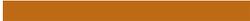


CHAPTER 5
BICYCLE
NETWORK





The bicycle network in Adams County includes both on- and off-street bicycle facilities. Dedicated, connected bicycle facilities offer a comfortable place for those in Adams County to recreate or travel.

Advancing Adams sets forth a vision for bicycling in the County that makes it much more attractive for all users, regardless of their age or ability.

- The benefits of a multimodal transportation system, including a connected bicycle network, include:
- Improved community health outcomes, including physical and mental well being
- Increased equity for affordable and accessible transportation options
- Enhanced quality of life through the expansion of transportation choices
- Expanded safe access to transit facilities for those who cannot or choose not to drive
- Enriched social capital that includes more interactions with and connections to community
- Strengthened environmental sustainability through improved air quality and fewer vehicle miles traveled (VMT)
- Improved economic benefits through spending at local businesses

- Increased safety across all modes and especially for vulnerable roadway users

While there are already 31 miles of bike lanes as well as shared use paths for recreation and transportation, given the size of the County, there are still many gaps in the network and other barriers to bicycling. *Advancing Adams* recognizes these challenges and outlines a future bicycle network that will address them. The bicycle facilities recommended in this plan are based on national best practices including standards and guidelines set by the American Association of State Highway and Transportation Officials (AASHTO) and the National Association of City Transportation Officials (NACTO).

5.1 - KEY ISSUES

Challenges within Adams County's existing bicycle network include connectivity issues, poor wayfinding, and a lack of comfortable bicycle facilities. The current bicycle network is disconnected, with gaps in bicycle facilities. Members of the public and stakeholders identified that despite living close enough to bike to the grocery store, trails, parks, and commuter rail stations, they felt that a lack of direct paths of travel to these destinations prevented them from biking for transportation. Given the investment in trails that do not provide direct connections in the County, missing connections to these existing

amenities is a key barrier to address in the plan.

We heard consistently in public outreach and in focus groups that Adams County residents and visitors generally prefer to bike off-street (on a trail) than on-street (on a bike lane). This provides a more comfortable experience that is separated from vehicles. Therefore, the focus of the bicycle network is to leverage existing and proposed trails and focus on improving access to trails through low-stress on-street facilities. Protected bike lanes (where there is a vertical buffer between people driving and people biking) and sidepaths, (wide sidewalks that provide enough space for people biking and walking), are the most effective way to provide those connections when a trail isn't possible. We recommended protected bike lanes and sidepaths to make sure we are continuing the facilities of neighboring jurisdictions, providing bike facilities along corridors of change per the land use plan, and connecting to key destinations.

High comfort bicycle facilities such as sidepaths and protected bike lanes require tradeoffs. This may come in the form of high costs, expanding curb to curb width, acquiring additional right-of-way, or high maintenance costs.

5.2 - BIG IDEAS

The proposed bicycle facilities in *Advancing Adams* will increase



Figure 5.1: Person Bicycling in Adams County

connectivity of the network and support biking for transportation as well as recreation. In order to create a more connected, gridded network and support access to additional destinations, an emphasis was placed on identifying low stress connections to existing and proposed trails. There was also a heavy focus of continuing existing and planned bicycle facilities from neighboring and incorporated jurisdictions into Adams County in order to create a seamless experience for the user. Development of the proposed bicycle network was also coordinated closely with the Preferred Land Use Plan, in order to create comfortable connections for people



biking to existing and planned key destinations.

Especially in the eastern portion of the County, a phased approach will be needed for constructing bicycle infrastructure as areas develop. Because of the types of bicyclists and traffic volumes in the eastern portion of the County, on-street bicycle facilities are recommended rather than off-street facilities. Additionally, based on feedback from public engagement participants, the plan recommends amenities including enhanced wayfinding and signage, additional parking at trailheads, bike racks/bike share stations, and bicycle repair stations, per identification in the programs section of **Chapter 2**.

