
PART I: BACKGROUND & POLICIES

CHAPTER 1: INTRODUCTION

A. Planning Purpose

The impetus for this planning process was to update and unify the City's two planning documents, *The Trails & Bikeways Facility Plan (TBFP)*, 1993 and the *Albuquerque Comprehensive On-Street Bicycle Plan (COSBP)*, 2000. By taking stock of current issues and the City's approach to bikeways and trails, we will be able to better manage the growth of the bikeway and multi-use trail system; thus helping to ensure a well-connected, enjoyable and ~~safe~~ efficient, non-motorized transportation and recreation system throughout the metropolitan area.

The purpose of the plan is to assess the current system and to make recommendations for new facilities, administration processes, and education and outreach programs. The trail and bicycle network is part of Albuquerque's system of Parks, Open Space and Trails (POST). This system is one of Albuquerque's prime attractions, connecting residents and visitors to Albuquerque's natural surroundings and providing the city a unique sense of place, while also providing the opportunity for healthy activities that many residents desire.

The bikeway and trail network is also a part of the City's multi-modal transportation system. Much of the funding that the City has allocated for bikeways and trails comes as part of a ¼-cent transportation tax and as a component of other transportation improvement projects. Incorporating bikeways and trails as an integral part of the transportation system is consistent with federal transportation policies that aim for a balanced, multi-modal system. Integrating bikeways on a variety of road types provides direct connections for those who rely on bicycling or walking as their mode of transit to commute, shop, or recreate.

This Rank II *Facility Plan* will guide the City-wide development of Albuquerque's bikeways and trails system to provide healthy and sustainable options for transportation and recreation, connections to nature, access to goods and services, and local economic development stimulus.

Albuquerque's Ranked Plans

The City of Albuquerque uses a system of ranked plans, starting with the Rank I *Albuquerque/Bernalillo County Comprehensive Plan*, which sets the vision, goals, and overall policies from a City-wide perspective. There are also lower-ranked plans that must comply with the intent, policies, and goals of higher-ranked plans. Rank II Plans, including area plans (such as the *West Side Strategic Plan*) or facility plans (such as the *Arroyos Facility Plan*), are exclusively policy documents that provide more detail and give more direction about large but distinct areas or facilities within Albuquerque. Rank III Plans provide the most detailed guidance for an area, and often include zoning customized to meet the goals of specific areas. The plans should be internally consistent and consistent within the ranking hierarchy.

B. Background and History of System

1. Previous Bikeway & Trail Planning in Albuquerque

In 1972, the City began work on its bicycle network. A team effort involving an ad hoc Bikeway Advisory Committee and the City of Albuquerque Planning Department developed *The Bikeway Study*, published in March 1974. The total proposed network originally targeted for completion in 1978 has yet to be realized. With a mature system of 620 miles of facilities, the fact that some of these early envisioned routes have not yet been completed speaks to the challenges in developing the system.

The Bikeway Study led to adoption of the *Bikeways Master Plan*, which establishes policy regarding bikeways in the Albuquerque Metropolitan Planning Area. A permanent Bikeway Subcommittee of the Environmental Planning Commission was created to advise the City on implementation of the Plan recommendations. These efforts were jointly adopted by the City and County. The bicycle subcommittee eventually became the current Greater Albuquerque Bicycling Advisory Committee (GABAC).

Since 1974, various plans and documents, including the *Facility Plan for Arroyos*, the *Facility Plan for Major Public Open Space* and several *Arroyo Corridor Plans*, have addressed different aspects of trail development, such as location, character, and even design. This study came at a crucial point in time as it helped Albuquerque acquire trail right-of-way (ROW) at a time when it was either free or very inexpensive. Now that most of the city has built out, the cost for ROW can be expensive and many times physically limiting.

A more recent planning effort was undertaken by the City Planning Department, which resulted in the *Trails & Bikeways Facility Plan*, completed in 1993. The Greater Albuquerque Recreational Trails Committee (GARTC) was established to help with the development of this plan. This plan established long-range policies for off-street trails and bicycle facilities within the Albuquerque Metropolitan Planning Area and was adopted by both the City and Bernalillo County. A proposed trail system that serves both recreational and commuting purposes was envisioned. The plan recommended the creation of two positions, a Bicycle/Pedestrian Coordinator in the Department of Municipal Development and a Trails Coordinator in the Parks & Recreation Department to oversee the development of on-street and off-street bikeways. Both of these positions were created and are staffed to this day.

At the time the *Trails & Bikeways Facility Plan* was adopted, there were 39 miles of paved trails. Staffing for the planning and implementation of the trail and bicycle network has remained stagnant or arguably reduced, while the size of the network has quadrupled. This is perhaps an indicator of the growing pains the managers of the system and users of the system are currently grappling with.

