Appendix A. Plan and Policy Review

The supporting plans and policies of the local jurisdictions affect bicycling in Ada County. This appendix reviews relevant plans and policies that may impact this Plan.

Regional Plans and Policies

Ada County Highway District

Ada County Highway District Development Policy Manual (2006)

The ACHD Development Policy Manual is in the process of being updated. Once it is finalized, the Traffic, Engineering and Technical Requirements sections should be consulted for the most recent policies. The document is divided into ten separate sections, and bicycles and bicycle design are mentioned in several of the sections.

Section 3004: Roadway Design Standards

Roadway planning and design for the public road system shall conform to the certain guidelines and referenced specifications, which includes the AASHTO Guide for Development of New Bicycle Facilities.

Section 5101.3: Bikeway Design

Bikeway design will be based on the AASHTO Guide for Development of New Bicycle Facilities. Where bike lanes are installed, the width shall be based on the guidelines specified in Section 5101.2. The latest version of the Ridge to Rivers Pathway Plan endorsed by the Community Planning Association or COMPASS (previously Ada Planning Association) Board and adopted by the ACHD Commission shall be used as a guide for including a bikeway in a District project or private development project. District staff will evaluate various alternative alignments and classes of bikeways before recommending a specific option to the District Commissioners for approval. These are:

- Class 1 - separate path
- Class 2 - bike lanes; and
- Class 3 - bike route District shared facility

The evaluation shall include at least the following considerations: the potential number and types of bicyclists; the importance of the bikeway in system continuity; the potential volume, types, and speed of vehicle traffic; right-of-way costs; construction costs; input of the public and various agencies; hardship to private property related to taking of right-of-way; the impact on parking removal; the impact on the environment; and the availability of parallel streets, canals, railroad tracks, to accommodate a bikeway.

7202.4: Collector Streets

Typically have an ADT of 2500-8500 vehicles in residential areas, but can reach much higher volumes along neighborhood edges and in areas of non-residential land use.

7202.4.10: Bicycles: Generally, collector streets will have sufficient pavement width to accommodate automobile and bicycle traffic on both sides of the roadway in accordance with the Ridge-to-Rivers Pathway Plan.

7202.5: Arterial Streets (Industrial and Commercial)

Have ADT that typically ranges up to 7500 vehicles. 7202.8.7 The industrial/commercial street section provides sufficient width to accommodate motorized vehicles and bicycles.

7204.6.15 Collector Street Design – Bike Lanes

Bike lanes may be required as designated by the Ridge-to-Rivers Pathway Plan. Bike lanes shall be a minimum of four feet wide where on-street parking is not allowed and six feet wide where parking is allowed.

7204.6.16 Bike Routes

Bike routes are not striped lanes on the pavement, but appropriate signage will be installed by the District to identify them in accordance with the Ridge-to-Rivers Pathway Plan.

7204.7.5 Arterial Street Bike Lanes

Bike lanes may be required as designated by the Ridge-to-Rivers Pathway Plan. The standard width of a bike lane is five feet.

7204.7.6 Bike Routes

Bike routes are not striped lanes on the pavement, but appropriate signage will be installed by the District to identify them in accordance with the Ridge-to-Rivers Pathway Plan.

ACHD Pedestrian-Bicycle Transition Plan (PBTP) (2005)

The Pedestrian-Bicycle Transition Plan's major focus was to address the regulatory requirements of the American with Disabilities Act (ADA). Through the public involvement process, the following issues, concerns, and comments regarding the bicycle network were identified:

- Lack of connectivity in the overall system
- Need for additional, enhanced signage and way-finding systems
- Need for improved education regarding the bicycle system, location, routes and function
- Desire for separated bicycle facilities in congested areas
- Connectivity to the Greenbelt is important

The Roadways-to-Bikeways proposed network addresses these issues in developing a comprehensive network with a variety of design treatments and focusing on providing connections. The network will also benefit disabled residents by providing direct access to popular destinations.

Important policy issues identified include:

- Need to integrate pedestrian/bicycle facility design standards into local planning/zoning ordinances
- Consider and plan pedestrian and bicycle facilities as part of the overall "transportation network"
- Desire for support from ACHD and ITD to local communities in creating development policies that support appropriate pedestrian and bicycle facilities

Important Coordination/Education/Planning Issues identified include:

- Need for more community-wide signage and way-finding systems regarding bicycle routes
- Need for more education regarding bicycle/skateboard/roller blade etiquette to reduce conflicts with pedestrians and mobility impaired
- Coordinate with schools to improve integration of pedestrian/bicycle facilities with new school sites
- Consider pedestrian/bicycle facilities needs as part of an overall multi-modal transportation system, not an add-on or optional consideration

Chapter 4 of the PBTP is dedicated to Recommended Bicycle Facilities, but the chapter acknowledges that it is only providing an initial summary of the Ridge to Rivers Pathway Plan and a cursory evaluation of the bicycle system until such time a Bicycle Master Plan can be completed. Findings from the cursory evaluation include:

- Identifying potential locations for re-striping existing arterials to accommodate bicyclists by reducing travel lane widths, narrowing or removing parking, or removing parking on one side.
- Recommended re-design projects to serve as a first step toward achieving an integrated network of bicycle facilities

The final recommendations of the chapter are to undertake a Bicycle Master Planning process (this current process), and to hire a Pedestrian/Bicycle Planning Coordinator.

State Street Corridor Strategic Plan Study (2003)

State Street is a major "gateway" to the City of Boise that provides the only complete east-west connection north of the Boise River. The study looks at State Street Corridor from 23rd Street to Highway 55 and includes:

- necessary near-term improvements
- a vision for how State Street should evolve over the next 20 years, and
- an implementation plan to help the multi-jurisdictional agencies responsible for this area make the vision a reality

State Street is designated a bike lane and mixed-use route from 36th Street to Gary Lane. State Street provides pedestrian connections to shopping centers, businesses, parks, schools, churches and neighborhoods along the corridor.

Traffic volumes are expected to increase significantly (more than 50 percent) over the next 20 years with volumes exceeding 55,000 Average Daily Traffic (ADT). With this increase, existing bicycle and pedestrian facilities need expansion to be effective. Improvements to bicycle and pedestrian facilities were included in all long-term scenarios.

After analyzing three alternatives, the preferred long-term scenario was a transit scenario that would result in a seven lane cross-section that would consist of three lanes (12' wide) in each direction and a landscaped median/center turn lane with 5-foot wide bike lanes. The implementation plan recommends that ACHD implement the interim 0-10 year improvements and program the longer term widening of the roadway to accommodate transit, bicycles, and pedestrians.

ACHD Bikeways Priority 2002: Gekeler Lane and 18th Street Corridors (2002)

As a follow-up to the Bikeway Connection Evaluation, ACHD evaluated the Gekeler Lane corridor and the 18th Street corridor and recommended signage improvements within these two corridors to facilitate bikeway connections and provide continuity in the bikeway system. This report recommends Bike Route status and signage improvements within these two corridors plus recommendations on new bikeway signage for ACHD consideration. Additional recommendations include:

- Organize and conduct an annual Bicycle Awareness Summit to help coordinate bicycle issues, planning, and development in Ada County; and
- Evaluate, seek public input and implement a "Citizen Bicycling Improvement Request" form.

Ada County Highway District Bikeway Connection Evaluation (1999)

The introduction acknowledges that the greatest need for Ada County's bikeway system is in traversing the bikeway sections that are rather hostile to cyclists, like overpasses, arterials, and bench connections of the city so that bicycle access becomes countywide. Attention is also needed to make certain that primary routes are available and continuous for cyclists.

20 road segments were identified as having gaps or dead ends in the Ad a County Ridge to Rivers Bikeway Map. This planning effort seeks to identify needed improvements for these gaps or "links" and prioritize their rank for future design and construction. Each identified project had an associated project sheet where the existing conditions, BAC recommendations, engineer's recommendations, and costs are described. The top tier projects were:

- Mitchell Street (McMillan Road to Marigold Street)
- Third Street (Myrtle Street to Fort Street)
- Bannock Street (5th Street to Avenue B)
- Americana Boulevard (Ann Morrison Park to Latah Street)

The 2nd tier projects were:

- State Street (36th Street to 28th Street)
- Boise Avenue (Holcomb Road to Eckert Lane)
- Emerald Street (crossing I-184)
- Curtis Road (Emerald Street to Fairview Avenue)
- Orchard Street (connecting to Downtown from the bench)
- Five Mile Road

The document also contains general recommendations regarding signing and pavement marking, bike facility maintenance, and education and enforcement.

Bicycle Accommodation Policy on ACHD Streets (1998)

The ACHD Commission directed staff to report back to them with a strategy to:

- Put bike lanes on all feasible collectors and arterials
- Identify collectors and arterials that are not appropriate for bike lanes and develop a strategy for safely accommodating bicyclists on those streets and
- Make bike lanes wider where factors such as speeds and trucks make widening desirable.

Based on direction given by the Commission, a safety shoulder should be provided and separated from the vehicle lane by an edge stripe as the standard accommodation on principal arterials. Bike lanes should be the standard accommodation on collectors and on minor arterial segments. Exceptions would be rural street sections where shoulders can best accommodate bicyclists, and low speed/low volume streets where bicyclists can be expected to mix well with traffic and/or the likelihood or impacts of a retrofit including bike lanes is impractical or undesirable.

With regard to attracting people to use their bicycles as a transportation mode, the point has been made that the greatest potential is in the B/C range where bike lanes and bike paths are clearly the facility of choice.

Travel Lane Width

In Ada County, travel lane widths are currently determined by posted speed and by roadway classification. Table 16 and

Table 17 show the designated lane widths set out by ACHD's District Policy Manual.

Table 16. Travel Lane Width and Posted Speed, DPM 5100

Posted Speed Limit	Through Lane Width	Bike Lane Width
25	10'-11'	3 ½' – 5'
30	10'-12'	4' – 6'
35	11' – 12'	4' – 6'
45	11' – 12'	4 ½' – 7'
60	11' – 12'	5' – 7'

Table 17. Travel Lane Widths and Roadway Classifications, DPM 7200

Classification	Lane Width	Classification	Lane Width
Standard Local (w/ parking)	9.5	3-Lane Minor Arterial	12
Residential Collector (no parking)	10	4- or 5-Lane Minor Arterial	11.5
2-Lane Collector	14	4- or 5- Lane Principal Arterial	12
3-Lane Collector	11	7-Lane Principal Arterial	12

ACHD staff recommends that 12' remain the standard lane width and not be compromised in constrained situations on state highways and other principal arterials where relatively high speeds (45 mph posted speed limit) and trucks are common. In the heavily developed areas with posted speed limits of 40 mph or less, 12' is still the recommended lane width on arterials but could be reduced to 11' where right-of-way impacts are excessive. Minor arterials could be considered for 11.5' lanes as a standard, reflecting the lower percentages of trucks and typically lower speeds than on a principal arterial. Collector lane widths are recommended for reduction in the standard width to 11' and local streets are already considered 10' wide with 8' wide parking lanes.

For continuous turn lanes, AASHTO gives a range of 10' to 16' width and ITD gives a range of 10' to 14' width. Staff recommends maintaining a 12' center turn lane on all arterial streets with compromises considered for constrained conditions.

Bike Lanes

The following is a recommendation on the width of bike lanes for various streets measuring from the face-of-curb to the center of the bike lane stripe:

- Principal Arterial*[12]: 7.5' (6' of asphalt concrete (AC) and 1.5' gutter pan)

- Minor Arterial: 6.5' (5' AC)
- Collector:[13] 6.0' (4.5' AC)

Outside Lane Width

The following are recommended outside lane widths for various streets measuring from the face-of-curb to the center of the nearest lane line:

- Principal Arterial: 16.5'
- Minor Arterial:[14] 15.5'
- Collector: 14'

Paved shoulders are the appropriate accommodation for bicyclists on rural roads and are generally appropriate on rural roadway sections in an urban area.

Downtown Streets

No overall conclusions were found in the research about bike lanes in the typical downtown area. The concept for downtown Boise, with a mixture of major one-way streets and less important two-way streets, lends itself to providing a network of bike lanes using the lesser streets and accepts the co-mingling of vehicular and bicycle traffic on most of the main one-way couplets.

Interim Accommodation with Striping

In many cases, the opportunity to develop a full standard bike lane on a street where it is desirable may be many years. For the last five years, ACHD staff has been striping bike lanes where width permitted it, even though full standard bike lane widths could not be provided. The current recommendation is to continue this practice and stripe the shoulder in lieu of bike lanes if the area is 50 percent of the desirable bike lane width and the outside lane width can be reduced to the AASHTO minimum. If the available bike lane width is 2/3 of the desirable bike lane width, the full bike lane treatment of signs, legends, and an 8" bike lane line would be provided. Where feasible, extra width should be provided with pavement resurfacing jobs, but not exceeding desirable bike lane widths.

Summary

As approved by the Commission, this staff report recommends that for urban applications (1) bike lanes be planned for minor arterials and collectors and that (2) safety shoulders be planned for principal arterials. This report also recommends a wider rural standard for the collector and arterial streets, assuming that these are the streets with the heavier volume of truck traffic in the rural area.

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[12] Typically the principal arterial would not have a bike lane

[13] 6.0' (4.5' AC) was proposed and approved by the Commission to obtain more functional use of what would otherwise be an additional 0.5' of utility easement on each side. 6.0' (4.5' AC) was proposed and approved by the Commission to obtain more functional use of what would otherwise be an additional 0.5' of utility easement on each side.

[14] Normally a bike lane would be required but where a very complex operating environment, a much safer separated and parallel adjacent pathway, or another unique circumstance exists making bike lanes undesirable, the above widths would apply.

With an increased emphasis on bike lanes, companion efforts such as bicycle detectors, signs and markings, and increased sweeping are also recommended.

Valley Regional Transit

Regional Transportation Service Coordination Plan (2007)

The Transportation Service Coordination Plan has been developed through the sponsorship of Valley Regional Transit (VRT) on behalf of local stakeholders within its service area - Ada and Canyon counties and the greater Boise metropolitan area.

The key goals of this plan will be to maximize existing public transit services, increase the efficiency of those services, and secure additional funding for these services. Specifically, the plan is intended to respond to a federal requirement established with the passage of the Safe, Flexible, Efficient Transportation Act, A Legacy for Users, commonly referred to as SAFETEA-LU. The law mandates the development of a coordinated human services plan in order to access applicable federal funds.

A Regional Coordination Council was formed in fall 2006 to provide oversight of the plan. This council includes representatives from the following areas: minorities, students/employers, persons with disabilities, neighborhoods, non-emergency medical transport, local governments, service providers, job access transportation and the elderly.

Regional Operations and Capital Improvement Plan (2005)

Valley Regional Transit (VRT) is the agency responsible for meeting the evolving public transportation needs of Treasure Valley residents through the planning and administration of a wide range of transportation services operating under the ValleyRide name.

Funding Mechanisms

- FTA Section 5311 – Rural and Small Urban Areas Program

FTA Section 5311 funding may be used for capital, operating, state administration, and project administration expenses. National funding is approximately $250 million per year. Projects to meet the requirements of the Americans with Disabilities Act, the Clean Air Act, or bicycle access projects, may be funded at 90 percent federal match. The maximum FTA share for operating assistance is 50 percent of the net operating costs or 80 percent for capital and project administration.

- Transportation for Livable Communities (LCI)

FTA has developed the Livable Communities Initiative (LCI) to strengthen the linkage between transportation services and the communities served. This program is targeting projects that utilize a collaborative public planning process, are transit or bicycle/pedestrian oriented, have significant local community benefits, and have been driven largely from a "bottom up" initiative. Certain new transit facility projects may be candidates for these funds if they examine ways to connect outlying areas to transit via bike or pedestrian modes.

- FTA Section 5307 – Urbanized Area Grant Program

Section 5307, the Urbanized Area Grant Program is the largest single component of FTA grants available to support bus transit in urban areas with a population of at least 50,000 people. The funds are available to any transit service meeting basic federal requirements. These funds are distributed by formula to urbanized areas, not individual cities.

Eligible uses of 5307 Grants include requiring one percent of the total UZA's apportionment must be used for "transit enhancements" such as bus shelters, landscaping, bikeways, or historic preservation;

Scenarios

The plan also details different scenarios – short-range service improvements and the long-range service plan – for VRT to implement.

The ValleyRide Boise/Garden City system is going to transition from a flag stop system, where at any point on a route a rider may flag down the bus to board, to a fixed stop system where the bus only stops at predetermined locations. Waiting for the bus is a large part of the transit customer experience. At fixed stops, ValleyRide has the opportunity to make waiting for the bus as pleasant, safe, and useful as possible via amenities and providing clear and useful information for waiting customers. The desire to maximize amenities must be balanced against the cost to install and then maintain each amenity. The amenities listed for consideration did not include bike racks or bike lockers.

VALLEYRIDE Rail Corridor Evaluation Study (2003)

The primary purpose of the study was to provide the information and background necessary for the sponsoring agencies to make an informed decision regarding a public acquisition of certain rail corridors within Ada and Canyon Counties.

ValleyRide, with participation from partner jurisdictions, has initiated discussions focused on negotiating an acquisition of the remaining portions of the Boise Cut-Off. This is an appropriate next step in the process of introducing passenger rail service in the Boise area.

The study does mention the possibility of a pathway utilizing the corridor in conjunction with commuter rail.

ValleyRide Strategic Plan (2002)

The purpose of this project is to develop a Five-Year Strategic Plan designed to outline a course that will lead to the realization of ValleyRide's organizational goals.

Several of the guiding principles dovetail well with the goals and objectives of the Roadways to Bikeways Plan.

- Develop Community Benefit: To provide the community with benefit in an overall, not just a transit-focused manner. By enhancing the ability of citizens to make a number of choices

for transportation and by providing alternative transportation for those who have no choice, the community's viability, diversity and livability is improved.

- Connectivity: To create ease of service between people, places, and modes, by assuring that reasonable ways to connect between different providers (of transit service) and different modes are not only available, but are truly easy to understand and easy to use.
- Action Oriented—A Sense of Urgency and Persistence: To keep the heat on and the energy up by applying the appropriate sense of urgency not only to the matter of immediate service and service improvement, but also to the longer range planning effort for the ultimate goal of enhanced livability for the citizens of the Treasure Valley. Hanging in there together and encouraging each other to be tenacious.

The authors conducted numerous focus group interviews, and the Rural Political Leaders group noted that the lack of a good bike system was affecting public transportation and mobility.

Valley InterArea Transportation's Transit Development Plan Technical Memo (2001)

This technical memorandum documents the methodology used to develop a set of alternatives that respond to the expectations that have been established for the regional public transportation authority, Valley InterArea Transportation (VIATrans), now called Valley Regional Transit (VRT)

The majority of the stakeholders expressed the concern that improvements and system expansion needs to take place now before the system falls behind the growth and transportation needs of Treasure Valley. A common view was that they do not want the area to reach a point of gridlock before improvements are made. Steps need to be taken now to ensure a reliable regional transportation system in the future. Most stakeholders agreed that a multi-modal system is needed. A majority of those interviewed stated that the rail corridor needs to be preserved and that right-of-ways and property along the rail corridor should be purchased now.

COMPASS (Community Planning Association of SW Idaho)

FY 2006-2010 Northern Ada County Transportation Improvement Program (2005)

The Transportation Improvement Program (TIP) is a short-range (3-5 year) capital improvement (budget) program of transportation projects consistent with federal regulations and area policies and strategies.

The TIP is developed through a cooperative process by the Community Planning Association of Southwest Idaho (COMPASS), the designated Metropolitan Planning Organization (MPO) for the Nampa Urbanized Area and the Northern Ada County Transportation Management Area (TMA). This process involves extensive participation by the Idaho Transportation Department (ITD), the Ada County Highway District (ACHD), Ada County, the cities of Boise, Garden City, Meridian, Kuna, Eagle, and Star, and ValleyRide, the regional public transportation agency.

TRANSPORTATION REVENUE

Idaho's transportation revenue comes from two primary sources. Approximately 53 percent of funds are received from the National Highway Trust Fund, and approximately 46 percent from transportation-related taxes and fees paid by Idaho citizens.

Federal funds administered by the Idaho Transportation Department are received from the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the Federal Aviation Administration (FAA), and the National Highway Traffic Safety Administration (NHTSA). Federal-aid projects generally require state or local matching funds of approximately 7-20 percent. Relevant funded project categories include:

Safety

The safety program uses various federal funding sources to invest in safety initiatives. The FY2009 – 2013 State Transportation Improvement Program (STIP) includes Safe Routes to School; sign upgrades; durable pavement markings; rumble strips; Intelligent Transportation Systems (ITS); Road Weather Information Systems, Work Zone Safety and Behavioral Safety, shoulder widening; high accident location mitigation; crash event countermeasures; safety corridor enhancements; intersection improvements; guardrail blunt end upgrades and many other miscellaneous safety improvements. Two other safety programs using surface transportation program (STP) federal aid funds invest in rail grade crossing improvements and highway intersection and guardrail improvements. Additionally, there is a small state funded rail crossing improvement program.

Enhancement

The Transportation Enhancement Program is a statewide competitive program that invests approximately $6 million in designated federal funds for eligible activities under Idaho's three primary categories of (1) bicycle and pedestrian, (2) historic, and (3) scenic and environ- mental. Enhancement projects must be related to the surface transportation system.

Destination 2030 Limited Plan Update Ada County Long-Range Transportation Plan (2005)

The COMPASS Board adopted several guiding visions on September 18, 1995. These visions defined what the plan would accomplish and presented goals that communities and planning entities could use to make technical decisions. One of the statements noted that "The goal of moving traffic smoothly and safely must be balanced with protecting the quality of existing neighborhoods. Pedestrians, residents and bicyclists are integral to the transportation system and must be provided a safe and comfortable environment."

The document is divided into several different chapters, and bicycles and bicycle issues are discussed in several of those chapters.

Chapter 1 General Transportation Issues

- Safety for Motorists, Bicyclists and Pedestrians

As travel increases, the safety of those who use the system will remain the highest priority. Those who drive or bike on the roads, as well as those who walk along the roads, must be accommodated.

- General Transportation Policy 6

COMPASS will encourage transportation implementing agencies to protect the neighborhood quality of life by ensuring future roadway capacities, intersection improvements and roadway improvements are compatible with the adopted long-range transportation plan, local comprehensive plans, and a comprehensive transportation system. Pedestrians, residents and bicyclists also are users of the transportation system and should be provided a safe and comfortable environment.

Chapter 4 Preservation of Transportation Corridors

Some citizens have expressed interest in local and collector street patterns that resemble more "traditional" neighborhoods built before World War II. Called "grid" or "neo-traditional," this pattern can offer residents and visitors multiple ways to travel between points. This pattern is considered friendlier to pedestrians and bicyclists, since the routes to school, parks and services are shorter and more direct. Many residents remain concerned about the potential for "cut-through" traffic from a grid system. The concept of throughway or loop collectors also addresses internal circulation and continuity.

Chapter 8 Non-motorized Transportation

The introduction to Chapter 8 notes that, "In light of past efforts, this plan recognizes bicycling and walking as an essential component of Treasure Valley's transportation system." Two of the policies related to non-motorized transportation are:

- Recognize that the bicycle is a vehicle with legal access to all public roads. Within engineering safety guidelines, roadway arterials, collectors and bridges will be designed for the needs of motor vehicle drivers, bicyclists and pedestrians.
- Increase access between the multiple-use pathway and the on-street bikeway system to enhance the transportation and recreation nature of the bikeway system.

Ridge to Rivers Pathway Plan (1996 Update)

Ridge-to-Rivers is a comprehensive Pathway Plan designed to improve pathways in Ada County. Some of the goals of this plan are to:

- Develop a comprehensive on-street bikeway system to aid non-motorized transportation.
- Adopt this plan as public policy by all appropriate units of government and incorporate into local planning documents and processes.

Section 2 focuses on the On-street bikeways. Bikeways are any combination of sidewalks, bicycle lanes, and bicycle routes designed to create a safer environment on the roadway for bicyclists, pedestrians, and motorists.

The first Ridge-to-Rivers Plan cultivated a "designated corridor model", in which maps identified specific corridors for bicyclists to use. This update of the plan takes the next step toward a more

responsive on-street bikeway system by instituting a "fully integrated bicycle/motor vehicle model" of planning and implementation.

A fully integrated bicycle/motor vehicle model seeks to achieve a balanced transportation system consisting of bikeways along most roadways rather than selected corridors. The plan calls for better utilization of our existing pavement through the narrowing of motorized traffic lanes and other minor adjustments in our transportation system with safety engineering guidelines.

Benefits include:

- Bikeways that provide more elbow room to meet the differing needs of motorists, bicyclists, and pedestrians. They increase the mobility, predictability, and visibility for everyone.
- Bikeways serve as a neutral traffic calming mechanism
- Bikeways improve the sight triangle for motorists crossing intersections or existing driveways
- Bikeways follow the roadway system, providing a distinct travel lane for bicyclists and allow motorists to pass safely and easily without being held up by the slower moving vehicles.

Needs that still need to be addressed include:

- Parking – bicycling can never reach its potential without a place to store the vehicle once the driver reaches their destination. A bicycle parking program to provide safe, convenient, sheltered storage of bicycles will go a long way towards encouraging greater bicycle use.
- Facility Planning – The maps in this plan should be used as a guide. However, to institute a fully integrated bicycle/motor vehicle model requires more attention to the built environment. Opportunities for improvement should be actively sought rather than waiting for the next roadway improvement.
- Four E's – Very little has been done in terms of 3 of the 4 E's – Education, Encouragement, and Enforcement.
- Signage – There is a need to re-tool the on-street signage system. Currently there are many obsolete and misplaced signs. A process to upgrade this system needs to be developed and implemented.

On-Street Bikeway Recommendations

- 2.1 - Convert the existing half-time transportation pathway coordinator into a full-time county-wide bicycle/pedestrian planner to implement a fully integrated bicycle/motor vehicle model. This position would work on bicycle transportation issues such as the needs listed above.
- 2.2 - Recognize that the bicycle is a vehicle with legal access to all public roads. Within engineering safety guidelines, roadway arterials, collectors, and bridges will be designed for the needs of motor vehicle drivers, bicyclists, and pedestrians. COMPASS will coordinate with implementing agencies and appropriate advisory groups in creating an Evaluation Matrix for bike lanes to supplement the current process. The full-time bicycle/pedestrian

planner will be responsible for the development of this objective method to identify bike lane needs.

Ada County

Ada County Comprehensive Plan (1996, updated 2006)

The purpose of the Ada County Comprehensive Plan is to guide and balance beneficial development in the most efficient, economical, and well-planned manner possible. To that extent, the plan looks at numerous components required by the Local Planning Act of 1975, including:

- School Facilities and Transportation
- Land Use
- Transportation

School Facilities and Transportation

Policy 3.1-12 states that "New development adjacent to schools should provide for adequate pedestrian and bicycle access for school children."

Land Use

Policy 5.1-13 states, "New developments shall be designed to provide open space, greenways, bicycle paths, and pedestrian linkages between parks, schools, neighborhoods, and shopping areas to the greatest possible extent."

Transportation

Policy 8.1-7 addresses non-motorized travel by saying, "Continue to improve a safe non-vehicular system; including pedestrian, equestrian, and bicycle pathways and trailheads. Ada County will work with surrounding entities in planning, implementation, and maintenance."

Policy 8.1-10 says, "Reserve rights-of-way for proposed transportation facilities for transportation use as a condition of approving development applications."

Goal 8.3 is specifically concerned with Alternative Modes of Transportation. The Goal Statement says, "Ada County seeks a comprehensive transportation network that provides mobility for all segments of the community by encouraging the use of public transit, bicycling, and walking as alternatives to automobile travel. The benefits to the environment, personal health, and small town atmosphere shall be considered in planning a quality alternative transportation network." This goal statement is supported by 6 policies that focus mainly on pathway development and pedestrian needs.

Local Plans and Policies

Boise

Downtown Boise Mobility Study (2005)

The Downtown Boise Mobility Study (DBMS) is charting a future of sustained growth for downtown Boise through 2025. The study integrates current land use data, a market study and growth forecast, and an in-depth evaluation of current and future transportation and land use conditions to frame a future that builds on existing strengths and supports growth to achieve a vibrant and prosperous downtown. This study was accomplished through a partnership between Valley Regional Transit, ACHD, Capitol City Development Corporation, Boise City, BSU, IDT and COMPASS with the assistance of a consultant team and stakeholder and technical committees.

The Transportation System Evaluation assessed the transportation system and supporting programs in downtown Boise by how well the system is positioned to meet the future needs. The system evaluation was conducted across modal categories. Chapter 3 of this section is the bicycle element, which responds to the following goals:

- Goal 2: Maximize transportation system efficiency and develop a downtown transportation system that includes and integrates a variety of travel modes, and promotes the use of alternatives to the automobile.
- Goal 3: Link sub-districts, activity centers, and the parking supply in downtown Boise through a well-designed, functional transportation system.
- Goal 4: identify ways to enhance the performance of the downtown street system and improve mobility while at the same time making the system compatible with a people-oriented, urban-intensity Downtown.

Challenges to biking in Downtown Boise include navigating busy streets, crossing the Boise River, or going against the one-way street system to reach a final destination. Cycling is also complicated by incomplete routing, lack of cycling information, and limited bicycle infrastructure in the downtown core.

Recommendations include additional bicycle lanes, bicycle boulevards, and improved end-of-trip facilities in the downtown area.

River Street-Myrtle Street Master Plan (2004)

The Pioneer Corridor – a pedestrian and bicycle connection between the Boise River Greenbelt and downtown Boise – is identified in the 2004 *River Street-Myrtle Street Master Plan* is part of the multimodal system of transportation that, "encourages the use of transit, bicycling and walking as alternative to use of automobiles. The Pioneer Corridor concept grew out of recommendations in the 1993 *Downtown Boise Plan* that the Pioneer Walkway bisecting the River Street neighborhood, a historical connection between downtown and the river, "be improved to create a stronger neighborhood design feature and improve the neighborhood's image." The plan also recommends the path be "extended to 8th Street… [to] provide another bicycle route into the [Central Business District] from the south." The 1994 River Street/Myrtle Street Urban Renewal Plan makes the further recommendation to, "re-establish a critical mass of primarily residential uses at the core of

the River Street area along Pioneer Walkway" and to "reinforce and improve Pioneer Walkway by enlarging it and promoting development around it."

Boise City Comprehensive Plan (1997)

Boise City is currently updating its comprehensive plan, called Blueprint Boise. Under Idaho Statute a transportation section is required of a comprehensive plan, and the 2009 update of Blueprint Boise is likely to address the bicycle network as part of the transportation system.

Within the introduction, a narrative vision of the future community is laid out. Part of the vision is that after "Years of encouraging high-density residential corridors and the shifting of transportation investment from highways to transit have enabled the evolution of a successful multi-modal transit system that provides regional service. This transit system and network of pedestrian and bicycle pathways have reduced traffic volumes on city streets to acceptable levels."

Chapter 6 of the plan addresses transportation needs in the Boise Planning Area.

Goal 6.3 is to "provide, in conjunction with ACHD, ITD, Boise Parks and Recreation and others, a safe and effective network of recreational and transportation pathways throughout the planning area." Objective 1 discusses implementation policies, Objective 2 addresses design policies, Objective 3 discusses means for increasing incentives for pathway use as a means of alternative transportation, while Objective 4 emphasizes education, enforcement, and distribution of pathway information as important components of a successful pathway plan.

Goal 6.4 addresses Transportation Demand Management (TDM). This is an area where bicycling can have an impact by reducing reliance on the single-occupant vehicle and reduce traffic congestion. Objective 2 states, "Provide opportunities for private interests to participate in improving the circulation system through Transportation Demand Management." The provision of bike lockers is listed as one of the programs to be included in the TDM ordinance.

Parks & Recreation Comprehensive Plan (2004)

The Comprehensive Plan notes that walking, biking, hiking, in-line skating, canoeing, and other trail- and pathway-related activities are important to Boiseans. This importance is demonstrated by extensive use the Boise River, Greenbelt system, and Boise Foothills trails.

During 1992 and 1993, COMPASS initiated a countywide pathway planning effort, in anticipation of federal opportunities for pathway funding as part of the Inter-modal Surface Transportation Enhancement Act (ISTEA). The City should continue participating in regional planning for trails and pathways to encourage connectivity and advance cooperation, coordination, and joint funding efforts for maintaining and expanding the trail and pathway systems.

A system of recreation-oriented multiple-use pathways, trails, and public trailhead parking is proposed to complement the on-street pathway system. The individual elements of the proposed recreational trails and pathways facility plan are described later in the comprehensive plan.

Eagle

2007 City of Eagle Comprehensive Plan (2007)

The City of Eagle Vision Statement says, in part, "We envision that in the future Eagle will be interconnected with user-friendly pathways and roadways…"

The document addresses several planned residential areas and notes that these areas - River Plain Residential Area and the Moon Valley & State Planning Area – will have good bicycle and pedestrian access and facilities.

Implementation Strategies (8.6) include: (a) Encourage new development to provide for pedestrian, equestrian, and bicycle circulation in accordance with the City of Eagle Transportation/Pathway Network Maps #1, #2, #3, adopted local and regional pathway plans, as may be needed for intra-neighborhood connectivity and to ensure that bike and pedestrian traffic is not unnecessarily pushed out onto arterials and collectors. (b) Provide for pedestrian and bicycle safety and comfort with enhanced pedestrian crossings of the State Highways (Highway 44 and Highway 55). Include pedestrian/bicycle overpass or underpass crossings where feasible. Also, consider constructing at-grade intersection enhancements, such as landscaping, crosswalk pavers and signage, for pedestrian/bicycle safety and comfort.

Meridian

Meridian Comprehensive Plan (June 2006 Update)

The purpose of the City of Meridian's comprehensive plan is to integrate the concerns and expressions of the community into a document that recommends how the City should grow and develop.

Two types of existing and proposed pathways are identified in the Ridge-to-Rivers Pathway Plan for the Meridian Area. These include on-street bikeways and multiple-use paths. On-street bikeways consist of bikeways on the roadway network which may be any combination of sidewalks, bicycle lanes, and bicycle routes designated to create a safer environment for all users

In order to minimize congestion in the future, several strategies should be incorporated to ensure adequate infrastructure.

- New development should not rely on cul-de-sacs since they provide poor fire access, walkability, and neighborhood social life. New development and streets should be designed to encourage walking and biking.
- In addition to providing for enhanced automobile traffic, Meridian should seek ways to encourage alternative modes of transport.

Garden City

Garden City Comprehensive Plan (2006)

The Garden City Comprehensive Plan sets a framework for: (1) maintaining community assets, while (2) improving the city's appearance, and (3) providing more community amenities and development potential. The following goals are directly related to the Roadways to Bikeways Plan.

Goal 2. Improve the City Image

Objective 2.4 is to "Improve the appearance of street corridors" and includes the following Action Steps:

- 2.4.1 With the appropriate transportation agency, develop new streetscape standards for state highways, major arterials, collectors, and local streets. The standards should address: adjacent land uses; vehicular, pedestrian and bicycle needs; lighting; and landscaping and trees. Funding priority should be given to sidewalk improvements.
- 2.4.2 Re-develop Chinden and Glenwood as grand boulevards lined with trees anchored in broad sidewalks.

Goal 5. Focus on the River

Objective 5.7 Maintain and protect the greenbelt

- Action Step 5.7.4: Support efforts to encourage courtesy and respect among greenbelt users, with the needs of recreational users taking priority over commuter cyclists. Consider licensure of bicycles, more volunteers and police presence on the greenbelt.

Goal 7. Connect the City

Objective 7.1 Create pedestrian and bicycle-friendly connections, Action Steps:

- 7.2.1 Develop a master plan for pedestrian and bicycle pathways. The plan should include the locations and design for various types of pathways including: separated bike paths and on-street bike lanes; sidewalk sections of various width and design depending on location; pathways that connect with the green belt and other major activity areas; and pathways along ditch and canals.
- 7.2.2 Reinforce responsible bicycling through signage, speed limits and education programs provided by youth oriented agencies such as the Boys and Girls Club and the Library.

Kuna

A Comprehensive Plan, City of Kuna, Idaho (2003)

The Kuna Comprehensive Plan is an official policy document identifying policies to guide future development within the City of Kuna and the area of city impact within the next 5 to 10 years. The Comprehensive Plan is the primary step in identifying the quality of life that community residents desire.

As Kuna expands, the demand on transportation facilities will increase. The timing, location, and expansion of the transportation infrastructure are important factors affecting urban development. A major concern of the community regarding the transportation system is the need to maintain and improve the livability of the residential areas in the face of new population and transportation requirements. This comprehensive plan component addresses vehicular transportation and alternative modes of transportation, specifically pedestrian, bicycle, and public transit.

As Kuna continues to grow in the next 20 years, the need for alternative modes of transportation, regional transit, and road improvements will increase. The majority of the community's future movement will be on street rights-of-way. The private motor vehicle will continue to be the primary mode of transportation over the planning period. However, the other most important modes of transportation will likely be the pedestrian and bicycle alternatives.

The Pathway Goal is to "Consider pedestrian and bicyclist needs and requirements, as they affect vehicular traffic, in all land use decisions." One of the supporting policies is to "Develop education and safety programs in association with the Sheriff's Department and bicycle interest groups."

Star

City of Star Comprehensive Plan (updated 2004)

The Comprehensive Plan is the basis for all land use decisions in the City's Area of Impact. The purpose of this Plan is to guide and balance beneficial development in the most efficient, economical and well-planned manner possible.

Section 3 addresses School Facilities and Transportation and one of the siting policies states that, "New school developments should provide for adequate pedestrian and bicycle access for school children within residential neighborhoods to minimize busing."

Star recognizes that alternative transportation modes will be desired as the community continues to grow, as "Growth in the Star area has been greater than forecast. Additionally, development of surrounding areas will contribute to increased traffic volume in the area. The increase in traffic originating in Star, as well as through traffic, may increase the demand for more public transportation options – particularly for commuter traffic to Boise. Additionally, the increased traffic volume in the area will increase the demand for alternatives for internal traffic circulation – including paths and trails for pedestrian and bicycle traffic."

Boise State University

Boise State University Campus Master Plan (2005)

Boise State University has evolved over the last three quarters of a century from a small church-sponsored college in a downtown schoolhouse to a major metropolitan research university on a 170-acre campus with approximately 18,600 students and 3,000 faculty and staff. This evolution has paralleled growth in the surrounding community as well as a dramatic shift in economics and demographics.

Goal B is to "Reinforce a Pedestrian Campus Environment for Boise State University". Objectives under this Goal include: (1) Give priority to pedestrians, cyclists and transit users over auto traffic both to and within the campus.

Goal C is to "Integrate the Boise River Greenbelt with the Boise State University Campus."

Vehicular & Bicycle Analysis

The Boise State University campus is well served by arterials and collectors from the east, south and west. Access from the north is limited by the Boise River Greenbelt and Julia Davis Park. University Drive provides good collector and distributor service for the campus but at the expense of the pedestrian environment. Curbside parking along University Drive is a good traffic calming device and enhances pedestrian safety by creating a buffer between traffic and those on foot. However, the street is wide enough to constitute a serious impediment to campus circulation on foot. This will become a greater concern as more development occurs on the southeast campus.

Access drives through campus conflict with pedestrian circulation yet often serve relatively few parking spaces or duplicate other access. Off campus event parking with shuttle service is an excellent parking and traffic demand management solution, which may be the most cost-effective solution to increasing demand.

Current transportation improvements in the general area under consideration are:

- An extension of Overland to Broadway, possibly aligned to follow the Protest Road descent from the bench.
- A previously proposed interchange on Capitol Boulevard with University Drive and Boise Avenue would separate southeast-bound traffic by way of an underpass below Capitol Boulevard. Pedestrian and urban design issues with this proposal are unresolved.

Bicyclist and pedestrian conflicts occur in many places on the campus. A partial resolution would be to designate primary bicycle routes on campus where they can operate at speed and avoid conflicts with major pedestrian circulation. Discussions of dismount zones in the central campus are ongoing. Circulation design should focus on minimizing places of potential conflict. COMPASS (Community Planning Association of Southwest Idaho) considers all arterials and collectors for inclusion of bike lanes. The Greenbelt is also targeted for bicycle use, and much of it has been so designated.

Bicycle routes identified on the campus are those that satisfy the criteria of safely accommodating speeds faster than pedestrians, good sight lines at all intersections with pedestrian and vehicular traffic, and direct through routes for those crossing much of the campus. The intention is to make designated cycle routes more attractive to use than the network of footpaths, thus freeing those up for people on foot. Links to adjacent streets are generally acceptable, although heavy traffic on Broadway, Capitol Boulevard and 9th Street make those river crossings hazardous for cyclists. Bicycle access routes to the north remain a priority, and could be improved with additional footbridges across the river.

Under the Campus Open Space Design Guidelines, guideline #3 calls for the redevelopment of the Boise River Greenbelt in a way that dignifies the Boise State University segment of this city-wide

resource. Prioritize the design treatment for pedestrians and bicyclists. Develop gathering and seating areas adjacent to buildings and near the river edge.

Campus Circulation Design Guidelines #1 calls for the provision of a hierarchy of campus streets, drives, and paths that allow different modes of circulation to have easy access and to mix where appropriate. This guideline also gives priority to pedestrians within the campus.

Capital City Development Corporation (CCDC)

CCDC Strategic Plan 2006-2015 (2005)[15]

Capital City Development Corporation is Boise, Idaho's redevelopment agency, and the vitality of downtown Boise has been CCDC's focus for the last forty years, and is expected to continue as its highest priority. At the same time, Boise City and CCDC are assessing how to reinvest in the city's neighborhoods so they continue to flourish, and to define what role CCDC has in this effort. The most relevant goal to this planning effort is Goal 4.

Goal 4. Transform the Transportation System

The Boise region's unprecedented growth, along with increasing instability in global energy supplies, presents significant challenges to the region's transportation system.1 Traffic congestion, air pollution and fuel-related economic impacts are likely to worsen unless effective alternatives to traditional transportation choices are implemented. Maintaining good traffic flow for those who use automobiles is important, but must be balanced by making walking, bicycling and public transit attractive and practical options. CCDC will work to create a seamless multimodal transportation system capable of serving people who need to move to, from and among various destinations in downtown Boise and the region.

CCDC Urban Renewal Plans & Master Plans

At present, Boise City has established three urban renewal districts in downtown Boise and approved an urban renewal plan for each district. These urban renewal plans include master plans, which set forth a preferred development concept as well as objectives and design and development guidelines for built form, civic spaces and streetscapes, transportation and parking and sustainable development. An implementation plan, action steps and a list of proposed capitol improvements are also included.

The districts and corresponding master plans include:

- Central District (C): Boise Downtown Framework Master Plan (1986)
- Westside Downtown (WS): Westside Downtown Framework Master Plan (2001)
- River Myrtle-Old Boise (RM-OB):

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[15] The *Downtown Boise Mobility Study* included a growth forecase to 2025. This forecase estimates that 4.8 million square feet of office, 500,000 square feet of retail space can 4,300 housing units will be added to downtown Boise between 2005 and 2025 (*Downtown Boise Mobility Study – Executive summary*, p.7)

- River Street-Myrtle Street Master Plan (2004)
- Old Boise-Eastside Master Plan (2004)

A robust bicycling network and bicycle facilities in downtown Boise receives strong support from these plans. A summary of objectives, guidelines and action steps from the master plans related to bicycling include:

Boise Downtown Framework Master Plan

- Consider the moving, standing and access requirements of the five basic circulation modes accommodated: private, transit, and service vehicles, bicycles and pedestrians
- Provide continuity between established bicycle routes
- Indicate by signage the those pedestrians streets and spaces which are not suitable for shared use by cyclists
- (This plan places very strong emphasis on creating an exceptional pedestrian environment by building civic parks and plazas with amenities for people, a rich and distinctive streetscape with attractive street furnishings, lively streets and storefronts, and building design. Bicycle routes and bicyclists were not a significant issue at the time)

Westside Downtown Framework Master Plan

- Plan for secure bicycle parking in public parking garages and at other convenient locations
- Provide short-term sidewalk parking for bikes using simple street-mounted furniture that is located out o conflict with pedestrian circulation
- Establish continuous, striped bike lanes through Westside and the downtown core (Central District) on 10th, 11th, 15th , Bannock and Grove Streets

River Street-Myrtle Street Master Plan; Old Boise-Eastside Master Plan

- Establish a multimodal system of transportation that encourages the use of transit, bicycling and walking as alternatives to automobiles

River Street-Myrtle Street Master Plan

- Establish strong pedestrian, bicycle and transit connections within the RM-OB district, and to the Central Business District and to other sub-districts in downtown
- Establish a network of pedestrian-oriented streets between activity centers in the River Street-Myrtle planning area and in downtown, in order to encourage walking and bicycling over automobile use. (Streets include the grid in downtown core, Avenue A, 3rd Street, 8th, 11th, 13th, 14th, 15th, Idaho, Main, Grove, Grand Avenue, Miller, Fulton, and Broad Streets)
- Protect bicycle-commuting routes through the River Street-Myrtle planning area, with particular attention to 8th street, Americana and Broadway. Avoid changes in street design on those routes that would compromise their use for bicycle commuting.

- Install a way-finding signage system that encourages downtown residents, workers and visitors to walk or bicycle in downtown rather than using cars…
- Establish a schedule for improvements to the Connector identified in the [Downtown Boise Mobility Study] that will reduce traffic congestion on this thoroughfare, enhance the environment for pedestrians and bicyclists, and improve its interface with the urban fabric of downtown…
- Place signals at the same cross streets on both Front and Myrtle so protected pedestrian and bicycle routes are created (Cross streets identified include: Avenue A and B and 3rd and 5th streets)
- Install a pedestrian light at 2nd and Front to improve access to the Ada County Courthouse for people walking and bicycling and to reduce jaywalking across Front Street
- Construct the Pioneer Walkway as a grand, boulevard-style pedestrians and bicycle link from the Boise River Greenbelt to 11th and Myrtle streets, and along the Broad Street alignment to 8th Street

Boise City and CCDC have also adopted Downtown Boise Streetscape Standards (1986; As amended 2007) which include a specification for bicycle racks to be installed in the urban renewal districts. Typically these racks are clustered in areas with a high amount of bicycle traffic. In the last year, there has been a sharp increase in the demand for short-term bicycle parking on sidewalks. Experienced cyclists have expressed a desire for bicycle lockers. CCDC is seeking funding to address these issues.

Meridian Development Corporation

Downtown Meridian Transportation Management Plan (2004)

The Downtown Meridian Transportation Management Plan (TMP) is part of a larger program to revitalize and grow the city center. One of the seven key strengths that downtown development will emphasize is "a circulation system for cars, bikes, and pedestrians that makes Downtown a great place to be and to visit."

Within the City of Meridian, some overlap exists between the bicycle and pedestrian networks. Pedestrian circulation within each of the circulation districts is, general, adequately provided for by the overall sidewalk system. ACHD and the City have recently identified a number of specific improvement needs to this system and are working to address them. In addition, the City's Comprehensive Plan also identifies opportunity for multiple-use paths that accommodate both bicycles and pedestrians through implementation of the Community Planning Association of Southwest Idaho (COMPASS) Ridge-to-Rivers Pathway Plan.

For bicycles, the Ridge-to-Rivers Pathway Plan identifies several on-street bikeways that include a combination of sidewalks, bicycle lanes, and bicycle routes designated to create a safer environment for all users.

In evaluating the alternatives of the Transportation Management Plan, accommodating multi-modal transportation was one criterion under Transportation Impacts but received the lowest weight, and

the description of multi-modal was focused primarily on transit. Community Impacts also had "fosters multi-modal lifestyles" as a criteria weighted as a 3.

In the final analysis, the preferred alternative was a split corridor on Main and Meridian between Central and the railroad corridor. Neither of the cross-sections (typical 5-lane, and 3-lane one-way couplet) shown in the discussion about the preferred alternative show bike lanes as part of the overall cross-section.

Appendix B. Outreach/Needs Assessment

The two primary outreach methods employed to gather information regarding existing bicycle use within in Ada County were the following:

- Bicycle counts
- On-line survey

Additional information and complete results and comments are available in Working Paper 2.

Methodology

Bicycle Counts

Bicycle counts were conducted over a three week period at a total of 33 locations on the following dates:

- April 24th, April 25th, April 26th
- May 1st, May 2nd, May 3rd
- May 8th, May 9th, May 10th

The counts were conducted by ACHD staff in either the am peak (7:00-9:00 am) or pm peak (4:00-6:00 pm). The counters used a collection sheet to collect data for one hour, and then flipped the sheet over to collect data for the 2nd hour. Data collected included:

- Direction of bicycle travel
- Travel behavior at the intersection (turning or through movement)
- Helmet use
- Location of bicyclist (whether on sidewalk or roadway)
- Gender

In addition, general information about the weather and any other relevant notes that might affect the overall bicycle count was also collected.

The counter was responsible for all bicycle traffic through the intersection where they were located. The bicycle counts began in late April to capture Boise State University students before school let out for break. The bicycle count locations are shown in Map 2 on page 89.

On-line Survey

The on-line survey was developed in combination with ACHD and was launched in conjunction with the first day of the bicycle counts. The purpose of the survey was to gather more detailed information on bicycling within Ada County. The survey gathered information such as: where bicyclists are from, how much they ride, reasons that they ride, where they like to ride, where they don't like to ride, and what ACHD might do better to improve bicycling within the county.

Results

Bicycle Counts

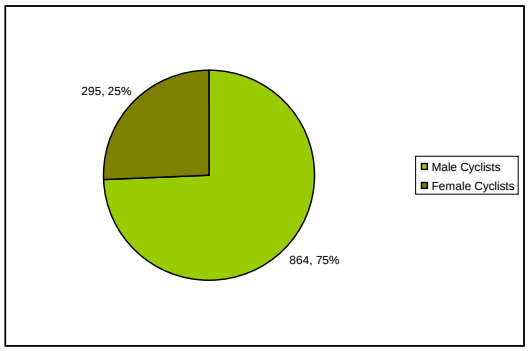
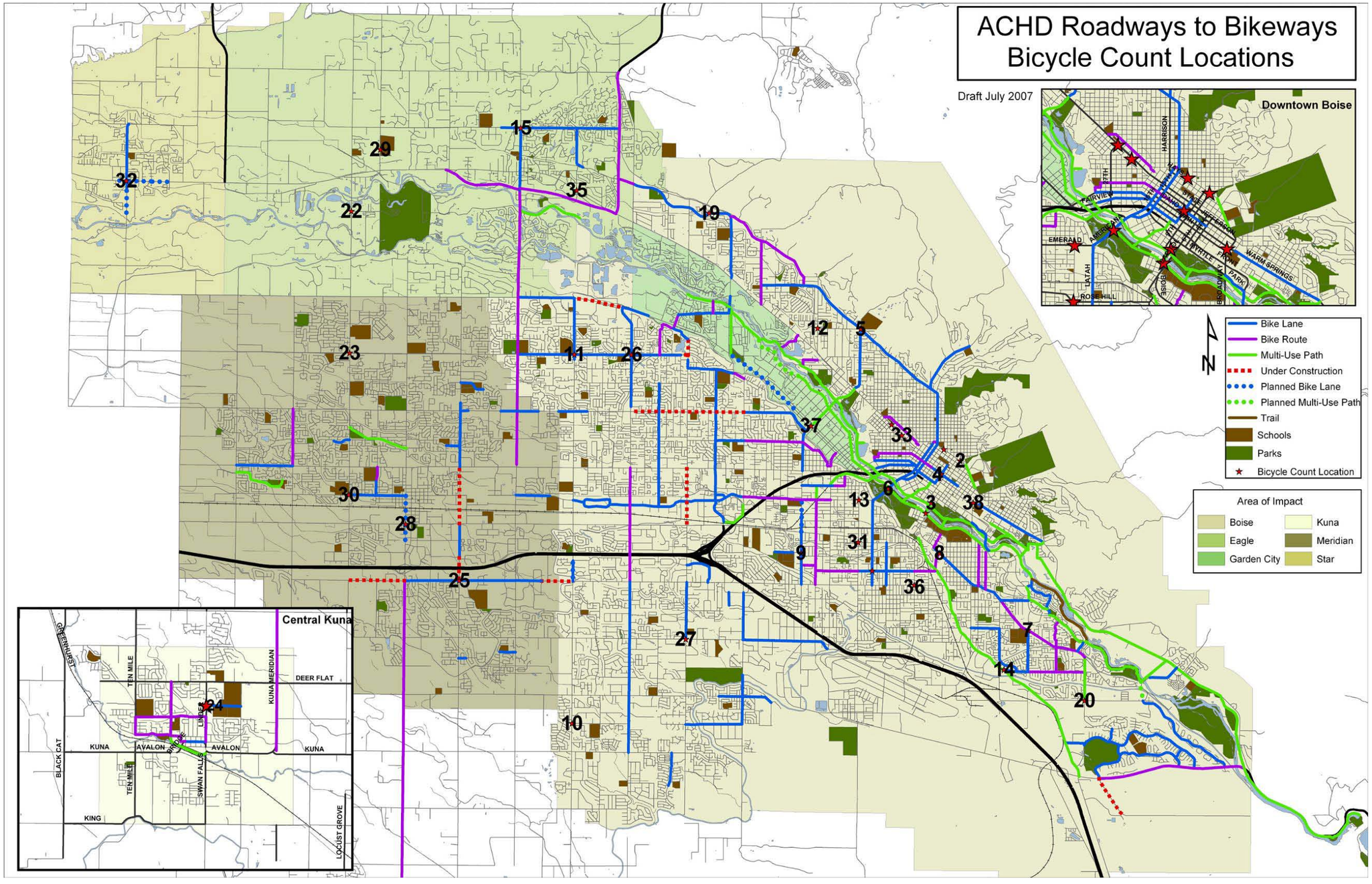


Figure 4. Male vs. Female Bicyclists

There were a total of 1,159 bicyclists counted at the 33 locations, as shown in Table 18 Male cyclists outnumbered female cyclists by a 3 to 1 margin, as shown in Figure 4. This level of gender split was expected, as men traditionally outnumber women when it comes to bicycling. The counts at the various locations support the self-reported results from the survey regarding where people bicycle in Ada County. The highest count locations occurred along or near the Greenbelt and entering downtown Boise.

