
Pedestrian-Bicycle Transition Plan



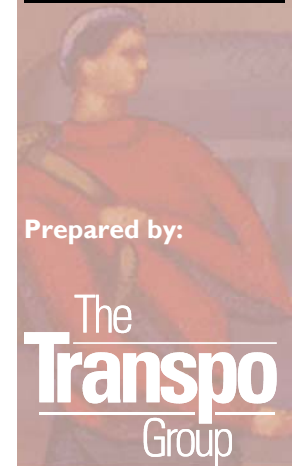
Recommended Bicycle Facilities

Chapter 4

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INTRODUCTION

The Ridge to Rivers Pathway Plan has provided the Ada County region with bicycle planning and policy direction over the past ten or more years. Nevertheless, there are many components of the Ridge to Rivers Pathway Plan that are either not fully defined or are incomplete.

Planning for the integration of bicycle facilities on new streets and highways can be much easier than retrofitting existing facilities.

Arterial and collector streets with limited width and higher traffic volumes are difficult to modify and add separate bicycle lanes in both directions. Public support for increased investment into new bicycle facilities is not prevalent within Ada County today¹.

This chapter provides an initial summary of the Ridge to Rivers

Pathway Plan to illustrate these short-comings and heighten awareness for the need of a comprehensive Bicycle Master Plan for Ada County. Such a significant effort was not envisioned as part of the Pedestrian-Bicycle Transition Plan (PBTP). Rather, the evaluation of the bicycle system as part of the PBTP helped identify and summarize critical gaps in the bike lane system (along street corridors) and shared-use path network; until such a time when a Master Plan can be completed.

RIDGE TO RIVERS PATHWAY PLAN

The last major update of the Ridge to Rivers Pathway Plan (RRPP) was in 1996. The RRPP is the current, regional plan to improve pathways in the Ada County urban area, some of which includes connecting links that are not under ACHD's jurisdiction. There are three bicycle components to the RRPP: *On-Street "Bikeways," Multi-Use Paths,* and *Multi-Use Trails*. The original goals

of the RRPP were to develop comprehensive systems for each of the three Plan elements.

The RRPP is a good starting point for bicycle planning in Ada County. As illustrated in **Figure 4-1**, the RRPP identifies a number of multi-use path and on-street *bikeway routes*. Unfortunately, the RRPP map leaves a number of critical gaps to both the on-street bike lane and multi-use path networks. Nor does the RRPP fully describe and document the various cycling user needs and bike trip generation activities.

Since the RRPP was last updated in 1996, several new bicycle facility projects have been constructed. **Figure 4-2 (a)** maps the existing bicycle system in the Ada County urban areas; **Figure 4-2 (b)** highlights the downtown Boise area. As shown, **Figure 4-2** helps distinguish the difference between on-street bicycle "lanes" and "routes," more so than the original RRPP map.

