SALT LAKE CITY

Salt Lake City Bicycle & Pedestrian Master Plan

Adopted by the Salt Lake City Council on September 14, 2004

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1.0 PURPOSE

Bicycling and walking are forms of low impact transportation and enjoyable types of exercise and recreation. They provide alternatives to motorized travel, provided that facilities and programs are in place to encourage and safely accommodate a diverse public.

The purpose of this bicycle and pedestrian master plan is to provide Salt Lake City Corporation with a strong planning tool that will facilitate the continued and orderly development of bicycle and pedestrian facilities and implementation strategies that encourage their use. It includes a facility classification system that addresses the needs of all ability, age and skill levels, goals and objectives, an implementation plan, and suggested approaches to bicycling and pedestrian safety education.

The master plan was developed with the following vision in mind:

Enhance use of the bicycle for transportation and recreation, and walking for pleasure and mobility. Foster community respect for bicycling and walking. Promote bicycling and walking as ways to enhance personal health and improve the community environment.

A community's overall goals for transportation improvements should include provisions for bicycle travel. Through appropriate planning and design, general improvements for motor vehicles can also be designed to enhance bicycle travel. For all roadways where bicycle travel is permitted, planning and design should consider provisions for bicycling. Roadway projects that extend near or intersect existing or planned shared use paths should include careful analysis and design measures to ensure the continued access and safety of path users. Public involvement in the form of public meetings, hearings or bicycle advisory groups is encouraged during the planning and design process.

American Association of State Highway and Transportation Officials
Guide for the Development of Bicycle Facilities, page 15. 1999.

At the core ... is the pedestrian. Pedestrians are the catalyst which makes the essential qualities of communities meaningful. They create the place and time for casual encounters and the practical integration of diverse places and people. Without the pedestrian, a community's common ground – its parks, sidewalks, squares and plazas, become useless obstructions to the car. Pedestrians are the lost measure of a community, they set the scale for both center and edge of our neighborhoods.

Peter Calthorpe
The Next American Metropolis: Ecology, Community, and the American Dream, page 17, 1993.

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2.0 BACKGROUND

Salt Lake City adopted the Salt Lake City Bikeways Master Plan 1993-2000 in 1992. It provided the City with guidance and a list of projects to continue development of a network of bicycle facilities. Since its adoption, many of the recommended facilities have been implemented. Planning for pedestrians in Salt Lake City has occurred through the development of community and neighborhood plans, and planning of specific land use developments. As a pedestrian master plan does not currently exist, such planning generally occurred on a community-by-community or development-by-development basis.

Adoption of the Bicycle and Pedestrian Master Plan is a sign of commitment by the City to support alternative modes of transportation, specifically bicycle and pedestrian travel. The document is an extension of the Salt Lake City Transportation Master Plan, 1996, and the Final Report of the Salt Lake City Futures Commission, 1998. Bicycling and walking are specifically encouraged and supported by the Salt Lake City Transportation Advisory Board and the Salt Lake City Mayors Bicycle Advisory Committee (MBAC). Aside from the health benefits and cost-savings realized by participants, these forms of transportation contribute in a significant way to improving air quality and reducing congestion on City streets.

2.1 Regional Planning Context

Regional planning for bicycle facilities is reflected in the Wasatch Front Regional Council Urban Area Long Range Transportation Plan for 2030. It integrates the plans from many of the jurisdictions along the Wasatch Front, including Salt Lake City's Bikeways Master Plan. Although the Wasatch Front Regional Council plays a role in the planning and funding of some facilities, implementation of bicycle facilities is the responsibility of each member jurisdiction.

The Utah Department of Transportation (UDOT) is responsible for the development of non-motorized facilities associated with the roadway network under their jurisdiction. UDOT's Statewide Pedestrian and Bicycle Plan was approved in February 2001. UDOT also has a designated Pedestrian/Bicycle Planner to provide leadership on non-motorized transportation. As several of the key transportation corridors in Salt Lake City are UDOT roadways, or intersect with UDOT roadways, UDOT is a key partner in the development of future bicycle and pedestrian facilities in the City.

The Utah Transit Authority's (UTA) light rail stations and bus stops are major generators of pedestrian activity. As both light rail vehicles and buses transport bicycles, the convenience of transit for bicyclists is enhanced.

2.2 City Responsibilities for System Development

Many divisions and departments within the Salt Lake City administration share responsibility for planning, implementation, and maintenance of pedestrian and bicycle facilities. The Planning Division plays a major role through both the development of community plans and the land development process. The Transportation Division is responsible for implementation of the Salt Lake City Bicycle and Pedestrian Master Plan, resolution of specific operational issues, striping

and signing design of on-roadway pedestrian and bicycle facilities, and bicycle and pedestrian safety considerations. The Engineering, Streets and Parks Divisions contribute significantly through the construction of new facilities, maintenance, and striping and signing programs.

2.3 Mayor's Bicycle Advisory Committee

The MBAC is a City committee of community volunteers committed to promote, enhance, preserve, and when necessary, create/restore physical, social, political and economic environments where bicycling is recognized as an essential element of a clean, healthy and vital community. The MBAC provides ongoing input on the planning, implementation and maintenance of bicycle facilities in Salt Lake City, working with city staff and reporting directly to the Mayor. The MBAC is also the driving force behind many of the promotional bicycling events that occur in the City.

The MBAC plays an important role in furthering the role of bicycling in the Salt Lake City area and has been a key contributor to the development of this master plan.

3.0 PLANNING PROCESS

The Bicycle and Pedestrian Master Plan should reflect the needs of current bicyclists and pedestrians as well as the needs of future users. The plan was developed through a community-based process that incorporated input, suggestions and critique from established bicycle advocacy groups, Salt Lake City community councils, and interested parties. This section describes the public involvement process and outcomes, the technical methodology, and the approval process for the master plan.

3.1 The Public Process

Various city departments make decisions that impact bicycling and walking. These decisions are generally based on input from city advisory committees and the general public. Due to the many diverse stakeholders, the public process for this master plan incorporated both formal and informal methods to gather information.

A Steering Committee was developed consisting of members from the City administration, Salt Lake City community councils, the Transportation Advisory Board (TAB) and the MBAC. Community council representatives played a key role by providing intimate knowledge of the communities in which they live and work. The Steering Committee met on May 22, 2001, August 28, 2001 and January 22, 2002.

Two public open houses were held to provide stakeholders and the general public with the opportunity to identify issues and needs and provide suggestions. These were held on June 26, 2001 at the Day Riverside Library and on June 27, 2001 at the Sweet Library. Notification of the open houses included distribution of a poster to the community councils, issuance of a press release to the local written and electronic media, placement of posters in several city locations, and incorporation of the notification poster on the Salt Lake City website. Approximately 5000 persons were contacted through the City's Office of Community Affairs mailing list. This list is a compilation of the mailing lists supplied by the community councils. Open houses to review the draft Bicycle and Pedestrian Master Plan were held March 18, 2002 at the Day Riverside Library and March 21 at the Forest Dale Golf Course Clubhouse. Detailed bicycle and pedestrian network maps, goals and objectives for the Bicycle and Pedestrian Master Plan, and an implementation plan were displayed for review and discussion. Approximately 80 persons attended these open houses.

3.2 The Planning Approach

Salt Lake City has had an approved bicycle master plan since 1993; distribution of a Salt Lake City Bikeways Map began in 1985. The existing master plan and the route network shown on the 1999-2000 Bikeways Map were the starting points for developing the updated bicycle portion of this master plan.

Except for the Salt Lake City Open Space Plan, Salt Lake City has not had a comprehensive, citywide pedestrian master plan. The Open Space Plan addresses corridors and trails but does not necessarily distinguish shared use trails from exclusive pedestrian facilities. Various neighborhood plans and downtown planning documents have addressed pedestrian issues, mid-block crossings, trails and pedestrian environments, but not comprehensively. With renewed interest in alternative modes of transportation, particularly bicycling and walking, this document is an important first step in promoting mobility that does not necessarily rely on the automobile.

Considerable neighborhood planning has occurred in Salt Lake City and is reflected in several community and neighborhood plans. Many of these small-area and neighborhood plans include bicycle and pedestrian circulation elements and suggested routes. These were overlaid on separate bikeways and pedestrian maps to create a comprehensive citywide composite of existing and proposed facilities.

Additionally, many of the neighborhood area plans and other planning documents are outdated. Some of the facilities mentioned in those plans have been implemented while other ideas have developed since the plans were prepared. In order to update the information, establish a dialog with neighborhoods, and identify both opportunities and constraints within Salt Lake City, a "Community Facility Inventory Worksheet" was developed and distributed to the Steering Committee, community councils, to the City's Office of Community Affairs mailing list, at the open houses, and to the MBAC. The worksheet asked three open-ended questions:

- *What/where are the top 3 to 5 pedestrian or bicyclist problems or issues in your community?*
- *What are the major barriers or obstacles in your community that make it difficult for pedestrians and bicyclists to get around?*
- *What are the key opportunities or corridors in your community that should be developed to help pedestrians and bicyclists?*

Worksheets and community responses were returned by mail, fax, email, and at the public open houses. The suggestions were mapped to help determine where they fit onto the existing non-motorized network as well as to identify new opportunities and needs. The suggested improvements were investigated in the field to qualitatively assess feasibility and to identify the potential type of facility that could be implemented.

3.3 Identified Pedestrian and Bicycle Issues

The initial public open houses were devoted to identification of issues and concerns and netted numerous written and verbal comments, as well as notations directly on maps indicating existing and proposed facilities. Combined with input received from the Steering Committee, interviews

with key Salt Lake City personnel, and other interested and involved individuals and groups, a comprehensive list of issues was developed. The following common themes were identified.

Diversity of skills and abilities: There is no single target population who uses the City's bikeways and pedestrian systems. Riders and walkers come in all ages, genders, socio-economic groups, ethnic and cultural backgrounds, and skill levels. Some are expert bike riders who travel to and from work, long distances, every day. These bicycle commuters consider their bicycles to be "vehicles", operate as vehicles, and prefer fast, direct routes on streets and can tolerate high traffic streets but prefer quieter streets.

Others are families, children and the elderly who are out for an evening ride or stroll, on their way to and from school and shopping, or other activities where quiet streets away from automobile traffic are preferred. Here, sidewalks and the quality of the pedestrian and street environment are important to their feelings of security, safety, and pleasure.

Between these two ends of the spectrum for the biking and walking public are countless others of varying skill levels and physical abilities whose expectations and needs are diverse.

Connections and nodes: Throughout the community there are important nodes and destinations such as schools, neighborhood shopping areas, libraries and other civic uses, churches, parks, cultural and recreation facilities, and employment centers. Although the street network provides connections for automobiles, convenient and attractive routes for pedestrians and bicyclists should be identified.

Connections to other modes of transportation: Biking and walking are a part of a broader system of mobility that includes TRAX, buses, park and ride lots, and perhaps others in the future. Bicycles are permitted on TRAX and UTA buses now, but even better access is desired. As new transportation facilities are constructed, ease of transfer from one form to another should be easily accommodated.

Provide support facilities: In order for biking and walking to grow as alternative forms of mobility, support facilities are needed. These include showers and changing facilities in places of business, permanent and secure parking and storage facilities for bicycles, temporary parking facilities during special events and festivals, service areas, and other similar uses for bicycles; and seating, lighting, trees, protection from the environment, and pedestrian-friendly streets for pedestrians.

Elimination of barriers: Major arterials, highways, railways, and other manmade structures are barriers to pedestrian and bicycle use. Existing facilities on bridges are often inadequate, unfriendly, and present both safety and security problems. As new infrastructure is being planned, safe bicycle and pedestrian facilities need to be integrated into the design. Existing problem areas need solutions.

New development opportunities: As new development and redevelopment projects occur, facilities for bicyclists and pedestrians should be included in the planning, design and approval process.

Street and sidewalk maintenance: Bikeways and sidewalks need regular maintenance. Potholes, recessed manholes, inadequately and poorly repaired roads and sidewalks, drain covers, curb and gutter damage, and other hazards affect the safety of bicyclists and walkers. Standards and regular methodologies need to be institutionalized and monitored.

Overlooked opportunities: Canal rights-of-way, abandoned railroad corridors, rail and highway rights-of-way, alleys, stream corridors, and others are opportunities for off-street biking and pedestrian corridors that should be optimized. Some members of the public expressed considerable concern with use of private lands along stream corridors for public trails.

Public education and innovation: Public education is a continuing need, both to educate motorists about the presence and rights of bicyclists and pedestrians, and to educate bicyclists and pedestrians about rules that apply to them and about safe use of streets and sidewalks. Additionally, other communities, states, and out-of-country locations are trying and succeeding with innovative means of blending multiple modes of transportation, encouraging pedestrian and bicycle use, and creating an atmosphere and environment that supports multi-modalism. There are examples and technologies that should be investigated and tested here. Salt Lake City should set an example for the State of Utah in educating the public and investigating new technologies.

4.0 EXISTING FACILITIES AND PROGRAMS

Salt Lake City has been committed to implementing facilities and programs that support bicycling and safe pedestrian movements for many years.

4.1 Current Bicycle and Trails Network

Salt Lake City has been developing bicycle facilities for many years through a variety of programs. The existing network is shown on Figure 4-1. It includes 49 miles of on-street bike lanes, 25 miles of signed shared use roadways, and 46 miles of off-street shared use pathways/trails.

A *Salt Lake City Bikeways Map* is produced, updated regularly, and made available to citizens. In addition to showing existing and planned routes, it outlines rules and regulations for riding in Salt Lake City, provides tips on bicycle maintenance, and includes bicycle safety information.

4.2 Street Pavement Maintenance and Rehabilitation

The City has an annual pavement maintenance program that includes slurry seal or pavement overlay projects. The City's current policy for roadways with bike lanes is not to place chip seal within the bike lanes. The Transportation Division reviews the list of streets that are scheduled for maintenance to identify opportunities to incorporate bike lane striping and pavement markings. As pavement markings do not require funding separate from the scheduled maintenance activities, this has proven to be an efficient way to implement or upgrade on-street bicycle facilities.

4.3 Wayfinding Signing Program

Salt Lake City has recently instituted a "wayfinding" program in conjunction with the Redevelopment Agency of Salt Lake City. This program provides distinctive signing that directs motorists, bicyclists and pedestrians to major destinations throughout the downtown and in the Sugar House area. This program enhances the appeal of the streetscape while providing valuable directional guidance to street and sidewalk users.

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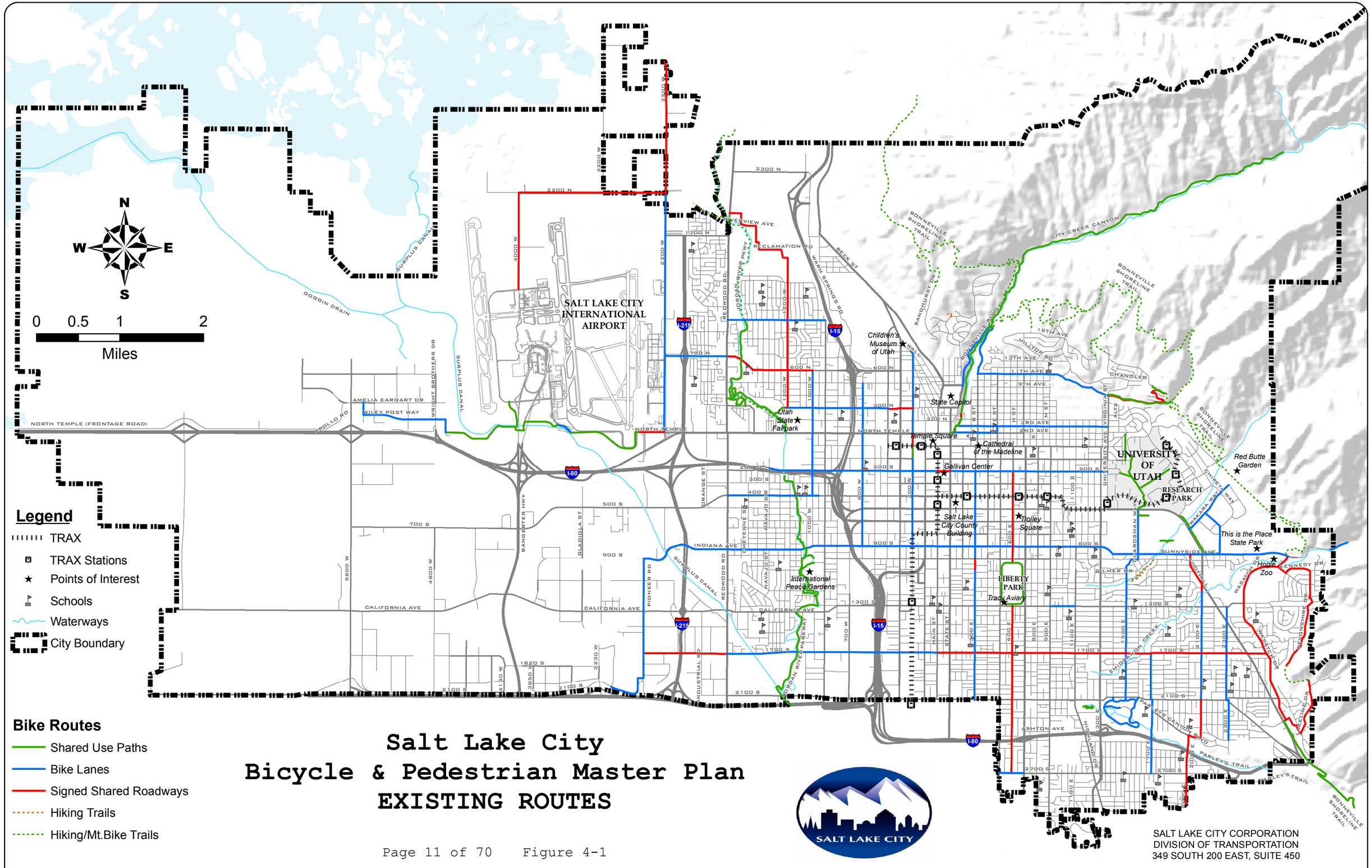


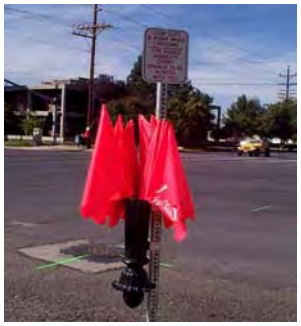
Salt Lake City
Bicycle & Pedestrian Master Plan
EXISTING ROUTES

SALT LAKE CITY CORPORATION
DIVISION OF TRANSPORTATION
349 SOUTH 200 EAST, SUITE 450

DRAWN BY: K. BELL 8/2/2004

4.4 Pedestrian Safety Programs

Salt Lake City has an active Pedestrian Safety Committee that works to identify and rectify pedestrian safety issues within the city. As a result of their efforts, the following programs are in place or are in the process of development.