The survey allows for analysis and extrapolation of current bicycle activity within Ada County. Of particular interest are:

- Bicycling and Helmet Use; and
- Sidewalk versus Roadway Use



Map 2. Ada County Bicycle Count Locations

Table 18. Ada County Bicycle Count Location and Totals (2007)

Location ID	Location	Male Cyclists	Female Cyclists	Total Cyclists	Time Period	Jurisdiction
1	8th/GB	111	30	141	am	Boise
2	8th/Fort	48	34	82	am	Boise
3	8th/River	62	22	84	am	Boise
4	10th/Bannock	49	20	69	am	Boise
5	36th/Hill	66	17	83	pm	Boise
6	Americana Bridge @ Greenbelt	22	6	28	pm	Boise
7	Boise/Apple	13	3	16	am	Boise
8	Boise/Protest	22	7	29	am	Boise
9	Cassia/Curtis	19	2	21	am	Boise
10	Cloverdale/La Grange	5	0	5	am	Ada County
11	Cloverdale/McMillan	36	12	48	pm	Boise
12	Collister/Catalpa	26	7	33	pm	Boise
13	Emerald/Roosevelt	29	4	33	pm	Boise
14	Federal Way/Bergeson	31	5	36	pm	Boise
16	Fort/13th	35	16	51	am	Boise
20	Holcomb/Amity	17	4	21	pm	Boise
21	Kootenai/Latah	27	4	31	pm	Boise
23	Linder/McMillan	3	1	4	am	Meridian
24	Linder/Porter	2	2	4	am	Kuna
25	Locust/Overland	9	6	15	pm	Meridian
26	McMillan/Five Mile	23	6	29	pm	Boise
27	Maple Grove/Victory	16	8	24	pm	Ada County
28	Meridian/ Franklin	4	0	4	am	Meridian
29	Park Lane	3	0	3	am	Eagle
30	Pine/Linder	3	0	3	am	Meridian
31	Rose Hill/Roosevelt	19	10	29	am	Boise
32	Star Road/Hwy 44	1	0	1	am	Star
33	State/23rd	6	12	18	am	Boise
34	State/27th	26	8	34	pm	Boise
35	State/Edgewood	3	0	3	pm	Boise
36	Vista/Overland	12	3	15	am	Boise
37	VMP/Chinden	50	13	63	pm	Garden City
38	Warm Springs/Broadway	66	33	99	pm	Boise
	Totals	**864**	**295**	**1159**		

Helmet Use Analysis

Overall, 55 percent of the total bicyclists were wearing helmets, with 56 percent of male cyclists and 53 percent of female cyclists doing so, as shown in Table 19 below. The highest percentage for men was 100 percent, recorded at Cloverdale/LaGrange (Location ID #10) and Linder/McMillan (ID#23). The highest percentage for women was also 100 percent, recorded at Cassia/Curtis (ID #9) and Holcomb/Amity (ID #20). It should be noted that in all of these locations very few total bicyclists were counted. The one minor exception is Cassia/Curtis, where there were a total of 19 male cyclists, yet only 5 were wearing helmets, while both of the female cyclists were observed wearing helmets.

Table 19. Helmet Use by Gender

Location ID	Location	Male Helmet Use	Female Helmet Use	Male Helmet Use %	Female Helmet Use %
1	8th/GB	67	19	60.4%	63.3%
2	8th/Fort	28	16	58.3%	47.1%
3	8th/River	27	13	43.5%	59.1%
4	10th/Bannock	30	7	61.2%	35.0%
5	36th/Hill	58	16	87.9%	94.1%
6	Americana Bridge @ Greenbelt	16	2	72.7%	33.3%
7	Boise/Apple	9	2	69.2%	66.7%
8	Boise/Protest	8	5	36.4%	71.4%
9	Cassia/Curtis	5	2	26.3%	100.0%
10	Cloverdale/La Grange	5	0	100.0%	0.0%
11	Cloverdale/McMillan	26	5	72.2%	41.7%
12	Collister/Catalpa	14	3	53.8%	42.9%
13	Emerald/Roosevelt	12	3	41.4%	75.0%
14	Federal Way/Bergeson	18	1	58.1%	20.0%
16	Fort/13th	27	10	77.1%	62.5%
20	Holcomb/Amity	10	4	58.8%	100.0%
21	Kootenai/Latah	11	3	40.7%	75.0%
23	Linder/McMillan	3	0	100.0%	0.0%
24	Linder/Porter	0	0	0.0%	0.0%
25	Locust/Overland	2	1	22.2%	16.7%
26	McMillan/Five Mile	15	2	65.2%	33.3%
27	Maple Grove/Victory	11	4	68.8%	50.0%
28	Meridian/ Franklin	2	0	50.0%	0.0%
29	Park Lane	0	0	0.0%	0.0%
30	Pine/Linder	0	0	0.0%	0.0%
31	Rose Hill/Roosevelt	5	5	26.3%	50.0%
32	Star Road/Hwy 44	0	0	0.0%	0.0%
33	State/23rd	3	8	50.0%	66.7%
34	State/27th	9	4	34.6%	50.0%
35	State/Edgewood	1	0	33.3%	0.0%
36	Vista/Overland	6	1	50.0%	33.3%
37	VMP/Chinden	16	6	32.0%	46.2%
38	Warm Springs/Broadway	41	13	62.1%	39.4%
	Totals	**485**	**155**	**56.1%**	**52.5%**

Helmet use among those wearing helmets was fairly evenly divided between those counted in the morning versus evening, as shown below in Table 20. Overall, 54 percent of bicyclists counted in the morning were wearing helmets, compared to 56 percent of bicyclists counted in the evening.

Table 20. Helmet Use by Time Period

Time period	# Males wearing helmets	# Females wearing helmets	Male % of males wearing helmets	F % of females wearing helmets
am	225	88	46.4%	56.8%
pm	260	67	53.6%	43.2%
total	485	155		

Sidewalk vs. Roadway Analysis

Overall, 33 percent of male cyclists and nearly 50% of female cyclists were counted riding on the sidewalk, as detailed in Table 6 below. Since men made up the majority of cyclists, this resulted in a total of 37 percent of all cyclists riding on the sidewalk as opposed to the roadway. The location with the highest percentage of male sidewalk riders was Star Rd/Hwy 44 (ID #32), where the only cyclist counted was on the sidewalk. The next highest percentages were Federal Way/Bergeson (ID #14) and Cloverdale/LaGrange (ID #10) at 90 percent and 80 percent respectively. There were 6 locations where 100 percent of female bicyclists were on the sidewalk. Those locations are: 8th/River (ID #3), Federal Way/Bergeson (ID #14), Linder/Porter (ID #24), Locust/Overland (ID #25), McMillan/Five Mile (ID #26), and State/23rd (ID #33).

Table 21. Sidewalk Use and Gender

Location ID	Location	Male on Sidewalk	Female on Sidewalk	Male s/w %	Female s/w %
1	8th/GB	6	4	5.4%	13.3%
2	8th/Fort	2	1	4.2%	2.9%
3	8th/River	17	22	27.4%	100.0%
4	10th/Bannock	1	0	2.0%	0.0%
5	36th/Hill	5	3	7.6%	17.6%
6	Americana Bridge @ Greenbelt	17	4	77.3%	66.7%
7	Boise/Apple	7	2	53.8%	66.7%
8	Boise/Protest	16	5	72.7%	71.4%
9	Cassia/Curtis	8	0	42.1%	0.0%
10	Cloverdale/La Grange	4	0	80.0%	0.0%
11	Cloverdale/McMillan	15	9	41.7%	75.0%
12	Collister/Catalpa	0	0	0.0%	0.0%
13	Emerald/Roosevelt	1	0	3.4%	0.0%
14	Federal Way/Bergeson	28	5	90.3%	100.0%
16	Fort/13th	12	9	34.3%	56.3%
20	Holcomb/Amity	4	1	23.5%	25.0%
21	Kootenai/Latah	2	0	7.4%	0.0%
23	Linder/McMillan	0	0	0.0%	0.0%
24	Linder/Porter	0	2	0.0%	100.0%
25	Locust/Overland	6	6	66.7%	100.0%
26	McMillan/Five Mile	8	6	34.8%	100.0%
27	Maple Grove/Victory	9	3	56.3%	37.5%
28	Meridian/ Franklin	2	0	50.0%	0.0%
29	Park Lane	0	0	0.0%	0.0%
30	Pine/Linder	1	0	33.3%	0.0%
31	Rose Hill/Roosevelt	9	4	47.4%	40.0%
32	Star Road/Hwy 44	1	0	100.0%	0.0%
33	State/23rd	4	12	66.7%	100.0%
34	State/27th	18	7	69.2%	87.5%
35	State/Edgewood	2	0	66.7%	0.0%
36	Vista/Overland	9	2	75.0%	66.7%
37	VMP/Chinden	35	9	70.0%	69.2%
38	Warm Springs/Broadway	40	28	60.6%	84.8%
	Totals	**289**	**144**	**33.4%**	**48.8%**

Whether it has to do with the locations chosen, or perhaps the result of heavier evening traffic, sidewalk ridership was higher during the evening count periods, as shown in Map 14. Of the 289 male bicyclists counted on the sidewalks, nearly 65 percent of those were counted in the evening, compared to only 35 percent in the morning. The female percentages are closer; however there is still a 10 percent difference in sidewalk ridership between the morning and evening count period.

Table 22. Sidewalk Use by Time Period

Time Period	# Males on Sidewalk	# Females on Sidewalk	% Male Sidewalk Riders	% Female Sidewalk Riders
am	102	65	35.3%	45.1%
pm	187	79	64.7%	54.9%
total	289	144		

On-line Survey

The ACHD Roadways to Bikeways survey was available to be taken from Wednesday April 25 through June 15. In that time period, 2,162 people either completed the on-line survey or filled out and returned a paper copy of the survey.

Of the 2,162 people who completed the survey, just over three-quarters of respondents identified Boise as their place of origin, with Meridian a distant second at just over eight percent, as shown in Figure 5 below. Of the four percent of respondents who selected "Other", the most frequent answers were Hidden Springs or Canyon County (Nampa, Middleton, Caldwell).

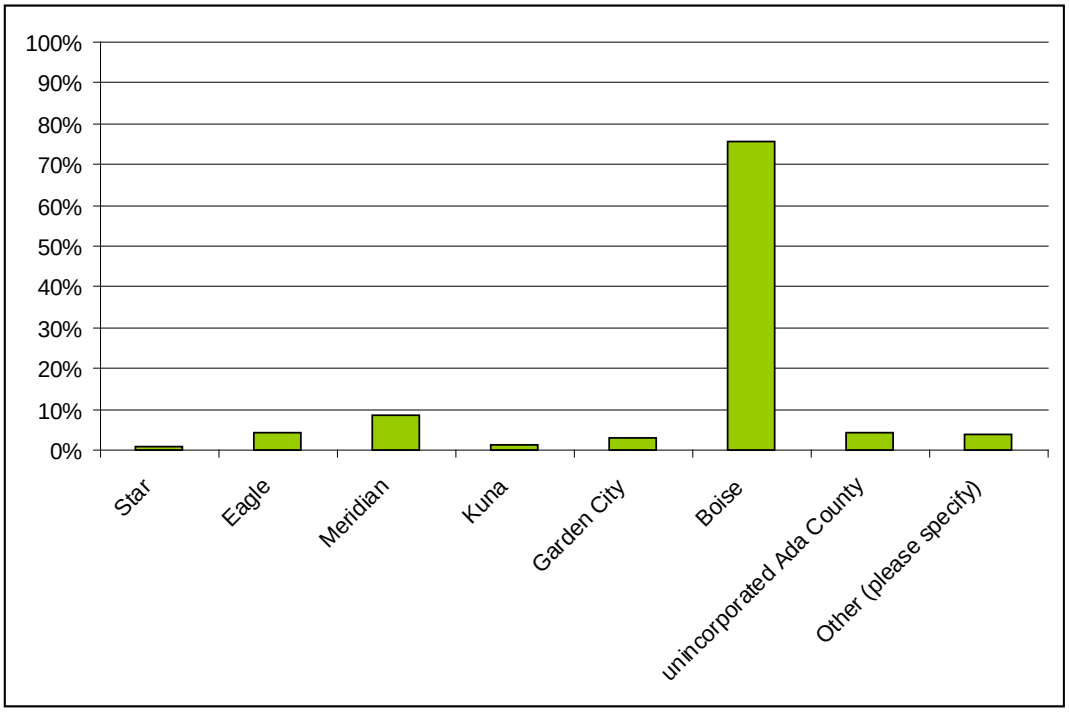


Figure 5. Online Survey Results: City of Origin

When asked why they bike, the majority of respondents said for either exercise (88 percent) or recreation (83 percent), followed by commuting to work (62 percent), as shown in Figure 6 below. Respondents were able to choose all that apply from the choices in Figure 6. For the 8.6 percent who provided an alternative reason, the most popular reasons were variations on the following:

- For the environment (air pollution, a legacy for children, congestion)
- To save money (cost of gas, wear and tear on car)
- To go to church
- Racing/training for racing

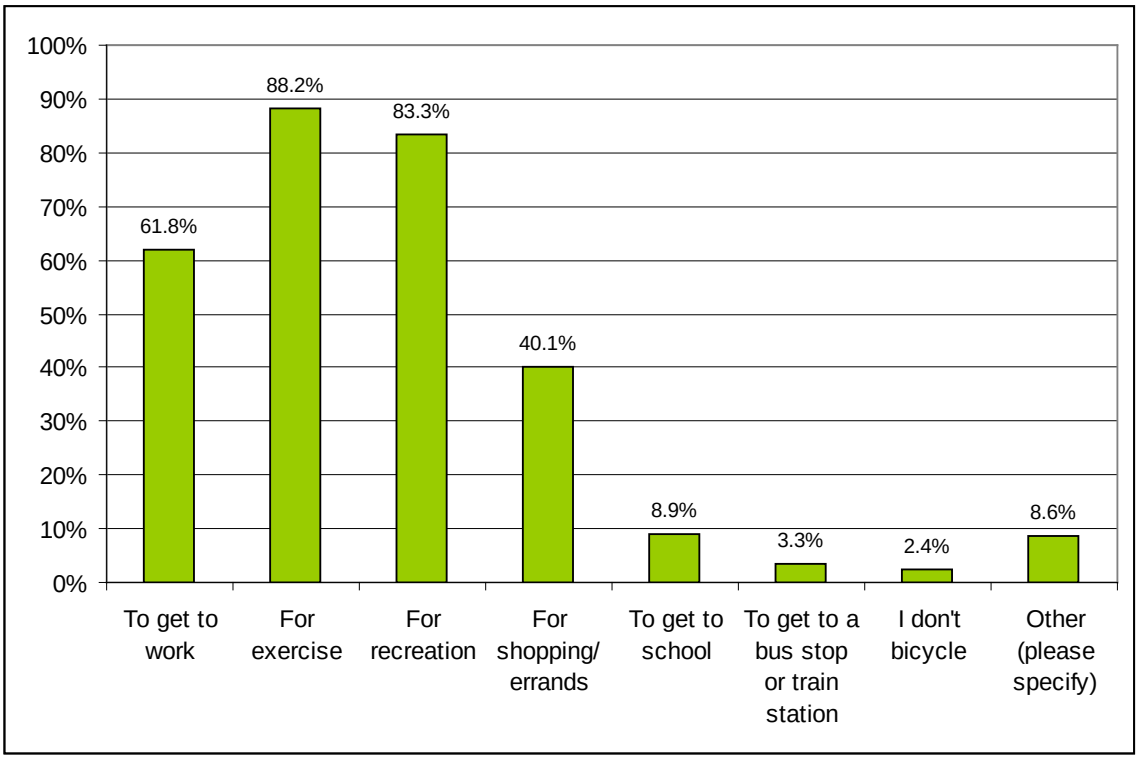


Figure 6. Online Survey Results: Why People Bike

In response to the question, "How often do you ride a bike?" nearly three-quarters of respondents ride their bike at least several times a week. For the six percent of people who responded "Other", the most frequent comment related to the weather, and how their riding frequency changed depending on the season.

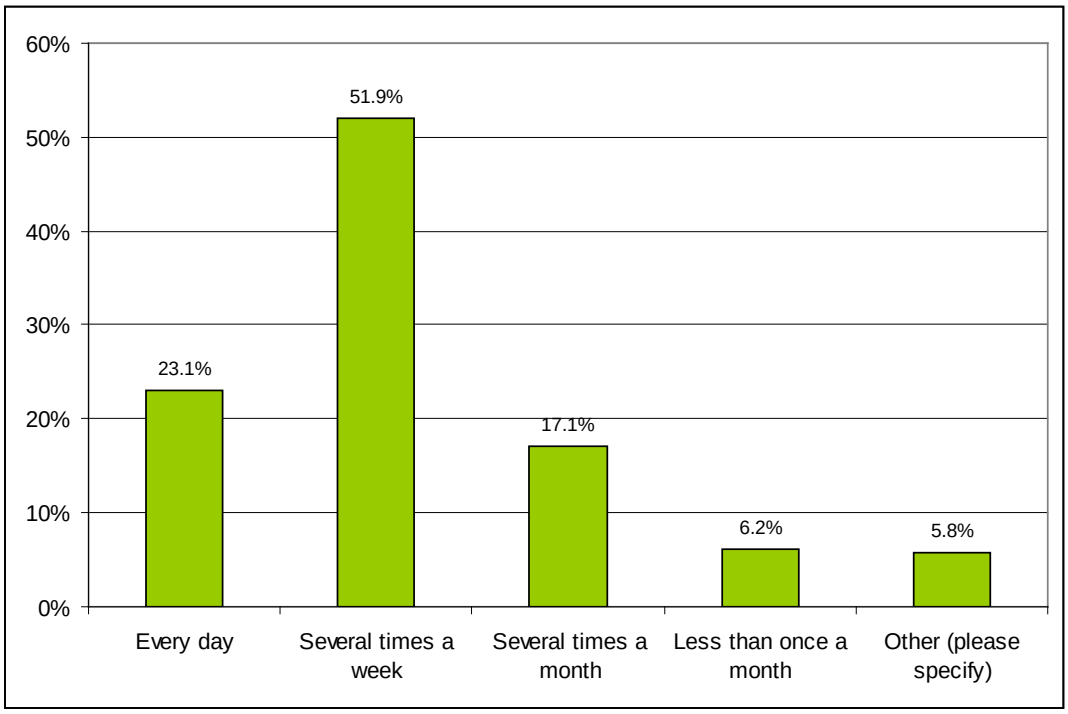


Figure 7. Online Survey Results: How Often People Bike

When asked the average distance of their ride, responses were fairly evenly divided, as shown below in Figure 5, although nearly 40 percent of the respondents said their average ride was 5 miles or less, and nearly 70 percent of total respondents said their average ride distance was less than 10 miles.

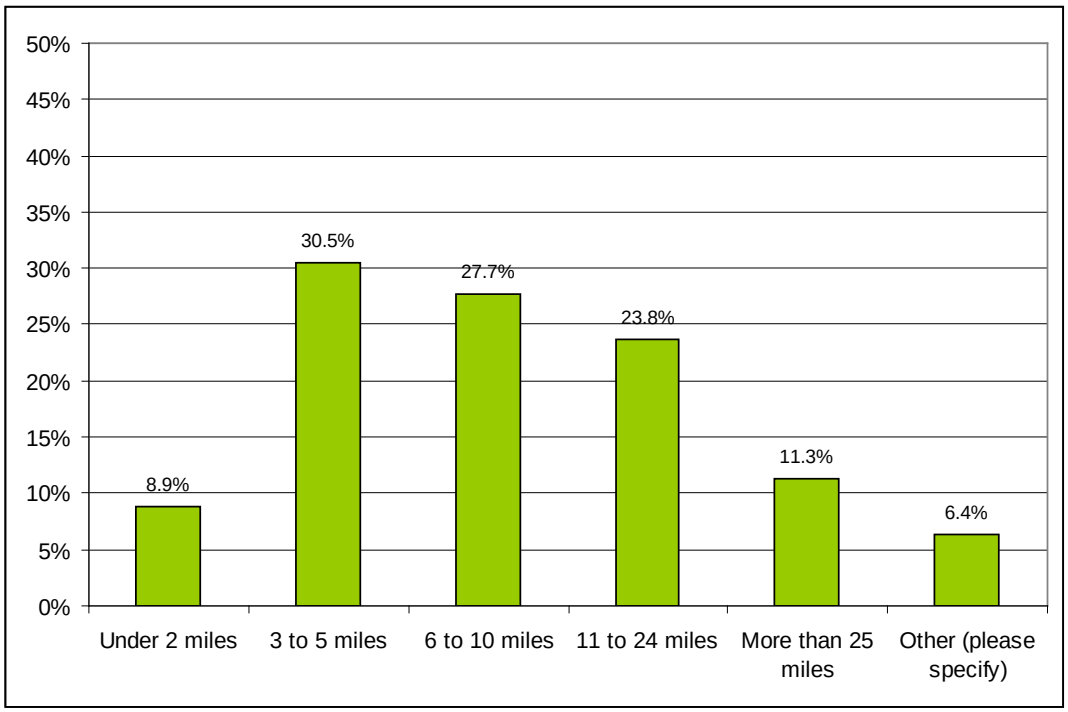
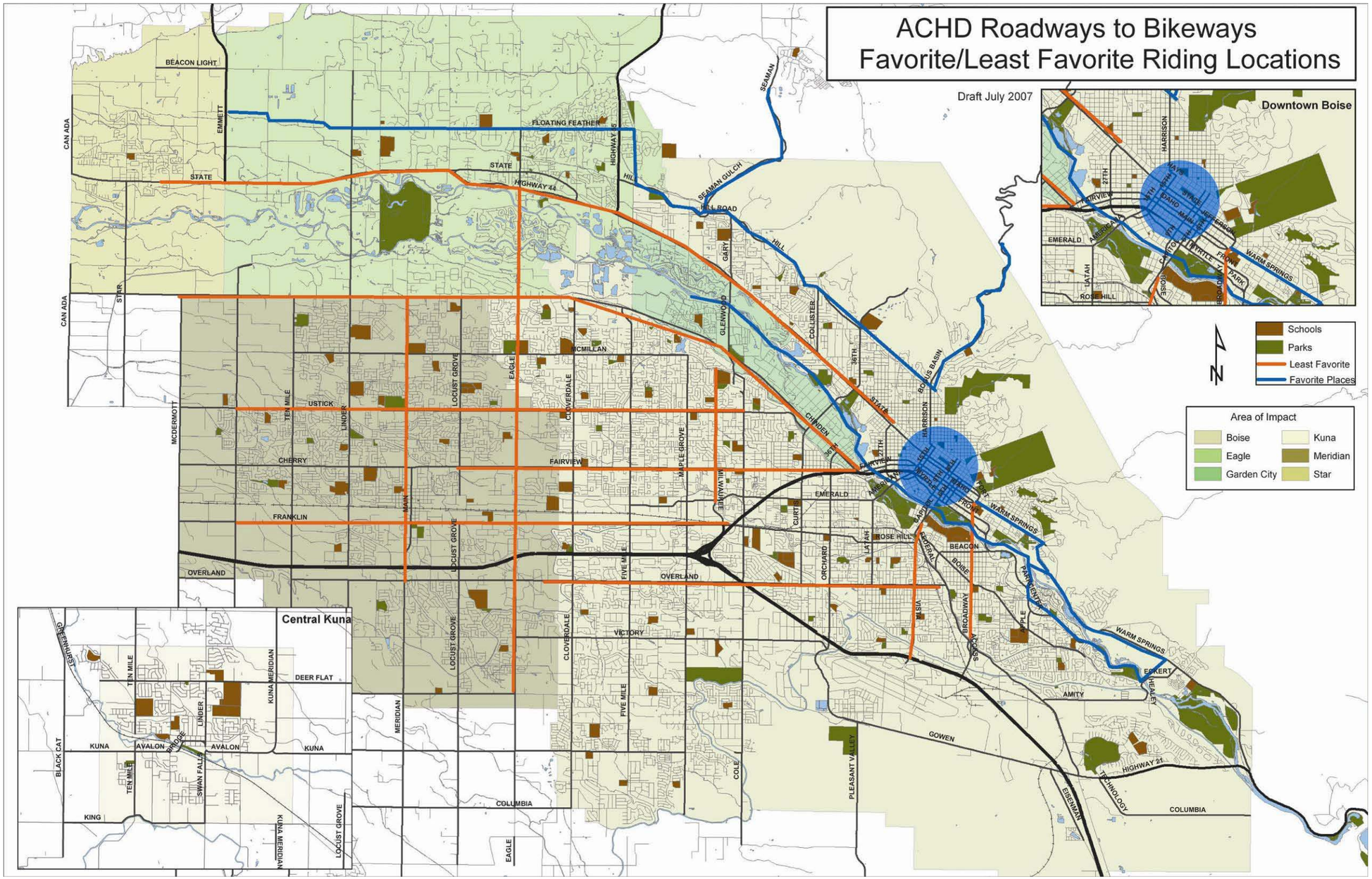


Figure 8. Average Ride Distance

The primary reason that people responded "Other" was to clarify between commuting/errand distances (generally shorter distances under ten miles) and recreational/training ride distances (20+ miles).

There were two very similar open ended questions in the survey. One question asked respondents to identify their favorite places to bike within Ada County, while the other question asked that respondents identify the most difficult/least favorite place to bike within Ada County. As Map 3 illustrates, the overwhelming favorites were along the Greenbelt, into downtown Boise, and the recreational routes accessible off of Hill Road. The least favorite places were a majority of the arterial roads (both north-south and east-west) within Ada County. It should be noted that all of the locations identified received votes for favorite and most difficult place to ride, the map just illustrates those locations where there was a significant majority in either category. For example, 871 people mentioned the Greenbelt as a favorite place to ride, however 201 people noted that they disliked riding there, primarily due to pathway conditions and heavy usage.

Although respondents identified several arterials as some of their least favorite places to ride, they are still out there riding a bicycle as shown by the bicycle counts and results of the survey. Few people mentioned their neighborhood, or local grocery store, or local park as a favorite place to ride. This indicates that the majority of survey respondents were commuters and/or serious recreational riders, which is supported by the results to earlier questions. Reaching out to the casual bicyclist will be a key to increasing bicycle ridership within Ada County.



Map 3. Favorite / Least Favorite Place to Ride

In response to the question, "What prevents you from biking more often?", nearly three-quarters of the respondents mentioned the lack of bike lanes, paths, or routes; while over 55 percent also identified the number and speed of vehicles as a barrier (respondents were allowed to mark all that applied). All of the other response rates were under 20 percent, except for the "Other" category. The most frequent answers provided fell into the following two general categories:

- Weather (especially in the winter, but also when it gets too hot)
- Cars/Drivers (inconsiderate/distracted drivers that cut bicyclists off or get too close, cars parked in bike lanes, dangerous/illegal driving, etc)

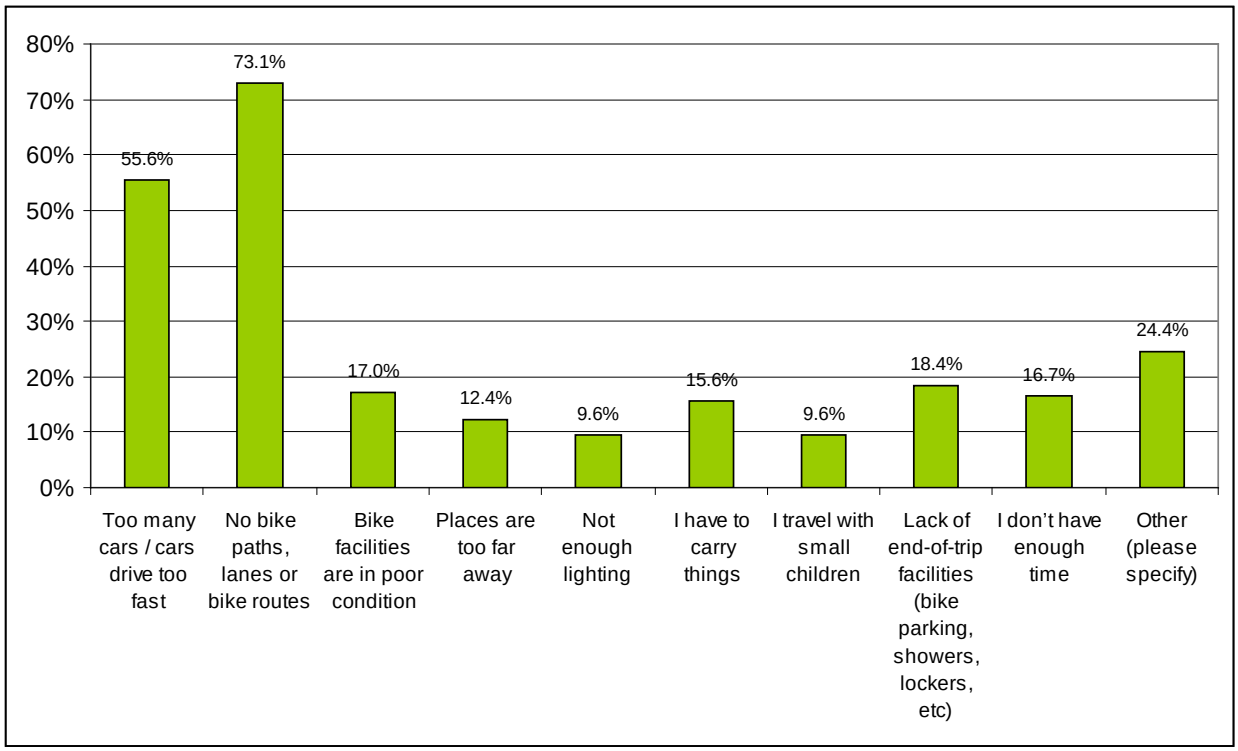


Figure 9. Online Survey Results: Barriers to Bicycling

When asked to identify whether they had any children who biked or walked to school, nearly 60 percent of respondents said that the question did not apply to them, while only ten percent noted that their child biked or walked every day.

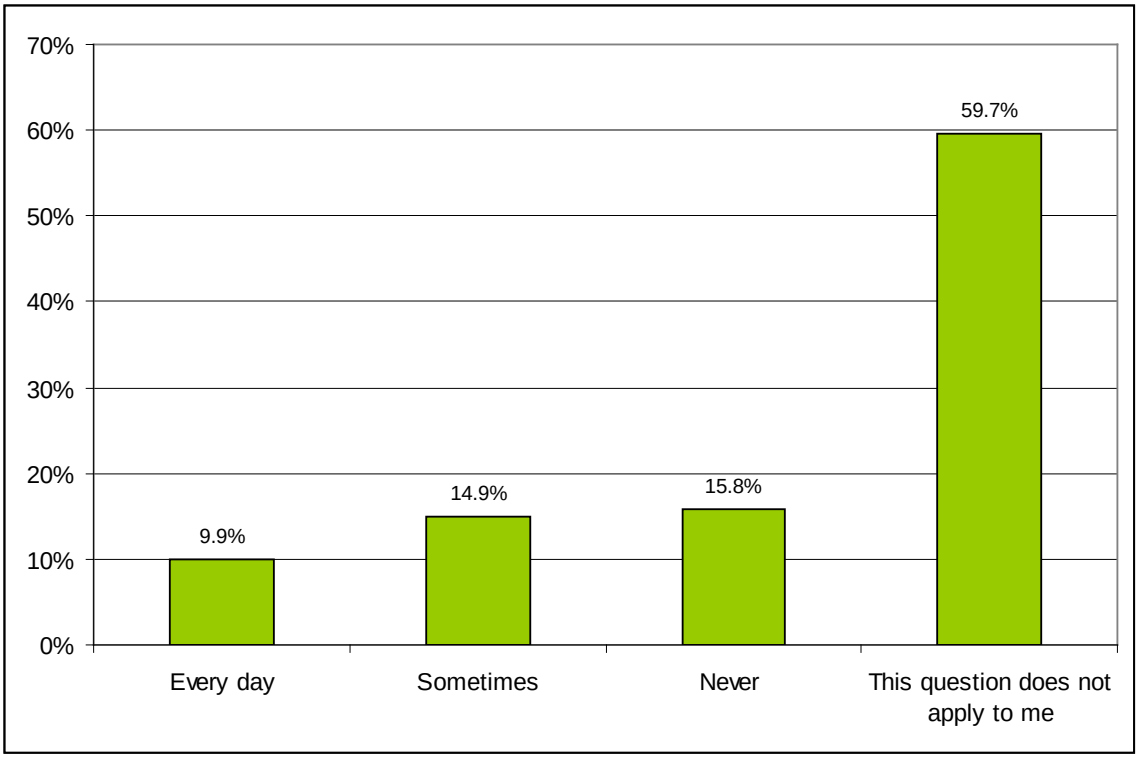


Figure 10. Online Survey Results: Biking and Walking to School

The final question was an open ended question that asked people to identify improvements that they would like to see in Ada County. This could include new bike lanes, paths or routes; enhancements to existing bikeways or intersections; additional signage; or educational and encouragement programs to promote bicycling.

The majority of responses mentioned several of the items mentioned in the question. The most frequent answers provided fell into the following general categories:

- More off-street/separated pathways
- More bike lanes
- Completing the gaps in the existing system, connecting various communities
- Education (aimed at both driver and bicyclist)
- Promotion of bicycling benefits
- Better signage
- More bicycle racks / bike lockers
- Maintenance of existing facilities (sweeping, filling in potholes, etc)

Appendix C. Opportunities & Constraints

While the previous section was a review of the existing conditions within each city in Ada County, this section provides an assessment of where more generalized opportunities and constraints exist in developing a comprehensive bike network for Ada County.

Population Growth

As the population of Ada County continues to grow, ACHD, Valley Regional Transit, COMPASS, and the local governments need to plan for a truly multi-modal transportation system that serves the needs of all Ada County residents. The following section details the population growth of Ada County as described in the *April 2007 Ada County Comprehensive Plan: Chapter 2 – Population and Growth*

Ada County's population has experienced significant growth over the past 15 years, including an increase of nearly 50 percent between 1990 and 2000 (see Table 1). The county's population growth in the 1990's accounted for roughly one third of the statewide total. This 3.9 percent average annual growth rate (AAGR) is estimated to have increased slightly between 2000 and 2006, when the population grew from just over 300,000 to an estimated 383,314 (see Table 1). Ada County's population density of 285 persons per square mile in the year 2000 was far greater than that of any other county in the state. The Treasure Valley is the most urbanized area and has the highest population concentration in the state.

Boise is the largest city in Ada County, and it accounts for 55 percent of the county's estimated 2006 population. Meridian and Eagle are the only other cities with populations greater than 15,000. While Boise accounts for a majority of the county's population, other communities contributed more population growth during the last 16 years. Table 23 shows that the cities of Meridian, Eagle, Kuna, and Star experienced double-digit annual growth in the 1990's. These, along with Garden City, were responsible for nearly half of the county's population growth over that time period.

Table 23. Population Growth in Ada County

Jurisdiction	1990 Population	2000 Population	1990-2000 AAGR	2006 Population	2000-2006 AAGR	1990-2006 Increase
Ada County	205,775	300,904	3.9%	383,314	4.1%	177,539
Boise	125,738	185,787	4.0%	211,473	2.2%	85,735
Eagle	3,327	11,085	12.8%	20,131	10.5%	16,804
Garden City	6,369	10,624	5.2%	12,074	2.2%	5,705
Kuna	1,955	5,382	10.7%	12,647	15.3%	10,692
Meridian	9,596	34,919	13.8%	66,565	11.4%	56,969
Star	648	1,795	10.7%	4,594	17.0%	3,946

Source: 2007 Ada County Comprehensive Plan; Chapter 2; Table 2.1

This explosive growth has started to stress the existing roadway system, resulting in increased traffic and congestion and hazardous conditions for bicyclists and pedestrians, particularly children. This is an excellent opportunity to further develop a comprehensive bicycle network.

Development

The amount of planned new residential and commercial development in Ada County presents many opportunities to incorporate bicycle facilities into projects that are in the planning and design stages. Building bicycle facilities into projects adds a relatively small amount to most improvements, compared to the expense of trying to retrofit facilities later. In addition, as the county develops, bicycling will continue to grow as a preferred option for commuting and recreating.

Weather

The weather can be viewed as both an opportunity and constraint, depending on the time of year.

A clear view of the Foothills and downtown Boise

Ada County's climate is predominantly arid, with mild temperatures and gentle breezes. The temperature rarely gets over 100, even in the middle of summer, and it's rare when the temperature drops below zero, even on the coldest days. Typically, the winter temperature rises to above freezing during the day, so snow doesn't stick to the ground very long. Precipitation is minimal in Ada County. There are a few snowstorms in the winter and some rain showers in the spring and autumn. Boise will frequently go 45 or 60 days without any precipitation in the summer months. Even so, many bicyclists noted that the weather was a barrier to bicycling more frequently.

Wind is typically a non-factor for cyclists. A 10mph wind, or less, is the rule, with occasional "breezy" days when the wind gets up to 15-20mph. What wind there is comes in predominantly from the west or northwest. It's not unusual to have wind from the southeast in the morning, switching to west in the afternoon.

Roadway Classifications, Volumes, and Speeds

Heavy traffic volumes and speeds along most of Ada County's arterials, combined with a lack of extra outside lane or shoulder width on some routes, makes bicycling very difficult along many of the county's major streets. This is made more challenging by the fact that nearly any bicycle journey in Ada County requires some amount of travel along or across an arterial, just due to the lack of connectivity of the collector and local street networks.

Bicyclists have the same mobility needs as other transportation system users: they want to travel to the same destinations, and they want to get there quickly, efficiently and safely. These factors make arterials preferred routes for cyclists in the same way they are preferred for motorists: the arterials and major collectors provide the most direct routes with the fewest intersections, and link to all major destinations. In the optimal situation there would be bikeways on all arterial streets to serve this need. Two U.S. cities – Davis, California and Boulder, CO – both have bicycle lanes on over 90 percent of their arterial roads, and also experience some of the highest bicycle commute mode split of any city in the United States (about 20 percent of trips by bike in both cities). However, the

existing land use development patterns, limited right-of-way widths, and heavy traffic make it infeasible, and perhaps even unsafe to accommodate bicycles on some of Ada County's arterials. As the bikeway network development process moves forward, this will continue to be a challenge – balancing the accessibility and functionality provided by arterial roads, with the difficulties these roads present in terms of safely and feasibly implementing bikeways.

Centralized Agency Control

As the roadway provider for all of Ada County, ACHD has the opportunity to create and implement a truly connected on-street bicycle system that serves all residents of the county. Instead of needing coordination between different jurisdictions to ensure that a bike lane started in Boise isn't dropped in Meridian, ACHD provides the centralized agency control to oversee and implement a county-wide bicycle master plan.

Available Partnering Agencies

While ACHD as a centralized agency controls the roads, working with the various jurisdictions within in Ada County will be important. Mayor Mitchell (Star) noted that in many cases it will be the land uses that dictate the opportunities. That is, if the cities create areas where people want to be (desired destinations), then those places will need connections. In addition, the county and the cities can be a responsible funding partner for bike improvements by exacting bicycle improvements as part of the land use entitlement process. Furthermore, ACHD policies can support the work of the various jurisdictions, particularly relating to education, encouragement, and end-of-trip facilities.

Topography / Geography

The Boise River and the Bench are constantly identified as constraints to bicycling in Ada County. Identifying safe, comfortable crossings of both will enhance the entire bicycle network while increasing connectivity throughout the system.

I-84 / I-184

The freeways are a constraint to north-south travel in Ada County, where few safe crossings of I-84 exist and a number of crossings are quite difficult. Planning for and creating safe crossings along desired bicycle routes will be necessary in creating a comprehensive bicycle network. ACHD should work with Idaho Department of Transportation to provide the needed crossings.

Existing and Planned Pathway Networks

Identifying connections to the existing and planned pathway networks will improve the connectivity and safety of the entire non-motorized system, connecting parks and schools to the greater bicycle network in Ada County.

Major Generators and Attractors of Bicycle Trips

Educational Facilities

From higher education facilities - such as Boise State University – to the elementary schools located throughout the county; providing safe facilities for students to bike to school is important.

Boise State has approximately 19,000 students, with only 1800 of them living on campus. 60 percent live within Ada County, with 40 percent of those living in Boise. With a dispersed student population and limited vehicle parking around campus, finding routes to BSU from all areas of the county becomes important.

The Meridian School District is the largest in the state, both in geographical size and student population, serving approximately 32,000 students. The Boise School District serves an additional 25,000 students in K-12, while employing an additional 3,900 people throughout the district. State policy requires that the schools bus students who live outside a 1.5 mile radius from the school. There is also the option for bussing students who live one mile from school if they have no "feasible or safe" rout to school. Identifying a comprehensive bicycle network that connects the schools and neighborhoods provides an alternative transportation option for students and teachers.

Major Employers

Ada County is home to several major employers, including: Hewlett Packard, Micron, Albertsons/Supervalu Inc., several large hospitals, federal, state and local governments, and many others. Providing safe connections to these and other employment centers will be critical as Ada County continues to grow. Continuing to work with these employers through Commuteride (currently working with 175 employers) to provide education and encouragement about bicycle commuting and other alternative means of transportation to work will be vital.

Park & Recreation Facilities

The existing and planned parks within Ada County serve as obvious destinations for bicyclists, particularly those under 16 who are unable to drive. With the development of major community parks that attract users of all ages, providing a safe and comfortable non-motorized option for getting there will be an important part in identifying the future bicycle network.

Government / Civic / Commercial Centers

The downtown and other commercial areas within each city are important destinations, with activities such as farmers markets and downtown businesses drawing people from all over the region. Providing alternative transportation options to workers and residents to these important destinations is an important component of a complete bicycle network.

Residential Areas

Many of the cities in Ada County have very traditional neighborhood development, with neighborhood streets connecting directly to major arterials, which can make it difficult for bicyclists and pedestrians to travel quickly and safely to their destinations. A comprehensive bicycle network can provide safe travel corridors for all residents.

System Fragmentation

The current bikeway network is fragmented, with many sections of bike lanes starting and stopping without connecting to additional bicycle facilities. Identifying a connected system that ACHD can implement within a reasonable time frame will be a key priority of the Plan recommendations.

Intersections

Providing a comfortable and logical route through key intersections should be a key priority in making design improvements to the bicycle network. Several intersections – Glenwood/State/Gary, Capitol/Vista/Federal Way, I-84/Meridian – among others were all highlighted as difficult/dangerous intersections for bicyclists. The utility of a great bicycling facility between intersections is greatly reduced if bicyclists are uncomfortable at the intersections.

Air Quality

Non-motorized travel directly and indirectly translates into fewer vehicle trips, and an associated reduction in vehicle miles traveled and auto emissions. The variables used as model inputs generally resemble the variables used in the demand models discussed earlier. Data including population, employed persons and commute mode shares were used for this analysis. In terms of daily bicycle trips, assumptions regarding the proportion of persons working at home reflect those used in the demand models. Other inputs included data regarding college student and school children commuting patterns.

In addition to models quantifying existing and future demand for non-motorized facilities, a variety of models can also quantify the benefits of such facilities. Models were used in this analysis to estimate the positive air quality, public health, transportation, and recreation benefits associated with existing and future bicycle travel in Ada County.

Additional assumptions were used to estimate the number of reduced vehicle trips and vehicle miles traveled, as well as vehicle emissions reductions. In terms of reducing vehicle trips, it was assumed that 73 percent of bicycle trips would directly replace vehicle trips for adults and college students. For school children, the reduction was assumed to be 53 percent. To estimate the reduction of existing and future vehicle miles traveled, a bicycle roundtrip distance of eight miles was used for adults and college students; and one mile for school children. These distance assumptions are used in various non-motorized benefits models. The vehicle emissions reduction estimates also incorporated calculations commonly used in other models, and are identified in the footnotes of Table 24.

Estimating future benefits required additional assumptions regarding Ada County's population and anticipated commuting patterns. According to the U.S. Census, approximately 155,666 people are

currently employed in the County. A future workforce population of 185,000 was used to reflect current overall population growth trends. In terms of commuting patterns, the bicycling mode share was increased to address higher use potentially generated by the addition of new non-motorized facilities and enhancements to the existing system. The estimated proportion of residents working from home was also grown slightly.

Table 24 summarizes existing and potential future air quality improvements associated with bicycling in Ada County. Bicycling currently removes over 3,700 weekday vehicle trips, eliminating nearly 27,000 vehicle miles traveled. Bicycling also prevents nearly 16,000 tons of vehicle emissions from entering the ambient air each weekday. Bikeway network enhancements are expected to generate more bicycling trips in the future. This growth is expected to improve air quality by further reducing the number of vehicle trips, vehicle miles traveled and associated vehicle emissions.

It should be noted that this model only addresses commute-related trips. Unlike the demand models, this model does not account for air quality improvements associated with recreational non-motorized travel. Quantifying the benefits of recreational travel could further improve the air quality benefits of bicycling.

Table 24. Existing and Potential Future Air Quality Benefits

Vehicle Travel Reductions	Existing	Future
Reduced Vehicle Trips per Weekday*	4,154	6,587
Reduced Vehicle Trips per Year†	1,084,272	1,719,314
Reduced Vehicle Miles per Weekday‡	29,766	46,021
Reduced Vehicle Miles per Year	7,769,017	12,011,554

Vehicle Emissions Reduction	Existing	Future
Reduced PM10 (tons/weekday)§	548	847
Reduced NOX (tons/weekday)**	14,847	22,955
Reduced ROG (tons/weekday)††	2,161	3,341
Reduced PM10 (tons/year)‡‡	142,950	221,013
Reduced NOX (tons/year)	3,875,186	5,991,363
Reduced ROG (tons/year)	564,031	872,039

Note: VMT means Vehicle Miles Traveled, ROG means Reactive Organic Gases

* Assumes 73 of bicycle trips replace vehicle trips for adults/college students; 53% reduction for school children.

† Weekday trip reduction multiplied by 261 weekdays per year.

‡ Bicycle trips: assumes average roundtrip of 8 miles for adults/college students; 1 mile for school children

§ PM_{10} reduction of 0.0184 tons per mile.

** NO_X reduction of 0.4988 tons per mile.

†† ROG reduction of 0.0726 tons per mile

‡‡ Weekday emission reduction multiplied by 261 weekdays per year.

Existing Bicycling Community

Existing Commuter and Utilitarian Cyclists

Every day cyclists in Ada County use the roadway network to travel to work and school for shopping and other daily needs and for exercise and recreation. The number of cyclists observed has been increasing since gasoline prices increased in 2008. Even with the decrease in fuel prices, a higher level of bicycling activity continues and is expected to grow. This activity demonstrates that it is possible to travel around Ada County by bicycle at any time of the year, and it is creating a demand for more bicycle facilities.

Looking at ways to enhance the roadway network – to make bicycle travel safer, to reduce the need for cyclists to ride on the sidewalk because they are not comfortable on the road – should be a key priority of the bicycle plan network recommendations.

Existing Facilities

There are many existing facilities throughout Ada County that support the bicycling network by encouraging more residents to bicycle regularly.

- Boise State University Bike Barn: locked indoor bicycle storage, showers, and lockers. Dry cleaning drop off and delivery services are provided for those who wish to leave a selection of work clothes in their lockers. The facility accommodates approximately 40-50 users per semester. Cost for use of the facility is $10 per semester and it includes an individual key code combination that provides secure entry into the facility and shower privileges. Lockers are available in the facility and in the shower area for an additional cost.
- Idaho Velodrome & Cycling Park: Currently under construction, this facility will be located in Eagle, and will include facilities for BMX, Four-Cross, Skills Terrain, Jump/Aerials Terrain, Short-Track MTB, Cyclo-Cross, and a cornerstone outdoor 333 meter concrete surface cycling track. When completed, this facility will encourage bicycling and be a center for bicycling activity.
- Willow Lane BMX Dirt Jump Park

Appendix D. Existing Bicycling Conditions

As noted earlier, the public roadways in Ada County serve the cities of Boise, Eagle, Garden City, Kuna, Meridian, Star and the unincorporated areas of Ada County The following section documents the existing bicycling conditions throughout Ada County, using the adopted Area of Impact as the boundary for each jurisdiction.

Star

Roadway Functional Classifications

Within the Area of Impact, Star Road is identified as a minor arterial south of State Street, and a major collector north of State Street. State Street is a minor arterial within Star. Floating Feather east of Pollard Lane is a major collector, and Beacon Light Road is a section line road. Emmett (Highway 16) is identified as a principal arterial. All other roads are classified as local streets.

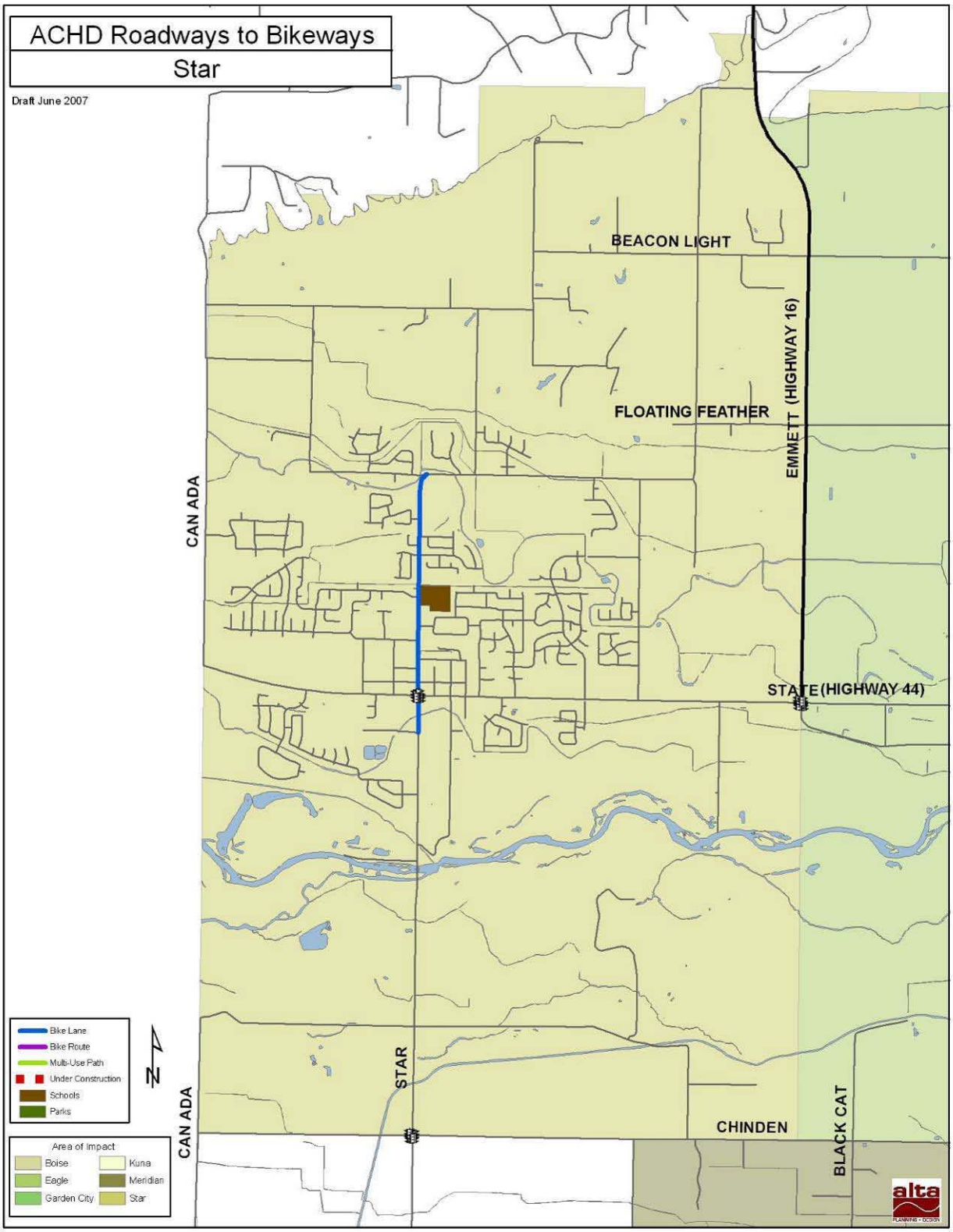
Bicycle Facilities

The only designated bicycle facility within Star is a bicycle lane on Star Road that begins just north of the Lawrence-Kennedy Canal and continues north to Floating Feather Road. There is also a pathway that connects Knox Street, Mira Avenue, and Taurus Way paralleling State Street north of the highway (Map 4).

Bike lane in front of Star Elementary

Biking within Star is generally fairly comfortable, especially through the neighborhoods surrounding the elementary school; however it is limited by the lack of east-west connections. The most direct east-west routes are State Street and Floating Feather Road. State Street can be uncomfortable due to higher traffic volumes and cars accessing businesses along the road. In addition, while the speed limit is posted at 25 mph through town, the road design encourages faster speeds, especially as the posted limit increases to 45 mph continuing east. Floating Feather is narrow in sections and experiences higher vehicle speeds due to the rural nature of the surrounding land uses, making bicycling uncomfortable at times, particularly for less skilled bicyclists.

State Street (Hwy 44) looking east through downtown Star



Map 4. Existing Bicycle Facilities, Star

Connecting to Star from other parts of Ada County occurs on major streets such as State Street (Highway 44), Star Road, Beacon Light Road and Floating Feather Road. For confident cyclists, these roads work well, however as the county continues to grow and develop, these rural facilities will need upgrading to accommodate the increasing vehicle and bicycle traffic volumes. In addition, crossing Highway 16 can be difficult at times given the lack of intersection controls and the heavy traffic volumes on the highway.

Bicycle Friendly Community Sign, Star Road

Signage

There are very few signs related to bicycling posted within Star. The most prevalent sign is primarily intended for drivers and identifies the presence of a bike lane to inform drivers where they should be parking. There were no directional signs present to help bicyclists navigate through Star. ACHD has also posted League of American Bicyclists signs throughout the county identifying the entire county as a Bicycle Friendly Community.

Bike lane sign, Star

End of Trip Facilities

Star Elementary School had well-used bicycle parking, although the type of bicycle rack used is an older "wheel bender" style of rack that is not recommended. The library also provided an older-style bicycle rack for patrons to use. Other than those two locations, formalized bicycle parking was difficult to locate and identify during fieldwork.

Bicycle Parking, Star Elementary

Multi-Modal Connections

There is currently one transit route connecting Caldwell to Boise that passes through Star twice during the day – once in the morning and again in the evening. The *Treasure Valley in Transit Plan* identifies State Street (Highway 44) as a future transit corridor with service every 15 minutes during the commute times and every 60 minutes during midday. A park-and-ride lot is located near the intersection of Star Road and State Street. Within ACHD, all Commuteride vanpools can be equipped with bike racks to encourage multi-modal trips.

