



Chapter 6

Bicycles

This chapter summarizes existing and future facility needs for bicycles in the City of Beaverton. The following sections outline the criteria to be used to evaluate needs, provide a number of strategies for implementing a bicycle plan and recommend a bicycle plan for the City of Beaverton. The needs, criteria and strategies were identified in working with the City's Traffic Commission, TSP Transportation Advisory Committee (TAC) and the Bike Task Force. The Traffic Commission, TAC and Bike Task Force provided input regarding the transportation system in Beaverton, specifically exploring bicycle needs. The methodology used to develop the bicycle plan combined citizen and staff input specific Transportation Planning Rule requirements,¹ and continuity to the regional² and county³ bicycle network.

Metro's *Draft Regional Transportation Plan (RTP)*⁴ has identified a Proposed Regional Bicycle System. Metro's definitions of bicycle classifications are provided in the technical appendix. Washington County's *Draft Bikeway Plan*⁵ identifies a preferred bikeway network. Table 6-1 summarizes the bicycle route designations of Metro, Washington County and the proposed City Master Plan.

NEEDS

Bikeways are provided on many of the arterial and collector roadways in the City of Beaverton (see Figure 3-13). There are, however, many segments where bikeways do not exist on the arterial and collector roadway network. Continuity and connectivity are key issues for bicyclists and gaps in the bikeway network cause the most significant problems for bicyclists in Beaverton. Without connectivity of the bicycle system, this mode of travel is severely limited (similar to a road system

¹*Transportation Planning Rule, State of Oregon, DLCD, Section 660-12-020(2)(d), 660-12-035(3)(e), 660-12-095(3)(b & c).*

²*Regional Bicycle System Map, Draft 3.0, Metro, July 2, 1997.*

³*Draft Bikeway Plan, Washington County, June 1995.*

⁴*Draft Regional Transportation Plan, DRAFT 3.0, Metro, July 2, 1997.*

⁵*Draft Bikeway Plan, Washington County, June 1995.*

**Table 6-1
Bicycle System Designations**

Route	City Master Plan	Washington County	Metro Bikeways
East-West			
Walker Road	Lane	County Bike Lane/Shoulder	Community Connector
Jenkins Road	Lane	County Bike Lane/Shoulder	Regional Access
TV Highway/Canyon Road	Lane	ODOT Bike Lane/Shoulder	Regional Corridor
Farmington/BH Hwy	Lane	ODOT Bike Lane/Shoulder	Regional Corridor
Allen Boulevard	Lane	City Bikeway	Community Connector
Bany/Hart/Denney	Lane	City Bikeway	Community Connector
Greenway/Brockman/Beard/Nora	Lane	City Bikeway	Community Connector
Scholls Ferry Road	Lane	County Bike Lane/Shoulder	Regional Corridor
North-South			
170th/173rd/174th/175 th			
158th/Merlo	Lane	County Bike Lane/Shoulder	Community Connector/ Regional Access
Murray Boulevard	Lane	County Bike Lane/Shoulder	Regional Corridor
Cedar Hills (north of Walker)	Lane	County Bike Lane/Shoulder	Community Connector
Cedar Hills (s/o Walker)	Lane	City Bikeway	Regional Access
Hall/Watson	Lane	City Bikeway	Regional Access/ Regional Comdor
125th Avenue	Lane	City Bikeway	Community Connector
Western Avenue	Lane	City Bikeway	Community Connector

Route	City Master Plan	Preferred County Bikeway Plan
Butner Way	Lane	County Shared Roadway
Park Way	Lane	County Share Roadway
153rd Drive	Bikeway	City Bikeway
Millikan Way	Lane	City Bikeway
Center Street	Lane	City Bikeway
9 1st Avenue	Lane	County Bike Lane/Shoulder
87th/Laurelwood	Bikeway	County Shared Roadway
160th Avenue	Lane	County Shared Roadway
5th/6th Avenue	Lane	City Bikeway
Jamieson Road	Lane	County Bike Lane/Shoulder
Oak Street	Lane	County Bike Lane/Shoulder
Davis Road	Lane	City Bikeway
Wilson Avenue do Allen	Bikeway	City Bikeway
Sorrento Avenue	Bikeway	City Bikeway
Davies Road	Bikeway	City Bikeway
Nimbus Avenue	Lane	City Bikeway
Cascade Boulevard	Bikeway	City Bikeway
Conestoga Drive	Bikeway	City Bikeway
Dowing Drive	Bikeway	City Bikeway

full of cul-de-sacs). The Transportation Planning Rule (TPR) calls for all arterial and collector streets to have bicycle facilities. To meet the TPR requirements and fill-in existing gaps in the existing bicycle system, and action plan that focuses on a framework system should be developed to prioritize bicycle investment.

