

## Chapter 9 – Transportation

### Introduction

The Transportation Element establishes the City’s goals and policies for developing the transportation system within the Battle Ground Urban Growth Area (UGA). It is intended to serve as a guide for making transportation decisions to address both short and long term needs. The Transportation Element discusses roadway mobility and accessibility needs, identifies improvements to enhance safety, non-motorized travel (bicycles and pedestrians), and public transit, and addresses the impacts of future land development activity. The Transportation Element summarizes the City of Battle Ground Transportation System Plan (TSP).

Along with the other elements of the Comprehensive Plan, the Transportation Element establishes a flexible policy framework for making decisions consistent with this vision, and describes a strategy for accomplishing the vision over a 20-year period.

### Policy and Regulatory Context

#### *Growth Management Act*

The 1990 Growth Management Act (GMA) requires that a Transportation Element be included in the City of Battle Ground’s Comprehensive Plan. The GMA contains one goal that addresses transportation planning:

- *Encourage efficient multi-modal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans*

This Transportation Element is developed in accordance with the GMA’s requirements for transportation system planning, including:

- *Establishes consistency with county-wide policies;*
- *Establishes consistency with the land use plan;*
- *Estimates traffic impacts on state-owned facilities;*
- *Provides an inventory of existing transportation services;*
- *Provide a financing plan for new improvements.*

In addition to mandating that a capital facilities chapter be included in comprehensive plans, the GMA also establishes a requirement of “concurrency”. This mandates that adequate and necessary public services and facilities are available concurrent with new development to accommodate the impacts posed by it, or be programmed to be provided within a specified time or concurrent with a particular threshold being met.

Concurrency has two levels of applicability. The first is at the planning level and refers to all services and facilities, over the long term, and at the citywide scale. This Element identifies the relationship between needed services and identifies adequate funding sources for the proper timing of those services. If the

necessary revenues were not available, then the City would take appropriate action. Those actions include lowering the level of service standards, raising taxes, restricting growth, or a combination of these actions. This Element satisfies the planning level concurrency requirement as outlined in the GMA.

### **Regional Coordination and Consistency**

Battle Ground's Transportation Element is generally consistent and coordinated with regional transportation plans. Regional partnerships are maintained with Clark County, the Southwest Washington Regional Transportation Council (RTC), C-TRAN, WSDOT, and other cities in Clark County. The City of Battle Ground participates in the RTC, which serves as the area's federally designated Metropolitan Planning Organization and state-designated Regional Transportation Planning Organization (RTPO). RTC maintains and runs traffic models for all jurisdictions within Clark County based on Clark County's Comprehensive Plan Map. As a result, each jurisdiction within Clark County land use and transportation plans are consistent with other jurisdictions.

It should be noted that some differences between the recommended classification system for the Battle Ground UGA and the Metropolitan Transportation Plan (MTP) classifications were identified and discussed in Chapter 4 of the Transportation System Plan. These differences should be addressed and resolved in the next update of the MTP.

The City of Battle Ground's Transportation Element is consistent with the applicable Countywide Planning Policies. The Transportation Element of the Clark County Comprehensive Plan contains several goals with supporting policies and implementation strategies intended to promote a shift from a transportation system based on single-occupant autos to a multi-modal network. Clark County's goals include:

- Develop a multi-modal transportation system
- A safe transportation system
- Develop a balanced finance program, which ensures that new development pays the costs of its impacts and that adequate public financing is pursued and available

### **Battle Ground Transportation System plan**

The Transportation Element establishes a *Transportation System Plan (TSP)* for the City, which ensures that the transportation system is safe, efficient, balanced, environmentally sustainable, and improves livability. This Transportation Element summarizes the City of Battle Ground's Transportation System Plan (TSP). The TSP includes:

- Goals and objectives
- Existing conditions
- Community growth and future transportation system demand
- Street plan including freight mobility
- Public transit plan including transportation demand management
- Non-motorized transportation plan
- Air transportation plan
- Plan implementation and funding.

The TSP should be consulted for more information about Battle Ground's existing and planned transportation system and how it relates to regional systems. The Transportation System Plan has been

adopted concurrent with the Comprehensive Plan by reference.

### **Transportation Element goals and objectives**

The City of Battle Ground has developed Comprehensive Plan goals and objectives that establish transportation planning and programming policy. A list of these goals and objectives follows.

#### **Transportation Goal 1:**

*The City will encourage the construction of a transportation system that enhances the City's livability.*

#### **Objectives**

TO1.1 The City will use transportation improvements to help implement the Comprehensive Land Use Plan.