City "Orange Flag" Program. This program is intended to increase the visibility of pedestrians to motorists at existing crosswalks by providing orange flags for pedestrians to carry with them while crossing the street. The City is responsible for maintenance of the flags. The majority of these installations are at midblock crossings in the downtown area. Currently, 40 flag locations are maintained by the City.

Adopt-A-Crosswalk. The Adopt-A-Crosswalk program grew out of the success of the City's "Orange Flag" program. Where there are existing crosswalks, citizens, community councils, businesses or other entities may adopt the crosswalk. The City funds and installs flag holders for the orange crossing flags and provides the first set of flags. The City subsidizes replacement flags but the crosswalk sponsor must maintain the crosswalk and contribute to flag replacement (If a public school adopts a crosswalk, the city will provide replacement flags at no cost). At the time of preparation of this master plan, sponsors have adopted 108 locations throughout the City.

Pedestrian Countdown Timers. The safety of pedestrian crossings at busy signalized intersections throughout the City is being enhanced through installation of new pedestrian signal heads. These signal heads provide the pedestrian with a countdown of the number of seconds remaining before the traffic signal turns yellow. This allows for more informed decision-making by the pedestrian.

LOOK Crosswalk Pavement Markings. LOOK pavement markings were developed and have been placed at the entrances to all downtown and school crosswalks. The LOOK markings are intended to caution pedestrians to look both ways before crossing the roadway. The two arrows in conjunction with the eyeballs looking left are intended to send the same message taught to children: "Before crossing, look left, then right, then left". The arrows

also alert pedestrians that once they cross halfway the traffic will be coming from the other direction and they will need to look right.

Overhead Crosswalk Warning Lights. These overhead installations are pedestrian activated and provide motorists visual notice of crossing pedestrians. Recent installations include the crosswalks at 600 South 900 West, Sunnyside Ave. at the Hogle Zoo and at 800 West California Ave. The City has received numerous requests for this treatment and will continue to evaluate the suitability of new locations as funding is available.

In-Roadway Crosswalk Lights. This new system provides enhanced visibility of pedestrian crosswalks to motorists and has demonstrated increased safety at such crossings. The first installation of this technology occurred at the 200 South Regent Street crosswalk in downtown Salt Lake City. Other installations may be considered after an appropriate trial period and identification of additional funding.

Sidewalk Maintenance Program. The City has an active sidewalk maintenance program that is funded annually to replace and repair sidewalks and to install curb cuts consistent with the requirements of the Americans with Disabilities Act. It is administered by the Engineering Division. The program contributes to overall pedestrian safety and mobility as well as enhancing the ability of persons with disabilities to negotiate the City's sidewalks.

Streets Division 50/50 Concrete Replacement Program. This cost-sharing program splits the actual cost of sidewalk replacement between the adjacent residential property owner and the City on a 50/50 basis. Property owners must pay for the work before the start of construction. Construction estimates are provided without charge and work is scheduled on a "first come first serve" basis. The Engineering Division administers this program.

Lighting Master Plan. The City is currently in the process of developing and adopting a Lighting Master Plan Element of the General Master Plan. This plan is expected to be adopted in the near future but could experience a number of changes from its current form before adoption. The plan currently calls for pedestrian and bicycle level lighting on all residential streets and continuous lighting on major arterials. At intersections and other conflict points with motor vehicles, the lighting is to be increased to provide better visibility. The document also provides guidelines for the design of such lighting systems.

4.5 Pedestrian Related Ordinance Enhancements

Attaining a safe environment for pedestrians includes more than providing infrastructure. Salt Lake City has instituted a Pedestrian Safety Committee that reviews specific problem locations, as well as investigates complaints. As a result of issues addressed by the City's Pedestrian Safety Committee, City ordinances 12.76.020, 12.76.030, and 12.76.040 have been rewritten and combined into a new ordinance, *12.76.045 Yielding Right-of-Way at Marked or Unmarked Crosswalks-Driver and Pedestrian Duties*. The new ordinance redefines how drivers yield to pedestrians at crosswalks and provides for increased penalties for initial and repeat offenders. In addition, drivers cited for failing to yield to the blind or otherwise physically impaired persons,

crossing guards or pedestrians using crosswalk flags, will be required to appear before one of the City's Justice Court Judges and will be subject to substantially increased fines.

Work of the Pedestrian Safety Committee has resulted in the introduction of Pedestrian Countdown Timers in the city. This new device, in combination with the new use of symbols instead of words in pedestrian signals, necessitated changes to City ordinance 12.32.050 Pedestrian "Walk" and "Don't Walk" Signals. The ordinance has been modified and renamed as ordinance 12.32.055 Pedestrian Signal Indications. Changes include updating the ordinance to include references to the Walking Person and Hand symbols and adding a section to allow pedestrians to begin crossing the roadway during the flashing hand phase at locations with countdown timers.

4.6 Traffic Management Program

The quality of the experience of walking and bicycling on the City's street and sidewalk network is heavily influenced by traffic. The City initiated a Traffic Calming Program in 1997 that has since evolved into a more comprehensive Traffic Management Program. The goal of this program is to implement measures, either physical or psychological, that will reduce speeding, influence commuters to use commuter streets, and effect driver behavior in such a way that safety and the traveling experiences of other road users, including pedestrians and bicyclists, will be improved. Effective traffic management improves the livability and quality of life in neighborhoods. The City's program is community based and includes a number of traffic management tools that may be applied to particular areas to enhance the travel experience for diverse types of street users. Traffic Management projects have been implemented in sixteen locations to date. More information on this program can be obtained on the city's Transportation Division website at: www.slcgov.com/transportation/trafficmanagement/management.htm

4.7 Redevelopment Agency of Salt Lake City

The Redevelopment Agency of Salt Lake City (www.slcrda.com) provides Salt Lake City with the opportunity to enhance pedestrian and bicycle amenities and circulation through their programs. Eight Regional Development Redevelopment Project Areas have been created – Baseball Stadium, Central City, Central Business District, Depot, Granary District, Sugar House Neighborhood, West Temple Gateway, and West Capitol Hill. Through redevelopment projects within these project areas, the Redevelopment Agency has been able to successfully construct pedestrian and bicycle amenities and circulation as well as urban design elements that are conducive to walking and bicycling. The Redevelopment Agency also has funding for improvements within their project areas. Continued and increased attention to partnering with the RDA will improve and expand bicycle and pedestrian facilities within their project areas.

4.8 Special Improvement Districts

A Special Improvement District (SID) is an area legally defined through ordinance by the City Council for the installation of public way improvements. The SID program provides an opportunity to enhance sidewalks, pedestrian safety, and improve the appearance of streets. There are two basic types of Street Improvement SID's. The first is a Street Extension SID, which involves the installation of curb and gutter, sidewalks, and drive approaches where such improvements have not previously existed. The second is a Concrete Replacement SID, which involves the reconstruction of deteriorated concrete in the public way. Both types of SID's may also include roadway and drainage improvements, accessibility ramp construction, street lighting, and landscape improvements in the parking strip. SID projects upgrade communities through the elimination of drainage problems, pedestrian safety concerns, and unsightly conditions in the public way.

Property owners can petition the City for the installation or reconstruction of public way improvements through a SID. Those signing the petition must be the owners of the properties adjacent to the requested improvement. Apparent support of the project, as indicated by those signing the petition, must represent greater than 50% of the total lineal frontage. Improvement costs for a Concrete Replacement SID are shared by the City and the residential property owner on a 50/50 basis. Business property owners pay the total cost of improvements adjacent to their properties. Property owners participating in a Street Extension SID pay the total cost of the improvements. Payment can be on an installment plan, generally over five years for a Concrete SID and over ten years for a Street Extension SID.

4.9 Public Way Accessibility Ramp Program

This program improves overall accessibility that benefits pedestrians, persons with disabilities, and bicyclists. A public way accessibility ramp inventory was completed in 1995. There are approximately 2,850 roadway intersections in Salt Lake City, which translates to approximately 10,000 total possible directional accessibility ramps. To date, approximately 6,000 ramps have been installed. This program is administered by the Engineering Division of the City. Since funding to install all the needed ramps is not immediately available, determination of priority locations for the expenditure of City funds is based on specific ranking criteria including pedestrian traffic volume, bus routes, school routes, public buildings, commercial outlets, citizen requests, and coordination with special needs groups. The citywide accessibility ramp inventory in conjunction with the defined prioritization criteria provides a powerful tool for evaluating needs and planning future ramp construction projects.

5.0 BICYCLE AND PEDESTRIAN FACILITIES CLASSIFICATIONS

Over the years, the transportation industry has given individual names to differing types of bicycle and pedestrian facilities. The names provide a simple method to assist in identifying target users and for generalizing design guidelines. In the United States, the most widely referred to names for bicycle facilities are those found in The American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities (1999). AASHTO defines four basic types of bicycle facilities as follows:

- Shared Roadways
- Signed Shared Roadways
- Bike Lanes, and
- Shared Use Paths.

To better suit local needs and based on the AASHTO classifications listed above, Salt Lake City has classified both bicycle and pedestrian facilities together into four general facility types:

- Neighborhood Bicycle and Pedestrian Circulation,
- City Bikeways,
- Downtown Bicycle and Pedestrian Circulation, and
- Shared Use Paths.

Separating these facilities into these four types will assist in determining the extent and design of improvements needed as the City moves ahead to improve both the bicycle and pedestrian environment. The already well-developed urban fabric, including a mature street network and considerable variation in topography, complicates such progress. Therefore, flexibility without compromising safety will be an important element as new plans are made and designs reviewed.

5.1 Neighborhood Bicycle and Pedestrian Circulation

Neighborhood bicycle and pedestrian circulation is informal and generally occurs on quieter low volume neighborhood streets, sidewalks, and pathways. Virtually every residential neighborhood street not designated as a City Bikeway is included in this classification. Circulation occurs between residences, local amenities and businesses to serve local needs. Examples include children walking to school, residents bicycling and walking in the evening, those going to nearby shopping destinations, joggers, and dog-walkers.

Bicyclists on these local low volume routes share the roadways with vehicles; no bicycle signing or pavement markings are provided. The neighborhood sidewalks are used by multiple types of users, including bicyclists, skateboarders, pedestrians, and children playing. Riding on sidewalks in Salt Lake City is permitted except in the Central Traffic District of the downtown area. Developing awareness of these informal connections would occur through community activities, community council publications, and may be reflected in local community or neighborhood plans.

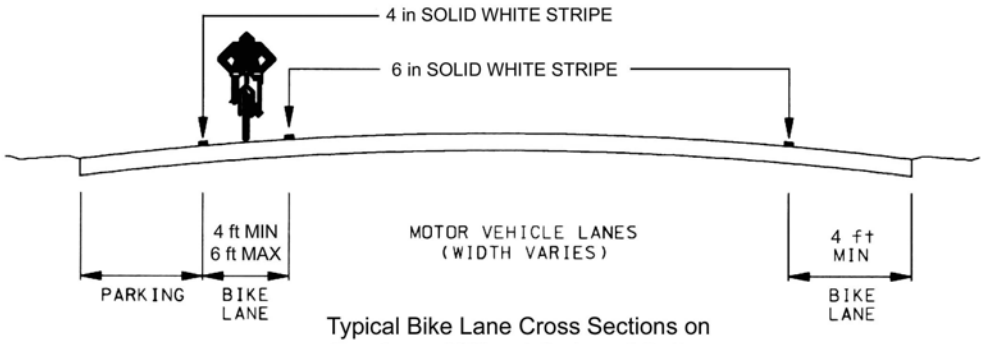
The extent to which neighborhood streets and sidewalks are used by local residents is related to the quality of the experience. Street lighting, landscaping, street furniture, and good sidewalks are physical elements that encourage pedestrian and local bicycle use, and can constitute strong "community builders". When people are comfortable walking and casually riding bicycles, they are making connections with their neighbors, building relationships, and developing a sense of neighborhood. In order to make these streets quieter and safer, special traffic calming treatments and other test projects may be appropriate to improve safety and encourage use by a diverse bicycling and pedestrian oriented public.

5.2 City Bikeways

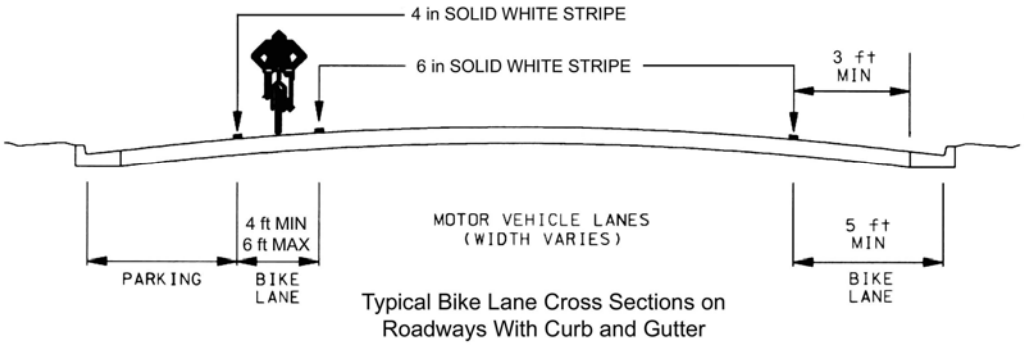
City Bikeways incorporate two AASHTO classifications: Signed Shared Roadways and Bike Lanes. City Bikeways are intended to establish direct and convenient on-street bicycle access to significant destinations throughout Salt Lake City and to provide cross-town routes. Bicycle travel occurs along a signed route or along a route with a lane signed and striped for the exclusive use of bicycles. The specific design treatment for each route varies depending on the characteristics of each roadway. Traffic volume, speed, street width, and parking are important considerations. The City will meet AASHTO guidelines when possible. City Bikeways are shown on Figure 4-1.

City Bikeways will accommodate the specific needs of bicycle commuters, experienced riders, and others who are comfortable being integrated into the roadway system and riding among motor vehicles. During more congested peak hour traffic times when bicyclists are more likely to be highly skilled commuters, City Bikeways help increase driver awareness of bicyclists and provide validation of their rights as roadway users. During off-peak times, less skilled riders may choose these routes for either all or part of their trip.

Bike Lanes. Two bike lane stripes are utilized to designate bike lanes adjacent to parking and one stripe is used on roadways without parking. Bicycle pavement markings and signs are used to designate the lanes for exclusive bicycle use. The minimum preferred width for bicycle lanes is 5 feet. The preferred minimum widths for adjoining parking and travel lanes are 8 feet and 10 feet respectively. Seven foot parking lanes and 9-foot travel lanes should not be used in combination with 4-foot bike lanes unless the speed limit is 25 mph or less, the average daily traffic (ADT) is 5,000 or less and the roadway is classified as a local street.



Typical Bike Lane Cross Sections on Roadways Without Curb and Gutter



Typical Bike Lane Cross Sections on Roadways With Curb and Gutter

Signed Shared Roadways. Guide signs alone are used to designate Signed Shared Roadways. These are routes that cannot presently accommodate bike lanes. As road reconstruction and paving projects occur, the roads are studied to determine if bike lanes could be installed. Many Signed Shared Roadways in the city could be converted to bike lanes if parking could be eliminated on one side of the roadway. It may also be possible to reduce the width of travel lanes, eliminate center turn lanes, or eliminate a motorized vehicle lane.

5.3 Downtown Bicycle and Pedestrian Circulation

Downtown Salt Lake City has a density of development that is associated with its role as a major destination for employment, shopping, entertainment, and cultural activities. Downtown experiences high levels of vehicle traffic (bus, light rail, car, delivery trucks), pedestrian activity, and on-street parking such that demands for street space in the downtown can be significant. Relative to elsewhere in Salt Lake City, the potential for conflicts among users is the greatest and providing bicycle and pedestrian facilities presents the greatest challenge. The relatively wide streets and long block lengths have an impact on vehicle speeds and driver behavior that can create a challenging environment for bicyclists.

On-street bike lanes and routes, described as City Bikeways, provide access to and through downtown via direct thoroughfares from all quadrants of the City. However, once within the downtown, the vast number of destinations and their dispersal throughout the area make it infeasible to formally designate routes for each destination. City ordinances also prohibit riding on sidewalks forcing bicyclists to operate as vehicles on roads not specifically designated as bikeways. With only limited options, the major focus of bicycle circulation in this key part of the City is safe operation of bicyclists in mixed traffic and motorist awareness of bicyclists. Upgrading the quality of downtown City Bikeways to maximize their safety and visibility for the benefit of all roadway users is a high priority.

Pedestrian activity within the downtown is significant and the sidewalk system is the backbone of circulation. Many of the existing programs described in Section 4.0 of this plan enhance wayfinding, safety, and awareness for pedestrians and motorists. These are all positive programs and improvements that demonstrate a commitment on behalf of the City to provide a pedestrian-friendly environment. Salt Lake City's large blocks are also a recognized deterrent to pedestrian mobility; mid-block crossings have been encouraged and developed where possible, and others are planned as new development and redevelopment occurs.

