



Santa Fe Metropolitan BICYCLE MASTER PLAN

A Component of the Santa Fe Metropolitan
Transportation Plan 2010-2035



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Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACS	American Communities Survey (U.S. Census Bureau)
ADA	Americans with Disabilities Act
ADAAG	ADA Accessibility Guidelines
BCNM	Bicycle Coalition of New Mexico
BFC	Bicycle-Friendly Community (per League of American Bicyclists)
BMP	Bicycle Master Plan
BSF	Bike Santa Fe
BNSF	Burlington Northern & Santa Fe Railroad
BTAC	Bicycle and Trails Advisory Committee (City of Santa Fe)
CAG	Citizens' Advisory Group
CCD	Community College District
COLTPAC	County Open Land, Trails, and Parks Advisory Committee
FHWA	Federal Highways Administration
IMBA	International Mountain Biking Association
MPO	Metropolitan Planning Organization
LAB	League of American Bicyclists
LCI	League Cycling Instructor (certified by LAB)
MUTCD	Manual on Uniform Traffic Control Devices (FHWA's national standards and guidelines for signage, pavement markings, signals, etc.)
MVD	State Motor Vehicle Division
NACTO	National Association of City Transportation Officials
NMDOT	New Mexico Department of Transportation
NMSP	New Mexico State Parks
POSAC	Parks and Open Space Advisory Commission (City of Santa Fe)
RTP	Recreational Trails Program
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (federal transportation authorization act)
SBR	State Bike Route
SOBs	Seniors on Bikes
SFFTS	Santa Fe Fat Tire Society
SFPS	Santa Fe Public Schools
SRTS	Safe Routes to School
TE	Transportation Enhancements (federal funding category)
USDOT	United States Department of Transportation

Definitions

Bicycle (or Bike): A pedal-powered vehicle upon which the human operator sits (from AASHTO 2010).

Bicycle Boulevard: A street segment, or series of contiguous street segments, that has been modified to accommodate through bicycle traffic but discourage through motor traffic (AASHTO 2010).

Bicycle Facility: A provision to accommodate or encourage bicycling, including parking and storage facilities, multi-use trails, bike lanes, and shared roadways not specifically designated for bicycle use (adopted from AASHTO 1999).

Bicycle Lane: A portion of a roadway which has been designated by pavement markings and, if used, signs, for the preferential or exclusive use of bicyclists (AASHTO 2010).

Bicycle Level of Service (BLOS): A model used to estimate bicyclists' average perception of the quality of service of a section of roadway between two intersections (AASHTO 2010).

Bicycle Locker: A secure, lockable container used for long-term individual bicycle storage (AASHTO 2010).

Bicycle Rack: A stationary fixture to which a bicycle can be securely attached (AASHTO 2010).

Bicycle Route: A roadway or bikeway designated by the jurisdiction having authority, either with a unique route designation or with BIKE ROUTE signs, along which bicycle guide signs may provide directional and distance information (from AASHTO 2010).

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 designated for the exclusive use of bicycles or are to be shared with other transportation modes (AASHTO 2010).

Complete Streets: Streets designed and operated to enable safe access along and across the roadway for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities (Paraphrased from National Complete Streets Coalition).

Multi-Use Trail (a/k/a Multi-Use Path or Shared Use Path): A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Multi-use trails may also be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users (from AASHTO 1999).

Rumble strip: Textured or grooved pavement sometimes used on or along shoulders of highways to alert motorists who stray onto the shoulder (AASHTO 1999).

Shared-lane marking: A pavement marking intended to (1) assist bicyclists with lateral positioning in a shared lane with on-street parallel parking in order to reduce the chance of a bicyclist's impacting the open door of a parked vehicle, (2) assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane, (3) alert road users of the lateral location bicyclists are likely to occupy within the traveled way, (4) encourage safe passing of bicyclists by motorists, and (5) reduce the incidence of wrong-way bicycling (MUTCD 2009).

Sharrow (“Shared lane arrow”): A name for the specific shared-lane marking adopted by MUTCD 2009, consisting of a bicycle symbol preceding a directional chevron.

Shoulder: The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use and for lateral support of sub-base, base and surface courses.

Sidepath: A shared use path located immediately adjacent and parallel to a roadway (AASHTO 2010).

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EXECUTIVE SUMMARY

The Santa Fe Metropolitan Planning Organization (MPO) created this Metropolitan Bicycle Master Plan following the recommendation made in the Metropolitan Transportation Plan 2010-2035. The Plan's purpose is to coordinate transportation planning and other bicycle-related planning among MPO partners - the City of Santa Fe, Santa Fe County, the New Mexico Department of Transportation (NMDOT) and Tesuque Pueblo - in order to maximize the benefits of the use of bicycles for transportation. These benefits include economic development, reduced traffic congestion, reduced demand for motor vehicle parking, reduced greenhouse gas emissions, healthier residents and neighborhoods, improved urban and suburban environments and quality of life, improved accessibility, and an affordable transportation option for Santa Feans and visitors to our area.

The vision of this plan is that Santa Feans and their guests enjoy safe and convenient bicycle and pedestrian access along a comprehensive network of multi-use trails and complete streets, connecting residential neighborhoods with employment centers, parks, open space, schools, retail centers, and other public and private services throughout the metropolitan area. This Plan reviews bicycle-related planning in the Santa Fe area, existing bicycle infrastructure, and local activities in bicycle education, encouragement and enforcement, and relies on professional guidance, public input, communication and collaboration with a wide variety of public and private entities (see Appendix 1), and the guidance of a Citizens' Advisory Group (CAG) toward a stated objective to *“create an environment where all residents and visitors could ride a bicycle for transportation if they wanted to.”*

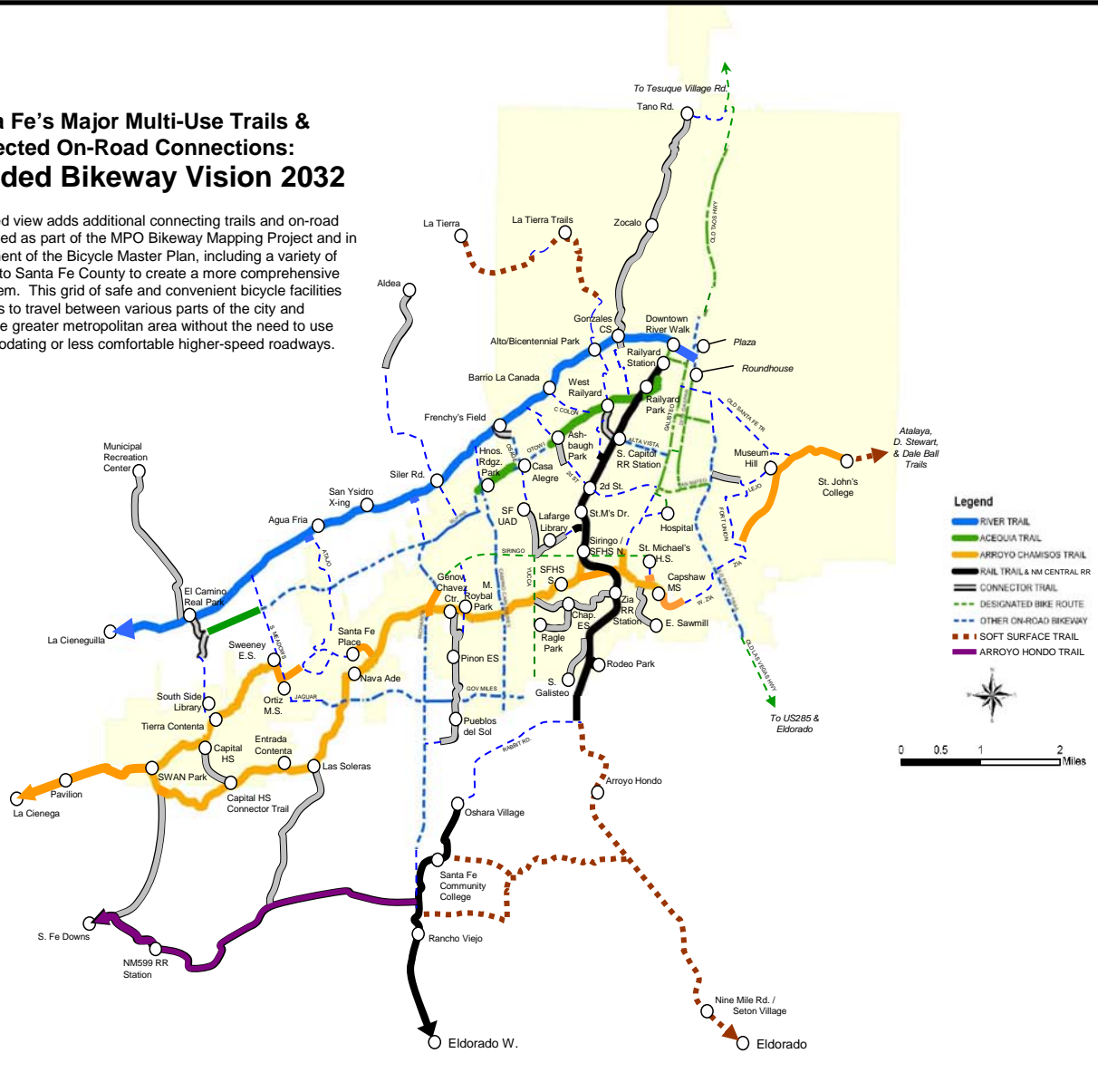
Under the goal of “More Bicycle Facilities and Better Bicycle Facilities, within an Integrated and Effective Bikeway System,” the Plan presents twelve general recommendations for improving bicycle infrastructure followed by more specific reference to the facilities that the recommendations apply to. Under a second goal, that “Santa Feans and their guests are able to confidently, safely, and effectively ride bicycles within a shared transportation network where cyclists' rights and responsibilities are understood, respected and enforced,” the Plan presents eight additional recommendations in the area of bicycle education, encouragement, and enforcement. The Plan concludes with a road map for implementation by the MPO and its public and private partners, detailing strategies to disseminate recommendations, agency responsibilities, prospective funding sources, and specific proposed projects listed in three phases of development.

The recommendations for new infrastructure in this Plan, include the extension of seamless multi-use trail and bikeway alignments from the downtown Plaza and Railyard areas to the southern, western, and northern extremes of the metropolitan area, and improved local bikeway connections and road crossings along these alignments. The challenge for this Plan will be identifying funding to implement the recommended improvements and maintain the growing system. The citizens of the metropolitan area have given implementation of the Plan a boost with support of \$4 million in City bond funding for implementation of the Phase A recommendations.

Following the Implementation Plan, through coordinated efforts of public and private partners to improve bicycling in Santa Fe, within five years the metropolitan area will merit recognition by the League of American Bicyclists (LAB) as a Bicycle-Friendly Community at the Silver level. Within ten years the metropolitan area will have doubled the share of local residents who are using bicycles for transportation. Within twenty years Santa Fe will have become a leading “bicycle-friendly community” in the southwestern United States and will merit LAB recognition at the Gold or Platinum level.

Santa Fe's Major Multi-Use Trails & Selected On-Road Connections: Expanded Bikeway Vision 2032

This expanded view adds additional connecting trails and on-road routes identified as part of the MPO Bikeway Mapping Project and in the development of the Bicycle Master Plan, including a variety of extensions into Santa Fe County to create a more comprehensive bikeway system. This grid of safe and convenient bicycle facilities allows cyclists to travel between various parts of the city and throughout the greater metropolitan area without the need to use less accommodating or less comfortable higher-speed roadways.



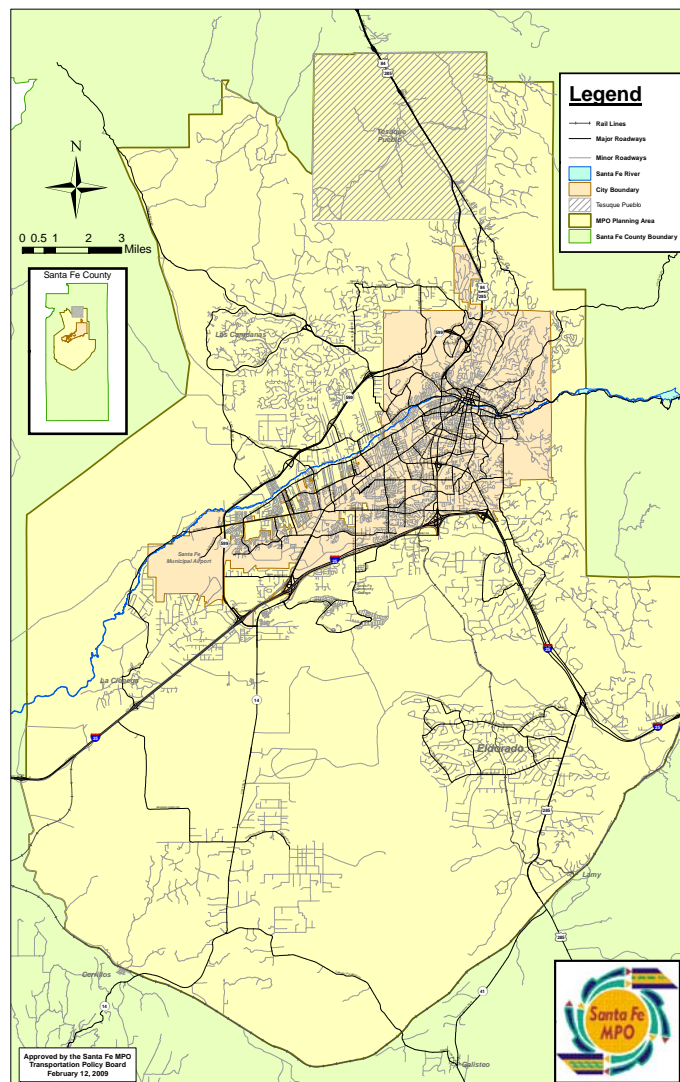
I. INTRODUCTION

Bicycling is a clean, healthy, and efficient form of transportation and recreation in the Santa Fe metropolitan area. In order to promote the safe and efficient use of bicycles within the transportation system, the Santa Fe Metropolitan Planning Organization (MPO) supports the construction and maintenance of “complete streets;” the development of a complementary network of off-road facilities for bicyclists; and policies and programs to educate motorists and bicyclists, to enforce laws to protect the safe use of the transportation system by cyclists, and to encourage the use of bicycling and other transportation modes other than the private motor vehicle.¹

In recognition of Santa Fe’s commitment to supporting bicycling as a transportation choice, the League of American Bicyclists (LAB) designated the City as a “Bicycle-Friendly Community” at the “bronze” level in 2011. The MPO’s Transportation Policy Board (TPB), including representatives of the City of Santa Fe, Santa Fe County, Tesuque Pueblo, and the New Mexico Department of Transportation (NMDOT), initiated the development of this Bicycle Master Plan for the Santa Fe MPO area (see Map 1) in order to continue to guide policies, programs, and investments so that the bicycle is properly and fully integrated into our transportation system. A stated goal of this Plan is to earn LAB recognition for the metropolitan area at the “silver” or “gold” level within five years.

This Plan was produced by the Santa Fe MPO with the

Map 1: Santa Fe MPO Planning Area



¹ Santa Fe MPO, Metropolitan Transportation Plan, 2010-2030 (Oct. 2010), pp. 120-24.

assistance of a Citizens Advisory Group (CAG), consisting of cyclists living and working in the city and the county, as well as through close consultation with agency staff.² The MPO thanks citizens and staff alike for their dedication to making Santa Fe a more bike-friendly community.

A. Benefits of Bicycles in Santa Fe

There are many reasons to support the use of bicycles in Santa Fe. From a pure transportation perspective, providing for bicycles broadens individuals' travel alternatives and increases our system's overall capacity and longevity. Strong supporting arguments run the gamut from individuals' cost savings to clean air and public health. Santa Fe's size, topography, climate, and economic base all conspire to make our community an ideal venue for the bicycle to play a more significant role in transportation.



Improving local transportation options

Bicycling is a cheap and efficient form of local transportation for residents and guests, especially in a small and mostly flat urban area like ours. A significant percentage of the population cannot or does not wish to rely on the automobile for personal transportation. In addition those who are too young, elderly, or physically or visually impaired to drive a motor vehicle, many more individuals cannot afford a motor vehicle, cannot get a driver's license or have had it taken away, or simply do not want to drive. And many motorists need or would like an alternative to driving for some of their trips.

Like walking, bicycling is an important adjunct to public transit as a transportation option. For many transit users the bicycle is a critical component of their access to the bus system or commuter rail. Facilities such as bike lanes, urban trails, bike parking, space for bikes on busses and trains, and even "bike share" systems (or inexpensive bicycle rentals) all contribute to solving transit's difficulty in helping prospective



Every bicycle on this bike rack in the Railyard means reduced demand for motor vehicle parking as well as reduced motor vehicle congestion on our local streets.

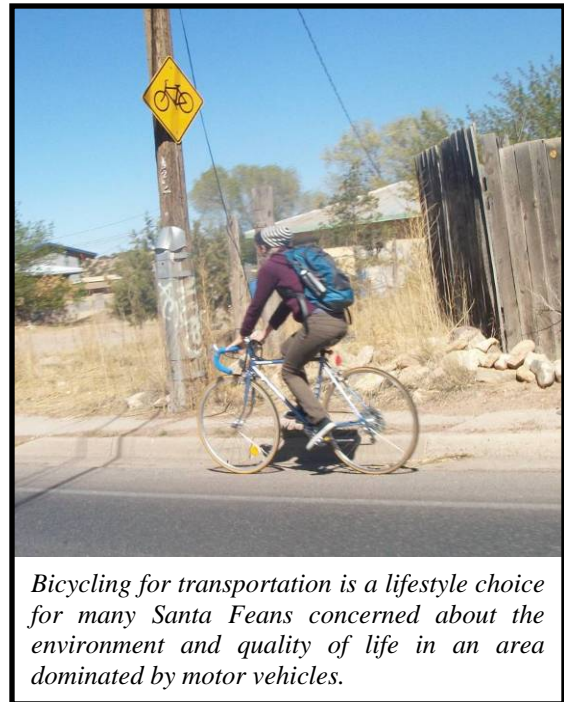
² For a full list of meetings, presentations, and CAG participants, see Appendix 1.

users take care of the first or last mile(s) of their trips – the part that is not covered by existing bus or train service.

Along with transit and walking, developing infrastructure for bicyclists can also result in saving time and space for motorists. In that they work as motor vehicle “congestion mitigation,” these modes can serve to reduce road maintenance and construction costs, fuel consumption, and the amount of public and private space dedicated to roadways and parking.

Environment

Transportation accounts for a major part of air pollution and greenhouse gas emissions in our nation. The New Mexico Environmental Department estimates that motor vehicles account for about 17% of greenhouse gases produced in New Mexico.³ The City of Santa Fe’s “Sustainable Santa Fe Plan” focuses on developing a bicycle-friendly environment as a central strategy for reducing emissions in the area of transportation, and one that is strongly supported in the City’s General Plan (see Appendix 1). The County likewise emphasizes the environmental benefits of supporting bicycling as transportation in its Sustainable Growth Management Plan, putting efforts to support multimodal transportation in the context of “environmental responsibility” and highlighting development of bicycle transportation as a “key to sustainability.”⁴



Bicycling for transportation is a lifestyle choice for many Santa Feans concerned about the environment and quality of life in an area dominated by motor vehicles.

Bicycle use not only directly eliminates emissions as an alternative to motorized transportation but indirectly reduces overall emissions by reducing motor vehicle congestion. In short, more bikes means cleaner air for Santa Feans to breathe and clear skies for all to enjoy.

Health / Fitness

Investment in bicycling and walking directly benefits the health of our communities, and especially our children. Obesity affects roughly one quarter of adults and nearly one fifth

³ City of Santa Fe, Sustainable Santa Fe Plan (2008).

⁴ Santa Fe County Sustainable Growth Management Plan, Santa Fe County General Plan, Adopted by the Board of County Commissioners, November 2010, pp. 19 and 152.

of youths ages 10-17 in New Mexico, proportions that are growing.⁵ Integrating walking and bicycling into New Mexicans' daily routine is a promising way to combat the upward trend in obesity. Given Santa Fe's educational budget restrictions, and declining offerings in physical education in particular, promoting walking and bicycling to school is a logical strategy for children's health that can benefit the entire community.

The strategy of promoting bicycling and walking through "complete streets" is specifically embraced by New Mexico's statewide coalition for obesity prevention and control⁶ and by New Mexico professionals working to control chronic diseases such as diabetes and heart disease.⁷ Both statewide groups also favor the institution of "health impact assessments" as a method to put increased value on health considerations when public policies and investments are made, particularly in the areas of transportation, urban and regional planning, and site selection for public services.

Economy

Transportation is a major expense for American families, and the burden of private automobile ownership is particularly heavy on lower-income families. Individuals and families that bicycle, walk, or use transit for part or all of their transportation needs can realize significant savings over relying on one, two, or more private motor vehicles. At the community and nationwide level, walking, bicycling, and transit also reduce our dependence on costly foreign or domestic oil as the fuel of choice for our transportation.

Given the impact of high housing costs on family budgets in the Santa Fe region, reducing transportation costs may be a key approach to reduce the overall cost of living in our city and increase the opportunities for lower- and middle-income New Mexicans to live and prosper here.



Bicycling and walking as active transportation, or just as recreation, benefits children and adults.



Bicycling for transportation is a good economic choice for many Santa Feans.

⁵ U.S. Centers for Diseases Control and Prevention (CDC), Behavioral Risk Factor Surveillance System (BRFSS), Prevalence and Trends Data, New Mexico – 2009; Overweight and Obesity (BMI); Trust for America's Health, "F as in Fat," 2009.

⁶ The New Mexico Healthier Weight Council has convened a "Complete Streets Leadership Team" in 2010-11 to pursue activities in this major policy area (see www.nmhealthierweight.org).

⁷ New Mexico Chronic Disease Council, "New Mexico Shared Strategic Planning: Missions, Goals and Strategic Priorities," Draft, May 2011.

Business – The Bike Business in Santa Fe

The Santa Fe area is already home to a variety of businesses directly relating to the bicycle, including small numbers of framebuilders, messengers, and pedicab drivers, and larger numbers of individuals employed at eight full-service bike retail shops and a large parts wholesaler that has received national recognition from the League of American Bicyclists as a “Bicycle-Friendly Business.” All together it could be estimated that these businesses, which are almost all locally-owned, employ the equivalent of nearly 100 full-time workers in Santa Fe.

These businesses are based on the established popularity of bicycles for transportation and recreation in and around Santa Fe, and they rely on a bike-friendly Santa Fe to thrive. Success stories elsewhere in the country, such as Portland, Oregon, have shown that investment in improving local bicycling can lead to dramatic growth in local bike-related businesses.⁸

Business – Tourism

Other direct economic beneficiaries of a more bicycle-friendly Santa Fe include hotels, restaurants, shops, and other service providers - even gas stations - that cater to visitors to our city. Numerous studies around the country have found that investment in bicycling facilities can pay off handsomely in direct benefits to tourist-oriented businesses.⁹

Whether attracted by our world-class mountain biking or by our scenic and challenging road venues, dedicated cyclists already have plenty of reason to come to Santa Fe. More bike-friendly

The logo for Bicycle Technologies International (BTI) features the letters 'BTI' in a bold, italicized, sans-serif font. The letters are white with a thick black outline, giving them a three-dimensional appearance. The background is a solid black rectangle.

Bicycle Technologies International (BTI) is a Santa Fe-based parts distributor that received gold-level recognition as a “Bicycle-Friendly Business” from the League of American Bicyclists in September 2010.



This bike and trailer combination can haul up to 250lbs. of deliveries at a time for Creative Couriers.

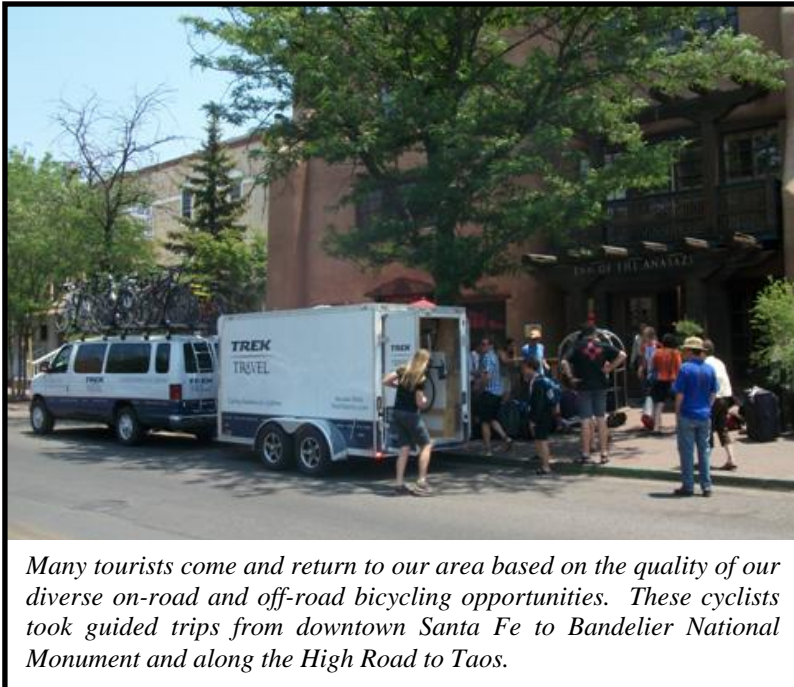


Out-of-state visitors enjoy a pedicab ride at the Plaza.

⁸ Mia Birk, *Joyride: Pedaling Toward a Healthier Planet* (Portland ORL Cadence Press, 2010).

⁹ See, for example, Institute for Transportation Research and Education at North Carolina State University, “Economic Impact of Investing in Bicycle Facilities: A Case Study.”
http://www.ncdot.gov/bikeped/download/bikeped_research_EIAfulltechreport.pdf

urban and suburban environments will increase the attraction and broaden the appeal to a wider variety of visitors, as well as individuals, families, and businesses who may choose to locate here permanently. A city that provides a bicycle-friendly environment is one that many visitors will remember, return to, and tell their friends and neighbors about.

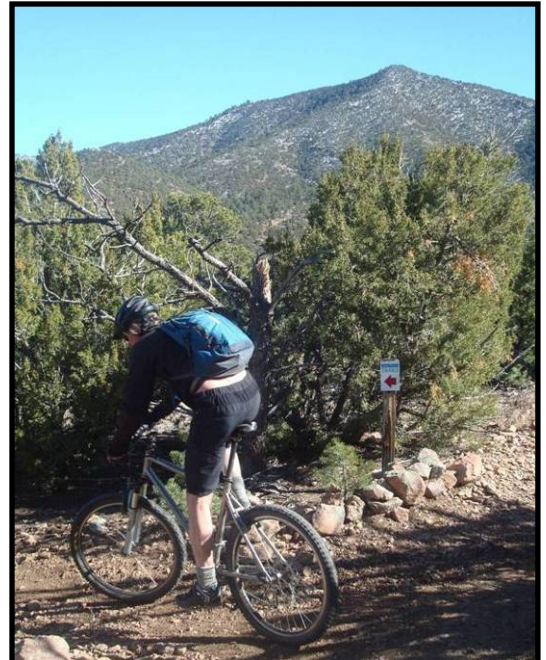


Many tourists come and return to our area based on the quality of our diverse on-road and off-road bicycling opportunities. These cyclists took guided trips from downtown Santa Fe to Bandelier National Monument and along the High Road to Taos.


Local events that rely on high-quality bicycling in our area serve well to make the case. The Santa Fe Century, one of the oldest organized century rides in the country, attracts thousands of visitors to spend the weekend in our city each May. These individuals and their families can be counted on to return to Santa Fe not only for the annual ride but also to enjoy more of our diverse cycling environment on their own. Likewise, high-quality off-road cycling available within the city limits (Dale Ball Trails, La Tierra Trails) and throughout the metropolitan area (National Forest Trails, Rail Trail, Galisteo Trails, Caja del Rio) mean nearly unlimited opportunities for visitors from flatter, snowier, or otherwise less accommodating areas, along with the likelihood that, if pleased with their experience, they will return with their families for more.

A visitor on a bicycle has the unique ability to experience local environments, like a pedestrian, but also to easily span an entire city¹⁰ as well as surrounding countryside.

¹⁰ On the practicality of bicycling for the urban tourist, see David Byrne, *Bicycle Diaries* (New York NY: Viking Penguin, 2009).



Trails for hiking and mountain biking form a big part of Santa Fe's offerings as an outdoor recreation destination. In October 2012, Santa Fe welcome's the International Mountain Biking Association's "World Summit."



**27th
Year**

**Santa Fe
Century**

Sunday, May 20, 2012
Santa Fe, New Mexico

25, 50, and 100 Mile Rides

The Santa Fe Century currently ranges between 2,700-2,900 participants each year, about half of whom travel to New Mexico from Colorado. For more information see www.santafecentury.com

While most visitors to Santa Fe, including bicyclists, arrive in motor vehicles, bicycle tourism, including arrival to our city by bicycle, can be expected to increase somewhat in the near future. The development of inter-city transit, and particularly the New Mexico Rail Runner, and the continued improvement of our on-road and off-road bicycle facilities have already set the stage.

A more direct impetus to bike touring will come within a few years with the anticipated promotion of a new national bike touring route through Santa Fe along old Route 66.¹¹ Guided and unguided bike tourists have been shown to not only spend more at local restaurants, shops, and hotels, but they can also be counted on to take care of various other travel or leisure needs before leaving town.¹² They can also be expected to be interested in lodging, camping, dining, and other services available in rural communities around Santa Fe such as Tesuque, Lamy, Galisteo, Cerrillos, Madrid, and La Cienega.

Culture – the Arts

Bicycling and the arts are intertwined and mutually reinforcing. Like the iconic “old pick-up truck” or the “low-rider,” bicycles are both a form of art and the subject of art in Santa Fe. They are also a vehicle for artistic or lifestyle statements by a wide variety of individuals who may or may not consider themselves artists or bicyclists. To show up at the Farmer’s Market on a bicycle might be to say, “I value my community, my planet, my freedom of expression, etc.” Or maybe it’s just a fun and sensible transportation choice. In any case, there is evidence around the country to suggest that when art-loving communities like Santa Fe are able to provide an environment that is conducive to bicycling, they are creating the right environment to attract and retain the very people who are needed to contribute to the creative life of the city.

Creating Community and an attractive Urban Environment


Bicycling contributes to a broader sense of community in the Santa Fe area as well. Public spaces that are dominated by



Anyone who can confidently ride a bicycle for transportation has unique advantages getting around downtown Santa Fe.

**WEEK
ONE**
02/28/11



 **Kaleidospoke**

coming July 2011 | thekaleidospoke.com

Art for bikes and bikes for art: KALEIDOSPOKE is an art collaboration around spoke card designs and film submissions that were shown at the Center for Contemporary Arts from July - September 2011, benefitting local bicycle cooperative efforts.

¹¹ See p. 67 on Adventure Cycling Association’s “Bike Route 66.”

¹² See Cycling Mobility (Jan. 2011), “Have bicycle, will travel,” pp. 48-51; also NCSU study, op cit.

motor vehicles tend to confine meaningful human interactions to limited, controlled, indoor environments. Like pedestrians, bicyclists can make eye contact with other users of public space, can greet passers-by, and even stop to chat, contributing significantly to community cohesion and the creation of an attractive, positive, and less intimidating urban environment that responds to human needs at a human scale. In fact, in commercial districts the creation of attractive social venues favoring pedestrians and bicyclists has also been found to improve business rather than detract from it – even if it comes at the expense of motorist access in the form of parking spaces.¹³

A Wise Transportation Investment

With these many benefits, and especially as we face continued difficult economic times and possible reduced federal support for non-motorized transportation, investment of local resources and effort to improve the environment for bicycling would seem to be a good idea. This is particularly true when proposed spending on bicycle transportation is compared with the far greater sums of resources that are dedicated to ever-expanding infrastructure for motor vehicles. Increasing public investment in bikeways is reinforced by policy from Secretary of Transportation Ray LaHood directing federal agencies and encouraging state and local governments to consider “walking and bicycling as equals with other transportation modes.”¹⁴

B. A Bicycle Master Plan for the Santa Fe Metropolitan Area

This Santa Fe MPO Bicycle Master Plan is intended to provide a blueprint for the metropolitan community to improve the environment for bicycling. It is intended to guide state, local, and tribal policy and investment so that the bicycle is integrated into transportation on a metropolitan-wide basis. This includes coordinating across political jurisdictions to create a cohesive and seamless bikeway network and across public program areas so that trails, roads, parks, and other facilities are located, designed, built and operated in a way that meets non-motorized transportation objectives.

Creating a Bicycle Master Plan is a way to get citizens, elected officials, and professional staff together to develop effective strategies to facilitate bicycling. This includes examining national guidelines and proven best practices based on local, national, and international models, and how they may be best applied in our setting. A successful Bicycle Master Plan will make the Santa Fe metropolitan area a place with more bikeways, better bikeways, fewer barriers to bicycling, friendlier interactions between motorists and bicyclists, more diverse representation of our society on bicycles, and above all more bicyclists. With these gains, the Plan will help lead the Santa Fe metropolitan area to national recognition as a “Bicycle-Friendly Community” at the silver, gold, or platinum level.

¹³ See Copenhagen and New York City examples in Cycling Mobility (Jan. 2011), “Conquering the borderlands,” pp. 10-15.

¹⁴ USDOT/FHWA. “United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation: Regulations and Recommendations (Signed by Sec. LaHood, March 2011).

C. Vision, Goals, and Objectives for a more bicycle-friendly Santa Fe

This plan's Citizens Advisory Group (CAG) expressed a vision for Santa Fe as a place where the bicycle could provide "safe, convenient, attractive, every-day transportation for citizens and visitors." One goal was expressed of being "the most bicycle-friendly city in the world."

Benchmarks that might measure progress toward this goal include recognition of the Santa Fe metropolitan area as a Bicycle-Friendly Community by the League of American Bicyclists (LAB) at the Silver level by 2015 and the Gold or Platinum level by 2020.

Supporting the vision and goal, the CAG outlined objectives to:

- create more and better bikeways as part of a comprehensive city and county network
- improve safety, design and maintenance of bicycle facilities
- improve crossings, ways to overcome obstacles
- provide more, better bicycle parking
- remove the "fear factor" relating to bicycling
- improve the public image of bicycling as a safe mode of transportation through marketing and public relations
- provide equal rights and opportunities to bicyclists as users of the transportation system, including equality in the planning and construction of transportation facilities.
- Create an environment where all citizens and visitors could ride a bicycle for transportation if they wanted to; increase bicycle mode share to 10% of all traffic.



Strategies to achieve these goals discussed by the CAG included

- Incorporate bike accommodations in roadway design and make improvements for bicyclists "enforceable"
- Focus on connectivity through targeted improvements
- Create a "Green Building Code" for sustainable transportation
- Provide signage and online tools for wayfinding
- Develop "Safe routes to school"
- Pursue best practices for encouragement, creating incentives to ride
- Provide education for bicyclists and motorists
- Develop new funding sources such as use of impact fees
- Get business buy-in

- Bring in partners such as the Santa Fe Alliance, Chamber of Commerce, Green Chamber of Commerce
- Give the Bicycle Master Plan “teeth” so it is legally enforceable.

The development of indicators and measures of progress toward objectives under this Bicycle Master Plan are discussed in detail in Section VI, Implementation Plan.

D. Bicyclists: the User Group

Bikeway users range from children and families that may restrict their riding to multi-use trails to commuters and other cyclists who are comfortable using a wide variety of facilities, but may typically use more direct and open on-road routes to arrive at a given destination. Bikeway users include local residents as well as visitors to Santa Fe.



This Metropolitan Bicycle Master Plan seeks to address the transportation needs of the full spectrum of individuals that use, or may use, bicycles in our metropolitan area. This includes commuter cyclists as well as recreational cyclists, including on-road cyclists, mountain bikers, and users of BMX or skate parks, since such individuals may use their bicycles on our roadways and trails to arrive at their recreational destinations.

The user group also includes the growing number of businesses and public agencies that use bicycles, not only bicycle-mounted police but also parking enforcement, emergency responders, private security personnel, pedicab drivers, and delivery services.

E. Approach: The E’s

Approaches in planning for bicycles and pedestrians are often broken down into “Four E’s,” which over time have expanded into five or six “E’s”. The approach of this Bicycle Master Plan likewise follows these “E’s”:

i. Engineering: Much of this plan focuses on bicycle infrastructure, particularly our network of roads, multi-use trails, intersections and other crossings, as well as bicycle parking and transit facilities for bicycles. This focus on engineering starts with a look at bicycle-specific planning in the City and County of Santa Fe as well as a variety of state, county, and city plans that address bicycling as a mode of transportation or recreation. Next is an assessment of our on-road and off-road bikeway system; connectivity, gaps, and barriers between facilities; and the extent to which the elements of our bikeway system meet national standards and guidelines for bicycle facilities. The plan presents

policy and program recommendations relating to engineering followed by a detailed list of recommended road and trail improvements, prioritized according to impact and feasibility. In the final chapter of this plan, these improvements are presented as proposed projects with rough cost estimates within three phases of implementation.

ii. Education and Encouragement: An examination of our area's growing activities to educate bicyclists and motorists and to encourage the use of the bicycle in Chapter V of this plan leads to recommendations to continue to foster promising approaches in this area. New directions proposed in Chapter V include improved coordination of bike education activities and implementation of "bike sharing" to make inexpensive but reliable bicycles more accessible to residents and visitors for short-range trips.

iii. Enforcement and Equity: This approach, also discussed in Chapter V., comprises an examination of the legal framework as it relates to bicycles, how this framework is enforced among bicyclists and motorists, recent efforts to make significant changes in state and local laws, and recommendations for further improvements.

iv. Evaluation: The Implementation Plan that forms the final chapter of this plan assigns agency responsibilities, timelines, and budgets for the implementation of the Bicycle Master Plan, including planning, design, construction and maintenance of bicycle facilities and other programs. Indicators are proposed to help monitor our metropolitan area's progress toward the goals and objectives we have established in order for Santa Fe to become a more bicycle-friendly community.