In late 1996, the Department of Municipal Development initiated the *Albuquerque Comprehensive On-Street Bicycle Plan*, based on a recommendation in the *Trails & Bikeways Facility Plan* to investigate on-street bikeways more closely. A steering committee was created consisting of members from bicycle advisory and advocacy groups, public agencies, and other parties. The *Albuquerque Comprehensive On-Street Bikeway Plan* was adopted in 2000. It includes goals and policies, funding strategies, design standards, recommended facilities, and an implementation plan. Recommended elements of this study are currently being implemented as funding becomes available.

GABAC and GARTC were originally City/County committees. Each citizen committee was established by City ordinance and is charged with representing cyclists, equestrians, and pedestrians and advising

governmental agencies on planning, projects, and programs affecting bicyclists and other trail users. The County has withdrawn its participation with the advisory groups and adoption of the *Trails & Bikeways Facility Plan*. The reason given was that the groups focused almost exclusively on urban, paved trails, which was not what the County was working on, and their adoption of the Bernalillo County Bicycle & Pedestrian Safety Action Plan.

2. Early Accomplishments

For many years, the Paseo del Bosque Trail, also known as “the Bosque Trail,” went from just south of the Zoo to the Rio Grande Nature Center (4.85 miles). With extensions north and south, trail users can now travel over 16 miles without encountering an at-grade intersection, making this the most heavily used trail in the City. The second most frequently used trail for cyclists is the combined Paseo del Nordeste and the North Diversion Channel Trails. The original Paseo del Nordeste Trail started at the University of New Mexico, went north to the Hahn Arroyo, and then east to Pennsylvania Street.

Since the North Diversion Channel Trail was completed and connects to the trail along Paseo del Norte, this has become part of a popular north-south trail, making connections to the Paseo del Bosque Trail and the Paseo del Nordeste with minimal at-grade crossings. AMAFCA has worked closely with the City on the trails using the channel and other AMAFCA rights-of-way. These trails carry regional cycling traffic, not just local traffic. Tramway Trail was originally developed in the early 1980s and has undergone multiple renovations. It was extended to the north by Bernalillo County and the NMDOT has played a strong role in its development and maintenance. It is now approximately 8.5 miles long and is another of the region’s most popular trails. See **Figure 3: 2014 Bike Map**, page 28, and **Figure 10: Existing Facilities Map**, page 64.

3. Recent Accomplishments

Since 1993, there have been major shifts in federal policies and requirements for multi-modal transportation accommodations. See the discussion in **Chapter 2.B.5, Federal Policies and Programs** for more information. At the local level, the Mid-Region Council of Governments (MRCOG) has implemented these policies through its Project Prioritization Process and allocation of NMDOT funds to local jurisdictions. The City has adopted various new funding initiatives, such as the quality of life ¼-cent gross receipts tax, which earmarked a portion for trails, followed by the current ¼-cent transportation tax.

In the past several years, the City has constructed over \$10 million dollars in bikeway and path improvements, new facilities, and system upgrades. Part of this large expenditure was made possible by the American Recovery and Reinvestment Act of 2009 (ARRA), which funded “shovel ready” projects across the nation. These improvements have been focused on bridging major barriers and providing grade-separated crossings to improve the safety-security of the North Diversion Channel Trail.

In 2007, the City began construction of three bicycle boulevards, which provide an enhanced bicycle connection along Mountain Rd., 14th Street, and Silver Ave., which will ultimately connect the Rio Grande to San Mateo Blvd. In 2010, the City completed the Gail Ryba bicycle and pedestrian bridge

Recent Accomplishments

Since 2007

- Over \$10 million in bikeways and path improvements
- 3 bike boulevards
- Gail Ryba bike and pedestrian bridge over Rio Grande river
- Bear Canyon Arroyo bike and pedestrian bridge over I-25

across the Rio Grande just north of I-40. At this time, the City also repaved the popular 16-mile long Paseo del Bosque Trail, which had become rife with large pavement cracks. In 2012, four new underpasses were built along the North Diversion Channel, creating a second, nearly uninterrupted north-south trail route across the City. In 2013, the Bear Canyon Arroyo Bridge was completed, connecting the east and west sides of I-25 for non-motorized travel.

The mileage of official bikeways and trail facilities **within the City boundary** grew by almost 200% between 2000 and 2010 (see Table 1). From 2010 to the 2014, it has grown another 10%. This period also saw significant upgrades in grade-separated crossings and pavement maintenance as described above. This plan proposes projects that would more than double the current mileage of bikeways and trails. The intent of many of these new facilities is to increase continuity of the existing system by connecting gaps and bridging obstacles.

Table 1: Existing Bikeway and Trail Facilities over Time & Proposed Facilities

Bikeways & Trails	1974	1993	2000	2010	2014	Proposed	Proposed Full Build-Out
Multi-Use Trails	0	39	55	161	154	116 115	270
Unpaved Trails	-	-	-	-	49	46 43	95
Bike Boulevards	0	0	0	6	6	10 11	16
Bike Lanes	0	24	48	170	197	202 196	399
Bike Routes	0	0	56	134	115	78 76	193
Total System Length	0	63	159	471	520*	406398	926
Total System (incl. unpaved)	-	-	-	-	620	452 441	1072
Grade-Separated Crossings	0	10	15	26	31	16	46

- No data exists for these facilities in the years shown.

