Falls City
Transportation System Plan (2013)

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Section 1 – Chapter 1
Background and Introduction

The Falls City Transportation System Plan (TSP) establishes City goals, policies, and strategies for developing and improving the transportation system within the Falls City Urban Growth Boundary. The Falls City TSP serves as a twenty-year plan to guide transportation improvements and enhance overall mobility for vehicles, pedestrians and bicyclists. (A glossary of transportation terms and acronyms are presented in **Section I, Appendix A**.)

Transportation Planning Requirements

The Falls City Transportation System Plan (TSP) was developed utilizing the Oregon Department of Transportation System Planning Guidelines (2008) and in accordance with the requirements of Statewide Planning Goal 12 - Transportation and the Transportation Planning Rule (TPR - OAR 660, Division 12). Statewide Planning Goal's (12 - Transportation) purpose is to "provide and encourage a safe, convenient and economic transportation system."

Goal 12 is implemented through the Oregon Transportation Planning Rule (TPR) that requires local governments and state agencies to prepare and adopt TSPs. The plan strives to be consistent with other relevant County and State plans. See **Section II, Appendix B**.

A TSP is defined as a "plan for one or more transportation facilities that are planned, developed, operated and maintained in a coordinated manner to supply continuity of movement between modes, and within and between geographic and jurisdictional areas." The TPR encourages multi-modal transportation systems to reduce dependence on auto traffic.

Statewide Planning Goal 12 and the TPR provide the following guidelines for developing a TSP:

"A transportation plan shall (1) consider all modes of transportation including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrian; (2) be based upon an inventory of local, regional, and state transportation needs; (3) consider the difference in social consequences that would result from utilizing differing combinations of transportation modes; (4) avoid principal reliance upon any one mode of transportation; (5) minimize adverse social, economic and environmental impacts and costs; (6) conserve energy; (7) meet the needs of the transportation disadvantaged by improving transportation services; (8) facilitate the flow of goods and services so as to strengthen the local and regional economy; and (9) conform with local and regional comprehensive land use plans."

Although the City of Falls City is eligible for an exemption to the TPR requirements based upon the City's current population of less than 2,500, Falls City elected to develop a TSP in order to better manage the City's transportation facilities and promote the development of a safe and well-planned transportation system. In 2010 as preparation for a future plan, the City developed and adopted with the assistance of a grant from the Rural Investment Fund, a 2010 Falls City Street Improvement Plan. Information gathered

during that process was used to update and supplement the development of a City of Falls Transportation System Plan.

Benefits of a well-planned transportation system:

- Affords residents, businesses, and visitors alike, convenient and efficient **mobility** throughout the community in a **safe** manner.
- Encourages **economic development**, in terms of both direct construction spending, and helping reduced the costs of transporting goods and services through an efficient transportation system.
- Provides individuals and household greater **choice** and freedom to access the transportation system in many different ways.
- Influences the character and **appearance** of the community through the design and development of transportation facilities.

(A glossary of transportation terms and acronyms is provided in **Section 1 - Appendix A**.)

Transportation System Plan – Background

In 2011, the City of Falls City was awarded a grant from the combined Oregon Department of Transportation (ODOT) and the Department of Land Conservation and Development (DLCD) Transportation Growth Management (TGM) program to focus on key transportation issues as part of the adoption of elements of a Transportation System Plan (TSP) to:

- Link the bicycle and pedestrian facilities to key land uses and activity centers, such as schools, residential areas, downtown area, parks, recreational areas and other community designations;
- Provide well-designed, visible, safe and convenient bicycle and pedestrian facility access points and street crossings;
- Identify a prioritized list of planned improvements, including cost estimates, to guide future transportation investments;
- Inventory infrastructure facilities located within street rights-of-way, such as drainage facilities that would be impacted by planned improvements;
- Provide an effective financing program for planned improvements and potential sources of funding;
- Actively engage property owners, businesses, residents, stakeholders, and elected and appointed officials in all phases of this project; and
- Adoption of the elements of a TSP.

The preparation of the planning document results in the adoption of a TSP for the City. The process also includes incorporating any needed Comprehensive Plan goals and policies updates and adopting implementing ordinances into the Falls City Zoning and Development Ordinances (FCZDO). Adoption of the TSP and Comprehensive Plan /FCZDO amendments were completed under Legislative Amendment 2013-01**.** The applicable sections of the TSP must comply with the Transportation Planning Rule (Oregon Administrative Rule (OAR 660-012-0015), and be consistent with other relevant County and State plans. See **Section II** - **Appendix B**.

In 2010, the City of Falls City completed and adopted the "Falls City Street Improvement Plan" (FCSIP) as a first step toward preparing a more detailed TSP. See **Section II – Appendix B** for an assessment of the FCSIP. The City needs to ensure for the current City residents and at the time of future development that the transportation system serves the community with a safe and efficient transportation system that is accessible by a variety of transportation modes (e.g. riding in vehicles, walking as pedestrians, or riding bicycles).

Transportation System Planning

The purpose of the Falls City's Transportation System Plan (TSP) is to identify a system of transportation facilities and services that will provide for local transportation needs and meet state and federal transportation planning requirements. The TSP serves as an important tool for local officials to make informed transportation investments and sound land use decisions, as well as allow for protection of rights-of-way needed for planned transportation improvements[1].

A TSP generally includes the following information:

- Determination of transportation needs,
- Road Plan,
- Bicycle/Pedestrian Plan,
- Public Transportation Plan,
- Air, Rail, Water and Pipeline Plan,
- Policies and regulations for implementation of the transportation system plan, and
- Transportation Financing Program.

The process of preparing a TSP included the following steps:

- **Step 1**: Inventory of the elements of the existing transportation system.
- **Step 2**: Review of existing plans, policies, regulations and standards.
- **Step 3**: Review and update, as needed, of the City's Comprehensive Plan local transportation goals and objectives.
- **Step 4**: Identify current conditions and deficiencies.
- **Step 5**: Identify existing funding mechanisms and projected revenues.
- **Step 6**: Determine future deficiencies and needs.
- **Step 7**: Develop criteria for evaluating project alternatives that are linked to project goals and objectives.
- **Step 8**: Develop and evaluate alternatives that address deficiencies and needs that can be constructed at a reasonable cost.
- **Step 9**: Select a recommended transportation system.
- **Step 10**: Develop of a transportation improvement program and local ordinances that implement the TSP.
- **Step 11**: Develop a transportation finance program that seeks to fund the projects identified in the transportation improvement program.

[1] Source: ODOT TSP Guidelines 2008; online at: http://www.oregon.gov/ODOT/TD/TP/

- **Step 12**: Adopt the TSP and related implementing ordinances (e.g. Zoning and Development Ordinance amendments and creating TSDCs).

Other documents were reviewed for additional information that is important to the transportation facilities. Summaries of those documents and assessment of their details are included in **Section II – Appendix B**. Examples of resource materials not already listed include the Oregon Downtown Development Association (ODDA) Report (2000), a 1997 Bicycle and Pedestrian Assessment, and selected US Census and PSU population data and projections.

Information that supplements the assessment of the City's Comprehensive Plan is provided in **Section II – Appendix B**.

Throughout the project, efforts were made to obtain stakeholder and public feedback on the TSP (e.g. community events, utility surveys, and updates at several City Council meetings).

The Planning Process

The 2013 TSP Update was prepared with assistance from a Project Advisory Committee (PAC). The PAC consisted of representatives from the Oregon Department of Transportation (ODOT), City staff from Falls City, Polk County Public Works Department, Oregon Department of Land Conservation and Development (DLCD), Oregon Department of Fish and Wildlife, Luckiamute Watershed Council, Weyerhaeuser, and project staff from the consulting firm of Kittelson and Associates and the Mid-Willamette Valley Council of Governments (MWVCOG). The PAC also included members from the community at large and representatives from the City Council of Falls City and its Public Works Committee. The City completed development and review of the TSP through a series of committee meetings held over a period of approximately 12 months. Information gathered at a community events in April and October and other activities during the planning year helped obtain feedback on the TSP from the citizens of the community and prioritize the list of transportation improvements.

Planning Area

The planning area for the Falls City TSP update is the Falls City Urban Growth Boundary (UGB). The City of Falls City layout consists of a discontinuous grid pattern. Streets that connect outside City limits include Ellis Street and Socialist Valley Road on the north; Sheldon Avenue, Clark Street, and Harrington Road on the south; Falls City Road connection to north Main Street on the east; and Mitchell Street connects to Black Road on the west. All other streets provide internal circulation within City limits.

The primary commercial core area of the City is centered along North Main Street. Other common destinations include the elementary and high schools, City Hall, a Community Center/Fire District building, the Falls and several City parks.

Maps of the current Comprehensive Plan and zoning designations within the planning area are shown in **Chapter 1 – Map 1-1 —Comprehensive Plan Designations** and **Chapter 1 - Map 2-1—Zoning and Address map**.

SECTION 1 - APPENDIX A
Glossary of Transportation Terms and Acronyms

Access Management: Measures regulating access to streets, roads, and highways from public streets or roads and private driveways. Measures may include, but are not limited to, restrictions on the siting of interchanges, restrictions on the type and amount of access to roadways; and the use of physical controls, such as signals and channelization including raised medians to reduce impact of approaching traffic on the main facility.

ADA: Americans with Disabilities Act of 1990. Federal legislation requiring that public facilities and commercial buildings have doorways, corridors, accessways, elevators, seating, and other facilities that are accessible to the handicapped population.

Arterials: A highway primarily for through traffic, usually on a continuous route.

Average Daily Traffic (ADT): The annual average two-way traffic volume. It represents the total traffic for the year divided by 365.

Bikeway: A bikeway is created when a road has the appropriate design treatment for bicyclists, based on motor vehicle traffic volumes and speeds: shared roadway, shoulder bikeway, bike lane or bicycle boulevard. Another type of facility is separated from the roadway: multi-use path.

Bikelane: A portion of the roadway which has been designated by striping and pavement markings for the preferential or exclusive use of bicyclists.

Collectors: Collector provide links between an area or neighborhood and the arterials. Collectors supply abutting properties with the same degree of land service as a local street but are usually given priority over local streets in any traffic control installation.

Comprehensive Plan: A local document that guides a community's land use, conservation of natural resources, economic development, and public services. Plans contain data and information called the inventory, and the policy element. The policy element sets forth the community's long-range objectives and the policies by which they will be achieved. The plan in adopted by ordinance and has the force of law.

DLCD: Department of Land Conservation and Development, the State of Oregon's land use planning agency.

Functional Classification: See definitions for Arterials, Collectors, and Local Streets. Identifying functional classifications for roadways provides a basis for future improvements and establishing design standards, such as: access spacing, roadway width, right-of-way needs, design speed, and type of pedestrian and bicycle facilities.

Implementing Measures: The mechanisms used to accomplish the goals, policies, and objectives contained in a comprehensive plan. There are a variety of measures and two common examples are zoning and land-subdivision ordinances.

Level of Service: A quantitative measure of the effect of a number of factors on transportation service including speed and travel time, traffic interruptions, freedom of movement, safety, driving comfort, and convenience (see **Section I, Chapter 2, Existing Traffic Operations**).

Local Streets: The primary function of a local street is to provide access to abutting properties. While connectivity is encouraged for all streets, through traffic movement is not the intended purpose of local streets.

Mobility: Being able to move easily from place to place.

Modes of Transportation: Mass transit, air, water, pipeline, rail, highways, bicycle, pedestrian types of travel and transport. The terms "modes", "mode connectivity", and intermodal refer to these types of travel.

Multimodal: Involving several modes of transportation.

Public Transit: Bus, van, light rail and other surface transportation systems open to the general public which operate frequently and on predetermined routes and schedules.

OAR: Oregon Administrative Rules. A body of law that describes how legislation and other laws will be implemented.

ODOT: Oregon Department of Transportation

Shared Roadway Bikeway: A type of bikeway where bicyclists and motor vehicles share a travel lane.

Shoulder Bikeway: A type of bikeway where bicyclists travel on a paved shoulder.

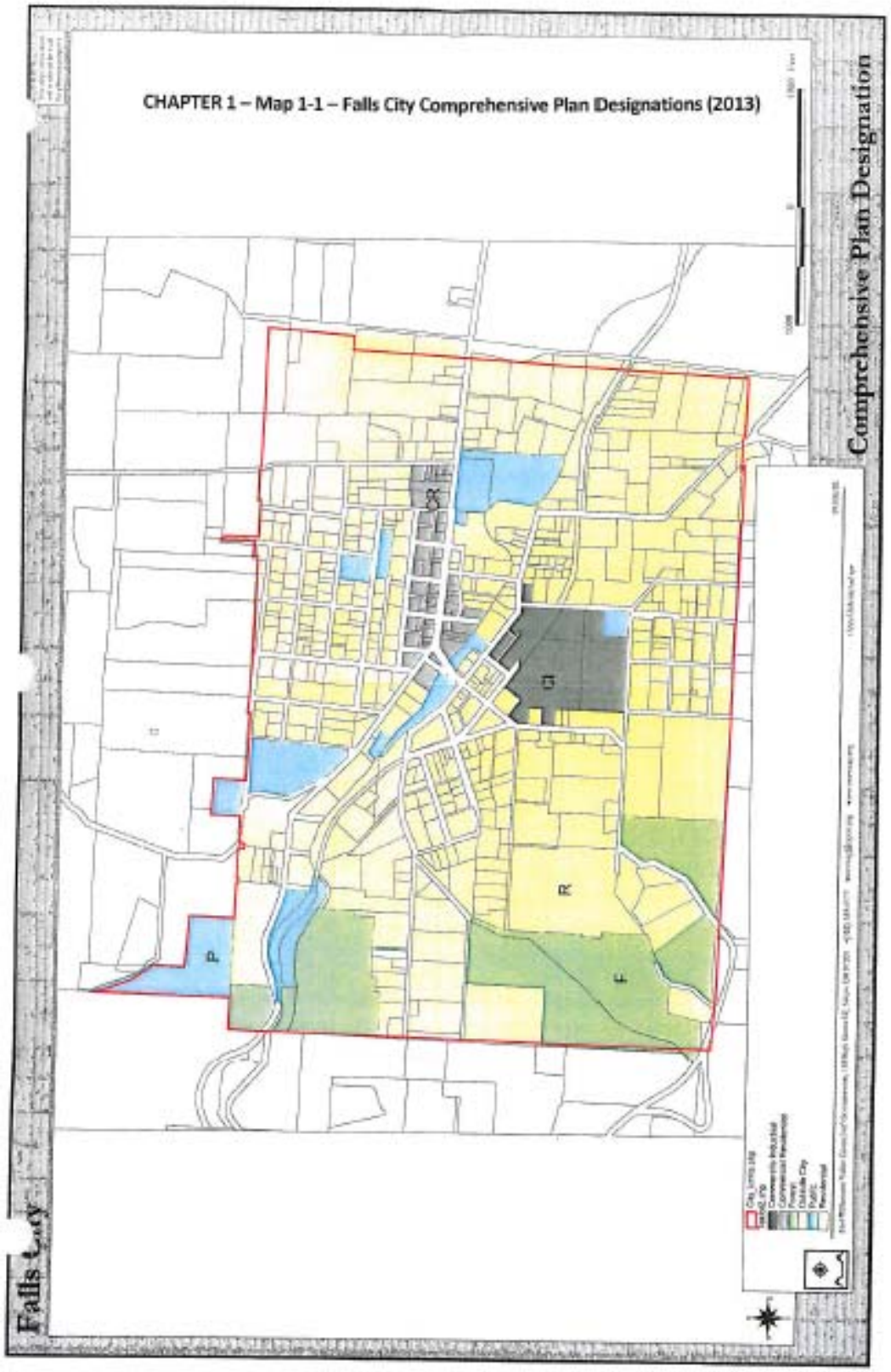
STIP: Statewide Transportation Improvement Program

Structures: A bridge, retaining wall, or tunnel.

Transportation Disadvantaged: A term used to denote individuals without the ability or capability to use personal conveyances to travel. For example, these individuals may be the working poor, students, physically or mentally challenged people.

TPR: The Transportation Planning Rule contained in Oregon's Administrative Rule, Chapter 660, Division 12, which implements the statewide planning Goal 12: Transportation.

UGB: Urban Growth Boundary. A line drawn around a geographic area that separates urban use lands from resource, or rural, use lands; and shows where the city intends to grow.