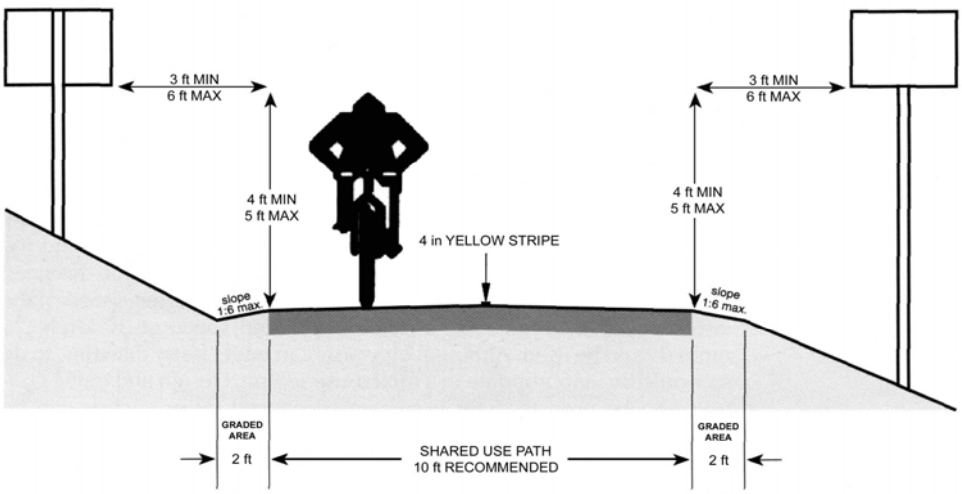
The Redevelopment Agency of Salt Lake City (RDA) is working to establish pedestrian corridors within key development blocks as a way to encourage walking, and better integrate the various attractions within the downtown. Identification of opportunities to establish "interblock" connections should be pursued through the RDA development process and other public and private development projects. Implementation of the development process concepts described in Towards a Walkable Downtown will continue to build on the advances the City has made in the past several years.

5.4 Shared Use Paths

These are defined as those separate trail systems that accommodate a wide variety of non-motorized users and that provide both inter-city and intra-city connections. Trailheads are provided for access in key locations, and neighborhood connections are encouraged. Bicyclists, joggers, walkers, and other recreational users frequent these trails. The paths are generally 10 to 12 feet wide, asphalt paved, and signed to minimize conflicts between different types of users. A typical cross-section is shown below; it provides flexibility of width to reflect availability of right-of-way. Where sufficient right-of-way is available, separate pathways for bicyclists and pedestrians could be developed.

Major existing and proposed shared use paths in Salt Lake City include the Bonneville Shoreline Trail, Jordan River Parkway, City Creek, Parley's Creek, and the Airport Trail. These paths are described in more detail in Chapter 7. Other minor trails are incorporated into Salt Lake City's parks system.

Typical Cross Section – Shared Use Path



5.5 Activity Nodes

Salt Lake City has evolved into an urban form that includes many activity nodes that attract both pedestrians and bicyclists. Although almost any commercial or recreational facility could be considered an activity node, there are several significant centers that have evolved, or are evolving, with an identity of their own. Figure 5-1 shows the locations of many of these nodes. They include such familiar ones as the University of Utah, 9th East/9th South, Liberty Park, 15th East/15th South, UTA light rail TRAX stations, and the International Center business park but also include smaller nodes best known to the local neighborhoods that use them.

Identifying convenient and attractive connections between these nodes for pedestrians and bicyclists would enhance the overall livability of the neighborhoods these nodes serve, as well as the economic vitality of those nodes that are commercially oriented.

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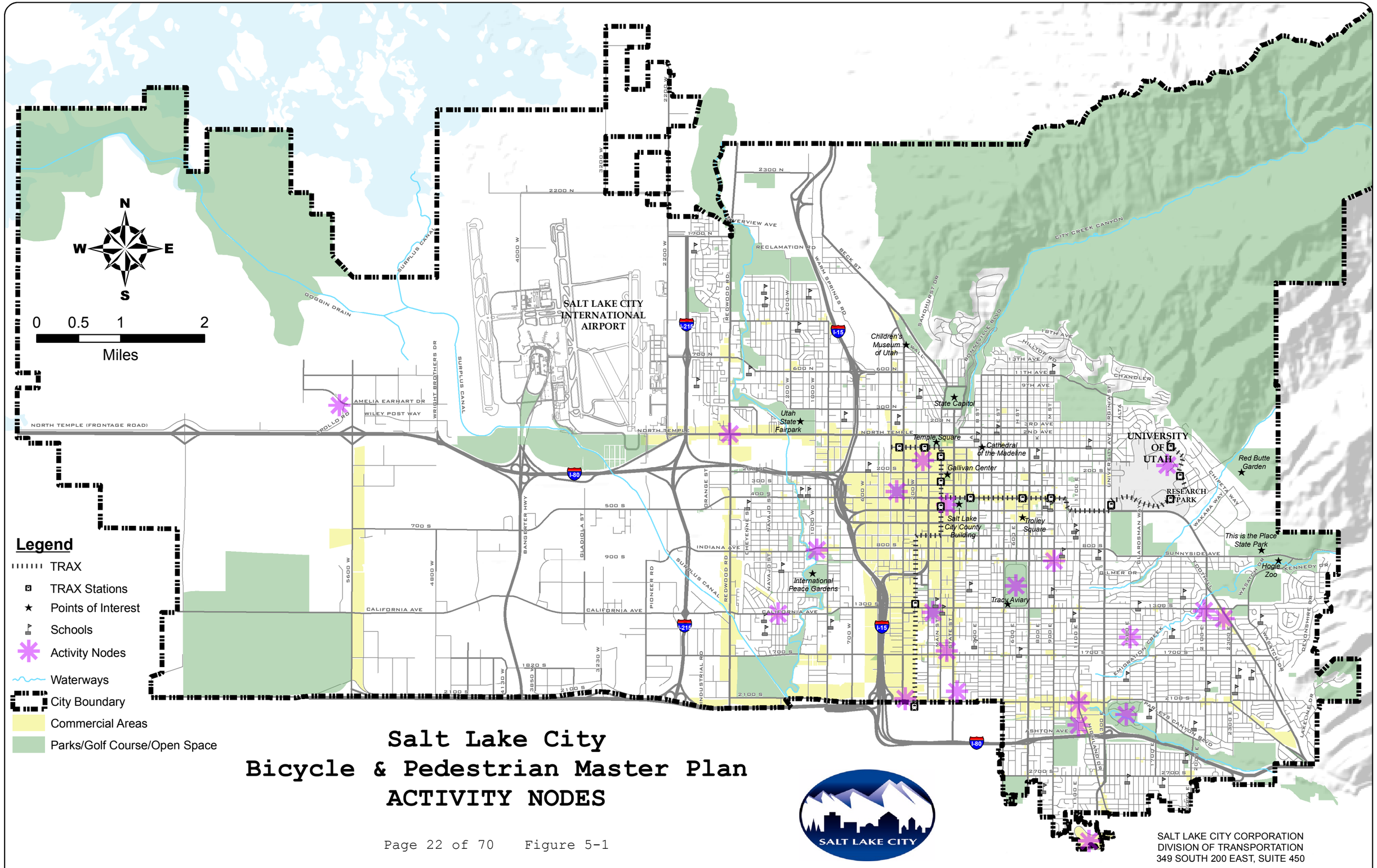

Salt Lake City
Bicycle & Pedestrian Master Plan
ACTIVITY NODES

SALT LAKE CITY CORPORATION
DIVISION OF TRANSPORTATION
349 SOUTH 200 EAST, SUITE 450

DRAWN BY: K. BELL 8/2/2004

6.0 GOALS AND OBJECTIVES

The Bicycle and Pedestrian Master Plan is intended to provide a framework to achieve the following five goals:

1. *To incorporate bicycle and pedestrian mobility and facility needs into community planning, land use planning and the development process.*

2. *To expand the existing pedestrian and bicycle system and improve on-street bicycle travel between neighborhoods, within the City, and to connecting intra-city locations.*

3. *To improve the quality of the existing system.*

4. *To promote safe bicycling and enhance pedestrian safety.*

5. *To maximize the use of available federal and state funding opportunities to support pedestrian and bicycle programs and facilities development.*

These goals will be achieved through action items oriented to specific objectives.

Goal 1: To incorporate bicycle and pedestrian mobility and facility needs into community planning, land use planning and the development process.

Objective 1-1: Include a bicycle and pedestrian systems element into each small area, neighborhood, and citywide planning document.

Action Item(s):

1. As new neighborhood and small area plans are completed, incorporate by reference the classifications, goals and objectives of the Bicycle and Pedestrian Master Plan.

Objective 1-2: Include bicycle and pedestrian considerations into new development and redevelopment projects.

Action Item(s):

1. Within the planning, design and approval process, require new development and redevelopment projects to provide public access for bicyclists and pedestrians, and provide support services for bicyclists and pedestrians, including parking and storage facilities.
2. Evaluate the feasibility of amending the governing codes and ordinances to allow the City to require development projects to provide amenities that support bicycling and walking (pedestrian circulation, showers, in-building bicycle lockers, etc.)
3. Consider bicyclists' needs in the design of traffic calming roadway elements.
4. Implement roadway, bicycle, and pedestrian pathways and designations that are appropriate for adjoining land use.

Objective 1-3: To encourage and facilitate pedestrian mobility and bicycle use so that they become viable and attractive choices for travel within the City.

Action Item(s):

1. Include a bicycle and pedestrian circulation element within the planning of any community, major development, and/or neighborhood plan.
2. Incorporate and adopt the Bicycle and Pedestrian Master Plan into the City's Transportation Plan.

Goal 2. To expand the existing pedestrian and bicycle system and improve on-street bicycle travel between neighborhoods, within the City, and to connecting inter-city locations.

Objective 2-1: Designate a network of "City Bikeways" to facilitate cross-town circulation.

Action Item(s):

1. Designate and sign a network of cross-town streets as on-street bicycle routes.
2. Determine the type of on-street facility based on traffic volume, available pavement width, right-of-way, community input, and site specific conditions.
3. Extend the use of "Share the Road" signs on higher volume streets that are designated as City Bikeways.
4. Integrate the consideration of City Bikeways into all planning, design, construction and maintenance activities of the Departments of Public Services and Community Development.

Objective 2-2: Enhance the "Downtown Bicycle and Pedestrian Circulation System" to accommodate the need for bicycle and pedestrian circulation in the Central Business District and adjacent uses.

Action Item(s):

1. Install "Share The Road" signing on the designated City Bikeways.
2. Upgrade routes to AASHTO standards wherever possible.
3. Incorporate bicycle and pedestrian access into new development or redevelopment projects as appropriate to maintain continuity of routes and enhance access.
4. Create pedestrian and bicycle routes using mid-block crossings and passageways, wide sidewalks, and signing.
5. Create safe linkages by limiting curb cuts, reducing conflicts, and making needed sidewalk and street repairs.
6. Provide pedestrian and bicycle amenities on downtown rights-of-way, including benches, trees, lighting, bike racks, public art, and special paving systems.
7. Provide developer bonuses for including extra pedestrian and bicycle amenities.
8. Require promoters and developers to provide temporary, secure bicycle parking during special events and festivals.

Objective 2-3: Enhance the "Neighborhood Bicycle and Pedestrian Circulation Systems" for recreational riders, school children, and others traveling short distances to neighborhood service areas and for recreational purposes.

Action Item(s):

1. Incorporate internal neighborhood bicycle and pedestrian circulation into community and neighborhood area plans through the planning process.
2. Identify links from these local routes to the City Bikeways.
3. Publicize links through community activities and joint Community Council and City events.
4. Encourage citizens to participate in the 50/50 Concrete Replacement Program to repair sidewalks in their neighborhoods.

Objective 2-4: Identify, eliminate or provide alternatives to physical barriers to bicycle and pedestrian access

Action Item(s):

1. Provide regular maintenance of designated City Bikeways.
2. Incorporate bicycle and pedestrian circulation into the planning, design and construction of major transportation and other infrastructure projects.
3. Maintain long term options for potential future bicycle or pedestrian corridors through adherence to existing approved and amended City plans.

Objective 2-5: Complete the Jordan River Parkway Trail so that it is continuous between the north and south boundaries of the City.

Action Item(s):

1. Work with Union Pacific Railroad, UDOT, and others to complete a safe and connected Jordan River Parkway multi-purpose trail.
2. Identify and sign interim alternative routes until the parkway trail can be completed.
3. Identify and sign accesses to the Jordan River Parkway from cross streets.
4. Identify possible funding sources for completing the trail.
5. Encourage other neighboring jurisdictions to complete their portions of the trail.

Objective 2-6: Complete the Parley's Creek Corridor Trail between the Bonneville Shoreline Trail and the Jordan River Parkway.

Action Item(s):

1. Complete the tunnel under I-215 at the mouth of Parley's Canyon to connect the Parleys Creek Corridor with the Bonneville Shoreline Trail.
2. Incorporate a permanent off-street trail in the planning, design, and construction of any I-80 improvements.
3. Continue to coordinate and work with the Parley's Rails, Trails and Tunnels (PRATT) committee to confirm the preferred trail alignment.
4. Incorporate a multiple use trail into the planning for the future transit use of the UTA rail corridor to Sugar House.
5. Coordinate with the City of South Salt Lake and the Utah Transit Authority to determine and implement a connection through the City of South Salt Lake.

Objective 2-7: Support the implementation of trail corridors within the Open Space Plan as funding and opportunity allow.

Action Item(s):

1. Public involvement with notification to all affected property owners must be a basic component of the planning process prior to designing a specific trail.
2. Support current City policy to fully explore and exhaust public property alternatives for trail alignments prior to any consideration of private property encroachment.
3. For sections of trail proposed on private property, monitor opportunities for acquisition of right-of-way or conservation easements through purchase or voluntary donation.
4. When determining the exact location of a proposed trail project, address private property issues such as safety and privacy and ensure that negative impacts are mitigated.
5. Trail alignments shall not require the removal of private housing units.

Objective 2-8: Investigate other feasible off-street trail corridors on other publicly and privately held regional corridors.

Action Item(s):

1. Monitor existing and proposed uses of utility rights-of-way, railroad rights-of-way, alleys, and canals to identify opportunities for incorporation of public trails.

Objective 2-9: Accommodate bicycles on public transportation systems.

Action Item(s):

1. Coordinate with the Utah Transit Authority to continue to provide bicycle storage on buses and light rail vehicles and to ensure bicycle accommodation on future commuter rail trains.
2. Encourage installation of bicycle parking spaces, including secure parking, such as bicycle lockers, at all transportation hubs, including the Salt Lake City Intermodal Hub, park and ride lots, and UTA TRAX stations.

Objective 2-10: Provide support facilities and services to encourage and facilitate bicycle and pedestrian use.

Action Item(s):

1. Apply existing ordinances and bicycle and pedestrian-friendly planning principles to incorporate access, safe storage, and appropriate lighting into new development, and as a condition of special event approvals.
2. Provide secure bicycle storage during special events, festivals, farmer's markets, and other City gatherings.

Objective 2-11: Coordinate with other state and neighboring local jurisdictions and potential partner organizations to coordinate and enhance bicycle and pedestrian circulation and support facilities at jurisdictional boundaries.

Action Item(s):

1. Develop a partnership relationship with the school district to identify opportunities for facility development, education programs, school access, and future school site location and planning.

2. Coordinate with the City of South Salt Lake to develop a linkage to the Jordan River Parkway from the Sugar House area of Salt Lake City.
3. Develop a partnership with the University of Utah to better integrate City bicycle and pedestrian facilities and programs with campus planning and infrastructure.
4. Explore nationwide experience with implementation of trails along privately held canals to identify ways to overcome institutional issues.
5. Through the Wasatch Front Regional Council and development of the State Transportation Implementation Plan (STIP), monitor opportunities to implement master plan bicycle and pedestrian facilities into the planning, design and construction of federal, state, and city sponsored transportation projects.
6. Coordinate with UDOT to provide sidewalks on UDOT roads within Salt Lake City to improve pedestrian access to transit stops and other community facilities (i.e. Redwood Road, 1300 East).

Goal 3: To improve the quality and maintenance of the existing system.

Objective 3-1: Maintain bicycle and pedestrian facilities in a safe and operational condition.

Action Item(s):

1. As required, establish an annual maintenance budget for bicycle routes, including street sweeping, repainting of pavement markings, replacement or repair of signs, etc.
2. Establish a plan for frequent sweeping of City streets that are designated as City Bikeways.
3. As determined necessary, adjust the sensitivity of traffic signal loop detectors on City Bikeways so they detect bicycles.
4. Dedicate additional funds for sidewalk improvements and repairs.
5. Implement a City website-based maintenance reporting system to facilitate repair requests.
6. Through utility bills or other regular City correspondence, educate homeowners and businesses about their responsibility for maintaining passable sidewalks.

Objective 3-2: Implement and enforce strict construction street rehabilitation requirements and specifications for utility providers and contractors.

Action Item(s):

1. Review existing contract specifications for street rehabilitation and revise to help contractors implement a smoother bicycle riding surface without gaps, steps, or grooves.
2. Require signed alternative routes when construction closes or impedes a City Bikeway, sidewalk or shared use pathway.
3. Review existing contract specifications to require restriping of pavement as soon as possible after construction is complete.

Objective 3-3: Continue to replace drainage grates on City Bikeways with grate designs that do not pose a safety hazard for bicycles.

Action Item(s):
1. Inventory bicycle unfriendly drainage grates.
2. Replace with bicycle friendly grates during routine street maintenance and reconstruction projects.
3. Establish a budget item for grate replacement.
4. Require bicycle friendly grates in all new street construction.

Objective 3-4: Restrict the practice of chip sealing within bike lanes.

Action Item(s):
1. Formalize the unwritten City policy to restrict the practice of chip sealing within bike lanes.

Goal 4: To promote safe bicycling and enhance pedestrian safety.

Objective 4-1: Provide clear signing and pavement markings targeted to bicyclists, pedestrians, and motorists.

Action Item(s):
1. As required, provide an annual budget to support pavement markings and signing of bicycle routes.
2. Install "Share the Road" signs on high traffic volume on-street bicycle routes.

Objective 4-2: Educate motorists, pedestrians, and bicyclists concerning bicyclists' and pedestrians' rights and obligations, as well as about the City's network of pedestrian and bicycle systems and classifications.

Action Item(s):
1. Provide information at City events and on the City website.
2. Include a "Share the Road" safety advisory mailing in the City utility bill annually in the spring.
3. Develop a bicycle education module that can be included in driver education and other educational programs.
4. Encourage police enforcement of traffic violations by bicyclists and pedestrians.

Objective 4-3: Support Police Department participation in developing a school children based safety program.

Action Item(s):
1. Examine program elements and funding requirements for programs established by other municipal jurisdictions in the country.
2. Establish a pilot-program through coordination with the school district and/or through the public library system.

Objective 4-4: Prepare and distribute an update to the City Bikeways Map approximately once every three years.

Action Item(s):

1. Work with the MBAC to help ensure sufficient funding for updating, printing and distribution of the map.
2. Maintain the updated map on the City website.

