

## Chapter 7 - BICYCLE PLAN

Commuting to work is one of many reasons people ride bicycles in Mountlake Terrace. Residents and visitors use bicycles for a myriad of purposes – shopping at a local business, getting to school, accessing bus stops or the transit center, exercising, and travelling to a friend’s house, a park or any other social event. Cycling in Mountlake Terrace is not only an efficient, environmentally-friendly utilitarian mode of transport, but it is also a source of health and enjoyment. As more people realize the benefits of this mode, the need for convenient, safe and comprehensive bicycle infrastructure becomes a critical and important facet to any community. A central focus of this Bicycle Plan is how to improve the existing bicycle facility network and create a viable strategy for it to complement many of the City’s health and wellness goals.

The Bicycle Plan will also examine ways to improve the level of comfort to people biking through the City with the use of wayfinding signs and maps, as well as providing secure places to park bicycles.

Four key goals of the Bicycle Plan include the following:

### 8] **Safety**

People walking and bicycling encounter unique safety concerns compared to other road users. Roadways are typically designed for motor vehicles travelling at high that make it difficult and uncomfortable for bicyclists to navigate. In addition, cyclists do not have the protection offered by a motor vehicle, making them more likely to be seriously injured in the event of a collision.

### 9] **Mobility**

In order for bicycling to be an attractive mode choice for residents and visitors, to choose, transportation networks must offer comfortable and convenient routes to meaningful destinations. Bicycling is an affordable, accessible travel mode choice for many people; therefore, the Bicycle Plan seeks to improve mobility for all residents and visitors to Mountlake Terrace in order to make it a viable mode choice.

### 10] **Livability**

Creating inviting public spaces that encourage bicycling leads to a more vibrant community and increased business activity along retail corridors. Providing opportunities for residents to meet one another by cycling and then to travel together to their final destination can promote social cohesion and increase Mountlake Terrace’s quality of life for everyone.

### 11] **Health**

Where we live, learn, work, and play—and how we get there—affects our health. Designing cities and transportation systems that allow residents and visitors to reach their destinations without relying on vehicles can positively impact health and quality of life. Bicycling is an easy ways to increase daily physical activity and improve health of its residents. Reducing driving also creates less greenhouse gas emissions and pollutants that contribute to environmental degradation. Walking and bicycling, together, will encourage and reinforce healthy transportation decisions.

## **TYPES OF BICYCLE FACILITIES**

There are four types of bicycle facilities routinely identified in the bicycle planning process. Bike paths (Class I), bike lanes (Class II), bike routes (Class III) and cycle tracks (Class IV).

### **BIKE PATHS (CLASS I)**

Also termed shared-use or multi-use paths, are paved right-of-way for exclusive use by bicyclists, pedestrians and those using non-motorized modes of travel. They are physically separated from vehicular traffic and can be constructed in roadway right-of-way or exclusive right-of-way. Bike paths also provide critical connections in the City where roadways are absent or as part of a more regional facility that crosses jurisdiction lines.

Existing and planned Class 1 bike paths include the Interurban Trail, Lakeview Trail and the ped-only Veteran's Park Trail. These facilities were also identified and discussed in the previous Pedestrian Plan chapter.

### **BIKE LANES (CLASS II)**

These facilities are defined by pavement striping and signage used to allocate a portion of a roadway for exclusive or preferential bicycle travel. Bike lanes are one-way facilities on either side of a roadway. Whenever possible, bike lanes should be enhanced with treatments that improve safety and connectivity by addressing site-specific issues, such as additional warning or wayfinding signage.

Bicycle lanes are the most common and used bicycle facilities used throughout the world.

### **BIKE ROUTES (CLASS III)**

Class III bike routes provide shared use with motor vehicle traffic within the same travel lane. Designated by signs and/or pavement markings, bike routes provide continuity to other bike facilities or designate preferred routes through corridors with high cyclist demand but do not have the needed space to provide Class II bike lanes. Whenever possible, bike routes should be enhanced with treatments that improve safety and connectivity, such as the use of "Sharrows" or shared lane markings to indicate that the road is a shared-use facility.

### **CYCLE TRACKS (CLASS IV)**

These facilities, also referred to as protected bikeways, are exclusive bike facilities that combine the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk. They are typically bi-directional on one side of the roadway. The separation maybe in the form of posts, a cross-hatched striped medians and/or parking lanes.