TO1.2 The City will work to preserve the gateways identified in the 50-year Vision through transportation improvements.

TO1.3 The City will consider a system of arterials and collectors that provide both transportation and open space.

TO1.4 The City will strive to build a transportation system that supports the City's design objectives.

TO1.5 The City will strive to build a transportation system that supports the City's livability design objectives.

TO1.6 Where possible, the City will build a transportation system that will also provide recreation opportunities for the residents of Battle Ground.

TO1.7 The City will strive to create a transportation system that includes right-of-way areas as public gathering spaces.

#### **Transportation Goal 2:**

*A transportation system that is safe.*

#### **Objectives**

TO2.1 The City will work to enhance the safety of the pedestrian system.

TO2.2 The City will work to enhance the safety of the bicycle system.

TO2.3 The City will work to enhance the safety of the motor vehicle system.

#### **Transportation Goal 3:**

*A transportation system with a variety of transportation options.*

#### **Objectives**

TO3.1 The City will strive to provide increasing amounts of transit service.

TO3.2 The City will work to provide a complete pedestrian network.

TO3.3 The City will work to provide a complete bicycle network.

TO3.4 The City will strive to develop a transportation demand management program to reduce the number of single occupancy vehicles.

TO3.5 The City will seek alternative means of meeting travel demand.

**Transportation Goal 4:**

*A transportation system that provides for the efficient movement of goods and services.*

**Objectives**

TO4.1 The City will work to improve the freeway access to the City.

TO4.2 The City will work to improve industrial and employment access in the City.

TO4.3 The City will work to balance parking and loading needs with other City goals.

TO4.4 The City will work with property owners surrounding the airstrip and with the appropriate state and federal agencies to develop a plan for the airstrip area.

TO4.5 The City will work to implement the transportation system improvements identified in the Transportation System Plan.

**Transportation Goal 5:**

*A transportation system that balances accessibility and mobility.*

**Objectives**

TO5.1 The City will work to reduce the negative impacts of transportation improvements on the community.

TO5.2 The City will strive to improve circulation throughout the City.

TO5.3 The City will strive to give access priority to schools and other civic uses.

TO5.4 The City will work to improve access management along major City streets to improve mobility.

TO5.5 The City will work to protect future transportation routes.

TO5.6 The City will strive to minimize travel time between Battle Ground and the I-5 freeway.

TO5.7 The City will work to decrease intersection conflicts that increase travel time and prohibit accessibility.

TO5.8 The City will seek to balance motor vehicle mobility with pedestrian, bicycle and transit accessibility.

**Transportation Goal 6:**

*A transportation system that is affordable and durable.*

**Objectives**

TO6.1 The City will work to improve the durability of transportation improvements.

TO6.2 The City will work to identify multiple funding sources for new projects and maintenance.

TO6.3 The City will strive to provide an equitable balance of funding for transportation improvements.

**Transportation Goal 7:**

*The concurrent provision of transportation facilities.*

**Objectives**

TO7.1 The City will strive to establish a transportation concurrency system that is equitable and maintains the City's ability to grow.

**Transportation Goal 8:**

*A sustainable transportation system to minimize adverse environmental impacts and encourage environmentally appropriate design and practices.*

**Objectives**

TO8.1 The City will strive to reduce the impacts of the transportation system on water quality and quantity.

TO8.2 The City will strive to reduce the impacts of the transportation system on wildlife and aquatic habitat.

TO8.3 The City will strive to reduce air quality impacts caused by the transportation system.

TO8.4 The City will strive to reduce the energy consumed in the transportation system.

TO8.5 The City will strive to reduce noise impacts caused by the transportation system.

**Existing Conditions****Motor Vehicles**

Increasing congestion has become a concern for the city as a result of additional retail establishments and employment opportunities within the Battle Ground city limits and continuing growth of rural residential land uses to the north and east of the city. Many of the schools in the Battle Ground School District (one of the largest districts in Washington State), are located in the city center just north of East Main Street. The city experiences three peak travel periods during most of the year, including the typical AM and PM commuter peak hours, as well as a school peak at mid-afternoon during the school year. Schools buses, parent pick-up and drop-off and cars driven by high school students combine on these weekday afternoons to cause a steady stream of traffic along E. Main Street extending from roughly the school driveway off North Parkway Avenue to SR 503. Battle Ground also serves as the center for employment and shopping in northeastern Clark County with trips coming from far outside the city limits to businesses located within the city limits.

