

CHAPTER 6 SAFETY NON-MOTORIZED SYSTEMS



Non-Motorized Modes – people walking, cycling, horseback riding, and Maintenance using wheelchairs – play an important role in Bainbridge Island’s transportation system. Many peak hour commuting trips as well as other trips are made walking or riding. Having non-motorized choices available is important to many Island residents. Providing facilities that accommodate non-motorized users provides for safety, mobility, supports development density, encourages healthy lifestyles, reduces impact to the environment, and ultimately provides for improved quality of life for Island residents, workers, and visitors.

Safety and the related issue of maintenance are primary community concerns to ensure the roadway system’s safety and longevity. This chapter provides an overview of the safety and maintenance issues for the City of Bainbridge Island. The core of the safety section is a discussion about accident history and high accident locations. The maintenance section describes maintenance issues, activities, and programs that occur on the Island.

Safety

Many of the Island’s two-lane roads were constructed before current safety guidelines were developed. As traffic levels increase, the potential for safety concerns rises. There is a combination of factors that can lead to accidents on substandard roadways, including demographic changes to the Island’s population, preferences for larger or more powerful vehicles, increased motor vehicle volumes, and demands for greater use of roadways by pedestrians and bicyclists. Crashes on these roads can have more serious consequences because of narrower lanes and shoulders, hazardous roadsides, steeper grades, and sharper curves, which also impedes the ability for emergency vehicles to respond.

Speed is a factor in the risks and severity of traffic accidents. Both the likelihood of accidents and the severity of injuries are greater with higher speeds. Communities are embracing initiatives for lowering speed limits such as the Vision Zero initiative that has been adopted by the City of Seattle and WSDOT’s target zero initiative. Vision Zero initiatives make the goal of zero deaths and serious injuries the highest priority and emphasize government taking the lead to implement improvements to further that goal. An emphasis is placed on lowering speed limits, including engineering solutions such as narrowing traffic lanes, and employing traffic calming.

The City of Bainbridge embraces the principle of putting people first when it comes to safety over efficiency for vehicular traffic and even bicycle traffic. The City’s standard roadway lane width is 10 feet providing narrow lanes for traffic calming. The following areas are emphasized for safe street design:



- **Speed Limits** – Consider neighborhood context and existing and future non-motorized use when establishing speed limits. For local access and minor collector streets, lowering speed limits can be an effective tool for obtaining lower speeds. For secondary arterials and major collectors, speed zones with lower speed limits can be an effective tool for lowering speeds. When traffic engineering professionals consider lowering the speed limit has potential for achieving lower speeds then the non-motorized safety aspects of the study should be heavily weighted in the analysis.
- In developing capital projects, consider elements that manage speed, improve safety and traffic calming:
- Bicycle climbing lanes at locations where differential speeds are higher between cyclists and motorists;
- Pathways separated from the roadway for pedestrians, wheel chair users, and cyclists;
- Roundabouts, traffic islands, and curb bulb outs;
- Maintaining or providing vegetation close to the roadway.

In developing transportation improvement programs consider types of projects that provide improved safety for the traveling public, such as:

- Complete Streets,
- Shoulder Improvements,
- Separated Pathways, and
- Greenways.

Accident data is often used to identify the location of safety issues. While the number of accidents does provide an indication of the safety of an intersection or roadway, it does not mean a location is safe. Often drivers will adjust their driving behavior to match the design of a roadway. For example, a driver may be more cautious and slow their travel speed when approaching a corner where there is limited sight distance. Types of safety concerns that can be identified by accident data include:

- **Road Surface Conditions** – Poor roadway surface conditions such as pavement edge drop-offs, potholes, worn lane striping, and reductions in surface friction due to age and wear affect vehicle stopping and maneuvering capabilities.
- **Intersection Configuration** – Accidents related to high turning volumes, lack of channelization, and improper phasing.
- **Non-Motorized Conditions** – High accident data between vehicles with pedestrians or bicycles may emphasize the need for the construction of non-motorized facilities.
- **Geometric Conditions** – Accidents related to undesirable physical characteristics of the roadway's design, such as sight distance, curve radii, paved width and shoulder, and roadway slope.



- **Enforcement Issues** – Accidents related to vehicle speeding, intersection traffic violations, driving under the influence of alcohol or illegal drugs.

Accident History

Accidents can indicate where safety issues exist within a transportation system. The number of accidents at a specific location is a function of a number of factors including the quality of reporting data, traffic volumes, roadway design and geometrics, vehicle speed, and speed limit. For the analysis the total number of annual accidents at intersections over a ten-year period is used. Unsignalized intersections with an average annual number of accidents of 5 or more is considered to be a high accident location. For signalized intersections 7 or more accidents is considered to be a high accident location.

City Intersections

- Table 6-1 indicates intersection locations with 10 or more accidents over the ten-year period ending in 2014 per the City's accident data base at locations other than along the SR305 corridor. Current data is compared with data from the previous study which was reported over a 9.5-year period ending in 2000.



Table 6-1. Bainbridge Island Accident Locations

Background / History

Non-motorized modes of transportation, have been and continue to be, an integral part of Island life. From the late 1800's to the early 1900's, the main transportation to the Island was provided by a small fleet of steam ships referred to as the "mosquito fleet". Roads originated at or near the "mosquito fleet" docks. Early residents walked, rode horses, and biked before the proliferation of automotive transportation. Auto ferry service was brought to the Island in the 1920's at Agate pass. The Agate Pass Bridge was constructed in 1950. Auto ferry service to Seattle followed in 1951. With the onset of the golden age of the automobile, reliance on non-motorized transportation declined, in most places. As a rural oasis from the growing urban center of Seattle; however, walkability, biking, and horse-friendly neighborhoods remained an attractive part of the Bainbridge lifestyle. Walking and biking continued to be an important aspect of mobility within and nearby the Town of Winslow and other outlying Island town centers. With a reliable transportation to Seattle, a commuter culture developed and Bainbridge evolved to be more suburban. With increasing population, bus transit linking residential areas to the ferry terminal became an important element of the transportation system. In more recent times, with increased density closer to the ferry terminal increasing traffic congestion, and greater awareness of health and environment, walking and biking have become a more attractive mode of transportation.



The entire Island incorporated as the City of Bainbridge Island in 1991. Since incorporation, there has been a greater emphasis on non-motorized transportation planning. Following the development of the 2003 Island-Wide Transportation Plan, non-motorized transportation became a significant driver of the City's Capital Improvement Program. The City has invested heavily in non-motorized improvements over the past decade. The following is a summary of major milestones in the City's non-motorized planning and implementation:

- Inclusion of bicycle system planning and maps in the Transportation Element of the 1992 Comprehensive Plan.
- Development of a Trail System Master Plan in 1994.
- Recommendations for sidewalk and bicycle improvements in the 1995 Winslow Master Plan.
- Formation of a Non-Motorized Transportation Advisory Committee (NMTAC) to advise Council and support staff in December of 2002.
- Drafting of an island-wide Non-Motorized Transportation Plan in 2003. This plan included a comprehensive set of policies and goals that were later adopted in the City's Comprehensive Plan. Extensive Island-wide non-motorized existing and planned facilities maps were developed. These maps were subsequently adopted in the City's Comprehensive Plan and have evolved through several comprehensive plan updates.
- Inclusion of extensive non-motorized planning in the transportation element of the City's 2006 Comprehensive Plan following the 2003 Non-Motorized Plan.
- Formation of the Core 40 Program to provide a 40-mile integrated shoulder network for bicycles island-wide in 2007. The delivery of several Core 40 projects, including Bucklin Hill and North Madison.
- Delivery of capital improvement projects (mostly grant funded) in the Winslow area providing pedestrian and/or bicycle facilities including; Bjune, Ericksen, Ferncliff, High School, Madison, and Winslow Way.

In the 2004 Island-Wide Transportation Study, the 2003 Non-Motorized Plan was included as a separate volume. In this update to the Island-Wide Transportation Study, the Non-Motorized Plan is being incorporated into the Plan. Both the 2003 Non-Motorized Plan and the 2004 Transportation Study were extensive efforts that involved considerable staff time, comprehensive consultant support and extensive public outreach. Much of the information in the past Plans is still relevant today and remains a useful reference. The current update is more limited in scope and budget. The limited update is being prepared by City Staff with consultant support for updating information from the updated traffic model from the recent impact fee study. Public involvement includes participation by the NMTAC in the revisions to the Plan and



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review of the final draft by the Planning Commission. All of those meetings are open to the public. The final draft of the Plan is intended to be utilized to inform the update of the City's Comprehensive Plan Transportation Element. The Comprehensive Plan update includes more extensive public involvement.



System Overview, Inventory, and Attractions

The City's existing non-motorized transportation system consists of sidewalks, bike lanes, and trails.

Sidewalks are prevalent in the urban town center of Winslow and Lynwood.

