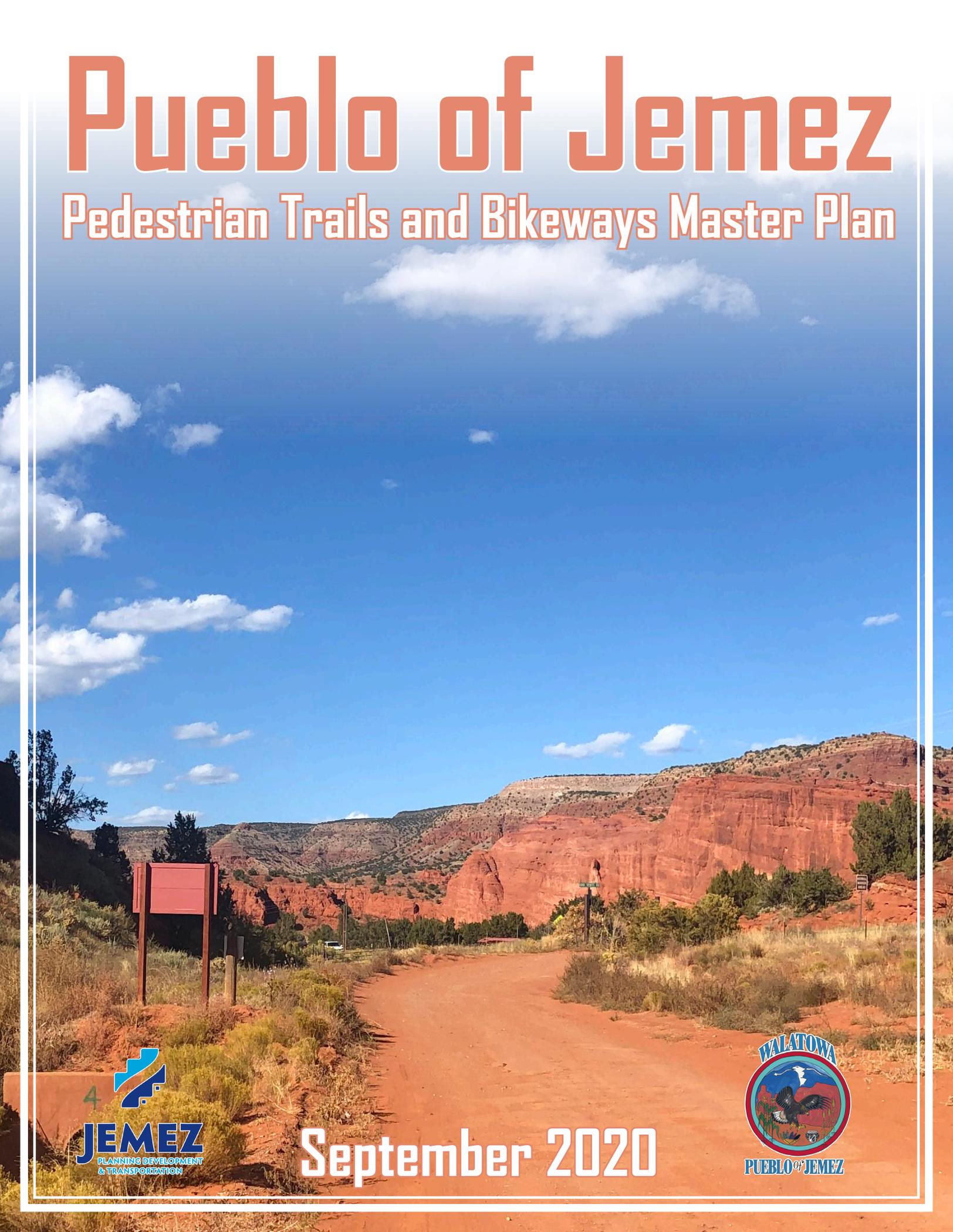
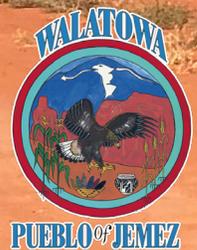


Pueblo of Jemez

Pedestrian Trails and Bikeways Master Plan



September 2020





Acknowledgements

The Pueblo of Jemez would like to thank the individuals below for their support in the completion of this plan. These individuals include members of the Pedestrian Facility Planning Committee and those who participated in the elder and youth focus groups. We would also like to thank the individuals who participated in the community meetings and provided valuable input into the plan.

Pueblo Members

- Antonio Blueeyes
- Sheri Bozic
- Paul Clarke
- Reyes Crespín
- Cambree Gachupin
- David Gachupin
- Klara Gachupin
- Marlon Gachupin
- Jesirae Lucero
- Leonora Lucero
- Cornell Magdalena
- Steven Mora
- Maggia Pecos
- Amanda Rubio
- Freddie Sabaquie Jr.
- Mary Shendo
- Rose Shendo
- David Toledo
- Sefora Tosa
- Sydney Tosa
- Ada Toya

- Ailana Toya
- Antoinette Toya
- Chris Toya
- Danielle Toya
- Mary Toya
- Vince Toya
- Maria Tsehlukai
- Faila Waquie
- Priscilla Waquie
- Juanita Yepa
- Kristen Yepa

Bohannon Huston, Inc.

- Denise Aten, AICP
- Melanie Meroni
- Bradyn Nicholson
- Jennan Qato
- Aaron Sussman, AICP
- Jeanette Walther, PE, PTOE

Pueblo of Jemez Pedestrian Trails and Bikeways Master Plan

September 2020

Prepared by:

Bohannon ▲ **Huston**





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Introduction

Overview

The Pueblo of Jemez and surrounding area has been continuously inhabited for hundreds of years. Today there are approximately 3,900 community members across 90,000 acres of non-contiguous land. Over time, transportation needs have evolved across the Pueblo and new challenges have emerged. In particular, reliance on single-occupancy vehicles has grown, and conflicts have arisen between vehicles and pedestrians along the narrow streets that were developed long before motor vehicles were invented. This plan – developed from fall 2019 through summer 2020 – is intended to address some of these transportation challenges.

This plan specifically considers potential pedestrian and bicycle routes and facility types for the Village Area and surrounding Pueblo lands. This plan focuses primarily on trails in and near the main Village Area. Other facilities, including cultural trails, are discussed in this plan in general terms. The types of facilities proposed in this document are informed by cultural values and the need to balance traditional activities with modern transportation challenges. This plan was also developed after the funding award and design of the Hemish Path to Wellness, a two-mile multi-use trail along NM 4 through the Walatowa Village Area. The role of the trail and the ability to provide connections to the trail are major considerations of this plan.

Purpose and Need

The Pueblo of Jemez Pedestrian Trails and Bikeways Master Plan seeks to enhance the Pueblo's transportation network by proposing additional travel options, and in particular, biking and walking. The plan is a response to various community planning efforts that identified the need to promote safety and eliminate barriers to physical activity; developing a pedestrian and bicycle plan was also a specific recommendation from the Pueblo's most recent Long Range Transportation Plan.

A cohesive network of trails and pedestrian and bicycle routes has community benefits beyond simply being able to walk and bike in the community as a form of transportation. An expanded pedestrian and bicycle trails network can help improve public health and safety, provide access to community destinations, create opportunities for physical activity, and ensure the continuation of traditional cultural activities. Each of these considerations are discussed in greater detail below.



Goals and Objectives

I. Create additional *opportunities for walking and biking* in the Pueblo of Jemez

- A. Develop new pedestrian trails and bikeways and enhance existing facilities
- B. Develop a design guide that identifies various trail concepts and considers all potential users regardless of age or ability
- C. Implement the first phase of the NM 4 Trail and pursue extensions as part of additional phases
- D. Perform regular maintenance on pedestrian trails and bikeways to ensure facilities remain accessible and in good condition

II. Increase *connectivity* across the Pueblo and increase access to local destinations and services

- A. Identify locations and major destinations – including the senior center, youth center, and schools – where additional walking and biking trips should be encouraged
- B. Prioritize trails that provide access to local destinations
- C. Create connections to the NM 4 Trail to enable efficient travel across the Pueblo of Jemez

III. Provide *safe conditions* for pedestrians, particularly school children and elderly community members

- A. Evaluate the effectiveness of bus stop locations and continue to improve or add signage as needed
- B. Add pedestrian-scale lighting to enhance visibility of bicyclists and pedestrians and to improve user comfort
- C. Address safety issues regarding stray animals



- D. Manage informal vehicle access points to reduce conflicts between ATVs, motor vehicles, and pedestrians
- E. Create additional pedestrian crossings across NM 4 to increase connectivity to local destinations
- F. Reduce unsafe vehicular speeds along roadways where bicyclists and pedestrians are present

IV. Promote trail use for exercise and recreation to improve *public health*

- A. Create opportunities to encourage active living by implementing additional bicycle and pedestrian facilities for exercise and recreation
- B. Encourage use of trails for recreation and exercise by installing user amenities and use of signage along trails
- C. Promote community wellness by building upon programming efforts undertaken by the Department of Public Health that encourage physical activity and use of trails
- D. Improve coordination among Pueblo of Jemez departments to identify priorities for implementation

V. Maintain the *cultural integrity* of the Pueblo of Jemez

- A. Develop trails in ways that are conducive to cultural programming and running events
- B. Create an inventory of cultural trails and identify appropriate maintenance efforts
- C. Identify trail types that are appropriate for different locations across Pueblo of Jemez (inside and outside the Village Area)



Issues and Considerations

Safety

Previous planning efforts identified safety as a major concern for the Pueblo of Jemez. Community input received as part of this planning process also indicated safety as a barrier to walking and biking. Critical safety issues that emerged from the planning process are related to vehicle speeds, drainage issues, and general perceptions of crime. Speeding issues and conflicts between pedestrians and motorists occur despite concerted enforcement efforts within the Village Area and along NM 4.

This plan addresses pedestrian and bicyclist safety by proposing measures that reduce vehicle speeds, create separate trails and paths to reduce conflicts with motor vehicles, and identify safer bus stops for children. Well-designed trails can address issues with drainage and standing water, which make it safer and more sanitary to walk and bike around the Pueblo.

Pueblo of Jemez residents also raised security concerns related to abduction attempts and the presence of non-tribal and non-native people on the San Ysidro Road - an access point that anyone can utilize. This type of outside access hinders parents from feeling comfortable allowing their kids to walk or bike in the community, while some residents reported no longer walking in more remote or wilderness areas out of security concerns. A trail that is not perceived as safe is unlikely to be used by residents. Along with adding lighting in strategic places, implementing a comprehensive trails network could generate more activity, which might reduce these concerns. Trail investments could also be accompanied by increased patrols along trail routes to enhance the sense of security.

Public Health

A robust pedestrian and bicycle network means that Pueblo residents would have more opportunities to exercise and spend time outside. The plan complements ongoing efforts across the Pueblo to promote physical activity, including walking and biking. The Pueblo of Jemez Public Health Department recently released a report noting that one-half of Jemez Pueblo children are either overweight or obese and 89% of Jemez Pueblo adults are overweight or obese, a complex health condition which can result in a myriad of negative health outcomes. However, people who regularly walk or bike generally are less likely to be overweight or obese and have an improved quality of life. Alleviating existing barriers to walking and biking and creating additional options for recreation provides Jemez Pueblo residents with viable options for adopting healthier lifestyles. In addition to physical health benefits, spending additional time outdoors and engaging in regular exercise has important



mental health and social and community benefits. In general, residents are more comfortable and motivated to spend time outside and participate in physical activity when there are safe, connected, and accessible facilities that support activities for biking and walking.

Other Public Health Issues

Dust

Dusty conditions, particularly in the afternoons, are common as a result of vehicles driving on unpaved streets through the Village Area. Dust can irritate the eyes and skin and exacerbate existing respiratory conditions. Shifting behaviors from driving to walking or biking can help reduce the amount of driving trips and help mitigate dust issues.

Stray Animals

Pueblo residents and staff identified stray dogs and other animals as a significant barrier to walking and biking through the Village Area. This is a challenging situation to remedy and will require coordination with Tribal leadership to mitigate.

Additional Transportation Options

There is currently a network of footpaths across the Pueblo, though many are not formalized. While motor vehicle use has increased dramatically over time, many residents still rely on walking as their only travel option; based on data from the American Community Survey for 2013-2017 data, 13% of Jemez Pueblo households do not own a vehicle. Additional options to access destinations are especially important for the elderly and those too young or unable to drive. Among Pueblo residents, 13% of the population is over the age of 65 and 25% of the population is under the age of 16. Those who are able and without vehicles could use pedestrian trails and bikeways for safe access to local destinations and for recreational purposes.

Access/Connectivity

Creating safer and more direct connections to community destinations and public services – such as schools, the community library, and Jemez Community Health Clinic – was identified as a challenge during community outreach. This plan provides more options to access these destinations and will increase connectivity around the Pueblo. Among the benefits include safe connections to bus routes, which can reduce the need for parents to drive their children

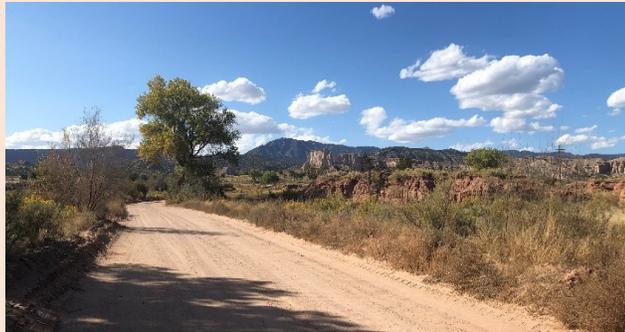


to school. Greater access to destinations can also reduce the need for households in the Pueblo to own multiple cars, which can significantly lower household costs.

