ISLETA DRAIN + TRAIL PLAN

December 2022

PREPARED FOR:

PREPARED BY:

SITES SOUTHWEST

WILSON & COMPANY

BERNALILLO COUNTY

BOARD OF COUNTY COMMISSIONERS

ADMINISTRATIVE RESOLUTION NO. 2022 140

ADOPT THE ISLETA DRAIN AND TRAIL MASTER PLAN

WHEREAS, in 2012, the County adopted the *Pedestrian and Bicyclist Safety Action Plan* that identifies locations of future multi-use trails including one proposed along Isleta Drain in the South Valley. Future trails, including Isleta Drain trail, are also identified on the Long-Range Bikeways and Trails map approved in 2020 as part of the *2040 Metropolitan Transportation Plan.*

WHEREAS, in 2019, the County received capital outlay funding to prepare a trails plan for Middle Rio Grande Conservancy District (MRGCD) facilities. The County, MRGCD, and Albuquerque Metropolitan Arroyo and Flood Control Authority (AMAFCA) have matched the state funding to prepare the Isleta Drain and Trail Master Plan. The proposed 13 mile multi-use trail extends from Central Avenue to Malpais Road.

WHEREAS, public engagement was conducted in the South Valley to obtain feedback on proposed Isleta Drain trail alignments, amenities, trailheads, crossings, and design features. Input was also received from MRGCD and AMAFCA on maintenance, operations, and management aspects of the drain facility to accommodate a trail.

WHEREAS, the trail plan identifies five character areas with particular conditions and connections to destinations such as schools, parks, open space, community centers, and retail centers within those areas. The plan proposes to seek funding to design and construct the trail in five phases.

NOW, THEREFORE, be it resolved by the Board of County Commissioners, the governing body of the County of Bernalillo, that the Isleta Drain and Trail Master Plan be adopted this 13th day of December 2022.

BOARD OF COUNTY COMMISSIONERS

Adriann Barboa, Chair

Walt Benson, Vice-Chair

Debbie O'Malley, Member

Steven Michael Quezada, Member

Charlene E. Pyskoty, Member

BERNALILLO COUNTY COUNTY CLERK SEAL STATE OF NEW MEXICO

APPROVED AS TO FORM:

W. Ken Martinez, County Attorney

ATTEST:

Linda Stover, County Clerk

ACKNOWLEDGMENTS

The planning and design team would like to thank the staff, elected officials and hundreds of South Valley neighbors who contributed their time, ideas and guidance to the creation of the Isleta Drain + Trail Plan. We hope that this plan is an accurate reflection of your vision for a future asset within the community.

TECHNICAL REVIEW TEAM

Richard Meadows, Technical Planning Manager, Bernalillo County
Yasmeen Najmi, Planner, Middle Rio Grande Conservancy District
Nolan Bennett, Field Engineer, Albuquerque Metropolitan Arroyo Flood Control Authority
Willie West, Real Estate Manager, Albuquerque Metropolitan Arroyo Flood Control Authority

COMMUNITY ORGANIZATIONS

Center for Social Sustainable Systems
South Valley Regional Association of Acequias
South Valley Coalition of Neighborhood Associations
Atrisco Viejo Neighborhood Association
Vecinos del Bosque Neighborhood Association
Foothills Neighborhood Association
Blake Road Neighborhood Association
Southside Farms Neighborhood Association
Pajarito Village Association
Los Padillas Neighborhood Association
Greater ABQ Recreational Trails Committee
Greater ABQ Active Transportation Committee

STAFF AND ELECTED OFFICIALS

District 2 - Commissioner Quezada and Staff
Staff at South Valley Public Library
Staff at the South Valley Senior Multipurpose Center
Bernalillo County Sheriff Department, Community Services

CONSULTANTS

Sites Southwest
Wilson and Company

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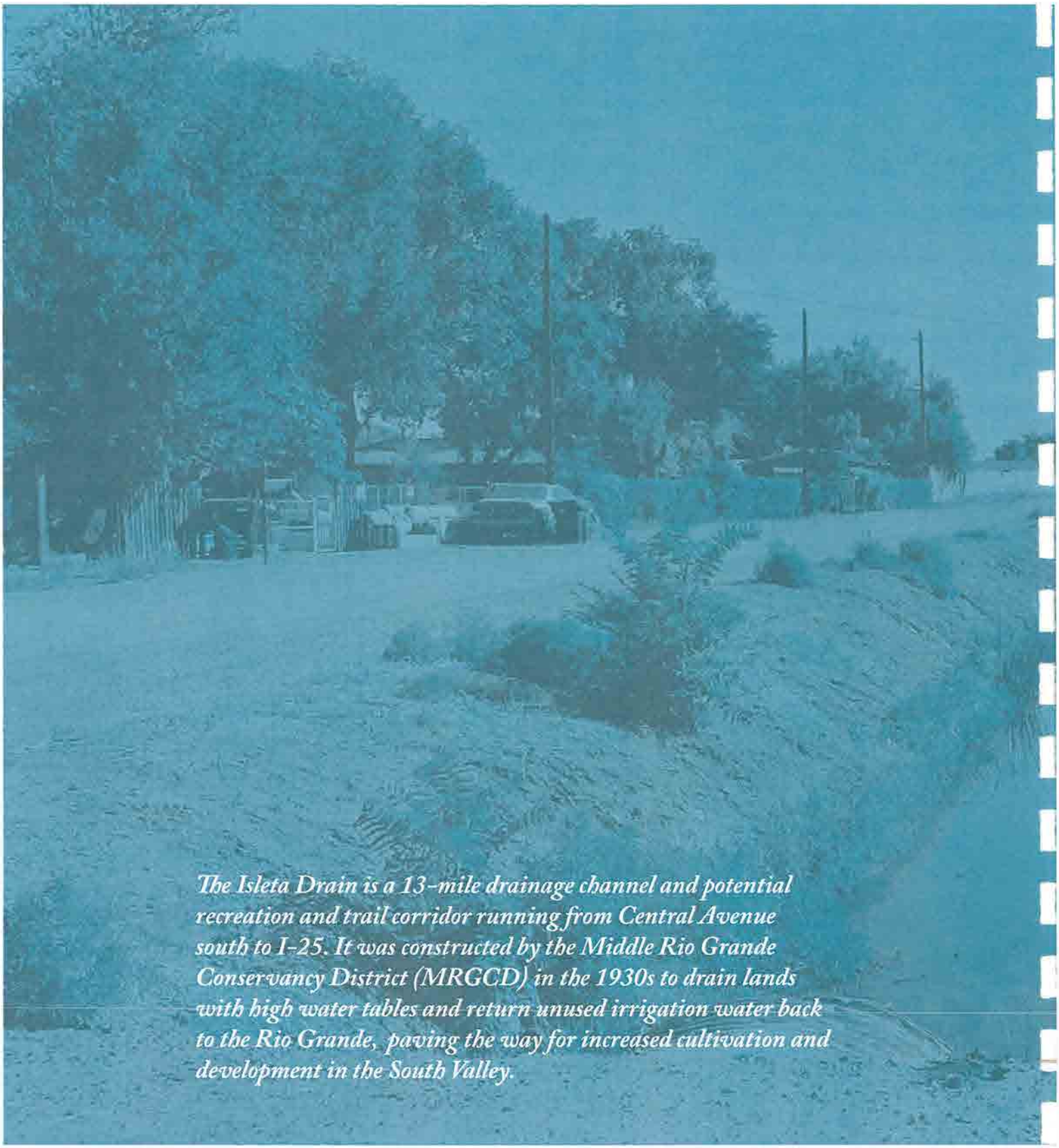
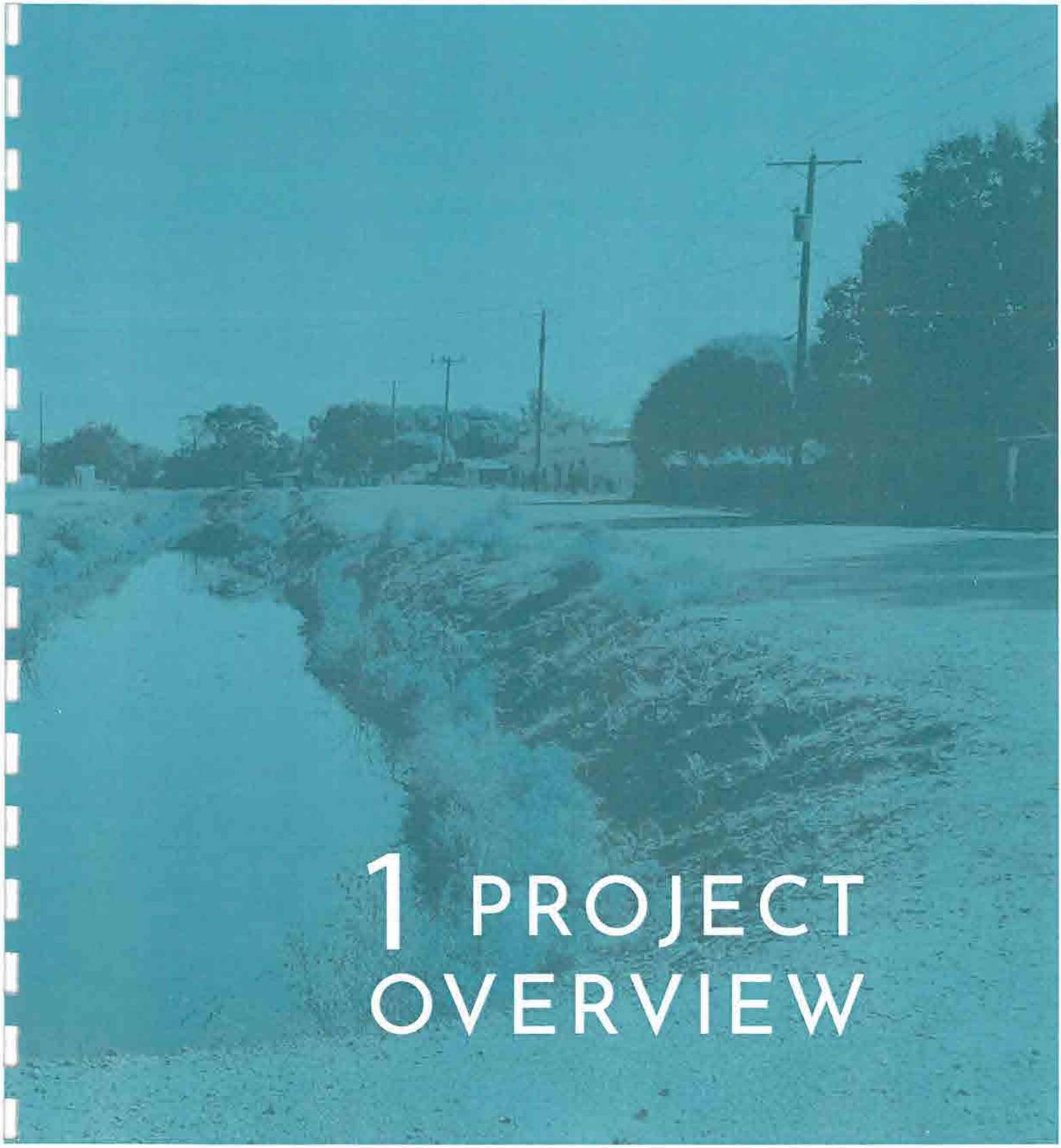
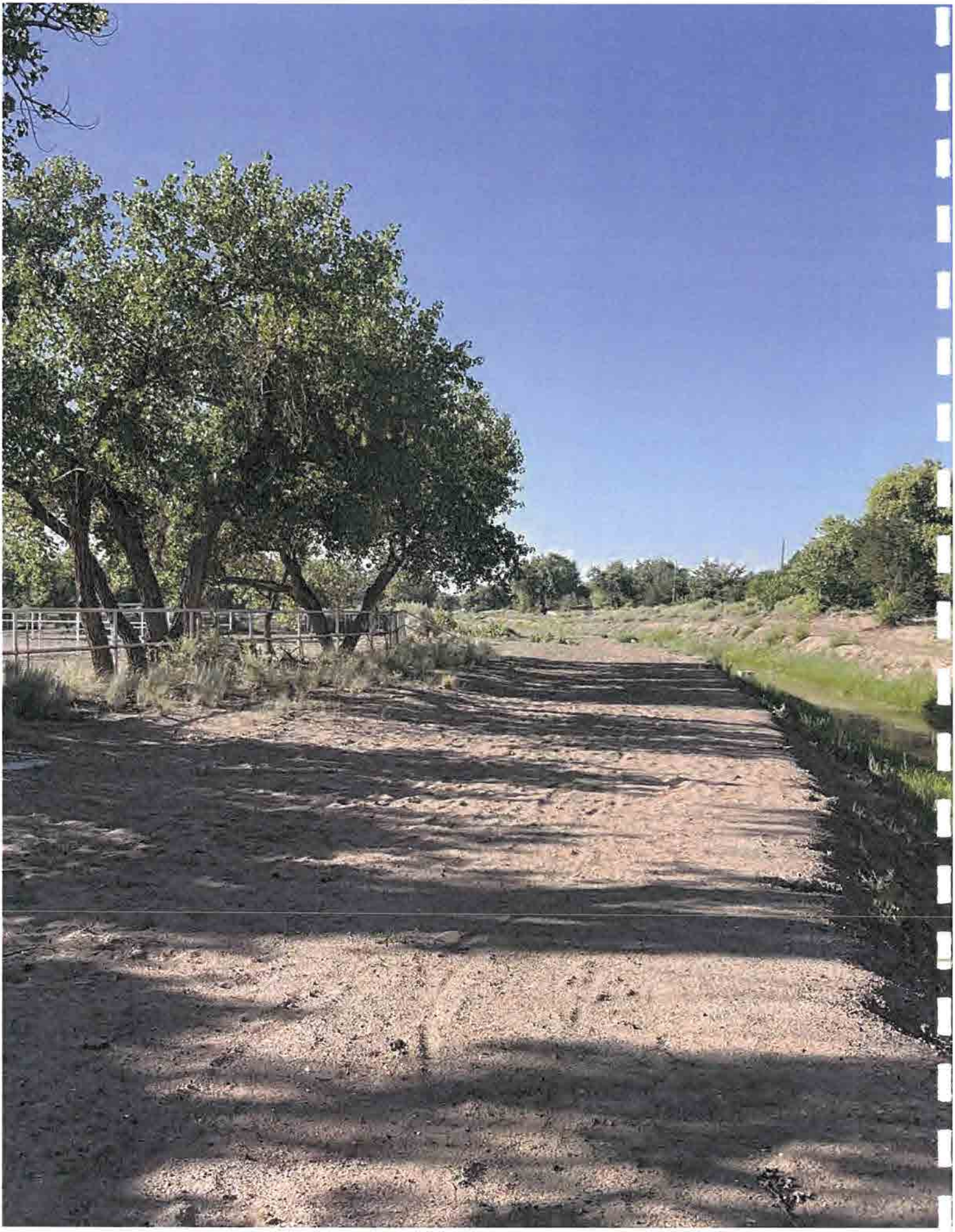


The Isleta Drain is a 13-mile drainage channel and potential recreation and trail corridor running from Central Avenue south to I-25. It was constructed by the Middle Rio Grande Conservancy District (MRGCD) in the 1930s to drain lands with high water tables and return unused irrigation water back to the Rio Grande, paving the way for increased cultivation and development in the South Valley.



1 PROJECT OVERVIEW



OVERVIEW

The Isleta Drain is a nearly 13-mile drainage channel and potential recreation corridor running from Central Avenue south to I-25. It was constructed by the Middle Rio Grande Conservancy District (MRGCD) in the 1930s to drain lands with high water tables and return unused irrigation water back to the Rio Grande. The drain is still used for these purposes and to help route stormwater to the Rio Grande. Like many of the acequias and drains in the South Valley, people have used the Isleta Drain for decades as informal paths for walking, biking, horseback riding and connecting to destinations in the community.

The Isleta Drain is an important part of the water management infrastructure in the South Valley. It is now jointly managed and maintained by MRGCD, the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) and Bernalillo County who work with residents to make sure this drain continues to serve the surrounding area for stormwater flood control and irrigation drainage purposes.