## **BICYCLE STORAGE FACILITIES**

Bicycle racks and lockers accommodate cyclists when using this travel mode. These facilities provide a convenient place for bikes to be stored and encourage multi-modal trips by making them more practical for the traveler. For instance, when a cyclist needs to access a bus stop or the transit center when making a trip and the distance from the origin to the transit hub exceeds the threshold for a comfortable walking distance, adequate bike parking and storage should be provided.

## EXISTING BICYCLE NETWORK

Mountlake Terrace’s existing bicycle network consists mostly of Class I and Class II facilities. However, the City is planning to incorporate more Class III facilities and introduce Class IV facilities where appropriate.

Table 7.1 summarizes these facilities.

**TABLE 7-1 – EXISTING CLASS I AND CLASS II BICYCLE FACILITIES**

Street	FROM	To	Type of Facility
212 <sup>th</sup> St. SW	West City Limits	44 <sup>th</sup> Ave. W	Class II
228 <sup>th</sup> St. SW	44 <sup>th</sup> Ave. W/Cedar Way	East City Limits	Class II
230 <sup>th</sup> St. SW	East of I-5	56 <sup>th</sup> Ave. W	Class II
Lakeview Trail	Interurban Trail	I-5	Class I
236 <sup>th</sup> St. SW	I-5	Cedar Way	Class II
244 <sup>th</sup> St. SW	Van Ry Blvd.	56 <sup>th</sup> Ave. W	Class II
Interurban Trail	North City Limits	South City Limits	Class I
52 <sup>nd</sup> Ave. W	212 <sup>th</sup> St. SW	220 <sup>th</sup> St. SW	Class II
44 <sup>th</sup> Ave. W/Cedar Way	228 <sup>th</sup> St. SW	244 <sup>th</sup> St. SW	Class II
Van Ry Blvd. <sup>1</sup>	236 <sup>th</sup> St. SW	244 <sup>th</sup> St. SW	Class II
66 <sup>th</sup> Ave. W <sup>1</sup>	220 <sup>th</sup> St. SW	North City Limits	Class II or Class IV

<sup>1</sup> Under Construction

Bicycle storage facilities currently include bicycle racks at the Transit Center.

Figure 7.1 illustrates the existing and proposed Class I and Class II bicycle facilities identified in the Bicycle Plan.