Objective 4-5: Incorporate bicycling and pedestrian promotional activities into City-sponsored events.

Action Item(s):

1. Fund and develop a portable display to encourage and promote bicycling and walking, including their health benefits, for use at public events, display in public libraries, and for use at project-related public forums.

Objective 4-6: Initiate a citywide pilot project program to test alternative means of encouraging bicycle and pedestrian access and use.

Action Item(s):

1. Organize a City committee dedicated to developing and implementing pilot projects to encourage alternative modes of transportation.

Goal 5: To maximize the City's potential to obtain federal and state funding to support pedestrian and bicycle programs and facilities.

Objective 5-1: Clarify the City's grant application process.

Action Item(s):

1. Educate City employees about the new role Management Services will play in identifying new and existing funding programs and writing City grant applications.
2. Resolve the issue for guaranteeing matching funds during the application process.
3. Maintain a current list of available funding sources for pedestrian and bicycle programs and facilities.

Objective 5-2: Support the grant application process initiated by public, community and private groups.

Action Item(s):

1. Provide information on grant application preparation on the City website.
2. Provide City staff assistance to public, community and private groups in preparing applications for grants for pedestrian and bicycle planning and facilities.

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7.0 IMPLEMENTATION PLAN

The Bicycle and Pedestrian Master Plan must include a Systems and Facility Map and an organized plan for the implementation and funding of new bicycle and pedestrian facilities and the maintenance of existing ones. The implementation plan includes planning and construction of new infrastructure, support for existing programs, and support for new programs. Various City departments will share the responsibility for undertaking the plan, depending on their administrative mandate. This master plan makes use of existing committees within the City to implement the plan efficiently.

Through the efforts of the Redevelopment Agency of Salt Lake City, guidance as provided in recent neighborhood plans, and such documents as Towards a Walkable Downtown, the Administration is confident that the principles of good, safe urban design and street treatments are well known. What is lacking to implement them is secure on-going City funding or alternative State or Federal funding sources.

7.1 The Plan

The bicycle and pedestrian corridor network map for Salt Lake City is shown in Figure 7-1. The map shows both existing routes and proposed routes, and includes shared use paths, bike lanes, and signed shared roadways. In general, City Bikeways are spaced to provide north/south and east/west corridors at half mile to mile intervals, depending on the characteristics of the network. Figures 7-2, 7-3, 7-4 and 7-5 provide route information by city quadrant.

Table 7-1 lists specific projects by geographic section of the City and provides the assumptions used to develop the planning level cost estimates. These Year 2004 construction cost estimates are included as a means of comparing funding requirements for each project. As many of the individual projects will require conceptual engineering and field confirmation, these estimates are order-of-magnitude only and should be used accordingly. Projects that are not specific to facilities development are also included in Table 7-1. Funding for these projects is needed for the City to attain the goals and objectives presented in Section 6.0 Goals and Objectives. Funding opportunities are discussed in Section 10.

It should be noted that Table 7-1 is a list of projects assembled from previous work with the MBAC, other existing city master plans and community and Steering Committee input during preparation of this master plan. The inclusion of a project on Table 7-1 does not indicate that the city is required to construct the project nor does it imply a schedule certain or funding for implementation. Projects may be added or subtracted from the table in the future as community needs are further assessed and as funding opportunities become available. Projects cannot be constructed until funding for them is allocated. None of the projects are currently funded and funding availability is not guaranteed.

7.2 Prioritization

Before implementation of the proposed shared use paths and bikeways can occur, two additional steps are needed to guide orderly and affordable expansion of the system:

- Development of a yearly priority list in consultation with the MBAC and communities that may be served and/or affected; and
- Conceptual engineering and cost estimation of each bikeway.

Developing Priorities

This master plan recommends that the MBAC play a major role in determining the priority for implementation of the projects included in Table 7-1 on an annual basis. Criteria to be considered include route continuity, safety, geographic equity, and opportunity. This approach allows the major users of City Bikeways to help determine how the bikeway network will be expanded each year. As the Downtown is the portion of the City where pedestrian/vehicle/bicyclist/parking conflicts are the greatest, including Downtown facilities as a priority should be considered. Coordination with interested and affected communities in reviewing these priorities should be incorporated into the process. Recommendations of the committee will be provided to the relevant City Boards and Commissions such as the Capital Improvements Advisory Board, the Community Development Advisory Committee, the Transportation Advisory Board, the Business Advisory Board, the Planning Commission, etc.

Conceptual Engineering and Estimates

Many of the City Bikeways have varied street cross-sections, parking characteristics, access needs, and opportunities that will determine which of the bikeway classifications described in Section 5.2 of this master plan are appropriate and feasible. For those priority bikeways that are identified each year, City staff time and resources are needed to conduct conceptual engineering and develop more detailed cost estimates. Consultation with potentially affected communities and interested parties will also be required when developing detailed plans for the City Bikeways. This additional staffing is reflected in Table 7-1 and is subject to funding availability.

7.3 Shared Use Paths

The shared use path system forms one of the most important elements of the Salt Lake City bicycle and pedestrian network, based on public input received during this planning process. It provides both local and regional opportunities for a variety of users, from casual walkers to children learning to ride bicycles, to more experienced bicyclists. It is a high priority for many citizens as it provides the best type of facility to accommodate people of diverse abilities and ages.

Through the public involvement process for this master plan, as well as for other planning documents, concerns have been raised about the potential impacts of shared use trails on private property. As part of the Sugar House Master Plan adopted November 13, 2001, the Salt Lake City Council approved the following language:

> "The exact trail route location of a proposed trail project should address private property issues such as safety and privacy and ensure negative impacts are mitigated. If a specific trail plan is ever proposed for any of the open space corridors in Sugar House, public involvement with notification to all affected property owners must be a basic component of the planning process, prior to identifying the location for a trail route and designing a specific trail plan.

> Trail alignments shall not require the removal of housing units. Public property alternatives shall be fully explored and exhausted prior to any consideration of private property encroachment for trail alignments, particularly in the areas of the Canal/McClelland and Emigration Creek Corridors located in the Sugar House Master Plan Community. This would not preclude voluntary donations or conservation easements provided by private property owners."

This policy with respect to private property would also, presumably, apply to other open space corridors throughout Salt Lake City.

Bonneville Shoreline Trail

The Bonneville Shoreline Trail is being constructed along a route that follows the eastern shoreline of ancient Lake Bonneville across the foothills of the Wasatch Range. The trail will eventually span a distance of approximately 90 miles. Within Salt Lake City the Bonneville Shoreline Trail is essentially complete.

Jordan River Parkway

The Jordan River Parkway trail is being constructed along the Jordan River with the ultimate goal of a continuous trail from Utah Lake to the Great Salt Lake. A desire to complete the Jordan River Parkway was one of the most frequently heard public comments. Portions of the Parkway in Salt Lake City have already been built and the City has been very active in planning for the design and construction of the unfinished sections. The status for completion of the Parkway within the City is detailed below.

Pierpont Ave. to 200 South

> This is a short section of trail, approximately 350 feet in length, which passes under I-80. The design is complete and the project can be constructed as soon as funding is obtained. The estimated cost of the project is $220K. This project is included in the implementation plan as a high priority project.

200 South to North Temple

> Funding for this section is being requested in the City's budget. There are some property encroachment problems with Qwest and UP&L that need to be resolved before the section can be constructed. There are also issues with the Union Pacific regarding crossing their mainline railroad tracks. The City has estimated the cost at $1 million, without right-of-way. This project is included in the implementation plan as a high priority project.

1000 North to north City limit

> Creation of a formal paved shared use path is needed to complete the parkway concept through Salt Lake City. This project is included in the implementation plan as a high priority project.

City Creek Trail

The existing City Creek Trail begins at City Creek Park located on the northeast corner of State St. and North Temple. The trail heads north on Canyon Road and passes through Memory

Grove. At the North end of Memory Grove the trail crosses Bonneville Blvd. and enters City Creek Canyon. The trail/canyon road ends approximately 5.6 miles past the canyon entrance.

In addition to the trail described above, Salt Lake City is undertaking a project to resurface City Creek and to create a trail connection along the creek between 500 West and the Jordan River. This goal is listed in the 1992 "Salt Lake City Open Space Plan", as well as the Poplar Grove and Gateway master plans. The project includes moving Union Pacific Railroad's active freight line from Folsom Ave. (40 South) to South Temple, to run parallel with the existing line. This will provide a continuous 80 to 100 foot wide right-of-way along Folsom Ave. from 500 West to the Jordan River. This right-of-way will accommodate the restored creek channel and a shared use path.

Parley's Trail

The Parley's Trail is a proposed multi-purpose pedestrian and bicycle trail connecting the existing Bonneville Shoreline Trail on the east to the Jordan River Parkway Trail on the west. The Parley's Trail has the opportunity to traverse and connect Parley's Crossing, Hidden Hollow Natural Area, Tanner Park, Sugar House Park, Sugar House Business District, Fairmont Park, Forest Dale Golf Course, South Salt Lake, Roper Train Yard, Workman Park and Glendale Park as well as various neighborhoods, commercial centers, employment areas and community destinations. Salt Lake County is currently in the process of creating a trail master plan with the goal of identifying the preferred alignment, philosophical approach and more specific design solutions and cost estimates. A continuous route may include the following projects:

Parley's Trail Tunnel under I-215

A design contract for the tunnel has been funded and will proceed. The tunnel is not included in this implementation plan.

Sugar House Park to Parley's Crossing of the Bonneville Shoreline Trail

The future reconstruction of I-80 from Parleys Canyon to I-15 provides the opportunity to obtain this corridor as part of the freeway right-of-way. Determining the preferred alignment, whether it is on the north or south side of I-80, will be done as part of Salt Lake County's master plan for the Parley's Trail. Only part of this section of the Parley's Trail is within Salt Lake City (approximately 1.5 miles). Only the city portion of the trail is included in the Table 7-1 cost estimate. Use of the existing internal roadway system through Sugar House Park can provide a link between 1700 and 1300 East.

The Draw at Sugar House

In 2003, Salt Lake City, with the National Endowment for the Arts, sponsored a competition to design a pedestrian passageway across 1300 East. The winning proposal envisions an open walkway below 1300 East connecting Sugar House Park, Hidden Hollow and the Sugar House business district. Automobile traffic will pass over the "Draw" on two separate bridges, with a light well in the center median to bring daylight

into the passage below. Adjacent to the crossing, 1300 East will be planted as a parkway, with large sycamores on both sides of the street and bordering the light well. The passage through the Draw is designed to reflect the ecological and cultural history of Sugar House with colorful stepped, battered walls, and opportunities for landscape treatment and art at both ends. The design includes two landscape sculptures that evoke Utah's pioneer history.

Salt Lake City has allocated funds for construction design, and private, state and federal funds are being sought to pay for construction of the Draw.

Sugar House Rails to Trails Corridor

The Utah Transit Authority owns the rail corridor through the Sugar House Business District. One long-range concept contained in the Sugar House Master Plan is to develop the corridor as a multi-modal corridor that includes transit, and a shared use pathway. The photograph to the right shows a trail within the same right-of-way as an active rail line. As implementation of transit in the Sugar House corridor is long term, given the expected phasing of light rail lines in the greater Salt Lake Valley, an interim solution is recommended.

Salt Lake City could pursue an agreement with UTA for interim use of a portion of the corridor for a shared use pathway, and assume the costs of its construction and maintenance. The trail should be designed to minimize the need to relocate it within the right-of-way, should UTA implement transit in the corridor in the future. Should the corridor be needed for fixed guideway transit, the right-of-way could then be developed to incorporate both transit infrastructure and the shared use pathway. This implementation plan includes funding for development of this concept into a demonstration project proposal. The funding would provide for UTA and community coordination, engineering feasibility, conceptual engineering, and detailed construction cost estimation.

Airport Trail

During the summer of 2001, the Salt Lake City Airport Authority closed to public access portions of 4000 & 4200 West within the airport. This closure eliminated a large portion of a popular bike route/loop around and through the airport used by casual riders and by serious bicyclists as a training loop for bicycle racing.

In a demonstration of support for bicyclists and alternative modes of transportation, the Airport Authority, with the support of the Planning Commission and City Council, has agreed to allow the City to construct an alternative route around the west side of the airport. The new route is planned as a 10-foot wide shared use path that will connect 2200 North with the existing shared use bike path on the south end of the airport. The new path will take the place of 4000 & 4200

West thereby allowing the popular airport bike loop to remain intact. It is envisioned that besides being a popular route for bicyclists, this new route may also become a favorite for hikers and other nature lovers since it passes through large wetlands along the shores of the Great Salt Lake.

The entire path will be constructed on existing gravel and dirt roads to minimize costs. The existing gravel road is used as a maintenance road for the UP&L powerline corridor. UP&L has an easement for the road but the Airport Authority owns the property. Initial discussions with UP&L indicate their support for construction of the shared use pathway within their easement.

TRAX Rail Trail

During light rail transit planning, a 1997 agreement between Salt Lake City and UTA was signed which allows the City to use up to ten feet of the TRAX right-of-way to build a bicycle path between 2100 South and 1300 South. The agreement states that implementation of a trail is subject to availability of right-of-way and must be based on mutual agreement between the City and UTA. Development of this trail is included in the implementation plan.

7.4 City Bikeways

Many of the City Bikeways are in place, as shown on Figure 1-1. Those that are yet to be developed will require detailed review of site-specific conditions to develop an implementation plan for each route. Where the current street condition will require reconstruction or resurfacing, pavement markings may be delayed until that reconstruction or resurfacing occurs. Once reconstruction or resurfacing is complete, the roadway has a fresh surface that can be striped and is very visible to both motorists and bicyclists. The City Bikeways are listed in Table 7-1 by geographic segment of the City.

7.5 Pedestrian Crossings and Intersection Operations

Public comment received during preparation of this plan included concerns with pedestrian crossings at many intersections. The list of pedestrian crossing issues has been provided to the Transportation Division for consideration by the Pedestrian Safety Committee. The master plan recommends that the Pedestrian Safety Committee continue to be the vehicle by which the City reviews site-specific pedestrian crossing needs and requests and develops recommendations. To support this process and enhance the public's ability to request assistance, a request or complaint form should be added to the City website.

The TRAX stations and the associated feeder bus network generate considerable pedestrian traffic. UTA has expressed a need to improve pedestrian access to stations at 1300 South and 2100 South. A detailed examination of the UTA's proposals for improved access and improved sidewalks should be undertaken by the City and included in future funding.

7.6 Traffic Management Program

The environment for bicyclists and pedestrians in those areas qualifying for the Traffic Management Program will benefit as traffic speeds and volumes are reduced. In addition, the

tools utilized by the program further enhance the environment by improving pedestrian visibility (raised crosswalks and bulbouts), reducing crossing distance (bulbouts and islands), and providing pedestrian refuge areas and landscaping (islands). This master plan recommends continued support and funding for this program.

7.7 Support Programs Requiring Funding

The implementation of this master plan requires annual funding to provide support for on-going maintenance and for education and promotion of bicycling and walking.

Maintenance

Inadequate maintenance of existing facilities was a common complaint received during preparation of this master plan. Although the City currently provides funding for street sweeping, funds should be earmarked for more frequent cleaning of roads that are designated as City Bikeways in Figure 4-1.

Replacement and/or repair of sidewalks in the City also require on-going annual funding if the City is to provide a better walking environment within neighborhoods, and to the many activity nodes in the City. Although the City is already providing some funding for this purpose, additional funding is needed.

Education and Promotion

Section 9 of this master plan outlines suggestions for providing education of motorists, pedestrians, and bicyclists of all ages, as well as promoting the facilities that are in place. Developing programs will require some level of City funding, if only as a local match to State or Federal funds that may be applicable. An annual funding level is suggested in Table 7-1 to support educational efforts.

7.8 Pilot Projects

Other North American and European cities have been able to achieve levels of integration of pedestrian and bicycle mobility into their transportation systems that far exceed the typical American experience. Although much of their success can directly be related to land use patterns and differing societal values, Salt Lake City does have the potential to explore the feasibility of some of these approaches and to test their success through pilot projects. Connecting the activity nodes identified in Figure 5-1 provides a planning objective to begin to identify possible projects.

Detailed examination of their feasibility and testing should be pursued and funding for both planning and implementation identified and budgeted.

Possible pilot projects suggested during public open houses and discussions with the City Administration include:

- "Bicycle Take Back the Streets" on selected streets on selected days;
- A European style "woonerf" street connecting key activity nodes;
- "Walking School Bus" or "Walk to School Day" concept to safely escort children to and from school along established neighborhood walking corridors.
- Interim use of the UTA railroad spur in Sugar House

7.9 Special Downtown Planning Studies

Providing additional bicycle facilities and improving the urban fabric to encourage bicycling and additional pedestrian activity in and through the Downtown will require additional detailed study. Resolving potential conflicts between competing uses of downtown streets may require that a downtown small area plan be developed. Proactive involvement of user groups, the business community, UDOT, UTA and other major stakeholders will be needed to identify issues and collectively develop strategies. Funding for this downtown study is included in Table 7-1.

7.10 City Ordinance Issues

During the public process, as well as through other research, some mobility needs were identified that are not specifically addressed in the City's existing codes.

In-Line Skaters

Although this is a relatively small component of the populace and mobility issues, citizens who choose to commute to work on in-line skates are currently precluded from using either the sidewalks or the street within the Central Business District. Skaters have been ticketed for using both. How other cities have addressed this issue warrants examination.

Bicycling on Sidewalks

The feasibility of allowing bicycling on sidewalks within the Central Traffic District should be analyzed. Bicycling on sidewalks is currently prohibited in this area. It may be possible to change the geographic coverage of the restricted area, or the time when the restriction is in force. Use of some sidewalks by bicycles in the downtown may be feasible by virtue of the types of adjacent land uses. Use of sidewalks for bicycling during off-peak periods for pedestrian activity, such as on Sundays, is another possibility.

Code Enhancements

Section 8.3 of this master plan examines the extent to which Salt Lake City codes support bicycling and walking, and suggests areas of the existing code that could be improved. As this analysis was not exhaustive, more detailed analysis is needed before effecting any code changes.

Historic Ordinance Review

Salt Lake City may have ordinances and code language affecting bicycle and pedestrian facilities and circulation that are no longer applicable and may be considered anachronistic. Determining these and either amending or deleting such references will serve to streamline application of codes.