FACILITIES

Bicycle facilities can generally be categorized as bike lanes, bike routes, off-street bike paths, multi-use paths or bikeways.

- **Bike lanes** are areas within the street right-of-way designated specifically for bicycle use.
- **Bike routes** are streets which are recommended for bicycle use, but do not have a specific area designated within the right-of-way. Bike routes generally share the travel lane with vehicular traffic.
- **Off-street bike paths** are off-street facilities designated for bicycle use.
- **Multi-use paths** are generally off-street routes that can be used by several transportation modes, including bicycles, pedestrians and other non-motorized modes (i.e. skateboards, roller blades, etc.).
- **Bikeway** is used in this report to describe any of the bicycle accommodations described above.

The Beaverton TSP designations focuses on lanes, bikeways and multi-use paths.

CRITERIA

Beaverton's Traffic Commission, the public and the TSP Technical Advisory Committee created a set of goals and policies to guide transportation system development in Beaverton (see Chapter 2). Several of these policies pertain specifically to bicycle needs:

Goal 1, Policy 3: Locate and design recreation/bicycle pathways so as to balance the needs of human use and enjoyment with resource preservation in areas identified for their Significant Natural Resource values.

Locate pathways to have the lowest level of impact on a stream or sensitive riparian vegetation. Pathways through natural resource areas and/or significant wildlife habitat will be intended for day use only and will have no provisions for night illumination. If a natural resource is so delicate that any degree of human intrusion will irreparably destroy it, preservation of the resource will take precedence over the proposed path.

Goal 2, Policy 1: Develop and implement public street standards that recognize the multi-purpose nature of the street right-of-way for utility, pedestrian, bicycle, transit, truck, and auto use and recognize these streets as important to community identity as well as providing a needed service.

Develop and maintain a series of system maps and design standards for motor vehicles, bicycle, pedestrian, transit and truck facilities in Beaverton.

Goal 2, Policy 2: Provide connectivity to each area of the City for convenient multi-modal access.

Require the provision of an adequate local public street system for both residential and non-residential development. Give particular attention to large blocks of commercially developed properties to assure that local circulation has adequate public streets and is not forced to utilize only private parking and driveway areas or the major street systems to conduct local trips. Develop and maintain appropriate on-site loading, parking, and internal circulation standards for private development based upon adopted standards in the City's development code.

Goal 2, Policy 3: Develop a safe, complete, attractive and efficient system of pedestrian ways and bicycle ways, including bike lanes, shared roadways, off-street pathways and sidewalks according to the pedestrian and bicycle system maps.

Use the Beaverton Engineering Design Manual Standards in design of facilities. Conform to the design guidelines set forth in the "Guide for Development of New Bicycle Facilities" (current edition) as published by the American Association of State Highway and Transportation Officials (AASHTO) and the Oregon Bicycle Pedestrian Plan adopted by the Oregon Transportation Commission (OTC) and Tualatin Hills Park and Recreation District (THPRD). Bicycle and pedestrian facilities should be provided and designed to accommodate the unique requirements of various user groups and trip types (including school trips, commuter trips, neighborhood circulation trips, and recreation trips). Locate pathways to provide the "shortest path" between origins and destinations. Accommodate non-automobile movements specifically by bicyclists and pedestrians within neighborhoods. Sidewalks will continue to be the responsibility of fronting property owners. Maintain the opportunity for citizen groups to fund pathway improvements through the local improvement district process. Continue to recognize the importance of walking and bicycling as a form of transportation and recreation.

Goal 2, Policy 5: When development or redevelopment of land occurs, provide bike and pedestrian facilities that are consistent with standards and policies of this plan.

Goal 3, Policy 6: Construct pathways only where they can be developed with satisfactory design components that address safety, security, maintainability and acceptable pathway use.