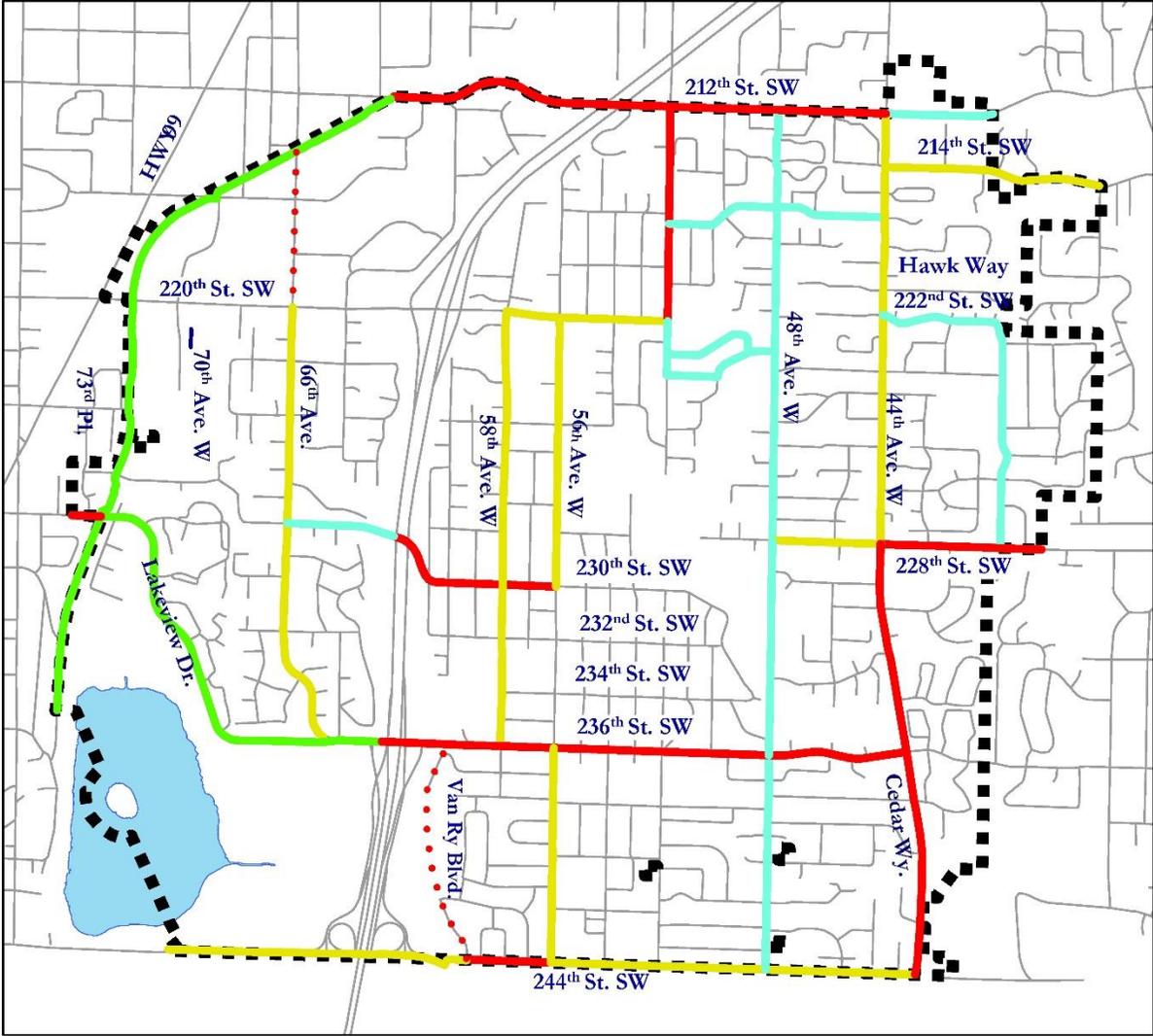


FIGURE 7-1 – EXISTING AND PROPOSED BICYCLE FACILITIES

## EVALUATION OF BICYCLE FACILITIES

### PUBLIC OUTREACH FINDINGS

Respondents to the TMP's online survey ranked bicycle facilities as the least most desired travel mode to be prioritized for infrastructure improvements in the future. However, this is most likely because it is the least used travel mode, and improvements to it become less important to most travelers.

Travelling through intersections with high volumes of vehicular traffic was considered the attributes that is in the poorest condition within the existing pedestrian network. In addition, the highest-ranking improvements desired for long-term pedestrian infrastructure included:

- Improving bicycle safety and
- Providing more bicycle infrastructure.

These findings suggest that public strongly supports improving safety for bicycle mode improvements. While only 22% of all survey respondents acknowledging that they bicycle for at least some of trips they take, the investments that protect cyclists from vehicle interaction such as bicycle detection at intersection and improved Class II bicycle design will be the City's priority for this mode. Collision statistics that show that 3% of all pedestrian/vehicle collisions and 0.8% of all bicycle/vehicle collisions, in Washington State, are fatal support this endeavor.

### CREATING A SUCCESSFUL BICYCLIST-FRIENDLY ENVIRONMENT

As part of its comprehensive transportation strategy, the City promotes the provision of safe bicycling opportunities and the seeking of partnerships to develop or maintain bicycle routes. The City's bicycle network contains facilities intended for bicyclists of varying skill and comfort levels, including trails, bicycle lanes, and low volume local roadways

The progression of improvements that make up the bicycle network today began with the City's first bike lanes striped in 2009. This provided 800 feet of bike lane on the north side of 244th Street SW, from 56th Avenue W to Van Ry Blvd. A bike lane on the south side of the roadway, which is in the City of Shoreline, was also marked. Since then, the City has installed additional bike lane markings or multi-use trail facilities each year. Bike lane markings have been included with pavement overlay and chip seal projects when the project is on a roadway, which is identified in the City's Transportation Master Plan as recommended for bike lanes. By the end of 2014, the City had completed 38,730 feet of bike lane markings.