II. BICYCLE PLANNING AND POLICY IN THE SANTA FE METROPOLITAN AREA

Bicycling in Santa Fe is supported by policies, laws, plans and programs at the federal, state, metropolitan, and local levels, which are summarized below. For more details on planning background and the legal framework behind providing for bicycles, see Appendices 3 and 4. This chapter also discusses the availability of data to guide bicycle planning.

A. Federal and Metropolitan / MPO

The Santa Fe MPO plans for bicycles as an integral part of the transportation system as required under the SAFETEA-LU federal legislation. The MPO adheres to USDOT Sec. LaHood's "Livability Principles" which further emphasize to federal funding agencies, particularly the Federal Highways Administration (FHWA), and state and local governments the important role of non-motorized transportation in our communities (see text boxes at right).

Every five years the MPO updates its Metropolitan Transportation Plan, applying these policies and principles to transportation needs in Santa Fe, and bicycle travel plays an increasingly important role. The MPO's Transportation Policy Board passed a resolution in 2007 (Resolution 2007-1) encouraging local governments to take a "complete streets" approach to the design, construction and maintenance of streets in the MPO area (See Appendix 4). The MPO has worked closely with local counterparts, and particularly the City's Bicycle and Trails Advisory Committee, to improve the environment for bicyclists in the MPO area. The MPO also convened a Bicycle-Pedestrian Study Group and funded the MPO Bikeways Mapping Project as part of its "Unified Planning Work Program." These activities served as precursors to the Citizens Advisory Group and this Bicycle Master Plan.

Eight Planning Factors Mandated under federal law (SAFETEA-LU)

- Support Economic Vitality
- Increase the Safety of the transportation system
- Increase the Security of the transportation system
- Increase the Accessibility & Mobility options
- Protect and enhance the Environment, promote Energy Conservation, & improve Quality of Life
- Enhance the Integration & Connectivity of the transportation system
- Promote efficient System Management & Operation
- Emphasis the Preservation of the existing transportation system

USDOT Secretary LaHood's "Livability Principals"

- *Expanding access to affordable housing, particularly located close to transit;*
- *Providing more transportation choices;*
- *Enhancing economic competitiveness-giving people access to jobs, education, and services as well as giving businesses access to markets;*
- *Targeting federal funds towards existing communities to spur revitalization and protect rural landscapes;*
- *Increasing collaboration among federal, state*

Federal funding for bicycle facilities in the Santa Fe area has primarily consisted of general road construction costs associated with state highway shoulders. In most cases, such as new bike lanes on Cerrillos Rd. (NM14), these improvements have simply been incorporated into the cost of new construction or reconstruction. In other cases, such as sidewalks and bike lanes along Old Pecos Trail (NM466), specific federal support for bicycle and pedestrian facilities has been obtained through the use of transportation enhancement (TE) funds. Federal TE funds have also been used to support statewide bicycle education activities by the Bicycle Coalition of New Mexico (BCNM).

B. State of New Mexico

State law and policy require accommodations for bicycles on state highways.¹⁵ General bicycle planning by the New Mexico Department of Transportation (NMDOT) is conducted by the Bicycle-Pedestrian-Equestrian (BPE) program with guidance from the BPE Advisory Committee. The primary focus of planning through NMDOT's BPE program in Santa Fe has been the designation, through signage, of State Bike Route 9 on a combination of state highways, city streets, and a multi-use trail. The MPO works directly with NMDOT's District 5 to conduct more specific transportation planning for state highways in the Santa Fe area. District 5 programs federal funding as well as state matching funds for state highway projects in the MPO area. State funding is also the basis for all highway maintenance activities by District 5.

Capital outlays from the state have historically been a significant source of funding for multi-use trails in Santa Fe, including a \$3.5 million outlay from Gov. Richardson for trails in general and nearly \$2 million from the legislature for trails within the Railyard Park. Also of significance was state support through the NM Rail Runner project to build several miles of the Santa Fe Rail Trail.

Another potentially important player at the state level is the New Mexico State Parks (NMSP) Division of the state's Energy Minerals and Natural Resources Dept. (ENMRD). NMSP is considered to be the "state trail agency" and administers the federally-funded Recreational Trail Program (RTP). While neither activity has had significant impact on bicycling in the Santa Fe MPO area, the major "state trail" concept that NMSP has pursued, a Rio Grande Trail spanning the state from north to south, might some day reach our area; efforts to date have focused on central and southern New Mexico.

¹⁵ Per NMSA 67-3-62: "Provision for pedestrian, bicycle and equestrian traffic required: No expenditure or contract for the expenditure of state public funds for purposes of constructing highways along new alignments or for purposes of substantially widening highways along existing alignments shall be made or entered into by the state unless the design and construction of such highway makes provision for bicycle, pedestrian and equestrian traffic along and across such highway..."

C. City of Santa Fe

The city's earliest efforts to take a comprehensive approach at bicycle planning resulted in the 1993 Bikeways Master Plan, which remains the city's standing bicycle plan. Planning for bicycles in the city is also supported by a variety of policies under the City's General Plan, the Parks and Recreation Plan of 2001, subsequent activities under the Bicycle and Trails Advisory Committee (BTAC), and the Sustainable Santa Fe Plan.



The City's development code under Chapter 14 is an effective method to get "complete streets," like this stretch of Gov. Miles Rd. where a private developer provided accommodations for bicycles, pedestrians, and transit.

In support of these planning efforts, Chapter 14 of the City's General Code requires the accommodation of bicycle and pedestrian traffic along city streets as well as through off-road trails.¹⁶ Developers are expected to provide for "vehicle and pedestrian traffic circulation;" bicycles are implicit to this requirement for some uses, explicit for others. The Code states that all new public streets shall be required to provide adequate pedestrian and bicycle facilities, as well as necessary

transit facilities. Where developments provide open space, the Code specifies that "To the greatest extent possible, connections shall be provided to public open space and/or the urban trail system and bicycle paths, or in such a way that a future connection shall be facilitated."

City funding for trails has represented the majority of public financial support for bicycling in the Santa Fe MPO area. Primary sources include Capital Improvement Program (CIP) funds, \$1.5 million of which were the original basis for the establishment of BTAC in 2003, and the \$30 million Parks Bond of 2009, of which roughly \$9 million was reserved for city trails. Since 2006, planning by the City Parks Division has been guided by the Parks and Open Space Advisory Commission (POSAC).



Bikes and bike rack outside of City Hall.

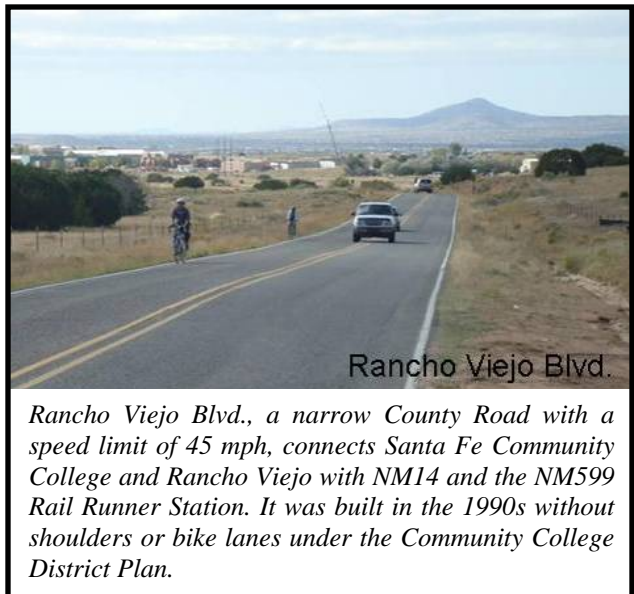
¹⁶ See Appendix 3, Articles 14-4 "Zoning Districts," 14-8 "Development and Design Standards," and 14-9 "Subdivision Design, Improvement, and Dedication Standards."

D. Santa Fe County

Santa Fe County is currently undertaking a first attempt to integrate bicycle planning into its road and trail planning. The County's recently completed Sustainable Growth Management Plan (SGMP) suggests policies to build complete streets, including bike lanes or shoulders on county roads where warranted, and to build trails for transportation purposes rather than purely for recreation. The County is currently developing its Sustainable Development Code to support the Plan.

Santa Fe County's current Land Use Development Code does not include specific references to accommodation of bicycles but requires subdivisions to provide "non-vehicular trails" along major roads or to provide an "internal, off-road trail system."¹⁷ Neither strategy has resulted in a functional transportation system for bicyclists who wish to travel along County roads or between County subdivisions and the rest of the metropolitan area. As discussed in Chapter III below, the provision of trails along roads, also known as "side paths," is a particularly unsatisfactory approach to bicycle transportation or recreation which runs counter to clear guidance from AASHTO and LAB. The County does not currently have any requirements for on-road bicycle facilities along major roadways.

The Community College District (CCD) Plan applies specifically to the CCD area south of I-25 in particular but is often seen as a model plan for developing areas outside of the district. The CCD Plan suggests building shoulders or bike lanes along major roads but expresses a preference for "narrow" roads, primarily for aesthetic purposes. The CCD Code includes on-road bicycle facilities in illustrations of some cross sections for higher-speed roads, but in practice the County has allowed private developers to forgo such facilities, in line with the County's more general development code, substituting sidepaths or separate trail systems, or mere plans for such facilities, rather than providing bike lanes or paved shoulders. This approach is directly counter to prevailing engineering guidance¹⁸ and has resulted in a somewhat dysfunctional bikeway system in the CCD.



Santa Fe County's trail planning is undertaken by the Open Space and Trails Program with guidance from the County Open Land, Trails, and Parks Advisory Commission (COLTPAC). The Program and Commission have focused on the development of

¹⁷ Santa Fe County Land Development Code, Article V, "Subdivision Regulations," Section 8.4.2.

¹⁸ AASHTO (1999), p. 33: "Shared use paths should not be considered a substitute for street improvements..."

recreational trail alignments but have become aware of the possible transportation function of some of these alignments, such as the River Trail, the Rail Trail, and the Arroyo Hondo Trail. To date, multi-use trails and sidepaths developed within subdivisions, such as Rancho Viejo, La Pradera, and Las Campanas, have been generally planned and designed as internal networks or pedestrian facilities that do not facilitate or incorporate more functional, longer-range bicycle transportation alignments.

The County has funded its trail program from a variety of sources, with the bulk provided by a one-quarter percent share of the County's Gross Receipts Tax (GRT) dedicated to development of open space and trails. While that specific share is no longer legally required, GRT remains the most important source of local funding for county trails. Current efforts to improve the Santa Fe Rail Trail between Rabbit Rd. and Lamy and the planned N.M. Central Rail Trail between Rabbit Rd. and Eldorado are also supported by federal Transportation Enhancement (TE) funds obtained through NMDOT.

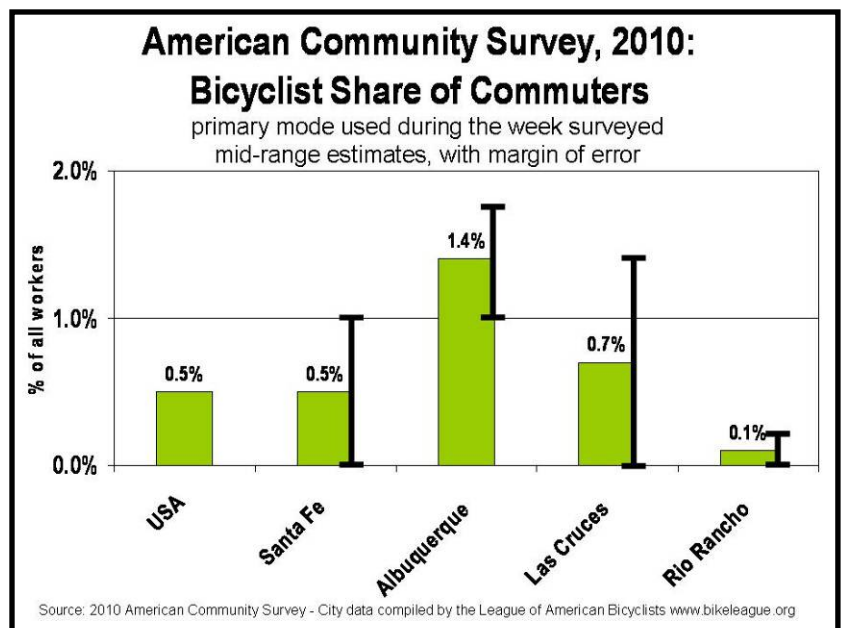
E. Data to Support Bicycle Programs and Planning

This plan has not benefited from detailed analysis of bicycle crash data nor bicycle traffic volume data. While the bicycling community is aware of certain hazards that have been the cause of multiple crashes – for example, skewed-rail crossings in Santa Fe – in general, formal bicycle crash reporting is known to be weak if not supplemented by detailed analysis and study of supplemental data sources. This has not been undertaken nor have any systematic attempts to quantify bicycle traffic on Santa Fe's bikeways, information which could inform planning as well as justify investments.

Data on Use of Bicycles

Information on the use of bicycles in the Santa Fe area is limited. While bicycle traffic may be included in specific intersection studies, bicyclists have never been systematically counted in order to shed light on broader traffic patterns and trends.

Various sources of survey data are available to quantify the use of bicycles in New Mexico at the individual or household level but there is little that can be meaningfully disaggregated at the MPO-area level. For example, the U.S. Census Bureau's American Communities Survey estimates with some degree of confidence that 0.5% of Americans bicycled to work in 2010 as their primary mode of transportation. The ACS produced an identical estimate of 0.5% for Santa Fe, but the



reported margin of error for this figure ranges from “0%” to 1.0%. The figure of 0.5% for Santa Fe, does however appear in line with what one might expect when compared to findings in three other New Mexico cities (see figure), among which Albuquerque has the highest estimate of all (1.4%) and Rio Rancho the lowest (0.1%).

For the state as a whole, the ACS estimates that 0.6% of New Mexicans commute by bicycle as their primary means of transportation. It is important to note the shortcomings of these figures, which do not capture the use of a bicycle for part of a commute that might also include transit, for example, the use of a bicycle for some, but not a majority, of a given individual’s commuting trips, nor the use of bicycles for other transportation purposes besides commuting, including use of bicycles by individuals that work at home.

Many cities in our region and elsewhere in the nation have proven that investment in bicycling infrastructure and dedication of other resources for bicycling can make a difference in increasing the bicyclists’ share among commuters. Some of the national leaders include Boulder CO (9.9%), Berkeley CA (8.0%), Portland OR (6.0%), Missoula MT (5.4%), and Flagstaff AZ (5.1%). Throughout the nation, the ACS had found that the mode share of bicycling has risen by 39% since 2000, with a 63% average rise in the nation’s 70 largest cities.¹⁹

Another source of data on bicycle use is records kept by transit agencies. NM Rail Runner has documented significant use of the commuter train by bicyclists traveling to and from stations in the Santa Fe area. The City’s Santa Fe Trails service also tallies use of city busses by bicyclists. Data on bicycle boardings reported by transit agencies are presented and discussed in more detail below in Chapter III, Section H.

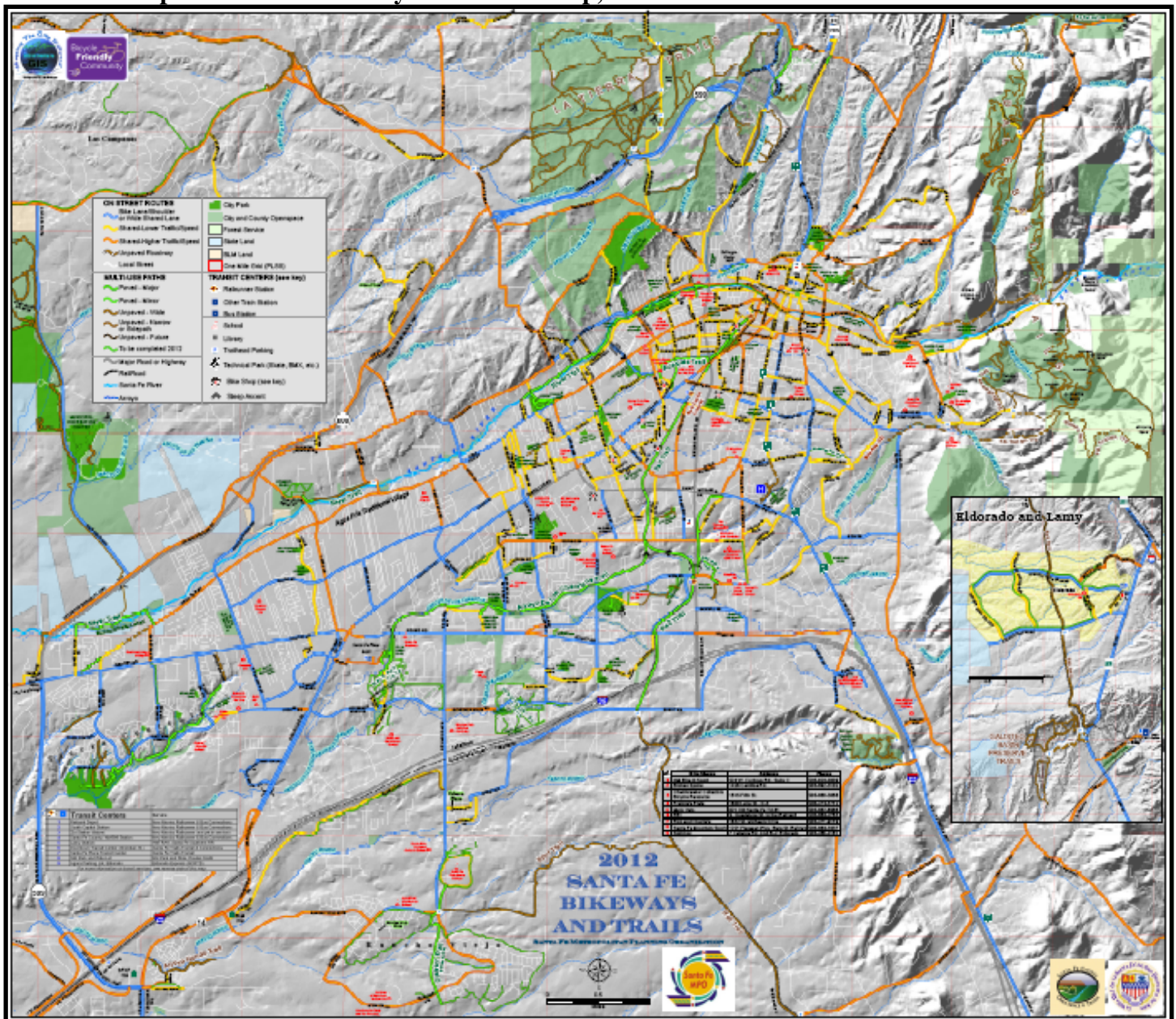
Bicycle Crash Data

Bicycle crash data are available from the University of New Mexico’s Division of Government Research (UNM/DGR) based on police reports. This information focuses on crashes involving motor vehicles and is known to under represent non-fatal bicycle crashes.²⁰ For the period 2004-2008, the most recent data available for this analysis, UNM/DGR’s database includes 136 reports of crashes involving bicyclists or other “pedalcyclists” in the Santa Fe MPO area, including one fatality. As one might expect, the most common locations listed for crashes in this period included the City’s busiest roadway corridors. Some known hazards are underrepresented in this data because crashes at these locations did not involve motor vehicles (e.g. “one-vehicle” crashes at skewed rail crossings, cattle grates, or trail hazards such as bollards) or they involve facilities that did not exist or were substantially altered since the reporting period (e.g. post-2008 Rail Trail and Acequia Trail crossings). More information and analysis of bicycle crash data for the Santa Fe MPO area is provided in Appendix 5.

¹⁹ From 0.38% in 2000 to 0.53% in 2010 nationwide, and from 0.63% to 1.02% in 70 cities. American Community Survey, Top 70 Cities Data Compiled by League of American Bicyclists www.bikeleague.org.

²⁰ LaValley, J., et al. UNM Dept. of Emergency Medicine. “Using Emergency Department Records to Enhance Bicycle Injury Surveillance in New Mexico.” Presentation to American College of Emergency Physicians, New Orleans, LA, October 2006

Map 2: Santa Fe Bikeways and Trails Map, 2012



A larger scale and better quality map can be downloaded from:

<http://santafempo.org/documents/bikeways-map/>

Hard Copies of this map are available from the MPO Offices, Libraries and local Bike Shops.

III. ENGINEERING: ASSESSMENT OF EXISTING CONDITIONS

Santa Fe's bikeway system is a combination of on-road facilities, including designated bike lanes, striped shoulders, and lanes shared with motor vehicle traffic; and off-road facilities, including paved multi-use trails and formal or informal soft-surface paths. In some cases, facilities are designated and linked through "Bike Route" or other guidance signage. The 2012 Santa Fe Bikeways and Trails Map (Map 2) details existing on-road and off-road facilities throughout the Santa Fe MPO area. Road facilities and trail segments are also listed according to their general characteristics in Appendix 6.

A. ON-ROAD FACILITIES: Bike Lanes, Paved Shoulders, Shared Lanes

The road network is as critical to bicycle transportation as it is to motor vehicle transportation. Bicyclists are permitted to use all public roadways in the Santa Fe metropolitan area. While shared lanes are sufficient on many roads, separate on-road provisions, such as bike lanes or paved shoulders, are needed to accommodate cyclists on higher-speed and higher-volume roadways. Sidewalks and sidepaths may serve to accommodate pedestrians and some cyclists but should never be used as a rationale to forgo on-road facilities.

"To varying extent, bicycles will be used on all [roadways] where they are permitted. Bicycle-safe design practices, as described in this guide, should be followed during initial roadway design to avoid costly subsequent improvements." (AASHTO Guide for the Development of Bicycle Facilities (1999), p. 16.)

Bike lanes and paved shoulders. Roads in the Santa Fe area that have bike lanes or paved shoulders with at least four feet of usable width for cyclists are generally indicated in blue on the Santa Fe Bikeways and Trails Map.

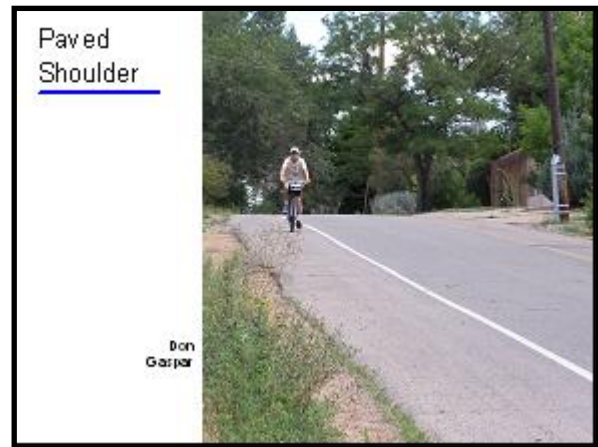
Designated bicycle lanes can be found on some of Santa Fe's arterial streets and some other roadways where it was deemed appropriate to provide signage and/or pavement markings dedicating lanes for exclusive use by bicycles. Typically these lanes are routed through intersections to the left of dedicated right-turn lanes. Examples can be found on city streets, county roads, and state highways in the Santa Fe area (see Appendix 6). Some location-specific bike lanes have also been striped in order to route cyclists using paved shoulders through intersections.



Pavement marking options for designated bicycle lanes are covered by national guidance in the Manual on Uniform Traffic Control Devices (MUTCD) as well as in publications by the American Association of State Highway and Transportation Officials (AASHTO).

Most state highway and city streets with new bike lanes use one of the recommended designs. If used on a two-way roadway, in most cases bike lanes should be marked in each direction.

Paved Shoulders. In some cases, streets have paved shoulders that meet bike lane criteria for clear width but are not designated as bicycle lanes. Most of these shoulders are not routed through intersections or alongside parking or bus bays but rather bicyclists are expected to merge into or through lanes shared with motor vehicle traffic at these locations. Most of these facilities are shown in blue on the Santa Fe bikeways map, though a few, such as shoulders on I-25, St. Francis Dr., and parts of the Relief Route (NM599), are not emphasized as primary bicycle routes, are left as gray.



Many striped shoulders are available for use by bicyclists but do not meet bike lane criteria for width, clear width, or pavement surface quality. Examples of narrow shoulders that do not meet bike lane criteria but do help accommodate cyclists can be found on parts of Agua Fria St. and W. Alameda St. that are identified in orange on the bikeways map.

In some cases, shoulders include pavement edges resulting from partial overlays, a phenomenon that is limited to state highways. Both the City and County have passed resolutions²¹ requesting that NMDOT discontinue paving practices that leave pavement edges in or near the shoulder area that is needed by bicyclists. Some recent work by NMDOT that would appear to comply with these requests include overlays completed in 2011 on US84/285 and NM599 (Relief Route) as well as specific commitments to follow suit on NM41 just south of the MPO area.



Rumble strips in paved shoulders - a proven effective countermeasure against run-off-the-road motorist crashes - are found on three state highways in the MPO area: I-25, US84/285 north of Opera Hill, and US285 south of Eldorado. Of the three, only US285 is a significant bicycling route in the MPO area as I-25 and US84/285 have more desirable frontage or other alternate routes. Rumble strips can pose a hazard and inconvenience to cyclists and for this reason AASHTO and FHWA recommended that they not be installed without leaving four feet of clear space on the shoulder for use by

²¹ See City Resolution 2009-10 and County Resolution No. 2009-135.

bicyclists. All rumble strips in the MPO area meet this criterion. US84/285's rumble strips also feature 12-ft. gaps every 60 feet per NMDOT's current standard design specification to accommodate bicyclist movements.

Bike Lanes and Paved Shoulders at Intersections. One of the primary differences between bike lanes and paved shoulders is the treatment of intersections. Designated bike lanes typically provide cyclists with a path through intersections whereas bicyclists using paved shoulders are expected to choose their own course through intersections, either by taking the travel lane or by staying to the right to let through vehicles pass.

In Santa Fe, many shoulders cannot be easily converted into bike lanes because intersection configurations, and particularly dedicated turn lanes, do not allow for space to route the bike lane through. In some cases, designated bike lanes end abruptly before an intersection due to this problem. Unfortunately these intersections lacking through-lanes for bicycles are typically where cyclists need the separate bicycle facility most.

Shared lanes. The majority of streets in the Santa Fe area do not provide a separate on-road facility for cyclists, but rather travel lanes are shared by bicyclists and motor vehicles. On many low-speed residential streets, there are few significant conflicts resulting from this arrangement; where these roadways are significant as bikeways they are shown in yellow on the Santa Fe Bikeways and Trails Map. Where motor vehicle speed or volume contribute to a less comfortable, narrow shared lane, but the roadway still holds significance for through travel by bicycle, orange is used on the map.



Wide Shared Lanes. On some streets, a wide shared lane allows enough space for motorists to pass cyclists without crossing the center line. AASHTO specifies 14 feet as the minimum width needed for this arrangement. On the Santa Fe bikeways map, some roads with significant motor vehicle traffic that have wide curb lanes where there is no parking, or where parking is minimal, are shown in blue.

Pavement Markings: Sharrows. On some low-speed streets²² where cyclists are encouraged to “take the lane” in order to avoid possible conflicts with moving or parked motor vehicles, the City’s Bicycle and Trails Advisory Committee (BTAC)’s

²² According to the MUTCD (2009), Section 9C.07: “The shared lane marking should not be placed on roadways that have a speed limit above 35 mph.”

Subcommittee on Street Improvements²³ recommended the use of “**shared lane arrows**,” or “**sharrows**,” based on a model from San Francisco, CA, that has since been adopted into nationwide standards.²⁴ Sharrows were installed by the City on many downtown streets in 2005 and 2007. Sharrows have also been used on a few streets in the county in Oshara Village.



Maintenance of the sharrow symbols has proved to be burdensome enough that well over half of the roughly 380 symbols that were installed at BTAC’s request have disappeared or are now barely visible. Appendix 6 includes a list of locations where sharrows have been installed and a descriptive analysis of the experience with sharrows so far.



Pavement Markings: Signal Actuator Locations for Cyclists. Also at the request of the BTAC Subcommittee on Street Improvements in 2004, the City’s Public Works Department adjusted loop detectors and optical detectors at selected signalized intersections so that they would be able to detect the presence of a bicycle. The “sweet spot” where cyclists could rely on being detected was then marked with an appropriate bicycle symbol as specified in the MUTCD.²⁵



²³ “Report of the Subcommittee on Street Improvements of the Bicycle and Trails Advisory Committee,” July 7, 2004.

²⁴ AASHTO, Guide for the Planning, Design, and Operation of Bicycle Facilities (2010 Draft), “Marked Shared Lanes” (pp. 59-63); MUTCD (2009), Section 9C.07, “Shared Lane Marking.”

²⁵ MUTCD (2009), Section 9C.05, “Bicycle Detector Symbol.”

B. OFF-ROAD FACILITIES



Multi-Use Trails

For a wide variety of bicyclists, pedestrians, and other non-motorized users, a system of multi-use trails on alignments distinct from the road network can create enhanced opportunities both for transportation as well as recreational purposes. Multi-use trails that are generally intended to address transportation needs should follow accepted engineering guidelines with respect to width (generally 10 ft. minimum), surface (ADA compliant), acceptable horizontal and vertical curvature, sight distance needs, clear zone, and a variety of other safety and convenience factors discussed in the AASHTO Guide for the Development of Bicycle Facilities.

Multi-Use Trails: According to AASHTO...

"Shared use paths should be thought of as a complementary system of off-road transportation routes for bicyclists and others that serves as a necessary extension to the roadway network. Shared use paths should not be used to preclude on-road bicycle facilities, but rather to supplement a system of on-road bike lanes, wide outside lanes, paved shoulders and bike routes." (AASHTO 1999, p. 33)



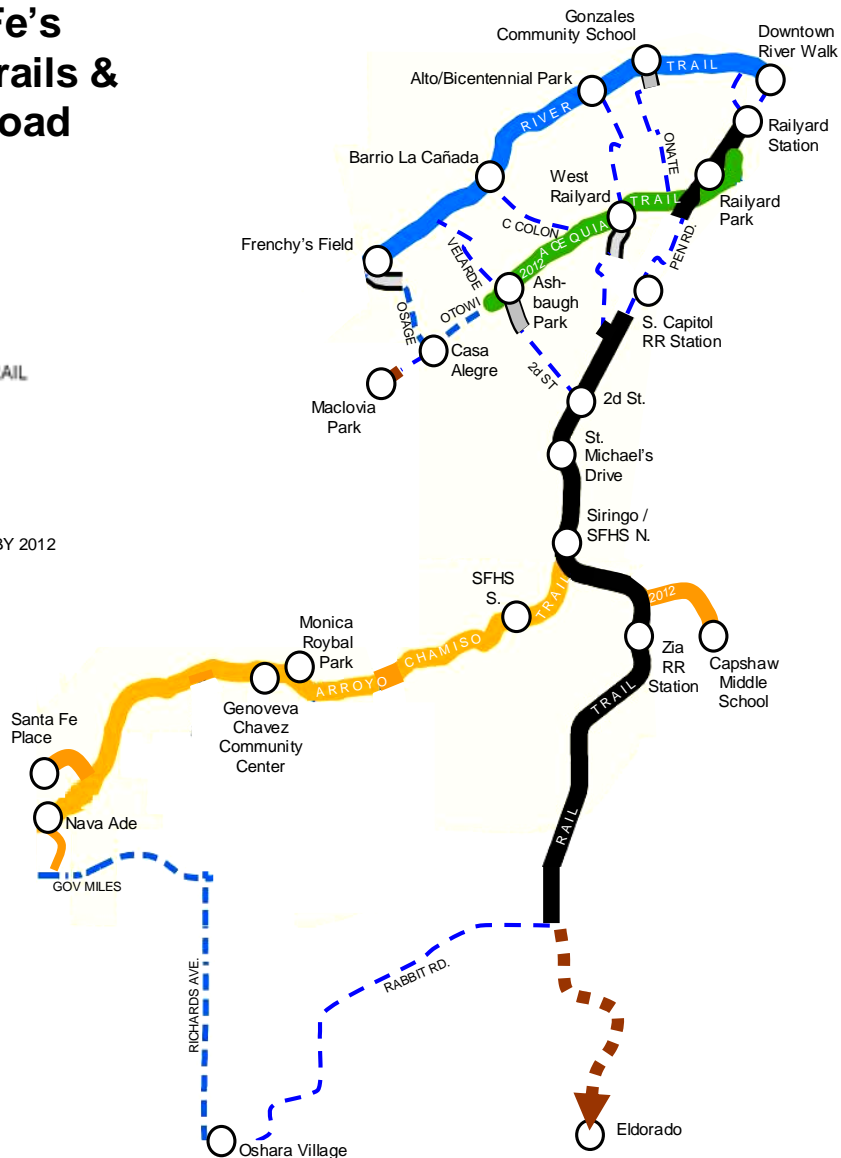
"Shared use paths are facilities on exclusive right-of-way and with minimal cross flow by motor vehicles. ... Users are non-motorized and may include but are not limited to: bicyclists, in-line skaters, roller skaters, wheelchair users (both non-motorized and motorized) and pedestrians, including walkers, runners, people with baby strollers, people walking dogs, etc." (AASHTO 1999, p. 33)

MAP 3: Santa Fe's Major Urban Trails & Selected On-Road Connections

Legend

- RIVER TRAIL
- ACEQUIA TRAIL
- ARROYO CHAMISOS TRAIL
- RAIL TRAIL
- CONNECTOR TRAIL
- SOFT-SURFACE TRAIL
- - - ON-ROAD ROUTE
- 2012 SEGMENT TO BE BUILT BY 2012

NOT PICTURED:
TIERRA CONTENTA TRAIL



Santa Fe's four major multi-use trails are the River Trail, the Acequia Trail, the Rail Trail, and the Arroyo de los Chamisos Trail. Other lesser-known multi-use trails meeting AASHTO specifications include the Cañada Rincón Trail (a/k/a North Spine Trail), the Arroyo de los Chamisos Trail (north fork) in Tierra Contenta, the District Trail (N.M. Central RR) in Rancho Viejo, and some trails in city parks including Frenchy's Field and Ashbaugh Park.

These multi-use trails, which are shown as thick green lines on the Santa Fe Bikeways and Trails Map (Map 2), can be thought of as core pieces of the region's "arterial bikeways." They typically follow alignments that are independent of roadways, such as waterways, arroyos, and active or abandoned rail lines. This serves to minimize conflicts with motor vehicles, increase recreational value, and maximize the extent to which the

transportation alignment complements the existing road system. Together with complementary road connections, Santa Fe's major multi-use trails can function as an integrated network of comfortable and reasonably convenient alignments that a wide variety of bicyclists can use to get to most parts of the MPO area.

As shown in Table 1 below, the Santa Fe metropolitan area includes nearly 19 miles of paved "arterial" trails and 17 miles of unpaved "arterial" trails. These figures include major trail alignments only. Paved trails listed here meet or approximate AASHTO guidelines. Many more miles of minor paved trails within subdivisions and parks, including internal connections and side paths along roadways, are not included, nor are other soft-surface recreational trails.

Table 1: Mileage of Trails along Major Alignments in the Santa Fe MPO Area, by surface type

Trail Alignment	Paved	Unpaved	Total
Acequia Trail	1.1	0.5	1.6
Arroyo de los Chamisos ¹	4.4	0.2	4.6
Arroyo Hondo Trail	0.0	0.8	0.8
Ashbaugh Park Trail	0.2	0.0	0.2
Chili Line	0.0	0.2	0.2
Frenchy's Field Trails	0.8	0.0	0.8
NM Mexico Central RR ²	1.6	0.0	1.6
Rail Trail	4.4	11.6	16.0
River Trail	3.3	0.6	3.9
Spur Trail	0.0	3.0	3.0
St. Francis Dr. Trail	0.9	0.0	0.9
Tierra Contenta Trail ³	2.1	0.0	2.1
TOTAL	18.8	16.9	35.7

1 - Includes Gail Ryba Trail (with Gail Ryba Trail underpass, currently under construction) and Zia Trail.

2 - Includes Rancho Viejo "District Trail" and part of SFCC Loop.

