

Neighborhood Byway	
NASON'S CORNER	
↑	Miles
DEERING CENTER	1.7
WOODFORDS CORNER	2.3
Hall Elem.	0.3
Evergreen Cemetery	1.4
Deering High	1.8
Lincoln Middle	1.8
Longfellow Elem.	1.8



Pedestrian and Bicycle

Chapter of the

City of Portland Comprehensive Plan



Approved by the Portland City Council on Dec. 17, 2012 as a component of the Comprehensive Plan

Produced by: Department of Public Services
Department of Planning and Urban Development
Department of Health and Human Services



Pedestrian and Bicycle

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Pedestrian and Bicycling Chapter of the Portland Comprehensive Plan: Policy Context and Goals, Objectives, Strategies and Performance Measures

I. Vision and Existing Policy and Planning Context

A. Pedestrian and Bicycling Vision for Portland

DRAFT Vision

Over the next ten years, bicycling and walking will play an integral role in Portland's growing reputation as a livable and sustainable city. More biking and walking facilities that are safe, convenient and attractive will significantly increase the number of bikers and walkers as they travel to work, school, shop, and recreate. High quality complete streets, trails and pathways will provide connections for cyclists and pedestrians of all ages and abilities within and between the city's neighborhoods. These bikeways and walkways will also help grow transit ridership by creating seamless connections to bus routes and transportation centers. Robust enforcement, promotion and education programs help create and foster an active transportation culture within the city.

B. Existing Planning and Policy Context for Walking and Bicycling in Portland

A Time of Change: Portland Transportation Plan (1993)

In 1993, the City adopted a comprehensive transportation plan, *Time of Change*, which remains the foundational transportation policy document for Portland. The Plan was innovative in its day and continues to challenge decision makers to integrate land use and transportation decisions, to reduce automobile dependence, and to promote multi-modal transportation options for the sustainable health and vitality of the City. The Plan establishes targets for walking and biking mode shares for commuting of 20% for walking and 5% for bicycling.

Peninsula Transit Study and Action Plan (2009)

Working in the spirit of the 1994 Transportation Plan, the *Peninsula Transit Study* was approved in 2009 with the expressed goal of reducing the number of single occupancy vehicle trips to and from the Portland Peninsula. Using an integrated approach of policy, land use, and infrastructure innovations, the Transit Study includes an action plan for phased implementation. Implemented actions to date include: a "Fee In-Lieu of Parking" ordinance; Transportation Demand Management requirements, standards and application tools; expanded bike parking with bike parking requirements for private development; and, evaluation of Congress Street as a Bus Priority Corridor.

A Sampling of Related City Plans

Portland Waterfront Public Access Design Guidelines (1985)

The Portland Waterfront Public Access Design Guidelines were developed in the 1980s in recognition of the Waterfront's growing role as a tourism destination and a resource for local recreation and commerce. The guidelines mapped expanded routes and points of access to key places in Portland Harbor and were instrumental in establishing the "Shoreway Trail", Compass

Park at Maine State Pier, and improved pedestrian integration between the Old Port and the Waterfront.

Portland Shoreway Access Plan (1987)

Building off the work of the Waterfront Public Access Design Guidelines, the 1987 Shoreway Access Plan established a “Water Links” policy of connecting key points of waterfront access through a city-wide system of off-road trails. The Water Links concept was the predecessor of the Portland Trails system map and the Shoreway Access Plan should be recognized as one of the most important foundational documents for expanded pedestrian infrastructure since plans establishing the Eastern and Western Promenades in the late 1890’s and early 20th Century.

Brighton Avenue / Main Street Corridor Traffic and Streetscape Study (1999)

The Brighton Avenue/Main Street Corridor Traffic and Streetscape Study was a regional planning process between Portland, Westbrook, GPCOG, and PACTS, which evaluated a key gateway corridor prior to opening a new Maine Turnpike interchange at Rand Road. The Streetscape Study was instrumental in establishing improved pedestrian conditions around the “Pine Tree” shopping plaza and in implanting a “road diet” 3-lane section of Brighton Avenue from Rosemont to Nason’s Corners with an on-road bikeway.

Green Spaces Blue Edges: Portland’s Recreation and Open Space Plan (1994 with 2006 update)

The Green Spaces - Blue Edges plan is a comprehensive inventory resources and recommendations for parks and recreation lands city-wide. The plan includes extensive neighborhood descriptions and recreational amenity inventories and is a valuable resource for pedestrian and bicycle planning.

Eastern Promenade Master Plan

The Eastern Promenade Master Plan is the first plan of improvements, treatments and land management for Portland’s signature open space since the Olmstead firm’s plan of 1905. The Eastern Prom is both a regional destination and route for pedestrians and bicyclists and is a link between communities to the north and the eastern portions of the Portland Peninsula.