## **Functional Classification**

In general, roadways serve two functions, to provide mobility and to provide access, with the design of a roadway emphasizing one function over the other to various degrees. Higher speeds and fewer intersections are preferred for mobility, while lower speeds and more frequent intersections support access. Roadways are classified by agencies depending on what role the facility plays in the agencies' overall transportation system. Functional classifications typically include arterials, collectors, and local roadways. Arterials function to provide mobility, local roadways provide access, and collectors provide a combination of the two.

The primary streets in the study area are described below and illustrated in Figure 9-1. Each street has been given a relevant functional classification according to its intended function and role in the overall transportation system of the area. The City of Battle Ground and Clark County have adopted classifications for the roadways under their jurisdiction.

## **Level of Service**

Level of Service (LOS) quantifies and normalizes the degree of comfort that a driver feels when traveling through an intersection or along a roadway segment to allow easy comparison among facilities where volumes of traffic or roadway features may differ substantially. Level of Service assessments take into account traffic volumes during a given period of time, mix of vehicle types including trucks, vehicle speed, number of stops, total amount of delay, impediments caused by other vehicles and/or pedestrians, and other factors.

Levels of service are expressed in grades ranging from A (free-flowing operational conditions) to F (operational breakdown). LOS B through E denote conditions of increasing platooning (or collecting of vehicles into a steady stream of traffic), decreasing speeds and increasing delay.

Under Washington State's Growth Management Act (GMA), local communities are required to develop level of service standards to identify the maximum level of congestion acceptable to the community and the threshold to determine transportation system deficiencies and improvement needs. The level of service standards required by the GMA is implemented through local concurrency ordinances and procedures.

The concept of concurrency relates to the timing of demand for certain public services and the availability of these services to meet demand. For the transportation system, this means that adequate roadway facilities must be in place at the same time as traffic impacts associated when land development occurs.

The City of Battle Ground implements the concurrency requirements of GMA through the land development review process. Level of service thresholds currently used by the City (to identify where and when adequate transportation facilities exist to serve development) include level of service (LOS) D or better operations for signalized intersections, and LOS E or better for side street movements at unsignalized intersections, provided that the intersection doesn't meet signal warrants.

Based on the adopted level of service standards in the Battle Ground UGA, all signalized intersection currently operate at acceptable levels of service. Of the 12 unsignalized intersections in the study area, all currently operate with side street movements better than the LOS E standard. Three signalized intersections and one unsignalized intersection do not meet LOS standards with in-process trips and

approved project trips added. Battle Ground currently has funding to improve one intersection so that it meets LOS standards when these trips are added. Battle Ground is collecting concurrency mitigation fees for the other three intersections so that improvements can be made so that they will meet LOS standards when the extra trips are added.