In addition to providing flood control and directing water back to the Rio Grande, this channel provides a convenient corridor through the heart of the community. It meanders through a diverse set of environments, from semi-urban neighborhoods to rural stretches of farmland. A goal of this plan is to highlight the different conditions and interests along the corridor and work with community members to envision the Isleta Drain and proposed trail as a celebrated community asset. Additional priorities include:

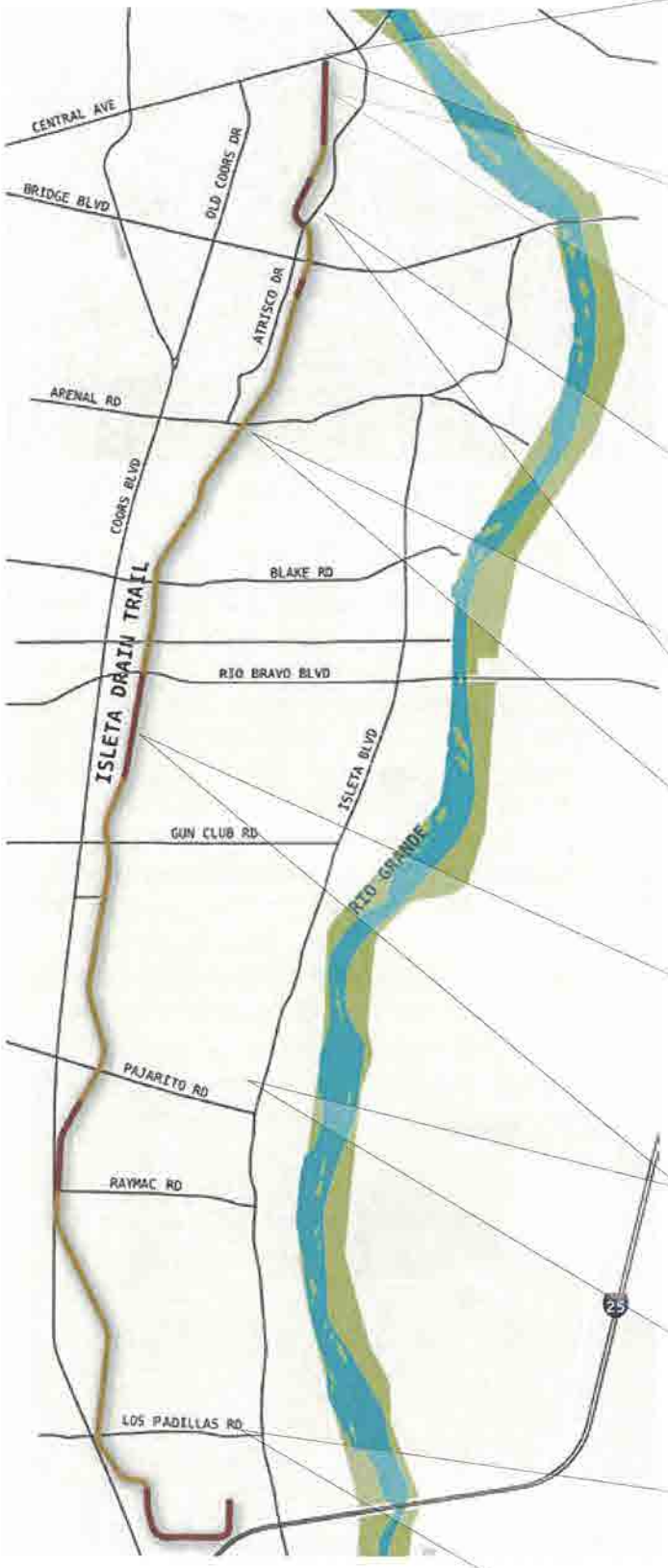
PHYSICAL CONTEXT

The Isleta Drain runs through the heart of the South Valley, beginning just north of Central Avenue – historic Route 66 – extending south to I-25 and the Isleta Pueblo beyond. The drain runs first through primarily residential areas, crossing commercial corridors and moving to less dense, agricultural land and open space as one moves south.

It crosses several major east-west vehicular connectors, including Central Avenue to the north and Bridge Boulevard and Rio Bravo Boulevard as you continue south. Coors Boulevard runs nearly parallel, meandering west of the drain. The Rio Grande provides another parallel corridor with possible connections, at a distance of between 1 to 2 miles east of the Isleta Drain, depending on reference point.

There are several religious institutions, schools, open spaces and community centers that are either directly adjacent to or within a reasonable walking distance of the Isleta Drain. Figure 1 identifies many of these community destinations and their relationship with the Isleta Drain.

This corridor presents a vital opportunity to potentially create the first multi-use trail in the South Valley west of the Rio Grande with significant transportation potential. As will be explored in later sections, the only other multi-use trails in the South Valley west of the river are short trails, typically constructed along Bernalillo County property frontages. Some of these are loop trails, but none provide the formal, long-distance potential that the Isleta Drain would provide.



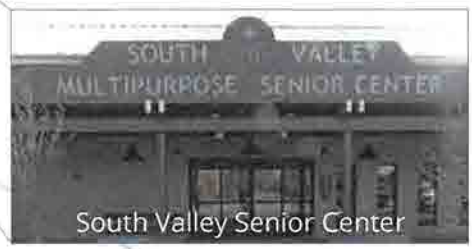


FIGURE 1. ISLETA DRAIN OVERVIEW MAP

HISTORY AND COMMUNITY CONTEXT

The South Valley has long been the site of cultivation, with several groups of inhabitants working to direct the waters of the Rio Grande in support of local agriculture. Native Puebloans dug the original systems of ditches for flood irrigation, which were later shared and expanded by Hispano newcomers. Along with the acequia system came a unique form of democratic governance to guide decision-making and care for the waters.

With the expansion of Anglo American colonization in the 19th century and corresponding environmental demands, the combined impacts of increased deforestation and grazing of sheep and cattle removed much of the ground cover throughout and upstream from the middle Rio Grande valley. These changes to the landscape led to increased silt in the riverbed, over time, raising the water table and flooding farmland throughout the valley. After several instances and increased frequency of flooding devastation, the Middle Rio Grande Conservancy District (MRGCD) was created to manage irrigation, drainage and river flood control in the region. The Isleta Drain was a part of a drainage network constructed by the MRGCD in the 1930s to alleviate high water tables and alkali soils throughout the Middle Rio

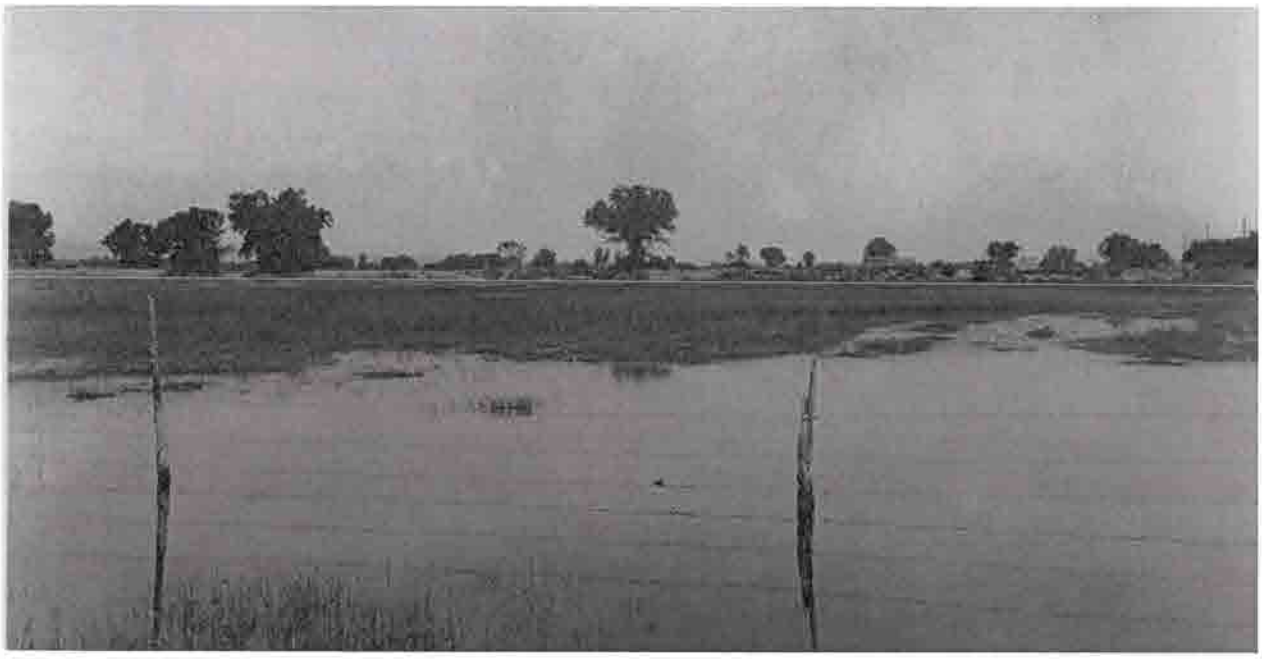


FIGURE 2. WATERLOGGED LAND, 1930 FROM MRGCD

Grande Valley. Though these projects served their purpose of making water management in the valley more predictable, the cost of ongoing maintenance proved too much for the new Conservancy. The Congressional Flood Control Acts of 1948 and 1950 channeled federal funding to MRGCD and, later, the Bureau of Reclamation established the Rio Grande Flood Control Program to repair and modernize the District's dams, drains and channels.

Today, the MRGCD continues to provide maintenance to flood control, drainage and irrigation facilities, allowing for the continuation of agricultural production throughout the Middle Rio Grande Valley. In addition to the added economic and cultural benefits sustained through this work, the network of drainage channels and original irrigation ditches provides space for a number of informal recreational uses, including walking, biking, and horseback riding. Further, they provide valuable wildlife habitat along a critical migratory corridor.

PUBLIC ENGAGEMENT

The Isleta Drain + Trail Plan has been developed with direct input from residents, key stakeholders, agency staff and elected leaders. Given its proximity to neighborhoods, efforts have been made to prioritize the voices of those who would be most impacted by trail development. The planning team made presentations at neighborhood association and interest group meetings, hosted a project pop-up table at community events and hosted a community design workshop to refine design scenarios. Additionally, a project website and community survey was made available to solicit resident input and provide a forum for public comment and knowledge sharing. Flyers and physical signage were used to notify the public about engagement opportunities.

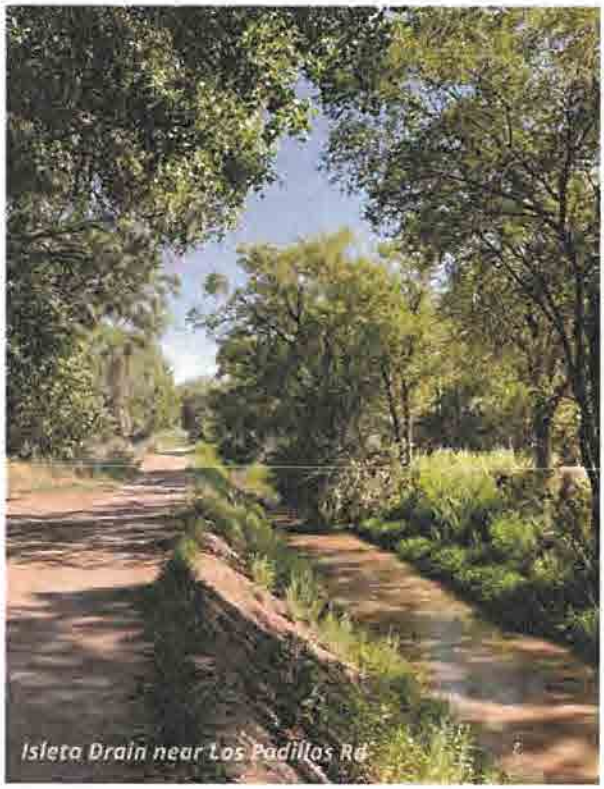
A summary of community input and its shaping of a project vision and priorities are provided in the following section.

STAKEHOLDER COORDINATION

The team used a variety of virtual and in-person engagement strategies to make sure the Isleta Drain + Trail Plan exemplifies the vision, priorities and ideas of the South Valley community that surrounds it. Throughout the planning process, the team worked closely with key partners and stakeholders, including Bernalillo County, MRGCD, AMAFCA and neighborhood leadership to shape tactics and provide valuable opportunities to connect with neighbors.

These groups met regularly and provided invaluable guidance throughout the planning process.

Two site visits kicked off the planning process in the summer of 2021. Organizational and neighborhood representatives also reviewed draft documents and provided feedback.



Isleta Drain near Los Padillos Rd

WE WANT TO HEAR FROM YOU

QUEREMOS ESCUCHAR TUS IDEAS

Learn more and stay in touch at the project website:

Ver más información y manténgase en contacto:

Share your ideas by taking the community survey:

Cuentanos tus ideas con la encuesta comunitaria:

For questions & comments:

Preguntas y comentarios:

Project Planner - Bernalillo County

Richard Meadows, Technical Planning Manager

rmeadows@bernco.gov | 505.850.4496

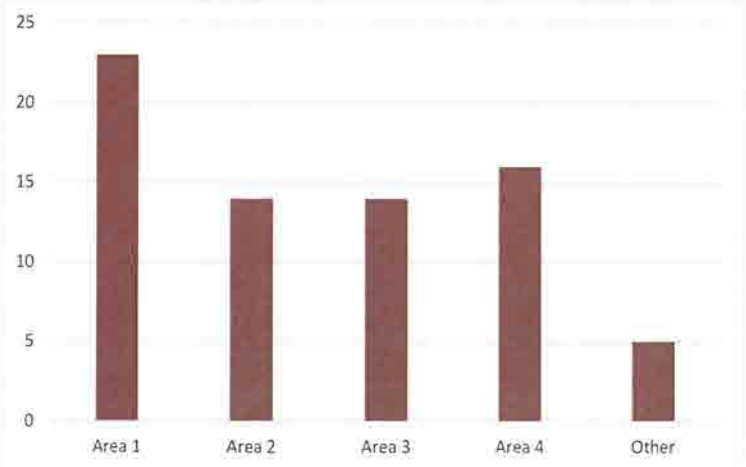
COMMUNITY SURVEY

A community survey was launched in early September 2021 and remained open until the end of January 2022. The survey asked a number of open-ended and ranked choice questions related to current use and activity along the Isleta Drain, barriers or concerns, and future opportunities and priorities for improvement. In total, 92 responses were received. What follows is a summary of survey results and insights.

Respondent Profile

Most of the community survey respondents are residents of the South Valley, with the majority of respondents living in the northernmost sections of the Isleta Drain (between Central Avenue and Blake Road). Further, while over 50 percent of respondents were older than age 55, a large number of younger adults (between ages 35 and 44) also completed the survey. Finally, the race/ethnic identity of respondents is reflective of the area population, with nearly 40 percent identifying as Hispanic or Latino.

WHAT NEIGHBORHOOD DO YOU LIVE IN?

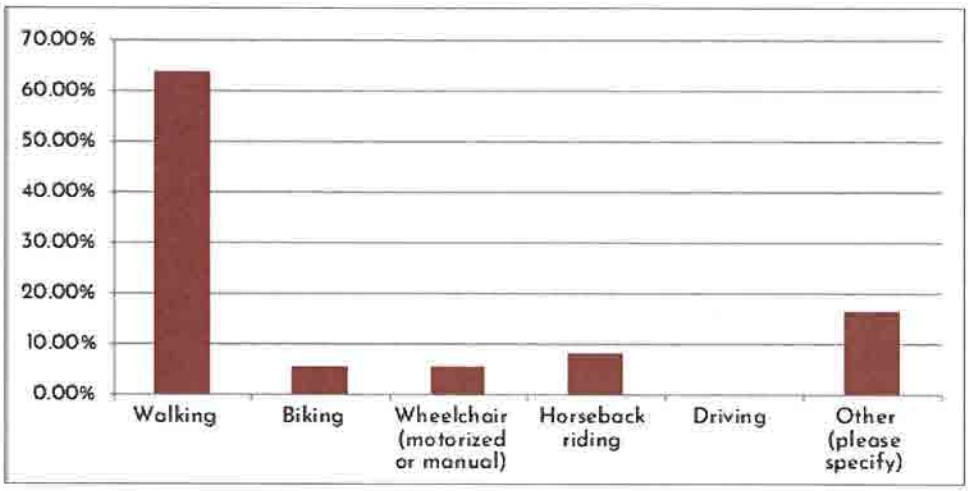


When the survey was created, the team used four character areas to define the different segments of the Isleta Drain, rather than the five that were used later in the planning process.

