Oregon Greenhouse Gas Reduction Toolkit:

Strategy Report

OREGON SUSTAINABLE TRANSPORTATION INITIATIVE

Source: www.pedbikeimages.org / Heather Bowden

Bicycle Facilities

This report describes the general types of transportation and parking facilities for people on bicycles.

What is it?

Bicycle facilities come in many shapes and sizes, and serve many purposes. Providing bicycle facilities for riders with varied needs and comfort levels is important to ensuring that the transportation network appeals to a broad spectrum of the public. A dense network of lower-stress bicycle routes will appeal to a wider audience and more effectively promote active lifestyles and reduced reliance on the automobile. Low-stress bikeways are characterized by low traffic volumes and low speeds, or if located on a busier arterial, by greater physical separation between the bicycle and motorized traffic. Detailed descriptions of bicycle facilities can be found in ODOT's Bicycle and Pedestrian Design Guide.[1] Facilities fall into these general categories:

- **Shared Roadways** are streets where bicycles are mixed with other traffic. They are usually narrow, so a motorist must cross into the adjacent travel lane to pass a cyclist. Shared roadways are common on neighborhood residential streets, rural roads, and low volume highways. Street markings known as **"Sharrows"** may indicate the proper lane position for bicyclists, alert motorists to the presence of bicyclists on the roadway, and assist with wayfinding.
- **Bike Lanes** are designated portions of the roadway for bicycle use, appropriate on collector and arterial streets. Bike lanes are marked to call attention to their preferential use by bicyclists.
- **Cycle Tracks** are segregated bikeways that are physically separated from motor vehicle traffic. A common design places bicycle traffic to the right of vehicle parking and to the left of the sidewalk.
- **Bicycle Boulevards** operate as a through street for bicyclists while maintaining local access for automobiles. Traffic calming devices control speeds and discourage vehicle through trips, giving priority to bicycles.
- **Shoulder Bikeways** provide suitable area for bicycling on a paved shoulder. Most bicycle travel on the rural state highway system and on many country roads is accommodated on shoulder bikeways.
- **Shared-Use Paths** are separated from motor vehicle traffic by an open space or barrier. They are typically used by pedestrians, joggers, skaters, and bicyclists.
- **Intersection Treatments**, such as bike boxes or bike signals, manage traffic at intersections and are intended to increase safety and comfort for bicyclists.

In addition to roadway facilities, amenities for cyclists can impact ridership.

- **Bicycle Parking** is an important component of a complete bicycle network, and are typically regulated in zoning codes. Minimum bicycle parking can be tied to dwelling units or square footage, with an option to pay into district bicycle parking or converting automobile parking into bicycle parking.[2] The State of Oregon provides a model development code that includes detailed recommended bicycle parking requirements.[3]
- **Showers and changing areas** to accommodate bicycle commuters are increasingly common in commercial developments.

1 *ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/Appendix_N_BikePedDesignGuide_Web.pdf*
2 *See the Oregon Model Development Code http://www.oregon.gov/LCD/TGM/pages/modelcode.aspx*
3 *http://www.oregon.gov/LCD/TGM/docs/modelCode05/pdf/art3.pdf*

How well does it work?

At the city level, higher levels of bicycle infrastructure are strongly associated with higher overall levels of bicycling, especially bicycling to work, school, and shopping. However, it is less clear what type of infrastructure is most effective at increasing bicycling for daily travel, as the most compelling evidence comes from communities that have implemented a fully integrated package of strategies to increase bicycling. This suggests that a comprehensive approach produces a much greater impact on bicycling than individual measures that are not coordinated.[4]

Combined pedestrian and bicycle infrastructure and policies have been estimated to result in a .2 to .5 percent reduction in baseline greenhouse gas (GHG) emissions.[5]

How can it benefit my community?

In addition to reducing GHG emissions, improving bicycle facilities can:

- Encourage physical activity and promote a healthy lifestyle
- Increase safety for bicyclists and pedestrians
- Increase access to destinations for all modes
- Increase community involvement and activity in developing policy and promoting projects
- Increase in transit use when stations have good bicycle access

What does it cost?

Bicycle facilities vary in cost, from inexpensive sharrow markers ($230 each), to bike lanes ($5,000 to $50,000 per mile), to costly infrastructure such as bridges, undercrossings, and separated paths.

Bicycle racks are typically $150 to $300 to purchase and install, and bicycle lockers are $1,000 to $4,000.[6] A "Bike Corral," a row of bike parking spaces that often replaces a former automobile parking space, costs $3,000 for materials and labor.[7]

Funding for bicycle improvements can come from federal and state sources, including community development block grants, ODOT grants, and Oregon's Transportation and Growth Management (TGM) program.

Where has it been used?

- The **City of Eugene, OR** created a Pedestrian and Bicycle Master Plan in 2012, as part of the city's Transportation System Plan, calling for over 100 miles of new bikeways in the next 20 years.
- The **Lincoln City Walking and Biking Plan**, adopted in 2012, looks at ways the City can support pedestrian and bicycle transportation, with an emphasis on increasing connectivity and addressing gaps.
- The **City of Milwaukie, OR** requires that bicycle parking spaces comprise at least 10 percent of the required automobile parking in new commercial and multifamily development.[8]

Where can I learn more?

- Bicyclinginfo.org has information about bicycle facility planning and implementation.
- ODOT Bicycle and Pedestrian Design Guide for facilities: http://www.oregon.gov/ODOT/HWY/BIKEPED/pages/planproc.aspx
- Oregon Model Development Code http://www.oregon.gov/LCD/TGM/docs/modelCode05/pdf/art3.pdf
- How to Increase Bicycling for Daily Travel – Active Living Research: http://www.activelivingresearch.org/files/ALR_Brief_DailyBikeTravel_May2013.pdf
- The Hillsboro Intermodal Transit Facility contains a BikeStaton. http://en.wikipedia.org/wiki/Hillsboro_Intermodal_Transit_Facility

The Toolkit is a component of the Oregon Sustainable Transportation Initiative (OSTI), which was formed to address the requirements of Senate Bill 1059 (2010).

For more information, please visit:

http://cms.oregon.gov/ODOT/TD/TP/pages/ ghgtoolkit.aspx

Oregon Department of Transportation

4 *Dill, Jennifer et Al. How to increase bicycling for Daily Travel. Active Living Research: Research Brief May 2013. Web. Accessed 5/30/2013. http://www.activelivingresearch.org/files/ALR_Brief_DailyBikeTravel_May2013.pdf*

5 *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions. Cambridge Systematics, Inc. Urban Land Institute, July 2009..*

6 *http://www.bicyclinginfo.org/engineering/parking.cfm*

7 *http://www.portlandoregon.gov/transportation/article/250076*

8 *Milwaukie Zoning Code: 19.609*