#### METHOD FOR IDENTIFYING BICYCLE ROUTES

A review of existing and potential bicycle routes was conducted. Potential bicycle routes were identified based on discussion at public Open Houses and with City staff members. Specific bicycle routes were evaluated based on the following criteria.

- 29] **Directness** – higher consideration was given to a route that provides a direct connection to other routes.
- 30] **Street Classification** – higher consideration was given to a route on a street with a higher functional classification.

31] **Generators** – higher consideration was given to a route that provides a direct connection to major destinations.

32] **Transit** – higher consideration was given to a route on a street with transit service, to take advantage of design features provided along transit routes that could provide an advantage to bicyclists, and to facilitate transit use by bicyclists through multi-modal trips.

Bicyclists tend to use the same corridors as automobiles as they have the same destinations. This was also factored into the consideration of recommended bike routes. Often bicycle trips are made between work and home, but they may include trips to school, stores, or recreational facilities. Additionally, bicycle safety may directly dictate a cyclist’s route selection. Bicyclists traveling along residential streets must yield to vehicles at intersections just as other vehicles do. Along arterials where side streets are controlled with stop signs, bicyclists may avoid decelerating at intersections

**TYPICAL BICYCLE LANE TREATMENT ILLUSTRATIONS**

Typical roadway depictions that illustrate bicycle facilities for either a collector or minor arterial streets in Figure 7-2.



NACTO, Urban Street Design Guide

**FIGURE 7-2 – COLLECTOR OR MINOR ARTERIAL ROADWAY WITH BICYCLE LANES**

Recommended Improvements to the Bicycle Infrastructure

**BICYCLE ROUTE FACILITY REQUIREMENTS**

Once bicycle routes were identified each route was evaluated for the appropriate type of facility, the following factors were considered:

- Available space based on the roadway width and use,
- Existing and projected 2025 LOS of the roadway,

- Roadway average daily traffic,
- Speed limit,
- Current bicycle usage,
- Bicycle and pedestrian accidents,
- Topography, and
- Connections to the Interurban Trail or with other communities

Table 7-2 lists the bicycle route and the recommended facility based on this review.

The bicycle plan is dedicated to create bicycle infrastructure that facilitates the movement of bicycles within the City and encourages the use of bicycles as an alternative transportation mode. The City will create the bicycle infrastructure to satisfy the goals listed below.

- Guide the expenditure of capital and operation funds for bicycle improvements.
- Provide direction to designers when improving or widening roadways.
- Provide information to the public on routes intended for bicycle usage.
- Define routes where bicycle safety is given a higher priority.
- Facilitate coordination with adjacent jurisdictions when considering bicycle routes and capital expenditures.

The final goal is important so that regional connectivity may be achieved. The adjacent jurisdictions that have existing and proposed bicycle routes that will be coordinated with the City bicycle network include:

Lake Forest Park – NE 205<sup>th</sup> St. has been designated as a bicycle route.

Shoreline – A planning study to be conducted by the City of Shoreline will identify potential bicycle routes on Ballinger Way and I-5 and recommended funding. A bicycle route also exists on Meridian Avenue N, south from the intersection with NE 205th Street west of the City limits.

Lynnwood – Connections with bicycle routes on Larch Way and on 76<sup>th</sup> St via 212<sup>th</sup> St. SW, bicycle lanes on 52nd Avenue W.

Edmonds – Connections with a bicycle route on 224th St. SW and bicycle routes along 244<sup>th</sup> St. SW and 216<sup>th</sup> St. SW.