The city's network of shoulders on arterial streets is largely built out in the urban town Center of Winslow. Outside of the town center of Winslow only a few roadways have paved shoulders for cyclists.

Most City trails of significant length are located within the City's rights-of-way. Other City trails connect to or through neighborhoods in formalized easements. City trails are mostly gravel surfaced and constructed to 6 feet in width although many neighborhood trails are smaller in width. The Parks District owns and operates a network of trails within, between, and connecting to Parks that makes up most of the length of trails on the island.

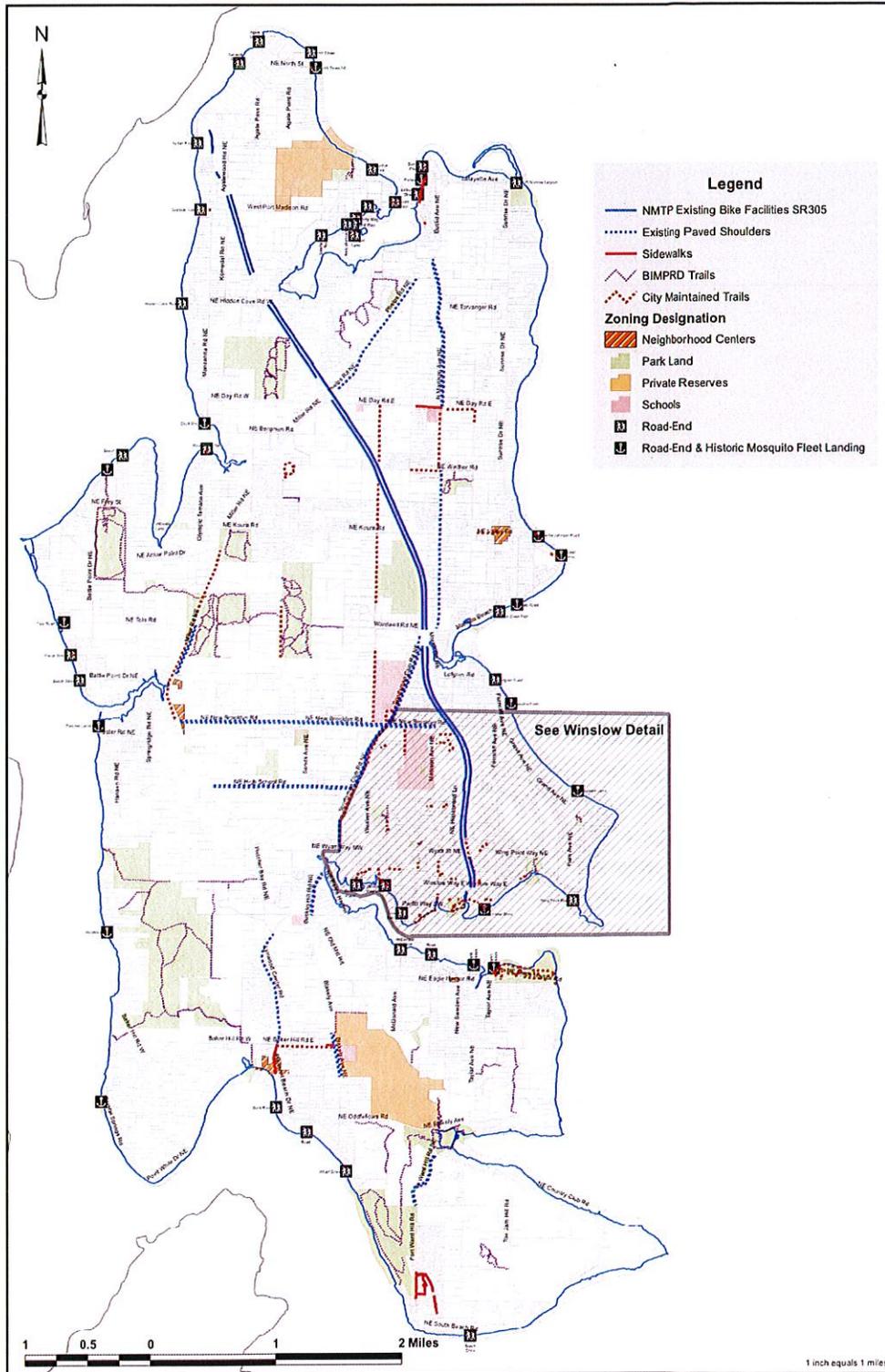
The City's existing non-motorized facilities are shown in Maps A and B.

There is a huge potential to improve non-motorized access to transit, goods and services, and recreational opportunities on Bainbridge Island and improve the quality of life for citizens. The following destinations are identified for consideration:

- Ferry Terminal
- Agate Pass Bridge
- Town center of Winslow
- Town centers of Day Road, Island, Lynwood, and Rolling Bay
- Residential neighborhoods
- Schools
- Churches
- Parks
- Road ends and shorelines
- Equestrian facilities

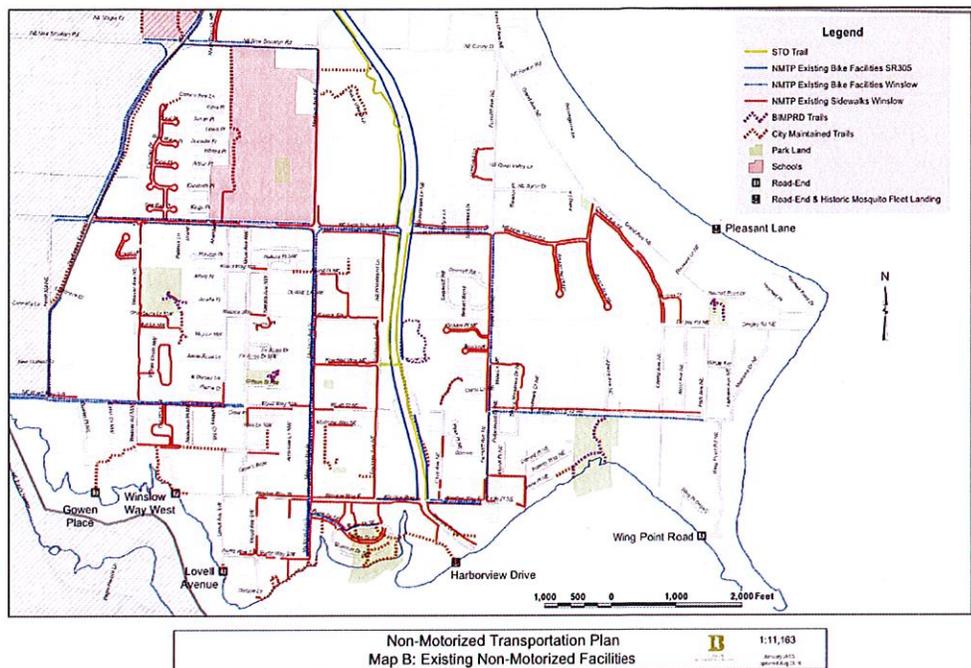


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Non-Motorized System Plan
January 2003 Updated May 2016 Map A: Existing Non-Motorized Facilities





Barriers to use and Connectivity Improvements

Barriers are physical characteristics of a transportation system that limit or restrict the mobility for non-motorized users. Some common barriers on the Island are listed as follows:

- Inadequate maintenance from lack of shoulder sweeping for cyclists, objectionable joints at settled sidewalk panels, or poor trail surfaces in need of re-grading and compaction;
- Deficiencies in design such as lack of ADA compliant ramps, facilities that are not of adequate width to be comfortable for many users, and facilities with materials that are not ADA compliant;
- Discontinuities in system networks such as gaps in sidewalks or roadway shoulders;
- Inadequate facilities at roadway intersections;
- Lack of facilities when systems do not exist or do not extend far enough to meet needs;
- Physical barriers such as naturally occurring ravines or existing developed properties that do not provide for access.



To address barriers and other limitations on non-motorized connectivity across the Island, connectivity improvements are identified in a set of figures and tables which are intended to be living documents updated as new areas are identified and considered warranted by the Public Works Department / Director.

Table 6-1 lists identified barriers on SR305 and on City roadways.