Eagle

Roadway Functional Classifications

Bike lanes drop on Floating Feather at Red Leaf

Within the Area of Impact, State Street (Highway 44), Chinden Boulevard (Highway 20/26), Emmett (Highway 16), Eagle Road (Highway 55) (Chinden – Hwy 44), and Highway 55 are all classified as principal arterials. Beacon Light Road is a rural arterial. Minor arterials are: State Street (through downtown), Linder Road (Chinden – Beacon Light), Eagle Road (State Street/Hwy 44 – Floating Feather), and Floating Feather (Eagle – Hwy 55). Roads classified as major collectors are:

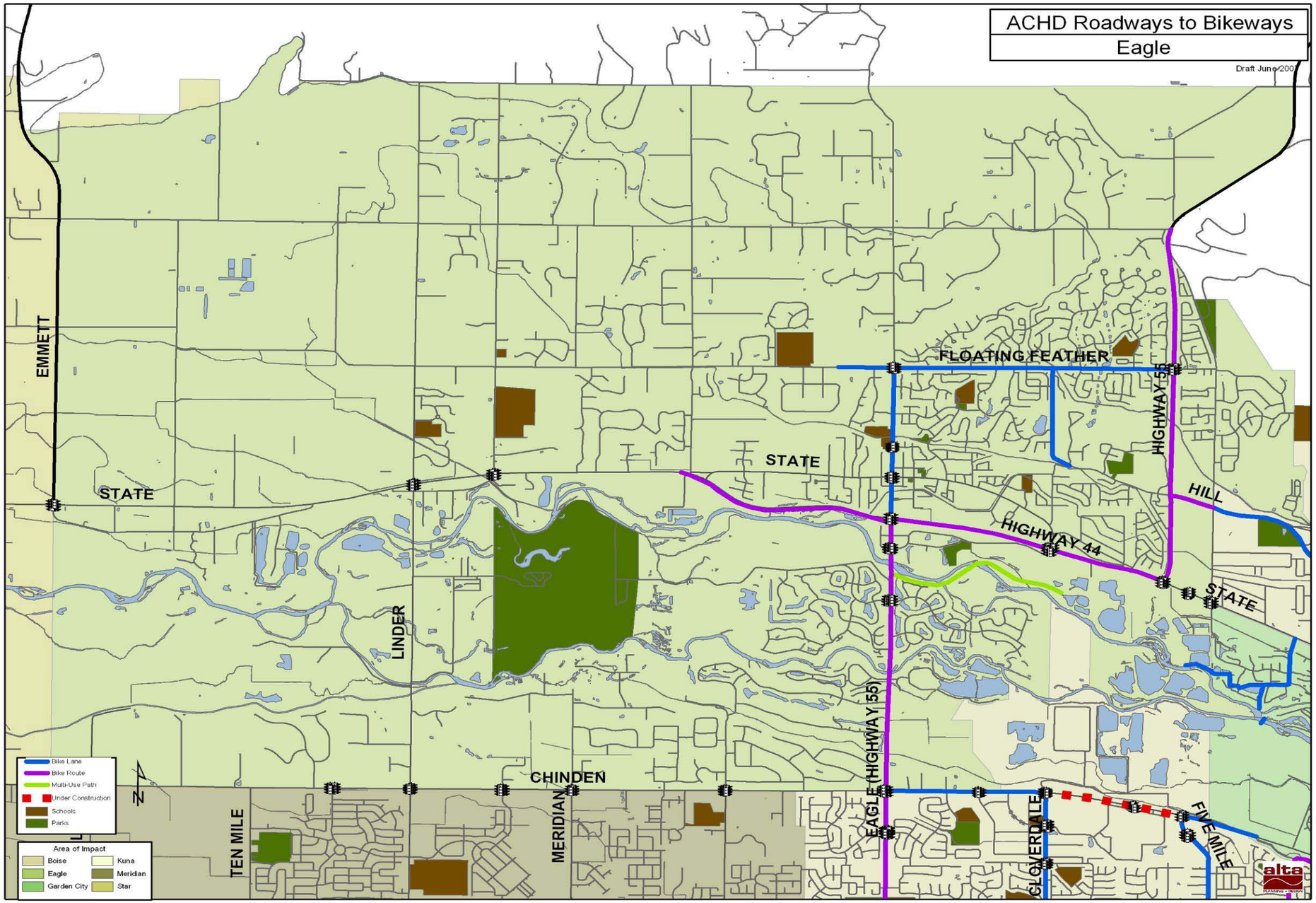
- Floating Feather from Star to Eagle Road
- Eagle Road (Highway 55) north of Floating Feather
- Horseshoe Bend
- Hill Road/Edgewood
- Eagle Hills Way
- Ranch Drive
- Stierman Way
- Island Woods Drive
- Mace Road
- Meridian Road (north of Chinden)
- Locust Grove Road (north of Chinden)

All other roads in Eagle are classified as local streets.

Bicycle Facilities

Eagle has several segments of bike lanes (see Map 5), which can be divided into two distinct groups. The major group includes the longest segment of bike lane - Eagle Road (Highway 55) from the Eagle Drain to Floating Feather Road, connecting into the bike lane on Floating Feather. Floating Feather has two discontinuous segments of bike lanes. The first stretches from Eagle Middle School to just east of the signal at Eagle Road (Highway 55). The bike lane drops after the signal and begins again about ¾ mile later continuing to Horseshoe Bend Road. This connection is set for reconstruction in 2008. The last segment of bike lane is on Edgewood Lane, and connects Hill Road with Floating Feather Road. The other existing bike lanes are in the Eagle River development on the Riverside Drive / Shore Drive loop.

The local streets north of downtown and east of Eagle provide for some connectivity and allow residents to reach Eagle Hills Elementary and Eagle Elementary (after crossing Eagle Road), as well as Krassen and Friendship Park, without using any of the major arterials. Residents further west do not have the same level of connectivity and are forced to use major roads, such as State (Highway 44), Floating Feather, and Linder Road to reach their desired destinations.



Map 5. Existing Bicycle Facilities, Eagle

However, bicycling within Eagle seems to be primarily a recreational activity, as Eagle provides access to the Foothills, as well as lower volume arterial roads such as Beacon Light that bicyclists enjoy riding. Hill Road out of Boise into Eagle, and then north on Horseshoe Bend to continue either north on Highway 55 or west on Floating Feather or Beacon Light is a highly popular ride that was mentioned frequently by residents.

Bicyclist on Hill Road @ Guerber Community Park

Connecting to Eagle from the surrounding cities occurs primarily on major streets such as State Street (Highway 44) or Floating Feather Road from Star, Linder Road or Eagle Road (Highway 55) from Meridian, or Hill Road from Boise. For confident cyclists, these roads work well, however as the county continues to grow and develop, these rural facilities will need upgrading to accommodate the increasing vehicle and bicycle traffic volumes. In addition, crossing the highways can be difficult at times given the lack of intersection controls and the heavy traffic volumes.

Bike Route sign on Floating Feather east of Highway 55

Signage

There are very few signs related to bicycling posted within Eagle. The most prevalent sign is the MUTCD-approved "Bike Route" sign, which were not seen that frequently. There were no directional signs present to help bicyclists navigate through Eagle, or to identify potential destinations for bicyclists. ACHD has also posted League of American Bicyclists signs throughout the county identifying the county as a Bicycle Friendly Community.

Eagle Elementary bike parking

End of Trip Facilities

The elementary schools (Seven Oaks, Eagle Hills, and Eagle) all had well-used bicycle parking, although both the type and locations of the racks could be improved. Many of the racks are an older "wheel-bender" style of bicycle rack that is not recommended for use due to the ease in which bikes are damaged. In addition, some of the bicycle racks were located off to the side of the school in a location that is not easily observed by those within the school, increasing the likelihood of theft or damage. The middle school and high school had much less bike parking while also being more

inaccessible; the high school bicycle parking is located around the back of the school against the wall underneath an exterior stairway.

Sub-standard bike parking behind State Street in Downtown Eagle

Both of the newer community parks (Merrill Park and Guerber Park) had dedicated bicycle parking using newer "wave" racks, with each park accommodating 12 bicycles (assuming the bicycle racks are being used correctly). The smaller neighborhood parks typically lacked any formalized bicycle parking. The major commercial centers (downtown and Eagle River) were both lacking sufficient bicycle parking. Rembrandt's Coffee House and the brew pub adjacent to the downtown path were two of the few locations downtown where bicycle parking was easily located. There was also sub-standard bike parking located in a shared parking lot just north of State Street (Highway 44) in downtown. In addition, both the library and city hall provided visible bike parking for visitors. In Eagle River, Bardenay also had bike parking available in a prime location (adjacent to the front door), although the rack is installed improperly. Long term bicycle lockers were also noted at the park-and-ride lot adjacent to Highway 44 at Riverside Drive. Other than the schools and the community parks, formalized bicycle parking was difficult to locate and identify during fieldwork.

Multi-Modal Connections

Valley Regional Transit started a weekday commuter bus route between Caldwell, Middleton, Star, Eagle and Boise in 2007. The Route 44 Express provides one morning trip originating in Caldwell and one late afternoon trip originating in Boise that stops in Eagle at the park-and-ride lot at Highway 44 and Riverside Drive/Edgewood Road. The *Treasure Valley in Transit Plan* identifies State Street (Highway 44) as a future transit corridor with service every 15 minutes during the commute times and every 60 minutes during midday. A park-and-ride lot is located west of the intersection of Eagle Road with Highway 44. The *Treasure Valley in Transit* also identifies a core area north of the river as a Flex Route zone, with service every 60 minutes which can deviate from its set route. Within ACHD, all Commuteride vanpools can be equipped with bike racks to encourage multi-modal trips.

Kuna

Roadway Functional Classifications

Within the Area of Impact, Deer Flat Road, Ten Mile Road, Kuna Road, Swan Falls Road, Main Street, Linder Road (south of Deer Flat), King Road (west of Swan Falls) and Bridge Avenue are all identified as minor arterials. Identified major collectors are: Linder Road (north of Deer Flat), School Street, Boise Street, 4th Street, Kay Avenue (south of 4th St), and King Road (east of Swan Falls). Kuna-Meridian (Highway 69) is a principal arterial. All other roads are identified as local streets.

Boise Street bike lane stencil covered by chip seal and not re-stenciled

Bicycle Facilities

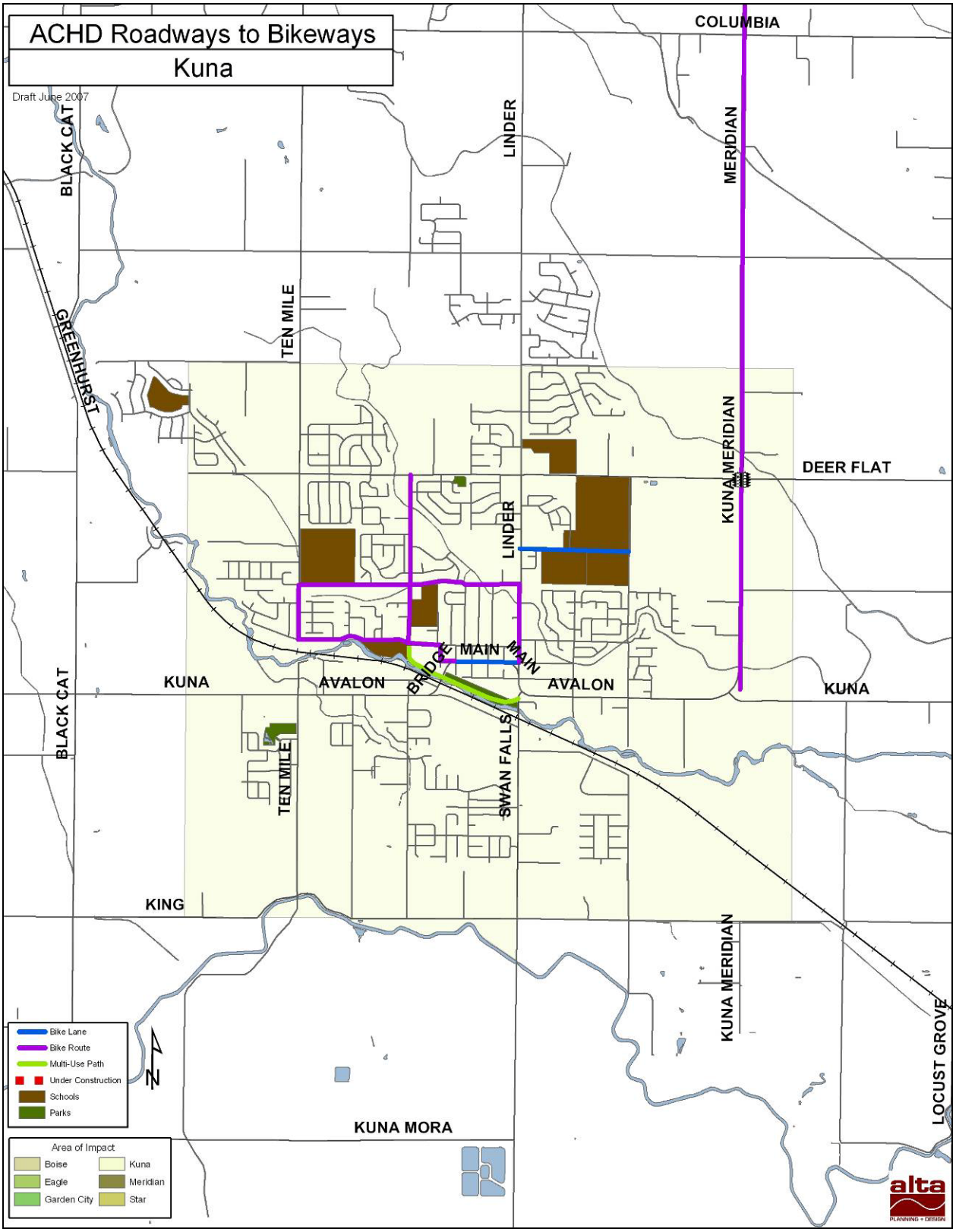
Kuna has several existing bike lanes; although half of them are missing bike stencils and signage to identify them as bike lanes (see Map 6). Bike lanes currently exist on Porter Street and on Main Street through downtown. Boise Street and Ten Mile (between Boise Street and 4th Street) are both striped as bike lanes but are missing bike stencils. In addition, Ten Mile has "No Parking Bike Lane" signs posted.

School Street bike route with wide shoulder / parking area

School Street (Deer Flat to 4th Street), 4th Street (Ten Mile to Avenue D), and Linder Road (Boise Street to 4th Street) are all identified as bike routes.

Biking within Kuna is fairly comfortable on the local streets through the neighborhoods surrounding the elementary schools and on the major collectors that connect up major destinations near downtown Kuna. However, bicycling conditions along the minor arterials are not conducive to biking for most bicyclists. Linder Road, Deer Flat Road, and portions of Ten Mile Road have few locations with shoulders, and the sidewalks are absent or discontinuous along all of them, eliminating even that possibility for bicyclists. Since these roads provide major north-south and east-west connectivity through Kuna with few alternatives, getting from northern Kuna to downtown Kuna can be difficult.

Connecting to Kuna from other parts of Ada County occurs on arterial roadways such as Kuna-Meridian (Highway 69), Linder Road, Ten Mile Road, and Black Cat Road. For confident cyclists, these roads work well, however as the county continues to grow and develop, these rural facilities will need upgrading to accommodate the increasing vehicle and bicycle traffic volumes.



Map 6. Existing Bicycle Facilities, Kuna

Signage

There are very few signs related to bicycling posted within Kuna. The most prevalent sign is the MUTCD-approved "No Parking Any Time" signs. There were no "Bike Route" signs noted in Kuna. There were also no directional signs present to help bicyclists navigate through Kuna. ACHD has also posted League of American Bicyclists signs throughout the county identifying the county as a Bicycle Friendly Community.

"No Parking Any Time" sign along Ten Mile bike lane

End of Trip Facilities

The elementary schools (Hubbard, Indian Creek, Ross, Teed, and Reed) and the Falcon Ridge charter school all had well-used bicycle parking; while the middle school and high school saw much less use on the day observed. Kuna City Park had one older-style bicycle rack that was partially hidden behind a tree. Other than the schools and the City Park, formalized bicycle parking was difficult to locate and identify during fieldwork.

Reed Elementary bike parking

Multi-Modal Connections

There is currently no transit service provided to Kuna by Valley Regional Transit. The Treasure Valley in Transit Plan identifies Kuna-Meridian (Highway 69)/Avalon into downtown Kuna as a future transit corridor with service every 30 minutes during commute times and every 60 minutes during midday. Within ACHD, all Commuteride vanpools can be equipped with bike racks to encourage multi-modal trips.

Meridian

Roadway Classifications

Within the Area of Impact, the following roads are all classified as principal arterials: Eagle Road (Highway 55) north of Overland, Cherry Lane/Fairview Avenue east of Black Cat, Franklin Road east of Main Street, Chinden Boulevard, and Kuna-Meridian Road (Highway 69) south of I-84. Roads classified as minor arterials are:

- Black Cat Road
- Ten Mile Road
- Linder Road (north of I-84)
- Meridian Road (north of I-84)
- Main Street
- Locust Grove (north of Pine, Franklin – Overland)
- Eagle Road (Hwy 55) (south of Overland)
- McMillan Road (east of Ten Mile)
- Ustick Road
- Cherry Lane (west of Black Cat)
- Franklin Road (west of Meridian Road)
- Overland Road (east of Ten Mile)
- Victory Road (east of Eagle)
- Amity Road (west of Eagle)

Major Collectors include:

- McMillan Road (west of Ten Mile)
- Pine Avenue (west of Eagle)
- Victory Road (west of Eagle)
- Amity Road (east of Eagle)
- West 8th Street
- Chateau Drive/Todd Way, Monaco Way/Chateau Drive (a portion of Chateau Drive is classified as local)
- Stratford Drive/Central Drive
- Hickory Ave/Hickory Way

McDermott Road, Overland Road (west of Black Cat), Linder Road (south of Overland), Locust Grove (south of Overland) are all currently identified as section line roads. The rest of the roads are identified as local streets.

Bicycle Facilities

Meridian has several segments of bicycle lanes; however it is a highly disconnected system, making bicycling difficult for most bicyclists (see Map 6). The longest segment of continuous bike lane – Locust Grove from Summerheights Drive to Franklin Road – only connects to two short segments of bike lanes, and ends ~ 1800 feet from the bike lanes on Leighfield Drive that connect to

Locust Grove bike lanes

Cars parked in bike lane on Leighfield outside Discovery Elementary

Narrow bike lane on Pine Avenue

Overland Road bike lanes west of Eagle Road

Discovery Elementary, Medical Arts High School, and Meridian Technical Charter High School. Ustick Road has two segments of bicycle lanes, yet they are not connected, nor do they connect with the existing bike lanes on Ustick within Boise.

Pine Avenue, also has disconnected bike lanes, but this is a result of the discontinuous nature of Pine Avenue itself. However, Pine Avenue west of Locust Grove is a continuous east-west connector that would serve bicyclists well, however there is only a one-mile segment of Pine Avenue currently striped with a bike lane.

Overland Road (Topaz to Meridian Road) and Cherry Lane (west of Ten Mile) are both five-lane roads striped with bike lanes. This cross-section is less desirable for bicyclists, however it does provide a dedicated space for bicyclists on major arterials, a must for Meridian where there is not a connected collector system to locate bicycle facilities.

In addition, the bike lanes and bike routes do not provide direct connections to the major destinations within Meridian – downtown, community parks, schools, the Bud Porter Pathway, and the water park to list a few – making bicycling a difficult option for many residents. Besides the lack of connectivity in the roadway network, I-84 presents an additional barrier to bicycling in Meridian. The current overcrossings are either at interchanges with high traffic volumes (Meridian, Eagle) or narrow two-lane rural roads with no shoulder or bike lane on the overpass (Black Cat, Ten Mile). These conditions are all major barriers to bicycling in Meridian. The planned Locust Grove overpass was completed in Summer 2008, and provides a good alternative to Eagle or Meridian when crossing I-84 in Meridian city limits.

Connecting to Meridian from other locations within the county is difficult, given the lack of continuous bicycle facilities. The Emerald Street / Executive Avenue east-west route forms the only continuous collector from Ten Mile in Meridian nearly to downtown Boise. McMillan Road is another popular east-west route from Boise, as McMillan has bike lanes through most of Boise, although these bike lanes end at Eagle Road (Highway 55) and do not continue into Meridian. Connections north to Eagle occur on both Eagle Road and Linder Road, which experience heavy

traffic volumes and speeds throughout the day, making bicycling difficult for many bicyclists. Connecting south to Kuna occurs along Kuna-Meridian (Highway 69) as well as Ten Mile, Linder Road, and Black Cat. For confident cyclists, these roads work well, however as the county continues to grow and develop, these rural facilities will need upgrading to accommodate the increasing vehicle and bicycle traffic volumes.

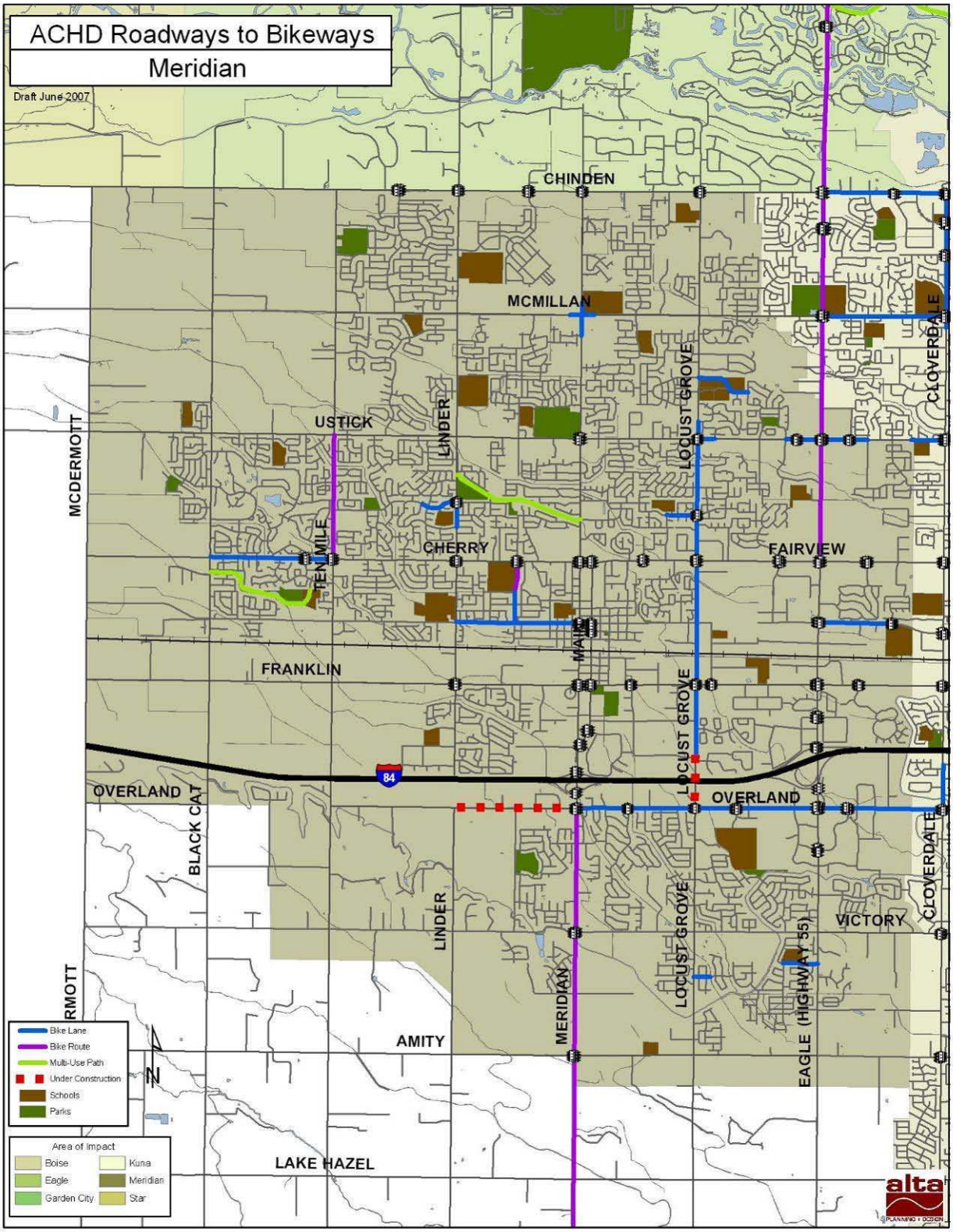
Signage

There are very few signs related to bicycling posted within Meridian. The only bike-related sign identified was the MUTCD-approved "No Parking Bike Lane" signs, and these were not very common. In addition, these signs are aimed more at drivers rather than helping bicyclists locate bicycle routes. The lack of directional signs presents an unnecessary barrier to bicyclists who are unfamiliar with how best to navigate through Meridian or identify potential destinations on a bike. ACHD has also posted League of American Bicyclists signs throughout the county identifying the county as a Bicycle Friendly Community.

End of Trip Facilities

Bike parking at Meridian High School

The bike parking at all the schools observed was generally well-used, including Meridian High School. However, the style of the bicycle racks, particularly at the older schools, needs improvement. Many of the racks observed are of the older "wheel bender" variety that results in the racks being used improperly or, if used properly, bicycles being damaged. Newer "wave" type racks were observed at the Medical Arts and Meridian Tech Charter High School and Central Academy. Bicycle parking at Meridian Middle School was much less formalized, with bikes leaning against a chain link fence in the parking lot. In addition, the bike parking locations should also be reviewed, as many were some distance from the front entrance with no visible means of keeping the bicycle parking under observation throughout the day. Other than the schools and scattered locations in downtown Meridian, formalized bicycle parking was difficult to locate and identify during fieldwork.



Map 7. Existing Bicycle Facilities, Meridian

Multi-Modal Connections

ValleyRide currently offers two different lines that provide service to Meridian. The #40 Nampa Express stops at the Gold's Gym park-and-ride lot in Meridian. Service runs every 30 minutes for two hours in the peak direction on each peak, and for one hour (two trips) in the reverse-peak direction.

The #42 Nampa Limited Stop exits Interstate 84 at Meridian Road, heads north, and services the Meridian Business Park. From there, its goes to Franklin Road and then Eagle Road, where it serves St. Luke's Meridian. It continues south to Overland Road, serving Silverstone, the Social Security office (from Maple Grove Road) and the Towne Square Mall. From the mall, it continues into downtown Boise via I-184. This two-way service runs every 60 minutes during peak hours and every 3 hours (two round trips) during the midday.

The *Treasure Valley in Transit Plan* identifies the following corridors as future transit corridors in Meridian:

- The railroad corridor from Caldwell to Boise is identified as a high capacity service corridor
- Overland Road, Franklin Road, Meridian Road, Ustick Road, Fairview Avenue, Pine Avenue/Emerald Street, and Five Mile Road with service every 15 minutes all day.
- Kuna-Meridian (Highway 69) into downtown Kuna with service every 30 minutes during commute times and every 60 minutes during midday.

In addition, within ACHD, all Commuteride vanpools can be equipped with bike racks to encourage multi-modal trips.

Garden City

Roadway Classifications

Within the Area of Impact, State Street (Highway 44), Chinden Boulevard (Highway 20/26), and Glenwood Street are all classified as principal arterials. Veterans Memorial Parkway is the only minor arterial. Major collectors include: Kent Lane/Alworth Street/Adams Street, 36th Street, 44th Street (Chinden – Adams), 50th Street (Chinden – Adams), Coffey Street, Marigold Street, Garrett Street, Mountain View Drive, Pebble Brook Lane, and Arney Lane. All other roads are classified as local roads.

Bicycle Facilities

Bicyclist on Marigold bike lane

Glenwood Street looking north from

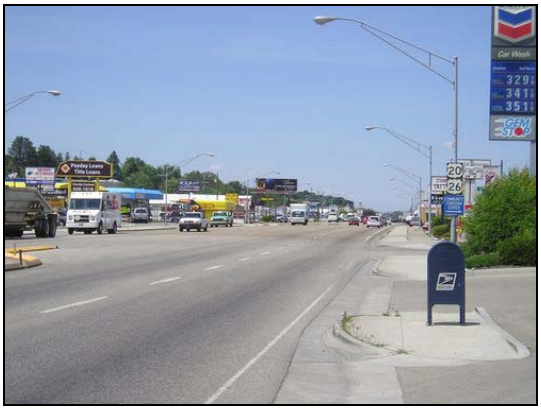
Garden City has very few dedicated bicycle facilities, which is unsurprising given its geography and physical size (Map 7). Bike lanes currently exist on Marigold, Curtis (south of Chinden), Ustick, Orchard, and on 36th Street (uphill direction only, lacking both signage and stencils). Garrett Street is identified as a bike route connecting to the Marigold bike lanes from Chinden, as is Strawberry Glenn connecting the Marigold bike lanes to the Greenbelt. The Kent Lane/Alworth Street/Adams Street route, although not currently identified on the existing facilities map, provides a good parallel alternative to Chinden Boulevard (Highway 20/26), which is difficult for bicyclists to use due to high traffic volumes and speeds, as well as significant access management issues. The Arney Lane/Riverside Drive route on the north side of the river is a good east-west alternative to bicycling on State Street, connecting into the Greenbelt at Glenwood Street.

Besides traveling along and across Chinden Boulevard, both the Boise River and the Bench act as barriers to bicycling in Garden City. The only crossings of the river are along Glenwood or Veterans Memorial Parkway. Glenwood has a multi-use path over the river, as well as a striped bike lane/shoulder. Reaching the north side of the river, bicyclists are provided with no facilities while Glenwood becomes a high volume 5-lane road with additional right-turn pockets. There is an existing narrow asphalt path on the east side of Glenwood north of the river; however this is a dangerous location for bicyclists given the number of driveways that the path crosses. The intersection of Glenwood/Gary and State (Highway 44) sees a high volume of traffic, making bicycling difficult. Veterans Memorial Parkway also has a pathway along the southeast side across the river. Bicyclists heading in either direction are intended to use this

facility, as the northern travel lane has no shoulder adjacent to the fixed bridge railing. This is a difficult transition for southbound bicyclists to make, as the decision needs to be made at the signal at State Street (Highway 44).

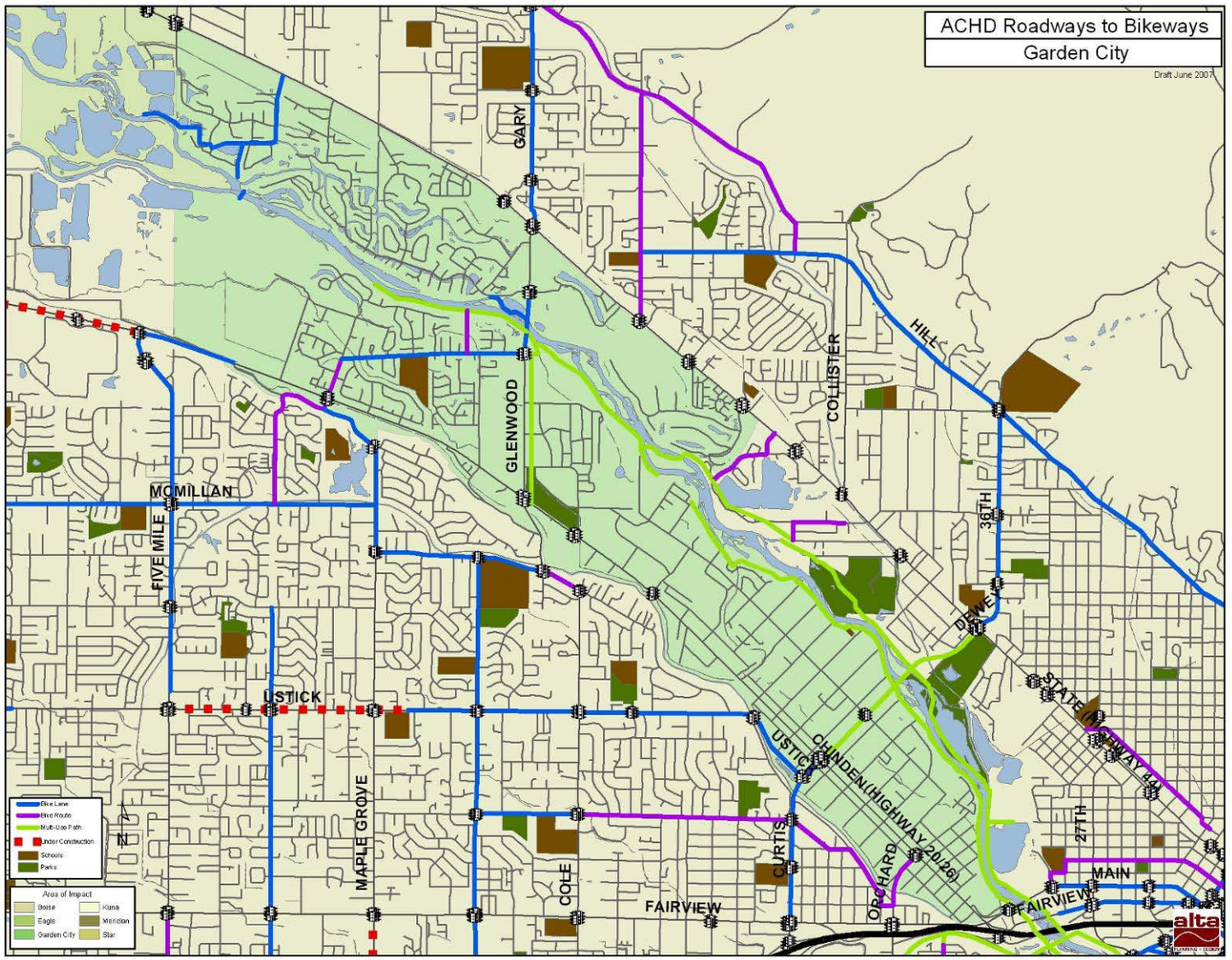
Mitchell Street bike route north down the Bench

The Bench also acts as a barrier in a similar way to the river, with only a few access points up the Bench from Garden City, resulting in higher traffic volumes on all of these routes. The lowest volume route is the Mitchell Street bike route which connects into Garrett Street at Chinden (Highway 20/26). However, this route has a steeper grade on a narrower road than other routes. The new Maple Grove extension also provides access to the Bench from Garrett/Chinden (Highway 20/26) and has bike lanes in both directions. Both Curtis and Orchard have bicycle lanes heading south in the uphill direction.



Chinden Blvd (Hwy 20/26)

Connecting to Garden City from the surrounding cities occurs primarily on major arterials and collectors such as Gary/Glenwood, State Street, Chinden Boulevard, Veterans Memorial Parkway/Curtis, and 36th Street. In addition, the Greenbelt provides excellent off-street connectivity southeast to Boise, and will eventually connect to Eagle as well. For confident cyclists, the majority of the roads work well, while the Greenbelt provides greater access for a wider range of bicyclists.



Map 8. Existing Bicycle Facilities, Garden City

Signage

There are very few signs related to bicycling posted within Garden City. The only bike-related sign identified was the MUTCD-approved "No Parking Bike Lane" signs, and these were not very common. In addition, these signs are aimed more at drivers rather than helping bicyclists locate bicycle routes. The lack of directional signs presents an unnecessary barrier to bicyclists who are unfamiliar with how best to navigate through Garden City or identify potential destinations on a bike, in particular connecting to the Greenbelt. In addition to posted signage, ensuring that work crews place temporary signs correctly with respect to all roadway users is necessary. ACHD has also posted League of American Bicyclists signs throughout the county identifying the county as a Bicycle Friendly Community.

Poorly placed road work sign on Marigold

End of Trip Facilities

Garden City's most visible bike parking location is outside City Hall. There are two different style of racks – a newer "wave" rack (installed improperly), and an older "wheel bender" rack. There was one bike locked to each on the day observed. ACHD headquarters also has a "wave" rack outside its main entrance and a designated covered bicycle room (with an older "wheel bender" rack) as well as shower facilities for bicyclists. Otherwise, formalized bicycle parking was difficult to locate and identify during fieldwork.

Two bicycle racks at City Hall

Multi-Modal Connections

Valley Ride provides three fixed bus routes that stop in Garden City. The #8 line travels Chinden Boulevard (Highway 20/26), the #9 provides service along State Street (Highway 44), and the #10 provides service along Glenwood Street. The Treasure Valley in Transit Plan also identifies Adams Street as a future transit corridor with service every 15 minutes all day. Within ACHD, all Commuteride vanpools can be equipped with bike racks to encourage multi-modal trips.

Boise

Roadway Classifications

Within the Area of Impact, Boise has a number of roadways that fall into the various classifications described earlier. Map 8 provides a closer look at the roadway classifications within Boise.

Bicycle Facilities

The ease of bicycling in Boise (Map 9) depends on where in the city one is bicycling. For this reason, the city has been divided into 4 sections:

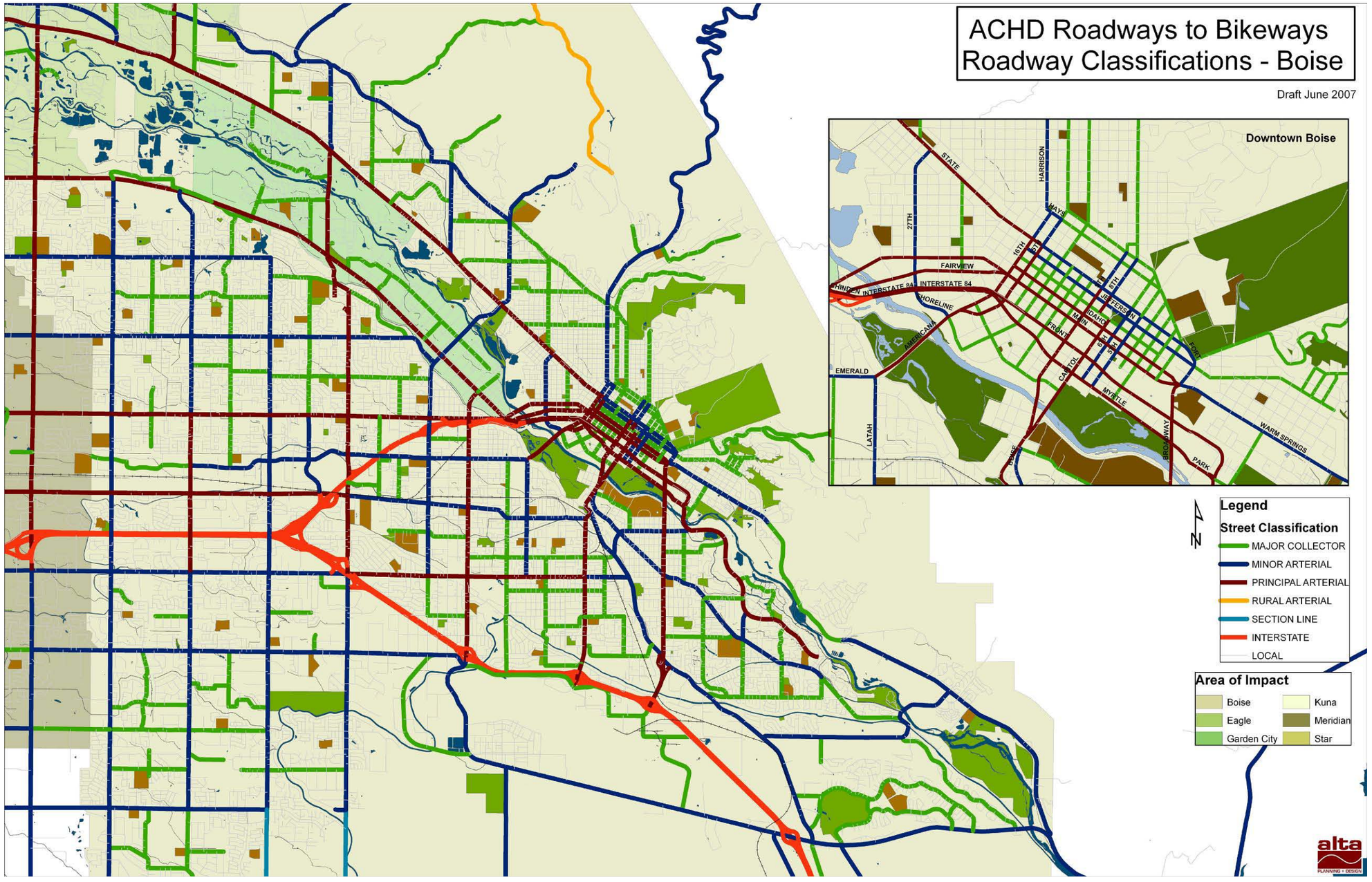
- The Bench / West Boise
- South Boise
- Downtown Boise
- North Boise The Bench / West Boise

Emerald bike route with narrow

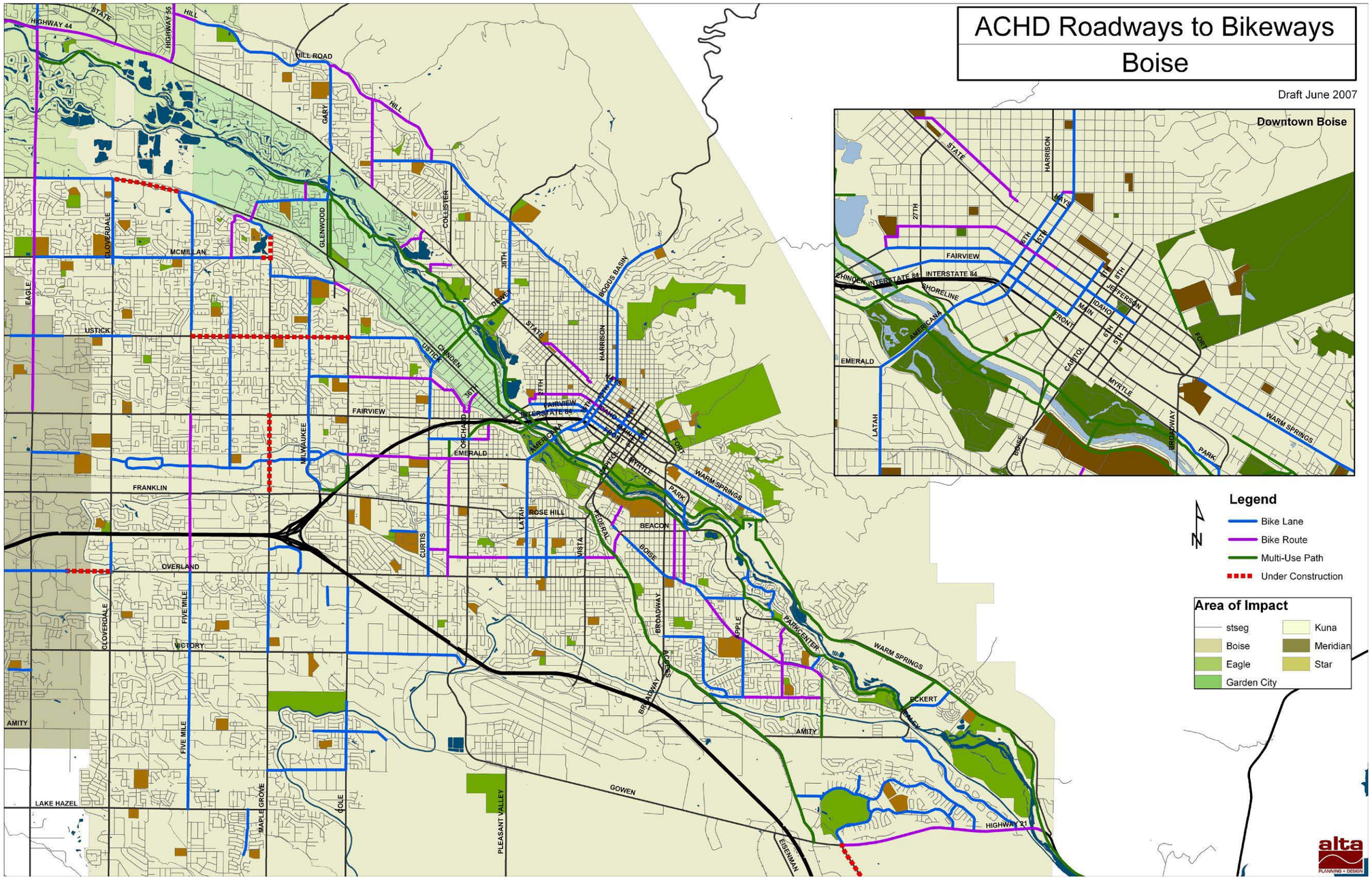
Narrow bike lane on Kootenai Street

Roughly defined as Boise south of Garden City and west of Federal Way, this is a difficult place to bike in Boise for all but the most confident bicyclists. The road network is less connected than other areas of the city, forcing bicyclists onto the major streets to reach most destinations. Even where bicycle lanes are provided they are sometimes squeezed into the available space resulting in narrow (less than four feet) widths. This is particularly notable along Milwaukee Street, mentioned by many survey respondents as one of the least favorite places to ride in Ada County. Some of the bicycle facilities are nice – the bike lanes on Emerald heading to Meridian, as well as the bike lanes on Mitchell heading north from Emerald – there just is not a sufficiently connected bicycle network in this section of Boise. Major gaps in the network include:

- The lack of bicycle facilities along the entire length of Emerald, particularly from Curtis east to Latah and the intersection of Emerald/Latah/Americana.



Map 9. Boise Roadway Classifications



Map 10. Existing Bicycle Facilities, Boise

- The lack of connections from south of the freeway to other bicycle facilities within Boise
- The lack of continuous bike lanes on Ustick Road
- The lack of continuous bike lanes on Kootenai Street and Protest Road
- Safe crossings of the freeways – the overcrossing at Curtis was noted numerous times by residents as a problem location
- Safe, comfortable connections from the Bench to downtown Boise
- Safe, comfortable connections to the Greenbelt at Orchard and Irving Street

Crowded Curtis I-84 overpass/on-ramp

Southeast Boise

Roughly defined as south of the river and east of Federal Way, bicycling in Southeast Boise is easier for local circulation, as there are more connected residential streets that bicyclists can choose among. The major collectors in the area (Apple Street, Gekeler Lane, Pennsylvania Street, and Bergeson Street) all have bike lanes, while the bike lanes on Boise Ave east of Broadway (Highway 20/26) are a comfortable width (about 5 feet). There are also connections to the Greenbelt along Bown Way, River Run Drive, Division Avenue, Leadville Avenue and Pennsylvania Street.

Wide bike lanes on Gekeler south of Boise Ave

However, the most direct routes into downtown Boise all suffer from some deficiencies. West of Broadway (Highway 20/26), the bike lanes on Boise Avenue get incredibly narrow (three feet and less), making bicycling much less comfortable for all but the most dedicated bicycle commuters. Broadway Avenue (Highway 20/26) is part of the state highway network and has five lanes with no bike lanes, along with high traffic volumes and speeds. Federal Way has a pathway along the east side of the road which crosses a significant number of driveways where bicyclists aren't always noticed, and the intersection of Federal Way and Gowen (Highway 21) was mentioned as one of the least favorite places for biking in Ada County.

Narrow bike lanes on Boise Ave north of Broadway

Downtown Boise

Due to the absence of bicycle lanes on most streets, bicycling in downtown Boise requires the bicyclist to either take the travel lane or use the sidewalk, a legal move in downtown Boise. With lower vehicle speeds, and regularly timed traffic signals, bicycling in downtown Boise is generally comfortable for most adult bicyclists. A number of survey respondents noted that the one-way grid downtown made biking somewhat more difficult, either forcing bicyclists to travel out-of-direction, use the sidewalk, or ride against vehicle traffic. One location commonly cited was the popular 8th Street bicycle route and the desire of bicyclists to continue north against one-way traffic north of Main. Another difficulty noted was the connection to downtown Boise, particularly from the Greenbelt. Crossing the Myrtle/Front couplet was singled out as quite difficult for many bicyclists in the survey.

Bannock Street bike lane in downtown

North Boise

This section of town contains many of the most popular bicycling routes in Ada County, including Hill Road, Bogus Basin, and Seaman Gulch. This part of Boise, especially east of 36th and north of State (Highway 44) has a consistent grid street network that provides numerous lower volume roads for bicyclists to use. As such, there are very few dedicated bicycle facilities in this part of town, with bike lanes on 15th Street connecting into downtown, bike lanes along 36th Street connecting to the Veterans Memorial Parkway pathway, and bike lanes along portions of Hill Road. The lack of complete bike lanes of sufficient width (5' or greater) along Hill Road is the major deficiency in this area of town, especially with the popularity of this route for both bicyclists and motor vehicles. Other gaps in the network include:

Bike lanes on 15th Street, one of the two roads with bike lanes to connect to downtown from north Boise

Narrow shoulders on Hill Road with

- Additional routes connecting into downtown – such as 13th Street
- Additional east-west routes to serve as alternatives to Hill Road or State Street

- Difficult intersections and crossings of the Greenbelt
- Difficult/crowded intersections at Gary and State, and 36th/Veterans and State

Bike Route sign missing arrow to indicate Division Street bike route next right

Signage

There are very few signs related to bicycling posted within Boise. The primary bike-related signs identified were the MUTCD-approved "No Parking Bike Lane" sign and the "Bike Route" sign, and these were less common than anticipated. In addition, the first type of sign is aimed more at drivers rather than helping bicyclists locate bicycle routes, while many of the "Bike Route" signs also seemed directed more at drivers, as they were rarely located at decision making points to better inform bicyclists on routes. The lack of directional signs presents an unnecessary barrier to bicyclists who are unfamiliar with how best to navigate through Boise or identify potential destinations on a bike. ACHD has also posted League of American Bicyclists signs throughout the county identifying the county as a Bicycle Friendly Community.

Bike knocked over in substandard bike

End of Trip Facilities

Informal bike parking downtown Boise

Much like the rest of the communities in Ada County, the most visible bicycle parking is found at the schools. Like many schools, the bike parking is generally sufficient in number of spots while lacking in quality. The "wheel bender" is a popular bike rack found at many schools, rather than the preferred "wave" or "staple" style racks. Unlike many of the other cities, Boise has very visible bike parking downtown, particularly in the vicinity of the 8th Street pedestrian mall. Unfortunately, there is not a sufficient number of racks to provide the desired bike parking, so many people end up locking their bicycles to convenient objects such as benches, tree grates, parking meters, sign posts, and other stationary objects. This results in a crowded sidewalk that can impede pedestrian flow. In addition, many of the larger businesses (such as Hewlett Packard, Micron) provide additional end-of-trip facilities for bicycle commuters, including bicycle lockers and changing facilities.

Multi-Modal Connections

Valley Ride currently has fourteen fixed bus routes that provide service in Boise. The buses operate Monday through Saturday during the following hours:

- 14 weekday routes that operate between the hours of 5:15 a.m. and 6:45 p.m.
- Eight weekday routes that operate between the hours of 7:45 a.m. and 6:45 p.m.

All Valley Ride busses are equipped with bicycle racks. The *Treasure Valley in Transit Plan* also identifies downtown and Towne Square Mall has future transfer points for 18 routes and rapid transit and 13 routes and rapid transit respectively. Within ACHD, all Commuteride vanpools can be equipped with bike racks to encourage multi-modal trips.

Appendix E. Existing Bikeway Network Analysis

Bicycle Network Evaluation

In arriving at a recommended bicycle network, several evaluation methods were employed to form as a complete picture as possible of factors that will influence bicycling within Ada County over the next 20-30 years. The following sections highlight these factors, including:

- Barriers / Missing Network / Network Gaps
- Population Growth in Ada County
- Land Use & Demand
- Bicycle / Vehicle Crash Locations
- Existing Network Coverage
- Existing Lane Widths

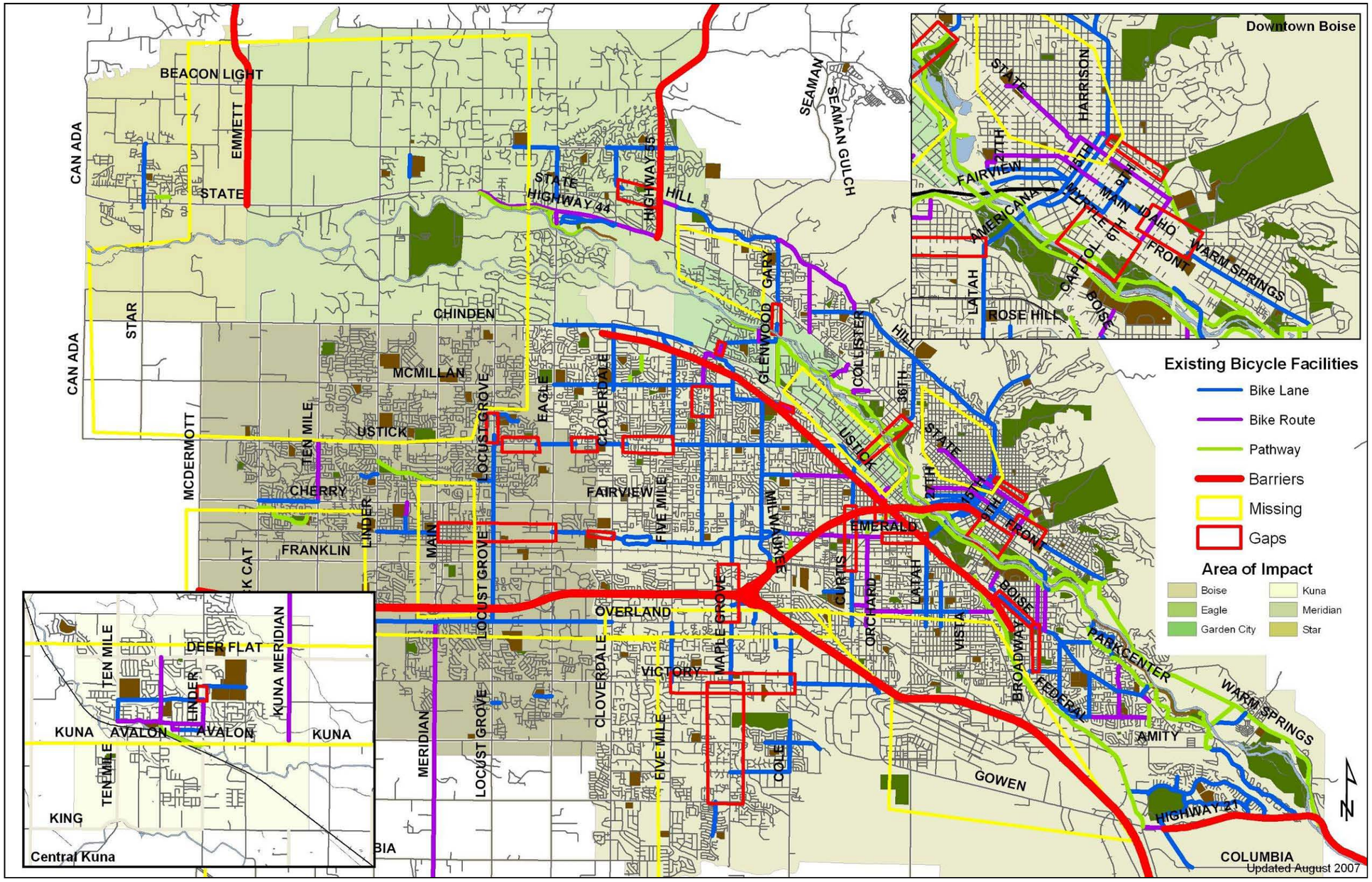
Missing Bicycle Network / Bicycle Network Gaps

Action 1.3: Complete the recommended bikeway network by closing existing gaps and considering innovative design solutions for constrained locations to provide accessible bicycling corridors throughout Ada County.

In analyzing the existing network, two major categories of missing network segments were identified:

- Missing Network means locations where there are little or no existing portions of the bicycle network.
- Missing Gap refers to locations where there is a short (less than 2 mile) segment of the bikeway missing between existing portions of the bicycle network. Incorporates the connectivity of the existing bicycle facility network.

The identified Missing Network and Missing Gap segments are identified on Map 11 on the following page.



Map 11. Missing Bicycle Network / Missing Gaps

Missing Gap Analysis

A bike lane feasibility assessment was conducted on several identified road segments in Ada County. All road segments are discussed in detail below. The segments analyzed include:

- Boise Avenue – Protest Hill to Broadway Avenue
- Curtis Road – Fairview Avenue to Franklin Road
- Emerald Street – Orchard Street to Latah Street
- Garrett Street – Chinden Boulevard to Marigold Street
- Glenwood Street – Boise River to State Street[16]
- Linder Road – Boise Street to Porter Road
- Locust Grove Road – Ustick Road to Leighfield Drive
- Maple Grove Road – Overland Road to Franklin Road
- Mountain View Drive – Glenwood Street to Cole Road
- Orchard Avenue – Fairview Avenue to Irving Street
- Pine Street – Middle School to Cloverdale Road
- Ustick Road – Gaps from Five Mile Road to Locust Grove Road
- Veteran's Memorial Parkway – State Street to Chinden Boulevard

The intent of this analysis was to determine how the accommodation of bike lanes can be incorporated into the identified road segments.

A field assessment was conducted in September 2007 for each identified road segment. During the field assessment the following features were identified:

[16] ACHD should work with Idaho Department of Transportation on this corridor.