CHAPTER 1 – Map 1-1 – Falls City Comprehensive Plan Designations (2013)
Comprehensive Plan Designation
Falls City
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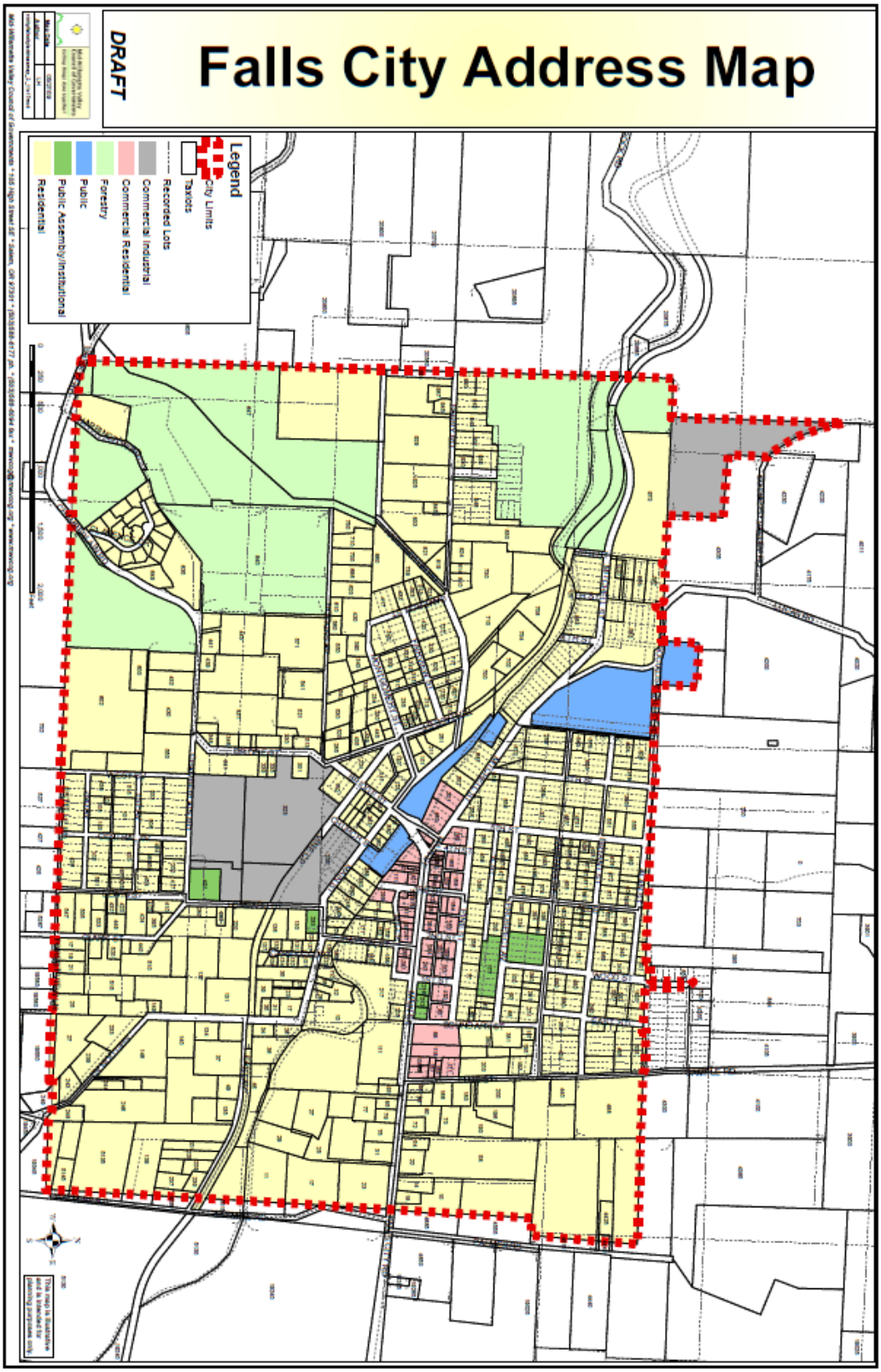
Chapter 1 – Map 1-2 – Falls City Address Map
(and including Zone Districts (2013))



Section 1
Chapter 2
Existing and Future Conditions

Section I - Chapter 2
Existing and Future Conditions

The City of Falls City is located in the Willamette Valley approximately four (4) miles west of OR 223 (Kings Valley Highway #223) and approximately six (6) miles southwest of Dallas, Oregon. The adoption of this City's 2013 Transportation System Plan (TSP) will be the first for this Polk County City. A transportation assessment was completed in 2010 that provided a formal roadway inventory, an updated roadway functional classification, and updated Public Works design standards. Using this information, the City proceeded with the task of completing a formal TSP.

The review process included the distribution of memoranda. The first memorandum summarized the background information needed to support the development of a TSP and was organized into the following sections:

- Population Inventory,
- Roadway Network,
- Pedestrian and Bicycle Network,
- Rail Network,
- Air Transportation,
- Pipeline Facilities,
- Water Transportation Facilities, and
- Transportation Funding.

The findings in this chapter do not include solutions or improvements to mitigate identified deficiencies. Rather, findings combined with the goals, objectives, and plan and policy review, are intended to provide a comprehensive overview of Falls City's anticipated transportation needs. Subsequent chapters will describe and evaluate alternative solutions.

POPULATION

The purpose of the population inventory is to identify the characteristics of the population served by the Falls City transportation network, such as modes of transportation used and number of residents with mobility limitations. The population inventory helps inform the existing and future conditions in the analyses preparing the TSP document, particularly as the project team worked with the community to develop future alternative scenarios that serve residents' needs.

According to the latest certified estimates from the Portland State University Population Research Center, Falls City has a population of approximately 947. In 2010, 41.1 percent of Falls City residents belonged to age groups that are considered to have mobility limitations; 17.9 percent were between the ages of 5 and 14; and 23.2 percent of residents were greater than 60 years of age.

In 2010, the Falls City workforce included 402 residents, approximately 43 percent of the population. Driving alone was the most common means of transportation to work (79.6 percent),

followed by carpooling (13.9 percent). Approximately 1.4 percent walked or biked to work while 1.2 percent used other forms of transportation such as a motorcycle. Approximately 100 percent of the Falls City workforce had access to at least one (1) vehicle in 2010. These figures have remained relatively unchanged in the last 10 years.

ROADWAY NETWORK

Falls City is unique in the sense that it is not located on a major state highway. The nearest regional highway is OR 223 located approximately four (4) miles to the east. Access to OR 223 is provided primarily via two Polk County roadways: Falls City Road and Bridgeport Road/Sheldon Avenue. Within the City limits, Falls City Road becomes N. Main Street and is the City's primary east-west arterial. Bridgeport Road becomes Sheldon Avenue within the southeast portion of the City and later S. Main Street as it parallels the Little Luckiamute River. The remaining roadway network is a collection of Arterial, Collector, and Local Streets that form a loosely defined grid pattern on the north side of the Little Luckiamute River and a more irregular pattern on the south side of the river. Bridge Street (connecting S. Main Street with N. Main Street) is the only vehicular river crossing within City limits.

In 2009, City staff conducted an existing street system inventory for all roadways within Falls City that was incorporated into the 2010 Street Improvement Plan. The referenced inventory was prepared by MWVCOG staff and documented in the *2012 Falls City Street Improvement Plan*. Key elements of this inventory include:

- Street classification and jurisdiction,
- Street width and right-of-way,
- Surface type and condition, and
- Presence of curbs and sidewalks.

The following sub-sections provide additional discussion of jurisdictional responsibility and functional classification, as well as analysis of existing traffic operations, crash history, and future traffic operations of the roadways within Falls City.

JURISDICTION

All streets within the Falls City boundary are owned and maintained by Falls City. Polk County owns and maintains all roadways that provide regional accessibility to/from Falls City. **Table 2-1** summarizes the jurisdictional responsibilities and functional classification of the primary roadways (Collector and higher) within the City limits of Falls City.

Table 2-1 2013 Roadway Ownership and Functional Classification

Roadway	Jurisdictional Responsibility	Functional Classification
Bridge Street	Falls City	Arterial
Main Street, North (N. Main)	Falls City	Arterial
Mitchell Street	Falls City	Arterial
Sheldon Avenue	Falls City	Arterial
Chamberlain Road	Falls City	Collector
Clark Street	Falls City	Collector
Ellis Street	Falls City	Collector
Fairoaks (5th to Ellis)	Falls City	Collector
Lombard Street	Falls City	Collector
Main Street, South (S. Main)	Falls City	Collector
Parry Road	Falls City	Collector
5th Street (Mitchell to Fairoaks)	Falls City	Collector

Note: All other streets are classified as Local Streets and are owned and maintained by Falls City

FUNCTIONAL CLASSIFICATIONS, STREET DESIGN STANDARDS AND ACCESS SPACING STANDARDS

Identifying the appropriate functional classification for roadways provides a basis for planning future improvements and establishing design standards, such as: access spacing, roadway width, right-of-way needs, design speed, and type of pedestrian and bicycle facilities. The Falls City Public Works Design Standards identify three (3) roadway classifications: Arterials, Collectors, and Local Streets. **Figure 2-1** shows the functional classifications of roadways within the Falls City and is identified as the **2013 Street Plan**.

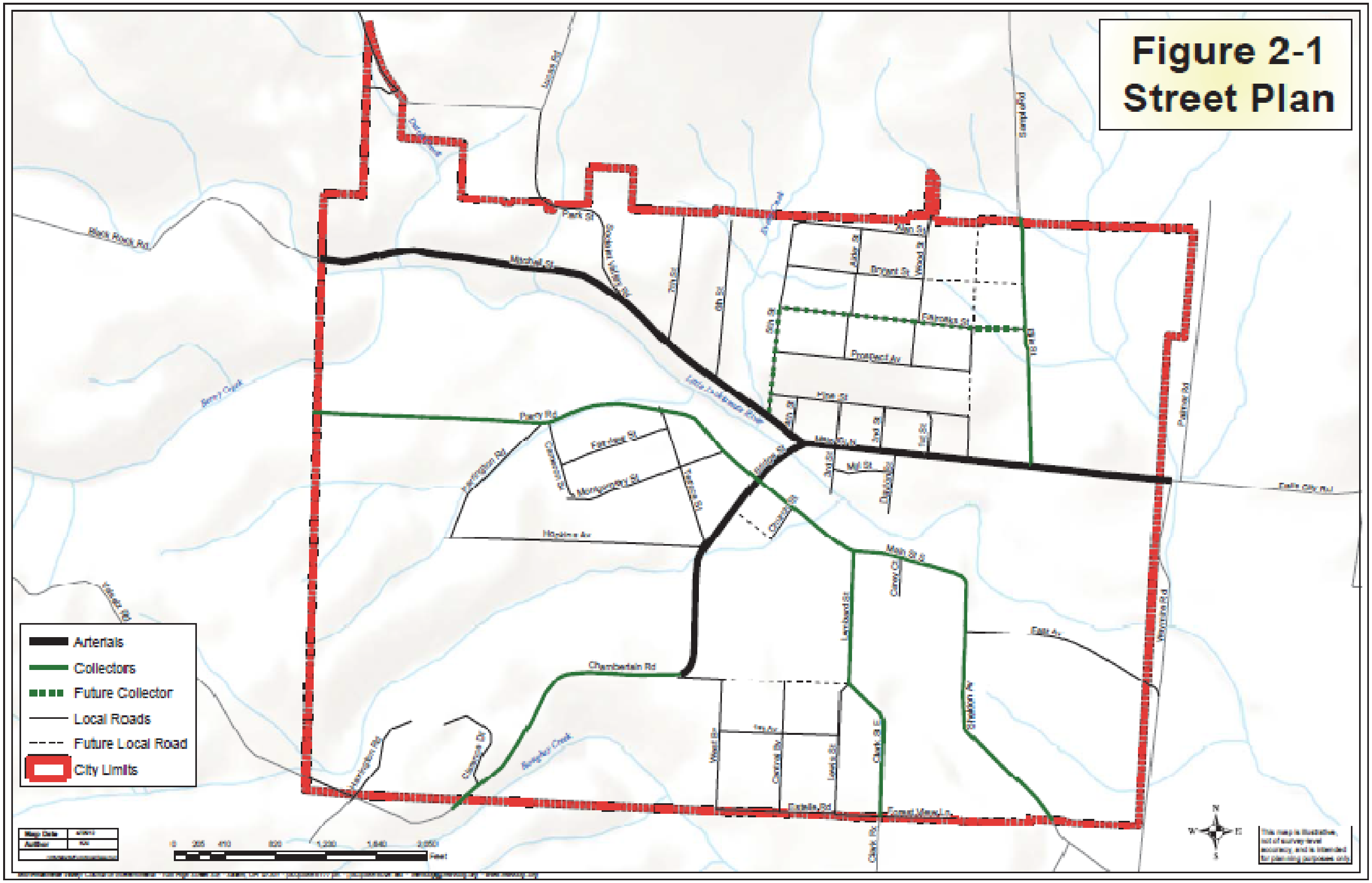


Figure 2-1 Street Plan

Table 2-2 summarizes the street design standards corresponding to each of the functional classifications adopted in the Falls City Public Works Design Standards.

Table 2-2 – 2013 Falls City Street Design Standards

Functional Classification	ROW Width	Paved Width	Travel Lanes	Turning Lane	Parking	Landscape Strip	Sidewalk Width	Bike Lane
Arterial	60 feet	40 feet	[1]	[1]	None	Optional	5 feet	5 feet
Collector	60 feet	40 feet	[1]	[1]	Both Sides	Optional	5 feet	None
Local Road	50 feet	32 feet	2 Lanes	None	One Side	Optional	5 feet	None
Residential Cul-de-sac (Length > 200 ft)	50 feet	30 feet	-	-	None	Optional	5 feet	None
Residential Cul-de-sac (Length < 200 ft)	45 feet	30 feet	-	-	None	Optional	5 feet	None
Alleys	20 feet	20 feet	-	-	No	No	No	No

[1]The number of travel lanes for Arterial and Collector roadways shall be determined by the volume of traffic. The City may require additional turning lanes based on situational analysis or a traffic engineer's report evaluating the need for additional turning lanes.

EXISTING TRAFFIC VOLUMES

Existing traffic operations were evaluated in 2012 to identify current traffic conditions. **Figure 2-2** shows the study intersection and roadway locations. **Figure 2- 3** shows the existing weekday a.m. and p.m. peak hour traffic volumes at each of the study intersections. **Section II – Appendix C** contains the raw 2011 traffic count summary worksheets. These volumes were balanced and adjusted to account for seasonal fluctuations in traffic volumes. The seasonal adjustment factor selection process is described in the Methodology Memo, included in **Section II – Appendix D** of this document.