Although pathways are encouraged to be separated and distant from major streets for most of their length, they are encouraged to converge at traffic controlled intersections for safe crossing. New construction of pathways along residential rear lot lines will not be encouraged unless no comparable substitute alignment is possible in the effort to connect common attractors or existing segment links. When pathways do follow rear lot lines, design treatments defined in the Beaverton Bikeway and Pedestrian Facility Construction Standards will be followed to minimize the impacts to private property.

These goals and policies are the criteria that all bikeway improvements in Beaverton should be measured against to determine if they conform to the intended direction of the City.

Since bicyclists can generally travel further than pedestrians, connections that lead to regional destinations such as Portland, Hillsboro, Tigard and Washington Square are important. Beaverton's bicycle network should connect to Washington County's, the City of Portland's, the City of Tigard's and the City of Hillsboro's bicycle networks and be consistent with the Regional Bicycle System. Key locations where connections should be made to these other jurisdictions' networks include Walker Road, Cornell Road, Baseline Road, TV Highway (ORE 8), Beaverton-Hillsdale Highway (ORE 10), Scholls Ferry Road and Murray Boulevard.

STRATEGIES

Several strategies were considered for construction of future bikeway facilities in Beaverton. These strategies were studied to provide the City with priorities since it is likely that the available funding will be insufficient to address all of the projects identified in the Bikeway Master Plan.

Strategy 1 - "Connect Key Bicycle Corridors to Schools, Parks, Recreational Uses and Activity Centers (public facilities, commercial areas, etc.)"

This strategy provides bikeway links to schools, parks and activity centers from the arterial/collector bikeway network. This alternative provides added safety to likely bicyclist destinations as well as destinations where children are likely to travel.

Strategy 2 - "Fill in Gaps in the Network where Some Bikeways Exist"

This strategy provides bikeways which fill in the gaps between existing bikeways where a significant portion of a bikeway corridor already exists. This strategy maximizes the use of existing bicycle facilities to create complete sections of an overall bikeway network.

Strategy 3 - "Bicycle Corridors that Connect Neighborhoods"

This alternative puts priority on bikeways for arterials/collectors which link neighborhoods together. Some of these could include paths crossing parks, schools or utility rights-of-way.

Strategy 4 - "Construct Bike Lanes with Roadway Improvement Projects"

This strategy focuses on providing bike lanes on all roadway improvement projects within the City of Beaverton.

Strategy 5 - "Bicycle Corridors that Commuters Might Use"

This strategy focuses on providing bicycle facilities where commuters are likely to go such as local (within Beaverton) or regional (i.e. Hillsboro or downtown Portland) employment centers or leading to transit which provides access to regional employment centers.

Strategy 6 - "Bicycle Corridors Providing Mobility to and within Commercial Areas"

This strategy focuses on provides bikeways to and within retail areas which are popular destinations for both employment and shopping.

Table 6-2 summarizes the strategies in terms of meeting the transportation goals and objectives.

Table 6-2
Bikeway Facility Strategies Comparisons

strategy	Policies					
	1-3	2-1	2-2	2-3	2-5	3-6
1. Connect key bicycle corridors to schools, parks, recreational uses and activity centers (public facilities, commercial areas, etc.)	■	□	◆	■	□	□
2. Fill in gaps in the network where some bikeways exist	□	□	□	■	□	□
3. Bicycle corridors that connect neighborhoods	□	□	◆	■	□	□
4. Construct bike lanes with roadway improvement projects	○	□	□	◆	■	□
5. Bicycle corridors that commuters might use	□	□	◆	■	□	□
6. Bicycle corridors providing mobility to and within commercial areas	○	□	■	◆	□	□

- Does not meet criteria
- Partially meets criteria
- ◆ Mostly meets criteria
- Fully meets criteria

RECOMMENDED BICYCLE FACILITIES PLAN

The strategies for bicycles that had been evaluated by the Traffic Commission and the public were then ranked. Each commissioner and public participant were assigned a certain number of points that he or she could allocate to each of the strategies according to his or her vision of priorities for the City of Beaverton. The ranking of these strategies follows, from most important to least important:

- Connect key bicycle corridors to schools, parks, recreational uses and activity centers (public facilities, commercial areas, etc.)