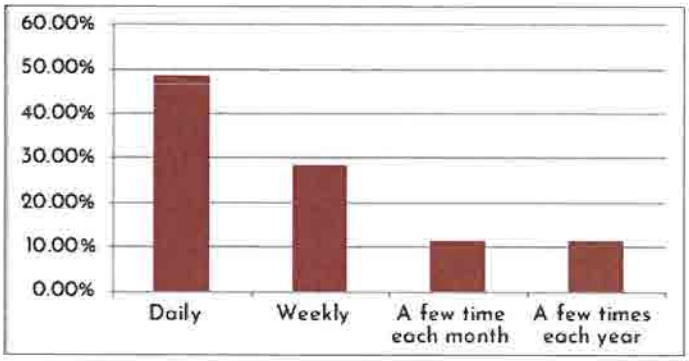
Current Use and Activity

By and large, the majority of respondents indicated that walking is the primary activity and use along the Isleta Drain, and nearly half of respondents use the corridor daily.

WHAT IS YOUR PRIMARY ACTIVITY ALONG THE CORRIDOR?

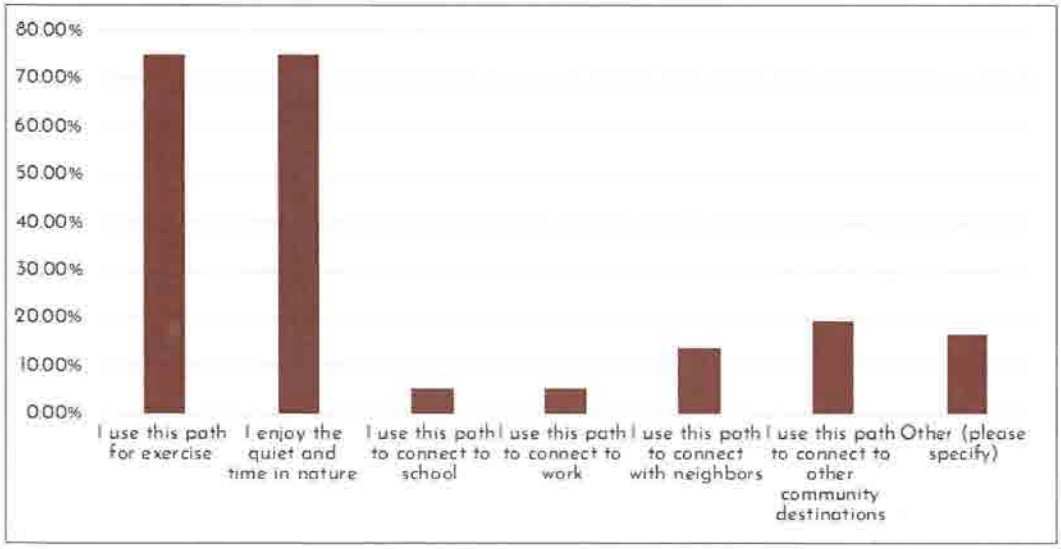


HOW OFTEN DO YOU USE THIS PATH?

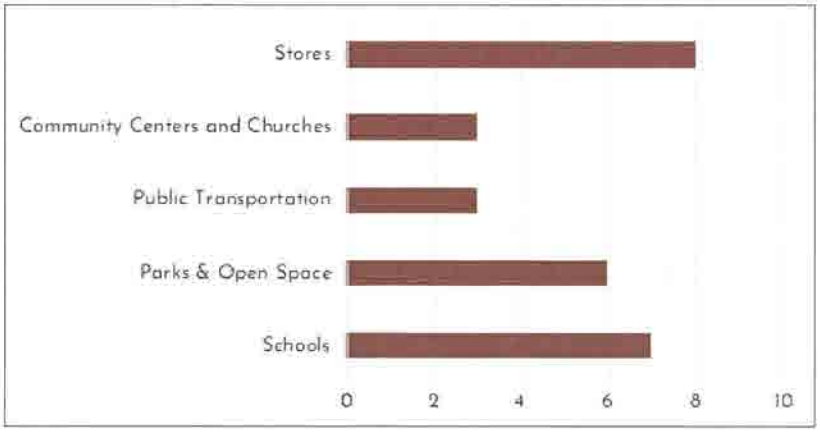


The primary reasons for using the land adjacent to the Isleta Drain are for exercise and to enjoy the quiet and time in nature. These responses are reflective of the unique, more rural character of the South Valley, overall, and for many, the reason why they chose to call this community home. Respondents also noted that stores, schools and parks and open spaces are the most important community destinations that they might travel to along this path.

IF YOU USE THIS CORRIDOR, WHAT ARE YOUR PRIMARY REASONS?



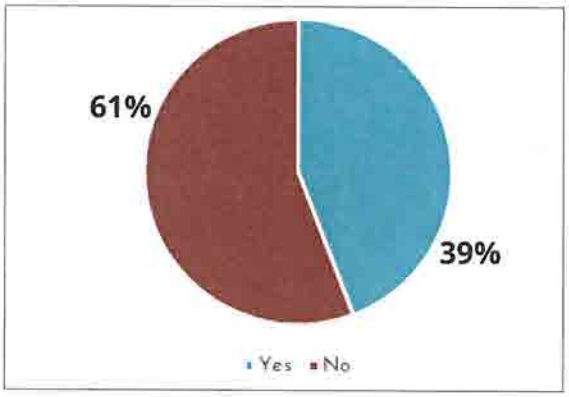
MOST IMPORTANT COMMUNITY DESTINATIONS



Challenges and Barriers

While the proposed path along the Isleta Drain is widely used, respondents noted that there are several needs and concerns that should be addressed by this plan to improve the experience of users. The single most important improvement would be to create paved and/or packed trail surfaces. Respondents also noted that regular maintenance and trash and weed removal from the drain will be essential to future use of the trail.

DOES THE ISLETA DRAIN CORRIDOR CURRENTLY MEET YOUR NEEDS?



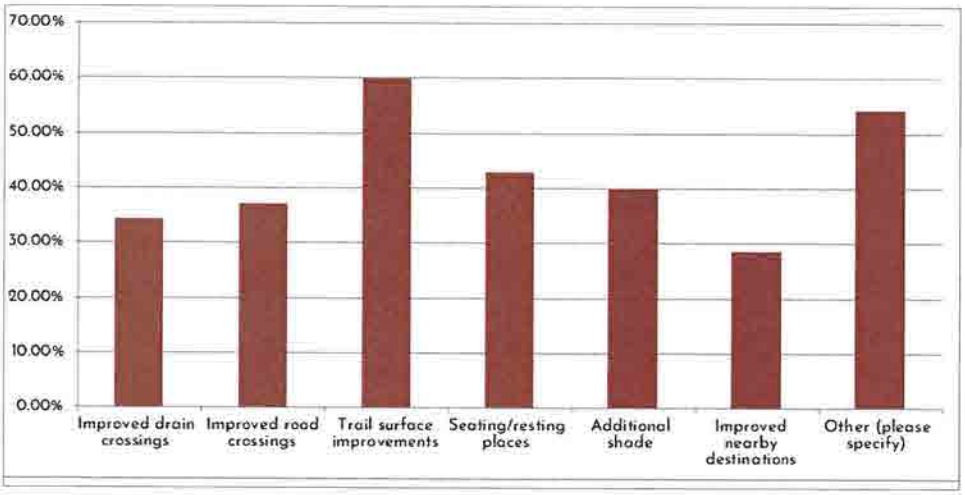
OTHER CONCERNS OR BARRIERS TO USE:

- Drain needs regular cleanup/reduce litter and dumping
- Overgrown weeds and goatheads
- Loose dogs are a concern
- Soft surface is challenging for bicycles
- ATV traffic can make the drain feel unsafe for other users
- More trees for shade, plus natural vegetation
- Poorly designed gates
- Additional lighting, especially in the north

ARE THERE SPECIFIC SECTIONS THAT NEED IMPROVED CONNECTIONS/CROSSINGS?

- Between Bridge and Arenal
- Rio Bravo
- Blake Road
- Raymac to Malpais (concerns are specifically with ATVs)

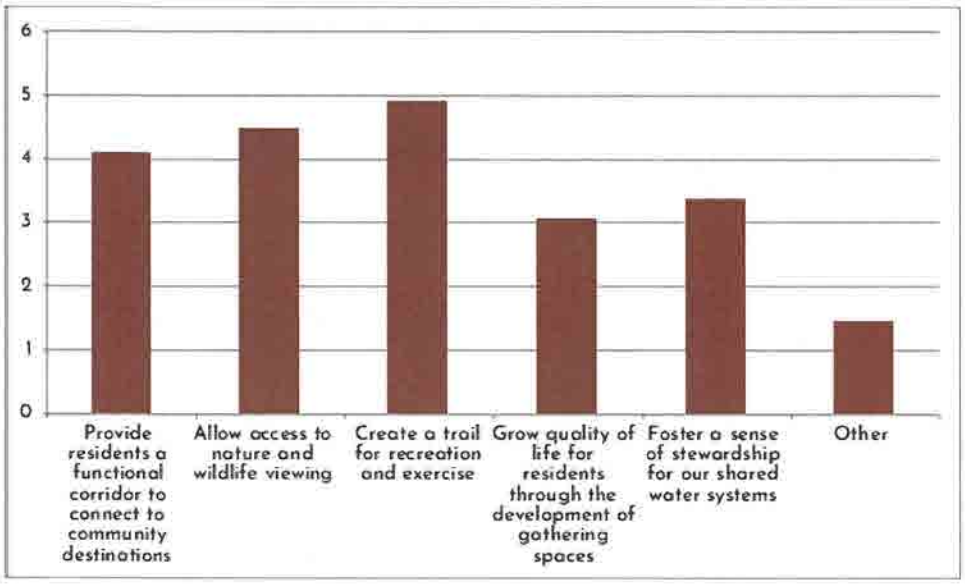
WHAT CHANGES MIGHT IMPROVE YOUR EXPERIENCE HERE?



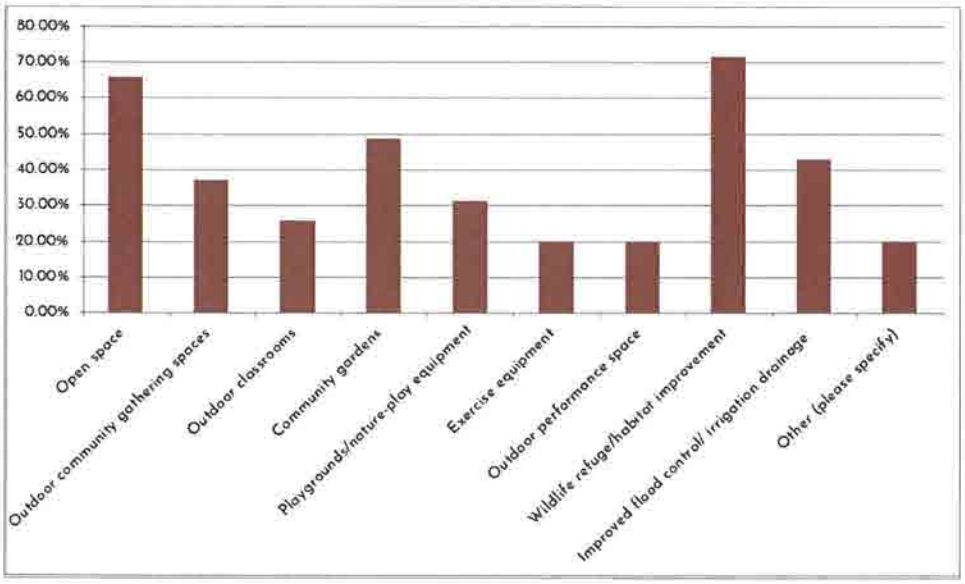
Plan Priorities and Opportunities

The question below asked respondents to rank priority goals for this plan. The responses shown in the graph represent those priorities with the higher number corresponding to higher priority.

WHAT SHOULD WE PRIORITIZE AS GOALS FOR THIS PLAN?



WHAT TYPES OF SPACES OR ASSETS WOULD BEST SUPPORT COMMUNITY NEEDS?



ARE THERE SECTIONS OF THE CORRIDOR OR SITES NEAR THE TRAIL THAT SHOULD BE CONSIDERED FOR ADDITIONAL IMPROVEMENTS OR THAT HAVE THE POTENTIAL TO BECOME COMMUNITY SPACES?

- East of 5700 block of Isleta Boulevard
- Arenal Open Space
- Raven Pond
- Open Space near Atrisco Park and Atrisco Elementary
- Additional lighting, especially in the north
- Near schools
- Bridge Boulevard & Anthony Lane

Character Areas Survey Insights

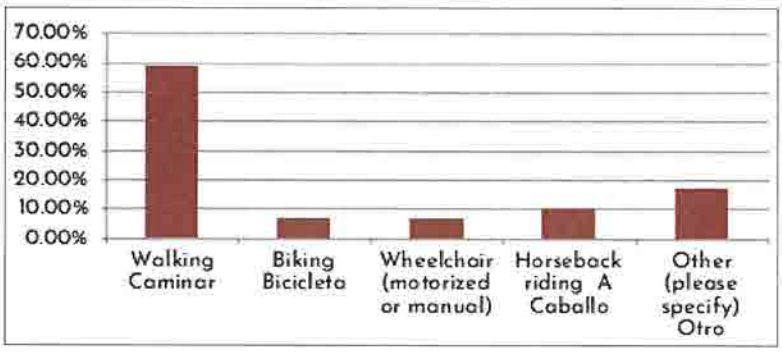
The team recognizes that the quality of space, density of residences and natural environment (as well as the ideas of adjacent neighbors) shift dramatically as one traverses along the drain corridor. The following four character areas were a first attempt to define the unique segments that comprise the nearly 13 miles of the Isleta Drain and Trail. Since the survey was drafted and shared, the planning team has revised these to include an additional segment, for a total of five character areas.

Character Area 1

IMPROVEMENTS NEEDED:

- Regular maintenance to remove trash, debris and weeds from the drain
- Shaded rest areas
- Paved trail
- Gates and improved fencing
- Lighting
- Crosswalks/safety at intersections

WHAT ACTIVITY IS MOST COMMON IN CHARACTER AREA 1?



Character Area 2

IMPROVEMENTS NEEDED:

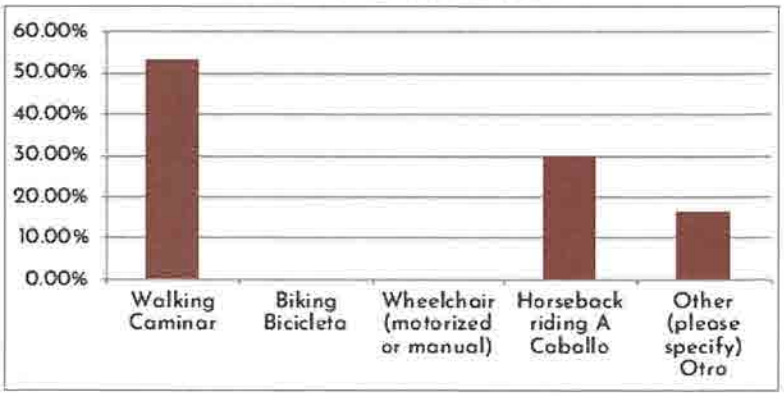
Regular maintenance to remove trash, debris and weeds from the drain

Paved trail

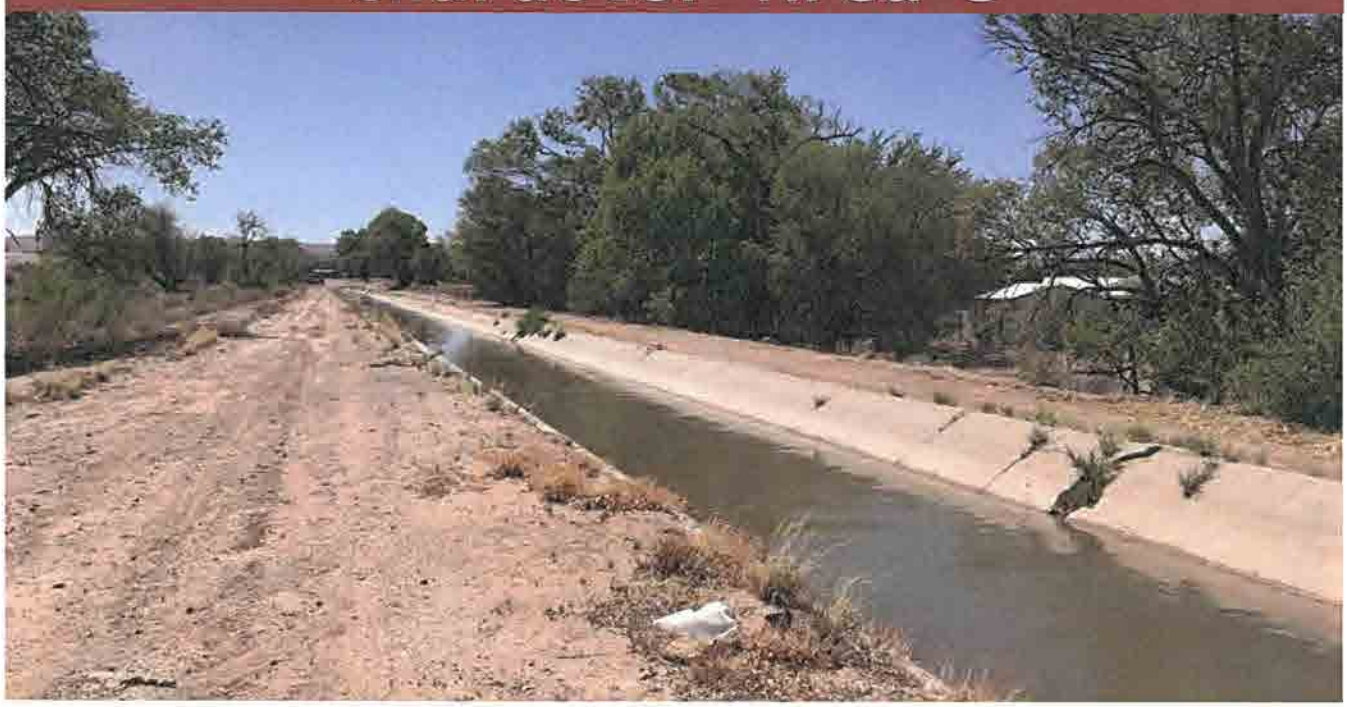
Gates and improved fencing

Safer street crossings

WHAT ACTIVITY IS MOST COMMON IN CHARACTER AREA 2?