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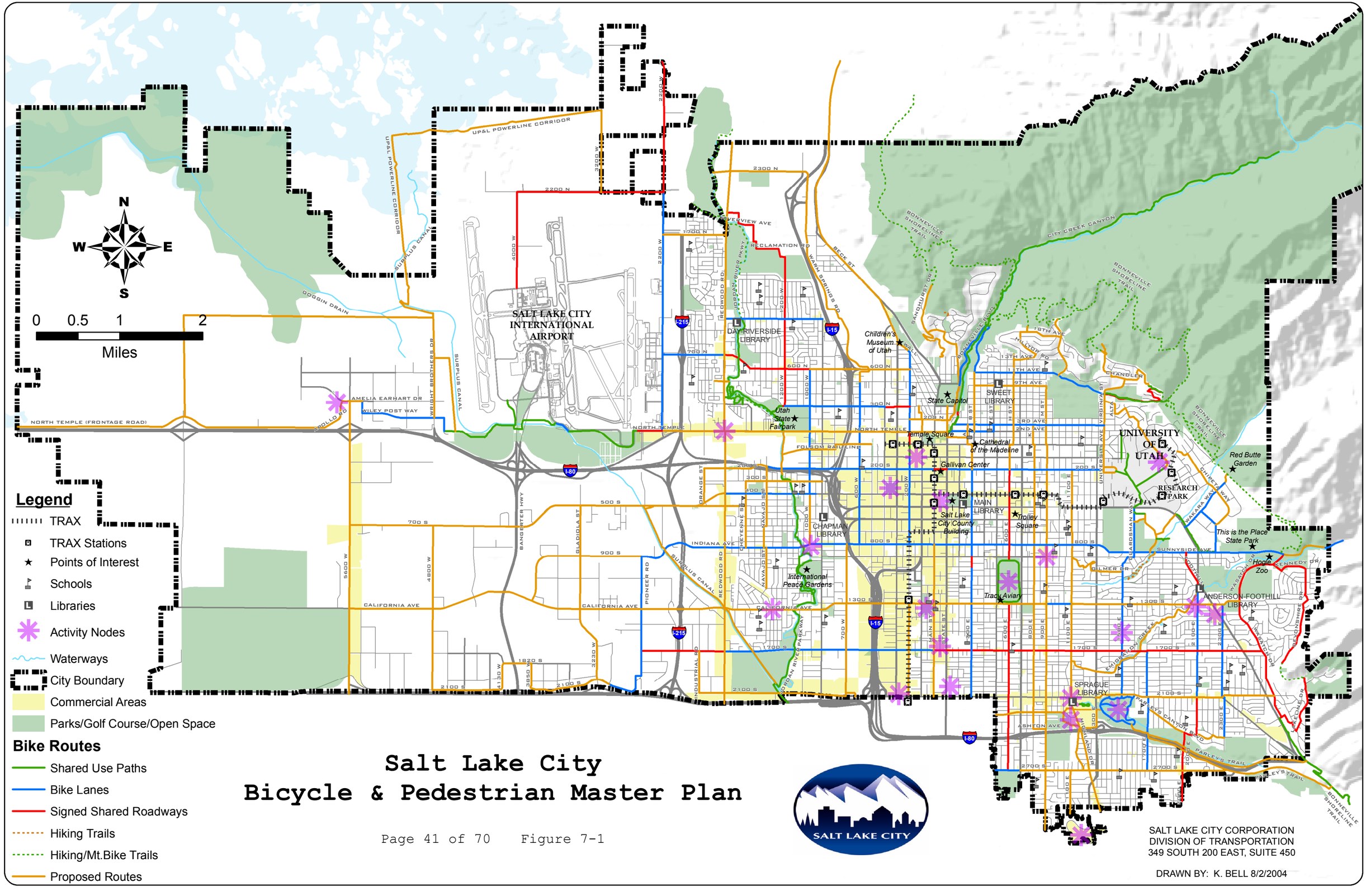
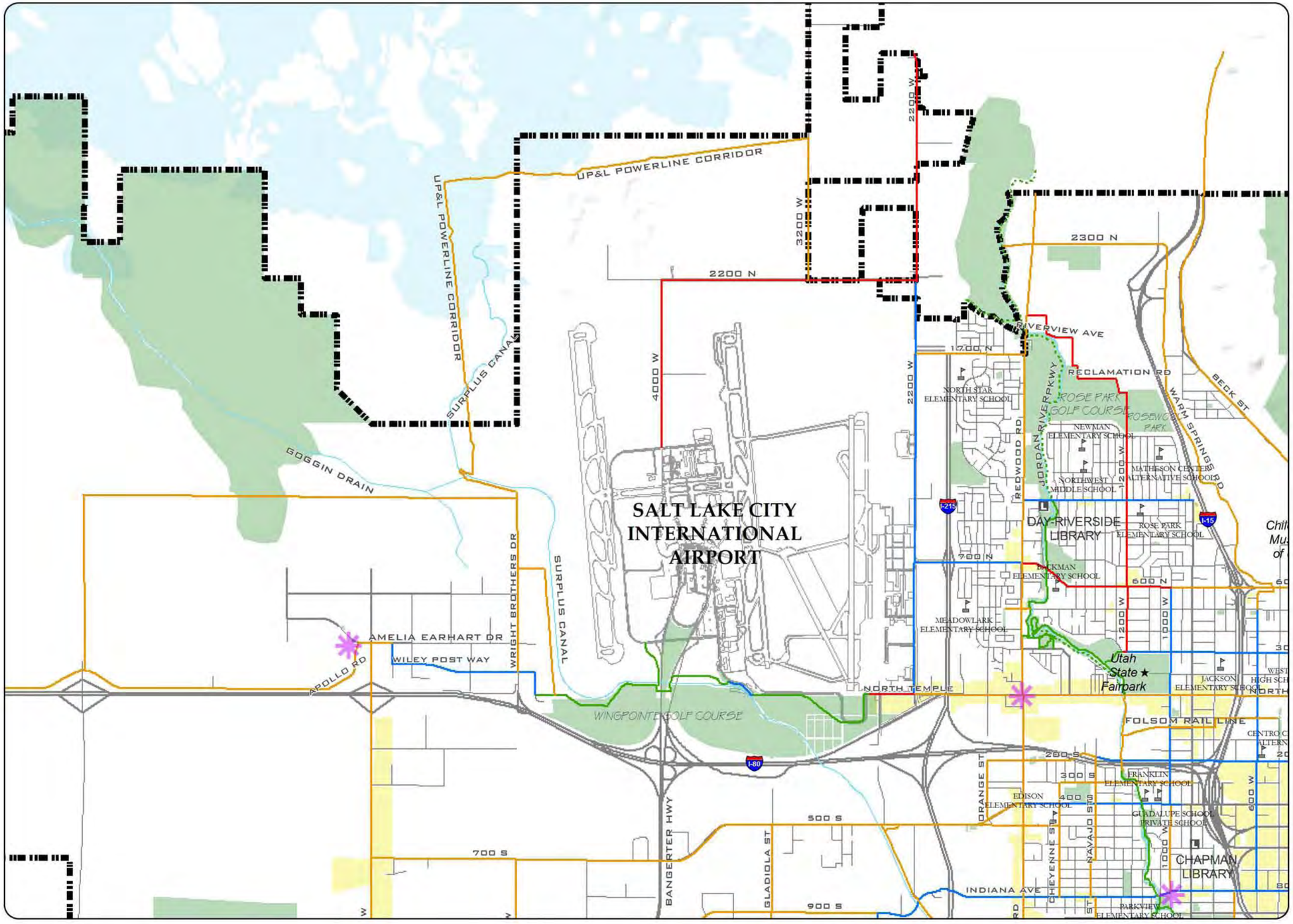
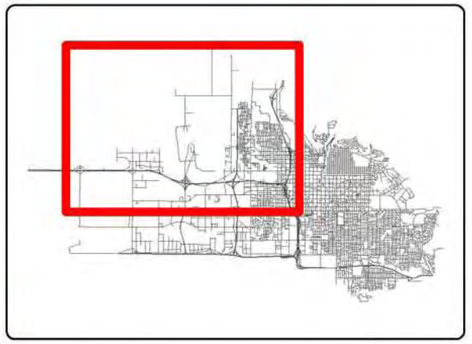


Salt Lake City
Bicycle & Pedestrian Master Plan

SALT LAKE CITY CORPORATION
DIVISION OF TRANSPORTATION
349 SOUTH 200 EAST, SUITE 450

DRAWN BY: K. BELL 8/2/2004





Salt Lake City Bicycle & Pedestrian Master Plan

Legend

- TRAX
- TRAX Stations
- ★ Points of Interest
- Schools
- Libraries
- Activity Nodes
- Waterways
- City Boundary
- Commercial Areas
- Parks/Golf Course/Open Space

Bike Routes

- Shared Use Paths
- Bike Lanes
- Signed Shared Roadways
- Hiking Trails
- Hiking/Mt.Bike Trails
- Proposed Routes

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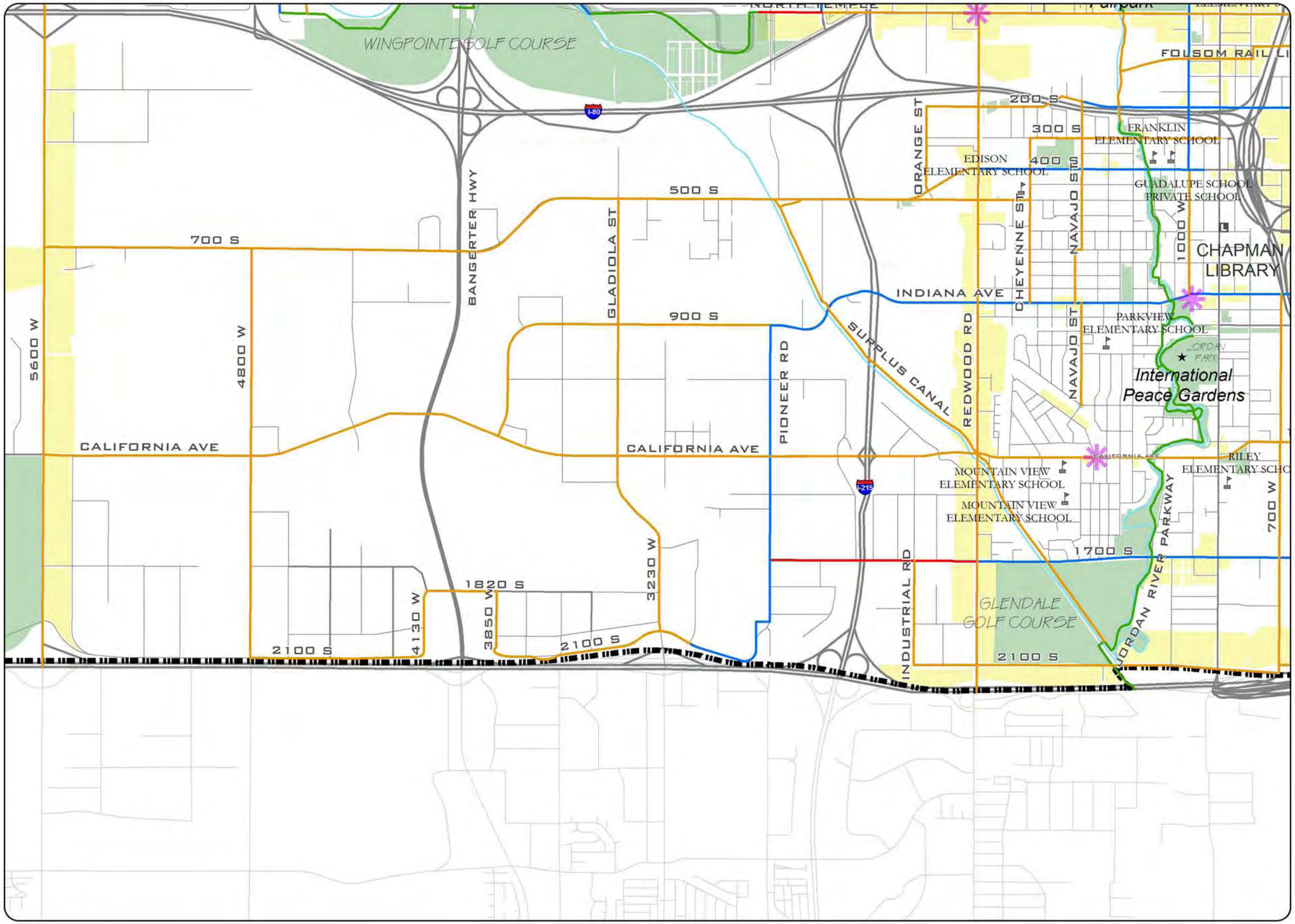
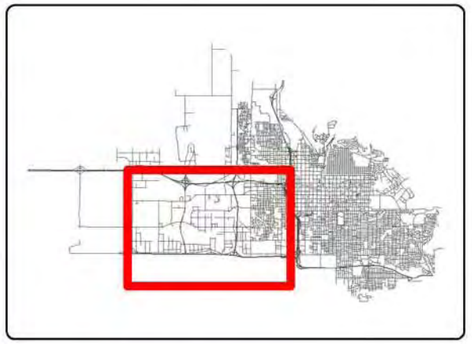
Miles

SALT LAKE CITY CORPORATION
DIVISION OF TRANSPORTATION
349 SOUTH 200 EAST, SUITE 450

DRAWN BY: K. BELL 8/2/2004

SALT LAKE CITY





Salt Lake City Bicycle & Pedestrian Master Plan

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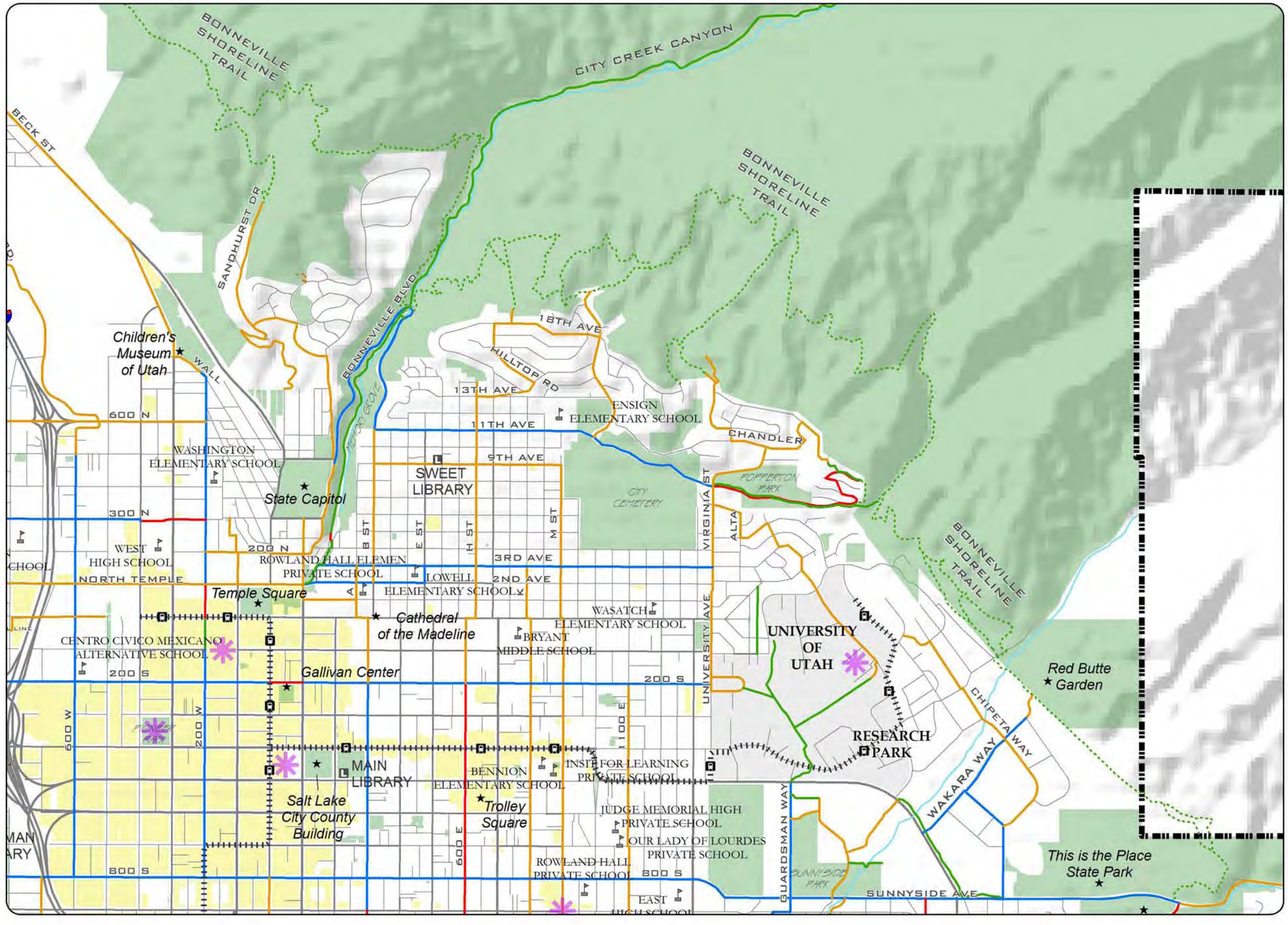