- Fill in gaps in the network where some bikeways exist
- Bicycle corridors that connect neighborhoods
- Construct bike lanes with roadway improvement projects
- Bicycle corridors that commuters might use
- Bicycle corridors providing mobility to and within commercial areas

Based on a review of potential strategies and corresponding needs, City staff and citizens determined overall bicycle improvement priorities. Connecting key bicycle corridors to schools, parks, recreational uses and activity centers (public facilities, commercial areas, etc.) was considered to be the highest priority for bicycles in Beaverton. The second highest priority for bicycles in Beaverton was filling in the gaps in the existing network where some sidewalks exist. The bicycle action plan was developed to focus on these two areas.

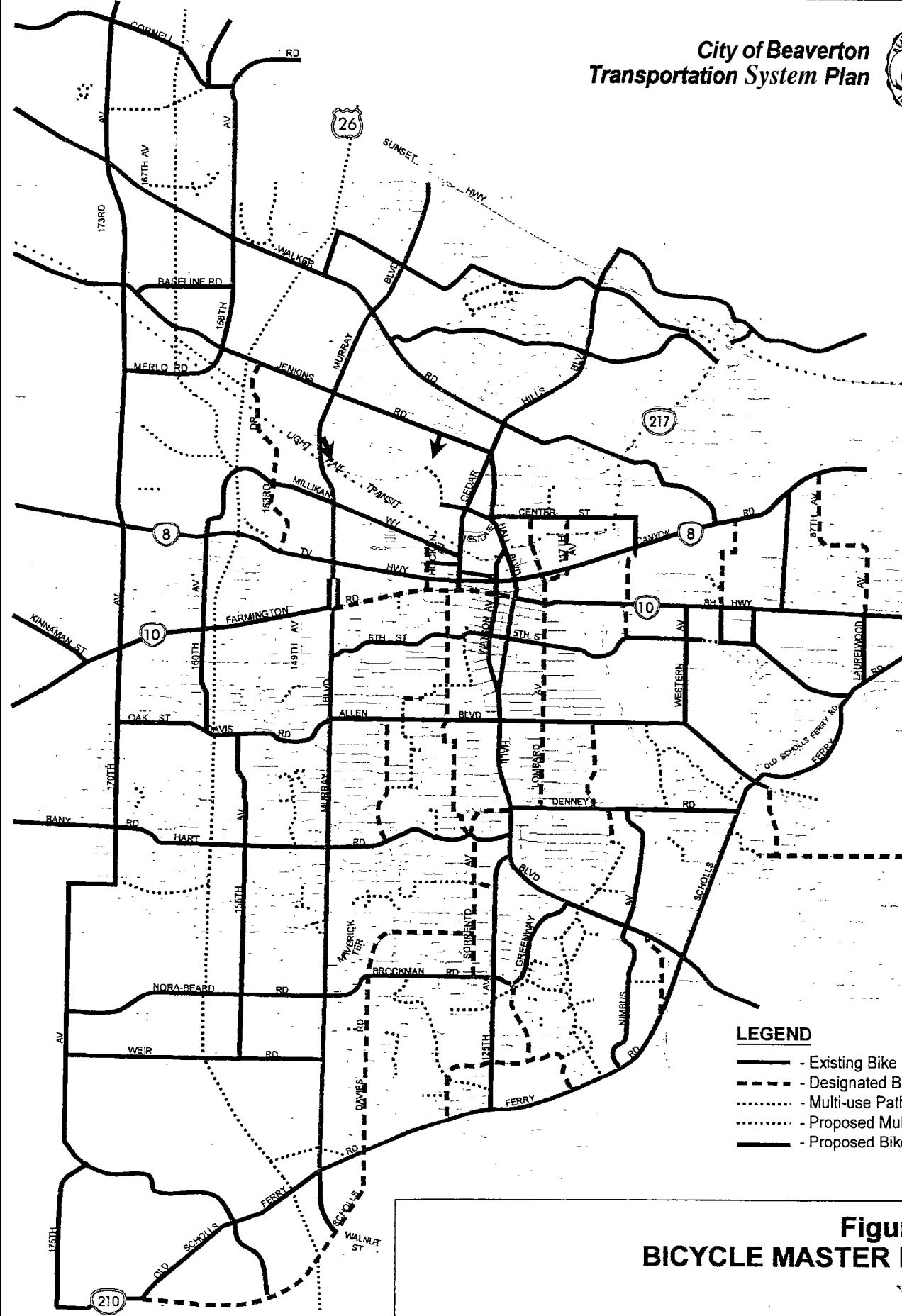
The Bicycle Master Plan (Figure 6-1) outlines where bicycle facilities will be required in the future. It builds from the state policy from the Transportation Planning Rule that all arterial and collector roads have bike facilities. Additional linkages with lanes or accommodations are outlined to make a complete network. The Bicycle Action Plan (Figure 6-2) consists of projects that the City should give priority to in implementing the Master Plan. The objective of the action plan is to develop a framework bicycle network first and allow attention to move toward infill Master Plan projects second. The Action Plan is consistent with plans developed by Metro, Washington County and the State.⁶ The bicycle plan will require incremental implementation. As development occurs, streets are rebuilt and other project funding opportunities (such as grant programs) arise, projects on the Master Plan should be integrated into project development. Many of the projects would be elements of multi-modal street improvement projects (i.e. Murray Boulevard extension). The City, through its Capital Improvement Program, joint funding with other agencies (County, Metro and State) and development approval would implement these projects.