Inter-section	Type	Accidents 2005–2014	Accidents 1991–2000	Average Annual Accidents	Average Annual Accidents
High School Rd @ Madison Ave.*	RA	22	2-2	45	4.7
High School Rd @ Hillside Lane		20	2-0	1-9	
1 SR305 at Vineyard Lane	Winslow WayA separated grade crossing is needed to unite the two sides of the urban town center of Winslow that are divided by the SR305	@—Ericksen Ave. S C 2	14 1- 4	1 8	1.8



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		superb- lock be- tween Winslow Way and High School Road.					
W yat t W ay 2	@-----Madison Ave.SR305 Signalized Crossings	SC4Wide crossings can be a barrier to some users; As ca- pacity improvements are made to SR305, medians, islands, and other pedestrian related improvements should also be provided.			1 3	1. 3	23 2. 4
Mil ler Rd -3	SR305 Shoulders	@-----Koura Rd.Shoulder wid- ening is needed to address gaps in between Hid- den Cove Rd and the Agate Pass Bridge.	SC2		1 2	1. 2	-- --
4	City Secondary arterial and collector road- ways	High School Rd.*Im- provement constructed at this inter- section in 2007Where e pedes- trians and cy- clists are uncom- fortable, shoul- ders and/or sepa- rated	@ S Gr C ow 2 Av e:	40	1.0		24 2. 5



		<p>pathways are needed in areas with or with potential for non-motorized use. Many of these areas are identified for improvements shown in Map E.</p>
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	@	1-0	---
	Bu ekli n	S	
Eagle Harbor Dr.	Hill Rd.	C 4	10 ---

RA – Round About, SC – Stop Controlled

All of the top ten intersections fall below the high accident criteria threshold. The intersection at and number of which was significantly higher than the other locations and accidents is reported for the two intersections along High School Road west of and in closest proximity to SR305.

State Route 305 Intersections

Table 6-2 indicates the accident rates at primary intersections along the SR 305 corridor as from the most recent data available from the Washington State for the ten year period ending in 2014. The number of reported accidents, and the average annual rate over a 3.25-year period from the prior IWTS. Annual average accidents are shown for comparison purposes Department of Transportation. The table displays the intersection cross streets, the type of intersection (“S” signalized, “U” un-signalized).

Table 6-2. SR 305 Accident Locations

Table 6-2 identifies potential connectivity for trails. The focus of this table is for regional and inter-island multi-use pathways and roadway shoulder improvements.



Trails included in this table are shown in Maps E and F. These maps graphically depict one set of possibilities for inter-island trails for the purposes of demonstrating connectivity that may be achieved by an integrated trail network. Some connectivity is identified for connecting pathways that are branches of regional and inter-island trails. Local connectivity is beyond the scope of what is listed. Refer to Maps C and D for additional trail connection zones. Trail connection zones are identified as opposed to specificity of routes to allow flexibility. The City's past practice has been to acquire easements for trails from private property owners on a voluntary basis or when there is significant development.

Intersection Table 6-2, Trail Connection Zones		Signalized/Unsignalized	Accidents 2005-2014	Average Annual Accidents 1997-2000	Average Annual Accidents
1	Sound to Olympics Trail at Vineyard Lane				
2	Sound to Olympics Trail at Hildebrand Shopping Area				
3	Sound to Olympics Trail north of High School Rd				
SR 30	@Sound to Olympics Trail north of Madison Ave.	82	8.2	22	6.8



54		<p>serve as a cross connecting route at the north end of the urban Winslow area. This route would connect to Schools and Parks facilities and also serve as a transportation corridor, requiring easements from private property owners fronting SR305 within the highway setback for flexibility in construction of the trail.</p>	
SR3055	<p>@ Sportsman's Sound to Olympics Trail north of Sportsman Club Rd.</p>	<p>SA 10-foot wide paved pathway is envisioned to serve as a cross connecting route at the north end of the urban Winslow area. This route would connect to Schools and Parks facilities and also serve as a</p>	<p>71 7.1 21 6.5</p>



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					transportation corridor, requiring easements from the Parks District on the Meigs Farm property.	
6	Sound to Olympics Trail north of West Port Madison				A 10-foot wide paved pathway is envisioned to serve as a cross connecting route at the north end of the urban Winslow area. This route would connect to Schools and Parks facilities and also serve as a transportation corridor requiring easements from private property owners for use of roadways fronting SR305.	
7	Waterfront Trail connector at Harbor Drive				A 10-foot separated pathway is envisioned to connect the Waterfront Trail to the Ferry Terminal. Permission is needed from WSF to use the area West of the roadway for a separated pathway.	
8	Cave Avenue Trail connector				A 6-foot wide connecting pathway is envisioned to connect local neighborhoods to the STO trail and the center of the urban area of Winslow. Easements may be needed in the vicinity of the ravine for access from the STO trail to Ferncliff Avenue near Wing Point Way.	
9	Knechtel Trail connectors				A network of 6-foot wide connecting pathways and low volume local access roadways is envisioned to connect local neighborhoods to the center of the urban area of Winslow and the STO trail. Easements are needed from private property owners to link local access to the roadway for east – west connection from STO trail to Weaver.	
SR305	@ Day Rd School	S	52	5-2	34	10-5A 10-foot wide paved pathway is envisioned to serve as a cross connecting route at the north end of the urban Winslow area. This route would connect to Schools and Parks facilities and also serve as a transportation corridor. Formalized routes and easements are needed from the Parks District at the



1 0	Inter-Island Trail	Central Park and the School District at the High School campus and the City's Suzuki property.
S R 3 0 5 1 1	Wardwell Inter-Island Trail	<p>@ High School Rd. A 10-foot wide paved pathway is envisioned to serve as a route connecting points north to the urban Winslow area School and Parks facilities. Formalized route and easement are needed from the School District at the Middle School campus.</p> <p>S 47 4.7 25 7.7</p>
1 2	Shepard Inter-island Trail	A network of 10-foot wide paved pathways and low volume streets is envisioned along this corridor to better accommodate non-motorized use. Easements will be needed from private property owners to link local access roadway for east – west connection from Weaver to Finch.
1 3	Head of the Bay shoulders and trail	6-foot wide paved shoulders are envisioned along this corridor. Additional right-of-way may be needed from fronting property owners to widen the roadway and mitigate for wetland impacts.
1 4	Bucklin Hill Road	6-foot wide paved shoulders are envisioned along this corridor. Additional right-of-way is needed to



		widen the roadway and drainage for shoulder improvements.
SR 30515	Lost Valley Inter-island Trail	@ Winslow Way A 10-foot wide paved pathway is envisioned through the lost valley. The trail would provide a more direct route to the west from the Winslow area at lesser grades than surrounding road networks. Easements are needed at the east end of the proposed trail to connect through to Fletcher Bay Road.
16	Lynwood Center Inter-Island Trail	A 10-foot wide paved pathway separated from the roadway is envisioned on the East side of Fletcher Bay Rd and Lynwood Center Rd. This pathway would provide non-motorized connectivity south to Lynwood Center. Easements are needed along the East side of Fletcher Bay Road.
17	Sound to Olympic Expeditionary Trail Inter-Island Trail	A continuous trail network is envisioned connecting Wardwell road on the South end to Lovgreen Rd at the North along mostly unopened rights of way. This system would connect with Megs Farm Park Land trails.



<u>1</u> <u>8</u> -	<u>Mandus Olson</u> <u>Corridor</u> <u>Inter-Island Trail</u>	<i>*Improvement constructed at this intersection in 2001</i> <u>A continuous network of trails and low volume roadways is envisioned to link to the Lost Valley at the South and the STO Expeditionary Trail / Lovgreen Rd at the North.</u>
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As indicated by the table, the intersections at SR 305/Madison and SR 305/Sportsman's Club exceed 7 accidents per year which is considered higher than what is normally expected for signalized intersections. There are no scheduled improvements identified by WSDOT for these intersections. In 2003, WSDOT added channelization at this location, and a signal is scheduled to be constructed there in 2004.

Accidents involving pedestrian and cyclists

From review of the State accident report there were 19 injury accidents reported involving pedestrians (6) and cyclists (13) along the SR305 corridor for the ten year period. The highest concentration of accidents was near the Ferry Terminal. The vast majority of accidents outside of the urban Winslow area involved cyclists. A project for implementing non-motorized improvements on SR305/ Olympic Drive near the Ferry Terminal is in progress.

From review of City accident reports outside of SR305 there were 121 injury accidents reported involving pedestrians (27) and cyclists (94) for the ten year period. There was at least one fatality involving a pedestrian on struck crossing the street on New Brooklyn in December of 2010. The highest concentration of accidents occurred on Madison Avenue (17), Winslow Way (16), High School Road (14), and Wyatt Way (10). In 2012 Winslow Way was reconstructed including pedestrian and bike facility improvements. Non-motorized improvements are planned for Wyatt Way and Madison Avenue.