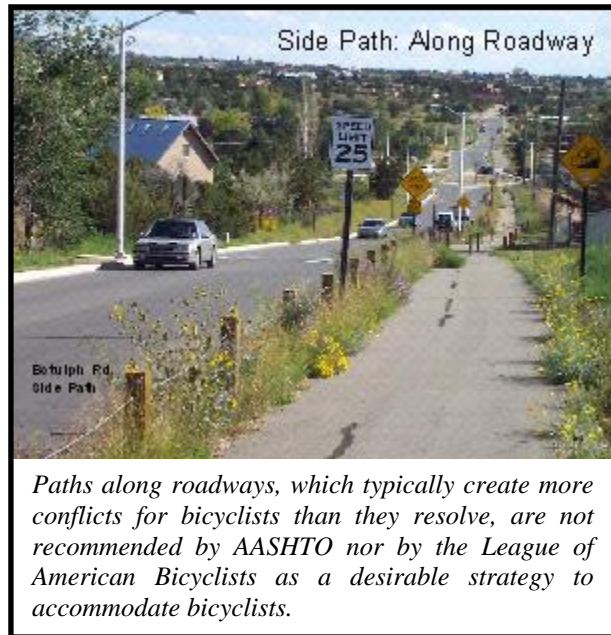
3 - Counted separately from the rest of the Arroyo de los Chamisos Trail.

Subdivision Trails

Narrow multi-use trails, and paths that otherwise do not meet AASHTO standards for multi-use trails, are often found in parks or within subdivisions such as Pueblos del Sol, Nava Ade, and Rancho Viejo. These paths are shown as narrow green lines on the Santa Fe Bikeways and Trails Map. In many cases these trails are difficult to integrate into longer bikeway alignments. While serving a recreational role for a variety of local users, for transportation purposes, at best they may serve as local “collectors” into the greater bikeway system.

Sidepaths

“Sidepaths” are trails built along roads. AASHTO highlights operational difficulties presented to bicyclists by sidepaths, including increased hazards at driveway crossings and intersections, and strongly discourages their use by public agencies as a primary strategy to accommodate bicycles or as a rationale to forgo on-road bicycle facilities.²⁶ There are only a handful of examples of paths built for bicycles along roads in the city but far more in county subdivisions. Where displayed on the Santa Fe Bikeways and Trails Map, paved side paths are shown as narrow green lines.



In most cases, a side path may serve as a good pedestrian facility but a marginal bicycle facility, often suitable for lower-speed use only. In many cases, for example near schools in residential areas, enhanced sidewalks may be considered to accommodate children, but it must be recognized that these alignments tend to present users on bicycles with complex motor vehicle conflicts that may be challenging and hazardous.

²⁶ See AASHTO 1999, pp. 33-35; revised and expanded guidance on side paths will be available in Section 5.2.2 of the *AASHTO Guide for the Planning, Design, and Operation of Bicycle Facilities*, scheduled for release during 2011.

C. GUIDANCE FOR BICYCLISTS

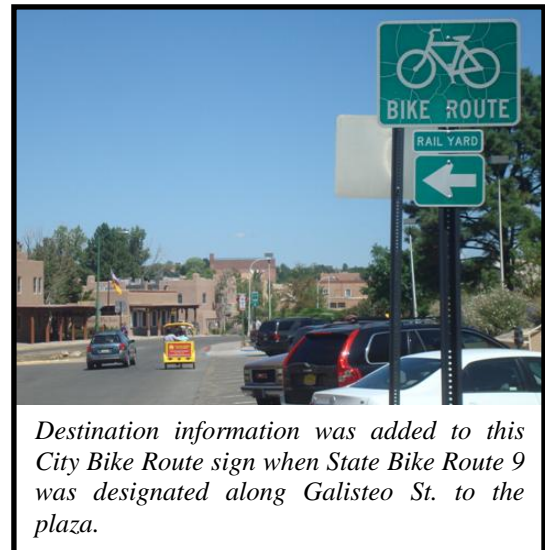
Providing cyclists with wayfinding guidance through signage, pavement markings, maps, and other means is an important and cost-effective strategy toward a creating an effective and usable bikeway network. The following sections summarize city and state efforts in this area; for more details, see Appendix 8.

City Bike Routes: The 1993 Bikeways Master Plan created a network of bike routes designated through standard “Bike Route” signage on city streets, a program was implemented within a few years of the plan (see Appendix 8). The signage scheme served to identify priority routes for bicycles but did not include additional guidance such as information on destinations or distance. Bike route signage is also used in Santa Fe as guidance to multi-use trails where they can be accessed from roadways, or as more generic declarations of the beginning and end of multi-use trails, without wayfinding information.

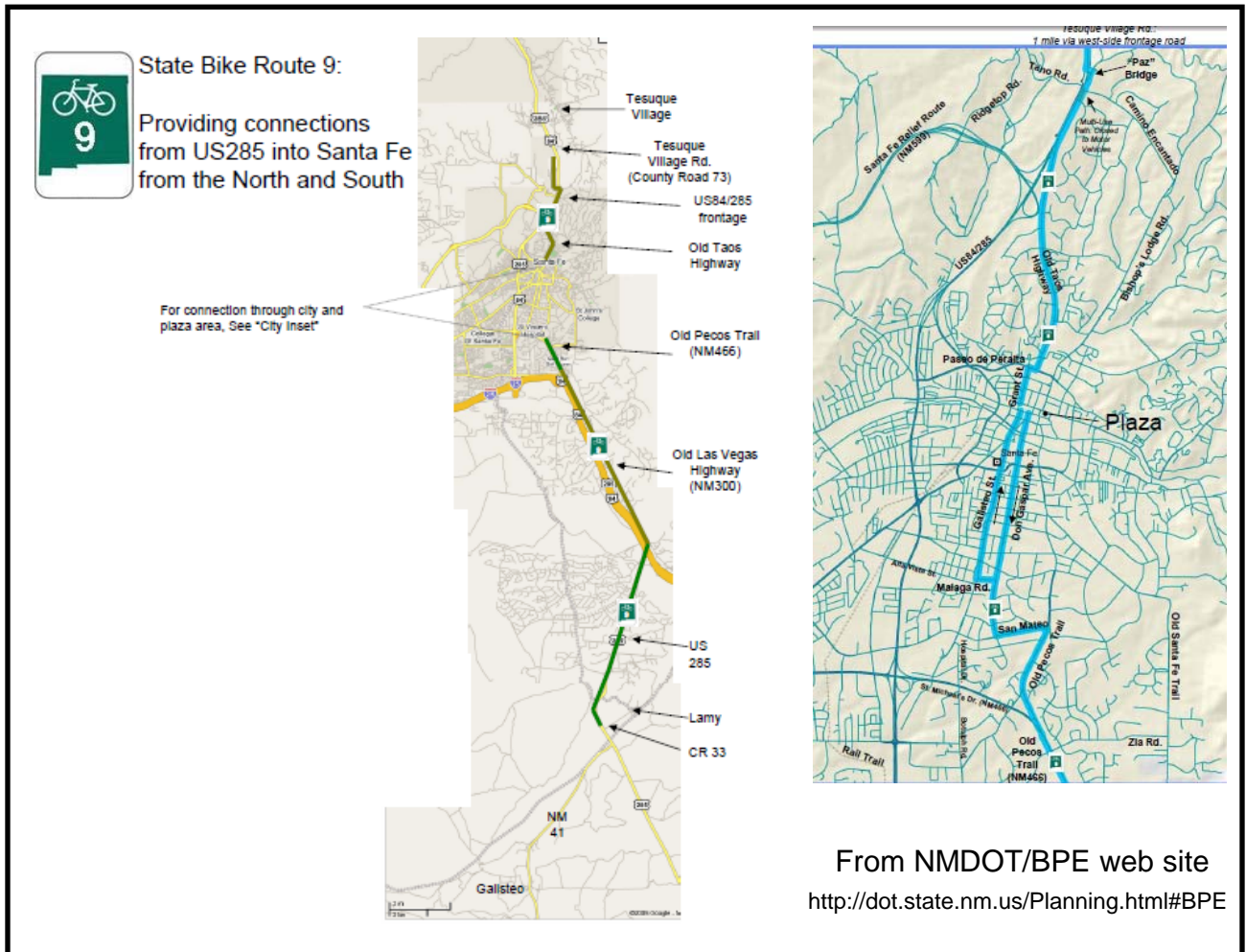
Bike route signage was also included on the Acequia Trail as part of a safety measure to guide cyclists from the Railyard Park Rail Trail and Alarid St. onto the new trail to the St. Francis Dr. crosswalks, and away from the on-sidewalk and on-road skewed rail crossings along Cerrillos Rd.

State Bike Route 9: State Bike Route 9 is a series of primarily on-road facilities connecting Lamy, Eldorado, Santa Fe and Tesuque Village. It was designated by NMDOT in conjunction with the City of Santa Fe in 2006-2007 (see Map 4 and Appendix 8). Each side of State Bike Route 9 brings cyclists to within a block of the plaza but, due to the difficulty of establishing a single best route, as well as the sensitivity of signage in the plaza area, the two sides are connected only through reference on the plaques.

State Bike Route 9 added directional information (arrows and destination plaques) at many decision points and added or incorporated a few small spur or connector bike routes. Long-range plans for NMDOT’s “State Bike Route 9” extend south to Galisteo and Moriarty via NM41 and north to Ojo Caliente via Española on US285.



Map 4: State Bike Route 9



Other Guidance: Pavement Markings

In addition to signage, pavement stencils also provide trail users with helpful guidance on some multi-use trails in the Santa Fe area (see photo).



D. GAPS and BARRIERS

Typical physical barriers faced by bicyclists and other non-motorized travelers in cities throughout the world include major multi-lane roadways, railways, rivers and other waterways, and other topographical features that are difficult to cross.

In the Santa Fe metropolitan area, the primary significant barriers in the bikeway system are the highest-trafficked, major roadways, particularly St. Francis Dr. (US84/285), Cerrillos Rd. (NM14), the Santa Fe Relief Route (NM599), St. Michael's Dr. (NM466), W. Zia Rd., Rodeo Rd., Airport Rd., and I-25. Also of some significance as barriers are active rail lines used by the NM Rail Runner and by the Santa Fe Southern rail service. .

The Santa Fe River, the Acequia Madre, and various arroyos also pose formidable topographical barriers to bicyclists. These barriers and existing or planned crossings for multi-use trails in particular are described in more detail in Appendix 7.

Lack of continuity in off-road and on-road bicycle facilities is a focus of recommended improvements listed in Chapter IV. Prominent examples of incomplete trail alignments that require negotiation with public or private landowners include:

- The remaining gap between the Acequia Bikeway and Rufina St., which is primarily limited to private properties on the west side of Maez Rd.



Existing bridges over the Acequia Madre include this two-by-four construction providing some degree of access between Otowi Rd. and Camino Canyon de Chelly (above). A similar construction (but without the center posts) could connect the Acequia Trail to the end of Kathryn St. (below)



Acequia Trail at Kathryn St.



Southridge Park, also known as Calle Lorca Park, provides a convenient off-road route between a densely populated neighborhood and shopping. As part of recent playground renovations, the City Parks Division erected a fence across this route.

- The desired non-motorized connection from the Arroyo de los Chamisos Trail north to Richards Ave., along an emergency vehicle easement granted to the City by the public landowner, the New Mexico Fish and Game Dept.
- The gap between the two separate pieces of W. Zia Rd., along a utility easement east of Botolph Rd., in order to connect the Gail Ryba Trail along the Arroyo de los Chamisos to various on-road routes to the east.

Many other significant gaps in our trail system are the result of a failure to value, and plan for, non-motorized connectivity between adjacent land uses, and the difficulty of changing these situations once they are put in place.

E. CROSSINGS AND CONNECTIONS: TRAIL-ROAD INTERSECTIONS

The MPO Bikeways Mapping Project, which assessed existing and desirable trail and road alignments throughout the MPO area, included a close examination of the interface between multi-use trails and roadways, which AASHTO describes as often the most critical area of focus for multi-use trail design.²⁷ The project found many examples of trail crossings that combine good pedestrian safety design for crosswalks with good bicycle design for multi-use trails (see W. Alameda example at right). There are many opportunities, however, to improve trail crossing and connections that do not meet AASHTO bikeway guidelines, such as desired clear width available to cyclists, or that could benefit from latest best practices for pedestrian design.

At-Grade Crossings: At-grade trail crossings and other connections to streets are found throughout the MPO area. The Bikeway Mapping Project assessed crossings and other trail connections to roads at signalized intersections, unsignalized intersections, and mid-block locations, noting presence of crosswalk markings and signage, width and orientation of access ramps, and presence of posts and other in-trail obstacles, among other attributes.

Pavement Markings at Crossings: All trail crossings at signalized intersections in the Santa Fe area are marked with parallel-line or, less commonly, “Continental”-style crosswalk



²⁷ AASHTO (1999), p. 46.

markings. These markings provide guidance to both pedestrians and motorists regarding the desirable and legal walking path across the road. Prominent examples of marked crosswalks at signalized locations include the Rail Trail at W. Zia (see photo on previous page), the Rail Trail and Acequia Trail at St. Francis and Cerrillos, the River Trail at St. Francis Dr., and the St. Francis Dr. Trail at Siringo Rd.

High-Visibility Crosswalk Markings at mid-block crossings, such as this “ladder”-style crosswalk at Alarid St. near the Railyard Park, provide useful guidance to trail users and a clearly-visible notification to motorists. These markings also serve to legally establish a mid-block crosswalk where road users are required to yield to pedestrians.



Most of the Rail Trail’s other mid-block crossings, including the crossing at 2nd St. (left), are not marked and thus do not provide a legal crosswalk – under state law, pedestrians using these crossings cannot assert a legal right to cross the road.

Many trail crossings at uncontrolled locations, including “mid-block locations,” are also marked with highly-visible continental- or ladder-style crosswalks, including all three original Arroyo de los Chamisos crossings, the River Trail crossing at Camino Alire along with various other River Trail connectors across W. Alameda, and three Arroyo de los Chamisos/Tierra Contenta Trail crossings. Most Rail Trail crossings at uncontrolled



A crosswalk marked across Paseo de Peralta to guide Rail Trail users around a built median creates a legal crosswalk but does not always achieve its intended purpose.

locations, on the other hand, have not been marked, with the exceptions of Paseo de Peralta (parallel lines marked in order to steer pedestrians around a median, see photo on previous page) and Camino Alarid (Ladder, marked in May 2011, see photo on previous page).

None of the Rail Trail crossings south of the city are marked, but some trail crossings are marked at uncontrolled locations in county subdivisions such as Rancho Viejo (e.g. District trail at A Va Nu Po) and Las Campanas (Camino la Tierra side path crossing north of interchange with Ave de las Campanas). Crossing treatments in city subdivisions also vary but examples of marked crosswalks at uncontrolled locations can be found in Nava Ade, Tierra Contenta, and Las Acequias.

Other At-Grade Crossing Strategies: Other pedestrian safety strategies that can be used to improve trail crossings include building median islands as pedestrian refuges, curb extensions to reduce crossing distance, flashing lights or signals, eliminating “free right turns,” and other forms of traffic calming to reduce motor vehicle speeds.

Median refuges are found on the Rail Trail at Siringo Rd. and at St. Michael’s Dr., within several crossings of Alameda associated with the River Trail, and in one location with a speed table on the Arroyo de los Chamisos Trail. Flashing lights activated by pedestrians have been installed at high-



This marked crosswalk in Nava Ade incorporates a speed table to calm traffic where a trail meets a residential street.



This median refuge is of critical value for Rail Trail users trying to cross the six lanes of St. Michael’s Dr.

Arroyo de los Chamisos Trail crossing at Ave. de las Campanas, with median refuge. Slanting the gap in the median toward the right is a desirable strategy to help users passing through in either direction face any oncoming motor vehicle traffic that they would need to be able to see in order to safely complete the crossing. Unfortunately, neither this median treatment nor the bollards (posts) placed at either end of the crosswalk provide sufficient maneuvering space for bicycles.



traffic, uncontrolled downtown crosswalks, both in pavement (Grant St. / no longer functional) and mounted with pedestrian warning signage (Guadalupe), but have not been installed at trail crossings in the MPO area.

Grade-separated crossings: Grade-separated trail crossings, including underpasses or overpasses, can provide bicyclists and pedestrians with a conflict-free route to cross a roadway or railway. These crossings are not always practical or feasible but under the right conditions can provide an ideal means for trail users to overcome major obstacles. They can be extremely expensive to build except where they are integrated into an existing structure (e.g. bridge or culvert).

The Santa Fe area does not have any trail overpasses but has two significant trail underpasses, including the Rail Trail under I-25 (shared with railroad underpass) and Arroyo de los Chamisos Trail under Rodeo Rd. (converted concrete box culvert). A third – a stand-alone tunnel to route the eastern segment of the Arroyo de los Chamisos Trail (to be called the Gail Ryba Trail) under St. Francis Dr. – is scheduled for coompletion in 2012. The Arroyo de los Chamisos Trail also features two underpasses of low-traffic school driveways south of Santa Fe High School.

Space for future underpasses has been left in all recent construction or reconstruction of bridges over the Santa Fe River, including under Camino Alire, where the River Trail was recently extended, as well as future trail locations under Siler Rd. and S. Meadows Rd. Similarly, NMDOT included a stand-alone trail underpass in the reconstruction of Cerrillos Rd. (NM14) roughly two decades ago to accommodate the future Arroyo de los Chamisos Trail, an investment which may now be nearing fruition as development in the area reaches south.

Three “equestrian” underpasses, also intended for use by pedestrians and bicyclists, were included in the construction of the Relief Route (NM599) in the late 1990s. They do not yet incorporate any significant multi-use trails, though the La Tierra Trails Master Plan prioritizes routing an access trail through the easternmost of the three, just west of



Grade-separated crossings of major roadways can be invaluable for trail users but are often prohibitively expensive unless integrated into an existing structure, such as the Santa Fe Southern Railroad's underpass of I-25.



This grade-separated crossing of the Arroyo de los Chamisos Trail under Rodeo Rd. utilized an existing concrete box culvert, an achievement that is promoted as a “best practice” in Chapter VI.

Camino de Los Montoyas. Another operational “equestrian” underpass can be found under US285 south of Eldorado.

At-Grade Rail Crossings: Active rail lines generally do not pose a major barrier to bicyclists in Santa Fe but the rails themselves do present a specific hazard at skewed crossings, particularly at the intersection of St. Francis Dr. and Cerrillos Rd. Although information on crashes not involving motor vehicles is very limited, eyewitness and anecdotal evidence strongly suggest that the on-road and sidewalk rail crossings at this intersection would have the highest incidence of bicycle crashes of any location in the metropolitan area. AASHTO provides excellent guidance on possible treatments to improve bicycle safety at skewed rail crossings.²⁸

Official crash data available for this plan do not include “single-vehicle” crashes nor do they reflect conditions created after 2008, but this skewed rail crossing at St. Francis Dr. and Cerrillos Rd. is known to be the single most common hazard to have afflicted area bicyclists in recent years.



F. OTHER MULTI-USE TRAIL DESIGN ISSUES

Many of our area’s multi-use trails present a variety of constraints, distractions, and hazards to bicyclists that can be avoided in future designs through strict adherence to AASHTO bikeway guidelines. For example, most subdivision trails and even some major arterial trail segments do not meet the recommended minimum width of 10 ft. for paved, multi-use trails. In many instances, fences, handrails, or other vertical obstacles are placed within the suggested 1-2 ft. “clear zone” at the edge of our trails. Bollards or posts have occasionally been placed at random locations on trails, often providing insufficient clear space for bicycles (e.g., see Arroyo de los Chamisos photo on p. 31). Sometimes these posts fail to establish a “centerline”



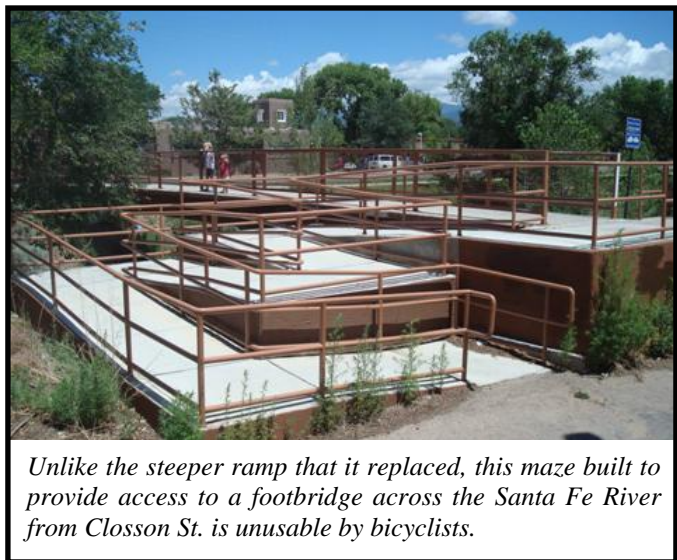
This critical bikeway connection between the River Trail and Ave. Cristobal Colon meets minimum requirements for ADA but provides a poor facility for bicyclists.

²⁸ Conceptual fixes are illustrated in Appendix 11, with AASHTO and FHWA references, and included in Chapter VI., Implementation Plan.

location, as is recommended, and sometimes they fail to serve the intended purpose of restricting access by motor vehicles. In such cases, these obstacles only serve as a hindrance and a hazard to legitimate trail users.

Competing concerns that influence multi-use trail designs include prevention of entry by unauthorized motor vehicle traffic, provision of access to authorized maintenance and emergency vehicles, and meeting accessibility requirements interpreted to exist under American with Disabilities Act (ADA). Designs focusing on these concerns have frequently produced multi-use trails, street crossings, and connections that do not accommodate the safe and convenient use by bicycle, which should be the intended design vehicle for multi-use trails.²⁹

For most of the issues described above, the approach recommended by AASHTO is that a multi-use trail should be designed as a “road for bicycles.” This approach need not conflict with the needs of other users of multi-use trails, such as in-line skaters, runners, dog-walkers, hikers, and other pedestrians. However, following strict guidelines and best practices for pedestrian accessibility, as perceived to be required under ADA – and the ADA Accessibility Guidelines (ADAAG) created to define appropriate access to and within buildings – can lead to designs that are both inconvenient and hazardous to users of the intended design vehicle, the bicycle. Examples documented by the MPO’s Bikeways Mapping Project include narrow ramps at trail crossings (following state standards for pedestrian ramps at crosswalks), inordinate use of handrails in the area that would be the “clear zone” on a “road for bicycles,” and the use of difficult or inconvenient switchbacks and flat spots to meet slope requirements under ADAAG.³⁰



Another constraint in the design and construction of multi-use trails is an operating assumption and requirement that bridges must be built to specifications worthy of use by heavy motor vehicles for emergency and maintenance purposes. Where such bridges are built, this may place a significant financial burden on public trail funds. In other cases, minor but significant desired connections may become infeasible, impractical, or otherwise too expensive if a heavy bridge is required.

²⁹ See, e.g. AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004), p. 71: “Trails built to meet...guidelines [of the AASHTO Guide for the Development of Bicycle Facilities] will also serve the needs of pedestrians.”

³⁰ See Appendix 10 for further discussion of these issues and the prospects for “universal design,” meeting the needs of all intended users for access, safety, and convenience.

G. BICYCLE PARKING

Most commercial centers and public facilities in Santa Fe provide some form of formal parking facilities for bicycles, typically one of many varieties of bicycle racks.

AASHTO and the Association of Pedestrian and Bicycle Professionals (APBP) have produced guidelines for bicycle parking that favor the use of inverted U-shaped racks that:

- Support the bicycle at two points above its center of gravity
- Accommodate high security U-shaped bike locks
- Accommodate locks securing the frame and one or both wheels (preferably without removing the front wheel)
- Provide adequate distance [minimum 36 inches (0.9 m)] between spaces so that bicycles do not interfere with each other
- Do not contain protruding elements or sharp edges
- Do not bend wheels or damage other bicycle parts
- Do not require the user to lift the bicycle off the ground.³¹

Unfortunately many of the racks that are installed in the MPO area do not meet these characteristics.

Public agencies including the state, county, city, federal government, and school district have all made significant efforts to provide bicycle racks at all public facilities, including those offering services to the public as well as those that do not. In a unique effort to provide additional bicycle parking in high-demand public spaces, the City installed inverted “U” racks at ten selected locations downtown around 2007 (see photo).

Private developers and builders are required to provide bicycle parking by the City’s Chapter 14, which specifies bicycle parking standards for all uses except single-family residential (see Appendix 3). For most uses, the number of bicycle spaces required is tied to the number of motor



Photos by Gail Ryba of BCNM illustrate various kinds of parking used by local bicyclists in the recent past. Parking at public facilities, such as Salvador Perez pool (lower left) has improved dramatically over the years.



Key downtown locations that received loop racks under a special City initiative several years ago included the Plaza, City Hall, DeVargas Park, and the corner of Alameda and Don Gaspar (above). This inverted “U” design conforms with new guidance from APBP and AASHTO.

³¹ AASHTO (2010 Draft), p. 201, citing Association of Pedestrian and Bicycle Professionals (APBP), “Bicycle Parking Guidelines.” Washington, DC: 2002.

vehicle parking spaces required. For hotels it is tied to the number of employees and for schools the number of students.

The city code provides an illustration of an acceptable bike rack and specifies that racks be “located on an outside ground surface which shall be paved or planted in a way which avoids mud or dirt and is easily maintained;” “anchored so they cannot be easily removed,” “designed so that both wheels or the frame of a bicycle can be locked securely to it with a chain, cable or padlock,” and “located so as to be visible, easily accessible near the building entrances, well lit and not conflicting with pedestrian or vehicular traffic.” The code allows for the substitution of bike lockers or a “room” or communal locker instead of a bike rack.

Some agencies provide additional indoor storage space or outdoor bike lockers for more secure storage for use by staff. A public bike locker installed by the city for public use at its parking facility on Water St. receives minimal use, in large part due to lack of awareness among potential users.

The NM Rail Runner Express, in addition to providing ample bike racks at each station in the Santa Fe area, installed 14 bike lockers at NM599 station in April 2011 and has expressed interest in installing bike lockers at South Capitol Station as well as the Railyard Depot.



A promotional photo from www.nmrailrunner.com displays the type of bike lockers being installed at NM Rail Runner stations.



The City Parking Division's two-chamber bike locker at the Water St. lot is available free of charge though users need to provide their own padlock.

H. ON-BOARD TRANSIT PROVISIONS FOR CYCLISTS

All major public transit providers in the MPO area offer provisions for carrying bicycles free of any extra charges. For transit services using buses with front racks to hold bicycles, bicycle ridership is typically limited to the number of spaces available on the rack.



Santa Fe Trails bus service extends the range of bicycling for many individuals in the MPO area, in this case providing a ride into town from the Santa Fe Community College.

All of the City's "Santa Fe Trails" regular-service buses now have racks with a capacity of at least two bicycles; the City is gradually replacing busses with two-bike racks with new vehicles with three-bike racks. North-Central Regional Transit District buses also have front racks with a capacity of two bicycles. The State's Park and Ride services provide space for bicycles in the luggage compartments located underneath on large busses and on front racks on smaller busses. Taos Express shuttles, which connect to Rail Runner stations and the Santa Fe Airport, offer two rack slots per vehicle, with a reservation required to guarantee a slot.



The NM Rail Runner provides for bicycle storage in designated areas on trains, each of which can fit 2-4 bikes, but overflow space is also usually available in areas to be shared with users with wheelchairs or other assistive devices. Trains arriving or departing from NM Rail Runner stations in the Santa Fe area typically have at least one bike on board per car, if not several more. NM Rail Runner, which states that each train will be able to accommodate up to 12 bicyclists, has never had to turn any commuting cyclists away.



A Rail Runner passenger boards the train at a designated entrance (left). Space is reserved for a minimum of two bicycles per car (right); in practice several more bicycles may fit.

Annual bicycle boardings counted by NM Rail Runner throughout the system increased dramatically after service to Santa Fe began in mid-December 2008, rising from under 29,000 for Calendar Year 2008 to roughly 42,000 each year in 2009 and 2010. In 2010, NM Rail Runner counted 10,026 bicycle boardings at stations in Santa Fe County, nearly half of which were at the Santa Fe Depot. Boardings by bicyclists comprised 2.6% of all passenger boardings in Santa Fe County in 2010, including 2.9% of those at S. Capitol Station, 2.4% at the Santa Fe Depot, and 2.4% at NM599 Station. This share was more pronounced on weekdays (2.9%) than on Saturdays (1.3%) or Sundays (1.9%). By comparison, the share of bicyclists among all weekday Rail Runner boardings in 2010 was 4.4% in Bernalillo County, 2.9% in Sandoval County, and 2.4% in Valencia County.

AMTRAK, with rail service in Lamy, charges an extra fee to carry a bicycle and will only carry bicycles in a box. Because there are no formal provisions for bicyclists to store or obtain a bike box in Lamy, AMTRAK's bike box policy almost entirely prohibits the combination of long-distance rail and bicycle travel to get to and from Santa Fe without motor vehicle assistance. Private shuttle services, such as those serving the Albuquerque Sunport, also charge an extra fee for carrying bicycles and may require the use of a bike box.

I. MAINTENANCE OF BICYCLE FACILITIES

Maintenance is an often overlooked area in bicycle facility planning and operation. Maintenance needs on streets specific to bicycle use include sweeping and plowing of shoulders and bike lanes, upkeep of signage and pavement markings, and resurfacing and restriping bike facilities within roadway resurfacing projects. Road maintenance can also include other measures to limit foreseeable hazards posed to bicyclists, such as cutting back vegetation infringing upon bike lanes or ensuring that drainage grates or cattle guards do not trap bicycle wheels. Maintenance on trails relating to bicycle use similarly includes cutting back vegetation, upkeep of signage, removing debris including snow and ice, surface repair, and repaving.

Sweeping and Plowing

Area road agencies, including NMDOT, the City, and the County, conduct street sweeping, including shoulders and bike lanes, as needed. For roadways without curb and gutter, most of this work is done with "broom" attachments which clear debris onto the unpaved shoulder area. In residential areas and roads with curb and gutter, the city uses street sweepers that sweep debris into a bin to be disposed of elsewhere. NMDOT also operates a street sweeper as needed.

Local road agencies also plow snow and remove



A street sweeper clears debris off of Richards Ave.

ice on roadways as necessary. Bike lanes and shoulders are usually generally cleared of snow and ice in this process. The city has also begun to regularly plow major multi-use trails after significant snowfall through the use of all-terrain vehicles fitted with plow blades.

Local agencies frequently receive requests from bicyclists to sweep area bike lanes and shoulders in the spring, when many cyclists are returning to the roadways. Agencies seek to address cyclists' needs after there is some certainty that there will no longer be a need to apply additional cinders or other means to melt snow and ice. NMDOT regularly responds to requests to clear highway shoulders well before major bicycling events, such as the Santa Fe Century which is held late in May each year.

Pavement Markings

Bike lane markings, including stripes and bike symbols, are generally integrated into regular restriping within state and city roadway maintenance, or when road repair work is performed by others (e.g. utilities). Due to lack of dedicated resources, other pavement markings specifically relevant to bicycling, however, including sharrows and signal actuator location markings, have not been restriped since their installation four-to-six years ago, and most are significantly faded or have disappeared. BTAC's On-Road Subcommittee assessed and rated the condition of nearly half of the 380 sharrows installed by the City, reporting to BTAC in June 2011 that just over half of the sharrows assessed are no longer visible.³²



Drainage Grates and Cattle Guards

Longitudinal gaps in drainage grates or cattle guards can pose an extreme hazard to on-road bicyclists. Offending units can be repaired, replaced, or removed entirely. Drainage grates are found in various styles throughout the MPO area. Cattle guards on MPO-area roadways that are regularly used by bicyclists include four locations on or adjacent to NMDOT-maintained facilities:



³² Memorandum to BTAC from BTAC On-Road Subcommittee, June 21, 2011, "Launching an Annual Bicycle Sharrow Maintenance Program."

- Old Las Vegas Highway (FR2108) east of Ojo de la Vaca Rd. (Cañoncito)
- Buckman Rd. east of Calle Nopal, and Camino La Tierra
- Caja del Rio Rd, north of the NM599 Relief Route frontage road.

Several more cattleguards are found on or along Caja del Rio Rd., including one at the entrance to the Municipal Recreation Center.

Multi-Use Trail Maintenance

Trail maintenance within the city falls under the City Parks and Recreation Dept. A significant portion of maintenance work along trails is dedicated to landscaping care, cutting back vegetation, removal of debris and trash on or along the trail, and removal of trash from bins along or near the trail. Of particular concern for local bicyclists is the clean removal of “goathead” thorn plants (also known as “puncture vines”), which are notorious for causing flat tires in urban areas throughout New Mexico.

In the winter, the City’s Parks and Recreation Dept. conducts ice removal in spot areas as needed, in addition to plowing after snowstorms. City and contractor staff typically use motor vehicles on multi-use trails on order to conduct maintenance and other operational activities. This practice can damage trails, particularly at the outside edges, as well as create an inconvenience and hazard to trail users.

Asphalt trails will also suffer some level of natural deterioration over time as well. Paved multi-use trails eventually require surface maintenance, including asphalt patching and resurfacing, and re-decking of bridges.



A “goathead” vine creeps onto the path in Franklin Miles Park. Flat tires due to goathead thorns are a bane to cyclists in the Santa Fe area.



Deteriorating asphalt on the multi-use trail at the Santa Fe Community College. This trail was slated to be rebuilt by SFCC after this photo was taken in 2011.



Compared to full-size pick-up trucks, the City's use of small electric vehicles for maintenance of the Railyard Park produces less wear and tear to trails, less pollution, and less inconvenience to Rail Trail users.

Soft-Surface Trail Maintenance

Unpaved trails require erosion control in addition to occasional removal of debris. The Santa Fe Conservation Trust and the Santa Fe Trails Alliance have taken a leadership role in organizing trained volunteers to maintain city and county foothill trails as well as La Tierra Trails. The Santa Fe National Forest's Española Ranger District provides trainings and organizes volunteers to assist with trail maintenance on the Atalaya Trail and other national forest trails in our area.

The City and the County have also supported and benefited from volunteer training and maintenance activities on local trails. The Santa Fe Fat Tire Society (SFFTS), a local mountain biking advocacy group affiliated with the International Mountain Biking Association (IMBA), provides a significant piece of the volunteer base. IMBA has visited Santa Fe twice in the past two years to provide trail maintenance and construction training. The second visit culminated in the construction of a new trail segment planned under the La Tierra Trails Master Plan by roughly 40 volunteers and two IMBA trainers in a half-day's work.



Volunteers under the direction of the City and IMBA trainers work on an arroyo crossing for a new piece of La Tierra Trails in 2011 (Photo: SFFTS).

IV. RECOMMENDATIONS TO IMPROVE BICYCLE INFRASTRUCTURE

Goal: More Bicycle Facilities and Better Bicycle Facilities, within an Integrated and Effective Bikeway System.

Primary recommendations of this Bicycle Master Plan include the following keys to make bicycling an accessible, comfortable, and safe mode of transportation:

- adoption and implementation of “Complete Streets” policies by each MPO member government
- construction of new multi-use trails and implementation of road retrofits based on targeted investment in prioritized improvements
- adoption of AASHTO guidelines for the development and maintenance of bicycle facilities
- pursuit of best practices for the design, construction, and maintenance of bicycle facilities based on models around the country.

A. General Recommendations to Improve Bicycle Infrastructure³³

Recommendation 1.1: Implement “Complete Streets” Policies for all construction and maintenance of roadways in the MPO area.

Effective complete streets policies ensure that adequate bicycle facilities are included in all new construction and preserved or improved in all maintenance activities. The MPO Transportation Policy Board unanimously passed a resolution in 2007 urging both the City and the County of Santa Fe to require the design and construction of “complete streets” catering to the needs of pedestrians, bicyclists, and transit throughout the metropolitan area (see Appendix 4, MPO Complete Streets Resolution).

In order to accommodate bicyclists, designated bicycle lanes, paved shoulders or wide curb lanes meeting specifications in the AASHTO Guidelines for the Development of Bicycle Facilities should be included in the design,

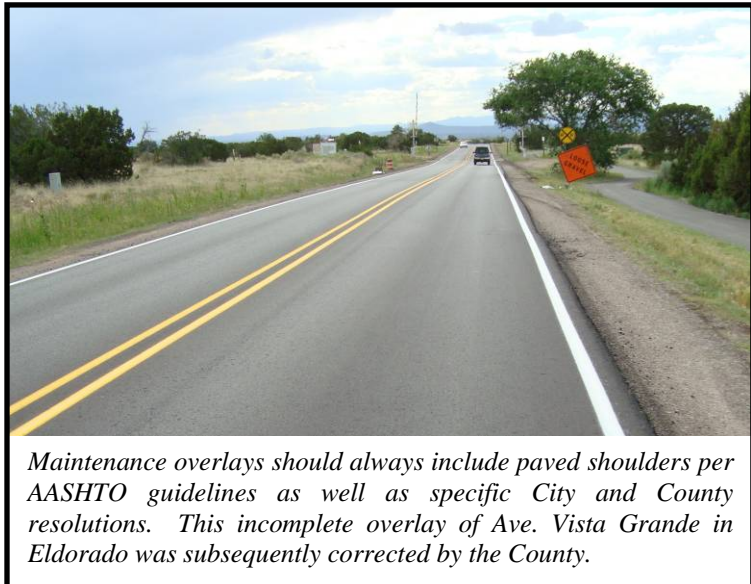


Bike lanes or paved shoulders, like this one on Richards Ave., should be included on major roadways throughout the MPO area. In addition to accommodating bicyclists and pedestrians, paved shoulders improve motor vehicle safety, provide space for emergency and maintenance vehicles, and help to preserve the roadway.