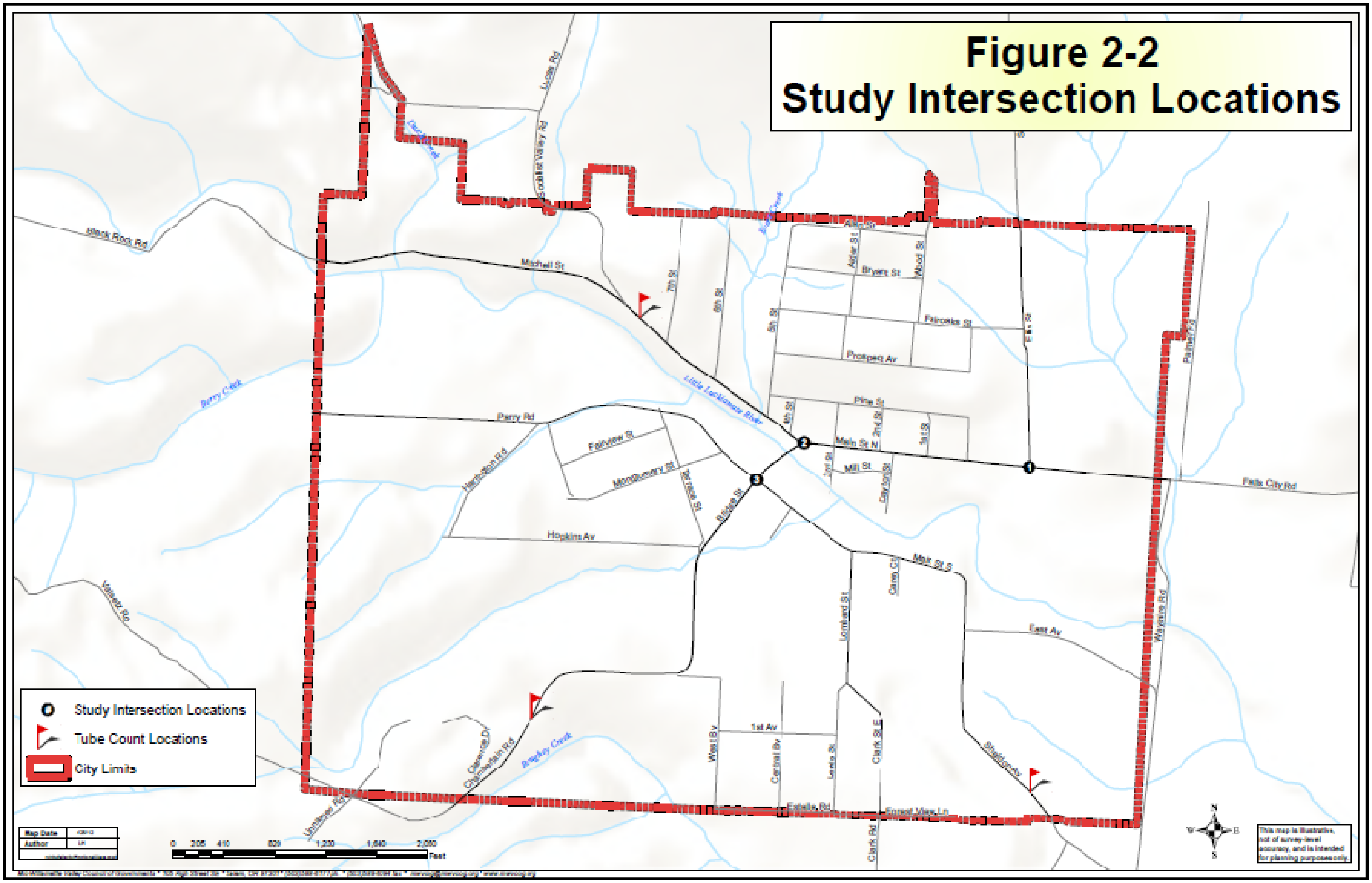
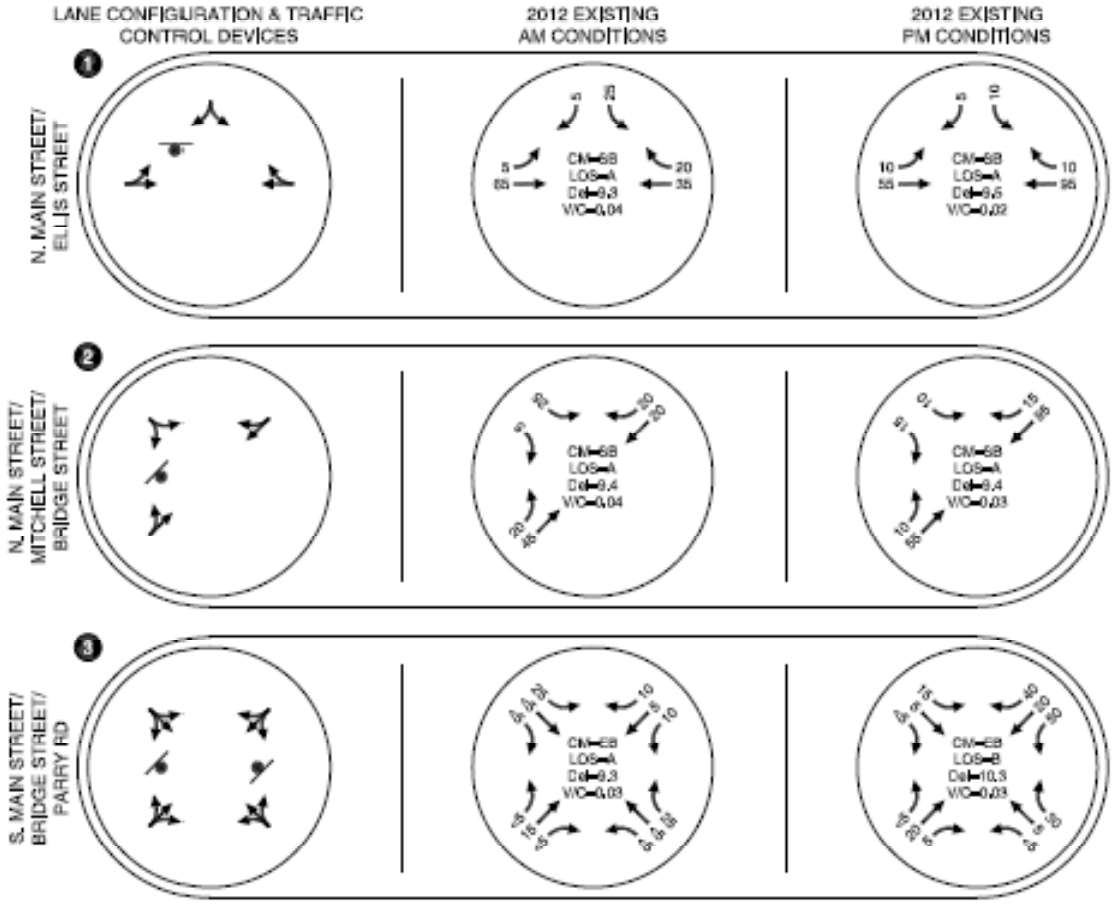


Figure 2-2
Study Intersection Locations

Figure 2-3
2012 Traffic Conditions



EXISTING TRAFFIC OPERATIONS

Traffic operations at intersections are typically gauged using a measure known as "level of service" (LOS). Level of service represents the average amount of delay that motorists experience when passing through an intersection using a letter grade scale from "A" (best) to "F" (worst). At signalized and all-way stop-controlled intersections, LOS is based on the average delay experienced by all vehicles entering the intersection. At two-way stop-controlled intersections, LOS is based on the average delay experienced by the worst movement at the intersection, typically a left-turn from the stop-controlled street. For signalized intersections, LOS "D" (drivers experience no more than 55 seconds of average delay) is generally considered to be an acceptable operational level. For unsignalized intersections, LOS "E" (drivers experience no more than 50 seconds of average delay) is generally considered to be an acceptable level.

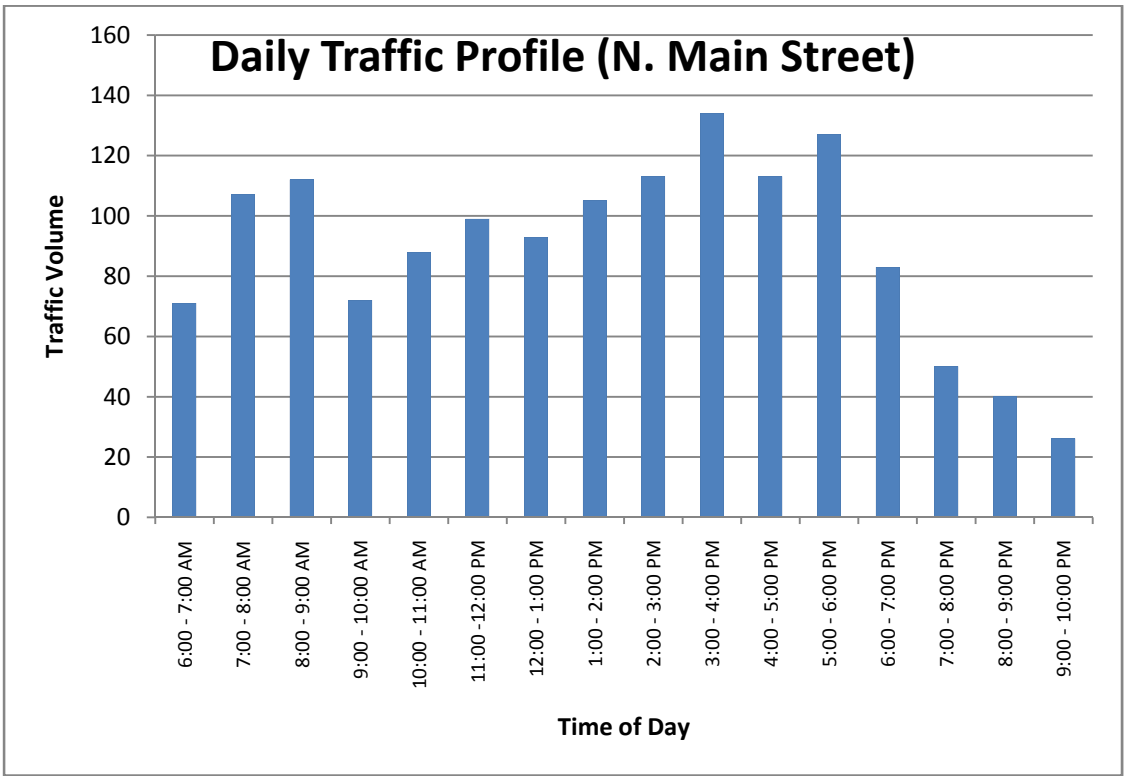
All of the operational analyses described in this report were performed in accordance with the procedures stated in the 2010 Highway Capacity Manual (Reference 1) and the ODOT Analysis Procedures Manual (Reference 2, page 2-21).

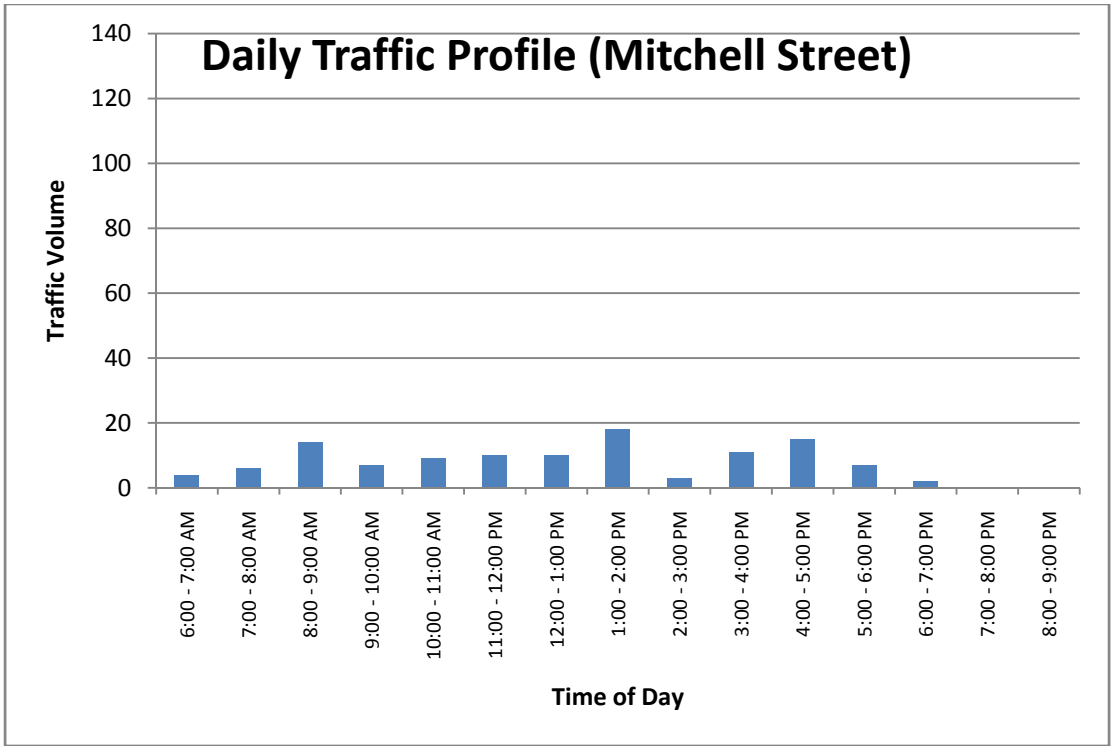
Based on 2012 a.m. and p.m. peak hour traffic volumes, level of service was calculated for the study area intersections. The results of the level of service analysis are summarized in **Figure 2-3**. As shown in the Figure, all of the study area intersections currently operate within acceptable performance standards during the weekday a.m. and p.m. peak hours. **Section II – Appendix E** provides the 2012 existing conditions operational analysis worksheets for each study intersection.

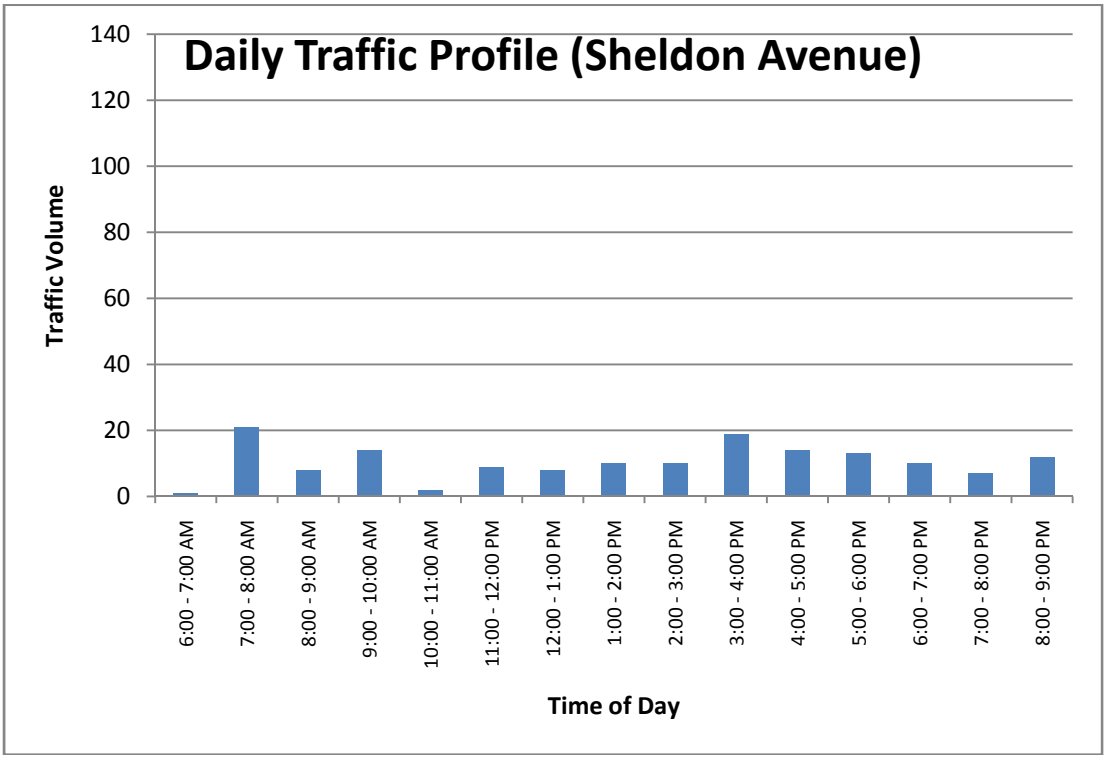
EXISTING TRAFFIC PROFILE

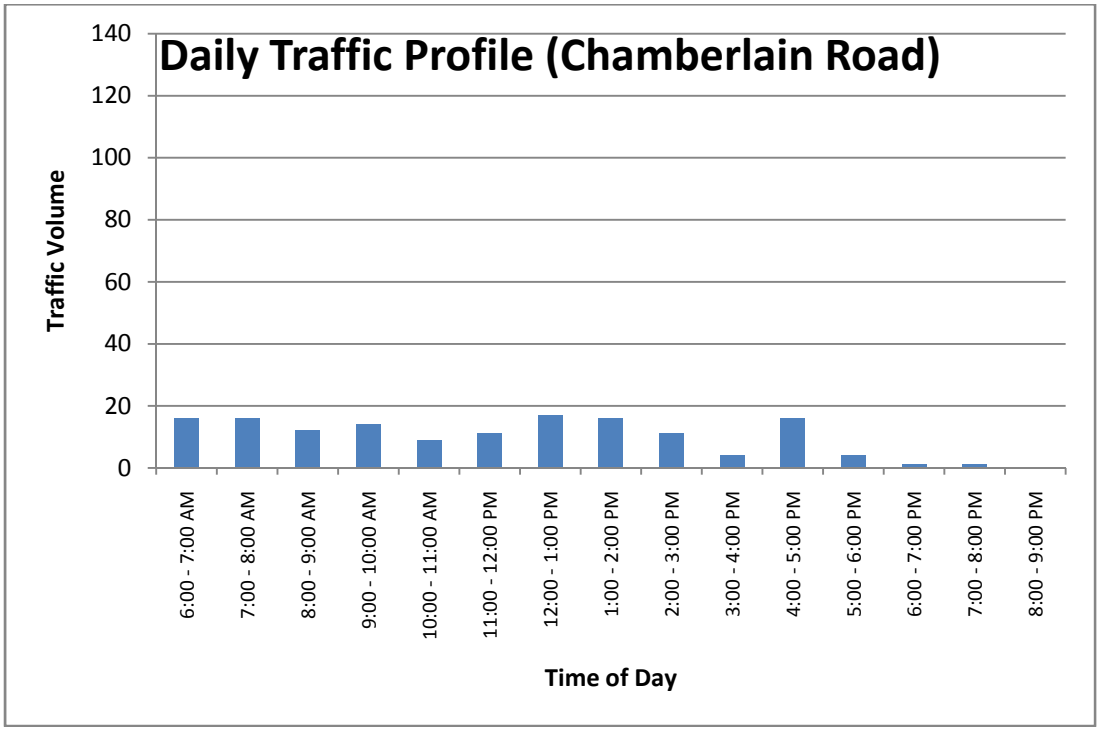
In addition to the peak hour intersection traffic counts, daily traffic counts (2012) were obtained at each of the roadways that provide regional access to/from Falls City. These roadways include N. Main Street, Sheldon Avenue, Chamberlain Road, and Mitchell Street. The following charts (**Figure 2-4**) summarize the daily traffic profile for each roadway. As shown, N. Main Street is the primary roadway providing regional access to/from Falls City.