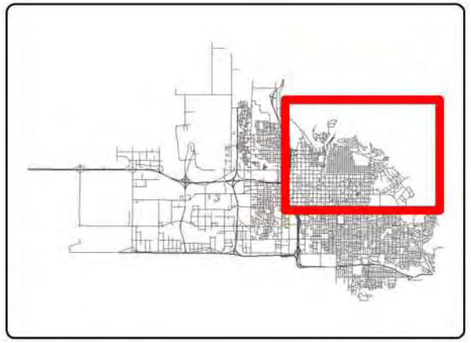

Salt Lake City Bicycle & Pedestrian Master Plan

Legend

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 Figure 7-4

SALT LAKE CITY CORPORATION
DIVISION OF TRANSPORTATION
349 SOUTH 200 EAST, SUITE 450

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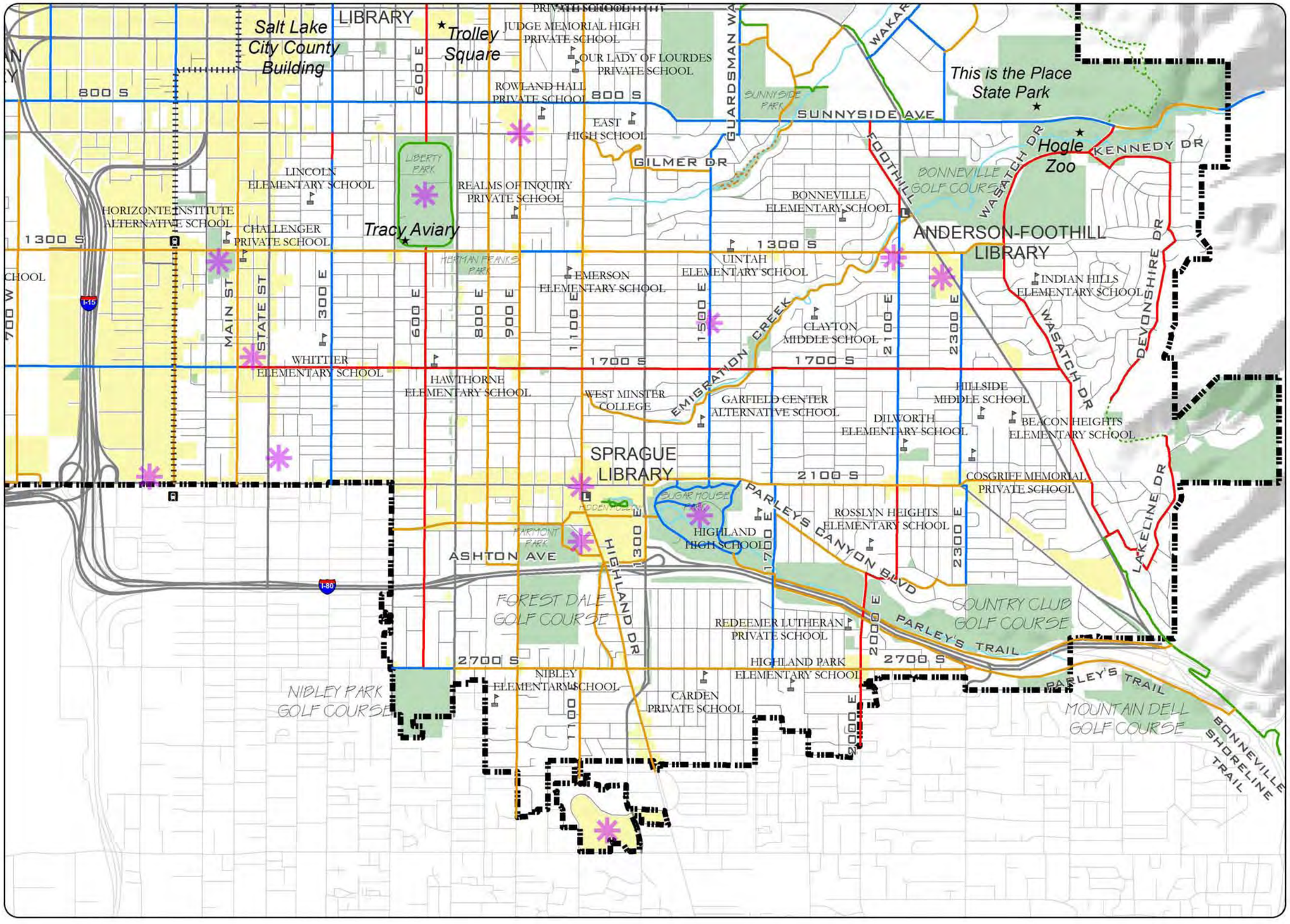
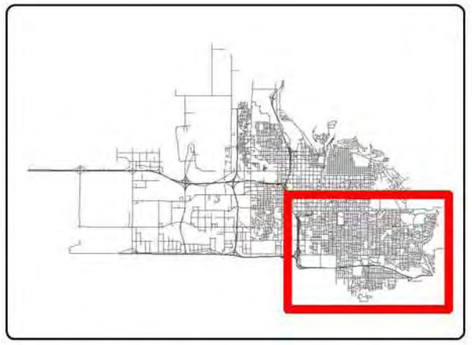
SALT LAKE CITY





Salt Lake City Bicycle & Pedestrian Master Plan

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SALT LAKE CITY CORPORATION
DIVISION OF TRANSPORTATION
349 SOUTH 200 EAST, SUITE 450

DRAWN BY: K. BELL 8/2/2004

SALT LAKE CITY

Table 7-1 Implementation Plan Projects and Costs

Street	To/From	Length (Miles)	Assumptions	Item	Unit Cost	Quantity	Total Cost
NW of I-15/Indianna							**$1,023,185**
Airport West Trail	Existing Airport Trail at SW coner of airport to 3200 West	6.8	10-foot wide shared use pathway with one 12-foot wide bridge spanning 80-feet. It is assumed that the pathway is generally at-grade. Rights-of-way and other landscaping, lighting or miscellaneous trail amenities are not included in this cost estimate.	Asphalt (per ft^2 @ 3" thickness)	$0.65	359040	$233,376
				Granular Subbase (per ft^2 @ 6" thickness)	$0.40	359040	$143,616
				Striping (per lineal foot)	$0.100	35904	$3,590
				Signs (ea)	$300.00	54	$16,200
				Bridge (ft^2)	$90.00	960	$86,400
							$483,182
3200 West	Airport Trail Intersection to 2200 North	1.0	Estimate includes Signing only.	Signs (ea)	$300.00	8	$2,400
							$2,400
Old North Temple	Amelia Earhart to west city limits	4.2	Estimate includes Signing only.	Signs (ea)	$300.00	34	$10,200
							$10,200
Wright Brothers Dr.	Wiley Post Way to Airport West Trail	1.3	Estimate includes Signing only.	Signs (ea)	$300.00	10	$3,000
							$3,000
Future International Center Roadways	Wright Brothers Dr. to Old North Temple	4.2	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	110	$51,150
				Striping (per lineal foot)	$0.105	88704	$9,314
				Signs (ea)	$300.00	34	$10,200
							$70,664
1700 North	2200 West to Redwood Road	0.8	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	22	$10,230
				Striping (per lineal foot)	$0.105	16896	$1,774
				Signs (ea)	$300.00	6	$1,800
							$13,804
500 North	Jordan River Trail to Redwood Meadows Park	0.2	Estimate includes Signing only.	Signs (ea)	$300.00	2	$600
							$600
600 North	1000 West to 200 West	1.2	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	32	$14,880
				Striping (per lineal foot)	$0.105	25344	$2,661
				Signs (ea)	$300.00	10	$3,000
							$20,541
2300 North	Jordan River under I-15 to Warm Springs Rd.	1.1	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are **not** included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	30	$13,950
				Striping (per lineal foot)	$0.105	23232	$2,439
				Signs (ea)	$300.00	8	$2,400
							$18,789
City Creek Trail on Old Folsom Rail Line and South Temple	Jordan River Parkway Trail to 500 West	1.1	10-foot wide shared use pathway. It is assumed that pathway is generally at-grade. Roadway crossing improvments, rights-of-way and other landscaping, lighting or miscellaneous trail amenities are not included in this cost estimate.	Asphalt (per ft^2 @ 3" thickness)	$0.65	58080	$37,752
				Granular Subbase (per ft^2 @ 6" thickness)	$0.40	58080	$23,232
				Striping (per lineal foot)	$0.100	5808	$581
				Signs (ea)	$300.00	8	$2,400
							$63,965
North Temple	State St. to 2200 West	3.4	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	90	$41,850
				Striping (per lineal foot)	$0.105	71808	$7,540
				Signs (ea)	$300.00	28	$8,400
							$57,790
Redwood Road	2100 South to north city limit	6.8	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	180	$83,700
				Striping (per lineal foot)	$0.105	143616	$15,080
				Signs (ea)	$300.00	54	$16,200
							$114,980
Cheyenne Street	Indiana to 500 South	0.5	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	14	$6,510
				Striping (per lineal foot)	$0.105	10560	$1,109
				Signs (ea)	$300.00	4	$1,200
							$8,819
Cheyenne Street	500 South to 300 South	0.2	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	6	$2,790
				Striping (per lineal foot)	$0.105	4224	$444
				Signs (ea)	$300.00	2	$600
							$3,834

Table 7-1 Implementation Plan Projects and Costs

Street	To/From	Length (Miles)	Assumptions	Item	Unit Cost	Quantity	Total Cost
300 South	900 West to Cheyenne	0.9	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	24	$11,160
				Striping (per lineal foot)	$0.105	19008	$1,996
				Signs (ea)	$300.00	8	$2,400
							$15,556
Orange St.	200 South to 400 South	0.5	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	14	$6,510
				Striping (per lineal foot)	$0.105	10560	$1,109
				Signs (ea)	$300.00	4	$1,200
							$8,819
200 South	Navajo to Orange St.	0.8	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	22	$10,230
				Striping (per lineal foot)	$0.105	16896	$1,774
				Signs (ea)	$300.00	6	$1,800
							$13,804
Navajo St.	200 South to Illinois Ave.	1.5	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	40	$18,600
				Striping (per lineal foot)	$0.105	31680	$3,326
				Signs (ea)	$300.00	12	$3,600
							$25,526
1000 West	400 South to Indiana Ave.	0.6	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	16	$7,440
				Striping (per lineal foot)	$0.105	12672	$1,331
				Signs (ea)	$300.00	4	$1,200
							$9,971
700/500/400 South	5600 West to Cheyenne	5.2	Estimate includes Signing only.	Signs (ea)	$300.00	42	$12,600
							$12,600
Gladiola	500 South to 2100 South	2.2	Estimate includes Signing only.	Signs (ea)	$300.00	18	$5,400
							$5,400
5600 West	2100 S. to Amelia Earhart Drive	3.5	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	92	$42,780
				Striping (per lineal foot)	$0.105	73920	$7,762
				Signs (ea)	$300.00	28	$8,400
							$58,942
SW of I-15/Indianna							**$499,355**
900 South/3800 West	Pioneer Rd. to California Ave.	1.8	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	48	$22,320
				Striping (per lineal foot)	$0.105	38016	$3,992
				Signs (ea)	$300.00	14	$4,200
							$30,512
700 West	1700 South to 2100 South	0.6	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	16	$7,440
				Striping (per lineal foot)	$0.105	12672	$1,331
				Signs (ea)	$300.00	4	$1,200
							$9,971
700 West	Indiana to 1700 South	1.3	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	34	$15,810
				Striping (per lineal foot)	$0.105	27456	$2,883
				Signs (ea)	$300.00	10	$3,000
							$21,693
4800 West	2100 South to 700 South	2.0	Estimate includes Signing only.	Signs (ea)	$300.00	16	$4,800
							$4,800
2100 South	Milestone Dr. to 4800 W. around Bangerter	2.7	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	72	$33,480
				Striping (per lineal foot)	$0.105	57024	$5,988
				Signs (ea)	$300.00	22	$6,600
							$46,068
2100 South	700 West to Industrial Rd.	1.8	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	48	$22,320
				Striping (per lineal foot)	$0.105	38016	$3,992
				Signs (ea)	$300.00	14	$4,200
							$30,512
Industrial Rd.	2100 South to 1700 South	0.5	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	14	$6,510
				Striping (per lineal foot)	$0.105	10560	$1,109
				Signs (ea)	$300.00	4	$1,200
							$8,819

Table 7-1 Implementation Plan Projects and Costs

Street	To/From	Length (Miles)	Assumptions	Item	Unit Cost	Quantity	Total Cost
California Ave.	I-15 to 5600 West	6.4	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	168	$78,120
				Striping (per lineal foot)	$0.105	135168	$14,193
				Signs (ea)	$300.00	52	$15,600
							$107,913
Surplus Canal	Airport Trail to Jordan River Parkway near 2100 South	4.1	10-foot wide shared use pathway. It is assumed that pathway is generally at-grade. Roadway crossing improvments, rights-of-way and other landscaping, lighting or miscellaneous trail amenities are not included in this cost estimate.	Asphalt (per ft^2 @ 3" thickness)	$0.65	216480	$140,712
				Granular Subbase (per ft^2 @ 6" thickness)	$0.40	216480	$86,592
				Striping (per lineal foot)	$0.100	21648	$2,165
				Signs (ea)	$300.00	32	$9,600
							$239,069
NE I-15/800 South							**$428,767**
Warm Springs/600 North/600 West	2300 North to 500 North	3.0	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	80	$37,200
				Striping (per lineal foot)	$0.105	63360	$6,653
				Signs (ea)	$300.00	24	$7,200
							$51,053
East Capitol Blvd.	State St. to Edgecombe Dr.	1.0	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	26	$12,090
				Striping (per lineal foot)	$0.105	21120	$2,218
				Signs (ea)	$300.00	8	$2,400
							$16,708
200 North	State St. to 200 West	0.5	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	14	$6,510
				Striping (per lineal foot)	$0.105	10560	$1,109
				Signs (ea)	$300.00	4	$1,200
							$8,819
West Temple	North Temple to 300 North	0.3	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	8	$3,720
				Striping (per lineal foot)	$0.105	6336	$665
				Signs (ea)	$300.00	2	$600
							$4,985
State St.	1st Avenue to 300 North	0.4	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	10	$4,650
				Striping (per lineal foot)	$0.105	8448	$887
				Signs (ea)	$300.00	4	$1,200
							$6,737
1st Avenue	State St. to A St.	0.2	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	6	$2,790
				Striping (per lineal foot)	$0.105	4224	$444
				Signs (ea)	$300.00	2	$600
							$3,834
Edgecome Dr./Dorchester Dr./Sandhurst Dr.	East Capitol Blvd. to access to Bonneville Shoreline Trail	1.1	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	30	$13,950
				Striping (per lineal foot)	$0.105	23232	$2,439
				Signs (ea)	$300.00	8	$2,400
							$18,789
Terrace Hills Dr.	11th Avenue to Bonneville Shoreline Trail Access	0.8	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	22	$10,230
				Striping (per lineal foot)	$0.105	16896	$1,774
				Signs (ea)	$300.00	6	$1,800
							$13,804
Columbus St. to Sandhurst Dr.	Columbus St. to Sandhurst	0.7	Estimate includes Signing only.	Signs (ea)	$300.00	6	$1,800
							$1,800
B Street	2nd Avenue to 11th Avenue	0.7	Estimate includes Signing only.	Signs (ea)	$300.00	6	$1,800
							$1,800

Table 7-1 Implementation Plan Projects and Costs

Street	To/From	Length (Miles)	Assumptions	Item	Unit Cost	Quantity	Total Cost
H Street	200 South to 14th Avenue North	1.2	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	32	$14,880
				Striping (per lineal foot)	$0.105	25344	$2,661
				Signs (ea)	$300.00	10	$3,000
							$20,541
9th Avenue	B Street to M Street	0.9	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	24	$11,160
				Striping (per lineal foot)	$0.105	19008	$1,996
				Signs (ea)	$300.00	8	$2,400
							$15,556
A Street	3rd Avenue to South Temple	0.2	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	6	$2,790
				Striping (per lineal foot)	$0.105	4224	$444
				Signs (ea)	$300.00	2	$600
							$3,834
K St./800 East	3rd Avenue to Ashton Ave.	3.7	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	98	$45,570
				Striping (per lineal foot)	$0.105	78144	$8,205
				Signs (ea)	$300.00	30	$9,000
							$62,775
M St./900 East	9th Avenue to south city limit	5.3	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	140	$65,100
				Striping (L)	$5.75	1297	$7,458
				Signs (ea)	$300.00	42	$12,600
							$85,158
1100 East	2nd South to Wilmington Ave.	2.9	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	76	$35,340
				Striping (per lineal foot)	$0.105	61248	$6,431
				Signs (ea)	$300.00	24	$7,200
							$48,971
University Ave./Virginia Avenue	Presidents Circle to Chandler Dr.	1.3	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	34	$15,810
				Striping (per lineal foot)	$0.105	27456	$2,883
				Signs (ea)	$300.00	10	$3,000
							$21,693
Tomahawk Dr./Chandler Dr./Cambridge Way/Perry's Hollow Rd./New Bonneville Pl./Bonneville Shoreline Trail (BST)	South end of Tomahawk Dr. to Chandler Dr. to Cambridge Way to Perry's Hollow Rd. to New Bonneville Pl. to Bonneville Shoreline Trail	1.3	Estimate includes Signing only.	Signs (ea)	$300.00	10	$3,000
							$3,000
13th Ave./Northcrest Dr./Hilltop Rd.	H St. to 13th Ave.	0.7	Estimate includes Signing only.	Signs (ea)	$300.00	6	$1,800
							$1,800
18th Avenue	Hilltop Rd. to Terrace Hills Dr.	0.5	Estimate includes Signing only.	Signs (ea)	$300.00	4	$1,200
							$1,200
300 East	200 South to South Temple	0.3	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	8	$3,720
				Striping (per lineal foot)	$0.105	6336	$665
				Signs (ea)	$300.00	2	$600
							$4,985
600 East	200 South to South Temple	0.3	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	8	$3,720
				Striping (per lineal foot)	$0.105	6336	$665
				Signs (ea)	$300.00	2	$600
							$4,985
East of Guardsman/North of Sunnyside/West of Foothill	Connecting Guardsman, Sunnyside and Foothill	1.0	Estimate includes Signing only.	Signs (ea)	$300.00	8	$2,400
							$2,400
University Route	Virginia Avenue to Ballif Rd.	1.3	Estimate includes Signing only.	Signs (ea)	$300.00	10	$3,000
							$3,000