³³ See Appendix 9: Bicycle Master Plan Goals and Recommendations, for a list of Recommendations. 1.1-1.12.

construction, and maintenance of roadways with higher motor vehicle speeds and volumes, typically including those classified as arterials or collectors. This plan recommends that **each MPO member legally adopt bike lanes or paved shoulders as standard on-road provisions for bicyclists on major roadways** (arterials and major collectors), comparable to standards already specified in the City's Chapter 14, for construction and maintenance by public agencies as well as private developers.

Bike lane or shoulder provisions should be required not only within typical road cross-sections but also through intersections, as recommended by AASHTO and the MUTCD. Additional guidance on innovative bike lane treatments through intersections can be drawn from the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide.



Consideration of modifications to traffic lanes and intersections should not be limited to assessment of motor vehicle needs and warrants but should include an analysis of corresponding quality of service for bicycles. Consideration of current or future need for bike lanes through an intersection, for example, should be taken before road width is re-allocated to right-turn or center turn lanes.

Building and maintaining complete streets includes providing a smooth surface for use by bicyclists and keeping that surface reasonably free of sand and other debris. MPO members should follow City and the County resolutions prohibiting the practice of leaving pavement seams within the shoulder or along the edge of the travel lane. MPO members should continue to develop sustainable strategies to sweep and plow shoulders, bike lanes and multi-use trails of sand, snow, and other debris in order to keep the bikeway system safely and conveniently operational throughout the year.

Recommendation 1.2: Create and implement programs to retrofit roadways in need of bicycle facilities.

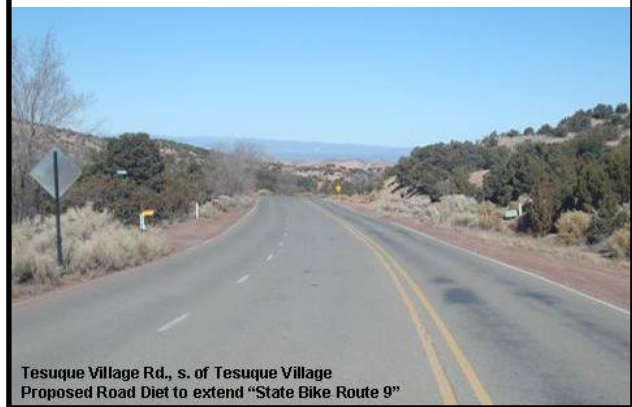
MPO members are also encouraged to pursue complete streets through “retrofits” whereby roadway width can be allocated to cyclists where needed. Bicycle facility retrofitting should focus on opportunities to restripe roadways in conjunction with resurfacing. Agency staff responsible for planning bicycle facilities should partner with maintenance staff for this specific purpose.

Analysis to retrofit bicycle facilities into street segments and intersections should utilize a multi-modal level of service analysis,³⁴ including analysis of relative levels of service on a given roadway among different modes, and also considering relative level of service on alternative alignments available to motorists and bicyclists.

Specific opportunities and priorities to retrofit local roadways to meet AASHTO guidelines for bicycle facilities through restriping or widening should be evaluated on a case-by-case basis. Top priorities for retrofits of city streets, county roads, and state highways are identified in Section B of this chapter and in Chapter VI., Implementation Plan. Retrofits can also be required of private developers, where impact of development warrants.



The City’s “Road Diet” on Cordova Rd. in 2008 reduced a four-lane section to two travel lanes with a two-way left turn lane and bike lanes, improving conditions for motorists, bicyclists, and pedestrians. There are several more promising candidates for “road diets” in the MPO area, including part of the County’s Tesuque Village Rd. (below).



**Tesuque Village Rd., s. of Tesuque Village
Proposed Road Diet to extend “State Bike Route 9”**

³⁴ See, for example, National Cooperative Highway Research Program, Multimodal Level of Service Analysis for Urban Streets, NCHRP Report 616, Washington DC: Transportation Research Board (2008) (http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_616.pdf)

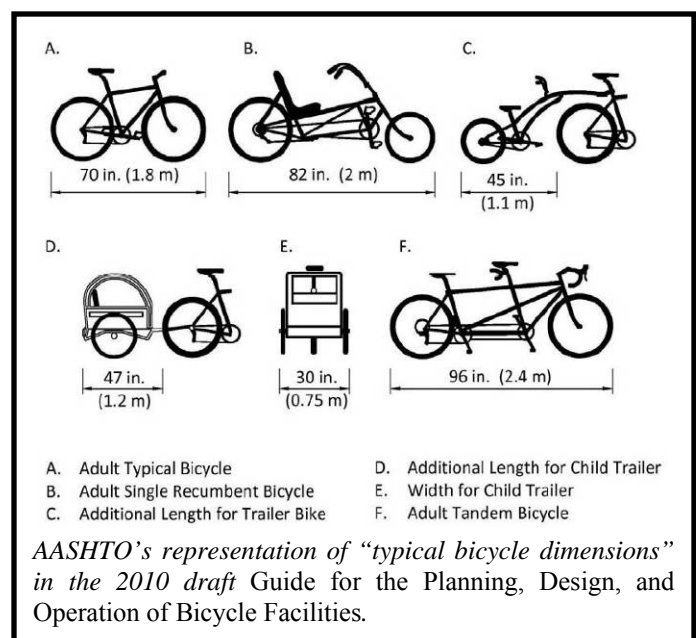
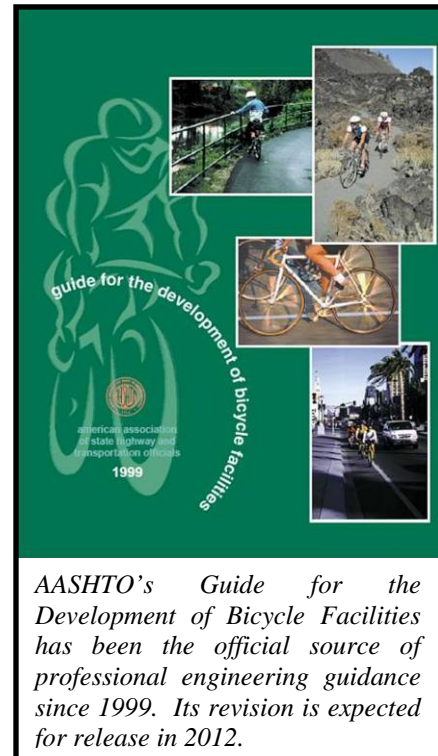
Recommendation 1.3: Adopt and Adhere to Established Engineering Guidelines for Planning, Designing, Building, and Maintaining Roads, Trail, and other Bicycle Facilities

This plan recommends that each MPO member agency, and other entities in the MPO area, adopt the latest AASHTO Guide for the Planning, Design, and Operation of Bicycle Facilities (current draft slated for adoption in 2012) as their own guidelines for the planning, design, construction and maintenance of on-road and off-road bicycle facilities as well as additional provisions for cyclists, such as bike racks. This recommendation applies to the City, County, Pueblo of Tesuque, and NMDOT as well as Santa Fe Public Schools, Santa Fe Community College, and other colleges and schools. Within agencies the recommendation should apply to streets departments as well as divisions responsible for trails, parks, and development review. Private developers, contractors, and design consultants should be held contractually responsible for understanding and following these guidelines.

In particular, roads should be designed and built as complete streets per recommendation 1.1 above, following specific AASHTO guidelines. In order to fulfill a transportation function, multi-use trails should likewise be designed and built as “roads for bicycles.” MPO members should make coordinated and focused efforts to design safe and convenient points of contact between multi-use trails and roadways (see text boxes on following page).

Just as the design vehicle for major roadways is a large truck, the design vehicle for our multi-use trails should be a bicycle with a two-wheel trailer. Corresponding attention must be paid to providing sufficient maneuvering and clear space within and around multi-use trails and particularly at points to access to trails.

MPO members are urged to take caution in strict application of ADA Accessibility Guidelines (ADAAG) and best practices for ADA to multi-use trails (See Appendix 10: A Proposed Policy with Regard to



ADA and Multi-Use Trails in the Santa Fe MPO Area). Designers should be aware that minimum widths and standard designs that are intended to satisfy ADA requirements for pedestrian facilities are typically inadequate for facilities serving multi-use trails. Designing for all users, including bicyclists, may thus mean limiting use of handrails, switchbacks, flat spots, and other constraints that may present significant inconveniences and hazards to bicyclists on multi-use trails. The MPO will work with member agencies to monitor development of more relevant guidance from US Access Board, particularly Shared Use Path Accessibility Guidelines currently under development.³⁵

Multi-use Trails (Paths) and Roads: Strategies to Improve Crossings

*“**Ramp Width** should be at least the same width as the shared use path.”*

*“**Curb cuts and ramps** should provide a smooth transition between the shared use path and the roadway.”*

*“**Transition zones:** Where shared use paths terminate at existing roads it is important to integrate the path into the existing road system... The designer should consider each path-road intersection along the length of the path as a potential entry/exit point.”*

Source: AASHTO Guide for the Development of Bicycle Facilities (1999). p. 50-51

Multi-use Trails (Paths) and Roads: More Guidance for Good Connections

“GEOMETRIC DESIGN ISSUES AT CROSSINGS

*The design approach for the intersection of a shared use path with a roadway is **similar to** the design approach used for the intersection of **two roadways** in the following ways:*

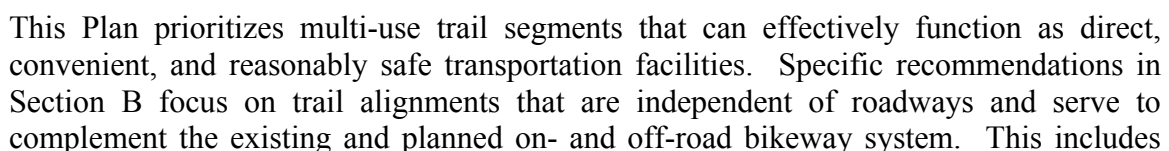
- *The intersection should be **conspicuous** to both road users and path users.*
- ***Sight lines** should be maintained to meet the requirements of the traffic control provided.*
- *Intersections and approaches should be on relatively flat grades.*
- *Intersections should be as **close to a right angle** as possible, given the existing conditions.”*

Source: AASHTO Guide for the Development of Bicycle Facilities (Draft 2010). p. 167

³⁵ See Architectural and Transportation Barriers Compliance Board (Access Board), “Shared Use Path Accessibility Guidelines, Advance notice of proposed rulemaking.” Federal Register: March 28, 2011 (Volume 76, Number 59). Available on line at <http://edocket.access.gpo.gov/2011/2011-7156.htm>.

This Bicycle Master Plan emphasizes that bikeway planning and development focus on continuing to develop “arterial” trail alignments and on-road and off-road connections to those alignments as detailed in Appendix 7. Map 5 below, “Expanded Bikeway System,” is a vision of an expanded bikeway network developed following this recommendation. Specific, prioritized recommendations for facility improvements to achieve this vision are provided in Section B below and in Chapter VI., Implementation Plan.

This expanded view adds additional connecting trails and on-road routes identified as part of the MPO Bikeway Mapping Project and the development of the Bicycle Master Plan, including a variety of extensions into Santa Fe County to create a more comprehensive bikeway system. This grid of safe and convenient bicycle facilities allows cyclists to travel between various parts of the city and throughout the greater metropolitan area without the need to use less accommodating or less comfortable higher-speed roadways.



longer “arterial” trail segments as well as specific small connections and crossing improvements with potential significant impact on the bikeway system.

Roadway improvements should also be strongly considered in the prioritization of investments in new bicycle infrastructure (see Section B below). While Recommendations 1.1 and 1.2 promote “complete streets” policies focusing on new construction and on opportunities to retrofit roadways through restriping, particularly in conjunction with maintenance projects, public investment in bicycle infrastructure should also address needs to pro-actively adjust intersections and trail crossings to benefit on- and off-road bicycle traffic and to widen selected roadways to create bike lanes or shoulders, as prioritized in Section B starting on p. 56.

The City and other agencies are encouraged to examine particular bicycle-pedestrian bridge crossings on a case-by-case basis, rather than follow a policy across the board, in order to determine whether increased costs are justified in order to accommodate heavy motor vehicle use across bridges.

Recommendation 1.5: Support pro-active maintenance of on-road and off-road facilities while minimizing impact to users

Area agencies are urged to reserve resources for regular maintenance of on-road and off-road bicycle facilities. On-road facilities should ideally be cleared and shoulder or bike lane surface, markings, and signage replaced or repaired on a routine basis along with the rest of the roadway. Roadway resurfacing by MPO area agencies should be applied to the entire roadway width, including bike lanes or paved shoulders to the edge of pavement. Drainage grates and cattle guards should be routinely inspected to assess needs for repairs or replacement if there are hazardous longitudinal slots that may catch bicycle wheels. Some cattle guards in urbanizing areas may be removed entirely if they are found to be no longer needed. Some maintenance of on-road facilities, such as the replacement of sharrows, may require the development of dedicated funding sources.

Maintenance of the growing multi-use trail system also needs to be integrated into agencies’ operational budgets. Some trail maintenance activities will require the development of dedicated funding mechanisms, particularly in order to program asphalt resurfacing and re-decking of bridges. Other activities require ongoing workforce development in areas such as erosion control and plant identification. Past successes in recruiting volunteers to maintain soft-surface trails may be replicated for the multi-use trail system, particularly with regards to identifying maintenance issues and providing coordinated volunteer labor where applicable. The community can be encouraged to “adopt” trail segments for trash removal and other light maintenance activities. Trail users can be encouraged to report conditions requiring staff attention, including through electronic media developed for that purpose. Community members could also be mobilized to assist in the removal of “goathead” plants from identified problem areas on a seasonal basis, i.e. when the plants are easily identified through their flowers (late summer) and before staff or contractors may inadvertently disburse thorns onto and around trails through mechanized mowing or “weed whacking.”

All agencies should keep motorized use of multi-use trails, even by authorized public agency staff, to a minimum for a variety of reasons, including surface preservation as well as the safety and convenience of non-motorized users. The City's Parks and Recreation Division in particular is encouraged to serve as a role model by limiting the use of heavy motorized vehicles on multi-use trails and exploring the use of non-motorized vehicles for some functions. A first step is to identify maintenance activities that can be conducted through the use of bicycles or adult tricycles, along with trailers, within our parks and along our trails. These services, which might include removal of trash and recyclable materials, could be contracted out or performed by city staff. Appropriate cycles designed for heavy-duty use would qualify for city purchase both for purposes of cost-savings and reduction of greenhouse gas emissions.



"The Pedal People," a private hauling firm in Northhampton MA, demonstrate that recycling and trash removal by bicycle is not only feasible but profitable. This kind of service could help limit the use of large motor vehicles in Santa Fe's parks and on multi-use trails while reducing the City's greenhouse gas emissions and operational costs. Photo by Adam Macchia courtesy of: <http://pedalpeople.com>.

Recommendation 1.6: Coordinate planning of bikeway facilities in the MPO area

Effective planning to support a metropolitan-wide transportation system for bicycles requires a comprehensive approach, and particularly a need to coordinate between planning for roads and for trails, between County, City, state, and tribal planning, and between other divisions within local entities, for example, within the City between Trails Division projects overseen by "BTAC" and Parks Division projects overseen by POSAC. Trail and roadway improvements should be pursued within a coordinated program of prioritized projects, and also as opportunities arise through public or private development along desirable alignments.

This plan recommends that the MPO and its member governments work together toward the establishment of a Bicycle-Pedestrian program, staffed by at least one, qualified Bicycle-Pedestrian Coordinator at the metropolitan and/or local levels. This staff member should have authority to coordinate agency planning, participate in review of project plans to ensure that pedestrian and bicycle needs are being met, and collaborate with agency staff in various program areas, particularly relating to streets, trails, parks, and open space, as needed.

Functions of a bicycle pedestrian program would include:

- develop coordinated and overarching strategy
- provide various levels of staff orientation and training
- guide planning and implementation following agreed-upon standards and guidelines

- develop advance planning and implementation activities such as strategic right-of-way acquisition and coordination with partners
- work closely with roadway maintenance programs to anticipate opportunities to include new bicycle facilities through restriping
- review trail, road, and other facility designs to ensure that non-motorized transportation needs are being met.



League of American Bicyclists:

“Bike staff levels correlate with overall bicycle-friendliness.”

“Eighty-eight communities in the U.S. have achieved bronze Bicycle Friendly status. Only 36 have received silver, gold, or platinum recognition. The elevated status of the top three categories is reflected in staff sizes. Non-BFCs average one and a half staff, bronze BFCs average three staff, and the top three categories combined average 11 staff. Larger staffs get communities to the next level.”

“In addition to large cities, many smaller communities have bicycle and pedestrian program managers. Davis, CA, a city of 62,000, has a city bicycle and pedestrian coordinator -- who works with their Bicycle Advisory Commission (BAC) -- and the University of California at Davis, has a campus bicycle coordinator.”

- “*Why Communities & States Need Bicycle and Pedestrian Staff.*”
(www.bikeleague.org/resources/reports/pdfs/why_bike_ped_staff_april_2010.pdf)

Recommendation 1.7: Provide bicyclists with useful guidance through Bike Route Signage and other wayfinding assistance on trails and roads

Bike Route signage should be used to provide bicyclists with useful guidance on how to navigate around the Santa Fe area.³⁶ Significant opportunities to improve and expand guidance for cyclists can be found at trail junctions, at intersections of trails with roads, along preferred on-road routes, and particularly along bikeways that alternate between on-road and off-road segments. Per the MUTCD, bike route signage should include complementary information including arrows, destinations, and possibly distance. Bike

³⁶ See AASHTO 1999, pp. 20-21; AASHTO 2010 (Draft) Section 2.3.5, “Wayfinding for Bicycles;” MUTCD, Chapter 9, Section 9B.20 “Bicycle Guide Signs.”

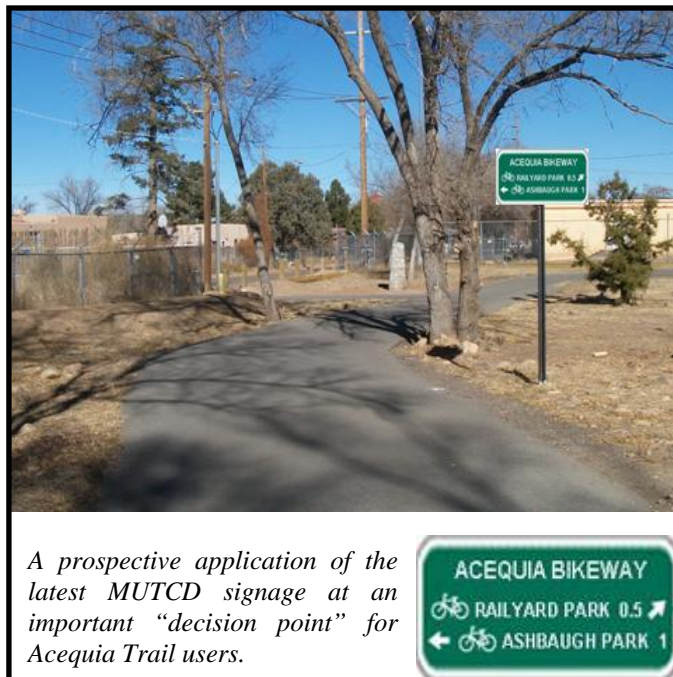
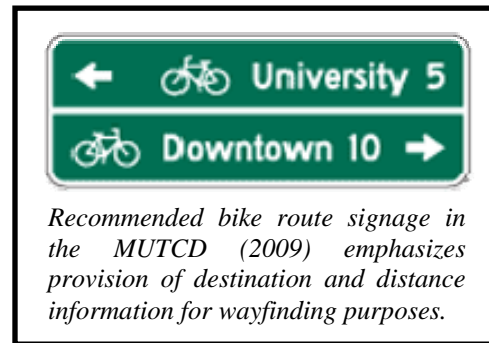
route signage should not be used as a generic declaration that a road or trail is a bicycle facility.

This Plan recommends that member agencies work together within the MPO's Unified Planning Work Program to develop a bicycle route signage plan for the MPO area. Section B of this Chapter provides specific recommendations on improving guidance through bike route signage. In addition to creating guidance along existing and planned alignments discussed in Chapter III, a new opportunity to provide longer-range guidance will come with the designation and promotion of "Bike Route 66" by Adventure Cycling Association (see text box on p. 68).

Pavement markings should also continue to be used to assist in wayfinding, particularly through stencils on multi-use trails where they meet roadways. Shared-lane arrows ("sharrows") can also be used to provide continuity on bikeways that alternate between bike lane and shared lane. Agencies may also consider marking the edges of multi-use trails that are not lit with high-visibility tape or edge line striping, and similarly marking any other significant, identifiable trail-side hazards.

Resources to assist with bicycle wayfinding in the metropolitan area should also support the continued revision and distribution of the Bikeway and Trails Map as well as posting copies of the map at strategic points within the bikeway system (see Section B).

Local entities are also encouraged to collaborate to develop arterial bikeway "branding" through symbols and other guidance so that users can easily understand and identify desirable routes, and to develop wayfinding interfaces with electronic media.³⁷



³⁷ See WPI 2011 (http://santafemipo.org/wp-content/uploads/2011/10/Report_D11_Trails.pdf).

Recommendation 1.8: Research, consider, promote, and implement best design practices

The MPO will work with member agencies to stay abreast of the latest research in the development of best practices for bicycle facilities and to identify opportunities to put such practices into use in the Santa Fe MPO area. This includes consideration of new striping options for bike lanes and shared lanes, use of shared-lane arrows, creation of bike boulevards, means of cyclist actuation of traffic signals, and general street design for pedestrian and bicycle safety, including traffic calming and intersection design (corners, medians, ramps, and signals).

For a review of emerging bikeway design areas, see Appendix 11 focusing on “Best Practices.” Particular attention should be paid to the latest and best practices with respect to trail crossings. MPO members are urged to use state-of-the-art pedestrian safety techniques for at-grade crossings and connections, as promoted by FHWA and AASHTO, combined with AASHTO’s more specific recommendations for multi-use trails. Guidance on particularly innovative bikeway treatments can also be drawn from NACTO’s Urban Bikeway Design Guide.

Multi-use Trails (Paths) and Roads: Some Criteria for a Good Connection

- Mark Crosswalks where appropriate (see FHWA, Safety Effects....) preferably with high-visibility striping.
- Reduce crossing distance.
- Warn/Slow motor vehicle traffic.
- Otherwise reduce exposure to motor vehicle hazards

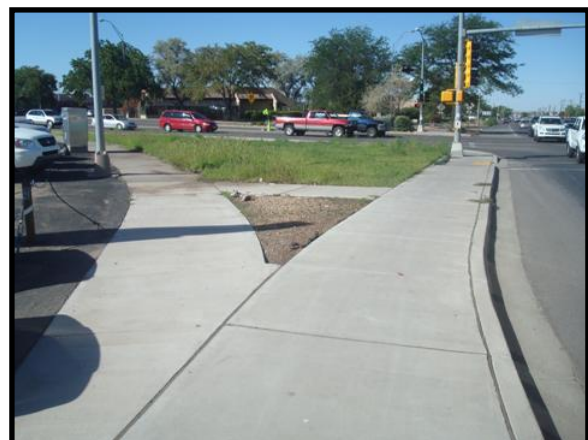
Multi-use Trails (Paths) and Roads: Some Tools to Improve Crossings

- Median Refuges
- Curb Radius Reduction
- Bulb-out/Bump-out
- Raised Crosswalks
- Signage and Striping

Source: AASHTO Guide for the Development of Bicycle Facilities (1999)
AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities (2004)



Retrofitting an existing culvert to create a trail underpass is a homegrown “best practice” that MPO members should seek to replicate elsewhere.



The City’s decision to eliminate a free-right turn at the southeast corner of St. Michael’s Dr. and Cerrillos Rd. served to benefit all roadway users, particularly pedestrians. This plan encourages similar actions at key trail crossings such as at St. Francis Dr. and Siringo Rd.

MPO members are specifically encouraged to identify opportunities to establish and improve mid-block trail crossings and other crossings at uncontrolled locations. Members are also encouraged to creatively use existing conditions to their advantage in the pursuit of grade-separated trail crossings, especially where it may be possible to utilize excess capacity of concrete box culverts or bridge underpasses.

Suggested Best Practices for Creating an Attractive Urban Environment

The following checklist was suggested by a member of this Plan's Citizens Advisory Group as a way to ensure aesthetic considerations are applied to all activities during the implementation of the Bicycle Master Plan:

- Inclusion of "aesthetic impact" as one of the criteria for early development of bicycle project planning at the City and County levels.
- Use of online and outside private resources in exploring creative and attractive new (or replacement) bicycle facilities developed in other regional, national as well as international locales;
- Review of Requests for Proposals to ensure that attractive design is included as part of the evaluation process;
- Coordination among agencies to ensure that aesthetic elements are implemented and properly maintained;
- Coordination with other public and nonprofit agencies, such as Warehouse 21, Santa Fe University of Art and Design (SFUAD), granting organizations, or the City Arts Commission, to maximize available resources that can be used for beautification. Resources could include not only grants and subsidies but creative talent and manpower.
- Collaboration with public and nonprofit agencies to sponsor such events as design competition for facilities or other means to elicit realistic creative responses to defined needs.
- A recognition that while the cost of beauty (versus pure functionality) may be small, the benefits in civic attractiveness and pride may be great.

Recommendation 1.9: Improve and expand bicycle parking

This Plan recommends that MPO, local agencies, and community members, including the local art community, take the following steps to increase the quantity and quality of bicycle parking available to local cyclists, visitors, transit users, and public and private employees:

- Ensure that development codes require parking that meets AASHTO and APBP guidelines, and particularly APBP's Bicycle Parking Guidelines (see p. 35).



The Coffee Cup. Fabrication: New Project, Brooklyn, NYC 2008 (Photo courtesy of www.davidbyrne.com).

- Inventory and map bicycle parking in high-demand areas.
- Continue to program installation of new bike racks in public spaces and to explore demand for bike lockers and other forms of bike parking at transit hubs, places of employment, and other locations.
- Encourage the creation of bike racks as art in public spaces. Consider reserving funding in order to hold a design competition to select 10-12 bike rack designs to have locally manufactured.³⁸
- Provide adequate quality and quantity of bicycle parking at all city, county, and state agency facilities.
- Recognize the role that bicycles play in reducing motor vehicle parking demand:
 - Consider creation of a bike rack program within City Parking Division
 - Consider use of abandoned parking meter posts when meter parking is converted to ticket system (see photo).
 - Consider conversion of on-street motor vehicle parking spaces into on-street bicycle parking (known as “bike corrals”), where sufficient demand exists.



A bike corral in Portland, Oregon (photo courtesy of BikePortland.org).

- Provide incentives for private businesses to improve bicycle parking retroactive to development, or to provide enhanced bicycle parking as part of development.
- Require provision of attended bicycle parking at outdoor events such as Zozobra, the Folk Art Fiesta, events at the plaza, baseball games, and other athletic events.³⁹



When pay stations replaced parking meters in Nob Hill, the City of Albuquerque converted the posts into attractive and functional pieces of the sidewalk streetscape.

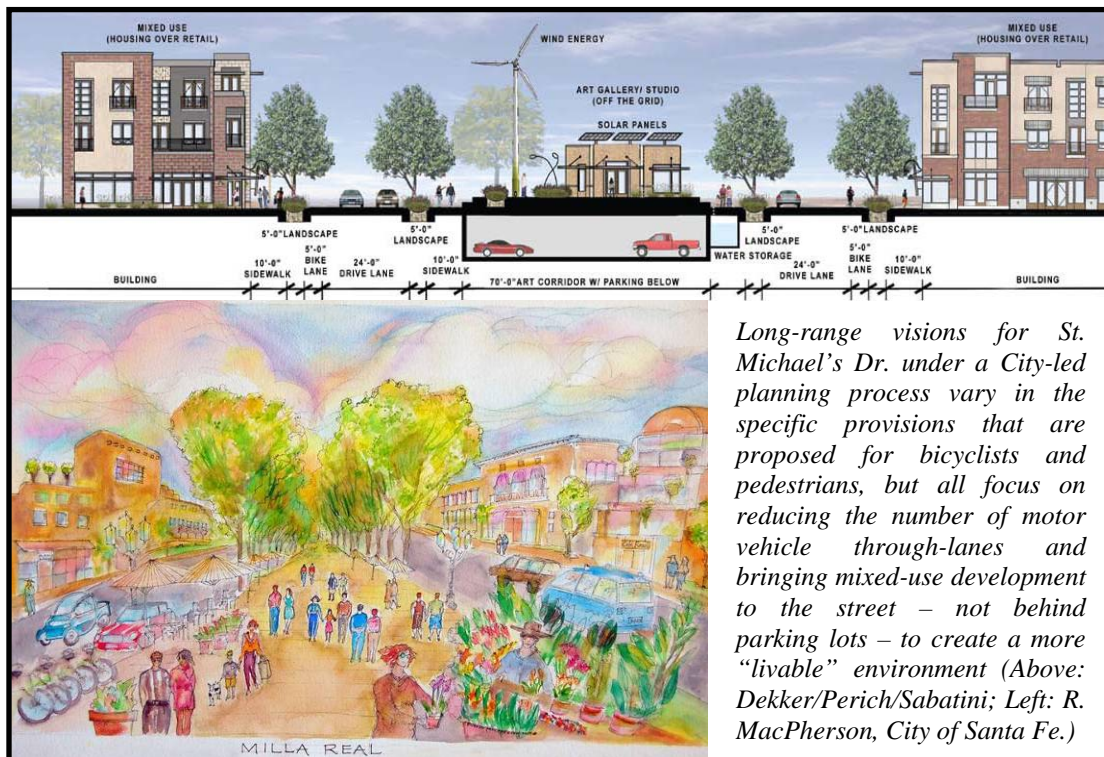
³⁸ For example, see a collaboration with NYDOT described at www.davidbyrne.com/art/bike_racks/index.php.

³⁹ For an example of a requirement along these lines, see San Francisco Municipal Transportation Agency (SFMTA), <http://www.sfmta.com/cms/vclos/13487.html>.

Recommendation 1.10: Support Higher-Density, Mixed-Use Development

MPO members are encouraged to support initiatives to promote higher-density, mixed-use development in and around Santa Fe, in order to significantly reduce number and distance of trips and facilitate walking and bicycling as healthy, environmentally-friendly, and community-building transportation. This includes supporting the Sustainable Santa Fe Commission’s campaign for a “Green Development Code” to create incentives for higher-density and mixed-use developments within the City of Santa Fe, and guiding development of relevant material in the County’s Sustainable Development Code, currently under way.

MPO members should continue to support transit, transit-oriented development, and specific planning initiatives, such as the City’s long-range planning activities around St. Michael’s Dr. and Airport Rd., that seek to re-orient commercial and residential areas to better serve Santa Feans and their guests at a pedestrian scale.



Recommendation 1.11: Provide Critical Connectivity for Bicyclists and Pedestrians

Design and construction of private and public developments should be required to include bicycle and pedestrian access to adjoining land uses. Retail centers, neighborhoods, parks, schools, and other public facilities should be specifically designed to facilitate access to and from adjoining spaces. Due effort should be put into dedicating publicly owned land and easements to bicycle and pedestrian use, and to negotiate with private landowners in order to do so, where critical connectivity can be created.

Many critical connections are identified as specific priorities in this plan, others are identified in the MPO's Bikeways Mapping Project materials (e.g. "Revised Inset Maps," January 2012) while many more will depend on site-specific analysis for private and public projects under consideration. The MPO will work with member agencies to pursue the following strategies to create connectivity:



Renovations to Ragle Park in 2011 included this tie-in to an adjacent neighborhood, providing residents with pedestrian and bicycle access not only to the park but to nearby Chaparral Elementary School as well. Typically there are some who will object to these kinds of connections due to perceived security threats posed by foot traffic. This Plan proposes that local agencies recognize the benefits of formal connections between adjacent land uses and pursue them as a standard policy rather than an exceptional treatment.

- Continue to strengthen the City's Chapter 14 provisions, and develop comparable County regulation, discouraging the creation of cul-de-sacs and encouraging bicycle-pedestrian access via trails and calm roads.
- Use parks and open space to facilitate, not discourage, through access for bicyclists and pedestrians. Routes dedicated for emergency access and/or maintenance access to neighborhoods and public facilities should routinely accommodate pedestrian and bicycle use as well.
- Connect multi-use trails directly to adjacent land uses, as well as trails and roads, just as roads area connected to driveways and side streets. These connections can be included in trail design and construction and/or negotiated with private developers and landowners.
- Close remaining critical gaps in the trail system through strategic, advanced planning based on priorities established in the Bicycle Master Plan. In many cases, the City and County will need to patiently work with private landowners or public agencies to identify and secure desirable alignments well before resources are necessarily reserved for design and construction of related trail segments.

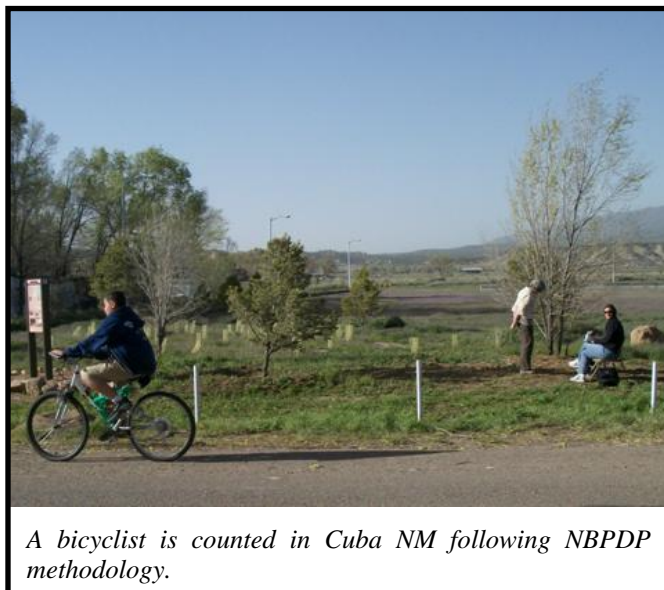
Recommendation 1.12: Gather Data to Support and Guide Bicycle Planning

Documentation of the use of bicycles and of the challenges and hazards that bicyclists face is important to justify and guide investments in bicycling in Santa Fe. This Plan's recommendation is that local agencies, under coordination of the MPO, begin to collect and analyze crash data and traffic volume data for pedestrians and bicyclists in order to inform local planning, including the next update of the MPO's Metropolitan Transportation Plan (MTP), scheduled for 2015, and the anticipated update of this Bicycle Master Plan within five years.

Analysis of bicycle and pedestrian traffic patterns may draw from review of existing resources (e.g. crossing movements recorded at intersections) as well as establishment of dedicated bicycle and pedestrian traffic counts on key facilities. Also of interest is survey data that may inform analysis of bicyclists' travel routes, needs, and desires for a better bikeway system. Tools and methodologies for bicycle and pedestrian traffic counts and surveys are available through the National Bicycle and Pedestrian Documentation Project (NPPDP).⁴⁰

Data gathering can be made easy and cost-effective through judicious use of staff, consultant, and volunteer time. The MPO will begin counting of bicyclists and pedestrians at selected locations in 2012. MPO members should also ensure that motor vehicle traffic counting efforts include observation of bicyclist and pedestrian movements to the greatest extent possible.

The MPO will also work with local governments and with UNM/Division of Government Research to improve the collection and analysis of bicycle crash data. This analysis may draw from official crash reports as well as hospital and emergency service records.



A bicyclist is counted in Cuba NM following NBPDP methodology.

⁴⁰ See <http://bikepeddocumentation.org>.

B. Specific Recommended Bicycle Facility Improvements, with prioritization

The MPO Bikeways Mapping Project identified prioritized alignments based on local planning as well as a metro-area wide analysis emphasizing transportation considerations. The analysis continued under the development of this Bicycle Master Plan and the results are presented here under headings for road retrofits, trail projects, improvements to trail crossings and connections, and guidance signage and other wayfinding tools. Further recommendations for phased implementation of these specific projects are presented in the implementation plan (Chapter VI).

1. Completing Streets: Retrofitting Roads

The MPO Bikeways Mapping Project identified priorities to provide bike lanes or shoulder space to specific roads through restriping, resurfacing, or widening. This Plan recommends that each MPO member agency develop a program to study, and where found to be feasible, implement road retrofits to create bike lanes or shoulder space. Specific road retrofit recommendations include the following:

a. “Road Diets”

Road diets are a means of creating bike lanes by reducing the number of motor vehicle lanes. The following candidates are recommended for study and possible implementation in the short term:

- Siler Rd. (four lanes to three), south of Agua Fria St.: This opportunity has been studied and is currently being pursued by the City.
- Paseo de Peralta (4>3): Canyon Rd. to Old Santa Fe Trail
- Tesuque Village Rd. (3>2): County Rd. 73 from US84/285 (south interchange) to Tesuque River bridge, eliminate climbing lane (and sign as State Bike Route 9)
- Old Las Vegas Highway (Frontage Road 2108); consider feasibility of eliminating third lane west of JCT Ojo de la Vaca Rd. to Paseo de la Luz (0.6 miles) (3>2); restore shoulders west of Paseo de la Luz to JCT US285 (1.6 miles); Sign as Bike Route 66



Old Las Vegas Highway, w. of Ojo de la Vaca Rd.: This state highway along I-25, which will soon be the entry of “Bike Route 66” into the Santa Fe area, is a great place for a “Road Diet.”