Figure 2 - 4, Daily Traffic Profiles









Source: KAI using ODOT data

CRASH ANALYSIS

To identify potential safety deficiencies or conflict points at study intersections within Falls City, five (5) years of crash data (from 2006 through 2010) were obtained from ODOT and analyzed. Crash data were reviewed at the intersection level in order to identify potential safety issues that should be addressed.

Typically, intersection safety is evaluated by calculating the intersection's crash rate (the number of crashes per million vehicles entering the intersection) and the frequency of crashes (the number of crashes per year). These rates are compared to other similar facilities and crash patterns are examined to determine whether a safety deficiency exists.

For this analysis, the critical rate method was used to evaluate each of the study intersections. **Section II - Appendix F** contains the raw ODOT crash data and **Section II - Appendix G** contains the critical crash rate calculations. Under this methodology, a critical crash rate is calculated for each intersection and compared to each intersection's observed crash rate. The critical crash rates are based on the performance of other study intersections with the same traffic control device[1].

Crash rates for intersections were calculated in crashes per million entering vehicles (MEV). The observed crash frequency, crash rate, and critical crash rate for each study intersection is summarized in **Table 2-3**[2]. As shown in Table 2-3, none of the study intersections exceeded their critical rate.

Table 2-3 Crash Analysis Summary (2006-2010)

Intersection	Property Damage Only (PDO) Crashes	Injury Crashes	Fatal Crashes	Total Crashes	Crash Frequency (per year)	Observed Crash Rate (per MEV)	Critical Crash Rate	Exceeds Critical Rate?
N. Main Street/ Ellis Street	1	0	0	1	0.2	0.3	0.78	No
N. Main Street/ Mitchell Street/ Bridge Street	0	1	0	1	0.2	0.27	0.75	No
S. Main Street/ Bridge Street/ Parry Road	0	1	0	1	0.2	0.29	0.76	No

Source: KAI using ODOT data

[1] More information on the method can be found in the American Association of State Highway Officials (AASHTO) *Highway Safety Manual*, (Reference 3, see Chapter 4 Network Screening).

[2] Not all crashes that occur at an intersection are reflected in the reported data. Some crashes are not reported by motorists or do not exceed the property damage limit necessary to be reported and classified.

Table 2-4 provides additional detail about the types of crashes that were reported at each intersection.

Table 2-4 Intersection Crash Type and Severity (2006-2010)

Intersection	No. of Crashes	Collision Type				
		Angle	Head-On	Read-End	Turning	Other
N. Main Street/ Ellis Street	1	1	0	0	0	0
N. Main Street/ Mitchell Street/ Bridge Street	1	0	0	0	0	1
S. Main Street/ Bridge Street/ Parry Road	1	1	0	0	0	0
Total	**3**	**2**	**0**	**0**	**0**	**1**

Source: KAI using ODOT data

FUTURE TRAFFIC OPERATIONS

The following section describes anticipated future growth in Falls City and the surrounding region between 2012 and 2036. How the transportation system is anticipated to operate with the additional traffic in the "no build" scenario (if no improvements were made to the existing system) is also summarized. Future traffic operations were evaluated in accordance with the Cumulative Analysis Procedure identified in the ODOT Analysis Procedures Manual. The detailed methodology for this analysis and development of future growth forecasts are included in **Section II – Appendix D**.

Population and Employment Growth

Projected 2036 housing growth was estimated based on historical building permit data as researched by MWVCOG. The City's Comprehensive Plan indicates the number of housing construction starts between the years of 1995 and 2001 to be a total of 38 new units. Limited information was obtained from Polk County Community Development Department for April 2007 through December 2011. From this source, a total of eight (8) single-family residential permits were issued for the five (5) year period. Based on these figures, approximately two (2) new dwelling units per year could be projected through the 2036 planning horizon resulting in a total of 48 additional dwelling unitsthrough the year 2036. These estimates were reviewed by City staff and were determined to be reasonable given the inability to accommodate significant amounts of growth based on the status of the sanitary sewer system. As shown in **Table 2-5**, an increase of 48 housing units[3] is anticipated within Falls City between 2011 and 2036.

Table 2-5 Housing Growth Projections (2011-2036)

	2011	2036	Absolute Growth (2011-2036)
Housing Units	381	429	48

Source: KAI using MWVCOG analysis

Household Growth Allocation

In order to evaluate the anticipated growth in the City, the projected housing growth was assigned to the traffic network according to different geographic regions. Based on discussions with City staff, it is anticipated that those portions of the City with sanitary sewer service are likely to experience approximately two-thirds of the long-term housing growth. These areas include the half of the City north of the Little Luckiamute River. Based on a review of land availability and topographic constraints, it was assumed for the purposes of the TSP that this housing growth will occur north of N. Main Street and west of Ellis Street. The other third of the residential growth is anticipated to occur throughout the half of the City located south of the Little Luckiamute River.

[3] Housing unit growth is assumed to be single-family residential.

Based on a review of land availability and topographic constraints, it has been assumed for the purposes of the TSP that this housing growth within the southern portion will occur south and west of the S. Main Street/Bridge Street intersection.

Trip Generation

Trip generation estimates for the housing growth areas previously described were prepared based on observations found in the standard reference manual, Trip Generation, 8th Edition, published by the Institute of Transportation Engineers (Reference 4, page 2-21). **Table 2-6** summarizes the estimated trip generation for each of the growth areas rounded to the nearest five trips.

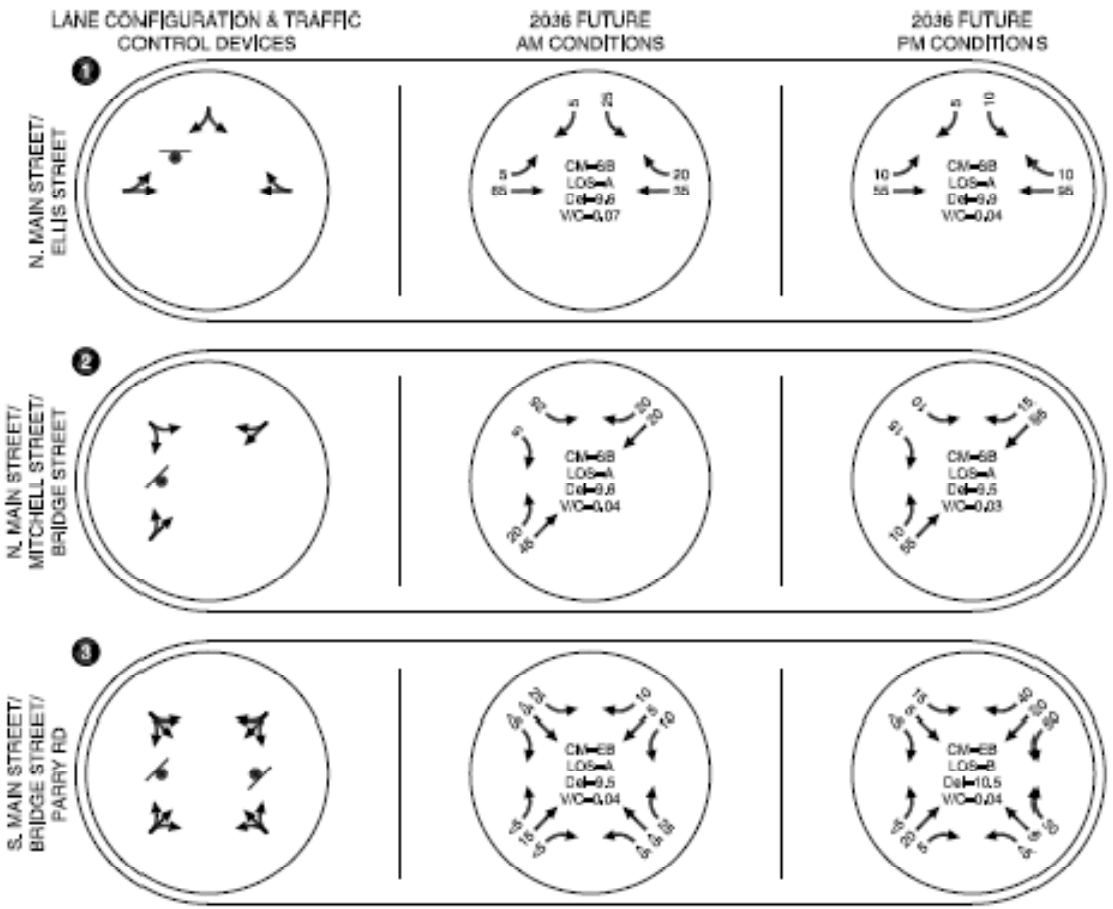
Table 2-6 2036 Single-Family Housing Trip Generation Estimate by Growth Area, Weekday AM and PM Peak Hour.

	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Total	In	Out	Total	In	Out
Northeast Quadrant	30	10	20	40	25	15
Southwest Quadrant	20	5	15	20	10	10
Area-wide	**50**	**15**	**35**	**60**	**35**	**25**

Source: KAI

The trips generated by future housing growth were added to the existing traffic volumes. The projected 2036 traffic volumes at the study intersections are shown in **Figure 2-5**. As shown in Figure 2-5, assuming the existing transportation network is not improved, all of the study intersections are forecast to operate within acceptable standards through the 2036 horizon year. **Section II – Appendix H** provides the 2036 no-build conditions operational analysis worksheets for each study intersection.

Figure 2-5
Future Traffic Conditions



PEDESTRIAN AND BICYCLE NETWORK

The following sections document the existing and future conditions and deficiencies for the pedestrian and bicycle network.

Pedestrian System

Pedestrian facilities serve a variety of needs, including:

- Relatively short trips (under a mile) to local destinations and pedestrian attractors, such as schools, parks, stores, and public facilities (e.g., libraries, recreation centers, community centers);
- Recreational trips (e.g., jogging or hiking) and circulation within parklands; and
- Local commute trips, where residents have chosen to live near where they work or to shop and obtain city services.

With small communities that have a small overall footprint such as Falls City, most origins and destinations are within a ½ to 1-mile distance, meaning that walking could be employed regularly for a variety of trips.

The *2010 Falls City Street Improvement Plan* describes existing pedestrian facilities in Falls City and provides an overview of pedestrian-related goals and policies. **Figure 2-6** shows existing sidewalk locations, widths, and conditions in the City of Falls City. The most complete sidewalk network exists along both sides of N. Main Street from Ellis Street to Bridge Street and along Bridge Street to S. Main Street. Smaller sidewalk connections exist on a few other streets where schools exist or where new development was required to install them. Two pedestrian bridges cross the Little Luckiamute River at the south end of 3rd Street and at Dayton Street.

In general, very few streets within Falls City have sidewalks as most streets were constructed prior to formal adoption of the current street design standards. As such, Falls City should focus sidewalk improvements along those facilities that provide safe and convenient access between neighborhoods, schools, parks, and shopping locations. Discussion of specific pedestrian facility needs, cost estimates, and project prioritization are addressed in the 2013 TSP alternatives analysis **Section I – Chapter 3**.

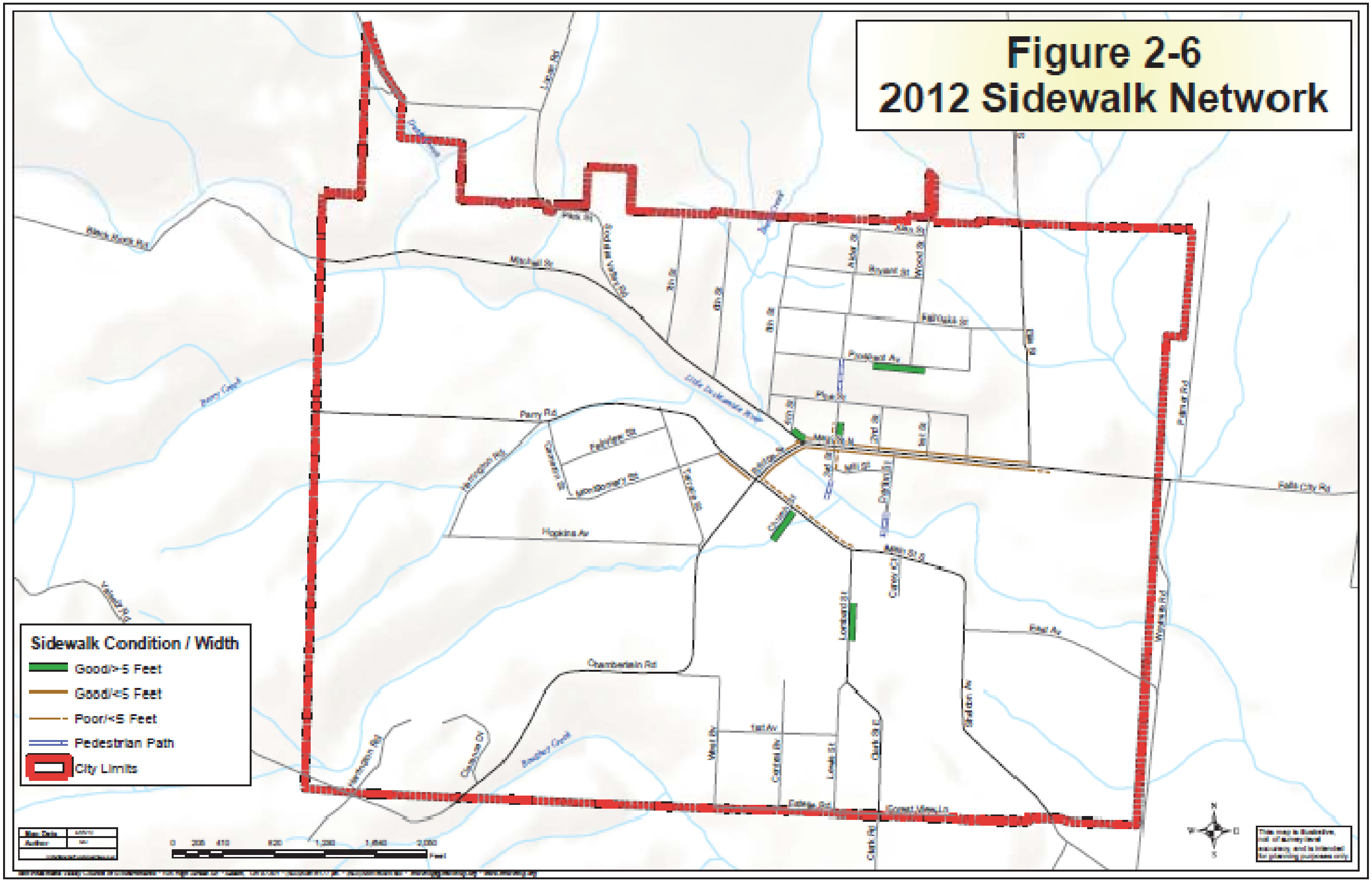


Figure 2-6
2012 Sidewalk Network
Sidewalk Condition / Width
Good/>5 Feet
Good/<5 Feet
Poor/<5 Feet
Pedestrian Path
City Limits
Mitchell St
Perry Rd
Hopkins Av
Chamberlain Rd
Falls City Rd

Bicycle System

Similar to pedestrian facilities, bicycle facilities can serve a variety of trip purposes, including local errands, commute trips, and recreational trips.Falls City currently has no marked bicycle facilities of any kind.

