



# Bicycle Transportation Plan

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## Executive Summary

Los Alamos County is an active outdoor community with scenic mountainous topography, natural landscapes, home to Los Alamos National Laboratory (LANL) and three national parks including the Bandelier National Monument, Valles Caldera National Preserve and the newly established Manhattan Project National Historical Park. With relatively low traffic congestion, an increasing contingent of bicyclists occupy the road network. The county is traversed with numerous trails shared by bicyclists, hikers, runners, walkers, and equestrians. Thus, bicycling is a natural part of the community setting for both recreation and transportation.

On July 26, 2005, County Council endorsed the Transportation Board's recommendation of the Los Alamos Bicycle Transportation System (Exhibit A), the first County document formally recognizing bicycle improvements during major maintenance, reconstruction or construction of roadway facilities and established bicycle routes and priorities. This document was produced through the Transportation Board's Bicycle Subcommittee. Along with numerous public meetings, the subcommittee issued polls to gauge citizen interest in bicycling as a form of transportation. The polls indicated that citizens favored adding bicycle and pedestrian infrastructure throughout the County and in a percentage comparable to other bicycle friendly communities that already use bicycles as a form of transportation to school and work. The mission of the subcommittee was to connect cyclists from their homes to their destination and provide safe and efficient *bicycling as transportation*. Therefore, routes were chosen to connect residential communities to destinations, particularly through collectors and arterials, and where possible, encouraging connectivity on state and LANL routes. The routes also focus on a 1-mile radius of local schools to address "Safe Routes to School" concerns.

Over the years several bicycle facility improvements were implemented countywide, including some of the priorities listed in the 2005 document. Further guidance to ensuring that *bicycling as transportation* was included in county planning occurred in 2010 with the passage of Council County Resolution 10-32, *Policy for the Design of Public Streets and Rights-of-Way in Los Alamos County*, (Exhibit B). More recently, a citizen petition was brought before the County Council in 2016 requesting development of an urban bike path through the center of town suitable for all users. Subsequently, a subcommittee of citizens and staff was formed at the direction of the Transportation Board. From their involvement, a planning map (Exhibit C) was developed linking points of interest within the town site utilizing the existing transportation framework with potential off-street, multi-use paths and on-road improvements. On this map, a "High Priority Corridor" was identified prioritizing further development of an urban trail. On July 26, 2016, County Council continued its support of bicycling by endorsing this map for inclusion in the Bicycle Transportation Plan and for use in programming future improvements.

In January 2017, the Transportation Board requested that a bicycle plan subcommittee be formed to create a Bicycle Transportation Plan. County staff from Public Works, Parks Recreation & Open Space, Community Development, the County Manager's Office, and interested citizens, began meeting in February 2017 to assemble a document aimed towards creating a comprehensive transportation network focusing on bicycle facilities in accordance with the 2016 Los Alamos Comprehensive Plan (Comp Plan). The Comp Plan identified three key areas for Los Alamos seen as valuable to the identity of the community. These key areas are: *Housing, Neighborhoods, and Growth; Development, Redevelopment, and Downtown; and Open Space, Trails, and Mobility*. The Bicycle Transportation Plan is a complimentary document to support these community goals and values.

# Introduction

## Goals & Objectives

Los Alamos County Council developed a 20-year Strategic Leadership Plan to provide a vision and help guide the community into the future. As part of this plan, *Mobility* is recognized as one *Quality of Life* strategic focus area. This community goal of maintaining and improving transportation and mobility for the citizens of Los Alamos is important since having a variety of transportation options increases citizen involvement in the community and their ability to earn a living.

By offering a variety of timely and efficient transportation options, Los Alamos County supports our citizens' efforts to interact, attend school and work, and conserve resources. Additionally, healthy lifestyles are promoted by including pedestrian and bicycle-friendly options as part of our transportation system throughout our community.

We can achieve these goals by providing transportation options that meet the diverse needs of its population; having a variety of transportation options is important to the quality of life for residents because it connects our communities of Los Alamos, White Rock and beyond our County borders. Atomic City Transit, the County's bus service, is used by workers, students, commuters and shoppers with quick connections to LANL, White Rock and the residential neighborhoods and mesa tops of Los Alamos, as well as the regional Park & Ride service. The bus provides valuable transportation options for children to attend after-school programs or access the Teen Center in downtown Los Alamos. Our senior demographic relies upon the bus service for safe and easy access to medical services, shopping, and recreational programs. Current bicycle transportation routes found throughout the county and those planned in the future improves mobility by providing transportation options and supplements already established transportation infrastructure and services.

Amongst Council Strategic and Comp Plan goals for enhancing quality of life and mobility, the Bicycle Plan Subcommittee also considered the following objectives in developing the plan:

### Overall

- Council Strategic and Comp Plan goals for enhancing tourism and economic development
- Obtain progressive metal status as bike friendly community by the League of American Bicyclists
- Enhance and facilitate bicycle use for residents and visitors
- Improve the public image of bicycling as a safe mode of travel
- Create a system where users could use a bike as their main form of transportation

### Infrastructure

- Improve and create more bikeways as part of the transportation network
- Provide connectivity (neighborhoods to destinations)
- Incorporate bike facilities in new and existing roadways
- Improve bicycle facility safety, design, and maintenance
- Enhance bicycle parking opportunities
- Integrate planned bicycle improvements and connections into the planning and design of new land development and redevelopment

## Programs & Partnerships

- Incorporate interpretive opportunities into the bicycle transportation system (historical, geological, etc.)
- Improve wayfinding through signage, maps, and online tools
- Use “Safe Routes to School” Programs to encourage bicycling and improve routes
- Create incentives to ride a bike
- Obtain support and partner with local groups, businesses, and area government agencies and schools on bicycling
- Use recreational amenities and events to encourage bicycling
- Provide opportunities at public events to educate and encourage the community about riding safely, following rules/traffic laws, etc.

The Plan’s purpose and overall goal is to help advance a bicycle friendly environment where residents and visitors alike can enjoy a transportation system that encourages and empowers use of a bicycle as a key form of transportation. This can be accomplished by developing a more comprehensive transportation system focused on improved bicycle infrastructure, utilizing state of the practice methods and guidelines for improving bicycle facility safety and design, and by encouraging and educating the community about bicycling as a form of transportation.

## System Connections

A key goal is to create a bicycle system that connects destinations and key points of interest such as employment, retail and commercial areas, residential neighborhoods, community centers, and recreational facilities including parks and open space. The map and associated “High Priority Corridor” shown as Exhibit C, prioritizes such connections to notable points of interest in and around the downtown area of Los Alamos utilizing the existing Canyon Rim Trail system and street network. These destinations include Ashley Pond, Fuller Lodge, Mesa Public Library, the Bradbury Museum, the Downtown Business District, the Nature Center, and the Aquatic Center.

In similar fashion, Exhibit D illustrates current and potential improvements to enhance connectivity within the White Rock area of the County. Given the expansive area, topography, and varying land ownership between White Rock and the Los Alamos town site, bicycle connections between these two areas of the county prove difficult. However, with the proposed roadway shoulder expansion project of NM 4 between E. Jemez Road and White Rock by the New Mexico Department of Transportation (NMDOT) and the existing transit service via the county’s Atomic City Transit system, along with future trails plan for Bandelier (Exhibit E) by the National Park Service and continued coordination with LANL and the U.S. Department of Energy, efforts to improve and establish additional bicycle connections are possible. Los Alamos County is a willing and active participant with our state and federal partners to further enhance the bicycling experience.

## Safety

Bicycle safety is a shared responsibility of all who share and interact with the transportation system including bicyclists, motorists, pedestrians, planners, engineers, designers and public agencies.

Users of the transportation system must be aware of local and state traffic laws that regulate bicycle use intended to promote safety. For example, the “Five Foot Rule” in Chapter 38, section 545 of the Municipal Code states, “When approaching or passing any person riding on a bicycle, the operator of a motor vehicle shall proceed with caution and shall pass such bicycle rider at reasonable speed and

maintain a safe distance, no less than five feet from the operator of the bicycle.” Also, In 2007 New Mexico implemented the Child Helmet Safety Act which requires that all persons under 18 year of age wear helmets when riding bicycles, skateboards, scooters, skates, and tricycles while on a public facility.

Federal, state and local jurisdictions have the responsibility to ensure safety in the transportation network through those who plan, design, build, and maintain these facilities, as well as ensure that the public is made aware of laws and regulations while ensuring those laws are enforced.

Resources to enhance bicycle safety awareness include a federal initiative launched by the United States Department of Transportation (USDOT) in 2015 entitled “Safer People, Safer Streets Initiative” From this initiative, new resources and research were rolled out to address non-motorized safety issues and help communities create safer, better-connected bicycling and pedestrian networks. Additionally, the University of New Mexico’s Center for Injury Prevention Research & Education (CIPRE) is conducting a project in conjunction with the NMDOT called the New Mexico Pedestrian and Bicycle Safety Initiative Program. This program supports community organizations to improve pedestrian and bicycle safety through education, engineering, and encouragement. This program also conducts training for law enforcement agencies, engineers, community leaders, and pedestrian advocates statewide. CIPRE distributes information on outreach events and initiatives. Their website has links to government agency resources such as Federal Highway Administration (FHWA) and National Highway Transportation Safety Administration (NHTSA) policies regarding bicycle safety.

### Health & Environmental Benefits of Bicycling

Bicycling is a healthy activity, and riders are known to live healthy lifestyles, get sick less often, and feel less stressed. The National Center for Safe Routes to School gives the following health benefits for kids who ride or walk to school:

- Weight and blood pressure control
- Bone, muscle, and joint health and maintenance
- Reduction in risk of diabetes
- Improved psychological welfare
- Better academic performance

Environmental benefits are many for the community. The implementation of a bicycle transportation system improves transportation options for commuters, thus reducing carbon emissions with the reduction of motorized vehicles and resulting in reduced wear on roadway system. Bicycling is also a more cost efficient mode of transportation. Bicycling in combination with use of the transit system and buses containing bike racks, is an excellent form of commuting and getting to town, particularly between the White Rock, the town site and LANL facilities.

### Economic Development & Tourism

Expansion of the bicycle system and enhanced connectivity also supports economic development and tourism initiatives planned and in process.

Economic Development projects currently in process, such as the 20th Street Extension, Deacon Street Improvements, and DP Road and Tract A-16 Infrastructure, are planned with bicycle infrastructure, multi-use trail improvements and connections in mind. Potential land development associated with



these initiatives include commercial and retail business, an RV Park, housing, etc. all of which will benefit greatly with an integrated transportation system.

With the recent creation of the Manhattan Project National Historical Park, tourism is anticipated to increase within Los Alamos. Improvements to bicycle infrastructure not only provides transportation options, but will supplement the establishment of tourist sites, walking/biking tours, and other methods of sharing the story of Los Alamos. Additionally, the Canyon Rim Trail, proposed extensions including the aforementioned “High Priority Corridor” (Exhibit C) are located in close proximity, within view, and overlook sites of historical significance.

Los Alamos’ appeal as an outdoor tourist destination is not only attributed by the surrounding national parks, but is becoming increasingly known as a recreational trail and mountain bike destination observed by the annual Los Alamos Endurofest. The recreational trails network represented in Exhibit F and entitled “Los Alamos County Trails Network”, is gradually undergoing transformation and improvement. One of the main priorities of the Los Alamos County Trail Network plan is to provide a wide spectrum of trail experiences, from entry level “Gateway Trails” and intermediate level paths, up to the more challenging advanced single track and finally gravity-driven bicycle-specific trails. With a few underpasses, safer road crossings, and other improvements, the system can be leveraged to provide an alternative mode of non-motorized travel throughout town in addition to providing recreation. Los Alamos clearly has the potential to be an International Mountain Biking Association (IMBA) Ride Center with opportunities for bicycle-specific facilities, front country-skills area, and back country-gravity driven resort-based trails. Significant epic adventures exist in the adjacent Santa Fe National Forest as well. All with a back drop of an amazing southwest landscape. An application for an IMBA Bronze Level Ride Center Designation is in process. Once IMBA Ride Center designation is obtained, more interest in recreational trails is anticipated and the link to the transportation system will be even more important.

Bike sharing programs are opportunities to make reliable bicycles accessible to more residents and visitors for affordable short-range trips. They allow individuals to obtain a bicycle from point “A” and return the bicycle to point “B”. Bike sharing programs can be implemented by government entities, small businesses, or large companies. In 2015 the City of Albuquerque, through a partnership with Zagster, a bike sharing provider, introduced a pilot bicycle sharing program throughout the downtown area with stations strategically placed near transit stops. The county is exploring such a program in Los Alamos through possible partnerships, grants or entrepreneurial interest.

In summary, implementation and use of the Bicycle Transportation Plan can help to enrich current and future economic development initiatives, and enhance and create tourism, recreation and entrepreneurial opportunities, further increasing the community’s appeal as a tourist and employment destination, and overall great place to live.

## Bicycle Friendly Community

It is also the County’s goal to become a Bicycle Friendly Community as designated by the League of American Bicyclists. The League of American Bicyclists was founded in the 1880s to advocate for paved roads. Today they aim to provide safer roads, stronger communities, and a bicycle friendly America for everyone.

In 2016, Los Alamos County applied through the League’s Bicycle Friendly Community Program and received Honorable Mention. The League provided the County with a report card (Figure 1) and a

feedback report (League of American Bicyclists, 2016) that provided suggestions and recommendations for achieving a higher award status. Award status is good for 4 years and has five award levels: Bronze, Silver, Gold, Platinum, and Diamond. One notable suggestion was the need for a current bike plan. With adoption of the bike plan, recent Council Proclamation declaring May as Bike Month (Exhibit G), continuation and expansion of Bike to Work events and activities, and further implementation of the bicycle improvements, the County is well on its way to becoming an established Bicycle Friendly Community.

Designation as a “Bicycle Friendly Community” is not clear cut, which this allows communities to play on their strengths to make bicycling better for their respective communities. The League notes there are more than one route to becoming a Bicycle Friendly Community. Figure 2: The Building Blocks of a Bicycle Friendly Community, is a matrix identifying key benchmarks that the league considers to define the award levels and uses when considering communities for medal award status.