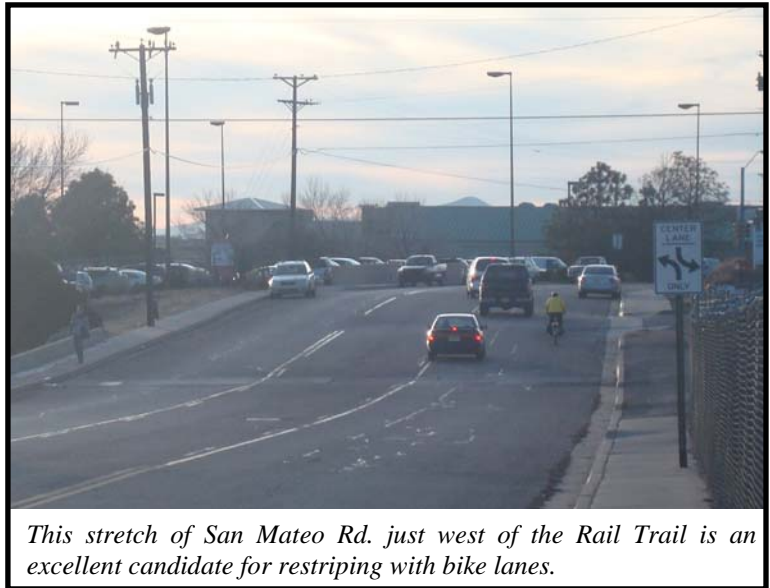
Consider the following additional “road diet” opportunities for possible medium- to long-term implementation:

- St. Michael’s Dr. between Cerrillos Rd. and St. Francis Dr. (6>4, with left-turn bays, as proposed in City long-range planning studies), once City of Santa Fe has assumed responsibility for this facility; meanwhile, consider bike lane retrofit through lane width reduction when resurfacing occurs
- Paseo de Peralta (4/5>3): Old Santa Fe Trail to Guadalupe
- Paseo de Peralta / NM475 (5>3, or through reduction of lane widths): St. Francis Dr. to Washington Ave.
- Long-term consideration of other multi-lane roadways including other segments of Cerrillos Rd. (e. of St. Francis Dr.), St. Francis Dr., Guadalupe St., and Paseo de Peralta (St. Francis Dr. to Old Santa Fe Trail).

b. Other Road Retrofits through Restriping

The following retrofits could be accomplished by reducing the width or number of motor vehicle lanes (particularly at intersections), and/or reducing on-street parking:

- Galisteo St. from Hospital to Harkle (restripe), eventually consider from San Mateo to dead-end at St. Francis Dr. Trail
- Siringo Rd: Ave. de las Campanas to St. Michael’s High School, reduce center turn lane width, route through St. Francis Dr. intersection
- San Mateo: Galisteo St. to 2nd St. (see photo).
- Pacheco St.: south of St. Michael’s Dr. to north of San Mateo
- Wagon Rd.: Retrofit bike lanes through reducing lane widths, eliminating turn lanes, or consider widening
- Osage: consider striping bike lanes south of San Ildefonso.



This stretch of San Mateo Rd. just west of the Rail Trail is an excellent candidate for restriping with bike lanes.

c. Specific intersections where through-bike-lanes should be considered

- Cerrillos Rd. and Airport/Rodeo Rd. Bike lanes or paved shoulders with Bike Route signs approach from all four directions but are dropped shortly before the

intersection. Space exists today on eastbound Cerrillos, with drop-lane configuration per AASHTO 1999.

- St. Francis Dr. and Cerrillos Rd.: westbound Cerrillos Rd., east of St. Francis Dr., could be a candidate for a special bike lane application to encourage on-road cyclists to cross the rail tracks at a perpendicular angle, with the bike lane connecting to the existing striped shoulder along the New Mexico School for the Deaf property. Eastbound Cerrillos Rd. could merit a similar treatment.
- Pacheco St. and San Mateo: recently rebuilt with right-turn lanes on each approach. Review whether these are warranted vs. space needed for bike lanes; this review should include consideration of even lower level of service for bicycles at the nearby interchange of St. Michael's Dr. and St. Francis Dr.
- Yucca St. at W. Zia: right-turn lane recently installed at the expense of striped shoulder, part of a "Bike Route" designated in 1993.
- W. Alameda at Camino Alire: Dedicated right-turn lane on eastbound W. Alameda only serves motorists if there is no queue in the through lane. Review whether the turn lane can be removed in favor of a bike lane, which could facilitate a bike lane from Ave. Nopal to St. Francis Dr. as well as improve conditions for the sidewalk and pedestrian crossings at this intersection.
- Cerrillos Rd. and St. Michael's Dr./Osage: Bike lanes on Cerrillos exist to the northeast and are planned to the southwest but do not continue through this intersection. Bike lanes also should be considered along St. Michael's and Osage.
- St. Francis Dr. and St. Michael's Dr. (interchange): Evaluate opportunities to stripe bike lanes on St. Michael's Dr. between Galisteo Rd. and Pacheco St.

d. Road Retrofits: Contra-flow bike lanes

Santa Fe has a handful of opportunities where contra-flow bike lanes may be considered to provide bi-directional travel for cyclists on otherwise one-way streets. One contra-flow candidate (see photo) is prioritized based on feasibility and impact. Other candidates described in Appendix 11 may be worth reconsidering once there is more experience with this technique.

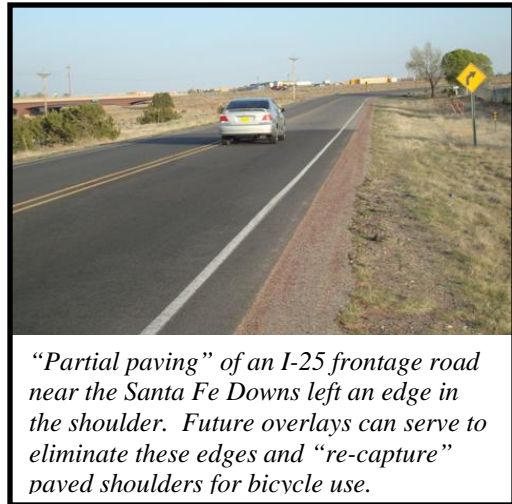
Permitting west-bound bicycle traffic on W. San Francisco St. from the plaza to Don Gaspar ("State Bike Route 9" south) and beyond to Galisteo St., where W. San Francisco becomes a two-way street, would provide critical connectivity for east-west and north-south travel. It could be accomplished with no significant conflicts and minimal changes to existing signage and striping; one possible conflict with motorists entering from Galisteo St. could be remedied with spot striping and signage.



e. Road Retrofits through Resurfacing

Roadways whose shoulders have been abandoned or compromised by incomplete pavement overlays should be remedied through the next maintenance overlay, or any time when part or the entire roadway is reconstructed. Prominent examples of candidates for “recapturing” usable shoulder space through complete overlays include:

- NM599 frontage roads and stub-outs (e.g. parts of Camino La Tierra, Buckman Rd., Via Abajo, CR 70)
- I-25 frontage roads west of NM14, where shoulders exist
- NM14, Lone Butte to Madrid
- NM14, I-25 to NM599, where shoulders exist
- Hyde Park Rd., where shoulders exist (e.g. city/county line)
- Old Las Vegas Highway (NM300 / State Bike Route 9)
- Old Las Vegas Highway (FR 2108) (restore shoulders w. of Paseo de la Luz)
- Rabbit Rd., older section between St. Francis Dr. and new, curbed section.



f. Road Retrofits through Widening

Widening roadways to accommodate bicycles requires significant resources. Under a “complete streets” policy, bike lanes or shoulders should be strongly considered whenever major roadways that lack them are reconstructed, whether they are state highways, county roads, or city streets. As a general rule, those roads that are shown as orange on the Santa Fe Bikeways and Trails Map are those that have been identified as lacking sufficient space for bicyclists: those that cannot be remedied through restriping or resurfacing proposals shown above should be considered for widening, particularly if they are under consideration for reconstruction.



Some high-priority narrow roadways warrant specific projects to create bicycle facilities through road widening. The MPO Bikeways Mapping Project identified a variety of

higher-priority roadways in the MPO area that could be improved for bicyclists through widening; continued analysis based on demand, connectivity, and feasibility provides the following list of top-ranked candidates:

- Galisteo Rd., San Mateo Rd. to Hospital Dr.
- Old Santa Fe Trail, E. Zia Rd. to El Gancho Way
- Camino de las Crucitas, Michelle Dr. to Buckman Rd.*
- Ave. del Sur, east and west of Amy Biehl School
- Hyde Park Rd. (NM475)*
- Gov. Miles Rd., Richards Ave. to Pueblos del Sol
- Wagon Rd. (after considering restripe)
- San Felipe Rd., Airport Rd. to Agua Fria St.
- W. Alameda St., Calle Nopal to Siler Rd.
- W. Alameda St., near Chicoma Vista to NM599 frontage road
- Rancho Viejo Blvd.
- NM14 north of NM599 (restore shoulders at traffic islands)
- Bishop's Lodge Rd.: Washington Ave. to Bishop's Lodge*
- Rodeo Rd., Old Pecos Trail to W. Sawmill Rd.
- Tesuque Village Rd. (CR72) north of Tesuque Village
- Old Santa Fe Trail, south of El Gancho Way*
- Henry Lynch Rd.
- W. Zia St., e. of St. Francis Dr.(after considering restripe)
- W. Zia St. and Rodeo Rd., w. of Camino Carlos Rey (after considering restripe)
- Buckman Rd., Camino de las Crucitas to transfer station*
- NM592, Tesuque Village Rd. to Rio en Medio.*

* - Where grades are steep and space is limited, a single shoulder may be considered on the climbing side.

g. Shared Lane Arrows (Sharrows)

This plan concurs with the findings of the BTAC On-Road Subcommittee's Memo to BTAC of June 21, 2011, proposing that the City consider certain new locations for sharrows, as well as "Share the Road" signs. This plan proposes consideration of a small number of additional locations.

- Paseo de Peralta between E. Alameda and Washington St.
- Osage north of San Ildefonso St., and any other identified transitions from bike lane or wide shared lane to narrow shared lane.
- Guadalupe St. between Manhattan and Agua Fria

- Jaguar, Paseo del Sol W., S. Meadows: Consider sharrows where there is no bike lane or wide shared lane

The following locations may also be considered for sharrows pending further analysis of roadways, crash data, and any evidence of motorist harassment of bicyclists; also pending availability of specific funding for sharrows, and in the absence of other remedial actions such as bike lane retrofits proposed above:

- Mid-block locations with on-street parking with evidence of “dooring” crashes
- Intersection approaches with evidence of “right hook” crashes or other need for guidance for on-road cyclists (e.g. across skewed rail on Cerrillos Rd.)
- Other low- to medium-speed 4-lane roads with no bike lane or shoulder, e.g.:
 - Guadalupe St. from Agua Fria north to Paseo de Peralta
 - Paseo de Peralta where lacking shoulder between St. Francis Dr. and Washington Ave.
 - Paseo de Peralta where lacking sharrows between Rail Trail and E. Alameda St.
 - Cordova Rd. between Cerrillos Rd. and Don Diego St.



Replacing existing sharrows in poor condition as identified and proposed by BTAC’s On-Road Subcommittee, will likely require a dedicated funding source. The City Council has included this expense within current Capital Improvement Program (CIP) bond funding.

2. Prioritized Trail Improvements

Under the Bikeways Mapping Project, planned and proposed trail improvements in the MPO area were assessed with respect to:

- prospective local demand, based on land use and presence of specific traffic generators such as schools, parks, and transit centers
- connectivity, both as a multi-use trail and as a bikeway (including consideration of road connections)
- feasibility, including land ownership and status, topography, need for and feasibility of structures and/or crossing treatments
- specific safety considerations.

A scoring system was developed whereby the desirability and level of priority of a given segment might be weighed against another. The methodology and findings of this process, continued under the development of this Bicycle Master Plan, are provided in more detail in Appendix 12.

a. Construction of Paved Multi-Use Trails

Among over 100 proposed segments or groups of segments examined, top-ranking candidates for construction of paved multi-use trails are listed in Table 2 below. This ranking based on impact and feasibility is the foundation for specific phasing of trail development presented in the implementation plan in Chapter VI (Tables 8-10) and on Maps 5-13 at the end of this document.

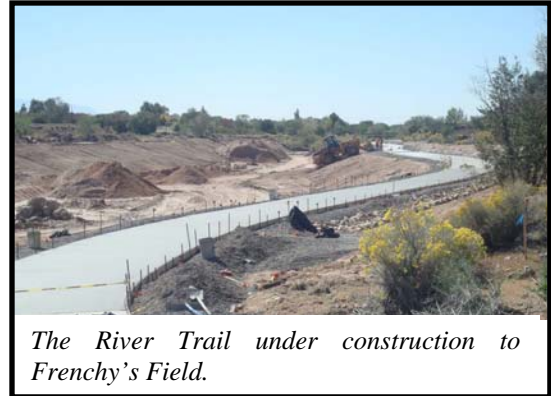


Table 2. Top-ranking proposed paved multi-use trail segments, ranked according to impact and feasibility

Rank	Trail Segment	Score
1	RAIL TRAIL: Tie in across rail to Sidewalk along Cerrillos Rd., e. of St. Francis Dr.	36
2	RIVER TRAIL: Don Gaspar to Camino del Campo, w/underpasses	33
3	RAIL TRAIL: St. Francis Dr. to Cordova (along Pen Rd.)	32
3	RIVER TRAIL: Ramps & Crosswalks to Camino de Campo and to Candelario St.	32
5	ACEQUIA TRAIL: Grade Separated St. Francis Crossing	31
5	RAIL TRAIL: Cordova to Alta Vista (S. Capitol Station)	31
5	RIVER TRAIL: Connection to La Madera St.	31
5	RIVER TRAIL: Connection to Cam. de la Conquistadora w. of Camino Alire	31
5	RIVER TRAIL: Connection to Cam. De Chelly at Frenchy's Field	31
10	ACEQUIA TRAIL: Hmnos Rodriguez Park to Harrison	30
10	ACEQUIA TRAIL: Bridges to Oñate and Kathryn	30
14	RIVER TRAIL: Connection to Closson St.	29
14	ARROYO DE LOS CHAMISOS TRAIL: Improve connection to Santa Fe Place	29
14	ACEQUIA TRAIL: Otowi to Maclovio Park	29
14	ACEQUIA TRAIL: Connection to Larragoite Park (w/ X-Walk) & Agua Fria St.	29
14	RIVER TRAIL: Camino del Campo to St Francis Dr. (widen existing trail)	29
19	TIERRA CONTENTA (N. Arroyo Chamiso): Buffalo Grass Rd. to S. Meadows	28
19	ARROYO HONDO: NM599 Station to Fire Place Rd. via abandoned I-25 on-ramp	28
19	ACEQUIA TRAIL: Rufina to San Felipe, with connector and crosswalk at Agua Fria	28
19	ARROYO CHAPPARAL TRAIL: from Ragle Park to Zia Station via Candelero Park	28
19	LA TIERRA TRAILS: Connect from Camino de los Montoyas via NM599 Underpass	28
19	SFUAD ROADBED along E. Boundary, w/tie-ins to DeVargas M.S. & La Farge Lib.	28
19	NM CENTRAL / KENNEDY LINE: Piñon ES to Pueblos del Sol Trails	28
19	MRC TRAIL: River Trail to Caja del Rio Rd./NM599 frontage (via NM599 underpass)	28
19	RAIL TRAIL CONNECTION: Monterrey	28
19	RIVER TRAIL: Frenchy's Field to Siler Rd.	28
19	RIVER TRAIL: San Ysidro Crossing to Caja del Oro Grant Rd. (pave existing trail)	28
19	RIVER TRAIL: Widen connection @ Ave. Cristobal Colon	28

For the full list of ranked trail segments, see Appendix 12.

b. Construction of/Formalization of Easements for Soft-Surface Trails

Also among the proposed trail segments examined were a smaller group of soft surface trail improvements, several of which provide critical connections to recreational, soft-surface trail networks (see Table 3). In many cases, these segments may serve an important transportation function by providing alternatives to road segments that hikers and mountain bikers might otherwise use to arrive at recreational trails. These trails, which need not be paved to serve this function, are an opportunity to create significant bikeway and trail connectivity at a relatively minor cost. These segments also appear in Tables 8-10 in Chapter VI., Implementation, and on Maps 5-13.

Table 3. Top-ranking proposed soft-surface alignments, ranked according to impact and feasibility.

Rank	Trail Segment	Score
1	COUNTY RAIL TRAIL: Improvements, Rabbit Rd. to Spur Trail	28
1	SPUR TRAIL: Connect into SFCC from east	28
3	COUNTY RAIL TRAIL: Improvements, Spur Trail to Ave Vista Grande	27
4	COUNTY RAIL TRAIL: Improvements, Ave Vista Grande to New Moon Overlook	25
4	DALE BALL TRAILS: La Piedra Connection to Little Tesuque River (SFNF Trails)	25
4	SARAH WILLIAMS TRAIL: Gonzales Rd. to Dale Ball Trails along Hyde Park Rd.	25

c. Long-range trail alignments

Longer-range proposed trail alignments connecting to areas outside of the MPO area do not rank high for local demand and connectivity for transportation purposes, but MPO members and partners are encouraged to stay abreast of long-term opportunities to develop these alignments both for transportation and recreation. These include:

- The abandoned NM Central RR Line from Eldorado to Galisteo
- Down the Santa Fe River to the Rio Grande at Cochiti Lake
- Along the Chili Line, among other possible routes northwest to the Rio Grande
- Along Galisteo Creek toward Glorieta.

For further descriptions of these alignments, and prospects for their development, see Appendix 7.

d. Maintenance: Repaving Multi-Use Trails

In addition to trail construction, MPO members will need to continue to maintain existing trail inventory, including major resurfacing of older segments. Based on current condition and age, significant asphalt trails that will need to be considered for resurfacing in the near- to medium-term are summarized in Table 4.

Table 4. Multi-use trail alignments as candidates for re-paving, based on age and observed condition

Rank	Trail Segment	Distance
1	ARROYO DE LOS CHAMISOS TRAIL: between Yucca St. and Rodeo Rd.	2 mi.
2	ARROYO DE LOS CHAMISOS TRAIL: along Nava Ade	¼ mi.
3	ARROYO DE LOS CHAMISOS TRAIL: between Siringo Rd. and Yucca St.	¾ mi.
4	RAIL TRAIL: between Siringo Rd. and Arroyo de los Chamisos	¼ mi.
5	GAIL RYBA TRAIL/"ZIA RD. TRAIL": from St. Fr. Dr. Trail to W. Zia	¼ mi.
6	RAIL TRAIL: between St. Michael's Dr. and Siringo	½ mi.

3. Recommended Improvements to Trail Crossings and Connections to Roadways

a. Grade-Separated Street Crossings

Grade separated crossings should include multi-use trail ramps to the roads that are crossed whenever possible, except in cases of limited access highways such as the NM599 main line and I-25.

(i). Utilize existing grade-separated crossings that are not yet served by formal trails:

- NM599 equestrian crossings (MRC Trail, Aldea area, La Tierra Trails)
- Arroyo de los Chamisos Trail at NM14 (to connect Las Soleras & Entrada Contenta)
- River Trail, built benches underneath Siler Rd. and S. Meadows Rd.

(ii). Plan for desired grade separations in future road, bridge, and culvert construction (e.g. as proposed in Las Soleras for the Arroyo de los Chamisos Trail).

(iii). Utilize space beneath bridges and within culverts, as trail or road improvements occur

- River Trail at three downtown bridges (Guadalupe, Sandoval, Galisteo), as envisioned in River Parkway design
- River Trail at NM599 bridge
- Richards Ave. side path(s) at I-25, pending development of adjacent land.



This trail underpass near Camino de los Montoyas is one of three "equestrian" underpasses that were included in the construction of NM599 by NMDOT. Under the City's new La Tierra Trails Master Plan, this will be the first to be integrated into a formal multi-use trail.



Arroyo de los Chamisos, downstream from Tierra Contenta: One of these openings may house a trail underpass planned through the "Pavilion" project.

(iv). Continue to pursue creation of trail underpasses using excess water carrying capacity of existing concrete box culverts, based on model of Arroyo de los Chamisos Trail underpass at Rodeo Rd., pending priority of trail segments served and/or opportunities to integrate into future developments:

- Arroyo Hondo Trail at NM14 (to NM599 station)
- Arroyo de los Chamisos Trail at NM599 (via Pavilion project)
- Arroyo Chaparral Trail at W. Zia Rd. (to connect north to Arroyo de los Chamisos Trail)
- Arroyo Hondo at I-25 and at NM599 (pending development)
- Arroyo de los Chamisos at Gov. Miles Rd. (if trail is to pass along arroyo through current auto park to north).

(v). Continue to research and consider major investment in other major grade-separated crossings

- Acequia Trail at St. Francis Dr. (medium term / under consideration by City)
- River Trail at St. Francis Dr. (consider for medium- to long-term)
- Rail Trail at St. Michael's Dr. (consider underpass, medium-to-long term)
- NM Central Line at I-25 (consider for long-term, if trail alignment is developed)

b. At-Grade Street Crossings and Connections

Dedicate resources to improve significant trail crossings and connections following AASHTO engineering guidance and best practices. Higher-priority improvements to facilitate safe and convenient movements between trail and street are summarized in Table 5 and Table 6:



Table 5. Recommended Improvements to Existing Trail Crossings

<i>Trail</i>	<i>Crossing Location(s)</i>	<i>Crossing Type</i>	<i>Recommendation(s) (Also see Appendix 10)</i>
Arroyo de los Chamisos	Yucca, Cam. Carlos Rey, Ave. de las Campanas	Uncontrolled, mid-block	Remove gates, consider median refuge on Yucca, rebuild median and speed table on Ave. de las Campanas. Re-examine signage for motorists.
St. Francis Dr. Trail	Siringo (signalized)	Signalized	Mitigation of side path condition: eliminate free right turn off of westbound Siringo, reduce corner radii, expand median refuge; examine signal timing
Acequia Trail	St. Francis Dr., Cerrillos Rd., and S.F. Southern Railroad tracks	Signalized	Improve crosswalk orientation, reposition and widen ramp
Acequia and Rail Trails	St. Francis Dr., Cerrillos Rd., and S.F. Southern Railroad tracks	Signalized	Examine Signal timing; opportunity to show walk signal along Cerrillos during train crossign phase
Rail Trail	Lower-speed two-lane roads (Alta Vista St., San Mateo/Second St., Siringo Rd.)	Uncontrolled, mid-block	Mark with high-visibility crosswalk markings, consider providing median refuge on Alta Vista St.
Rail Trail	Rodeo Rd. (currently three lanes)	Uncontrolled	Mitigation of side path condition: Relocate to east side of tracks; improve median as refuge; mark with high visibility crosswalk markings.
Various (Railyard Park): (a) Chili Line and Acequia Trails, west of Gilmore St.; (b) between Early St. & Alarid St.	Cerrillos Rd.	Uncontrolled	Provide ramps and median refuges; reduce corner radius (Alarid); consider striping and other measures.

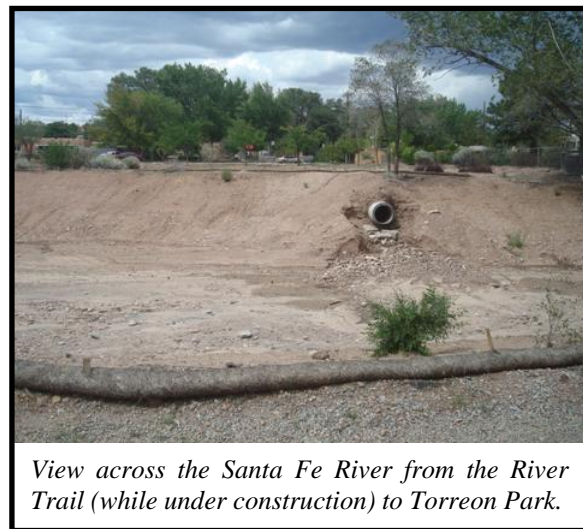
Table 6. Recommended Improvements to Existing Connections to Streets.

<i>Trail</i>	<i>Connection Location</i>	<i>Recommendation</i>
River Trail	Ave. Cristobal Colon	Widen or rebuild ramp
Arroyo de los Chamisos	Santa Fe Place	Widen connection, build ramp, consider other improvements or other location to connect to bus stop
River Trail	Caja del Rio Rd.	Build ramp to sidewalk
Arroyo Hondo Trail	Vista del Arroyo	Rebuild as AASHTO-compliant connection when trail is paved.

Examples of model at-grade crossings, both in Santa Fe and elsewhere, are illustrated in Appendix 11 on “Best Practices.”

c. Crossing Topographical Barriers

Because the River Trail is an arterial bikeway connecting various land uses in various parts of the metropolitan area, there will continue to be a need to provide for non-motorized crossings of the river, typically via bicycle-pedestrian bridges, at various locations, including: west of DeFouri St. (for planned River Parkway Trail); west of Camino Alire (aligned with Torreon Park) and/or between Griego Park and Ave. Rincon de Torreon; and west of Lopez Lane/Caja del Oro Grant Rd. (aligned with Camino Atajo).



View across the Santa Fe River from the River Trail (while under construction) to Torreon Park.

Other challenging features to cross when relevant bikeway alignments are being pursued include the Acequia Madre at Kathryn St. and Oñate Pl. dead-ends, the Arroyo Chaparral near Sawmill Rd. and near Candelario Park, the Arroyo Hondo at the NM Central RR alignment, and the Arroyo de los Chamisos at various appropriate locations pending alignments to be developed between Gov. Miles Rd. and Tierra Contenta. Bridges for these crossings are included within the trail improvements prioritized above and proposed as specific projects in the implementation plan (Chapter VI).

4. Specific Recommendations on Wayfinding Assistance

a. Bike Route Signage

Specific locations and routes that would currently benefit from guidance signage in Santa Fe include many bikeways that combine roads and trails:

- Arroyo de los Chamisos Trail <-> Gov. Miles Rd. (possibly with additional guidance from Cerrillos Rd. and Jaguar Rd.)
- Otowi Rd.<->Acequia Trail <-> Potencia St.<->Acequia Trail<->Railyard Park
- Rail Trail <-> S Capital train station <-> Pen Rd.<-> Railyard Park (see photo)
- East-Side Bike Routes: Galisteo & Don Gaspar <->Alta Vista St.<->Rail Trail
- Galisteo St. <-> St. Francis Dr. Trail <-> Rail Trail & Gail Ryba Trail; consider removing generic Bike Route signs from Hospital Dr. and Botulph St.
- Richards Ave.<->Rabbit Rd.<->Rail Trail
- River Trail<->Ave C. Colon<->Acequia Bikeway



Further adjustments to signed routes and the signing of future routes will depend on the bicycle-friendly trail and road alignments that become available. As facilities are developed, and to the extent that guidance may be helpful to link these facilities, additional signed routes to aim for in the future include:

- Yucca St.<-> SFUAD Trail <-> Osage / Otowi / C. de Chelly <-> Frenchy’s Field/River Trail
- Acequia Trail @ Felipe St. & @ Fayette St.<->Connector Trails<->Flagman Way<->Baca St.<->Monterey<->Rail Trail (see photo)
- Acequia Trail @ Felipe St.<->Alicia<->La Madera<->River Trail @ Alto Park
- Acequia Trail @ Oñate <-> Oñate -> Urioste -> Alto -> El Rio Rd./River Trail
- Acequia Trail<-> Rufina St. <-> S. Meadows <-> (N) Arroyo de los Chamisos Trail (Tierra Contenta)
- Acequia Trail<->Ashbaugh Park<->2nd St.<->Rail Trail



- Pueblos del Sol <-> Desert Sage (connection planned) <-> Las Soleras and /or Richards Ave./SFCC

Signage should specify direction and possibly provide distance to ultimate destination (“Railyard Park 2.5”) or interim destination (“Rail Trail 1.5”). Each of these routes might also be considered as an opportunity to establish specific designated local bike routes, such as “Bike Route 1,” “Bike Route A,” or a named local bike route as discussed in the MUTCD. Some may be integrated into N.M. or U.S. Bike Routes as discussed below.

Opportunities should be considered to provide additional guidance and to minimize downtown signage through consolidation of bicycle wayfinding with the City’s recent pedestrian signage initiative (see photo).



This guidance for pedestrians on Cordova Rd. at St. Francis Dr. could also let pedestrians and bicyclists know that S. Capitol Station and the Rail Trail are just around the corner.

b. State Bike Route 9

State Bike Route 9 (SBR 9) currently has termini at the south end of Tesuque Village Rd. (CR73) and at the junction of US285 and CR33 near Lamy.

- Extend SBR 9 north to Tesuque Village center, working with Santa Fe County and NMDOT, via road diet on Tesuque Village Rd. (CR73). Consider continuing northward along CR73 and US84/285 frontage road in collaboration with Tesuque Pueblo, with long-range potential to connect SBR 9 through Pojoaque and Española to Ojo Caliente per NMDOT BPE Program plans.
- Extend SBR 9 south to and beyond the border of the MPO area via US285 and NM41 (pending programmed improvements to NM41), to Galisteo, Moriarty, and Estancia per NMDOT BPE Program plans.
- Given recent extension of bike lanes on Old Pecos Trail north to Cordova Rd., the City may consider working with NMDOT to redirect northbound SBR 9 into Santa Fe to stay on Old Pecos Trail to Old Santa Fe Trail to the plaza, if it is deemed that guidance to San Mateo, Don Gaspar, and Galisteo is no longer of value to plaza-bound cyclists.



c. Bike Route 66, State Bike Route 66, and US Bike Route 66

Bicycle tourism is an important component of promoting bicycling in general in Santa Fe. This Plan proposes that the MPO collaborate with Adventure Cycling Association, NMDOT, and the City and County of Santa Fe to consider prospective alignments of Bike Route 66 through the Santa Fe area. In particular, as a possible precursor to US Bike Route 66, and in conjunction with a “road diet” on NM300 proposed above, pursue

signing Old Las Vegas Highway (NM300) east of US285 as “State Bike Route 66” to the Cañoncito interchange at I-25. This route could then be integrated into existing State Bike Route 9 into downtown Santa Fe.

Another opportunity to designate State Bike Route 66 in Santa Fe may be found along Cerrillos Rd. (NM14), the pre-1937 alignment of historic Route 66 which within a few years will have paved shoulders or bike lanes the entire distance from St. Francis Dr. to I-25.

Bike Route 66. On November 22, 2010, the premiere provider of mapping and travel information services for long-range bicycle tourists in North America, the Adventure Cycling Association (ACA), announced that it will add “Bike Route 66” between Chicago and Los Angeles to the 40,000 mile network of routes that ACA has researched and mapped (see www.adventurecycling.org/news/20101122.cfm).

ACA will be working with state and local agencies and through AASHTO to designate a U.S. Bike Route Bicycle Route 66 in conjunction with ACA’s Bike Route 66. Routes through the Santa Fe metropolitan area will undoubtedly be researched and mapped by ACA within the next year or so, and it can be anticipated that the pre-1937 alignment of Route 66 through Santa Fe will a major alternative, if not the major alternative, promoted by ACA (see Appendix 8, including map of Route 66 alignments between Santa Rosa and Albuquerque). Because it may take many years before states approve signing the U.S. route, it is conceivable that parts of the future route be signed as New Mexico State Bike Route 66 in the interim.



State Bike Route 66 (shield on left), has been signed in elsewhere in NM and could be a precursor to US Bike Route 66 (shield on right) in the Santa Fe area.



Photo from ACA blog, [“Bicycling the Mother Road,”](#) Nov. 24, 2010

d. Santa Fe Bikeways and Trails Map

Continue to update, promote, and distribute the Santa Fe Bikeways and Trails Map. Post hard copies at strategic locations in the bikeway system, particularly transit stations, parks, and trailside locations. Recommended locations for consideration of map displays include:

- Railyard Station
- Railyard Park
- S. Capital Station
- Sheridan Transit Center/Plaza area
- Santa Fe Place: Transit Center and/or Playground
- Rail Trail at Rabbit Rd.
- Ashbaugh Park at Acequia Trail connector trailhead
- Acequia Trail at Felipe St.
- River Trail in Alto Park
- Arroyo de los Chamisos Trail near Genoveva Chavez Community Center/Monica Lucero Park
- Intersection of Arroyo de los Chamisos Trail and Rail Trail at Siringo
- Santa Fe Community College
- Intersection of Richards Ave. and Ave. del Sur/Spur Trail



A mock-up of the 2012 Santa Fe Bikeways and Trails Map as it might look placed in a currently-empty placard at Monica Lucero Park.

V. Education, Encouragement, and Enforcement

A. Assessment of Education and Encouragement Activities

Education of bicyclists, motorists, elected officials, public servants, and the general public about bicycle transportation is a critical component of this Bicycle Master Plan, as are efforts to encourage individuals, businesses, and public agencies to recognize the value of bicycle transportation and to use bicycles for transportation needs. The League of American Bicyclists (LAB) responses to the City of Santa Fe's applications for recognition as a Bicycle-Friendly Community have repeatedly called for more attention to the area of education in particular.

1. Promotional Events

Bike-to-Work Week and Bike-to-Work Day celebrations have been a major venue for education and encouragement of bicycling each May since the 1990s. The City has taken an increasingly active role in coordinating and promoting these events, working with local bike shops, the Santa Fe Metropolitan Planning Organization (MPO), NMDOT, and community organizations including Bike Santa Fe, the Pedal Queens, Seniors on Bikes (SOBs), the Chainbreakers Collective, and the Bicycle Coalition of New Mexico (BCNM). Bicycle transportation has also been showcased as part of National Transportation Day at NMDOT's General Offices. Other opportunities to celebrate the bicycle in Santa Fe have included National Trails Day (June 1), Walk and Roll to School Day (held each October), and especially whenever new trail segments or bike lanes have been opened.

Another form of promoting bicycling is to organize group rides. Various cycling organizations hold recreational rides or races in the Santa Fe area, including the Pedal Queens, SOBs, the New Mexico Touring Society, the Santa Fe Century Committee, and various bicycle racing groups. The City's Recreation Dept. also organizes various recreational events involving bicycles, such as the Santa Fe Triathlon, and co-sponsors many more, including the La Tierra Trails "Trail Jam" and the Santa Fe Century.



Promotional events include trail openings (top), bike-to-work events coordinated by the city (middle, with goathead piñata), and "community cruises" organized by the MPO (bottom).

Transportation-oriented rides - specifically intended to increase knowledge of local bikeways, to introduce new riders to comfortable routes, and to inform and foster dialog on bikeway planning - include Bike-to-Work Day convoys organized by the City and other partners and “Community Cruises” supported by the MPO. Various other formal and informal group rides, currently embodied in a weekly “loops” event, combine fun and education for cyclists and would-be cyclists.

2. Educating and Equipping Bicyclists

The Santa Fe area now has a half-dozen active League Cycling Instructors (LCIs) trained and certified by LAB to educate the public on “smart cycling” and several more individuals who have been trained in providing more basic “Bicycling 1-2-3” instruction.⁴¹ Many of these instructors received this training in the past year through BCNM’s Bicycle Education Coordinator, who is certified by LAB as a “Master Cycling Instructor,” as part of a statewide activity that was until recently supported by federal transportation enhancement funds provided through NMDOT. Local LCIs are now organizing training sessions and linking with various organizations in order to bring bicycle education to adults as well as children.



Some of Santa Fe's League Cycling Instructors, certified by the League of American Bicyclists (Photo by Tammy Schurr / BCNM)

The health community has also been engaged in bicycle education with a focus on safety. Staff of La Familia Medical Center has worked with area schools to educate children and a Christus St. Vincent Hospital nurse has long provided helmet distribution and helmet fittings at public events. The City's Recreation Dept. has been active in assisting private partners, such as Christus St. Vincent Hospital, and public partners, such as the Santa Fe Police Dept., at helmet giveaways, with professional fittings, and “bike rodeos” where children can learn bicycling skills from a trained instructor on a closed course. The City and the MPO have also distributed bicycle safety information, particularly through the Bikeways and Trails Map, whose reverse side includes a variety of written and illustrated tips for safe and effective use of the bicycle.



Transportation-oriented cyclists need to be able to use roads safely and effectively. “Smart cycling” curricula developed by LAB and used by local LCIs teach the importance of being confident and assertive as a “vehicular cyclist,” including positioning oneself on the roadway in a visible and predictable manner.

⁴¹ For links to LAB educational curricula, local LCI contact information, and a schedule of upcoming trainings by LCIs in New Mexico and elsewhere, see <http://www.bikeleague.org/programs/education/>.

Non-profit groups, such as Bike Santa Fe and the Chainbreaker Collective, have also worked to educate community members on safe and effective cycling as well as on how to build and maintain bicycles as affordable transportation. Along with a variety of other groups, including bike shops, the Santa Fe Century Committee, and students of the Santa Fe Preparatory School, these organizations are specifically working to make bicycle transportation an affordable transportation option for lower-income New Mexicans by way of repairing and donating rehabilitated bicycles. Working to this end, Bike Santa Fe in collaboration with the Chainbreaker Collective runs Santa Fe’s annual “Bike Swap.”