Education and enforcement need to be implemented for the safety of bicyclists. This includes bicycle lane only signage and driver education to give motor vehicles an awareness that the bicycle lane is for bicycle use only. Bike lanes need to be maintained on a routine basis which includes cleaning (sweeping) and painting the bike lane lines. Actuated traffic signals on bikeway routes need to accommodate bicycles by installing bicycle loop detectors.

POTENTIAL PROJECT LIST

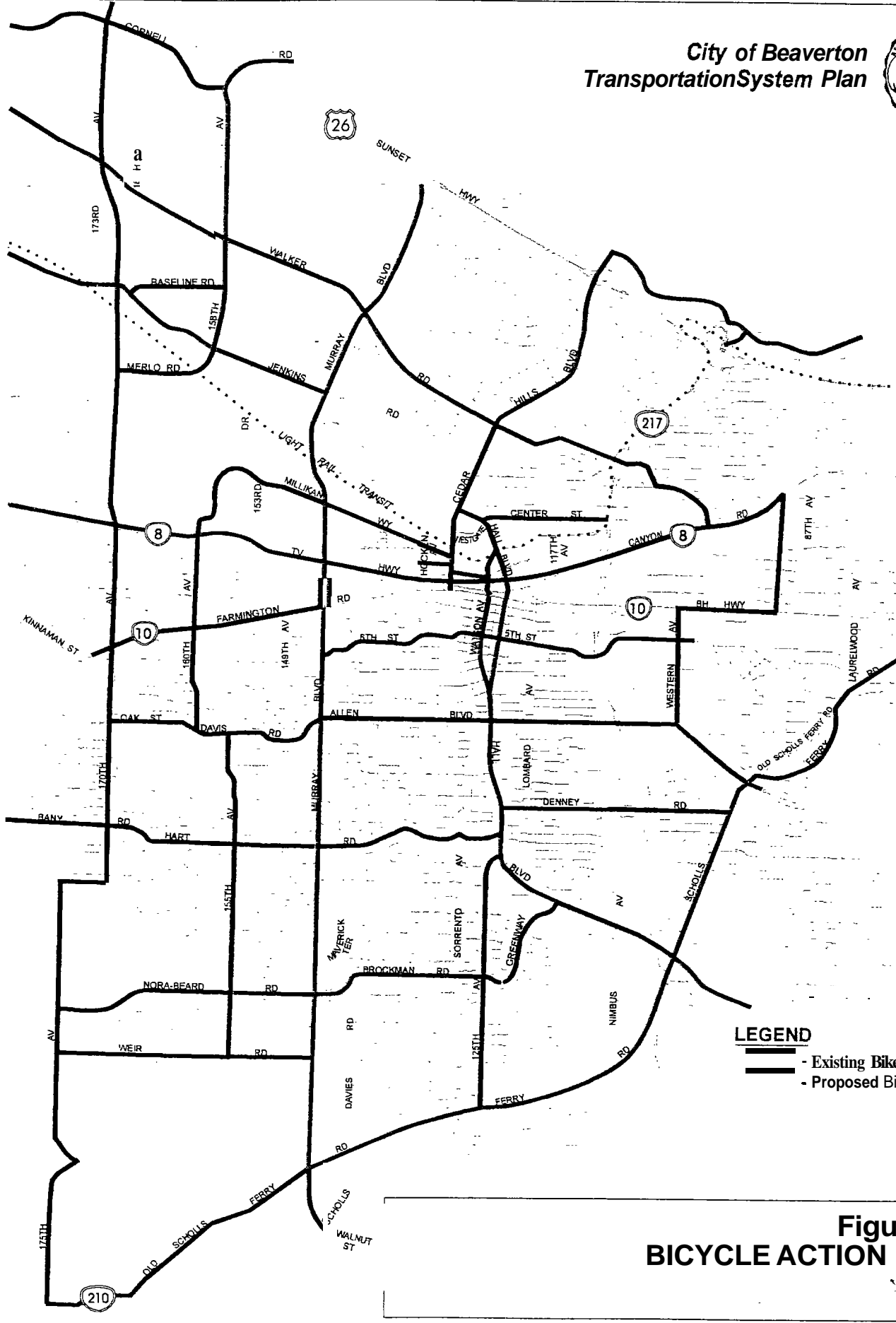
Table 6-3 outlines potential bicycle action plan projects in Beaverton, and Table 6-4 outlines potential bicycle master plan projects in Beaverton. The master plan projects include the action plan projects listed in Table 6-3. The City, through its Capital Improvement Program (CIP), joint funding with other agencies (County, Metro) and development approval would implement these projects.