A variety of bicycle facilities are feasible within Falls City and have been implemented in similar small communities throughout Oregon. ODOT categorizes bicycle facilities into the following four (4) major classifications:

- Shared roadway - Bicycles and vehicles share the same roadway area under this classification. The shared roadway facility is best used where there is minimal vehicle traffic to conflict with bicycle traffic.
- Shoulder bikeways - This bicycle facility consists of roadways with paved shoulders to accommodate bicycle traffic.
- Bike lanes - Separate lane adjacent to the vehicle travel lane for the exclusive use of bicyclists are considered bike lanes.
- Bike paths - These bicycle facilities are exclusive bicycle lanes separated from the roadway.

Similar to the pedestrian system, the bicycle system should connect residential areas throughout the City with parks, shopping, employment, and other destinations. Support facilities such as bike parking are necessary to make cycling a more secure and convenient travel option.

PUBLIC TRANSPORTATION

The following information documents the existing and future conditions and deficiencies for the public transportation network.

There is no fixed-route public transportation system serving Falls City. The Chemeketa Area Regional Transportation System (CARTS) has flex route service provided by Cherriots Salem-Keizer Transit, but this service does not cover Falls City. The closest connection is Dallas, Oregon.

RAIL SERVICE

There is no passenger or freight rail service within Falls City. The closest passenger rail service is Amtrak with a station in Salem.

AIR SERVICE

There are no air strips within Falls City. Falls City is served by the Independence State Airport and Salem Municipal Airport and the airport in the cities of Portland and Eugene.

Independence State Airport

The Independence State Airport is located approximately one mile northwest of downtown Independence. Thisstate-owned airport serves a variety of charter, corporate and recreational users. It is equipped with one 2,935-foot runway.

Salem Municipal Airport

The Salem Municipal Airport is frequently referred to as McNary Field and is located approximately two (2) miles southeast of downtown Salem. The airport is bordered by I-5 to the East and the Pacific Railroad on the West. Currently, the 751 acre airport serves general aviation aircraft and the Oregon Army National Guard – Army Aviation Support Facility. The airport is made up of two jet runways and supporting taxiways that mainly support commercial activities on a limited basis. Both runways were recently resurfaced and grooved. The airport is owned and operated by the City of Salem and is organizationally structured under the Urban Development Department. The Salem Municipal Airport Plan was last updated in 1997.

Airports in the Cities of Portland and Eugene

Portland International Airport, operated by the Port of Portland, is located approximately 85 miles to the north and east of the City of Falls City and provides both commercial and passenger services. Additional information is available at www.portofportland.com/PDX. The City of Eugene's airport is located about 70 miles south and east of Falls City. Information about commercial and passenger services is available at the following website: www.eugene-or.gov/index.aspx.

PIPELINE SERVICE AND WATER TRANSPORTATION FACILITIES

There are no regional pipelines nor are there water transportation facilities in Falls City.

TRANSPORTATION FUNDING

There are a variety of options available for Falls City to fund its transportation improvements. The following section identifies the funding sources that contributed to projects within the City over the past five (5) years and forecasts the future funding availability from these existing funding sources.

In the future it is likely that the transportation program in Falls City will be funded by a combination of funding sources. The purpose of this section is to provide the City with a reasonable assumption of future funding during the development of transportation alternatives.

Existing Funding

Table 2-7 provides a summary of the funding that was used for transportation projects within Falls City over the past five (5) years. As shown in **Table 2-7**, there have been eight (8) projects completed within Falls City since 2006. The majority of these projects were maintenance projects with a total dollar value of approximately $80,700.

Table 2-7 Past Transportation Project Funding in Falls City

Fiscal Year	Location	Improvements Completed	Cost	Funding Source
2011 – 2012	Various City Streets	Graded and Graveled	$3,439	Local Funds
2010-2011	Various City Streets	Graded and Graveled	$6,730	Local Funds
2009-2010	Various City Streets	Graded and Graveled	$5,561	Local Funds
2008-2009	Various City Streets	Graded and Graveled	$3,278	Local Funds
2008-2009	Bridge Street	Pavement Overlay	$30,372	Local Funds ODOT SCA Grant
2007-2008	Various City Streets	Graded and Graveled	$5,114	Local Funds
2006-2007	Various City Streets	Graded and Graveled	$4,145	Local Funds
2006-2007	Prospect Street	Pavement Overlay	$25,000	ODOT SCA Grant
City Funds ODOT/Grant Funds			**$33,639 $50,000**	
Total			**$80,639**	

Source: KAI with City of Falls City background materials

Future Funding

An estimate of future funding was made by looking at past funding sources. **Table 2-8** provides a summary of the potential future project funding over the next five, ten, and twenty years based on an assumed average funding level of approximately $16,700 per year from local and state sources combined.As shown in Table 8, it is assumed that approximately $334,000 will be available for transportation project funding over the next twenty (20) years.

Table 2-8 Future Transportation Project Funding

	5-Year Forecast	10-Year Forecast	20-Year Forecast
City Funds	$33,700	$67,000	$134,500
ODOT/Grant Funds	$50,000	$100,000	$200,000
Total	**$83,700**	**$167,000**	**$334,500**

Source:KAI

SUMMARY

In summary, this chapter evaluated the existing and future transportation system conditions within Falls City and identified the performance and deficiencies of each component of the system. Components of the transportation system include the roadway, pedestrian, bicycle, transit, rail, air, water, and pipeline/transmission networks. The overview provided for development of the TSP and subsequent tasks that describe and evaluate alternative solutions to mitigate identified deficiencies.

References

1. Transportation Research Board. Highway Capacity Manual.2010.
2. Oregon Department of Transportation.Analysis Procedures Manual. 2006.
3. American Association of State Transportation Officials (AASHTO). Highway Safety Manual. 2010.
4. Institute of Transportation Engineers. Trip Generation Manual, 8th Edition. 2008.

Appendices (Falls City TSP, Section II)

C. Traffic Count Worksheets
D. Methodology Memo
E. 2011 Existing Conditions Traffic Analysis Worksheets
F. ODOT Crash Data
G. Critical Crash Rate Calculations
H. 2036 No-Build Conditions Traffic Analysis Worksheets

Section 1
Chapter 3
Transportation System Alternatives

Chapter 3
Transportation System Alternatives

Chapter 3 of the TSP summarizes the transportation system needs in an effort to address the existing and future deficiencies identified for the roadway, pedestrian, and bicycle networks in Falls City. These deficiencies were presented in Chapter 2: Existing and Future Conditions. In addition, feedback received during Community Workshop #1 and #2 (conducted in 2012) identified a number of other issues and concerns regarding the existing and future transportation network in Falls City. A summary of the Community Workshop feedback in presented in **Section II – Appendix I**.

ROADWAY NETWORK

The following sections summarize an analysis of proposed roadway alternatives to address identified needs and deficiencies.

Summary of Roadway Deficiencies

A number of existing and future roadway issues within Falls City are outlined below:

- Projected traffic volumes are relatively low due to estimates of slower and limited growth potential in the City. As such, no capacity based improvements are necessary to the roadway network for this planning period.
- Many City streets are narrow and do not meet the adopted Street Design Standard cross sections. These narrow streets can make bicycling and walking uncomfortable for travelers.
- Many City streets are unpaved gravel and un-graveled surfaced roadways.
- The N. Main Street/Bridge Street/Mitchell Street intersection is a large intersection. Roadway striping and signing is less than ideal on some approaches, making it confusing for drivers and pedestrians.
- Many streets do not have sidewalks or provide sidewalks narrower than the required five to six (5 to 6) feet. Sidewalks or continuous sidewalk sections are missing along many streets that serve the elementary or high school.

Roadway Alternatives

The following section summarizes the alternatives considered to mitigate the issues described above.

N. Main Street/Mitchell Street/Bridge Street Intersection

The existing N. Main Street/Mitchell Street/Bridge Street intersection is a unique intersection with a large pavement area (to accommodate large logging trucks). This can make certain approaches difficult to maneuver - particularly for unfamiliar drivers and pedestrians. Some approaches such as the Mitchell Street approach, experience pavement striping loss due to wear and tear, making the traffic movements unclear. To address these issues, several options were identified that could better define

the specific movements at this intersection, yet still stay within available right-of-way. These options are described below and illustrated in **Figures 3-1 through 3-3**.

- Option #1 – This concept maintains the existing "T" intersection design with a raised channelized right-turn lane on the Mitchell Street approach. In addition, the curb on the north side of the intersection would be pushed out to provide a narrower westbound movement from N. Main Street to Mitchell Street. This modification would provide a more defined and shorter pedestrian crossing along the north side of the intersection. However, it would also limit the movement of trucks through the intersection which would be a significant constraint.
- Option #2 – This concept creates a 4-way intersection by incorporating 4th Street. Although it provides a more traditional intersection configuration with narrower channelized movements and shorter/better defined pedestrian crossings, the predominate N. Main Street to Bridge Street movement is made less efficient and would likely require all-way stop-control. Some larger trucks would also have a harder time making some of the turning movements without tracking into adjacent travel lanes.
- Option #3 –This mini-roundabout concept would provide a fully mountable central island to accommodate trucks. Although the design as shown fits within the available right-of-way, the Bridge Street to N. Main Street and Bridge Street to Mitchell Street movements do not provide good deflection, thereby limiting the effectiveness of the mini-roundabout. In addition, it does not fully accommodate movements to/from 4th Street. Thereby creating some circulation challenges.

Table 3- 1 provides planning level cost estimates for the three improvement concepts. As shown in the table, Option #1 is the least expensive, as it generally maintains the existing layout and intersection configuration. Options #2 and #3 are significantly more expensive as they require more substantial modifications of the intersection.

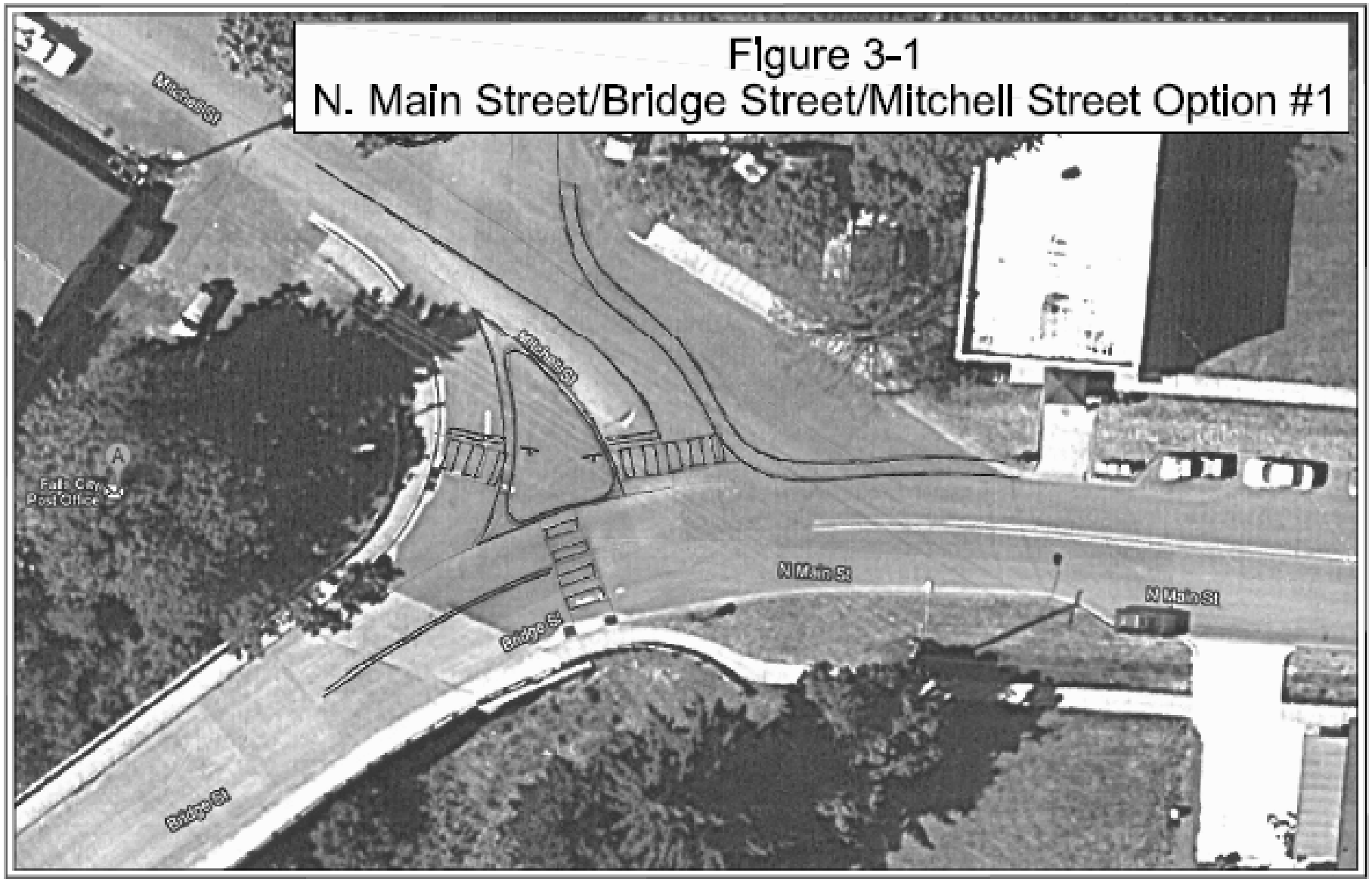


Figure 3-1
N. Main Street/Bridge Street/Mitchell Street Option #1
Mitchell St
Falls City Post Office
N Main St
N Main St
Bridge St
Bridge St


Figure 3-2
N. Main Street/Bridge Street/Mitchell Street Option #2
Mitchell St
Mitchell St
N Main St
N Main St
Bridge St


Figure 3-3
N. Main Street/Bridge Street/Mitchell Street Option #3
Mitchell St
Mitchell St
Falls City Post Office
N Main St
N Main St
Bridge St
Bridge St

Table 3-1 – N. Main Street/Bridge Street/Mitchell Street Improvement Concept Cost Estimates

Concept	Planning Level Cost Estimate[1]	Right of Way Available?
Option #1	$24,000	Yes
Option #2	$45,000	Yes
Option #3	$75,000	Yes

[1] All cost estimates include mobilization (10%), traffic control (5%), contingencies (30%), architectural/engineering fees (15%), and construction management (10%) (2012 dollars)
Source: Kittleson and Associates, Inc.

Functional Classification Changes

In response to the previously summarized roadway and circulation issues,the existing roadway functional classifications were reviewed as part of the alternatives analysis. Based on that review, the following modifications were considered:

- 5th Street from Mitchell Street to Fairoaks Street – change from a Local Road to a Collector
- Fairoaks Street from 5th Street to Ellis Street – change from a Local Road to a Collector

These recommendations are based upon the connectivity these streets provide to the Arterial network and the larger residential neighborhoods that they serve. There is no cost associated with these changes; however, additional right-of-way is required on Fairoaks Drive to accommodate the minimum right-of-way width of 60 feet for Collector streets outlined in the Falls City Public Works Design Standards. Fairoaks Drive currently has a right-of-way of 50 feet. The resultant design and access standards are applied as new development occurs and as roadway, pedestrian, and bicycle improvements are made. A functional classification map is shown in **Figure 3- 4.**

Future Street Network

The TSP Street Plan (**Chapter 3 – Figure 4, Street Plan**)identifies new streets or extensions of existing streets in order to maintain a balanced street network (to the extent possible) that are in accordance with the Oregon Transportation Planning Rule. The Street Plan designates where new local roads and/or pedestrian ways may be located to provide better connections between existing streets and significant local destinations such as parks and schools.