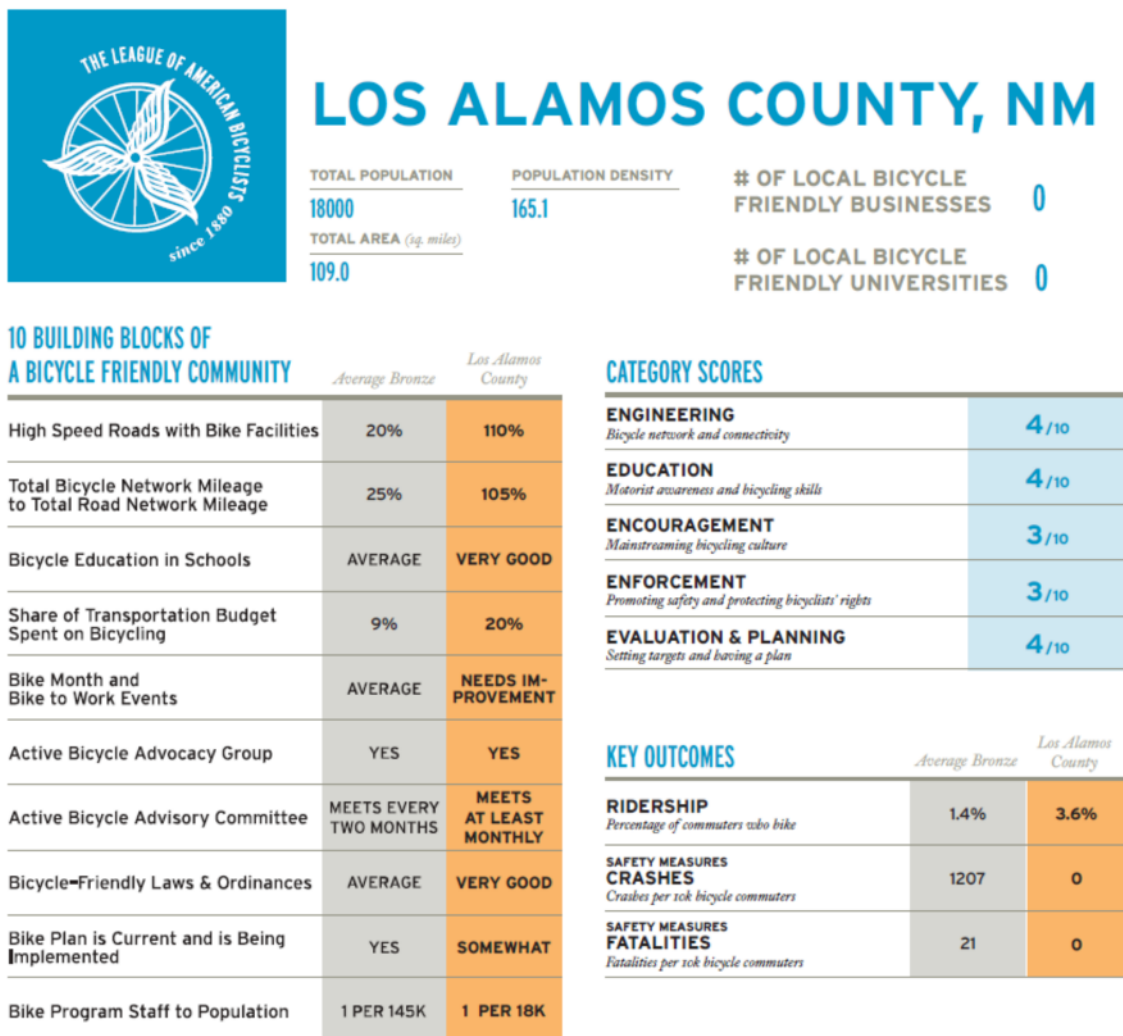


Figure 1: The League of American Bicyclists Los Alamos, NM Report Card

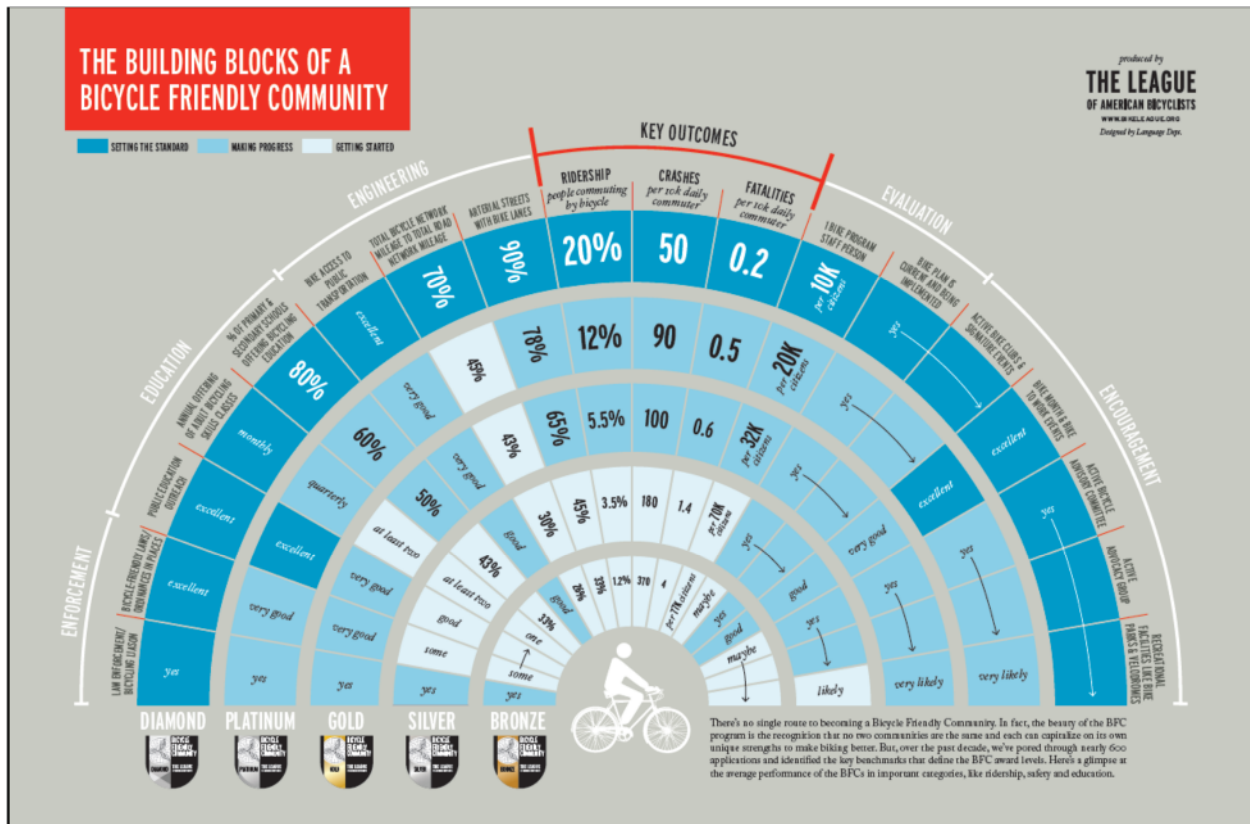


Figure 2: The Building Blocks of a Bicycle Friendly Community

The League conducted a public survey on behalf of the County, aiming to gauge bicycling interest in the community and how to improve. The survey compares data received from the respondents from Los Alamos County with a database of all BFC Survey Respondents in the year of the application (2016) and 2012 respondents of a NHTSA Survey. Los Alamos County respondents were asked how often they ride their bicycles and for what reasons, if they have had any bicycle safety training in the last 5 years, the proximity of bicycle facilities, their satisfaction of local government to implement facilities, and the safety factor within the community. Overall, Los Alamos County respondents answered similarly to those nationally. The majority of respondents ride at least once a month for recreation, exercise, and to commute to work. Training opportunities were not prevalent, and transportation bike facilities were typically close to half of the respondents, within a quarter a mile. The principal request for the local government is to add more bike lanes and paths. Slightly less than half of the respondents believe it is safe to ride a bicycle within their neighborhoods, while a measure closer to 15% believe it is unsafe, and the remainder say it depends (the main reasons being distracted drivers/riders and few bike lanes and paths). The survey highlights the need and desire for additional bicycle facilities.

### The Five E's

The League emphasizes the 5 E's for a Bicycle Friendly America: 1. Engineering, 2. Education, 3. Encouragement, 4. Enforcement, and 5. Evaluation & Planning.

#### Engineering: Creating safe and convenient places to ride and park

The League cites that surveys indicate the most tangible evidence of a great location for bicycling is the presence of welcoming infrastructure. The most bicycle friendly communities have well-connected

bicycle networks using quiet neighborhood streets, conventional and protected bike lanes, shared use trails, and policies to ensure connectivity that continues to shape the system with future development and a system that continues to be properly maintained over time. Secure, convenient and readily available bike parking is also a key component towards promoting bicycling in the workplace and wider community. Through County investment and federal grants, Los Alamos has progressively improved its bicycling infrastructure with the construction of the Canyon Rim Trail, Canada del Buey Trail, and installation of bike lanes through various arterial roadways. Other completed improvements and guidelines utilized by the County for the design of bike facilities are discussed further in the document.

#### Education: Giving people of all ages and abilities the skills and confidence to ride

Having the skill and confidence to ride a bike is an important step in promoting the use of bicycle facilities. The League has a Smart Cycling program with over 2000 instructors around the country who deliver education programs. Public education of the laws of the road for both bicyclists and drivers are key components to educating users. Local government and state governments can promote sharing of the road through programs handed down to the public through their respective departments, such as motor vehicle and public education. Safety Town, an event held by the Los Alamos Police Department is a program for preschoolers entering Kindergarten where many safety topics are covered, bicycle, bus and pedestrian safety are all promoted with a partnership with the Los Alamos School District.

Education of motorists about safe operating behavior around bicyclists is also an objective necessary to make bicycling safer for all users. This can be done by working with local and state officials to integrate bicycle safety and awareness curriculum into driver education by way of the Motor Vehicle Division, private driving schools, and defensive driving courses. Training materials and courses for transit drivers can be modified to include bicycle awareness curriculum. For the general public, printed materials discussing County ordinances and general courtesy can be distributed for motorists driving and around bicyclists and vice versa.

Being courteous to others on the trails and streets is a large part of education for bicycling. Trail etiquette should be followed when riding on any bicycle facility. When using multi-use trails with different types of users always stay on the right to pass and warn other before passing either by using a bell or voice command, such as “on your left.” Travel at a safe and controlled speed and do not stop and block the trail as others may be traveling toward you from either direction. Always be aware of your surroundings, if you use headphones make sure you can hear what is going on around you.

#### Encouragement: Creating a strong bike culture that welcomes and celebrates bicycling

Encouragement is needed to build a bicycling community. Local businesses, universities, health organizations, and local governments can promote bicycling throughout the community in many ways. Maps of the trail and bicycle system available at local businesses and other effortless locations, as well as signage and wayfinding for users, enables people to find ease in using bicycling as a means of transportation. Bike sharing is also a way to encourage riders and tourism can drive the need for bike sharing programs or bike rentals, as most tourists do not travel with their bicycles. National Bike Month is in May and many communities celebrate by holding community events during Bike to Work Week or Bike to Work Day.

A County Proclamation declaring May as Bike Month and supporting Bike to Work events was approved by the County Council on May 2, 2017 (Exhibit G). On May 19, 2017, “Bike to Work Day” events were planned to bring awareness and encourage bicycling as transportation. Bike to Work events will continue as a coordinated effort between County groups, such as the Transportation Board, Planning & Zoning Board, Public Works Department, Parks Recreation & Open Space, Police, Fire, and Transit, as well as employers and businesses such as Los Alamos National Laboratory (LANL), Los Alamos Public Schools (LAPS), Los Alamos Medical Center, the University of New Mexico–Los Alamos (UNM-LA), the New Mexico Department of Transportation (NMDOT), the Northern Pueblos Regional Transportation Planning Organization (NPRTO), bike shops (in Los Alamos as well as nearby communities) local bike clubs, and bike vendors.



### Enforcement: Ensuring safe roads for all users

Equitable laws and regulations for bicyclists and motorists set a good platform to ensure safety of all road users. Law enforcement should understand these laws and know how to enforce them equitably to ensure public safety. Officers on bicycles also ensure that law enforcement understands the issues cyclists face while using the transportation system adjacent to vehicles. Los Alamos County Police Department utilizes bike patrols and has adopted the “Five Foot Rule” (Chapter 38, Section 545 of the Municipal Code) which states, “When approaching or passing any person riding on a bicycle, the operator of a motor vehicle shall proceed with caution and shall pass such bicycle rider at reasonable speed and maintain a safe distance, no less than five feet from the operator of the bicycle.”

### Evaluation & Planning: Planning for bicycling as a safe and viable transportation option

Active citizens and support by the local government contribute to a community’s success in developing a seamless bicycle network. Evaluation and Planning includes compiling data, creating and updating a comprehensive bicycle master plan, and identifying dedicated funding sources needed to plan towards creating a comprehensive system. The Transportation Board, other county committees, and staff by working together can help decision makers prioritize bicycle system projects on a regular basis. Through development of this plan, the Los Alamos County has taken an incredible step towards a comprehensive transportation system.

## Design Policies & Guidelines

### Complete Streets

The USDOT identifies complete streets as “streets designed and operated to enable safe use and mobility for all users, including people of all ages and abilities, regardless of whether they are traveling as drivers, pedestrians or bicyclists or riding public transportation.” Complete streets designs are developed to encourage slower speeds of vehicles and to prevent conflicts between all modes of transportation. Studies carried out by the National Complete Streets Coalition have shown that by implementing the Complete Streets model, local economies are stimulated. Further, public transit

stands to be supported by street designs that encourage walking and bicycling for transportation. Another element of complete streets includes trees, “which remove substantial volumes of carbon dioxide and other air pollutants, catch storm water, and reduce urban heat-island effects, along with creating safer and more sociable neighborhoods, contributing to a sense of community, economic viability, environmental sustainability and healthier people.”

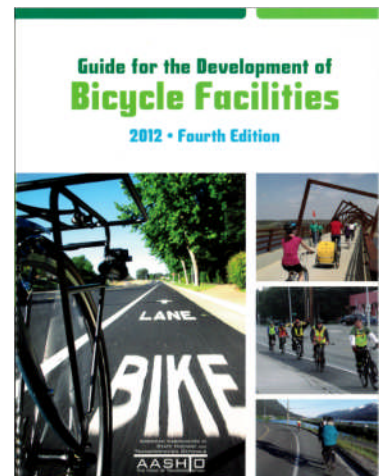
In January 2017, the New Mexico State Legislature signed Senate Memorial 35 and House Memorial 29 that recognizes and congratulates the leadership and accomplishments of local and tribal governments, agencies and team members that are committed to the safety of all users of roadways in promoting and implementing complete streets throughout New Mexico. The memorials continue that complete streets be recognized for its understanding that transportation is about moving people and connecting, supporting, and building vibrant communities.

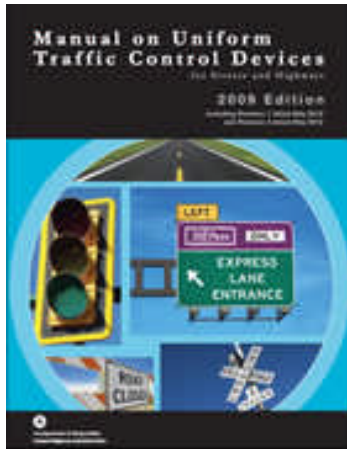
National 2015 statistics show 35,092 traffic fatalities, of which 5,376 were pedestrian fatalities—an increase of 7.2% from 2014, with New Mexico having the highest rate of pedestrian fatalities in the nation. It is also estimated that by 2030, New Mexico will be fourth in the nation with a population 65 years of age or older. Complete streets initiatives provides an opportunity to improve safety of all users and provides our aging population with increased travel options. The State of New Mexico has a complete streets leadership team consisting of members statewide with technical expertise to advance policy, practices and projects that support safety and mobility of all users of public streets and roadways.