⁶Draft 1995 Interim Federal Regional Transportation Plan, April, 1995, Metro and Draft Bikeway Plan, Washington County, Oregon, June, 1995.



- LEGEND**
- Existing Bike Lanes
 - - - - Designated Bikeway
 - Multi-use Path
 - · - · Proposed Multi-use Path
 - Proposed Bike Lanes

**Figure 6-1
BICYCLE MASTER PLAN**



LEGEND
 — Existing Bike Lanes
 - - - Proposed Bike Lanes

**Figure 6-2
BICYCLE ACTION PLAN**

**Table 6-3
Bicycle Action Plan Project Priorities**

Project	From	To	Approximate Cost (\$1000's of dollars)
<i>Priority: Connect key bicycle corridors to schools, parks, recreational uses and activity centers</i>			
Greenway Road bike lanes	Hall Boulevard	200 ft east of Downing	214
155 th Avenue/Weir Road bike lanes	Davis Road	Murray Boulevard	1,037
Millikan Way/160 th bike lanes	Murray Boulevard	TV Highway	454
Millikan Way/160 th bike lanes	TV Highway	Davis Road	438
125 th Avenue	Scholls Ferry Road	Brockman Road	277
Canyon Road	142 nd Avenue	91 st Avenue	1142
<i>Priority: Fill in gaps in bicycle network</i>			
Greenway/Brockman bike lanes	125 th Avenue	200 ft east of 125 th Ave	17
Hall Boulevard bike lanes	Greenway	ORE 217	311
Hall Boulevard bike lanes	12 th Street	900 ft south of Allen	134
Hall Boulevard bike lanes	Beaverton-Hillsdale Hwy	Cedar Hills Blvd	68
Watson Avenue bike lanes	Beaverton-Hillsdale Hwy	Hall Boulevard	59
Cedar Hills Boulevard bike lanes	Farmington Road	Walker Road	441
Cedar Hills Boulevard bike lanes	US 26	Foothill Drive	84
6 th Street bike lanes	Murray Boulevard	Menlo Drive	210
Murray Boulevard bike lanes (west side of Murray Boulevard)	Farmington Road	approximately 200 ft south of TV Hwy	42
Denney Road bike lanes	Bel Aire Drive	Scholls Ferry Road	319
Allen Boulevard bike lanes	200 ft east of Western	Scholls Ferry Road	193
Western Avenue bike lanes	Beaverton-Hillsdale Hwy	Allen Boulevard	294
Beaverton-Hillsdale Hwy bike lanes	Western Avenue	91 st Avenue	235
91 st Avenue bike lanes	Beaverton-Hillsdale Hwy	Canyon Road	249
Old Scholls Ferry Road	Murray Boulevard	175 th Avenue	781
<i>Priority: Construct bike lanes with roadway improvement projects</i>			
125 th Avenue bike lanes	Hall Boulevard	Brockman Road	263
Farmington Road bike lanes	Murray Boulevard	172 nd Avenue	540
Farmington Road bike lanes	500 ft east of Lombard	500 ft west of Lombard	75
Walker Road bike lanes	ORE 217	Canyon Road	285
Walker Road bike lanes	Cedar Hills Boulevard	Lynnfield Lane	131
Walker Road bike lanes	178 th Avenue	185 th Avenue	270
Millikan Way bike lanes	Hocken Avenue	Cedar Hills Blvd	79
170 th Avenue bike lanes	Rigert Road	Alexander Street	701
170 th /173 rd Avenue bike lanes	Baseline Road	Walker Road	300
170 th Avenue bike lanes	Alexander Street	Baseline/Jenkins	499
173 rd Avenue bike lanes	Walker Road	Cornell Road	323
Hart Road bike lanes	Murray Boulevard	167 th Avenue	435
Hart Road bike lanes	Hall Boulevard	Murray Boulevard	450
Hart Road/Bany Road bike lanes	167 th Avenue	170 th Avenue	60
Cornell Road bike lanes	158 th Avenue	185 th Avenue	450
Baseline Road bike lanes	158 th Avenue	170 th Avenue	180
Murray Boulevard bike lanes	Old Scholls Ferry Road	Scholls Ferry Road	150
Oak Street/Davis Road/Allen bike lanes	Murray Boulevard	170 th Avenue	420
Allen Boulevard bike lanes	ORE 217	Murray Boulevard	255