Cultural Legacy

Trails are significant cultural places for the Pueblo of Jemez and mountain running is a centuries-long practice. Historically, trails were used as trade routes and to carry messages between communities. Running for Pueblo of Jemez residents was even part of colonial resistance and the Pueblo revolt of 1680 as Pueblo communities sent runners to carry the message of the uprising to different areas.

Owl Springs Way



Trails continue to serve cultural purposes by providing access to lands used for hunting and are places of cultural and spiritual activities, including dances and gathering medicinal and ceremonial items. Other cultural activities such as running and wellness events also take place along Pueblo of Jemez trails. The creation of new trails and paths – and maintaining existing trails – ensures a continued place for these cultural activities, alongside their role as modern transportation facilities.

Environmental Conditions and Village Area Context

Implementation of certain road design techniques, including potential safety strategies, is regulated by the narrow right-of-way available as well as cultural traditions that mandate the types of materials that can be used in the Village Area. The Trail Concepts Guide contained in this plan identifies potential trail options for different areas across the Pueblo. This Guide serves the purpose of maintaining land use traditions by ensuring trail and bikeway facilities are appropriate for the surrounding context and celebrate historical cultural and environmental practices.

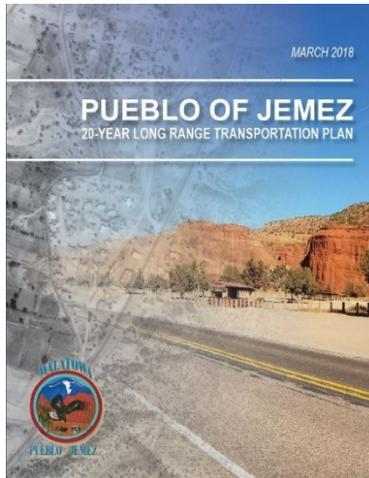
The location of the Village Area also makes flooding and drainage a recurring challenge. In particular, run-off from hills to the east of NM 4 is common while various arroyos traverse the historical Village Area. Roadway surfaces can also become muddy following rainfall events creating impassable roadways and trails. For roadways and trails to remain passable, improved drainage features may be necessary; For example, the multi-use trail along NM 4 includes three arroyo crossings, which adds substantial costs to the project.



Existing Plans and Initiatives

This plan builds upon previous efforts completed by the Pueblo of Jemez that established the increased need and desire for pedestrian and bicycle facilities. A review of relevant planning documents, initiatives, and safety assessments was conducted to identify specific priorities, challenges, and opportunities for biking and walking in Jemez and used to inform the overall vision and recommendations included in this plan. Previous efforts that laid the foundation for this plan are summarized below.

Long Range Transportation Plan



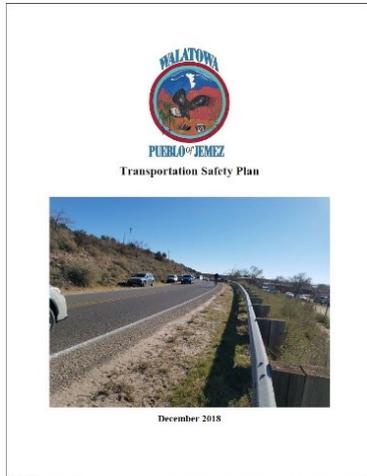
The Pueblo of Jemez 20-Year Long Range Transportation Plan (LRTP), adopted in 2018, evaluates current and future transportation needs of village residents in order to establish funding priorities. Public involvement completed for this plan indicated that village members are highly concerned with safety. The plan also draws heavily upon the Transportation Safety Plan (TSP) adopted in 2018 (see below for more information).

Major priorities of this plan include ongoing maintenance needs, pervasive concerns about drainage and flooding, as well as issues of safety and vehicle speeds in the Village Area and along NM 4. In most village areas, the posted speed is 5 miles per hour. However, public input and observations from Pueblo staff indicate that speed limits are rarely followed. Key recommendations for addressing safety and travel speeds include installing more traffic calming elements such as speed bumps, pedestrian improvements, and better signage. Specific locations for bicycle and pedestrian improvements identified in this plan include:

- Mission Road
- Canal Road
- Day School Road
- Trading Post Road
- Southern Street
- Bear Head Canyon Road
- Head Start Road
- Walatowa Boulevard
- NM 4



Transportation Safety Plan



The purpose of the Transportation Safety Plan (TSP) – completed in 2018 and funded by the Federal Highway Administration (FHWA) – is to identify transportation safety issues in the Pueblo of Jemez and determine appropriate strategies to address those issues. Other objectives of the plan are to identify and prioritize safety measures to prevent injuries and fatalities in the Pueblo.

The process involved reviewing and building upon two previous studies – Road Safety Audit (2007) and the Jemez Valley Corridor Assessment (2006). In leading this effort, the Planning Department established a collaborative partnership among agencies known as the Pueblo of Jemez

Safety Committee comprised of tribal staff from Emergency Medical Services, the Health Department, Injury Prevention Program, school bus drivers, and the Natural Resources Department. Other participants included community members and federal, state, and local agencies.

Transportation safety issues and potential action items were identified through site visits, committee meetings, and survey responses. Key recommendations include:

- Installing traffic control devices and traffic calming measures
- Adding bus stop signs at pick up and drop off locations
- Creating a safer environment for all pedestrians
- Reducing the frequency of speeding

Transportation Safety Plan Vision Statement

To provide safe transportation facilities for our community, our future generations, and all who travel through the Pueblo of Jemez, with consistent efforts toward educational outreach to the community and support of our Indigenous way of life.

Road Safety Audit

A Road Safety Audit (RSA) was completed in 2007 along NM 4 to examine its safety performance through Pueblo of Jemez lands. RSAs can be used to promote road safety by identifying design issues, promoting awareness of safe design practices, and considering the needs of all roadway users. The audit identified nine safety issues along NM 4 and applied a crash risk rating using a scale from A (low risk) to E (high risk). All safety issues fell from



moderate to high risk on the scale, with speeding being the highest risk safety issue. Other issues that are relevant to bicycle and pedestrian travel include lack of dedicated space for pedestrians, deterioration of shoulders where pedestrians and bicyclists may travel, and limited sight distance at intersections (see Table 1).

Several recommended countermeasures to address these issues include creating a network of continuous off-road paths, improving visibility at school bus stops, improving pavement markings, and installing a consistent speed limit. Since NM 4 is maintained by NMDOT, this effort was considered advisory and all actions within the right-of-way require the involvement of NMDOT. A major recommendation from the RSA is a multi-use trail along NM 4 (which is currently in progress). See the Hemish Path to Wellness section for additional information.

Table 1: Safety Issues Identified by RSA

Safety Issue	Risk Rating*
Limited access to properties located adjacent to the roadway	D
No dedicated space for pedestrian travel	D
Infrequent signage, pavement markings, and delineation	C
Issues of speeding	E
Deterioration of the shoulder as a result of drainage and traffic	C
Roadside hazards present off the highway	C
Limited sight distances at the intersection with Bear Canyon Road	C
Inconsistent flashing of lights by school buses when picking up or dropping off students	D
Potential risk of livestock crossing on the highway	C

**Rating is based on crash risk and is assessed on a scale of A (lowest risk level) to F (highest risk level)*

Safe Transportation Initiative

Purpose

In response to safety issues identified in the LRTP and the TSP, the Safe Transportation Initiative (STI) identifies and implements a variety of policies and programs to create a safer transportation environment in the Village Area. The STI is a grant-funded, collaborative effort of local school transportation programs and local agencies to reduce injuries from vehicle-related crashes, improve traffic flow, and make the community safer to navigate. Specific STI goals that aim to increase safety in the near-term include creating school zones to enforce speed limits, developing one-way traffic flow patterns for school buses to ease traffic congestion, and adding school bus stop and other road signage.



Figure 1: Phases of the Safe Transportation Initiative



The STI has been pursued through a series of phases. Phase 1 established tribal and school partnerships to collaborate on the following phases while also identifying shared bus stops to optimize the school bus pick up process. Phase 2 included community outreach efforts such as meetings and presentations to establish community priorities. Phase 3 included an evaluation of each bus stop and creation of a video in which community members share perspectives on safety issues as a means of informing Pueblo residents of the purpose and benefits of the STI. Phase 4 – which is ongoing – includes implementation efforts such as adding more bus stop signs and crosswalks along NM 4.

Local schools involved in the STI:	Pueblo of Jemez agencies involved in the STI
<ul style="list-style-type: none">• Jemez Day School• Walatowa Language Immersion Program• Jemez Valley Public Schools• San Diego Riverside Charter School• Walatowa Charter High School	<ul style="list-style-type: none">• Injury Prevention Program• Transportation Program• Public Health Program• Police Department• Indian Health Service – Environmental Health



Community Feedback

Phase 2 included a community survey (n=27) intended to glean insight into community residents' safety priorities and general transportation patterns. The results indicate safety concerns regarding bus stops and routes and some lack of awareness on safety guidelines for buses.



66% of respondents said they did NOT feel the bus routes were safe



72% of respondents said they did not know where bus stops are located

FiTT Trails Guide

The FiTT Trails Guide was developed by the Pueblo of Jemez Health and Human Services department in response to the public health epidemic of high overweight and obesity rates in the Pueblo of Jemez.

The guide promotes walking and biking along trails for recreation and exercise, which can help increase physical activity levels and reduce overweight and obesity rates. More specifically, the guide provides the location, distance, and difficulty level for six trails. Difficulty is described by both trekking level and intensity. Trekking levels (from 1 to 4) are defined by steps needed and trail distance, ranging from 3,000 steps or 1.5 miles to more than 10,000 steps or more than 5 miles. Intensity is defined by incline as easy, medium or hard. The guide notes that medical providers at Jemez Health Center write prescriptions for walking, biking, and hiking. In turn, the guide helps these patients manage their health outcomes.

The FiTT Guide is informative for the purposes of this plan as it provides some insight into routes and trails that are currently used. In addition, many of trails identified in the FiTT Guide serve general transportation purposes and could be improved by implementing designs contained in the Trail Concepts Guide of this plan.

Bosque Fitness Trail





Figure 2: FiTT Guide Cover and Trail Example

FiTT TRAILS

JHHS Public Health Programs

Run

Walk

Hike

Bike

FiTT TRAIL QUICK GUIDE

STARTS: Plaza

ENDS: Plaza

Medium

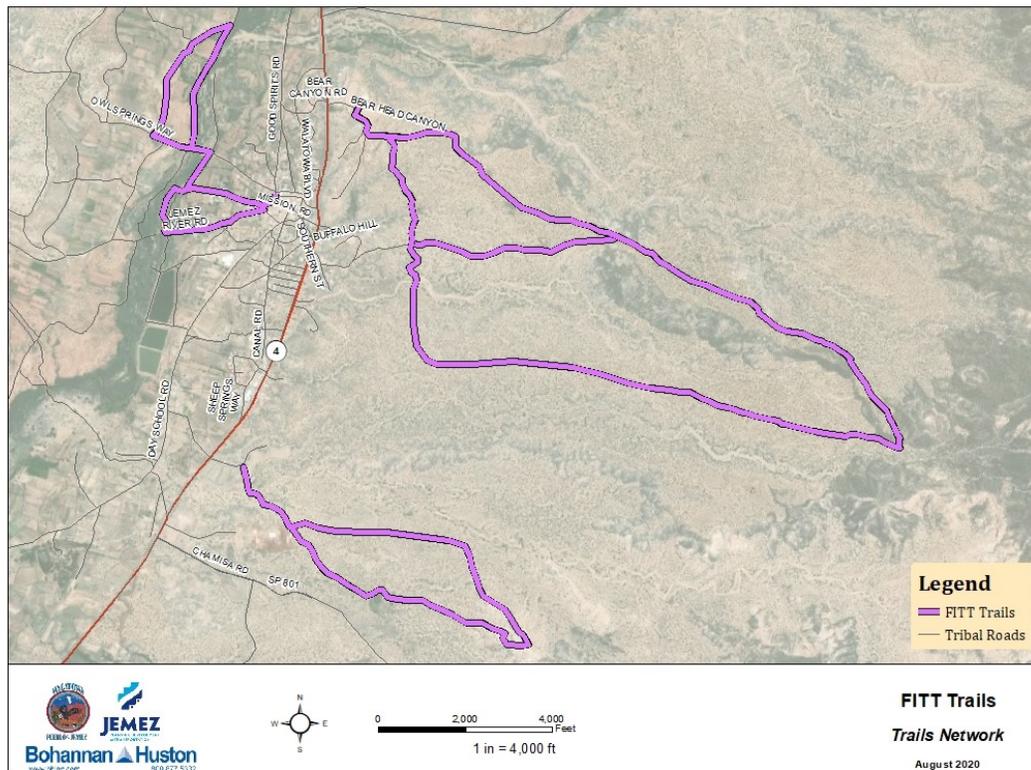
LEVEL 3

Level	Description
Easy	Flat, minimum terrain and incline. Stroller/Bike Friendly

TREKKING LEVEL:

Level	Description
Level 3	3000 – 6000 steps (1.5 – 3 miles)

Figure 3: Trails Identified in the FiTT Guide



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Author: brinchason

Note: This map was created to document trails in the FiTT Guide, which was developed separately.