* The total system length in 2014 excludes unpaved trails, because they were not considered part of the total in previous plans. This needs to be done to compare “apples to apples” over time. There are approximately 50 more miles of unpaved trails managed by the Open Space Division that are outside the City limits.

On-going education and encouragement programs have been coordinated by the Department of Municipal Development and the Parks and Recreation Department. These recent improvements are in line with the present vision and goals of improving the ~~safety and~~ quality of the facilities and addressing specific facility gaps, in addition to focusing solely on increasing the extent of the system.

The City was presented a bronze level Bicycle-Friendly Community award from the League of American Cyclists in 2005 – a significant achievement for a first-time submittal. This recognition is a direct indication that the City is proceeding in the right direction with its development of bicycle facilities.

Other Jurisdiction’s Planning Efforts

In addition to the City of Albuquerque, the State of New Mexico and the Mid-Region Council of Governments (MRCOG), and Bernalillo County have been active in bicycle and trail planning. In 2012, Bernalillo County adopted the *Pedestrian and Bicycle Safety Action Plan*, which identifies pedestrian and bicycle safety issues in the County and prioritizes projects to address the problems.

The Long Range Bikeway System (LRBS), presented in Figure 1, page 19, is part of the 2035 *Metropolitan Transportation Plan* long-range transportation plan for the metropolitan area. Opportunities to update the LRBS are provided every five years through the MRCOG transportation planning process. The LRBS is included in the Transportation Program, which is reviewed and approved annually by elected officials, including Bernalillo County, Albuquerque, and Rio Rancho.

At the state level, the New Mexico Bicycle-Pedestrian-Equestrian Transportation Plan was completed in 1996. This plan provides goals, recommended actions, and planning and design guidelines to improve and accommodate non-motorized transportation modes. The NM Department of Transportation is currently working on the Statewide Long-Range Multimodal Transportation Plan (SLRP), which sets the vision for how New Mexico's transportation system supports the well-being of our community now and in the future.

C. Bikeways and Trails Benefits

Recent years have seen a nationwide trend toward the increased development and use of bikeways and trails for both recreation and transportation. Bikeways and trails provide communities with myriad benefits, including improved public health ~~and safety~~, natural and cultural resource protection, environmental quality improvements, and economic growth.

Cycling and trail use is important to Albuquerque's future due to its potential to address several interrelated challenges, including traffic, air quality, and public health. By planning a metropolitan area that is more accessible to non-motorized transportation, practitioners can affect all of these areas, which collectively can have a profound influence on existing and future quality of life in Albuquerque. As the *State Bicycle-Pedestrian-Equestrian Advisory Plan* states, walking and bicycling are already "significant modes of transportation in New Mexico." Significant opportunities and reasons remain to expand the non-motorized transportation system and improve the quality of the user experience. Improving active transport can achieve planning objectives including economic development, reduced traffic and parking congestion, energy consumption and pollution emissions, improved public health outcomes, and more compact development.

1. Economic Benefits

There are many positive economic benefits associated with bikeway and trail development. Bikeway and trail use reduces costs associated with vehicle use. **Commuting by bicycle costs, on average, less than half as much as driving** when all internal and external costs, including travel time, maintenance of infrastructure, environmental impacts and ownership expenses, are considered. According to AAA, the average annual cost to own and operate a motor vehicle is around \$9,000 per year in 2012. With robust transportation facilities for non-motorized travel, combined with transit, families may be able to get by with fewer cars per household.

A significant economic benefit of increased cycling is a reduction in motor vehicle traffic congestion, which has estimated annual congestion costs at over \$100 billion nationally. These costs result from lost productivity while stopped or slowed in traffic. **Each trip taken by walking or cycling is one fewer vehicle contributing to congestion and environmental pollution.** The economic impacts of traffic congestion also affect the business community through slower delivery times, diminished employee morale, and an inability of patrons to easily access businesses.

Studies show that walking, hiking, or biking a few times a week can **improve a person's health and reduce healthcare costs**. A cost-benefit analysis of using bike/pedestrian trails in Lincoln, Nebraska to reduce health care costs associated with inactivity showed that for every \$1 investment in trails for physical activity led to \$2.94 in direct medical cost reduction. Another study reported that those who exercise regularly “filed 14% fewer health claims, spent 30% fewer days in the hospital, and had 41% fewer claims greater than \$5,000” (Greenways, Inc., p. 14). Surveys indicate far fewer medical bills, lower insurance reimbursements, and fewer hospital stays by people who regularly use trails for transportation or recreation.

Trails build strong communities and are a **valuable amenity for neighborhoods**. According to a National Association of Homebuilders study cited by the *New York Times*, trails are the number one amenity potential homebuyers look for when they are considering moving into a new neighborhood. Homes near trails are easier to sell, and homeowners see a direct correlation between trails and positive impact on quality of life. Trails translate into higher housing values. Trails revitalize neighborhoods; new houses and businesses take advantage of locations adjacent to trails.