Project	From	To	Approximate Cost (\$1000's of dollars)
Allen Boulevard bike lanes	ORE 217	200 ft west of Western	94
Nora-Beard Road bike lanes	175 th Avenue	155 th Avenue	435
Weir Road	175 th Avenue	155 th Avenue	390
175 th Avenue-Rigert Road bike lanes	170 th Avenue	ORE 210	1,028
Bicycle Action Plan Projects Total Cost:			\$14,813

Table 6-4
Other Bicycle Master Plan Projects

Project	From	To	Approximate Cost (1000's of dollars)
Priority: Bicycle corridors that connect neighborhoods			
SW Park Way bike lanes	Walker Road	ORE 217	714
SW Butner Road bike lanes	Murray Boulevard	Park Way	722
SW Downing Road bike lanes	Murray Boulevard	Meadow Drive	147
Meadow Drive bike lanes	Downing Road	Walker Road	92
Laurelwood Avenue bike lanes	Beaverton-Hillsdale Hwy	Scholls Ferry Road	139
Priority: Construct bike lanes with roadway improvement projects			
Farmington Road bike lanes	172 nd Avenue	185 th Avenue	296
173 rd Avenue bike lanes	Cornell Road	Bronson Road	56
Merlo Road/158 th Avenue bike lanes	170 th Avenue	Walker Road	503
Jenkins Road bike lanes	Murray Boulevard	Cedar Hills Boulevard	323
New connection roadway bike lanes	Jenkins Road at Cedar Hills Boulevard	Hall Boulevard at Center Street	165
Hart Road/Bany Road bike lanes	170 th Avenue	185 th Avenue	293
Nimbus Road bike lanes	Hall Boulevard	Denney Road	285
SW Beaverton collector roadway bike lanes	Scholls Ferry Road	175 th Avenue	473
Priority: Construct bicycle corridors that commuters might use			
Priority: Corridors providing mobility to and within commercial areas			
Nimbus Road bike lanes	Scholls Ferry Road	Hall Boulevard	277
Canyon Road bike lanes	91 st Avenue	78 th Avenue	231
Beaverton-Hillsdale Highway bike lanes	Hall Boulevard	Western Avenue	454
Beaverton-Hillsdale Highway bike lanes	91 st Avenue	Scholls Ferry Road	370
Jamieson Road bike lanes	Beaverton-Hillsdale Hwy	Scholls Ferry Road	307
Center Street bike lanes	ORE 217	Canyon Road	181
Other Bicycle Master Plan Projects Total Cost:			\$ 6,026

COMPLEMENTING LAND DEVELOPMENT ACTIONS

The Transportation Planning Rule requires that bicycle parking facilities be provided as part of new residential developments of four units or more, new retail, office and institutional developments, and all transit transfer stations and park and ride lots.⁷

It is important that, as new development occurs, connections or accessways are provided to link the development to the existing bicycle and pedestrian facilities in as direct a manner as is reasonable. If a development fronts a proposed bikeway or sidewalk (as shown in the Bicycle or Pedestrian Master Plans), the developer shall be responsible for providing the bikeway or walkway facility as part of any half-street improvement required for mitigation.

⁷ Transportation Planning Rule, State of Oregon, Department of Land Conservation and Development, Section 660-12-045(3)(a).