Another means of outfitting cyclists is providing low-cost bike rentals, as the City has envisioned within a “Railyard Transportation Center.” Current bike rentals in Santa Fe target, and are priced for, visiting recreational cyclists rather than individuals seeking short-term transportation. Insurance requirements are cited as a major obstacle to lower-cost rentals by bike shops. UNM and the City of Albuquerque are currently discussing the establishment of a public “bike share” system on and around the UNM campus. The potential for bike sharing in Santa Fe is discussed further under Recommendation 2.6 on p. 82.

3. Educating Motorists

BCNM and Bike Santa Fe have worked to raise awareness of bicycles among motorists through campaigns such as “Give Bicyclists Five Feet” slogan boards placed throughout the city. Another form of raising all highway users’ awareness of bicycles, and the need to safely share the road, has been the installation of “ghost bikes” where bicyclist fatalities have occurred in New Mexico. This activity, spearheaded by the Duke City Wheelmen Foundation, based in Albuquerque, is protected under state law relating to roadside *descansos* (memorial shrines).⁴² Two bicyclists who were killed on Santa Fe area roadways in years past were memorialized through ghost bikes in 2010-11.

Local LCIs and BCNM’s Bicycle Education Coordinator may also be available to discuss safe operation of motor vehicles around bicyclists with special audiences such as transit operators, police, public agency staff, teenagers, or driving students. The City has



⁴² See Bicycle Times, Issue 9 (Feb. 2011), “Ghosts Bikes: Fallen Riders Remembered,” pp. 66-72.

expressed interest in receiving this kind of training for transit operators in Santa Fe.

Another strategy to educate motorists about safe driving around bicyclists is to include bicycle education in drivers' education curricula and to include questions about bicycles in the tests that new drivers must take in order to receive their license. Local advocates and BTAC members worked with the State Motor Vehicle Division (MVD) in the past year to get more questions about bicycles in the MVD's standard tests and to add more information into training materials. As a result, the June 2011 revision of MVD's "New Mexico Driver Manual," now includes a page and a half dedicated to information on sharing the road with bicyclists.



Members of the Duke City Wheelmen, Bicycle Coalition of NM, local law enforcement, and friends and family of Amy Marie Jobe gather in Cuyamungue in March 2011 to dedicate a ghost bike for the teenager who was struck trying to cross US84/285 just south of here in 1999.

4. Safe Routes to School

Efforts in the area of educating and encouraging children to bike or walk to school are supported in New Mexico by federal and state-level "Safe Routes to School" (SRTS) programs, which also provide limited funding for related engineering improvements. While Santa Fe-area schools have yet to take advantage of SRTS resources, several have expressed interest and several more are already undertaking significant education and encouragement activities on their own, including participation in the annual Walk and Roll to School Day promoted each October by the New Mexico Safe Routes to School (NMSRTS) program.



"Walk and Roll to School Day" is an annual event that is celebrated by various Santa Fe area schools. Walking or bicycling to school on a regular basis is a healthy activity that also serves to reduce motor vehicle traffic congestion around schools.

SRTS advocates at Chaparral Elementary School have made efforts to create an "SRTS Action Plan." These plans typically include data on the number of children walking and bicycling to school, information on educational and promotional efforts, analysis of walking and cycling conditions on campus and in the surrounding neighborhood, and proposed improvements. A completed SRTS Action Plan is required by the NMSRTS program in order to apply for "Phase 2" funding for infrastructure improvements.

B. Bicycle Law, Enforcement, and Legislative Activities

1. State Law.

As throughout the United States, bicyclists have for the most part the same rights and responsibilities as motorists on streets and highways in the Santa Fe MPO area. Most traffic law relating to bicycling in our area comes from the Uniform Vehicle Code as adopted by the State of New Mexico, with some specific state revisions that can be reviewed in the NMDOT's latest "BPE Advisory Plan."⁴³ Bike Santa Fe and other groups have recently endeavored to revise or establish new state laws relating to bicycling, including five-feet-to-pass, the "Idaho stop" law (permitting cyclists to roll through STOP signs), and increased penalties for distracted driving. Of these three initiatives, just the five-feet-to-pass bill passed the NM House and Senate but was vetoed by Gov. Martinez in early 2011.

Under the state Child Helmet Safety Law, children and youth under 18 years of age are required to wear a helmet when using bicycles, tricycles, skateboards, scooters, or skates on public property.



Signage on the US84/285 frontage road in Tesuque Pueblo cites specific state law affirming bicyclists' legal responsibilities on roadways.



Under state law, bicyclists are required to ride "as far to the right as practicable." Tesuque Pueblo tribal law includes a provision requiring cyclists to ride single file.

⁴³ Specific state law relating to bicycling can be reviewed in the NMDOT's BPE Advisory Plan (April 2009), pp. 66-68. Additional state laws and administrative code relating to bicyclists, pedestrians, and equestrians can be found in the BPE Program's "Applicable State Laws (2008)."

2. Local Law.

Advocates working through the City's Bicycle and Trails Advisory Committee (BTAC) recently examined city code with respect to traffic and other laws relating to bicyclists, reviewed models elsewhere in the country, and proposed revisions to the City's Uniform Traffic Ordinance. These revisions were passed into law by the City Council in June 2011 under Ordinance 2011-23. Among the new provisions were a "five-feet-to-pass" law (see text box), prohibition of driving a motor vehicle on a bike lane or path except under certain conditions, prohibition of harassment of bicyclists by motorists, inclusion of helmet-mounted lights to satisfy lighting requirements,

a provision permitting the use of the right hand to signal a right turn, and prohibition of altering serial numbers on bike frames. Also included were clarifications of bicyclists' rights and responsibilities with regard to positioning within a bike lane or on a roadway with no bike lane. The new code eliminated an antiquated requirement to register bicycles with the city, though City of Santa Fe police still encourage registration of bicycles in order to aid in recovery of stolen property.

City of Santa Fe's New "Five-foot-to-pass" law (12-6.2.7F):

"When approaching or passing a bicyclist, every person operating a motor vehicle shall proceed with caution and shall pass such bicyclist at a reasonable speed and keep a safe distance from him. In no event shall a distance of less than five feet be considered a safe distance within the meaning of this Section. To comply with the requirements of this paragraph, a person operating a motor vehicle may be required to drive at a slower rate of speed..."

In addition to these revisions proposed by advocates, the amendment also requires bicyclists to obey any prohibitions of bicycle traffic on roadways, including roadways along which cyclists may be required to ride on sidewalks or sidepaths.⁴⁴ There are currently no cases of specific prohibition of bicycles on any public roadway in the Santa Fe area, nor is there any case of a "side path" where cyclists are required to ride rather than on the roadway. There is no support for such prohibitions under New Mexico state law nor in model laws elsewhere in the country. Historic mandatory "side path" laws have been repealed in states throughout the country, including New Mexico in 1997, in recognition of the inappropriateness of requiring bicyclists to behave like pedestrians rather than operators of vehicles on public roadways.

⁴⁴ 12-8-11 RIDING ON PROHIBITED STREETS OR CONTROLLED ACCESS, 12-8-15 RIDING ON SIDEWALKS, Section B.

C. Recommended Policies, Programs, and Activities for Education, Encouragement, and Enforcement

Goal: Santa Feans and their guests are able to confidently, safely, and effectively ride bicycles within a shared transportation network where cyclists' rights and responsibilities are understood, respected, and enforced.

Recommendation 2.1: Support Bicycle Education for Children and Adults

This Plan recommends that the MPO, the City and County of Santa Fe, the State of New Mexico, educational institutions, public health and safety advocates, and the local cycling community work together to:

- Establish formal programs for pedestrian and bicycle education for children and adults.
- Use the services of local certified League Cycling Instructors (LCIs), other local groups active in bicycle education, City Recreation Dept. resources, and statewide resources available through NMDOT and the Bicycle Coalition of New Mexico (BCNM).
- Offer bicycle education to youth, college students, recent arrivals to Santa Fe, new employees, lower-income groups, and other individuals that may be embarking on bicycle transportation for the first time in our area.
- Provide bicycle education through the LCIs and others to target audiences such as local government staff, elected officials and committee members, law enforcement, and others who plan for bikes, design for bikes, enforce bicycle laws, and/or use bicycles in their work.
- Participate in BCNM's annual Bike Education Summit.
- Link bicycle education with recreational activities, events, and other opportunities.
- Provide guidance on trail etiquette, particularly how to be safe and courteous in sharing trails with other users.
- Promote helmet use among children, per the New Mexico Child Helmet Law, as well as adults; work with the NM Helmets for Kids Coalition (www.nmchildhelmetlaw.com) and local partners to ensure that helmets are available for children and youths whose families cannot afford a helmet.



In November 2011, the New Mexico Bike Education Summit organized by BCNM in Albuquerque drew seven participants from Santa Fe, including several newly certified League Cycling Instructors.

Recommendation 2.2: Educate Motorists about Safe Operating Behavior around Bicyclists

This Plan recommends that the MPO work with local and state government and the local cycling community in order to:

- Integrate bicycle awareness into driver education curricula, including those produced by the Motor Vehicle Division (MVD), private driving schools, and defensive driving classes offered by public agencies and private entities.
- Pursue partnerships with LCIs, bicycle-mounted police, and others to create a speakers resource to speak with high school students, college students, and other young audiences.
- Provide training and training materials for special motorist groups such as Santa Fe Trails, RTD, and NM Park and Ride bus drivers.
- Partner with the MVD and the legal system to offer bicycle education to motorists who have had their driver's licenses revoked.
- Prepare and distribute printed materials educating motorists about safe driving around bikes.
- Consider use of mass media, public transit advertising space (on-board busses and trains, on the exterior of busses, and at bus stops) and other means to encourage bicycle-friendly driving in the Santa Fe area. Use City Channel and other public resources for bicycle-related messages. Create and distribute Public Service Announcements, e.g. on "Five Feet to Pass" now that it is city law, or the meaning of "sharrows" and relation to safe passing behavior.

Recommendation 2.3: Enforce Traffic Laws Relating to Bicycling

This Plan proposes that the MPO work with local governments, the cycling community, and law enforcement in order to:

- Support training of City, County and State law enforcement in the City's new Bicycle Code, other traffic laws and enforcement as they relate to bicycles, and crash reporting procedures for bicyclists and pedestrians.
- Support training of Santa Fe County Sheriff's Office, NM State Police, and Tesuque Tribal Police in bicycle laws in effect outside of the City of Santa Fe.
- Develop programs, possibly in partnership with the bicycle industry, the public health community, and local LCIs, that encourage law enforcement officers to distribute helmets, lights, other safety equipment, and educational materials to bicyclists who appear to need them.

Recommendation 2.4: Establish a District-Wide Safe Routes to School Program

This plan recommends that the MPO work with local governments, the cycling community, and Santa Fe Public Schools to:

- Secure active involvement of Santa Fe Public School (SFPS) District.
- Work toward district-wide involvement in annual Walk-and-Roll-to-School Day (held each October), National Bike-to-School Day (to be held each May), and other promotional opportunities.
- Advance SFPS policies that favor walking and bicycling to school.
- Enlist support of NMSRTS program, public health community (e.g., through NMDOH's Healthier Weight Coalition and the NM Helmets for Kids Coalition), and private foundations for development of local SRTS activities.
- Develop and promote promising trail alignments and other non-motorized routes as part of broader SRTS programs that would also have significant impact on the bikeway system. Examples of bikeway improvements prioritized for this Plan that connect K-8 schools with residential areas that they serve are presented in Table 7:



A dozen bicycles crowd the rack at Gonzales Community School.

LAB's Feedback on Santa Fe's Bicycle-Friendly Community Application, Fall 2011

- Ensure that bicycle-safety education is a routine part of public education and that schools and the surrounding neighborhoods are particularly safe and convenient for biking.
- Work with your Bicycle Advisory Committee, local bicycle advocates and the Santa Fe MPO to integrate the Safe Routes to School program into local elementary schools, middle schools and high schools.
- Strongly encourage all schools to participate. Funding is currently still available through the federal transportation bill SAFETEA-LU, among several other sources at both the federal and state levels. See www.saferoutesinfo.org as well as www.nmsaferoutes.com for more information.

Table 7. Prioritization for Top 11 Trail Segments with Significance for Safe Routes to School

Rank*	Location and Type of Improvement	Score	K-8 School(s) served (1) = Immediate Vicinity (2) = More Distant
6	RIVER TRAIL: Connection to La Madera St via Alto Park	31	(1) Aspen, (2) Gonzales (also Desert Academy & Dragonfly)
20	TIERRA CONTENTA (N. Arroyo Chamisos) Buffalo Grass to S. Meadows	28	(1) Sweeny & Ortiz
20	SF University of Art & Design ROADBED: along E. Boundary Ditch	28	(1) De Vargas
20	ARROYO CHAPARRAL TRAIL: Ragal Park to Zia Station via Candeler Park	28	(1) Chaparral
20	NM CENTRAL/KENNEDY LINE: Pinon ES to Pueblos del Sol Trails	28	(1) Pinon
32	PUEBLOS DEL SOL: N-S Connector across Governor Miles	27	(2) Pinon
32	RAIL TRAIL: Connection at Calle Sombra	27	(2) De Vargas
43	ARROYO EN MEDIO TRAIL: completing route from Sawmill to Rodeo	26	(2) Capshaw
43	ARROYO DE LOS CHAMISOS TRAIL: Zia to Zia Connection	26	(1) Capshaw
43	ARROYO CHAPARRAL TRAIL: Arroyo Chamisos Trail to Ragal Park or Chaparral ES.	26	(2) Chaparral
43	ARROYO DE LOS PINOS TRAIL: Fifth St @ Camino Lado to Llano St.	26	(1) De Vargas

* - All Scores and rankings reflect overall trail considerations – not specific to SRTS

Recommendation 2.5: Continue to Promote and Celebrate Bicycles and Bicycle Transportation in the Santa Fe Area

This plan recommends that the MPO, partner agencies, and the local cycling community:

- Continue to support promotional activities such as Bike-to-Work Week and Walk and Roll to School Day.
- Continue to support community bicycle rides; explore opportunities to create new rides tied in with other areas of interest, e.g. art (particularly outdoor art) or history.
- Promote the use of bicycles by tour groups in downtown Santa Fe and environs.⁴⁵
- Promote bicycling as active transportation in collaboration with public health partners and through recreational bicycling events and other public events. Use bike valet service or bike corrals at large outdoor events both to facilitate and to visibly promote bicycling.
- Distribute and post the Santa Fe Bikeways and Trails Map as discussed under Chapter IV on “wayfinding.”
- Develop useful Bike Route guidance signage, as discussed under Chapter IV; establish an ongoing program to provide guidance for bicyclists and pedestrians.
- Develop electronic wayfinding resources, e.g. “apps” with local bikeway information.
- Promote Bike Tourism in and through Santa Fe:
 - Work with the Visitor’s Center and Convention Bureau, the private sector, and regional and national organizations such as Adventure Cycling Association to market Santa Fe as an “active vacation destination.”
 - Develop special maps and other marketing materials to showcase Santa Fe’s bicycling resources to visitors.
 - Promote long-term development of longer-range on-road and off-road facilities such as State Bike Route 9, State or US Bike Route 66, and the Rio Grande Trail.

LAB’s Feedback on Santa Fe’s Bicycle-Friendly Community Application, Fall 2011

- *Promote, host, sponsor and/or encourage a variety of bicycle-themed, fun and family-friendly community events year-round, such as a bike movie festival, a 4th of July bike parade, an “increase-your-appetite” Thanksgiving community ride, a dress-like-Santa community ride before Christmas, a kids triathlon, a bicycle fashion show, a Halloween bike decoration competition, a bike to the arts event, etc.*
- *Work closely with local bicycle advocacy groups, bike clubs, bike shops, bike teams and schools.*
- *Provide appropriate safety measures such as road closures or police escorts.*

⁴⁵ See, for example, <http://bikeandroll.com/washingtondc/dcbiketours.html>.

Recommendation 2.6: Establish a Bike-Sharing Program as an Extension of Public Transit Services

This Plan recommends that the MPO, the City, and partners continue to explore opportunities to establish organized bike sharing in the Santa Fe area through a viable number of standard kiosks, closely linked to and offered as an extension of other transit services.

Given support through a professional market analysis, or even a demonstration at an event (such as the IMBA World Summit), bike sharing based on established models might be attempted in Santa Fe as a pilot project, focusing on a specific area (downtown) or a specific market group (e.g., city, county and state workers). Opportunities should be explored to broaden the market of potential users, including establishment of a regional bikeshare program to include the Albuquerque metropolitan area, through a regional transit agency such as Rio Metro, operator of the NM Rail Runner.⁴⁶



“Capital Bikeshare” is operated by the Washington Metropolitan Area Transit Authority in Washington D.C. and Northern Virginia.

Santa Fe’s dense downtown with disbursed transit centers, all within a one-mile radius around the Railyard, offers a promising nucleus for a bike share system. Analysis for this plan, based on proximity to transit, access to public buildings and services, mixed uses, residential and employment density, spatial distribution, and availability of publicly-owned land produces the following proposal for initial or phased-in kiosk locations, which could be changed and expanded based on demand for kiosks in the private sector (also see Map 6 on the following page).

- Santa Fe Depot/Guadalupe St.
- Railyard Plaza/Park
- South Capitol Station/Complex
- Baca St./West Railyard/NMDOT
- Sheridan Transit Center/City Hall/Plaza
- Roundhouse (State Capitol)
- Canyon Rd./PERA Building
- Fort Marcy Park Recreation Center
- Genoveva Chavez Community Center
- Museum Hill
- St. John’s College
- Christus St. Vincent Hospital/Med. Ctr.
- Future Zia Rail Station/Plaza Entrada
- Salvador Perez Pool/Cordova St.
- Santa Fe UAD/St. Michaels Dr.
- Alto Park/Solana Shopping Center
- Devargas Mall

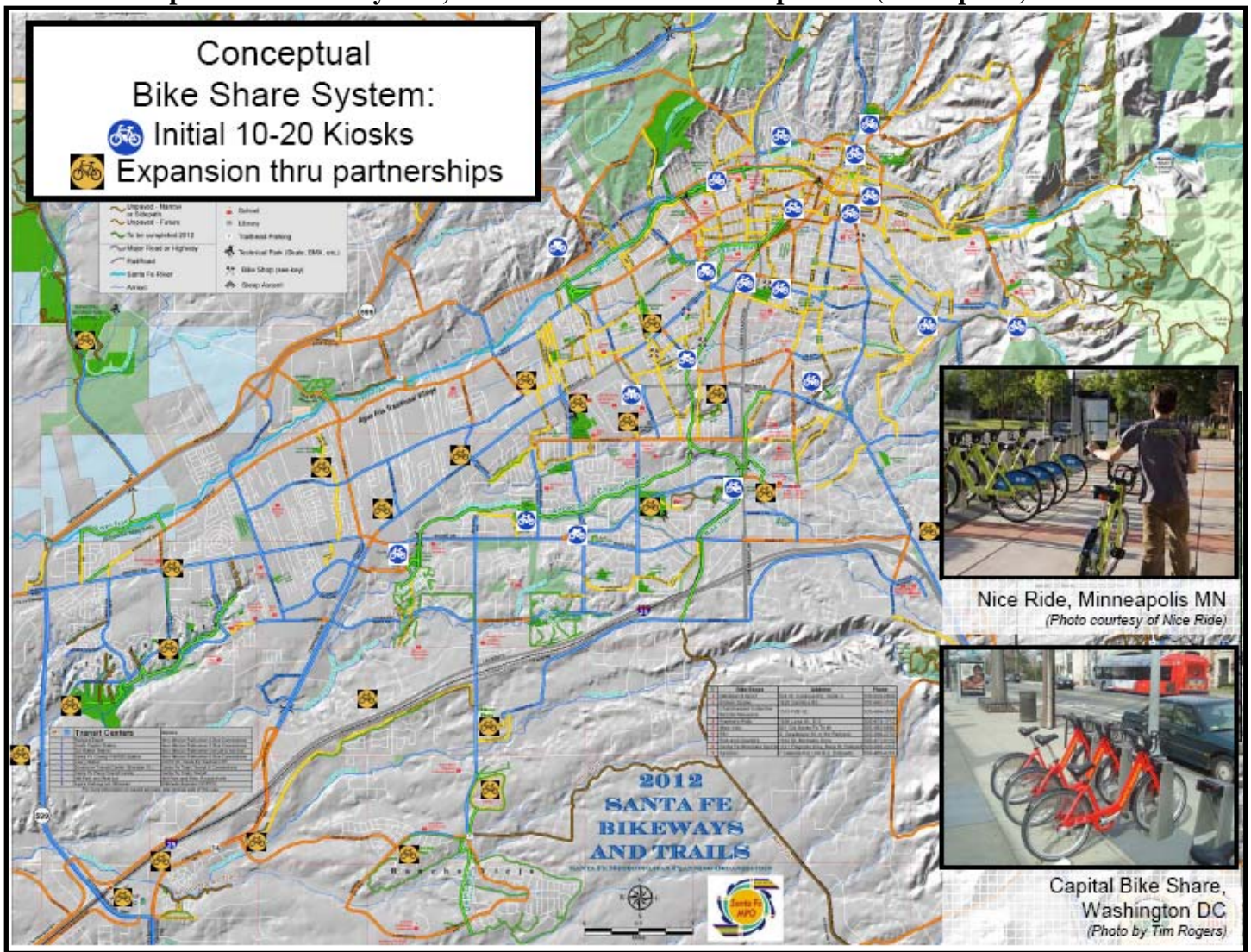
Phase in:

- Municipal Recreation Center
- Southside Library/Tierra Contenta
- Santa Fe Community College (1-3)
- Santa Fe Place Transit Center/Mall
- NM599 Rail Station
- Rancho Viejo Plaza/Oshara Village

⁴⁶ E.g., see a recent Request for Proposals to develop a bikeshare system along a commuter railway for the San Francisco Municipal Transportation Agency (full reference in App. 13 under “BAAQMD”).

Map 6 below builds on the list on p. 86, proposing up to 20 initial locations for bike share kiosks and roughly 20 more additional locations that could be considered in an expansion of the system, which could be facilitated by private partnerships to re-locate existing kiosks or establish new kiosk locations.

Map 6: Bike Share System, Initial 10-20 Kiosks and Expansion (Conceptual)



Recommendation 2.7: Encourage and facilitate the use of bicycles by public agency staff and in the private sector

This Plan recommends that the MPO work with public agencies and other partners to:

- Recognize the bicycle as a legitimate, safe, efficient and desirable form of transportation for official duties.
- Promote increased official use of bicycles by law enforcement, emergency responders, parking enforcement, parks maintenance staff, building inspectors, security personnel, and others.
- Promote use of bike share systems by staff of public agencies and large private employers.
- Provide incentives, or remove disincentives, to private businesses that use bicycles, including but not limited to delivery, pedicab, and security services.
- Restrict use of public agency or contractor motor vehicles on multi-use trails.



LAB's Feedback on Santa Fe's Bicycle-Friendly Community Application, Fall 2011

- Actively facilitate stronger connections between bicycle advocates, the wider bicycling community and law enforcement. Increase the number of police officers patrolling multi-use paths and streets on bike, as it gives officers a better understanding of the conditions for cyclists and keeps secluded multi-use paths safe.

Recommendation 2.8: Create Incentives / Remove Barriers to Travel by Bike

This Plan recommends that the MPO and partner agencies coordinate efforts to:

- Work with public and private employers to create services and incentives for staff who commute by bicycle, including providing employees with lockers, showers, and protected parking, and offering to reimburse costs of commuting by bicycle at least on par with support for commuting by other means.⁴⁷
- Allow developments to substitute bicycle provisions, including lanes, trails, parking, or bike share kiosks, in place of provisions otherwise required for motor vehicle parking.
- Encourage local businesses, government agencies, and higher-education institutions to pursue recognition from LAB as “Bicycle-Friendly Businesses” (BFBs) or “Bicycle-Friendly Universities.” For those that are interested, the MPO can organize consultations with and field visits to recognized BFB’s in our area, including BTI in Santa Fe and General Mills in Albuquerque.

⁴⁷ Employers may provide such reimbursements tax-free under the Bicycle Commuter Act of 2008. For more information, see www.bikewalk.org/bca.php.

VI. IMPLEMENTATION PLAN

Implementing the recommendations of this plan will require coordination of a wide variety of players within the Santa Fe metropolitan area. The implementation plan focuses on developing methods to publicize and disseminate the recommendations above to key public and private partners responsible for various facets of implementation. Ultimately it is the Santa Fe MPO which will take responsibility for publicizing and disseminating the BMP recommendations in close coordination with partner agencies, as suggested in section A below. This Chapter details various agency responsibilities in Section B, phased implementation of proposed projects in Section C, and funding mechanisms to be pursued in Section D.

A. Adopting, Publicizing and Disseminating the Bicycle Master Plan

The Citizens' Advisory Group emphasized that one of the most important steps will be disseminating this plan's recommendations to elected officials, agency staff, and the public in a sustained fashion. A successful Bicycle Master Plan will need to be adopted not only by the MPO's Transportation Policy Board but also by each member of the MPO, as soon as possible, by resolution or by ordinance. The next step will be to develop accountability by having MPO staff report on implementation progress on a regular basis. MPO staff should develop a work plan with appropriate agency staff including specific tasks and ways to measure progress toward accomplishing goals under the BMP. Every activity that represents progress toward the BMP goals should be closely documented for periodic reporting as well as measurement of overall progress.

"Public involvement does not end with the adoption of the plan. Every project will involve some outreach. Don't take for granted that projects will move forward just because they are in an adopted plan. Public outreach should be taken very seriously; otherwise you'll risk a public backlash that slows or stops implementation of the plan. If possible, replicate or adapt other public outreach models that have worked in your community or region."

"Successfully implementing a BMP means taking advantage of every opportunity that presents itself. Every public and private project and program can provide an opportunity to make improvements for bicyclists. The ingredients of success are time, money, and most importantly, political will. If the time is ripe, go for it."

- Peter Lagerwey, *Creating a RoadMap for Producing & Implementing a Bicycle Master Plan.*

This Bicycle Master Plan is the bicycle component of the Santa Fe MPO's Metropolitan Transportation Plan. Through its Unified Planning Work Program, the MPO will work to implement those recommendations that are identified as its responsibility. The MPO will work with local agencies, the public, committees and advisory groups, advocacy groups, and other partners to develop strategies to pursue policy changes called for in this BMP, including the development of a local bicycle-pedestrian program staffed by a bicycle-pedestrian coordinator. Central to this effort will be educating elected officials and agency staff, "marketing" the BMP and providing regular workforce training. Training for local, tribal, and state government staff may range from a brief, general overview of the BMP to more intensive "in-service" training for members of key agency divisions.

B. Agency Responsibilities

This plan emphasizes the need to coordinate bikeway planning, construction, and maintenance within the MPO area, including working with city and county public works, streets, parks, trails, and development review departments, as well as public and private utilities, commissions, transit services, NMDOT, other state entities and facilities, and Tesuque Pueblo. The MPO will pursue a relationship whereby agencies may collaboratively plan and implement projects, including shared development and review of plans and designs with significance to the development of the bikeway system. Appendix 13 presents a table seeking to clarify roles and responsibilities related to improving bicycle transportation in the MPO area for specific public agencies, pertinent divisions within those agencies, and selected private entities.

C. Recommended Short-, Medium-, and Long-Term Projects

Tables 7 through 10 presents the road, trail, and crossing improvements proposed above, under Chapter IV., “Recommendations,” as projects within three implementation phases:

- Phase A, representing a five-year horizon (2012-2017),
- Phase B, representing 5-10 years out (2017-2022), and
- Phase C representing 10-20 years out (2022-2032).

Each recommendation is conceptual and subject to more detailed feasibility analysis by each implementing agency.

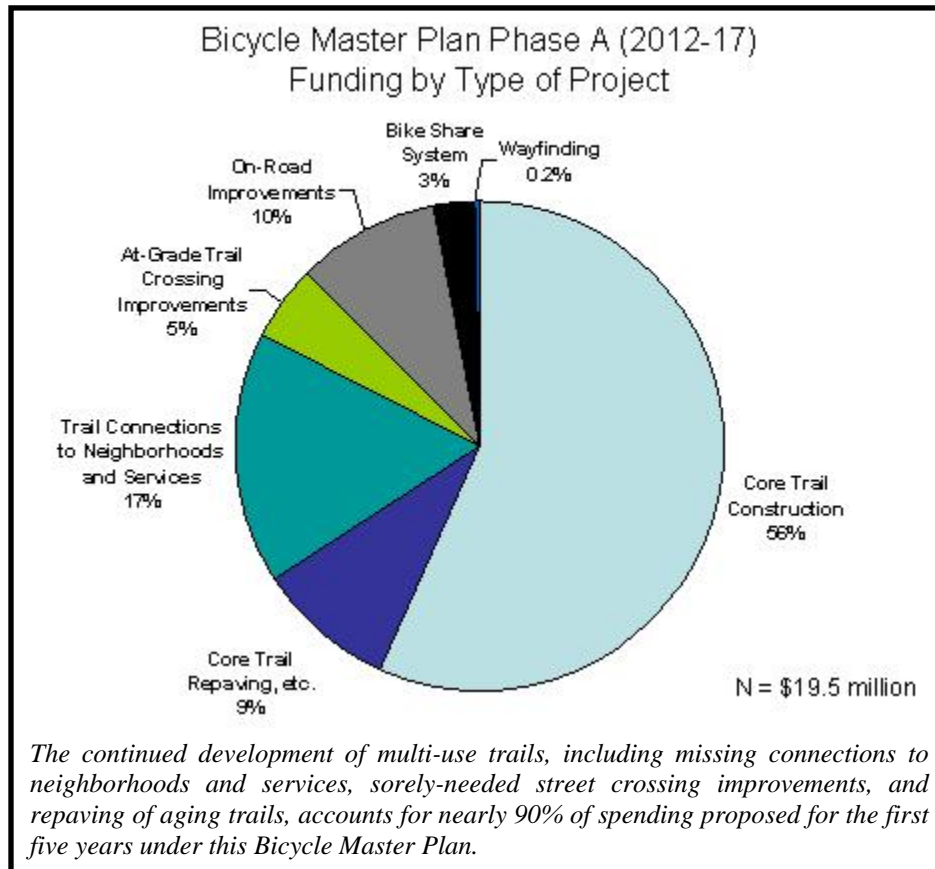
Within each phase, proposed projects are broken down by prospective lead agency and type of project. Tables 8 through 10 also provides a “planning-level” cost estimate for each recommended improvement, based on standardized unit costs and other cost considerations outlined in Appendix 14: Unit Costs used in Tables 8-10. These improvements are also shown by type of improvement, phase, and general trail alignment on Maps 7-15.

The three implementation phases reflect not only project priority but the need to logically sequence improvements to achieve maximum impact. Some projects that ranked high in the impact and feasibility analysis may be phased back in order to allow time for parallel processes or to



Tierra Contenta subdivisions have provided current and future Santa Feans with many miles of bike lanes and multi-use trails. Tierra Contenta's section of the Arroyo de los Chamisos Trail spans over two miles, providing a direct connection to the future site of a planned major regional park (the “Southwest Activity Node” or SWAN Park). Significant bikeways anticipated through private development are listed in Table 12.

conserve scarce funding for other projects. For example, this plan supports the proposed grade-separated crossing of St. Francis Dr. for the Acequia Trail, but places the project in Phase B as a suggestion to conserve short-term resources in order to pursue a wider variety of smaller trail connections with significant impact. After five years, the extent to which various programmed improvements to the Acequia Bikeway listed in Phase A have contributed to increased demand for the grade-separated crossing may make the decision to commit to the crossing far more compelling.



This list of public projects in Tables 8 through 11 is as comprehensive as possible but is not exhaustive. New priorities for trail alignments, connections, crossings, and road improvements will continue to arise as our metropolitan area develops and as bicycle use expands. The MPO and its member agencies will need to continue to strive to anticipate future needs and to take advantage of opportunities that arise relating to private developments (e.g., see Table 12) as well as public projects. Thus implementation of this BMP requires some flexibility. The contents of these Phases will be revisited and revised by the MPO and its member agencies as implementation proceeds.

