Appendix B

DEFINITIONS & DESIGN GUIDELINES

B. Definitions & Design Guidelines

A. GENERAL PRINCIPLES

Design Guidelines are intended to provide a consistent approach to creating safe, state-of-the-practice bicycle and pedestrian facilities and are based on nationally published guidelines including the 2014 NACTO Urban Bikeway Design Guide, the 2012 AASHTO Guide for Development of Bicycle Facilities, and the 2011 Public Right-of-way Accessibility Guidelines (PROWAG). Additional guidance is available from the Manual on Uniform Traffic Control Devices, FHWA Bicycle and Pedestrian Program, and the City of Whitefish Engineering Standards.

Design Guidelines are intended to allow creative solutions and flexibility for a wide range of bicycle and pedestrian facilities. These guidelines should not be interpreted as strict standards. Engineering judgment and context sensitive design should be used in implementing these guidelines.

B. CLASSIFICATION SYSTEM

While there are no national standards for classifying bicycle and pedestrian facilities, many state and local agencies have adopted a classification system that includes paths, lanes, and routes:

- ***Class I Facilities*** are paved facilities that are physically separated from roadways used by motor vehicles.
- ***Class II Facilities*** are on-street facilities that provide lanes or shoulders reserved for exclusive use of bicycles and/or pedestrians and designated with special signing and pavement markings.
- ***Class III Facilities*** are routes recommended for bicycles and pedestrians where the roadway is shared with motor vehicles and designated with special signing.

DESCRIPTION		CRITERIA
	Bicycle Route Bike Routes are Class III shared roadways with special signing and pavement markings. Bike Routes are appropriate on low-volume, low-speed local streets and rural roadways, and may include traffic calming, traffic diversions, and wayfinding. Signs may include “Bike Route”, "Share the Road", and/or a unique route designation. Pavement Markings typically include shared-lane ("Sharrow") markings.	**Traffic Volume:** Less than 3,000 ADT **Posted Speed:** Less than 25 mph **Surface:** Paved **Width:** Varies **References:** MUTCD
	Shared-Lane Marking Shared-Lane Markings ("Sharrows") are used to indicate a shared lane for bicycles and automobiles. Sharrows raise awareness of bicycle traffic on the street and encourage safe passing by motorists. Sharrows can be used to identify Bike Routes and Bike Boulevards, fill gaps in an otherwise continuous bike path or bike lane network, or to provide directional and wayfinding guidance. Sharrows should not be considered a substitute for bike lanes, cycle tracks, or other separation treatments where these types of facilities are warranted or space permits.	**Traffic Volume:** Less than 3,000 ADT or higher volume streets with very low travel speeds (12-15 mph) **Posted Speed:** Less than 25 mph **Surface:** Paved **Width:** Varies **References:** NACTO, MUTCD
	Bicycle Boulevard (Neighborhood Greenway) Bicycle Boulevards or "Neighborhood Greenways" are low-volume, low-speed streets designed to give priority to non-motorized users and discourage through traffic by motorists. Bicycle Boulevards use signs, pavement markings, traffic calming, and traffic diversions to discourage though trips by motor vehicles and create safe, convenient routes for bicycles and pedestrians.	**Traffic Volume:** Less than 3,000 ADT (less than 1,500 ADT preferred) **Posted Speed:** Less than 25 mph (less than 20 mph preferred) **Surface:** Paved **Width:** Varies **References:** NACTO

DESCRIPTION	CRITERIA

Bicycle Lane

Bike Lanes are Class II facilities on the outside edge of roadways reserved for exclusive use of bicycles and designated with special signing and pavement markings. Bike Lanes are appropriate on higher volume collector and arterial streets where cyclists cannot comfortably share the lane with motor vehicles. May also include Buffered Bike Lanes, Contra-Flow Bike Lanes, and Left-Side Bike Lanes.

Traffic Volume:
Over 3,000 ADT

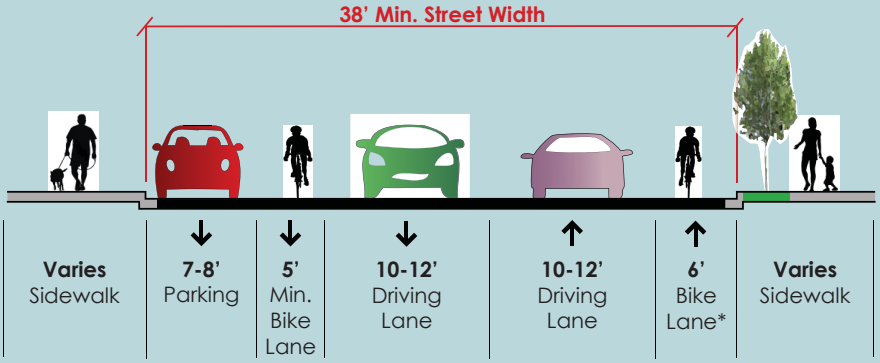
Posted Speed: Over 25 mph

Surface: Paved

Width:
4 feet (minimum)
6 feet (desirable)

References:
NACTO, AASHTO

* Desirable bike lane width adjacent to a street edge or longitudinal joint is 4', with a minimum width of 3'.