Locations for the right-of-way and improvements are identified based on review of the existing street grid, existing parcel boundary locations, physical constraints (e.g. steep slopes or creeks that might preclude economical road construction), applicable access management guidelines and research on dedicated rights-of-way.

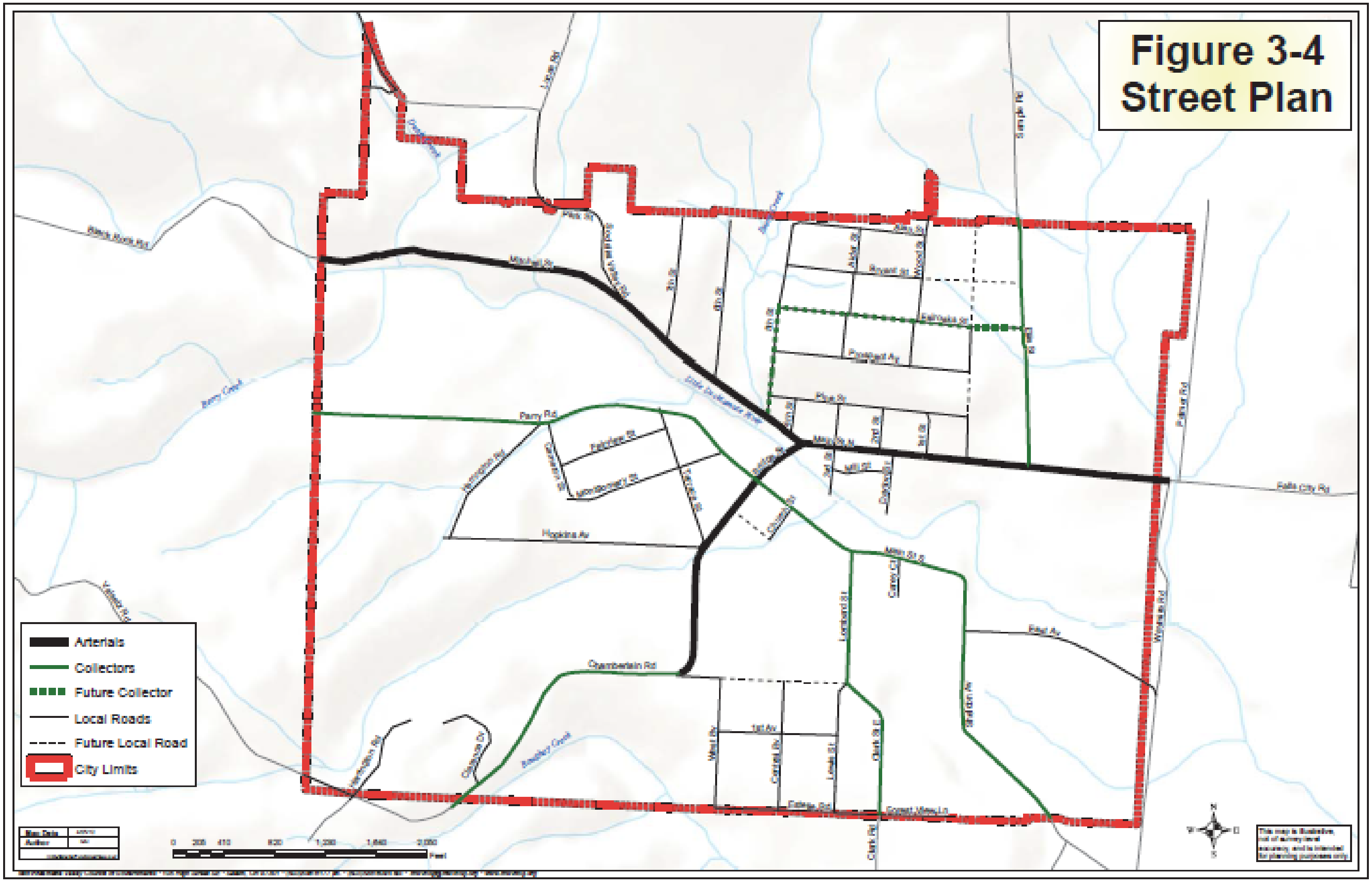


Figure 3-4
Street Plan
Arterials
Collectors
Future Collector
Local Roads
Future Local Road
City Limits
Perry Rd
Hopkins Av
Pine St
Mill St
Main St S
Prospect Av
Chamberlain Rd
Falls City Rd

Figure 3-4 shows a map of potential future extensions of the local street network. All of the proposed future roadways are anticipated to be local roadways. They include:

- Vine Street extension from Bridge Street to Lombard Street,
- Chamberlain Road extension from Bridge Street to Lewis Street,
- Bryant Street extension from Wood Street to Ellis Street,
- Boundary Street extension from Pine Street to Prospect Avenue, and
- Boundary Street from Fairoaks Avenue to north city limits.

Rights-of-way exist for these street extensions. In all cases, alignments are identified that would provide for the most logical street layout. However, alignments are flexible and more refined layouts meeting the site and development constraints would be performed at the time of development by developers.

STREET DESIGN STANDARDS

The 2010 Street Improvement Plan and the City's Public Works Design Standards provided the street categories and street design standards based upon the categories of Arterial, Collector, Local Road, Cul-de-Sac (separately at less than and greater than 200 feet in length), and Alley. (Note: alleys are public right-of-way but not considered a public street in determining primary access to a property.) Chapter 4 of the TSP presents additional categories and design options as updated in 2013.

Local Road

Standards for local streets within the City of Falls City were adopted in 2010 in conjunction with the Street Improvement Plan. However, preparation of the TSP determined that additional categories are needed for design standards. The additional categories, including alternatives to rights-of-way and surfacing for pedestrian/bikeway travel areas, were revised in 2013. See Chapter 4 for dimensions, surfacing and design standards.

PEDESTRIAN NETWORK

Street design standards in 2012 required sidewalks on all local, collector, and arterial roadways within the City limits. There are many roadways without sidewalks, sidewalks in poor condition or with critical gaps. The following text identifies pedestrian and bicycle network projects that were identified as potential priorities. The analysis also provides planning level cost estimates to complete all of the identified projects. The planning level costs provided are for stand-alone pedestrian projects and do not account for full road reconstruction or potential cost savings of implementing multiple projects together. Project costs were refined to account for these factors after a recommended list of improvements is identified and additional feedback is received from City staff.

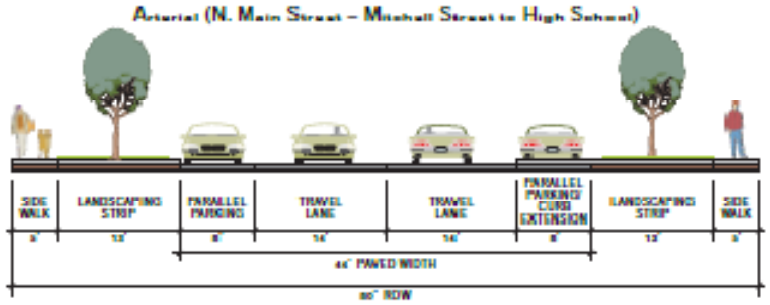
Pedestrian Projects

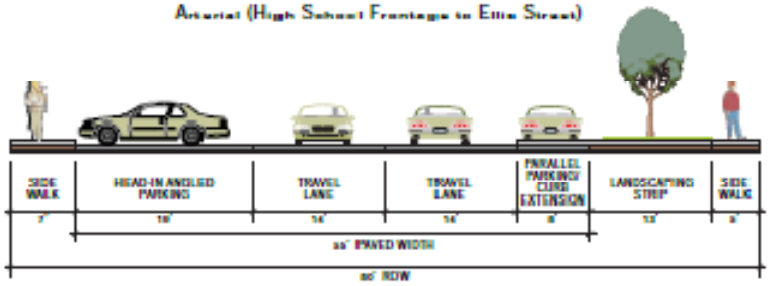
For the purpose of this analysis, priority sidewalk project locations were identified based on arterials and collectors without sidewalks, system connectivity needs, and gaps in existing sidewalks on local streets. Based on this analysis, the following locations were identified as potential sidewalk priorities:

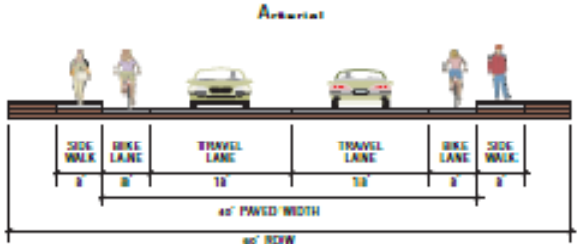
- Boundary Street - Both sides between Fairoaks Street and Prospect Avenue. Installing sidewalks would connect Fairoaks Street to Prospect Avenue, thereby improving access to the elementary school.
- Bridge Street – Both sides between S. Main Street and Hopkins Avenue. Sidewalks along this stretch of Bridge Street would connect the Hopkins/Terrace Avenue neighborhoods to the Main Street corridors.
- Dayton Street – Both sides between N. Main Street and Little Luckiamute River. Constructed sidewalks would connect N. Main Street with the existing pedestrian bridge.
- Ellis Street - East side between N. Main and Fairoaks Streets. This project would provide a natural connection between N. Main Street and the residential neighborhoods along the Fairoaks Street and Prospect Avenue corridors. In addition, Ellis Street intersections N. Main Street near the high school, thereby improving the ability to high school kids to safely walk to school.
- Fairoaks Street - Both sides between Ellis and 5th Streets. Installing sidewalks along Fairoaks Street would provide a natural east-west connection between Ellis and 6th Streets.
- Lombard Street – East side between S. Main and Lewis Streets. A complete sidewalk network would be beneficial in connecting the south side neighborhoods to the existing pedestrian facilities and existing pedestrian bridge crossings of the Little Luckiamute River.
- Mitchell Street – North side between 5th and 4th Streets. Constructing this small stretch of sidewalk would provide a continuous sidewalk connection to N. Main Street.
- Prospect Avenue - Both sides between 5th and Boundary Streets. Installing sidewalks along Prospect Avenue would provide access to the elementary school.
- 3rd Street – East side between N. Main Street and the river. Installing sidewalks would connect N. Main Street with the existing pedestrian bridge.
- 5th Street - East side between Fairoaks and Mitchell Streets. Installing sidewalks along 5th Street would complete a pedestrian loop, therefore serving the upper residential neighborhoods and connect them to Mitchell Street/N. Main Street.

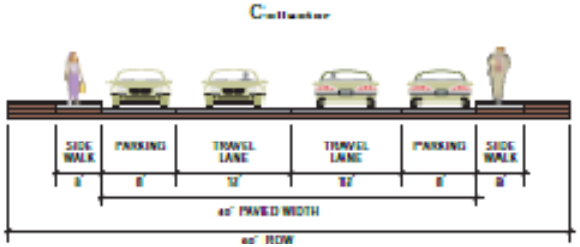
This list of potential pedestrian priority projects is presented in **Table 3-2** and provides planning level cost estimates for the pedestrian projects identified above. Locations of the projects are identified in **Figure 3-5.**

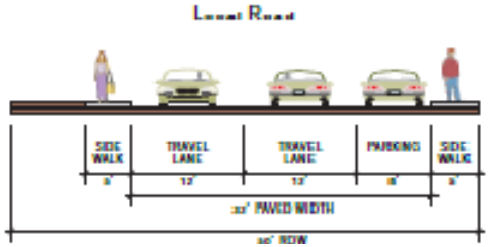
Figure 3-5
Revised Street Design Standards











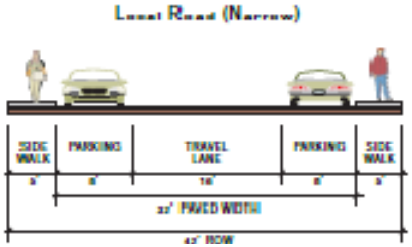


Table 3-2: Pedestrian Improvement Cost Estimates

Improvement	Length				New Length (ft)[1]	Retrofit Length (ft)[1]	Curb & Gutter (ft)[1]	Cost Estimate[23]	ROW Available?
	Street	Side	From	To					
Sidewalks	Ellis Street	West	N. Main Street	Fairoaks Street	2,000	-	2,000	$187,000	No
	Fairoaks Street	Both	Ellis Street	5th Street	3,750	-	3,750	$351,000	No[4]
	Boundary Street	Both	Fairoaks Street	Prospect Avenue	600	-	600	$56,000	Yes
	Prospect Avenue	North	Boundary Street	5th Street	1,500	-	1,500	$140,000	Yes
		South	Boundary Street	5th Street	1,250	-	1,250	$117,000	Yes
	5th Street	Both	Fairoaks Street	Mitchell Street	1,740	-	1,740	$163,000	Yes
	Bridge Street	Both	S. Main Street	Chamberlain Road	3,500	-	3,500	$328,000	Yes
	S. Main Street	South	Bridge Street	Lombard Street	950	-	950	$89,000	Yes
		North	Bridge Street	Lombard Street	-	950	950	$89,000	Yes
	Lombard Street	West	S. Main Street	Lewis Street	900	-	900	$84,000	No
		East	S. Main Street	Lewis Street	1,100	-	1,100	$103,000	No
	3rd Street	Both	N. Main Street	Bridge	400	-	400	$38,000	Yes
	Dayton Street	Both	N. Main Street	Bridge	850	-	850	$80,000	Yes
	Mitchell Street	North	4th Street	5th Street	200	-	200	$19,000	Yes
							Total	**$1,844,000**	

Source: KAI

[1] Combined Length – both sides of street (if applicable).

[2]All cost estimates include mobilization (10%), traffic control (5%), contingencies (30%), architectural/engineering fees (15%), and construction management (10%) (2012 dollars).

[3]Assumes replacement of existing "poor" quality sidewalks for same price as installation of new sidewalk.

[4] Insufficient right-of-way assuming Fairoaks Street is modified to Collector status.

The total cost to complete all of the identified pedestrian priorities is approximately $1,844,000. The planning level cost estimates do not include additional costs for right-of-way acquisition costs in areas where the existing right-of-way is not adequate to accommodate the minimum cross section.

Section 1
Chapter 4
Recommended Transportation Improvements

Chapter 4
Recommended Transportation Improvements

Chapter 2 (Existing and Future Conditions) discussed the existing and future roadway, pedestrian, and bicycle deficiencies in Falls City. Chapter 3 (Transportation System Alternatives Analysis) developed and analyzed a number of options for addressing those deficiencies. Using feedback received from the Project Advisory Committee (PAC), City staff, and attendees at the April 25/September 28 (2012) community workshops, Chapter 4 identifies recommended transportation improvements for consideration in the Falls City Transportation System Plan.

The recommended improvements are categorized into Near- and Long-term transportation projects to address future transportation system needs. Near- and Long-Term projects are defined as follows:

- Near-term – The projects in the Chapter 4 list mitigate declining infrastructure conditions and maximize the existing system through lower-cost multi-modal improvements, where possible. Listed projects are generally recommended for implementation in the more immediate time-frame (5 to 10 years).
- Long-term – The projects in the Chapter 4 list maintain the basic transportation infrastructure within the city and meet the long-term vision for a fully connected and enhanced multi-modal network. Referenced projects are generally recommended for implementation over a longer period of time as development and capital expenditures are acquired (10 to 20 years).

In addition to presenting the improvements for future roadway, pedestrian, and bicycle systems; the Transportation System Plan includes 1) Roadway Classifications, 2) a Future Street Plan, and 3) Roadway Cross-Section Standards for all streets in Falls City.

SUMMARY OF TRANSPORTATION NETWORK DEFICIENCIES

Chapter 2 and Community Workshops #1 and #2 identified a number of existing and future circulation issues within Falls City. These issues are outlined below:

- Projected traffic volumes are relatively low due to estimates of limited growth potential in the City (based on infrastructure deficiencies). As such, no capacity based improvements are necessary to the roadway network. However, the existing transportation network does need to be better integrated and connected from a multi-modal perspective.
- The N. Main Street/Bridge Street/Mitchell Street intersection is a large intersection. Roadway striping and signing is less than ideal on some approaches, making it confusing for drivers and pedestrians.
- Many streets do not have sidewalks, or provide sidewalks narrower than the required 5 to 6 feet. Sidewalks or continuous sidewalk sections are missing along many streets that serve the elementary or high school.
- Many City streets are narrow and do not meet the adopted Street Design Standard cross sections. These narrow streets can make bicycling and walking uncomfortable.
- Many City streets are unpaved gravel and un-graveled surfaced roadways.