- Existing curb, pavement and shoulder widths
- Number of lanes
- Striping configuration
- Approx. lanes/shoulder width
- Surrounding land use
- Major features/obstructions

Measurements and descriptions of existing conditions are based on visual observation and do not reflect topographic surveys. All lane and shoulder widths cited in this appendix DO NOT include the gutter pan width. Gutter pan width should not be included in bike lane width measurements because debris and water collects in the gutter pan area, rendering it unsafe to bicycle in. Many of the segments have improvements at major intersections that are not reflected in the field data collected and improvement options provided in this memorandum. Existing intersection improvements typically include curb and gutter, additional lanes, and increased lane widths.

Improvement options are based on engineering judgment, observed field conditions, and a minimum 4' bike lane width (from lip of gutter). Additional data collection, analysis, and design will be required during the project development process if ACHD programs improvements for any of these segments. Two segments are identified in ACHD's Five Year Work Program for improvements. The Linder Road segment is programmed for pedestrian improvements in 2009. Two sections of the Ustick segment are programmed under "Preliminary Development" for roadway improvements and do not have an identified construction year.

Boise Avenue looking west

Boise Avenue – Protest Hill to Broadway Avenue

Boise Avenue from Protest Hill to Broadway Avenue is a two lane urban road section with vertical curb (no gutter). The current lane configuration consists of two 11' lanes with 3' striped shoulders. There is a 4' detached sidewalk along both sides of the roadway. The sidewalk is separated by a 7' planter strip. Power lines run parallel to Boise Avenue along the south side of the road in the planter strip. The shoulder is striped with an 8" white stripe, inferring the shoulder could be used as a bike lane facility; however no bike lane symbol striping exists through this section of Boise Avenue. This segment of Boise Avenue has a raised vertical curb without a gutter pan.

In order to accommodate a 4' dedicated bike lane from the face of curb to the bike lane stripe each travel lane will need to be reduced from 11' to 10' without any reconstruction for widening. An 11' lane can be maintained but would require the relocation of curb and a width reduction of the planter strip on one or both sides of Boise Avenue along this segment. Widening will potentially require relocation of power poles and may

Boise Avenue looking east

impact existing street trees.

Curtis Road – Fairview Avenue to Franklin Road

Curtis Road from Fairview Avenue to Franklin Road is a five lane urban road section. The configuration has five 12' lanes with a center two-way left turn lane (TWLTL). This segment of Curtis Road is in a commercial area that includes St. Alphonsus Hospital. The majority does not include shoulder striping, with the exception of the area near the Franklin/Curtis intersection. The northbound lane of the intersection has a striped bike lane.

Curtis Road looking north with bicyclist on sidewalk

The majority of Curtis Road could not be striped to provide a 4' bike lane without significant reconstruction, and additional right-of-way. A bike lane could be provided in one direction if all travel lanes were reduced to an 11' width. Additionally, the existing bridge crossing I-184 is extremely narrow. North of Emerald Street the existing shoulders could be re-striped for bike lanes.

Emerald Street – Orchard Street to Latah Street

The road section along Emerald Street consists of three distinct road segments from Orchard Street to Latah Street. Power lines are located along the north side of Emerald along all three segments listed below.

Segment 1 – Orchard Street to Pond Street

Emerald Street looking east

This segment of Emerald Street consists of a five lane urban road section with 12' lanes. Both sides of the road include curb, gutter, and a 5' attached sidewalk. Shoulders are not present through this segment. Reducing each lane by 1' would gain five additional feet, which would allow the placement of a bike lane along one side of the roadway. Reducing each travel lane by an additional foot (10-foot wide travel lanes) would provide space for five foot wide bike lanes on both sides of the street. This improvement would require modifying the signal heads and detectors at the intersections for the new lane configurations. Maintaining 11- or 12-foot wide travel lanes plus adding a bike lane along both sides of the corridor would require the relocation of curb, gutter and sidewalk along the south side of Emerald Street to avoid relocating the power poles on the north side. Due to the dense development along Emerald Street, relocating the curb and gutter would have significant impacts on adjacent properties.

Possible shoulder widening location

Segment 2 – Pond Street to Roosevelt Street

This segment of Emerald Street consists of a four lane urban road section with 12' lanes. Curb, gutter and sidewalk have discontinuity throughout this segment of Emerald Street. Shoulders are not present.

Reducing each lane by 1' would allow for the placement of a bike lane along one side of the roadway. Reducing each travel lane by an additional foot (10-foot wide travel lanes) would provide space for four foot wide bike lanes on both sides of the street. This improvement requires modifying the signal heads and detectors at intersections for the new lane configurations. Maintaining 11' or 12' wide travel lanes and adding a bike lane along both sides of the corridor would require relocating and constructing curb, gutter and sidewalk along the south side of Emerald Street to avoid relocating the power poles on the north side. Due to the dense development along Emerald Street, relocating the curb and gutter would have significant impacts on adjacent properties.

Segment 3 – Roosevelt Street to Latah Street

Emerald Street looking west

This segment of Emerald Street consists of a four lane urban road section with 12' lanes. A 4' raised median as well as curb, gutter and sidewalk exist through this segment. Shoulders are not present through this area.

Reducing each lane by 1' and removing the raised median through this segment would allow for the placement of a 4' bike lane along both sides of the roadway. Adding bike lanes along this section of Emerald Street would require a major reconstruction project with various impacts along the corridor.

Garrett Street – Chinden Boulevard to Marigold Street

Garrett Street looking south to Chinden Boulevard

The road segment along Garrett Street consists of a two lane road section with curb, gutter, and sidewalk. The northbound lane is approximately 13.5' wide and the southbound lane is approximately 18.5' wide. Shoulders are not present. Approximately 400' of the southbound lane is a reduced width, with no curb and gutter.

Bike lanes could be added to both sides of Garrett Street by re-striping two 12' lanes with two 4' bike lanes. This action would require removing all on-street parking from Chinden Blvd to Marigold Street. The south 400' of Garrett Street should also be completed to provide a 35' wide curb-to-curb road section. Garrett Street is an appropriate location to use the shared lane marking.

Glenwood Street – Boise River to State Street

Glenwood Street looking south to the Boise River

This segment of Glenwood is a five lane roadway in a commercial area. Some sections of Glenwood Street contain curb and gutter, with detached sidewalks. The majority of the northbound side has curb and gutter. Approximately 10' wide shoulders exist between Riverside Drive and the Boise River. Sections of the southbound side of Glenwood Street have shoulders approximately 3' wide. Recent construction on the southbound side of Glenwood has added numerous right turn lanes for adjacent development. The segment is approximately 64' wide from curb to curb. Reducing the lane widths to 11' would allow for one bike lane.

Linder Road – Boise Street to Porter Road

Linder Road looking south

This segment of Linder Road is a two lane section in a mixed use residential and commercial area. The northbound lane is 11' wide with a striped 6' wide shoulder and 5' detached sidewalk. The southbound lane is 11' wide with curb, gutter and varying shoulder widths. At Porter Road, there is a striped bike lane heading east towards the elementary school. Power poles run along the southbound side and vary in distance to the roadway

Linder Road south of Boise Street is two lanes with a striped 6' shoulder on the northbound side and 1' shoulder on the southbound side. The roadway needs to be widened 4' on the southbound side from Kenter Street to Porter Street to allow for a 4' bike lane on the southbound side of the road. No changes to the existing roadway are required on the northbound side of Linder Road.

Locust Grove Road – Ustick Road to Leigh Field Drive

The road section along Locust Grove Road consists of three road segments from Ustick Road to Leigh Field Drive. The existing roadway width transitions between each segment. Power lines were located along the East and West side of Locust Grove Road along all three segments listed below.

Linder Road looking north

Segment 1 – Leigh Field Drive to Charter School

This segment of Locust Grove Road consists of a three lane rural road section. The northbound lane is 11' wide, the southbound lane is 12' wide and the southbound dedicated right turn bay is 17' wide. Curb, gutter and a 5' detached sidewalk are located along the west side and a 3' striped shoulder is located along the east side.

The power lines along the west side of Locust Grove Road are placed approximately 1' behind the back of curb. Reducing the dedicated right turnbay through this segment by 5' and utilizing the 3' striped shoulder along the east side would allow placement of two 4' bike lanes along both sides of Locust Grove Road.

Linder Road looking north

Segment 2 – Charter School to LDS Church

This segment of Locust Grove Road contains a two lane rural road section. The lane configuration consists of two 11'-12' lanes with 2'-3' striped shoulders throughout the segment. Detached sidewalk is located along the both sides of Locust Grove Road through this segment.

Widening the existing shoulder can occur without relocating any identified utilities. To accommodate 4' bike lanes through this segment the existing road width would need to be widened 2'. This widening would allow for two 11' lanes and two 4' bike lanes.

Linder Road looking south

Segment 3 – LDS Church to Ustick Road

This segment of Locust Grove Road consists of a four lane urban road section. The road lanes are 11' wide with curb, gutter and a 7' attached sidewalk along the east side of Locust Grove Road. There is also a 4' bike lane located along the east side of Locust Grove Road from Ustick Road to Summerheights Drive. The west side of Locust Grove Road has a 2'-3' shoulder.

Widening the existing shoulder 1'-2' along the west side of Locust Grove would allow a dedicated 4' bike lane. Improvements are not needed along the east side of Locust Grove Road since there is an existing bike lane.

Maple Grove Road looking north

Maple Grove Road – Overland Road to Franklin Road

Maple Grove Road is an urban four lane section with curb and gutter from Overland Road to Franklin Road. The width increases at the intersections for turn lanes. The lanes are 11' wide except on the bridge over I-84 where they are 12' wide. There is 5' attached sidewalk for the entire segment except at the bridge which has 8' attached sidewalks. There are power poles 5' behind the sidewalk on the northbound side and illumination poles at the back of the sidewalk along the southbound side. The northbound side is residential use and the south bound side is commercial use.

One southbound bike lane could be accommodated with no additional right-of-way by re-striping. The lane widths can be reduced from 11' to 10' in order to add one 4' bike lane.

Mountain View Drive – Glenwood Street to Cole Road

Mountain View Drive looking west

This segment of Mountain View Drive consists of a three lane section with one eastbound lane and two westbound lanes. This segment of roadway is in a residential area and the lanes are 11'-12' wide. The segment includes curb and gutter, with 7' attached sidewalk adjacent to the eastbound lane. No sidewalk is present on the westbound side of Mountain View Drive. The segment is approximately 40' wide from curb to curb. There is a bike lane striped on Mountain View Drive at the westbound intersection with Glenwood. There are existing overhead power poles adjacent to the westbound lanes, approximately 5' behind the curb. This roadway segment is a very constrained section that could not be widened to provide bike lanes without significant reconstruction, and additional right-of-way. This would be an excellent location for the use of the shared lane marking.

Orchard Avenue

Orchard Avenue – Fairview Avenue to Irving Street

This segment of Orchard Avenue is an urban five lane section with curb and gutter and attached sidewalks on both sides. There are two through lanes (12' wide) in each direction and left turn lanes/two-way left turn lanes in the center. This segment is all commercial use. The attached sidewalk varies from 5' to 7'. There is only sidewalk (7' attached) on the northbound side of Orchard Avenue along the bridge over I-184.

By reducing each lane from 12' to 11', a 4' northbound bike lane could be added to the roadway by re-striping. By further reducing lane width to 10', bike lanes could be provided along each side of the roadway. This improvement would require removing and replacing the existing concrete channelization and modifying the signal heads and detector loops at the intersections for the new lane configurations.

Pine Street opportunity for shoulder

.Pine Street – Middle School to Cloverdale Road

This segment of Pine Street is a two lane section with 11' lanes, no curb or gutter, 3'-4' striped shoulders and 5' detached sidewalks. The roadway section widens at Cloverdale Road and Park Dale Avenue to accommodate turn lanes. The surrounding land use is residential and commercial. Bike lanes could be added with minor (2') shoulder widening and no additional right-of-way.

widening

Ustick Road – Gaps from Five Mile Road to Locust Grove Road

The road section along Ustick Road consists of three distinct road segments from Five Mile Road to Locust Grove Road. Curb, gutter, and lane improvements have been made to the Ustick/Eagle intersection. These improvements extend approximately ¼ mile east and west of the intersection.

Opportunity for shoulder widening

Segment 1 – West of Five Mile Road

This segment of Ustick Road is two lanes, 11' wide and has 3' shoulders. There is no sidewalk, curb or gutter. Power poles run along the eastbound side approximately 15' from edge of pavement. There is a canal crossing in this segment with an abutment approximately 5' from the edge of pavement.

Opportunity for shoulder widening

Segment 2 – East of Eagle Road

This segment of Ustick Road is three lanes, 11'-12' wide and has 3' shoulders on the eastbound side and 5' shoulders on the westbound side. There is a detached 5' sidewalk. There is no curb or gutter. Power poles run along the east bound side approximately 15' from edge of pavement,

Opportunity for shoulder widening

Segment 3 – West of Eagle Road

This segment of Ustick Road is two lanes, 11'-12' wide and has 3' shoulders on the eastbound side and 4' shoulders on the westbound side. There is no curb or gutter. Power poles run along the east bound side approximately 15' from edge of pavement.

For all three segments, bike lanes could be added with minor shoulder widening and no additional right-of-way.

Veteran's Memorial Parkway looking south

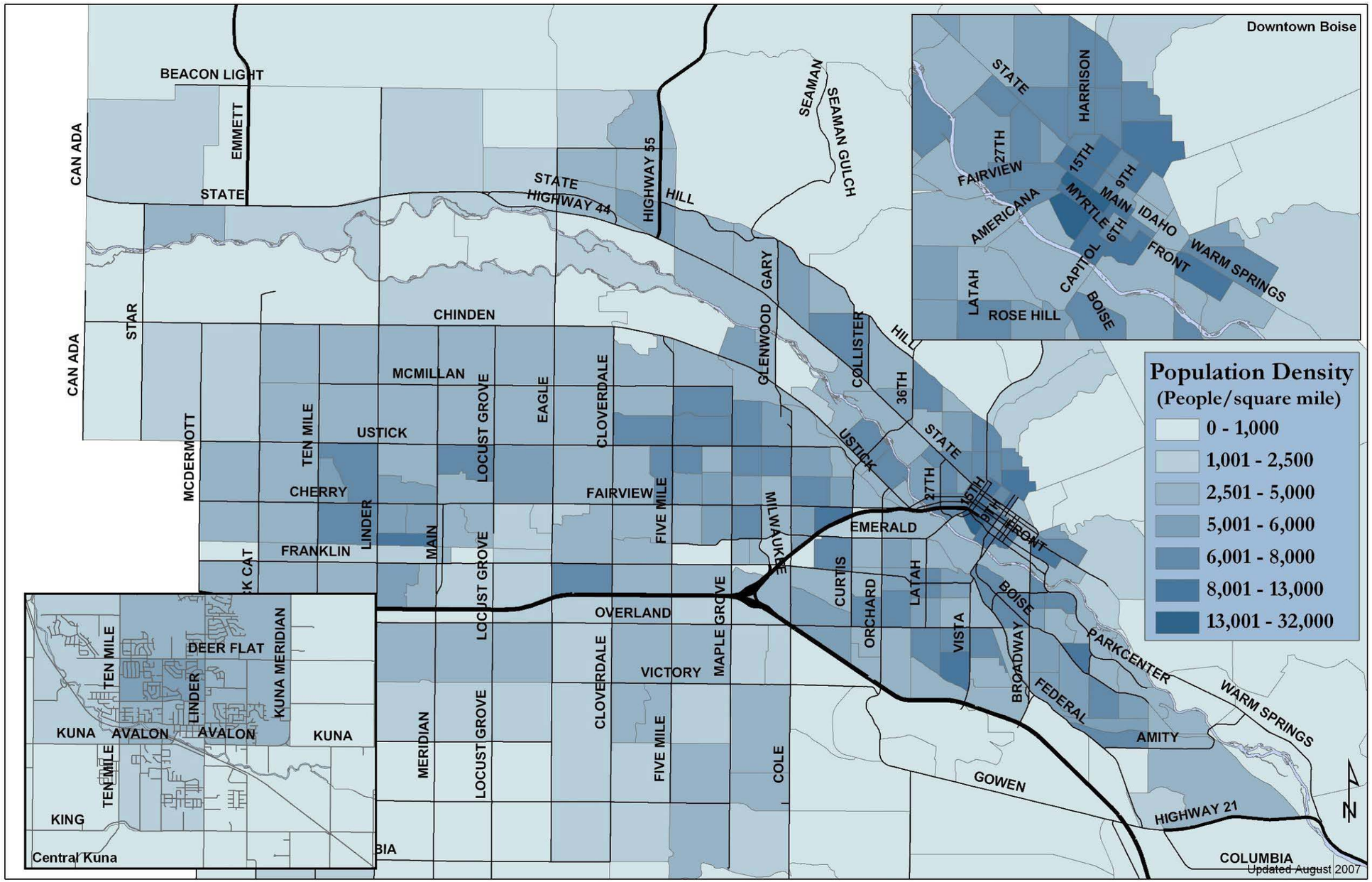
Veteran's Memorial Parkway – State Street to Chinden

This segment of Veteran's Memorial Parkway is a five lane road section that narrows to four lanes across the Boise River. This segment consists of mixed use residential, commercial, and industrial areas. The existing lanes are 11'-12' wide. The majority of the segment is approximately 64' wide from curb to curb. The northbound side of Veteran's Memorial Parkway includes a 10'-wide attached sidewalk. No sidewalk is present on the southbound side

Two crossings, one over the Boise River and one over a canal, are areas of concern for adding bikeways due to the bridge constraints. There are concrete barriers that separate vehicle traffic and pedestrian traffic along portions of the roadway near the river and canal crossings. Modifying the lane striping by reducing travel lanes to accommodate a 4'-wide bike lane southbound is possible. However, due to the constraints of this section, detailed field surveys and design would be required prior to programming improvements.

Population Growth

As the population of Ada County continues to grow, ACHD, Valley Regional Transit, COMPASS, and the local governments need to plan for a truly multi-modal transportation system that serves the needs of all Ada County residents.



Map 12. Estimated Population Density - 2030

Land Use & Demand

The concept of "demand" for bicycle facilities can be difficult to comprehend. Unlike automobile use, where historical trip generation studies and traffic counts for different types of land uses permits an estimate of future "demand" for travel, bicycle trip generation methods are less advanced and standardized in the United States. Land use patterns can help predict demand and are important to bikeway planning because changes in land use (and particularly employment areas) will affect average commute distance, which in turn affects the attractiveness of bicycling as a commute mode. The Roadways to Bikeways network will connect the neighborhoods where people live to the places they work, shop, recreate, or go to school. An emphasis will be placed on regional bikeway connections centered on the major activity centers in Ada County, including:

- Major employment centers
- Major retail and commercial centers
- Civic buildings such as libraries
- Schools
- Transit Stations
- Parks and regional recreational areas

Map 13 highlights the connection between desirable destinations throughout Ada County and the existing bicycle network, based on a half-mile radius from each land use.

Bicycle / Vehicle Crash Locations

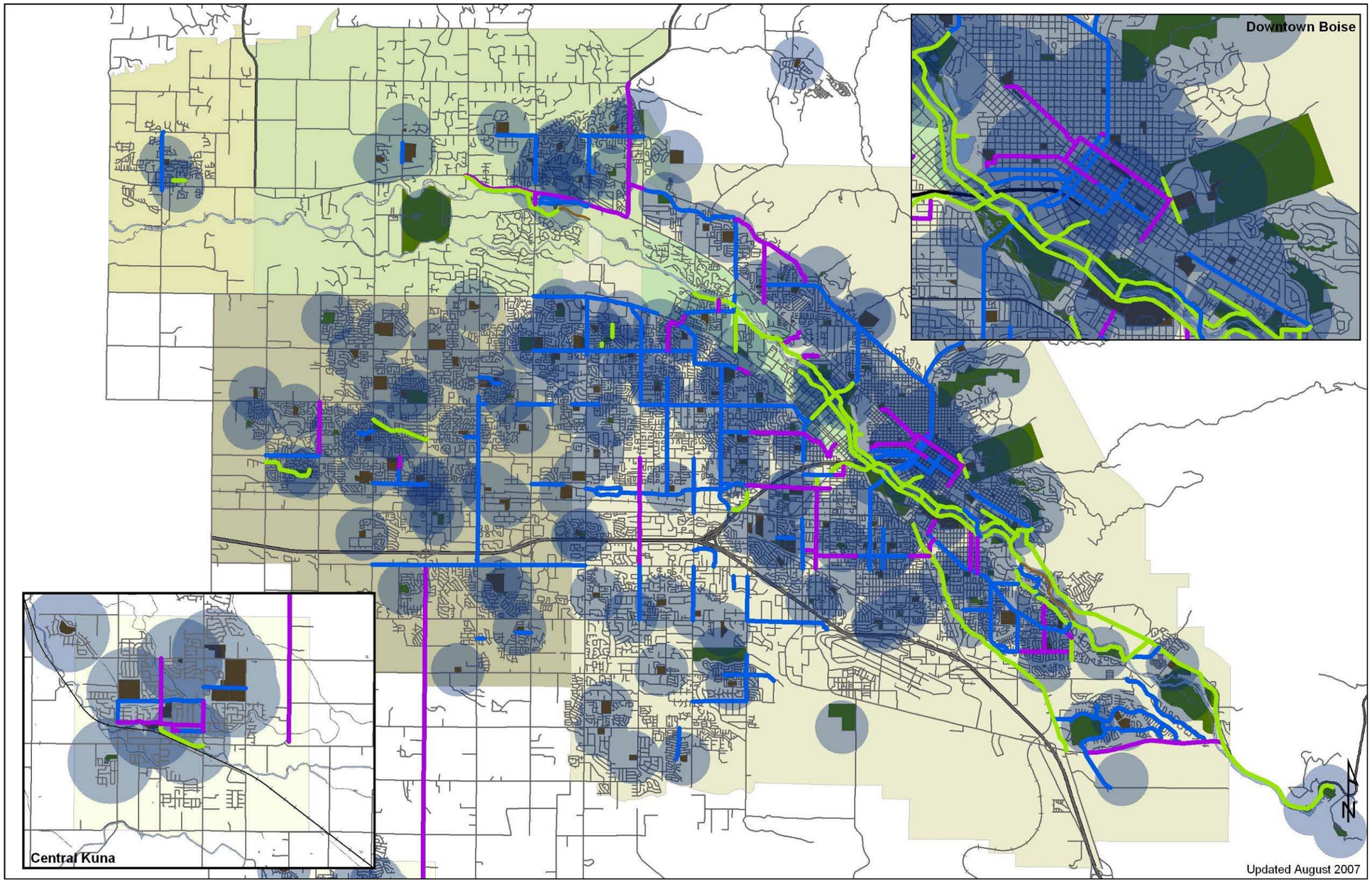
Safety is a major concern of both existing and potential bicyclists. For those who ride, safety is typically an on-going concern or even a distraction. For those who don't ride, it is one of the most compelling reasons not to ride. In discussing bicycle safety, it is important to separate out perceived dangers versus actual safety hazards.

Bicycle riding on-street is commonly perceived as unsafe because of the exposure of a lightweight, two-wheeled vehicle to heavier and faster moving automobiles, trucks and buses. Actual collision statistics, however, show that bicyclists face only a marginally higher degree of sustaining an injury than a motorist based on numbers of users and miles traveled. Death rates are essentially the same with bicyclists as with motorists. Bicycle-vehicle collisions are much less likely to happen than bicycle-bicycle, bicycle-pedestrian, or collisions caused by physical conditions.

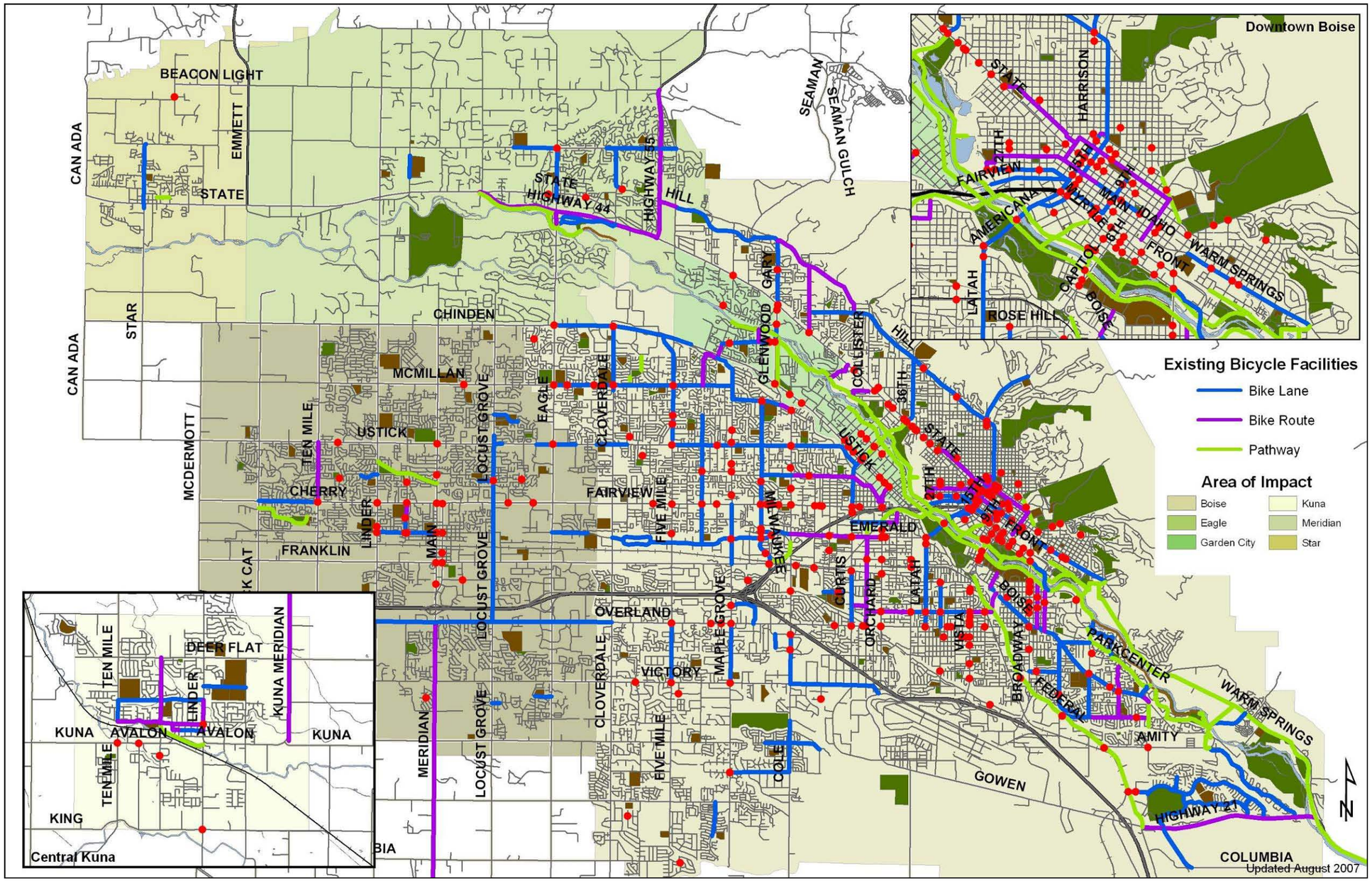
Map 14 highlights the locations of bicycle/vehicle crashes in Ada County from 2004– 2006.

The highest density of crashes is in the vicinity of the downtown Boise core especially along 15th between State and River Streets, along Capitol Boulevard and 9th Street and at intersections on the Connector. Fifteenth Street and Capitol Boulevard are heavily used by bicycle commuters traveling from the Highlands, North End and the Bench into and out of downtown

Corridors with a high number of reported crashes include: State Street, Chinden Boulevard, and Fairview Avenue. These corridors typically carry high traffic volumes especially during commute times, lack bicycle facilities and have low bicycle traffic. Motorists may be less likely to see cyclists because they are not expecting them to be there. New research indicates that bicyclist safety increases as the numbers of bicyclists in an area increases.



Map 13. Half-Mile Buffer Around Ada County Activity Centers



Map 14. Bicycle/Vehicle Crash Locations, Ada County, 2004-2006

Existing Network Coverage

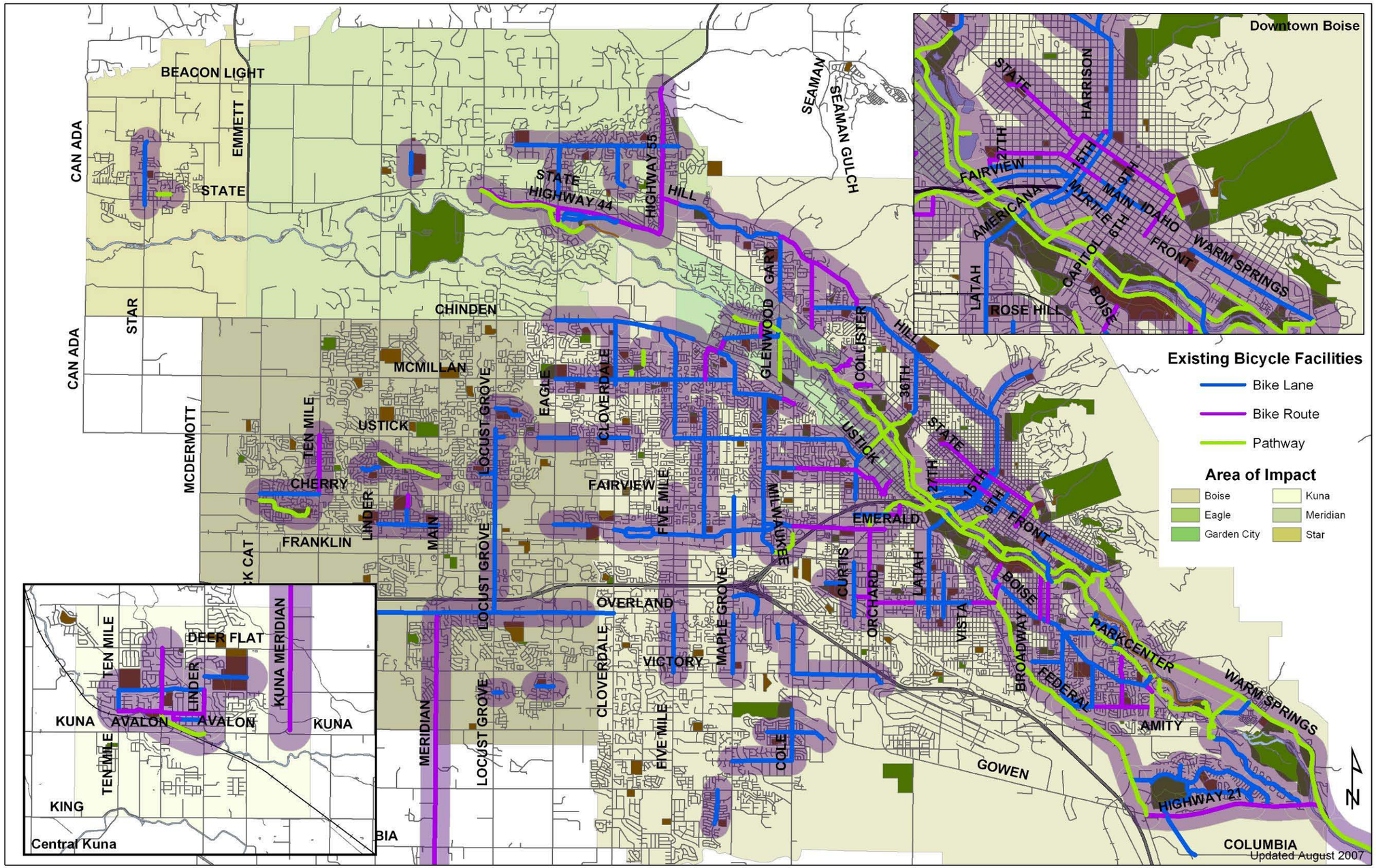
The existing bicycle facility network coverage provides an understanding of how accessible the existing bicycle facilities are to the residents of Ada County. The goal is to provide a bikeway every half mile, putting a bicyclist a maximum of a quarter-mile from a bicycle facility. As Map 5 shows, Ada County is well-served in downtown and South Boise; however the further west, north, and south from downtown Boise one travels major gaps in both the connectivity and accessibility of the bikeway system appear.

Existing Lane Widths

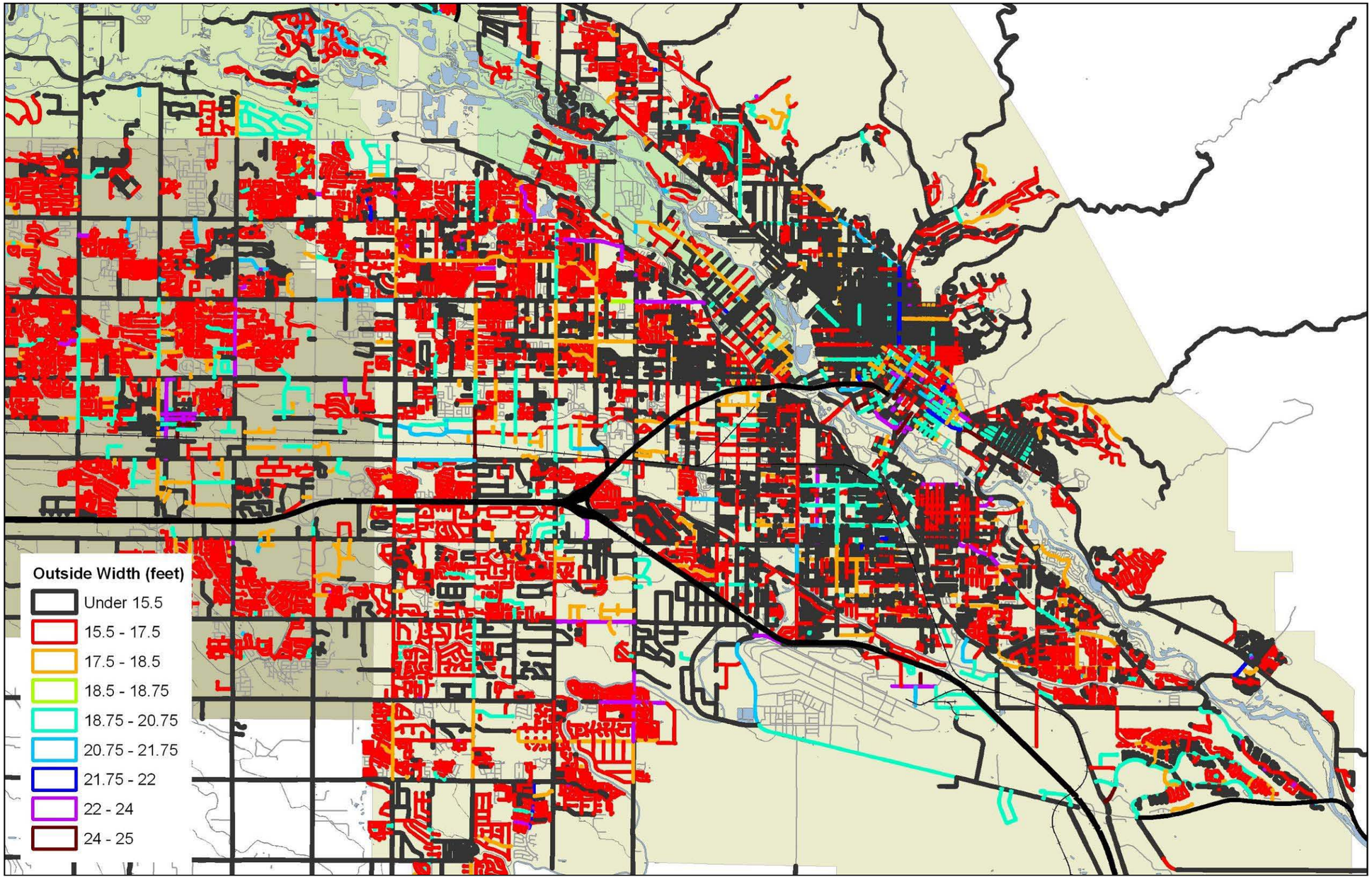
Using pavement management data provided by ACHD, a GIS analysis was performed to determine the average width of the existing travel lanes. This process provides the opportunity to identify existing roadway segments that can be re-striped to accommodate the existing number of travel lanes as well as the addition of bicycle lanes. Maps 6-11 show the results of the analysis. The widths identified in the legend are based on the minimum, maximum, and recommended widths for gutter pan, parking, bicycle lanes, and travel lanes. Table 25 shows the outside lane cross-sections available based on the data.

Table 25. Existing Lane Widths

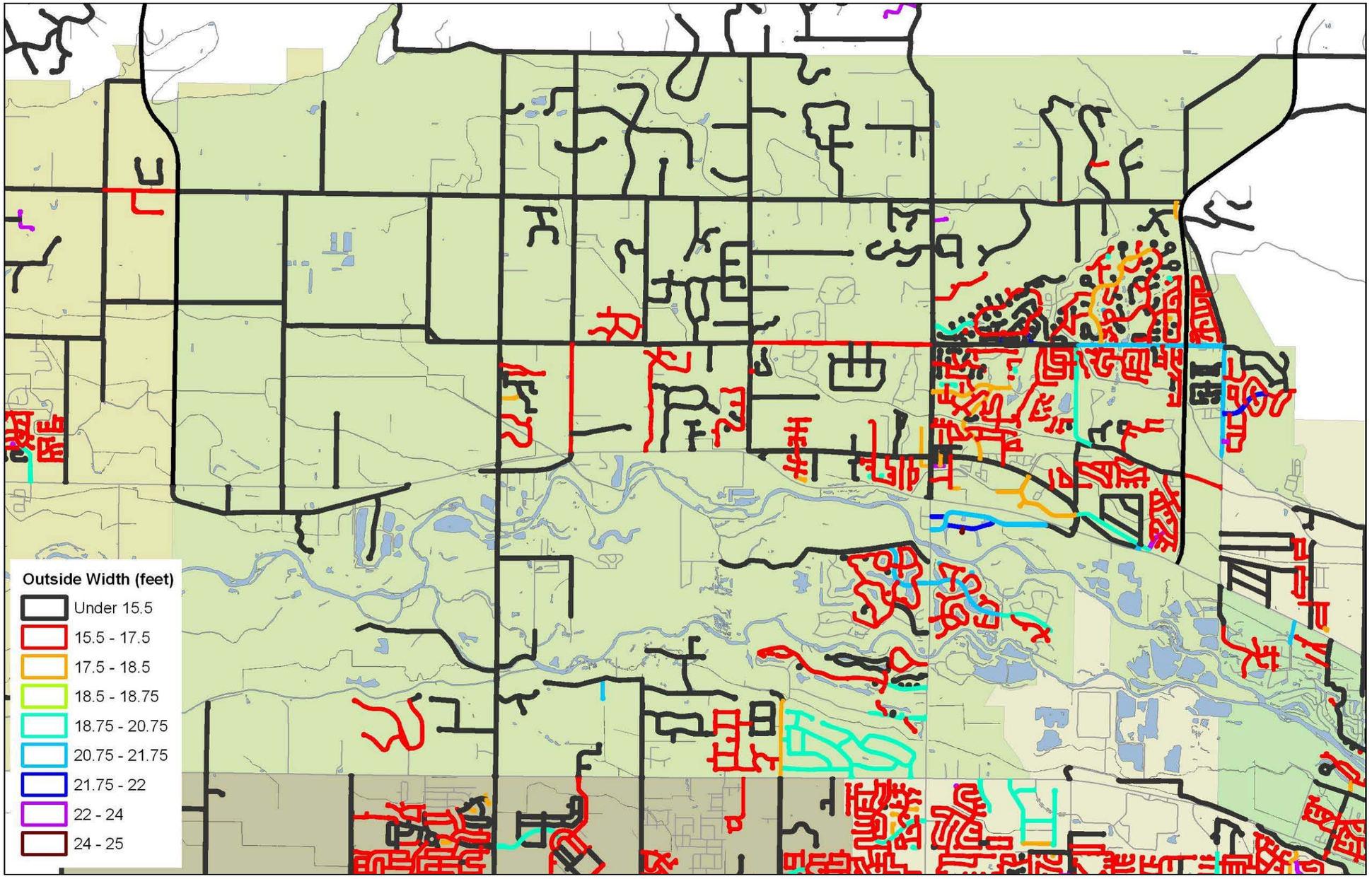
Outside Lane Width (feet)	Travel Lane Width (ft)	Bike Lane Width (ft)	Parking Width (ft)	Gutter Pan Width (ft)
15.5	10	4	0	1.5
17.5	11	5	0	1.5
18.5	12	5	0	1.5
18.75	10	5/4	parking one side	1.5
20.75	11	5	parking one side	1.5
21.75	12	5	parking one side	1.5
22	10	5	5.5	1.5
24	11	5	6.5	1.5
25	12	5	6.5	1.5



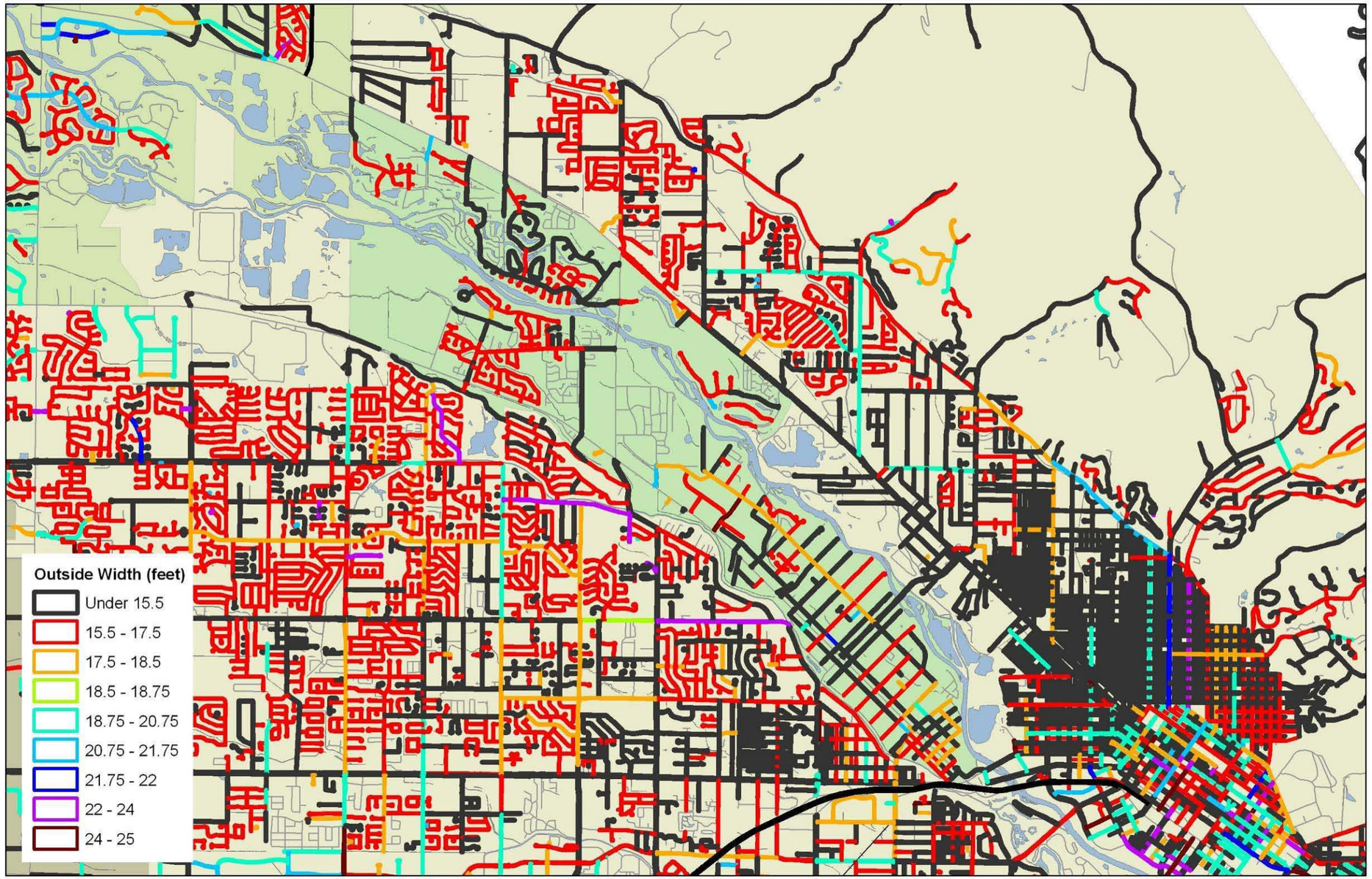
Map 15. Existing Bicycle Network Coverage



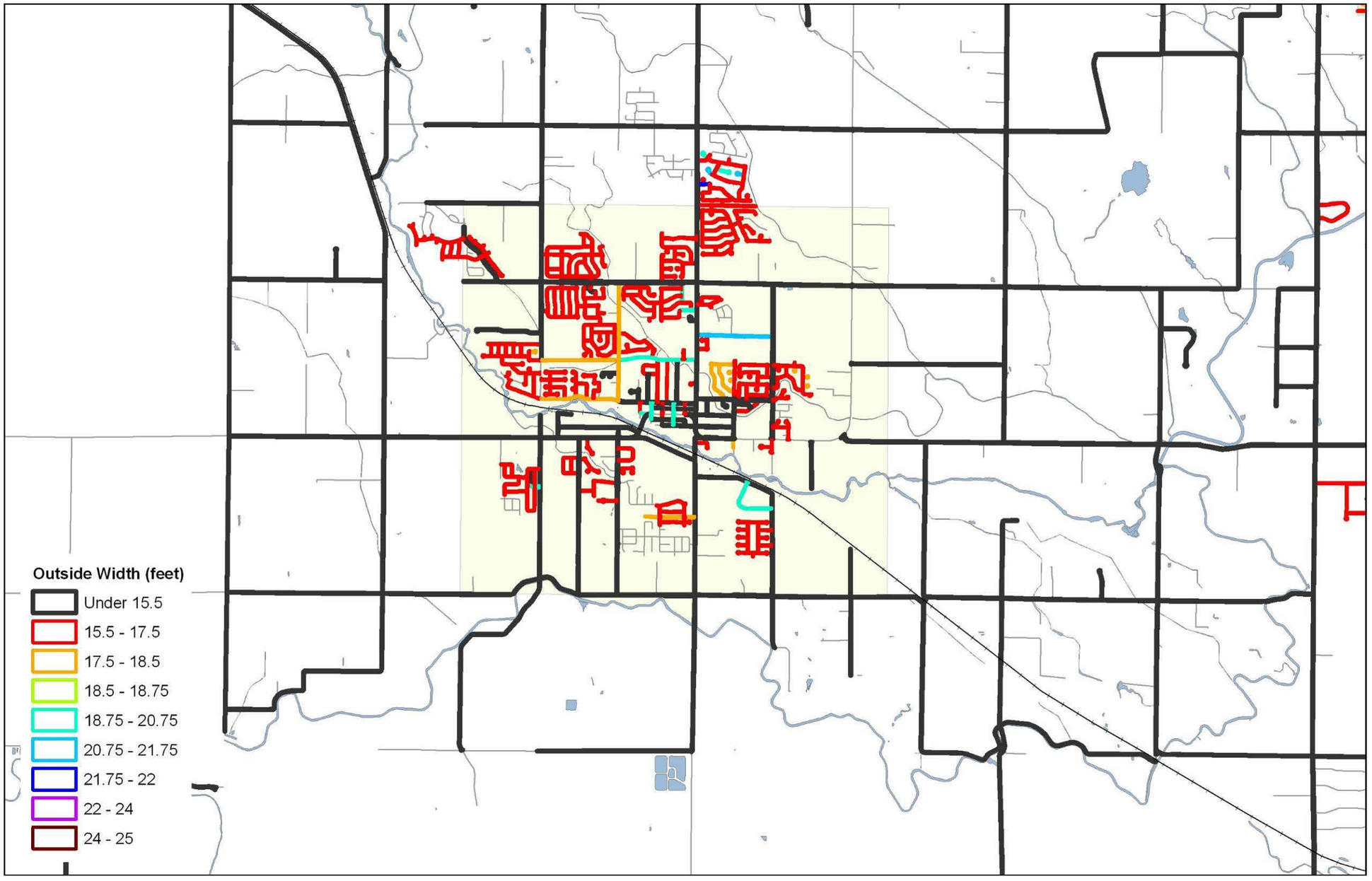
Map 16. Outside Lane Widths - Boise



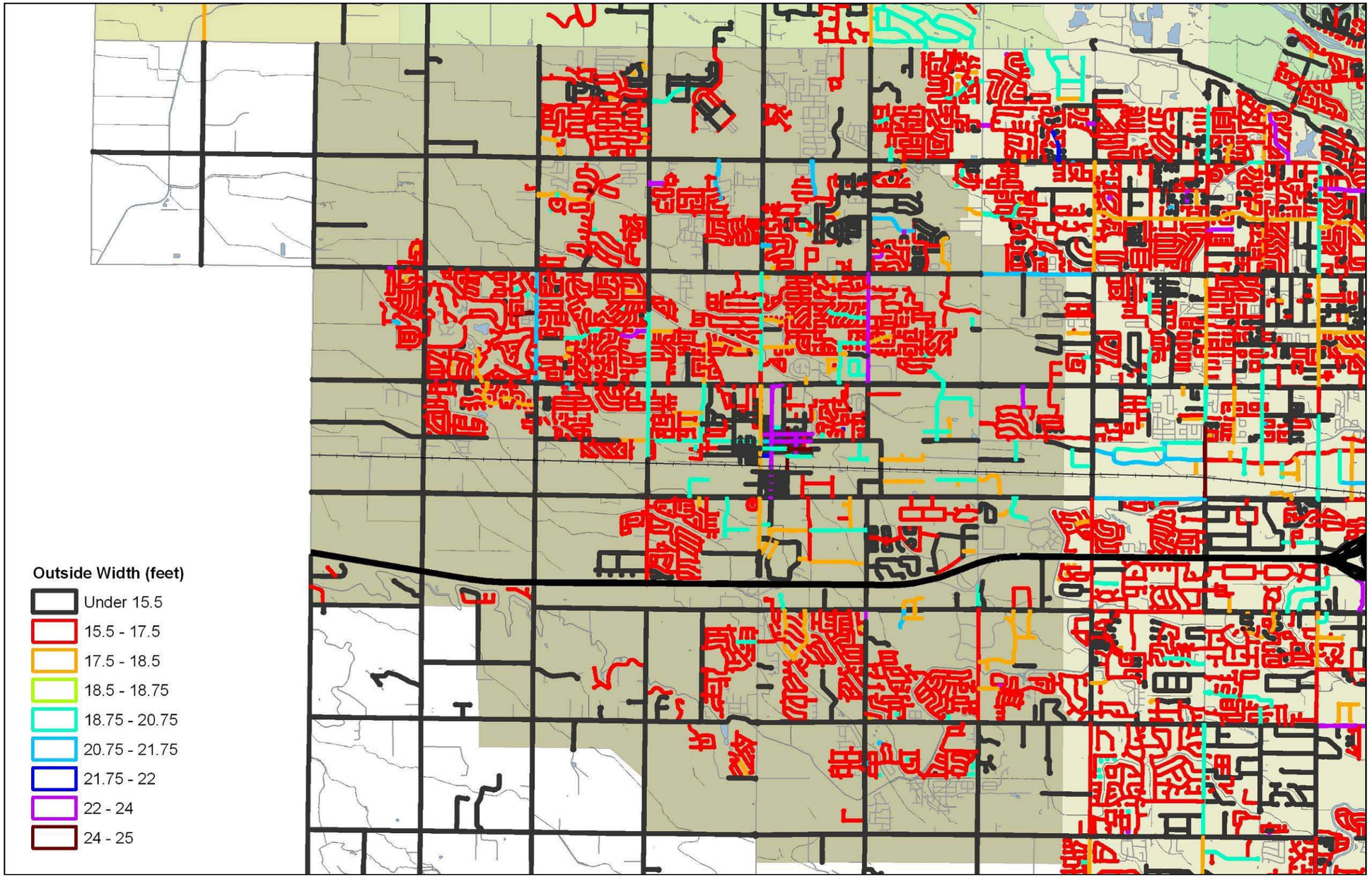
Map 17. Outside Lane Widths - Eagle



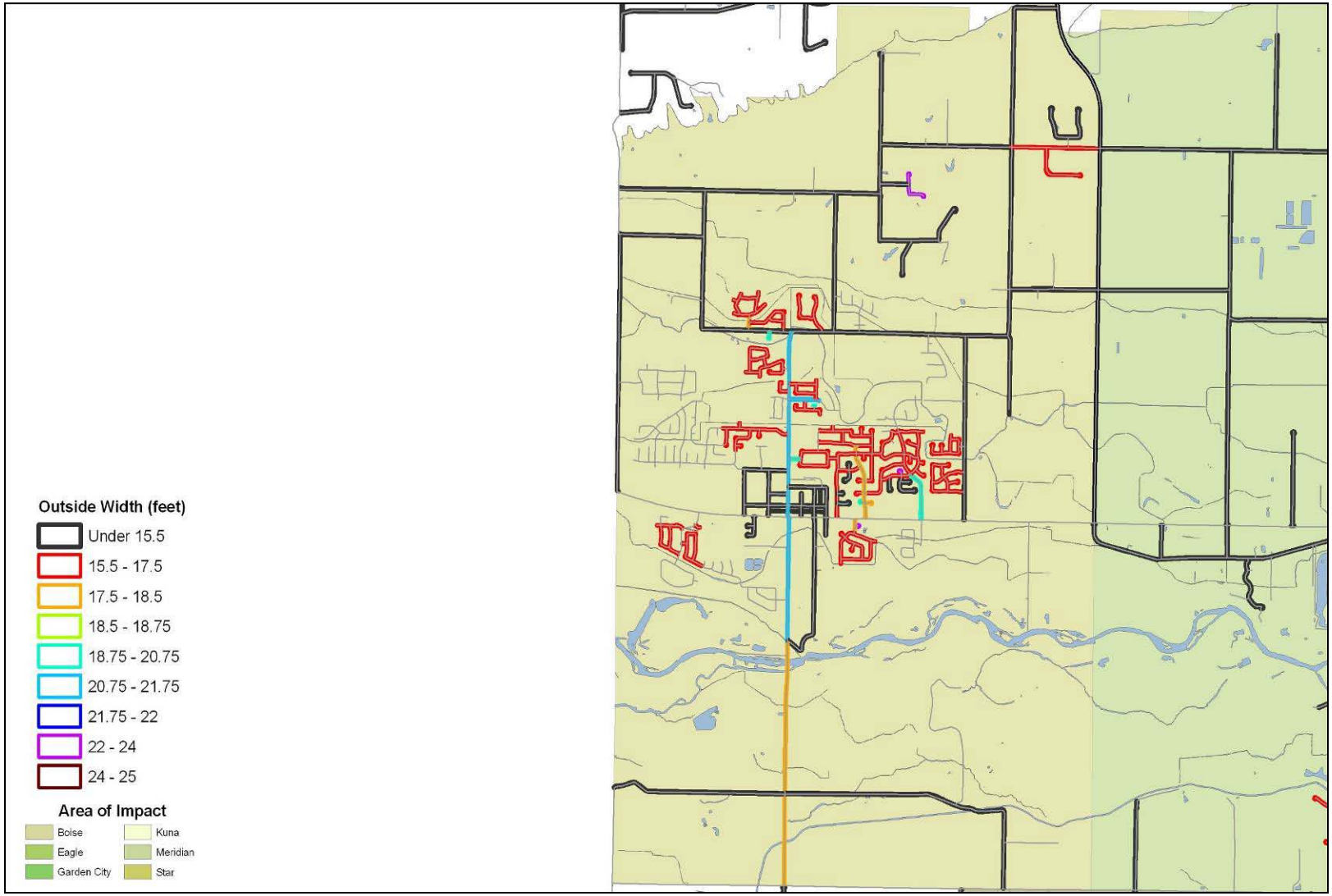
Map 18. Outside Lane Widths – Garden City