5.3 - FUTURE BICYCLE NETWORK

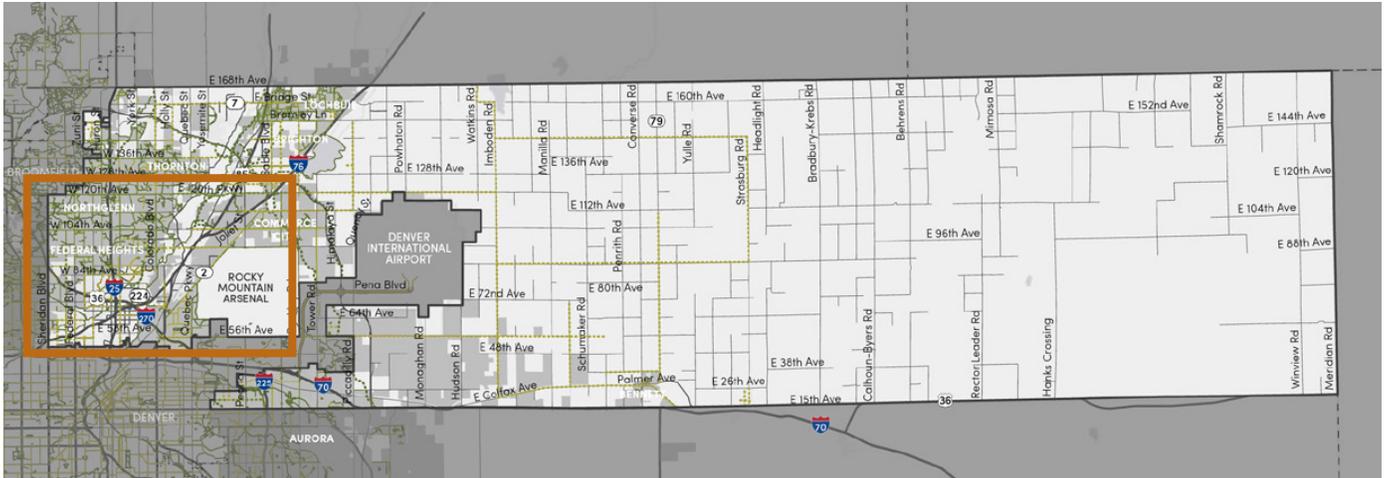
The future bicycle network and project list are shown in **Map 5.1** and **Table 5.1**, respectively. The development of this network builds off the Adams County 2012 Transportation Master Plan, DRCOG priority bicycle corridors, the existing and proposed bicycle

facilities in neighboring jurisdictions, gaps in the existing bicycle network, access to key destinations, and public input.

The network categorizes all proposed facilities as on- or off-street. There are a spectrum of different types of on-street bicycle facilities and spectrum of off-street facility types. This plan does not recommend a specific facility type, understanding that additional analysis of curb-to-curb width, right-of-way, and costs will need to be considered to identify a specific facility type. The County should conduct an additional study before implementation of a bicycle facility.

This plan does identify a glossary of bicycle facility types at this end of this chapter that are recommended that help guide selection of specific facilities and ensure consistency of bicycle facility type within the County. On-street facilities include neighborhood bikeways, bike lanes or buffered bike lanes, or protected bike lanes. Off-street facility types include sidepaths and trails.

MAP 5.1: FUTURE BICYCLE NETWORK



- Adams County Boundary
- Incorporated Places Adams County
- Existing On-Street Facility
- Existing Sidepath
- Existing Trail
- Proposed On-Street Facility
- Proposed Sidepath
- Proposed Trail