Table 8. Phase A Recommended Improvements, with Anticipated Lead Agency and Cost Estimate

Phase A: 2012-2017, listed in order of Agency, and then type of project				
	Type of Improvement	Improvement	miles	Cost Estimate
(1) City-Lead Trail Construction (in rough order of priority)				
1	Multi-Use Trail	RIVER TRAIL: Don Gaspar to Camino del Campo, w/underpasses	0.40	\$ 682,000
2	Multi-Use Trail	RIVER TRAIL: Connection/Crosswalk to Campo	0.01	\$ 21,560
3	Multi-Use Trail	RIVER TRAIL: Connections/Crosswalks to Candelario	0.01	\$ 21,560
4	Multi-Use Trail	RAIL TRAIL: St. Francis Dr. to Cordova (along Pen Rd.)	0.20	\$ 176,000
5	Multi-Use Trail	RIVER TRAIL: Connection to Cam. De Chelly	0.02	\$ 15,840
6	Multi-Use Trail	RIVER TRAIL: Connection to La Madera St.	0.02	\$ 59,400
7	Multi-Use Trail	RIVER TRAIL: Connection to Cam. de la Conq.	0.01	\$ 6,600
8	Multi-Use Trail	RAIL TRAIL: Cordova to Alta Vista (S. Capitol Station)	0.20	\$ 176,000
9	Multi-Use Trail	ACEQUIA TRAIL: Hmnos Rodriguez Park to Harrison	0.10	\$ 66,000
10	Multi-Use Trail	ACEQUIA TRAIL: Bridge to Oñate	0.05	\$ 88,000
11	Multi-Use Trail	ACEQUIA TRAIL: Bridge to Kathryn	0.05	\$ 88,000
12	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Widen connector, install ADA ramp to mall road at Villa Linda playground	0.05	\$ 27,500
13	Multi-Use Trail	ACEQUIA TRAIL: Connection to Larragoite Park (w/ X-Walk) & Agua Fria St.	0.10	\$ 73,370
14	Multi-Use Trail	RIVER TRAIL: Camino del Campo to St Francis Dr. (widen existing trail)	0.40	\$ 234,667
15	Multi-Use Trail	ACEQUIA TRAIL: Otowi Dr. to Maclovía Park (w/ Otowi improvements @ C. de Chelly & San Felipe)	0.10	\$ 83,820
16	Multi-Use Trail	RIVER TRAIL @ C Colon: Widen connection	NA	\$ 5,500
17	Multi-Use Trail	TIERRA CONTENTA (N. Arroyo Chamiso): Buffalo Grass Rd. to S. Meadows	0.38	\$ 247,500
18	Multi-Use Trail	ACEQUIA TRAIL: Rufina to San Felipe, with connector and crosswalk at Agua Fria	1.00	\$ 660,770
19	Multi-Use Trail	LA TIERRA TRAILS: Connection from Camino de los Montoyas via NM599 Underpass	0.40	\$ 264,000
19.1	Multi-Use Trail	MRC TRAIL: River Trail to JCT Caja del Rio Rd./NM599 frontage rd (via extg underpass)	0.50	\$ 385,000
20	Multi-Use Trail	SFUAD ROADBED along E. Boundary Ditch, w/tie-ins to Llano @ DV MS & La Farge Library	0.70	\$ 737,000
21	Multi-Use Trail	RAIL TRAIL CONNECTION: Monterrey	0.05	\$ 33,000
22	Multi-Use Trail	ARROYO CHAPPARAL TRAIL: from Ragle Park to Zia Station via Candelero Park, with tie-in to ped bridge to Zia	0.50	\$ 660,000
23	Multi-Use Trail	NM CENTRAL / KENNEDY LINE: Pinon ES to Pueblos del Sol trails	0.20	\$ 132,000
24	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Extend connector trail from Villa Linda Park soccer field to transit stop	0.13	\$ 82,500
25	Multi-Use Trail	Railyard Park & Plaza, West Railyard Connections (see Bikeways Mapping Project)	NA	\$ 63,580
26	Multi-Use Trail	NM CENTRAL / KENNEDY LINE: AC Trail / GCCC to Rodeo Rd. (w/X-walk to sidewalk to front entrance)	0.30	\$ 198,385
27	Multi-Use Trail	PUEBLOS DEL SOL: N-S Connector across Gov. Miles (w/related improvements)	0.10	\$ 128,370
28	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Connection south to Richards Ave.	0.10	\$ 66,000
29	Multi-Use Trail	ARROYO MASCARAS TRAIL: From San Francisco St. to Las Mascaras St., including speed table at San Francisco (Villa Alegre)	0.10	\$ 94,600
30	Multi-Use Trail	ACEQUIA TRAIL: Maclovía Park to Hnos. Rodriguez Park	0.20	\$ 139,370
31	Multi-Use Trail	CANADA RINCON TRAIL: Calle Mejia to Zocalo	0.20	\$ 132,000
32	Multi-Use Trail	RAIL TRAIL CONNECTION: Calle Sombra	0.10	\$ 66,000
33	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: NM14 to Entrada Contenta (to meet Las Soleras)	0.20	\$ 132,000
34	Multi-Use Trail	ARROYO EN MEDIO TRAIL: completing route from Zia to Sawmill	0.25	\$ 192,500
35	Multi-Use Trail	GAIL RYBA TRAIL: East to Botolph Side Path, w/ St. M's connection	0.40	\$ 264,000
36	Multi-Use Trail	GAIL RYBA TRAIL: Zia to Zia Connection	0.20	\$ 132,000
37	Multi-Use Trail	RAIL TRAIL CONNECTIONS: Rodeo Park E. (x2-3)	0.10	\$ 66,000
38	Multi-Use Trail	SARAH WILLIAMS TRAIL: Gonzales Rd. to Dale Ball Trails along Hyde Park Rd.	0.90	\$ 44,550
39	Soft-Surface Trail Easement	LA TIERRA TRAILS: Connection from Cañada Rincon Trail (s. of Tano Rd.)	0.30	\$ -
40	Soft-Surface Trail Easement	ARROYO POLAI: Formalize connection from Upper Canyon Rd. to Dale Ball and D Stewart Trails	0.20	\$ -
TOTAL			9.21	\$ 6,746,942
(2) City-Lead Trail Maintenance Projects (in rough order of priority)				
1	Repave M-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Repave from Yucca St. to Rodeo Rd.	2.00	\$ 880,000
2	Repave M-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Repave from Siringo Rd. to Yucca St.	0.75	\$ 330,000
3	Repave M-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Repave from Siringo to bridge over Arroyo Chamisos	0.50	\$ 220,000
4	Repave M-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Repave along Nava Ade	0.60	\$ 264,000
5	Maintenance	RAIL TRAIL: Build retaining wall south of I-25	NA	\$ 55,000
TOTAL			3.85	\$ 1,749,000
(3) City-Lead Trail Crossing Improvements (in rough order of priority)				
1	Crossing	ACEQUIA/RAIL TRAIL: St. Francis-Cerrillos Intersection Improvements, Phase I (inc. w-bound bike lane)	NA	\$ 201,080
2	Crossing	ARROYO DE LOS CHAMISOS TRAIL: Crossing at Yucca St: Remove gates, build median refuge	NA	\$ 27,500
3	Crossing	ARROYO DE LOS CHAMISOS TRAIL: Crossing at Cam. Carlos Rey: remove gates, related improvements	NA	\$ 27,500
4	Crossing	ARROYO DE LOS CHAMISOS TRAIL: Crossing at Ave de las Campanas: remove bollards, rebuild median refuge	NA	\$ 27,500
5	Crossing	RAIL TRAIL: Mark Crossings at Alta Vista, 2nd St., Siringo; Improve Paseo de Peralta markings; consider Manhattan, Alcala	NA	\$ 3,080
6	Crossing	ST FRANCIS DRIVE TRAIL: St. Francis-Siringo Intersection Improvements	NA	\$ 220,000
7	Crossing	RAIL TRAIL: Crossing at St Michael's Dr., Consider Pedestrian Hybrid Signal	NA	\$ 220,000
8	Crossing	RAIL TRAIL: Crossing at Cordova Rd., Consider Pedestrian Hybrid Signal	NA	\$ 220,000
9	Crossing	ACEQUIA / CHILE LINE (Railyard Pk.): X-walk across Cerrillos to Gilmore St.	NA	\$ 12,540
TOTAL			NA	\$ 959,200

Continued on next page

Phase A: 2012-2017, listed in order of Agency, and then type of project				
	Type of Improvement	Improvement	miles	Cost Estimate
(4) City-Lead On-Road Bikeway Improvements (in rough order of priority)				
1	Bike Lanes	W. San Francisco: Contra-flow bike lane from plaza to Galisteo	0.10	\$ 1,870
2	Bike Lanes	Siringo: Study and Implement Bike Lanes where feasible (Ave de las C to Botolph)	2.50	\$ 115,500
3	Bike Lanes	W. Alameda: Stripe bike lanes between Alire and Defouri St. (restrict some parking; consider sharrows @ major intersections)	1.20	\$ 37,510
4	Bike Lanes	Galisteo: Stripe bike lanes from St. Michael's/Harkle to Hospital	0.40	\$ 14,438
5	Bike Lanes	Galisteo: Widen by 5 ft. from San Mateo to Hospital	0.05	\$ 6,875
6	Bike Lanes	Widen Camino de las Crucitas: 5 ft., Michelle to Buckman	0.20	\$ 55,000
7	Bike Lanes	San Mateo: Study and Implement Bike Lanes where feasible (Galisteo to 2nd St.)	1.00	\$ 46,200
8	Bike Lanes	Widen Old Santa Fe Trail: Sun Mtn Rd. to E. Zia Rd. and beyond within city limits	0.75	\$ 206,250
9	Bike Lanes	Paseo de Peralta Road Diet: Palace to Old Santa Fe Trail	0.60	\$ 27,720
10	Bike Lanes	Siler Road Diet (under way)	0.40	\$ 18,480
11	Bike Lanes	Pacheco St.: Study and Implement Bike Lanes where feasible (n. of San M to Siringo)	1.00	\$ 30,800
12	Bike Lanes	Wagon Rd.: Restripe with Bike Lanes (if not sharrows)	0.10	\$ 4,620
13	Bike Lanes	Cerrillos Rd.: Reconstruct with Bike Lanes, Maez Rd. to Llano St.	0.60	-
14	Sharrows	Osage: Sharrows bet. Agua Fria and San I	0.10	\$ 550
15	Sharrows	Paseo de Peralta: Sharrows bet. Washington and Palace	0.30	\$ 1,650
16	Sharrows	Tierra Contenta: Sharrows as needed where road narrows on Jaguar, Paseo del Sol, etc.	1.00	\$ 5,500
17	Sharrows	Wagon Rd.: Sharrows	0.10	\$ 550
TOTAL			10.40	\$ 573,513
(5) County-Lead Trail Construction (in rough order of priority)				
1	Multi-Use Trail	ARROYO HONDO: NM599 Station to Fire Place Rd. via abandoned I-25 on-ramp	0.25	\$ 165,000
3	Soft-Surface Trail	COUNTY RAIL TRAIL: Improvements from Rabbit Rd. to Spur Trail	1.50	\$ 330,000
4	Multi-Use Trail	RIVER TRAIL: Frenchy's Field to Siler Rd.	1.00	\$ 660,000
5	Soft-Surface Trail	SPUR TRAIL: Connect into SFCC (SFCC lead)	0.40	\$ 19,800
6	Soft-Surface Trail	COUNTY RAIL TRAIL: Improvements from Spur Trail to Ave Vista Grande	5.00	\$ 1,100,000
7	Multi-Use Trail	RIVER TRAIL: Siler Rd. to San Ysidro Crossing, with connection to Henry Lynch Rd.	1.13	\$ 1,017,500
8	Multi-Use Trail	RIVER TRAIL: San Ysidro Crossing to Caja del Oro Grant Rd. (pave existing trail)	0.50	\$ 220,000
9	Multi-Use Trail	RIVER TRAIL: San Felipe to E. of S. Meadows (at AFTC line)	1.25	\$ 825,000
10	Multi-Use Trail	RIVER TRAIL: Caja del Oro Grant Rd. west to AFTC line (w/connection n. to S. Meadows)	0.75	\$ 495,000
11	Multi-Use Trail	Connect County River Trail to Agua Fria Park trails	0.03	\$ 16,500
12	Multi-Use Trail	ARROYO HONDO (south branch): Fire station Trailhead at Rancho Viejo Blvd. to private development west of Richards Ave. - minus section along Via Orilla Dorada	1.25	\$ 825,000
13	Soft-Surface Trail	DALE BALL TRAILS: La Piedra Connection to Little Tesuque River (SFNF Trails) from DB Trails	0.60	\$ 29,700
14	Soft-Surface Trail	COUNTY RAIL TRAIL: Improvements from Ave Vista Grande to New Moon Overlook	4.50	\$ 990,000
15	Soft-Surface Trail	NM CENTRAL/KENNEDY LINE: Rancho Viejo "District Trail" to Eldorado (Soft-surface)	4.00	\$ 198,000
TOTAL			22.15	\$ 6,891,500
(6) County-Lead On-Road Bikeway Improvements (in rough order of priority)				
1	Bike Lanes	Road Diet: Tesuque Village Rd., Tesuque R. s. to JCT US84/285	1.20	\$ 55,440
2	Bike Lanes	Widen Old Santa Fe Trail: E. Zia Rd. to El Gancho Way	2.00	\$ 1,100,000
3	Bike Lanes	Widen Ave del Sur bet. Rancho Viejo Blvd. and Amy Biehl School (where not already widened for	0.15	\$ 41,250
TOTAL			3.35	\$ 1,196,690
(7) State-Lead Bikeway Improvements (in rough order of priority)				
1	Bike Lanes	Road Diet: OLVH from Paseo de la Luz to Ojo de la Vaca Rd.; w/ SBR 66 wayfinding signage, remove / rebuild cattle guard to east	0.60	\$ 33,220
2	Bike Lanes	Intersection of Airport Rd./Rodeo Rd. and Cerrillos Rd. (NM14): Study all four legs and implement Bike Lanes where feasible	NA	\$ 11,000
3	Multi-Use Trail	ARROYO HONDO to ARROYO DE LOS CHAMISOS TRAIL: via I-25 / NM14 Interchange (Dinosaur Trail to Beckner Rd.); Consider signing as State Bike Route 66	1.10	\$ 726,000
4	Bike Lanes	Full-width paving, selected state highways (e.g. NM14; frontage roads along NM599, I-25, US84-2	NA	\$ -
5	Bike Lanes	Widen other state highways to create shoulders, e.g. as work occurs on narrow frontage roads, NM592	NA	\$ -
6	Bike Lanes	NM14: Modify traffic islands south of NM599, assess future resurfacing or restriping needs in order to provide consistent shoulder or bike lane bet. Rancho Viejo Blvd. and NM599; Consider signing as State Bike Route 66	1.00	\$ 11,000
7	Bike Lanes	St. Michael's Dr. (NM466): Consider Bike Lane Retrofit through lane width reduction, west of St. Francis Dr., when next resurfaced & restriped	1.50	\$ 46,200
8	Bike Lanes	St. Michael's Dr. (NM466), Galisteo St. to Arroyo Chamiso Rd.: Consider bike through lanes in right-turn lanes, e.g. per NACTO	0.50	\$ 2,750
TOTAL			4.70	\$ 830,170
(8) Other Phase A and Ongoing (in rough order of priority)				
1	Bike Share System	Bike Share System	NA	\$ 550,000
2	Wayfinding	City Wayfinding: Various Bike Routes along Trails and Roads	NA	\$ 22,000
3	Wayfinding	County Wayfinding: Various Bike Routes along Trails and Roads	NA	\$ 11,000
4	Wayfinding	State Highway Wayfinding: State Bike Routes 9 and 66	NA	\$ 1,100
TOTAL			NA	\$ 584,100
City Trail Construction			9.21	\$ 6,746,942
City Trail Crossing Improvements			NA	\$ 959,200
City Trail Maintenance (Repaving, etc.)			3.85	\$ 1,749,000
City On-Road Bikeways & Wayfinding			10.40	\$ 595,513
City Bike Share			NA	\$ 550,000
County Trails			22.15	\$ 6,891,500
County On-Road Bikeways & Wayfinding			3.35	\$ 1,207,690
State Bikeways & Wayfinding			4.70	\$ 831,270
TOTAL			53.66	\$ 19,531,114

Table 9. Phase B Recommended Improvements, with Anticipated Lead Agency and Cost Estimate

Phase B: 2017-2022, listed in order of Agency, and then type of project				
	Type of Improvement	Improvement	miles	Cost Estimate
(1) City-Lead Trail Construction (in rough order of priority)				
1	Multi-Use Trail	RIVER TRAIL: Connection to Closson St.	NA	\$ 22,000
2	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: from Gov. Miles to Las Soleras	0.10	\$ 66,000
3	Multi-Use Trail	ARROYO DE LOS PINOS TRAIL: Fifth St. @ Cam. Lado to Llano St.	0.25	\$ 180,510
4	Multi-Use Trail	ARROYO DE LOS PINOS TRAIL: Llano St. to CSF Trail @ Yucca & Siringo	0.15	\$ 114,510
5	Multi-Use Trail	ARROYO CHAPPARAL TRAIL: from Arroyo Chamiso Trail to Chapparal E.S. (to ped bridge to north)	0.50	\$ 440,000
6	Multi-Use Trail	CANADA RINCON TRAIL: Alameda to Camino de las Crucitas	0.20	\$ 132,000
7	Multi-Use Trail	ACEQUIA TRAIL: Maclovio Park to Carmelita St. via Cielo Vista Park	0.10	\$ 121,000
8	Multi-Use Trail	RIVER TRAIL: Connection to Torreon Park (w/ bridge & crosswalk), and/or Ave de Torreon	0.10	\$ 341,770
9	Multi-Use Trail	TIERRA CONTENTA (N. Arroyo Chamiso): To Camino Entrada, via S. Meadows, School	0.40	\$ 264,000
10	Multi-Use Trail	ARROYO DE LOS PINOS TRAIL: Through Herb Martinez Park and west to Richards Ave. Extension Trail	1.00	\$ 660,000
11	Multi-Use Trail	MRC TRAIL: From NM599 frontage road to MRC entrance & paved path around soccer fields	1.30	\$ 913,000
12	Multi-Use Trail	ACEQUIA TRAIL: Atajo to Cielo Azul development (n. side of Las Acequias Park)	0.13	\$ 82,500
13	Multi-Use Trail	PUEBLOS DEL SOL TRAILS: Utility Line to Camino Carlos Rey	0.20	\$ 132,000
14	Multi-Use Trail	ST. FRANCIS DR. TRAIL: Continue south to Albertson's	0.10	\$ 66,000
15	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Connection north to Richards Ave.	0.25	\$ 170,500
16	Multi-Use Trail	MRC TRAIL: From Soccer Fields to Caja del Rio Rd.	0.20	\$ 132,000
17	Multi-Use Trail	MRC TRAIL: From Soccer Fields to Caja del Oro Rd.	0.20	\$ 132,000
18	Multi-Use Trail	RIVER TRAIL / Route, Patrick Smith Park to Hydroelectric Plant Park:	0.05	\$ 178,310
19	Multi-Use Trail	ARROYO HONDO to ARROYO CHAMISO: Connector along north side of I-25 to Las Soleras	0.25	\$ 165,000
20	Multi-Use Trail	RAIL TRAIL: West Spur from Rodeo Rd. south along Galisteo Rd.	0.50	\$ 330,000
21	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Through SWAN Park to Tierra Contenta Trail & Plaza Central	0.50	\$ 330,000
22	Multi-Use Trail	Las Acequias Park Phase 4: E-W trail along acequia from Atajo to Cielo Azul Development	0.20	\$ 132,000
23	Multi-Use Trail	NM CENTRAL / KENNEDY LINE: Rodeo Rd. to Pinon ES	0.80	\$ 528,000
24	Multi-Use Trail	ARROYO DE LOS PINOS (Mus. Hill): Along SE branch of arroyo, Corrales Rd. to Camino Lejo	0.10	\$ 66,000
25	Multi-Use Trail	ARROYO MASCARAS TRAIL: Consider improvements from San Francisco St. to Paseo de Peralta	0.30	\$ 264,000
26	Soft-Surface Trail Easement	ARROYO VERDE TRAIL: Connecting Gonzales Rd. to La Vereda/Palace Ave.	NA	\$ -
27	Repave M-Use Trail	RAIL TRAIL Repave from St. Michael's Dr. and Siringo	0.50	\$ 220,000
TOTAL			8.38	\$ 6,183,100
(2) City-Lead Trail Crossing Improvements (in rough order of priority)				
1	Crossing	ACEQUIA TRAIL: Grade Separated St. Francis Crossing	0.10	\$ 3,300,000
2	Crossing	RIVER TRAIL: Underpass of St. Francis Dr. (per 2012 Bond)	NA	\$ 3,300,000
3	Crossing	RAIL TRAIL: Consider Underpass of St. Michael's Dr.	NA	\$ 3,300,000
4	Crossing	Cerrillos Rd. at Alarid/Early, with median refuge (St. Francis-Cerrillos Intersection Improvements, Phase I)	0.10	\$ 21,780
5	Crossing	RAIL TRAIL: Consider Re-routing trail to cross east of Rodeo with median refuge, striping	0.05	\$ 44,770
TOTAL			NA	\$ 9,966,550
(3) City-Lead On-Road Bikeway Improvements (in rough order of priority)				
1	Bike Lanes	Widen Gov. Miles Rd. from Richards to Pueblos del Sol	0.50	\$ 275,000
2	Bike Lanes	Widen San Felipe Rd., Airport Rd. to Agua Fria St.	0.30	\$ 165,000
3	Bike Lanes	St. Michael's Road Diet, west of St. Francis Dr.: reconstruction with bike lanes, following road exchange to City	1.50	-
4	Bike Lanes	Cerrillos Rd., RR tracks to Early St. (St. Francis-Cerrillos Intersection Improvements, Phase II)	0.10	\$ 58,080
5	Bike Lanes	Widen W. Alameda: Calle Nopal to Siler Rd.	1.25	\$ 687,500
6	Bike Lanes	Widen Henry Lynch Rd.	0.50	\$ 275,000
7	Bike Lanes	Stripe bike lanes elsewhere as recommendable (e.g. consider Camino Alire; Osage s. of San I)	NA	\$ -
TOTAL			4.15	\$ 1,460,580
(4) County-Lead Trail Construction (in rough order of priority)				
1	Multi-Use Trail	NM CENTRAL/KENNEDY LINE: Rabbit Rd. to Burnt Water Rd. side path	0.50	\$ 605,000
2	Multi-Use Trail	ARROYO HONDO: NM14 to Rancho Viejo Blvd. / Fire Station Trailhead	1.00	\$ 660,000
3	Multi-Use Trail	ARROYO HONDO (south branch): Within RV Blvd. to w. of Richards Ave. / Section along Via Orilla Dorada	0.75	\$ 495,000
4	Multi-Use Trail	NM CENTRAL/KENNEDY LINE: E. of Richards Ave., Ave del Sur to trail head	0.10	\$ 66,000
5	Multi-Use Trail	RIVER TRAIL: Constellation to Water Treatment Plant	1.00	\$ 660,000
6	Multi-Use Trail	Rabbit Rd.ext. northside Sidepath / Sidewalk: from Richards Ave. to NM Central RR	0.40	\$ 211,200
7	Multi-Use Trail	NM CENTRAL/KENNEDY LINE: Rancho Viejo "District Trail" to Eldorado	4.00	\$ 2,640,000
9	Multi-Use Trail	RIVER TRAIL: Connection to Calle Atajo (w/ bridge)	0.20	\$ 407,000
9	Multi-Use Trail	ARROYO HONDO: Connection NE to Dinosaur Trail, including bridge over arroyo	1.00	\$ 935,000
10	Multi-Use Trail	ARROYO HONDO @ Planned Ped. Bridge North to Dinosaur Trail @ I-25 / NM14 Interchange	0.25	\$ 165,000
11	Multi-Use Trail	Richards Ave. West Side Sidepath through Petchesky Ranch (Old Dinosaur Trail to roundabout at Santo Nino church)	0.75	\$ 495,000
12	Soft-Surface Trail	SARAH WILLIAMS TRAIL: Dale Ball Trails to 10,000 Waves along Hyde Park Rd.	0.25	\$ 12,375
13	Multi-Use Trail	ARROYO HONDO: From Old I-25 on-ramp to NM14 (including NM14 underpass)	0.25	\$ 275,000
14	Soft-Surface Trail	ARROYO HONDO: Through Petchesky Ranch and south to AH Trail	1.20	\$ 59,400
TOTAL			11.65	\$ 7,685,975

Continued on next page

Phase B: 2017-2022, listed in order of Agency, and then type of project (cont.)				
	Type of Improvement	Improvement	miles	Cost Estimate
(5) County-Lead On-Road Bikeway Improvements (in rough order of priority)				
1	Bike Lanes	Widen W. Alameda: e. of Chicoma Vista to NM599 frontage road	0.38	\$ 206,250
2	Bike Lanes	Widen to add shoulders: Tesuque Village Rd., Tesuque village n to JCT US84/285	1.50	\$ 825,000
TOTAL			1.88	\$ 1,031,250
(6) State-Lead Bikeway Projects (in rough order of priority)				
1	Bike Lanes	Widen Hyde Park Rd. (NM475) where possible, Artist Rd. to Little Tesuque Cr.	3.50	\$ 1,925,000
2	Bike Lanes	Reconstruct/Repave Old Las Vegas Highway shoulders: from US285 FR to Paseo de la Luz	1.60	\$ 445,500
3	Bike Lanes	Paseo de Peralta (NM475) Road Diet, or Retrofit through Lane Width Reduction, where feasible		\$ -
TOTAL			5.10	\$ 2,370,500
			City Trails	8.38 \$ 6,183,100
			City Trail Crossing Improvements	NA \$ 9,966,550
			City On-Road Bikeways	4.15 \$ 1,460,580
			County Trails	11.65 \$ 7,685,975
			County On-Road Bikeways	1.88 \$ 1,031,250
			State On-Road Bikeways	5.10 \$ 2,370,500
			TOTAL	26.05 \$ 26,327,455

Table 10. Phase C Recommended Improvements, with Anticipated Lead Agency and Cost Estimate

Phase C: 2022-2032, listed in order of agency, then type of project				
	Type of Improvement	Improvement	miles	Cost Estimate
(1) City-Lead Trail Construction (in rough order of priority)				
1	Multi-Use Trail	CANADA RINCON TRAIL: Alamo to Calle del Viento (@ Calle Mejia)	0.50	\$ 330,000
2	Multi-Use Trail	CANADA RINCON TRAIL: Camino de las Crucitas to Alamo	0.40	\$ 271,370
3	Multi-Use Trail	I-25 NORTH FRONTAGE: Rail Trail / West Spur to Camino Carlos Rey & Pueblos del Sol Trails	0.80	\$ 528,000
4	Soft-Surface Trail	LA TIERRA TRAILS: Connection from NM599 frontage road to SW corner / Chili Line	0.10	\$ 66,000
5	Soft-Surface Trail	SARAH WILLIAMS TRAIL: Cross of the Martyrs Pk. to Gonzales Rd. along Hyde Park Rd.	1.00	\$ 49,500
6	Multi-Use Trail	LA TIERRA TRAILS: Connection from NM599 Underpass west to NM599 frontage road	0.13	\$ 82,500
7	Multi-Use Trail	MRC TRAIL: From Airport Rd. to Acequia Trail (if needed)	0.25	\$ 165,000
8	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Along Wagon Rd. Office Complex, cross Arroyo @ Emblem Rd.	0.30	\$ 473,000
9	Multi-Use Trail	Richards Ave. Westside Sidepath, under I-25 to Dinosaur Trail	0.20	\$ 139,370
10	Multi-Use Trail	ARROYO DE LOS PINOS: Richards Ave. Connector to Camino de los Arroyos	0.50	\$ 330,000
11	Multi-Use Trail	ACEQUIA TRAIL: Harrison to Calle de Comercio	0.05	\$ 33,000
12	Multi-Use Trail	ACEQUIA TRAIL: Siler Rd. to Henry Lynch Rd.	0.60	\$ 396,000
13	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Zia Rd./Fort Union Dr. to St. John's College, w/X-ing improvements & sidewalk along Zia Rd.	2.00	\$ 1,821,380
TOTAL			6.83	\$ 4,685,120
(2) City-Lead On-road bikeways (in rough order of priority)				
1	Bike Lanes	Other Road Widening Opportunities in City: e.g. Bishop's Lodge Rd., Rodeo e. of St. Fr., Buckman Rd.		TBD
(3) County-Lead Trail Construction (in rough order of priority)				
1	Soft-Surface Trail Easement	CHILI LINE: Connection SW corner of La T. Trails to Pipeline Rd. Trail & Thistle Lane (possibly including multi-use path to abandoned Camino la Tierra & mailboxes)	0.80	\$ 264,000
2	Multi-Use Trail	ARROYO DE LAS GALLINAS: from NM599 underpass near Aldea to frontage road, e.g. at Via Tessler (pending development s. of NM599)	0.10	\$ 66,000
3	Soft-Surface Trail	NM CENTRAL / KENNEDY LINE: Eldorado to Galisteo	10.00	\$ 495,000
4	Soft-Surface Trail	COUNTY RAIL TRAIL improvements, New Moon Overlook to Lamy, with US285 underpass	7.00	\$ 456,500
5	Soft-Surface Trail	SARAH WILLIAMS TRAIL: 10,000 Waves to Nunn's Curve (SFNF Trails) along Hyde Park Rd.	0.75	\$ 37,125
TOTAL			18.65	\$ 1,318,625
(4) County-Lead On-road bikeways (in rough order of priority)				
1	Bike Lanes	Widen Rancho Viejo Blvd.	1.75	\$ 962,500
2	Bike Lanes	Widen Old Santa Fe Trail from El Gancho Rd. to Two Trails Rd.	1.75	\$ 962,500
3	Bike Lanes	Other Road Widening Opportunities in County: e.g. Bishop's Lodge Rd., Camino La Tierra, CR42 east of NMCRR		\$ -
TOTAL			3.50	\$ 1,925,000
			City Trails	6.8 \$ 4,685,120
			City On-Road Bikeways	TBD
			County Trails	18.7 \$ 1,318,625
			County On-Road Bikeways	3.5 \$ 1,925,000
			TOTAL	29.0 \$ 7,928,745

Table 11. Phase D Recommended Improvements

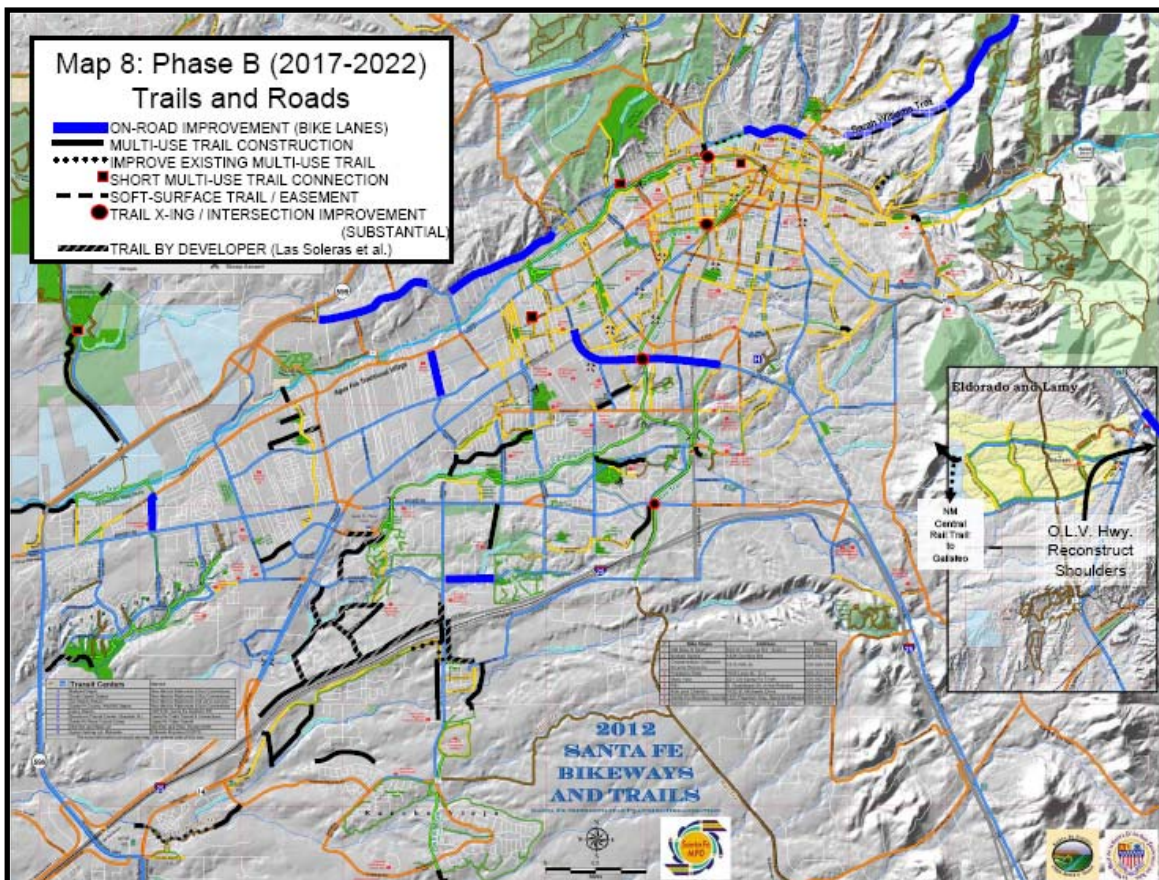
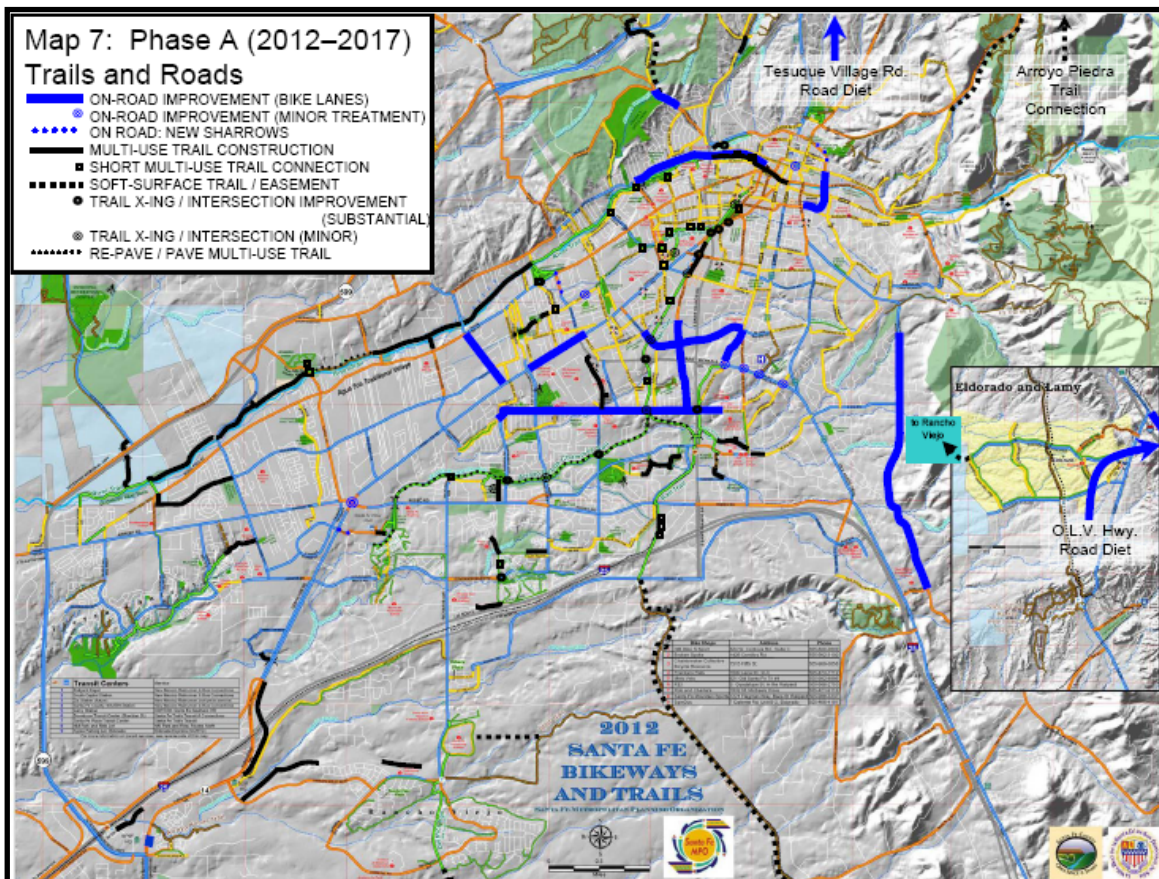
D Phase D: Long-term, Long-range alignments				
	Type of Improvement	Improvement	miles	Cost Estimate
1	Multi-Use Trail	WEST: To La Bajada & Cochiti via Santa Fe River / Old 66 (as alternative to I-25)	NA	\$ -
2	Crossing	NM CENTRAL RAIL TRAIL: Under I-25 and Rail Runner	NA	\$ -
3	Multi-Use Trail	EAST: Canoncito to Glorieta via BNSF RR, Galisteo Creek, and/or Old 66 (as alternative to I-25)	NA	\$ -
4	Multi-Use Trail	NORTH: To Buckman / Otowi via Chili RR Line, Buckman Diversion, and/or Old Buckman Rd.	NA	\$ -
5	Multi-Use Trail	SOUTHWEST: To Waldo Canyon / Cerrillos / Madrid via Railrunner line and old rail bed to Madrid	NA	\$ -

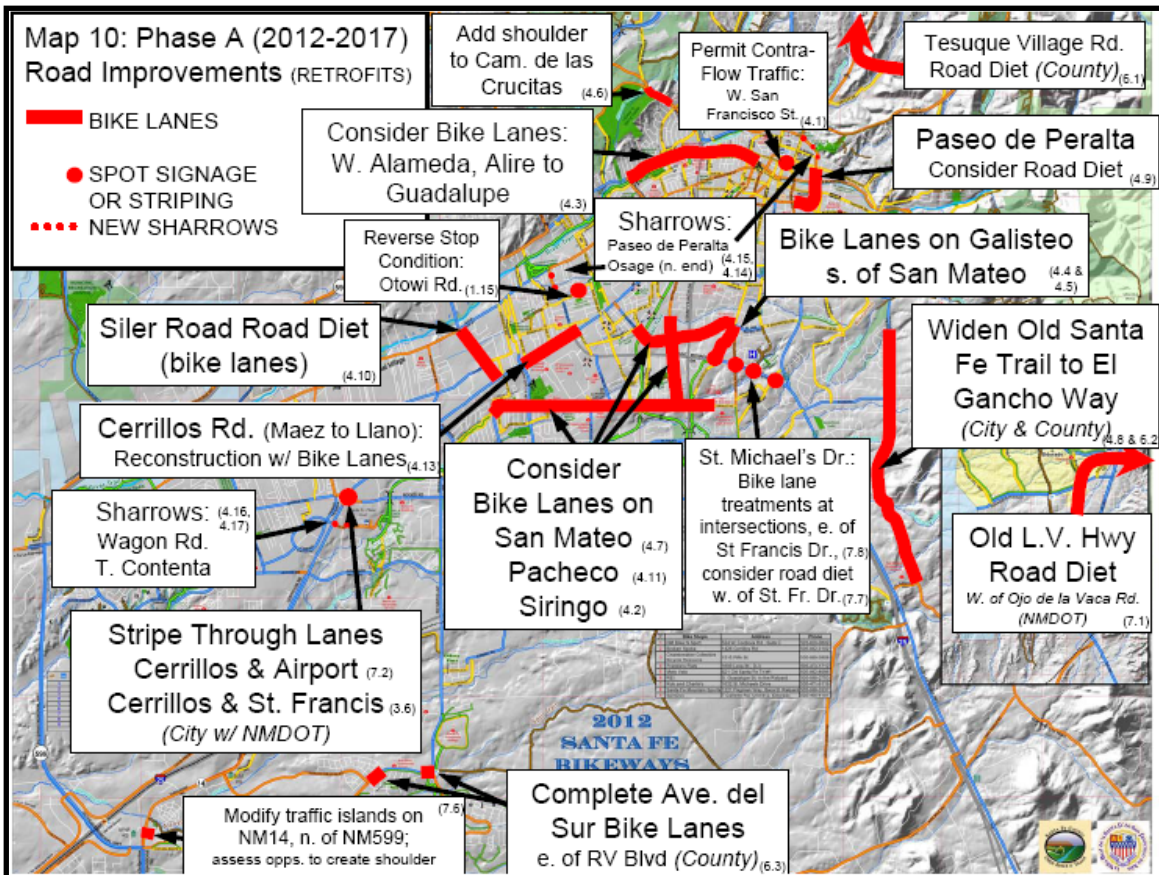
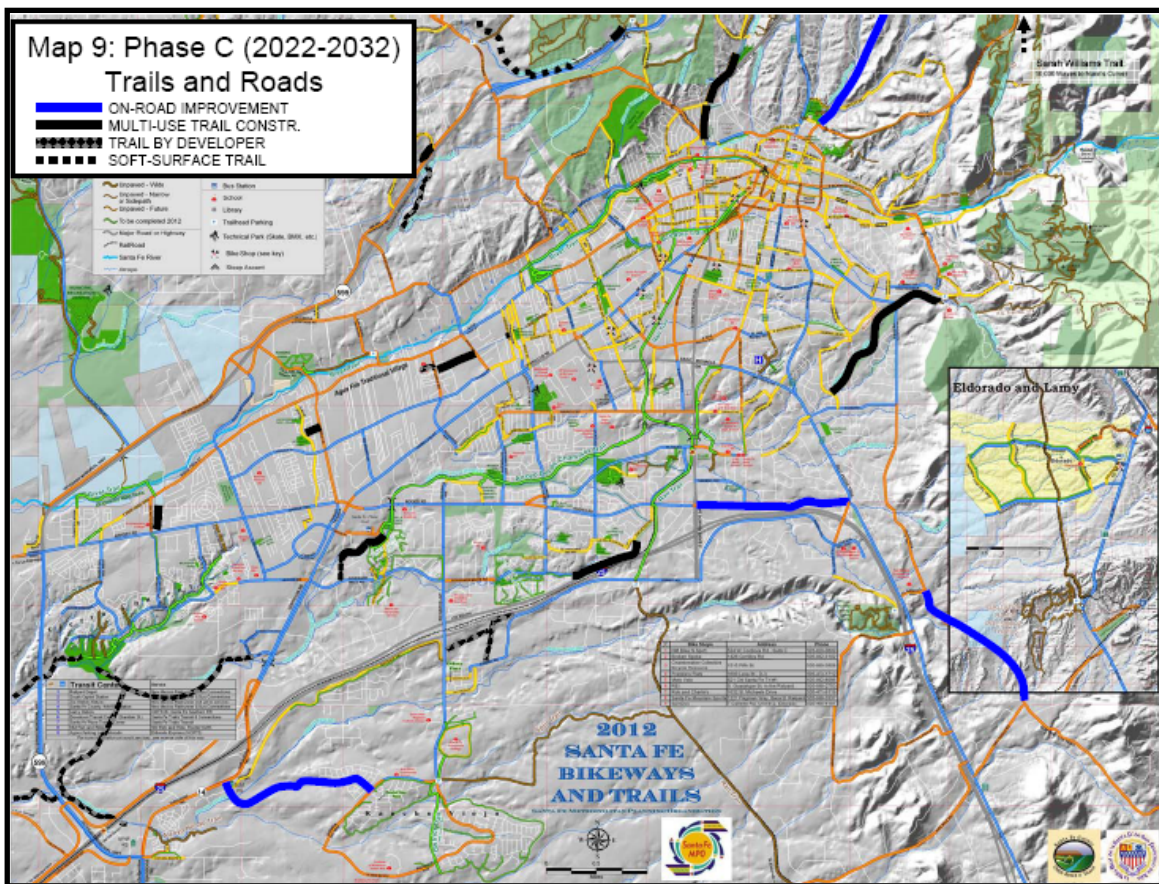
Private development is a cornerstone of bikeway improvements in the city and the county. Improvements that are expected through private development are not included in Tables 8 through 11, but are critical to the determination of priorities and phases for relevant publicly-funded projects. Table 12 below provides a list of “developer-driven” bikeway segments that directly influence the implementation plan. The anticipated timing of these developments and of public initiatives such as river restoration, development of parks and open space, other major public projects, as well as planned annexation, has significant impact on phasing decisions for individual projects in Tables 8-11.