Map 19. Outside Lane Widths - Kuna



Map 20. Outside Lane Widths - Meridian



Map 21. Outside Lane Widths – Star

Appendix F. Corridor Evaluation Spreadsheet

Table 26. Corridor Evaluation Spreadsheet

Road Segment	Land Use	# of Lanes	Lane Width*	Shoul-der*	Existing Bike Lanes	Bike Lane Width	Curb	Gut-ter	Gutter Width	Side-walk	Side-walk Width	Features/ Obstruc-tions	Add'l Comments
Boise Avenue: Protest - Broadway													
Entire Section	Res.	2	11'	Yes- 3'	No	N/A	Yes	No	N/A	Yes	4' Detached	7' Planter Strip	Curb Exists through majority of section
Curtis: Franklin - Fairview													
Entire Section	Comm.	5	12'	No	No	N/A	Yes	Yes	1.5'	Yes	7' Attached	Bridge x-ing interstate	
Emerald: Orchard - Latah													
Section 1- Orchard to Pond	Res./ Comm.	5	12'	No	No	N/A	Yes	Yes	1'	Yes	5'	Pwr lines along N side of section	
Section 2- Pond to Roosevelt	Res./ Comm.	4	12'	No	No	N/A	Varies	Varies	N/A	Varies	Varies	Power lines along N side of section	Curb, Gutter, & Sidewalk starts & stops throughout this section
Section 3- Roosevelt to Latah	Res./ Comm.	4	12'	No	No	N/A	Yes	Yes	1'	Yes	5' (WB) & 7' (EB) Both Attached	Power lines along N side of section	
Garrett: Chinden - Marigold													
Entire	Res.	2	13.5' (NB) 18.5'	No	No	N/A	Yes	Yes	1.5'	Yes	7' Attached		Sidewalks not present on a portion of W

Road Segment	Land Use	# of Lanes	Lane Width*	Shoul-der*	Existing Bike Lanes	Bike Lane Width	Curb	Gut-ter	Gutter Width	Side-walk	Side-walk Width	Features/ Obstruc-tions	Add'l Comments
Section			(SB)										side
Glenwood: River - State													
Entire Section	Comm.	5	12'	Yes	No	N/A	Yes	Yes	1.5'	Yes	5' Detached		Curb, Gutter, & Sidewalk starts & stops throughout this section. No shoulder strip on E side.
Linder: Pathway - Porter													
Section 1- South Bound	Comm.	1	11'	Yes	No	N/A	Yes	Yes	1.5'	Yes	6' Detached		Curb, gutter, & sidewalk only from Boise to Kenter St.
Section 2- North Bound	Res./ Comm.	1	11'	Yes	No	N/A	No	No	N/A	Yes	5' Attached &Detached		
Locust Grove: Ustick - McMillan (Leigh Field)													
Section 1- Leigh Field to Charter School	Res./ Comm.	3	Varies	Yes 3' (E)	No	N/A	Yes (W)	Yes (W)	1.5' (W)	Yes	5' Detached		SB lane- 12', NB lane- 11', RTB- 17'
Section 2- Charter School to LDS Church	Res./ Comm.	2	11' - 12'	Yes- 2'-3'	No	N/A	No	No	N/A	No	5' Detached		
Section 3- LDS Church to Ustick	Res./ Comm.	4	11'	Yes-1' (W)	Yes (E)	4.0'	Yes (E)	Yes (E)	1.5'	Yes (E)	7' Attached (E)		Right & Left turnbays transition through this section

Road Segment	Land Use	# of Lanes	Lane Width*	Shoul-der*	Existing Bike Lanes	Bike Lane Width	Curb	Gut-ter	Gutter Width	Side-walk	Side-walk Width	Features/ Obstruc-tions	Add'l Comments
Maple Grove: Overland - Franklin													
Section 1- North Bound	Res.	2	11'	No	No	N/A	Yes	Yes	1.5'	Yes	5' Attached	Power lines- 5' behind walk	
Section 2- South Bound	Mixed Use	2	11'	No	No	N/A	Yes	Yes	1.5'	Yes	5' Attached	Light poles on back of walk	
Section 3- Bridge	Over Interstate	4	12'	No	No	N/A	Yes	Yes	1.75'	Yes	8' Attached		

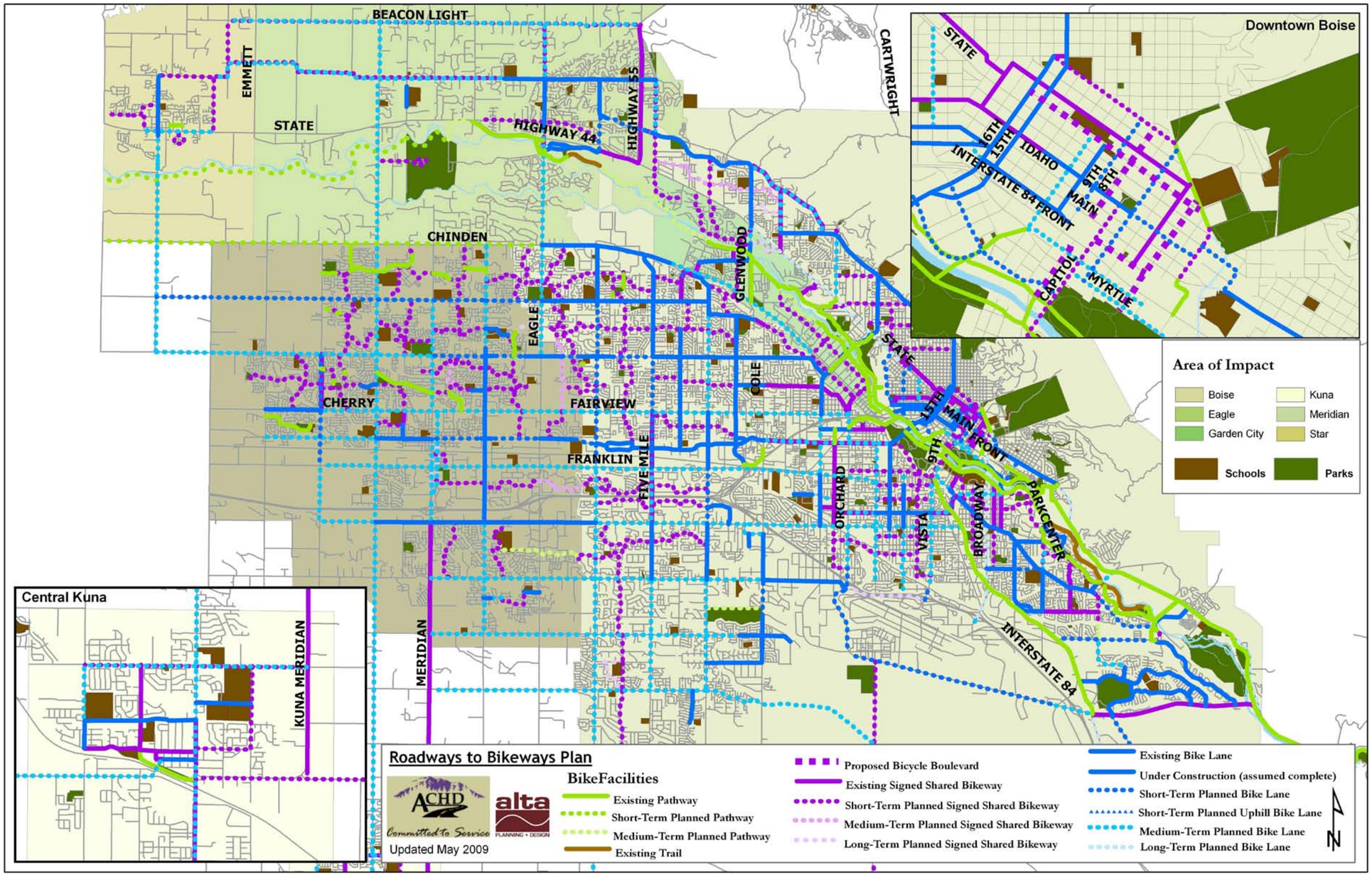
* Does not include gutter pan

Mountain View Drive: Glenwood - Cole													
Section 1- East Bound	Res.	1	11'-12'	Yes- 2'	No	N/A	Yes	Yes	1.5'	Yes	7' Attached		
Section 2- West Bound	Res.	2	11-12'	Yes- 2'	No	N/A	Yes	Yes	1.5'	No	N/A		
Orchard: Fairview - Irving													
Entire Section	Comm.	5	12'	No	No	N/A	Yes	Yes	1'	Yes	5'-7' Attached		7' Sidewalk only on West Side of bridge
Pine: Middle School - Cloverdale													
Entire Section	Res./ Comm.	2	11'	Yes- 3'-4'	No	N/A	No	No	N/A	Yes	5' Detached		Sidewalk separated by swale (Approx. 25')

Road Segment	Land Use	# of Lanes	Lane Width*	Shoul-der*	Existing Bike Lanes	Bike Lane Width	Curb	Gut-ter	Gutter Width	Side-walk	Side-walk Width	Features/ Obstruc-tions	Add'l Comments
Ustick Gaps: Five Mile – Locust Grove													
Section 1- West of Five Mile Intersection	Res.	2	11'	Yes- 3'	No	N/A	No	No	N/A	No	N/A		
Section 2- East of Eagle	Res.	3	11' -12'	Yes- 3' (E) 5' (W)	No	N/A	No	No	N/A	Yes	5' Detached, Meandering	Power poles ~15' south of shoulder edge.	
Section 3- West of Eagle	Res.	2	11' - 12'	Yes- 3' (E) 4' (W)	No	N/A	No	No	N/A	Yes	5' Detached	Power poles approx. 15' south of shoulder edge.	
Veteran's Memorial Parkway: State – Chinden													
Entire Section	Res./ Comm./ Industrial	5	11'-12'	No	No	N/A	Yes	Yes	1.5'	Yes	7' Attached (North)	Bridge x-ing river & bridge crossing canal	Curb, Gutter, & Sidewalk starts & stops throughout this section

* Does not include gutter pan

Appendix G. All-Project Map



Map 22. Short-Term, Medium-Term and Long-Term Projects

Appendix H. Project Scoring Matrix

Table 27. Short-Term Bike Lanes

Project	Extent (From - To)	Connect-ivity (25 pts)	User Generator (25 pts)	Land Uses (15 pts)	Overcomes Barriers (15 pts)	Regional Benefits (10 pts)	Ease of Implementation (10 pts)	Total
EAST-WEST ROUTES								
Hill Rd Extension	Horseshoe Bend Rd - State St	25	22	15	15	10	8	77
W/E Ustick	Meridian - Locust Grove	22	25	10	15	10	8	72
E Ustick	Summerfield Way - Leslie Way	22	25	10	15	10	8	72
E Ustick	Duane Dr/Way - Campton Way	22	25	10	15	10	8	72
W Ustick	Tylerson Ave - Five Mile	22	25	10	15	10	8	72
E Pine Ave	Meridian - Locust Grove	22	25	12	12	10	8	71
E Pine Ave	Nola - Eagle	22	25	10	12	10	9	69
W Executive Dr	Parkdale - Cloverdale	25	22	15	10	8	8	72
W Deer Flat	Ten Mile - Linder	22	25	12	12	10	6	71
E Deer Flat	Linder - Kuna Meridian	22	20	15	10	8	8	67
Gowen	Orchard - RR bridge	22	20	12	10	10	6	64
River St	Americana - Capitol	20	22	15	8	8	6	65
Bannock	6th - Warm Springs	25	20	12	10	6	6	67
Amity	Federal Way - Surprise Way	20	22	10	10	8	8	62
Boise	Holcomb Rd - Eckert Rd	20	20	12	10	8	8	62
NORTH-SOUTH ROUTES								
Ten Mile	Cherry - Ustick	25	25	12	15	10	9	77
Ten Mile	Franklin - Cherry	25	25	12	15	10	9	77
Main/Meridian Couplet II	Franklin - Cherry/Fairview	25	22	12	15	10	8	74
Edgewood	Hill - State	25	22	10	15	6	8	72
Cloverdale	Franklin - Fairview	22	22	10	15	8	8	69
Cloverdale	Fairview - Ustick	22	22	10	15	8	8	69
Cloverdale	Ustick - McMillan	22	22	10	15	8	8	69
Five Mile	Franklin - Fairview	25	20	10	12	8	8	67
Five Mile	Fairview - Ustick	22	20	10	12	8	8	64
Orchard	Victory - Gowen	20	20	10	12	8	8	62
30th St Extension	State - Main	18	22	12	10	6	6	62
27th	Fairview - Ellis	18	22	12	10	6	5	62

Table 28. Medium-Term Bike Lanes

Project	Extent (From - To)	Connect-ivity (25 pts)	User Generator (25 pts)	Land Uses (15 pts)	Overcomes Barriers (15 pts)	Regional Benefits (10 pts)	Ease of Implementation (10 pts)	Total
WEST-EAST ROUTES								
Emerald	Cole - Curtis	15	15	10	8	6	7	61
Emerald	Curtis - Roosevelt	15	20	10	8	6	7	66
Emerald	Roosevelt - Americana	15	15	10	8	6	7	61
Ustick	Ten Mile - Linder	12	10	10	8	4	8	52
Ustick	Linder - McMillan	20	12	8	9	6	6	61
Pine	Ten Mile - Linder	12	15	12	7	6	6	58
Overland	Cloverdale - Five Mile	15	12	8	8	6	8	57
Overland	Five Mile - Maple Grove	15	12	8	8	6	8	57
Overland	Maple Grove - Entertainment	15	10	8	12	5	6	56
Overland	Entertainment - Curtis	18	8	10	10	7	4	57
Overland	Curtis - Roosevelt	16	12	8	6	6	8	56
Overland	Roosevelt - Shoshone	18	12	8	6	6	8	58
McMillan	Locust Grove - Eagle	12	15	12	8	6	6	59
NORTH-SOUTH ROUTES								
Orchard	Emerald - Bond	18	15	12	10	8	6	69
Maple Grove	Fairview - Ustick	18	17	12	8	6	8	69
Maple Grove	Ustick - Goddard	18	17	12	8	6	8	69
Maple Grove	Overland - Franklin	22	12	10	12	8	4	68
Locust Grove	Summerheights - McMillan	20	15	10	7	6	6	64
Locust Grove	McMillan - Chinden	20	15	10	7	6	6	64
Five Mile	Overland - Franklin	20	12	8	13	8	4	65
Roosevelt	Pasadena - Overland	22	12	12	8	6	5	65
Roosevelt	Overland - Franklin	20	12	12	8	6	5	63
Roosevelt	Franklin - Emerald	20	12	12	8	6	5	63
Cole	McGlochlin - Victory	22	15	10	8	6	6	67
Linder	Main - Trophy	22	22	12	13	9	7	85
Ten Mile	Boise - Deer Flat	22	15	10	8	9	6	70
11st	Myrtle - Washington	20	12	8	8	8	4	60

Table 29. East-West Long-Term Bike Lanes

Project	Extent (From - To)	Connect-ivity (25 pts)	User Generator (25 pts)	Land Uses (15 pts)	Overcomes Barriers (15 pts)	Regional Benefits (10 pts)	Ease of Implementation (10 pts)	Total
Overland	Ten Mile - Linder	10	8	6	6	5	5	40
McMillan	Star - Locust Grove	9	10	8	8	7	4	46
Amity	Meridian County line - Rawhide	15	12	6	6	4	6	49
Amity	Meridian - Meridian County Line	15	12	6	6	4	6	49
Beacon	Boise - Park Center	18	12	10	5	3	4	52
Beacon Light	Pollard - Hwy 55	15	8	6	8	4	8	49
Broad	11th/Myrtle - 2nd	12	7	10	5	4	6	44
Cassia	Boarah H.S. - Phillippi	15	10	12	5	4	6	52
Catalpa	Collister - Hill	12	12	10	5	6	5	50
Cherry	Ten Mile - Linder	12	10	10	6	4	6	48
Chinden	Marcliffe Ave - 45th	10	15	10	6	4	4	49
Deer Flat	Ten Mile - Kuna Meridian	8	12	12	8	4	6	50
Fairview	Orchard - DuPont	8	10	12	6	4	3	43
Floating Feather	Emmett - Eagle M.S.	15	8	8	8	4	6	49
Floating Feather/Pollard	Plummer - Emmett	15	8	8	8	4	6	49
Franklin	Roosevelt - Linder	12	15	12	6	6	3	54
Gowen	Business - Federal	20	8	6	12	6	3	55
Hill Rd Extension	Hwy 55 - Horseshoe Bend	12	10	8	8	6	4	48
Holcomb/Eastgate	Amity - Mimosa	8	15	8	8	4	6	49
Kootenai	Vista - Phillippi	12	8	8	6	6	6	46
Kuna/Avalon	Black Cat - Main	8	10	8	8	4	6	44
Lake Hazel	Meridian - county line	10	10	8	8	4	6	46
Lake Hazel	Cloverdale - Maple Grove	12	10	8	8	4	6	48
Linden	Geckeler - Boise	15	10	8	9	5	7	54
Myrtle	Capitol - Broadway	15	12	6	7	6	5	51
State	Center - Plummer	12	8	8	8	6	4	46
Ustick	Star - Meridian							0
Victory	Meridian - Cole	12	10	8	8	6	5	49

Table 30. South-North Long-Term Bike Lanes

Project	Extent (From - To)	Connect-ivity (25 pts)	User Generator (25 pts)	Land Uses (15 pts)	Overcomes Barriers (15 pts)	Regional Benefits (10 pts)	Ease of Implementation (10 pts)	Total
Swan Falls/ Linder	Mora Canal - Boise	15	10	12	8	6	4	55
Meridian	Fairview - Franklin	15	8	10	7	6	3	49
Meridian	Johnson - Overland	12	10	8	14	6	3	53
Main	Franklin - Pine	12	10	8	14	6	3	53
Curtis	Franklin - Emerald	15	8	8	10	6	5	52
Star	Chinden - State	20	10	8	8	6	5	57
Cloverdale	Overland - Franklin	15	8	6	12	6	4	51
Five Mile	Lake Hazel - Victory	12	10	8	8	6	5	49
Horseshoe Bend	Hill - Floating Feather	15	8	6	6	6	5	46
Glenwood	Riverside - Strawberry Glen	15	6	6	10	7	3	47
Linder	Deer Flat - Beacon Light	15	8	8	8	6	8	53
Curtis	Emerald - Fairview	12	6	6	13	5	3	45
Cloverdale	Kuna Mora - Overland	10	5	6	8	5	8	42
Roosevelt	Overland - Franklin	15	7	6	12	6	4	50
Orchard	Wright/Victory - Overland	12	8	6	8	6	5	45
Vista	Sunrise Rim - Rose Hill	15	10	8	6	8	3	50
Owyhee	Elder - Overland	12	8	6	8	6	4	44
Owyhee	Rose Hill - Alpine	10	8	6	8	6	4	42
Boise	Protest - Capitol	12	6	6	7	6	6	43
Grove	Main - 16th	12	4	5	5	4	4	34
Star	Ustick - Chinden	15	6	4	4	4	6	39
Collister	State - Hill	15	10	8	5	5	6	49
Meridian	Cherry - McMillan	15	10	8	6	6	6	51
Locust Grove	Amity - Overland	12	8	8	6	6	6	46
Ten Mile	Overland - Franklin	12	6	8	12	5	3	46
Maple Grove	Lake Hazel - Victory	12	8	8	6	6	6	46
Eagle	Floating Feather - Beacon Light	15	8	6	8	4	6	47
Hill	Gary - Castle	17	8	6	8	6	5	50
Pierce Park	Hill - Castle	17	8	6	8	6	5	50
Apple	Boise - Park Center	15	7	7	9	5	5	48

Table 31. East-West Short-Term Signed Shared Roadways

Project	Extent (From - To)	Connec-tivity (25 pts)	User Generator (25 pts)	Land Uses (15 pts)	Overcomes Barriers (15 pts)	Regional Benefits (10 pts)	Ease of Implementation (10 pts)	Total
Gambrell/ Carswell/ Blake	Tyborne - Star	15	15	12	15	6	8	57
Floating Feather	Star - Pollard	20	15	10	15	8	8	60
Floating Feather	Pollard - Preakness	18	18	13	12	8	7	61
Beacon Light	Pollard - Hwy 55	20	12	10	8	8	8	50
State	Hwy 44 - Hwy 44	15	15	12	12	8	8	54
Taft	State - 28th	20	18	10	8	6	7	56
Sunset	Taft ES - 20th	18	18	13	12	6	8	61
Irene	32nd - 15th	18	15	12	8	6	7	53
Rossi/ Denver/ Highland	Lincoln - Division	22	15	13	10	6	6	60
Rose Hill	Roosevelt - Vista	18	20	13	6	6	8	57
Cassia	Roosevelt - Vista	18	22	15	12	8	8	67
Nez Perce	Roosevelt - Vista	18	22	14	8	9	7	62
Alpine	Orchard - Peasley	18	20	12	6	6	8	56
Spaulding/ Hillcrest/ Targee	Phillippi - Shoshone	20	18	12	12	8	8	62
Kuna Mora	Eagle - Ada County	22	18	10	12	10	8	62
Kuna	Swan Falls - Eagle	18	20	10	12	10	7	60
Kay/4th	Deer Flat - Swan Falls	22	15	8	12	9	8	74
Ottawa/Doberman	Locust Grove - Maple Grove							0
Camas/ Hackamore/ Sandpiper	Cloverdale - Maple Grove	18	20	10	8	8	8	56
Rockbury/ Shoup	Winthrop - Maple Grove	18	20	10	8	8	8	56
Crawford/Irving	Five Mile - Milwaukee	18	18	10	8	6	8	54
Granger/North view	Five Mile - Milwaukee	22	20	12	8	8	6	62
Foxboro/Pembrook	Wainwright - Milwaukee	20	20	10	8	8	6	58
Strauss/Hickory	Locust Grove - Five Mile	18	18	13	7	7	7	56
Dason/Skycrest	Five Mile - Mitchell	18	18	12	8	8	8	56
Monument/Leighfield	Linder - Locust Grove							0
Claire/Challis	West 3rd - Wingate	16	18	10	8	8	7	52
James Ct/Meadow Wood	Meridian - Hickory							
Watertower/St Lukes	Main - Eagle	18	18	10	13	8	8	59
Ridgeside/Chateau	Seasons Park - Glennfield							0

Table 32. North-South Short-Term Signed Shared Roadways

Project	Extent (From - To)	Connectivity (25 pts)	User Generator (25 pts)	Land Uses (15 pts)	Overcomes Barriers (15 pts)	Regional Benefits (10 pts)	Ease of Implementation (10 pts)	Total
Center/Carswell	State - Blake	15	15	12	15	6	8	71
Plummer Rd	State - Floating Feather	20	15	10	10	8	8	71
Pollard	Floating Feather - Beacon Light	22	20	10	12	8	6	78
Eagle	Floating Feather - Beacon Light	22	20	10	12	8	6	78
Horseshoe Bend	Floating Feather - State	22	15	10	10	8	8	73
Horseshoe Bend/Heceta Bend	State - Ulmer Ln	22	18	10	12	8	8	78
Bogart/Cattail	Hill - Riverside	22	18	12	10	6	8	76
Arney/Riverside/Savannah/Plantation	State - Glenwood	20	18	12	10	8	8	76
32nd	State - Taft	17	19	12	8	8	7	71
28th	State - Irene	15	18	13	7	6	9	68
Capitol	Vista - Bannock	23	20	10	15	10	7	85
1st	Main - State	20	23	14	10	7	8	82
University/Lincoln	Joyce - Boise	20	20	15	10	10	7	82
Manitou	University - Howard	18	22	14	12	7	8	81
Boise	Protest - Rossi	24	18	10	10	7	7	76
ParkCenter	Beacon - Bown Way							0
Apple	Boise - ParkCenter	22	18	12	10	8	8	78
Leadville	Linden - Boise	20	20	13	10	8	8	79
Healey/Eckert	Amity - Boise River	25	20	13	13	10	8	89
Shoshone/Peasley/ Crescent Rim	Hillcrest - Americana	18	20	12	10	8	7	75
Pleasant Valley	Gowen - Kuna Mora	20	18	8	8	8	7	69
Eagle	Kuna - Kuna Mora	22	20	12	12	9	6	81
Valley Heights	Hollandale - Raul	18	20	12	12	8	8	78
Gold Bar/Millenium	Victory - Overland	18	20	15	12	8	7	80
Mountainview	Cole - Ustick	20	18	12	8	7	8	73
45th	Stockton - Greenbelt	20	22	12	10	8	8	80
Stockton	45th - 36th	23	22	12	8	6	6	77
Meadowland/Lena	President - De Meyer	20	20	12	10	9	8	79
Bowmont/ Park Meadow	Coolwater - Chinden	18	20	12	10	8	7	75

Project	Extent (From - To)	Connectivity (25 pts)	User Generator (25 pts)	Land Uses (15 pts)	Overcomes Barriers (15 pts)	Regional Benefits (10 pts)	Ease of Implemen-tation (10 pts)	Total
Hickory/Dixon	Pine - Leighfield	19	22	13	9	8	8	79
Maxie Way/ Goodard Creek	Chateau - Tignes							0
Observation/East 5th Way	Victory - Overland	15	18	10	8	6	8	65
Coffey	Marigold - Sorrento	20	20	12	10	8	8	78

Table 33. Medium- and Long-Term Signed Shared Roadways

Project	Extent (From - To)	Connectivity (25 pts)	User Generator (25 pts)	Land Uses (15 pts)	Overcomes Barriers (15 pts)	Regional Benefits (10 pts)	Ease of Implementation (10 pts)	Total
East-West Routes								
Anton/ Leigh Field	Meridian - Leigh Field	20	20	12	10	6	8	76
Belltower/ Towerbridge/ Windchime/ Stone Valley	Ten Mile - Linder	20	22	13	10	8	7	80
Chateau/ Bernice	Locust grove - River valley Elem	15	22	15	10	8	8	78
36th	Clay - Greenbelt	18	20	12	10	8	8	76
Arch/Sharon/Spearfish	Grenadier - Granadier	15	20	14	12	7	8	76
Hatchery/ Eagle island Park	Linder - Linder	5	15	12	8	8	8	56
Avalon/Kuna	Swan Falls - County line	18	17	12	10	8	8	73
North-South Routes								
Strawberry Glenn	Riverside - Glenwood	20	18	12	8	8	8	74
Sorrento/ Christine	Mountain View - Goddard	18	18	12	10	8	8	74
Dixon/ Nakano/ Troxel/Hickory/Wingate	Leighfield - Pine	20	15	15	8	8	8	74
Cosmo/ Achillea/ Alcove/ Gloxinia/ Delphinium	State - State	5	15	10	8	2	8	48
Linda Vista	McMillan - Edna	18	20	10	8	8	8	72
Phillippi	Overland - Malad	18	15	10	8	8	8	67
Swan Falls	Stagecoach - 3rd	22	20	10	8	7	6	73
Collister	Hill - Outlook	18	20	10	9	7	8	72
Records/ N Harding Way	Fairview - Pine	20	18	8	12	8	7	73
Sumpter/ Peppermint	Overland - Coleen	18	18	10	9	7	8	70

Table 34. Bicycle Boulevards

Project	Extent (From - To)	Connectivity (25 pts)	User Generator (25 pts)	Land Uses (15 pts)	Overcomes Barriers (15 pts)	Regional Benefits (10 pts)	Ease of Implementation (10 pts)	Total
East-West Routes								
Washington	16th - Fort	20	22	14	8	8	7	64
Grove	Capitol - 3rd	22	24	10	12	8	7	68
North-South Routes								
8th	Greenbelt - Hays	20	24	13	8	8	7	65
3rd	Julia Davis Park - Fort	20	22	14	13	9	7	69

Appendix I. Design Guidelines

The Ada County Highway District (ACHD) has been working for the past decade to implement on-street bikeway projects in order to encourage cycling, improve safety, and improve the quality of bicycling so that it becomes an integral part of daily life. While Ada County is growing rapidly, it also contains a built urban environment; many future projects will involve retrofitting existing streets and intersections. The county has significant changes in topography, a high demand for on-street parking, a roadway system heavily reliant on arterial roadways, and many other complex situations. When looking to implement bike lanes or other improvements on Ada County streets, most standard design manuals offer limited solutions.

The Roadways to Bikeways Design Guidelines are a compliment to the 2007 ACHD Roadways to Bikeways Bicycle Master Plan. These design concepts are based on current bikeway design guidelines for typical bikeway situations provided in the Ada County Highway District Development Policy Manual, the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, and the Manual of Uniform Traffic Control Devices (MUTCD) 2003, Part 9 Traffic Controls for Bicycle Facilities. The Roadways to Bikeways guidelines use these documents as a baseline for minimum conditions, and are intended to find creative solutions to a wide range of bicycle facility types. These treatments draw upon creative solutions in use in other states as well as European cities. These designs are conceptual at this stage, and must be reviewed further before being applied to actual situations. Strong design guidelines will allow the Ada County Highway District to improve the quality of the bicycle network by applying the highest standard of bicycle safety, comfort, and convenience.

The following are key principles for these guidelines:

- All roads in Ada County are legal for the use of bicyclists, (except those roads designated as limited access facilities which prohibit bicyclists). This means that most streets are bicycle facilities, and will be designed and maintained accordingly.
- Bicyclists have a range of skill levels, from "Type B/C" inexperienced / recreational bicyclists (especially children and seniors) to "Type A" experienced cyclists (adults who are capable of sharing the road with motor vehicles). These groups are not always exclusive – some elite level athletes still like to ride on shared-use paths with their families, and some recreational bicyclists will sometimes use their bicycles for utilitarian travel.
- At a minimum, facilities will be designed for the use of Type "A" cyclists, with a goal of providing for Type "B" cyclists to the greatest extent possible. In areas where specific needs have been identified (for example, near schools) the needs of appropriate types of bicyclists will be accommodated.
- Design guidelines are intended to be flexible and can be applied with professional judgment by designers. Specific national and state guidelines are identified in this document, as well as design treatments that may exceed these guidelines.
- Ada County will have a complete network of on-street bicycling facilities to connect seamlessly to the existing and proposed off-street pathways.

National and State Guidelines / Best Practices

The following is a list of references and sources utilized to develop design guidelines for the Roadways to Bikeways Supplemental Design Guidelines. Many of these documents are available online and are a wealth of information and resources available to the public.

- *AASHTO Guide for the Development of Bicycle Facilities*, 1999. American Association of State Highway and Transportation Officials, Washington, DC. www.transportation.org
- *AASHTO Policy on Geometric Design of Streets and Highways*, 2001. American Association of State Highway and Transportation Officials, Washington, DC. www.transportation.org
- *Manual on Uniform Traffic Control Devices* (MUTCD), 2003. Federal Highway Administration, Washington, DC. http://mutcd.fhwa.dot.gov
- *Bicycle Facility Selection: A Comparison of Approaches*. Michael King, for the Pedestrian and Bicycle Information Center. Highway Safety Research Center, University of North Carolina – Chapel Hill, August 2002 http://www.bicyclinginfo.org/pdf/bikeguide.pdf
- *Bicycle Parking Design Guidelines*. http://www.bicyclinginfo.org/pdf/bikepark.pdf
- *City of Chicago Bike Lane Design Guide*. http://www.bicyclinginfo.org/pdf/bike_lane.pdf
- *The North Carolina Bicycle Facilities Planning and Design Guidelines*, 1994. NCDOT Division of Bicycle and Pedestrian Transportation. http://www.ncdot.org/transit/bicycle/projects/resources/projects_facilitydesign.html
- *Wisconsin Bicycle Facility Design Handbook*. 2004. Wisconsin Department of Transportation. http://www.dot.wisconsin.gov/projects/bike.htm
- *Florida Bicycle Facilities Planning and Design Handbook*. 1999. Florida Department of Transportation. http://www.dot.state.fl.us/safety/ped_bike/ped_bike_standards.htm#Florida%20Bike%20Handbook
- *Oregon Bicycle and Pedestrian Plan*. 1995 Oregon Department of Transportation. http://www.oregon.gov/ODOT/HWY/BIKEPED/planproc.shtml
- City of Portland (OR) Bicycle Master Plan. 1998. City of Portland (OR) Office of Transportation. http://www.portlandonline.com/shared/cfm/image.cfm?id=40414
- ACHD Policy Manual. http://www.achd.ada.id.us/AboutACHD/PolicyManual.aspx
- ITD Manual

Bicycle Facility Selection Criteria

The appropriate bicycle facility for any particular roadway whether new or existing should be primarily dictated by vehicle volume and speed of the roadway. Figure 1 below is a summary graphic combining bikeway dimension standards for ten different communities in North America. This figure is taken from Michael King's research, *Bicycle Facility Selection: A Comparison of Approaches* for the Pedestrian and Bicycle Information Center and Highway Safety Research Center, University of North Carolina – Chapel Hill in August 2002. The goal of this study was to survey the varying requirements available and provide a best practices approach for providing bicycle facilities. The study includes comparison with European standards providing context for the North American standards for the inclusion of bicycle facilities into roadways.

Figure 11 below provides a matrix for evaluating bicycle facilities. Along the left side are total traffic volumes per day and along the bottom is the speed of travel lane. The different colors represent the type of bikeway facility prescribed given the volume and speed of the travel lane.

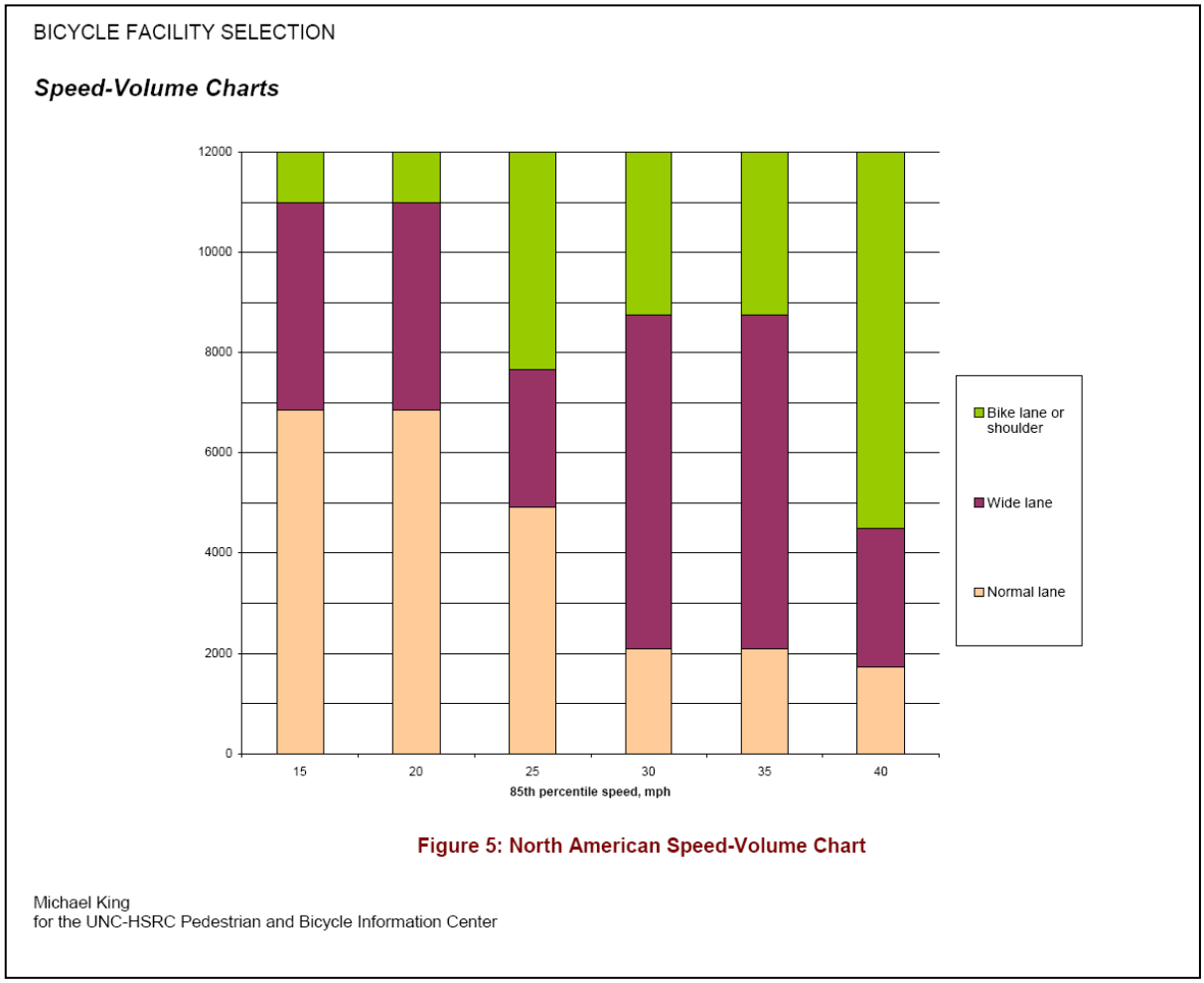


Figure 11. North American Speed-Volume Chart

Bike Lane Design: Roadway Elements

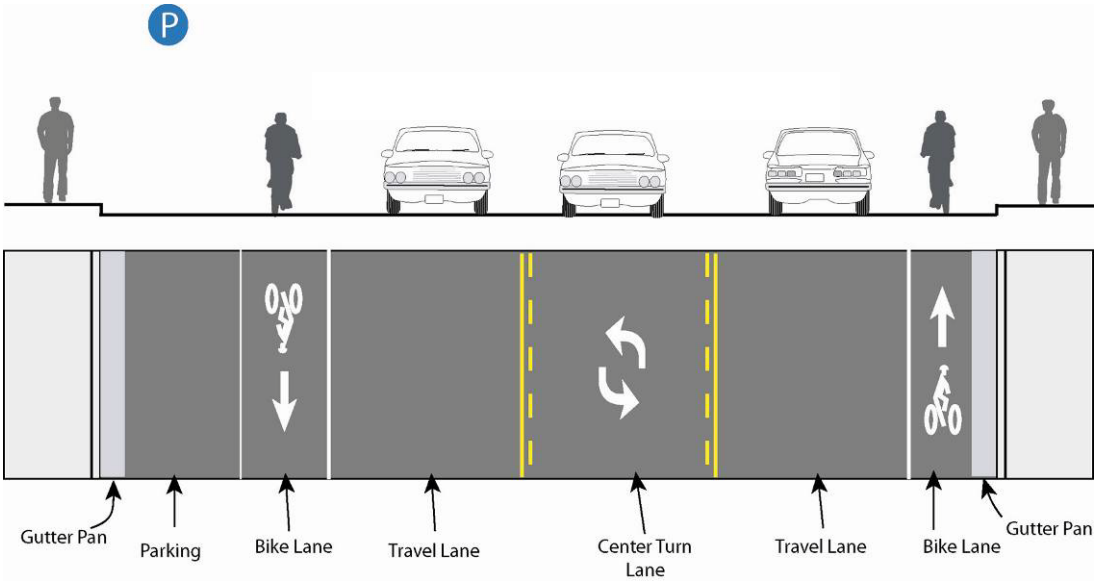
DESCRIPTION

The minimum, maximum and recommended width of the various right-of-way roadway elements are identified in the table below. The minimum is for use in constrained situations where there is not sufficient roadway width to accommodate all users at the recommended width.

Roadway Elements of Concern

	Gutter Pan	On-Street Parking[1]	Bike Lane[2]	Travel Lane	Turn Lane
Minimum	1.5'	7'	4'	10'	10'
Maximum	1.5'	9'	6'	14'	12'
Recommended	1.5'	8'	5' / 6'	11' / 12'	11' / 12'

GRAPHIC



Bike Lane Design: Guidelines

DESCRIPTION

BICYCLE LANE WIDTH

RECOMMENDED GUIDELINE:

Bike lanes alongside curbs shall be at least four feet wide exclusive of gutter pan. Bike lanes alongside parking lanes shall be at least five feet wide. They may be widened to six feet if space is available and the parking lane has been widened to nine feet. This is due to the following:

- Debris tends to collect in the gutter, having been swept there by passing motor vehicles
- An increased likelihood of hitting a pedal on the curb by riding in/too close to the gutter
- An uneven longitudinal joint leads to increased crashes
- A steeper cross slope in the gutter pan
- A bicyclist riding close to the curb is less likely to be seen by motorists at cross streets

Bicycle lanes <5' alongside parking lanes may be desirable with one or more of the following conditions:

- Traffic volumes (including truck or bus volumes)/speeds are high
- Bicycle volumes are high
- Wider bike lane will not encourage illegal parking or driving in the bicycle lane to bypass congestion

MINIMUM STANDARD:

The minimum standard for bicycle lane width is 4' (exclusive of gutter pan). The minimum standard for bicycle lane width adjacent to parking is 5'.

PARKING LANE WIDTH (inclusive of gutter pan)

RECOMMENDED GUIDELINE:

The recommended guideline for parking lane width is 8'. Parking lanes may be of narrower width if specifically required for other modes, with preference to transit over motor vehicle traffic.

9' parking lane width is recommended where one or more of the following conditions exists (assuming space is available):

- Parking turnover is high (metered parking, commercial areas)
- Higher concentration of wide vehicles in parking lane (trucks, buses, etc)
- It is preferable to narrow travel lanes to encourage slower speed

Widening the parking lane moves the bike lane away from the curb and keeps motorists near the middle of the road, increasing sight distances for traffic on cross-streets

MINIMUM STANDARD:

The minimum standard for parking lane width is 7'.

TRAVEL LANE WIDTH

RECOMMENDED GUIDELINE:

Travel lanes adjacent to a bike lane should be at least 11' in width. Travel lanes can be as wide as 14' in specific instances where it is necessary to provide additional roadway space. In the absence of designated truck routes and/or high capacity transit lines, additional curb to curb width should be allocated according to the following priority: (1) bicycle and pedestrian circulation, (2) transit operations, and, (3) private vehicle operations.

MINIMUM STANDARD:

The minimum standard for travel lane width is 10'.

COORDINATION WITH TRANSPORTATION & LAND USE INTEGRATION PLAN (TLIP)

The bicycle lane design guidelines outlined in this document are for use in situations where ACHD is retrofitting existing roadways, or where the local jurisdiction has chosen to use the existing ACHD roadway standards rather than the TLIP design guidelines. In new construction refer to TLIP standards, which include the appropriate bicycle facility accommodation for the roadway typology.

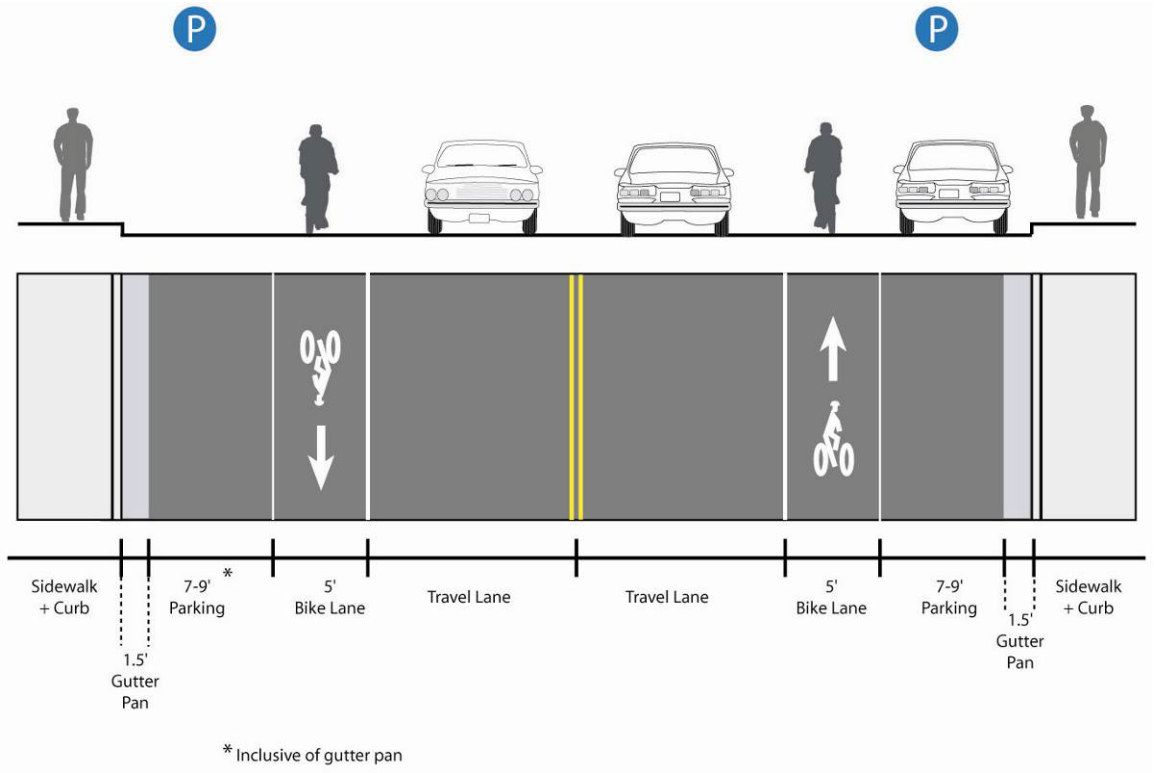
Bike Lane Design: Two Lane Cross-Section with Parking Both Sides

DESCRIPTION

The minimum amount of right-of-way necessary to provide space for on-street parking, bike lanes, and one travel lane in each direction is 47' curb-to-curb. This is a constrained situation and should only be used where no other options (such as removing one lane of parking) are feasible. If additional space is available, add additional width to the parking bay first, followed by the bike lane and then the travel lane.

The minimum width for a bike lane adjacent to parking is 5 feet. Parking bays may vary in width up to 9 feet wide. Travel lane widths may vary from 10'-12'.

GRAPHIC



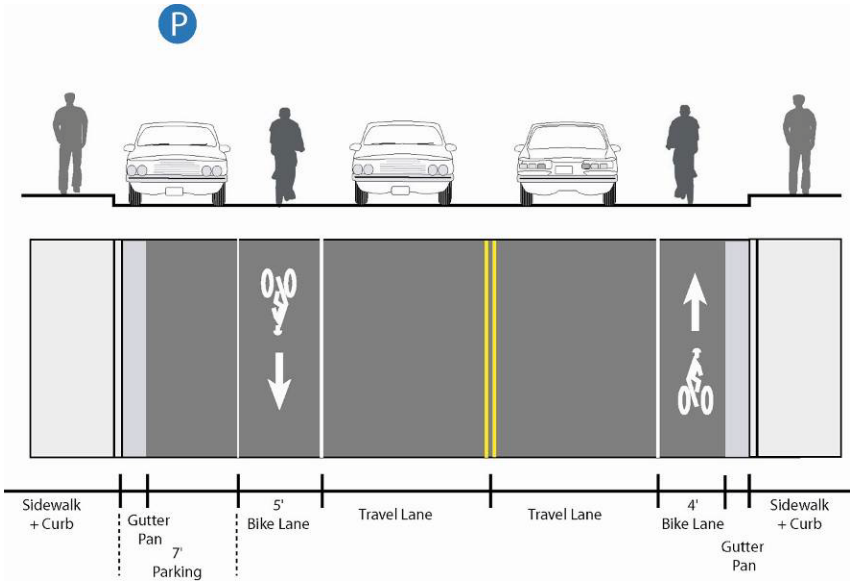
Bike Lane Design: Two Lane Cross-Section with Parking One Side

DESCRIPTION

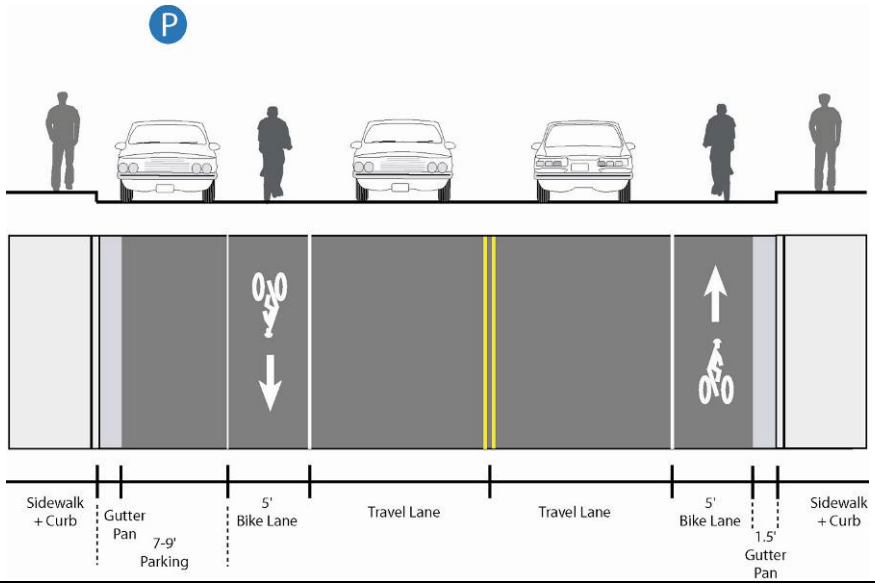
The minimum width for a bike lane adjacent to on-street parking is 5 feet. A 4-foot wide bike lane (exclusive of the gutter pan) adjacent to the curb may be used in constrained locations. The recommended width for a bike lane is 5-feet in width. Parking bays may vary in width up to 9 feet wide. Travel lane widths may vary from 10'-12'.

GRAPHIC

CONSTRAINED



RECOMMENDED



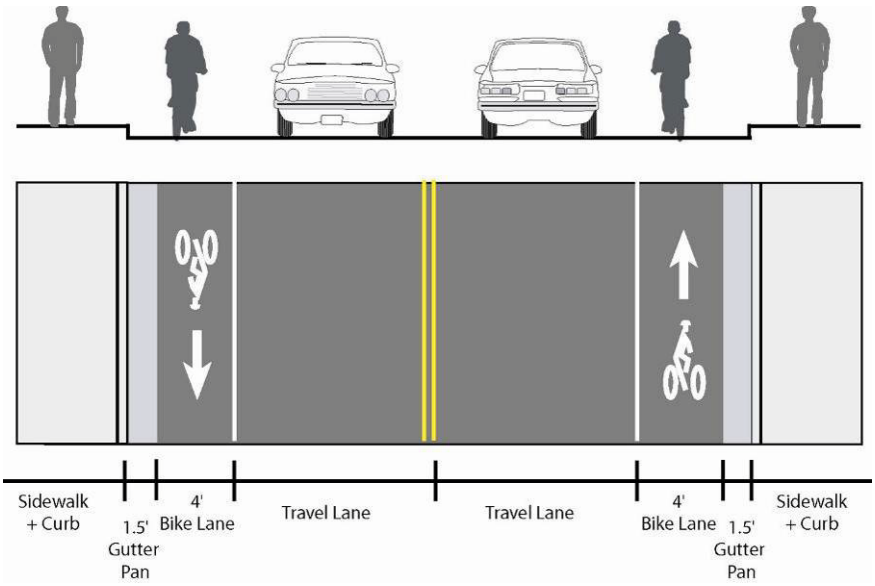
Bike Lane Design: Two Lane Cross-Section with No Parking

DESCRIPTION

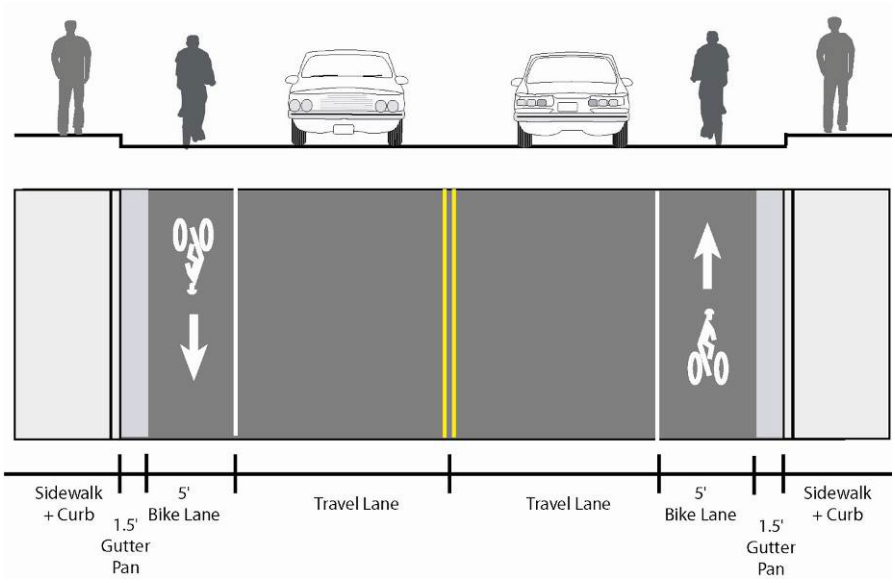
A 4-foot wide bike lane (exclusive of the gutter pan) adjacent to the curb may be used in constrained locations. The recommended width for a bike lane is 5-feet. Travel lane widths may vary from 10'-12'.

GRAPHIC

CONSTRAINED



RECOMMENDED



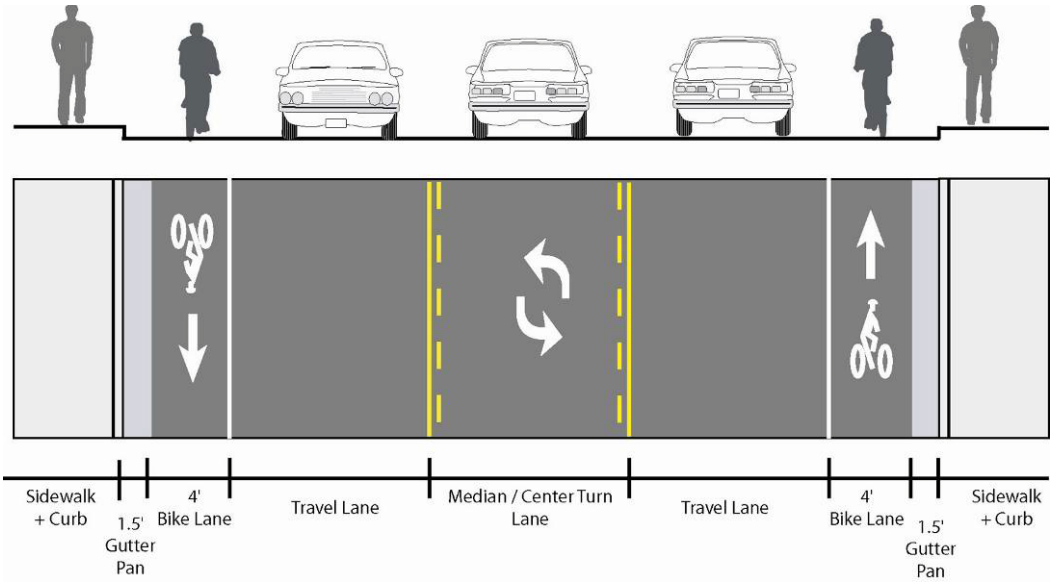
Bike Lane Design: Three Lane Cross-Section with No Parking

DESCRIPTION

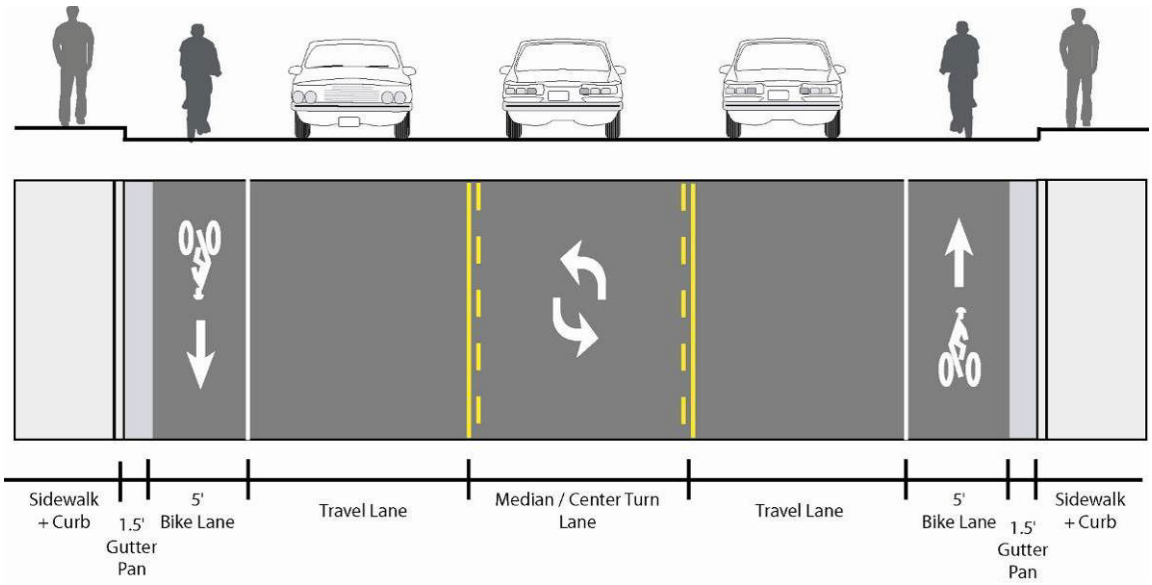
A 4-foot wide bike lane (exclusive of the gutter pan) adjacent to the curb may be used in constrained locations. The recommended width for a bike lane is 5-feet. Travel lane widths may vary from 10'-12'. The use of a median with left turn pockets over a continuous two-way left turn lane is recommended for the center lane. Reduce travel lane widths to the minimum allowed before reducing bike lane width to 4'.