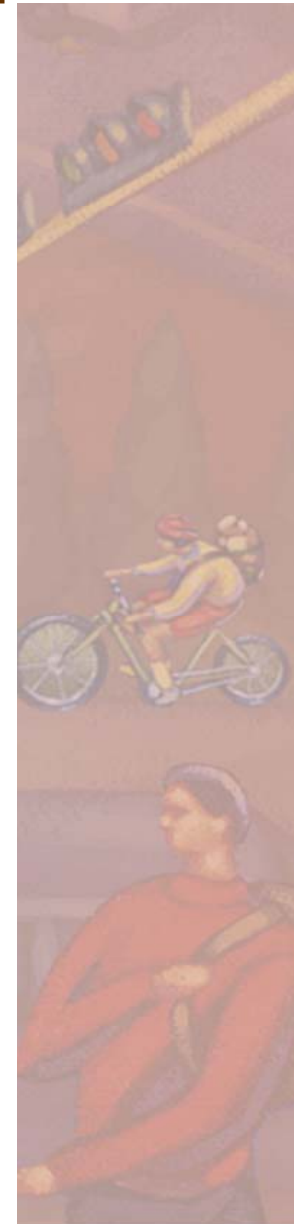


Figure 4-1 Ridge-to-Rivers Bikeway Facilities Map

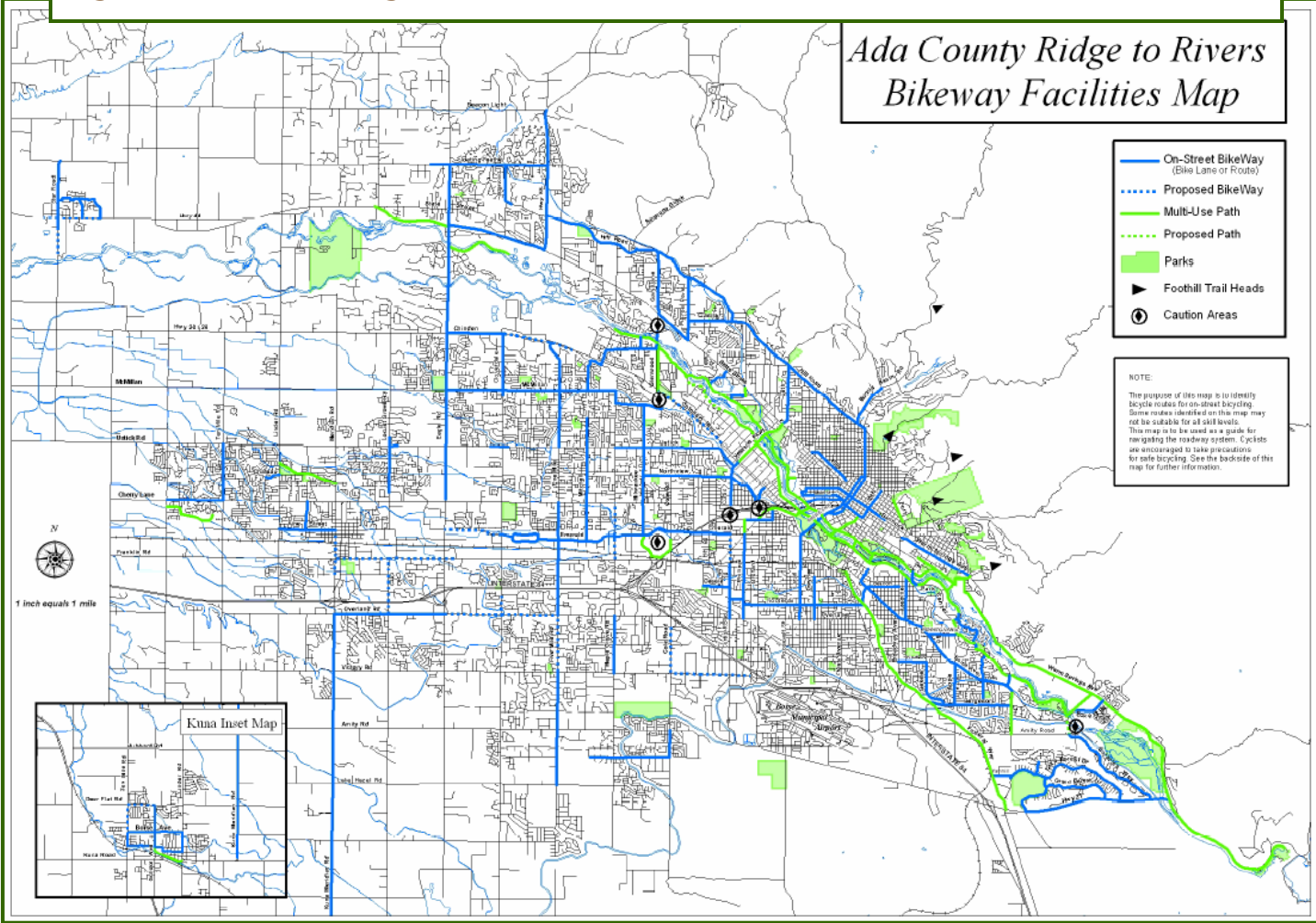


Figure 4-2 (a) Existing (2004) Bicycle Facilities

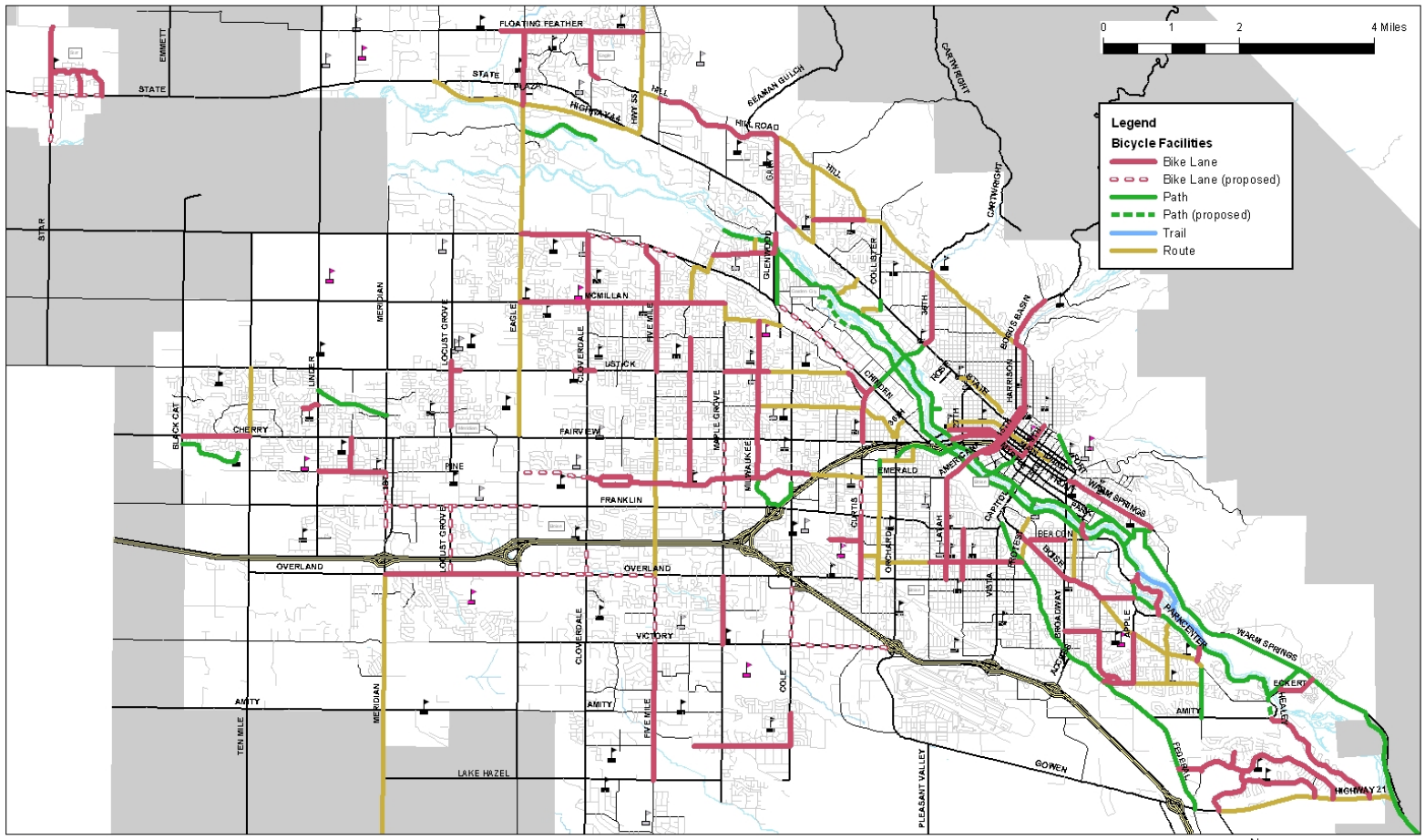
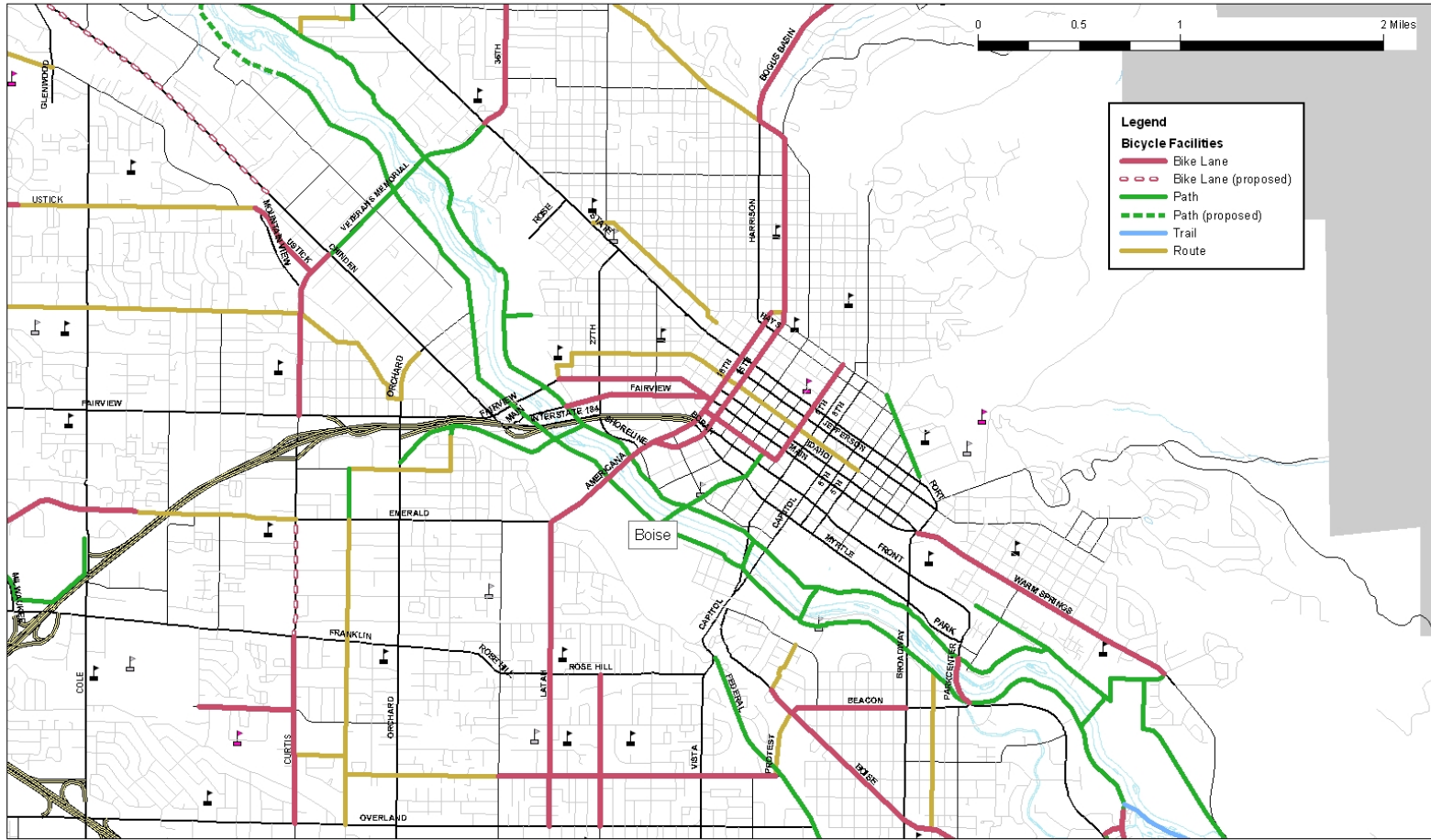