Locally, Los Alamos County Resolution 10-32, *Policy for the Design of Public Streets and Rights-of-Way in Los Alamos County*, (Exhibit B) was developed with the complete streets guiding principles in mind. The policy establishes the goals for street, right-of-way and intersection design, and land use decisions to ensure they are mutually reinforced, creating synergy through promoting safety health, economic vitality, environmental sustainability, and livability throughout the community.

### Federal Design Guidance

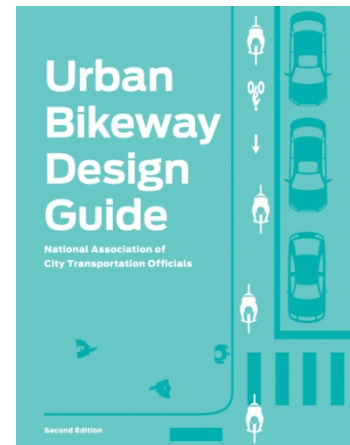
In 2012 AASHTO published the 4<sup>th</sup> edition of the Guide for the Development of Bicycle Facilities updated from the previous volume published in 1999. This guidance manual highlights and clarifies elements needed to make bicycling safe, comfortable, and convenient as a form of transportation. Information found in this guide includes accommodating bicycle travel and operation. Sound guidelines are outlined to design facilities that will meet the needs of both bicyclists and drivers. “Good design practice involves engineering cost-effective solutions that balance safety and mobility for all transportation modes, along with preservation of scenic, aesthetic, historic, cultural, and environmental resources.”





The Manual on Uniform Traffic Devices (MUTCD), incorporated by reference into the Code of Federal Regulations, is recognized as the national standard for all traffic control devices installed on any street, highway, bikeway, or private road open to public travel. Part 9 is dedicated to traffic control for bicycle facilities, including: signing, markings, and signalization.

National Association of City Transportation Officials (NACTO) is a non-profit association representing the nation's large cities and facilitates the exchange of best practices and transportation insights. They promote sharing data and building a common vision with cities around the nation to raise the state of engineering practice for urban design. NACTO has published the Urban Bikeway Design Guide to provide cities with current solutions to create complete streets in urban settings. This guide offers additional design treatments for bicycle facilities not referenced within the AASHTO Guide, although most are permitted under the MUTCD. FHWA issued a memorandum officially supporting the use of the document in 2013.



These guidelines include many bicycle facility treatments for consideration into the local system, including, but not limited to, signal actuators for cyclists at intersections, at-grade crossings, grade-separated crossings, and Green Pavement Markings. Los Alamos County readily utilizes these guidance manuals in the planning, design, construction and maintenance of its transportation facilities.

### County Development Code

In newly developed or redeveloped properties, consideration should be given to all transportation modes including bicycle facilities to the greatest extent possible, to connect to the public transportation system, parks and open space. No impediments to existing and future bicycle and pedestrian connections should be caused due to development.

The Comprehensive Plan as related to trails outlines several policies directed at economic vitality, land use, and infrastructure. To inspire economic vitality, the following three policies were adopted: (1) develop and expand trails connecting downtown to surrounding open space, (2) create or improve trails that serve residents of all ages, and (3) connect County trails to non-County-owned trails adjacent to/near County land. Pursuing federal and state funds; obtaining a bicycle friendly community designation; and developing policies for off-trail foot, bicycle, and equestrian travel would be strategies to fulfill the policies. Land use policies of promoting safety for pedestrians and bicyclists on paved trails and streets and ensuring that private development is required to provide trail connections that may not create impediments to trail connections were set forth. These policies would be accomplished using the following four strategies: (1) map trails, identify gaps in trail connections, and propose connection strategies; (2) develop a strategy for the prioritization of gap connections; (3) consider alternate means of circulation, especially for the Americans with Disabilities Act (ADA) individuals, including golf carts in historic areas; and (4) consider signage or speed controls to slow bicyclists when they are on same path as pedestrians. The infrastructure policies consist of (1) creating designated, safe, convenient, and well-

maintained bike and pedestrian pathways and sidewalks; (2) incorporating multi-use trails whenever possible; (3) recognizing and acknowledging the difference between bicycling for recreation and bicycling for transportation; and (4) ensuring safe trail crossings (especially at arterials) and weigh cost/benefits of underpasses and/or overpasses. It is anticipated that by examining the potential to expand the paved and accessible Rim Trail and to link the Rim Trail to Mesa Trail while considering wider easement requirements for trails, the infrastructure policies will be accomplished.

Mobility is also a core theme of the Comprehensive Plan and discusses the adoption of the complete street concept while incorporating facilities that accommodate all users of all abilities. Because bicycling as a means of transportation has grown significantly nationwide through many New Mexico communities and is of great interest in Los Alamos County, it is anticipated that bicycling to work from White Rock and around Los Alamos could become increasingly more popular. Because of the proximity of the Los Alamos National Laboratory, the area's largest employer, to housing in Los Alamos and with the economic development goal of increasing housing within the town site, the need for a more comprehensive bicycle transportation network is anticipated.

## Bicycle Infrastructure Inventory & Completed Improvements

### Types of Facilities

Shared use paths or multi-use trails are typically separated from vehicular traffic either by open space or a barrier or maybe contained within rights of way independent of the street system. Multi-use trails provide a non-motorized means of transportation for pedestrians, bicyclists, and those requiring the use of power assisted devices. Side paths are another form of multi-use path located adjacent and parallel to a roadway and typically are intended for two-way travel. Side paths are safest and function best where there are limited driveway and side street crossings.



Bike lanes are a portion of the roadway designated for exclusive use by bicyclists and are shown by pavement markings and signage. Bike lanes are intended for one-way travel adjacent to lanes designated for vehicles; a buffer may exist between the lanes to create a higher level of comfort for bicyclists. "Road diets" are a form of treatment where the number of lanes on a roadway can be reduced to allow for bike lanes. It can have many benefits such as reducing crashes; improving operations; and improving livability for pedestrians, bicyclists, businesses, etc.

Shared lanes are designated with signs, such as "share the road," and markings called "sharrows" or "shared lane arrows." These designations are used on low-speed streets where cyclists are encouraged to take the lane.

### Multi-use Trails and Side Paths

In 2009 the County Council approved \$1.2 million in Capital Improvements Program (CIP) Funds for the initial phase of the Canyon Rim Trail, a paved multi-use trail on the south side of NM 502 from the Camino Entrada area to Fire Station 6, approximately a 7,600-foot-long. This section of trail was opened to the public in the late summer of 2010. The project was very popular and brought interest for continuing the trail to the west along the Canyon; thus the Canyon Rim Trail Master Plan was created,



which was adopted by the County Council in 2011. As part of the plan, new extensions were envisioned from terminus of Phase 1 near Fire Station 6 to Oppenheimer Drive. The plan provided a vision for developing projects and a mechanism to pursue funding for this work.

A subsequent project, Phase 2, starting at the end of Phase 1 to Smith’s Marketplace (Kroger Development), was funded for design and construction through County CIP funds and a Transportation Alternatives Program (TAP) grant from the NMDOT. This project was completed in the winter of 2016. As part of the Kroger development, a portion from west of DP Road towards the west near Knecht Street was constructed. A trail-street connection from the trail end north to Knecht Street was built as part of the Knecht Reconstruction Project. The trail today extends a length of approximately 2.7 miles.



Figure 3 CANYON RIM TRAIL PHASE II

Efforts to continue the trail west have also begun with an engineering task order underway for easement acquisition and preliminary engineering for a portion of trail from the Knecht Street connection to 20<sup>th</sup> Street. Last, a 2018-19 TAP application was submitted to the NMDOT for funding of an underpass at the trailhead near Camino Entrada under NM 502. A letter announcing award was received by County Public Works staff in April 2017. Design funds are programmed for Federal Fiscal Year 2018 and Construction funding in 2020. Both of these projects are identified in the Comprehensive Plan on its “Needed Trail Connections Map” as trail connections with known gaps (Exhibit H)



Figure 4: CANYON RIM TRAIL PHASE II BRIDGE

The Canada del Buey Trail is an asphalt paved side path from State Road 4 to Rover; from Rover to the Overlook Park entrance, the trail surface consists of crusher fines. This trail was constructed in the summer of 2012.



Figure 5: CANADA DEL BUEY SIDE PATH

## Sharrows

Sharrows have been applied on many low speed streets (35 mph or less) where bicycling and vehicle traffic share the lane. Typical placements of sharrows are on streets where shoulders or bike lanes do not or cannot exist because of right-of-way restrictions, parking, or transit stops. These markings are desirable in urban settings, where a higher level of guidance to both bicyclists and motorist is required.

Central Avenue has been reconstructed through the downtown area with an urban streetscape design including on street parking, streetscapes with plantings and furniture, and wide sidewalks for pedestrian traffic. The roadway is typically two lanes, aside from where turn lanes are necessary. The design promotes a low speed environment where bicyclists and motorists can navigate the roadway collectively. Sharrows are used throughout this roadway to give bicyclists and motorists guidance.

Sherwood Boulevard, between NM 4 and Aztec Road in White Rock, was reconstructed in 2015 with similar design features including on street parking, a bus pullout with shelter, and sharrows.

## Bike Lanes/Shoulders

From 2007 through 2011, Diamond Drive was reconstructed in four phases from Omega Bridge to the roundabout at San Ildefonso Road and included bike lanes in both directions. San Ildefonso Road also contains shoulders for bike use from Sioux Street to Chamisa Street. Canyon Road, from Diamond Drive to 15<sup>th</sup> Street also contains bike lanes and shoulders

In 2011, NM 4 from Rover to Pajarito Road was reconstructed, and bike lanes were included in the development and construction of the project. The NMDOT currently has an approximately 3 mile reconstruction project programmed for Federal Fiscal Year 2020 for NM 4 between East Jemez Road and Rover Boulevard. The project is slated to add shoulders on both sides of NM 4 to accommodate bicyclists.



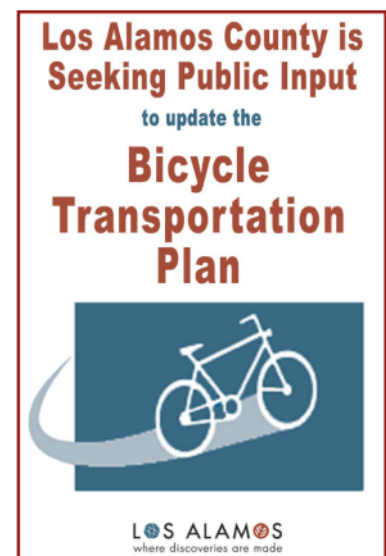
Figure 6: NM 4 BIKE LANES AND SIDE PATH

## Planned Improvements

### Public Involvement & Input

The bicycle transportation plan was presented to the public in several different formats during the planning stages in order to ensure input was gathered from variety of groups individuals within the County. Public meetings were held at regularly scheduled County Board meetings and meetings focused on the plan were held in Los Alamos and White Rock. Exhibit I is a list of all meetings that were conducted.

The County also instituted an online survey from April 13, 2017 to May 8, 2017 utilizing the County's "Open Forum" webpage. The survey was advertised through the media, with flyers at local libraries and related business, as well as at events. One such event occurred at the farmer's market, where County staff greeted and discussed the plan with the public and circulated the link for the survey. The survey was brief,



twelve questions, and was visited by 290 residents and had 239 responses.

Residents were asked to discuss their riding habits, whether they rode for transportation or recreation, average distances they travel by bicycle, if they use transit in conjunction with their bicycles, what would make them more inclined to ride more, among other questions shown in Exhibit J. To make it more specific to Los Alamos County there were several questions where the respondent was able to discuss in more depth the routes they use or would like to take and what would they think would improve the system. Response to the survey and input received was tremendous.

Currently within the County residents are using their bicycles overwhelmingly for both recreation and transportation and the majority of respondents ride their bikes over one mile every week, with over 25% riding daily. Some of the most prevalent transportation routes are: northern neighborhoods to downtown or LANL; Diamond Drive; routes within White Rock; the “Bandelier Loop”; and the Canyon Rim Trail.

For those who use their bicycles less frequently, there were a variety of reasons. However the majority of respondents said they don’t feel safe while biking. The pie chart in Figure 7 below, shows reasons why respondents feel unsafe while biking as discovered from the survey.

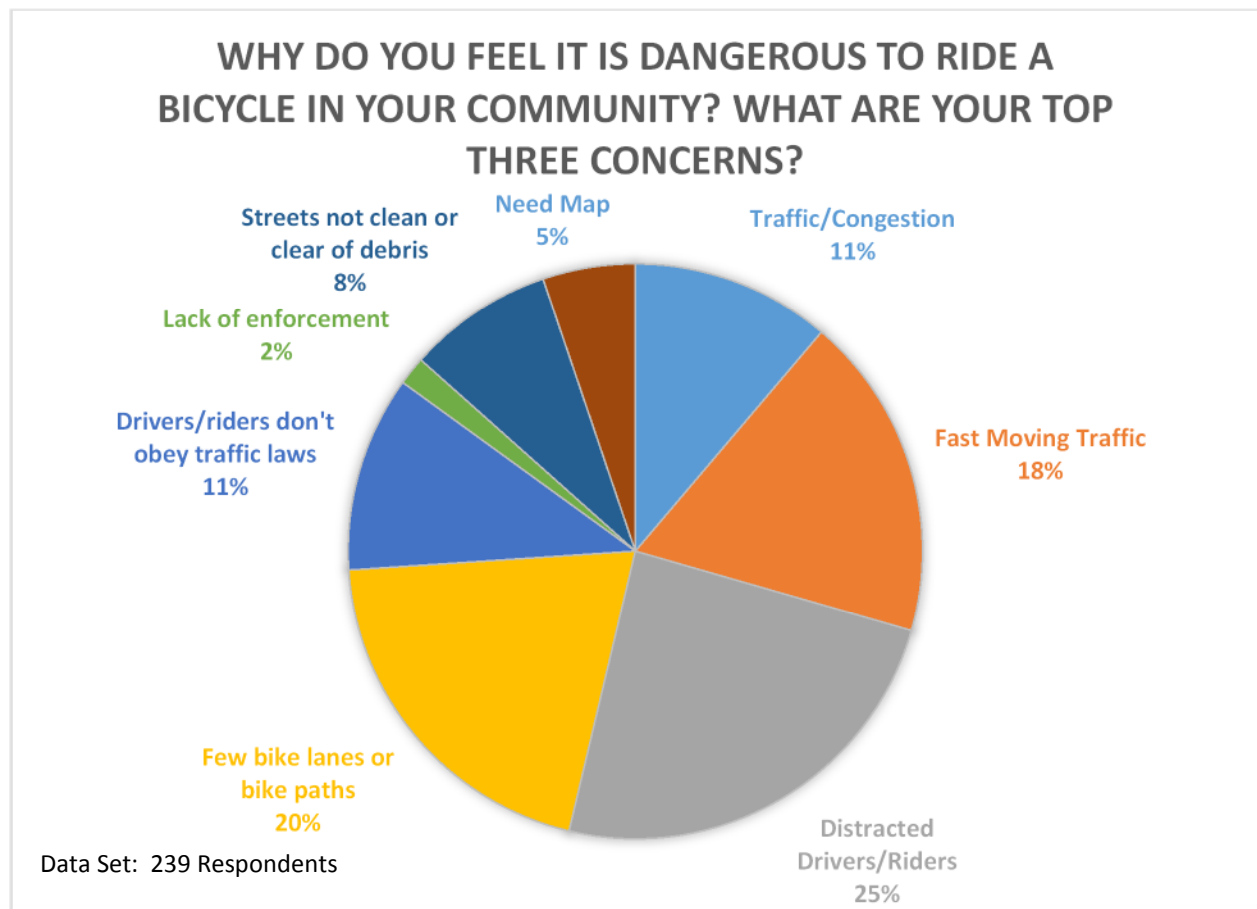


Figure 7: Question 9 - Bicycle Transportation Plan Survey

The following question of the survey made an effort to find solutions to the needs of riders by asking what changes in the system would increase cycling habits, figure 8 summarizes these responses.