TABLE 7-2 – POTENTIAL BICYCLE INFRASTRUCTURE IMPROVEMENTS

BIKEWAY	FACILITY	
	TYPE	COMMENT
244 <sup>th</sup> St. SW west of Ballinger Wy.	Study	Participate in City of Shoreline study to determine facility type
244 <sup>th</sup> St. SW east of Ballinger Wy.	Bicycle Lanes	Assists hill climbing along the corridor: use good cross-town route; shoulders east of 56 <sup>th</sup> Avenue. Some impact to parking along shoulders.
228 <sup>th</sup> St. SW west of 44 <sup>th</sup> Ave. W	Bicycle Lanes	Fairly level; traffic volumes light. Parking would not be impacted.
230 <sup>th</sup> /228 <sup>th</sup> St. SW/226 <sup>th</sup> Pl. SW	Shared Roadway/ Bicycle Lanes	Roadway narrow; bicycle lanes would have significant parking impact; use lane on uphill portions only.
222 <sup>nd</sup> St. SW /221 <sup>st</sup> St. SW	Shared Roadway	One-way roadway with low traffic volumes. No impact on parking.
220 <sup>th</sup> St. SW /39 <sup>th</sup> Ave. W	Shared Roadway	Low traffic volumes and speed limit. No impact on parking
48 <sup>th</sup> Ave. W	Bike Route	Volumes moderate and bike lanes would have substantial impact on parking. Recommend simply designating as a bike route.
52 <sup>nd</sup> Ave. W north of 229 <sup>th</sup> St. SW	SB Bike Lane/ NB Bike Route	Traffic volumes high eliminate parking on west side of street for uphill bike lane
52 <sup>nd</sup> Ave. W south of 220 <sup>th</sup> St. SW	Shared Roadway	Low traffic volumes and speed limit. No impact to parking
56 <sup>th</sup> Ave. W	Bicycle Lanes	Traffic volumes moderate some accidents. No impact to parking under current channelization though bicycles would be required to merge with traffic at some intersections.
58 <sup>th</sup> Ave. W	Shared Roadway	Low traffic volume and speed limit. No impact to parking.

BIKEWAY	FACILITY	
	TYPE	COMMENT
66 <sup>th</sup> Ave. W	Bicycle Lanes	South of 220 <sup>th</sup> St. SW install two-way bikeway with buffer on west side of roadway
220th St. SW east of 58th Ave. W	Bicycle lanes	Traffic volumes high. There is insufficient width to provide lanes with existing channelization. There is no parking along the roadway.

A more detailed matrix showing the criteria points and assumptions used for the cost estimate for future bicycle facility improvement projects is included in **Appendix D**.

The final network of bicycle facilities is shown Figure 7-3.