Figure 4-2 (b) Existing (2004) Bicycle Facilities



The Transpo Group
Boise

ACHD Pedestrian & Bicycle Transition Plan

While ACHD has been providing good advanced planning for many on-street bicycle lanes (see *State Street Corridor Study*²) and multi-use path connectors, the absence of these defining characteristics, policies and maps makes current project and long-range planning efforts more difficult, particularly when several jurisdictions are involved. Some of the current planning and design projects offer excellent examples that highlight these policy and plan gaps. The following section highlights three major, on-going planning efforts in Ada County: *Three Cities River Crossing*, *Downtown Boise Mobility Study*, and *Eagle Road Arterial Study*.

Three Cities River Crossing

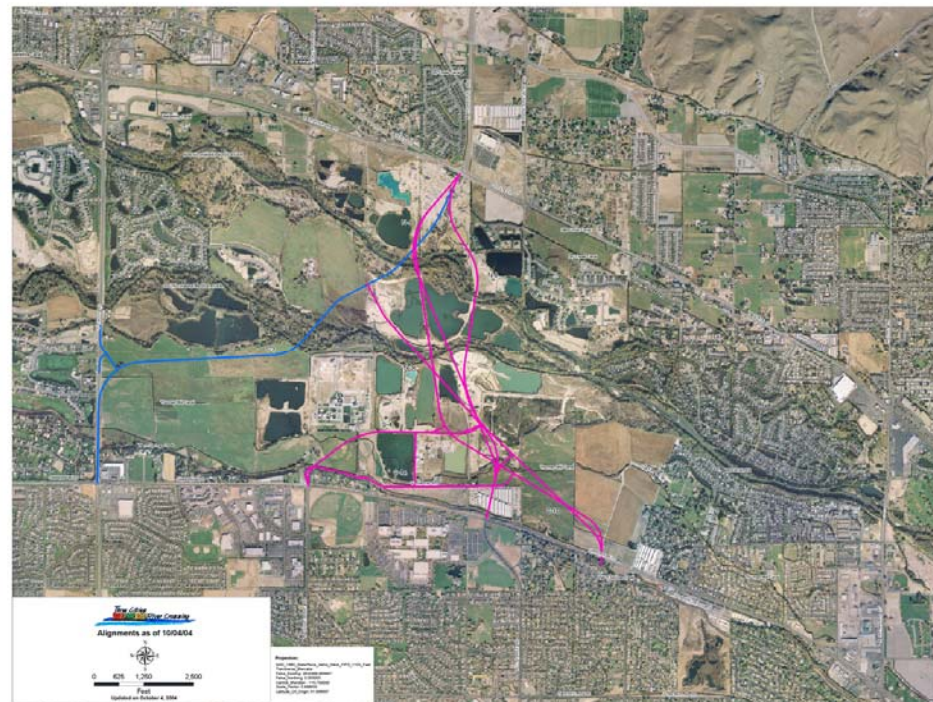
The purpose of the on-going Three Cities River Crossing study is to conduct environmental analysis and concept level engineering to define an alignment for a new road and bridge connecting the intersection of State Highway 55 and State Street (State Highway 44) with Chinden Boulevard (U.S. 20/26).

Planners and engineers have identified a number of river crossing route options, as shown in **Figure 4-3**. There are no map or policy indicators in the RRPP that demonstrate the need for routes that link the Boise River multi-use path (greenbelt) network across the

Boise River via the Three Cities River Crossing.



Figure 4-3 Three Cities River Crossing Options



RRPP doesn't indicate need to connect shared-use paths



Downtown Boise Mobility Study

The Downtown Mobility Study initial draft is being reviewed by participating jurisdictions following recent public involvement activities. The purpose of this on-going study is to develop a comprehensive approach to mobility within downtown Boise and for people traveling from, to, and through the downtown area. The stated vision for downtown Boise includes:

- An urban, pedestrian-oriented setting characterized by ease of movement and freedom from congestion for people and manageable congestion for vehicles.
- A vibrant mix of uses, including housing, offices, services, retail, restaurants, hotels, public spaces, and cultural, entertainment, research and learning opportunities.
- **An interconnected, multi-modal system of transportation that**

sustains this character and connects downtown Boise to the larger region.

- Smooth connectivity between various activity centers within the study area.

shown, the Plan currently identifies only a few bicycle lane and route enhancements and multi-use path routes; but no recognition of route continuity into and through downtown Boise (in relation to those bike lanes, routes and shared-use paths identified in Figure 4-2). A more comprehensive bicycle master plan would have provided greater and more specific direction