## Non-Motorized Transportation

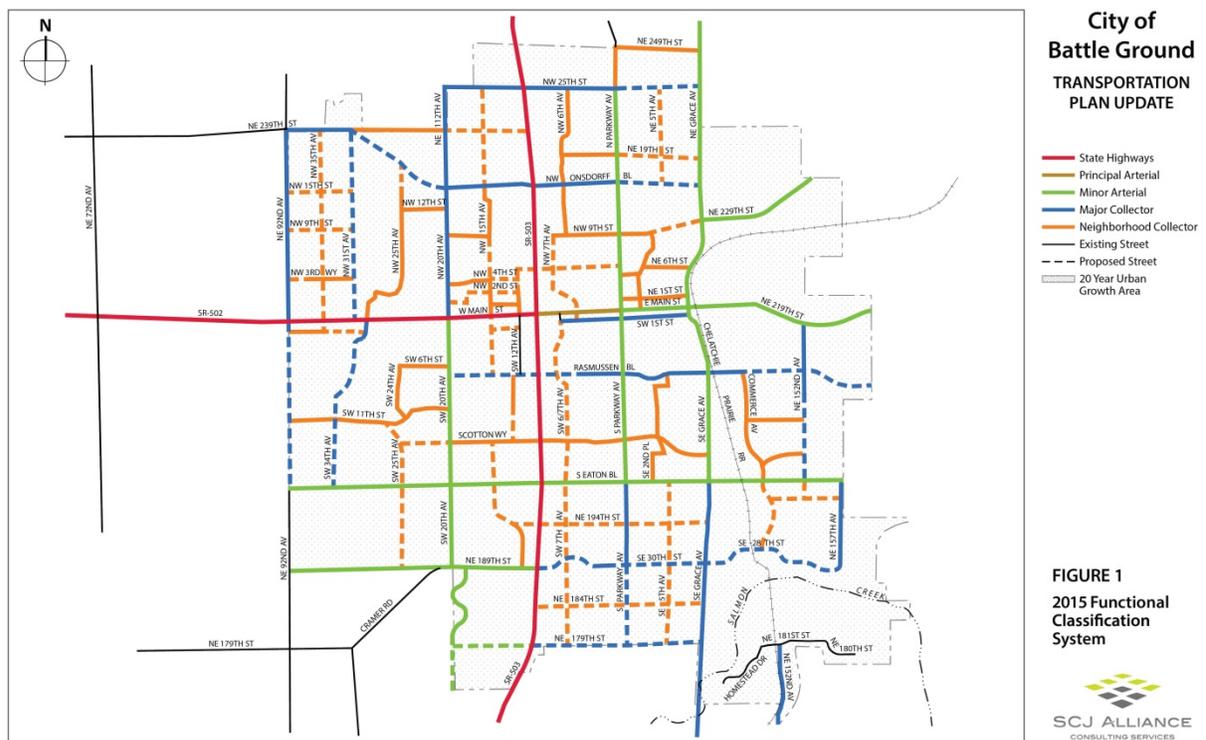
### Existing Bicycle Facilities

The inventory of existing bicycle facilities in the Battle Ground urban area is shown in Figure 9-2. Over the last several years, a number of the community’s arterial and collector streets have been expanded to include bicycle facilities, corresponding with frontage improvements required with new residential and commercial development, as well as the completion of several capital improvement projects. Figure 9-2 identifies various types of bikeways including: roadway shoulders, bike lanes, and multi-use paths (i.e., along SR 503). As indicated in the graphic, most bikeways in the city consist of widened roadway shoulder with bike lanes limited to portions of N/S Parkway Avenue, NE Grace Avenue, SW/SE Eaton Boulevard and SW Scotton Way.

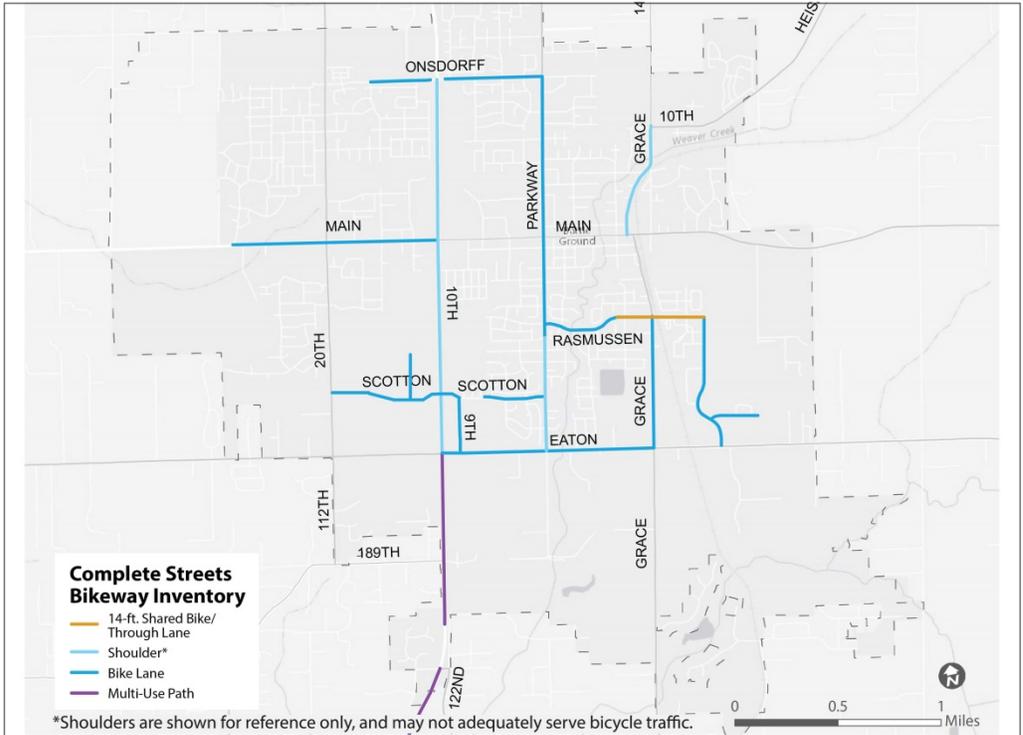
### Existing Pedestrian Facility

As indicated in Figure 9-3, most arterial streets within the core area of the city currently have sidewalks. This includes W Main Street between approximately NW 30<sup>th</sup> and NE Grace Avenues, portions of SW 20<sup>th</sup> Avenue, N Parkway Avenue, SW Eaton Boulevard, and SE Grace Avenue, and a multiuse path along SR 503 between W Main Street and south of NE 189<sup>th</sup> Street. Locations along the key roadway system that currently lack sidewalks can also be seen in the graphic.