Advisory Bicycle Lane

Where the width of a street prevents the installation of conventional bike lanes, dashed "advisory" bike lanes can be an alternative to the shared-lane marking. With advisory bike lanes, the area designated for bicycles to operate is shared with cars when passing.

This treatment is currently experimental.

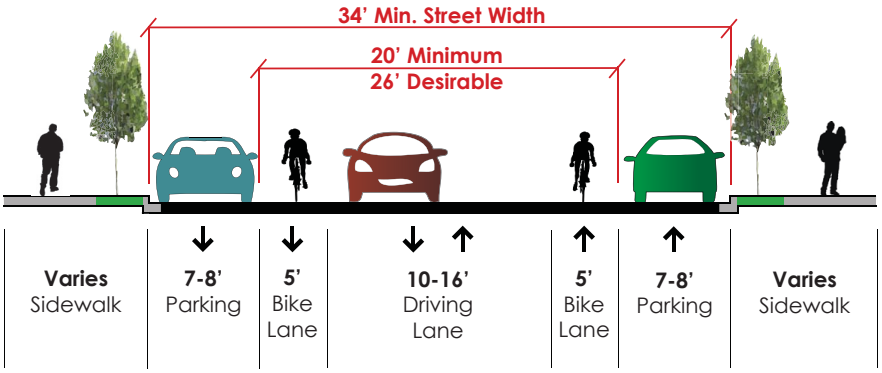
Traffic Volume:
Less than 6,000 ADT

Posted Speed:
Less than 25 mph

Surface: Paved

Width:
20' (minimum)
26' (desirable)
incl. bike and vehicle lanes

References: FHWA



DESCRIPTION	CRITERIA

Cycle Track

A Cycle Track is a Class I bike facility that is physically separated from motor vehicle traffic and distinct from the sidewalk. Cycle Tracks are appropriate on high-volume, high-speed streets or where a higher degree of comfort and separation from traffic is desirable. Cycle Tracks are intended to be primarily or exclusively used by bicycles and may include One-Way Protected Cycle Tracks, Raised Cycle Tracks, and Two-Way Cycle Tracks.

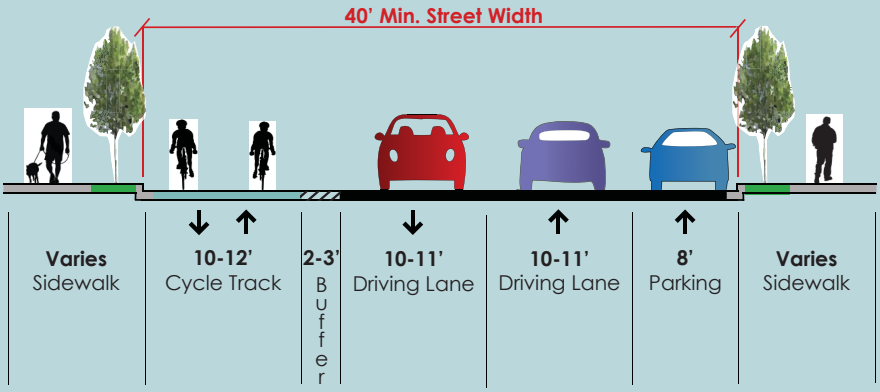
Traffic Volume:
Over 3,000 ADT

Posted Speed: Over 25 mph

Surface: Paved

Width:
5 feet (minimum one-way)
8 feet (minimum two-way)
12 feet (desirable two-way)

References:
NACTO, AASHTO



Shared Use Path

A shared use path is a multi-use trail or other path, physically separated from motorized traffic by an open space or barrier, either within a street right-of-way or within an independent right-of-way. Shared Use Paths are typically ADA accessible facilities.

Traffic Volume: N/A

Posted Speed: N/A

Surface: Paved

Width:
8 feet (minimum)
10 feet (desirable)

References: AASHTO

DESCRIPTION	CRITERIA

Urban Trail

Urban Trails, for the purposes of this Plan, are unpaved trails or paths that provide connections between existing bicycle and pedestrian faciliites. Urban Trails may be interim improvements until Shared Use Paths can be constructed or permanent installations intended to provide a more natural setting. Urban Trails should be ADA accessible, where feasible, however this should not be a mandatory requirement in steep or constrained areas.