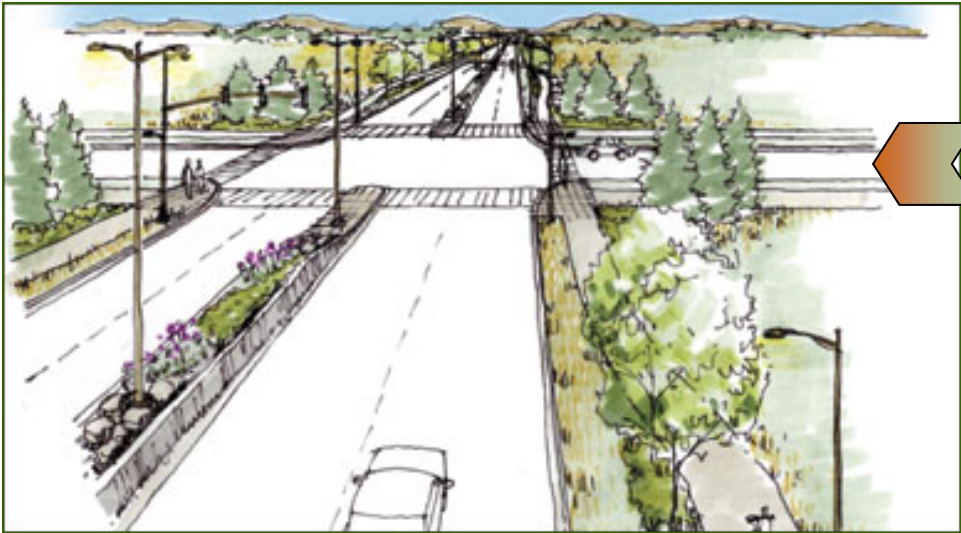
Figure 4-4 Downtown Boise Mobility Study Projects



to the Downtown Boise Mobility Study to recognize important, existing facilities (on-street bicycle lanes and routes and multi-use paths) and important bicycle trip generators. In its current draft form, the Downtown Boise Mobility Study doesn't really identify those critical bicycle routes and facilities to address the Study's vision statement for bicycle connectivity.

Idaho 55 Eagle Road Arterial Study

The Idaho Transportation Department (ITD) is currently conducting the Idaho 55 Eagle Road Arterial Study. Idaho Highway 55 spans a portion of the Boise/Meridian urban area along Eagle Road. Eagle Road currently carries about 51,000 vehicles per day, and generally lacks curbs, sidewalks and designated bicycle facilities. The *Arterial Study* is examining a number of safety and modernization improvements, including:



Idaho 55 Eagle Road Arterial study—

Artist Rendering

RRPP indicates on-street bike lane or route for Hwy 55/ Eagle Road



Proposed safety improvements

- **Sidewalks and bike paths**
- Increase lighting for motorists, pedestrians and cyclists
- Median barriers with periodic breaks

Proposed roadway improvements

- Dual left-turn lanes at major intersections
- Increase U-turn capabilities
- Bus pullouts

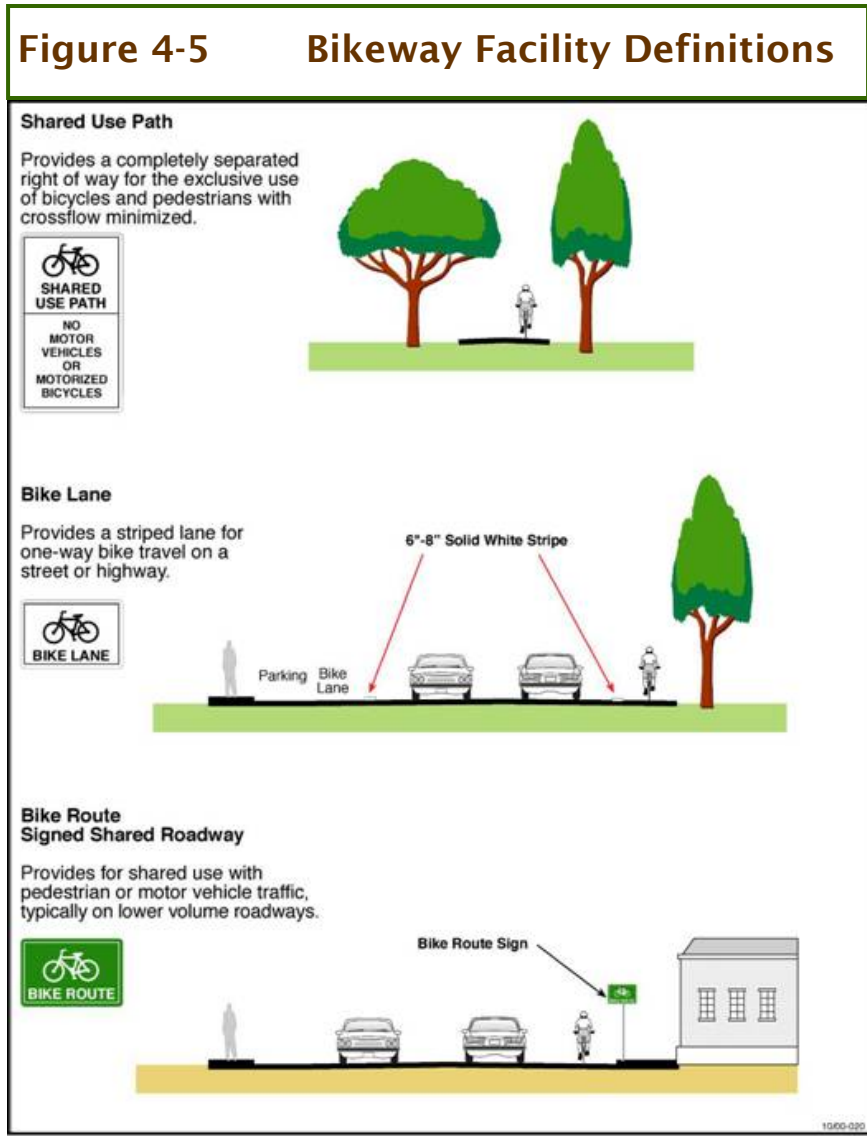
- Curb and gutter along entire length of Eagle Road

While many of the street improvement options are not depicted in the Study's recent artist rendering, the illustration does include the possibility of shared-use paths along both sides of Eagle Road. These type of bicycle system enhancements are currently not depicted in the RRPP.

REVISING THE BICYCLE PLANNING LANGUAGE

ACHD can begin more proactive planning for bicycle facilities by first expanding upon the RRPP and clarifying the definitions of the various bicycle facilities, especially for the on-street bicycle system. The various local jurisdictions differ somewhat in their preferences for bicycle facilities, requiring a great deal of cooperation. Oftentimes the RRPP concludes in its text and mapping a defined “Bikeway Route” network, some of which are implied to mean on-street bicycle lanes. What are *bikeway routes*? Are they separate lanes for cyclists or a series of signs and painted symbols that indicate for cyclists the need to share the travel lanes with cars and trucks?

There is need for further clarity in these definitions, otherwise planners, engineers, policy officials and the general public might be



unclear what the RRPP full intentions are. **Figure 4-5** illustrates the basic forms of bikeway facilities as defined by the Manual of Uniform Traffic Control Devices (MUTCD)³. Consistent with the MUTCD, ACHD should adhere to the following definition of terms concerning bicycle facilities in Ada County:

Bicycle Facilities

A general term denoting improvements and provisions that accommodate or encourage bicycling, including parking and storage facilities, and shared roadways not specifically defined for bicycle use.

Bikeway

A generic term for any road, street, path that in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive bicycle use or are to be shared with other travel modes.

Bicycle Lane

A portion of a roadway that has been designated by signs and pavement markings for preferential or exclusive use by bicyclists. Bicycle lanes are one-way facilities that are placed on both sides of a street, and they carry bicyclists in the same direction as adjacent motor vehicle traffic. In addition to lane striping, pavement markings and signage identify bicycle lanes.