Character Area 3



IMPROVEMENTS NEEDED:

Regular maintenance to remove trash, debris and weeds from the drain

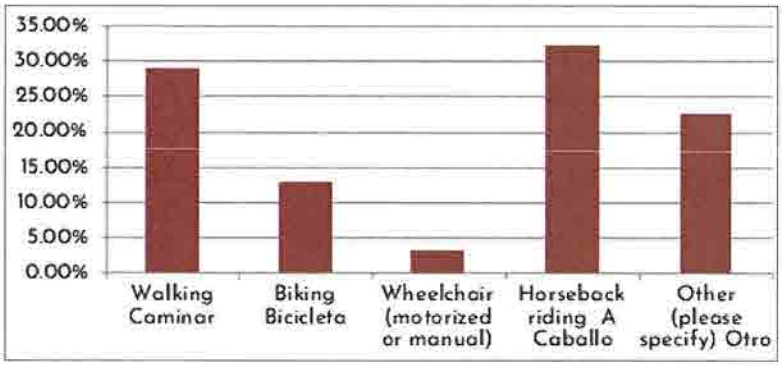
Shaded rest areas

Barriers for ATVs

Security & visually limiting fencing

Tree planting

WHAT ACTIVITY IS MOST COMMON IN CHARACTER AREA 3?



Character Area 4

IMPROVEMENTS NEEDED:

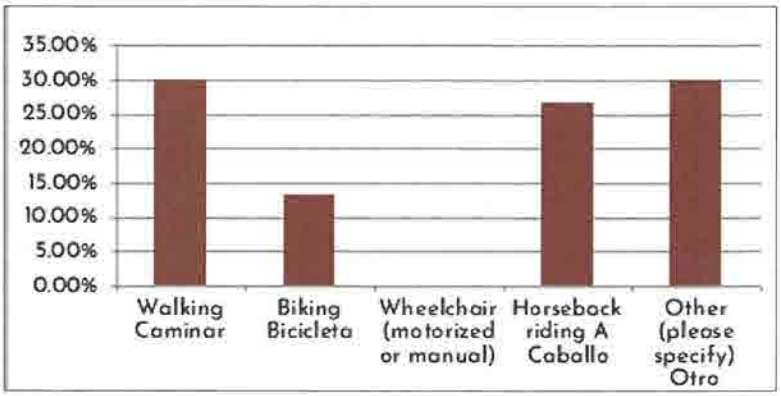
Gates and improved fencing

More trees, fewer weeds

Smoothing and packing for easier walking

Security & visually limiting fencing

WHAT ACTIVITY IS MOST COMMON IN CHARACTER AREA 4?



WEBSITE

A project website, www.IsletaDrainPlan.org, launched in early September 2021 as a virtual place to keep residents and interested stakeholders updated on the Isleta Drain + Trail Plan as it progresses. This website also provides background about the project goals and intentions, as well as information and links where community members can share their ideas and shape plan development.

TABLING EVENTS

The planning team also created mini information tables, including maps, printed surveys, voting tools and information flyers, that were set up at community events through the fall and winter of 2021. These events included:

- La Familia Growers' Market
- South Valley Growers' Market
- Rail Yards Market
- Acequia of Lights Celebration

COMMUNITY PRESENTATIONS

The team engaged key stakeholders and neighbors in the communities closest to the Isleta Drain through one on one stakeholder interviews and presentations at neighborhood association and interest group committee meetings. Presentations were offered to all South Valley neighborhood associations. These included:

- The South Valley Coalition of Neighborhood Associations
- Atrisco Viejo Neighborhood Association
- Vecinos del Bosque Neighborhood Association
- Greater Albuquerque Active Transportation Committee
- Greater Albuquerque Recreational Trails Committee

KEY INSIGHTS

Many people have multi-generational roots in this area and have close ties to the land and water systems

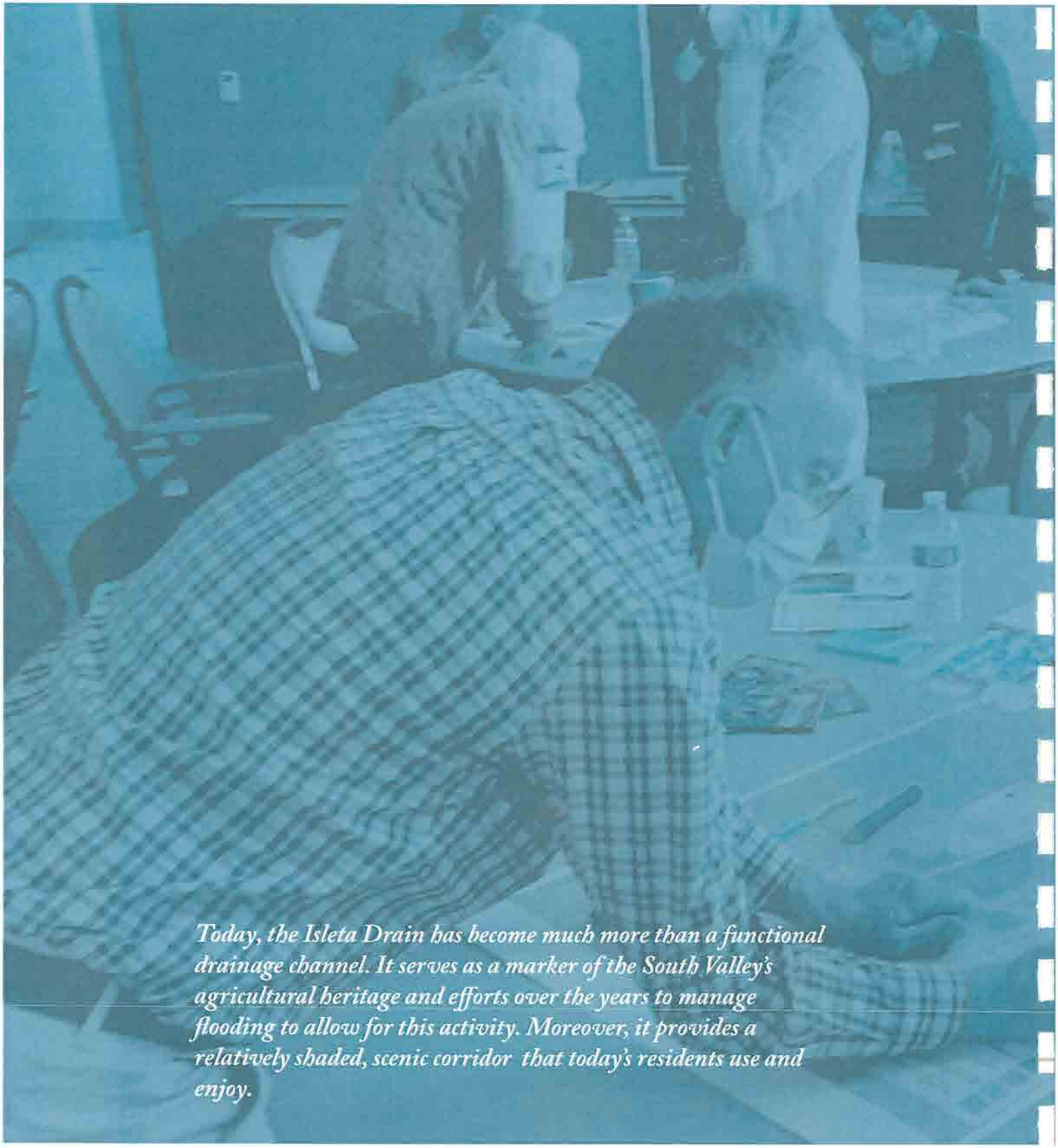
Separating and creating clear communication/wayfinding for separated user areas (walkers, bikers, horseback riders) is key to avoiding multi-user conflict and safety issues

Access, crossings and connections to both sides of the drain are important; How will the Isleta Drain + Trail provide recommendations for east-west connections to parallel trails?

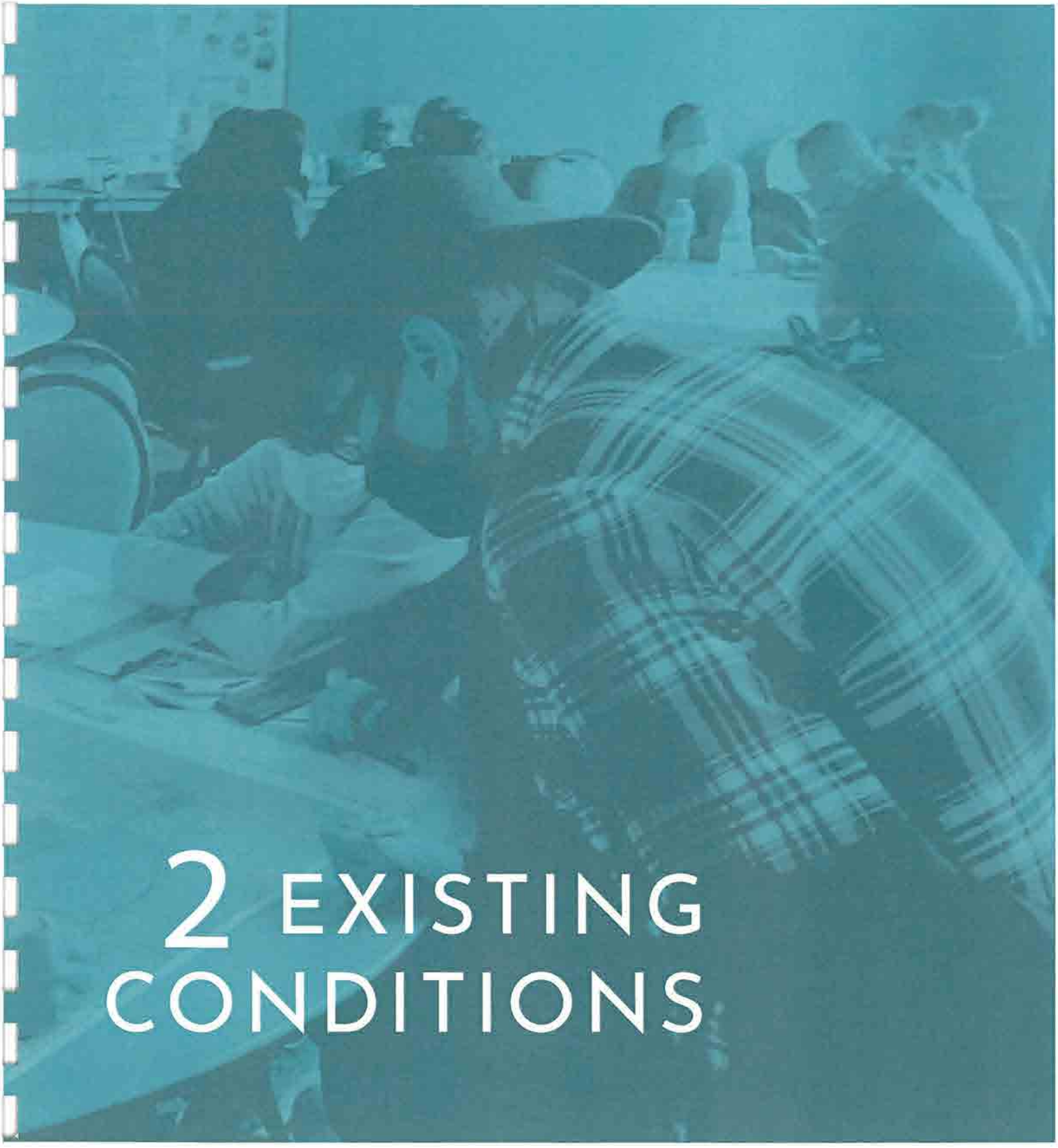
Designation of roles and responsibilities (between AMAFCA, MRGCD, Bernalillo County and resident groups) for implementation and maintenance of drain and trail improvements is necessary

Safety (and perception of safety) and a feeling of belonging are key themes that have been raised by neighbors. This relates to lighting along the drain, proper fencing and gates to manage different user access, crossings of roads and intersecting drains, laterals and acequias, understanding the growing population of unhoused community members and the marginality of spaces that are offered to them, loose dogs who are either feral or can break the barriers around individual properties

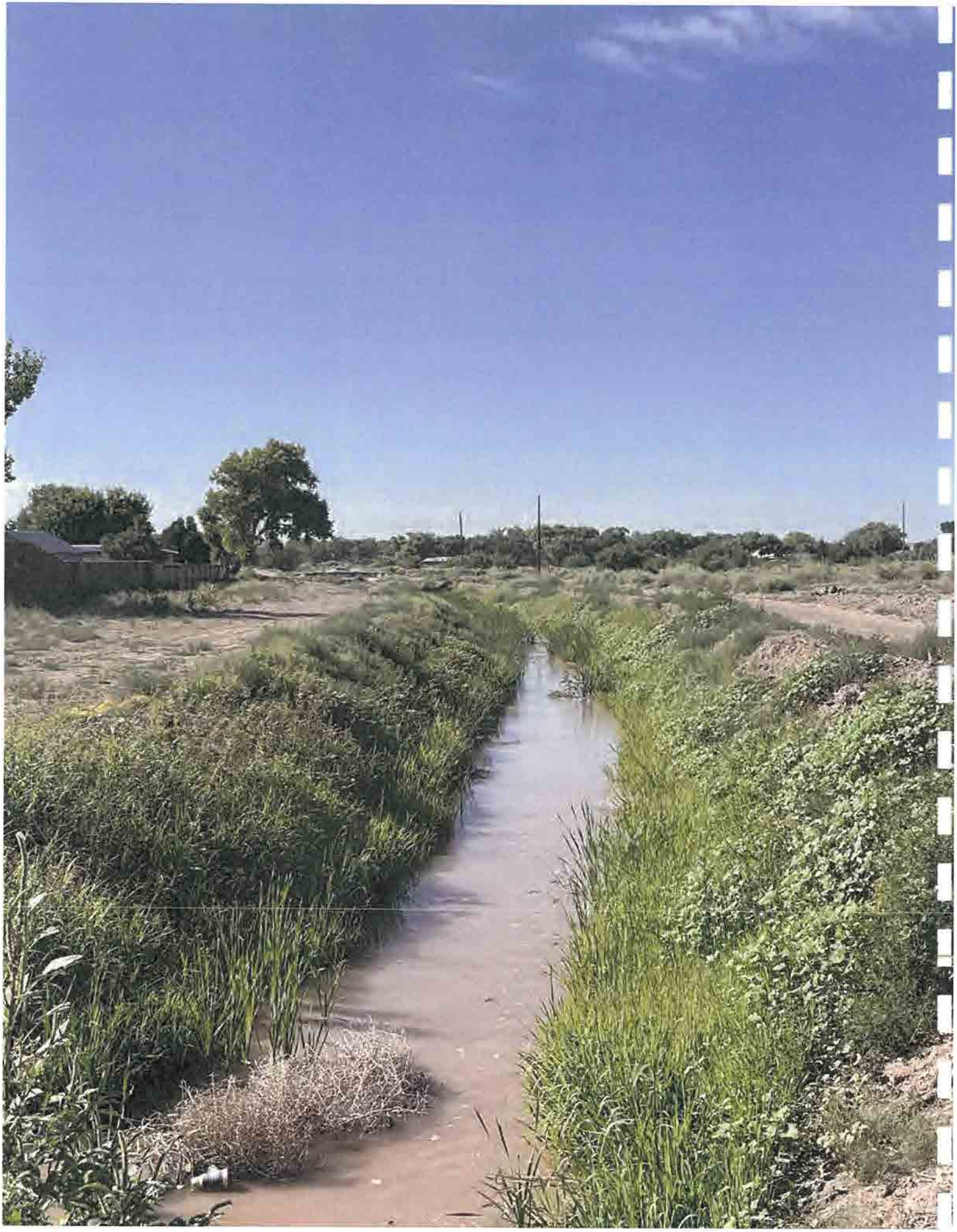
Make sure community members have a clear understanding of project constraints throughout the engagement process



Today, the Isleta Drain has become much more than a functional drainage channel. It serves as a marker of the South Valley's agricultural heritage and efforts over the years to manage flooding to allow for this activity. Moreover, it provides a relatively shaded, scenic corridor that today's residents use and enjoy.