Finally, **bikeways and trails support tourism** by providing additional destinations and opportunities for visitors, who patronize nearby motels, bed and breakfasts, cafes, or shops. Cities with well-developed cycling and trail infrastructure have become destinations in themselves – look at Portland, OR; Davis, CA; Sedona, AZ; Boulder, CO; Ketchum, ID; San Antonio, TX; and even Manhattan, NY. These places have branded themselves as bike-friendly vacation locations. Albuquerque could benefit from increased revenues by attracting active or sport tourism. Local businesses selling bicycles, biking gear, walking and hiking shoes, and equestrian gear also stand to benefit from increased demand for their products.

Trails build local businesses; bicycle tourism is a growing segment of the tourism market benefiting businesses that are well connected to trails. Several recent studies have concluded that people walking and bicycling spend more money locally and help to support local economy. “Bicycle Friendly Districts” is a new concept, started in Long Beach, CA, that is focused on improving bicycle facilities in select districts that have neighborhood and business support in order to build community, increase physical activity, and make streets less congested.

2. Traffic Safety Improvements

Roadway improvements ~~to that~~ increase bicycle safety-utilization and attractiveness also enhance motorists' safety-experience as well. Bike lanes or bikeway shoulders minimize traffic flow impacts by providing bicyclists with a designated space and decrease degradation of the roadway edge, thereby increasing roadway life and decreasing roadway maintenance costs.

Vehicle speed differential is the primary cause in a large percentage of roadway crashes and a deterrent to potential cyclists. A traffic calming approach being used successfully across the country is the striping of bike lanes to create narrower vehicular travel lanes. For cyclists, this approach serves the more important benefit of creating wider ~~and safer~~ non-motorized travel lanes.

There is evidence that the more people walk and bicycle the safer it becomes to walk and bicycle. This is related to goals of both safety and increasing the number of users in the network (Safety in Numbers, 2003).

3. Social Equity in Mobility

According to the U.S. Census, nearly one-third of Americans do not drive — this includes children under 16, about 20% of residents over 65, and other residents over 16 that cannot afford or choose not to own a motor vehicle. Also included in this user-base are people that own cars but choose to walk or bike and people that would like to walk and bike but feel that significant barriers exist (e.g., physical barriers such as missing facilities or perceived barriers such as a lack of time). ~~Safe-Alternative~~ options for transportation, mobility, and recreation should be provided for all residents and visitors to the City.

4. Public Health Benefits

Regular physical activity has a beneficial impact on health through its role of prevention of various diseases and health conditions and of protection against injury and disability.

In recent years, public health professionals and urban planners have become increasingly aware that the **impacts of motor vehicles on public health extend far beyond asthma and other respiratory conditions caused by air pollution**. There is a much deeper understanding of the connection between the lack of physical activity resulting from auto-oriented community designs and various health-related problems such as obesity and other chronic diseases. Although diet and genetic predisposition contribute to these conditions, physical inactivity is now widely understood to play a significant role in the most common chronic diseases in the US, including coronary heart disease, stroke, and Type II diabetes. In response to these trends, the public health profession has begun to advocate for the creation of walk-able and bike-able neighborhoods as one of the most effective ways to encourage active lifestyles. Prescription Trails is one of the programs targeted at getting more people active (see page 88). Studies show that 43% of people with ~~safe-dedicated~~ places to walk within ten minutes of home meet recommended daily activity levels, compared to only 27% of those without ~~safe-these~~ places to walk.

Sixty-percent of the total New Mexican population is considered overweight or obese. Data collected by the Center for Disease Control (CDC) between 1995 and 2010 indicates that the percentage of New Mexican residents classified as obese has increased from the 10 - 14% range in 1995 to 25% in 2010. As Albuquerque becomes more inviting to non-motorized transportation, residents will have more opportunities to exercise, ideally resulting in a higher proportion of residents achieving recommended daily activity levels.

Physical activity is directly linked to our overall physical and mental health. Even moderate levels of exercise have been shown to aid in weight control, the prevention of heart disease and certain cancers, and the alleviation of anxiety and depression. However, making the choice to exercise can be a difficult one. “Lack of time or access to convenient outlets for healthy transportation and recreation opportunities” is a commonly cited barrier to increasing physical activity (Rails to Trails Conservancy). One way to ensure adequate amounts of exercise is to choose active transportation for one or more of your weekly trips to work, the store, or social gatherings.

~~Safe, dD~~ Dedicated paths and bikeways encourage the use of non-motorized modes of transportation for everyday errands and commuting. This allows people to build physical activity into their daily routines, rather than having to carve out extra time for exercise alone. Additionally, attractive, outdoor settings can make exercise more enjoyable and trails can provide cost-effective exercise options when compared to gym or health club memberships.

Tangible benefits include an improved mental outlook and enhanced well-being. Walking and cycling as transportation modes are an ideal form of exercise to maintain or improve one's health, which will eventually impact the national goal of reducing health care costs.