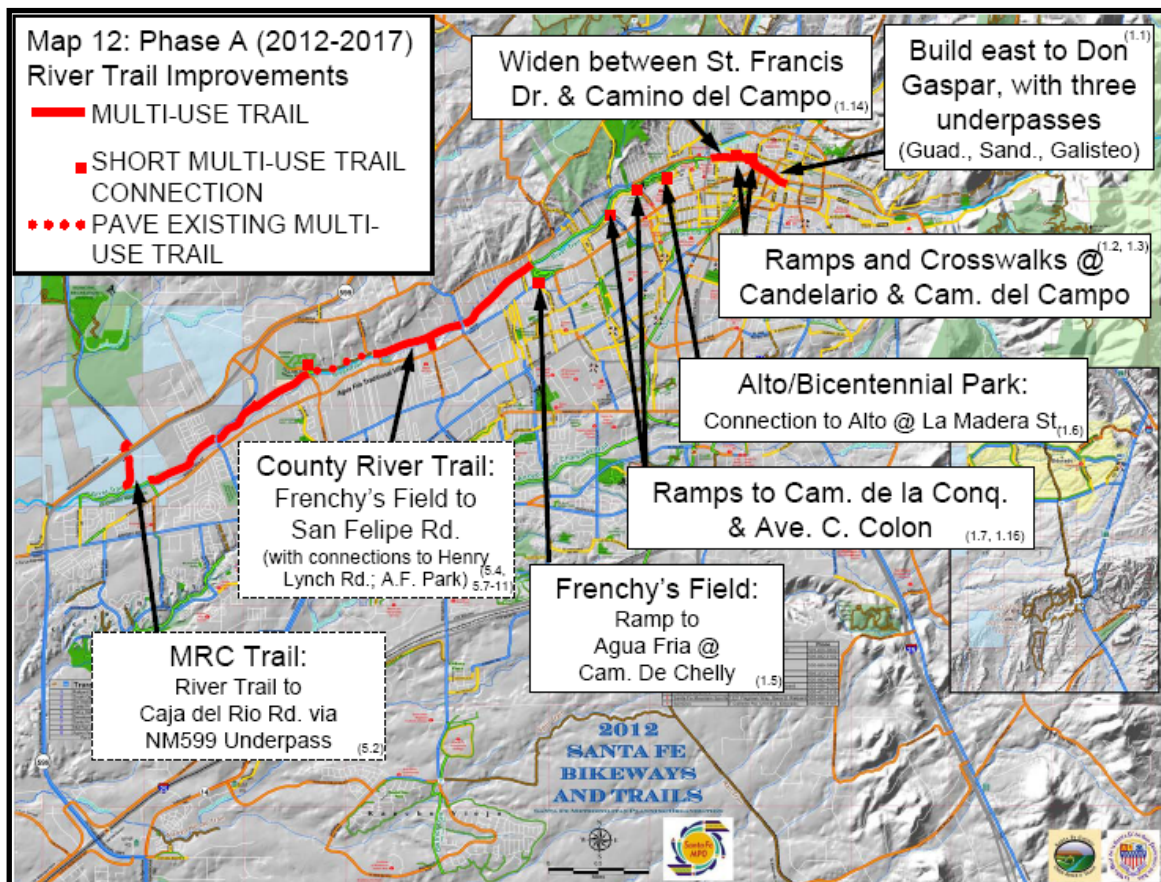
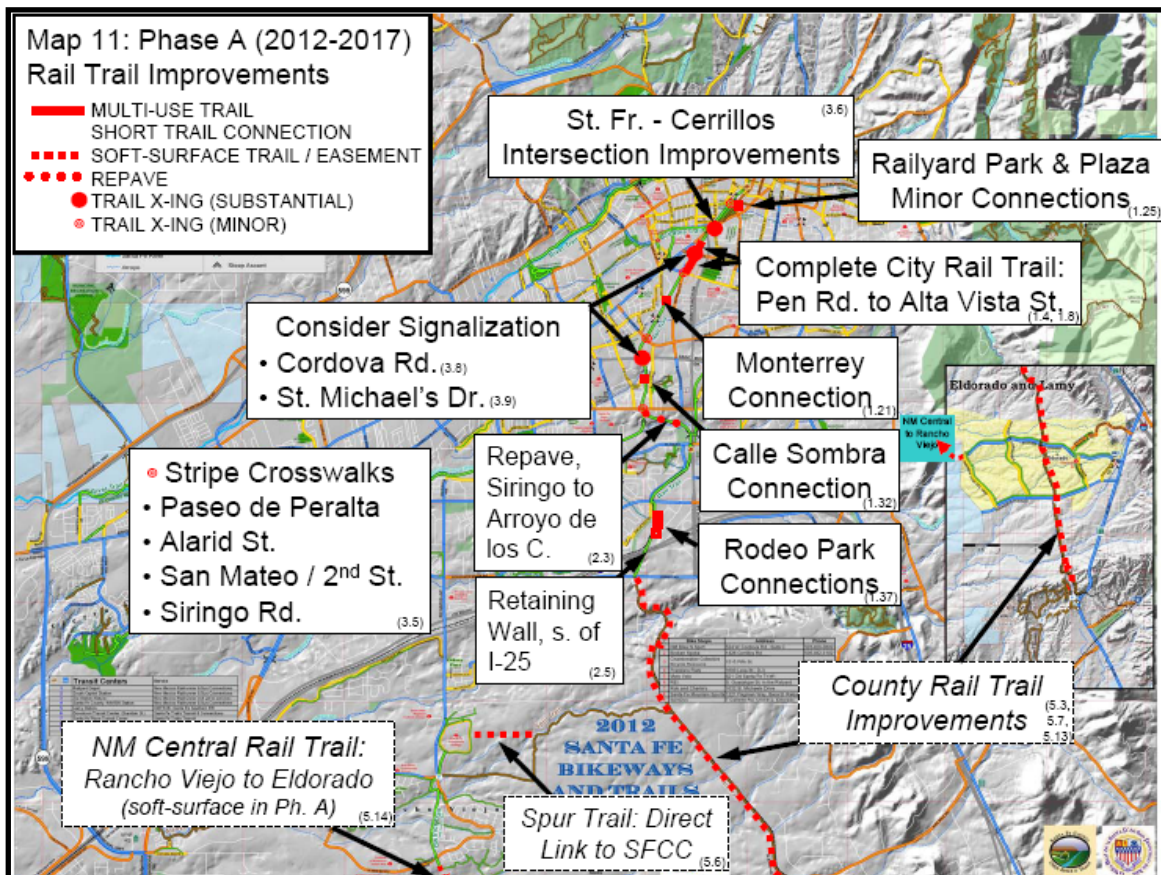
In addition to playing a role within the greater bikeway system, privately-funded facilities respond to needs generated by private developments themselves. Planning for and programming these improvements must therefore remain flexible. This list is ***not*** an attempt to reflect all bikeway needs that may be met through private developments but rather an illustration of expectations of the role that private development may play in creating, extending, or connecting into major bikeways in the MPO area.

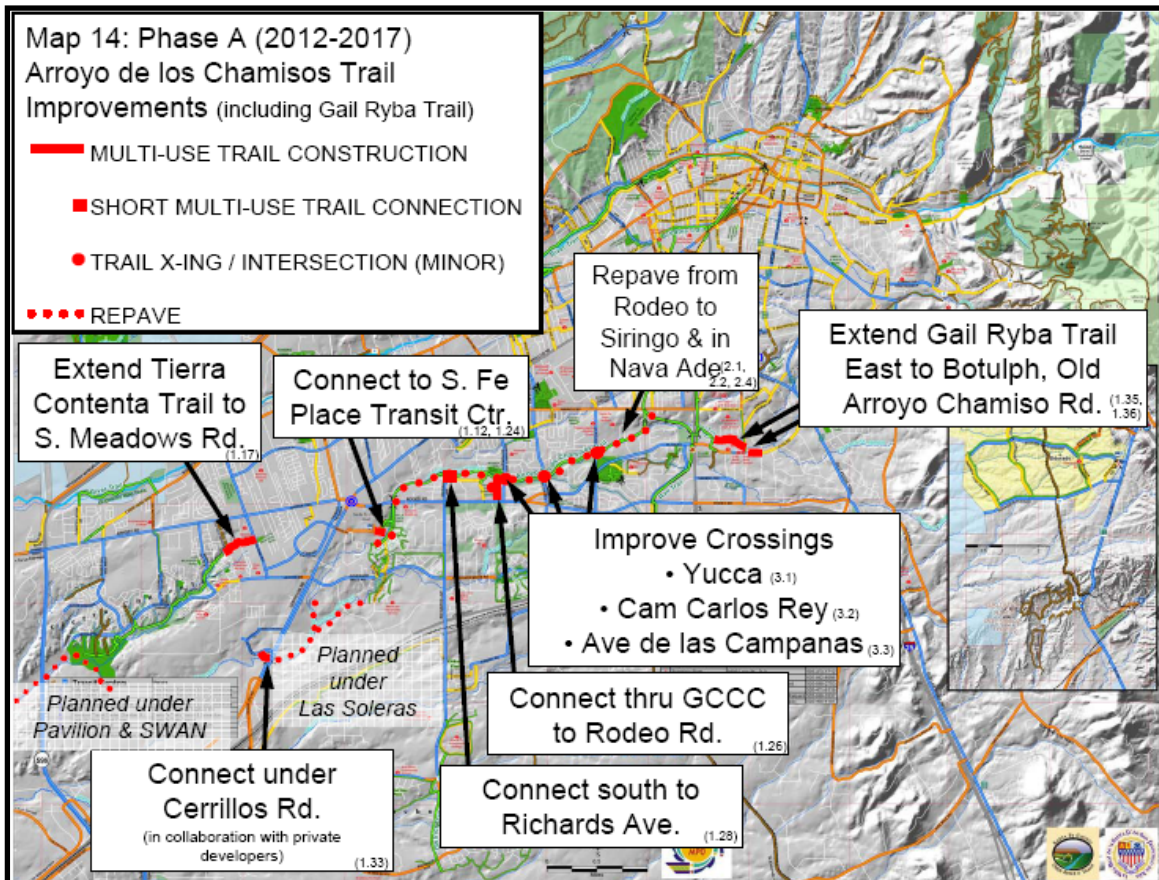
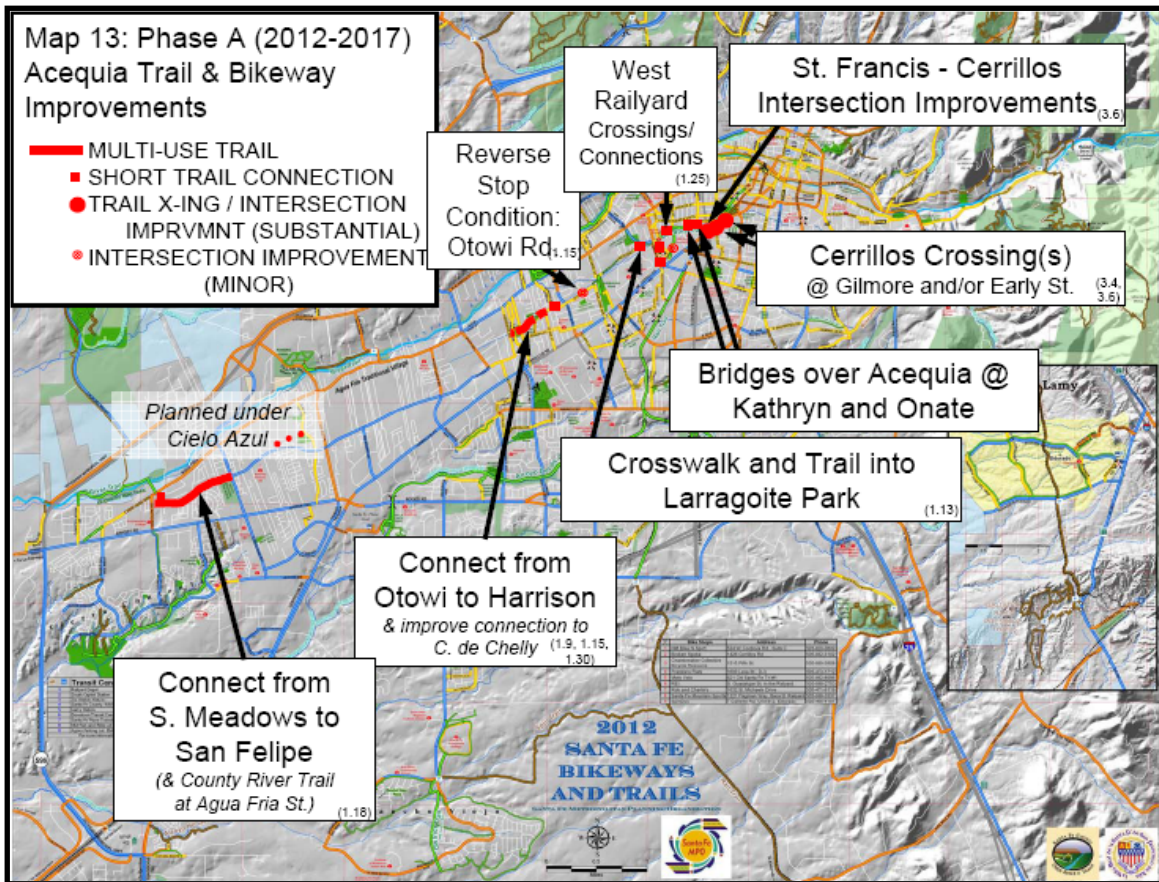
Table 12: Bikeway Projects Anticipated through Private Development

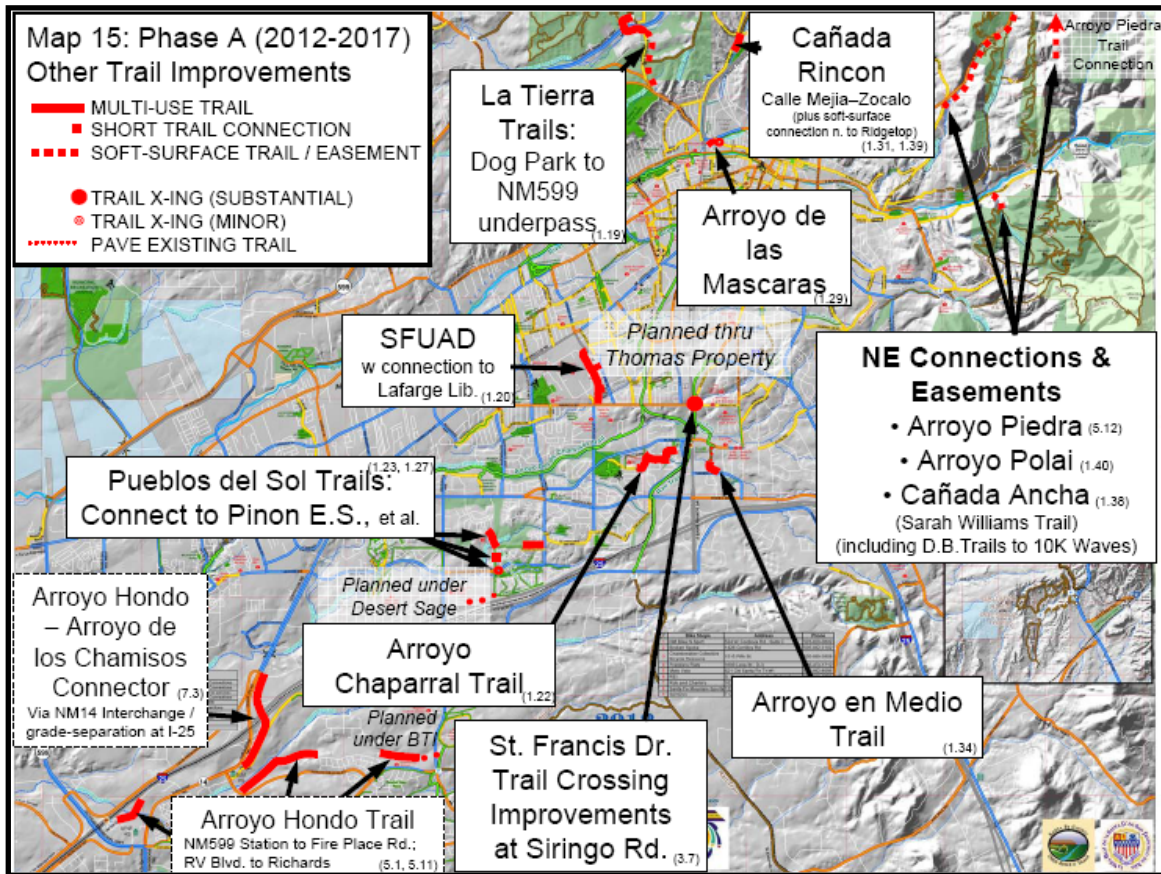
DD Developer Driven Improvements (selected)			
	Type of Improvement	Location	miles
1	Multi-Use Trail	ARROYO HONDO (south branch): E. of Amy Biehl School through private development to	0.25
2	Bike Lanes	Widen Ave del Sur east of Amy Biehl School	0.15
3	Multi-Use Trail	ACEQUIA TRAIL: Rufina to Atajo/Las Acequias Park (pending Cielo Azul development)	0.20
4	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: from s. of Gov. Miles to Cerrillos Rd. (Las Soleras)	0.67
5	Multi-Use Trail	I-25 NORTH FRONTAGE: Richards Ave. to Las Soleras	1.00
6	Multi-Use Trail	I-25 NORTH FRONTAGE: Pueblos del Sol to Richards Ave.	0.50
7	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Extend connector trail from Santa Fe Place transit stop to Wagon Rd.	0.25
8	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: West of Plaza Central to NM599	0.50
9	Multi-Use Trail	ACEQUIA TRAIL: Lopez Lane to Atajo	0.13
10	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: West from Villa Linda Soccer Field to Office Complex	0.20
11	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Emblem Rd. through Grant Property to Gov. Miles Rd.	0.20
12	Multi-Use Trail	Richards Ave. East Side Sidepath / Sidewalk: from I-25 underpass to Rabbit Rd. Ext.: By	0.25
13	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Under NM599 and west to La Cienega area (Pavilion Development)	2.00
14	Multi-Use Trail	ARROYO DE LAS GALLINAS: from NM599 underpass to a street with access to W. Alameda	1.00
15	Multi-Use Trail	Richards Ave. Westside Sidepath, south of Beckner to I-25	0.20
16	Multi-Use Trail	ARROYO DE LOS CHAMISOS TRAIL: Entrada Contenta to SWAN Park	1.50
17	Multi-Use Trail	ACEQUIA TRAIL: from Henry Lynch Rd. to Ave. de Montoya	0.20
18	Multi-Use Trail	ARROYO HONDO @ NM599 to ARROYO CHAMISO near SWAN Park	1.25
19	Multi-Use Trail	NM CENTRAL/KENNEDY LINE: Rabbit Rd. north to I-25	0.50
20	Multi-Use Trail	NM CENTRAL/KENNEDY LINE: I-25 south frontage / arroyo, from rail bed west to Richards Ave.	0.50
21	Multi-Use Trail	ARROYO HONDO: NM599 Station to NM599 frontage road via I-25	0.25
22	Multi-Use Trail	ARROYO HONDO: under NM599 and west	0.25
23	Multi-Use Trail	NM CENTRAL/KENNEDY LINE: I-25 south frontage / arroyo, from rail bed east to Rabbit Rd.	0.50
TOTAL			12.45











D. Funding Sources / Mechanisms

Implementation of this Bicycle Master Plan will depend on continued inclusion of provisions for bicyclists within greater public projects (e.g., “routine accommodation” within transportation projects), within private developments as required by City and County land use and development review departments, and through specific programs and projects by public agencies using dedicated public resources. Public funding and other public support is available at the federal, state, and local levels.

Federal Transportation Funding Sources

Types and amounts of federal transportation funding available for the implementation of this Bicycle Master Plan are subject to the outcome of the current process to re-authorize federal transportation funding under SAFETEA-LU. Bicycle and pedestrian improvements currently qualify for nearly all categories of federal transportation funding, including the Surface Transportation Program (STP) and even Interstate Maintenance (IM) funding. In practice, however, dedicated facilities such as sidewalks, multi-use trails, and bike lanes, are typically only federally funded in New Mexico through the use of dedicated federal resources such as those outlined below.

Transportation Enhancements (TE). Federal TE funds are distributed through NMDOT’s six District offices. State or local matching funds amounting to at least 25% of total TE-eligible expenses are required. Three of the twelve qualifying activities relate specifically to bicycling:

- Provision of pedestrian and bicycle facilities
- Provision of pedestrian and bicycle safety and education activities
- Conversion of abandoned railway corridors to trails

For more information on the federal TE program, see:

<http://www.fhwa.dot.gov/environment/te/index.htm>

TE funding was used by NMDOT’s District 5 to build sidewalks and landscaping along Old Pecos Trail (NM466) in the 1990s. Past TE support through NMDOT for statewide bicycle education activities under Bicycle Coalition of New Mexico, including training of LCIs and other bicycle instructors in the Santa Fe area, has been discontinued.

Santa Fe County is currently using TE funding to improve the Santa Fe Rail Trail and to initiate work toward a New Mexico Central Rail Trail connecting Eldorado to Santa Fe. NMDOT’s District 5 has forecasted very limited availability of additional TE to the Santa Fe MPO area in the foreseeable future.

Recreational Trail Program (RTP). Federal RTP funds are distributed through the New Mexico State Parks (NMSP) Division of New Mexico’s Energy, Minerals, and Natural Resources Department (EMNRD). Much of the RTP funding available to New Mexico is used for trail projects within state parks. A significant percentage of available funding is designated for trails for motorized use.

RTP funding helped build a multi-use trail on Pojoaque Pueblo, just north of the MPO area, in the 1990s. South of the MPO area, efforts to access RTP funding for a rail trail on the abandoned New Mexico Central Rail line between Moriarty and Estancia have not been successful.

NMSP reports that the current RTP grant cycle is suspended pending availability of funds. For more information, see www.emnrd.state.nm.us/PRD/rectrails.htm.

Safe Routes to School (SRTS). Federal SRTS funds are administered by the NMSRTS program within the NMDOT. New Mexico is eligible for roughly \$1,000,000 per year statewide for engineering, education, encouragement, and enforcement activities intended to increase the number of children who walk or ride a bicycle to school. No state or local matching funds are required. The federal formula applied in New Mexico is that 75% of the available funding is to be used for engineering infrastructure and 10% for eligible education, encouragement, or enforcement activities; the remaining 15% is a “flex” category that can be used for either engineering or non-engineering activities.

The NMSRTS program provides successful applicants, including local governments, tribal governments, and/or school districts, with \$20,000 in “Phase 1” funding for planning and educational activities. Once a community has created a satisfactory SRTS Action Plan, it is eligible for up to \$250,000 for “Phase 2” engineering activities and up to \$25,000 in additional non-engineering activities. Although most local SRTS programs focus on a single school or a small group of schools, the Las Cruces Metropolitan Planning Organization has succeeded in securing NMSRTS support for MPO-area-wide planning activities.

The NMSRTS program is not currently accepting new applications for funding. Further information is available at <http://dot.state.nm.us/Planning.html#SRTS>.

National Scenic Byways Program (America’s Byways). The National Scenic Byways Program identifies roads with outstanding scenic, historic, and cultural, natural, recreational, and archaeological qualities as National Scenic Byways. In the Santa Fe metropolitan area, these include the Camino Real, the Santa Fe National Forest Scenic Byway (primarily along Hyde Park Rd. / NM475), the Santa Fe Trail Scenic Byway, Route 66 (pre-1937 alignment) Scenic Byway, and the Turquoise Trail Scenic Byway (NM14).

In New Mexico, federal funding for the development of scenic byway programs and projects is now administered by the New Mexico Department of Transportation, which issued its first “Call for Projects” in many years on Dec. 1, 2011. A 20 percent state or local match is required. Eligible activities include on-street and off-street bicycle facilities, intersection improvements, and guidance for bicyclists including maps. Available funding for the nationwide competitive process is limited; apportioning of funds by FHWA is not defined at the state level. For more information on NMDOT’s Scenic Byways Program, see <http://dot.state.nm.us/Planning.html#Scenic>.

The following table lists proposed improvements under this plan that might be eligible for Scenic Byways funding:

Table 13. Scenic Byways in the Santa Fe MPO area, with eligible projects proposed in the Metropolitan Bicycle Master Plan.

<i>Scenic Byway</i>	<i>Facility</i>	<i>Proposed Improvements</i>	<i>Termini</i>	<i>Implementing Agency</i>
Santa Fe National Forest Scenic Byway	Hyde Park Rd. (NM475)	Various Soft-surface trail segments along Canada Ancha and to SFNF Trails	Cross of the Martyrs Park and Nun's Curve	City and/or County
		Paved shoulders	Throughout, but esp. Artist Rd. to 10,000 Waves	NMDOT
Route 66 Scenic Byway	Old Las Vegas Highway (FR2108)	Restripe (Road Diet) west of Ojo de la Vaca Rd.: eliminate climbing lane, stripe with 5-6 ft. shoulders	US285 and I-25 Interchange at Canoncito	NMDOT
		Repair or remove cattle guard east of Ojo de la Vaca Rd.		
		Restore shoulders w. of Paseo de la Luz		
		Sign as State Bike Route 66		
Santa Fe Trail Scenic Byway	Old Santa Fe Trail	Widen/add paved shoulders	Zia and El Gancho Rd.	City and County
Camino Real Scenic Byway	Tesuque Village Rd. (CR72)	Restripe (Road Diet): eliminate climbing lane, stripe with 5-6 ft. shoulders	Bridge over Tesuque Creek south to US84/285	County
		Sign as State Bike Route 9 to Tesuque Village		
Turquoise Trail Scenic Byway	NM14	Repave / Restripe / eliminate pavement seam in shoulders	Rancho Viejo Blvd. to Village of Madrid	NMDOT
		Consider signing as State Bike Route 14 or 66		

Highway Safety Improvement Program (HSIP). Federal HSIP funds are administered by NMDOT under a competitive statewide process. The state program relies heavily on crash data in order to prioritize awardees. Bicycle and pedestrian activities qualify if applicants can show that an activity will bring about a significant, measurable safety improvement. For more information on NMDOT's HSIP activities see http://dot.state.nm.us/Engineering_Support.html#f.

Transportation, Community and System Preservation (TCSP) funds may support transit-oriented development, traffic calming and other projects that improve the efficiency of the transportation system, reduce impact on the environment, and provide efficient access to jobs, services, and trade centers. The TCSP program provides communities with resources to explore the integration of their transportation system with community preservation and environmental activities. TCSP funds require a 20 percent match. For more information see <http://www.fhwa.dot.gov/tcsp/>

American Recovery and Reinvestment Act (ARRA) Funds. More than 12,000 transportation projects have been funded by the federal government through ARRA since 2009. ARRA funds were used by the County to complete the paved Rail Trail between I-25 and Rabbit Rd. ARRA support continues to be available through discretionary TIGER grants, described below.

TIGER Grants. “Transportation Investment Generating Economic Recovery” or TIGER Grants are administered by the US Dept. of Transportation under the American Recovery and Reinvestment Act of 2009. These grants, which are intended to support “surface transportation projects that will have a significant impact on the Nation, a metropolitan area or a region,” continue to be available, now through the TIGER Discretionary Grant Program for 2012 (for more information, see <http://ops.fhwa.dot.gov/freight/infrastructure/tiger/>).

Other sources of federal support. Availability of other federal transportation funds for agencies within the Santa Fe MPO area is very limited. For example, because of our clean air, the Santa Fe area does not directly qualify for Congestion Mitigation and Air Quality (CMAQ) funding, though some transit-related activities in Santa Fe that involve links with Albuquerque may be pursued through agencies in the Albuquerque area. Other sources of federal funding do not apply due to our small population base.

Federal Funds / Non-transportation Sources

Community Development Block Grants (CDBG). A wide variety of planning and development activities qualify for these federal funds, which are administered by the U.S. Department of Housing and Urban Development. In Santa Fe, CDBG funds have contributed to current planning by the City around the possible transformation of St. Michael’s Dr. into a more pedestrian-oriented and bicycle-friendly corridor. More information is available at www.hud.gov/offices/cpd/communitydevelopment/programs/index.cfm.

Rivers, Trails and Conservation Assistance Program (RTCA). This program under the National Parks Service (NPS) provides technical assistance by NPS staff to establish and restore greenways, rivers, trails, watersheds and open space. The program does not provide funding to grantees. See http://www.nps.gov/ncrc/programs/rtca/contactus/cu_apply.html

State Resources

The State of New Mexico provides various other avenues of support for pedestrian and bicycle improvements:

NMDOT District 5 administers federal transportation funding sources in the Santa Fe area as described above, in conjunction with FHWA’s New Mexico Division. NMDOT plans and implements highway construction and reconstruction projects through a mix of federal and state support. NMDOT’s District 5 undertakes maintenance activities

through the use of the state funding. Activities that may benefit cyclists in particular include pavement overlays, re-striping, sweeping, and plowing.

New Mexico Department of Health (NMDOH). Current strategic planning by NMDOH for a variety of programs, including healthier weight and chronic diseases, has emphasized advocacy for pedestrian and bicycle infrastructure, and particularly the promotion of “complete streets” approaches, as a major area of future activity. While NMDOH staff and partners are initiating public awareness activities, more significant resources have not yet been dedicated to this area.

New Mexico Mainstreet. This program within the State of New Mexico, Economic Development Department, provides support for development of more attractive “main streets” within New Mexico communities. Pedestrian improvements are a typical activity supported by the program; bicycle facilities also qualify. For more information see nmmainstreet.org.

New Mexico Rail Runner Express. Rio Metro, the operator of NMRX, offers some assistance with planning of transit-oriented development around Rail Runner stations.

University of New Mexico, Prevention Research Center. UNM/PRC is supporting planning activities to improve the environment for physical activity, and particularly within the transportation system, in a handful of rural communities around the state. For more information, see:

Local Funding Sources

Bonds. Much of recent trail construction by the City of Santa Fe has been the result of a \$30 million Capital Improvement Program (CIP) Bond for parks and trails that passed in 2008. The City is programming a new CIP bond, which will include specific support for on-road bicycle improvements, and has received voter approval to issue an “Opportunity Bond” in 2012 to include \$6 million for trails, specifically in support of Phase A of this Bicycle Master Plan. The County may also pursue bond funding to support road and trail improvements in 2012.

Impact Fees are currently collected by the City of Santa Fe for new residential, commercial, office and industrial developments with specific fee rates for contributions toward arterial streets, signals, neighborhood parks, regional parks, fire service, police service, water, and wastewater. The City’s current Impact Fee Capital Improvements Plan covers the years 2007-2012.

Gross Receipts Tax (GRT). A portion of local GRT is dedicated to bikeway improvements as determined by the Regional Planning Authority. In the past, one-quarter of one percent of the GRT was dedicated to County open space and trails projects with presumptive benefits for city residents. This formula is no longer in place but these projects still qualify for the use of GRT.

E. Performance Indicators, with Baselines and Benchmarks

The MPO, working in conjunction with member agencies, will develop baselines, benchmarks, and reporting mechanisms for indicators of progress toward meeting the objectives of this Bicycle Master Plan. Baselines and targets for facility-based indicators in particular will directly reflect the assessment and recommendations for development of bikeways as detailed in the implementation plan.

1. Indicators based on Facilities & Programs

Indicator for “bicycle-friendliness”

- Recognition by LAB as a “Bicycle-Friendly Community” (BFC)
Baseline for 2011: City of Santa Fe recognized as BFC at the Bronze Level
Target for 2017: Metropolitan Area recognized as BFC at Silver level
Target for 2022: Metropolitan Area recognized as BFC at Gold Level

Indicators for on-road bicycle facilities:

- Number of miles of AASHTO-compliant bicycle facilities on major roadways
Target for 2017:
15 miles of new bike lanes or shoulders through road retrofits
- X% of major roadways have AASHTO-compliant bicycle facilities.
Target for 2017:
100% of new major roads have bike lanes or shoulders meeting AASHTO

Indicators for off-road bicycle facilities:

- Number of miles of AASHTO-compliant multi-use trails.
Baseline for 2012: 18.5 miles of paved arterial multi-use trails in MPO area
Target for 2017: 30 miles of paved arterial multi-use trails in the MPO area
- X% of major multi-use trails are built compliant with AASHTO
Target for 2017:
100% of new major multi-use trails are built compliant with AASHTO

Indicators to be developed through use of Geographic Information Systems:

- X% of urban population lives within one mile of a bikeway that is directly connected to the core bikeway system
- X% of urban population lives within one mile of a multi-use trail that is directly connected to the core trail system
- X% of the urban population can access shopping, school, park, playground, playing fields, recreational facilities, outdoor recreation areas, including recreational trails, by bicycle
- X% of public facilities are easily accessible by bicycle from the core bikeways network

Other Facility-Based Indicators, to be developed:

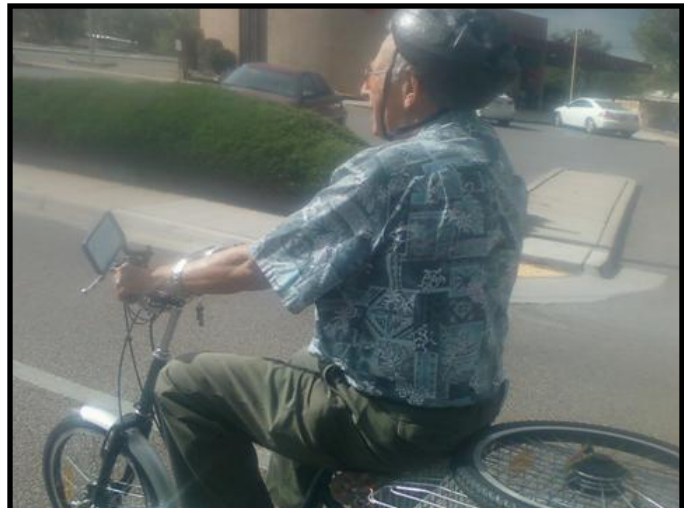
- Bike Parking indicator

- Growth of Bike Share program

2. Indicators on education / awareness and behavior

The Santa Fe Metropolitan Planning Organization will work with public and private partners to develop reporting around the following indicators:

- Modal Split: Use of bicycles within all forms of transportation (household surveys)
Baseline for 2010: 0.5% of commuters use a bicycle as the primary means of commuting (ACS)
Target for 2020: 1.0% of commuters use a bicycle as the primary means of commuting (ACS)
- Use of specific facilities: Bicycle and pedestrian traffic counts to be performed on major facilities under coordination of Santa Fe MPO
- Use of bicycles on transit: Data to be gathered through reporting by transit providers
 - NM Rail Runner
 - Santa Fe Trails
 - North-Central Regional Transit District
- Use of bike share program: Data to be gathered through bike share program reporting
- Use of bicycles in the public sector (data and reporting mechanisms to be developed by MPO)
Baseline: Current level of usage by police, fire department, and parking enforcement
Target: Increased numbers of public employees and public agencies using bicycles.
- Other Survey Data:
 - Commuter behavior, including transit (to be developed).
 - Use of Helmet (through Behavioral Risk Factor Surveillance System)



Off to the future: A motorized tricycle provides this gentleman with an ideal transportation alternative. This Plan will need to remain flexible as technology, best practices, and social norms around transportation evolve.