**Figure 9-1: Functional Classification**



**Figure 9-2: Bicycle Map**

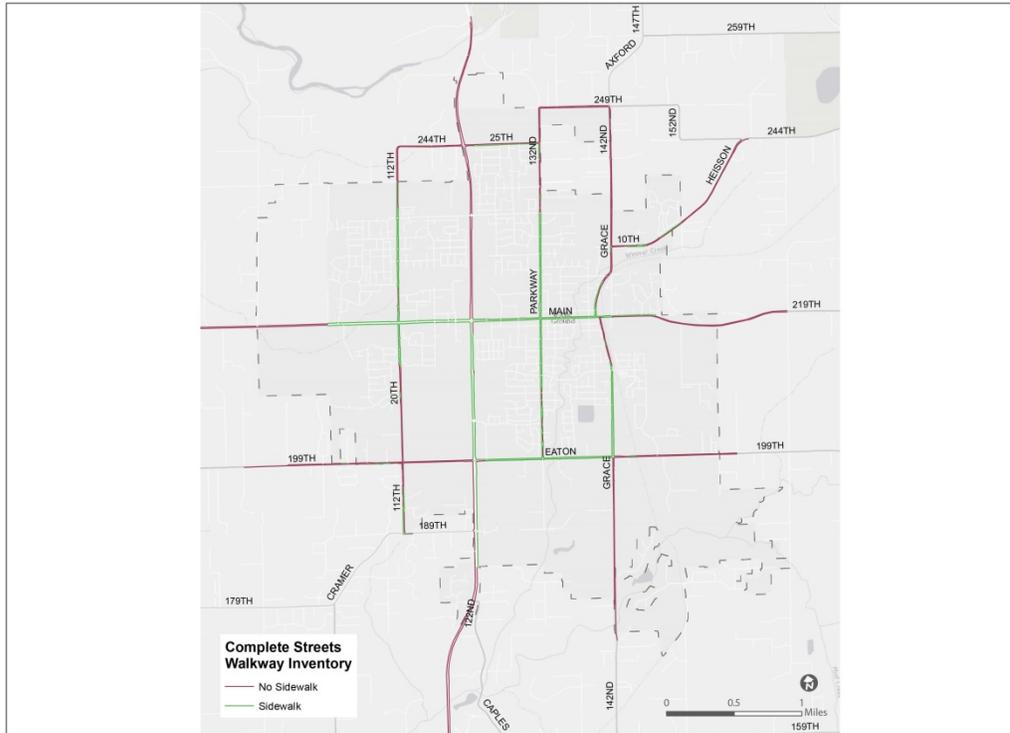


**City of  
Battle Ground**  
TRANSPORTATION  
PLAN UPDATE

**FIGURE 3**  
Complete Streets  
Inventory –  
Bikeways



**Figure 9-3: Pedestrian Map**



**City of  
Battle Ground**  
TRANSPORTATION  
PLAN UPDATE

**FIGURE 2**  
Arterial Complete  
Streets Inventory -  
Walkways



## Freight

### Truck Routes

A key component of the transportation system is the provision of adequate mobility for the movement of freight. To minimize adverse impacts of truck traffic on local streets, a system of truck routes has been designated for the streets and roads within the study area. Figure 9-4 illustrates the adopted truck route plan for the Battle Ground UGA (urban routes) and routes in the vicinity of Battle Ground but outside of the UGA (rural routes). As indicated in the graphic urban routing for through truck movement is typically focused on the city’s arterial street system including: SR 503, SR 502/W Main Street, NE 92<sup>nd</sup> Avenue, NE 239<sup>th</sup> Street, NW 25<sup>th</sup> Street, NE 249<sup>th</sup> Street, NE/SE Grace Avenue, SW/SE Eaton Boulevard and SE Rasmussen Boulevard/Commerce Avenue though existing industrial development east of SE Grace Avenue. The rural truck routes shown in the figure largely include extensions of the urban system outside of the UGA.