Stakeholder/Community Outreach

The planning process for the Pedestrian Trails and Bikeways Master Plan included a range of stakeholder and community outreach efforts to inform general plan priorities, identify specific locations for additional trails, and ensure that recommendations are appropriate for the Pueblo of Jemez.

Among the efforts included regular meetings of a Pedestrian Facilities Planning Committee, online input opportunities, multiple community meetings, as well as two focus groups conducted during the initial information gathering phase. The Project Team also organized a series of community outreach efforts to generate input from a wide range of residents, officials, and Pueblo staff. While early outreach efforts were conducted in person, including a large community meeting, final outreach efforts were conducted virtually due to the covid-19 pandemic.

Pedestrian Facilities Planning Committee

A Pedestrian Facilities Planning Committee (PFPC) – comprised of representatives from Pueblo agencies including Planning Development and Transportation, Injury Prevention, Tribal Historic Cultural Preservation Office, and the Natural Resources Department – was convened to oversee the development of the plan. The PFPC met throughout the plan development process and served to provide expertise and knowledge regarding community priorities and current transportation challenges. The PFPC was also critical in developing goals and objectives that speak to the needs of Pueblo of Jemez residents and in providing input on trail locations and destinations.

Focus Groups

The Project Team conducted two focus groups: one with community elders and the other with community youth. Each focus group included a discussion to understand challenges and barriers to walking and biking in the Pueblo of Jemez, as well as a mapping exercise where participants identified desired routes and destinations.

Elders Focus Group

The group offered insight into issues that might discourage senior citizens from walking or biking in the Pueblo of Jemez. Of particular concern are issues of safety and security. In particular, the elders discussed reports of kidnapping, as well as how wider roads like Day School and NM 4 are uncomfortable and difficult to traverse, and how issues with flooding and uneven surface conditions are impediments to comfortable walking. In addressing



safety, the Elders suggested signage to reduce speeding and adding lighting along with handrails and trail maintenance to reduce issues with drainage and uneven surfaces. With regard to security, lighting and increased use by more tribal members will improve the sense of security for all users.

Youth Focus Group

Among the insights gleaned from the youth group was a desire to ride a bike, although none of the participants actually owned a bicycle. The most significant barrier to walking and biking for youth discussed in the meeting included road conditions such as uneven surfaces, muddy roads and general drainage issues. In addition to road conditions, local youth discussed conflicts with vehicles as a safety concern that prevents them from walking. When discussing trail priorities, attendees suggested that trails are most needed for them to walk to school and enjoy running. However, attendees also mentioned a concern that trails could make the Pueblo lose its rural feel depending on the types of trails that are implemented.

Figure 4: Major Issues and Barriers Identified in Focus Groups

Elders Group	Youth Group
<ul style="list-style-type: none"> • Access to bus routes • Animals* • Flooding/drainage* • Safety (lack of lighting, desire for handrails, security)* • Signage • Surface conditions / maintenance* 	<ul style="list-style-type: none"> • Animals • Cars speeding/traffic • Narrow roads* • No infrastructure present for walking • Poor road condition*

**Indicates frequently cited response*



Community Meetings

Two community meetings were organized as part of the community outreach process. The first community meeting served to both inform the community of what the plan will include and how the Project Team hopes to gather community input for the plan. The second community meeting included an overview of the plan and the proposed trails and bikeways network. Community members were given the opportunity to provide feedback on potential trail types and to identify the highest priority routes.

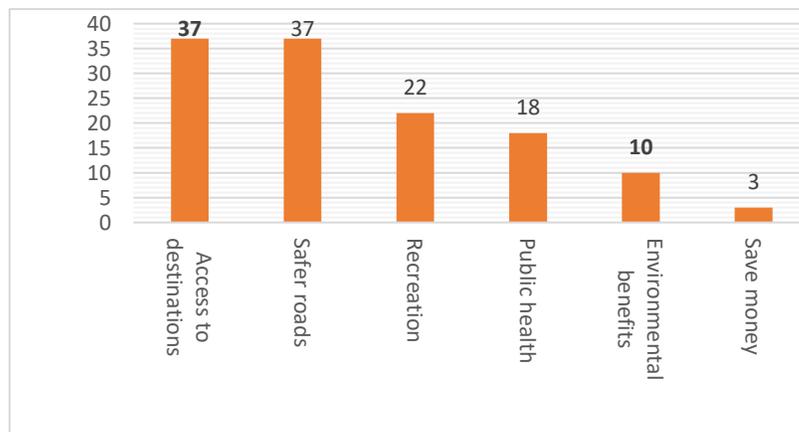
Community Meeting #1

The first community meeting was held on December 9, 2019 in the Fitness Center gymnasium. The meeting introduced the plan purpose and solicited input through an interactive question session on issues and priorities related to walking and biking, major obstacles, and the appropriateness of different trail facility types. A total of 48 individuals participated in the interactive questions.

General Questions

1) What do you feel are the biggest issues and priorities for the trails/bikeways plan?*

The most common responses, selected by nearly 80% of respondents, were access to destinations and safer roads. Recreational opportunities and public health were also frequently cited issues and priorities.

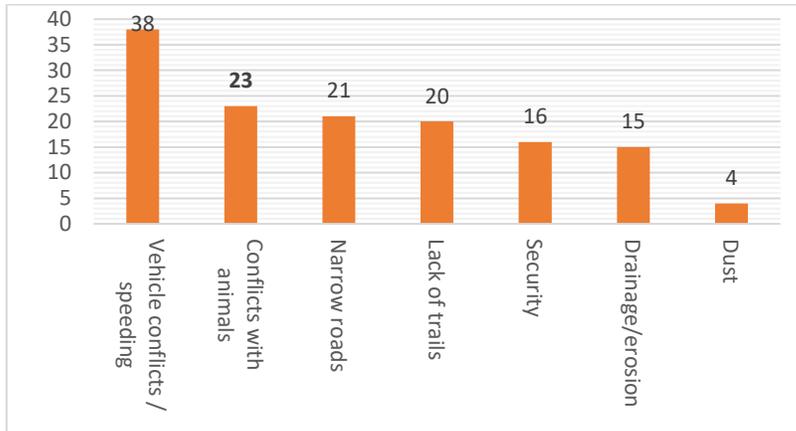


**Attendees were asked to pick up to three*



2) **What do you feel are the biggest obstacles to walking or biking in Pueblo of Jemez?***

The most common response, selected by 81% of respondents, was vehicle conflicts/speeding. Other frequently cited issues included conflicts with animals, narrow roads, and a lack of trails.



*Attendees were asked to pick up to three

Facility Type Preferences

Attendees were also asked to rate various trail design concepts for their appropriateness for the Village Area on a scale of 1 to 3 (least to most appropriate). Attendees indicated that all options were at least somewhat appropriate, with a roadside trail with fencing (2.69 average) and a delineated gravel trail (2.43 average) the most popular choices.

Table 2: Community Input on Trail Concepts

	<p>20% voted not appropriate (1) 57% voted somewhat appropriate (2) 22% voted highly appropriate (3)</p> <p><i>2.03 average</i></p>
	<p>24% voted not appropriate (1) 27% voted somewhat appropriate (2) 49% voted highly appropriate (3)</p> <p><i>2.43 average</i></p>



	<p>28% voted not appropriate (1) 46% voted somewhat appropriate (2) 26% voted highly appropriate (3)</p> <p><i>2.09 average</i></p>
	<p>2% voted not appropriate (1) 29% voted somewhat appropriate (2) 69% voted highly appropriate (3)</p> <p><i>2.69 average</i></p>
	<p>17% voted not appropriate (1) 37% voted somewhat appropriate (2) 46% voted highly appropriate (3)</p> <p><i>2.37 average</i></p>
	<p>10% voted not appropriate (1) 57% voted somewhat appropriate (2) 33% voted highly appropriate (3)</p> <p><i>2.35 average</i></p>

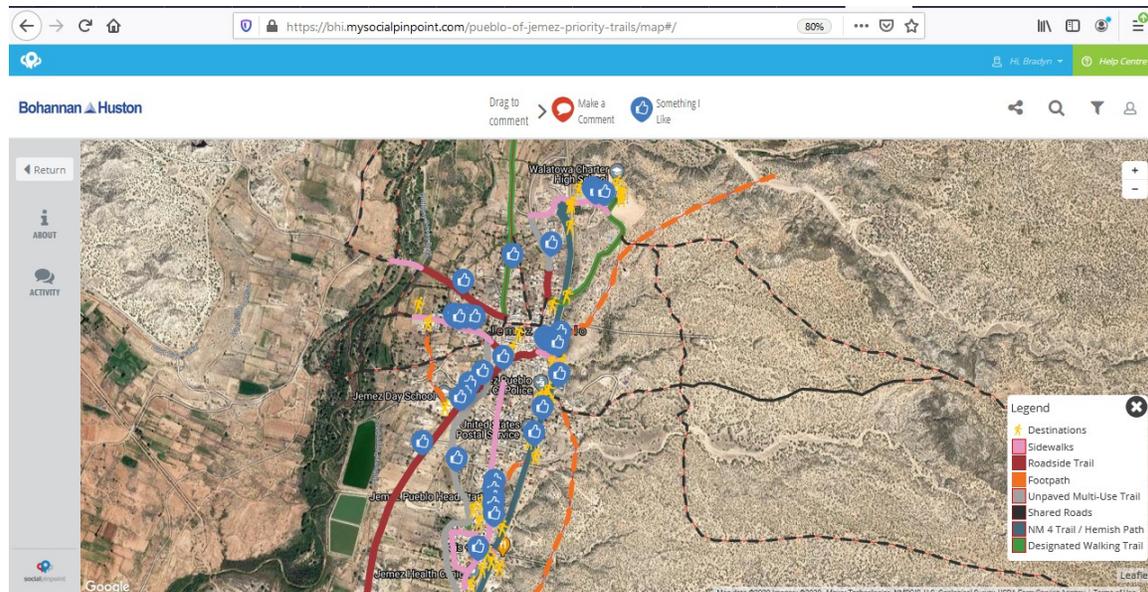
Community Meeting #2

The second phase of community outreach was shaped by the covid-19 pandemic and took place while the Pueblo was on lockdown and access to and from the Pueblo was highly restricted. Rather than an in-person meeting, the Project Team held two virtual sessions in August 2020.

The general purpose of the meetings was to provide an overview of the major products of the plan and to solicit input on the trails and routes that should be prioritized for implementation. A key comment of the meetings was an interactive map that featured the proposed trail network and destinations identified in the Pedestrian Trails Plan. Attendees were asked to place a “thumbs up” icon along each route that attendees indicated as a priority route. More than 40 data points were included in the interactive map over the course of the two community meetings. The website was made available to Pueblo of Jemez staff and interested community members for additional input following the meeting.



Figure 5: Priority Trails Interactive Map from Community Meetings (August 2020)



Among the priorities discussed in the community meetings were routes to each of the schools (i.e. Mission Road, Day School Road, Bear Head Canyon Road, and Head Start Road), as well as the community library. The primary reason these routes were cited were issues related to vehicle speeds and safety for school children. Multiple attendees also spoke to the benefits of the NM 4 Trail, and many key destinations identified by attendees will be accessible via the NM 4 Trail.

Other routes that received support for priority implementation include the Canal Trails, Walatowa Boulevard Trail, and Owl Springs Road. In addition, Attendees also expressed a desire to prioritize a connection from the interior of the Pueblo to the Health Clinic and Tribal Administration buildings via the Canal Trail and sidewalks along Sheep Springs Way.

In addition to the installation of trails, attendees identified the value of signage for both safety and trail preservation needs. Proposed safety features included flashing signs at pedestrian crossings and speed feedback signs. Other proposed signs include asking tribal members not to litter to encourage maintenance and respect for the trails, as well as signs to encourage healthy behavior with slogans such as “Walatowa Strong” and “Keep Walatowa Beautiful.”

Several attendees also voiced support for closing roads permanently beyond the temporary closures which are currently in place under the pandemic. One attendee noted how the Pueblo feels much safer with Mission Road closed and that reducing traffic has brought a lot of relief to library staff.



Interactive Map

To maximize community input, the Project Team developed an online interactive map where participants could indicate destinations and routes where trails would be most beneficial. Input gathered at focus group meetings was entered into the map, and the interactive map remained accessible to Pueblo of Jemez staff and residents following the first community meeting. In addition to providing unique inputs, Pueblo of Jemez residents could interact with other users' input by liking or commenting on their entries. The results of the interactive map became a key component in developing the proposed trails network.

Figure 6: Interactive Map Used for Identifying Potential Trails





Existing Conditions

Existing pedestrian facilities include a combination of footpaths and a small number of roads with formal sidewalks. Much of the walking and biking in the Pueblo, including in both the Village Area and the surrounding agricultural fields and forest roads, takes place in the roadways themselves.

Existing Sidewalks

Canal Street

There is an existing sidewalk between Southern Street and the Senior Center along Canal Street. This pedestrian facility also provides access to the Walatowa Head Start/Childcare Center and the Community Resource Center. A walking path connects to the residences along Sheep Springs Circle.

Bridge over Jemez River at Owl Springs Way

A replacement project over the Jemez River along Owl Springs Way has been designed and is ready for construction. The new bridge will include pedestrian facilities on one side of the bridge.