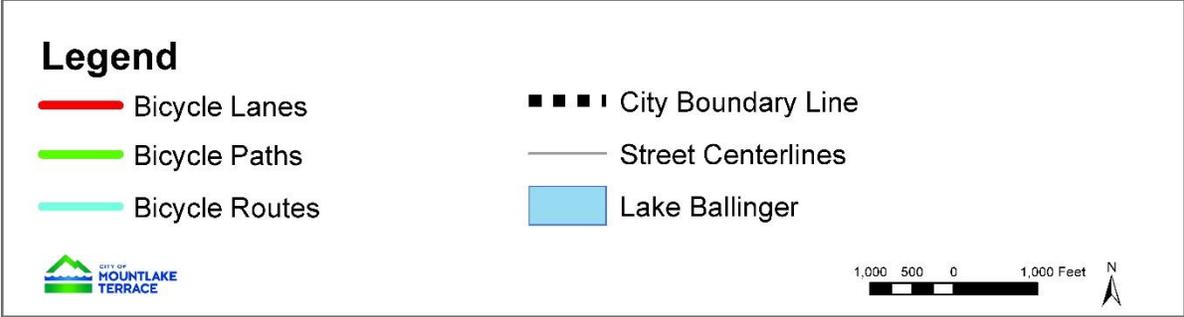
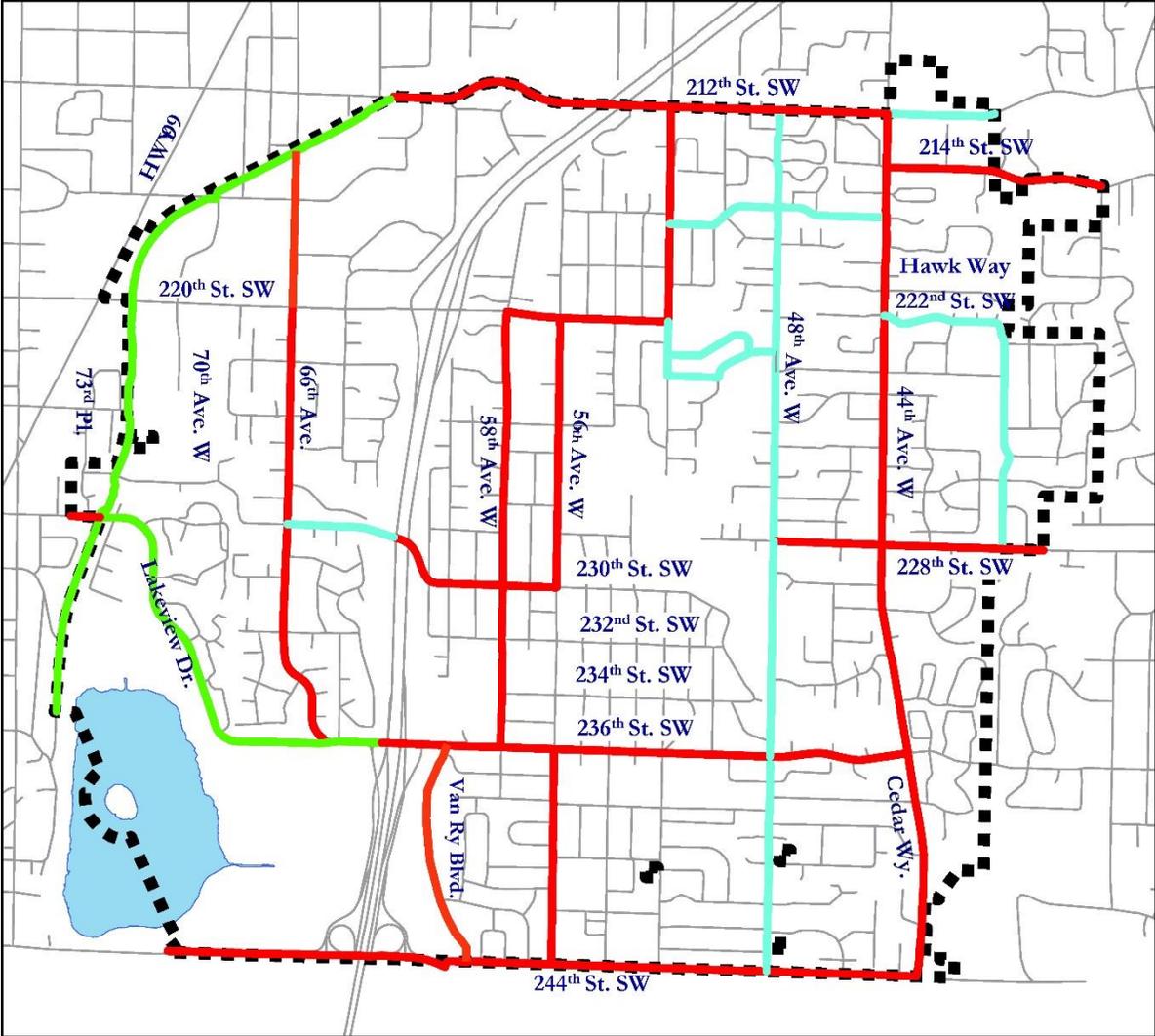


FIGURE 7-3 – FUTURE BICYCLE FACILITIES MAP

**BICYCLE PARKING REQUIREMENTS**

In planning for bicycle parking, both public and private property needs must be considered. It is recommended that \$1,000 per year be budgeted toward bicycle parking improvements on City properties.

The recommended standard for new commercial developments on private property is one bicycle rack for every 12 motor vehicle spaces provided. This would apply to commercial developments that provide a minimum of 12 motor vehicle spaces. Many jurisdictions in the area have a similar recommendation for bicycle parking. In addition, bicycle storage should be required for multi-family developments in the town center. The City already has bicycle storage requirements for multi-family developments in multi-family zones.

The City considers the following criteria when reviewing the suitability of potential new bicycle racks:

- **Convenience** – bicycle parking should be at least as convenient as the provided motor vehicle parking spaces.
- **Anchoring** – bicycle racks should be securely anchored to the ground or building structure.
- **Location** – bicycle parking should be in a visible location as close as practical to the building entrance.
- **Bicycle locks** – racks should accommodate standard U-shaped bicycle locks. These allow the user to lock one or both wheels and the bicycle frame to a stationary object.
- **Spacing** – the space between racks should be at least 2 feet. Figure 4-3 illustrates recommended bicycle rack designs.

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