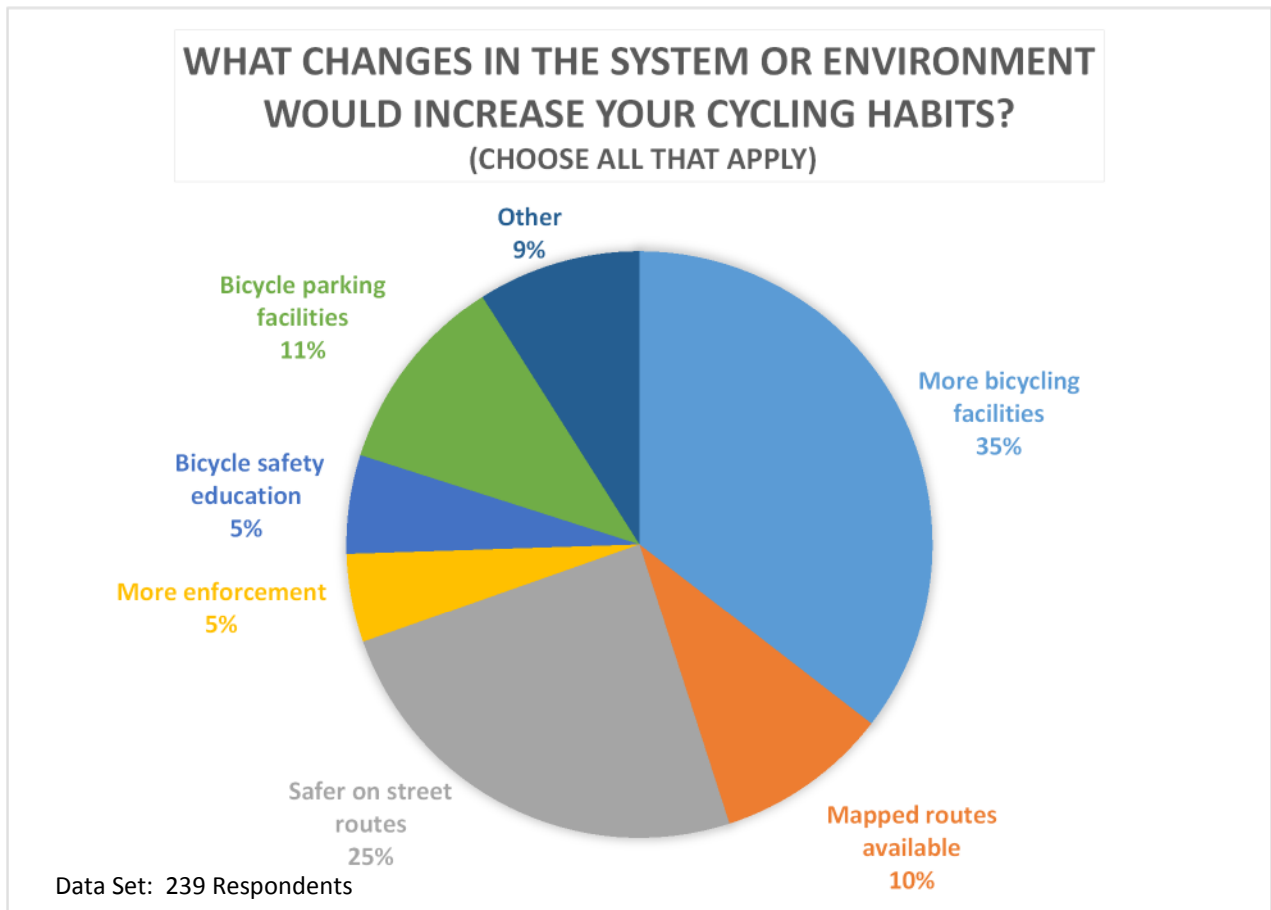


Figure 8: Question 10 – Bicycle Transportation Plan Survey

As shown in Figure 8 the majority of respondents are looking for more bicycling facilities. From the survey respondents were asked to be more specific regarding facilities or routes they would like to see developed. From the 161 Respondents 50 listed the need for a bicycle route on NM 4 between Rover Boulevard and East Jemez Road (truck route). As noted previously, this state route is programmed for widening in federal fiscal year 2020 by the New Mexico Department of Transportation. In General, more bike lanes and multi-use trails county wide were requested and more specifically; adding a bicycle route on or near Trinity Drive; Diamond Drive over the Omega Bridge (DOE facility); and the extension of the Canyon Rim Trail from the Northside of NM 502 to the Medical Center or Omega Bridge. Other concerns that had a large number of responses include enforcement; signal timing; adding signing; bicycle related markings; and maintenance of existing facilities to ensure safety and longevity of the system. A tally of results from the public comments can be found in Exhibit J and the County Public Works Department has a record of all comments.

### 2005 Priorities

The table below shows the priority streets identified and adopted in the 2005 Bicycle Transportation System and the status of bicycle facilities that are currently in place on these routes.

Table 1: 2005 Bicycle Transportation System "Priority Streets"

<b>Priority 1 - Arterials</b>	
Diamond Drive (Omega Bridge to San Ildefonso Road)	Bike Lanes
Central Avenue (NM 502 to Rose Street) 9th Street to Oppenheimer Oppenheimer to Canyon Road	Sharrows Installed Bike Lanes Installed
Canyon Road (Rose Street to Diamond Drive)	Bike Lanes Installed
Trinity Drive - East Road (Diamond Dr. to Airport Rd.) Diamond Drive to 4th Street 4th Street to Tewa Loop Tewa Loop to Airport Road	* Bike Lanes Pending NMDOT Project *
<b>Priority 2 – Major Collectors</b>	
Arkansas Avenue and North Road	*
Grand Canyon Drive	*
Rover Boulevard and Meadow Lane	*
San Ildefonso North (Diamond Drive to beginning of Barranca Road) Diamond Drive to Chamisa Street Chamisa Street to Barranca Road	Bike Lanes *
San Ildefonso Road South (Diamond Drive to Sioux Street)	Bike Lanes
38th Street	Bike Lanes
Villa Street	Shoulders
<b>Priority 3 – Minor Collectors</b>	
Bryce Avenue	*
Canyon Road (NM 502 to Central Avenue) NM 502 to 15th Street 15th Street to Central Avenue	* Shoulders
North Mesa Road	*
Sherwood Boulevard NM 4 to Aztec Road Aztec Road to Piedra Loop Canada Way to Piedra Loop	Sharrows Installed Sharrows Installed Single Striped Bike Lane
Western Area Loop: Trinity Drive from Diamond Drive to 48th Street, 48th Street to Sandia Drive, and Sandia Drive to Diamond Drive	*
Urban Street (Diamond Drive to North Road)	*

\* No Separate Bicycle Facilities/Shared Use

### New Bicycle Transportation Priorities

Within the Los Alamos and White Rock areas there are many stakeholders that will be critical in the development of the bicycle transportation network, they include, but are not limited to, Los Alamos County, Los Alamos National Laboratories, Department of Energy, State of New Mexico Department of Transportation, San Ildefonso Pueblo, Santa Fe County, Bandelier National Park, Manhattan Project

National Historic Park, Valles Caldera National Preserve. With collaboration with all stakeholders it is the County's ambition to obtain a well-connected bicycle transportation system crossing jurisdictions and make connections to recreational trails, recreational centers, business centers and points of interest.

County bicycle infrastructure improvement projects currently in process include:

- Urban Bike Path/High Priority Corridor (See Exhibit C)
- Canyon Rim Trail Phase 3
- Canyon Rim Trail Underpass at Camino Entrada and NM 502 (Federal funded)

The Urban Bike Path project was brought forth by public interest and approved by Council in 2016 and subsequently funded with fiscal year 2018 capital improvements funding. The Canyon Rim Trail Phase 3 is a continuation of the Canyon Rim Trail from Knecht Street to the new 20<sup>th</sup> Street extension. This project was funded with 2017 capital improvements program funds. The Canyon Rim Trail Underpass at Camino Entrada and NM 502 as discussed previously, was awarded a federal Transportation Arterial Program (TAP) grant in the spring of 2017, design funding is programmed for federal fiscal year 2018 and construction funding in 2020.

Based on public input received and ongoing planning review, the following is a list of potential projects that could be considered for further study and/or development in Los Alamos:

- Trinity Drive Corridor bicycle facilities
- Bicycle Route over Omega Bridge
- Direct route from northern residential areas to the business district

Trinity Drive, a state of New Mexico highway, is the more heavily traveled of two East-West arterials within the business district, the other being Central Avenue. While bike lanes or protected bike lanes are a typical treatment on a 35 mph arterial, a combination of limited right of way and numerous side streets and curb cuts coupled with a significant grade in both the east and west directions make installation of bike lanes challenging. Alternative treatments to improve bicycling mobility include an extension of the Canyon Rim Trail, and using Central Avenue and Deacon Street as parallel bike routes. Further study, potential for right of way acquisitions, and development will be necessary to determine the most favorable route.

In White Rock, wide neighborhood streets with lower posted speeds and a recreational trail system already in place provides potential opportunities to expand upon the bicycle transportation network. The Vision Statement of the 2008 White Rock Master Plan is ..."People walk and bike everywhere, getting to their destinations along and across improved streets with landscaping and along new pathways. Crossing State Road 4 should be safe and inviting." While several facilities mentioned in the 2008 plan have been implemented, the bicycle transportation plan looks to further this vision.

Public comment and field reviews have observed several potential projects within the White Rock area. They are as follows and shown graphically on Exhibit D:

- Multi-Use Trails
  - Extend Canada del Buey Multi-Use trail to connect to Overlook park
  - Enhance neighborhood connections.
  - Trail improvements from Piedra Loop south of Sherwood Boulevard

- White Rock Canyon Rim Trail Improvements
- Improve and connect Overlook Park Multi-use trail
- Bike Lanes/Shared use (Markings/Signing)
  - The “Loop” that is made up of Rover Boulevard and Meadow Lane
  - Sherwood Boulevard - Aztec Avenue to Piedra Loop
  - Grand Canyon Drive – NM 4 to Meadow Lane
  - Aragon Avenue – Rover Boulevard to Cheryl Avenue
  - Bryce Avenue – Rover Boulevard to Meadow Lane
- Trail Crossings
  - NM 4 at the White Rock Visitors Center
  - Crossing of the Canada Del Buey at Longview & Rover, Meadow Lane & Overlook
  - Sherwood Boulevard at Piedra Loop
- Future Development
  - Tract A-19 (Incorporation of trails and bike lanes into development plans)

On-Road Operational Improvement (County Wide) via use of signing, pavement markings and striping provide additional opportunities to provide and/or enhance bicycle facilities on existing infrastructure and are generally lower cost in nature as compared to road construction or reconstruction. Such improvements include:

- Sharrow Markings
- Striping or re-striping for bike lanes
- Crossing Improvements (signs, markings, lighting, signals/beacons)
- Wayfinding Signage

Regionally there are several regionally significant projects other stakeholders have been planning. The New Mexico Department of Transportation programmed a reconstruction project that proposes 6’ shoulders on each side of NM 4 from Rover Boulevard to East Jemez Road (Truck Route). This project funded and managed by NMDOT is programmed for construction in federal fiscal year 2020. The second project is a 30 mile loop around Los Alamos and White Rock. The National Park Service developed the Bandelier Multi-Use Trail Plan in 2015—Exhibit E is a map denoting its potential location. The plan’s objective is to: “Establish a multi-use trail connecting Bandelier National Monument to existing local attractions and provide a central recreational feature which will branch into the new National Park Service locations, the Manhattan Project National Historic Park and the Valles caldera National Preserve.” The County recognizes the importance of these regional projects and fully supports these efforts as they have a significant beneficial impact to Los Alamos by improving safety, mobility and economic vitality.

#### Bandelier Multi-Use Trail Plan Goals:

- Foster cooperative partnerships with Federal, State, County, and Tribal agencies, non-profit organizations, and community groups to coordinate recreation management and alternative transportation modes.
- Develop a multi-use trail from Los Alamos residential areas to Bandelier National Monument, connecting through White Rock, LANL, and Santa Fe National Forest.

## Funding & Prioritization

Public funding sources include federal, state, and local programs.

Through the US Department of Transportation and federal legislation, the Transportation Alternatives Program (TAP) is a funding mechanism for bicycle and pedestrian improvements. Federal Highway Safety Improvements Program (HSIP) funds are also available for transportation projects to address an identified, data driven safety need for various modes of travel and users, i.e. motorists, pedestrians and bicyclists. Both federal programs are administered by the NMDOT through a competitive statewide process. The selection process for HSIP relies on measurable safety data to prioritize projects for selection, while TAP looks more broadly to safety, economic development, accessibility/connectivity, environment, and system preservation. The USDOT, Office of Federal Lands Highway manages the Federal Lands Access Program (FLAP). This program was established to improve transportation facilities to provide access to, adjacent to, or located within federal lands, emphasizing on high-use recreation sites and economic generators. The selection is carried out on a competitive basis.