### Freight Rail

The Chelatchie Prairie Railroad line runs through the City of Battle Ground east of and generally along the alignment of Grace Avenue. Clark County owns and maintains the rail line, which is leased to the Spirit of Washington/Columbia Basin Railway. The Spirit of Washington/Columbia Basin Railway runs for 33 miles from its intersection with the Burlington Northern Santa Fe railway line in Vancouver to its termination north and east of Battle Ground in Chelatchie Prairie.



goods by air in Battle Ground and the remainder of Clark County in that it is the only facility with regularly scheduled air passenger service and long-distance air cargo service in the north Willamette Valley and Southwest Washington.

## **Analysis and Projections**

### ***Existing Transportation System Needs and Deficiencies***

This section summarizes existing transportation system needs and deficiencies for Battle Ground. As use of the transportation system typically knows no jurisdictional boundaries, these opportunities and constraints apply for both the study area within the city limits and the urban growth area.

#### ***Access to I-5***

Lack of direct freeway access hinders the ability to develop the industrial area in the southeast area of the City. WSDOT is underway with construction of the SR502 widening from I-5 to Battle Ground Project. The project widens SR 502 from two to four lanes from I-5 east into the City of Battle Ground. Median barrier will also be installed to help reduce the severity of collisions along the corridor. Additionally, crews will construct 10-foot wide shoulder for pedestrian and bicyclist along both side of SR 503 for the entire length of the corridor. Construction is expected to continue through 2017. Direct Freeway access could encourage economic development in the City.

#### ***Congestion and Traffic Safety***

An analysis shows that four intersections (three signalized and one unsignalized) will operate below the City's LOS standards when in process growth is added to them. The City currently has funding to complete the improvements to the intersection of SR 503/SR 502, which will bring the intersection up to acceptable LOS standards. Additionally, the City is collecting mitigation funds for the other three intersections, which are SR 503/SW Eaton Boulevard, SW 20<sup>th</sup> Avenue/SW Eaton Boulevard, and SR 503/NW Onsdorff Boulevard. These funds will be used to make improvements that will raise the LOS at these intersections to an acceptable level. All other intersections operate at an acceptable LOS.

No intersections in the City UGA have accident rates greater than 1.0 accidents per million entering vehicles. The City will continue to monitor the situation and will address any issues if they were to arise.

#### ***Lack of Bicycle/Pedestrian System Connectivity***

Battle Ground's bicycle and pedestrian network provides enhanced north-south connectivity, but east-west routes have fewer connections. In spite of the numerous improvements and system additions that have been made, the bicycle and pedestrian transportation system remains relatively fragmented. On several streets, bicycle lanes and sidewalks exist only on one side, and some street segments have gaps between locations where facilities are in place. Additionally, few access ways are in place in locations where bicycle and pedestrian traffic is circuitous. Facilities for non-motorized travelers are mostly located in the central portions of the city while facilities on the outer portions are sparsely located and are generally found only near new residential and commercial development.

#### ***Right-of-Way Limitations***

Narrow public rights-of-way limit the ability to improve existing roadways without the purchase of additional right-of-way in much of the City, particularly the Old Town area in the east end of town.

#### ***Lack of Local Street System Connectivity***

Many local streets in the City are dead ends, terminating in cul-de-sacs or at barricades pending

further residential development. In a few locations connections are provided for pedestrian and bicycle traffic. There may be opportunities to increase local street connectivity in residential subdivisions where additional phases will be built through the design review process, and proposed implementation code changes are likely to include requirements for increased connectivity, both for vehicular and non-motorized travel. Over the long-term, implementation of provisions in the City's Legacy Street Standards should help to improve street connectivity.

### ***Freight Mobility***

Freight mobility issues in the study area include heavy truck traffic created by the operation of several manufacturing plants and a dairy. Truck traffic conflicts with vehicle and pedestrian traffic to and from the schools and commercial uses along East Main Street. Another freight mobility issue concern is truck traffic along NE 199<sup>th</sup> Street between SE Grace Avenue and SR 503. Almost all the land within the City east of SE Grace Avenue is zoned for industrial use, including portion already developed. NE 199<sup>th</sup> Street connects this industrial area with SR 503 for regional access to Vancouver Urban Area and to I-5. Truck traffic could create potential conflicts with traffic to and from schools and residential neighborhoods.

## **Future Transportation Needs and Deficiencies**

### ***Transportation Demand***

Battle Ground will experience increased traffic congestion over the next twenty years resulting from population growth and urban expansion. A variety of transportation improvements and programs are recommended by the Transportation System Plan to ensure that transportation needs are met, and mobility, connectivity and access are improved.

### ***Street System Deficiencies***

The analysis of future street system deficiencies is based on traffic growth anticipated in the Battle Ground UGA as well as growth in traffic passing through the City of Battle Ground.