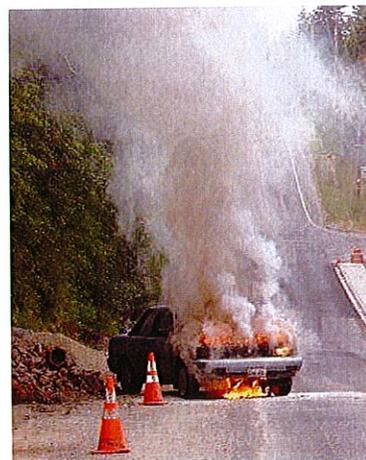
Using their more complicated methodology, identifies Addressing Safety Problems

Addressing safety problems require a combination of approaches ranging from educating the driver, enforcement, to improving the roadway. Roadway improvements fall into two major categories — improvements designed to prevent crashes from occurring, and improvements that minimize the severity of crashes that occur. Types of improvements that can improve safety problems include:

- ***Clear Zones***—Areas of open space with gentle slopes adjacent to the road giving motorists room to safely regain control of their vehicles if they run off the road. These areas should include features such as signs and utility poles which breakaway on impact, barrier walls or guardrails that redirect vehicles away from hazards, and crash cushions that absorb energy and lessen the severity of crashes where appropriate.



- **Guardrails** — The Island along its perimeter has many medium and high bluffs. In the interior the island's topography is hilly in many areas. Guardrails are employed at many locations. Many of these guardrails are older not meeting current design standards and some are in disrepair. There are some locations where new guardrails may be warranted due to roadway configuration, topography, traveled speed, and traffic volumes.
- **Signing, Pavement Marking, and Delineation** — Traffic signs, pavement markings, rumble strips, and reflective devices improve driver perception of important roadway features and alert them to changes in roadway geometry or other conditions.
- **Pavement Improvements and Preventive Maintenance** — Greater smoothness and friction of the road surface are provided by pothole repair, resurfacing, rehabilitation, and reconstruction.
- **Intersection Controls** — Stop signs, roundabouts, and traffic signals can better control traffic flow and reduce intersection conflict points.
- **Adding or Widening Shoulders** — Shoulders provide drivers, pedestrians, and cyclists with additional room to maneuver on narrow roads or to pull out of travel lanes.
- **Channelization** — Separate lanes for left or right-turning traffic avoid impediments to traffic flow, which can lead to rear end crashes.
- **Pedestrian/Cyclist Facilities** — A variety of techniques can be used to separate pedestrians and cyclists from motor vehicle traffic to improve safety.



How study addresses safety

The IWTP proposes improvements that will improve the safety of the roadway system through targeted improvements at intersections and roadways. Safety-related elements of this study include:

- Reviewing roadway geometrics and promoting safety enhancements;
- Identifying and mitigating of high accident locations;
- Identifying and mitigation of intersections with poor LOS operations, and
- Including safety as a factor in the evaluation of the roadway system.

Safety Programs

- **Roadside Safety Program** — This program provides for the inventorying and inspection of roadside elements of the Island's secondary arterial streets and higher volume collector streets. The program also provides for contracting work that is beyond the capacity of Operations and Maintenance. Roadside elements include items such as guardrails, shoulders, and clear zones. This program provides for the prioritization of guardrail repairs, replacements, and installations.



- **Focused Traffic Studies Program** – This program provides for the study of traffic control measures implemented on the Island's roadways. As conditions change with factors such as population growth and development, it is necessary to evaluate the effectiveness of roadway signage and other traffic control devices. Many residents are concerned about vehicular speeds and this program provides for the evaluation of speed limits.

Maintenance

An increasingly important function of the City of Bainbridge Island is preservation and maintenance of the existing roadway system. Careful maintenance allows existing travel corridors to keep their function, prevents damage from water and vehicle loads, and maximizes the use of City resources.

Maintenance Issues

The City of Bainbridge Island's Public Works Department is in charge of roadway maintenance activities for the Island.

Key maintenance issues for the City include:

- **Vegetation growth** – Overgrown vegetation requires the trimming of foliage to retain roadway safety and sight distance.
- **Pavement maintenance** – As roadways age, the pavement surface and underlayment can be damaged by traffic, heavy vehicles, weather, and water seepage if not properly maintained. Poor pavement condition can also affect the safety of the road for drivers and bicyclists.
- **Gravel road grading** – The surface of gravel roadways can deteriorate fairly quickly, producing potholes in the roads. These roads need regular re-grading to maintain the surface.
- **Dirt and gravel on shoulders and roadways** – Regular sweeping of roadways is necessary to provide a clean, smooth surface for drivers. Bicyclists are particularly concerned about gravel, dirt and debris accumulating on shoulder areas.
- **Stormwater** – Maintaining good roadway stormwater drainage is important to protect the roadway and to prevent flooding hazard.
- **Roadway erosion** – Roadway erosion on shoreline and steep slope areas is increasingly becoming an issue for the City. Repair of these roadways often is expensive and may require special permits and consistency with shoreline management goals and objectives.

Maintenance Programs

The roadway system has a number of on-going needs to keep the current roadway system functioning, and to prevent major roadway failures that would require extensive roadway reconstruction. The City Public Works Department's operation and maintenance program has the primary responsibility for these programs.



- *Street sweeping program* – Island-wide, street sweepers collect debris and litter before they enter the stormwater collection systems or roadside ditches. This function is important to protect stormwater run-off from the roadways and to provide a safe surface for automobiles and bicyclists.
- *Brush cutting program* – Island-wide mowing of vegetation to maintain roadway clearance and sight lines.
- *Roadway ditches and shoulders* – These components of the roadway system are periodically maintained, cleaned, and reshaped to ensure they function as designed.
- *Roads preservation program* – The City of Bainbridge Island has an annual road program focused on preserving, maintaining, and repairing the existing roadway infrastructure. The April 11, 2001 Pavement Management Program evaluated 462 street segments totaling 256 lane miles in length. The study recommended a strategy for each of the streets evaluated for either 1) reconstruction, 2) overlay, 3) seal coat and/or 4) patching. Where the roadway does not require complete reconstruction the City can repair damaged sections (patch with asphalt), apply chip seal layer (an oil emulsion and crush rock layer), or overlay new asphalt over the existing pavement.
- *Gravel grading program* – The City fills and regrades the surface of the gravel roads in the system annually.
- *Trail and Pathway Maintenance program* – The City cuts brush and restores trail surfaces to maintain its separated pathway and trail network.
- *Special Maintenance* – The City also performs special maintenance activities not addressed in the above programs such as the removal and trimming of large trees that may present hazards to the traveling public.
- *Sign Inventory* – The City maintains a data base of signage and routinely maintains or replaces signs to meet reflectivity and other requirements is contracted out if necessary.

How study addresses maintenance

The IWTS proposes improvements that will address roadway maintenance and promote the long-term preservation and operation of the street system. Maintenance-related elements of this Study include:

- Establishing the use of existing City transportation facilities as key elements of the future travel network. The need to maintain and improve these facilities is required to meet City roadway standards
- Promoting maintenance as a priority need in the budgeting and financing of transportation functions.

Identifying roadway improvements that meet the minimum requirements of the City's

Table 6-3 identifies gaps and deficiencies in sidewalks in the urban center of Winslow. This information is used to facilitate the planning of the City's sidewalk infill program and pedestrian elements for capital improvement projects.

Table 6-3, Winslow Area sidewalk gaps and deficiencies



<u>1</u>	<u>Madison Avenue</u> <u>from Wyatt Way</u> <u>to High School Rd</u>	<u>The existing 4-foot plus wide sidewalk is not adequate to accommodate a range of users.</u>
<u>2</u>	<u>Madison Avenue</u> <u>from Winslow Way</u> <u>to Wyatt Way</u>	<u>Sidewalk ramps not to current standards</u>
<u>3</u>	<u>Madison Avenue</u> <u>from Winslow Way</u> <u>to Parfitt Way</u>	<u>Sidewalk ramps not to current standards</u>
<u>4</u>	<u>Wyatt Way</u> <u>from Ericksen</u> <u>to Madison Ave</u>	<u>Sidewalk needed both sides</u>
<u>5</u>	<u>Wyatt Way</u> <u>from Madison Ave</u> <u>to Lovell</u>	<u>Sidewalks and bike lanes needed</u>
<u>6</u>	<u>Wyatt Way</u> <u>from Lovell to Weaver</u>	<u>Sidewalk is needed on north side to fill in the current gap.</u>
<u>7</u>	<u>Winslow Way</u> <u>from Madison Ave</u> <u>to Grow Ave</u>	<u>Existing sidewalks are incomplete for roadway segment. Complete sidewalks are needed on both sides.</u>
<u>8</u>	<u>Grow Ave</u> <u>from Winslow Way</u> <u>to Wyatt Way</u>	<u>Sidewalk needed. Possible greenway.</u>
<u>9</u>	<u>Grow Ave</u> <u>from Wyatt Way</u> <u>to High School Rd</u>	<u>Sidewalk needed. Possible greenway.</u>
<u>10</u>	<u>Wood Ave</u> <u>from Grow Ave</u> <u>to Parfitt Way</u>	<u>Sidewalks are incomplete on both sides.</u>
<u>11.</u>	<u>Cave Avenue</u>	<u>Gap in sidewalk on East side.</u>