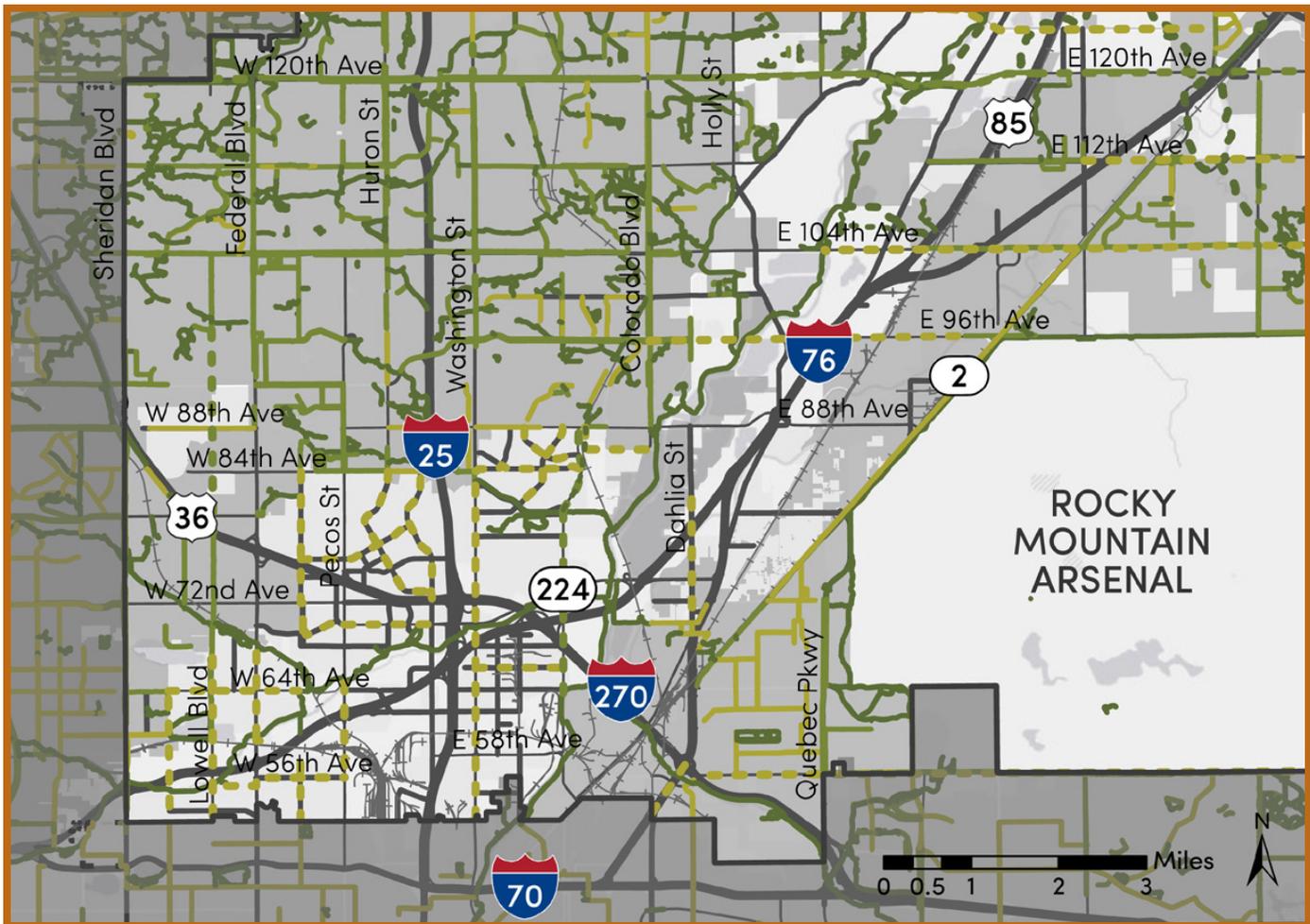


TABLE 5.1: FUTURE BICYCLE NETWORK PROJECTS

FACILITY NAME	EXTENT 1	EXTENT 2	FACILITY TYPE	MILES	PLANNING LEVEL COST ESTIMATE	LEAD
76th Ave/El Paso Blvd	Zuni St	Conifer Rd	On-Street	1.4	\$168,000	Adams County
Broadway Blvd	84th Ave	Denver Boulder Turnpike	On-Street	1.6	\$199,000	Adams County
Buckley Rd	Bridge St	120th Ave	On-Street	5.0	\$626,000	Adams County
Clear Creek - Federal Station	Clear Creek Trail	Clear Creek - Federal Station	On-Street	0.2	\$21,000	Adams County
CO-2	Eisenhower Hwy	E 53rd Ave	On-Street	0.7	\$83,000	Commerce City
CO-79	E 112th Ave	Palmer Ave	On-Street	9.6	\$1,193,000	CDOT
Colorado Blvd	141st Ave	CO-7	On-Street	2.3	\$282,000	Adams County
Dahlia St	Frontage Rd	E 70th Ave	On-Street	1.4	\$175,000	Adams County
E 104th Ave	Colorado Front Range Trail	E-470	On-Street	7.4	\$923,000	CDOT, Commerce City
E 112th Ave	Peoria St	Picadilly Rd	On-Street	6.0	\$744,000	Commerce City
E 120th Ave	High Plains Pkwy	Imboden Rd	On-Street	11.0	\$1,364,000	Adams County