GRAPHIC

CONSTRAINED



RECOMMENDED



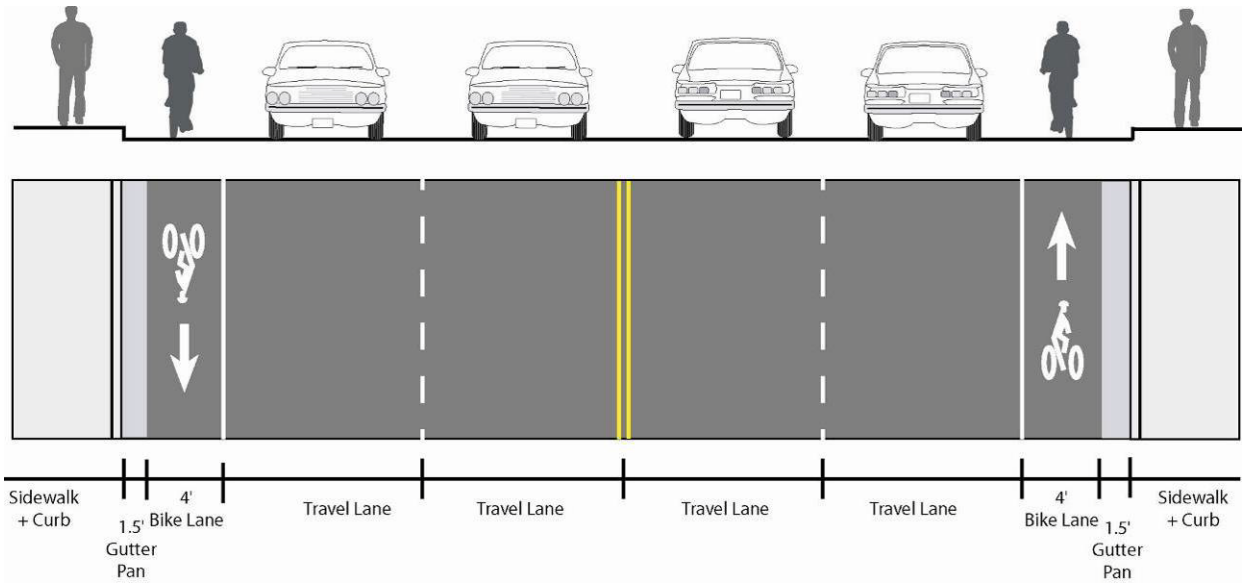
Bike Lane Design: Four Lane Cross-Section with No Parking

DESCRIPTION

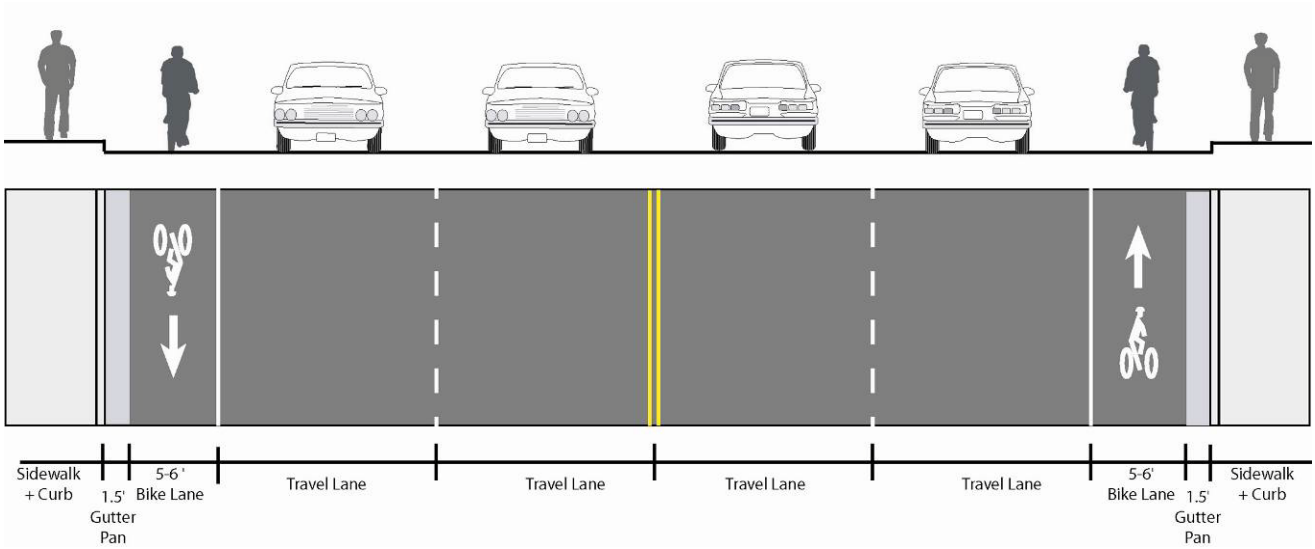
A 4-foot wide bike lane (exclusive of the gutter pan) adjacent to the curb may be used in constrained locations. The recommended width for a bike lane is 5-feet in width, increasing to 6-feet in width based on traffic volumes and speeds. Travel lane widths may vary from 10'-12'.

GRAPHIC

CONSTRAINED



RECOMMENDED



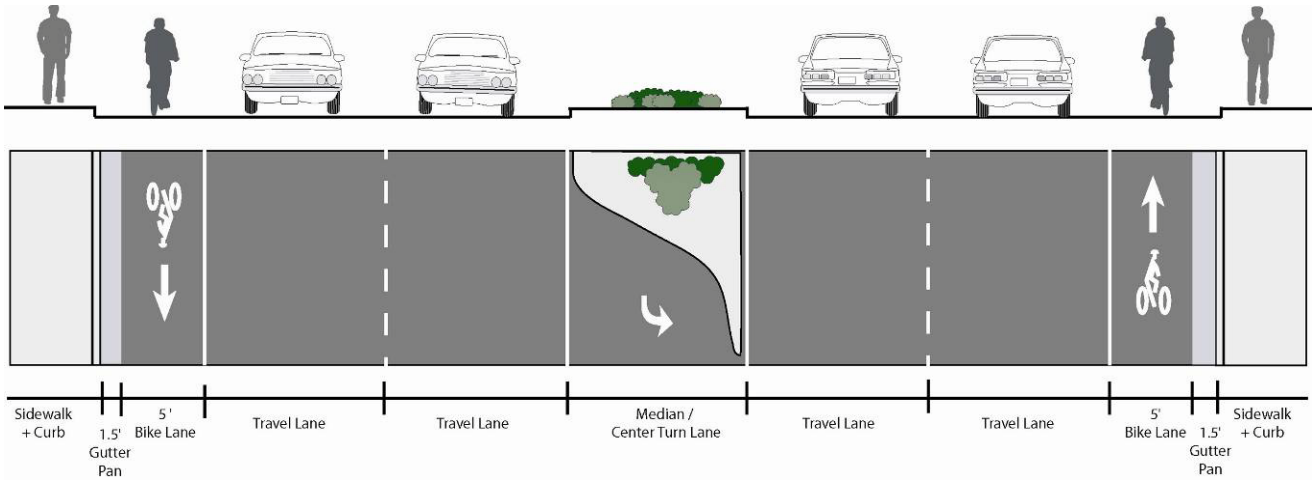
Bike Lane Design: Five Lane Cross-Section with No Parking

DESCRIPTION

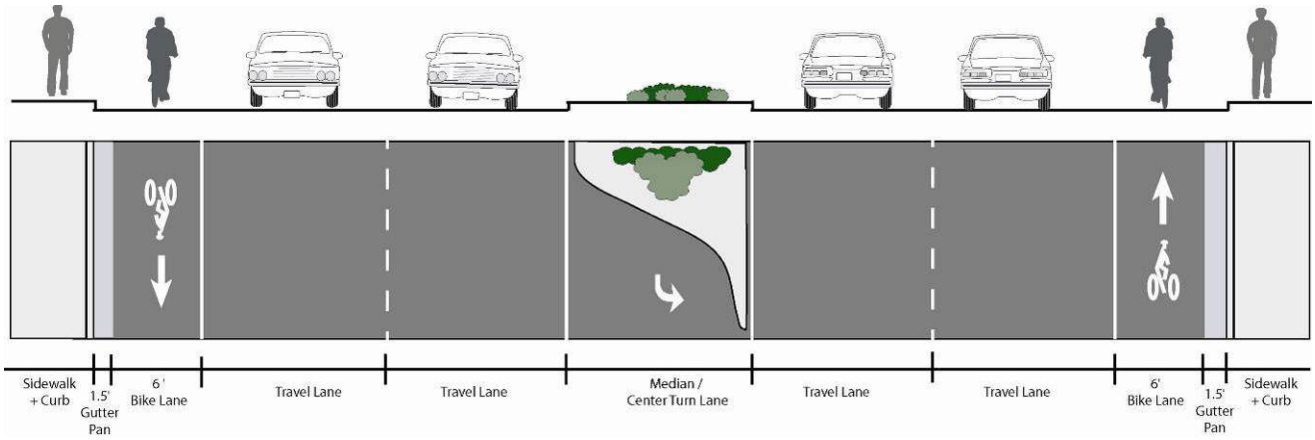
The recommended width for a bike lane is 5-feet in width on arterials, increasing to 6-feet in width on mobility/principal/industrial arterials where higher traffic speeds and higher truck volumes are expected. Travel lane widths may vary from 10'-12', with travel lanes adjacent to bike lanes a minimum of 11'. The use of a median with left turn pockets over a continuous two-way left turn lane is recommended for the center lane.

GRAPHIC

ARTERIAL



MOBILITY/PRINCIPAL/INDUSTRIAL ARTERIAL



Shared Lane Marking -"Sharrows": Two Lane Cross-Section

DESCRIPTION

Sharrows are high-visibility pavement markings that help position bicyclists within the travel lane. These markings are often used on streets where dedicated bicycle lanes are desirable but are not possible due to physical or other constraints. Sharrows are placed strategically in the travel lane to alert motorists of bicycle traffic, while also encouraging cyclists to ride at an appropriate distance from the "door zone" of adjacent parked cars. Markings may be placed on the street to inform motorists about the presence of cyclists, and also to inform cyclists how to position themselves with respect to parked cars and the travel lane.

APPLICATIONS

- Roadways that are too narrow for standard striped bike lanes
- Areas that experience a high level of "wrong-way" riding
- Areas with moderate to high parking turnover

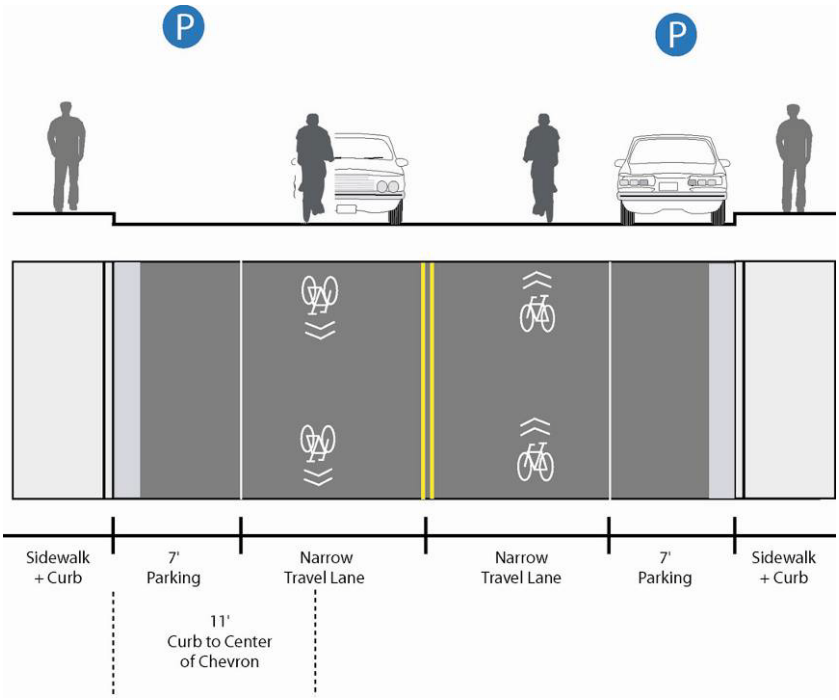
Placed in a linear pattern along a corridor at a minimum of 11 feet from the face of curb, sharrows also encourage cyclists to ride in a straight line so their movements are predictable to motorists.

MUTCD GUIDELINES

The shared lane marking is not currently approved for use by the MUTCD. The National Committee on Uniform Traffic Control Devices (NCUTCD) has recommended to the Federal Highway Administration (FHWA) that this marking be included in the next edition of the MUTCD, expected to be published in 2009.

The draft language notes that sharrows should not be placed on roadways with a speed limit over 35 mph, and that when used the marking should be placed immediately after an intersection and space at intervals no greater than 250 thereafter.

GRAPHIC



Sharrows: Four Lane Cross-Section

DESCRIPTION

Sharrows are high-visibility pavement markings that help position bicyclists within the travel lane. These markings are often used on streets where dedicated bicycle lanes are desirable but are not possible due to physical or other constraints. Sharrows are placed strategically in the travel lane to alert motorists of bicycle traffic. Markings may be placed on the street to inform motorists about the presence of cyclists. When sharrows are used in a constrained situation with multiple lanes, they encourage motorists to change lanes to pass bicyclists.

APPLICATIONS

Roadways that are too narrow for standard striped bike lanes

Areas that experience a high level of "wrong-way" riding

Placed in a linear pattern along a corridor at a minimum of 4 feet from the face of curb, sharrows also encourage cyclists to ride in a straight line so their movements are predictable to motorists.

MUTCD GUIDELINES

The shared lane marking is not currently approved for use by the MUTCD. The National Committee on Uniform Traffic Control Devices (NCUTCD) has recommended to the Federal Highway Administration (FHWA) that this marking be included in the next edition of the MUTCD, expected to be published in 2009.

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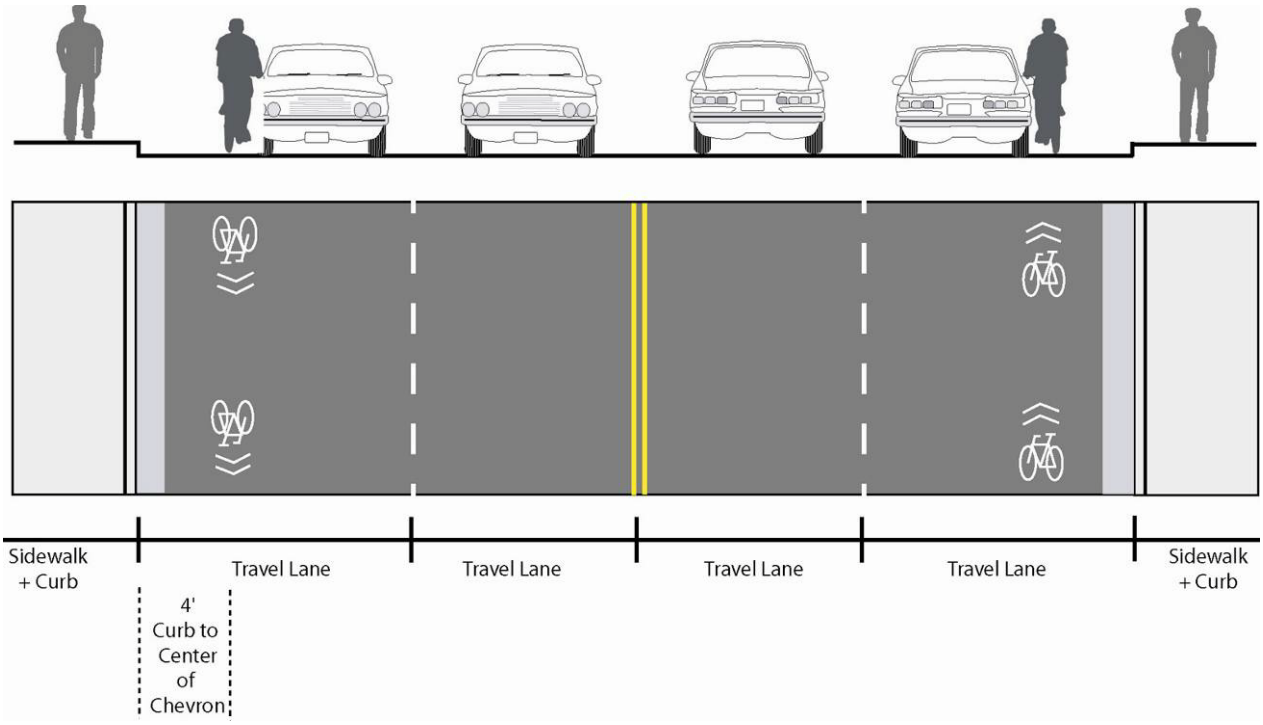


Signed Shared Roadways / Bicycle Boulevards

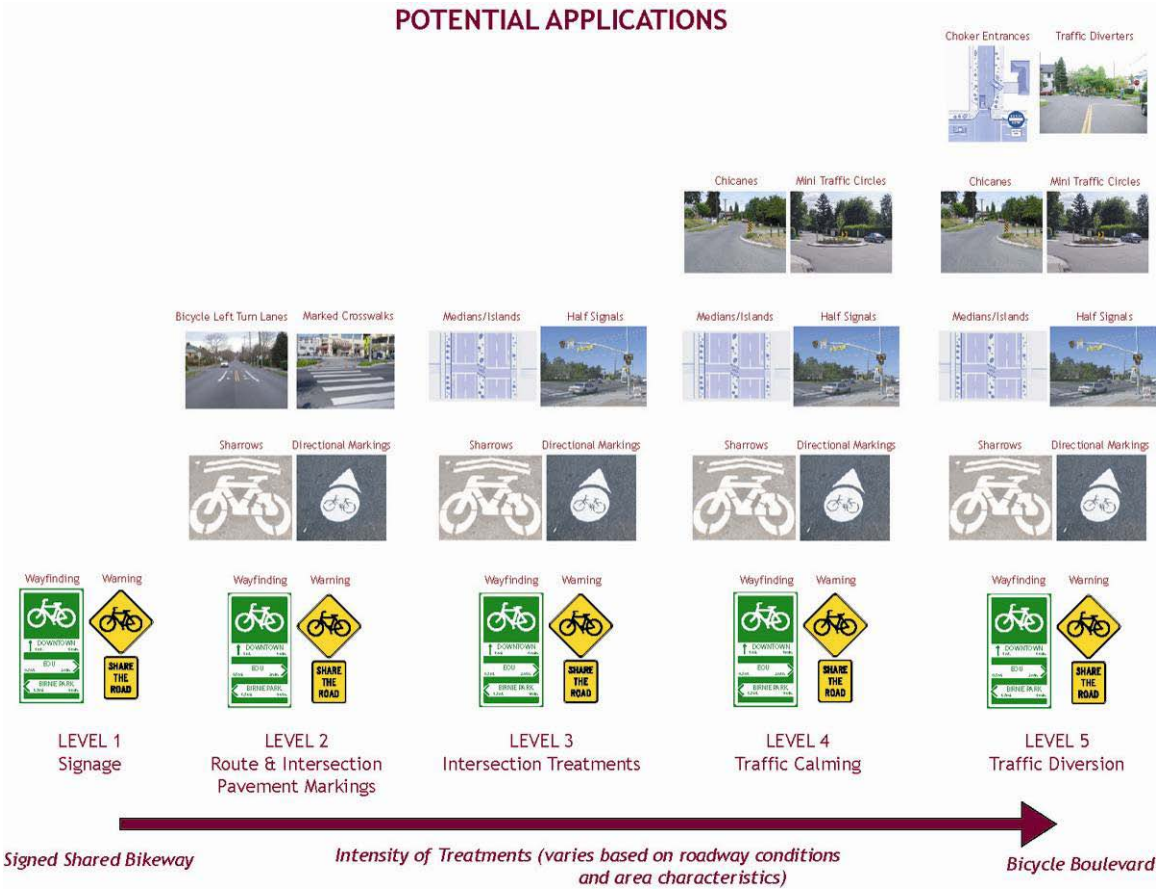
DESCRIPTION

Signed shared bikeways are streets with relatively low traffic volumes and posted speeds that enable cyclists and motorists to share the same travel lanes. These streets usually have two travel lanes with or without adjacent on-street parking. Signed shared bikeways can be provided through relatively inexpensive treatments like new signage, pavement markings, and crosswalk striping at intersections to facilitate bicyclists' mobility and safety (Levels 1 and 2 on the chart below)

APPLICATIONS

- Low volume streets
- Calming traffic on streets within 1/4 mile of parallel arterials
- Allows access to key destinations
- Provides safe arterial street crossing

GRAPHIC



Signed Shared Roadways / Bicycle Boulevards

DESCRIPTION

The bicycle boulevard treatment is typically a lower volume street with traffic calming treatments that parallels a higher volume arterial. Traffic calming typically includes a set of improvements to slow motor vehicles and prevent cut-through traffic such as: traffic circles, chokers, or medians. In addition, stop signs favor bicyclists by stopping perpendicular traffic. Push-buttons activate traffic signals to allow safe crossings of higher volume roadways (Levels 3-5 on the chart on the previous page).

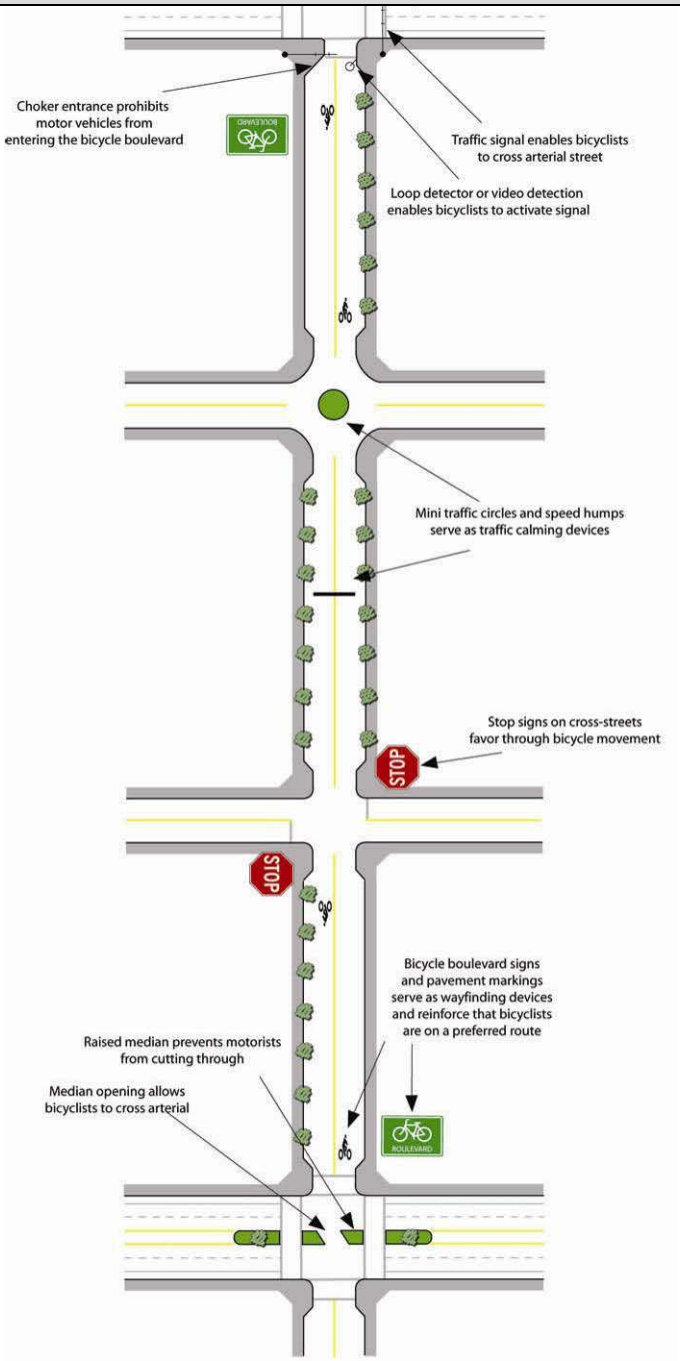
APPLICATIONS

- Low volume streets
- Calming traffic on streets within 1/4 mile of parallel arterials
- Allows access to key destinations
- Provides safe arterial street crossing

NOTES

20 mph speed limits should be considered

GRAPHIC



Colored Bike Lane Treatment Through a Conflict Area

DESCRIPTION

Colored bike lanes can be used in high-conflict areas, to alert drivers of the presence of bicyclists and bicycle lanes. These areas can be painted or treated with a thermoplastic. Materials should be skid-resistant and maintain traction for bicycles, even when wet. Typically, yield signs that instruct bicyclists and drivers about the lanes are installed wherever the colored lane treatments are used.

APPLICATIONS

- High volume of vehicles turning across bike lane to exit or enter a roadway in a ramp-like configuration. This should not be used in typical 4-legged intersection situations that simply have a high volume of turning motor vehicles.
- Roadways / ramps merge at angles where motorist sight distance is impaired, or that cause motorists to be looking to merge in such a way that they may not see cyclists in a normally-marked bike lane.
- High volume of bicyclists
- Cyclists have priority movement

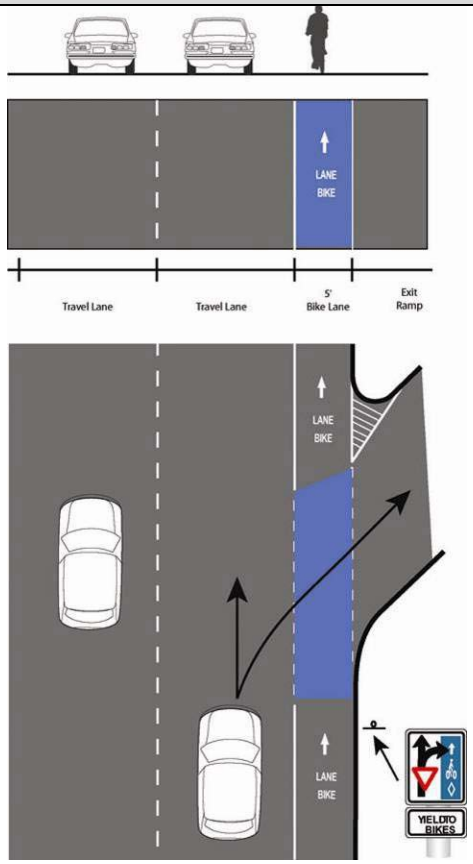
Other potential situations for application of colored bike lanes include:

- Contra-flow bike lanes
- Left-side bike lanes on one-way roads
- Bike-only left-turn pockets

NOTES

National committees are currently reviewing the use of color for bike lane situations. Should they make a recommendation for other colors, the design would use the recommended coloring.

GRAPHIC



Constrained Shared Bicycle / Right-Turn Pocket

DESCRIPTION

This treatment places a standard-width bicycle lane on the left side of a dedicated right-hand turn lane when there isn't enough room for both. A dashed stripe delineates the space for bicyclists and motorists within the right-hand turn lane. Signs should be installed to instruct bicyclists and motorists of the usage of this facility.

POTENTIAL APPLICATIONS

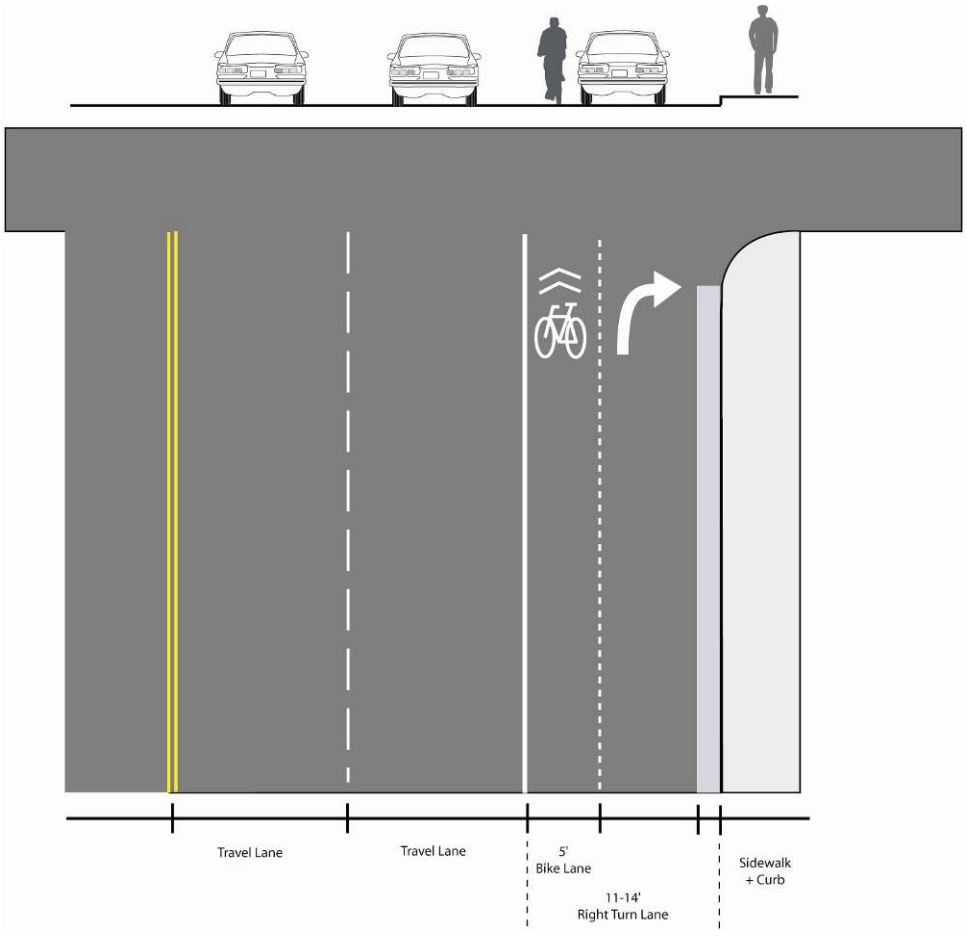
- On roadways where there is not enough space to implement a standard-width bicycle lane and a standard-width dedicated right-turn lane at the intersection
- Low speed roadways
- Low volume of heavy vehicle traffic (or those needing a large turning radius)

VARIATIONS

This treatment can also be used to transition a bicycle lane over one lane where the inside lane is right-turn only lane, and the adjacent lane is a turn/through lane. In this instance, the dashed line would appear in the turn/through lane to indicate to that bicyclists and automobiles are to share the turn/through lane. This properly positions through bicyclists and reduces conflicts with right turning vehicles.

The bike lane stencil and dashed line may be replaced by the shared lane marking if determined appropriate by a highway district traffic engineer.

GRAPHIC



Bike Only Left Turn Pockets: Scenario 1

DESCRIPTION

A left-turn pocket allows only bicycles to access a bicycle boulevard or designated bicycle route. The intersection is controlled and the left-turn pocket may have a left arrow signal, depending on bicycle and vehicle volumes. Signs should be provided that prohibit motorists from turning, while allowing access to bicyclists. Bicycle signal heads may also be used.

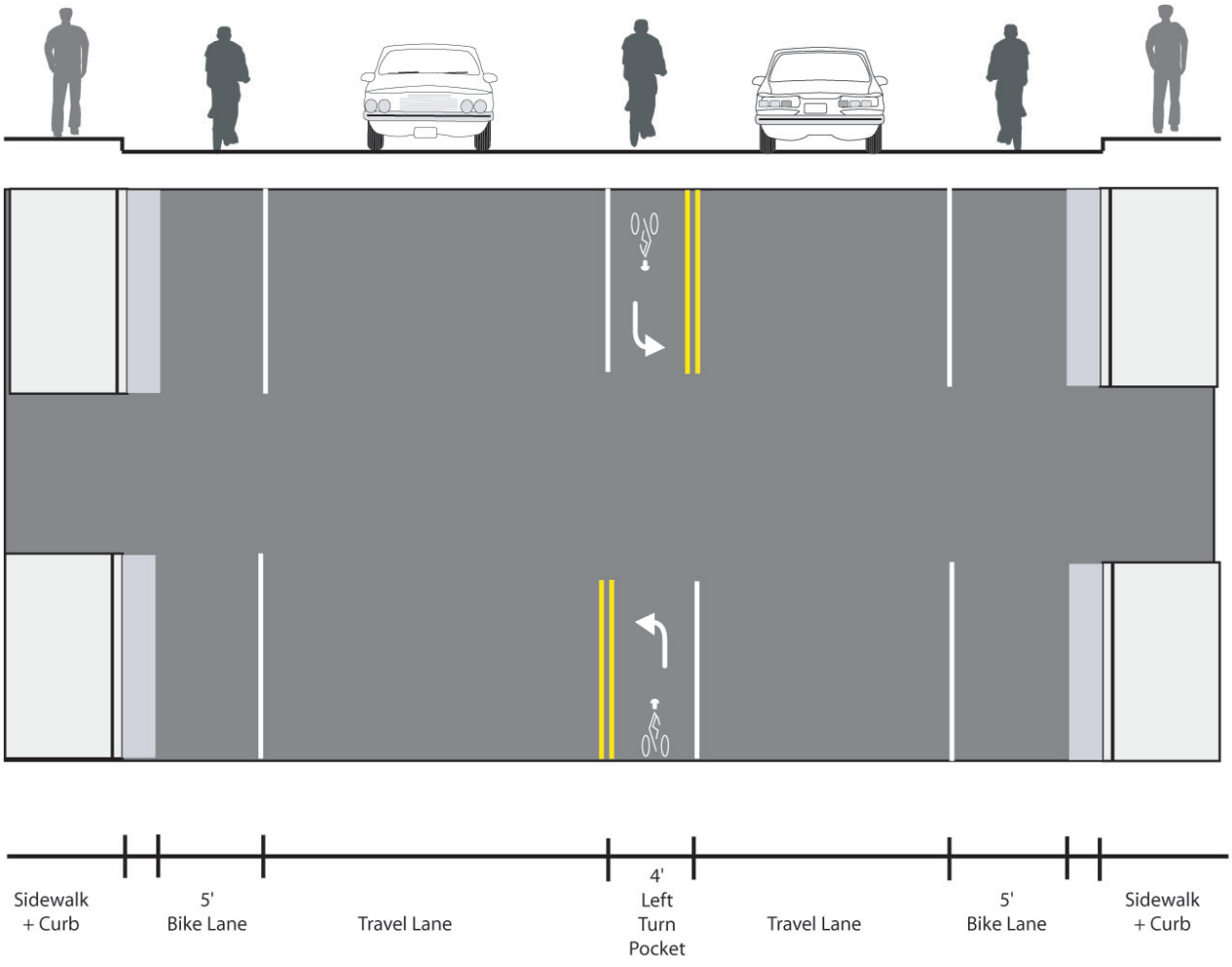
POTENTIAL APPLICATIONS

- Motor vehicle movement prohibited
- Low-speed roadway
- On lower volume arterials and collectors

NOTES

Proper signage must accompany this treatment

GRAPHIC



Bike Only Left Turn Pockets: Scenario 2

DESCRIPTION

This treatment shows a standard-width bicycle lane adjacent to the left-hand turn lane in order to reduce conflicts with turning vehicles. Requires a high volume of left-turning bicyclists and an established history of bicyclists on the route.

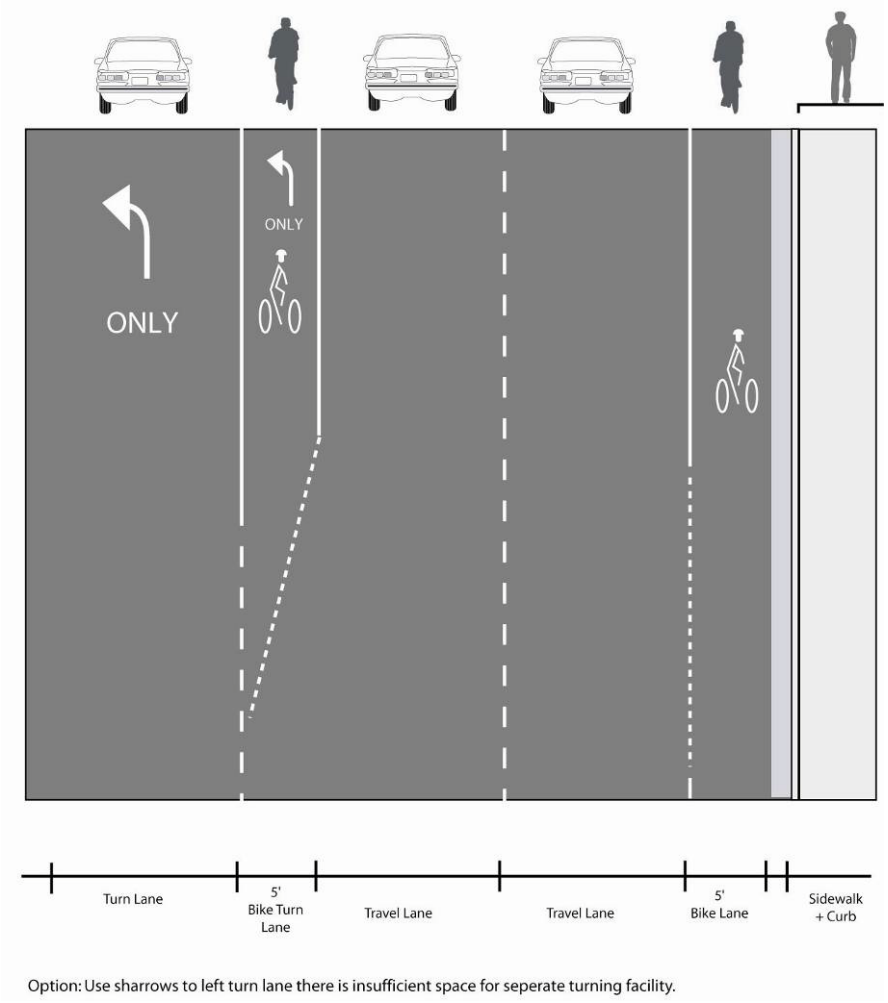
POTENTIAL APPLICATIONS

- One-way street
- Low-moderate speeds
- On lower volume arterials and collectors
- Heavy vehicular left-hand turning movements

NOTES

The Bicyclists Merging sign may be placed on the right side of the road before the left-side turn pocket.

GRAPHIC



Option: Use sharrows to left turn lane there is insufficient space for seperate turning facility.

Transit Stop Striping: Shared Bus/Bicycle Lane

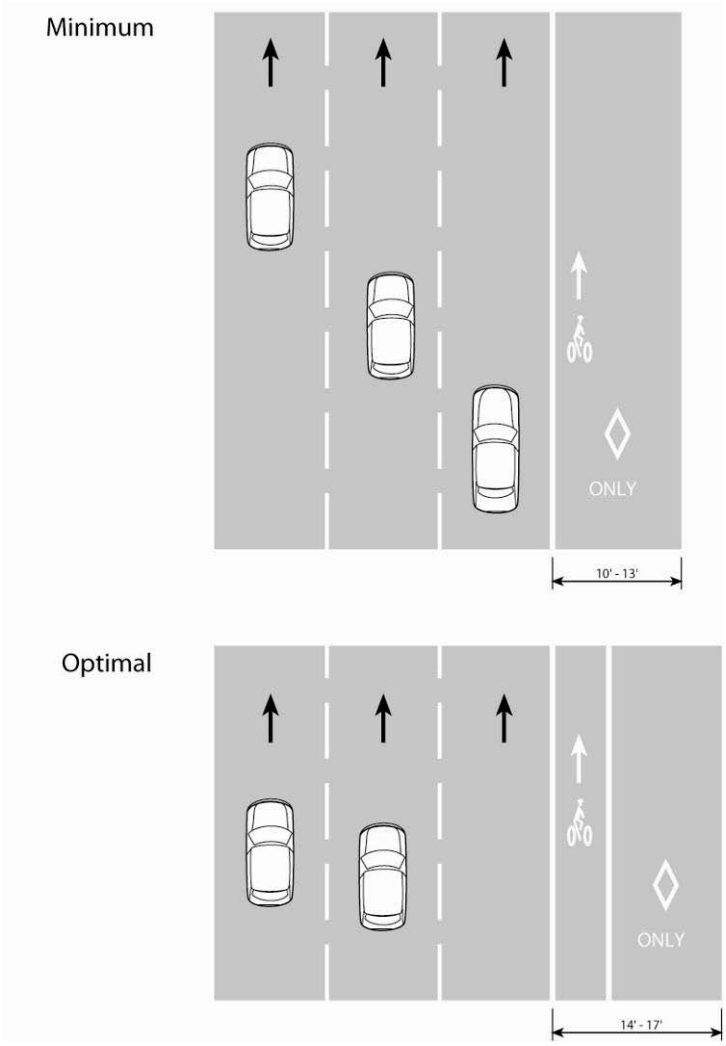
DESCRIPTION

The shared bus/bicycle lane should be used where width is available for a bus lane, but not a bus and bike lane. The dedicated lane attempts to reduce conflicts between bicyclists, buses, and automobiles. Various cities have experimented with different designs and there is currently no evidence of one design being more effective than the others.

APPLICATIONS

- On auto-congested streets, moderate or long bus headways
- Moderate bus headways during peak hour
- No reasonable alternative route

GRAPHIC



Transit Stop Striping: Far Side Bus Zone

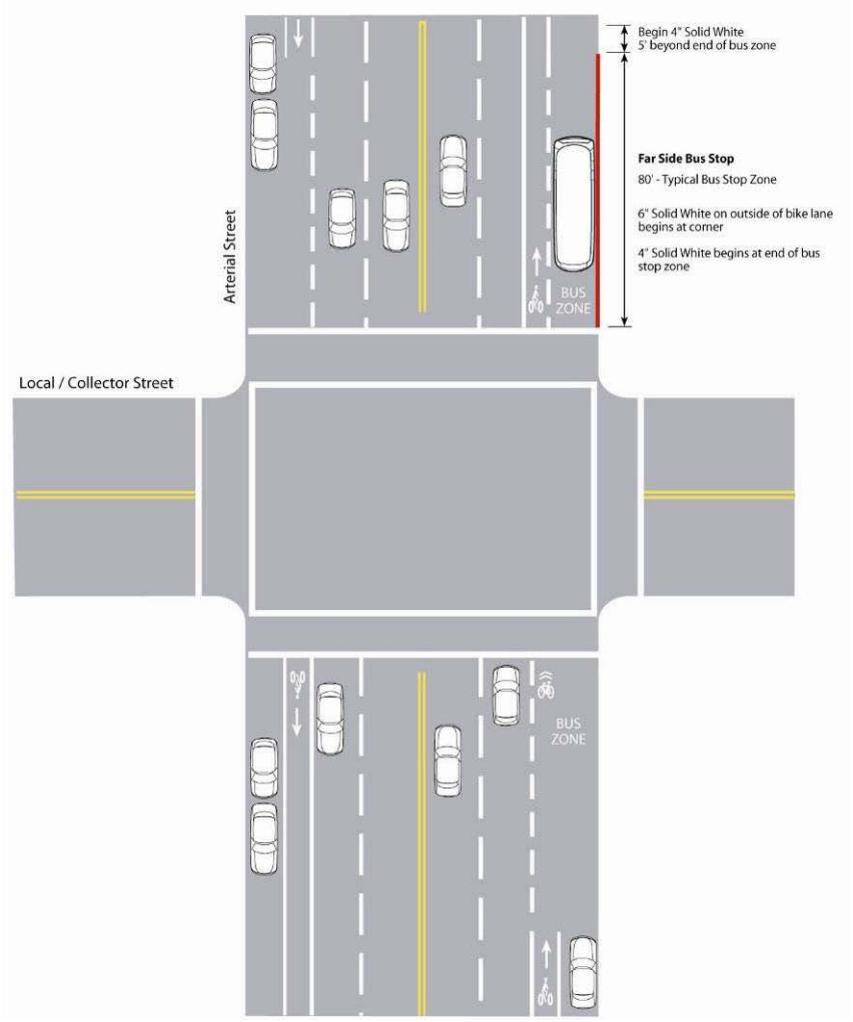
DESCRIPTION

This guideline details the striping of bike lanes adjacent to far-side bus zones. The bus zone will have a white striped box with BUS STOP marked inside. The bus zone box will serve as the inside demarcation between buses/bicycles. The outside bicycle lane stripe should be dashed from the crosswalk to end of the bus zone.

APPLICATIONS

When bus stops are located on the far side of intersections

GRAPHIC



Transit Stop Striping: Near Side Bus Zone

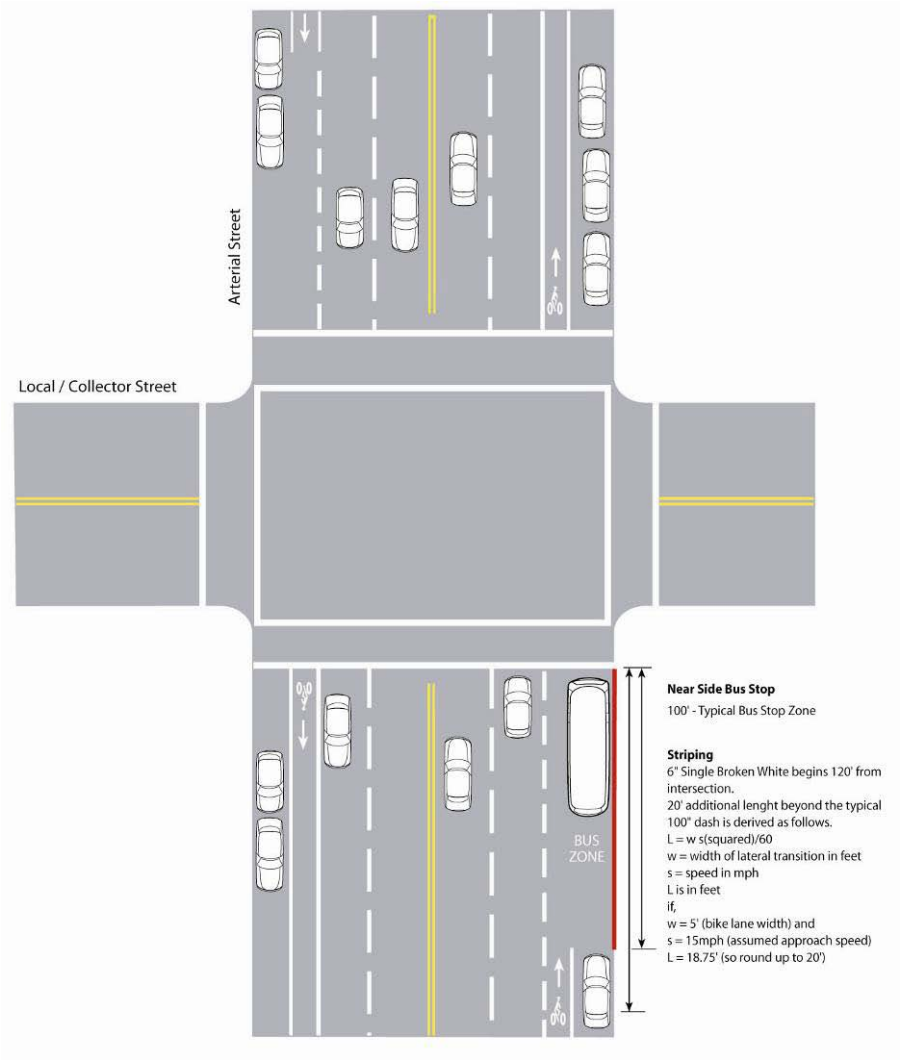
DESCRIPTION

This guideline details the striping of bike lanes adjacent to near-side bus zones. The solid right line of the approaching bike lane will stop 5 feet before the bus box and the left side of the bus box serves as the right bike lane stripe.

APPLICATIONS

When bus stops are located on the near side of intersections

GRAPHIC



Bicycle Streaming Lane (Bike Box)

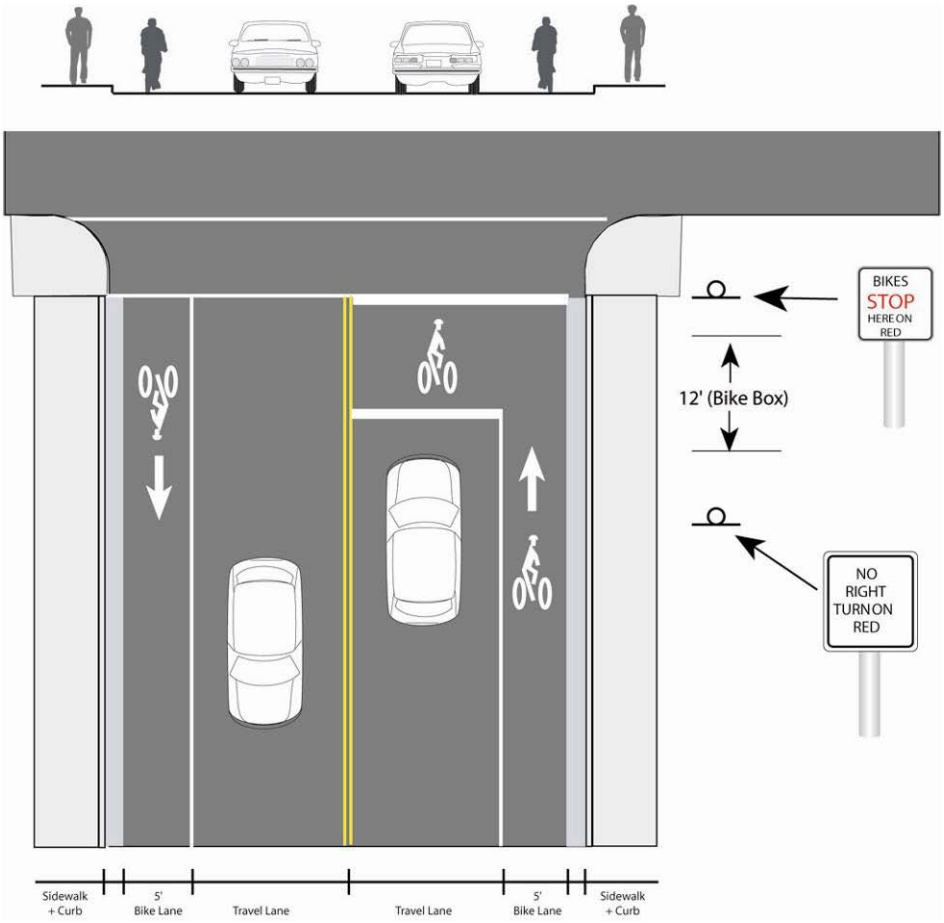
DESCRIPTION

This treatment includes a bicycle lane leading to a "box" situated behind the crosswalk and in front of the motor vehicle stop bar. The bike box allows bicyclists to move to the front of the queue and position themselves for turning movements. The treatment also improves the visibility of bicyclists. A bicycle marking is stenciled in the box and should be accompanied by signs communicating where bicycles and motor vehicles should stop.

APPLICATIONS

- At intersections with a high volume of bicycles and motor vehicles
- Where there are frequent turning conflicts and/or intersections with a high percentage of turning movements by both bicyclists and motorists
- No right turn on red
- Can be combined with a bicycle signal (optional)

GRAPHIC



Contra-flow Lane

DESCRIPTION

The contra-flow bicycle lane provides a striped lane going against the flow of automobile travel. The lanes should be separated by a double-yellow line.