Connecting Libbytown: Bicycle and Pedestrian Connection Options for a Disconnected Neighborhood (2009)

The Connecting Libbytown plan envisions improved pedestrian and bicycle linkage between the Fore River Parkway and the Portland Transportation Center to Deering Oaks and the planned extension of the Bayside Trail. In addition to providing quality of life amenities for the Libbytown neighborhood, the plan’s implementation will close gaps in completing a circa-peninsular trail network, as envisioned by the 1987 “water links” concept described above.

City of Portland Wayfinding System Study Report (2008)

The Portland Wayfinding System Plan created a set of criteria and graphic conventions for vehicular and pedestrian wayfinding city-wide. The Plan additionally established wayfinding districts and pedestrian signage for the Old Port, Government, Waterfront and Arts Districts. Pedestrian signage for these districts has been installed. Early in 2012, the City will continue the signage effort with a vehicle wayfinding study for the entire peninsula, which will include bicycle wayfinding.

Reclaiming Franklin Street (2009)

Starting as a citizen-led planning effort, the Reclaiming Franklin Street study developed three concept level plans for transitioning Franklin Street from an Urban Renewal era highway into a multi-modal urban mixed use corridor. The concepts retain the arterial function of the street, but add cross street connectivity, bicycle and pedestrian infrastructure, and improved access to adjacent properties in a less land consumptive right of way. Early in 2012, the City will partner with PACTS and MaineDOT to establish a preferred alternative for design from the concept drawings.

Outer Congress Street Corridor Study (2007)

This study looked at traffic, bicycling, pedestrian and streetscape improvements on Congress Street from St. John Street to the South Portland city line. It recommended a multi-phase set of actions to maintain traffic mobility and make incremental changes to biking and walking environment.

Non-Profit and Regional Initiatives and Plans

PACTS. PACTS, the Portland Area Comprehensive Transportation System, is a federally-mandated regional transportation agency that coordinates the planning and programming of federal transportation funds in the greater Portland (15 communities) region. Plans include:

- PACTS Regional Bicycle/Pedestrian Plan Update: Final Report (2009)
- Bicycle Approaches to Tukey's Bridge (2009)
- Pedestrian Access to Transit (2011)
- Destination Tomorrow, the regional transportation plan (2011).

Portland Trails. Portland Trails is a regional land trust that has a vision to create a 50-mile trail network in greater Portland (generally Portland, Westbrook and Falmouth). To date (2012), approximately 36 miles of trails have been implemented with approximately 30 miles within the City of Portland. Most trails serve primarily recreation purposes but many have high transportation utility. Initiatives include:

- Portland Trails Trail Map and Vision Map
- Active Transportation – Way to Go! Portland.

Regional Trail Initiatives. In addition to Portland Trails, other efforts are underway to link shared use pathways and trails in Portland to larger regional and national trail networks. These include:

- Sebago to the Sea Trail – linking trails from Standish/Sebago Lake to Portland
- Eastern Trail/East Coast Greenway – linking pathways and streets in Portland to larger regional and nation bicycling and walking routes.

C. Goals, Objectives, Strategies and Performance Measures

The heart of the Comprehensive Plan is the set of Goals, Objectives, Strategies and Performance Measures that are inter-related to achieve the city's Vision for bicycling and walking.

Goals - Goals are the desired end result, general in nature, the product of a specific objective or objectives. A goal is finished when the desired end result has been achieved.

Objectives – Objectives are more specific aspects of achieving a Goal and is stated ideally in a way that is measurable.

Strategies – The method or action by which an objective is achieved.

Performance Measures – Qualitative and quantitative measures of progress toward achieving objectives and implementation of strategies. There are three types of performance measures: *Input* (such as dollars spent), *Output* (miles of sidewalks built), and *Outcome* (results of efforts, such as the number of people biking and walking, number of crashes, and reductions in childhood obesity). Outcome performance measures are the most important type but can be more labor intensive to collect and involve change over longer periods of time. Benchmarks establish the status of a measure at the plan's inception; Targets set a measurable objective to reach at a future date.

The Benchmarks and Targets associated with the Performance Measures will be developed within the year following the Plan's adoption. The intent is to provide a bi-annual report to track implementation progress of the Plan's Goals and Objectives, and ultimately the Vision.

II. The Policy Context of Walking and Bicycling in Portland & in the Transportation System

Livability, Sustainability, Public Health & Public Safety

Overarching policy approach: Recommend important policy and programmatic changes to better coordinate actions and investments to achieve city goals in the areas of Livability, Sustainability, Public Health and Public Safety. Making the city more bikeable and walkable and increasing the amount of biking and walking can contribute significantly to achieving these goals. This Plan will be accomplished by doing more detailed work following the Plan's adoption such as developing a new street planning and design manual and identifying specific streets and areas for future investment or programs.