E 124th Ave	Park Blvd	Sable Blvd	On-Street	3.1	\$385,000	CDOT
E 132nd Ave	Second Creek Trail	US-6	On-Street	2.6	\$325,000	Adams County
E 132nd Ave	Barr Lake	Picadilly Rd	On-Street	0.5	\$60,000	Adams County
E 136th Ave	Monaco St	Riverdale Rd	On-Street	2.2	\$272,000	Thornton
E 144th Ave	Brighton Rd	27th Ave	On-Street	2.7	\$336,000	Adams County
E 144th Ave	Imboden Rd	Strasburg Rd	On-Street	14.0	\$1,740,000	Adams County
E 160th Ave	Colorado Blvd	27th Ave	On-Street	7.9	\$981,000	CDOT
E 38th Ave	Harback Rd	Kiowa Bennett Rd	On-Street	3.0	\$373,000	Adams County
E 56th Ave	Eudora St	E-470	On-Street	11.3	\$1,408,000	Adams County
E 56th Ave	E-470	West Sand Creek	On-Street	13.1	\$1,623,000	Colorado Air and Space Port
E 60th Ave	Dunkirk St	New Trail	On-Street	0.7	\$85,000	Aurora
E 66th Ave	Washington St	York St	On-Street	1.0	\$124,000	Adams County
E 88th Ave	Imboden Rd	Strasberg Rd	On-Street	14.0	\$1,737,000	Adams County
E 96th Ave	Colorado Blvd	Heinz Way	On-Street	3.6	\$447,000	Adams County
Essex Dr/84th Ave	Washington St	Devonshire Blvd	On-Street	1.3	\$156,000	Adams County