Bridge at Owls Springs Way



Existing Trails

Modern Trails

Footpaths

The Pueblo of Jemez, including the Village of Walatowa, was established long before modern vehicles when all trips were taken on foot. Trails and footpaths traversed the Pueblo and connected Walatowa to surrounding agricultural areas and other communities. Many footpaths have become formalized into roads over time or were enlarged due to use by



ATVs, and no longer serve pedestrian purposes only. Other footpaths, such as the route between San Diego Riverside Charter School and Jemez Day School, have been established through repeated informal use. Among these informal footpaths is the East Canal Trail from Wagon Road to Jemez Day School Road, which is widely used by students traveling to Jemez Day School and residents accessing the central Village Area.

Zola-huh-bay Trail

The Zola-huh-bay trail is a dedicated walking trail that follows steep terrain from NM 4 to Bear Head Canyon Road near the Walatowa High Charter School and the Fitness Center. The gravel trail, which was constructed and is now maintained by the Jemez Department of Transportation, is used frequently by students.



Cultural Trails

Many historic trails connect to locations of historic and cultural significance and were themselves important routes for communication, trade, and traditional activities. The cultural trails have been identified by the Tribal Historic Preservation Officer and are lightly maintained by Pueblo of Jemez staff. The trails are not intended for heavy use and were evaluated but not included in this plan.

School Bus Stops

Community feedback gathered as part of the STI revealed concerns regarding the safety of school children walking to bus stops. Community members also expressed uncertainty over the routes that bus stops follow and how motorists should act when near a school bus. In addition, the frequency of bus stops also means that buses stop and start frequently.

To address these concerns, the Pueblo of Jemez implemented a program to install signage at bus stops and to consolidate and formalize the locations of bus stops. Figure 7 contains locations of school bus stops across the Pueblo. Future considerations may include providing shelters for students to wait. Considerations for this plan include providing connections to these bus stops to reduce the need for children to walk along roadways, especially in the winter when children may be walking in the dark.



Key Destinations

Key destinations were obtained from staff, focus group participants, and from input provided through the online interactive map throughout the planning process. These destinations reflect locations that generate high numbers of walking trips and areas that should be easily accessible by trails and walking routes. Types of destinations that were identified and incorporated into this plan include bus stops, schools, community centers, healthcare services, and other tribal facilities (see Figure 8). Connecting safe and well-connected bicycle and pedestrian facilities with key destinations should be prioritized when determining future investments for trails and bikeways in the Pueblo of Jemez.

Good Spirits Road



Footpath along Canal Trail





Figure 7: Schools Bus Stops in the Walatowa Village Area

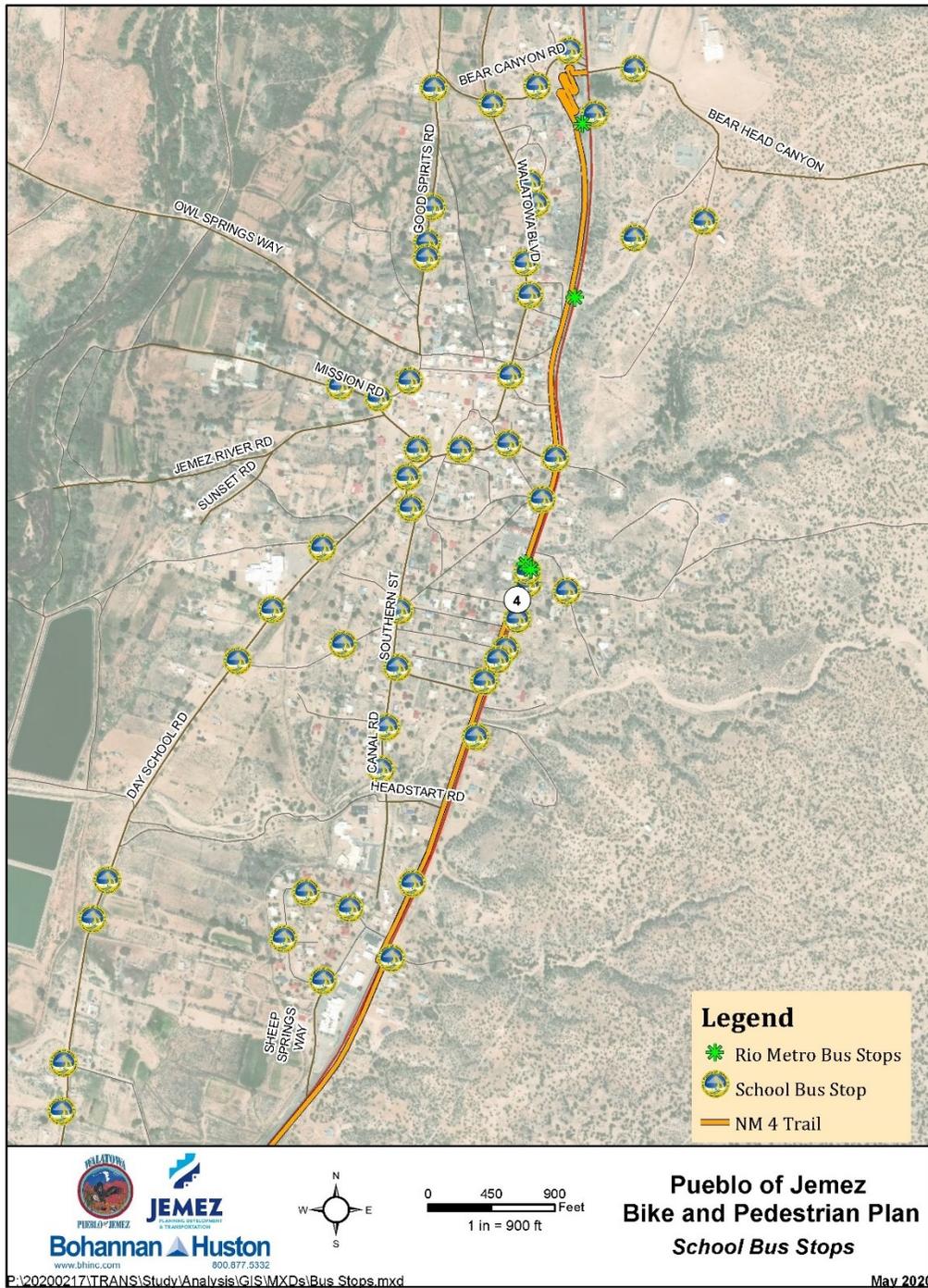




Figure 8: Key Destinations across the Pueblo of Jemez





NM 4 Trail/Hemish Path to Wellness

Background

In May 2019, the Pueblo of Jemez received a federal grant through the Congestion Mitigation Air Quality (CMAQ) program, administered through NMDOT, to construct a two-mile trail along NM 4 from Bear Head Canyon Road in the north and the Pueblo Place Housing Subdivision in the south. The project, which was initially proposed in the RSA for NM 4, was developed in coordination with NMDOT. While NMDOT has an easement for the roadway prism along NM 4, the agency does not own the right-of-way (ROW) beyond the roadway edges. The trail will be located on the east and west sides of NM 4 outside of the roadway ROW. The Pueblo of Jemez intends to perform maintenance on the trail and will likely purchase specialized equipment. Once inaugurated, the trail will be known as the Hemish Path to Wellness.

The \$5.5 million project includes almost \$4.7 million in grant funding plus approximately \$800,000 in local matching funds. The Pueblo of Jemez receives about \$750,000 per year through the Tribal Transportation Fund; funds were banked across multiple years to support the local match.

Figure 9: View of NM 4 Looking North Near the Pueblo of Jemez Post Office





Project Benefits

Access to Pueblo of Jemez Destinations

Part of the impetus for the trail is the existing pedestrian activity along the route and concerns about safety as NM 4 is a common pedestrian route and there are many tribal government buildings located along the corridor. The Pueblo of Jemez documented a high number of speeding citations along NM 4, reflecting the need for separation from motorists and dedicated facilities for pedestrians and bicyclists. Key destinations along NM 4 include the Governor's Office, the Jemez Community Health Center (JCHC), regional transit stops, and the Post office, while Pueblo residents also utilize NM 4 to access schools and the Fitness Center.

Regional Biking and Transit Activity

In addition to serving Pueblo needs, NM 4 is a popular route for long-distance bicyclists, despite the lack of shoulders along the route. Based on bicycle counts data, there are as many as 89 bicyclists on some days through the Pueblo area. To support biking activity along the corridor, NM 4 is identified as a Tier 2 facility in the NMDOT Statewide Prioritized Bicycle Network Plan (NM Bike Plan), indicating a moderate-to-high level of usage and a desire for shoulder bikeways (or other facilities) along the corridor.

As part of data collection and design efforts for the NM 4 Trail, the Pueblo of Jemez collected bicycle counts at two locations:

- South: Near Sheep Springs Way and the JCHC
- North: Near Mission Road across from the Pueblo of Jemez Library

The data reveal relatively high levels of bicycle trips through the Village Area; however, it is difficult to discern whether the bicyclists are Pueblo residents or individuals passing through the area. NM 4 is a popular tourist route and it is likely that many bicyclists are non-tribal residents. The number of bicyclists traveling through the Pueblo area is likely to increase once the trail is constructed. More bicyclist traffic could have economic development benefits through additional visitors to shops and restaurants on Pueblo lands.

There is also a high level of transit activity along NM 4, including school and regional transit bus stops. The Rio Metro Regional Transit District operates Route 204 along NM 4 and US 550 between the Village of Jemez Springs and the Town of Bernalillo, including connections to the US 550 Rail Runner Station. Bus stops are located at the Civic Center, near Trading Post Road, and Bear Head Canyon Road. Access to transit stops is a challenge, particularly for students who must cross NM 4 at undesignated locations to board school buses.



Table 3: Bicycle and Traffic Counts along NM 4

Dates	Location	Average Daily Traffic Volume	Average Daily Bicycle Count
July 31 - August 5	South	4,983	54
July 31 - August 5	North	4,803	78
August 5-16, 2019	South	4,309	42
August 5-16, 2019	North	4,341	61
September 4-10, 2019	South	4,158	63
September 4-10, 2019	North	4,189	51
October 3-16, 2019	South	4,327	48
October 3-16, 2019	North	4,487	61
November 8-14, 2019	South	4,482	43
November 8-14, 2019	North	4,105	22
May 14-26, 2020	South	3,923	89
May 14-26, 2020	North	3,528	84

*Data available for one weekday only

Trail Components

Phase I

The first phase of the Hemish Path to Wellness will feature a paved surface that is 10' in width to accommodate two-way travel. The trail will include 5' buffers between the road and trail edge and two designated pedestrian crossings of NM 4 at Bear Canyon Head Road (which leads to Walatowa High Charter School, the Youth Center, and the Fitness Center) and at the JHC. Due to major waterways that intersect with NM 4, the trail project includes three bridges at arroyos crossings. The current speed limit of 30 MPH along the corridor will remain unchanged. Engineering design was ongoing at the time this plan was developed, and construction is set to take place in 2022-2023.

Schedule for the Hemish Path to Wellness

- 2020-2021 – Engineering, design, and right-of-way acquisition
- 2022-2023 – Construction



Phase II

The Pueblo of Jemez has identified a second phase for future expansion of the Hemish Path that would extend the trail 1.5 miles to the south from the Pueblo Place Subdivision to the Pueblo of Jemez ballfields. Funding has not yet been identified for this connection; however, this trail was identified as a need at various points during plan outreach efforts.

Road Closures

The design of the NM 4 trail calls for the closure of multiple roadways where vehicles access the Village Area by crossing the proposed trail alignment. These locations include:

- Bluebird Mesa Road
- Trading Post Road
- Wagon Road/Village Plaza Way
- Eagles Nest Street
- Dancing Bear Street
- Big Bear Street
- Arrowhead Street
- Unnamed driveway – west of NM 4 south of Southern Street and Headstart Road

Road Closure at Bluebird Mesa Road

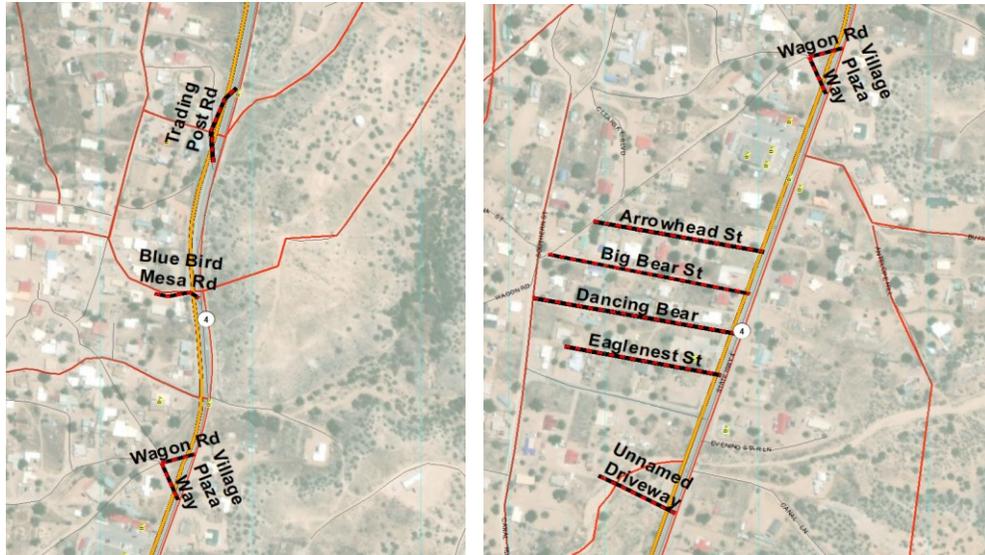


Note: During the course of plan development, Bluebird Mesa Road was approved for closure by the Governor of the Pueblo of Jemez.