5. Environmental Benefits/Natural and Cultural Resource Protection

Trail preservation and development have positive impacts on environmental health and resource conservation. The designation of trail corridors can be used as a tool for preserving important natural landscapes in the face of increased development. Trails can provide an attractive alternative to driving for daily activities within the City.

The development of safe-upgraded trail and bikeways for use in everyday commuting and errands can significantly reduce our consumption of fossil fuels and our emission of pollutants. Each time an Albuquerque driver chooses to walk or cycle, **one fewer motor vehicle trip is made**. It is the intent of this plan to increase the numbers of shopping, dining, school, and recreational trips made via multi-use bikeways and trails. Further, bicycling does not consume petroleum products, thereby conserving energy and reducing emissions.

Bicycling could have a significant impact on air quality by replacing motor vehicles for short trips of less than 5 miles. This represents trips that are less fuel-efficient and generate the highest emission rates per mile traveled. Transportation alternatives, including bicycling and walking, are viable solutions to reducing vehicle miles traveled and air quality impacts. Cumulatively, this pattern may reduce traffic in some neighborhoods, which would also improve air quality.

6. Quality of Life Benefits

Corporate relocation evidence shows that quality of life of a community is an increasingly important factor in corporate relocation decisions and may be more important than purely business-related factors when it comes to attracting new businesses, particularly in the high-tech and service industries. St. Mary's County in Maryland found over a ten year period that businesses that moved to the county because of tax incentives tended to leave as soon as the incentives expired. However, businesses that moved to the county because of its quality of life remained to become long-term residents and taxpayers.

In the end, a more balanced and flexible transportation system will give greater choice and independence to more members of the community. Neighborhoods can experience reduced environmental and transportation impacts from traffic congestion. Like the motor vehicle, the bicycle provides personal mobility. **The public, of all ages, will feel safer-more comfortable and more are-at ease in using the transportation system, whether cycling or walking in their neighborhood, due to the traffic calming impacts of bikeways**. As more and more people use the streets and trails using a variety of transportation modes for a variety of purposes, the sense of community will be strengthened, pollution will be reduced for a healthier physical environment, and health care costs will be reduced.

An enhanced bikeways and trails system also provides more support to the compact urban forms, making infill development more desirable. Close-in infill developments become more viable due to the non-vehicular connectivity resulting from their locations, versus the tendency for residents on the periphery to be more compelled to use their vehicles.

D. The Planning Process

Beginning in 2008, the City began an update of the two existing bicycle and trail plans with the intention of combining both documents to reflect a consolidated approach to developing and managing the bikeways and trail system. Both plan documents needed to be updated to address current conditions, goals, policies, issues, and future priorities. Gannett Fleming West and Alta Planning were selected as the consultant team for the effort. They completed an extensive amount of data collection and analysis that have informed the recommendations in this plan. A *Draft Bikeways & Trails Master Plan* was completed in 2011, but it needed a clearer implementation approach, and additional planning was needed to adequately address the trail system and recreational concerns.

In 2012, the City Parks & Recreation Department revised the draft to incorporate trail and recreation related concepts. In late 2013, the Planning Department began work to consolidate the previous planning efforts with updated research and analysis. Staff updated the plan to directly respond to public comments collected in the 2011 planning effort, and updated the vision, goals, and policies to reflect the concerns raised by the public, advisory groups, and agency interviews. An implementation plan and design guidelines were developed to guide design and construction of future facilities, support current and new education and outreach programs, and to guide development of the proposed 16 new grade-separated crossings, 290 miles of new bikeways, 162 miles of new trails, and numerous intersection enhancements.

1. Public Involvement Summary

In the initial data collection and analysis stages of this effort, the consultant team held **several public open house meetings, a stakeholder workshop, and user and agency interviews**. They developed a project website with updates and draft materials as the project progressed. A survey was also administered to get targeted feedback about bicycle facility preferences and the needs and desires of cyclists in the City. City Staff have carefully reviewed these documents and used them to inform additional plan content and revisions reflected in this current plan. Over 550 individual comments were received throughout this process. Additional information was gathered by staff by regularly attending both the GABAC and GARTC meetings. This public input was reviewed throughout the planning process to guide development of this *Bikeways & Trails Facility Plan*.

2. Data Collection & Analysis

Gannett Fleming West and Alta Planning completed a range of studies to better understand opportunities to improve our bikeway and trail system. They collected bikeway and trail user counts at 37 locations in 2010, which was compared to a smaller user count performed in 1997. A crash analysis was performed to understand the overall severity, where, and when reported collisions occurred. The planning and engineering studies – Cycle Zone Analysis, Bikeway Quality Index, the engineering gap analysis, StreetPlan, and public input – were used to develop the recommended facility improvements and programs. The detailed methodology and results from these analytic approaches is included as appendices; a summary of each approach and salient findings are included in **Chapter 3.C, Bikeway & Trail System Analysis**. The full report for each analysis is included as **Appendix C, Compilation of 2010 Bikeways Data**.