Los Alamos has received two TAP grants in recent years, the first for the design and construction of the Canyon Rim Trail Phase 2 Project completed in 2016. The second project is the proposed underpass at NM 502 and the Canyon Rim Trailhead and Camino Entrada, with design and construction programmed in federal fiscal years 2018 and 2020, respectively.

The State of New Mexico administers legislative funding sources for infrastructure projects statewide. New Mexico MainStreet is a program within the State of New Mexico, Economic Development Department that supports development of attractive “main streets” within New Mexico communities. Central Avenue in Los Alamos has been awarded several “main street” grants.

Locally, the County’s most common funding mechanism for capital improvements is the Capital Improvement Program comprised of general funds afforded through gross receipts tax. General Obligation Bonds are another avenue for funding capital projects at the local level, but requires voter approval as revenue for these measures are associated with property taxes.

## Conclusion

The Bicycle Transportation Plan is intended to be a living document serving as a helpful guide with deriving project prioritization and advance the establishment of project funding sources for the eventual development and implementation of bicycle infrastructure and programs previously discussed—or others that may take root from plan topics. Implementation of bicycle infrastructure improvements can occur in a variety of ways, through the inclusion of bicycle facilities into transportation projects, through the County development review process for private development, and through inclusion bicycle facility improvements in the Capital Improvement process by the County and area public agencies.

Continued public input and involvement of County Council, boards and commissions for prioritization and programming of individual projects and programs prompted a result of this plan will be important to further and overall improve the bicycle system. Partnerships with area agencies will be equally important as the County works towards a well-connected, safe bicycle transportation system and vision of creating a comprehensive transportation network.



## Exhibits

- A. 2005 Los Alamos Bicycle Transportation System
- B. Los Alamos County Resolution 10-32
- C. Los Alamos Bicycle & Pedestrian Routes Map (Priority Corridor)
- D. White Rock Bicycle & Pedestrian Routes Map
- E. Bandelier Plan: Multi-Use Trail Map
- F. Los Alamos County Trails Network
- G. Bike Month Proclamation
- H. Comprehensive Plan: Exhibit 38 - Needed Trail Connections Map
- I. Public Meeting List
- J. Open Forum Survey Questions and Results

## Exhibit A: 2005 Los Alamos County Bicycle Transportation System

### **LOS ALAMOS COUNTY BICYCLE TRANSPORTATION SYSTEM**

The Transportation Board recommends to Council that the following roads be adopted as the Los Alamos County Bicycle Transportation System. Throughout this Bicycling Transportation System, bicycling improvements (appropriate to each facility) should be implemented when major maintenance, reconstruction, or construction is performed on the roadway facilities included below.

Bicycling improvements should be appropriate to the type of roadway in question, such as wider shoulders on highways or bike lanes on arterials (if possible); and should include bicycle-friendly intersection improvements, uniform signing, and appropriate markings; and should avoid the use of bicycle unfriendly infrastructure such as parallel gratings, poorly placed rumble strips, or use of the gutter-pan as part of the travel lane. In addition to improvements, appropriate preventative maintenance must continue to be performed throughout the system such as routine sweeping, pothole patching, and snow removal. Furthermore, the County should review the Bicycle Transportation System periodically to ensure that any new developments are bicycle-friendly.

#### **PRIORITY I**

##### Arterials:

- a. Diamond Drive from San Ildefonso Road to Omega Bridge.
- b. Central Avenue from NM 502 to Rose Street.
- c. Canyon Road from Rose Street to Diamond Drive.
- d. Trinity Drive – East Road from Diamond Drive to Airport Road.

#### **PRIORITY II**

##### Major Collectors:

- a. Arkansas Avenue and North Road.
- b. Grand Canyon Drive.
- c. Rover Boulevard and Meadow Lane.
- d. San Ildefonso North from Diamond Drive to the end of Barranca Road.
- e. San Ildefonso Road South from Diamond Drive to Sioux Street.
- f. Thirty-eighth Street and Villa.

#### **PRIORITY III**

##### Minor Collectors:

- a. Bryce Avenue.
- b. Canyon Road from NM 502 to Central Avenue.
- c. North Mesa Road.
- d. Sherwood Boulevard.
- e. Western Area Loop: Trinity Drive from Diamond Drive to 48<sup>th</sup> Street, 48<sup>th</sup> Street to Sandia Drive, and Sandia Drive to Diamond Drive.
- f. Urban from Diamond Drive to North Road.

Los Alamos County supports and promotes regional bicycle transportation and therefore, encourages connectivity through adjoining jurisdictions. It is recognized that the County does not own the following "Regional Connectors" listed below. That said, the County should cooperate with neighboring government entities, to the extent possible, to develop appropriate regional bicycling infrastructure.

### REGIONAL CONNECTORS

Department of Transportation Roads:

- a. NM State Road 4.
- b. NM State Road 501.
- c. NM State Road 502.

LANL Roads:

- a. Pajarito Road.
- b. East Jemez Road (Truck Route).
- c. Diamond Drive from Omega Bridge to Pajarito Road.
- d. Bikini Atoll Road from West Jemez Road to Mercury Road.
- e. Mercury from Pajarito Road to Bikini Atoll Road.
- f. West Road from Diamond Drive to NM 501.

Motion passed, 5-0.

(End of motion text)

### Background

Several years ago, Los Alamos County tasked the Bicycle Subcommittee of the Transportation Board to gauge citizen interest in bicycling and to recommend a bicycle master plan to Council through the Transportation Board. As part of this task, the County commissioned two polls to gauge interest in bicycling, especially as a form of transportation, and to solicit input as to the kinds of bicycling improvements desired.

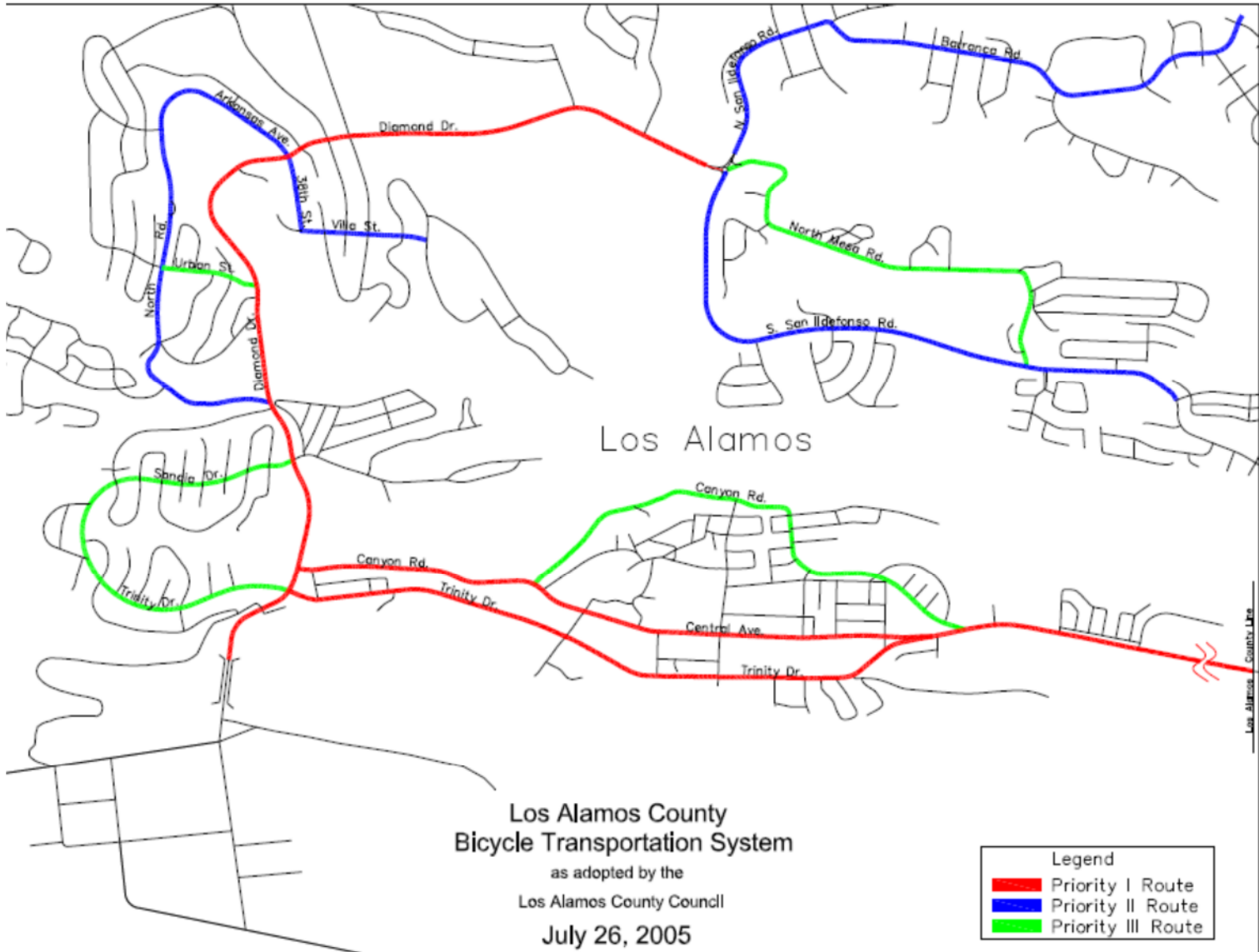
The results of these polls were encouraging. The 2002 Community Perception Study (Research and Polling, Inc.) indicated that 10% of respondents rode to work or school more than 50 times per year and another 9% rode between 6 and 50 times per year. This number compares favorably with bicycling-friendly communities such as Gainesville, Florida; Eugene, Oregon; Boulder, Colorado; and Madison, Wisconsin ([FHWA-PD-92-041](#)).

A second survey "[County-Wide Bike Survey Findings](#)" was commissioned by the County, sent by county mailing, and tabulated by the Bicycle Subcommittee. Drawing

from 1000 questionnaire responses from households representing all age and neighborhood groups, the Bike Survey found that there is a strong desire for safe and favorable bicycle and pedestrian infrastructure throughout Los Alamos County. Over two-thirds of the respondents favor some combination of on-road and off-road bicycling improvements. Safety concerns were by far the greatest response noted by both recreational and commuter bikers with Diamond Drive, Trinity Drive, and Pajarito Road being cited as particularly dangerous routes.

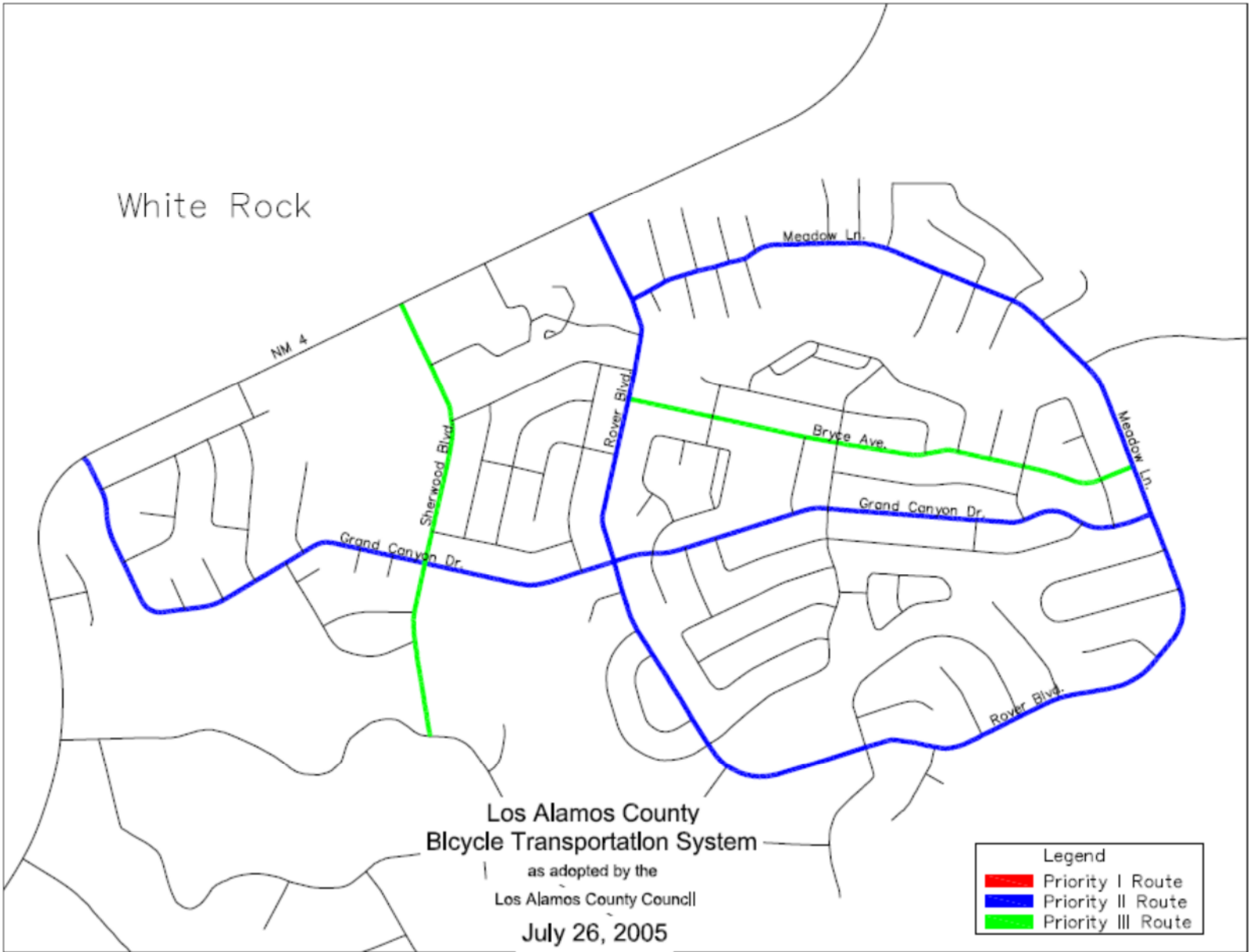
Drawing on these polls, numerous public meetings and internal deliberations regarding the best match of Los Alamos' infrastructure with our desire to provide safe and efficient *bicycling as transportation*, the Bicycle Subcommittee submitted its recommendations, unanimously, to the full Transportation Board for consideration at its April 2005 meeting. The above motion is the Transportation Board's motion regarding bicycle routings. Our mission is simple: that our transportation system should connect cyclists from their homes to their destinations (schools, downtown, place of employment) in a bicycling friendly manner. Therefore, these routes were chosen to connect residential communities to destinations. Particular attention was taken to improving collectors and arterials (and to the extent possible, encourage regional connectivity on State and LANL routes) since these often have high traffic flows and sometimes lack shoulders or bike lanes. Equally important, we focused on roads surrounding our schools (approximately within a one mile radius for non-bused children) in order to address "Safe Routes to School" concerns.