Road closures serve to manage vehicle access which, in turn, will reduce conflicts between pedestrians and motorists. Opportunities also exist to convert the roadways into formalized trails to enhance pedestrian connections between the Village Area and the NM 4 Trail, or to create short pedestrian connections from the end of the closed roadway to the trail.



Figure 10: Proposed Road Closures to Support Hemish Path



Additional/Desired Improvements

Pedestrian Crossings of NM 4

In addition to the two crossings included in the NM 4 Trail project funded through NMDOT, there is a desire for additional crossings to enable access to transit stops along NM 4 and create connections between the Village Area and homes and businesses on the east side of NM 4. Potential locations include:

- Trading Post Road
- Across from the Zola-huh-bay Trail
- At all Rio Metro Regional Transit District bus stops
- Near the U.S. Postal Service office along Eagle Nest Street
- Pueblo Place Subdivision entrance



Connections to Hemish Path to Wellness

A major objective identified in this plan is to create connections from the Village Area and other destinations and residential areas to the Hemish Path to Wellness. A significant opportunity for creating additional connections is to utilize the ROW along roads that are to be closed for pedestrian trails. The following connections to the Hemish Path to Wellness (from south to north) are proposed in this plan:

- Bear Canyon Road (sidewalks to be constructed in 2021)
- Bluebird Mesa *
- Mission Road
- Sheep Springs Way
- Trading Post Road *

**To be closed to through traffic*

Bear Canyon Road Crossing

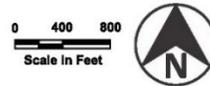




Figure 11: Map of Proposed NM 4 Trail



Route: 6 / Section: 10
 Name: NM 4 Pedestrian Trail
 Length: 1.9 miles
 Functional Classification: 8



NM4 Pedestrian Trail



Proposed Trails Network

Overview and Guiding Principles

This plan proposes a series of trails to create an integrated and connected network that links together key destinations, supports different user types, and improves the health and wellness of Pueblo residents. In addition to benefits related to access and public health, the network will improve safety through separated trails and provide traffic calming within the Village Area. This network also respects the cultural requirements in the Pueblo of Jemez, particularly as it relates to the use of culturally sensitive and appropriate materials.

Table 4 contains key information about each proposed trail/route, including termini, length, and proposed facility type. For some trails, two facility types are identified – with Facility Type 1 the preferred option – since a full survey was not conducted and feasibility of implementation is an important consideration. The proposed trail network is the result of community outreach efforts and previous studies conducted by Pueblo of Jemez organizations. In particular, the efforts described in the community outreach section provided insight into where trails should be located, and the form these trails should take in the Pueblo of Jemez.

It is important to note that this plan does not provide full designs for future trails. Rather, it identifies locations where trails and other facilities should be implemented and provides general design guidance based on that particular facility type (see Figure 12 and Table 5 for proposed trails by route and type). Facility types were identified based on community feedback and input from tribal staff to ensure cultural appropriateness. These facilities include:

- Footpaths
- Dedicated walking trails
- Roadside walking trails
- Unpaved multi-use trails
- Paved multi-use trails
- Sidewalks
- Shared roadways

Key Products/References

- Trail Locations and Route Type
- Design Concepts



Connection to Trail Concepts Guide

The trails network is complemented by the Trail Concepts Guide, which describes design characteristics and appropriate users of each facility type. Most facility types are geared toward pedestrian needs, with a limited number supporting biking. The most appropriate facility types for bicycle travel are along paved and unpaved multi-use trails and shared roadways. Sidewalks are considered most appropriate along paved roadways. Though the Pueblo is not obligated to meet ADA requirements, compliance is desired where possible.

It is also important to note that the difference among trail types is partly a matter of scale. Unpaved Multi-Use Trails are generally larger and more formal than a Designated Walking Trail, which is in turn larger and more formal than a footpath. Where a shared roadway is indicated as the facility type, a formal trail may not be feasible or is unnecessary due to the traffic levels. Shared roadways may also be applied as an interim solution before trails are installed.

Feasibility and Priority for Implementation

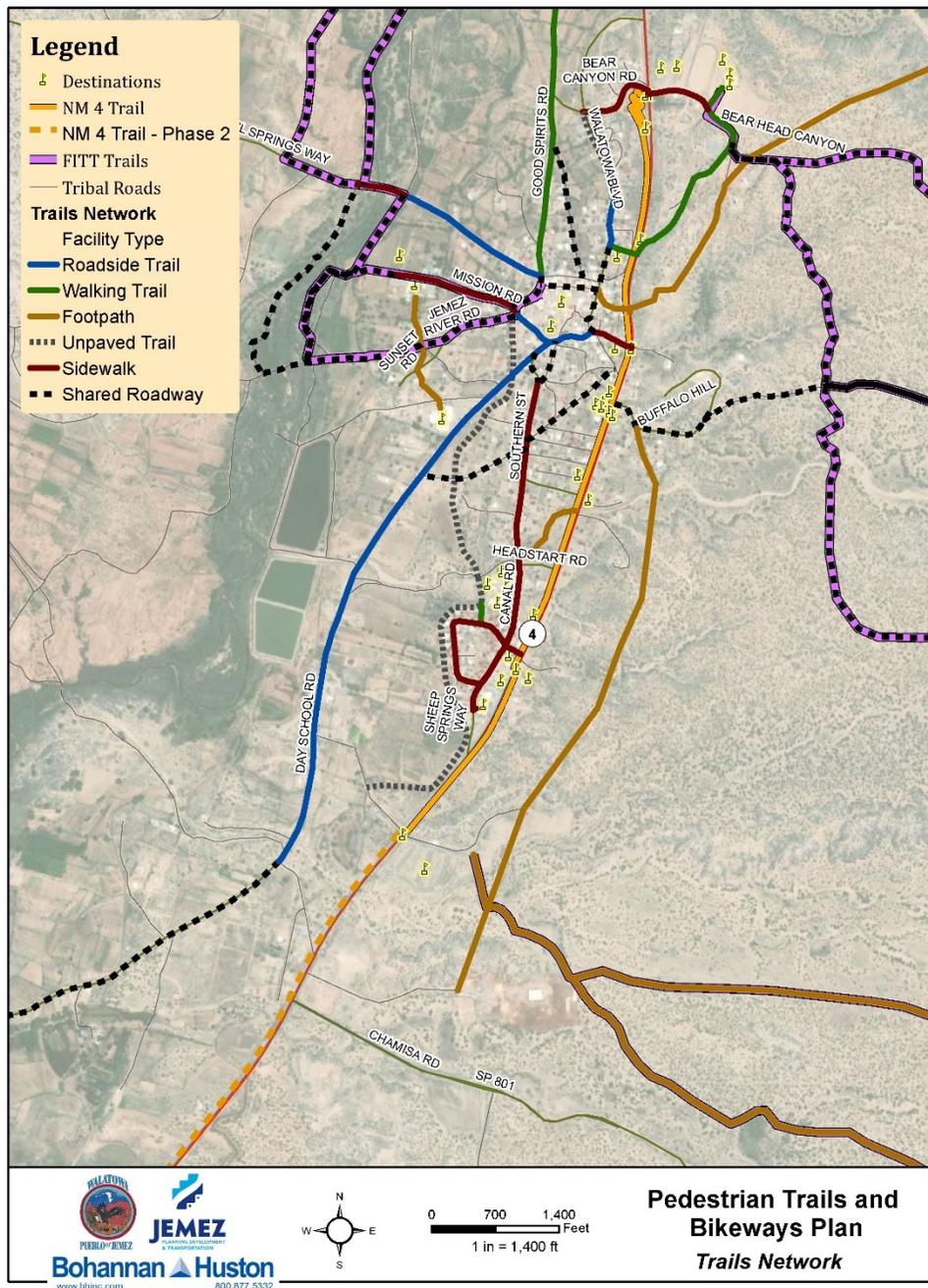
Trails may be pursued depending on the priority level, the availability of funds, and the ease of implementation. While high priority routes may have the greatest community benefits, the priority level should not dictate the order of implementation. Rather, as a first step toward implementation, Pueblo of Jemez staff should identify trails that could be constructed using existing staff or community resources. These routes are likely to include footpaths, dedicated walking trails, roadside walking trails, and shared roadways. Staff can then identify the most desired routes where engineering design may be necessary, depending on the type of trail, topography, or the presence of arroyos, among other factors. At the same time, the Pueblo of Jemez may pursue funding for high priority routes that require greater levels of funding for design and construction. These more costly high priority routes should be implemented as funding becomes available.

High priority routes include trails or sidewalks to each of the schools (i.e. Mission Road, Day School Road, Bear Head Canyon Road, and Head Start Road), as well as the community library. Other priority routes include the canal trails. NM 4 Trail is considered a high priority though design is complete, and construction is expected to begin in 2021. Phase II extension of the trail should also be considered a high priority. Shared roadways in the Village Area, which are low-cost and primarily entail signage installation, are candidates for immediate implementation.