Table 7-1 Implementation Plan Projects and Costs

Street	To/From	Length (Miles)	Assumptions	Item	Unit Cost	Quantity	Total Cost
Chipeta Way/Connor Rd./South Medical Dr.	1900 East to Arapeen Dr.	1.2	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	32	$14,880
				Striping (per lineal foot)	$0.105	25344	$2,661
				Signs (ea)	$300.00	10	$3,000
							$20,541
SE I-15/800 South							**$252,238**
Gilmer Dr.	1100 East to 1500 East	0.9	Estimate includes Signing only.	Signs (ea)	$300.00	8	$2,400
							$2,400
Ashton Ave.	800 East to 900 East	0.1	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	2	$930
				Striping (per lineal foot)	$0.105	2112	$222
				Signs (ea)	$300.00	0	$0
							$1,152
Highland Dr.	Wilmington Ave. to 3010 South	1.3	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	34	$15,810
				Striping (per lineal foot)	$0.105	27456	$2,883
				Signs (ea)	$300.00	10	$3,000
							$21,693
Main Street	800 South to 2100 South	1.8	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	48	$22,320
				Striping (per lineal foot)	$0.105	38016	$3,992
				Signs (ea)	$300.00	14	$4,200
							$30,512
UTA Trax North/South Rail Line	1300 South to 2100 South	1.1	10-foot wide shared use pathway. It is assumed that pathway is generally at-grade. Roadway crossing improvments, rights-of-way and other landscaping, lighting or miscellaneous trail amenities are not included in this cost estimate.	Asphalt (per ft^2 @ 3" thickness)	$0.65	58080	$37,752
				Granular Subbase (per ft^2 @ 6"	$0.40	58080	$23,232
				Striping (per lineal foot)	$0.100	5808	$581
				Signs (ea)	$300.00	8	$2,400
							$63,965
1300 South	700 West to 900 East	2.4	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	64	$29,760
				Striping (per lineal foot)	$0.105	50688	$5,322
				Signs (ea)	$300.00	20	$6,000
							$41,082
1300 South	1100 East to Wasatch Blvd.	2.0	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	52	$24,180
				Striping (per lineal foot)	$0.105	42240	$4,435
				Signs (ea)	$300.00	16	$4,800
							$33,415
Parleys Canyon Blvd.	1700 East to 2100 East	0.5	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	14	$6,510
				Striping (per lineal foot)	$0.105	10560	$1,109
				Signs (ea)	$300.00	4	$1,200
							$8,819
Parkway Ave./Country Club Drive.	2100 East to 2300 East	0.4	Estimate includes Signing only.	Signs (ea)	$300.00	4	$1,200
							$1,200
Elizabeth Street/Angelita Ct.	Elizabeth Sherman Park to 2700 South	0.4	Estimate includes Signing only.	Signs (ea)	$300.00	4	$1,200
							$1,200
1100 East	2700 South to Elgin Ave.	0.5	Estimate includes Signing only.	Signs (ea)	$300.00	4	$1,200
							$1,200
2700 South	700 East to 2300 East	2.4	Estimate includes Signing only.	Signs (ea)	$300.00	20	$6,000
							$6,000
2100 South	Wasatch Dr. to 1300 East	2.2	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	58	$26,970
				Striping (per lineal foot)	$0.105	46464	$4,879
				Signs (ea)	$300.00	18	$5,400
							$37,249
Ashton Ave.	Fairmont Park to Highland Dr.	0.1	Assumed shared use roadway condition with signing, striping, and minor improvements needed. Pavement / Roadway widening or improvements are not included in this cost estimate.	Bicycle-Safe Drainage Inlet (ea)	$465.00	2	$930
				Striping (per lineal foot)	$0.105	2112	$222
				Signs (ea)	$300.00	0	$0
							$1,152

Table 7-1 Implementation Plan Projects and Costs

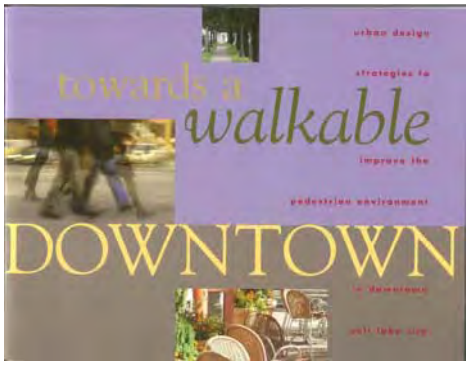
Street	To/From	Length (Miles)	Assumptions	Item	Unit Cost	Quantity	Total Cost
1300 East/I-80	Highland Dr. to Wilmington Ave.	0.5	Estimate includes Signing only.	Signs (ea)	$300.00	4	$1,200
							$1,200
Jordan River Parkway (High Priority)							**$1,383,310**
Under I-80	200 South to Pierpont Ave.	0.1	Project is designed and waiting for funding.	Estimate per Dell Cook SLC Engineering (July 2004)	Shared use path.		**$220,000**
Crossing Mainline UPRR Tracks	200 South to North Temple	0.5	Master planned. Funding being requested in City budget. Estimate provided by City.		Shared use path.		**$1,000,000**
Existing Dirt Road	1000 North to North City Limit	2.8	10-foot wide shared use pathway. It is assumed that pathway is generally at-grade. Roadway crossing improvments, rights-of-way and other landscaping, lighting or miscellaneous trail amenities are not included in this cost estimate.	Asphalt (per ft^2 @ 3" thickness)	$0.65	147840	$96,096
				Granular Subbase (per ft^2 @ 6" thickness)	$0.40	147840	$59,136
				Striping (per lineal foot)	$0.100	14784	$1,478
				Signs (ea)	$300.00	22	$6,600
							$163,310
Parley's Trail							**$147,333**
Sugarhouse Rail Spur	Sugarhouse Business District to West City Limits			Planning Study			**$25,000**
Parley's Trail	Sugar House Park to Parley's Crossing of the Bonneville Shoreline Trail	1.5	10-foot wide shared use pathway. It is assumed that pathway is generally at-grade. Roadway crossing improvments, rights-of-way and other landscaping, lighting or miscellaneous trail amenities are not included in this cost estimate. The 1.5 miles includes only the portion of the trail within SLC.	Asphalt (per ft^2 @ 3" thickness)	$0.65	79200	$51,480
				Granular Subbase (per ft^2 @ 6"	$0.40	79200	$31,680
				Striping (per lineal foot)	$0.100	7920	$792
				Signs (ea)	$300.00	12	$3,600
							$87,552
Parley's Trail along UTA Rail Spur to Sugar House	900 East to 500 East	0.6	10-foot wide shared use pathway. It is assumed that pathway is generally at-grade. Roadway crossing improvments, rights-of-way and other landscaping, lighting or miscellaneous trail amenities are not included in this cost estimate.	Asphalt (per ft^2 @ 3" thickness)	$0.65	31680	$20,592
				Granular Subbase (per ft^2 @ 6" thickness)	$0.40	31680	$12,672
				Striping (per lineal foot)	$0.100	3168	$317
				Signs (ea)	$300.00	4	$1,200
							$34,781
Planning, Education and Promotion							**$225,000**
Route Engineering			Additional FTE to develop engineering plans and detailed cost estimates for routes. Annual allocation.	Engineering staff			**$50,000**
Planning, Education and Promotion			Develop additional promotion and education programs or small area plans such as for the downtown area. Coordinate with other entities. Annual allocation.				**$125,000**
Pilot Projects			Conduct feasibility studies and develop funding proposal. Annual allocation.				**$50,000**
Maintenance							
Bikeway Maintenance			Ongoing Annual Supplement				**$0**
Sidewalk Construction and Rehab.			Ongoing Annual Supplement				**$0**
						Subtotal	**$3,959,188**
						Contingency (30%)	**$1,187,756**
						Total	**$5,146,944**

*SIGNING PER AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES: 1 SIGN PLACED EVERY 1/4 MILE FOR SHARED ROUTE SIGNING.
*BICYCLE-SAFE DRAINAGE INLET PLACED EVERY 400 FEET ON EACH SIDE OF THE ROADWAY.
*3 INCH ASPHALT THICKNESS.
*6 INCH GRANULAR SUBBASE THICKNESS.

8.0 Planning Tools – The Regulatory Environment

Much of a city's built environment is the result of the application of planning regulations over time, as manifested in city codes. The extent to which facilities for pedestrians and bicyclists are provided through development and redevelopment is partially a result of what city code legally requires, as well as a commitment to good planning through the development process.

Salt Lake City has demonstrated commitment to providing an improved environment for pedestrians and bicycles in recent years. The document Towards a Walkable Downtown (December 2000) addresses both principles and specific recommendations to enhance the downtown environment. Similar concepts are being incorporated into neighborhood plans like the Sugar House Master Plan and into developments like Sugar House Commons. As described in Section 4.0 Existing Facilities and Programs, Salt Lake City is proactive in providing an improved environment for walking while addressing potential safety issues.



As part of a comprehensive master plan, the extent to which key development requirements support walking and bicycling in a city or individual neighborhoods was evaluated by examining key city codes. In addition to Salt Lake City, the cities of Portland, OR; Eugene, OR; Davis, CA; Denver, CO; and Boulder, CO were reviewed. These cities were chosen because they are recognized for taking steps to promote walking and bicycling. They were reviewed for purposes of comparison and to highlight techniques which have been particularly successful and are worthy of consideration in Salt Lake City.

8.1 Identifying Supporting Policies

To create a method for systematically evaluating and comparing regulatory approaches for Salt Lake City and the other five cities noted, three primary categories of pedestrian and bicycling indicators were identified. These indicators have been shown to have a profound influence upon the extent to which people will choose walking or bicycling as an alternative to driving. These indicator categories are Land Use, Site and Building Design, and Street Patterns, On-Site Circulation and Parking.

Land Use

The character of land uses can have a significant impact upon the degree of pedestrian and bicycling activity in an area. Important aspects include:

Mixed Uses**.** Because people are typically willing to walk up to one-quarter to one-half mile, it is important for home, work, shopping, and services to be located in close proximity to one another. This mix can occur on the same parcel with flexible zoning requirements (e.g.,

residential over retail) or by having a variety of residential and commercial zones in an area. This mix creates opportunities for 24-hour districts, which are active pedestrian areas throughout much of the day.

Density**.** To support transit and commercial activity without reliance upon automobiles, residential densities need to be higher around commercial development and transit stations. In addition to higher maximum densities (and the associated standards such as smaller lot sizes and increased building coverage standards), minimum requirements are often appropriate to provide densities that encourage alternative transportation modes.

Site and Building Design

Environmental features created by urban development heavily influence walking and bicycling. Simply providing sidewalks or bike lanes will not automatically lure people out of their cars. Pleasant human-scaled development, landscaping, safety, and amenities all encourage walking and bicycling. Important design elements for pedestrian and bicycle-oriented design include:

Building Location and Orientation**.** Buildings and their main entrances should be located near and oriented toward the street. At the ground floor, buildings in commercial areas should have active uses with windows and other architectural features facing the street and sidewalk to provide interest and safety. Conversely, buildings that are located far from the street with entrances oriented toward parking lots deter walking.

Building Design. Sensitive human-scaled building design and architecture complement proper building location and orientation by further creating places where pedestrians feel comfortable. Complementary architectural design with the neighborhood, prominent entrances, porches, and limitations on blank walls and garage entrances are examples of the features that enhance pedestrian districts.

Landscaping. Landscaping is an important element for creating a pleasant pedestrian environment. Landscape buffering between parking and loading areas with trees and shrubs helps provide a more appealing pedestrian environment.

Safety**.** It is vital for pedestrians to feel safe. Factors that contribute to this include lighting, design techniques to enhance visibility of pedestrian routes from the street or nearby buildings, and clear demarcation of pedestrian and bicycle routes.

Amenities. It is very important to make walking and bicycling pleasant experiences. Facilities and design features such as street furniture, shelters, plazas, open spaces, public art, trash containers, and kiosks all contribute to making a walk or bicycle ride enjoyable and comfortable.

Street Patterns, On-Site Circulation and Parking

To encourage walking and bicycling, it must be convenient and safe to move from one destination to another. Parking can be managed in ways that support, rather than hinder walking and bicycling.

Street Pattern. Direct links between destinations are important for all transportation modes, but they are particularly important for pedestrians and bicyclists. Increased distances caused by circuitous routes, large blocks, and cul-de-sacs all conspire to discourage walking and bicycling. It is important for residents and employees to be able to easily walk or bicycle to stores, parks, and other destinations.

On-Site Circulation. To complement the public street system, it is important for direct and convenient connections to be employed within and between developments. Clear and direct routes between building entrances, public sidewalks, and transit stops are particularly helpful.

Parking Lot Location and Design. In order to have buildings close to the street, on-site parking lots need to be located to the rear or side. Sidewalk locations between public streets and large parking lots are never conducive to walking or bicycling. The distance from the public sidewalk and difficult access through parking lots discourage these modes of travel.

Automobile Parking Requirements. Local governments often require more parking than necessary to support development. Developers will also provide more parking than what is really necessary for the use. Lower parking ratios, parking "credit" for good pedestrian, bicycle and/or transit access, and maximum parking standards will allow developers to use less parking.

Bicycle Parking Requirements. Convenient and secure bicycle parking for employees and visitors is a major way to encourage bicycling. In addition to providing bicycle racks, attention should be paid to location and design. Other amenities, such as lockers, showers, and changing rooms can also play an important role to increase bicycle use.

8.2 Evaluation Summary

Important provisions in the zoning and subdivisions codes for the six cities were compared. A detailed tabular summary was prepared and can be obtained from the City. The most important findings are summarized in Table 8-1.

Based on the language contained in Salt Lake City's enabling codes, Table 8-2 summarizes how supportive those codes are. It should be noted that implementation of those codes and application of the principles expressed in documents like Towards a Walkable Downtown may result in development projects and a built environment that is more supportive than the code language would imply. The table uses the following comparison:

- ● - Very supportive
- ◘ - Somewhat supportive
- ○ - Not supportive

Table 8-1
Zoning and Subdivision Code Summaries – Important Findings

Indicators	Planning Tools to Consider
Land Use	
Mixed Uses	• Salt Lake City allows residential uses in a number of downtown and commercial zones, but additional opportunities to provide a compatible blend of uses should be considered. • Portland encourages a high degree of land use mix in many of its high density residential, commercial, and employment zones. This mix of use tends to reduce the distance between destinations, thereby encouraging walking and bicycling. • Eugene requires some commercial zones to be within walking/bicycling distance of a "support population" of approximately 4,000. • Davis and Denver offer several incentives for mixed-use development, including lot coverage and Floor Area Ration (FAR) increases.
Density	• Minimum density standards are used in Portland and Eugene (as do many cities in Oregon) to help ensure that sufficient densities are established in commercial and transit districts. • Davis has maximum lot size standards as well as provisions to reduce minimum lots sizes in certain zones. • Boulder allows increases in density and FAR when amenities such as open space and underground parking are present.
Site and Building Design	
Building Location & Orientation	• Although some of the other cities may achieve good building orientation using a design review process and general criteria, Portland and Eugene use a wide array of specific building location and orientation standards. • Denver uses similar standards in its Cherry Creek North District. While design flexibility is important, it is equally important to have code provisions that are clear about what good pedestrian-orientation is. What is important is to customize these standards to "fit" different districts in the city and not use a "on size fits all" approach.
Building Design	As with building location and orientation, Portland and Eugene have more specific standards regarding elements of building design such as front porches, limitations on blank walls facing a street, and garage entrance standards.
Landscaping	• Salt Lake City has the most specific standards for planter strips, especially regarding ground cover and surfacing materials in these areas. All cities have some standards for landscape buffering of parking lots adjacent to streets. • Davis emphasizes the use of landscaping to make walking and bicycling more pleasant.
Safety	Portland and Eugene have design standards for lighting and crosswalk design for on-site improvements, none of the codes reviewed addressed safety issues with specific criteria.
Amenities	Portland, Davis, and Denver offer incentives for providing amenities that can benefit pedestrians, such as open space and below grade parking.

Street Patterns, On-Site Circulation & Parking	
Street Pattern	Except for Portland and Eugene, the cities did not have any standards requiring maximum block lengths, limitation on cul-de-sacs, or similar provisions. These are very important to enhance the efficiency of all modes by providing more direct routes and more routes choices between destinations.
On-Site Circulation	The same street pattern principle applies to site development as well. While some codes may mention or allude to pedestrian circulation, Portland and Eugene are the only cities with specific language requiring walkway connections between on-site and off-site destinations (e.g., building entrances, transit stops, bicycle parking).
Parking Lot Location & Design	• Salt Lake City limits parking lot locations in close proximity to the street and further limits parking in corner locations in the Gateway District. • Portland and Denver require that parking along a property frontage be limited. • Eugene prohibits parking between building façade and the street in commercial zones.
Automobile Parking Requirements	• Portland and Eugene are the only cities to have parking maximums. • Other cities provide some incentives and/or flexibility to reduce required parking under certain circumstances.
Bicycle Parking Requirements	Salt Lake City, Portland, Denver, Eugene, and Boulder all have specific requirements for numbers of bicycle parking spaces. Davis requires parking as part of development review, but without specific standards. The cities also have some standards about parking facility design, but the Portland and Eugene codes include the most detail. None of the cities have specific standards for other bicycle amenities, such as lockers or showers. A key element for bicycle parking is to provide locations that are easy to find, convenient to building entrances, and secure.

Table 8-2 Evaluation of Selected Salt Lake City Codes

Indicators	Support Level	Comments	Code Sections
Land Use			
Mixed Uses	●	Downtown, Gateway, and commercial districts allow complete mix of residential uses in addition to a broad range of commercial activity.	Sec. 21A.26.080 Sec. 21A.30.050 Sec. 21A.31.050
Density	◘		
Site and Building Design			
Building Location & Orientation	○	Downtown districts have maximum building setbacks in the D-1 and D-4 Districts. Single-family residential districts generally have a 20-foot front setback requirement with no maximum. CN District requires a 15-foot front setback. Research and Business Park districts require a 30-foot front setback.	Sec. 21A.30.060 Sec. 21A.24.200 Sec. 21A.26.020 Sec. 21A.32.020/030
Building Design	○	No specific building design guidelines.	
Landscaping	◘	Park strip landscaping standards specifically call for street trees and "ground surface" treatment, which will enhance pedestrian areas.	Sec. 21A.48.060
Safety	○	Zoning provisions do not directly address pedestrian or bicyclist safety in design.	
Amenities	○	Zoning provisions do not directly address pedestrian or bicyclist amenities in design, except for landscaping requirements.	
Street Patterns, On-Site Circulation & Parking			
Street Pattern	○	Subdivision requirements do not include any standards for block size, street network, or pedestrian/bicycle access.	Title 20
On-Site Circulation	◘	Mid-block walkways are identified and required within the Gateway Districts.	Sec. 21A.31.010 F.
Parking Lot Location & Design	◘	The Gateway Districts restrict the location of parking lots and structures in "block corner areas" and "mid-block areas" so they may not be adjacent to the street. Landscaping is required between parking lots and the street as well as internal landscaping.	Sec. 21A.31.010 H. Sec. 21A.48.070
Automobile Parking Requirements	○	Vehicle parking requirements appear to be typical. No maximum limit.	Sec. 21A.44.060 F.
Bicycle Parking Requirements	◘	Bicycle parking required at a rate of 5% of required vehicle parking. Design standards also provided. Provision for property owner to ask the city to omit the parking if not used within one year.	Sec. 21A.44.040 A.