FACILITY NAME	EXTENT 1	EXTENT 2	FACILITY TYPE	MILES	PLANNING LEVEL COST ESTIMATE	LEAD
Explorador Calle/ Rainbow Ave	88th Ave	Coronado Pkwy	On-Street	1.1	\$134,000	Adams County
Federal Blvd	Little Dry Creek Trail	Clear Creek Trail	On-Street	1.1	\$132,000	CDOT
Fulton St	E 26th Ave	Montview Blvd	On-Street	0.5	\$62,000	Aurora
Greenwood Blvd	84th Ave	Broadway Blvd	On-Street	1.9	\$232,000	Adams County
Henderson Rd	Riverdale Rd	Park Blvd	On-Street	0.4	\$49,000	Adams County
Holly St	E 160th Ave	E 144th Ave	On-Street	2.0	\$246,000	Adams County
Iola St	E 26th Ave	Montview Blvd	On-Street	0.5	\$64,000	Aurora
Jordan Dr	Zuni St	W 70th Ave	On-Street	0.6	\$70,000	Adams County
Lowell Blvd	W 67th Ave	W 52nd Ave	On-Street	1.9	\$232,000	Adams County
Manilla Rd	E 72nd Ave	Eisenhower Hwy	On-Street	4.8	\$597,000	Colorado Air and Space Port
McElwain Blvd	88th Ave	Devonshire Blvd	On-Street	0.8	\$103,000	Adams County
Monroe St	E 26th Ave	US-36	On-Street	1.0	\$122,000	Adams County
N Imboden Rd	US-6	Colfax Ave	On-Street	24.4	\$3,027,000	Adams County
Pecos St	Clear Creek Trail	56th Ave	On-Street	1.1	\$134,000	Adams County
Pecos St	W 152nd Ave	W 144th Ave	On-Street	1.1	\$133,000	Adams County
Picadilly Rd	E 152nd Ave	E 122nd Ave	On-Street	5.0	\$620,000	Adams County
S 50th Ave	E Southern St	Frontage Rd	On-Street	0.4	\$51,000	Adams County
Sable Blvd	Bromley Ln	E-470	On-Street	3.0	\$374,000	Adams County
Spruce Ave	Aspen St	Basil St	On-Street	0.7	\$87,000	Adams County
Strasburg Rd	144th Ave	88th Ave	On-Street	7.0	\$866,000	Adams County
Future Street	Bromley Ln	E-470	On-Street	3.1	\$385,000	Adams County
Future Street	E Southern St	E 152nd Ave	On-Street	0.5	\$63,000	Adams County
Tennyson St	W 63rd Dr	W 52nd Ave	On-Street	1.4	\$176,000	Adams County
Tower Rd	E Southern St	E 152nd Ave	On-Street	0.5	\$59,000	Adams County
US-36	Imboden Rd	Monroe St	On-Street	14.4	\$1,794,000	CDOT
W 115th Ave	Sheridan Blvd	Wolff St	On-Street	0.3	\$33,000	Westminster
W 149th Ave	Zuni St	Huron St	On-Street	1.0	\$122,000	Adams County
W 152nd Ave	Zuni St	Huron St	On-Street	1.0	\$122,000	Adams County
W 55th Pl/W 56th Ave	Julian St	Pecos St	On-Street	1.4	\$179,000	Adams County
W 64th Ave	Tennyson St	Clear Creek Trail	On-Street	1.5	\$185,000	Adams County

FACILITY NAME	EXTENT 1	EXTENT 2	FACILITY TYPE	MILES	PLANNING LEVEL COST ESTIMATE	LEAD
W 70th Ave	Pecos St	Broadway Blvd	On-Street	1.0	\$124,000	Adams County
Wagner St	E 24th Ave	US-36	On-Street	0.8	\$102,000	Adams County
Washington St	E 83rd Dr	E 52nd Ave	On-Street	3.8	\$475,000	Adams County
Welby Rd/E 86th Ave	E 88th Ave	Colorado Blvd	On-Street	0.9	\$118,000	Adams County
Zuni St	W 59th Pl	W 52nd Ave	On-Street	0.7	\$93,000	Adams County
Zuni St	84th Ave	Fern Dr	On-Street	1.8	\$228,000	Adams County
Chambers Rd	Montview Blvd	Colfax Ave	Sidepath	0.5	\$251,000	Aurora
Chambers Rd	E 40th Ave	Moncrieff Pl	Sidepath	0.7	\$355,000	Aurora
E 120th Ave	Sheridan Blvd	Federal Blvd	Sidepath	0.6	\$276,000	CDOT, Westminster
E 120th Ave	US-85	High Plains Pkwy	Sidepath	3.6	\$1,775,000	CDOT, Commerce City
E 120th Pkwy	Holly St	US-85	Sidepath	3.5	\$1,741,000	Adams County
E Colfax Ave	Espana St	Himalaya Rd	Sidepath	0.4	\$218,000	Aurora
E Colfax Ave	Himalaya Rd	E-470	Sidepath	1.9	\$963,000	Aurora
E Montview Blvd	Central Park Blvd	Fitzsimons Pkwy	Sidepath	2.9	\$1,466,000	Aurora
E-470 Trail	Signal Ditch	Quebec St	Sidepath	1.5	\$745,000	CDOT
E-470 Trail	Rail Tracks	Signal Ditch	Sidepath	1.1	\$531,000	CDOT
E-470 Trail	Quebec St	East of Boston St	Sidepath	1.5	\$772,000	CDOT
E-470 Trail	East of Boston St	Fishing Is Fun Pond	Sidepath	1.5	\$731,000	Adams County
E-470 Trail	South Platte Trail	Second Creek Trail	Sidepath	2.6	\$1,279,000	CDOT
Fitzsimons Pkwy	Montview Blvd	13th Ave	Sidepath	0.8	\$400,000	Aurora
Lowell Blvd	W 97th Ave	Denver Boulder Turnpike	Sidepath	2.3	\$1,157,000	Westminster, Federal Heights
Quivas St	W 136th Ave	End of Quivas St	Sidepath	0.3	\$148,000	Westminster
S 4th Ave/Sable Blvd	Bromley Ln	144th Ave	Sidepath	1.0	\$493,000	Adams County
So. Platte River Trail	Adams County Boundary	Smith Park	Sidepath	0.8	\$386,000	Adams County
US-6	E 152nd Ave	Eagle Blvd	Sidepath	1.4	\$723,000	CDOT
Washington St	E 104th Ave	E 102nd Ave	Sidepath	0.3	\$138,000	Thornton
Washington St	Washington Center Pkwy	120th Ave	Sidepath	0.4	\$182,000	Thornton