2 EXISTING CONDITIONS



ISLETA DRAIN & THE SOUTH VALLEY

COMMUNITY PROFILE

The Isleta Drain cuts through the heart of the South Valley, encompassing southwestern portions of Albuquerque to the north and extending into unincorporated Bernalillo County as it travels south. The South Valley is well-known for its rich agricultural heritage which has been supported by a network of acequias, including the Atrisco, Arenal, Armijo, Los Padillas, and Pajarito.

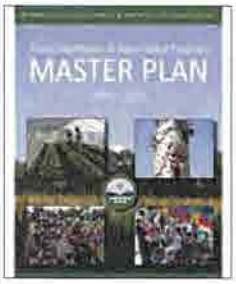
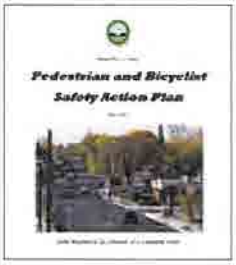
Also known as the Valle de Atrisco, the area owes its name to the Atrisco Land Grant of 1692. The land grant was created to encourage settlement of the area. Many of those original families' descendants remain in the community today.

While neighborhoods and corridors to the north have grown and taken on more of an urban identity and density, those areas to the south maintain the quietness and appeal of rural living.

The team's goal in this existing conditions section is to document the elements that comprise current conditions along the Isleta Drain in order to better understand needs, constraints and opportunities for improvement that would make this a functional asset for South Valley residents.

The following section reviews many of the planning documents that helped to guide and inform initial research.

EXISTING PLANS AND REGULATIONS

PLAN	YEAR	OVERVIEW	INSIGHTS
Operations Maintenance Repair Replacement and Rehabilitation Manual (OMRRR) for the Southwest Valley Flood Reduction Project 	2014	The Operations, Maintenance, Repair, Replacement and Rehabilitation Manual for the Southwest Valley Flood Reduction Project Facilities is a living report created to clearly define the roles and responsibilities of public agencies – Bernalillo County Public Works Division, Albuquerque Metropolitan Arroyo Flood Control Authority, Middle Rio Grande Conservancy District and the Bureau of Reclamation – in operating, inspecting, maintaining, repairing, replacing and rehabilitating Southwest Valley Flood Reduction Project (SVFRP) Facilities.	The OMRRR Manual describes the purpose and ongoing maintenance needs of all SVFRP Facilities, including the Isleta Drain, as well as plans for future facility projects and improvements. It also provides valuable direction for current and future management of the Isleta Drain and any improvements that might impact it.
2040 Metropolitan Transportation Plan (MTP) Long Range Bikeway System Map 	2020	The Long Range Bikeway System shows both existing and future bikeways and paved trails. This map shows recommended types of bicycle facilities based on the safest and best option, however; the type of facility that ultimately gets implemented may vary based on local engineering assessments.	The Isleta Drain is identified in this plan as a location for a proposed paved trail in the future.
Parks, Recreation & Open Space Facilities Master Plan - Bernalillo County Parks and Recreation Department 	2015 – 2030	The Parks, Recreation, and Open Space Facilities Master Plan (PROS Plan) provides a framework for the future development of parks, recreation, and open space facilities in Bernalillo County. Recognizing the intersecting impacts of public services, this plan update broadens the mission of the Parks, Recreation, and Open Space department to include quality of life services such as community health, economic development, and cultural heritage.	The Isleta Drain Trail is a project which will contribute toward the realization of the County's expanded quality of life goals and mission.
Pedestrian and Bicycle Safety Action Plan 	2012	The Pedestrian and Bicycle Safety Action Plan is a ten-year facility master plan which identifies issues within current pedestrian and bicycle facilities and provides recommendations for policy changes and projects that begin to fill gaps and remedy issues.	The Bike Lanes, Trails, and Routes section of the plan proposes future multi-use trail opportunities along the Isleta Drain and other AMAFCA/ MRGCD facilities. A trail along the Isleta Drain would also fill a need for Prescription (Rx) Trails and Safe Routes to Schools programs. This plan also provides direction regarding complete streets and trails policy.

PLAN	YEAR	OVERVIEW	INSIGHTS
MRGCD Ditches with Trails (DWT) Feasibility Report 	2008	The Ditches with Trails Plan Feasibility Report was drafted in 2008 to develop a "community-supported stewardship plan for preserving and enhancing the valley's system of irrigation ditches and drainage canals as a continuous and interconnected system of waterways and trails." Though it is not an adopted plan of the MRGCD, it provided a vision for management and maintenance of ditch banks and a foundation for how to design future trails along MRGCD facilities.	The vision, priorities, and recommendations of the DWT report support the development of trails along ditches, including the Isleta Drain. This report also provides helpful details and guidance about considerations and actions future planners might take to address common issues related to ditch trails. The planning process revealed that the trust of community members is integral to plans, especially when proposed facilities are in close proximity to private residences.
Southwest Area Plan 	1988	This is a planning document which covers 115 square miles in the southwest quadrant of Bernalillo County. It established a framework for growth and development for the next twenty years. This plan provides recommendations for land use scenarios, environmental remediation, transportation, drainage, and public services based on estimated population growth over that time.	The Southwest Area Plan notes that there is a deep commitment within the community to conserve open space and park land to maintain the rural quality of life and prioritize recreational opportunities. The Isleta Drain is noted as Major Public Open Space feature which should be maintained and improved as part of a larger network of trail corridors in the community.
El Camino Real National Historic Trail Development Concept Plan 	2022	This conceptual plan provides actions, development projects and infrastructure improvements needed to create a multi-modal path that follows the historic El Camino Real as closely as possible. This plan covers approximately 22 miles of the trail, which originally extended from Mexico City to Ohkay Owingeh Pueblo.	The El Camino Real Plan recommends a path that runs roughly parallel to the Isleta Drain through the South Valley - the trail is identified a primarily east of the drain, along Sunset and Isleta s. – and provides several opportunities for connections to a future trail along the Isleta Drain.
Arenal Open Space Master Plan 	2022 - In progress	This Open Space Master Plan is for the approximately 34 acres of land north of Arenal, between the Isleta Drain and Arenal Acequia. The county bought the space in 2016 and 2018 with the intention of having green space to contribute to the community's agricultural legacy.	The Arenal Open Space will be an important adjacent site and destination for users of the future Isleta Drain + Trail. It could provide an additional spur trail with amenities to learn more about the importance of agriculture and the waterways that support it.
Alameda Drain & Trail Master Plan 	2016	This Plan provided a framework for improvements along the Alameda Drain between I-40 to the northern end of 2nd Street.	Several recommendations within this Plan, as well as lessons learned in implementation, were instrumental to the team's understanding of best practices for the Isleta Drain.
Southwest Valley Flood Reduction Project (SWVFRP)	2001	The SWVFRP and subsequent studies have shown that there are deficiencies in the capacity of the Isleta Interior Drain as development occurs and runoff reaches the Isleta Interior Drain.	All future designs for the Isleta Drain + Trail must be consistent with those studies and include the necessary analysis and SWMM updates to ensure that stormwater conveyance and flood protection will be maintained.

CHARACTER AREAS

Considering the nearly 13 miles that the Isleta Drain encompasses, the team determined that it would be helpful to look more closely at the distinct segments or character areas that it passes through to understand the unique assets and challenges, as well as the desires of neighbors closer to these segments. The five character areas shown in Figure 3, identified as the Atrisco, Arenal, Rio Bravo, Pajarito and Los Padillas, were determined based on the neighborhoods and major intersections that began to define them, as well as their physical and natural qualities.

Elements included in the following maps of these areas include: land use, community destinations, parks and open space, transit, as well as potential connections and opportunity areas. "Opportunity areas" the team has determined to be spaces that could benefit from additional enhancements or pedestrian amenities that could serve users and the broader community. They often correspond to road crossings or connections to nearby destinations near the drain,

Some of these sections of right-of-way along the Isleta Drain also serve as access roads to homes. These areas are of particular concern, as any potential future trail alignment will need to consider the space and needs of multiple users (both pedestrians and vehicles) to ensure the safety of all who use this corridor.

Finally, the character area maps on the following pages highlight stormwater outfalls along the drain, which provide insight into possible opportunities for green stormwater infrastructure improvements in the future,

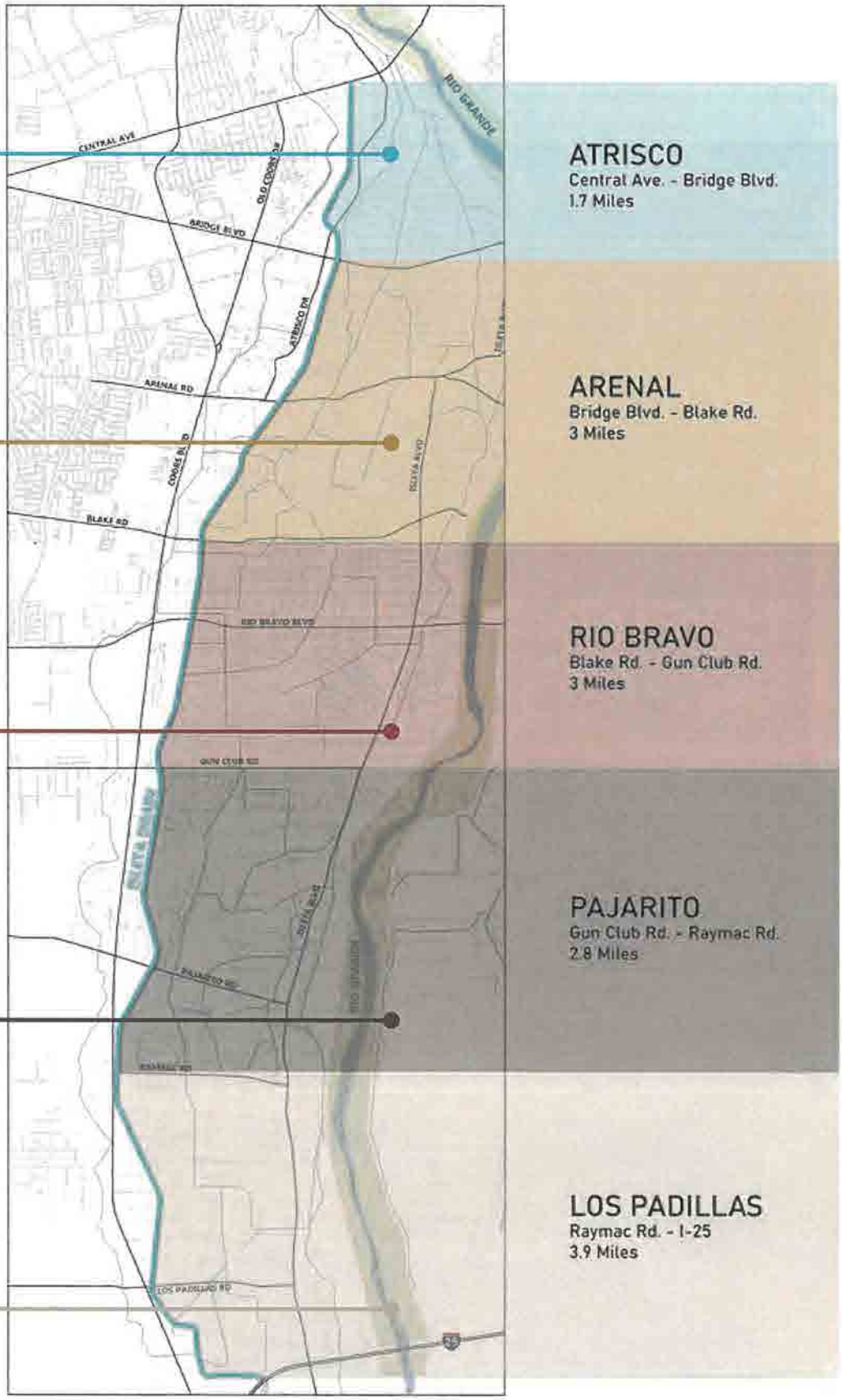


FIGURE 3. ISLETA DRAIN CHARACTER AREA MAP

ATRISCO

CENTRAL AVENUE – BRIDGE BOULEVARD (1.7 MILES)

This section of the Isleta Drain passes through relatively higher density residential areas, with close connections to neighborhood commercial corridors and several community amenities, including Atrisco Park and Little League, Valle Vista Elementary School, the future Crestview Bluff Open Space, and South Valley Senior Multi-Purpose Center. To the north, the Isleta Drain corridor connects to Central Avenue and the commercial amenities offered there. There are many road crossings through this character area, including major road crossings at Atrisco Road and Bridge Boulevard, as well as five minor road crossings. The drain runs close to the Atrisco Acequia through this section and connects with the Arenal-Atrisco feeder.

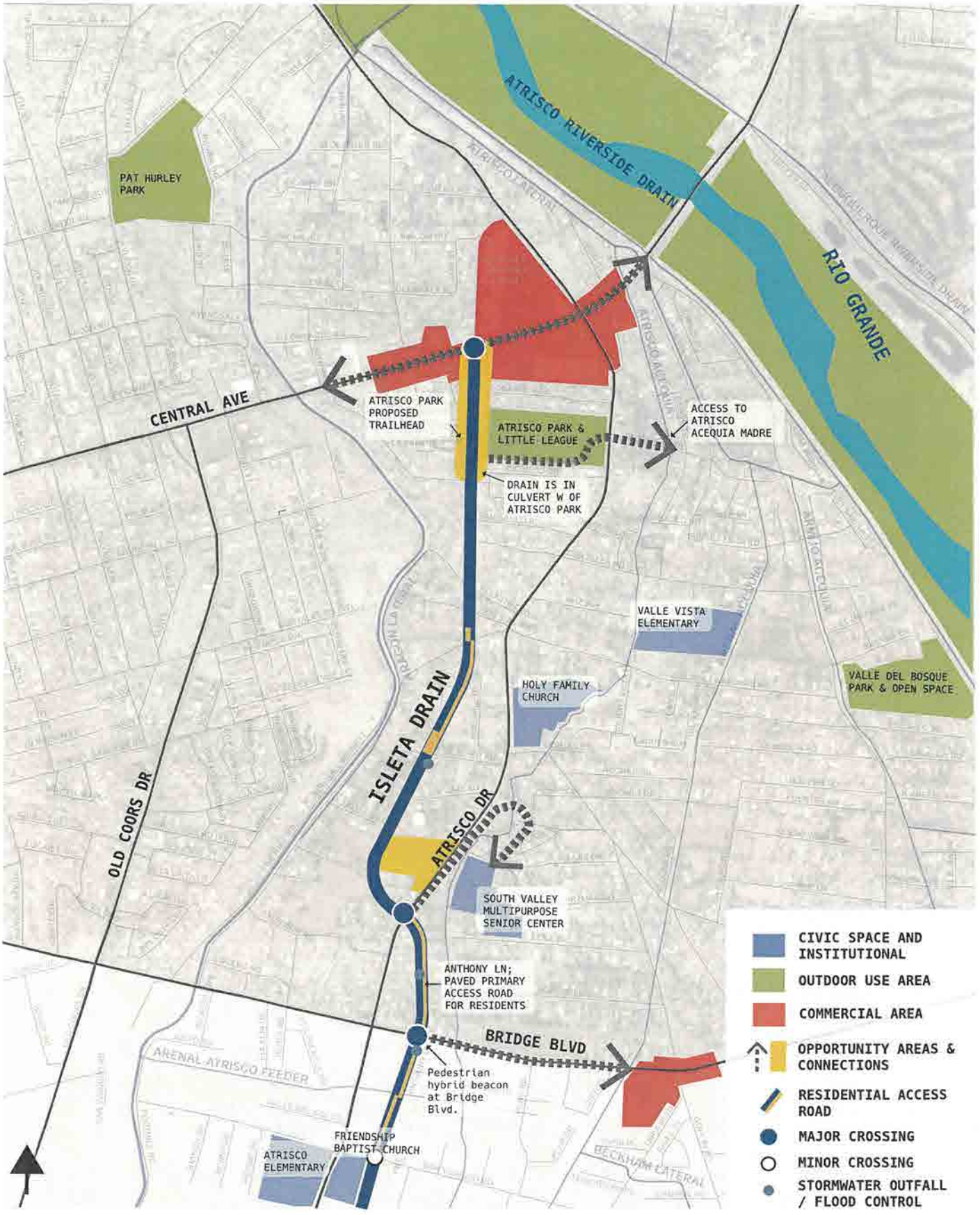


FIGURE 4. ATRISCO AREA MAP

ARENAL

BRIDGE BOULEVARD – BLAKE ROAD (3 MILES)

The Arenal character area comprises a section of the Isleta Drain that has frequent acequia and lateral connections, as well as several connections to community schools, including Rio Grande High School and Atrisco Elementary School. This section maintains adjacencies to higher density neighborhoods and is frequented by students, as well as neighbors generally. This sections also passes the west side of the proposed Arenal Open Space, just north of Rio Grande High School. A notable area near this section of the Isleta Drain is Raven Pond, connected to the drain via the Pajarito Lateral. This is also the first section of the drain that will require a bridge to allow future users to cross the Pajarito Lateral and continue along the Isleta Drain. The connection to Raven Pond is remarkably beautiful and has abundant mature trees and shaded areas, with the pond itself supporting habitat for birds and wildlife. Major crossings in the section include Arenal Road and Blake Road.