Based on the baseline of the 2035 traffic projections conducted in the Transportation System Plan Update the following improvements are recommended for enhancing a "backbone" transportation system in southeast Battle Ground. First street extensions, consistent with federal guidelines on the spacing of arterial and major collector streets in developing areas of a community, it is recommended that both NE 189<sup>th</sup>/SW30<sup>th</sup> Street and NE 179<sup>th</sup>/SW 40<sup>th</sup> Street be extended eastward from SR503 to at least SE Grace Avenue. It is also recommended that NE 189<sup>th</sup> Street be extended further eastward to connect with a future recommended extension of NE 152<sup>nd</sup> Avenue. Second is intersections, it is recommended that the intersection improvement be made to accommodate growth traffic volumes along SR 503 at both W Main Street/SR502, and SW Eaton Boulevard. It is also recommended that, with the NE 179<sup>th</sup> Street is extended that improvement are made to the intersection with SR 503 to accommodate the increased traffic activity associated with the extension.

In addition to addressing street system deficiencies that result from anticipated increases in traffic congestion, the street system will also require a wide variety of improvements to provide the full amenities expected in urban areas (including curbs, gutters, storm drainage, sidewalks, bike lanes, street lighting and other features). These improvements are a necessary part of incorporating a rural county road into a more urban environment. Increasing urbanization will also require the extension or new construction of numerous major and neighborhood collector streets to provide both property access and localized traffic circulation.

## Transportation System Recommendations

### ***Recommended Functional Classification***

Functional classification provides a systematic basis for determining future right-of-way and improvement needs, and can also be used to provide general guidance to appropriate or desired vehicular street design characteristics. A Street's functional classification is based on the relative priority of traffic mobility and access functions that are served by the street. At one end of the spectrum of mobility and access are freeways, which emphasize moving high volumes of traffic, allowing only highly controlled access points. At the other end of the spectrum are residential cul-de-sac streets, which provide access only to parcels with direct frontage and allow no through traffic. Between the ends of this spectrum are local streets, collectors and arterials, each with an increasingly greater emphasis on mobility. Classifications can be further stratified into major and minor arterials and collectors.

When developing a functionally classified roadway system, several factors must be taken into considerations including:

- The spacing of different street classifications. Typically principal arterials are designated every one to five miles depending on residential or employment density. Minor arterials can be designated on 1/2 mile spacing with collector roads filling in between to link neighborhoods with the arterial road system.
- Existing street classification. Predictability and long-term stability of a community's plans for growth and development is an asset to the local economy and to the quality of life in neighborhoods. Changes to existing street classifications should be carefully evaluated to ensure that change is warranted (e.g., changes in volumes or the type of traffic a street is carrying, etc.).
- Consistency with the plans and classifications of surrounding jurisdictions – Consistency in functional classifications is important to ensure that traffic crossing a jurisdictional boundary does not encounter a radically different roadway cross-section or that through traffic in one jurisdiction is not directed onto a minor street in another.
- Current patterns of traffic and use of the street – Existing levels of traffic and the types of trips served (including trip length and destinations) are evaluated to ensure that the street classification is consistent. For example, a roadway that serves longer- distance, higher speed through trips would appropriately be classified as an arterial. A street that serves to connect a residential subdivision to a shopping center may be more appropriately classified as a collector.

### ***Recommended Level of Service Standards***

Based on the assessment of future land use and its associated growth in traffic congestion and roadway improvement requirements, it is recommended that the City endorse Level of Service (LOS) D as the operating standard for signalized intersections and Level of Service E for stop-controlled side streets at unsignalized intersections.

### ***Recommended Transportation System Improvements***

The City of Battle Ground will need to construct many improvements to the motor vehicle, freight, bicycle, and pedestrian transportation systems to accommodate growth during the next twenty years. Recommended improvements include projects, services and programs and are described below.

### ***Street System Recommendations***

The Transportation Element includes street improvements that address the congestion problems that were identified by the 2035 intersection traffic operations analysis; projects that expand upon or improve existing streets; and recommended new street construction to provide access and circulation in the portions of the UGA that are expected to be developed over the next 20 years. Projects to address existing high accident locations are also identified, along with recommendations for on-going monitoring of accidents and prioritization of future improvement projects based on accident experience. Recommended street system improvements are categorized by short, medium and long term improvements and are explained and depicted in the Transportation System Update Plan.