Another type of bicycle lane is a shoulder bikeway.

Shoulder bikeways are paved shoulders that are at least four feet in width and are separated from conventional travel lanes with a lane stripe. This type of facility is typically applied to a rural roadway cross-section that does not have curb and gutter.

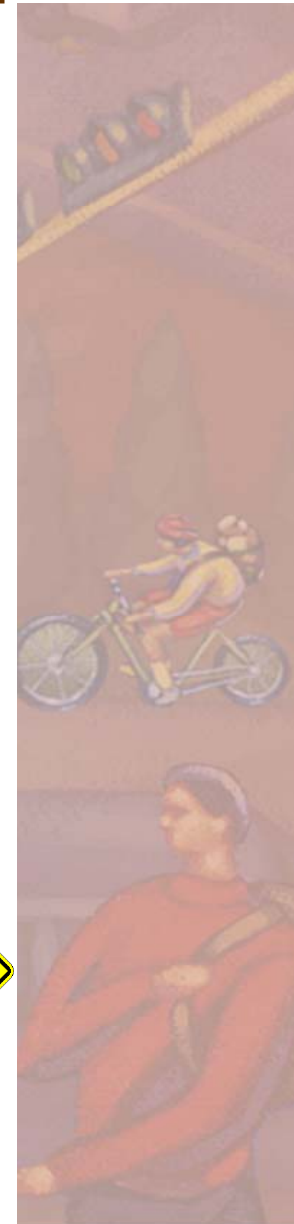


Designated Bicycle Routes

A system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route signs, with or without specific bicycle route numbers. Bicycle routes, which might be a combination of various types of bikeways, should establish a continuous routing. Designated bicycle routes can be divided into *shared roadway* and *shared-use path* facilities.

Shared Roadway

On a shared roadway, bicyclists and motorists share the same travel lane. Shared roadway bicycle routes can be placed on streets with wide outside travel lanes, along streets with bicycle route signing, or along local streets where motorists have to weave into the adjacent lane in order to safely pass a bicyclist.



Shared-use paths should be constructed to minimum widths of 10 feet (Source: FHWA Designing Trails and Sidewalks for Access)

Shared-Use Path

A bikeway outside the traveled way and physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. Shared-use paths are also used by pedestrians (including skaters, users of manual and motorized wheelchairs, and joggers) and other authorized motorized and non-motorized users.



Shared-use paths primarily attract recreational users. However, because they typically wind through

a community and connect destinations, they also offer an excellent opportunity to function as non-motorized transportation routes. For children, or any cyclist uncomfortable with sharing the roads with vehicles, shared-use paths may be the preferred facility.

Implementation of these specific terms will help advance consistent dialogue between all agencies and the Ada County community regarding bicycle facility planning and design, within the context of multi-modal systems development.

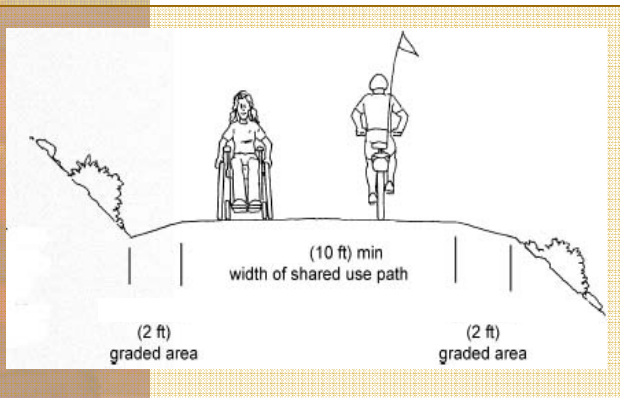
TRANSITION PLAN FINDINGS

ACHD’s Capital Improvements Plan (CIP) adds a number of important bike lane connectors on arterial street system over the next 20 years, as shown in **Figure 4-6**. The CIP identifies roadways planned for capacity expansion within this period. ACHD regularly

installs sidewalks and bicycle facilities as part of these projects, even though they are not funded by traffic impact fees. Once completed these CIP projects help fill a number of gaps in the bicycle system, but they don’t close all the gaps. Rather than widen existing streets to accommodate separate bike lanes, ACHD should consider re-engineering some of its arterials. To do so requires examination of:

- Number and width of vehicular travel lanes
- Presence and width of center turn-lane/median treatment
- Presence, width and utilization of on-street parking.

Arterial street re-engineering projects can be as simple as striping bicycle lanes which has no impact to existing travel lanes or on-street parking, re-striping travel lanes with reduced width (10 1/2- or 11-foot instead of 12-foot wide) to accommodate additional bike lanes, or removal of on-street parking on



one or both sides of arterials to add bicycle lanes.

Re-engineering projects can also be more significant, consider

treatments for access management, traffic signal consolidation, innovative design treatments (particularly at intersections), pedestrian and bicycle facilities such

as refuge islands and curb extensions, and landscaping. Re-engineering some ACHD arterials may maximize the efficiency and safety of the corridors