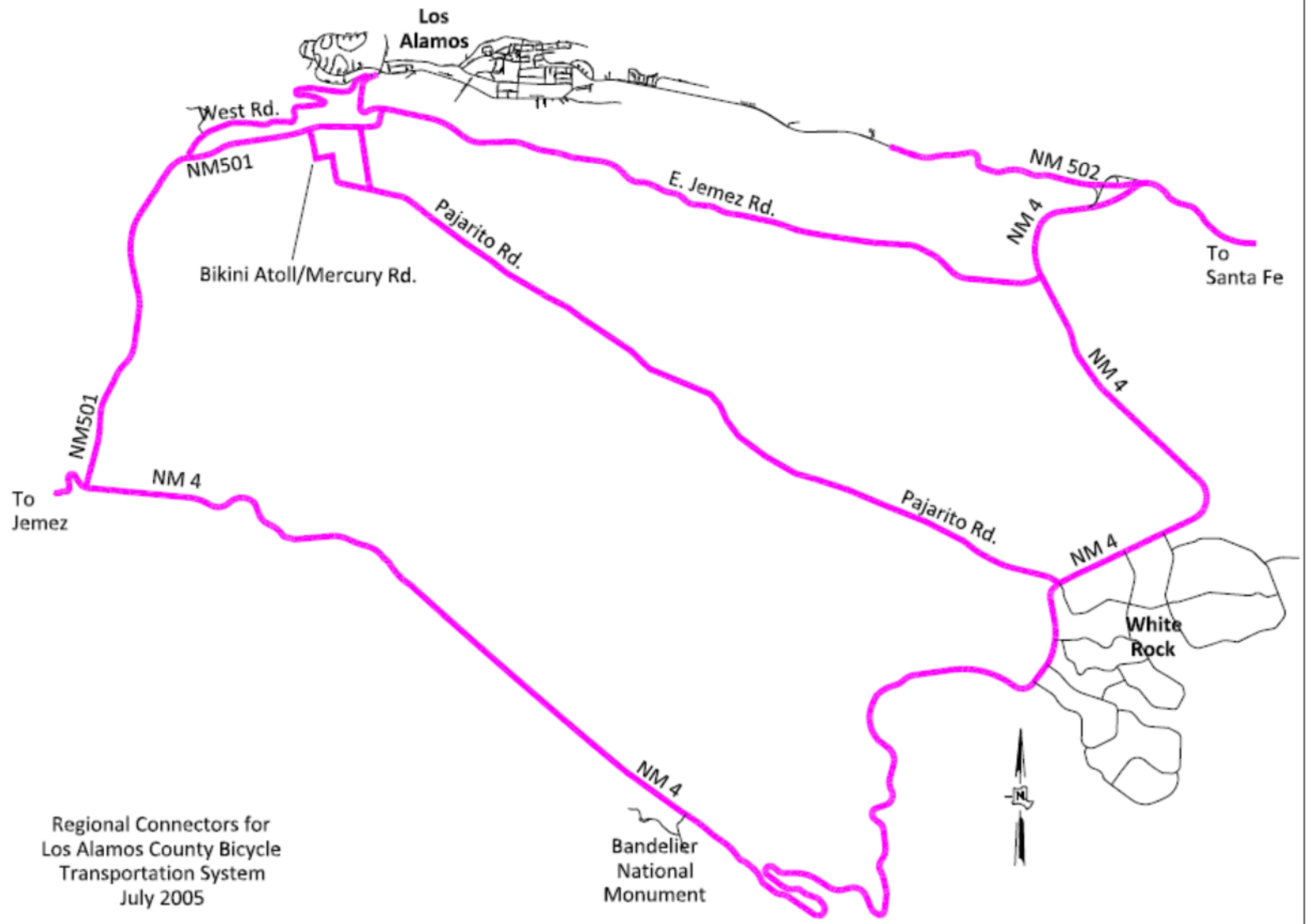
A more comprehensive vision statement ([Creating a Bike and Walk Friendly Los Alamos](#)) from the Bicycling Subcommittee can be found online at the following location: <http://www.labikes.org/bsc/labikeplan.asp> .



Los Alamos County  
 Bicycle Transportation System  
 as adopted by the  
 Los Alamos County Council  
 July 26, 2005

Legend	
<span style="color: red;">—</span>	Priority I Route
<span style="color: blue;">—</span>	Priority II Route
<span style="color: green;">—</span>	Priority III Route





Regional Connectors for  
Los Alamos County Bicycle  
Transportation System  
July 2005

**INCORPORATED COUNTY OF LOS ALAMOS RESOLUTION NO. 10-32**

**A RESOLUTION ON THE POLICY FOR THE DESIGN OF PUBLIC STREETS AND RIGHTS-OF-WAY IN LOS ALAMOS COUNTY**

**WHEREAS**, the Los Alamos County Council has established six (6) main Strategic Goals, three (3) of which are "Enhance Environmental Quality and Sustainability", "Improve Transportation and Mobility", and "Diversify the Economy/Revitalize White Rock and Los Alamos Downtowns"; and

**WHEREAS**, the Council has established a series of Strategic Objectives to carry out these goals, including objectives to "Incorporate smart growth concepts", "Pursue community-wide independence from hydrocarbon energy sources", "Promote and expand regional transit organization", "Develop a Transportation Master Plan", and "Improve downtowns by attracting at least \$30 million of private investment and making available \$6 million of public funds"; and

**WHEREAS**, recent advances in the practice of traffic engineering and urban planning have developed new "best practices" for the design of streets that better accommodate the needs of private vehicles, transit riders, pedestrians, cyclists, and those with disabilities, while enhancing safety and convenience for all users; and


**WHEREAS**, a consistent policy on the development of streets and rights-of-way in the County that supports consideration of all modes of transportation during the design process will help to achieve Council's three aforementioned Strategic Goals.

**NOW, THEREFORE, BE IT RESOLVED** by the Council of the Incorporated County of Los Alamos that the "Policy for the Design of Streets and Rights-of-Way in Los Alamos County" (Attachment "A") shall be adopted as the official policy of the County.

**PASSED AND ADOPTED** this 9th day of November, 2010.



**COUNCIL OF THE INCORPORATED COUNTY OF LOS ALAMOS, NEW MEXICO**

  
\_\_\_\_\_  
**Michael Wismer**  
**Council Chair**

**ATTEST:**

  
\_\_\_\_\_  
**Janet Foster**  
**Los Alamos County Clerk**



## ATTACHMENT "A"

# Policy on the Design of Public Streets and Rights-of-Way in Los Alamos County

### 1. Purpose and Vision

The purpose of this policy is to ensure that in the process of designing new streets and rights-of-way or redesigning or reconstructing existing ones:

- 1.1. Street and right-of-way design and land use decisions are mutually reinforcing, to create effective synergy between streets and rights-of-way and land uses.
- 1.2. A comprehensive approach to street and right-of-way planning and design provides sufficient capacity and safe and comfortable travel for expected levels of motorists, bicyclists, pedestrians, transit riders, and operators of other evolving modes of transportation, such as low speed vehicles.
- 1.3. Street and right-of-way design provides transportation choices while promoting safety, health, economic vitality, environmental sustainability, and livability throughout the community.
- 1.4. Street and right-of-way designs incorporate published engineering and best planning practices.

### 2. Applicability

2.1. This policy along with other related plans, codes, and regulations shall apply to the design of all new and rebuilt streets, roads, sidewalks, and similar paved public rights-of-ways. The policy does not apply retroactively to streets and rights-of-way that otherwise are being resurfaced or repaired.

2.2. All potential streets, rights-of-way and intersection elements to be considered under this policy are subject to context and appropriateness of surrounding and future land uses. Certain constraints such as lack of right-of-way, or topography may prohibit the use or require refinement of design element options.

2.2.1. Aspects of this policy may be waived if cost of accommodation is excessively disproportionate to the need or probable use.

2.2.2. A well defined process for granting exceptions will be developed that includes review by senior level department heads in DPW and Community Planning with concurrence by their respective Boards and Commissions. This policy shall also be taken into account when considering future codes and regulations.

### 3. Implementation

3.1. This policy establishes the goals for street, right-of-way, and intersection design guidelines that will be part of the Comprehensive Transportation Plan for Los Alamos County.

3.1.1 Guidelines for cross-sections, speeds, functional and aesthetic design elements for new and reconstructed streets and rights-of-way, including the design components that create the desired character of various streets or street segments will be set appropriately considering the overall function of the street or right-of-way in the context of surrounding land uses.

3.1.2 Street and right-of-way design guidelines will include street and intersection design elements and their intended purpose, as well as outline the approach to evaluating the tradeoffs among competing users and uses of the street right-of-way.

3.1.2 Developers and designers shall document how elements of this policy were taken into consideration during design and provide justification for elements recommended by or appropriate to the project and its surrounding land uses but not included in the recommended design, subject to County review and acceptance.

3.2 The requirements for development review and approval currently required by code should be updated as needed to implement this policy.

3.2.1 The Los Alamos County Public Works Construction Standards and current design-manuals will be revised and updated in a periodic manner consistent with the evolution of best practices. The Director of Public Works will be responsible for this process. Reference should be made to existing design guides, such as those issued by AASHTO, state design standards, and the Americans with Disabilities Act Accessibility Guidelines.

3.2.2 The County's Development Code should be updated as necessary.

3.3 This policy shall be incorporated into existing and future transportation related documents.

3.4 The public will be informed and involved during all stages of the planning and design process to ensure that the perspectives of all stakeholders are heard and seriously considered.

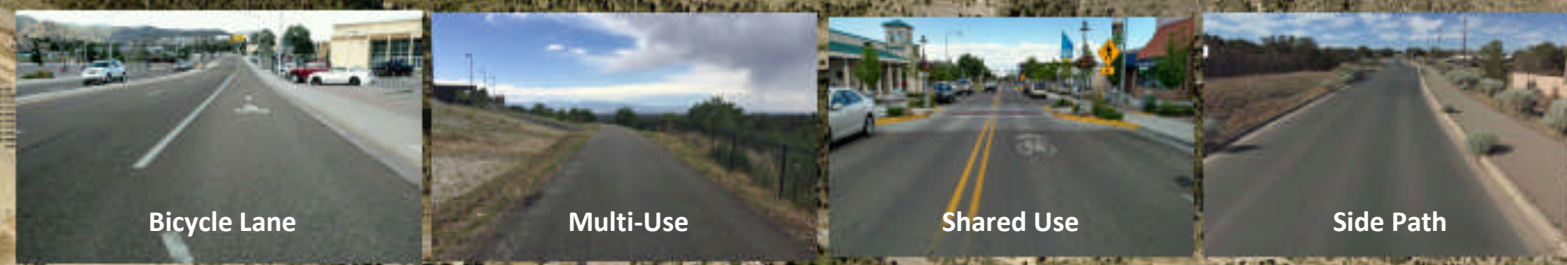


**LEGEND**

- Acid Canyon/Ranch School Trail (Existing)
- Los Alamos Mesa Trail (Existing)
- Canyon Rim Trail (Existing)
- Shared Use (For Consideration)<sup>2</sup>
- Multi-Use Connection (For Consideration)<sup>1</sup>
- Bike Lane (Existing)
- Shared Use (Existing)<sup>2</sup>
- Multi-Use Side Path (For Consideration)<sup>3</sup>
- Bike Lane (For Consideration)
- Canyon Rim Trail (2016 Construction)
- Canyon Rim Trail (2011 Master Plan)
- High Priority Corridor
- Point of Interest

**KEY: (Point of Interest)**

- 1 Mesa Public Library
- 2 Historical Museum
- 3 Fuller Lodge
- 4 Youth Activity Center
- 5 Ashley Pond
- 6 Reel Deal Movie Theater
- 7 Aquatic Center
- 8 Nature Center
- 9 Bradbury Science Museum
- 10 East Park Pool Assoc.
- 11 East Park



<sup>1</sup>Multi-Use Connection (Path) A bikeway physically separated from motor vehicle traffic by an open space within an independent right-of-way. Multi-use paths may be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Most multi-use paths are designed for two-way travel.

<sup>2</sup>Shared Use A lane of traveled way that is open to both bicycle and motor vehicle travel.

<sup>3</sup>Multi-Use Side path A path located immediately adjacent and parallel to a roadway. Multi-use side paths may be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Most multi-use side paths are designed for two-way travel.