Additional work has gone into understanding and developing recommendations related to the way the City administers bikeways and trails, as well as how the advisory groups can be most effective. More

recent work, such as DMD's Bollard Study, Parks and Recreation's Trail Design Guidelines, the Mayor's *ABQ the Plan: 50-Mile Activity Loop*, and newly adopted AASHTO and ITE guidance are incorporated.

The Facility Plan provides three types of recommendations:

- **Proposed capital improvements:** The bikeways and trail map guides future facility improvements. Recommendations are also made for end-of-trip facilities, intersection improvements, and specific gap closures that were identified as priority projects.
- **Programs:** The plan provides a review of existing programs to expand and continue, as well as new programs recommended for additional outreach, education, training, and awareness. The plan includes ongoing programs as well as periodic events and campaigns.
- **Policy changes & implementation actions:** The plan proposes changes to adopted state and local policy to improve the ~~safety~~, design, and law enforcement ~~of~~ trails and bikeways. Policy recommendations are made to improve maintenance of the facilities. Design guidelines address on-street facilities, multi-use trails, intersection design, wayfinding treatments, and end-of-trip facilities.

E. Using the Plan

The information gathered throughout the planning process was used to update goals and policies (**Chapter 2**), identify the strengths and weaknesses of our current bikeway and trail system (**Chapter 3**), the recommended network (**Chapter 4**), recommended programs (**Chapter 5**), the implementation approach (**Chapter 6**), and the design standards (**Chapter 7**).

This plan provides guidelines for implementing new projects identified during the planning process in **Chapter 4: Recommended Network** and **Chapter 6: Implementation Strategies**. It also provides policies for developing paths and bikeways in newly developing areas and in areas that need improved quality facilities in **Chapter 2: Planning & Policy Framework**. When a portion of the City has been identified for new development or redevelopment, whether by public or private means, this plan and the updated facilities map should be consulted to identify the need for bikeways or trails to be incorporated into the improvements as well as design standards for bikeway and trail facilities.

General guidelines for the design of those facilities are provided in **Chapter 7, Design Manual**. Facilities should be developed in accordance with the goals and policies of this plan and designed to be consistent with the Design Manual and most recent AASHTO, ITE, AADAG, and/or NACTO guidelines. Doing so will help ensure that new facilities are consistent with the long-range goals of the City to support and promote bicycle and trail use as a transportation option, recreation opportunity, and enhancement of quality of life for all citizens.

The following section, **Chapter 1.F, Acronyms**, and **Chapter 1.G, Definitions**, provide a comprehensive list of terminology and definitions used in this plan.

This plan proposes projects and programs that can be implemented over the next 50 years, at our current rates of funding for bikeways & trails activities. However, the plan recommends more frequent updates at 5 year intervals to allow the City to keep up with new best practices and to reflect our evolving understanding of the challenges facing the City in terms of walking and bicycling.

F. Acronyms

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ADAAG	ADA Accessibility Guidelines
AMAFCA	Albuquerque Metropolitan Arroyo Flood Control Authority
APD	Albuquerque Police Department
<u>B&PSEP</u>	<u>Bicycle & Pedestrian Safety Education Program (administered by P&R)</u>
BQI	Bikeway Quality Index
CZA	Cycle Zone Analysis
DMD	Department of Municipal Development
DRC	Design Review Committee
FHWA	Federal Highway Administration
GABAC	Greater Albuquerque Bicycling Advisory Committee
GARTC	Greater Albuquerque Recreational Trails Committee
ITE	Institute of Transportation Engineers
KAFB	Kirtland Air Force Base
LOS	Level of Service
<u>MPOS</u>	<u>Major Public Open Space</u>
MRCOG	Mid-Region Council of Governments
MRGCD	Middle Rio Grande Conservancy District
MTP	Metropolitan Transportation Plan
MUTCD	Manual on Uniform Traffic Control Devices
NMDOT	New Mexico Department of Transportation
<u>OSD</u>	<u>Open Space Division</u>
POST	Parks, Open Space, and Trails
ROW	Right-of-way
P & R	Parks and Recreation Department
PROWAG	Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way
TAP	Transportation Alternatives Program
<u>TDM</u>	<u>Traffic Demand Management</u>
TIP	Transportation Improvement Programs

G. Definitions

Accessible — describes a trail, or a portion thereof, which complies with the American National Standards Institute (ANSI) Guidelines and is accessible to people with disabilities.

Accessway — access routes between lots shall consist of a minimum 6-foot wide path in a 12-foot wide space, shall meet ADA standards as required by law, and shall prevent vehicle entry. Access routes shall have no blind spots and access route exits shall be clearly visible from all points along the route. Pedestrian access routes longer than 120 feet shall be a minimum of 18 feet wide.

Activity Center — location such as employment center, schools, downtown and uptown, entertainment, museums, etc. that tend to attract cyclist for education, recreation, shopping or employment.