Livability

Livability is a term that refers to the overall quality of life enjoyed by a city's residents. Portland has long been touted as a highly livable community. Its environment for walking and biking are often cited as contributing factors. These factors include the quality of its streets and streetscapes for walking and biking, the city's compactness, and the quality of its historic and contemporary architecture and urban design characteristics.

Sustainability

As defined in the City's Comprehensive Plan, sustainability planning integrates the city's long-term decision making with environmental goals, economic goals and community goals. It means that local, short-term decisions are consistent with strategic, long-term goals. Walking and biking can contribute to the city's sustainability goals by reducing the environmental impacts and cost of transportation while improving the quality of life and travel experience for area residents and visitors.

Public Health

Increased walking and biking can significantly contribute to a city's overall public health, including reduction in chronic diseases such as diabetes, heart disease and rates of obesity. Achieving these objectives has been linked to increased physical activity through increased bicycling and walking.

Public Safety

Over the six year time period of 2005 to 2010, in Portland there were 283 crashes involving pedestrians and motor vehicles and 208 crashes involving bicyclists and motor vehicles. Better infrastructure, enforcement and education programs can help reduce the number and severity of these crashes. Portland has begun to implement the national program called *Crime Prevention through Environmental Design* that explicitly takes public safety into account when buildings and public spaces are designed.

An Enhanced Multi-modal Framework for Portland's Transportation System

Overarching policy approach: Establish a more holistic framework for the planning, design, construction, operation and maintenance of Portland's transportation system. This is suggested to include, but not be limited to:

- adopting and implementing a Complete Streets Policy (under development)
- developing Quality of Service indicators for bicycling, walking and transit
- implementing the Transportation Districts and Centers concept from the 1993 transportation plan
- establishing and tracking mode share targets for all types of transportation trips
- work zone pedestrian and bicycling accessibility.

Complete Streets Policy

A Complete Streets Policy is a policy statement expressing the community's aspirations to create streets that 1) fit their particular context and 2) give full consideration to and balance the needs of all users of the street of all ages and abilities – motorists, pedestrians, transit users, commercial vehicles, and bicyclists. Careful consideration must simultaneously be given to neighborhood livability in looking at items such as on-street parking and maintaining traffic flow on arterials to reduce diversion onto residential neighborhood streets. Such a Policy defines the suggested process and procedures involved to institutionalize this full consideration of all users' needs and would develop a new planning and design manual for Portland's streets.

A Multi-modal Quality of Service/Level of Service Framework

Multi-Modal Quality/Level-of-Service Indicators are rating systems that can be used to more equitably evaluate various transportation modes and impacts. Quality/Level of Service can refer to the speed, convenience, comfort and security of transportation facilities and services as experienced by users. Ratings, typically from A (best) to F (worst), are widely used to evaluate problems and potential solutions. Such ratings systems can be used identify problems, establish Performance Measures and targets, evaluate trade-offs between potential solutions, compare locations, and track trends. For instance, when looking at a street's intersection performance, the trade-offs and impacts on the different modes for various possible solutions can be explicitly identified.

Current planning in Portland and most elsewhere tends to evaluate transportation system performance based primarily on motor vehicle traffic speed and delay. There are generally no Q/LOS ratings used for other modes or problems. This tends to favor highway expansion over other types of transportation improvements. A Q/LOS approach can help level the playing field between the modes to help achieve broader strategic livability and sustainability goals (adapted from the VTPI website, www.vtppi.org).

Another element to consider adding to a new planning framework is to revise how LOS for motor vehicles is being analyzed. Numerous communities are moving toward 1) lower LOS acceptable targets (such as LOS E (and in some cases LOS F) being 'acceptable' rather than the current typical LOS D being the target) or 2) changing the 'design hour' volumes from the highest peak hour to also include the hour before or after the highest peak hour. Either approach can potentially reduce the amount of infrastructure built to handle short, high traffic peak periods of the day. Building to the highest traffic peaks tends to negatively impact biking and walking infrastructure and the quality of the biking and walking environment.