FACILITY NAME	EXTENT 1	EXTENT 2	FACILITY TYPE	MILES	PLANNING LEVEL COST ESTIMATE	LEAD
Welby Rd/ Devonshire Blvd	E 88th Ave	Niver Creek Trail	Sidepath	1.0	\$508,000	Adams County
York St	Niver Creek Trail	South Platte Trail	Sidepath	2.1	\$1,040,000	Adams County
First Creek Trail	E 38th Ave	Colfax Ave	Trail	2.7	\$5,299,000	Adams County
Little Dry Creek Trail Spur	Little Dry Creek Trail	Midtown	Trail	0.0	\$50,000	Adams County
Little Dry Creek Trail Spur	Little Dry Creek Trail	Midtown	Trail	0.0	\$37,000	Adams County
So. Platte River Trail	Fishing Is Fun Pond	North of E-470	Trail	0.8	\$1,513,000	Adams County
So. Platte River Trail	North of E-470	North of 144th Ave	Trail	0.8	\$1,501,000	Adams County
So. Platte River Trail	North of 144th Ave	South of Bromley Ln	Trail	1.0	\$2,050,000	Brighton
So. Platte River Trail	120th Ave	104th Ave	Trail	2.1	\$4,175,000	Adams County
So. Platte River Trail	South of 120th Pkwy	North of 120th Pkwy	Trail	0.4	\$832,000	Adams County
So. Platte River Trail	South of 120th Ave	124th Ave	Trail	0.8	\$1,479,000	Adams County
New Trail	Adams County Boundary	56th Ave	Trail	2.3	\$4,449,000	Aurora
New Trail	E 168th	E-470	Trail	1.8	\$3,434,000	Adams County
New Trail	South Platte Trail	Pena Blvd	Trail	12.4	\$24,226,000	Adams County
New Trail	Montview Blvd	Colfax Ave	Trail	0.7	\$1,429,000	Aurora
New Trail	120th Ave	E 112th Ave	Trail	1.2	\$2,317,000	Adams County
New Trail	Chambers Rd	120th Ave	Trail	5.3	\$10,357,000	Adams County
New Trail	So. Platte River Trail	Brighton Rd	Trail	0.6	\$1,218,000	Adams County
New Trail	Brighton Rd	US-85	Trail	0.4	\$877,000	Commerce City
Westerly Creek Trail	E 26th Ave	Montview Blvd	Trail	0.6	\$1,086,000	Aurora

5.4 - GLOSSARY OF BICYCLE FACILITIES

This section defines and describes characteristics of the future bicycle facility types. Understanding the characteristics of these facilities is critical for successful implementation that applies both best practices and local standards.