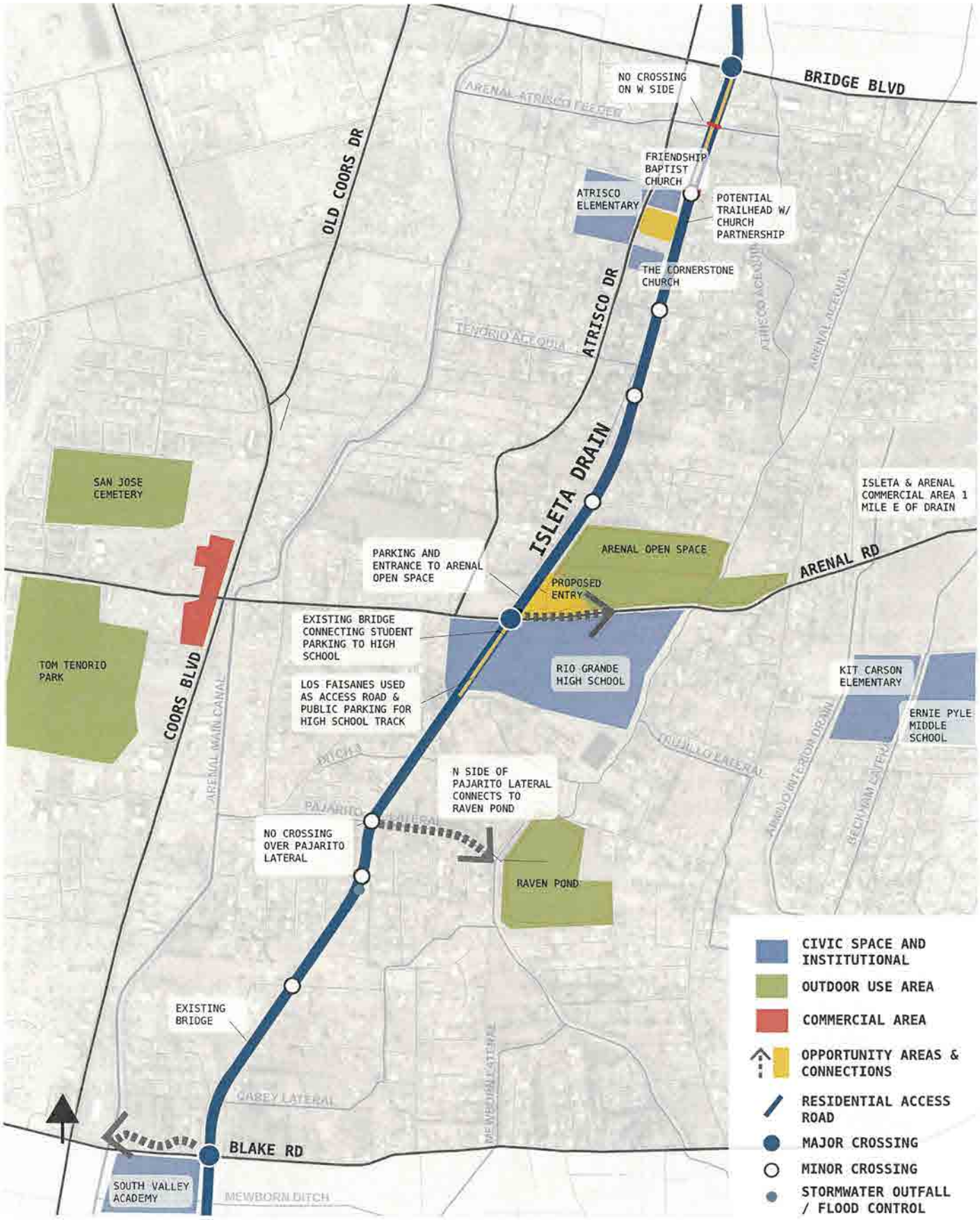


FIGURE 5. ARENAL AREA MAP

RIO BRAVO

BLAKE ROAD – GUN CLUB ROAD (2.1 MILES)

As the section closest to commercial amenities, as well as new development – including the Avanzando and Las Estancias developments - in the coming years, the Rio Bravo character area has the potential to be a highly trafficked section of the Isleta Drain in the future. Guidance for future development here has been outlined within the Anderson Farm Sector Development Plan and includes recommendations for future trail connections along the Isleta Drain to the Open Space reserve. This could offer area residents a safe walking/bicycling path to get to area grocery stores, entertainment and healthcare services centered along Coors Boulevard. This section includes adjacencies to South Valley Academy and Navajo Elementary School to the north. Additionally, the Hubbell Oxbow Farm City Open Space and Anderson Farm Open Space offer future recreational opportunities near the Isleta Drain. Rio Bravo Boulevard crosses the Isleta Drain through this section and poses a huge barrier in terms of traffic and safety of potential users. For east-west connections to the Isleta Drain, the traffic on Coors Boulevard also poses a challenge.

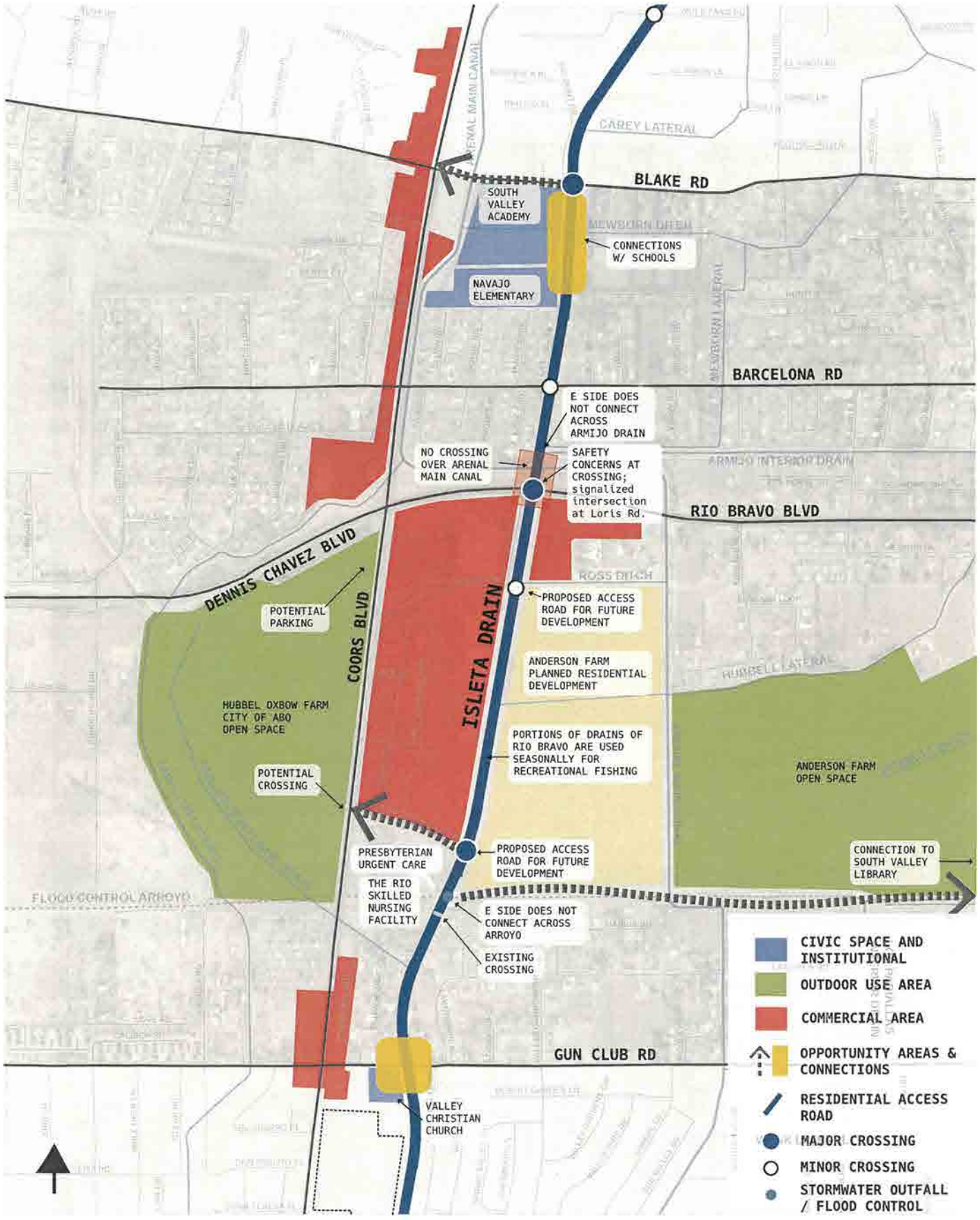


FIGURE 6. RIO BRAVO AREA MAP

PAJARITO

BLAKE ROAD – GUN CLUB ROAD (2.1 MILES)

South of Gun Club Road, the area surrounding the Isleta Drain becomes markedly more rural, with more agriculture adjacent to the Drain, as well as large tree stands. There are potential connections to nearby Pajarito Elementary School, as well as the historic Gutierrez-Hubbell House. Raymac Park and Pajarito Open Space offer nearby recreational amenities that could be connected to the Isleta Drain corridor. There is also more open space and greater distances between road crossings, with Pajarito Road and Raymac Road as the major crossings. Generally, there are more users on horseback or cross-country runners.

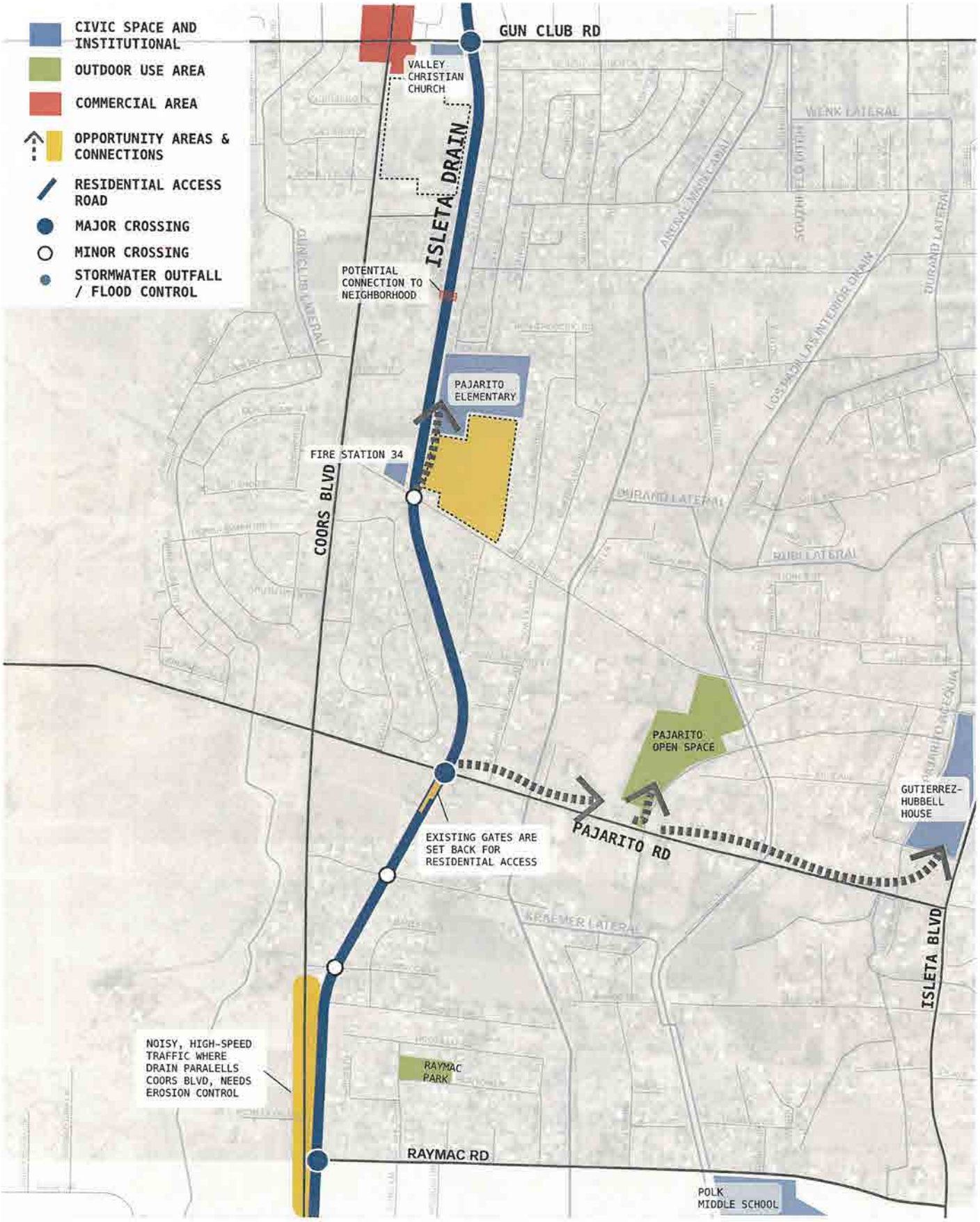


FIGURE 7. PAJARITO AREA MAP

LOS PADILLAS

RAYMAC ROAD – MALPAIS ROAD (3.9 MILES)

This section of the Isleta Drain is the most rural and quiet of all the character areas. The right-of-way along the drain tends to be tighter and there are more large shade trees sheltering potential users. Residential lots adjacent to the drain tend to be larger and more are used for agriculture. This section of the Isleta Drain offers connections to Polk Middle School, Los Padillas Elementary School and Los Padillas Community Center. West of Coors Boulevard, there is also a potential connection to Dennison Park and the Rodeo Grounds.