Proposed Network Maps and Table

Figure 12: Proposed Trails Network - Large Scale

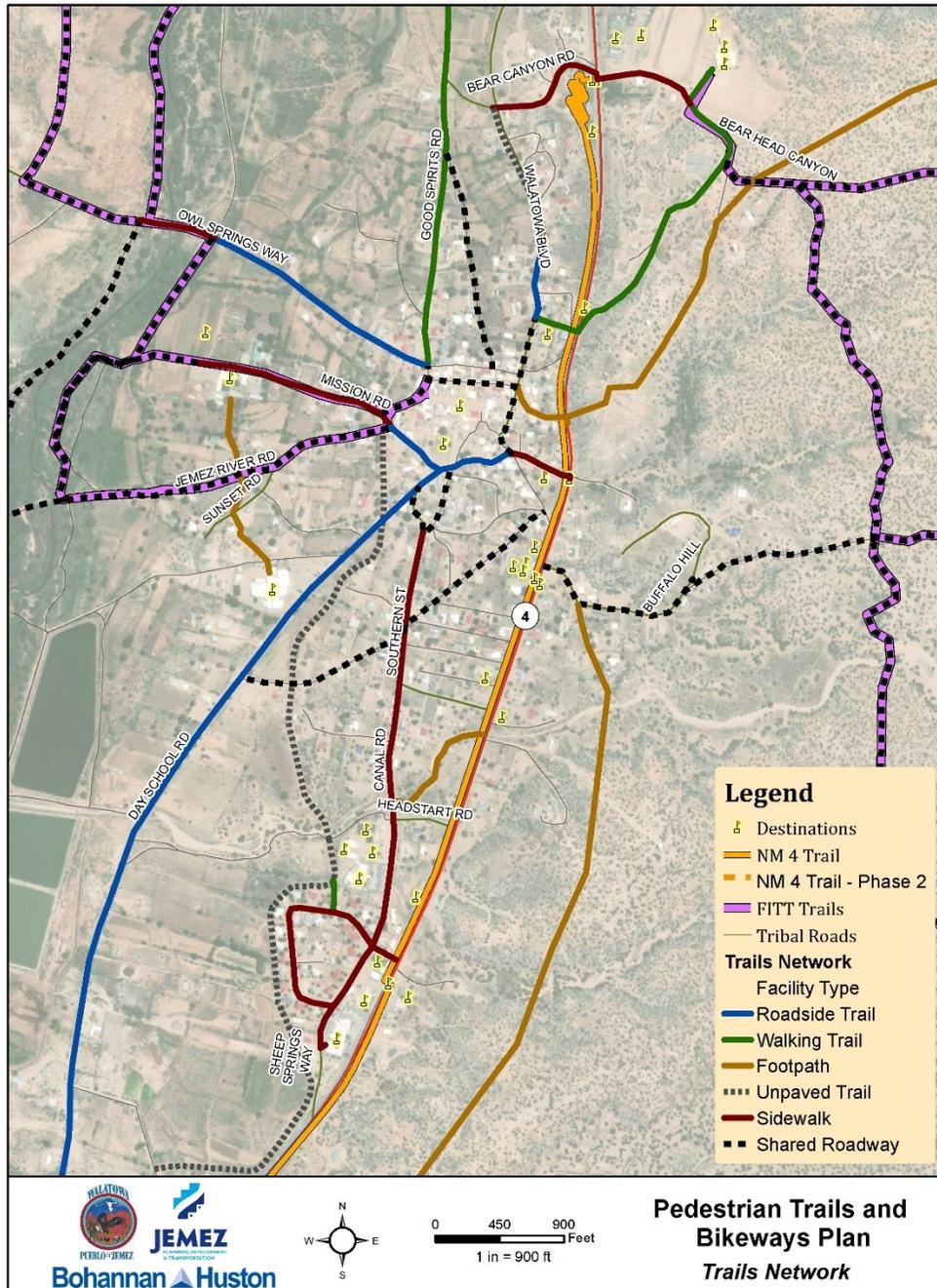


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Author: asussman

September 2020



Figure 13: Proposed Trails Network – Medium Scale

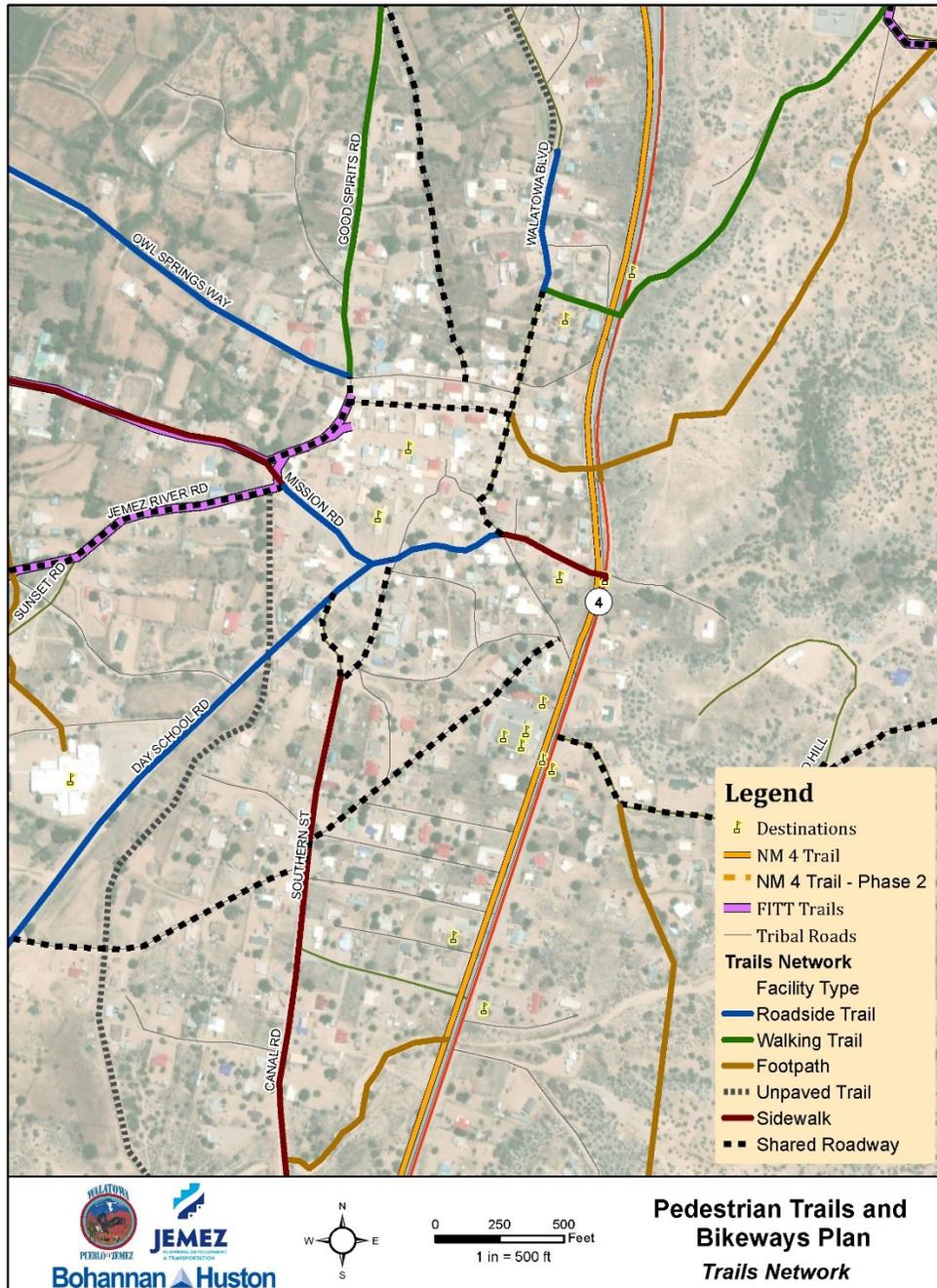


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Author: asussman

September 2020



Figure 14: Proposed Trails Network - Village Area



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 Author: asussman

September 2020



Table 4: Proposed Routes by Type

Route Name	Status	Direction / Termini	Priority Level	Facility Type*	Length (Miles)
Antelope Hill / Power Line Rd	Proposed	North-South, Sunhouse Trail to Sawmill Rd		(1) Footpath (2) Shared Roadway	1.27
Bear Canyon Rd	Proposed	East-West, Walatowa Blvd to NM 4	High	Sidewalk	0.18
Bear Head Canyon Rd (East)	Proposed	East-West, Bear Head Canyon to Rock Hill Rd		Walking Trail	0.15
Bear Head Canyon Rd	Proposed	East-West, NM 4 to Fitness Center	High	Sidewalk	0.14
Bluebird Mesa Trail	Proposed	East-West, Walatowa Blvd to NM 4	High	(1) Footpath (2) Walking Trail	0.09
Bosque Fitness Trail	Proposed	North-South, Owl Springs Way to ISR 821		(1) Shared Roadway (2) Footpath	0.58
Canal Rd-NM 4 Connection	Proposed	East-West, Canal St to NM 4		(1) Footpath (2) Walking Trail	0.17
Day School Rd	Proposed	North-South, NM 4 to Green Acres		(1) Shared Roadway (2) Footpath	2.02
Day School Rd	Proposed	North-South, Green Acres to Mission Rd	High	Roadside Trail	1.26
East Side Canal Trail	Existing Footpath	North-South, Jemez River Rd to Wagon Rd	High	(1) Unpaved Trail (2) Walking Trail	0.38
East Side Canal Trail	Proposed	North-South, Jeep Trail Rd to Broken Arrow	High	(1) Unpaved Trail (2) Walking Trail	0.67
East Side Canal Trail	Proposed	North-South, Wagon Rd to Jeep Trail 1	High	(1) Unpaved Trail (2) Walking Trail	0.22
Good Spirits Rd	Proposed	North-South, Mission Rd to Owl Springs Way		Shared Roadway	3.17
Good Spirits Rd Trail	Proposed	North-South, NM 4 to Turquoise St		(1) Walking Trail (2) Footpath	1.90
Jeep Trail	Proposed	North-South, Owl Springs Way to Jemez River Rd		Shared Roadway	0.49
Jemez River Rd	Proposed	East-West, Jeep Trail 8 to River Rd		Shared Roadway	0.55
Mission Rd	Proposed	East-West, Jemez River Rd to Village Plaza Way	High	(1) Roadside Trail (2) Walking Trail	0.19
Mission Rd	Proposed	East-West, Village Plaza Way to NM 4	High	Sidewalk	0.09
Mission Rd Trail	Proposed	East West, Jeep Trail 3 to Eagles Wings	High	(1) Sidewalk (2) Roadside Trail	0.28
Mission-River Trail	Existing	North-South, Mission Rd to Jemez River Rd		Shared Roadway	0.35
NM 4 Trail / Hemish Path	Proposed	Bear Canyon Rd to Pueblo Place Subdivision	High	Paved Multi-Use	
NM 4 Trail Extension	Proposed	Pueblo Place Subdivision to Pueblo ballfields	High	Paved Multi-use	1.50



Route Name	Status	Direction / Termini	Priority Level	Facility Type*	Length (Miles)
Owl Springs Trail	Proposed	East-West, SP 826 to Good Spirits Rd	High	(1) Roadside Trail (2) Shared Roadway	0.33
Owl Springs Trail	Proposed	East-West, Jeep Trail 8 to SP 826	High	Sidewalk	0.10
Pathfinder Trail	Proposed	North-South, Good Spirits Rd to Turquoise St		Shared Roadway	0.29
Rock Hill Rd	Proposed	Entirety of Rock Hill Rd East of NM 4		Footpath	0.96
San Diego-Jemez School Path	Existing	North-South, San Diego School to Jemez Day School		Footpath	0.25
Santo Rd	Proposed	North-South, Southern St to Mission Rd		Shared Roadway	0.07
Sheep Springs Circle	Proposed	Loop road from NM 4	High	Sidewalk	0.39
Sheep Springs Connection	Existing	North-South, Sheep Springs Cir to East Canal Trail		Walking Trail	0.04
Southern St/Canal St	Proposed	North-South, JCHC to Senior Center	High	Sidewalk	0.31
Southern St/Canal St	Existing	North-South, Santo Rd to Sheep Springs Circle		Sidewalk	0.56
Southern St	Proposed	South of Mission Rd		Shared Roadway	0.10
Sun House Trail	Proposed	East-West, East of NM 4		(1) Shared Roadway (2) Footpath	1.29
Trading Post Rd	Proposed	East-West, Walatowa Blvd to NM 4	High	(1) Walking Trail (2) Footpath	0.06
Wagon Rd	Proposed	East-West, Day School Rd to Village Plaza Way		Shared Roadway	0.48
Walatowa Ave.	Proposed	North-South, Walatowa Blvd to Good Spirits Rd		Shared Roadway	0.12
Walatowa Blvd Trail	Proposed	North-South, Trading Post Rd to Bluebird Mesa Rd	High	Shared Roadway	0.10
Walatowa Blvd Trail	Proposed	North-South, Trading Post Rd to East Canal	High	Roadside Trail	0.10
Walatowa Canal Trail	Proposed	North-South, south of Bear Canyon Rd	High	(1) Unpaved Trail (2) Walking Trail	0.20
Zola-huh-bay Trail	Existing	North-South, Bear Head Canyon Rd to NM 4		Walking Trail	0.32



Notes of Proposed Routes

Canal/Ditch Trails

Multiple drainage canals traverse the Village Area and present a significant opportunity to implement trails on dedicated ROWs that connect to various destinations and roadways. Up to 16' of ROW are theoretically available on each side of the irrigation canal. These canals, and in particular the East Canal, traverse much of the Village Area and provide an opportunity for dedicated trails and connections within the Pueblo. However, encroachments are present along the canals and in some locations fence lines may need to be moved.

The proposed trail type for these routes is unpaved multi-use trails. If enough space is available, these trails could be ideal biking, running, and walking routes. Additional design features include bollards, which could be installed to restrict access by motor vehicles.

East Canal – South Trail

There is an existing footpath along East Canal south of Day School Road (the trail disappears south of Wagon Road). The trail is narrow but heavily utilized among students and by residents for access to the central portion of the Village Area. This plan recommends upgrading and formalizing the existing trail to an unpaved multi-use trail. The Pueblo should also provide formal connections from Sheep Springs Way and Sheep Springs Circle to the Canal Trail west of the senior center.

East Canal – North/Walatowa Trail

Due to varied conditions along the corridor, the proposed trail along the Walatowa Boulevard corridor can be broken into segments comprised of different trail types. The north portion of the corridor could follow the East Canal to the west of Walatowa Boulevard between Bear Canyon Road and the point north of North Eastern Road where the canal runs underground. ROW is available from that point south to Trading Post Road for a roadside walking trail. Due to the narrow ROW and the location of existing buildings, the route may transition to a shared roadway between Trading Post Road and Shooting Star Boulevard/Eagle Wings Road.

Jemez Day School Road

Jemez Day School Road was identified as an ideal route for a roadside walking trail that separates users from traffic through a vertical barrier such as a fence. The road is both an important means of accessing the Pueblo as well as a common running route. A roadside



trail would have important safety benefits for day-to-day users, though runners may choose to utilize the road itself.

Roads with Sidewalks

Sidewalks are generally appropriate along existing paved roads and, in many cases, could be added to the outside of the curb. High priority locations for sidewalks include Mission Road, Bear Head Canyon Road, Sheep Springs Circle, and Southern Street/Canal Street.

Sheep Springs Circle/Sheep Springs Circle

Sheep Springs Circle is a paved road through a residential area that features several school bus stops and is a popular walking route for employees at the JCHC and nearby residents. The street is relatively wide and speed bumps were installed to reduce speeding, though additional traffic calming is appropriate to address pedestrian safety risks. Adding sidewalks would narrow the drivable portion of the roadway and further reduce vehicle speeds. Pavement along Sheep Springs Circle is in poor condition and needs to be resurfaced; roadway rehabilitation would be an opportune time to install sidewalks. Additional sidewalks should also be installed on **Sheep Springs Way**, where the road is being widened at the JCHC to allow for two-way traffic. In particular, a sidewalk could be added on the west side of the road as part of a second phase to improve the connection to the JCHC from Sheep Springs Circle.

Mission Road

Mission Road is the main entrance to the Pueblo and sidewalk connections are along the paved portions of the road, where feasible. A sidewalk connection to the library and San Diego Riverside Charter School are particularly high priorities. There is room on the south side of the road for a sidewalk for most of the route between the San Diego Riverside Charter School and Eagle Wings Street, though the sidewalk may need to be located on top of the drainage canal and fence lines may need to be moved. Narrow points along the corridor include near JT Romero Road and the entrance to the school parking area. If room for a sidewalk is not available, signage and pavement markings could be utilized to indicate the space is shared. Portions of Mission Road through the Village Area where paved roads are not permitted may be more appropriate for a designated walking trail.

Bear Canyon Road/Bear Head Canyon Road

Bear Canyon Road from Walatowa Boulevard to NM 4 is in poor condition and likely needs to be reconstructed. Sidewalks should be installed during roadway improvement efforts to provide a connection between the Hemish Path to Wellness/NM 4 pedestrian crossing and the proposed Walatowa Boulevard Trail. Sidewalks on **Bear Head Canyon Road** will



provide an important connection to the Walatowa High Charter School and the Fitness Center.

Central Village Area Connections

The roads near the central Village Area can become congested and there is little guidance provided for pedestrians or bicyclists on the appropriate routes for them to take. A conflict point is located at the intersection of Eagle Wings Street, Mission Road, and Jemez River Road where multiple roads come together and where an archaeological site limits the design options. One possibility is to route a walking trail along the west and south sides of the intersection to connect with the proposed East Canal Trail and Jemez Day School Road.