## Los Alamos Bicycle & Pedestrian Routes

Date: 6/19/2017

Feet

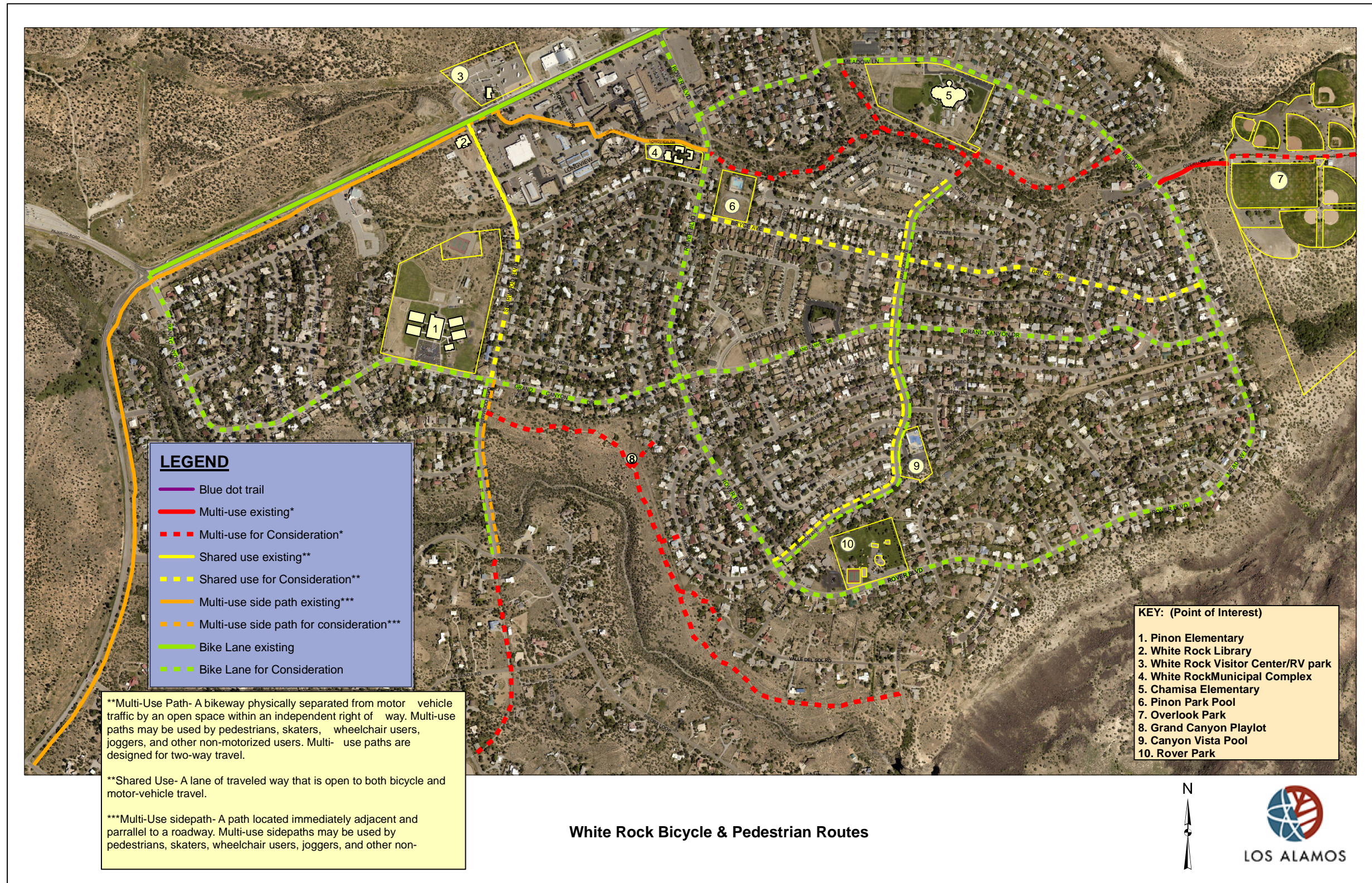


Exhibit E: Bandelier Plan: Multi-Use Trail

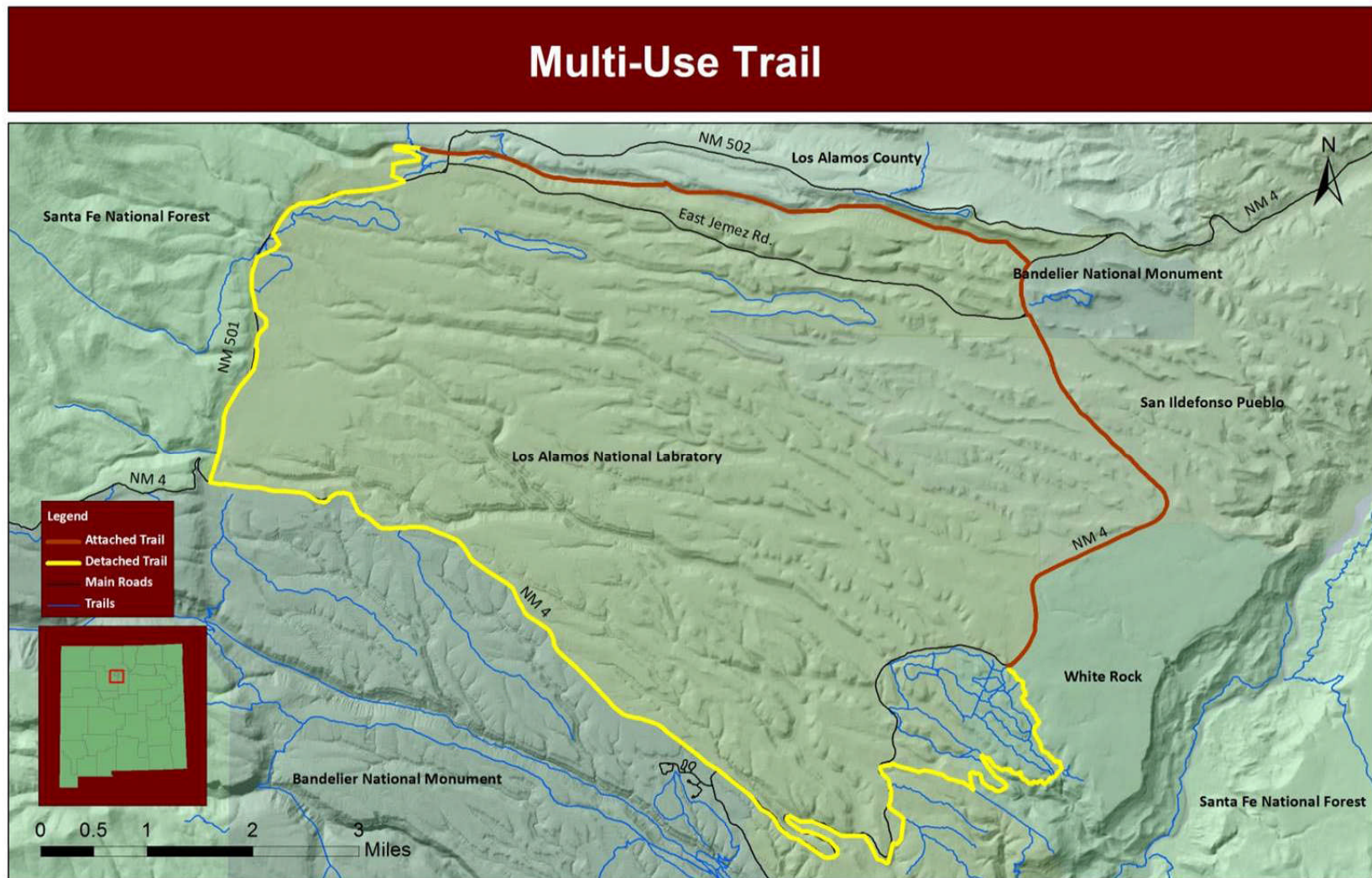
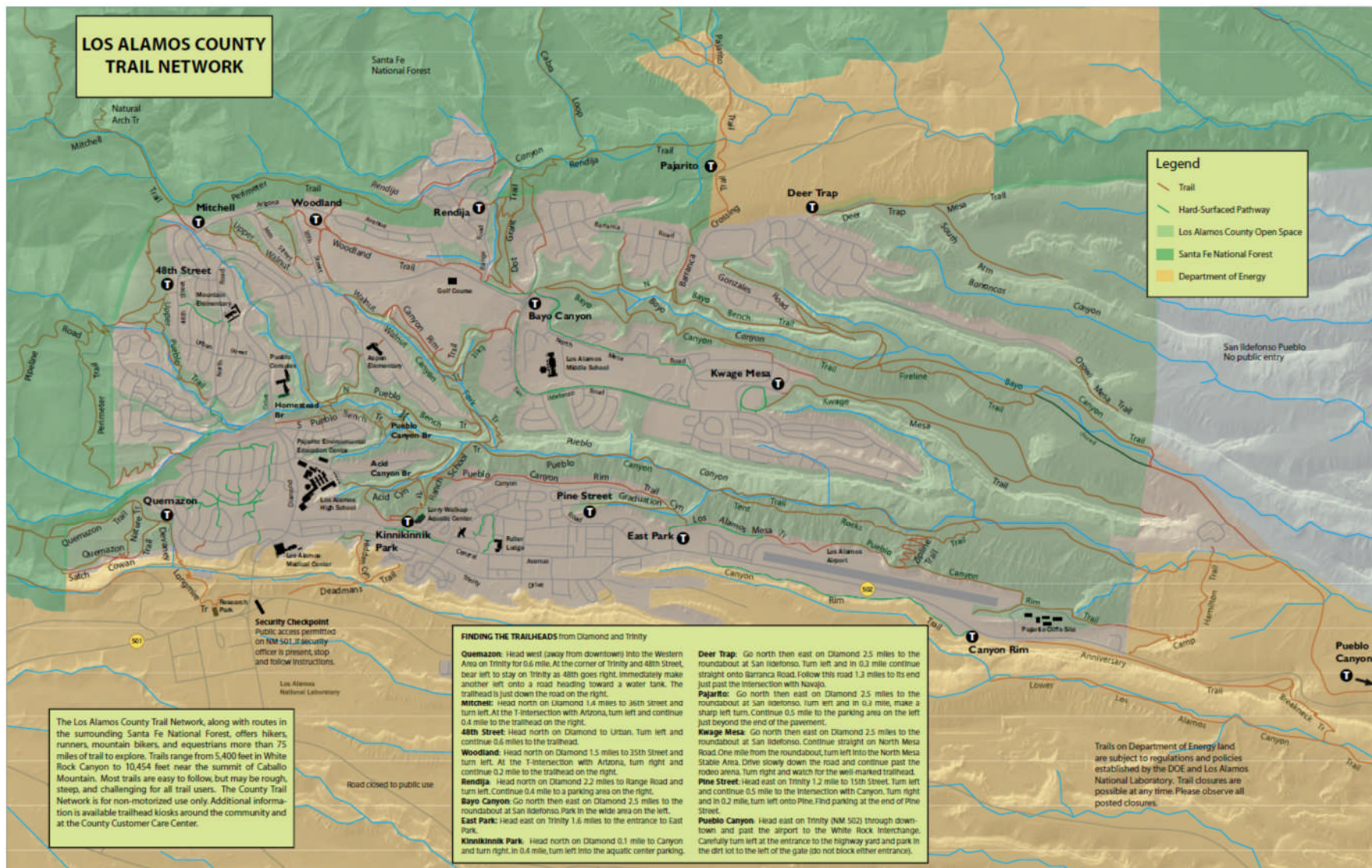
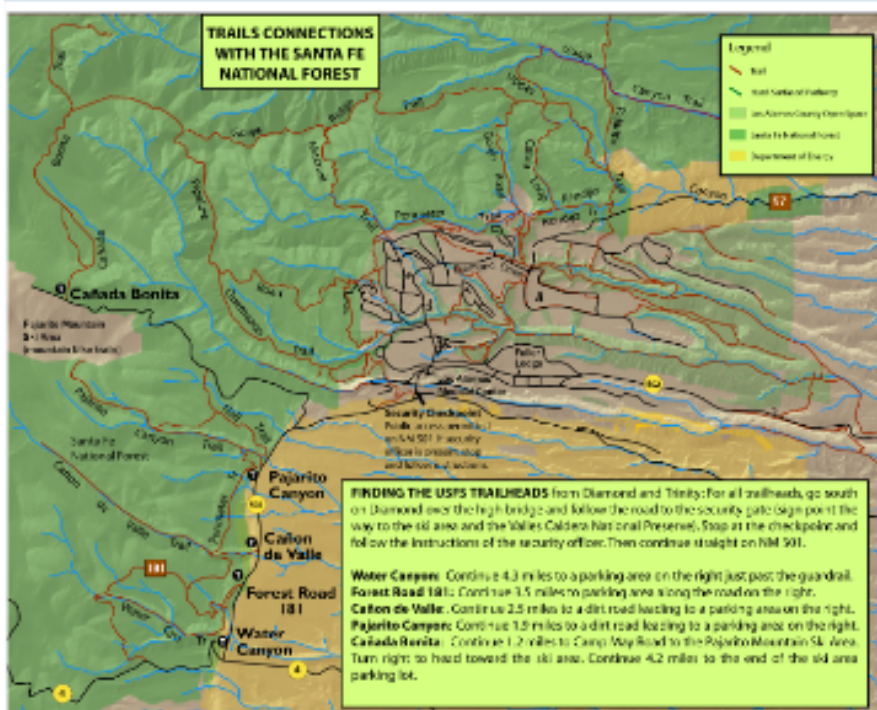


Exhibit F: Los Alamos County Trails Network





**SAFETY ON THE TRAIL**

**Hazard Trees:** Live and insect killed trees may be present along the trail. Many of these trees can be toppled by the wind. Always watch for trees that are leaning, loose, and dead. Avoid walking directly under any of these trees. Consider staying off the trail system on windy days.

**Rush Flood:** Most drainages in the Los Alamos area are normally dry. Intense rainfall can result in flash floods in any stream channel. Stay out of streams and off or downstream when raining. Be mindful that localized storms can hit the top of a watershed and result in high water flow many miles downstream.

**Lightning:** Lightning is a part of summer storms. Cloud buildups in the late morning usually result in thunderstorms in the afternoon. Plan when you don't leave you exposed on peaks or ridges in the afternoon. If caught with an approaching storm, seek lower ground well before the rain starts to fall.

**Sun exposure:** High elevation increases the intensity of the sun's ultraviolet radiation and can lead to quick sunburn. Always apply generous coats of sunscreen before heading out on the trail, for maximum protection, wear a hat, long-sleeved shirts, and long pants.

**Dehydration:** Intense sunburn and low relative humidity combined with physical exertion can lead to rapid dehydration. When using the trail system, always carry and drink plenty of water. In summer, a cup of water per mile of trail is not excessive. Drink water even if you don't feel thirsty.

**STAY ON THE RIGHT TRAIL BY FOLLOWING THE LOS ALAMOS COUNTY TRAIL NETWORK TRAIL MARKERS**

**PERMETER TRAIL**

**FOR MORE INFORMATION**

Los Alamos County Parks Office, 505 962-8159  
 Los Alamos County Open Space and Trails, 505 668-1776

Website: [www.losalamosns.us](http://www.losalamosns.us)  
 Email: [open\\_space@losalamosns.us](mailto:open_space@losalamosns.us)

**WANT MORE DETAILS ABOUT TRAILS AND TRIPS? PICK UP ONE OF EIGHT TRAILHEAD GUIDES AVAILABLE FOR EACH OF THE MAJOR TRAILHEADS, FIND THEM AND TRAIL MAPS AT THE PARKS OFFICE AT 101 CAMINO ENTRADA, BUILDING 5; THE COUNTY CUSTOMER CARE CENTER AT THE MUNICIPAL BUILDING; THE VISITOR CENTERS; OR ON THE COUNTY WEB SITE UNDER PARKS AND OPEN SPACE, LOS ALAMOS TRAIL NETWORK.**

**GREAT TRAILS: HIKING**

**Quimonzon Nature Trail:** Quimonzon Trailhead, 1.8 mile roundtrip, moderate. An interpretive loop to Point Cerro Grande for recovery. Head uphill on the road toward the water tower. Just below the green gate, turn left onto the same trail and follow the numbered signposts. In about a mile, the trail swings right and intersects the Quimonzon Trail. Turn right to return to the trailhead.

**Acid Canyon:** Kinnikinnik Park Trailhead, 1 mile roundtrip, easy. A quiet study walk in the heart of Los Alamos. From the trailhead, head down the slope. Angle right and follow the historic switchbacks on the Ranch School Trail for a few hundred feet, bear right and descend a series of log stairs. Cross a stream channel and angle left onto the Acid Canyon Trail. Cross a small bridge, then veer right in a few minutes, turn left and follow the wide road as it heads up canyon. Follow the road back to the trailhead.

**North Boyo Bench:** Boyo Canyon Trailhead, 2.6 miles, easy. A canyon exploration that ends with a view from the parking area, head east into the pine forest. Immediately take the left fork and travel to the north side of Boyo Canyon for 0.4 miles, drop to the bench level between two cliffs. Follow the trail on the bench. At mile 1.2, bear right to reach a viewpoint of Boyo Canyon. Return by the same route.

**Deer Trap Mesa:** Deer Trap Trailhead, 2.6 miles, easy. A mesa top scramble with continual spectacular views. Head east, soon dropping on an ancient stairway to the left. North side of the mesa. In a minute, reach the meadow and continue taking the left fork at mile 0.5. At the north mesa point, turn right and follow the loop trail to the south point. Return via the South Arm Trail.