At-grade Crossing — a junction where multi-use trail or sidewalk users cross a roadway at the same level as motor vehicle traffic, as opposed to a grade-separated crossing where users cross over or under the roadway using an overpass or underpass.

Bicycle (Bike) — a human-powered vehicle with two or more wheels designed to transport by the act of pedaling one or more persons seated on one or more saddle seats on its frame.

Bike Boulevard — a bike route that is designed to prioritize the through movement of bicycles while maintaining local access for motor vehicle travel. This bikeway type is often used on neighborhood streets with good connectivity. Traffic calming devices are used to control motor vehicle speeds and discourage vehicle through trips. These devices may include diverters, speed humps, traffic circles, or pocket parks which allow through access by bicycles. A bicycle boulevard may be constructed with wide curb lanes or with standard travel lanes and bike lanes. Bicycle boulevards should limit bicycle stops to one per quarter-mile or preferably one per half-mile spacing. Also known as Neighborhood Greenways in other communities.

Bicycle Facilities — the infrastructure that accommodates or encourages bicycling including bikeways, shared roadways not specifically designated for bicycle use, bicycle parking and storage facilities, and bicycle signal actuation hardware.

Bicycle Network — a system of public bicycle facilities that can be mapped and used by bicyclists for transportation and recreational purposes.

Bike Route — a segment of a system of bikeways designated on a roadway with appropriate directional and informational signing, with or without a specific bicycle route number, in accordance with the MUTCD. Bike routes are primarily located on local streets and low-volume, low-speed collector streets.

Bike Lane — a lane on the roadway that has been designated by striping, signing, and pavement markings for preferential or exclusive use by bicyclists. Bike lanes or paved shoulders are part of the standard arterial and collector cross-section. At signalized intersections, bike lanes should have bicycle-sensitive actuation capability such as loop detectors, video detection, curbside push buttons, or other detection devices approved by the City Traffic Engineer.

Bike Lane, Buffered — buffered bike lanes are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.

Bike Lane, Protected — protected bike lanes have some sort of physical, stationary, vertical separation between moving motor vehicle traffic and the bike lane. Examples of vertical separation include plastic posts, bollards, curbs, planters, raised bumps or parked cars. Protected bike lanes can be at street level or

raised, either to sidewalk level or a level in between street and sidewalk level. Paint alone does not create a protected bike lane. See *Cycle Track*

Bikeway — a generic term for any road, street, path or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designed for the exclusive use of bicycles or are to be shared with other transportation modes.

Bikeway Quality Index — a metric developed to indicate the likely comfort of bicyclists riding on an existing bicycle facility. Bikeway Quality Index factors are variable depending on facility type but typically include surface quality and wayfinding.

Bulb-out — a curb extension is a traffic calming measure, primarily used to extend the sidewalk, reducing the crossing distance and allowing pedestrians about to cross and approaching vehicle drivers to see each other when vehicles parked in a parking lane would otherwise block visibility.

Chicane — an artificial feature creating extra turns in a road, used to slow traffic ~~for safety~~.

Crosswalk — any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.

Cycle Zone Analysis — a zone-based system developed to analyze existing bicycling conditions. Zones consists of a more-or-less homogeneous cycling environment based on employment and population density, land use mix, road network density, connectivity, and topography.

Cycle Track — a cycle track is an exclusive bike facility that combines the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk. See *Bike Lane, Protected*

Directional or wayfinding signs — signs typically placed at road and bicycle path junctions (decision points) to guide bikeway users toward a destination or experience.

Grade-separated crossing — an overpass or underpass allowing multi-use trail users to cross a major roadway without motor vehicle conflict.

Highway — a road or thoroughfare, such as a street, boulevard, or parkway, which functions as a main route for any form of transport or travel and is available to the public for use.

Loop detector — a device placed in the pavement, real or virtual, at intersections to detect a vehicle or bicycle and trigger a signal to provide a green light for through traffic. They are also used to count bicyclists on multi-use trails.

Major Public Open Space — an integrated system of lands and waters that have been designated as such in the Comprehensive Plan. The lands and waters and interests therein have been or shall be acquired, developed, used and maintained to retain their natural character to benefit people throughout the metropolitan area by conserving resources related to the natural environment, providing opportunities for outdoor education and recreation or defining the boundaries of the urban environment.

Medians — the area in the center of the roadway that separates directional traffic. Medians may be painted and leveled with the surrounding roadway or raised using curb and gutter. Medians may include landscaping, concrete, striping or any combination thereof.

Median Refuge — an area within an island or median that is intended for pedestrians or cyclists to ~~wait safely away~~ be separated from travel lanes to wait for an opportunity to continue crossing the roadway.

Midblock Crosswalk — a legally established crosswalk that is not at an intersection.

Multi-Use Trail — see **Trail**

Open Space Trail — a linear corridor within open space or linking open space to other facilities. Open space trails include open space arroyos and open space links.

Paved Trail — a trail surfaced with asphalt, concrete, soil cement, or other hard, stabilized surface.