Eagle Wings Street, Mission Road, and Jemez River Road



Proposed Road Closures/Trail Connections to NM 4

Footpaths are proposed from Walatowa Boulevard to NM 4 via **Trading Post Road** and **Bluebird Mesa Road**, which are both proposed as locations for closing access from NM 4. Other roads proposed for closure as part of the Hemish Path to Wellness/NM 4 Trail include the roadways between Southern Street and Wagon Road (i.e. Eagles Nest Street, Dancing Bear Street, Big Bear Street, and Arrowhead Street). If the access from NM 4 is closed and the roads are converted into cul-de-sacs, then short pedestrian connections should be installed from the end of the roadways to the Hemish Path to Wellness.

Many of the roads where access from NM 4 could be closed feature driveways to residences and vehicle access from other tribal roads that would need to be retained. However, the roads could be converted to cul-de-sacs with barriers such bollards or fence posts used to block through traffic from NM 4.

Shared Roadways

The designation of a route as a shared roadway indicates that pedestrian travel may be present and a connection is desired along that route, but sidewalks are not appropriate, or right-of-way is not available for a roadside trail. Shared roadways should be complemented by signage to alert motorists of the presence of pedestrians and bicyclists. Shared roadways may also be appropriate in agricultural areas and roads with minimal vehicle traffic.



Trail Concepts Guide

Purpose

This document serves as a guide for design concepts for potential pedestrian and bicycle trails that could be implemented in appropriate locations in the Pueblo of Jemez, such as the historical Village Area. A menu of options is accompanied by key characteristics and discussion on appropriateness of the trail type by location. Rather than dictate the exact features that must be included on each facility, the intent of this guide is to inspire the implementation of various facility types of pedestrian trails and bikeways across the Pueblo of Jemez as desired and appropriate. The majority of the design concepts are focused on pedestrian accommodations while only few are appropriate for biking, including the paved and unpaved multi-use trail and shared roadway facility types.

Trail concepts are presented below with associated imagery to visually depict how they might look if implemented in the Pueblo of Jemez. Details for key characteristics and appropriateness including trail characteristics, complementary features, design guidance, maintenance/construction needs, and community feedback are also provided.

Definitions

Trail Characteristics: Descriptions of trail surface types, trail user information, and intended levels of use

Complementary Features: Aspects of the trail that enhance the trail's overall user experience including signage, wayfinding, site furnishings, etc.

Design Guidance: Information on recommended trail width and layout measurements, ADA compliance (where possible), appropriate location, and design for diverse user groups

Maintenance/Construction Needs: Indicate who can maintain the trail and if engineering design is required

Community Feedback: Relevant comments from public outreach efforts; CM: 12/9 community meeting



Footpath



Trail Characteristics	Unpaved hiking or walking trail (dirt or other native material) that is most appropriate for pedestrians; when utilized in rural areas, serves cultural and recreational purposes
Location	Appropriate throughout the Pueblo, including the historical Village Area
Complementary Features	Basic signage to identify walking trail; soft trail edges that are consistent with natural settings
Design Guidance	Width of 3-5 ft; max cross slope of 2-5%; the running slope may use existing terrain, though switchbacks may be used to reduce the level of incline; natural trail markers such as cairns may be used to indicate trails for maintenance purposes and to prevent off-trail hiking
Maintenance / Construction Needs	<p>Maintenance: Routine walk-throughs to address surface repairs, loose rocks, and overgrown vegetation; drainage-related repairs for eroded areas may be needed every several months</p> <p>Construction Needs: Can be built and maintained by volunteers; engineering design needed if water crossing and/or drainage issues are present</p>
Community Feedback	Appropriate for ancestral lands; concerns about snakes in the summer
Additional Considerations	Prone to erosion; footpaths are unlikely to meet ADA requirements and may not be accessible for all users



Dedicated Walking Trail



Trail Characteristics	Unpaved walking trail made of compacted gravel/stone, dirt, rock, or other native material to provide firm surface while complementing the natural landscape; primarily appropriate for pedestrian use and for bicyclists traveling at slower speeds; intended for heavier use than basic footpaths
Location	Appropriate for locations throughout the Pueblo, including the historical Village Area
Complementary Features	Small boulders, low posts, or other minor features to demarcate the trail and serve as a wayfinding feature
Design Guidance	Minimum width of 4 ft with 5 ft recommended; max cross slope of 2-5%; use soft edges (i.e. transitional areas) and follow contours of the land
Maintenance / Construction Needs	Maintenance: Routine walk-throughs to address surface repairs, loose rocks, and overgrown vegetation; regular surveys every several months to identify problems related to drainage/ eroded areas Construction Needs: Can be built and maintained by volunteers
Community Feedback	Potential for erosion; concerns about ATVs entering trail; not appropriate for pushing a stroller
Additional Considerations	Prone to erosion, ADA compliance should be met whenever possible



Roadside Walking Trail



Trail Characteristics	Paved or unpaved walking trail adjacent to roadway; intended for pedestrian use only; some form of physical or vertical separation from the roadway
Location	Most appropriate alongside roads near destinations such as schools and community centers and in areas with the potential for high pedestrian traffic
Complementary Features	Vertical barrier such as a fence to prevent motorized access and increase pedestrian safety and comfort while designating the space for walking
Design Guidance	Minimum width of 4 ft with 5 ft or more recommended; max cross slope of 2%; provide a 2.5-5 ft buffer from roadway, whenever possible; trail may follow the slope of the adjacent roadway
Maintenance / Construction Needs	<p>Maintenance needs: Unpaved trails should feature routine maintenance to remove debris, trash, and overgrown vegetation; other maintenance efforts depend on surface type</p> <p>Construction needs: Engineering design needed for paved trails</p>
Community Feedback	Appropriate along major roads; appropriate for around the post office area
Additional Considerations	Potential for dust from vehicles on unpaved roadways affecting pedestrians; ADA compliance should be met whenever possible



Unpaved Multi-Use Trail



Trail Characteristics	Unpaved multi-use trail made of compacted gravel or other native materials; appropriate for biking and walking; can be used for both transportation and recreational purposes
Location	Most appropriate for outside the historical Village Area
Complementary Features	Signage to identify trail; mile markers can enhance trail user experience, encourage trail use, and provide directions to destinations; bollards and fence prevent motorized access; fencing may be used alongside trail as a safety feature
Design Guidance	Minimum of 8 ft in width with 10-12 ft recommended (if bicycles are permitted); max cross slope of 2-5%; use soft edges and follow contours of the land (if unpaved)
Maintenance / Construction Needs	Maintenance: Routine walk-throughs to address surface repairs, loose rocks, and overgrown vegetation; regular surveys every several months to identify problems related to drainage/eroded areas Construction: Engineering design may be needed to prevent erosion depending on the terrain and areas with drainage concerns or arroyo crossings
Community Feedback	Potential for dust when crossing unpaved roadways; ADA compliance should be met whenever possible
Additional Considerations	



Paved Multi-Use Trail



Trail Characteristics	Surface may be paved or unpaved (compacted gravel); appropriate for range of biking, walking, and running trips; paved trails may be accompanied by gravel sidepath for pedestrians
Location	Most appropriate for outside the historical Village Area; may be located alongside major roads or through rural/undeveloped areas
Complementary Features	Basic signage to provide directional assistance; bollards and fences can prevent motorized access and increase safety
Design Guidance	Minimum of 8 ft in width with 10-12 ft recommended; max cross slope of 2-5%; 2' shoulders required on each side of trail to prevent edges from crumbling; follow contours of the land (if unpaved)
Maintenance / Construction Needs	Maintenance: Routine walk-throughs to collect debris and remove vegetation); inspections every several months for erosion; minor maintenance such as crack patching and sealing as needed Construction: Engineering design needed to ensure proper base course and pavement mix, prevent erosion, and navigate arroyo crossings
Community Feedback	Rest stops such as benches and picnic tables would make trail type appealing for families; educational information could be provided about surrounding area; ideal for Day School Road
Additional Considerations	Potential for dust when crossing unpaved roadways; ADA compliance should be met whenever possible



Dedicated Sidewalk



Trail Characteristics	Paved sidewalk adjacent to roadway; intended for pedestrian use only and in areas with the potential for high pedestrian traffic such as schools and community centers
Location	Most appropriate alongside roads near destinations and along walking routes outside of the historical Village Area
Complementary Features	Signage to provide directional assistance and alert motorized vehicles of pedestrians; designated pedestrian crossings at intersections
Design Guidance	Minimum width of 4 ft with 5-6 ft recommended; max cross slope of 2%; provide a 2.5-5 ft buffer from roadway, if possible
Maintenance / Construction Needs	Maintenance: Routine walk-throughs to remove debris, trash, and vegetation; minor maintenance such as crack patching and sealing as needed Construction: Engineering design needed
Community Feedback	Would work along Sheep Springs Way as extension from the Senior Center to the Village; safety concerns due to lack of fencing or barriers
Additional Considerations	Potential for dust being adjacent to unpaved roadways; ADA compliance should be met whenever possible



Shared Roadway



Trail Characteristics	Paved or unpaved roadway in which vehicles and non auto users shared the public right-of-way; appropriate when right-of-way is not available for sidewalk or adjacent path; particularly appropriate for bicyclists
Location	Appropriate for inside and outside the village area
Complementary Features	Frequent signage indicating presence of pedestrians/bicyclists; traffic calming; low speed limits
Design Guidance	Shared roadways may applied as an interim measure before a formal trail is constructed
Maintenance / Construction Needs	<p>Maintenance: Routine walk-throughs to address surface repairs, loose rocks, and overgrown vegetation; regular surveys every several months to identify problems related to drainage/eroded areas</p> <p>Construction: Engineering design may be needed to prevent erosion depending on the terrain and areas with drainage concerns or arroyo crossings</p>
Community Feedback	None
Additional Considerations	Potential for dust when crossing unpaved roadways; ADA compliance should be met whenever possible



Trail Elements Table

There are a range of complementary features that could be applied to each trail concept to enhance safety, restrict access, and better delineate the trail. Table 5 describes elements that may be used on a variety of the trail concepts described in this guide. Examples of these amenities and supplemental features include handrails, which may be beneficial along footpaths or roadside walking trails if the trail cross uneven terrain or traverses an area with a steep grade. Bollards may be applied to any trail where there is concern about access by motorized vehicles.

Table 5: Trail Features and Functions

Feature	Description	Function				
		Access Barrier	Speed Reduction	Way-finding	Promotes Recreation	Enhances Safety
Signage	Signage can identify cultural trails, mile markers, and signage to alert motorists of pedestrians/bicyclists		X	X	X	X
Trail Edges	Boulders and short posts can be used to delineate trail edges and prevent ATV access	X		X		X
Bollards	Bollards can be placed to prevent vehicle access	X				X
Physical Barrier	Barriers such as a fence serve as both wayfinding and a safety feature and can be applied on any trail along a roadway	X	X	X		X
Guardrails / Handrails	Guardrails can prevent vehicle access while delineating the trail and enhancing safety	X	X	X		X
Shared Rest Areas	Trees or structures with benches can serve as a shaded rest area			X	X	X
Water / Exercise Stations	Water and exercise stations enhance user comfort and encourage trail use for recreation			X	X	X
Lighting	Lighting highlights the trail while improving comfort and safety			X		X



Implementation

Construction of Priority and High Feasibility Routes

This plan provides a blueprint for developing a network of trails across Pueblo, and the Pueblo of Jemez may pursue installation of trails and routes identified in this plan as resources permit. High priority routes include connections to the schools and the community library, canal trails, and both phases of NM 4. Various footpaths and shared roadways – which are generally low cost and may be installed using Pueblo staff and community resources – may be considered for immediate implementation. Other routes may require engineering design and require greater levels of funding for installation.

A first step in the implementation of this plan could be to convene a working group from Natural Resources Department and the Planning and Transportation Department to identify trails that could be implemented with existing Pueblo resources. Staff should also conduct a full inventory of locations where fences could be pushed back to accommodate the installation of trails. At present, various barriers and fences exist along routes proposed in the trail network. These include high priority locations such as Mission Road and the East Canal parallel to Walatowa Boulevard.

Based on the list of high feasibility projects from the internal working group, Pueblo staff may also create a list of routes where engineering design and additional funding is required. Such locations are likely to include the Canal Trails and sidewalks, as well as locations where arroyo crossings or additional drainage infrastructure is required.

Cost Estimates

General Overview

Cost estimates for several of the proposed trail types are based on costs per square yard for the base materials and trail preparation (including scrubbing and grubbing, grading, and subgrade preparation). The costs for the various trail types are provided by mile and increase as the width and features of the trail increase. Cost estimates by trail type may be multiplied by the length of the proposed trail to generate a planning-level estimate; more refined cost estimates may be developed for individual trails. Assumptions and notes to support the cost estimates are provided below.



Footpaths and Gravel Trails

Cost estimates for basic trails include labor. These costs could be reduced by one-half or more if the Pueblo uses existing staff or community labor. All footpaths and gravel trails (i.e. dedicated walking trails, roadside trails, and unpaved multi-use trails) require clearing and grubbing, grading, and subgrade preparation. Gravel trails also feature base course.

Costs per Square Foot

- Dirt path: \$15 per square yard
- Gravel trail: \$25 per square yard

Sidewalks

Sidewalks may be installed along paved roads through construction outside of the roadway prism (i.e. to the outside of the existing curb) or by building from the existing curb into the roadway and thus narrowing the roadway width. The costs for each technique are comparable.

Retaining walls may be required where the sidewalk is built outside of the roadway prism. The cost of a 4' retaining wall is approximately \$550 per linear foot. Additional expenditures may be required for earthwork and removal and installation of fencing. Since the need for these features varies by location, general cost estimates are inherently imprecise. The cost estimates in Table X assume no additional features are needed beyond those described below.