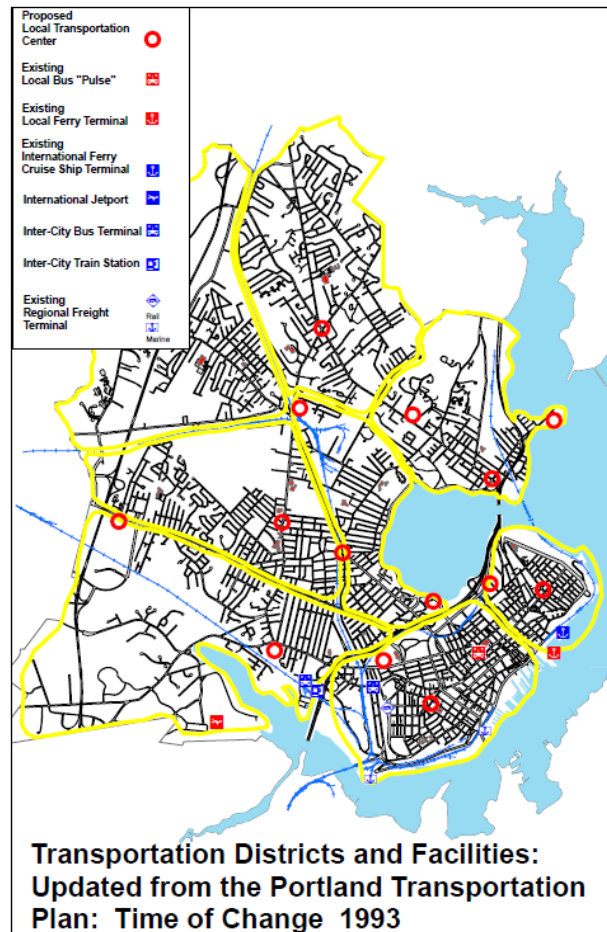
Transportation Districts

A major innovation in the 1993 *Time of Change* Portland Transportation Plan was the recommendation to use the concept of Transportation Districts as a transportation planning framework. A major finding of the Plan is that most of the busier arterial streets serve as barriers

within neighborhoods rather than as connectors of the community. It is recommended that these districts (illustrated at the right) be re-visited for their utility/functionality and be used more effectively to plan for new biking and walking (and transit) infrastructure.

Mode Share Targets

The 1993 Transportation Plan established mode share targets for biking and walking commute trips of 5% and 20%, respectively. Mode share targets are included in the current Transportation Demand Management plans required of certain employers/sites. Data for more extensive use of mode share targets is difficult to come by currently and may take significant effort to expand their use.



III. Pedestrian Network: Policy Context and Goal, Objectives, Strategies, Performance Measures

Potential pedestrian policy emphasis areas

Develop new and revisit existing policies related to pedestrian planning, infrastructure and investment, including:

- pedestrian Quality of Service indicators and targets
- Sidewalk Material Policy for cost-effectiveness and serviceability
- Sidewalk Snow Clearance Policy for effectiveness
- more systematic pedestrian ADA and work zone accessibility and safety program
- arterial and collector street crossings.

Pedestrian Quality of Service

A number of factors can be used to develop Quality of Service indicators for the pedestrian environment that more fully capture the quality of the pedestrian experience. These include factors related to sidewalk segments and intersections.

Sidewalk Segments – sidewalks between intersections

Possible rating elements include:

- Continuity of sidewalk and condition
- Quality and frequency of street crossing opportunities
- ADA accessibility compliance - curb ramps, width, obstruction free
- Streetscape characteristics - esplanades, street trees, lighting, street furniture, etc
- Urban design characteristics - building placement, architecture, parking lot design and orientation, visual interest
- Sidewalk width related to pedestrian congestion.

Intersections – pedestrian crossings at signalized or unsignalized intersections

Possible rating elements include:

- Crossing distance – length of crossing, presence of pedestrian refuge islands and/or curb extensions
- Signalization – concurrent versus exclusive pedestrian phases, pedestrian-activated versus automatic phases, allotted crossing time, countdown timers, overall signal cycle length
- Traffic exposure – traffic volumes, speeds, right turn on red, congestion
- Accessible Pedestrian Signals – MUTCD/ADA compliance, audible signals.

These indicators can be used to establish Quality of Service targets for various types of areas or districts. For instance, ‘Main Streets’ and retail districts (such as the Old Port, the Arts District or Forest Avenue) may have higher pedestrian Quality of Service targets than industrial areas (such as Warren Avenue).

Sidewalk Material Policy

The Sidewalk Material Policy establishes expectations for the materials to be used for new sidewalk construction and rehabilitation of existing sidewalks on specific streets in Portland. In

general, the Peninsula is a brick district, the areas abutting the Peninsula are concrete, and the outlying areas are asphalt sidewalk districts. Main critiques of the current policy include: 1) the relative higher cost to construct and maintain an extensive brick sidewalk network (versus concrete or asphalt sidewalks) and 2) the relative difficulty to maintain passable brick sidewalks in the winter due to snow and ice.

Sidewalk Winter Clearing Policy

Currently, residential and commercial property owners are responsible for maintaining clear and passable sidewalks and curb ramps to crosswalk in the winter in a timely way on sidewalks along their property frontage with certain exceptions. The City provides the initial clearing of sidewalks for a small percentage of sidewalks that are key walking routes including within the downtown and primary school walking routes.