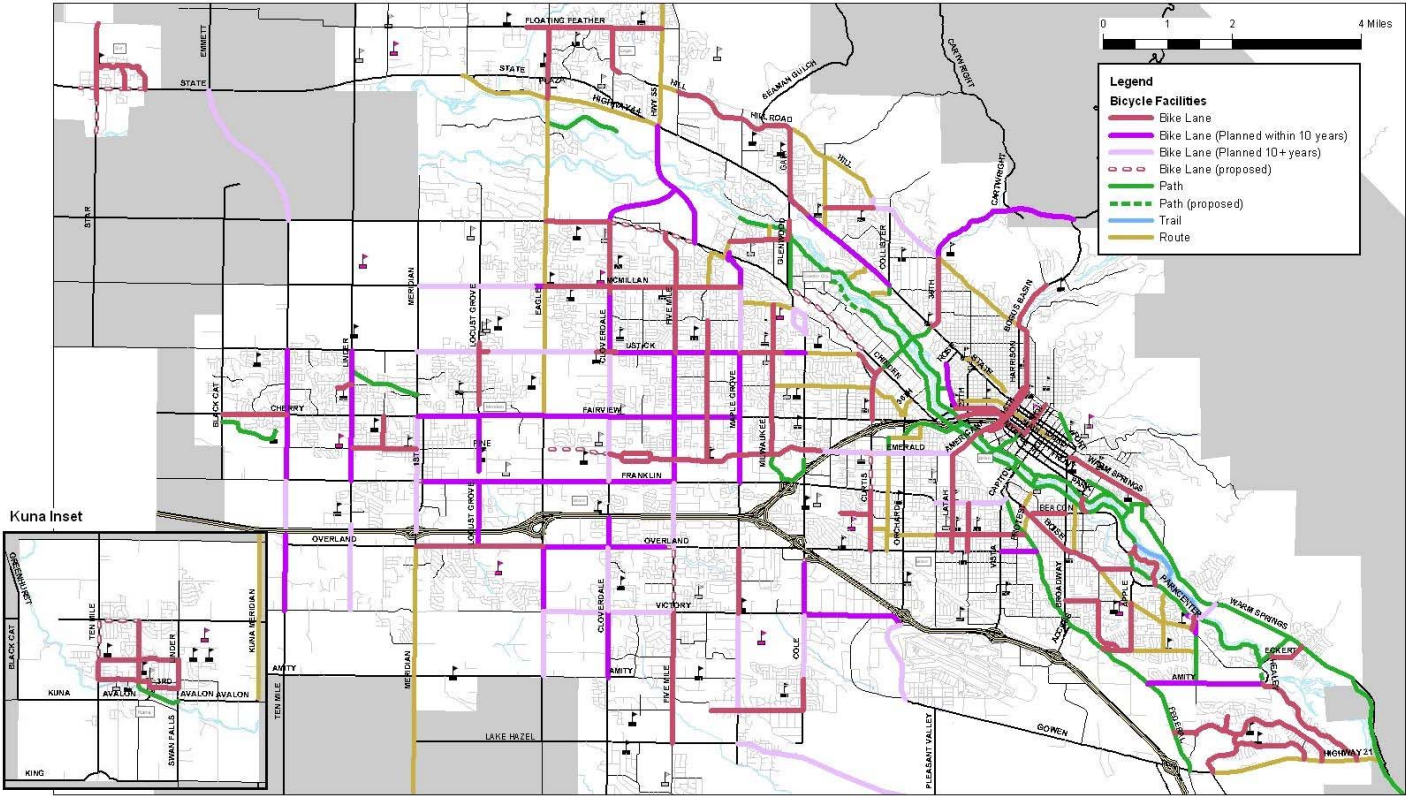
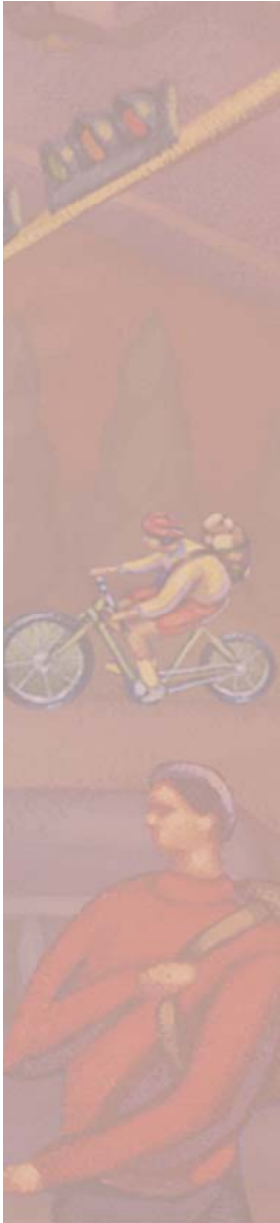


Figure 4-6 Planned Bicycle Facilities— As Part of the 2003 CIP





for motorists, pedestrians, bicyclists, and transit users. Well-designed street improvements can also help trigger reinvestment and help enhance the viability of some corridors in Ada County.

RE-STRIPING EXISTING ARTERIALS

It is possible for ACHD to re-stripe some arterial streets to include bicycle lanes, either by reducing travel lane widths or modifying on-street parking. Both options are described in this section. Where existing street widths do not allow full standards to be used, it may be possible to modify portions of the roadway to accommodate bike lanes. Many of ACHD’s major arterials include 14- foot center turn lanes and 12-foot travel lanes; some also include 8- foot on-street parking lanes. AASHTO⁴ guidelines should be used to determine how these streets can be modified to accommodate bike lanes without significantly affecting the safety or operation of the roadway. Reduced travel-lane widths are within

AASHTO minimums. However, each of ACHD’s streets have unique characteristics and land use access. It is important to apply good judgment - each project should be reviewed by ACHD’s Traffic Engineer.

Reducing Travel-Lane Widths

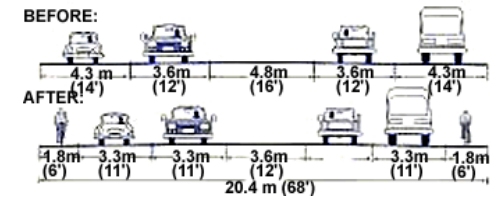
The need for full-width travel lanes decreases with speed:

- up to 25 mph ~ travel lanes may be reduced to 10 or 10 ½ feet
- up to 30 to 40 mph ~ 11-foot travel lanes and 12-foot center turn lanes may be acceptable
- 45 mph or greater - try to maintain a 12-foot outside travel lane and 14-foot) center turn lane if there are high truck volumes

Revise On-Street Parking

Most will agree that the primary function of ACHD’s arterials is to move traffic, not store parked cars.

Revising Travel-Lane Widths



When parking is removed, arterial street safety and capacity are generally improved and on-street bicycle lanes can be added.

However, removing on-street parking can be difficult within certain areas as adjacent land-owners place high value on street parking. Removal of on-street parking may require negotiations with affected business owners and residents. ACHD should conduct more careful research before implementing revisions to on-street parking to accommodate bike lanes by:

- Counting the number of businesses/residences and the availability of both on-street and off-street parking.
- Selecting which side would be less affected by removal (usually

the side with fewer residences or businesses, or the side with residences rather than businesses in a mixed-use neighborhood).

- Coordinate with cities neighborhood and homeowner associations.
- Proposing alternatives such as:
 - Allowing parking for church or school activities on adjacent lots during services or special events.
 - Shared use by businesses.
 - Constructing special parking spaces for residents or businesses with no other options.

Rather than removal of all on-street parking, several other options can be pursued:

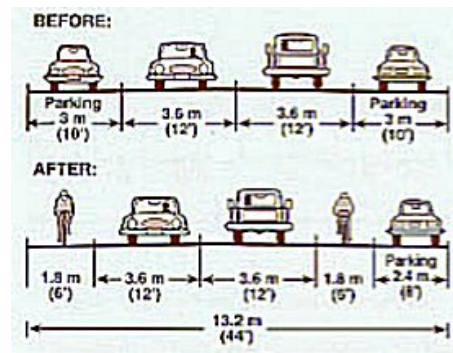
Narrow Parking Lane

Parking can be narrowed from 8 to 7 feet, particularly in areas with low truck parking volumes

Remove Parking on One Side

In some cases, parking may be needed on only one side to accommodate residences and/or businesses.