8.3 Code Improvements to Consider

This overview suggests that there are some areas of the City code that Salt Lake City should review with the objective of enhancing the language of the code to be more supportive of bicyclists and pedestrians. An in-depth analysis of the feasibility of such changes, their legal basis, and the approval process must be carefully undertaken by the appropriate City departments, Planning Commission and City Council.

Street Pattern
Although Salt Lake City is a mature City, there are still areas where new residential and commercial developments will occur. The current subdivision requirements do not specifically address street pattern standards or pedestrian or bicycle access within the subdivision or planned unit developments.

Vehicle Parking Requirements
The availability of parking and its cost are key considerations in determining travel behavior. As adequate parking is vital to the health and vitality of commercial areas and residential areas, changes to parking codes must be carefully considered. There may be geographic areas or types of development that would be viable with a reduced parking allotment. The availability of transit, and bicycle and walking facilities needs to be considered when imposing a maximum parking allotment. The placement of parking on a development site relative to proposed buildings and the existing street and sidewalk infrastructure does influence the walkability of the development.

Building Location and Orientation
The setbacks of buildings and associated parking have a major impact on the quality of the urban environment for pedestrians in particular. Those portions of the code that specify setbacks should be reviewed to provide more flexibility to work with the development industry.

Safety and Amenities
Specific references and requirements to provide safe designs for pedestrians and bicyclists and for specific amenities to support bicycling and walking are not currently found in the codes reviewed. Inclusion of appropriate wording would enhance the City's ability to include safe non-motorized amenities and continuous circulation networks that minimize barriers in development and redevelopment projects.

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9.0 EDUCATION AND PROMOTION

Increasing the role of the bicycle and pedestrian in transportation as well as for recreation requires the provision of safe facilities but also promotion of the bicycle network and education of the public. Achieving the vision of this master plan can be viewed from four perspectives: education, encouragement, enforcement, and engineering.

- Education can take the form of formal programs implemented by various constituencies.
- Encouragement includes any number of incentives as well as community-based introductory ride and walking programs.
- Enforcement includes any restrictions that are imposed on bicyclists and pedestrians as well as the role that the police department plays.
- Engineering includes the use of standards, guidelines, and the review process to ensure consideration of bicycle and pedestrian needs into transportation projects.

9.1 Current Programs

Salt Lake City has a number of bicycle oriented events that both educate the public and promote bicycling for both transportation and recreation. Many are sponsored by the MBAC. In the fall of 2001, Salt Lake City hosted the first annual downtown bicycle and pedestrian festival. The "Spooks and Spokes" event was the first time Main Street was closed to automobile traffic for the purpose of allowing bicyclists and pedestrians an opportunity to enjoy a downtown City street free of automobile traffic.

Cycle Salt Lake is an annual week-long bicycle festival that includes several events: the Mayor's Bike to Work Day, the Downtown Criterium Race, Historic Tour of the City, Salt Lake Century Ride, and the Utah Transit Authority sponsored Bike Bonanza.

Other existing programs include:

- The City, with the assistance of the MBAC and the Utah Transit Authority, issues the Salt Lake Bikeways Map that includes a map of routes as well as bicycling safety tips and maintenance tips.
- The City hosts an annual Walk and Run event, the Salt Lake City Classic. As an Olympic legacy, the City has created the Gold Medal Mile on Main Street between 300 South and South Temple.
- The Salt Lake Police Department participates in a variety of programs to promote bicycle safety to children, including bicycle rodeos.
- Through private sponsors, a bicycle borrow program has been implemented at Salt Lake City Hall to promote the use of the bicycle for short trips through the downtown.
- Coordination with UTA has resulted in the provision of secure bicycle parking at selected light rail stations within Salt Lake City's jurisdiction.
- Bicycle safety courses and bicycle maintenance courses are available through the Lifelong Learning programs at the University of Utah and through private industry.
- There are many privately sponsored running and walking events in the City that promote walking, including the annual Run through the Trees, Walk America, March for Parks, and the American Heart Association's Run for Your Life 5K.

9.2 Programs in Other Jurisdictions

The Cities of Tucson, Arizona, Portland, Oregon, and Davis, California were contacted by telephone to determine how other jurisdictions approach education and promotion. These cities are known for supporting bicycling for transportation and recreation. Table 9-1 summarizes the results of these discussions.

These jurisdictions all have active education and promotional programs to support bicycling. They include special bicycle to work events and fund rides as well as incentives for bicyclists (i.e. free bus fare or entrance to an event, secure bicycle parking, refreshments). Some have been able to involve school districts in education and promotion. Involvement of police departments is dependent upon funding and available resources.

9.3 Suggested Additional Programs and Initiatives

In addition to providing safe and continuous facilities, Salt Lake City can enhance their educational and promotional programs, both directly and through coordination with other jurisdictions and stakeholders. These programs are likely to require funding by the City but could also be funded through participation by a variety of sponsors. Sponsors may include non-profit groups like the American Lung Association, bicycle retailers, or service groups like the Rotary or Lions Clubs.

Promotion Through Special Events

Special events provide an excellent opportunity for Salt Lake City to promote bicycling and educate event attendees about facilities and programs that are available. To increase visibility at events and provide a consistent message, development of a portable education and promotion display is recommended. This display could be designed to be informational and unmanned. Inclusion of the display at City sponsored events like the Farmers' Market, the Living Traditions Festival, the 9th/9th Street Fair, as well as at events like the Utah Arts Festival would provide access to information for a wide audience. Ceremonial openings for public and private development projects and facilities provide another opportunity to use the promotional display.

For special events that require a City permit, the City should investigate the feasibility of requiring temporary bicycle storage in a high visibility location as a condition of the permit. City sponsored events should provide temporary bicycle parking where such parking is not already provided at the venue. This could take the form of a manned bicycle corral.

Salt Lake City Website Enhancements

Salt Lake City's website can be a powerful source of information for those interested in bicycling and walking. Enhancements to the website content and regular updates of the information presented will increase its usefulness. Direct links to other websites that address bicycling or walking help to educate citizens.

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Table 9-1 Education and Promotion in Other Jurisdictions

	Tucson, Arizona	Portland, Oregon	Davis, California
Encouragement (Programs /Facilities)	Has 488 miles of bikeways. Annual Bike Fest that lasts two weeks. Sponsored by Pima County Department of Environmental Quality and City of Tucson Department of Transportation. Sponsor a class "Introduction to Mountain Biking". Sponsor a Bike to Work Day. Free fare on transit with bicycle. Free bicycle registration for riding bicycle to school. County DEQ transportation fairs where bicycle maps and bicycle parking information is distributed. Ride to zoo and get in free. Have lockers in downtown as well as showers.	Bicycle maps. Escorted rides four nights a week to orient riders. Bridge Pedal Ride when downtown bridges closed to traffic on a Sunday. Keep Your Car At Home program. Bike to the Ballpark Day with free entrance to game.	Have 23 separate grade separations over obstacles and extensive exclusive bike paths and on-street bike lanes. 20% of commute trips by bicycle. Bicycle commuting encouraged through use of CMAQ money to pay for 60% of cost to purchase bike if used for commuting. Published bicycle map.
Education/Promotion Funding	Grant from ADOT and Pima County. Is also a City bikeways fund.	Funding through City operating funds. Some funding for education through grants to non-profit groups.	Some CMAQ. Office of Traffic Safety under CALTRANS.
Involvement of School District	Bicycle Advisory Committee (BAC) publishes a "safe routes to schools" pamphlet.	Is an annual 2-day training of 3rd graders. Portland Kids on the Move safety program sponsored by City and Portland Public Schools. City sponsored Traffic Safety Workshops annually. City sponsored Traffic Safety Town available to grade schools. Bicycle Transportation Alliance trying to get a safety curriculum in the schools.	No formal involvement in place. Use of school buses discontinued because students walk/bicycle to school.
Police Department	Police sponsored bicycle rodeo and training. Fire Department raises funds to purchase helmets.	Available resources and competition with other police priorities limit involvement.	Occasional involvement of police.

	Tucson, Arizona	Portland, Oregon	Davis, California
Bicycle Committees	Mayor appointed Bicycle Advisory Committee.	Bicycle Advisory Committee appointed by City Council. Bicycle Transportation Alliance; hosts a Bicyclists' Legal Clinic and a Bicycle Commuter Workshop. Community Cycling Center for youth. Programs include Learn a Bike. Portland Wheelmen Touring Club group rides and cycling classes.	An Ad Hoc Bike Task Force helped create the Bicycle Master Plan.
Enforcement Issues	Bicycles not allowed on sidewalks.	Bicycles not allowed on sidewalks in the downtown core. Are allowed on sidewalks elsewhere in the City.	Bicycles not allowed on sidewalks. Traffic laws enforced for both bicycle and motorists equally.
Engineering	Use AASHTO guidelines. BAC checks design before construction. Reconstruction projects reviewed by Transportation Program Coordinator before implementation. Have regular maintenance program. Fast response to maintenance complaints.	Portland Bicycle Master Plan contains design and engineering guidelines. Construction reviewed by city's bicycle program staff as well as BAC.	No city-based standards. AASHTO guide incorporates information from Davis and other CA cities. Reconstruction reviewed during development review sessions. Look for continuity, number and quality of bicycle racks provided.

Coordination with School District

Encouraging walking and bicycling to school and incorporating pedestrian and bicycle safety programs into the school curriculum or after school activities would instill an interest in bicycling in school age children. As a coordinated program between Salt Lake City and the School District does not exist, a first step is to explore the feasibility of such a program with the School District. Other jurisdictions have incorporated a bicycle safety program into a physical education class. Determining where opportunities would arise in the normal functioning of the school should be explored. An objective would be to draft and seek funding for a demonstration or pilot program at selected elementary schools. For those schools that offer driver education programs for their students, incorporation of a "Share the Road" element co-sponsored by Salt Lake City and the School District or corporate sponsors would be beneficial.

Motorist/Bicyclist Safety Reminder Program

Many bicyclists have expressed concern with the driving behavior of motorists, their reluctance to share the road, and the legal obligation to do so. To enhance understanding in a cost effective way, the City could distribute a "Share the Road" brochure through the spring mailing of Salt Lake City utility bills and/or property tax notices.

Mayor's Bicycle Advisory Committee Sponsored Events

The MBAC is a well-recognized volunteer bicycle advocacy group that reports to the Mayor. The feasibility of using the MBAC to sponsor, organize, lead or obtain sponsor participation in events should be explored as a means to further promote bicycling as an alternative means of transportation. Examples could be inclusion of a bicycling float or bicycling group in the Days of '47 parade, bicycle rodeos or other event. As the MBAC is a volunteer group, the potential role of the MBAC in other City-sponsored events and any funding or liability issues should be explored.

Neighborhood Circulation Community Council Rides

Section 4.0 of this master plan refers to neighborhood circulation to facilitate local bicycle circulation within a community by a wide variety of users. As these would not be signed facilities, a mechanism needs to be put into place to share the knowledge of how best to move within the neighborhood on a bicycle. The City of Portland has successfully promoted such a program for four consecutive years. To help community councils participate, a "how to" checklist should be developed to encourage community councils to organize and host neighborhood rides for all age groups. The rides could be established as a City-sponsored pilot program.

Police Department Participation

The City has a high profile "bicycle squad" that could be used to help promote and educate school children about safe bicycling, while increasing the positive acceptance of police personnel among youth. The potential for this form of community outreach and possible sources of funding should be explored.

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10.0 FUNDING PROGRAMS FOR BICYCLE AND PEDESTRIAN FACILITIES

The provision of bicycle and pedestrian facilities is dependent upon enabling City code, good planning practices, and the ability to fund these facilities. Funding is an important issue for implementation of this master plan. There are a variety of federal, state and local sources of funding that are available to Salt Lake City. Traditional sources of funding include federal appropriations through various transportation funding categories, State legislative appropriations for transportation programs, and local government funds. Less traditional sources can include private donations, public/private partnerships, in-kind services, and sponsorships.

10.1 Federal Funding

The funding programs created under the Intermodal Surface Transportation Efficiency Act (ISTEA) and under the new Transportation Efficiency Act-21 (TEA-21) include walking and bicycle facilities and programs as eligible activities. Most federally funded projects and activities require a twenty percent State or local match. Federal sources that may be available to Salt Lake City either directly, through the Utah Department of Transportation, or Wasatch Front Regional Council include:

Surface Transportation Program (STP). This program gives states flexibility to invest in a variety of transportation activities, including highways, transit, transportation demand management, and safety. Pedestrian walkways and bicycle transportation facilities are specifically listed as eligible activities and include the provision of sidewalks and crosswalks, bike lanes, trails, bicycle parking, and modifications of public sidewalks to comply with the Americans with Disabilities Act. Non-construction projects that relate to safe walking and biking are also eligible (maps, brochures, public service announcements).

Transportation Enhancement (TE). A range of specific projects is known as Transportation Enhancements; ten percent of STP funds must be allocated to these. Three eligible activities include bicycle, pedestrian or shared use physical facilities; conversion of abandoned railroad corridors for trails; and safety and education programs for pedestrians and bicyclists. A local match of 20 percent is required to use Utah's TE funds.

Hazard Elimination and Railway-Highway Crossing Program. This fund constitutes ten percent of the STP funds and includes pedestrian and bicycle safety issues. Funds can be used to survey hazardous locations, complete projects on any publicly owned pedestrian or bicycle pathway or trail, or any safety-related traffic calming measure.

State and Community Highway Safety (402) Grants. These federal funds are directed to safety and education programs related to walking and biking. These may include bicycle helmet programs, safety education materials and promotion, and maps. In Utah, these funds are administered through the Highway Safety Office, the Utah Department of Public Safety.

Congestion Mitigation and Air Quality Programs (CMAQ). These funds were established under ISTEA to assist metropolitan areas in attaining Clean Air Act Amendments air quality standards. Use of these funds is therefore limited to projects that benefit air quality within non-attainment areas. Pedestrian and bicycle projects are eligible activities. In the Salt Lake valley, the Wasatch Front Regional Council administers CMAQ funds.

10.2 State Funding Opportunities

The State of Utah also has programs in place that can provide funding for bicycle and pedestrian facilities and programs.

Centennial Non-Motorized Paths and Trails Crossings. The Utah Department of Natural Resources, Parks and Recreation Division administer this program. The funds are to be allocated towards the provision of safe and continuous pedestrian, bicyclist, and other human-powered and equestrian transportation paths and trails, and to provide access across highways and other impediments. A fifty percent local match is required.

Safe Sidewalk Program. This funding is for construction of sidewalks on State roads with an emphasis on providing sidewalks used by children walking to school. UDOT administers this program; a twenty-five percent local match is required.

10.3 City Funding

The City has several programs which may provide funding for bicycle and pedestrian facilities.

Capital Improvement Program (CIP). Salt Lake City's Capital Improvement Program, provides funding for meeting the community's needs for physical infrastructure facilities such as streets, parks, and public buildings. For additional information check the city website at http://www.slcgov.com/CED/hand/cipintro.htm or contact the City's Division of Housing and Neighborhood Development.

Community Development Block Grant Program (CDBG). Salt Lake City's CDBG funds can be used to address local housing and community development needs. The CDBG grant was established as a "bricks and mortar" grant to help cities improve housing, public facilities and infrastructure for low- and moderate-income persons. In order for a project to be eligible for CDBG funding it must meet one of three national objectives and be an eligible activity. To meet the national objective, the project must benefit low- and moderate-income persons, prevent or eliminate slum or blight, or meet urgent conditions that pose a serious and immediate threat to the health or welfare of the community. For additional information check the city website at http://www.slcgov.com/CED/hand/cdbg.htm or contact the City's Division of Housing and Neighborhood Development.

Impact Fees. As new developments are constructed in the city, impact fees are assessed. These fees may be available to assist in the construction of trails or other pedestrian or bicycle improvements.

10.4 Other Sources

Private corporations, non-profit groups, service organizations, and volunteer organizations can provide both funding and/or in-kind services for specific projects. As planning for implementation of facilities proceeds, the City may want to consider developing a "sponsorship program" to build awareness of opportunities for participation by these entities.

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Community Councils
Arcadia Heights/Benchmark
Avenues
Bonneville Hills
Capitol Hills
Central City
East Central
East Liberty Park
Foothill/Sunnyside
H Rock
Indian Hills
Jordan Meadows
Liberty-Wells
Oak Hills
People's Freeway
Poplar Grove
Rio Grande
Rose Park
St. Mary's
State Fairpark
Sugar House
Sunnyside East Assoc.
Sunset Oaks
Wasatch Hollow
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REFERENCES

American Association of State Highway and Transportation Officials, Guide for the Development of Bicycle Facilities, 1999

City of Portland, Bicycle Master Plan, May 1996

City of Portland, Portland Pedestrian Master Plan, June 1998

Salt Lake City Corporation, Avenues Master Plan Update, 1987

Salt Lake City Corporation, Beck Street Bicycle Commuter Route Concept Plan, 1997

Salt Lake City Corporation, City Creek Master Plan, 1986

Salt Lake City Corporation, Guadalupe Target Area Plan, 1984

Salt Lake City Corporation, Sugar House Master Plan Update, 2001

Salt Lake City Corporation, Northwest Jordan River/Airport Master Plan, 1992

Salt Lake City Corporation, Salt Lake City Open Space Plan, 1992

Salt Lake City Corporation, Towards A Walkable Downtown, December 2000

Salt Lake City Corporation, West Capitol Hill Target Area Plan, 1984

US DOT, FHWA, Bicycling and Walking in the Nineties and Beyond: Applying Scandinavian Experience to America's Challenges, November 1994

US DOT, FHWA, Bicycle and Pedestrian Planning Under ISTEA, September 1994

US DOT, FHWA, FHWA Study Tour for Pedestrian and Bicyclist Safety in England, Germany, and Netherlands, October 1994

Utah Department of Transportation, Statewide Pedestrian and Bicycle Plan, February 2001

Wasatch Front Regional Council, Wasatch Front Regional Council Urban Area Long Range Transportation Plan For 2030, October 2001