Compliance is monitored on a complaint-based system. Several options exist for revisiting the current Sidewalk Winter Clearing Policy including: 1) retaining the complaint-based process 2) moving to a more pro-active process and 3) expanding the city's responsibilities for clearing and maintaining sidewalks on certain classifications of streets (possibly focusing on priority streets (arterials/collectors) that have more snow loading and traffic exposure for pedestrians should sidewalks and crosswalks not be consistently cleared.

Safe and Accessible Streets/ADA Compliance

Create more systematic and sustained programs and funding to address ADA accessibility issues, work zone pedestrian accessibility and pedestrian safety issues. Federal law such as ADA and the implementing regulations such as the Public Right of Way Accessibility Guidelines (PROWAG) and the Manual on Uniform Traffic Control Devices (MUTCD) specify standards to establish and maintain accessible pedestrian routes along sidewalks (surface quality, slope and cross-slope), at intersections (curb ramps and accessible pedestrian signals) and within construction zones (allowable barriers, signs and detour routes).

Arterial/Collector Street Crossings

The 1993 Transportation Plan, 'A Time of Change', identified the 'barrier effect' that many of the city's arterial and collector streets can create which has the effect of reducing pedestrian safety and accessibility within and between neighborhoods. Enhanced pedestrian crossings can be created by a combination of one or more strategies, including reducing crossing distances, creating pedestrian refuge islands, active traffic speed management through street design, and pedestrian signal systems. Safe street crossings are needed to access bus transit routes which run on many of the city's arterial and collector streets. Crossing distances, traffic volumes, traffic speeds and the type of traffic control at a crossing all have significant impacts on pedestrian safety and comfort.

Pedestrian crossings can be located at controlled intersections (a crossing where there are traffic signals or stop signs) or at uncontrolled locations (a crossing not governed by signals or stop signs). Uncontrolled crossings can be located between corners at intersections or at mid-block locations between intersections. The city's Crosswalk Committee has jurisdiction over the approval and design of pedestrian crossings at uncontrolled locations.

Pedestrian/Walking Goal, Objectives, Strategies and Performance Measures

Pedestrian Network Goal: Establish and maintain a quality pedestrian network and supporting infrastructure and programs that safely serve: pedestrians of all ages and abilities; all neighborhoods and the islands; and, Portland residents, businesses and visitors.

- **Objective:** Expand the quality and continuity of the pedestrian network.
 - **Strategy 1P:** Identify sidewalks in poor condition for rehabilitation.
 - **Performance Measure:** Number of miles of sidewalks.
 - **Strategy 2P:** Identify priority missing gaps in the sidewalk network for construction.
 - **Performance Measure:** Number of miles of sidewalk gaps.
 - **Strategy 3P:** Identify priority missing gaps in the shared use pathway network for construction.
 - **Performance Measure:** Number of miles of pathway gaps.
 - **Strategy 4P:** Identify priority missing gaps in the trail network for construction.
 - **Performance Measure:** Number of miles of trail gaps.

- **Objective:** Expand the accessibility of the pedestrian network.
 - **Strategy 5P:** Develop and implement a Pedestrian ADA Accessibility Action Plan.
 - **Performance Measure:** Develop plan by June 30, 2014.
 - **Performance Measure:** Implementation of Plan.
 - **Strategy 6P:** Revise work zone accessibility ordinance and processes to maintain pedestrian access.
 - **Performance Measure:** Revise by June 30, 2013.
 - **Strategy 7P:** Reduce the barriers that arterials and collector streets can create by enhancing the number and quality of pedestrian crossings.
 - **Performance Measure:** Number of enhanced arterial pedestrian crossings.

- **Objective:** Reduce by half the number of pedestrian-motor vehicle crashes that occur annually.
 - **Strategy 8P:** Develop and implement a Pedestrian Safety Action Plan with an emphasis on Safe Routes to School as identified within School Travel Plans and Arterial/Collector Street Crossings.
 - **Performance Measure:** Develop plan by June 30, 2014.
 - **Performance Measure:** Reduce annual average of pedestrian crashes.
 - **Strategy 9P:** Develop and implement School Travel Plans as part of Safe Routes to School.
 - **Performance Measure:** Development of School Travel Plans/Safe Routes to School recommendations.
 - **Performance Measure:** Implementation of School Travel Plans/Safe Routes to School recommendations.

IV. Bicycling Network: Policy Context and Goal, Objectives, Strategies, Performance Measures

Potential bicycling policy emphasis areas

Develop new and revisit existing policies related to bicycle planning and infrastructure development, including:

- bicycling Quality of Service indicators and targets
- update bicycling related ordinances
- adopt/update bicycle facility design guidelines and standards
- more systematic bicycling accessibility and safety program.

Bicycling Quality of Service

A number of factors can be used to develop Quality of Service indicators for the bicycling environment that more fully capture the quality of the bicycling experience. For on-road bicycle facilities, these include factors related to street segments and intersections.