Revising On-Street Parking



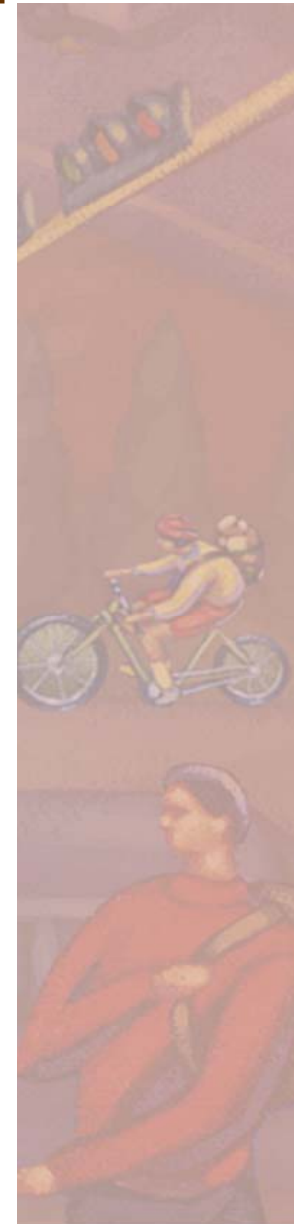
RECOMMENDED RE-ENGINEERING PROJECTS

The PBTP presents an initial set of recommended projects that will serve as a first step toward achieving the integrated network of bicycle facilities that would be further

outlined in a Master Plan. Specific corridors were selected based on the following criteria:

- They provide direct connectivity between major destinations, such as downtown Boise and other activity centers/neighborhoods
- They are corridors on which concentrations of attractors are located
- They generally extend in major directions from downtown Boise

The PBTP includes a Bikeway Map – **Figure 4-8**, which identifies streets where new, on-street bicycle lanes should be installed through re-engineering. These recommendations help fully connect the bicycle system already identified in the Ada County Ridge-to-Rivers Pathway Plan. Also, interim measures to re-stripe some arterials streets (that are already identified in the CIP for major widening and new bicycle lanes) may prove successful.



Chapter 4 | Recommended Bicycle Facilities

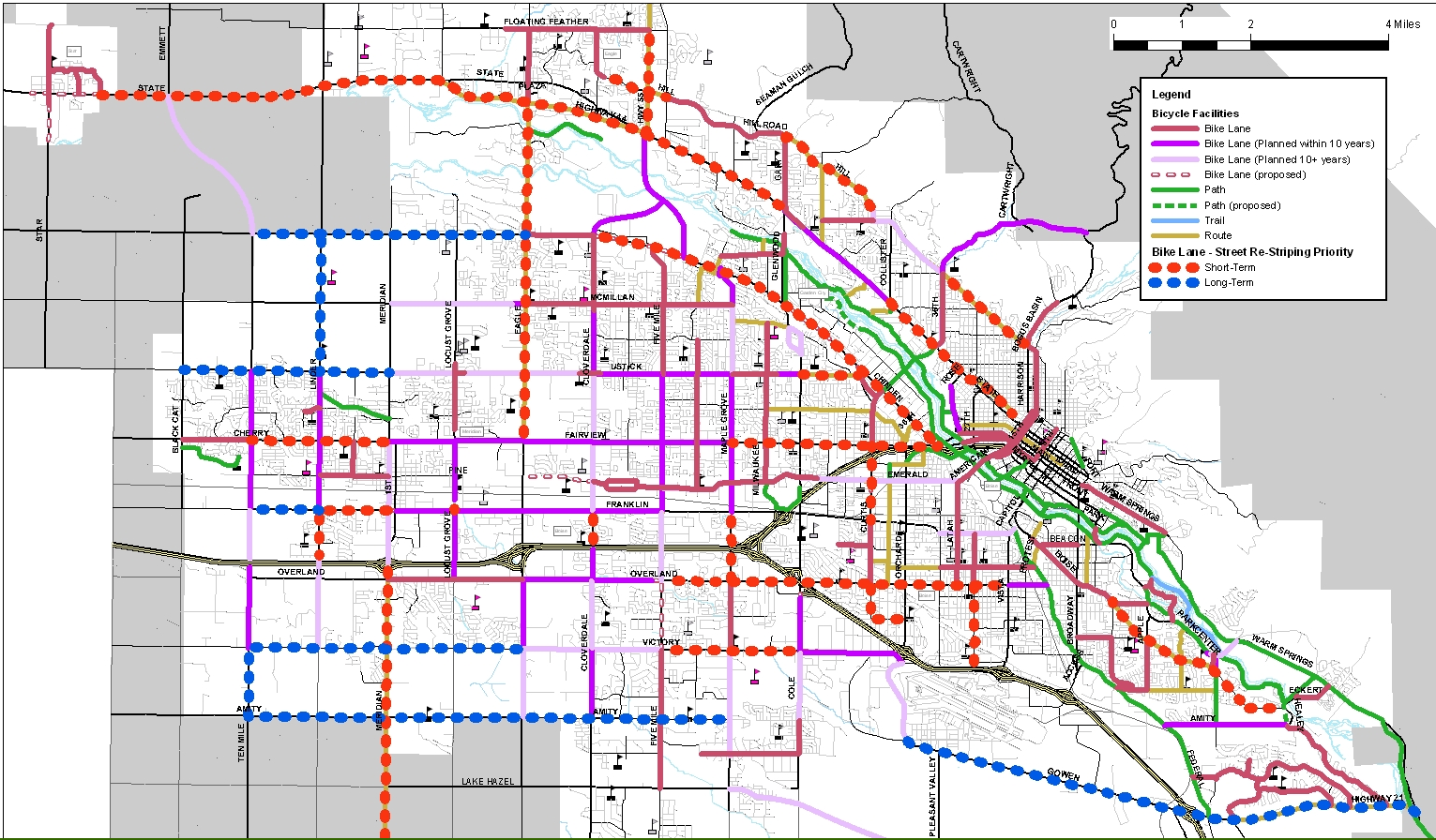


Figure 4-8 Priority Bicycle Lane Improvements—Including ITD Roadways

Specific re-engineering projects with higher priority for short-term implementation are listed separately for ACHD and ITD corridors. **Table 4-1** lists the ACHD arterial street segments that should be re-engineered for on-street bicycle lanes. Similarly, **Table 4-2** lists those ITD corridors that should be re-engineered with either on-street bicycle lanes or striped shoulders.

The recommended on-street bicycle facilities are coordinated with the off-street facilities (multi-use paths) that have already been identified as part of the Ada County Ridge-to-Rivers Pathway Plan, which will help develop a more comprehensive bicycle route network throughout Ada County.

Table 4-1 ACHD Arterial Streets Identified for Re-Engineering

Short-Term Priority Routes	from	to	Type
EAST-WEST			
State Street	Glenwood	Downtown Boise	Lane1
Hill Road (various sections)	Hwy 55	Harrison	Lane
E. Hill Road (Eagle)	Edgewood	Hwy 55	Lane
Ustick	Cole	Mountainview	Lane
Cherry	Ten Mile	Meridian	Lane
Fairview	Maple Grove	Chinden	Lane
Franklin	Linder	Meridian	Lane
Overland	Five Mile	Vista	Lane
Overland	Federal Way	Broadway	Lane
Victory	Five Mile	Cole	Lane
Boise Avenue	Pennsylvania	Amity Rd	Lane
Targee	Curtis	Orchard	Lane
NORTH-SOUTH			
Linder	Franklin	I-84	Lane
Locust Grove	Pine	Franklin	Lane
Cloverdale	Franklin	I-84	Lane
Maple Grove	Franklin	Overland	Lane
Curtis	Fairview	Franklin	Lane
Curtis	Overland	Targee	Lane
Owyhee	Overland	Elder	Lane
Joyce Street (alt to Capitol)	Boise Ave	greenway	Lane
Protest	Federal Way	Boise Ave	Lane
1 See State Street Corridor Study			