**Michelle Trail:** Michelle Trailhead, 2 miles or 5.2 miles, easy or strenuous. A fascinating look in a recovering watershed with the option of a rugged ascent to a ridge with 350 degree views. Head up the trail from the information kiosk. Cross the Perimeter Trail and angle left to begin paralleling Bendija Canyon. At 0.3 mile, cross the stream channel and in a few yards turn left and follow the rock carnie up the ridge. Climb to great views on tight switchbacks. Reverse along the ridge, then drop back to the canyon. Reach the bottom of the steep ascent at mile 1.1. For the easy trip, turn around here. To make the 1.300 climb to Guaje Ridge, continue up the trail as steep and wooded switchbacks. There are two false summits to be aware of before reaching the ridge line at mile 2.6. Return by the same route.

**Cañon de Valle:** Cañon de Valle Trailhead, 3.4 miles roundtrip, 1,200-foot elevation gain, moderate. A study trip through a canyon in unburned canyon. Follow the rough road from the trailhead into the canyon for 0.7 mile, continue up the canyon on a trail as the road swings to the right. Walk as far as you like up to the boundary of the Valles Caldera National Preserve. Turn around and return by the same route.

**WHITE ROCK TRAILHEADS** from Rover and Highway 4

**Blue Dot:** Head into White Rock on Rover Road, head in 0.2 mile, turn left onto Meadow Lane. Continue past Chimney Elementary 0.7 mile from Rover and turn left into Overlook Park. Continue on this road to a paved side road to the left that is signed for the trailhead. Turn right and head to the parking area.

**Red Dot:** Head south on Highway 4 0.2 mile to Sherwood Boulevard. Turn left and travel east on Sherwood 0.8 mile to a T-intersection with Piedad Loop. Turn left onto Piedad Loop and continue 0.6 mile to the pullouts on either side of the road at the well-marked trailhead.

**Blue Trail:** Head south on Highway 4 0.2 mile to Sherwood Boulevard. Turn left and travel east on Sherwood 0.4 mile to a chain-link entrance to the trail near a Los Alamos Parks trail marker.

**GREAT TRAILS: MOUNTAIN BIKING**

**Central Canyons Loop:** Kinnikinnik Park Trailhead, 3 miles, moderate. A short loop of the canyon trail network. Head left and downhill on the Acid Canyon Trail. At the Acid Canyon Bridge, cross the bridge to the South Pueblo Bench Trail. Ride to the Pueblo Canyon Bridge, cross it, and pick up the North Pueblo Bench Trail. Turn left and roll through several drainages to the Horsted Crossing Trail. Turn left, cross the bridge and turn right. Climb to return to the South Pueblo Bench Trail, turn left and return to the trailhead.

**Tour de Los Alamos:** Kinnikinnik Park Trailhead, 9 miles, moderate. A great tour that incorporates many popular trails. Start at the aquatic center and take the Acid Canyon Trail to the South Pueblo Bench Trail at the Road Canyon Bridge. Across the bridge, turn right and ride that trail to Horsted Crossing. Turn left, cross the Horsted Bridge, then turn right and follow the North Pueblo Bench Trail to Walnut Canyon Road. Turn left and in 0.1 mile, turn right onto the Back Fork Trail and ride to the end. At the roundabout at San Mateo Road, turn left and ride through the pedestrian tunnel to pick up the Dot Green Trail. Ride the length of that trail to the Bendija Trail. Turn left, and pick up the west end of the Perimeter Trail. Ride that trail 3 miles to Pipeline Road. Head down Pipeline to Quimonzon Road, turn right, and cross the pavement to North Road. Turn right and ride the pavement via Diamond Drive and Canyon Road back to the aquatic center.

**Hill Trail Loop:** Pajarito Canyon Trailhead, 4 miles, difficult. A challenging climb to be followed by a cruising descent through a scenic canyon. Head north on a descending dirt road, around a gate, and to the bottom of Pajarito Canyon. Look for a rock cairn marking the start of the Hill Trail. Angle right and start a steep, rocky climb. At mile 0.6, the route follows a logging road through unburned forest. At mile 1.4, turn left and shortly pick up a single-track angling right. Follow the trail to Pajarito Canyon at mile 2.1. Swing left and follow the Pajarito Canyon Trail back to the trailhead.

**Guaje Ridge:** Cafada Bonita Trailhead, 13 miles one-way, difficult. A Los Alamos classic starting with a booming climb to the roller coaster Pipeline. Leave one vehicle at the Bendija Trailhead and drive to the Pajarito Mountain Ski Area. Head north on the Cafada Bonita Trail for 2 miles, angle right onto Pipeline Road. Climb steeply 1.6 miles to the Guaje Ridge Trail. Turn left and descend the length of the trail to Upper Guaje Road. Turn left for 0.6 mile and then turn right onto the Cable Loop. Don't head up it, but turn and ride right and descend the rocky trail to the Bendija Trail. Turn right and take that trail to Pipeline Road and a second back to the ski area.

**Out-and-Backs** can be ridden on the Quimonzon and Cañon de Valle trails. Difficult, and Savage Mesa and North Boyo Bench trails (easy to moderate).

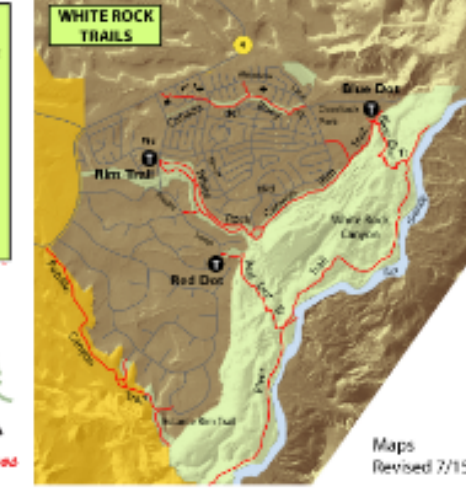
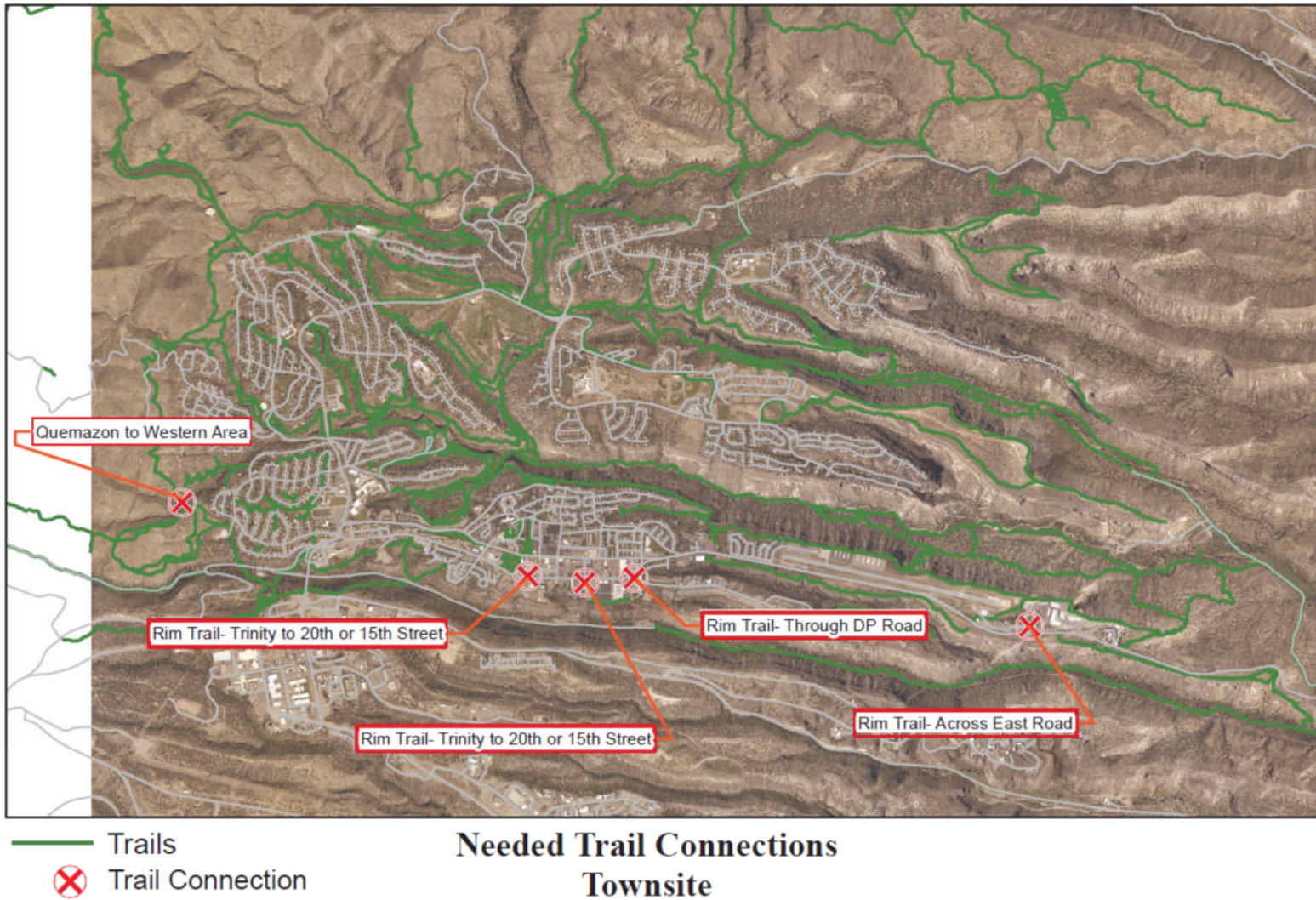






Exhibit H: Comprehensive Plan (Exhibit 38): Needed Trail Connections Map



## Exhibit I: Public Meeting List

- Planning & Zoning meeting – March 29, 2017
- Transportation Board Meeting – April 6, 2017
- Parks & Recreation Board Meeting – April 13, 2017
- White Rock Public Meeting – April 27, 2017
- Transportation Board Meeting – June 1, 2017
- County Council Work Session – June 13, 2017
- County Council – June 27, 2017

## Exhibit J: Open Forum Survey Questions and Results

### Bicycle Transportation Plan Survey

#### Open Forum April 13 – May 8, 2017

The following are the questions as asked on the online survey and number/percentages of responses. For questions asking for more than one answer a number of responses is given.

1. If you or anyone in your household ride a bicycle, for what purpose?

a. For transportation	2.2%
b. For recreation or exercise	35.1%
c. All the above	62.7%
  
2. How often do you use a bicycle?

a. Daily	28.0%
b. Weekly	43.2%
c. Monthly	13.1%
d. Rarely	15.7%
  
3. If you rarely ride a bicycle, why?

a. Not convenient	12
b. Don't feel safe biking	59
c. Time constraints	27
d. No direct route to take	27
e. Other	25
  
4. How far on an average daily roundtrip do you travel on your bicycle?

a. ¼ mile	2.7%
b. ½ mile	2.7%

- c. 1 mile 3.6%
  - d. More than 1 mile 91.0%
5. Do you utilize the transit system and bicycling in combination to travel?
- a. Yes 17.9%
  - b. No 82.1%

6. What is your most common bicycle route?

Diamond Drive -- 35

Northern neighborhoods to Downtown or LANL – 31

Recreational Trails – 28

White Rock – 26

Bandelier Loop – 21

Downtown – 20

Canyon Rim Trail – 16

LANL – 15

Canyon Road – 14

NM 4 – 12

LANL (Back Gate) – 11

Trinity Drive – 8

7. Please rank the changes, if any, would you like to see your local government make in your community for bicyclists to encourage more bicycle use?

1. Improve existing paths, roads, sidewalks
2. More on-street bicycle lanes
3. More multi-use paths
4. Increase bicycle education
5. Increase safety police presence
6. Don't allow bikes on sidewalks

8. Is it safe or dangerous to ride a bicycle in your community or does it depend?

- |              |       |
|--------------|-------|
| a. Safe      | 18.6% |
| b. Dangerous | 14.3% |
| c. Depends   | 67.1% |

9. If you answered dangerous or it depends on the previous question, why do you feel it is dangerous to ride a bicycle in your community? What are your top three concerns?

- |  |     |
|--|-----|
| a. Traffic/Congestion  | 56  |
| b. Fast Moving Traffic   | 91  |
| c. Distracted Drivers/Riders   | 121 |
| d. Few bike lanes or bike paths  | 101 |
| e. Drivers/riders don't obey traffic laws  | 55  |
| f. Lack of enforcement   | 8   |
| g. Streets not clean or clear of debris  | 41  |
| h. Not sure how to move safely from starting point to destination (lack of available bicycle transportation network map) | 26  |

10. What changes in the system or environment would increase your cycling habits? Choose all that apply.

- |  |     |
|--|-----|
| a. More bicycling facilities (Bike lanes, paths, etc.) | 189 |
| b. Mapped routes available                             | 51  |
| c. Safer on street routes                              | 131 |
| d. More enforcement                                    | 26  |
| e. Bicycle safety education                            | 29  |
| f. Bicycle parking facilities available                | 59  |
| g. Other   | 48  |

11. What specific improvements, facilities or routes would you like to see to improve the bicycling experience in Los Alamos County?

161 respondents answered this question, below is a tally of improvements, facilities or routes they find would improve the bicycling experience in Los Alamos:

1. Bicycle route on NM4/linking White Rock with Los Alamos – 50
2. More Multi-use trails in general – 25
3. Signal Timing/Enforcement/signing & markings – 21
4. Road maintenance (clean bike lanes/maintenance of existing facilities) – 19
5. Bike Facilities on LANL property (including crossing Omega bridge and access of Pajarito Road) -- 15
6. Bicycle Route on Trinity Drive – 12
7. Extension of Canyon Rim Trail from Coop to Medical Center -- 12
8. More bike lanes – 10
9. Bike lanes or off-street path through downtown and on Central Avenue – 9
10. Multi-Use Trail to Bandelier – 8
11. More bicycle facilities (integrates network throughout the County) – 7
12. Bicycle Facilities from neighborhoods further away from town (more direct routes, spanning canyons) – 6
13. Separation of bike lanes from vehicle lanes – 6
14. Bicycle Education – 4
15. Transit connections/bike rack use on all buses – 3
16. Bicycle Parking – 3
17. Bicycle Lanes on Canyon – 2
18. Bike Rentals – 1
19. Add bike lanes to 15<sup>th</sup> Street -- 1
20. Mapping – 3
21. Safe Routes to schools – 3
22. Traffic Calming – 2

23. Crossings of Trinity Drive – 1

12. What is your age group?

a. Under 18	0.4%
b. 19-25	2.1%
c. 26-40	25.4%
d. 41-60	44.5%
e. 61-70	17.8%
f. 70 or over	9.7%

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### Supporting & Related County Reference Documents

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