Sidewalks Cost Assumptions

- Cost of sidewalk installation is \$70 per square yard; estimate includes any ramps
- Estimates are based on a 5' sidewalk on one side of the road only
- Cost of curb removal is \$9 per linear foot
- Cost of curb installation is \$32.50 per linear foot
- Cost of removing pavement is \$5 per square yard; material may be repurposed including as base course for new pavement

Additional Costs: Trail Amenities and Arroyo Crossings

Additional trail features such as amenities, arroyo crossings, or retaining walls are not included in the cost estimates. Trails that cross arroyos may require engineering design and significant funding, depending on whether the arroyo requires a custom bridge or if a prefabricated bridge may be sufficient.



Table 6: Cost Estimates by Trail Type

Facility Type	Width*	Assumptions/Features	Cost Per Unit
Footpath	<ul style="list-style-type: none"> • 3-5' • 4' width used for cost estimate 	<ul style="list-style-type: none"> • Clearing and grubbing • Grading and subgrade preparation 	<ul style="list-style-type: none"> • <u>Prep</u>: \$15 per square yard • <u>Total</u>: \$35,200 per mile
Dedicated Walking Trail	<ul style="list-style-type: none"> • Minimum 4' • 5' width used for cost estimate 	<ul style="list-style-type: none"> • Clearing and grubbing • Grading and subgrade preparation • Hand placed rock edges (optional) 	<ul style="list-style-type: none"> • <u>Gravel/Prep</u>: \$25 per square yard • <u>Total</u>: \$73,500 per mile (excluding
Roadside Walking Trail	<ul style="list-style-type: none"> • Minimum 4' • 5' width used for cost estimate 	<ul style="list-style-type: none"> • Clearing and grubbing • Grading and subgrade preparation • Vertical barrier/fence 	<ul style="list-style-type: none"> • <u>Gravel/Prep</u>: \$25 per square yard • <u>Cedar Rail Fence</u>: \$25 per linear foot (\$132,000 per mile) • <u>Total</u>: \$205,000 per mile
Unpaved Multi-use Trail	<ul style="list-style-type: none"> • Minimum 8' (used for cost estimate) • 10-12' desirable 	<ul style="list-style-type: none"> • Clearing and grubbing • Grading and subgrade preparation • Vertical barrier or hand placed rock edges (optional) 	<ul style="list-style-type: none"> • <u>Gravel/Prep</u>: \$25 per square yard • <u>Total</u>: \$117,500 per mile
Paved Multi-use Trail	<ul style="list-style-type: none"> • Minimum 8' • 10-12' desirable (10' used for cost estimate) 	<ul style="list-style-type: none"> • Based on recent unit bid prices • Arroyo crossings require additional costs 	<ul style="list-style-type: none"> • <u>Total</u>: \$750,000 per mile
Sidewalks - Within Roadway Prism	<ul style="list-style-type: none"> • 5' width • One side of the road only • Build sidewalk from existing curb into roadway 	<ul style="list-style-type: none"> • Items: curb removal, curb installation, removal of asphalt, sidewalk construction • Includes 20% contingency 	<ul style="list-style-type: none"> • <u>Total</u>: \$525,000 per mile
Sidewalks - Outside Roadway Prism	<ul style="list-style-type: none"> • 5' width • One side of the road only • Build sidewalk adjacent to existing road 	<ul style="list-style-type: none"> • Items: curb removal, curb installation, sidewalk construction • Includes 30% misc. costs • Costs to remove barriers and install retaining walls not included in estimate 	<ul style="list-style-type: none"> • <u>Total</u>: \$550,000 per mile



Facility Type	Width*	Assumptions/Features	Cost Per Unit
Shared Roadway	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> Village Area: Signage approaching and following each intersection Agricultural Areas: one sign every ¼-mile 	<ul style="list-style-type: none"> <u>Total</u>: \$300 per sign

Notes:

- *Optional items are not included in the cost estimates.*
- *All costs include labor. Costs may be reduced by 50% or more if trails are constructed using staff labor.*

Maintenance

This plan reflects a commitment on the part of the Pueblo of Jemez to create new transportation options through additional trails facilities. However, construction of trails creates additional maintenance requirements. Adequate funding is required to ensure that residents may use the trails long-term. As a specific example, the Pueblo plans to purchase special vehicles to clean and maintain the NM 4 Trail. Having the essential equipment to carry out maintenance activities will ensure the trail remains accessible and safe for biking and walking.

General maintenance activities can vary depending on trail type and typically consist of annual grading, brush clearing, and dust palliative re-application. In addition, the Pueblo should assess trail facilities and inspect them on a yearly basis. Annual inspection efforts might include assessment of the substructure for corrosion and the need for modifications, replacements, and leveling.

Elders from the focus group session identified uneven surfaces as a critical issue; ongoing maintenance and the installation of handrails can help reduce issues with drainage and uneven surfaces. These issues should also be considered for maintenance activities.

To augment the formal trail maintenance efforts, Jemez Department of Transportation may recruit volunteer work groups for annual clean-up and preservation efforts. Such efforts provide an opportunity to instill community pride in local infrastructure and to build an ethic of active transportation.



Other Recommendations

Signage

Additional signage is critical for alerting motorists of the presence of pedestrians and bicyclists and for advising trails users of the appropriate routes to follow. Pedestrian signs are particularly important along shared roadways where no dedicated facilities for pedestrians or bicyclists are provided. For roads in the Village Area, signs should be placed approaching and just after roadway intersections. For shared roadways in agricultural and more rural areas, pedestrian signs should be placed every ¼-mile.

The Pueblo of Jemez may also consider signage to support the general use and maintenance of trails. In particular, community members suggested signs asking tribal members not to litter and to respect the trails, as well as signs to encourage healthy behavior with slogans such as “Walatowa Strong” and “Keep Walatowa Beautiful.” Ideas for such signs could be developed through a community design competition.

Maps and Trail Guides

The Pueblo of Jemez could develop maps and guides for local trails and paths to create greater awareness of pedestrian/bicycle options. Trails guides could complement and expand upon the existing FiTT Guide as additional trails are constructed. These trail guides could also serve as an educational tool with information about plants used for traditional practices and historical uses of different routes. Trail guides should be distributed within the Pueblo for use by Pueblo residents only.

Education and Encouragement Programs

Education programs could involve safety education, teaching children how to ride bicycles, and information on existing trails. These programs can be integrated into school curriculum to share skills and knowledge surrounding safe biking and walking behaviors and lead to increased interest in active transportation, particularly for youth.

Encouragement programs could involve distributing reflective backpacks or other reflective gear to encourage safe walking and biking. This would also help alleviate concerns of lack of lighting while maintain traditional land uses. Free or reduced-price bicycles could be provided to students who participate in public health awareness campaigns or volunteer at Pueblo of Jemez events.



Pursue Targeted Closure of Tribal Roads that Connect to NM 4

In addition to the recently closed Bluebird Mesa Road, the Pueblo of Jemez may pursue permanent closure of various minor tribal roads that connect to NM 4. Such closures are important for safety by limiting turning movements across the planned trail, including in locations with poor sight lines.

The benefits of road closures have been highlighted during the covid-19 pandemic as access to the Pueblo was closed and temporary barricades were erected at intersections with NM 4, including along routes proposed for permanent closure. During this time, Pueblo of Jemez staff report additional pedestrian activity and kids running and biking along the streets. Various community members commented on the benefits of the road closures and encouraged that they be made permanent.

It will also be important to consider the broader implications of road closures to the tribal transportation network as other roads may need to be improved to support additional traffic. For example, closing Bluebird Mesa Road limits access to the Natural Resources Department building and causes workers to travel on Walatowa Boulevard and other tribal roads to access their job site.

Bus Stop Consolidation and Improvements

The Pueblo of Jemez could further address safety at school bus stop locations by improving waiting areas, consolidating unnecessary stops, and formalizing walking routes to stops. A logical next step would be to assess waiting area conditions and the quality of access to stop locations. As funds become available, trails and sidewalks could be connected to bus stops to increase connectivity. The Pueblo could also conduct audits of student and motorist behavior around bus stops and increase patrols by Tribal Police to ensure adherence to traffic laws.

Building Upon and Strengthen Existing Partnerships

Creating a culture of walking and biking and encouraging healthier behaviors requires comprehensive strategies that transcend departments and individual community initiatives. The Pueblo of Jemez can build upon the momentum for increasing physical activity levels and creating safer environments for biking and walking over time and build upon partnerships such as the Pueblo of Jemez Safety Committee and the STI. Opportunities for partnerships exist between the Public Health, Jemez Department of Transportation, and others to encourage use of trails and highlight the benefits from a range of perspectives.



Ongoing Data Collection

The Pueblo of Jemez could conduct periodic assessments of biking and walking levels, community issues and challenges, and strategies that are working well to help identify how to approach trail planning in the future to best meet community needs and promote active living. To accomplish this, the Pueblo could conduct annual bicycle and pedestrian counts and create opportunities for continued community conversation surrounding new trails. To encourage community engagement in walking and biking, the Pueblo could engage students to participate as part of potential assignments, internships, or other for professional development opportunities.

Funding

Federal Funding Opportunities

The primary recurring source of federal funds for the Pueblo of Jemez is the Tribal Transportation Program (TTP) Fund, though a major benefit of this Pedestrian Trails and Bikeways Master Plan is the added potential for securing grants. The primary federal grants for which Pueblo of Jemez is eligible and which could be utilized to expand the trails network are administered through NMDOT. The Pueblo is currently using funds from the CMAQ program, described below, for the design and construction of the NM 4 trail/Hemish Path to Wellness.

This section describes major recurring federal funding opportunities administered through NMDOT. Other funding opportunities such as BUILD grants (or the previous TIGER program) may become available, though are not discussed here. Applications for federal grants are generally managed through the Mid-Region Rural Transportation Planning Organization, which submits applications to NMDOT.

Tribal Transportation Program

Pueblo of Jemez receives about \$750,000 dollars per year from FHWA through the TTP. These funds are used for maintenance and basic improvements on tribal roadways and other transportation facilities that are included in the federal inventory. TTP funds can be “banked” over multiple years to pay for high-cost improvements and may be used as a local match for other grants. This approach was used for the NM 4 Trail/Hemish Path to Wellness.

A subset of the TTP is the **Tribal Transportation Program Safety Fund (TTPSF)**. Rather than a direct allocation, the Pueblo of Jemez must apply for TTPSF grants through a competitive process. FHWA awards projects annually that specifically address the



prevention and reduction of deaths or serious injuries from motor vehicle crashes. Eligible projects include creating or updating safety plans, data collection efforts, and the identification and implementation of infrastructure improvements. Though the pool of funds is modest – about \$9 million in 2019 or 2% of the total TTP, funds can be leveraged as a local match for other funds.

Transportation Alternatives Program (TAP)

The Transportation Alternatives Program (TAP) is a federal reimbursement program administered by NMDOT. TAP can be applied to projects focused on pedestrian and bicycle facilities, including trails projects and safe routes to schools programs. The total state allocation was \$5.7 million in FY 2020; entities may be awarded up to \$2 million. Refer to the *Active Transportation and Recreational Programs Application Guide* (NMDOT, Current Guide) for more information.

Recreational Trails Program (RTP)

The Recreational Trails Program (RTP) is a federal reimbursement program administered through NMDOT. The RTP funds projects for additional multimodal transportation options including the development and maintenance of recreational trails and facilities for motorized and non-motorized use. The total state allocation was \$1.4 million in FY 2020; there are no minimum or maximum funding amounts for RTP. Refer to the *Active Transportation and Recreational Programs Application Guide* (NMDOT, Current Guide) for more information.

Congestion Mitigation and Air Quality (CMAQ) Improvement Program

The Congestion Mitigation Air Quality (CMAQ) Improvement Program, originally implemented in 1991, helped shift federal policy towards a multimodal and environmental focus. The CMAQ program supports surface transportation projects and other efforts that help improve air quality and reduce congestion to meet National Ambient Air Quality Standards. Eligible projects include those that contribute to maintenance or attainment of air quality standards and reduce air pollution, including bicycle, pedestrian, and trail projects. Consult the *NMDOT T/LPA Handbook* for additional information.



State Funding Opportunities

Local Government Transportation Fund

The Local Government Transportation Fund, administered by the State of New Mexico, was initiated in 2019 to make funding surpluses from oil and gas revenues available to local government agencies, including tribal governments, for transportation projects. Agencies must apply through a competitive process. Local governments can receive up to 95% of the total cost of a project, and up to 100% if they can show a financial hardship. Given the budgetary challenges posed by the COVID-19 pandemic, it is uncertain whether this fund will be available in future years.

Tribal Infrastructure Fund

The Pueblo Tribal Infrastructure Fund (TIF), administered by the New Mexico Indian Affairs Department, is intended to support utilities and road improvements on tribal lands across the state. TIF is supported by oil and gas revenue and available funding is a percent of the state's total infrastructure bonding capacity, which varies from year to year. Projects are selected based on a competitive grant process. The Pueblo of Jemez could pursue sidewalk or roadside trail improvements as part of a larger proposal to upgrade or rehabilitate a roadway.

Capital Outlay

The Pueblo of Jemez may seek capital outlay funds from the state legislature for transportation infrastructure needs. The Pueblo of Jemez often seeks capital outlay funds for transportation equipment needs and may choose to seek state funds for equipment for trail maintenance. The presence of the Pedestrian Trails and Bikeways Master Plan may also help the Pueblo obtain funds specifically for trail implementation.



Bohannon  Huston