Traffic Volume: N/A

Posted Speed: N/A

Surface: Gravel

Width:
2 feet (minimum)
4 feet (desirable)

Sidewalk

Sidewalks are the portion of a street right-of-way, beyond the curb or edge of roadway, which is intended primarily for use by pedestrians. Sidewalks should include a landscaped boulevard between the curb and sidewalk to provide snow storage and a buffer from traffic. Where a boulevard is not feasible, the sidewalk should be at least 7 feet wide. As a general rule, ADA accessible sidewalks should be required on both sides of the street. In less developed, outlying areas, or areas with constrained right-of-way or topography, it may be appropriate to consider a shared use path on one side of the street.

Traffic Volume: N/A

Posted Speed: N/A

Surface: Concrete

Width:
5 feet (minimum blvd)
7 feet (minimum attached)

References:
City Engineering Standards

Marked Crosswalk

Marked Crosswalks are designated locations, marked with special signing and pavement markings, for bicycles and pedestrians to cross a street. Crosswalks are intended to concentrate bikes and pedestrians where they can be seen by motorists and safely cross the roadway. Marked Crosswalks are not always necessary on low-volume, low-speed streets, but should be considered along routes to schools, parks, transit stops, and major public buildings that generate a high volume of pedestrians, regardless of traffic conditions. Crosswalks can include Rapid Flash Beacons, Raised Crossings, Median Refuge Crossings, Mid-Block Crossings, and Signalized Crossings.

Traffic Volume:
Over 3,000 ADT

Posted Speed: Over 20 mph

Surface: Paved

Width:
8 feet (typical)
12-16 feet (high ped. areas)

References: NACTO, MUTCD

DESCRIPTION		CRITERIA
	Wayfinding Bicycle and Pedestrian Wayfinding is a system of signing and/or pavement markings that guide bicyclists/pedestrians to their destinations along preferred routes. Signs are typically placed at decision points along routes and other key locations leading to and along routes. Wayfinding signs can be used to delineate Bike Routes, Safe Routes to School, and named paths or trails, and often include distances and travel times.	**References:** NACTO, MUTCD
	Bicycle Parking Bike Parking is a vital part of a bike network and consists of designated locations for short-term and long-term bike storage, including Bike Racks, Bike Corrals, Bike Lockers, and Sheltered Secure Enclosures. Bike Parking should be conveniently located and easy to use, typically within 50 feet of building entrances and visible to the public. Bike Corrals are located on-street and can sometimes make use of areas that are unsuitable for auto parking. Bike Racks should be designed to support the bike upright without putting stress on the wheels and allow locking of the frame and at least one wheel with a U-lock.	**References:** Essentials of Bike Parking (APBP)
	Bicycle Wheel Channel Bike Wheel Channels are installed along the edge of a stairway to facilitate walking a bicycle up or down the stairs. Wheel Channels should be provided at key locations where a Shared Use Path connection is not feasible.	**References:** AASHTO

C. ACRONYMS

ADA – American's with Disabilities Act

ADT – Average Daily Traffic

AASHTO – American Association of State Highway and Transportation Officials

FHWA – Federal Highway Administration

MUTCD – Manual on Uniform Traffic Control Devices

NACTO – National Association of City Transportation Officials

PROWAG – Public Right-of-way Accessibility Guidelines

D. REFERENCES

Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials, 2012, Fourth Addition, https://bookstore.transportation.org/item_details.aspx?ID=1943

Urban Street Design Guide, National Association of City Transportation Officials, http://nacto.org/publication/urban-street-design-guide/

Urban Bikeway Design Guide, National Association of City Transportation Officials, http://nacto.org/publication/urban-bikeway-design-guide/

Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way, United States Access Board, 2011, https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines

Manual on Uniform Traffic Control Devices (MUTCD), 2012, http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm

City of Whitefish Engineering Standards, 2009, http://www.cityofwhitefish.org /large-files/pdf/PublicWorks/Engineering%20Standards.pdf

Essentials of Bike Parking, Association of Pedestrian and Bicycle Professionals (APBP), 2015, http://c.ymcdn.com/sites/www.apbp.org/resource/resmgr/Bicycle_Parking/EssentialsofBikeParking_FINA.pdf

Federal Highway Administration (FHWA) Bicycle and Pedestrian Program, http://www.fhwa.dot.gov/environment/bicycle_pedestrian/