12.	Waterfront Park Trail at Harbor Drive	The sidewalk is narrow along a steep street grade. A separated pathway on the ferry property to the East with switchbacks would improve accessibility for persons with disabilities and cyclists.
13.	Waterfront Park Bridge and approaches	The bridge needs to be widened to accommodate cyclists and resurfaced for all users.
14.	Trail from Parfitt Way to Finch Place	The existing gravel trail serves an area that is used by many senior citizens and is inconsistent in width and surfaced with gravel

Envisioned Non-Motorized Travel Routes and Network

[The vision and goals for non-motorized transportation are established in the Transportation Element of the City's Comprehensive Plan. To meet the vision and mobility and connectivity goals in the Transportation Element of the Comprehensive Plan, a comprehensive network is further defined in this section.](#)

[Providing facilities for accommodation of non-motorized modes of transportation has consistently ranked high on past City surveys. The City Council appointed the NMTAC to work with staff to plan and assist with the implementation of non-motorized improvements and other work related to furthering non-motorized transportation.](#)

[This section provides a detailed understanding of the current needs as understood at this time by the NMTAC and what the best opportunities are given geographical, existing development, and other constraints in providing for those needs.](#)

[The over-arching goal embodied in the non-motorized vision and the first non-motorized goal is to provide a network of transportation facilities that provide non-motorized modes of travel for the greatest number and widest range of the traveling public.](#)

[The NMTAC considers the following mobility challenges to be high priorities:](#)

- [A. Accommodating a wide range of non-motorized users of all ages and abilities.](#)
- [B. Providing connectivity to the Ferry Terminal and the Winslow Town Center.](#)
- [C. Providing safe routes to schools.](#)
- [D. Providing connectivity to town centers and neighborhoods across the island for all modes.](#)



- E. Improving safety for cyclists and walkers on the Island's secondary arterial roadways.
- F. Improving usability and accessibility of sidewalks in the Winslow Town Center.
- G. Removing barriers and addressing gaps in networks addressing the above priorities. This includes but is not limited to SR305 and other higher volume streets.

Bainbridge Island is largely rural and suburban with neighborhood centers like Rolling Bay and Lynwood Center and the Winslow Town Center that have more urban development patterns. Context sensitive solutions for non-motorized modes will depend upon site specific conditions such as existing and planned land uses, the location of origins and destinations such as schools and parks, motor vehicle speeds and volume, and the overall network connectivity.

The non-motorized transportation system is envisioned to create a network of facilities that makes it safe and secure for all ages and abilities of people to get around their neighborhoods and the island without a car. This will require a toolkit of facilities that will be evaluated for the particular context but may include:

- A. Sidewalks and bicycle lanes along urban streets in the Island's town centers.
- B. Separated non-motorized facilities that provide a viable non-motorized transportation option for a wide range of people walking, riding bikes, riding horses, or using wheelchairs are a key component of the Island's transportation system. This pathway network is envisioned to connect to the City's sidewalk and bike lane infrastructure and connect to main destinations like the ferry terminal, Agate Pass Bridge, Winslow, urban town centers, schools, parks, shoreline street ends, equestrian facilities, and other amenities. These facilities will vary depending on purpose but are envisioned to include:
 - a. The Sound to Olympics (STO) trail, which serves as a centralized spine for non-motorized users and is envisioned as a 12-foot wide separated multi-use path connecting the Bainbridge Island Ferry Terminal to the Agate Pass Bridge and linking to other regional locations.
 - b. Inter-island trails, which are envisioned as 10-foot wide separated multi-use pathways to link urban town centers, schools, and parks.
 - c. Connecting pathways, which are 6-foot wide trails built to City standards that provide local connectivity and connect to the regional and inter-island trails. Additionally the system will integrate with Bainbridge Island Metropolitan Parks District Trails, built to Park Standards that provide both inter-island and local connectivity.



C. Road shoulders can provide connectivity for commuter and more experienced cyclists, as envisioned in the City's Core 40 Program. The Core 40 goal is to provide an integrated network of shoulders for cyclists that when combined with multi-use trails and lower volume roadways provides 40 miles of bicycle routes on the Island.

D. On low-volume neighborhood streets, specific non-motorized infrastructure may not be necessary if vehicular speeds are low (20-25 mph).

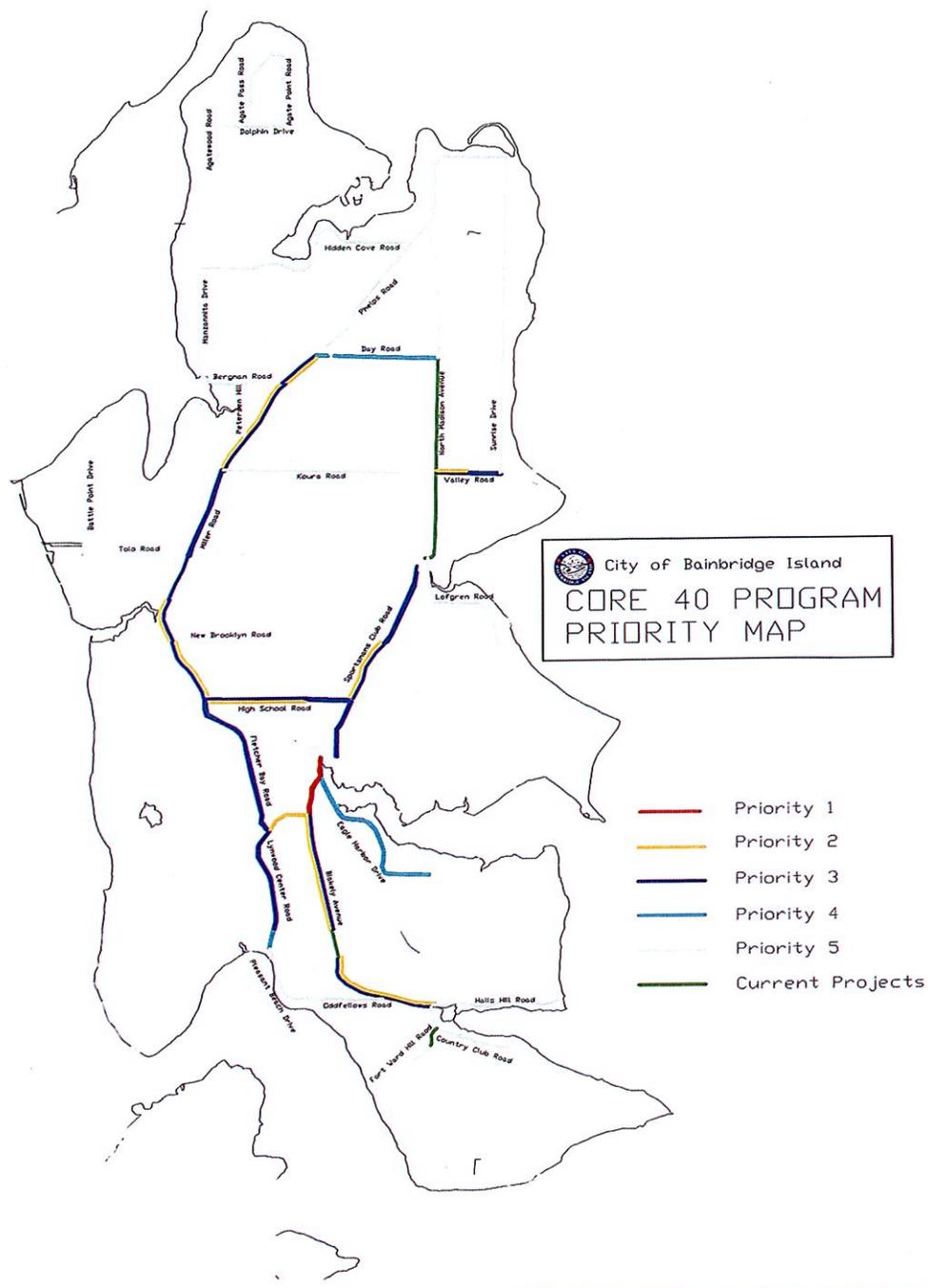
This combination of facilities is envisioned to make up a functional network that provides connectivity to the attractions previously identified and mobility for the greatest number and widest range of users.

Sidewalks, Shoulders, Multi-use Trails, and Connecting Pathway planned facilities are identified and located in attached Maps C and D. These facilities are integrated to optimize connectivity for alternative modes of transportation for users of all ages and abilities.

Routes are identified for pedestrians, cyclists, and equestrians within the non-motorized network. In 2007 the City developed a vision for a network of shoulders to provide connectivity for cyclists across the Island. This network was named the Core 40 Network. The intent is to provide shoulder improvements on the Island's aerial roadways to achieve connectivity to 40 or more miles of roadways for cyclists; refer to Map G. Refer to Map D for identified equestrian routes.



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Facility Types

The system plan maps identify facility types for roadway shoulders and trails. Refer to Recommended Capital Improvement Plan Maps for Regional and Inter-island trail designations.