- There is a desire to develop a multi-use pathway that better connects Falls City to tourist attractions (inside City limits) and recreational mountain biking (further west outside City limits).

TRANSPORTATION IMPROVEMENTS

The recommended transportation improvements identify roadway, pedestrian, bicycle, and other projects needed to address the transportation deficiencies. The projects are categorized as either near-term or long-term projects based on how they will meet the City's needs and the order in which the projects could potentially be pursued. **Figure 4-1, Future Transportation Improvements**, provides a map of the improvements. **Table 4-1, Transportation Improvement Projects**, summarizes the improvements by mode and priority.

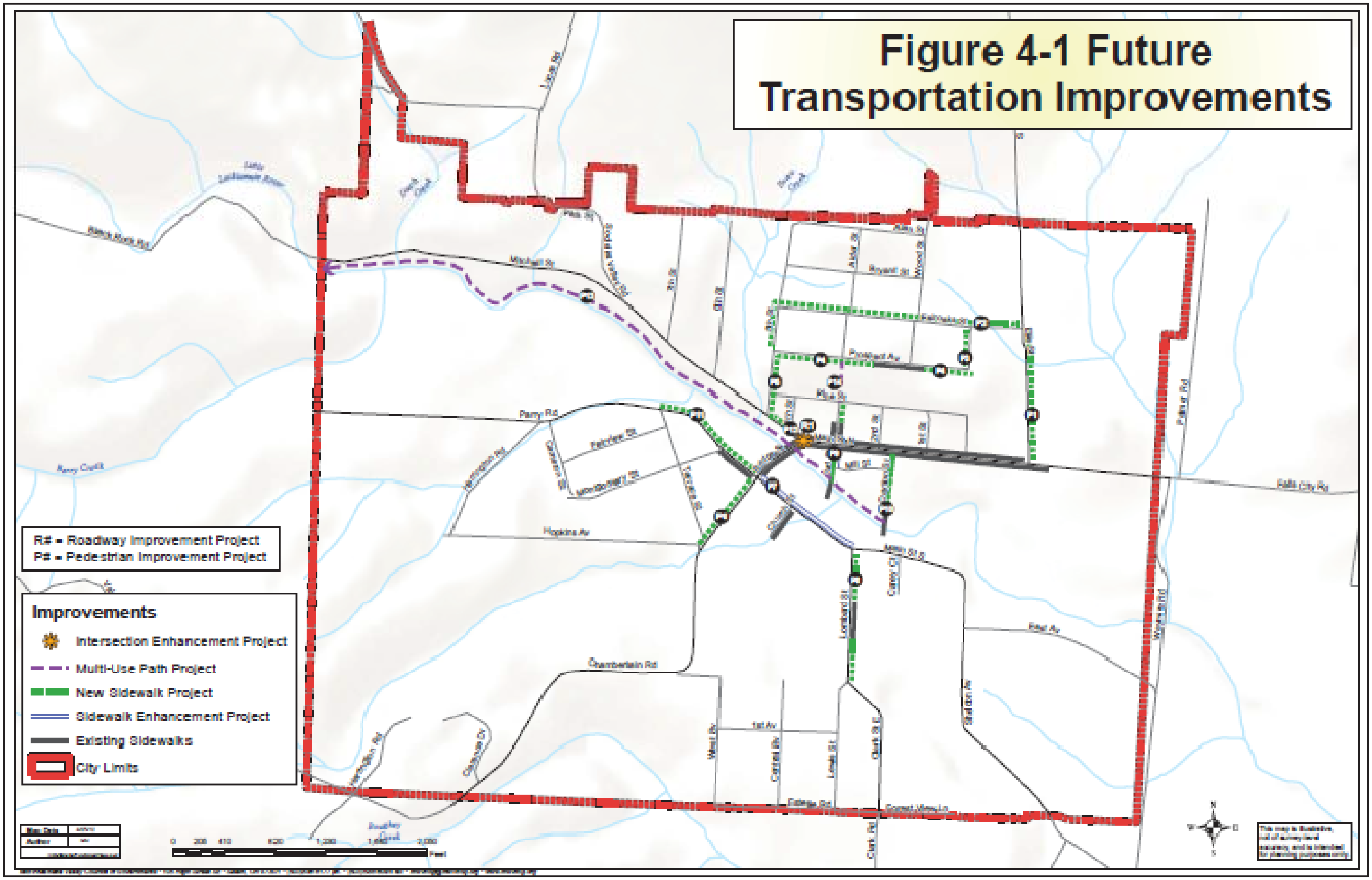


Figure 4-1 Future Transportation Improvements

Table 4 - 1 – Transportation Improvement Projects

Project	Location	Description	Capital Cost[1]	ROW Cost[2]	Priority
Roadway Projects					
R1	N. Main Street/ Bridge Street/ Mitchell Street	Reconfigure the intersection to provide a more defined and delineated Mitchell Street approach. Provide curb modifications to shorten the Mitchell Street pedestrian crossing. Combine the Mitchell Street left- and right-turn lanes into one single lane.	$9,000	N/A	Long-term
Pedestrian/Bicycle Improvements					
P1	Ellis Street	Construct an 6' wide gravel walkway along the east side of Ellis Street from N. Main Street to Fairoaks Street	$38,000	N/A	Near-term
		Install sidewalks on the east and west sides of Ellis Street from N. Main Street to Fairoaks Street	$210,000 or Development Driven	Developme nt Driven	Long-term
P2	Fairoaks Street	Construct an 6' wide gravel walkway along the north side of Fairoaks Street from Ellis Street to 5th Street	$35,000	N/A	Near-term
		Install sidewalks on the north and south sides of Fairoaks Street	$395,000 or Development Driven	Developme nt Driven	Long-term
P3	Boundary Street	Construct an 6' wide gravel walkway on the west side of Boundary Street from Fairoaks Street to Prospect Avenue	$5,600	N/A	Near-term
		Install sidewalks on the west side of Boundary Street	$35,000 or Development Driven	N/A	Long-term
P4	Prospect Ave	Install sidewalks on the south side of Prospect Avenue	$140,000 or Development Driven	N/A	Long-term
P5	5th Street	Construct an 6' wide gravel walkway on the east side of 5th Street from Mitchell Street to Fairoaks Street	$16,400	N/A	Near-term
		Install sidewalks on the east side of 5th Street from Mitchell Street to Fairoaks Street	$85,000 or Development Driven	N/A	Long-Term
P6	Bridge Street	Construct an 6' wide gravel walkway on the west side of Bridge Street from S. Main Street to Hopkins Avenue	$9,000	N/A	Near-term
		Install sidewalks on the west side of Bridge Street from S. Main Street to Hopkins Avenue	$70,000 or Development Driven	N/A	Long-term
P7	S. Main Street	Reconstruct/Install sidewalks on the north side of S. Main Street from Bridge Street to Lombard Street	$95,000	N/A	Near-term
P8	Lombard Street	Construct a wide shoulder along the east side of Lombard Street from S. Main Street to Lewis Street	$16,900	N/A	Near-term
P9	3rd Street	Install sidewalks on the east side of 3rd Street from N. Main Street to the river bridge	$20,000 or Development Driven	N/A	Long-Term
P10	Dayton Street	Install sidewalks on the west side of Dayton Street from N. Main Street to the river bridge	$50,000 or Development Driven	N/A	Long-term

P11	Parry Road	Install sidewalks on the north side of Parry Road from Bridge Street to falls parking area	$55,000	N/A	Long-Term
P12	Mitchell Street	Install sidewalks on the north side of Mitchell Street from 4th Street to 5th Street	$20,000 or Development Driven	N/A	Long-term
P13	Little Luckiamute River	Conduct an engineering study and, if feasible, construct a multi-use path along the Little Luckiamute River	To be determined	To be determined	Long-Term
P14	3rd Street	Acquire right-of-way and complete a side walk at the top of the existing pathway/stair connection between Pine Street and Prospect Avenue.	$16,000	$58,500	Near-Term

Source: KAI ROW = Right-of-way

[1] All cost estimates include mobilization (10%), traffic control (5%), contingencies (30%), engineering fees (15%), and construction management (10%) (in 2012 dollars).

[2] Planning level cost of right-of-way estimated at $15 per square foot. Actual right-of-way acquisition cost will vary.

N. Main Street/Mitchell Street/Bridge Street Improvement Project

Figure 4-1, Future Transportation Alternatives, and **Table 4-1, Transportation Improvement Projects,** identify an improvement project (R1) for the N. Main Street/Mitchell Street/Bridge Street intersection. This intersection has a large pavement area (to accommodate large logging trucks) which makes certain approaches difficult to decipher, particularly for unfamiliar drivers and pedestrians. Some approaches such as the Mitchell Street approach, have experienced pavement striping loss due to wear and tear, making the traffic movements unclear. To address this, a preferred intersection configuration was developed based on the feedback from the TSP Planning Advisory Committee (PAC) review of draft chapters. **Figure 4-2, N. Main Street/Bridge Street/Mitchell Street Improvement Project,** graphically indicates the revised design. Under the referenced configuration, the Mitchell Street approach realigned so that all left and right-turn movements are made from the same travel lane. In addition, the curb on the north side of the intersection is proposed to be "bumped out" in order to shorten the pedestrian crossing distances across the Mitchell Street approach. The redesign still accommodates large logging trucks while providing a better delineated intersection that accommodates pedestrian movements in a more efficient and safe manner.

TRANSPORTATION IMPROVEMENT COSTS

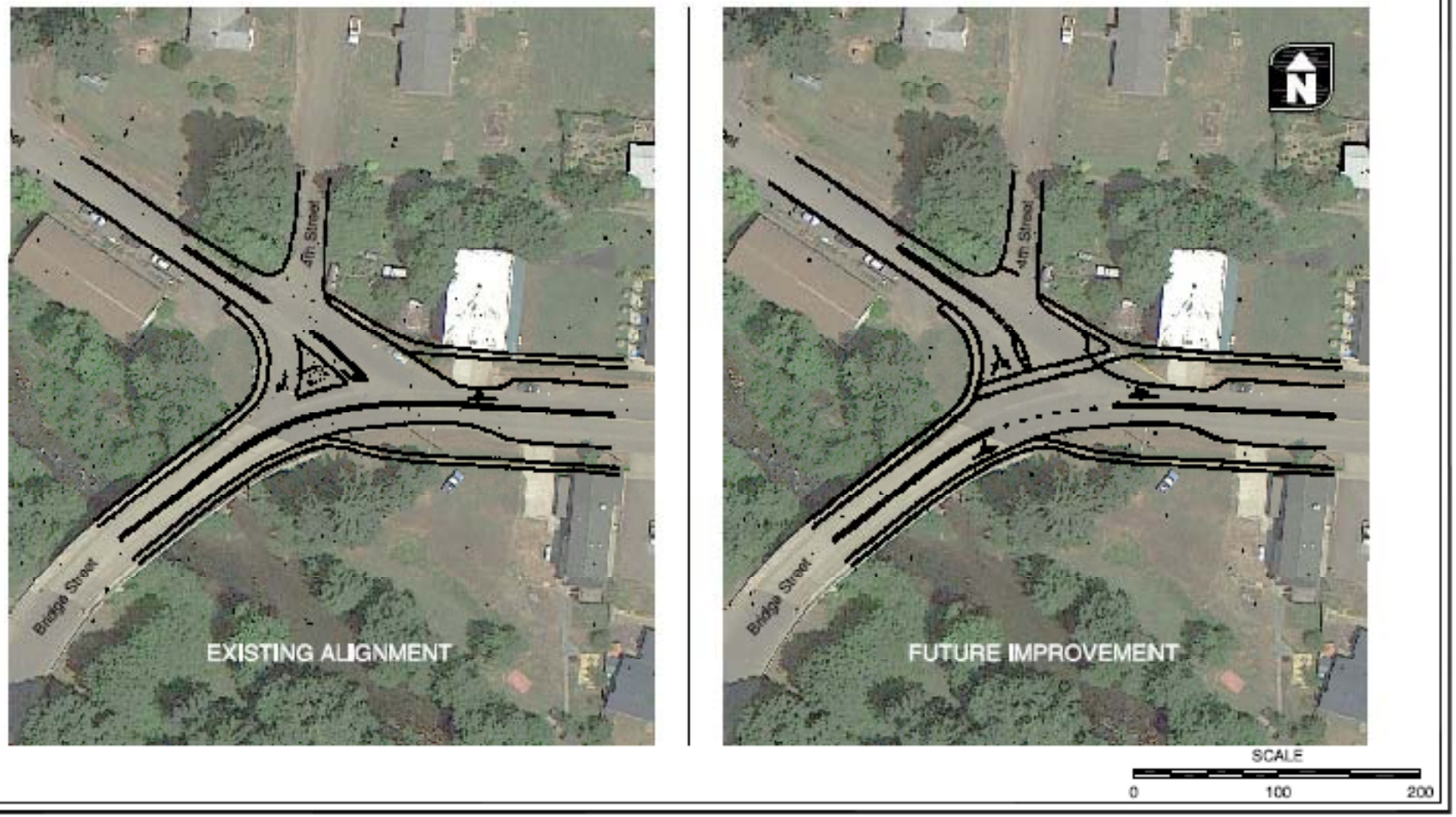
The total cost of the transportation improvements contained in **Table 4-1** is approximately $1.3 million, as shown in **Chapter 4 - Table 2, Planning Level Transportation Improvement Costs**. The costs include all projects identified in the list and represent an ideal improvement scenario.

Table 4-2 – Planning Level Transportation Improvement Costs (Identified List)

Type	Near-Term	Long-Term	Total
Roadway	-	$9,000	$9,000
Bicycle/Pedestrian	$231,900	$1,080,000	$1,311,900
Total	**$231,900**	**$1,089,000**	**$1,320,900**

Source: KAI

Figure 4-2
N. Main Street/Bridge Street/Mitchell Improvement Project



Source: KAI

Roadway Functional Classification and Future Street Plan

In preparation of the City's TSP, the roadway classifications for the existing and future street network were reviewed. As part of the review, suggested changes to existing roadway classifications and the location of potential future local and collector roadways were identified. The Roadway Functional Classification Map is shown in **Figure 4-3**. The 2013 Street Plan designates:

- The upgrade of several existing local streets to collectors;
  - 5th Street from Mitchell Street to Fairoaks Street - change from a Local Road to a Collector
  - Fairoaks Street from 5th Street to Ellis Street - change from a Local Road to a Collector
- The potential location of new local access streets to provide better connection between existing streets; and
- The potential of new local access streets to provide adequate connections for automobiles, pedestrians and bicyclists to significant local destinations and new development

Figure 4-3 provides a map showing future extensions of the local and collector street network. Depending on future lot sizes, additional local road(s) may be needed within the proposed grids to access all of the lots. Layout of local roads should remain flexible and be performed by developers to suit market, design opportunities, and site constraints.

The street plan should continue to be refined, as development occurs and the site constraints and opportunities of each property are addressed. The TSP is intended to provide some flexibility in alignments and primarily serve to define the desired level of connectivity in each area.