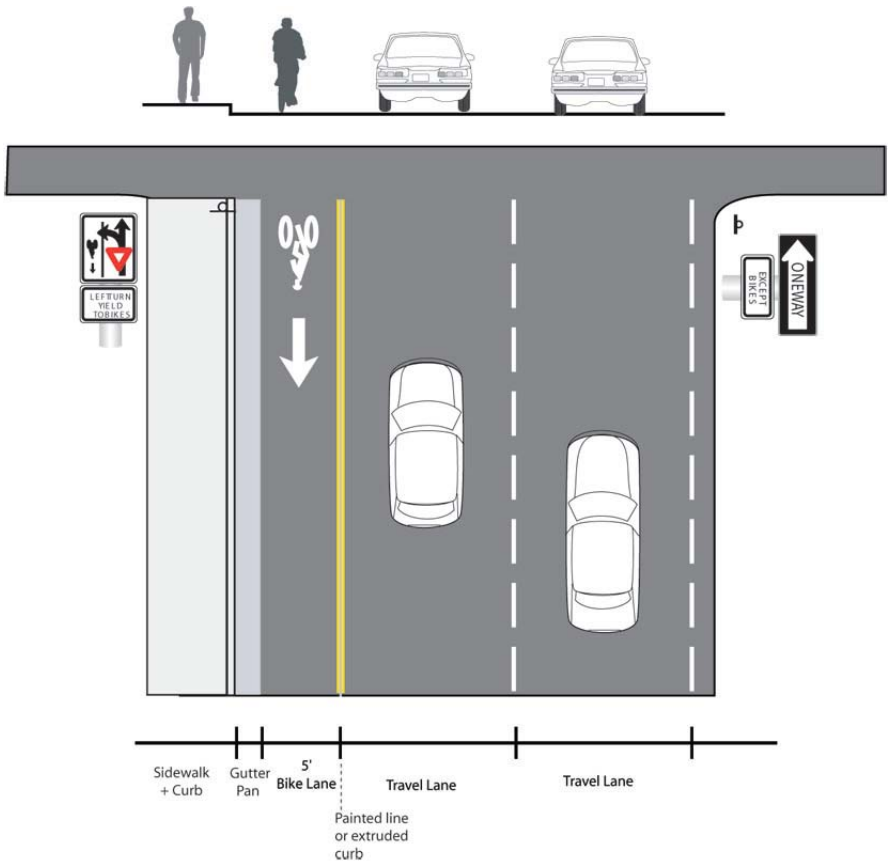
APPLICATIONS

- Provides direct access to key destination
- Improves safety
- Infrequent driveways on bike lane side
- Bicyclists can safely and conveniently re-enter traffic at either end
- Sufficient width to provide bike lane
- No parking on side of street with bike lane
- Existing high bicycle usage of street
- No other reasonable route for bicyclist

NOTES

This type of treatment should only be considered only after all other methods to accommodate bicycles along a corridor have been considered. This treatment is to be considered the exception and not the rule for one-way streets

GRAPHIC



Cycle Track

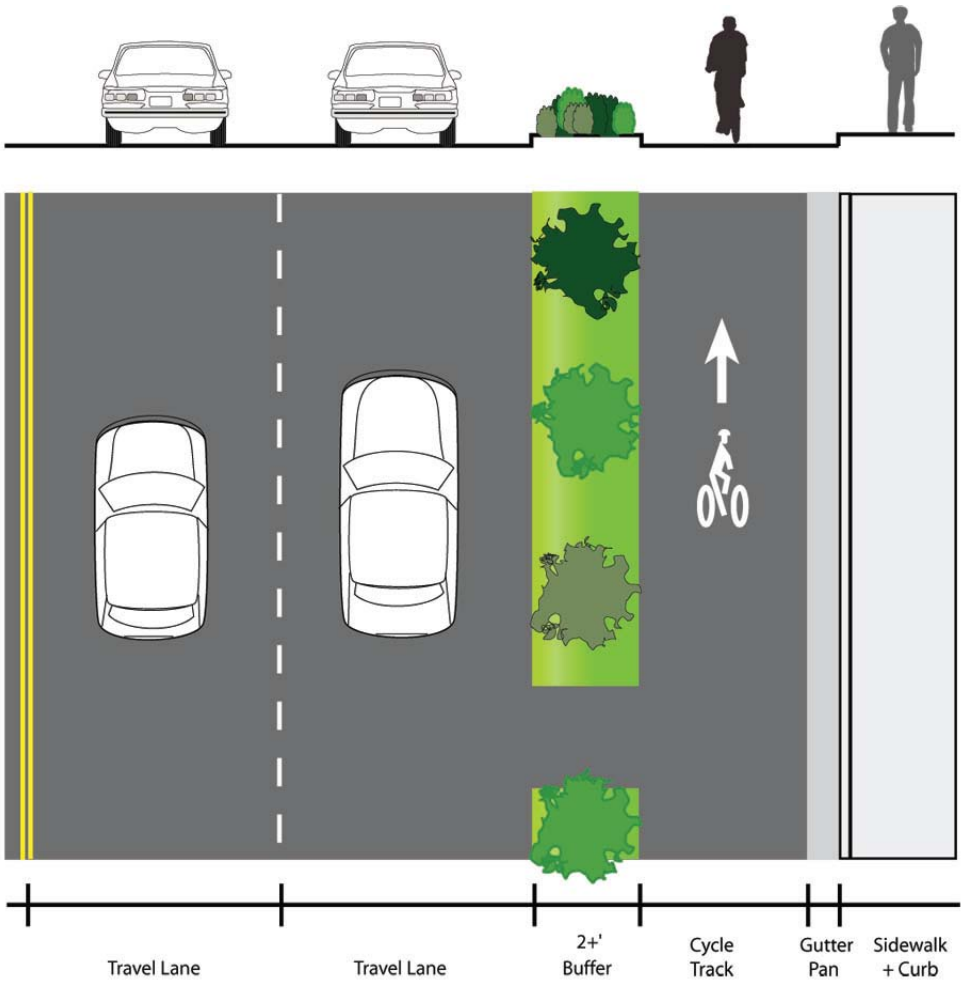
DESCRIPTION

The treatment provides a physical barrier between bikes and cars. It is useful along streets with minimal crossings. Installation of a one-way bike path should be undertaken only after careful consideration due to the problems of enforcing one-way operation and the difficulties in maintaining a path of restricted width.

APPLICATIONS

- When adequate pedestrian facilities exist so that the bike facility will not be considered a "multi-use path"
- Relatively few driveways or intersections
- Provides connection between two shared use path facilities
- Intersection transitions can be made
- Moderate to high speeds
- Regular street sweeping of track is possible
- There is an equivalent bikeway for the opposite direction that will be more attractive for cyclists in lieu of riding the wrong way on the track
- Where track does not interfere with transit stops

GRAPHIC



Loop Detectors

DESCRIPTION
Changing how intersections operate also can help make them more "friendly" to bicyclists. Improved signal timings for bicyclists, bicycle-activated loop detectors, and camera detection make it easier and safer for cyclists to cross intersections. Bicycle-activated loop detectors are installed within the roadway to allow the presence of a bicycle to trigger a change in the traffic signal. This allows the cyclist to stay within the lane of travel and avoid maneuvering to the side of the road to trigger a push button. One purpose of bicycle loops is to give cyclists extra green time before the light turns yellow to make it through the light. Current and future loops that are sensitive enough to detect bicycles should have pavement markings to instruct cyclists how to trip them.

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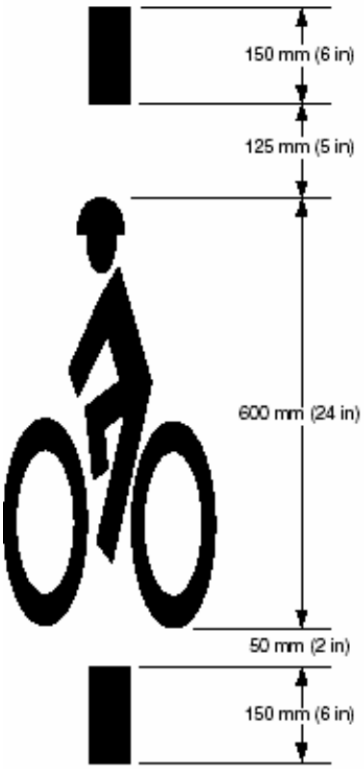
	

Bicycle Traffic Control Signals

DESCRIPTION

A bicycle signal is an electrically powered traffic control device that may only be used in combination with an existing traffic signal. Bicycle signals shall direct bicyclists to take specific actions and may be used to address an identified safety or operational problem involving bicycles. When bicycle traffic is controlled, only green, yellow and red lighted bicycle symbols shall be used to implement bicycle movement at a signalized intersection. The application of bicycle signals shall be implemented only at locations that meet Bicycle Signal Warrants. A separate signal phase for bicycle movement will be used. Alternative means of handling conflicts between bicycles and motor vehicles shall be considered first.

BICYCLE SIGNAL WARRANT

A bicycle signal may be considered for use only when the volume and collision or volume and geometric warrants have been met:

1. VOLUME. When W = B x V and W > 50,000 and B > 50.

Where:

W is the volume warrant.

B is the number of bicycles at the peak hour entering the intersection.

V is the number of vehicles at the peak hour entering the intersection.

B and V shall use the same peak hour.

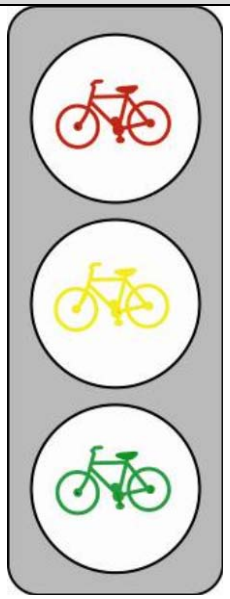
2. COLLISION. When 2 or more bicycle/vehicle collisions of types susceptible to correction by a bicycle signal have occurred over a 12-month period and the responsible ACHD official determines that a bicycle signal will reduce the number of collisions.

3. GEOMETRIC.

(a) Where a separate bicycle/multi use path intersects a roadway.

(b) At other locations to facilitate a bicycle movement that is not permitted for a motor vehicle

GRAPHIC



Source: Jonathan Maus

Standard Bicycle Lane Pavement Markings

DESCRIPTION

MUTCD GUIDELINES

Part 3 of the 2003 MUTCD covers roadway markings, while Part 9 of the 2003 MUTCD covers signs, pavement markings, and highway traffic signals specifically related to bicycle operation on both roadways and shared-use paths.

SECTION 3B.22 Preferential Lane Word and Symbol Markings

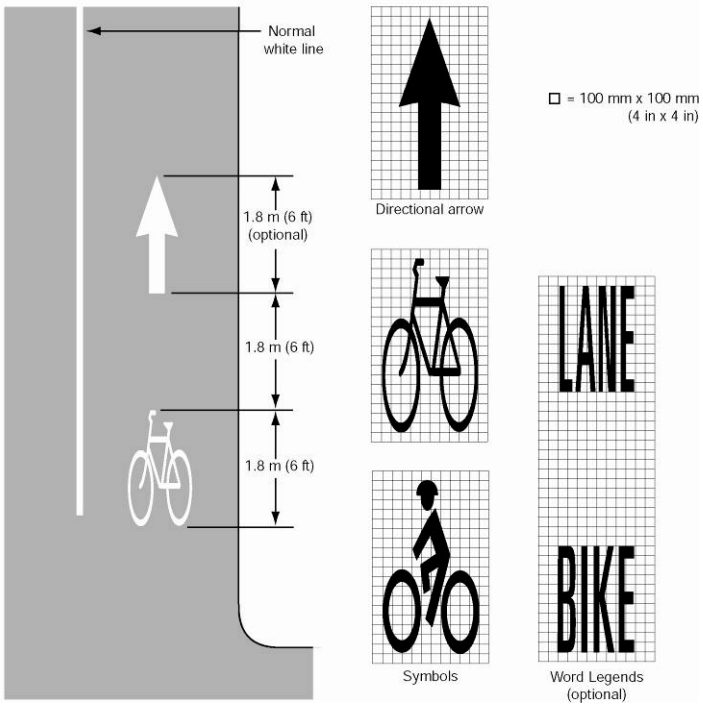
The Standard states, "When a lane is assigned full or part time to a particular class or classes of vehicles, preferential lane markings shall be used. Signs or signals shall be used with preferential lane word or symbol markings. All preferential lane word and symbol markings shall be white. All preferential lane word and symbol markings shall be positioned laterally in the center of the preferred-use lane." The standard continues by noting that, "Where a preferential lane use is established, the preferential lane shall be marked with one or more of the following symbol or word markings for the preferential lane use specified: …Bicycle lane – the preferential lane use marking for a bicycle lane shall consist of a bicycle symbol or the work marking BIKE LANE."

SECTION 9C. 04 Markings for Bike Lanes

The Guidance notes that. "Longitudinal pavement markings should be used to define bicycle lanes." The standard states that, "If used, the bicycle lane symbol marking shall be placed immediately after an intersection and at other locations as needed. The bicycle lane symbol marking shall be white. If the word or symbol pavement markings are used, Bicycle Lane signs shall also be used, but the signs need not be adjacent to every symbol to avoid overuse of the signs."

It is recommended that placing stencils after most intersections to alert motorists and cyclists of the exclusive nature of bicycle lanes. For long street segments with few intersections, the appropriate frequency of stencils is calculated by multiplying the street's design speed by 40. For instance, stencils should be placed every 1,400 feet on streets with a 35 MPH designated speed.

GRAPHIC



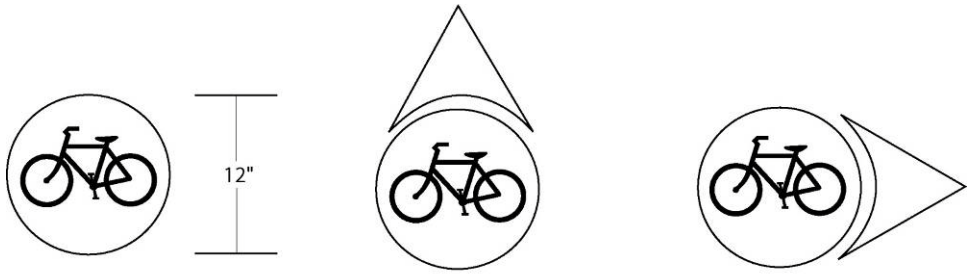
Supplementary Pavement Markings

DESCRIPTION

MUTCD GUIDELINES

The 2003 MUTCD currently provides no guidance on the use of directional pavement markings for bicyclists, although Section 9C.01 Function of Markings provides this general support, “Markings indicate the separation of the lanes for road users, assist the bicyclist by indicating assigned travel paths, indicate correct position for traffic control signal actuation, and provide advance information for turning and crossing maneuvers.” Directional pavement markings effectively lead cyclists along a bicycle boulevard (and reinforce cyclists that they are on a designated route). The markings take the form of small bicycle symbols (about one foot in diameter) placed every 600-800 feet along a linear corridor. When a bicycle boulevard travels along several streets (with multiple turns at intersections), additional markings accompanied by directional arrows are provided to guide cyclists through turns and other complex routing areas. Directional

GRAPHIC



Standard Regulatory Bicycle Lane Signage

DESCRIPTION

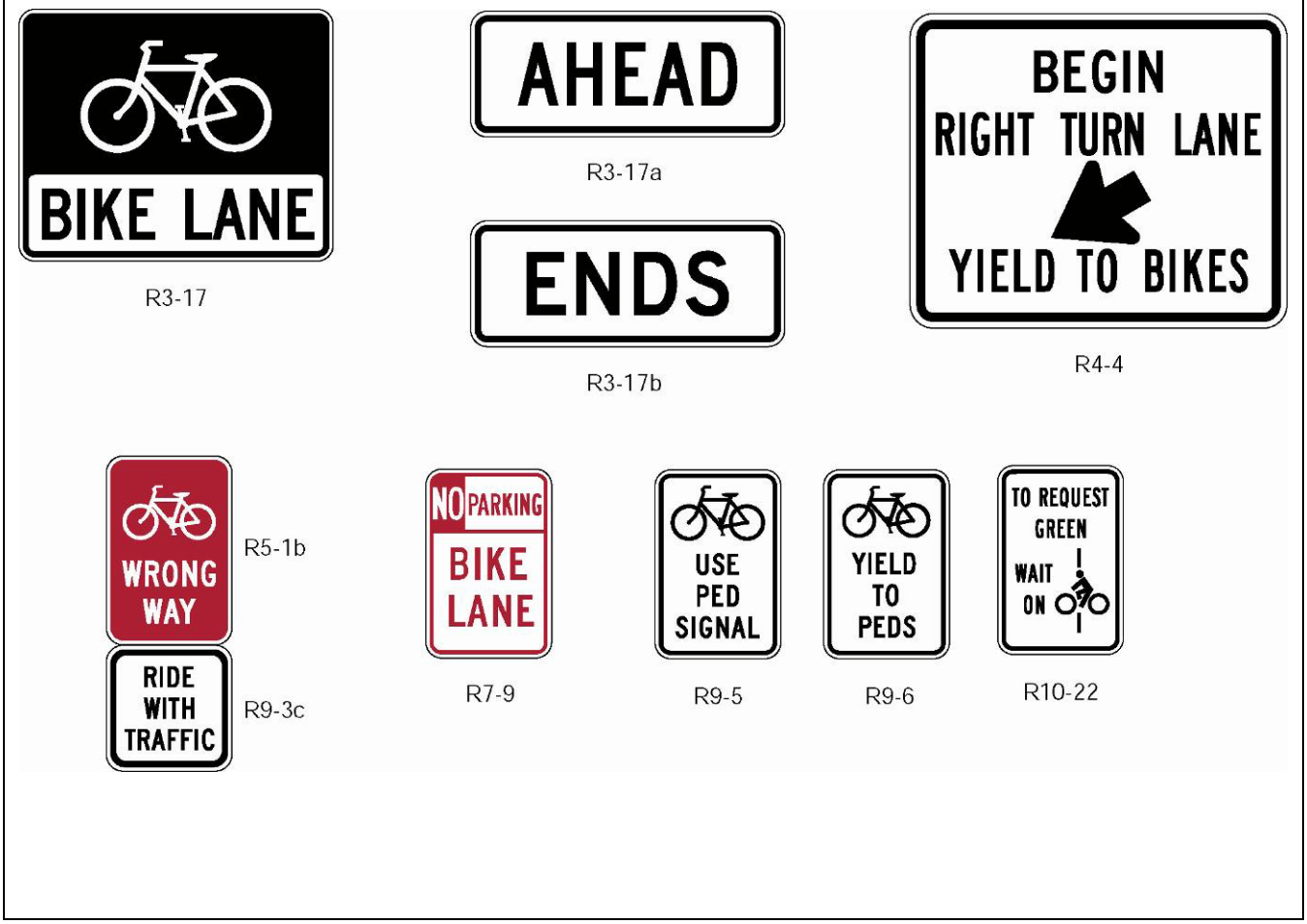
Part 3 of the 2003 MUTCD covers roadway markings, while Part 9 of the 2003 MUTCD covers signs, pavement markings, and highway traffic signals specifically related to bicycle operation on both roadways and shared-use paths.

SECTION 9B.04 Bicycle Lane Signs

The standard for Bicycle Lane Signs states, "The BIKE LANE (R3-17) sign shall be used only in conjunction with marked bicycle lanes as described in Section 9C.04, and shall be placed at periodic intervals along the bicycle lanes." Guidance notes that The AHEAD (R3-17a) sign should be mounted directly below a R3-17 sign in advance of the beginning of a marked bicycle lane. The ENDS (R3-17b) sign should be mounted directly below a R3-17 sign at the end of a marked bicycle lane.

Other regulatory signs described in Chapter 9 of the MUTCD are shown in the graphic below.

GRAPHIC



Standard Wayfinding / Signed Shared Bikeway Signage

DESCRIPTION

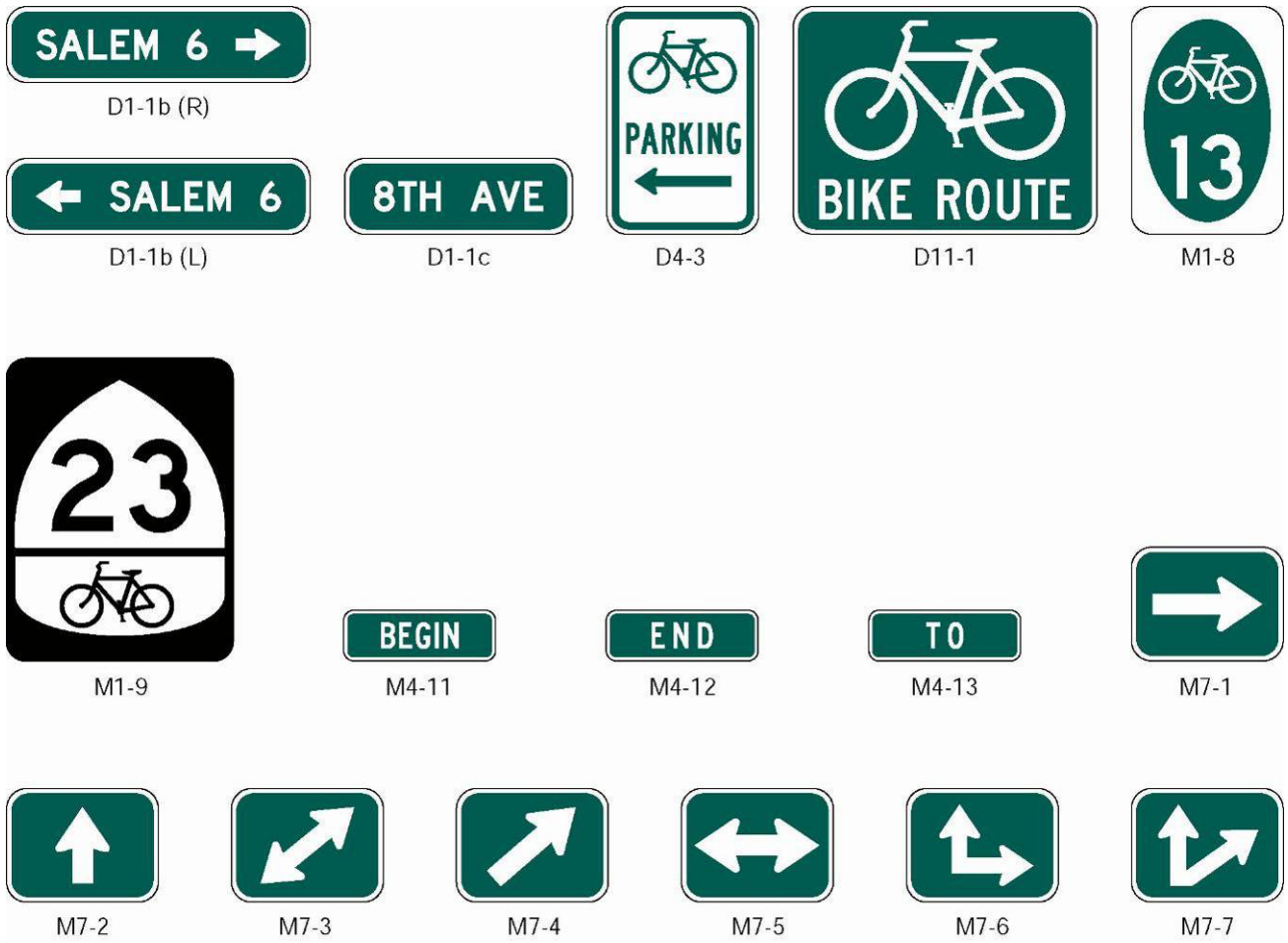
There are no Standards proscribed for wayfinding or guide signs in the 2003 MUTCD. However, there are several sections that do address wayfinding signage along bicycle routes.

Section 9B.19 Bicycle Route Guide Signs provides the following guidance, "If used, Bicycle Route Guide (D11-1) signs should be provided at decision points along designated bicycle routes, including signs to inform bicyclists of bicycle route direction changes and confirmation for route direction, distance, and destination. If used, Bicycle Route Guide signs should be repeated at regular intervals so that bicyclists entering from side streets will have an opportunity to know that they are on a bicycle route.

Section 9B.20 Bicycle Route Signs provides the Option of establishing a unique identification (route designation) for a State or local bicycle route using the Bicycle Route (M1-8) sign.

Section 9B.21 Destination Arrow and Supplemental Plaque Signs for Bicycle Route Signs provides the Option of mounting Destination (D1-1b and D1-1c) signs or directional arrow signs (M7-1 through M7-7) below the Bicycle Route Guide sign to furnish additional information.

GRAPHIC



Standard Warning Signs for Bicycle Facilities

DESCRIPTION

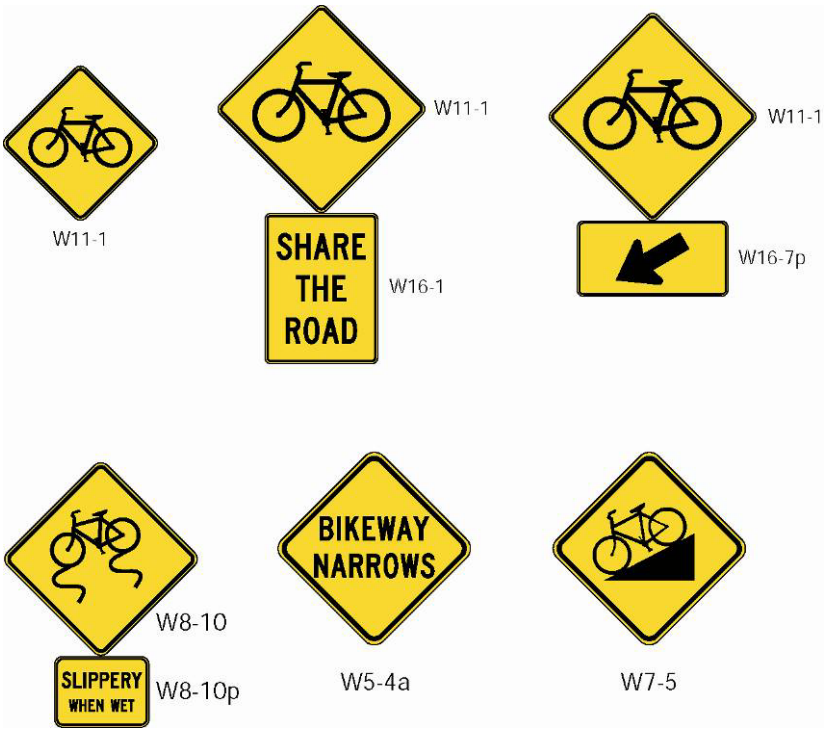
Part 3 of the 2003 MUTCD covers roadway markings, while Part 9 of the 2003 MUTCD covers signs, pavement markings, and highway traffic signals specifically related to bicycle operation on both roadways and shared-use paths.

Section 9B.17 Bicycle Warning Sign notes that a Bicycle Warning sign (W11-1) alerts the road user to unexpected entries into the roadway by bicyclists and other crossing activities that might cause conflicts. As an option, a supplemental plaque with the legend AHEAD or XXX FEET may be used with the Bicycle Warning sign.

Section 9B.18 Other Bicycle Warning Signs provides the Option for the installation of additional warning signs such as BIKEWAY NARROWS on bicycle facilities to warn bicyclists of conditions not readily apparent. In addition, in situations where there is a need to warn motorists to watch for bicyclists traveling along the highway, the SHARE THE ROAD (W16-1) plaque may be used in conjunction with the W11-1.

A variety of warning signs from the MUTCD are shown in the graphic below.

GRAPHIC



Supplementary Bicycle Facility Signage

DESCRIPTION
The following sign designs may be used in connection with the treatments listed in this guide or at locations with standard bike facilities that would benefit from their installation. This listing is meant to supplement the signs listed in the Manual of Uniform Traffic Control Devices (MUTCD). While signs help to inform behavior, it is important to select signage carefully. Overuse of signage can lead to visual clutter which in turn, lessens the effectiveness of the signs and decreases the aesthetic quality of the street. The signs shown below may require further approval before use by ACHD.

GRAPHIC		
		
		

Appendix J. Cost Calculations

Table 35. Five-Foot-Wide Shoulder / Bike Lane Costs

ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	ITEM TOTAL
6" MINUS UNCRUSHED AGGREGATE BASE	TON	1769	$10.00	$17,688
CRUSHED AGGREGATE FOR BASE TYPE I	TON	858	$20.00	$17,160
PLANT MIX PAVEMENT	TON	479	$65.00	$31,103
EXCAVATION	CY	1711	$10.00	$17,111
INSTALL ROADSIDE SIGN	EA	18	$100.00	$1,760
STRIPING DETAIL #15 (PAINT)	LF	5280	$0.30	$1,584
PAVEMENT MARKINGS (THERMOPLASTIC)	SF	194	$7.00	$1,355
SWPPP	EST	2%	LUMP SUM	$1,755
REMOVALS	EST	5%	LUMP SUM	$4,476
TRAFFIC CONTROL	EST	10%	LUMP SUM	$9,399
MISCELLANEOUS	EST	5%	LUMP SUM	$5,170
CONTINGENCY	EST	20%	LUMP SUM	$21,712
MOBILIZATION	EST	5%	LUMP SUM	$6,514
			TOTAL	**$136,786**

Table 36. Right-of-Way Acquisition Costs

ROW ACQUISITION	COST (SQ.FOOT)
RESIDENTIAL (IMPROVED LOTS)	$6
OFFICE (IMPROVED)	$10
MIXED USE	$5
COMMERICAL	$16

Table 37. Bike Boulevards/ Signed Shared Roadway Costs

ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY PER MILE	UNIT PRICE	ITEM TOTAL
signing	EA	18	$100.00	$1,800
pavement marking (thermoplastic)	SF	24	$7.00	$168
MISCELLANEOUS	EST	5%	LUMP SUM	$98
CONTINGENCY	EST	20%	LUMP SUM	$413
MOBILIZATION	EST	5%	LUMP SUM	$124
			TOTAL	$2,604

Table 38. Crossing Costs

TRAFFIC CONTROL	LUMP SUM
Type 1 Crossing	$5,000
Type 1+ Crossing	$15,000
Type 2 Crossing	$10,000
Type 3 Crossing	$100,000

Table 39 Short-Term Bike Lane Project Costs

Project	Extent (From - To)	Cost Est.	ROW Acq.
East-West Lanes		**$150,000**	
Amity	Federal Way - Surprise Way	$261,000	$367,488
Bannock	6th - Warm Springs	$99,000	$334,224
Boise	Holcomb Rd - Eckert Rd	$177,000	$373,824
E Deer Flat	Linder - Kuna Meridian	$150,000	$316,800
E Pine Ave	Meridian - Locust Grove	$130,500	$344,520
E Pine Ave	Nola - Eagle	$127,500	$341,880
E Ustick	Summerfield Way - Leslie Way	FYWP (PD)	N/A
E Ustick	Duane Dr/Way - Campton Way	$54,000	$114,048
Gowen	Orchard - RR bridge	$564,000	$459,360
Hill Rd Extension	Horseshoe Bend Rd - State St	FYWP (2010)	N/A
Linden	Geckeler - Boise	$60,000	$293,040
McMillan	Star - Locust Grove	$885,000	$1,724,976
River St	Americana - Capitol	$114,000	$341,088
W Deer Flat	Ten Mile - Linder	$150,000	$316,800
W Executive Dr	Parkdale - Cloverdale	$58,500	$332,640
W Ustick	Tylerson Ave - Five Mile	FYWP (PD)	N/A
W/E Ustick	Meridian - Locust Grove	FYWP (PD)	N/A
North-South Lanes			
6th	Fort - Myrtle	$113,850	$675,840
9th	Fort - Main	$76,500	$422,400
27th	Fairview - Ellis	FYWP (2012)	N/A
30th St Extension	State - Main	FYWP (2012)	N/A
Cloverdale	Franklin - Fairview	FYWP (2012)	N/A
Cloverdale	Fairview - Ustick	FYWP (2011)	N/A
Cloverdale	Ustick - McMillan	$150,000	$316,800
Cole	McGlochlin - Victory	$93,000	$196,416
Edgewood	Hill - State	$90,000	$348,480
Five Mile	Franklin - Fairview	FYWP (2011)	N/A
Five Mile	Fairview - Ustick	FYWP (PD)	N/A
Latah	Nez Pierce - Overland	$25,500	$44,880
Main/Meridian Couplet II	Franklin - Cherry/Fairview	FYWP (2012)	N/A
Maple Grove	Overland - Franklin	$150,000	$633,600
Orchard	Victory - Gowen	$204,000	$369,600
Orchard	Malad - Victory	$99,180	$105,600
Technology	Hwy 21 - Columbia	$208,800	$211,200
Ten Mile	Cherry - Ustick	FYWP (2010)	N/A
Ten Mile	Franklin - Cherry	FYWP (2008)	N/A
Vista	Airport - Sunrise Rim	FYWP (2009/10)	N/A
Walnut	Warm Springs - Park Center/Greenbelt	$69,000	$132,000
Woodbridge/ Bowstring/ Magic View	Locust Grove - Eagle	$159,210	$380,160
TOTAL SHORT-TERM BIKE LANE PROJECT COSTS		**$4,269,540**	**$9,768,000**
		$14,037,540	

Table 40. Short-Term Signed-Shared Route Project Costs

Project	Extent (From - To)	Cost Est.
East-West Routes		
Adams	Greenbelt - Chinden	$6,509
Alpine	Orchard - Peasley	$3,385
Anatole/Powell Creek/Root Creek	Black Sand - Goddard Creek	$625
Ashby	McKinley Park - Meridian	$1,927
Beacon Light	Pollard - Hwy 55	$19,267
Bower/East End	Meridian - Franklin	$1,198
Camas/ Hackamore/ Sandpiper	Cloverdale - Maple Grove	$6,249
Canal	Shoshone - Vista	$651
Cassia	Roosevelt – Vista	$2,604
Catalpa	Collister – Hill	$2,604
Claire/ Baldwin/ Addeson/ Cougar Creek/ Challis	West 3rd – Wingate	$5,936
Fort	16th – 5th/Fort	$1,823
Green Meadow/Sharon/Clover Meadow	Planned park – Cloverdale	$1,562
Crawford/Irving	Five Mile – Milwaukee	$4,426
Dason/Skycrest	Five Mile – Mitchell	$1,562
Floating Feather	Star – Pollard	$2,604
Floating Feather	Pollard – Preakness	$13,279
Foxboro/Pembrook	Wainwright – Milwaukee	$8,852
Gambrell/Carswell/ Blake	Tyborne – Star	$2,083
Granger/Northview	Five Mile – Milwaukee	$4,426
Highland/Mallard	Division – Parkcenter	$1,588
Holcomb	Glouchester - Boise	$1,349
Irene	32nd – 15th	$2,864
James Ct/Meadow Wood	Meridian – Hickory	$2,343
Kay/4th	Deer Flat – Swan Falls	$3,124
Kuna	Swan Falls – Eagle	$26,557
Kuna Mora	Eagle – Ada County	$9,634
Maple/Camellia	Linder – Western	$1,458
Monument/Leighfield	Linder – Locust Grove	$1,823
Nez Perce	Roosevelt – Vista	$2,604
Ottawa/Doberman	Locust Grove – Maple Grove	$13,018
Producer/Valentino/Ironstone/ Joshua Tree	Fox Run – Red Horse	$2,109
Ridgeside/Chateau	Seasons Park – Glennfield	$8,852
Rockbury/Shoup	Winthrop – Maple Grove	$8,071
Rose Hill	Roosevelt – Vista	$2,604
Rossi/ Denver/ Highland	Lincoln – Division	$2,343
Spaulding/ Hillcrest/ Targee	Phillippi – Shoshone	$4,166
State	Hwy 44 – Hwy 44	$5,728
Strauss/Hickory	Locust Grove – Five Mile	$9,373
Sunset	Taft ES – 20th	$3,124
Taft	State – 28th	$3,385
Torana/Station/Annata/Piazza	Ten Mile – Copper Cloud	$1,536
Watertower/St Lukes	Main – Eagle	$5,728

Project	Extent (From - To)	Cost Est.
North-South Routes		
1st	Main – State	$677
28th	State – Irene	$625
32nd	State – Taft	$2,239
36th	Stockton - Greenbelt	$833
45th	Stockton – Greenbelt	$1,302
Apple	Boise – ParkCenter	$833
Arney/Riverside/Savannah/Plantation	State – Glenwood	$1,614
Bennington/McCarthy/Rothmans/ Ice Springs/Camas Creek	McMillan – Chinden	$3,150
Bogart/Cattail	Hill – Riverside	$3,905
Boise	Protest – Rossi	$1,953
Bowmont/ Park Meadow	Coolwater – Chinden	$9,634
Capitol/1	Vista – Bannock	$3,385
Center/Carswell	State – Blake	$1,458
Coffey	Marigold – Sorrento	$3,596
Crescent Rim	Capitol – Peasley	$6,770
Eagle	Floating Feather – Beacon Light	$2,604
Eagle	Kuna - Kuna Mora	$5,103
Fox Run/existing path	McMillan - Chinden	$2,395
Gold Bar/Millenium	Victory - Overland	$3,567
Healey/Eckert	Amity - Boise River	$859
Hickory/Dixon	Pine - Leighfield	$5,728
Horseshoe Bend	Floating Feather - State	$4,296
Horseshoe Bend/Heceta Bend	State - Ulmer Ln	$2,031
Interlachen/Turnberry/Naomi	Cherry - Ustick	$3,411
Leadville	Linden - Boise	$1,875
Leann/Quarrystone	Chateau - Ustick	$1,406
Legacy Woods/Red Horse	Tradition - McMillan	$1,562
Manitou/Howard	University - Broadway	$3,744
Maxie Way/ Goodard Creek	Chateau - Tignes	$6,770
Meadowland/Lena	President - De Meyer	$10,675
Mirage/Morello/Todd	Cherry - Ten Mile	$1,190
Mountainview	Cole - Ustick	$2,604
Observation/East 5th Way	Victory - Overland	$3,150
ParkCenter	Beacon - Bown Way	$7,004
Phillippi/Malad	Overland - Orchard	$2,604
Pleasant Valley	Gowen - Kuna Mora	$17,653
Plummer Rd	State - Floating Feather	$2,604
Pollard	Floating Feather - Beacon Light	$2,656
Red Horse/Saguaro Hills	McMillan - Chinden	$3,059
Shoshone/Peasley/ Crescent Rim	Hillcrest - Americana	$7,030
Towerbridge/ Windchime	Coppercloud - Linder	$2,890
Stockton	45th - 36th	$2,838
University/Lincoln	Joyce - Boise	$1,250
Valley Heights	Hollandale - Raul	$14,190
Venable/Rhodes/Great Basin/Summit/Ashby	Ustick - McKinley Park	$2,882

Project	Extent (From - To)	Cost Est.
TOTAL SHORT-TERM SIGNED-SHARED ROUTE PROJECT COSTS		**$377,164**

Table 41. Short-Term Bicycle Boulevard Project Costs

Project	Extent (From - To)	Cost Est.
	East-West Routes	$45,000
Grove	Capitol - 3rd	$729
Washington	16th - Fort	$2,526
	North-South Routes	
3rd	Julia Davis Park - Fort	$1,641
8th	Greenbelt - Hays	$2,161
TOAL SHORT-TERM BICYCLE BOULEVARD PROJECT COSTS:		**$18,020**

Table 42. Mid-Term Bike Lane Project Costs

Project	Extent (From - To)	Cost Est.	ROW Acq.
East-West Lanes		$150,000	
Emerald	Cole - Curtis	$150,000	$458,040
Emerald	Curtis - Roosevelt	$150,000	$616,440
Emerald	Roosevelt - Americana	$36,000	$267,696
McMillan	Locust Grove - Eagle	$150,000	$316,800
Overland	Cloverdale - Five Mile	$150,000	$396,000
Overland	Five Mile - Maple Grove	$150,000	$448,800
Overland	Maple Grove - Entertainment	$99,000	$470,448
Overland	Entertainment - Curtis	$205,500	$1,157,376
Overland	Curtis - Roosevelt	$150,000	$748,440
Overland	Roosevelt - Shoshone	$109,500	$616,704
Overland	Vista - Federal Way	$84,000	$348,480
Palermo	Como - Firenze	$28,500	$50,160
ParkCenter Bridge	ParkCenter - Warm Springs	$43,500	$76,560
Pine	Ten Mile - Linder	$150,000	$316,800
Ustick	Ten Mile - Linder	$150,000	$459,360
Ustick	Linder - McMillan	$150,000	$316,800
Warm Springs	Pleasant Valley – I-84	$1,260,000	N/A
North-South Routes			
11st	Myrtle - Washington	$79,500	$447,744
23rd	State - Main	$69,000	$422,400
Broadway	I-84 - Commerce/Enterprise	$30,000	$52,800
Five Mile	Overland - Franklin	$150,000	$316,800
Linder	Main - Trophy	$145,500	$307,296
Locust Grove	Summerheights - McMillan	$130,500	$275,616
Locust Grove	McMillan - Chinden	$150,000	$316,800
Maple Grove	Fairview - Ustick	$150,000	$316,800
Maple Grove	Ustick - Goddard	$112,500	$237,600
Orchard	Emerald - Bond	$88,500	$498,432
Roosevelt	Pasadena - Overland	$154,500	$392,832
Roosevelt	Overland - Franklin	$112,500	$237,600
Roosevelt	Franklin - Emerald	$108,000	$228,096
Ten Mile	Boise - Deer Flat	$73,500	$155,232
ALL MEDIUM-TERM BIKE LANE PROJECTS		**$4,770,000**	**$11,270,952**
		$16,040,952	

Table 43. Long-Term Bike Lane Project Costs

Project	Extent (From – To)	Cost Est.	ROW Acq.
East-West Routes		$150,000	
Amity	Meridian County line – Rawhide	$420,000	$887,040
Amity	Meridian – Meridian County Line	$405,000	$855,360
Beacon	Boise – Park Center	$135,000	$380,160
Beacon Light	Pollard – Hwy 55	$1,110,000	$2,344,320
Broad	11th/Myrtle – 2nd	$90,000	$443,520
Cassia	Boarah H.S. – Phillippi	$60,000	$126,720
Cherry	Ten Mile – Linder	$705,000	$3,672,768
Chinden	Marcliffe Ave – 45th	$465,000	$2,618,880
Deer Flat	Ten Mile – Kuna Meridian	$300,000	$633,600
Fairview	Orchard – DuPont	$720,000	$4,055,040
Floating Feather	Emmett – Eagle M.S.	$705,000	$1,488,960
Floating Feather/Pollard	Plummer – Emmett	$150,000	$316,800
Franklin	Roosevelt – Linder	$1,515,000	$7,465,920
Gowen	Business – Federal	$105,000	$459,360
Hill Rd Extension	Hwy 55 – Horseshoe Bend	$45,000	$95,040
Holcomb/Eastgate	Amity – Mimosa	$135,000	$285,120
Kootenai	Vista – Phillippi	$150,000	$340,560
Kuna/Avalon	Black Cat – Main	$270,000	$525,888
Jefferson/Ave C	1st Ave – Warm Springs	$46,500	$81,840
Lake Hazel	Meridian – county line	$405,000	$459,360
Lake Hazel	Cloverdale – Maple Grove	$345,000	$1,044,384
Myrtle	Capitol – Broadway	$105,000	$316,800
Overland	Ten Mile – Linder	$150,000	$316,800
State	Center – Plummer	$180,000	$709,632
Ustick	Star – Meridian	$405,000	$855,360
Victory	Meridian – Cole	$885,000	$1,869,120
North-South Routes			$0
Apple	Boise – Park Center	$45,000	$213,840
Avenue B	Warm Springs - Jefferson	$21,000	$44,352
Bogus Basin	Curling - Torridon	$94,500	$158,400
Boise	Protest - Capitol	$90,000	$190,080
Broadway	Warm Springs - I-84	$480,000	$2,217,600
Broadway/B St	Front - Fort	$24,000	$135,168
Cloverdale	Overland - Franklin	$150,000	$316,800
Cloverdale	Kuna Mora - Overland	$1,350,000	$459,360
Collister	State - Hill	$165,000	$348,480
Curtis	Franklin - Emerald	$90,000	$459,360
Curtis	Emerald - Fairview	$75,000	$422,400
Eagle	Floating Feather - Beacon Light	$150,000	$316,800
Federal Way	Highway 21 - Micron	$195,000	$264,000
Five Mile	Lake Hazel - Victory	$300,000	$633,600
Glenwood	Riverside - Strawberry Glen	$45,000	$253,440
Grove	Main - 16th	$15,000	$84,480

Project	Extent (From – To)	Cost Est.	ROW Acq.
Hill	Gary - Castle	$285,000	$601,920
Horseshoe Bend	Hill - Floating Feather	$150,000	$316,800
Linder	Deer Flat - Beacon Light	$900,000	$1,900,800
Locust Grove	Amity - Overland	$300,000	$633,600
Main	Franklin - Pine	$165,000	$929,280
Main/Meridian	Fairview - Franklin	$225,000	$459,360
Maple Grove	Lake Hazel - Victory	$300,000	$633,600
Meridian	Johnson - Overland	$75,000	$422,400
Meridian	Cherry - McMillan	$300,000	$633,600
Owyhee	Elder - Overland	$180,000	$380,160
Owyhee	Rose Hill - Alpine	$45,000	$95,040
Pierce Park	Hill - Castle	$120,000	$253,440
Roosevelt	Overland - Franklin	$375,000	$792,000
Star	Chinden - State	$315,000	$887,040
Star	Ustick - Chinden	$300,000	$459,360
State	Lemp - Glenwood	$555,000	$422,400
Swan Falls/ Linder	Mora Canal - Boise	$255,000	$694,320
Ten Mile	Overland - Franklin	$150,000	$316,800
Vista	Sunrise Rim - Rose Hill	$285,000	$1,203,840
Warm Springs	East Parkcenter Bridge - Highway 21	$915,000	$1,610,400
ALL LONG-TERM BIKE LANE PROJECT COSTS		**$19,635,000**	**$51,622,560**
			$71,257,560

Table 44. Mid- and Long-Term Signed Shared Roadway Project Costs

Project	Extent (From - To)	Cost Est.
East-West Routes		
36th	Clay - Greenbelt	$521
Anton/ Leigh Field	Meridian - Leigh Field	$5,207
Arch/Sharon/Spearfish	Grenadier - Granadier	$1,041
Avalon/Kuna	Swan Falls - County line	$3,124
Baron/Saxton	Gary - Peirce Park	$1,718
BottleBrush/Duane/ Tweedbrook	Tahiti - Latinleaf	$2,604
Chateau/ Bernice	Locust grove - River valley Elem	$2,604
Hatchery/ Eagle Island Park	Linder - Linder	$3,124
Savannah/Plantation	Glenwood - State	$1,536
Utahna/Caswell/Gillis/Tobi	Horseshoe Bend - Peirce Park	$7,394
Wainwright	Eagle - Conley	$1,416
Wylie	James - Green Belt	$338
North-South Routes		
Arrowwood/Brown Bear	Blue Heron - Ustick	$1,692
Collister	Hill - Outlook	$521
Cosmo/ Achillea/ Alcove/ Gloxinia/ Delphinium	State - State	$1,562
Dixon/ Nakano/ Troxel/Hickory/Wingate	Leighfield - Pine	$5,988
La Grange/Fruithill/Pyramid Peak/Atwell Grove	Lake Hazel - Valley	$2,812
Linda Vista	McMillan - Edna	$1,302
Records/ N Harding Way	Fairview - Pine	$2,083
Sorrento/ Christine	Mountain View - Goddard	$1,041
Strawberry Glenn	Riverside - Glenwood	$781
Sumpter/ Peppermint	Overland - Coleen	$2,083
Swan Falls	Stagecoach - 3rd	$1,041
Venture	Fairview - future park	$521
Wright	Orchard - Vista	$3,905
TOTAL MEDIUM- AND LONG-TERM PROJECTS		$51,537

Appendix K. Funding Strategies

Potential Funding Sources

Federal Funding Sources

Federal funding is primarily distributed through a number of different programs established by the Federal Transportation Act. The latest federal transportation act, The Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU) was enacted August 2005, as Public Law 109-59. SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009.

Federal funding is administered through the state (Idaho Transportation Department, or ITD) and regional planning agencies. Most, but not all, of these funding programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs and projects must relate to the surface transportation system.

SAFETEA-LU

There are a number of programs identified within SAFETEA-LU that provide for the funding of bicycle and pedestrian projects. The specific types of eligible projects and required funding match by the local jurisdiction are discussed further below.

National Highway System (NHS)

This program funds improvements to rural and urban roads that are part of the National Highway System (NHS), including the interstate system. Bicycle and pedestrian facilities within NHS corridors are eligible activities for NHS funds.

Surface Transportation Program (STP)

The Surface Transportation Program (STP) provides States with flexible funds which may be used for a wide variety of projects on any Federal-aid Highway including the NHS, bridges on any public road, and transit facilities.

Bicycle and pedestrian improvements are eligible activities under the STP. This covers a wide variety of projects such as on-road facilities, off-road trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. SAFETEA-LU also specifically clarifies that the modification of sidewalks to comply with the requirements of the Americans with Disabilities Act is an eligible activity.

As an exception to the general rule described above, STP-funded bicycle and pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. In addition, bicycle-related non-construction projects, (e.g. maps, coordinator positions, encouragement programs) are eligible for STP funds.

Highway Safety Improvement Program

Funds projects designed to achieve significant reduction in traffic fatalities and serious injuries on all public roads and pedestrian/bike pathways. Included within this program are the Railway-Highway Crossings program and the High Risk Rural Roads program. (This program replaces the Hazard Elimination Program from TEA-21.)

Railway-Highway Crossing Program (RHC)

Administered by the state, this program is funded by a set-aside of STP funds and is designated for improvements to highway-rail grade crossings to eliminate safety hazards. Eligible projects include installation of new crossing protection devices, passive crossing protection devices, upgrades of existing signal devices, railroad crossing closures, and pedestrian crossing improvements. Funding for this program comes out of Highway Safety Improvement Program funds.

Transportation Enhancements (TE)

ITD provides Federal funding to transportation-related activities designed to strengthen the cultural, aesthetic and environmental aspects of the intermodal transportation system. The program provides for the implementation of various non-traditional projects, including historic highway facility restoration, bicycle and pedestrian facilities, landscaping, and scenic beautification. Projects must relate to surface transportation.

In Idaho the program's stated purpose is "to preserve and create more livable communities where roads blend with and preserve the natural, social, and cultural environment, by using flexible and innovative funding and design features of the enhancement funds." The Idaho Transportation Department (ITD) groups the activities into three general categories:

- Pedestrian and bicycle
- Historic
- Scenic and environmental

Congestion Mitigation / Air Quality Program (CMAQ)

The Idaho Transportation Department's Congestion Mitigation and Air Quality Improvement Program (CMAQ) is a statewide competitive program that provides federal transportation funds to implement cost-effective activities, plans, and projects that are mutually beneficial to transportation and air quality.

Idaho's CMAQ projects should demonstrate the highest potential for preventing or relieving a community's particular air quality problem. Planning activities can also be funded to develop a strategic plan that identifies additional projects and programs designed to reduce a community's transportation-related air quality problems.

The CMAQ Program was created by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and continues under the current authority found in the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA – LU) through fiscal year 2009. In Idaho, by federal law, the CMAQ funds can be used for CMAQ projects or for regular highway projects.

CMAQ projects fall into two categories: construction and non-construction. The non-construction category is further broken out into transit-related projects and all others. Construction projects may include: road surfacing and construction; bicycle and pedestrian route construction; traffic flow improvements, Intelligent Transportation Systems, and intermodal facilities with construction components. Non-construction projects may include: dust control and prevention; transit; conversion of public fleets to alternative fuels; traffic flow improvements and Intelligent Transportation Systems planning; special studies; and alternative transportation education, promotion, and outreach efforts.

Preference in funding is given to CMAQ projects that:

- Are measures, plans, and programs which either are, or have been developed as part of the Plan for the Control of Air Pollution in the State of Idaho
- Are designed for areas that are non-attainment (Northern Ada County is designated as an non-attainment area) for any criteria air quality pollutant or have the potential to be an air quality problem area in the near future;
- Have been reviewed by and coordinated through the local IDEQ regional office, including endorsements, as may be appropriate; and
- Are projects from a comprehensive, transportation and/or capital improvement plan.

Recreational Trails Program (RTP)

The Recreational Trails Program of the Federal Transportation Bill provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other non-motorized as well as motorized uses. These funds are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.

Recreational Trails Program funds may be used for:

- Maintenance and restoration of existing trails;
- Purchase and lease of trail construction and maintenance equipment;
- Construction of new trails; including unpaved trails
- Acquisition of easements or property for trails;
- State administrative costs related to this program (limited to seven percent of a State's funds); and
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a State's funds).

Safe Routes to School (SR2S)

Federal funds administered by ITD. Under the Idaho Safe Routes to School Program, approximately $1.0 million will be available for grants between 2006 and 2009. The grants can be used to identify and reduce barriers and hazards to children walking or biking to school.

The program establishes two distinct types of funding opportunities: 70-90 percent of the funding must be dedicated to infrastructure projects (the planning, design and construction of engineering improvements) and 10-30 percent of the funding must be dedicated to non-infrastructure related activities (such as education, enforcement, and encouragement programs).

New Freedom Initiative

SAFETEA-LU creates a new formula grant program that provides capital and operating costs to provide transportation services and facility improvements that exceed those required by the Americans with Disabilities Act.

Community Development Block Grants (CDBG)

The Community Development Block Grants program provides money for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal Community Development Block Grant Grantees may "use Community Development Block Grants funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers and recreational facilities, paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grants funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs."

Rivers, Trails and Conservation Assistance program

The Rivers, Trails and Conservation Assistance Program is a National Parks Service program which provides technical assistance via direct staff involvement, to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program provides only for planning assistance—there are no implementation monies available. Projects are prioritized for assistance based upon criteria that include conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation and focusing on lasting accomplishments.

Land and Water Conservation Fund (LWCF)

Land and Water Conservation Fund is a federally funded program that provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for ROW acquisition and construction. These funds are administered by the Oregon Parks and Recreation Department.

Transportation, Community and System Preservation Program

The Transportation, Community and System Preservation Program provides federal funding for transit oriented development, traffic calming and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities. The Transportation, Community and System Preservation Program funds require a 20 percent match.

Bridges

The Highway Bridge program requires that 15 percent of funding be shared with local governments for work on bridges not on the state highway system.

Potential Local Funding Sources (in coordination with cities)

Many of the measures listed below require local cities to take the lead and work in coordination with ACHD to provide bicycle facility improvements. Other measures noted below are currently not permissible for cities or counties to enact, but may become an accepted form of raising funds in the future.

Local Bond Measures

Local bond measures, or levies, are usually initiated by voter-approved general obligation bonds for specific projects. Bond measures are typically limited by time based on the debt load of the local government or the project under focus. Funding from bond measures can be used for right-of-way acquisition, engineering, design and construction of pedestrian and bicycle facilities.

Tax Increment Financing/Urban Renewal Funds

Tax Increment Financing (TIF) is a tool that uses future gains in taxes to finance current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Tax Increment Financing typically occurs within designated Urban Renewal Areas (URA) that meet certain economic criteria and approved by a local governing body. To be eligible for this financing, a project (or a portion of it) must be located within the URA.

System Development Charges/Developer Impact Fees

In 1985, the Idaho state legislature adopted the Local Economic Development Act that authorized the use of revenue allocation. In simplest terms, under revenue allocation (also known as tax increment financing), property taxes generated by increasing property values in an urban renewal district are used to pay for public improvements and other revitalization activities in that district. Over time, as both public and private dollars are invested and development occurs in the district, property values tend to rise. The increase in value over the base is called the "incremental" value or

increment. The taxes generated by this incremental value are allocated to the urban renewal agency for reinvestment in the district that generated them. Idaho State Code defines what the types of projects are eligible for the use of revenue allocation. Examples include master planning, land acquisition and disposition, building rehabilitation, site preparation, construction of streets, utilities, parks, playgrounds, open space, off-street parking facilities, public facilities or buildings and other improvements necessary for carrying out the urban renewal plan.

Before an area can be considered for urban renewal, the local elected body must make a finding that the area meets the criteria in the Idaho Code for a deteriorated or deteriorating area. Urban renewal areas do not change the amount of property taxes paid by property owners in the area; they change how the property taxes are distributed among the taxing entities and the urban renewal district.

System Development Charges (SDCs) are typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- or off-site pedestrian improvements encouraging residents to walk, bicycle, or use transit rather than drive. In-lieu parking fees may be used to help construct new or improved pedestrian facilities. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical to avoiding a potential lawsuit.

Because SDC programs can only charge developers for new growth, it is essential to calculate what portion of the needs are growth-related. In most cases, for bicycle or pedestrian projects this will be less than 100 percent as there is already an existing back-log of projects that are needed regardless of whether new development occurs. One way of including SDCs as a funding source is to compare the needed bicycle or pedestrian projects to the projected growth in the city. For instance, an example for sidewalks may be in a city that currently has ten miles of sidewalks and 10,000 people. The expected 2030 population is 20,000 people (a 100 percent increase) and there are 15 miles of proposed sidewalk projects (150 percent increase). Therefore 66 percent (100 percent divided by 150 percent) of the sidewalk projects are growth-related, and therefore SDC-eligible.

Local Improvement Districts

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area (with the City providing a predetermined match). The cost can be allocated based on property frontage or other methods such as traffic trip generation.