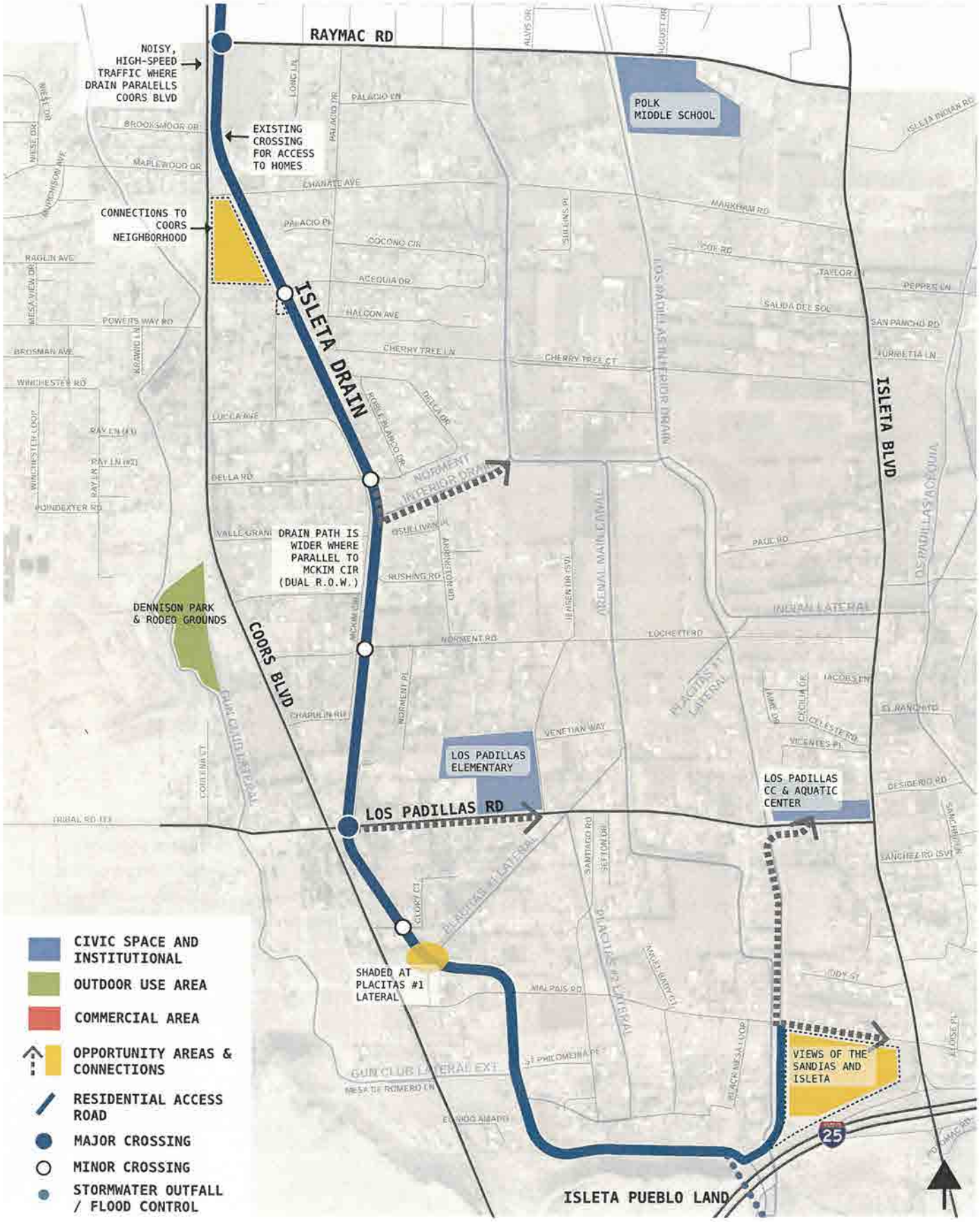


FIGURE 8. LOS PADILLAS AREA MAP

PHYSICAL & ENVIRONMENTAL CONDITIONS

Land Use

The South Valley comprises one of the most varied landscapes in the Middle Rio Grande Valley. The Isleta Drain meanders through sections that range from urban center – focused to the north, near Central Avenue – to rural agricultural land to the south. The Isleta Drain plays an important role in managing drainage, water tables and stormwater throughout this area, allowing for residential development and farming to continue.

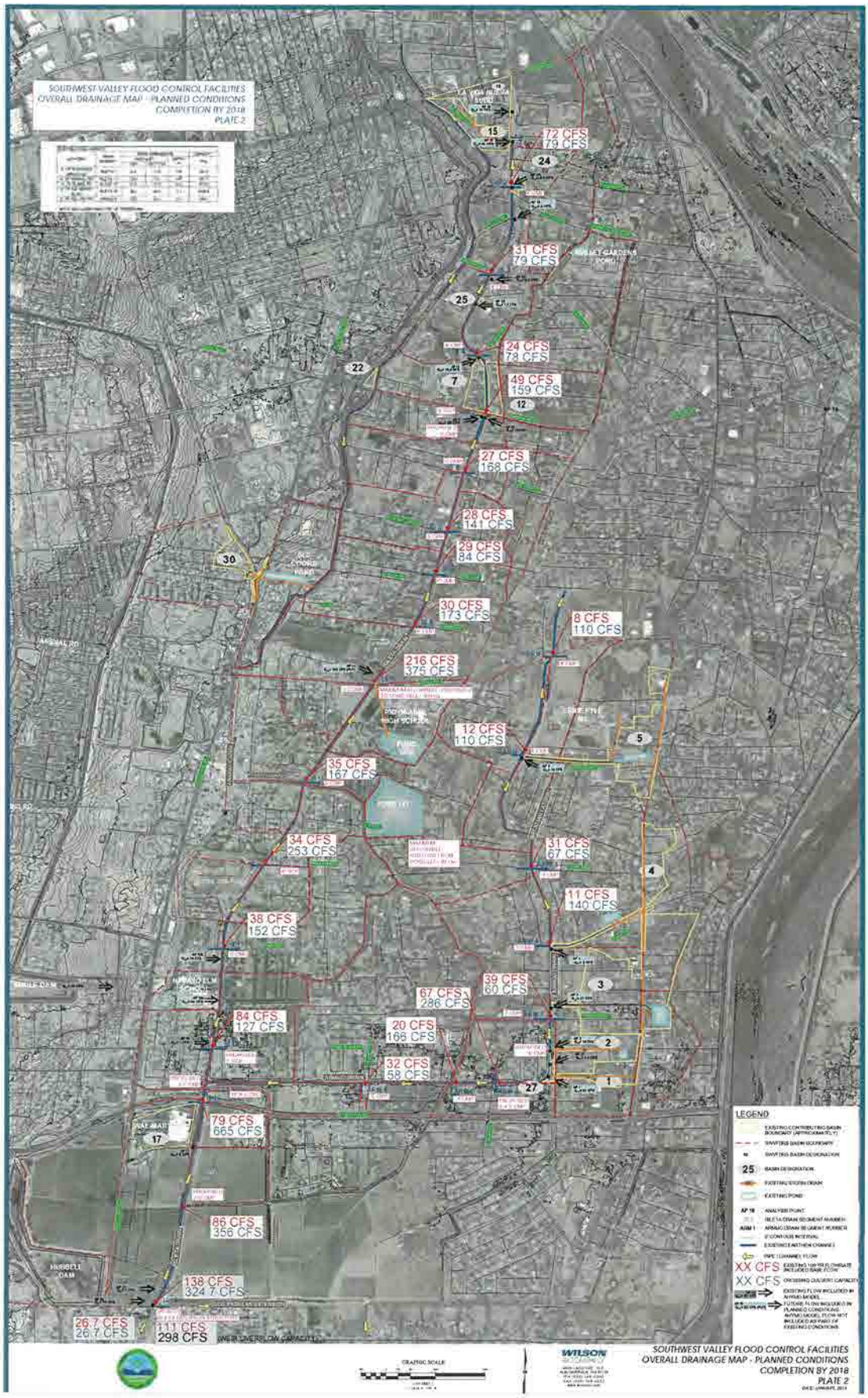
Overall, the primary land use in the area is residential, with commercial uses concentrated along the major corridors: Central Avenue, Coors Boulevard, Isleta Boulevard, Bridge Boulevard, and Rio Bravo Boulevard. Agriculture takes place throughout the South Valley, but is most widespread in the far south, beyond Rio Bravo Boulevard. There are also several large open spaces along or near the Isleta Drain, including the Arenal Open Space, Anderson Farm Open Space, Hubbell Oxbow Farm Open Space and Pajarito Open Space.

Drainage and Flood Control

The Isleta Drain is located in the Rio Grande Floodplain. It provides critical stormwater conveyance and protection for a large portion of the southwest valley and was the focus of the Southwest Valley Flood Reduction Project (SWVFRP) initiated by the US Army Corps of Engineers in 2001. It is a drainage channel which is operated and maintained jointly between MRGCD, AMAFCA and Bernalillo County. Most of the drain is unlined, with the exception of some concreted sections near culverts. The drainage channel is maintained at 60 feet wide on each side from the centerline in most sections. Additionally, most of the right-of-way on either side of the drain is dirt or gravel and accessible to neighbors, cyclists, horseback riders, and some vehicular users who have primary access to their residences along the drain. There are several points where the drain crosses under roads and intersects with other water facilities, including laterals and acequias.

Bernalillo County Public Works Division authorized Wilson and Company, Inc., Engineers & Architects (Wilson & Company) to perform hydrologic and hydraulic analysis of the Isleta Drain, Armijo Drain and Los Padillas (Extension/Drain/Outfall) located in the southwest valley of Albuquerque, NM. The Drains are owned and maintained by Middle Rio Grande Conservancy District (MRGCD). The project study area extends from south of Central Avenue to the Los Padillas Extension outfall near Metzgar Road. This analysis above was performed in Segment 1, Segment 2 and a portion of Segment 3 of the Trail Study.

The Isleta Drain within the master plan area systems utilizes large channels as conveyance and storage elements. The channels are connected by culverts at roadway crossings within the basin. The culverts act as contraction points in the conveyance thus producing increased water surfaces in the channels and increased storage within the channels.


SOUTHWEST VALLEY FLOOD CONTROL FACILITIES
OVERALL DRAINAGE MAP - PLANNED CONDITIONS
COMPLETION BY 2018
PLATE 2
72 CFS
79 CFS
31 CFS
79 CFS
24 CFS
79 CFS
49 CFS
159 CFS
27 CFS
168 CFS
28 CFS
141 CFS
29 CFS
84 CFS
30 CFS
173 CFS
8 CFS
110 CFS
216 CFS
375 CFS
12 CFS
110 CFS
35 CFS
167 CFS
34 CFS
253 CFS
31 CFS
67 CFS
11 CFS
140 CFS
38 CFS
152 CFS
39 CFS
60 CFS
67 CFS
286 CFS
84 CFS
127 CFS
20 CFS
166 CFS
32 CFS
58 CFS
79 CFS
665 CFS
86 CFS
356 CFS
138 CFS
324.7 CFS
26.7 CFS
26.7 CFS
111 CFS
298 CFS
LEGEND
25 BASIN DESIGNATION
XX CFS
XX CFS
WILSON
SOUTHWEST VALLEY FLOOD CONTROL FACILITIES
OVERALL DRAINAGE MAP - PLANNED CONDITIONS
COMPLETION BY 2018
PLATE 2

Landscape

The Isleta Drain primarily flows behind residential housing and alongside agriculture and open spaces. In the section just south of Rio Bravo Boulevard, it follows the back edge of the major commercial center developing along Coors Boulevard. Beyond culverts and drain crossings, the drain is primarily natural and natural wildlife and vegetation abound in these sections of the drain. There are also sections of the Isleta Drain that support a health tree canopy, including cottonwood and willow, New Mexico olive, sand scrub, and desert grasses.

North end of Isleta Drain near Atrisco Park

Looking South at San Ignacio Road Crossing

Looking North at Pajarito Road Crossing

Isleta Drain near Norment Road

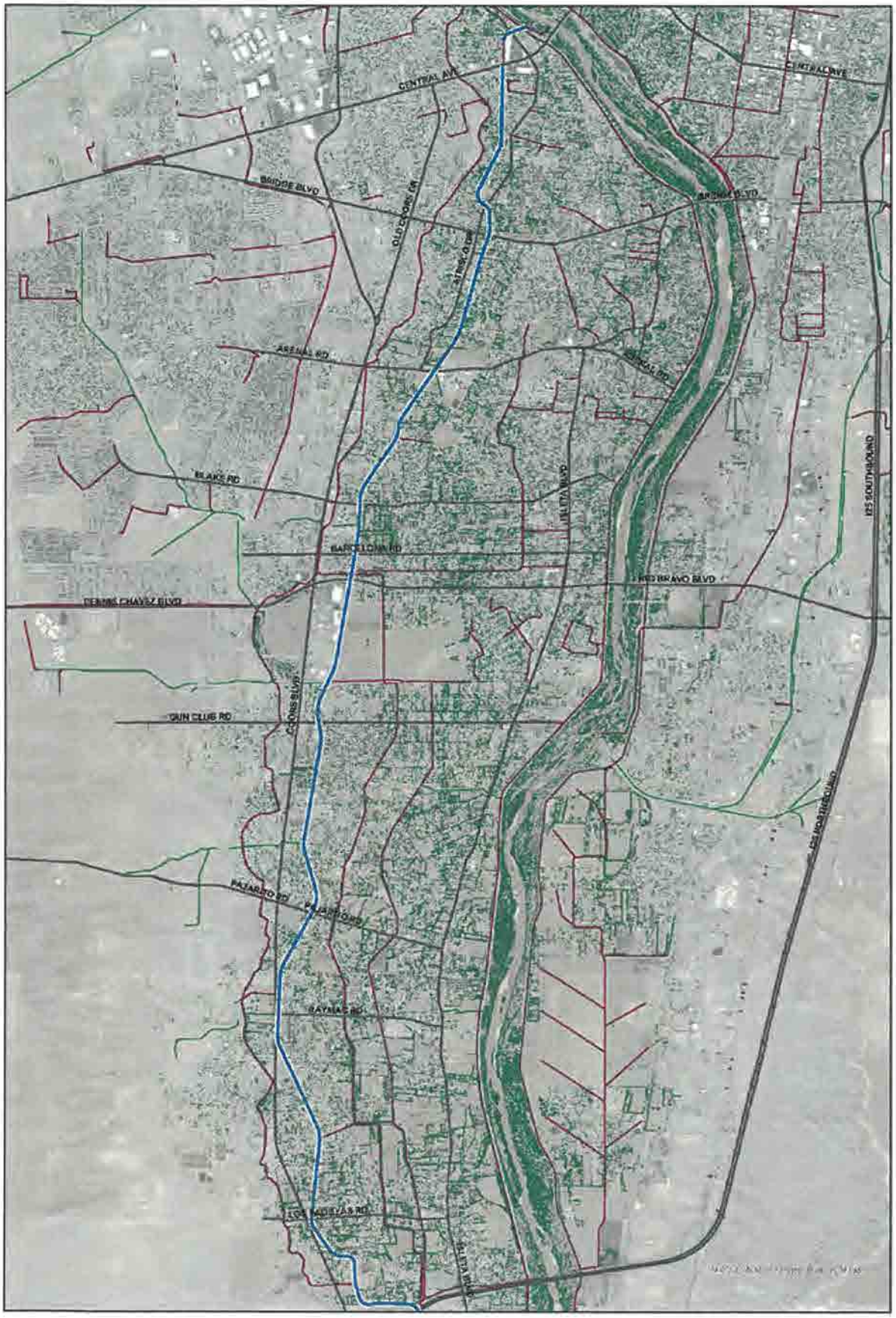


FIGURE 9. TREE CANOPY COVERAGE

Connectivity

The following section summarizes the road, trail and transit network that surrounds the Isleta Drain and offers opportunities for residents and visitors to access the Isleta Drain.

ROAD NETWORK

The Isleta Drain moves primarily in a north-south orientation. There are a few major roads that run parallel to the drain and several that cross the drain, though the majority are smaller, residential streets. Coors Boulevard and Isleta Boulevard are the major north-south corridors that carry vehicular traffic through the South Valley. Moving from north to south, the Isleta Drain crosses Central Avenue, Bridge Boulevard, Arenal Road, Blake Road, Rio Bravo Boulevard, Gun Club Road, Pajarito Road, Raymac Road, and, finally, Los Padillas Road. The drain curves back to the east just north of I-25.

TRAIL AND BICYCLE NETWORK

There are several proposed trails that come close to the proposed Isleta Drain + Trail. These include the El Camino Real Trail, which would connect near the northernmost terminus of the Isleta Drain at Central Avenue. The Camino Real Trail is proposed to follow Sunset Avenue south and connect to Isleta Boulevard.

The Atrisco Riverside Drain Trail is another proposed multi-use trail that follows the Atrisco Riverside Drain between Bridge Boulevard and Central Avenue.

Bernalillo County has implemented bikeways and complete street projects which intersect or follow near the Isleta Drain. The complete streets projects follow the El Camino Real National Historic Trail, along Sunset Avenue and Isleta Boulevard, and extend east-west along Bridge Boulevard, Blake Road, and Barcelona Road. Bikeways exist along Bridge Boulevard, Goff Boulevard, and Isleta Boulevard.