5.4.1 - NEIGHBORHOOD BIKEWAYS

Neighborhood bikeways (or bike boulevards or bike routes) are bikeways on streets with low vehicle volumes and speeds where people bicycling share the travel lane with people driving. Neighborhood

bikeways use signs, pavement markings, and speed/volume management to communicate the presence and prioritization of people bicycling. Typically, these streets are local, residential roads generally not used for through travel of vehicles. Bicycle routes should include wayfinding signage with distance, direction, and destination information. The Level of Traffic Stress methodology identifies that the posted speed limit for roadways designated as low stress neighborhood bikeways should generally be 25 mph or less and move fewer than 3,000 vehicles per day. To ensure travel speeds do not exceed 25 mph, neighborhood

Figure 5.2:
Neighborhood
Bikeway



bikeways may include traffic calming features that control volume or speed through vertical deflection (speed humps) and horizontal deflection (bulb outs, chicanes, medians). The US Traffic Calming Manual (Ewing, Reid, & Steven Brown) can be used to identify the appropriate treatment type for each neighborhood bikeway corridor. A study of each identified neighborhood bikeway should be completed to plan and design the appropriate treatments (i.e., traffic calming, pavement markings, such as bicycle stamps, and wayfinding) for each specific corridor.

5.4.2 - BICYCLE LANES AND BUFFERED BICYCLE LANES

A bicycle lane is a designated lane for people bicycling, separated from the general-purpose travel lane or parking lane by a single white line. NACTO recommends that bicycle lanes be five to six-feet wide (but not more than seven-feet wide), not including curb and gutter. When adjacent to on-street parking, a “door zone” between the bicycle lane and parked cars reduces conflicts between people opening car doors and people biking. A buffered bicycle lane has a painted buffer with limited cross hatching between the bicycle lane and vehicle travel lane. A buffer can increase safety and provide additional comfort for bicyclists, especially on higher speed, higher volume roadways. The identification of future bicycle lane and buffered



Figure 5.3: Bicycle Lane



Figure 5.4: Buffered Bicycle Lane



Figure 5.5:
Protected Bike
Lane

bicycle lane locations should include the consideration of existing right-of-way, vehicle speeds, vehicle volumes, travel lane requirements, and on-street parking. Bicycle lanes and buffered bicycle lanes should be located on roadways with average vehicle speeds 30 mph or less and less than 7,000 vehicles per day. It is recommended to require bicycle lanes built with new development to have a six-foot bicycle lane accompanied by a three-foot painted buffer with limited cross-hatching between the bicycle lane and travel lane.

5.4.3 - PROTECTED BICYCLE LANES

Protected bicycle lanes are buffered bicycle lanes with a vertical barrier (bollards, curb, or raised barricade) between people and vehicular traffic. Protected bicycle lanes can create low stress bicycling environments on higher volume, higher speed roadways where traditional bike

lanes feel uncomfortable or unsafe for many riders. It is recommended that protected bicycle lanes be six feet wide and have a three-foot buffer with a vertical barrier.

5.4.4 - SIDEPATH OR TRAIL (PAVED AND SOFT SURFACE)

A sidepath or trail is an off-street low stress facility that supports opportunities for both recreation and transportation. A sidepath more specifically is a wide sidewalk (at least ten feet wide) alongside a roadway, separated by a buffer. People who walk, bicycle, skate, or use wheelchairs or mobility devices can experience increased comfort and safety on a trail or sidepath because it is entirely separated from motor vehicles. All trails serving bicyclists should be a minimum width of ten feet. There should be at least a two-foot vertical buffer (concrete or landscaping) between the path and any roadway.



Figure 5.6: Paved Multiuse Trail