Sidewalks are not depicted on system plan maps. Sidewalks are required per City Design and Construction standards and Specifications in urban zoned areas of town centers and neighborhood centers.

Shoulders: Shoulders are required at locations shown in system plan maps. Minimum shoulder widths are designated as 3-foot asphalt paved plus a one foot or greater gravel ballasted edge / curb offset distance (Type C) or 5-foot asphalt paved plus a one foot or greater gravel ballasted edge / curb offset distance (Type B).

Type B shoulders are intended to provide limited space for non-motorized user when vehicles are traveling in each direction. This facility type is best suited for roadways with low traffic volumes when the frequency of conflict is low and where drivers can most often maneuver to provide additional room for non-motorized users.

Type C shoulders are intended to provide space that is adequate to accommodate cyclists riding with traffic and pedestrians walking facing traffic.

Trails: Regional Trails, Inter-island Trails, and some Connecting Pathways are shown in system plan maps. Connecting Pathways may be required locations not depicted in the system plan maps to preserve existing connectivity or provide connectivity to facilities. The City's minimum trail width is 6-foot wide. Where Type A facilities (Regional Trails, Inter-island Trails) are designated 10-foot-wide trails minimum plus 1 foot or greater ballasted shoulders. All trail facilities are to be hard surfaced. Trails along roadways should be separated from the vehicular traveled way.

Levels of Service

Bicycle Level of Service (BLOS) and Pedestrian Level of Service (PLOS) are established for each of the facility types for Secondary Arterial Streets and high Volume Collector Streets over 1500ADT. Refer to the following tables for Urban and Suburban Locations.

<u>Table 6-4, Non-Motorized Level of Service for Urban Locations</u>		
<u>Facility Description</u>	<u>BLOS</u>	<u>PLOS</u>
<u>10-foot wide multi-use pathway separated 7 or more feet from the roadway or separated by physical barrier</u>	<u>A</u>	<u>A</u>



<u>6-foot wide trail separated 7 or more feet from the roadway</u>	<u>C</u>	<u>A</u>
<u>5-foot wide sidewalk or trail with curb and gutter and planter strip 3 or more feet wide</u>	<u>N/A</u>	<u>A</u>
<u>5-foot wide sidewalk</u>	<u>N/A</u>	<u>B</u>
<u>5-foot wide paved shouder w/ 2 foot buffer</u>	<u>B</u>	<u>C</u>
<u>5-foot wide paved shoulder</u>	<u>C</u>	<u>C</u>

Table 6-5, Non-motorized Levels of Service for Suburban Locations

<u>Facility Description</u>	<u>BLOS</u>	<u>PLOS</u>
<u>10-foot wide multi-use pathway separated 7 or more feet from the roadway or separated by physical barrier</u>	<u>A</u>	<u>A</u>
<u>6-foot wide trail separated 7 for more feet from the roadway</u>	<u>C</u>	<u>A</u>
<u>5-foot wide paved shouder w/ 2 foot buffer</u>	<u>B</u>	<u>C</u>
<u>5-foot wide paved shoulder</u>	<u>C</u>	<u>C</u>
<u>3-foot wide paved shoulder</u>	<u>D</u>	<u>D</u>
<u>6-foot wide shoulder</u>	<u>N/A</u>	<u>C</u>
<u>8-foot wide shoulder</u>	<u>N/A</u>	<u>B</u>

Frontage Improvements

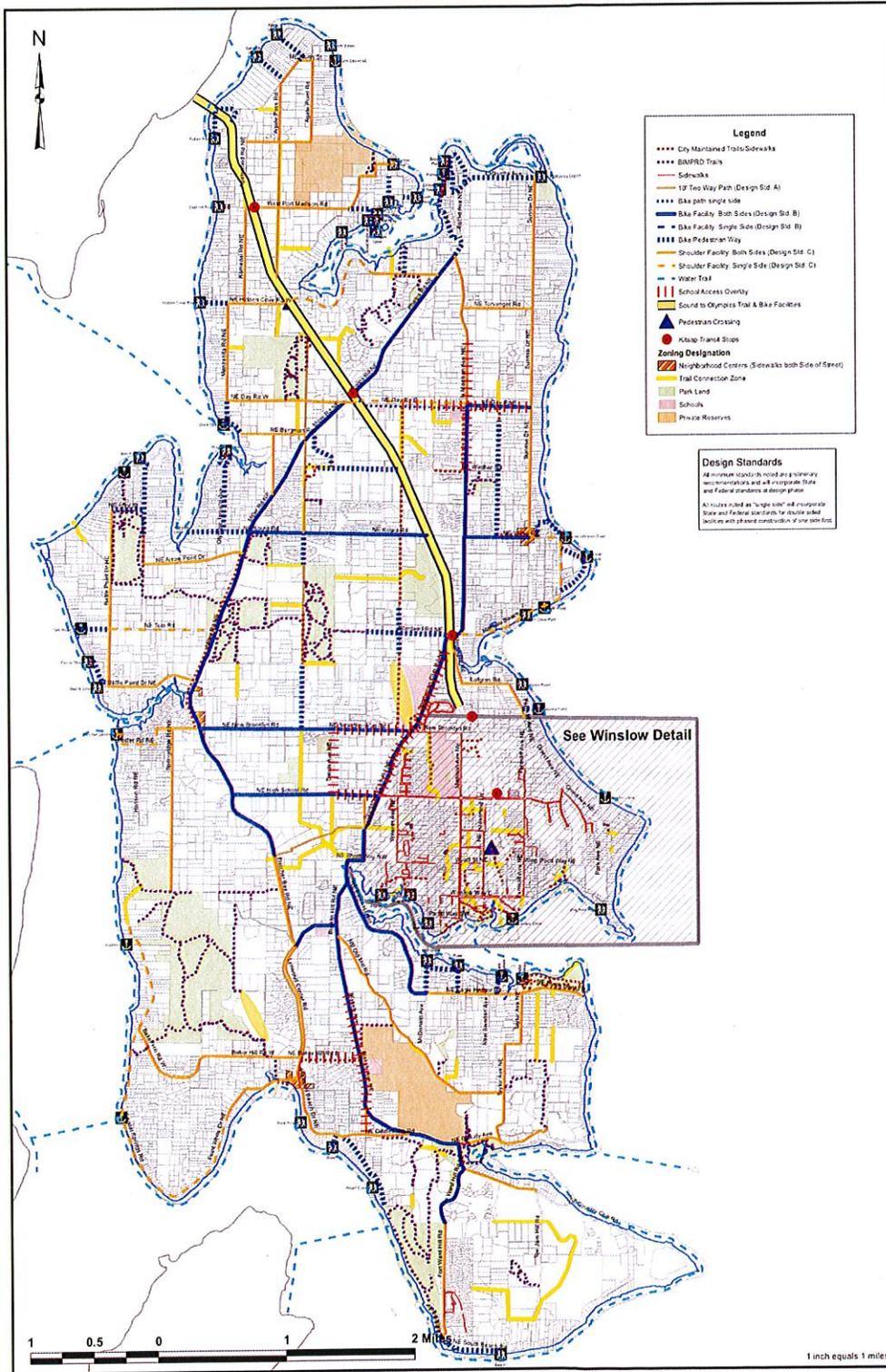
Non-motorized improvements are required for along with other infrastructure improvements for all development. The following table identified the level of improvements required that have been determined to be roughly proportional with the scale of development.



<u>Table 6-6, Frontage Improvement Requirements</u>	
<u>Development Type</u>	<u>Required facilities:</u>
<u>Development or re-development of a residential lot.</u>	<u>ROW dedication and easements. Sidewalk and shoulder infill and reconstruction to meet current standards.</u>
<u>Subdivisions over 3 lots in size, multi-family development exceeding 4 units, and all commercial development / re-development.</u>	<u>In addition to the above, the construction of sidewalk and shoulder extensions, and construction or reconstruction of trails up to 6 feet in width.</u>
<u>Residential Plats of 8 lots or more and development of commercial properties greater than 20,000 gross building square feet in aggregate.</u>	<u>In addition to above, the construction or reconstruction for all facilities including multi-use trails.</u>