Street Segments

Possible rating elements include:

- Traffic exposure – the volume, speed and composition of motor vehicle traffic
- On-street parking – the amount, location and turnover rate of on-street vehicle parking (door hazard)
- Bicycle Facility – the type (bike lane, paved shoulder, shared lane, bike boulevard) and continuity of bikeway facility along the segment
- Type of Intended User – the skill level, age and ability of cyclists
- Pavement markings and signs
- Availability of alternative/parallel routing options.

Intersections

Possible rating elements include:

- Traffic exposure – the volume, speed and composition of motor vehicle traffic
- Signalization and detection – the traffic signal cycle length and the quality of detection of bicyclists at intersection
- Bicycle Facility – the type (bike lane, paved shoulder, shared lane, bike boulevard) and continuity of bikeway facility through the intersection (do markings/facilities continue through the intersection?, e.g.)
- Type of Intended User – the skill level, age and ability of cyclists
- Pavement markings and signs
- Refuge islands/medians – their width and storage capacity (number of bikes/bikes with trailers).

Bikeway Facilities

Different on-road bicycle facilities provide distinct levels of accommodation and perceived safety for cyclists. Their application is dependent upon a roadway's characteristics, its context and intended its users.

Five types of on-road bikeway facilities that comprise Portland's designated bikeway network are included on a Bikeway Network Map (attached): Bicycle lanes, Paved shoulders, Shared lanes, Cycle-tracks, and Bicycle Boulevards (called 'Neighborhood Byways' in Portland). Existing and potential Future bikeways are shown. Each facility type has their own set of signs and pavement markings to denote them and is covered within the city's Technical Manual.

Regardless of whether a street is part of the designated bikeway network, Portland has adopted a Complete Streets Policy (December 2012) that states in principle that the entirety of Portland's streets (except where bicycling is expressly prohibited) should provide a safe environment for bicyclists of all abilities. Most of these types of facilities have specific pavement markings and signs and design guidelines or standards for implementation.

A large number of variables must be considered and balanced when selecting an on-road bicycle facility for a particular street. These variables include:

- existing road pavement width (and the potential/opportunities for widening)
- number of travel lanes, their width and their configuration
- traffic volumes – existing and future
- traffic speeds – posted speed limit and actual traffic speed
- composition of the traffic (such as the volume of trucks, buses and RVs)
- the skill level of likely cyclists using the facility
- the presence of on-street parking and its turnover rate
- the continuity of bikeway facility-type that can be achieved (frequent transitions between facility types within short distances should be avoided)
- surrounding land use context
- types of activity centers/destinations connected.

Bicycle lanes are designated bikeways that have stenciled bicycle symbol pavement markings and often have accompanying roadside signs. Bicycle lanes are designated for exclusive or preferential use by bicycles. They may be located on streets with or without on-street parking. On streets with parking, the lanes are placed between the travel lane and the parking. In Portland, the arterial and collector streets are candidates for bicycle lanes. These are the streets typically with the highest traffic volumes and even with bicycle lanes are most comfortable for cyclists riding with heavier traffic.

Paved shoulders are located to the right of the outside travel lane and delineated by a white pavement stripe. They are not designated specifically for use by bicycles but are available for bicycle use and provide room for separation from motor vehicle traffic. Paved shoulders are located on roads with and without curbing. They are distinct from on-street parking lanes.

Shared Lanes are roadway travel lanes that are shared by motorists and bicyclists. Shared Lanes, as a bicycle facility, are often used where the roadway is not wide enough to provide another facility such as a bike lane. Shared Lane pavement markings, also called Sharrows, may be appropriate if the Shared Lane is part of a designated bicycle network. 'Share the Road' signs or more recently, 'Bikes May Use Full Lane' signs, are often placed along roads where an on-road

bicycle facility may transition from a bicycle lane or paved shoulder to shared lane facility due to reduced effective cycling lane width.

Shared lanes may be of two types:

- *standard travel lanes* 10' to 13' wide that require motorists to change lanes or cross the center line to safely pass cyclists with the required 3' of clearance
- *wide curb lanes* that have additional width (14' to 16' wide) and allow motorists to potentially overtake and pass cyclists without changing lanes (depending upon cyclist positioning within the travel lane and other roadway conditions).

The Shared Lane Markings are placed differently depending upon whether the lane is a narrow or wide curb lane and with or without the presence of on-street parking. The markings are intended to raise the visibility of bicyclists on roadways and provide lateral positioning guidance to cyclists as well.

Shared Use Pathways are facilities physically separated from the roadway and are intended for multiple simultaneous types of path users including bicyclists and pedestrians. They have a firm, compacted surface (paved, stone dust, etc) that serves road bicycles well. Depending upon the type of surface, roller bladers and equestrian users may also use the path.