In addition to physical street improvements, the Transportation Element also recommends that the City implement a formal traffic calming program based on the requirements and measures described in the Municipal Code with the objectives of lowering vehicular speeds, providing a human-scale environment, facilitating pedestrian crossings and minimizing adverse impacts on the character and livability of neighborhoods and business districts while still allowing for emergency vehicle access. This program should be comprised on two primary elements:

- Identify and provide for traffic calming street improvements focused on non-arterial or collector streets to achieve program objectives.
- Utilize design techniques for local streets, such as reduced widths and lengths, curb extension and other traffic calming measures to achieve the objectives identified above.

### ***Freight Mobility Recommendation***

To minimize adverse impacts of truck traffic on local streets, a system of truck routes has been designated for the streets and roads within the study area. This system was shown earlier in this section in Figure 9-4.

### ***Public Transportation Recommendations***

Public transportation services are provided in the Battle Ground UGA by C-TRAN, with intercity services provided through Vancouver by Greyhound and Amtrak. The Transportation Element recommends that the City work closely with C-TRAN, Clark County, the City of Vancouver and the Regional Transportation Planning Commission to explore a variety of transit service options that could enhance this travel mode to/from and within the Battle Ground UGA. This coordination effort must be on-going with a regular assessment of actual and latent travel demand in the UGA that could be attracted to both intercity and local transit services.

It is recommended that Battle Ground continue with its current efforts to coordinate review of land development activity under SEPA with C-TRAN to ensure that opportunities to build transit-accessible development are maximized. Transit accessibility can be measured both in terms of building and site orientation to provide easy access to buildings for transit riders and in terms of providing the necessary bike lane and sidewalk facilities to ensure that access to transit service is safe and convenient.

It is further recommended that the City promote the use of alternative commute options to reduce motor vehicle travel generated by residents and employment sites in cooperation with regional efforts as administered by C-TRAN or other jurisdictions.

***Bicycle and Pedestrian System Recommendations***

Recommended improvements for Battle Ground’s bicycle and pedestrian network are focused on arterial and collector streets as well as off-street trails. An ideal bicycling environment would include some type of bicycle facilities on all arterial and collector streets. An ideal pedestrian environment would include facilities for foot traffic on all streets. Off-street trails would serve both modes, as these facilities can be located where street connections cannot be made, as well as where street connections are not planned. Recommendations include the addition of sidewalks and bike lanes along existing or new streets, and the development of various off-street trail projects that would connect multiple destinations in the UGA.

***Air Transportation Recommendations***

The City should consider developing specific ordinances consistent with state and FAA guidelines and regulations to protect navigable airspace surrounding the airpark when this area is annexed to the city. The ordinance should include specific height restrictions and specify slope protection.

The City should also consider where future residential, educational facilities, hospitals or other similar land uses might be permitted under current and proposed zoning within areas subject to aircraft noise or accidents.

**Plan Implementation**

The Transportation System Plan Update has broken down the needed projects for the future improvements into three categories that reflect short term improvements (2015-2020), medium term improvements (2021-2025), and long-term improvements (2026-2035). Table 9-1 summarizes the cost of the needed improvement by short term, medium term, and long term categories.

***Table 9-1: Future Improvement Costs***

Category	Cost
Short-Term Improvements (2015-2020)	\$26,667,800
Medium-Term Improvements (2021-2025)	\$102,531,000
Long-Term Improvements (2026-2035)	\$224,213,300

**Funding:**

The 20-year projection of transportation revenues expected to be available to the City of Battle Ground is largely based on an extrapolation of funding received from existing sources. In general, eligible expenditures for these revenues (e.g., operations, maintenance and/or capital improvements) are fixed by revenue type. For example, fees collected for system enhancements to address traffic impacts associated with land development cannot be used for street maintenance. State gas tax revenues are able to be used for capital improvements, operations and maintenance, and bond payments. State Transportation Improvement Board (TIB) and federal Surface Transportation Program (STP) funds are competitive and must be used for capital improvements. Community Development Block Grants are available only for improvements in lower income portions of a community and are typically used by the city for sidewalk improvements.

**Findings:**

The Transportation Element and the Transportation System Plan (TSP) will establish a balanced transportation system that will meet the city's growing transportation demands during the next twenty years. The TSP provides a financially constrained and prioritized project list that will facilitate continued urban expansion in accordance with the Land Use Element through increased mobility, access, options and efficiency. Additionally the TSP will generally maintain existing Levels of Service and provide for increased connectivity for bicycle and pedestrian modes.

Battle Ground's TSP is generally consistent with the Regional Transportation Council's adopted Metropolitan Transportation Plan (MTP).