Business Improvement Districts

Pedestrian improvements can often be included as part of larger efforts aimed at business improvement and retail district beautification. Business Improvement Districts collect levies on businesses in order to fund area-wide improvements that benefit businesses and improve access for customers. These districts may include provisions for pedestrian and bicycle improvements, such as wider sidewalks, landscaping, and ADA compliance.

City or Regional Sales Tax

Local sales taxes earmarked partially or exclusively for bicycle, pedestrian, and trail improvements.

Appendix L. Bicycle Support Facilities

While the Highway District does not directly manage bicycle support facilities, facilities such as bicycle parking and other end-of-trip amenities are an integral part of making a bicycle network successful. Adequate and appropriate bicycle parking, access to showers and changing facilities, and access to transit all increase the attractiveness and viability of bicycling as a primary mode of transportation. As such, the Highway District should coordinate efforts with the cities, development corporations, businesses, and major destinations in Ada County to ensure that the needs of bicyclists are met at their destination.

Objective 3: Provide for bicycle support facilities throughout Ada County.

Action 3.1 Provide secure bicycle storage facilities and racks in activity centers, large employment centers, colleges and universities, and at major transit stops.

Action 3.2 Provide projects that improve multi-modal connections and enhance bicycle-transit trip linking.

End of Trip Facilities

End of trip facilities include a safe location and appropriate type of bicycle parking, as well as a location to change from bicycling clothing into to work appropriate clothing. These facilities encourage and support bicycling in a region, and will require ACHD to form partnerships with local jurisdictions and corporations to effectively address end of trip facility needs.

Existing End of Trip Facilities

In 2008/2009, the CCDC began a concerted effort to provide bicycle lockers in its parking garage system. CCDC is currently working with partners such as the City of Boise, Downtown Boise Association (DBA), ACHD Bicycle Advisory Committee and the Treasure Valley Cycling Alliance to create a bicycle storage pilot program in one or more of CCDC's public parking garages. This effort is an outgrowth of the *Downtown Boise Mobility Study* (2005).

Bicycle Parking

Bicycle parking is an important component in planning bicycle facilities and encouraging people to use their bicycles for everyday transportation. Bicycles are one of the top stolen items in most communities, with components often being stolen even when the bicycle frame is securely locked to a rack. Because many of today's bicycles are often high-cost and valuable items, many people will not use a bicycle unless they are sure that there is secure parking available at their destinations. Bear in mind that many cyclists may use (and even prefer) less "formal" bicycle parking methods, such as simply bringing their bicycle inside their building and storing it in their office. Cyclists with higher-end bicycles (perhaps costing several thousand dollars) are often reluctant to let a bicycle out of their sight at all, and for them the ability to bring a bicycle inside a building is a paramount concern if they are considering whether or not to bicycle to work or to a store.

Lack of secure, convenient bicycle parking is a deterrent to bicycle travel. Bicyclists need parking options that can provide security against theft, vandalism, and weather. Like automobile parking, bicycle parking is most effective when it is located close to trip destinations, is easy to access, and is easy to find. Where quality bicycle parking facilities are not provided, determined bicyclists lock their bicycles to street signs, parking meters, lampposts, benches, or trees. These alternatives are undesirable as they are usually not secure, may interfere with pedestrian movement, and can create liability or damage street furniture or trees.

Bicycle parking facilities that are conveniently located and adequate in both quantity and quality can help to reduce bicycle theft and to eliminate inappropriate parking, benefiting everyone. Bicycle parking is highly cost-effective compared to automobile parking, and if credits are given for auto parking, the building owner can benefit as well.

Bicycle parking can be broadly defined as either short-term or long-term parking:

- **Short-term parking**: Bicycle parking meant to accommodate visitors, customers, messengers and others expected to depart within two hours; requires approved standard rack, appropriate location and placement, and weather protection.
- **Long-term parking**: Bicycle parking meant to accommodate employees, students, residents, commuters, and others expected to park more than two hours. This parking is to be provided in a secure, weather-protected manner and location.

Short-Term Bicycle Parking

Short-term bicycle parking facilities are intended to provide short-term (under 2 hours) bicycle parking, and include racks which permit the locking of the bicycle frame and one wheel to the rack and support the bicycle in a stable position without damage to wheels, frame or components. Short-term bicycle parking is currently provided at no charge at most locations. Such facilities should continue to be free, as they provide minimal security, but encourage cycling and promote proper bicycle parking.

Recommendations for short-term bicycle parking include the following:

- Bicycle parking spaces should be at least six feet long and two-and-a-half feet wide, and overhead clearance for covered spaces should be at least seven feet.
- A five-foot aisle for bicycle maneuvering should be provided and maintained beside or between each row of bicycle parking.
- Bicycle racks or lockers should be securely anchored to the surface or structure.

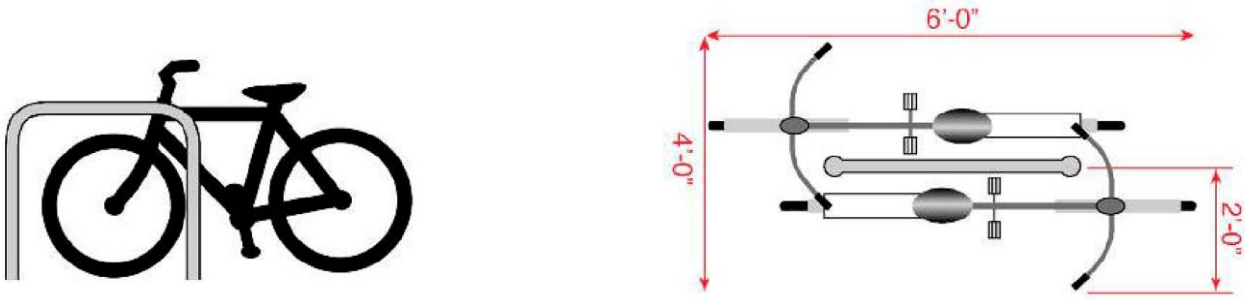


Figure 1. Inverted "U" Rack

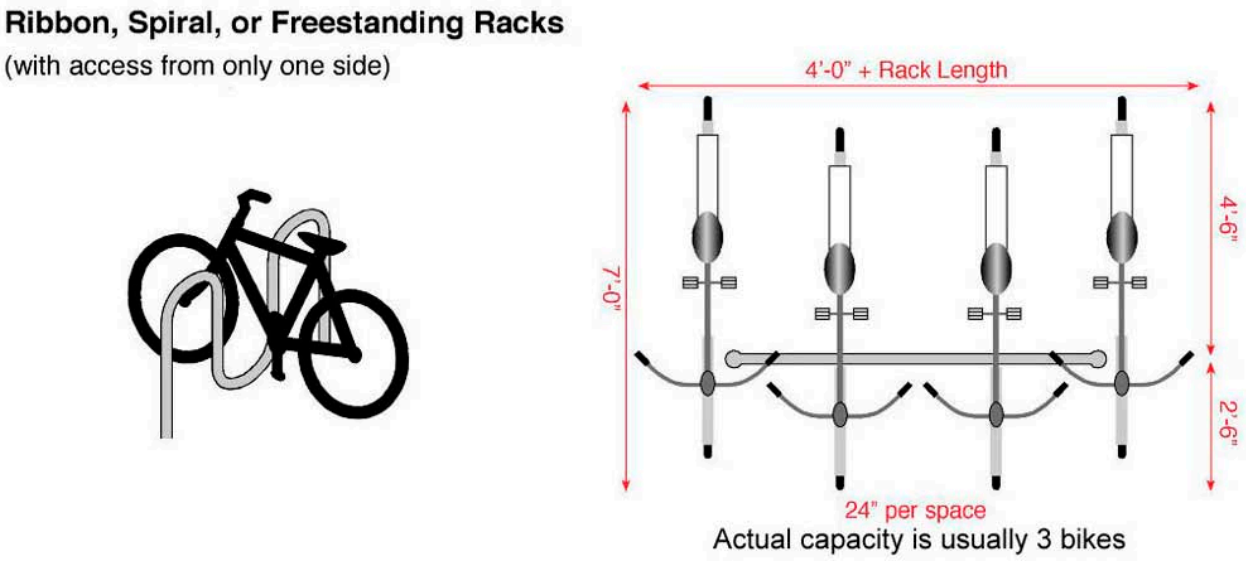


Figure 2. Ribbon, Spiral, and Freestanding Racks

On-street bicycle parking

Where racks are not possible on sidewalks (because of narrow sidewalk width, sidewalk obstructions, or other issues), bicycle parking can be created in the street where on-street vehicle parking is allowed. Two possible options for creating parking in the street include clustered racks in a car parking space protected by bollards or curbs, and racks installed on sidewalk curb extensions where adequate sight distance can be provided. Installing bicycle parking directly in a car parking space incurs only the cost of the racks and bollards or other protective devices.

A curb extension is more expensive to install, and can be prohibitively expensive if substantial drainage and/or utility work is necessary. Costs may be less if the curb extension is installed as part of a larger street or pedestrian improvement project. While on-street bicycle parking may take space away from the automobile parking, there are ways to mitigate auto parking loss: Additional auto parking spaces can be created by consolidating driveways, moving fire hydrants, or otherwise finding

places where it may be possible to admit auto parking where it is currently prohibited. Options for combining bicycle and motorcycle parking also exist.

On-street bicycle parking may be installed at intersection corners or at mid-block locations. Mid-block on-street parking may be closer to cyclists' destinations, although it could force cyclists to dismount and walk to the parking site if access from the street is difficult or dangerous. Combining a mid-block pedestrian crossing with mid-block on-street parking facilities could mitigate this situation.

Table 1. Bicycle Rack Placement Guidelines

Design Issue	Recommended Guidance
Minimum Rack Height	To increase visibility to pedestrians, racks should have a minimum height of 33 inches or be indicated or cordoned off by visible markers.
Signing	Where bicycle parking areas are not clearly visible to approaching cyclists, signs at least 12 inches square should direct them to the facility. The sign should give the name, phone number, and location of the person in charge of the facility, where applicable.
Lighting	Lighting of not less than one foot-candle illumination at ground level should be provided in all bicycle parking areas.
Frequency of Racks on Streets	In popular retail areas, two or more racks should be installed on each side of each block. This does not eliminate the inclusion of requests from the public which do not fall in these areas. Areas officially designated or used as bicycle routes may warrant the consideration of more racks.
Location and Access	Access to facilities should be convenient; where access is by sidewalk or walkway, curb ramps should be provided where appropriate and ADA compliant. Parking facilities intended for employees should be located near the employee entrance, and those for customers or visitors near the main public entrances. (Convenience should be balanced against the need for security if the employee entrance is not in a well traveled area). Bicycle parking should be clustered in lots not to exceed 16 spaces each. Large expanses of bicycle parking make it easier for thieves to operate undetected.
Locations within Buildings	Provide bike racks within 50 feet of the entrance. Where a security guard is present, provide racks behind or within view of a security guard. The location should be outside the normal flow of pedestrian traffic.
Locations near Transit Stops	To prevent bicyclists from locking bikes to bus stop poles - which can create access problems for transit users, particularly those who are disabled - racks should be placed in close proximity to transit stops where there is a demand for short-term bike parking.
Locations within a Campus-Type Setting	Racks are useful in a campus-type setting at locations where the user is likely to spend less than two hours, such as classroom buildings. Racks should be located near the entrance to each building. Where racks are clustered in a single location, they should be surrounded by a fence and watched by an attendant. The attendant can often share this duty with other duties to reduce or eliminate the cost of labor being applied to the bike parking duties; a cheaper alternative to an attendant may be to site the fenced bicycle compound in a highly visible location on the campus. For the long-term parking needs of employees and students, attendant parking and/or bike lockers are recommended.
Retrofit Program	In established locations, such as schools, employment centers, and shopping centers, the City should conduct bicycle parking audits to assess the bicycle parking availability and access, and add in additional bicycle racks where necessary.

Long-Term Bicycle Parking

Long-term bicycle parking facilities are intended to provide secure long-term bicycle storage. Long-term facilities protect the entire bicycle, its components and accessories against theft and against inclement weather, including snow and wind-driven rain. Examples include lockers, check-in facilities, monitored parking, restricted access parking, and personal storage.

Long-term parking facilities are more expensive to provide than short-term facilities, but are also significantly more secure. Although many bicycle commuters would be willing to pay a nominal fee to guarantee the safety of their bicycle, long-term bicycle parking should be free wherever automobile parking is free. Potential locations for long-term bicycle parking include large employers and institutions where people use their bikes for commuting, and not consistently throughout the day. An advantage of lockers is that they can be configured to more easily accommodate different styles of bicycles, such as recumbent bicycles.

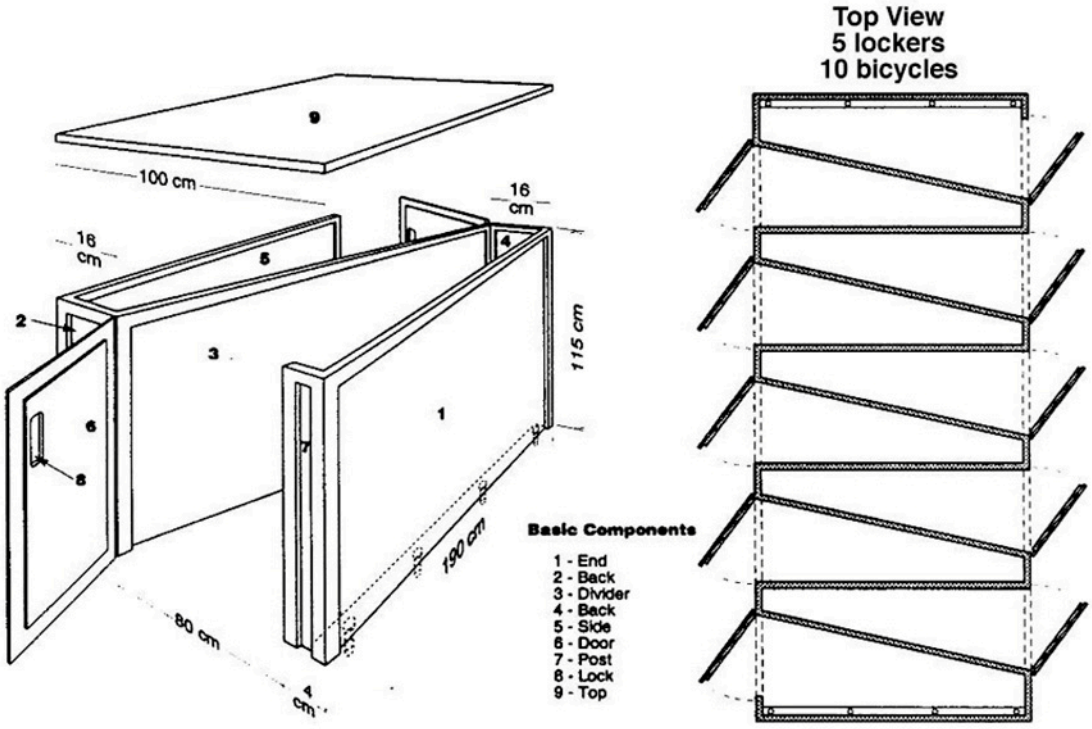


Figure 3. Cycle-Safe Lockers

Attendant Bicycle Parking

Attendant parking is practical where there is a heavy demand for secure bicycle parking. College campuses and high schools are obvious locations, as are employment locations with a large commuter bicycling population. Bicycle attendant duties become more cost-effective when shared with other duties, such as garage attendant, security guard, or private bicycle maintenance and repair operator. Attendant parking should be particularly considered for locations with heavy demand for bike parking but no existing bike parking facilities, such as the many BART stations without bicycle lockers.

Bikestations

Bikestation in Long Beach (CA)

Racks in Bikestation, Freiburg (Germany)

A Bikestation offers secure, attended bicycle parking in a centrally-located hub of transit-oriented activity. Bikestations allow cyclists to safely park their bicycle while they shop or commute nearby. The look, location, and design details differ from city to city and station to station; some Bikestations are located in their own buildings, offering a café atmosphere to cyclists, while others are located within a transit station, offering free overnight bike storage.

Bikestation operating costs include staffing, data processing (such as a computer system to track bikes), security, marketing, materials, utilities, business fees, and other overhead. Funding sources can include the usual local, state and federal non-motorized transportation funds, as well as user fees, local development fees, and income from associated retail establishments.

Changing Facilities

Aside from bicycle parking, other end-of-trip facilities for bicyclist include changing areas, clothes lockers and showers, which allow bicyclists to clean up after riding. For encouraging cycle commuting by more middle- and upper-income residents, who are likely to have professional office jobs, there will need to be a place for them to quickly change into work clothes. In order to best encourage bicycle commuting, these facilities need to be located at places of employment, so that an employee could bicycle in, then shower and change before starting work. Shower and locker facilities may exist in some office buildings and other employment centers in Ada County, but they do not appear to be very common. Health and fitness clubs can offer an alternative place to shower/change for commuter cyclists, but only function for commuter cyclists if the facilities are located conveniently close to the place of employment. In encouraging the new demographic of riders to try cycle commuting, facilities such as showers, lockers, and bike parking becomes nearly as important as providing the bicycle facilities themselves. ACHD can support local efforts to strengthen development ordinances that require shower and locker facilities based on employment densities.

Access to Transit

In Europe, Japan, and China, the bicycle-transit link serves millions of individuals. In the US, the bike-transit connection is strengthening, however bike access to transit is usually not practical because of lack of bikeways to transit stops, lack of secure bike parking, and the prohibition of bikes onboard buses or trains.

Bicycles on transit allow bicyclists to cover great distances quickly.

Benefits of the Bicycle-Transit Connection

Integrating bicycles with transit allows the bicyclist to overcome barriers such as:

- Hills
- Distance
- Night riding
- Inclement weather
- Breakdowns

Bike Parking

ACHD should coordinate with Valley Regional Transit to ensure that adequate and appropriate bike parking is provided at all Park & Rides and any future transit centers in Ada County.

Bikes on Transit

In Ada County, 100 percent of the Valley Regional Transit fleet is equipped with bike racks on the front. Bicycles are not allowed inside the vehicles.

Appendix M. Programmatic Recommendations

This Appendix outlines the existing materials and programs that currently encourage bicycling in Ada County and its six cities. It also describes recommendations for potential encouragement, education and enforcement programs that have been successful in other communities.

Available Materials:

- Idaho Bicycle Commuter Guide (http://itd.idaho.gov/bike_ped/Commuter_StreetSmarts.html)
- Idaho Bicycling: Street Smarts (http://itd.idaho.gov/bike_ped/Commuter_StreetSmarts.html)
- Getting the Green: A Cyclists Guide to Getting Traffic Signals to Turn Green (http://www.achd.ada.id.us/Departments/PP/TrafficBike.aspx)
- Ada County ACHD Bicycle Map (http://www.achd.ada.id.us/Projects/Media/bikewaymap.pdf)
- Ridge to Rivers Trail System Map (http://www.ridgetorivers.org)
- Boise River Greenbelt (http://www.cityofboise.org/parks/parks_facilities/Greenbelt/greenbelt_map.pdf)

Local Online Resources:

- Commuteride: http://www.commuteride.com/BikeWalk.aspx
- ACHD Bike/Ped Program: http://www.achd.ada.id.us/Departments/PP/TrafficBike.aspx
- ITD Bike/Ped Program: http://itd.idaho.gov/bike_ped/
- Boise State Bike Congress: http://www.boisestate.edu/bicyclecongress/
- Boise State University Bike Barn: http://kinesiology.boisestate.edu/bikebarn.htm

Clubs, Organizations, and Racing Teams

Several clubs have activities aimed at encouraging women riders and young racers. A few of these classes and rides are aimed at inexperienced riders, but most are designed for experienced road riders. Lactic Acid Cycling occasionally hosts maintenance clinics as well.

- Boise Aeros Multisport Club: http://www.boiseaeros.com/index.php
- Boise Young Riders Development Squad: http://www.byrdscycling.com/
- BOMBB (Boise Off-Road Mountain Bike Babes): http://northend.org/bombb/
- Community Bicycle Rides: http://communitybicyclerides.org/
- Cycle Idaho: http://www.cycleidaho.com/

- Gem State Mountain Bike Alliance: http://www.gsmba.org/
- Lost River Cycling: http://www.lostrivercycling.org/
- Lactic Acid Cycling: http://www.lacticacidcycling.org/
- SPIN (Scenic Pedaling Is Nearby): http://www.spinidaho.org/
- South West Idaho Cycling Association: http://www.idahobikeracing.org/
- Southwest Idaho Mountain Biking Association: http://www.swimba.org/links_clubs.shtml
- Team Dobbiaco: http://www.teamdobbiaco.com/
- Team Digestive Health Clinic/AERO Cyclos: http://www.aerocyclos.com/team.html
- Team Bobs-Bicycles.com: http://www.teambobs-bicycles.com/
- Treasure Valley BMX: http://www.treasurevalleybmx.net/
- Treasure Valley Cycling Alliance: http://www.biketreasurevalley.org/

Roll With It and Bike to Work Challenge (offered through BSU):

- http://www.boisestate.edu/bicyclecongress/rollwithit.shtml
- http://kinesiology.boisestate.edu/bikebarn.htm

Facilities

- Idaho Velodrome & Cycling Park: http://www.idahovelopark.org/
- Willow Lane BMX Dirt Jump Park www.cityofboise.org/parks/parks_facilities/parks/index.aspx?id=willowln_park_facts

Programs and Organizations:

- May in Motion: www.commuteride.org

Roll With It and Bike to Work Challenge (offered through BSU)

- http://www.boisestate.edu/bicyclecongress/rollwithit.shtml

LAB/LCI programs:

- The Treasure Valley Cycling Alliance offers League of American Bicyclists-certified adult cycling skills training courses http://www.biketreasurevalley.org/education.html

Boise Bike Week

- http://www.boisebikeweek.org/

AdVenture Programs

- http://www.cityofboise.org/Departments/Parks/Activities/AdaptedRecreation/page4719.aspx

Healthy Kids Day/Safe Routes

- [17]http://www.ymcaboise.org/index.cfm?Action=Content&ID=98,22,4

Program Recommendations

Tier I (near term) recommendations

"Lights On" Campaign

Target	Cyclists (especially students and low-income bicycle commuters)
Primary agency	ACHD
Partners	Boise Police Department, Boise State University, TVCA
Key elements	Media outreach, enforcement, bike light giveaways or subsidies
Time frame	Fall, annually
Cost	$$ - $$$ (depends on scope of program)
Potential funding sources	Bike shops (in-kind donations); transit agencies and local news outlets (donated ad space); traffic safety foundations and grant programs; hospitals and insurance companies
Sample programs	Portland's "See & Be Seen" campaign: http://www.portlandonline.com/transportation/index.cfm?&c=deibb&a=bebfjh Dutch "Lights On" campaign: http://www.fietslichtaan.nl/

While Idaho state law requires bicyclists to use lights at night, cyclists riding without lights are common in Ada County. Many cyclists, especially students, are unaware that lights are required by law, or they have simply not taken the trouble to purchase or repair lights. Research shows that cyclists who do not use lights at night are at much greater risk of being involved in bike-car crashes. For these reasons, increasing bicycle light usage is a top priority for Ada County, and a successful effort will reduce crash risk for bicyclists.

Every fall in the Netherlands, as days get shorter, a national "lights on" campaign reminds cyclists to use bicycle lights. This "lights on" campaign focuses several complementary strategies into a short time frame for maximum impact, pairing media messages (ads, posters, radio spots, and TV ads) with police enforcement of 'fix it' tickets.

This poster from Portland, OR uses simple graphics to communicate the importance of using bicycle lights

A similar Lights On campaign is recommended for Ada County. This multi-pronged outreach effort should take place every September, as the days are getting shorter and as kids and university students are returning to school.

The *Ada County Lights On* campaign should include the following elements:

- Well-designed **graphic ads**, to be placed on transit shelters, transit vehicles, and local newspapers, as well as around MSU. Ad space may be purchased or donated. Small-format ads can be placed on bike handlebars as well if desired.
- Police **enforcement of bike light laws**. This enforcement will be most likely to result in behavior change if the cyclist is able to avoid penalty if they obtain a bike light. Ideally, the police would give a warning, explain the law, and then install a bike light on the spot. If this is not possible, the cyclist should receive a 'fix it ticket' along with a coupon for a free or discounted light at a local bike shop; once the cyclist shows proof that they have purchased a bike light, their fine will be waived.

Every fall, Dutch cyclists receive many messages to use lights, including these bike hangers

- **Partnership with local cycling groups** to get the word out to their members and partners. These groups can be counted as campaign partners at no cost to them, enhancing the campaign's credibility and community exposure. Groups should be supplied with key campaign messages to distribute with their constituents along with coupons for free or discounted bike lights.
- **Earned media outreach**: ACHD should distribute media releases with statistics about the importance of using bike lights, relevant legal statutes, and the campaign's goal, timing, activities, and partners. If possible, a meeting with local media editorial boards should be sought.

Depending on partners, volunteer capacity and interest, the *Ada County Lights On* campaign may also include the following:

- **In-school presentations** about bike lights, including reflective material giveaways
- A **community bike light parade** with prizes
- **Discounts on bike lights** and reflective gear at local bike shops during September (publicized through the campaign outreach)
- Volunteers stationed at key intersections, trails, and on the BSU campus **who thank bicyclists using bike lights** and reward them with a small gift

Ada County Bike Central Website

Target	Current and potential cyclists
Primary agency	ACHD
Partners	ACHD Bicycle Advisory Committee
Key elements	Resources, maps and map orders, safety, events, groups
Time frame	Ongoing
Cost	$ - $$ (depending on design and scope)
Potential funding sources	Low cost; may not require outside funding
Sample programs	Vélo Québec website: http://www.velo.qc.ca/english/home.lasso

Ada County already has numerous resources for cyclists, and more services and resources are planned for the future. Many cyclists or potential cyclists do not know where to turn to find out about laws, events, maps, tips, and biking groups. ACHD should develop a "one stop shopping" website aimed at bicyclists. A potential name is Ada County Bike Central, though other names could be used.

The Ada County Bike Central website should contain:

- A list of all **bicycling groups**, including clubs, racing teams, and advocacy groups
- Information about the ACHD **Bicycle Advisory Committee**, or BAC (how to get involved, meeting times and dates, agendas and minutes)
- Information about **current projects and how to get involved** (e.g. public meetings, comment periods)
- **Maps and brochures** (links to online maps and brochures, where to find in person, and how to request mailed materials)
- Links to **laws and statutes** relating to bicycling
- Links to all relevant **local jurisdictions and their bike contacts** (ACHD, City of Boise, Boise Police Department, Ada County Sheriff's Office, etc.)
- Information about **cycling events** (rides, classes, volunteer opportunities)
- A list of **local bike shops**, including phone number and address
- Relevant **phone numbers** (hotlines for pothole repair, parking enforcement, bike rack installation request, etc.)

The website may also feature:

- Events calendar
- Request form for route planning assistance
- Link to Commuteride for ride share assistance, vanpools with bike racks, park & ride lots with bike lockers
- Message boards
- Blog featuring stories and news
- Photo galleries from events and submitted by readers
- Popular ride routes

Note that these additional features may increase the cost to set up and maintain the website.

A one-stop bike website will not be difficult to set up, but it will only be successful if the site is both easy to use and updated regularly. Corners should not be cut in either design or in maintenance of the site and its information. All Bike Central website content should be reviewed annually for accuracy.

The bicycle community can assist in keeping the site up to date. ACHD should consider adding a standing agenda item for the BAC to discuss the Bike Central website in order to hear about new content that should be added or out-of-date content that should be updated or removed.

Public Service Announcements

Target	General public
Primary agency	ACHD
Partners	None
Key elements	Awareness campaign with TV spots
Time frame	Late spring or early summer, 2008
Cost	$ - $$$ (depending on whether airtime is purchased or donated)
Potential funding sources	Local television stations (for donated airtime), traffic safety foundations and grant programs; hospitals and insurance companies
Sample programs	Bicycle Transportation Alliance "Decide to Ride" PSAs: http://www.bta4bikes.org/at_work/decidetoride.php

Public Service Announcements (PSAs) are an important part of creating awareness of bicycling. They are an effective way to reach the general public and reinforce other education and outreach messages.

A well-produced PSA will be memorable and effective, but a producing a good PSA from scratch is an expensive effort. The Bicycle Transportation Alliance (Portland, Oregon) has produced six high-quality PSAs that are available for rebroadcast at a reasonable cost. The 30-second spots were produced on film, not video, and cover the following messages:

- *"What If?"* Encourages viewers to give bicycling a try
- *"Look Right, See Right"* Reminds drivers to look over their shoulder before changing lanes
- *"See and be Seen"* Encourages cyclists to use lights at night
- *"Close Call"* Encourages both drivers and cyclists to stop at stop signs
- *"Bike Lanes"* Reminds drivers that bike lanes are not for vehicle use
- *"Wrong Way"* Reminds cyclists not to bicycle against traffic

It is recommended that ACHD air one or more of these PSAs. Many television stations are willing to donate airtime for public service announcements. This would bring the cost down greatly and should be pursued.

"Your Bike Resources" Sticker

Target	New bike owners
Primary agency	ACHD
Partners	Local bike shops
Key elements	Bicycle resources sticker to be distributed with every new purchased bike.
Time frame	Ongoing
Cost	$
Potential funding sources	Low cost; additional funding may not be necessary
Sample programs	None

Cyclists often are unaware of resources available to them, and jurisdictions are not sure how to reach these cyclists. The moment a bicyclist purchases a bike is an ideal time to provide them with more information to make cycling easier for them.

ACHD should develop a removable sticker that lists bike resources and partner with local bike shops to distribute this sticker with every purchased bike. The bike owner can stick the resource sheet on their refrigerator, desk, etc.

The ACHD "Your Biking Resources" stickers should include:

- The URL of the **Ada County Bike Central** website
- Instructions on how to request **maps and brochures**
- Phone numbers for local **bicycle coordinators**
- Relevant **phone numbers** (hotlines for pothole repair, sweeping, parking enforcement, bike rack installation request, etc.)

If desired, additional stickers may be printed and distributed through other means as well (e.g. at transportation fairs, at public meetings, through local clubs and organizations, etc.).

This removable sticker from Portland, OR lists resources for cyclists

Tier II (medium term) recommendations

BSU Bike Orientation

Target	BSU students, especially incoming freshmen
Primary agency	ACHD and BSU
Partners	Boise State Cycling club
Key elements	Bicycle safety & promotion orientation for incoming freshmen and returning students. Classes & clinics, materials, social events, rides.
Time frame	September, annually
Cost	$$
Potential funding sources	BSU parking fees, TDM funding sources
Sample programs	Stanford University Bike Program: http://transportation.stanford.edu/alt_transportation/BikingAtStanford.shtml

University students are ideal candidates for bicycling outreach programs; many students live near campus and may not own a car or choose to drive. ACHD should partner with Boise State University to promote bicycling to students at the beginning of the school year.

The BSU Bike Orientation should include:

- **Bike maps and information** provided to incoming and returning students at the beginning of the year through school information packets
- **Flat clinics, bike legal clinics, and guided rides**, advertised through flyers, email and bulletin boards, and campus newspaper
- **Information tabling** at campus events and prominent locations (e.g. bookstore, quad) during the first few weeks of school
- A **Bikes at BSU web page** with links and more information
- At-cost or low-cost **bike lights** sold at tabling events and through the campus bookstore

If desired, a "bike buddy" program may be implemented to match current cycling students with interested students. This can be a simple program where bicyclists wear a sticker that says "I bike to BSU, ask me how," or a more elaborate program that matches bike buddies with interested students who live in their neighborhood for mentoring. A bike buddy program would increase the cost of the program. This could be set up through the existing campus rideshare website.

Share the Path Campaign

Target	All path users (especially cyclists)
Primary agency	ACHD, Boise Parks and Recreation
Partners	Local cycling clubs and groups, TVCA, Cities of Boise, Eagle, Garden City, Meridian, Ada County
Key elements	Bell giveaway; maps and information; media outreach
Time frame	May/June 2008, or annually
Cost	$$
Potential funding sources	Local bike shops (in-kind donations); volunteer time contributions by local cycling groups; in-kind or time contributions by BPD or ACSO
Sample programs	Portland Office of Transportation Share the Path brochure: http://www.portlandonline.com/shared/cfm/image.cfm?id=161457

Many cities around the country are implementing "share the path" programs in response to concerns about conflicts between pedestrians and cyclists on shared-use paths. Ada County is home to numerous popular paths. A Share the Path program will encourage responsible path usage and creates community goodwill around bicycling.

It is recommended that ACHD partner with Boise, Garden City, Eagle, and Ada County to implement a Share the Path campaign. The campaign should include the following steps:

1. Develop a simple, clear **Share the Path brochure**; distribute through local bike shops and wherever bike maps are distributed.
2. Host at least one **bicycle bell giveaway** event on a popular shared-use path. A table should be set up with maps and brochures, and knowledgeable staff should be present to answer questions.

photo courtesy Jonathan Maus

Volunteers mount free bells on bikes in this Share the Path event

Volunteers and ACHD/Boise, Garden City, Eagle, Ada County staff can partner to hand out bells to cyclists. Signs (e.g. "burma shave" style signs), pavement chalk, and banners should be used to explain the event and give cyclists warning so they can stop and receive a bell. Volunteers should mount the bells on handlebars.[18]

[18] BBB EasyFit bells are recommended because installation requires no tools: http://www.bbbparts.com/products/accessories/others/bbb12.htm

If desired, volunteers can walk along the path and give a thank you and a small gift to bicyclists who use their bell when passing.

3. ACHD should do **media outreach** before the event; the bell giveaway will be a positive story about bicycling, and will provide good visual opportunities.

Safe Routes to School – Phase 1

Target	Parents, schoolchildren, administrators, city planners & engineers
Primary agency	ACHD, school districts (Boise School District, Meridian Joint School District, Kuna School District)
Partners	Parent groups at schools, school neighbors
Key elements	Bicycle and pedestrian audit of infrastructure at elementary schools. Recommended route maps.
Time frame	Spring 2009
Cost	$$
Potential funding sources	ITD Safe Routes to School grant funding; local, state or national health grants (e.g. Robert Wood Johnson Active Living by Design grants)
Sample programs	Portland Safer Routes to School Program: http://www.trans.ci.portland.or.us/saferoutes/

Helping children walk and bicycle to school is good for children's health and can reduce congestion, traffic dangers and air pollution caused by parents driving children to school. Robust Safe Routes to School programs address all of the "Five E's" (Engineering, Education, Encouragement, Enforcement, and Evaluation).

Students participate in a walkabout to evaluate pedestrian conditions

ACHD should work with Ada County school districts to implement the first phase of a Safe Routes to School Program. This phase will use a walkabout (also known as a **bicycle and pedestrian audit**) to assess walking and biking conditions of streets adjacent to elementary schools. Parents, students, neighbors, and city planners and/or traffic engineers should be invited to join in the walkabout. Safety concerns, issues, and ideas should be recorded.

After the bicycle and pedestrian audit is conducted, **parent maps for each elementary school** showing recommended routes to reach school, along with high-traffic intersections and routes to avoid, should be produced and distributed.

As a final step, an **initial infrastructure improvement plan** should be produced for each elementary school, including cost estimates and a prioritized project list. This infrastructure improvement plan will serve as a blueprint for future investments, and can be used to apply for further grant funding.

Bike to Work Month

Target	Current and potential cyclists
Primary agency	ACHD Commuteride
Partners	TVCA, Boise State Community Bicycling Congress
Key elements	Publicize Bike to Work Month in May. Offer classes, rides and events.
Time frame	May, annually
Cost	$$ - $$$ (depending on scope and length of program)
Potential funding sources	Local businesses and bike shops (in-kind or cash support); hospitals and insurance companies; City of Boise
Sample programs	Bay Area Bike to Work Day: http://www.bayareabikes.org/btwd/index.php Bike Commute Challenge (Oregon): http://www.bikecommutechallenge.com/

The Treasure Valley Cycling Alliance (TVCA) already hosts *Bike to Work Week* in May (http://www.boisebikeweek.org/). The Boise State Community Bicycling Congress also hosts a *Roll With It* alternative transportation challenge) in April for BSU students, staff, and faculty (http://www.boisestate.edu/bicyclecongress/rollwithit.shtml.

It is recommended that ACHD work with TVCA and BSU Community Bicycling Congress to support activities throughout the month of May, in recognition of National Bike to Work month. ACHD can support TVCA in Bike to Work Week activities by becoming an event sponsor, assisting with publicity, tabling, and providing materials (maps, brochures, and resource stickers).

ACHD should take the lead in further expanding Bike to Work activities during the month of May, offering additional commute classes, weekly rides, presentations on bicycling for employees, and raffles or other incentives, in addition to the commuter Champion Awards Employer Awards and incentive items that are currently awarded and distributed through ACHD Commuteride's May in Motion event.

Tier III (long term) recommendations

BSU Bike Program

Target	BSU students, faculty and staff
Primary agency	ACHD and BSU
Partners	Student groups
Key elements	Attended bike parking; tools and stands; mechanic services; clinics.
Time frame	Ongoing
Cost	$$$
Potential funding sources	BSU parking fees
Sample programs	UC Davis Bicycle Program: http://www.taps.ucdavis.edu/bicycle/

The BSU Bike Program should provide:

- Attended bicycle parking
- Bicycle registration services
- Lockers and showers
- Mechanic services
- Tools and repair stands

The BSU Bike Program may also offer:

- No Interest Bike Loan
- Folding bicycle promotion
- Bicycle message board (e.g. to post used bikes for sale)
- Cycling Links
- Bike flea market hosted at the beginning of the school year, or other used bicycle resale opportunities

Youth Bike Safety Education

Target	School-age children
Primary agency	ACHD, school districts (Boise School District, Meridian Joint District, Kuna Joint District)
Partners	Parent groups at schools, community volunteers
Key elements	In-school and/or after-school on-bike skills and safety training
Time frame	Ongoing
Cost	$$$
Potential funding sources	ITD Safe Routes to School grant funding; local, state or national health grants (e.g. Robert Wood Johnson Active Living by Design grants)
Sample programs	LAB's Kids I and Kids II curriculum: http://www.bikeleague.org/programs/education/courses.php#kids1 BTA's Bike Safety Education Program: http://www.bta4bikes.org/resources/educational.php

Nearly every child in America can look forward to in-depth training before receiving a driver's license. Bicycles are also vehicles that are used on the roads, but most Americans do not receive any training about the rules of the road, how bicycles work, or how to ride a bicycle on the roadway.

ACHD should launch an on-bike education program for kids. Curriculum should cover:

- Parts of a bicycle
- How a bike works
- Flat fixing
- Rules of the road/right of way
- Road positioning
- On-bike skills lessons (braking, turning, steering)
- On-bike community ride

At the time that this program is planned, ACHD should decide whether to start a program from scratch, or modify an existing program. Two excellent model programs are the League of American Bicyclists' Kids I and Kids II classes, and the Bicycle Transportation

Volunteers assist Swiss children through a bicycle skills course

Alliance's Bike Safety Education Program (see "sample program" links, above, for more information).

Pilot Smart Trips program

Target	Ada County residents who are interested in biking, walking and transit
Primary agency	ACHD
Partners	Transit agencies, TVCA, community volunteers
Key elements	Outreach to a target geographic area promoting biking, walking and transit usage.
Time frame	Program launch in late spring of selected year
Cost	$$$
Potential funding sources	CMAQ (Congestion Mitigation/Air Quality) funds; federal flexible transportation; public transportation funds; hospitals and insurance companies
Sample programs	Portland Smart Trips program: **http://www.portlandonline.com/transportation/index.cfm?c=ediab**

Smart Trips programs (also known as social marketing programs) are encouragement program based on saturating geographic area with resources to help residents reduce drive-alone trips and increase biking, walking, transit and carpool trips. Smart Trips programs have demonstrated a lasting reduction in drive-alone trips; for example, in Portland, OR, target areas have experienced a 10 percent reduction in vehicle traffic.

Programs offer residents maps, brochures and other printed materials, classes, guided rides and walks, and other tools and programs that make bicycling, walking and transit usage a more inviting travel option compared to drive-alone trips. Compared to infrastructure improvements, these programs are scalable, flexible, inexpensive, and site-independent. Once the program has been established for a specific geographic target area, it can be run with low start-up costs in other target areas.

This model, however, is unlikely to be successful in areas that have failed to make initial infrastructure investments sufficient to provide a functional bicycling, walking and transit network. It is most effective as an approach that leverages investments in infrastructure, not one that replaces those investments.

One of the strengths of the individualized marketing model is that it reaches every resident with an appealing invitation to participate, but then focuses the bulk of

Maps and materials are delivered to interested residents by bike in this Smart Trips program

resources on those who identify themselves as interested. The many classes, rides, and activities continue to be publicized and open to all, so residents have multiple opportunities to opt into the program. This focus allows for both broad reach and strategic investment.

It is recommended that ACHD implement a pilot Smart Trips program in a limited geographic area in Ada County (to be selected at time of program planning).

The program may include any of the following:

- Maps and brochures
- Classes, clinics, workshops
- Guided rides and walks
- Fun social events
- Giveaways (coupons, cyclocomputers, etc.)
- Targeted outreach (e.g. Women on Bikes, Senior Strolls)
- Route planning help (bike, walking, or transit)

The exact program components and budget should be determined at time of program planning.

Other program recommendations

During the life of this plan, it is possible that community interest will develop in programs beyond the priority programs listed above. The following table lists some promising additional programs with more information.

Description	Link to sample program(s)
Bike-sharing program	http://www.commissionersam.com/node/2680 http://www.washingtonpost.com/wp-dyn/content/article/2007/03/23/AR2007032301753.html
Bike kitchen	http://www.bikekitchen.org/ http://www.bicyclekitchen.com/
Create-a-Commuter program	http://www.communitycyclingcenter.org/index.php/programs/create-a-commuter/
Bike parking at events	http://www.sfbike.org/?valet
Adult skills classes	http://www.bikeleague.org/programs/education/courses.php https://www.sfbike.org/?edu
Bicycle Brown Bag events	http://www.portlandonline.com/transportation/index.cfm?a=beicbi&c=deibg
Walking School Buses (stand-alone program or part of SR2S program)	http://www.walkingschoolbus.org/
Bike Buddy program	http://bicycling.511.org/buddy.htm
Family day/family biking classes	http://www.sfbike.org/?family_day http://www.sfbike.org/?freedom
Women on Bikes program	http://www.portlandonline.com/transportation/index.cfm?a=iibhg&c=djdaa
I Share the Road campaign	http://www.isharetheroad.com/
Seniors on Bikes program (Safe Routes to Senior Centers, Older Adult Three-Wheeled Bicycle Program)	http://www.portlandonline.com/transportation/index.cfm?c=eafeg http://www.portlandonline.com/transportation/index.cfm?a=bffbgh&c=dheab
Breakfast on the Bridges / free bike safety check	http://www.shift2bikes.org/wiki/doku.php?id=bikefun:breakfast_on_the_bridges http://bikeportland.org/2006/06/16/bike-gallery-does-free-repairs-for-commuters/
Ciclovias/Sunday parkways	http://www.healthystreets.org/pages/sunday_parkways.htm
Bicycling Ambassadors	http://www.bicyclingambassadors.org/

Appendix N. Maintenance Guidelines

This Appendix outlines the guidelines for accommodating bicyclists and incorporating bicycle facilities into construction, maintenance and repair activities. The guidelines are presented as a menu of options and considerations for maintenance activities, and not strict guidelines. The Maintenance Department should consider these recommended guidelines, and implement them as possible within budget constraints. Safety for all road users is the top priority during construction and repair activities.

Street Construction and Repair

The safety of all users of the roadway network should be considered during the construction and repair process. Wherever bicycles are allowed, measures should be taken to provide for the continuity of a bicyclist's trip through a closure. Only in rare cases should pedestrians and bicyclists be detoured to another street when travel lanes remain open.

In order to accommodate bicyclists through various lane closures and detours, the following actions are recommended:

- Bicyclists should not be led into conflicts with work site vehicles, equipment, moving vehicles, open trenches or temporary construction signage.
- Efforts should be made to re-create the bike lane to the left of the construction zone if enough space exists and it is safe to do so. The recommended minimum width of a bike lane is five feet.
- Where there is insufficient space to provide a bike lane adjacent to the construction zone, then a standard wide travel lane should be considered. If steel plating is used, special care should be taken to ensure that bicyclists can traverse the plates safely.
- Contractors performing work for ACHD should be made aware of the needs of bicyclists and be properly trained in how to safely route bicyclists through or around construction zones.

Signage actions:

- Signage related to construction activities should be placed in a location that does not obstruct the path of bicycles or pedestrians, including bicycle lanes, wide curb lanes, or sidewalks.
- In areas where there are grades, sign may be placed at the street-side edge of sidewalks so as not to encroach onto a bike lane facility.
- Detour and closure signage related to bicycle travel may be included on all bikeways where construction activities occur. Signage shall also be provided on all other roadways.
- The following MUTCD signs should be used:
    - W21-4A Road Work Ahead

- W20-5 Right Lane Closed
- W4-2 Lane Shift, Left Sign
- W11-1 Bicycle Warning Sign
- W16-1 Share The Road

Open Trenches

Installation or repair of utility lines beneath roadways often involves trenching, where a one- to two-foot wide trench is cut for the length of a roadway segment. For new installation (such as fiber optic cable) trenching often takes place near the curb of roadways in order to minimize the disruption to automobile traffic. However, the common practice maximizes disruptions to bicycle traffic since bicycle travel predominantly takes place near the curb. Bike lane facilities can also be disrupted because they are located near the curb and away from vehicle travel lanes.

When plates are used to cover open trenches, they are typically not flush with the pavement and have a one- to two-inch vertical transition on the edges. This can puncture a hole in a narrow bicycle tire and can cause the bicyclists to lose control due to the shock of the vertical transition. Also, coordination among different trenching entities is a significant problem. Trenching performed by different City departments, utility companies, telecommunication companies, and others sometimes creates a situation where a street segment may be trenched several times over the course of a year. Coordination to prevent the duplication of trenching activities is a problem, especially for bicyclists whose riding space is often interrupted during trenching activities.

When activities such as this take place, bicycle travel is negatively affected, but no noticeable difference has occurred to motorists. Bicyclists often are left to their own devices to merge with vehicles in the adjacent travel lane. The interim condition of the trenches during non-construction hours is also of concern because of the impact on bicyclist travel. Although the common practice is to use steel plates during non-construction hours, these plates can be slippery, especially when wet. Slippage can be a significant problem for bicyclists riding over steel plates in any weather.

The ACHD maintenance department should consider the following:

- Ensure that steel plates used as a temporary measure during construction activities do not have a vertical edge greater than ¼ inch without a temporary asphalt lip to accommodate bicyclists riding over them.
- Consider using non-skid steel plates with no raised steel bar on top.
- Consider requiring temporary asphalt (cold mix) around plates to create a smooth transition and ensure the plates stay in place.
- Use steel plates only as a temporary measure during construction and shall not be used for extended periods of time.

Regular Maintenance

Like all roadways, bicycle facilities require regular maintenance. This includes sweeping, maintaining a smooth roadway, ensuring that the gutter-to-pavement transition remains relatively flat, and installing bicycle-friendly drainage grates. Pavement overlays should be used as a good opportunity

to improve bicycle facilities. ACHD currently includes the maintenance of bicycle facilities in its overall maintenance activities. In addition, ACHD should work with IDT to promote better maintenance of shoulders along state highways.

The following recommendations are provided as a menu of options for ACHD to consider as it augments and enhances its maintenance capabilities. Many of the recommendations listed below are already part of ACHD's regular maintenance activities.

Sweeping

Bicyclists often avoid shoulders and bike lanes filled with sanding materials, gravel, broken glass and other debris; they will ride in the roadway to avoid these hazards, causing conflicts with motorists. Debris from the roadway should not be swept onto sidewalks (pedestrians need a clean walking surface); nor should debris be swept from the sidewalk onto the roadway. A regularly scheduled inspection and maintenance program helps ensure that roadway debris is regularly picked up or swept.

Action items involving sweeping activities include:

- Establish a seasonal sweeping schedule that prioritizes roadways with major bicycle facilities and routes
- Sweep walkways and bikeways whenever there is an accumulation of debris on the facility
- In curbed sections, sweepers should pick up debris; on open shoulders, debris can be swept onto gravel shoulders
- Pave gravel driveway approaches to reduce loose gravel on paved roadway shoulders;
- Provide extra sweeping in the fall in areas where leaves accumulate in bike lanes

Roadway Surface

Roadway surface is a critical issue for bicyclists in Ada County. Bicycles are much more sensitive to subtle changes in roadway surface than are motor vehicles. Various pavement materials are used to pave roadways, and some are smoother than others. Compaction is also an important issue after trenches and other construction holes are filled. Uneven settlement after trenching can affect the roadway space nearest the curb where bicycles travel. Sometimes compaction is not achieved to a satisfactory level, and an uneven pavement surface can result due to settling over the course of days or weeks.

Recommended action items involving maintaining the roadway surface include:

- On all routes identified in the Roadways to Bikeways Plan, use the smallest possible chip for chipsealing the bike lanes and shoulders
- Ensure that on new construction, the finished surface of bikeways does not vary more than ¼ inch from the lower edge of a ten-foot long straight edge when laid on the surface in any direction.
- Maintain the surface of a roadway open to bicycle travel smooth, free of potholes, and the pavement edge uniform.

- Maintain pavement so ridge buildup does not occur at the gutter-to-pavement transition or adjacent to railway crossings.
- Inspect the pavement two to four months after trenching construction activities are completed to ensure that excessive settlement did not occur.

Gutter-To-Pavement Transition

The path of travel for bicyclists is most often along the right edge of a roadway. On streets with concrete curb and gutter, one to two feet of this curbside area is typically devoted to the gutter pan, where water collects and drains into catch basins. On many streets, the path of the bicyclist is near the transition between the gutter pan and the edge of pavement. It is at this location that water can erode the transition, creating potholes and a rough surface for travel.

Many streets' pavements do not meet flush with the gutter, creating a vertical transition between these two segments of the roadway. This area can buckle over time and create a hazardous environment to ride in for bicyclists. Since it is the most likely place for bicyclists to ride on the roadway, this issue is significant for bicycle travel.

Action items related to maintaining a smooth gutter-to-pavement transition include:

- Ensure that gutter-to-pavement transitions have no more than a ¼ inch vertical transition.
- Examine pavement transitions during every roadway project for new construction, maintenance activities, and construction project activities that occur in streets.

Drainage Grates

Drainage grates are encountered in the gutter area near the curb of a roadway. This area is where most bicycle travel occurs. Drainage grates typically have slots through which water drains into the municipal wastewater system. Many grates are designed with linear parallel bars spread wide enough for a tire to become caught in so that if a bicycle were to ride on them, the front tire would become caught and fall through the slot. This would cause the rider of the bicycle to tumble over the handlebars and sustain potentially serious injuries.

The ACHD maintenance department should consider the following:

- Continue to require that all new drainage grates be bicycle-friendly, including grates that have horizontal slats on them so that bicycle tires do not fall through the vertical slats.
- ACHD currently has a program to inventory all existing drainage grates. This program should be continued and grates that are not bicycle-friendly should be replaced or reset countywide.

Pavement Overlays

Pavement overlays are good opportunities to improve conditions for cyclists if done carefully: a ridge should not be left in the area where cyclists ride (this occurs where an overlay extends part-way into a shoulder bikeway or bike lane). Overlay projects offer opportunities to widen the roadway, or to re-stripe the roadway with bike lanes.

Action items related to pavement overlays include the following:

- Extend the overlay over the entire roadway surface to avoid leaving an abrupt edge
- If this is not possible, and there is adequate shoulder or bike lane width, it may be appropriate to stop at the shoulder or bike lane stripe, provided no abrupt ridge remains
- After overlays, ensure that inlet grates, manhole and valve covers are within ¼ inch of the pavement surface
- Pave gravel driveways and to property line to prevent gravel from spilling onto shoulders or bike lanes; and

Signage

Bicycle lanes, shared shoulders, bike boulevards and paths all have different signage types for wayfinding and regulations. Such signage is vulnerable to vandalism or wear, and requires regular maintenance and replacement as needed.

The ACHD maintenance department should consider the following:

- Occasionally check regulatory and wayfinding signage placed along bikeways for signs of vandalism, graffiti, or normal wear.
- Replace Signage along the Roadways to Bikeways network on an as-needed basis.
- Perform a regularly scheduled check on the status of signage with follow-up as necessary.

Maintenance Management Plan

Bikeway users will need to be managed during construction and periodic maintenance activities, when segments of bikeways may be closed or unavailable to users. Users must be warned of impending bikeway closures, and given adequate detour information to bypass the closed section. Users should be warned through the use of standard signing approaching each affected section ("Bike Lane Closed," "Trail Closed"), including (but not limited to) information on alternate routes and dates of closure. Alternate routes should provide a reasonable level of directness and equivalent traffic characteristics, and be signed consistently.

Action items related to a maintenance management plan include:

- Provide fire and police departments with map of system, along with access points and Knox boxes to gates/bollards.
- Enforce speed limits and other rules of the road.
- Enforce all trespassing laws for people attempting to enter adjacent private properties.

Appendix O. Public Involvement Summary Report

This document details the public involvement efforts for the Ada County Highway District (ACHD) Bicycle Master Plan, also known as Roadways to Bikeways. The public outreach approach was designed to accommodate multiple methods of public involvement and facilitate a shared vision of the bicycle system throughout Ada County. The Roadways to Bikeways team of ACHD staff, Alta (consultant), and Parametrix (consultant) engaged agencies, stakeholders, and the general public from across the County to develop the plan. Components of the public involvement process included:

- **Steering Committee** – Steering Committee meetings were held on June 4, August 6, and October 22, 2007. The Steering Committee for this project was comprised of members of the ACHD Bicycle Advisory Committee (BAC), along with representatives from the cities, county, and other agencies/committees from throughout Ada County. The Steering Committee was used to guide the direction of the bicycle master plan throughout its development.
- **Online Users Survey** – The purpose of the survey was to solicit information about where participants live, how often they use the existing system, and what improvements they would like to see. Over 2000 people responded county-wide.
- **Agency Interviews** – June 4 – June 21, 2007. The Team met with the following agencies to discuss their needs, goals, and desires for the bicycle network and related facilities in their respective jurisdictions: Boise State University (BSU), Boise School District, City of Meridian, Ada County, COMPASS/Valley Regional Transit, Meridian School District, City of Boise/CCDC, City of Star, Garden City, City of Eagle, Idaho Transportation Department (ITD), City of Nampa, ACHD Staff.
- **Public Open Houses -** A series of two public open houses was used both to solicit detailed feedback from the public to guide the master planning process and to educate the general public about the bicycle network and related facilities.
  - Open House #1 - August 9, 2007 - The open house was well attended, with 231 citizens signed in on the sign-in sheets. During the open house, citizens were encouraged to draw directly on maps to identify opportunities, constraints, and priorities to improve the existing system.
- Open House #2 - November 14, 2007 also well attended with 113 citizens signed in on the sign-in sheets. During the open house, citizens were encouraged to suggested modifications and improvements to the draft bicycle network by drawing directly on maps provided at the open house.
- **Draft Plan Circulation** – The full draft plan was posted on the ACHD website for review by the public, neighborhood groups, the cities, county and other effected stake holders. Postcards were sent to all those who attended the public open houses informing them of the draft plan completion and location on the website. Presentations were made to the city councils of Boise, Meridian, Garden City, and Eagle. The plan was also presented to the Treasure Valley Cycling Alliance and provided to the ACHD Bicycle Advisory Committee for comment. All comments received were tabulated and reviewed to determine how they could be incorporated into the plan.