Neighborhood Byways (commonly known as Bicycle Boulevards in other communities) are designated local streets that form a network of quality biking and walking connections that cater to cyclists and pedestrians of all ages and abilities, with special attention to making streets safer and more comfortable for children to use to and from schools. The streets are selected as Byways to allow travel off the busier arterial and collector streets provide connections to and between residential areas, schools, neighborhood business centers, parks, trails and open spaces and transportation centers. Byway treatments include Bicycle Boulevard pavement markings, wayfinding and destination signs, traffic calming measures, sidewalk and crosswalk improvements and streetscaping, such as street trees.

Bicycling Goal, Objectives, Strategies and Performance Measures

Bicycling Network Goal: Establish and maintain a quality bikeway network and supporting infrastructure and programs that safely serve: cyclists of all ages and abilities; all neighborhoods, the islands and adjoining communities; and, Portland residents, businesses and visitors.

- **Objective:** Expand the amount and quality of the network of bike lanes, paved shoulders and shared lanes on the city's arterial and collector streets.
 - **Strategy 1B:** Re-purpose streets with surplus traffic capacity, pavement width and/or under-utilized on-street parking to create bicycle lanes, paved shoulders or wide curb lane shared lanes, where appropriate. Care must be taken to not create traffic bottlenecks that divert traffic from major streets into neighborhoods or to not negatively impact livability residential areas.
 - **Performance Measure:** Number of Miles of Bicycle Lanes & Paved Shoulders.
 - **Strategy 2B:** For bikeway network streets without the width for bicycle lanes (or as an interim measure) create Shared Lanes with Shared Lane Markings (Sharrows).
 - **Performance Measure:** Number of Miles of Shared Lanes.
- **Objective:** Meet the needs of younger and less skilled cyclists with skill-appropriate bicycle facilities.
 - **Strategy 3B:** Create a network of Neighborhood Byways/Bicycle Boulevards on local residential streets that serve trips within (neighborhoods) and between Transportation Districts.
 - **Performance Measure:** Number of Miles of Neighborhood Byways.
 - **Strategy 4B:** Create a network of Shared Use Pathways.
 - **Performance Measure:** Number of Miles of Shared Use Pathways.
- **Objective:** Reduce by half the average number of annual bicycle crashes (over three year period).
 - **Strategy 5B:** Develop and implement a Bicycling Safety Action Plan.
 - **Performance Measure:** Development and Implementation of a Bicycle Safety Action Plan.
 - **Performance Measure:** Reduction in the Annual Bicycle Crashes.
- **Objective:** Increase Bicycle Parking – Public.
 - **Strategy 6B:** Establish and use funding mechanisms, including the Sustainable Transportation Fund, to create more short term bicycle parking including bike racks and bicycle corrals within the public right of way, at transportation centers.
 - **Performance Measure:** Short-term Bicycle Parking Capacity (Public).
 - **Strategy 7B:** Create long term parking including bicycle lockers at transit centers, including the Casco Baylines Ferry Terminal, the METRO Pulse, and the Portland Transportation Center possibly to include Bike Stations (attended bicycle parking facilities).
 - **Performance Measure:** Long-term Bicycle Parking Capacity (Public).

- **Objective:** Increase Bicycle Parking – Private.
 - **Strategy 8B:** Continue to include bicycle parking as part of overall parking requirements for private development – some may be on private property, some may be within the public right-of-way.
 - **Performance Measure:** Amount of Bicycle Parking Capacity (Private).
- **Objective:** Better maintenance of streets for bicycling.
 - **Strategy 9B:** Institutionalize processes for more timely street sweeping, pavement patching, pavement markings, snow removal, signs and signalization.
 - **Performance Measure:** Bicycle Facility Maintenance.
- **Objective:** Increase availability of bicycles for short trips and for visitors.
 - **Strategy 10B:** Conduct Bike Sharing feasibility study.
 - **Performance Measure:** Bike Sharing Feasibility Study Performed.
- **Objective:** Address key barriers to increased bicycle network connectivity (example: Rte 295 exits and bridges).
 - **Strategy 11B:** Identify key barriers and design improved connectivity.
 - **Performance Measure:** Develop and Implement Barrier Report.

V. Education and Enforcement

Education and Enforcement Goal: Develop and deliver effective education and enforcement programs to reach pedestrians and bicyclists of all ages and abilities and motorists and law enforcement officers.