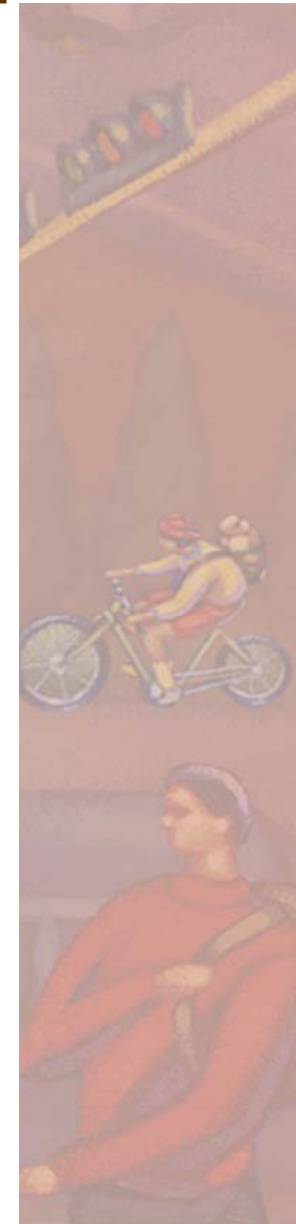




Table 4-2 ITD Highways Identified for Re-Engineering

Route	from	to	Type
Hwy 55 - Eagle Road	Hwy 44	I-84	Lane/Shared-Use Path ¹
Hwy 55 (north of Hwy 44)			Lane/Shoulder Lane
Hwy 44	Star	Glenwood	Lane/Shoulder Lane
Hwy 69	I-84	Kuna	Lane/Shoulder Lane
Hwy 21	I-84	Warm Springs	Lane/Shoulder Lane
US 20/US 26	Ten Mile	Eagle Road	Lane/Shoulder Lane
US 20/US 26	Eagle Road	Fairview/Main	Lane
¹ See Eagle Road Arterial Study			

NEED FOR A BICYCLE MASTER PLAN

More advanced plans and designs to better integrate bicycle facilities in the overall streetscape and multi-use path network will help ACHD better administer project-specific, multi-modal plans and designs (see Chapter 5 – *Local Design Guide for*

ACHD Pedestrian Facilities for discussion of emerging street and sidewalk design standards). There is also a need for additional planning of bicycle facilities in coordination with the new ValleyRide bus routes, stops and transfer points.

Since 1996 the Ada County public has not been effectively engaged in the full assessment of bicycle plan, programs and facility design. A detailed *Bicycle Master Plan* effort

affords the community and major land use and transportation agencies an opportunity to significantly expand and update the Ridge to Rivers Pathway Plan. ACHD should be a major player in the master plan effort. The absence of this master plan effort will continue to plague ACHD and others as planning and design for street, highway and transit improvements continue in Ada County.

The master plan effort should develop a set of guidelines for bicycle facilities, with standards and practices to provide ACHD, ITD and other agencies guidance on the integration of bicycle facilities into the various street, highway and transit projects that have the potential to affect bicycle travel in Ada County.

Application of the design guidelines will ensure consistency in facilities design. Consistency will provide cyclists with assurance regarding the type and quality of the

bikeways that they will encounter. It will also encourage both cyclists and drivers to operate with each other on public right-of-way. Consistency and predictability encourage bicycle use and are cornerstones of a safe multi-modal transportation infrastructure.

The guidelines should generally be based on the *AASHTO Guide for the Development of Bicycle Facilities*. The types of bicycle facilities that should be contained in the guidelines include bicycle lanes, shared roadways and shared-use paths. Guidance on related design issues such as intersections, common hazards, end-of-trip facilities, and bicycle facility maintenance should also be included. Application of the bicycle design guidelines will help ACHD and others consistently develop bicycle system facilities.

Regardless of the type of bicycle facility, or even the presence of a designated bikeway route, all streets

should be designed and maintained to eliminate the common hazards that create safety problems for bicyclists. Features or issues that require specific consideration for their effect on bicyclists include:

- Storm grates
- Pavement surface quality
- At-grade railroad crossings
- Rumble strips
- Roadway bridges
- Construction zones
- Bicycle Parking

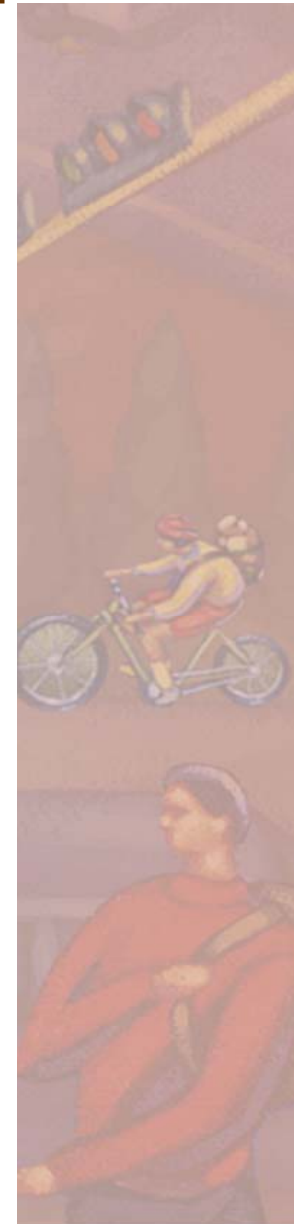
BICYCLE PLANNING COORDINATOR

Regardless of whether it leads the bicycle master planning effort, ACHD should consider the need to expand its bicycle coordinator position within the agency. Currently, ACHD administers a fairly informal coordination effort regarding bicycle facility project and planning coordination. Activities include continued update of the FYWP bicycle improvements with

local jurisdictions and hosting of a fairly informal bicycle advisory committee. ACHD's current bicycle coordination role could be combined with the ADA/PBTP Coordinator (see also Chapter 6 – *Local Design Guide for ACHD Pedestrian Facilities*).

The coordinator's responsibility would be to develop and administer the Bicycle Master Plan. Specific tasks would include the following:

- Review roadway and transit improvement projects for compliance with the BMP
- Advise and assist in the review of development projects for integration of bicycle considerations
- Evaluate and advise on bicycle retrofit projects
- Coordinate implementation of other BMP with all relevant agencies
- Facilitate education, encouragement and enforcement activities
- Coordinate pursuit of funding for bicycle system



END NOTES

¹ *Public Opinion on Priorities for ACHD Capital Spending*, Strategic Intelligence, Inc., May 2004

² *State Street Corridor Study*, Meyer, Mohaddes Associates, 2004.

³ *Manual of Uniform Traffic Control Devices*, U.S. Department of Transportation - Federal Highways Administration, 2004.

⁴ *Association of American State Highway Transportation Officials. Guide for the Development of Bicycle Facilities*, Washington, D.C. 1999.