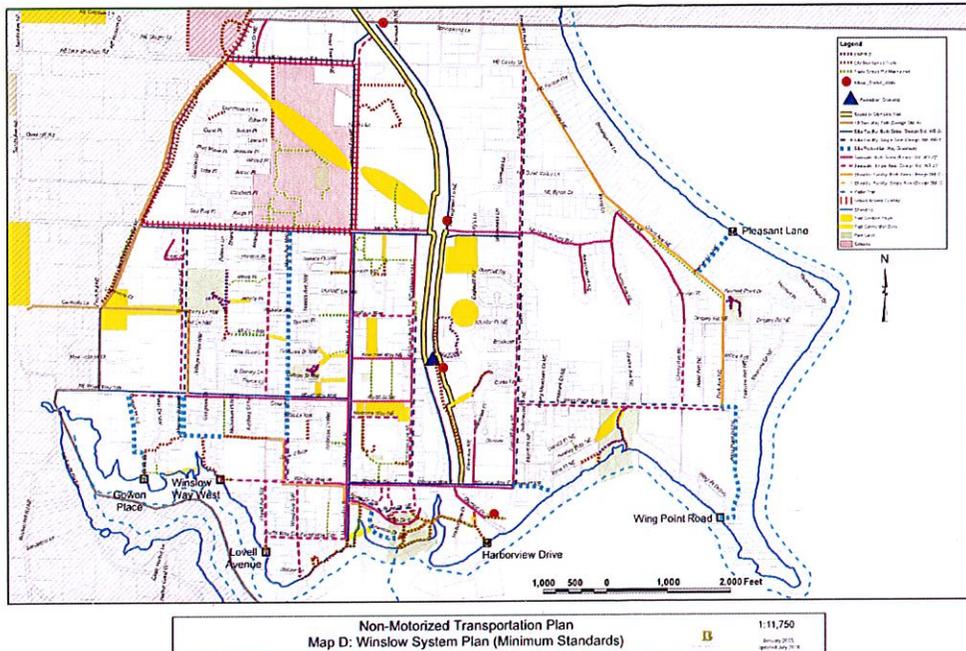


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Non-Motorized System Plan
Map C: (Minimum Standards)

January 2003 Updated July 2016



Implementation, Prioritization, and Funding

This section elaborates on specific measures to further the Non-Motorized Implementation Goals in the Transportation Element of the Comprehensive Plan. The following objectives have been identified:

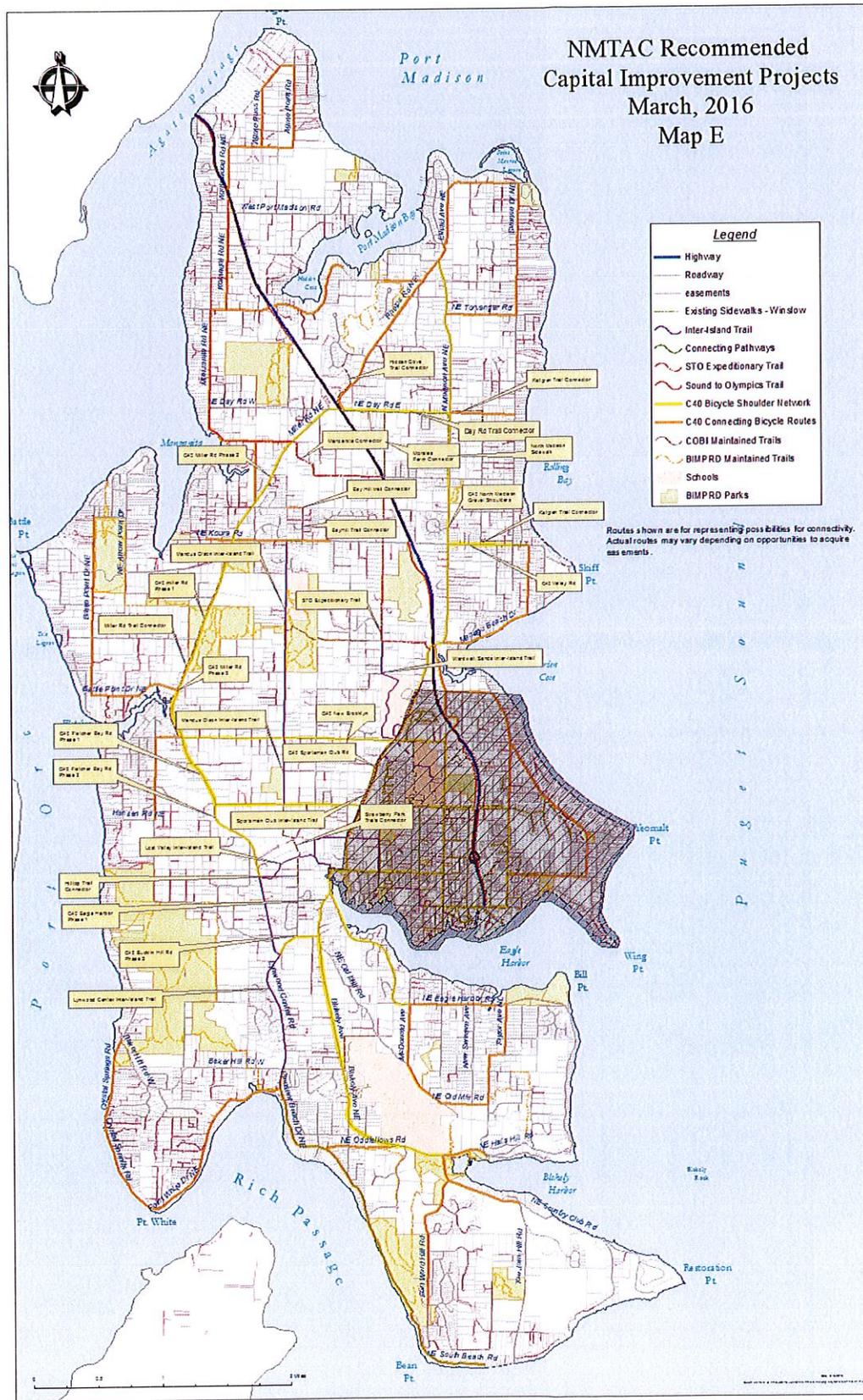
- A. As opportunities are identified, develop proposals to update the Municipal Code to increase the ability to obtain non-motorized facilities in accordance with the IWTP and consistent with the goals in the Transportation Element of the Comprehensive Plan with non-motorized projects.
- B. Support community efforts to develop new regulations incentivizing the construction of non-motorized facilities by development.
- C. All commercial and residential projects that reach the design and review thresholds set in the Municipal Code shall be reviewed for compliance with the goals, policies, and standards in the Transportation Element of the Comprehensive Plan, the Islandwide Transportation Plan and other adopted Plans.
- D. Facilitate the NMTAC review of development projects with potential for non-motorized elements and provide opportunity for early input in designs.
- E. As properties develop, secure right of way dedication for frontage improvements on City streets and easements for regional and inter-island



- multi-use trails (20 feet or more) and connecting pathways within and connecting neighborhoods (15 feet or more).
- F. Support opportunities to secure new easements or renegotiate existing easements (example: utility access agreements).
 - G. Provide mechanisms for funding, prioritizing, and implementing projects to develop non-motorized facilities identified in this plan. Identify and prioritize specific non-motorized projects in the City's transportation planning including but not limited to the IWTP and the Capital Facilities Plan to assure their completion.
 - H. Actively pursue various funding sources, such as available grant and bond initiatives for priority projects. Pursue joint funding opportunities with the School District, Parks District, and Department of Transportation. Provide flexibility in the program as needed to be competitive.
 - I. Support the development of a non-motorized bond measure to fund regional and inter-island trails, Core 40 shoulder improvements, and other island-wide non-motorized improvements.
 - J. Support involvement of the NMTAC in transportation planning and capital improvement planning. Important aspects of this work include developing and prioritizing projects, and collaborating to develop grant applications and secure funding.
 - K. Support involvement of the NMTAC in public outreach and the development of transportation improvement projects.
 - L. Incorporate non-motorized improvements into capital improvement projects. Consideration to be given to the context of each site in developing designs.
 - M. Study maintenance needs and put forward a budget proposal in Operations and Maintenance to provide for new facilities and improved level of service of all facilities.