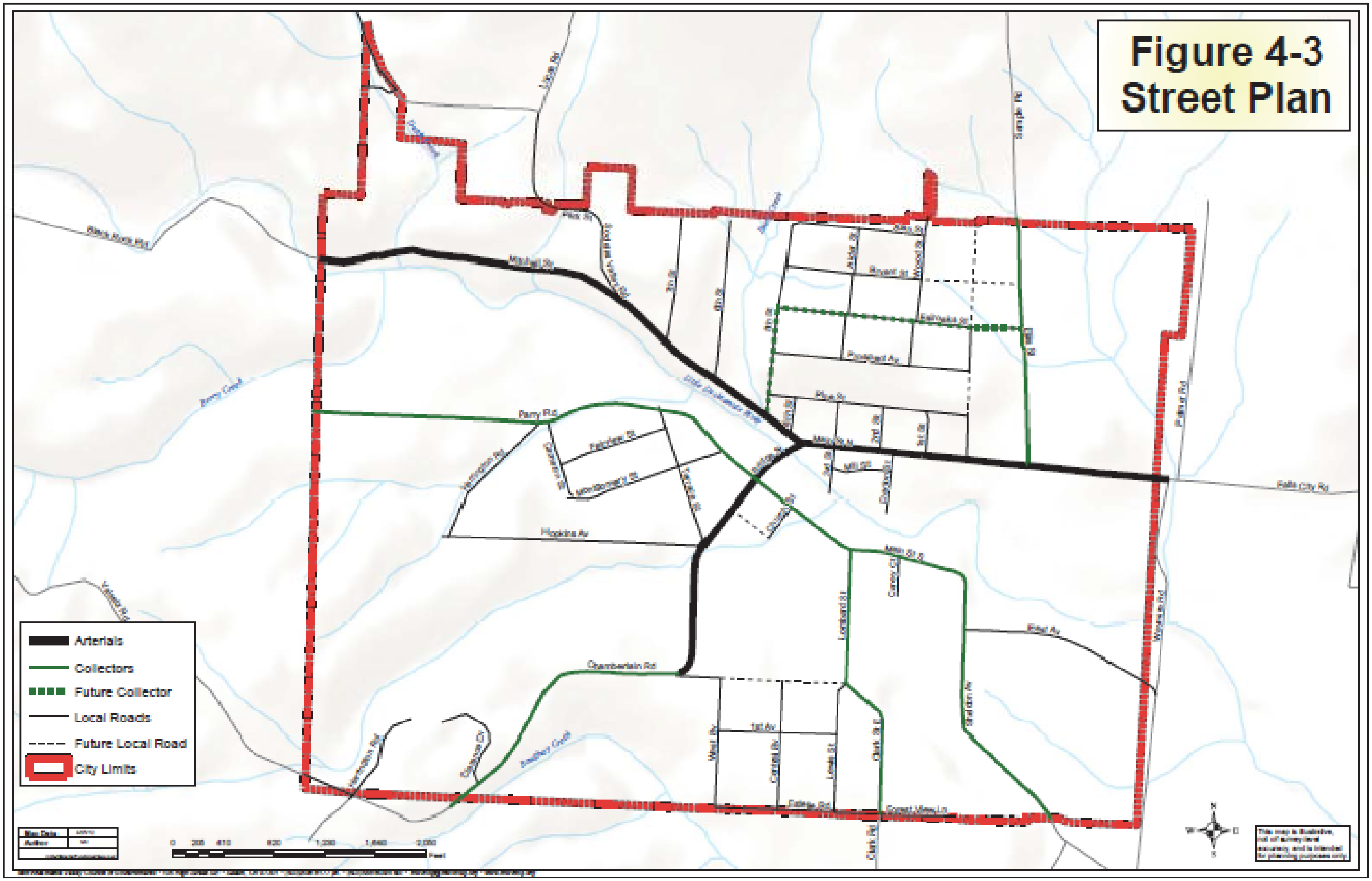


Figure 4-3
Street Plan
Arterials
Collectors
Future Collector
Local Roads
Future Local Road
City Limits
Chamberlain Rd
Hopkins Av
Parry Rd
Falls City Rd

STREET CROSS-SECTION STANDARDS

Figure 4-4, Street Design Standards, illustrates the TSP's Street Cross-Section Standards. Cross sections are consistent with the street design standards corresponding to each of the functional classifications adopted in the Falls City Public Works Design Standards, with the addition of two revised local street standards outlined below:

- Local Road (with Walkway) - This local street standard provides a lower cost section that does not include curb and gutter. Instead, it allows a 2.5 foot drainage swale on the outside of the travel way and sidewalks five (5) feet wide on both sides of the street.
- Local Road (with Shoulder) – Because many of the existing local streets have 40-foot right-of-ways, and given that it may be difficult to obtain a right-of-way 50 feet in width due to property impacts and topography constraints, a second narrower standard is proposed. This standard calls for a 40 foot wide right-of-way, two 12-foot travel lanes, and two shoulders eight (8) feet in width that could be used for on-street parking, walking or bicycling.

Table 4-3 summarizes the street design standards corresponding to each of the functional classifications.

Table 4-3: Proposed Falls City Street Design Standards

Functional Classification	ROW Width	Paved Width	Travel Lanes	Turning Lane	Parking	Landscape Strip	Sidewalk Width	Bike Lane
Arterial	60 feet	40 feet	[1]	[1]	None	Optional	5 feet	5 feet
Collector	60 feet	40 feet	[1]	[1]	Both Sides	Optional	5 feet	[3]
Local Road (with Walkway)	50 feet	32 feet	2 Lanes	None	One Side	Optional	5 feet	[3]
Local Road (with Shoulder)	40 feet	24 feet	2 lanes	None	Both Sides[2]	None	[2]	[3]
Residential Cul-de-sac (Length > 200 ft)	50 feet	30 feet	-	-	None	Optional	5 feet	-
Residential Cul-de-sac (Length < 200 ft)	45 feet	30 feet	-	-	None	Optional	5 feet	-
Alleys[4]	20 feet	20 feet	-	-	No	No	No	No

Source: KAI

[1] The number of travel lanes for Arterial and Collector roadways shall be determined by the volume of traffic. The City may require additional turning lanes based on situational analysis or a traffic engineer's report evaluating the need for additional turning lanes.

[2] 8' shoulder that could be used as an on-street parking lane or a pedestrian/biking walkway.

[3] Traffic volumes are projected to be low enough such that vehicles and bicyclists can share the travel lane.

[4] Alleys are public rights-of-way but shall not serve as primary access to a property.

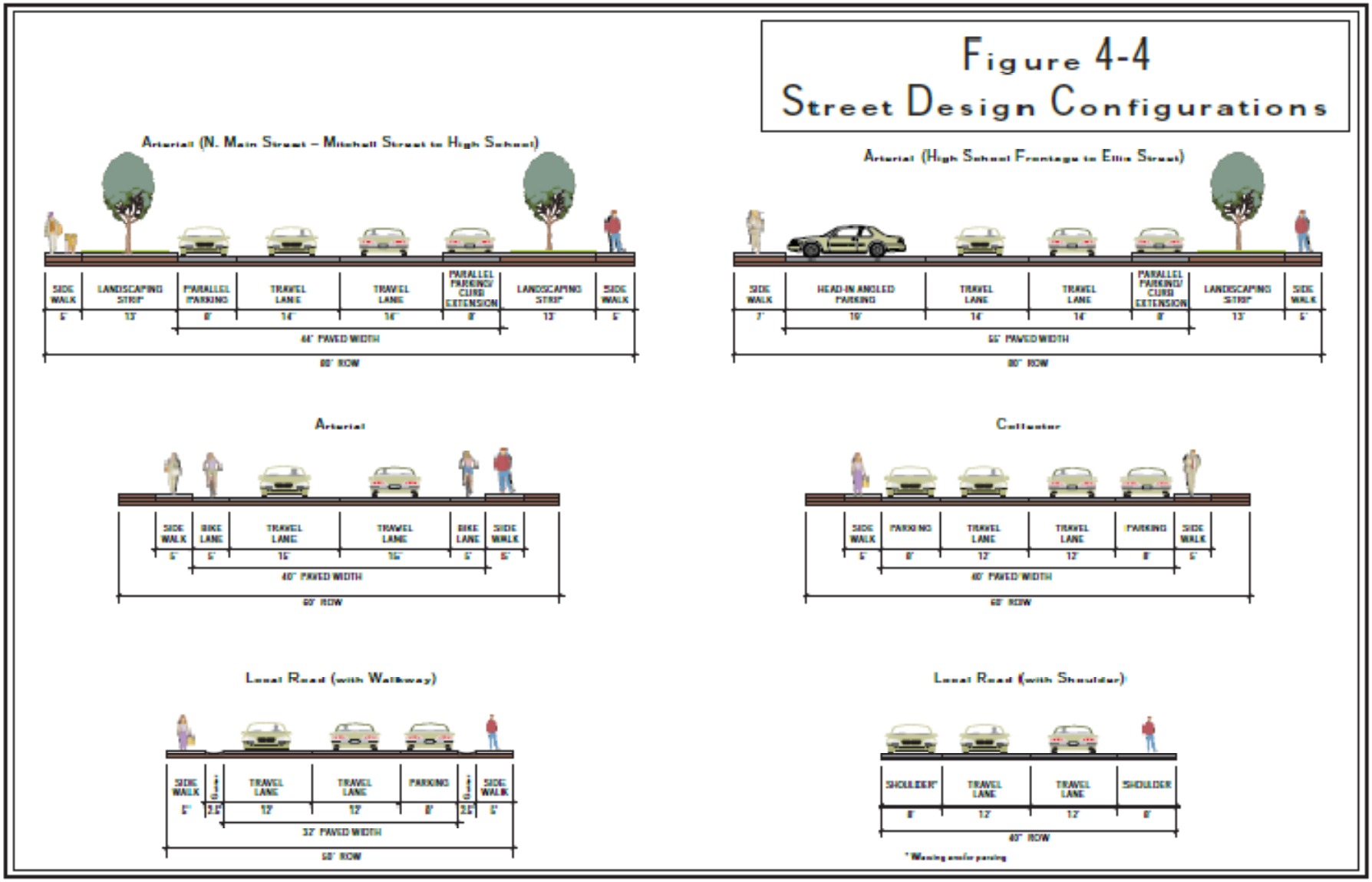


Figure 4-4
Street Design Configurations
Arterial (N. Main Street – Mitchell Street to High School)
SIDE WALK
LANDSCAPING STRIP
PARALLEL PARKING
TRAVEL LANE
TRAVEL LANE
PARALLEL PARKING/ CURB EXTENSION
LANDSCAPING STRIP
SIDE WALK
44' PAVED WIDTH
80' ROW
Arterial (High School Frontage to Ellis Street)
SIDE WALK
HEAD-IN ANGLED PARKING
TRAVEL LANE
TRAVEL LANE
PARALLEL PARKING/ CURB EXTENSION
LANDSCAPING STRIP
SIDE WALK
55' PAVED WIDTH
80' ROW
Arterial
SIDE WALK
BIKE LANE
TRAVEL LANE
TRAVEL LANE
BIKE LANE
SIDE WALK
40' PAVED WIDTH
60' ROW
Collector
SIDE WALK
PARKING
TRAVEL LANE
TRAVEL LANE
PARKING
SIDE WALK
40' PAVED WIDTH
60' ROW
Local Road (with Walkway)
SIDE WALK
TRAVEL LANE
TRAVEL LANE
PARKING
SIDE WALK
32' PAVED WIDTH
50' ROW
Local Road (with Shoulder)
SHOULDER*
TRAVEL LANE
TRAVEL LANE
SHOULDER
40' ROW

Source: KAI

SUMMARY

The proposed improvement projects are a comprehensive set of projects to address the City's near- and long-term needs. A summary of current and future funding sources and recommendations to increase local funding for transportation facilities are addressed in the TSP, Chapter 5, Transportation Financing Program and the City's Comprehensive Plan, Transportation Element.

Section 1
Chapter 5
Transportation Financing Program

Section I – Chapter 5
Transportation Financing Program

A list of planned multi-modal transportation improvements were identified in the Falls City Transportation System Plan - Chapter 4 (Recommended Transportation Improvements). Chapter 5 also provides a general estimate of the priority/timing of improvements as well as a conceptual capital cost estimates. The following memorandum provides an overview of existing and anticipated funding sources and identifies additional strategies for funding capital projects.

CURRENT TRANSPORTATION FUNDING SOURCES

Falls City currently funds local transportation operations, maintenance and construction activities using a "Street Fund". This fund relies upon the following revenue streams:

- State Highway Fund revenues: For cities and counties in Oregon, distributions from the State Highway Fund (SHF) are a primary source of revenue for transportation needs. Fund distributions, based on population, represent each local government's share of the State's fuel tax, weight-mile tax, and vehicle registration fees.
- General Fund revenues: At the discretion of the City Council, the City can allocate General Fund revenues (the largest portion of which is property tax) to pay for any portion of its transportation needs.
- State/Federal Grants: The City can apply for various grants to improve their transportation infrastructure. Grants are typically competitive, and to be eligible, most grant applications require a formal acknowledgement/adoption of a project on the local transportation system plan or capital improvement plan.

PROJECTED TRANSPORTATION FUNDING

Chapter 2 documented the funding sources of transportation projects within Falls City over the previous five (5) years. There were eight (8) projects completed within Falls City over this time period for a total of approximately $80,700 (2011 dollars). Only a portion of these projects came from dedicated local funds. The majority came from grants administered by ODOT Small City Allotment (SCA) Grants.

An average of approximately $10,100 was spent on transportation projects over the last eight (8) years in Falls City. Of this, Falls City provided approximately $4,200 per year on average for transportation projects with the remainder $5,900 provided by ODOT and ODOT grants. An estimate of future funding was based on past funding trends.

Table 5-1 – Forecast Future Transportation Funding provides a summary of the estimated future project funding over the next five, ten, and twenty years based on an assumed average funding level of approximately $10,100 per year (the forecast numbers are cumulative). As shown in **Table 5-1**,

approximately $202,000 is projected to be available over the next twenty years for transportation projects based on historic funding levels from the City and ODOT/ODOT grants.

Table 5-1 – Forecast Future Transportation Funding

	5-Year Forecast	10-Year Forecast	20-Year Forecast
City Funds	$21,000	$42,000	$84,000
ODOT/Grant Funds	$29,500	$59,000	$118,000
Total	$50,500	$101,000	$202,000

Source: Kittelson and Associates and FCS Group (2012 dollars)

IDENTIFIED TRANSPORTATION IMPROVEMENT COSTS

Table 5-2 – Planning Level Transportation Improvement Costs (Identified List) provides an overview of the identified transportation improvements documented in Chapter 4. As shown, the total cost of the project list is approximately $1,321,000.

Table 5-2 – Planning Level Transportation Improvement Costs (Identified List)

Type	Near-Term	Long-Term	Total
Roadway	-	$9,000	$9,000
Bicycle/Pedestrian	$231,900	$1,080,000	$1,311,900
Total	**$231,900**	**$1,089,000**	**$1,320,900**

Source: Kittelson and Associates and FCS Group (2012 dollars)

Between the projected transportation funding levels (**Table 5-1**) and the costs associated with the Identified Transportation Improvements (**Table 5-2**), there is a funding shortfall of approximately $1,118,900. Based on this shortfall, additional funding is needed to fund the near- and long-term transportation improvement projects in Falls City.

ADDITIONAL FUNDING AND FINANCING SOURCES

There are several options for enhancing transportation revenues for capital improvement projects. These funding sources are listed in **Table 5-3 – Existing and Potential Transportation Funding Sources**. A description of local considerations for each funding option is provided in **Section II – Appendix J (Transportation Utility Formation Study Report)** and the City's **Comprehensive Plan – Transportation Element** (other sources).

Table 5- 3 – Existing and Potential Transportation Funding Sources

Funding Source	$ Could be Spent		May Require Voter Approval
	Operations/Maintenance	Capital	
Street Fund (existing)	X		
General Fund (existing)	X	X	
Transportation Utility Fee	X	X	X
Transportation System Development Charges *		X	
Local Option Taxes (i.e., property or fuel tax)	X	X	X
Local Improvement District		X	
Reimbursement District		X	
Economic Improvement District	X	X	
Urban Renewal District		X	
General Obligation Bonds		X	X
Revenue Bonds		X	
Grants and Loans		X	

* Not permitted by City Charter Source: Kittelson and Associates and FCS Group

TRANSPORTATION UTILITY FEE

As part of the Transportation System Plan development, the Falls City Council gave approval to explore the potential creation of a Transportation Utility Fee (TUF). A transportation utility fee recovers a specific set of local transportation-related operating and/or capital costs by charging a fee to users. Because the same set of residences and businesses typically use both the water/sewer system and the transportation system, the transportation utility fee is usually added to an existing water or sewer utility bill.

Fees generated by the utility can finance both operating and capital costs directly, and they can also secure revenue bond debt that is used to finance capital costs. To date, more than 20 Oregon cities have created a utility fee to provide dedicated revenue for transportation needs. If the City of Falls City were to implement a transportation utility fee, a formation study is provided in **Section II - Appendix J.**