Pavement Marking — any marking on the surface of the pavement that gives directions to motorists and other road users in the proper use of the road. The MUTCD determines the standard marking in New Mexico for state and local use.

Pedestrian — someone who walks or journeys on foot; a walker.

Pedestrian Hybrid Beacon — the pedestrian hybrid beacon (also known as the High intensity Activated crossWalk (or HAWK)) is a pedestrian-activated warning device located on the roadside or on mast arms over midblock pedestrian crossings. These are recognized by FHWA as “proven counter-measures” that improve safety.

Rectangular Rapid Flash Beacons — user-actuated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system. These are recognized by FHWA as “proven counter-measures” that improve safety.

Shared Roadway — a shared roadway is any roadway that may be legally used by both motor vehicles and bicycles and is not specifically designated as a bikeway.

Shared-use Path — see **Trail**. Also defined by the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) – a multi-use path designed primarily for use by bicyclists and pedestrians, including pedestrians with disabilities, for transportation and recreation purposes. Shared use paths are physically separated from motor vehicle traffic by a buffer or barrier and are either within the highway right of way or within an independent right-of-way.

Sharrow (Shared Lane Marking) — a pavement marking symbol that indicates an appropriate positioning of cyclist within a travel lane shared by both bicycle and motor vehicles. This is used in Albuquerque on low traffic volume streets, typically classified as collector or below.

Shoulder Bikeways (Paved Shoulders) — a bicycle facility located along uncurbed arterials and collectors. It consists of a smooth paved surface that covers all or part of the roadway shoulder. Shoulder bikeways, or paved shoulders, are similar to wide curb lanes on roadways with curb and gutter.

Sidewalk — the portion of a street or highway, beyond the curb or edge of roadway pavement, which is intended for use by pedestrians. Sidewalks are typically, but not always, curb-separated from the roadway and made of concrete, brick, asphalt, or other hard surface material.

Single-track Trail — a trail where users must generally travel in single file and is named not for the physical structure of the trail but rather for the user. Single track trails are typically 18-30 inches wide. Usually and almost always a soft-surface trail or unpaved natural surface trail. These trails are typically found on Major Public Open Space lands and sometimes referred to as mountain bike or hiking trails. They disturb less ground and can be easier to maintain due to their narrow width. The narrowness of the trail tends to immerse the user closer to nature than a wider trail or dirt road.

Smart Trips — any trip made by walking, bicycling, sharing a ride or riding the bus that replaces a drive-alone vehicle trip.

Soft-surface Trail — a soft-surface trail is typically built with the earthen materials on hand and no fill or other material is brought to the area of construction. See **Unpaved Trail, Single-Track Trail**

StreetPlan — a GIS-based street evaluation model used in this Plan that graphically shows where bike lanes or wide curb lanes can be provided based on existing roadway configuration.

Traffic Demand Management Program — a TDM Program is an institutional framework for implementing a set of TDM strategies. Such a program has stated goals, objectives, a budget, staff, and a clear relationship with stakeholders. It may be a division within a transportation or transit agency, an independent government agency, or a public/private partnership.

Transportation Improvement Programs — a capital improvement program developed cooperatively by local and state transportation entities. TIP projects are drawn from and consistent with a statewide rural long-range plan and include a list of multi-modal transportation (a connected transportation system that supports cars, bicycles, pedestrians, and public transit) projects. All regionally significant projects must be in the TIP regardless of intended funding source.

Trail — a separate pathway that is physically separated from motor vehicle traffic by a **buffer** or barrier and either within the highway right-of-way or within an independent right-of-way. It is designated by signs for use by non-motorized traffic only, including pedestrians, bicyclists, skaters, wheelchair users, joggers, other non-motorized users, and equestrians. Not all trails may accommodate all of these uses. Most trails are designed for two-way travel. Trails may be either hard-surface or soft-surface; or paved or unpaved. See also, **Paved Trail, Shared-use Path, Soft-surface Trail**

Traffic Calming — changes in street alignment, installation of barriers, and other physical measures employed to reduce traffic speeds and/or cut-through traffic volumes in **the interest of an effort to enhance neighborhood and street safety**, livability, and other public purposes. Traffic Calming measures may include diverters, speed humps, traffic circles, or pocket parks which allow through access by bicycles.

Traffic Control Devices — Signs, signals, push buttons, or pavement markings whether permanent or temporary, placed on or adjacent to a travel way by authority of a public body having jurisdiction to regulate, warn, or guide traffic. MUTCD designates standards.

Unpaved Trail — an unsurfaced natural trail or trail surfaced with compacted earth, crusher fines, bark, or gravel. It is not surfaced with a hard, durable surface such as asphalt or Portland cement.

Utilitarian Trips — trips that are not primarily for recreational purposes, such as running errands.

Wayfinding — signs, maps, and other graphic or audible methods used to convey location and directions to travelers.

Wide Curb Lanes — wide curb lanes are located on shared roadways with outside lane widths of 14 to 16 feet. Wide curb lanes are similar to shoulder bikeways, or paved shoulders, on roadways without curb and gutter.