- **Objective:** Increase awareness of best/safe practices among bicyclists and pedestrians, as well as motorists and law enforcement.
 - **Strategy 1EE:** Promote regional cycling education classes by third parties through sponsorship, publicity, and use of city venues including the League of American Cyclists, the Bicycle Coalition of Maine, the Safe Routes to School program and Cycling Saavy.
 - **Performance Measure:** Increase number of education classes and students year over year.
 - **Strategy 2EE:** Increase amount and frequency of age-appropriate bicycling and pedestrian safety/education classes at elementary and middle schools.
 - **Performance Measure:** Amount of Education Programs Delivered.
 - **Strategy 3EE:** Adopt a manual of best recommended practices for city bicyclists and create promotional and/or distribution system for it.
 - **Performance Measure:** Adopt manual, arrange printing and distribution program, track numbers distributed.
 - **Strategy 4EE:** Increase law enforcement knowledge of bicycle law by instituting officer training in bicycle-specific law and best traffic practices (lane position, etc.).
 - **Performance Measure:** Amount of training for new officers within their first year, refresher every 5 years.

- **Strategy 5EE:** Institute law enforcement priorities and system for cyclist adherence to operational road rules, especially proper riding direction and use of lights at night, through either negative or positive reinforcement (i.e., ticket violations or reward adherence).
 - **Performance Measure:** Decrease in observed violations over time.
 - **Performance Measure:** Increase number of positive recognition "citations".
- **Strategy 6EE:** Integrate enforcement and education programs such that fines for violations by cyclists, and bicycle-related violations by motorists, may be waived or reduced through completion of a sanctioned cycling education program, such as those promoted by Strategy 1 above.
 - **Performance Measure:** Institute program and track use.
- **Strategy 7EE:** Partner with third parties (such as GoMaine and Bicycle Coalition of Maine and media partners) to create radio and television Public Service Announcements to increase motorist awareness of cyclist and pedestrian presence, expected behavior, and road use rights.
 - **Performance Measure:** Number of PSA's under development and running concurrently at any given time.

VI. Promotion and Encouragement

Promotion and Encouragement Goal: Create and implement effective promotion and encouragement programs to increase the enjoyment of and amount of walking and bicycling in Portland by pedestrians and cyclists of all ages and abilities and for trips of all purposes.

- **Objective:** Increase the amount of commuting by bicycling and walking to meet established mode share targets and to contribute to broader city sustainability, public health and livability goals.
 - **Strategy 1PE:** Implement promotional commute programs such as Bike to Work Day, Commute Another Way Week, and Transportation Demand Management Programs (TDM2GO.org).
 - **Performance Measure:** Measures of Work Commute Mode Share.
 - **Strategy 2PE:** Produce and promote an up to date bicycle network map.
 - **Performance Measure:** Map and website produced.
 - **Performance Measure:** Numbers of maps distributed and hits on website.
- **Objective:** Increase and measure the amount of bicycling and walking to contribute to city sustainability public health and livability goals.
 - **Strategy 3PE:** Implement promotional programs such as Cyclovias (closing of streets such as Congress Street and Baxter Boulevard to motor vehicle traffic for walking and biking and celebrations), Gateway signage citing Portland as a Bicycle Friendly Community, cycling events (races, etc), signage/wayfinding, and public information (website, promotional materials).
 - **Performance Measure:** Measured increases in bicycling and walking at cycling events.
 - **Strategy 4PE:** Develop a systematic and regular program of bicycle and pedestrian counts to accurately measure and track changes in levels of bicycling and walking.
 - **Performance Measure:** Change in amounts of walking and biking over time.
- **Objective:** Increase the safety of and the amount of walking and bicycling to school by children and staff.
 - **Strategy 5PE:** Implement the program elements of School Travel Plans such as Walking School Buses and others.
 - **Performance Measure:** Measured changes in the amounts of bicycling and walking to school.

VII. Implementation and Evaluation

Over time, progress on implementing the policies and programs is to be measured and reported upon.

- **Emphasis on Outcome Performance Measures** including systematic methods to perform counts of bicycling and walking throughout the city.
- **Bi-annual Reporting** on Implementation via the Performance Measures.

LEGEND

- Existing**
- Bicycle Lane
 - Shared Lane, With SLM
 - Shared Lane
 - Paved Shoulder
 - Neighborhood Byway
 - Shared Use Pathway
- Planned**
- On Road Bikeway
 - Neighborhood Byway
 - Shared Use Pathway or Rail with Trail

Notes:
Locations identified as "Planned Shared Use Pathway or Rail with Trail" are conceptual in nature only and will require significant additional public outreach and planning to determine their feasibility.

Much of the Planned Neighborhood Byway network may require additional off-street connectors to make them fully functional and are not shown.

SLM-Shared Lane Marking, or Sharrow, a bikeway pavement symbol denoting travel lanes to be shared by a bicyclist and motor vehicles.

• Neighborhood Byways are local residential streets prioritized for bicycling and walking while still permitting regular motor vehicle traffic.

* The Pedestrian Network shown is comprised only of the Neighborhood Byways and Shared Use Pathways. Sidewalks are not shown

Bikeway & Pedestrian Network City of Portland, Maine

Final

Adopted December 17, 2012



City of Portland, Maine Department of Public Services

Data Sources: PACTS, Public Services, & Maine Office of GIS