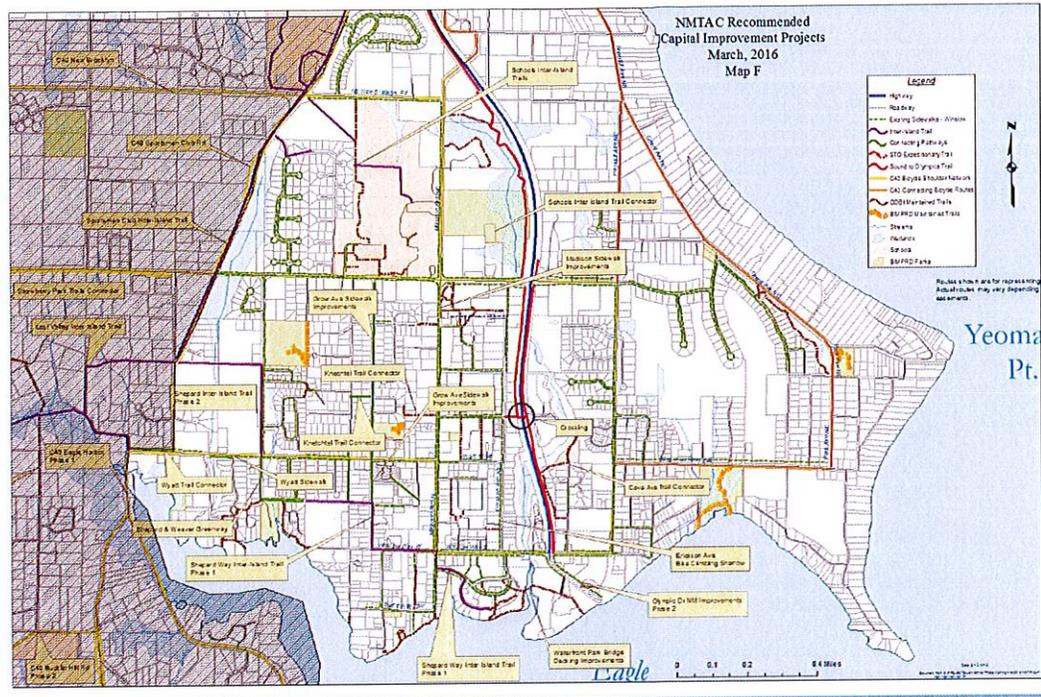
Non-Motorized Improvement Plan

Programs and projects to achieve the proposed Non-motorized Transportation System Plan are identified in Maps E and F.





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Design Considerations

The following areas have been identified for consideration in developing designs for public and private projects to improve non-motorized safety. Note that these design considerations may be above minimum established standards and should be provided for all public and private projects to the extent practical.

- A. Incorporate accessibility requirements in accordance with the PROWAG to the extent feasible and incorporate universal principals in design to the extent practical.
- B. Provide safe at-grade crossings at signalized intersections on SR305. Consider refuge areas at urban locations. Consider separated grade crossing for regional trails and other high volume locations.
- C. Provide marked crosswalks in high traffic areas, at safe and appropriate intervals, particularly in locations where pedestrian routes cross secondary arterials. Provide marked crosswalks at driveways on secondary arterial streets in urban locations.
- D. On designated bike routes, provide wider (8") fog lines adjacent to paved shoulder facilities for cyclists and bike lane markings and bicycle climbing lanes. The wide use of sharrow markings for general purpose raising awareness of cyclists is discouraged. Designs should incorporate the use of sharrow markings for directional purposes at high-bicycle-volume locations in urban areas when Engineers consider the design to be a significant safety enhancement. Examples include the use of sharrows



adjacent to angle parking and at transition areas from bike lanes to shared lanes on Winslow Way.

- E. Provide separation for non-motorized from non-motorized uses at higher speed (over 30mph) and higher volume (over 2000 ADT) motorized traffic locations. When separation is not practical, alternative routes should be provided to accomodate users of all ages and abilities. A particular emphasis for separated facilities is on roads connecting to schools and along SR305.
- F. Consider lowering speed limits of secondary and collector street with significant bicycle and or pedestiran traffic that lack non-motorized facilites.
- G. Posting of walking and biking warning signs on roadways in high non-motorized use areas without adequate facilities.
- H. Consider incorporating traffic calming elements such as narrow lanes (9-10 feet depending on roadway classification), chichanes or winding roadways, and maintaining native vegetation or providing street trees in all designs. Consider speed humps, and / or raised crosswalks at urban local access or other streets with a desired speed limit of 20mph when there are large vehicular traffic generators or very high vollumes of pedestrians.
- I. Provide street lighting of secondary arterials and collector streets in urban areas and marked crosswalks on arterial streets in suburban areas.
- J. Provide bicycle activated sensors at signal locations.
- K. Avoid placement of utility facilities, such as manhole covers and utility poles, within non-motorized travelways.
- L. The design of new parking lots and garages shall include covered bike storage / parking facilities. Where existing bicycle parking is sufficient and conveniently located, the City Engineer may omit this requirement.
- M. When bike racks are required for commercial development and public facilities, the racks shall be conveniently located to the building entrance, appropriately designed to be compatible with the design and development of the site, and sheltered from inclement weather.



Standards

The City's existing Design and Construction Standards were developed in 1997 and have not been updated to include all of the non-motorized elements identified in the 2003 Non-Motorized Transportation Plan. It is recommended that this document be updated following the update of the Island-Wide Transportation Plan and the City's Comprehensive Plan.

Refer to the table below showing a list of considerations for updating the Design and Construction Standards.

<u>Standards 1</u>	<u>Maintain narrow 10-foot lanes on major roadways.</u>
<u>Standards 2</u>	<u>Modify standards to require pedestrian facilities to be maintained at grade at driveway entrances.</u>
<u>Standards 3</u>	<u>Require sidewalks to be built to the back of the right-of-way along arterial and collector streets.</u>
<u>Standards 4</u>	<u>Include a standard for planter strips for increased pedestrian accommodation. An alternate standard would still be available to omit planter strips in certain situations; wider sidewalks should be provided where planter strips are omitted.</u>
<u>Standards 5</u>	<u>Minimum bike lane width on secondary arterial and major collectors is to be 5 feet. An additional one-foot clearance of the curb to be provided at curb and gutter locations. Buffered bike lanes to be considered.</u>
<u>Standards 6</u>	<u>Require paved driveway approaches at all driveways serving more than 3 households for all categories of projects. Note that paved driveways are currently required for new development.</u>
<u>Standards 7</u>	<u>Include a standard for shared use path, buffered separated multi-use path, inter-island trail, etc.</u>
<u>Standards 8</u>	<u>Utility structure covers are to be located out of the sidewalk and shoulders used by cyclists unless impractical and any deviation requires approval by the City Engineer. Type of cover to have flush, skid, and lock down characteristics suitable for cycle use.</u>
<u>Standards 9</u>	<u>Tenant improvements and remodels trigger frontage improvements to meet current ADA standards.</u>



Preservation and Maintenance

Existing and proposed non-motorized facilities need to be preserved and maintained to ensure continued usefulness. As the system grows, so does the demand for resources to maintain it. Facilities deteriorate over time and the City needs to plan for expenditures to repair and / or reconstruct these assets.

Areas of emphasis for maintenance as follows:

- o Annual raised sidewalk grinding or replacement of sidewalk panels to address deficient disability access.
- o Annual sidewalk and cross walk power washing where needed to maintain slip resistance and / or contrasting color.
- o Monthly sweeping of separated pathways.
- o Annual cleaning / power washing of separated pathways.
- o Seasonal brush cutting of trails.
- o Annual grading and graveling of non-hard surfaced trails where needed to address unevenness and traction issues.
- o Maintenance of roadway surfacing to consider serviceability of shoulders for cyclists when prioritizing repairs.
- o As needed cutting of roadside brush to maintain use of shoulders for cyclists and pedestrians.
- o Monthly shoulder / bike lane sweeping + higher frequency at problem areas.
- o As needed repair and adjustment of lids and grates to maintain even surfaces for cyclists and pedestrians.
- o Annual pavement marking maintenance of cross walks, bike lane symbols, etc.
- o As needed washing and replacement of signage such as no-parking signs, way finding signs, etc.



Education, Encouragement and Enforcement

The NMTAC, supported by City Public Works, Planning, and Police Staff, and in coordination with School District, Parks District, Fire District, Health District and community groups will work to further the education goals of this Plan. This should include developing programs, or adopting programs used successfully elsewhere, to encourage use of non-motorized modes and promote safety. This may include:

- Listening to the community to identify transportation system deficiencies and opportunities for improvement
- Coordinating and or supporting programs and projects that encourage active modes of transportation
- Supporting community outreach and involvement for the development of transportation projects
- Supporting safe routes to school programs
- Supporting “Adopt-a-Trail” and “Adopt a Route” programs
- Developing and distributing guide maps and providing wayfinding signage. Public non-motorized facilities such as trails should be identified with signage in order to designate routes and access points. This is especially important where facilities are adjacent to or run through easements on private property.

The Committee and City routinely support the following efforts:

- ‘Bainbridge Shares the Road’ program and signage.
- League of American Bicyclists ‘bicycle friendly community’ designation.
- Walking, Cycling, and Paddling Map supported on the City’s web site.
- Walking Map of Winslow, produced by Sustainable Bainbridge and supported on the City’s website.
- Map of accessibility features in the Winslow area, produced in cooperation w/ the Kitsap County Accessibility Communities Advisory Committee.
- Participating in ‘Bike to School Day’.
- Community engagement for connectivity opportunities and easements.



- Participating in public outreach involvement opportunities of City transportation projects.
- Coordinating with the Police Department to identify areas with higher non-motorized use that may need emphasis for safety due to accident history, speeding, observed poor behaviors by either motorized and / or non-motorized users for consideration for education and enforcement emphasis.
- Promoting Police bicycle patrols for enforcing laws for cyclists and patrolling multi-use pathways.