MRMPO Long Range Bikeway System also provides recommendations for several nearby bikeways and trails:

- Arenal Road bike lanes
- Blake Road bike lanes (under design/ construction)
- Barcelona Road bike lanes (under design/ construction)
- Rio Bravo Boulevard planned multi-use trail
- Las Estancias Road existing trail
- Lake View Road planned bike route
- Metzgar Road planned bike route
- Gun Club Road planned bike lanes
- Los Padillas Drain planned multi-use trail
- Don Felipe Road planned bike lanes
- Pajarito Road planned bike lanes
- Raymac Road planned bike lanes
- Los Padillas Road bike route
- Malpais Road bike route
- Arenal Canal parallel planned trail
- Amole Trail extension through Hubbell Oxbow planned multi-use trail
- Coors Boulevard (NM 45) existing and planned bike lanes and multi-use trail

The Prescription (Rx) Trails program identifies walking and wheelchair rolling routes that are both safe and accessible to patients and families to promote healthy lifestyles. There are several Rx Trails in the South Valley including at the Valle Del Bosque Park, Westside Community Center, Sanchez Farm Open Space, Rio Bravo Open Space, Durand Open Space, Pajarito Open Space, and the Gutierrez-Hubbell Open Space. These trails tend to be shorter routes – anywhere from .25 miles to 1.5 miles – and offer potential spur trails for those accessing the Isleta Drain + Trail.

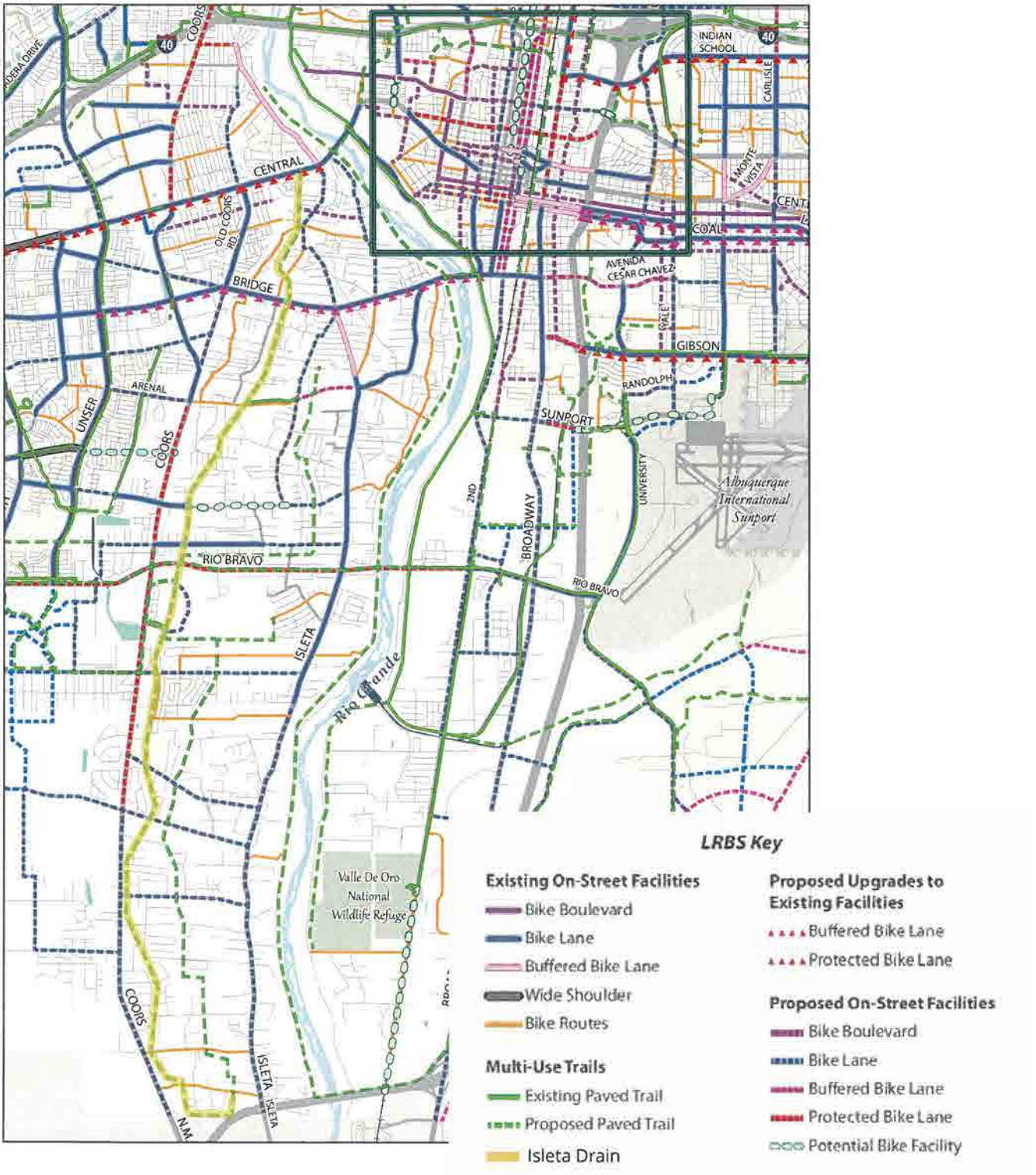


FIGURE 10. LONG RANGE BIKEWAY SYSTEM (LRBS) PLAN – 2021

PUBLIC TRANSIT

The ABQ Ride bus service has several routes that run though the South Valley. Several routes service Central Avenue and could provide connections to the north part of the drain, including the Albuquerque Rapid Transit (ART) line, which has a stop at Atrisco Boulevard. Route 51 follows Atrisco Boulevard, and route 54 has stops near the Isleta Drain along Bridge Boulevard. Route 155 follows Coors Boulevard and could provide close connections at several points along the drain, notably near Rio Bravo Boulevard, Route 222 follows Rio Bravo Boulevard, crossing the drain. Finally, route 53 runs the furthest south (along Isleta Boulevard) of all the ABQ Ride bus routes and provides a close connection (less than .5 miles) to the end of the Isleta Drain, near Malpais Road.

FIGURE 11. PUBLIC TRANSIT - NORTH

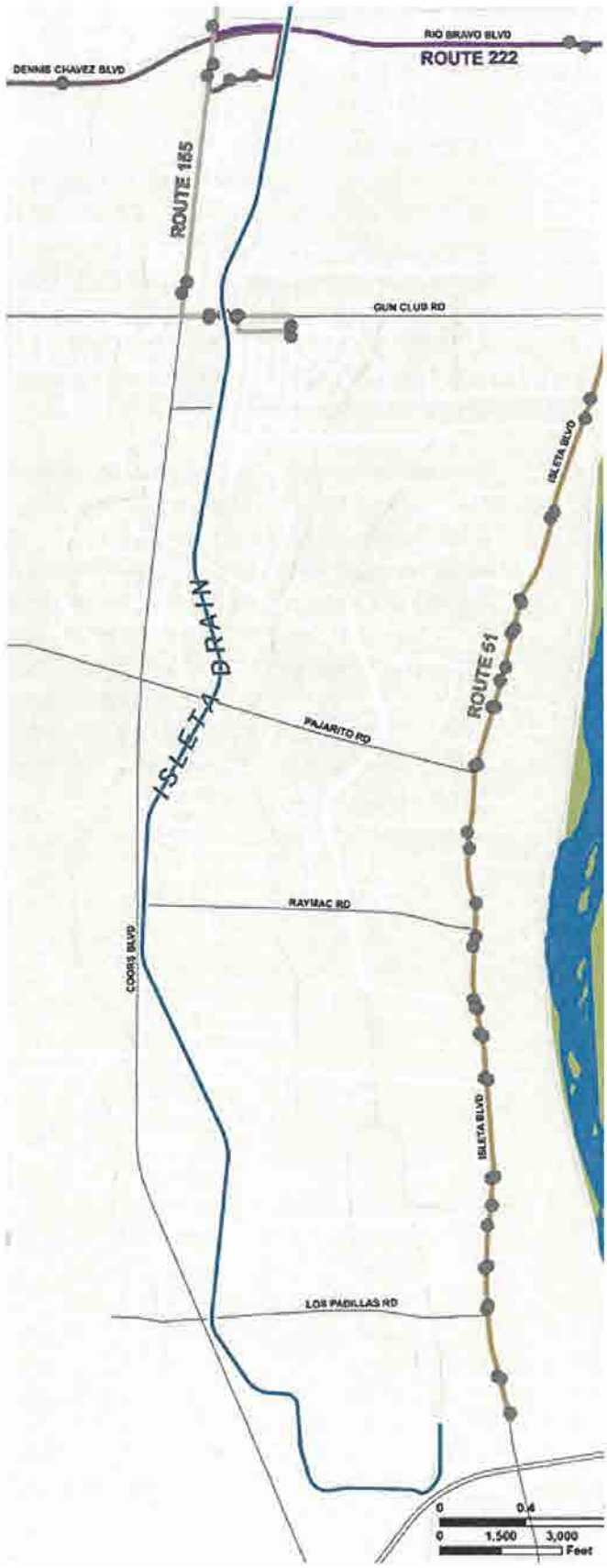


FIGURE 12. PUBLIC TRANSIT - SOUTH

Ownership and Operations

As a water channel that serves to provide drainage in the South Valley, the Isleta Drain requires regular maintenance to continue this function. This maintenance involves vehicles and heavy machinery whose needs must be considered alongside any other potential use along the drain. In addition to maintenance vehicles, the right-of-way along the drain is also used to access several private residences.

MRGCD is primarily responsible for Isleta Drain operations and maintenance, though, as outlined in the Operations Maintenance Repair Replacement and Rehabilitation Manual (OMRRR) for Southwest Valley Flood Reduction Project Facilities, these responsibilities will be shifted to AMAFCA and Bernalillo County Public Works Division per the schedule outlined for segment improvement.

These agencies are responsible for annual inspections of the channels, inlets/outlets, storm sewers, culverts, crossing structures, control gates, ponds, and rip rap. Annual inspections are normally performed in the spring prior to irrigation season. These inspections are key to identifying any maintenance issues that need to be addressed. In addition to these formal annual inspections, semi-annual inspections are a more informal way of identifying any maintenance needs along the drain. Often, these align with post operation inspections that occur after floodwater conditions have subsided. In particular, these are important to understand potential erosion points, debris build-up, and any plugging of inlets/outlets or crossing structures.

ACCESS AND USE

MRGCD owns or has easement interest along the entire Isleta Drain corridor. Easements are nonpossessory property interests that allow the easement holder to use land that they do not own, in this case, for the purpose of properly maintaining the drain. There are maps in the appendix that show the extents of the MRGCD right of way and easements.

There are a few areas where private residences must access the land adjacent to the drain to reach their homes. As will be discussed in the Preferred Alignment chapter, these sections are avoided insofar as possible in the recommended alignment to help maintain safety and separation between vehicles and pedestrians/cyclists. Gates and other appropriate barriers are also discussed in the Safety Recommendations section to explore ways to manage and mitigate traffic that should not be moving through these areas.

OPPORTUNITIES AND CONSTRAINTS

After assessing the existing conditions around the Isleta Drain, the planning team summarized findings as either opportunities or constraints that would inform future design decisions.

Connectivity

The Isleta Drain already functions as a corridor that provides the opportunity to connect South Valley residents with places they frequent, including schools, religious institutions, commercial centers and parks and open spaces. It intersects with many existing roads, trails and sidewalks that create a full network of movement potential. A goal of this plan is to provide a clear and safe alternative, particularly for pedestrians and bicyclists, to reach community nodes without needing to utilize roads that are intended for vehicular traffic.

Constraints: Several major intersections constrain safe movement along the Isleta Drain. Rio Bravo Boulevard is one of the busiest traffic corridors in the area and, though there is a traffic light near the drain, this would need to be improved to allow for safe travel by users of the Isleta Drain corridor. Additionally, Coors Boulevard is a major road that serves as a barrier for residents to the west who might want to access the drain. Particularly, south of Rio Bravo Boulevard, users who might connect to the Isleta Drain from the Hubbell Oxbow Farm Open Space lack a safe crossing.

Opportunities: As roads throughout the South Valley are redesigned and updated, planners should work with these teams to ensure that improvements take into consideration those linkages that would provide safe facilities and linkages for pedestrians and bicyclists. Additionally, increasing the number of access points along the drain will assist both neighbors and visitors in safely entering or exiting the trail in a convenient way. On a related note, ABQ Ride transit stops near the drain should be considered and improved as access points, with appropriate signage both for the overall drain map and with indicators for nearby community destinations.

FIGURE 13. RIO BRAVO BOULEVARD

FIGURE 14. NO CROSSING OVER ARENAL MAIN CANAL

Crossings & Accessibility

Similar to the consideration above, crossings and the issue of accessibility will greatly impact the ability of potential users to access and enjoy the Isleta Drain corridor. Intersections and crossings can be a barrier for the trail, but they also provide points of connectivity. If designed thoughtfully, they can offer safe points of entry, wayfinding opportunities, and respites for pause and enjoyment.

Constraints: Major road crossings include Bridge Boulevard, Arenal Road, Blake Road, Rio Bravo Boulevard, Gun Club Road, Pajarito Road, Raymac Road, and Los Padillas Road. These crossings impede north-south bicycle and pedestrian traffic. In some cases, such as south of Arenal Road, a residential access road shares the right of way along the east side of the Isleta Drain. Wherever possible, it is preferable to avoid locating a trail where vehicular use might impact or impede trail use.

Opportunities: The places where the drain intersects with roads also provide opportunities to focus trail amenities and create small community gathering spaces. If designed correctly, these intersections can provide space for users to safely access both trail corridor and roads, whether moving by foot, wheel or horse. There are several design elements that should be considered to help both road and trail users see and understand how they should move through these intersecting spaces, while considering the needs and safety of others. These include raised crossings and speed tables, striped crosswalks, accessible curb ramps, signalized intersections, and/or refuge islands in the roads. Each of these will be explored in later sections and recommendations will be provided for which option is most appropriate for the intersection.

FIGURE 15. NEW PEDESTRIAN CROSSING AT BRIDGE

Amenities

Trail amenities include any element or facility that would improve the experience of users along the Isleta Drain. These could include parking, site furnishings and seating, restrooms, shaded structures, community gathering spaces and gardens, public art, lighting or exercise stations. The goal of trail amenities are to provide valuable assets along the corridor that can be sufficiently maintained by managing organizations and community stewards.

Constraints: The proposed Isleta Drain corridor is over 13 miles in length. Any additions of amenities or improvements will need to be prioritized and strategically placed in order to be conscientious of associated costs. Additionally, the width of the right-of-way along the drain will determine what is possible in terms of amenity placement. Amenity placement should also consider the needs of maintenance vehicles who need to access the drain. Finally, any improvements that would attract families and young children should be evaluated in terms of safety, proximity to the channel, and water quality.

Opportunities: While the Isleta Drain does not have many amenities at the moment, there are several areas where the potential amenities listed above would be welcomed. Particularly, those open spaces adjacent to the drain (with a focus on those that are already owned by the County, MRGCD, and AMAFCA) offer potential community nodes that could comprise a combination of resting, parking or gathering potential, if enhanced by a few key elements.

Landscape & Vegetation

Ditch and drain corridors have historically served as an extension of the bosque, supporting a wide variety of plant and wildlife species that have followed the water that irrigates the farm fields across the former flood plain of the Rio Grande.

Constraints: Cottonwoods are the predominant native tree that has historically populated the bosque, and subsequently the ditch and drain corridors. However, since their introduction in the 1930s, Siberian elms have taken hold and spread freely within these corridors, as well as on adjacent private lands. Their extreme adaptability enables them to out-compete native cottonwoods, resulting in a shift toward the non-native elms, along with other invasives such as Russian olive and salt cedar. As such, it is important to preserve as many natives as possible during any implementation that may occur along the Drain.

Opportunities: Native trees and understory plants can be reintroduced as part of the plant palette that is used to landscape any improvements that might be made. Such landscaping can help to stabilize soil, improve water quality, and provide much-needed shade refuges along the Isleta Drain corridor. However, these improvements should be strategic in their placement, species and water requirements as water and irrigation infrastructure will be limited. Placement should also consider the operations and maintenance activities of MRGCD. Finally, landscape design should consider availability and connection to City and County water infrastructure and opportunities for passive water harvesting or other sustainable methods as discussed in Chapter 3, Landscape and Environment.

Right of Way

The majority of the right-of-way along the Isleta Drain provides ample room for a potential trail on either side of the drain. This right-of-way is generally close to 120 feet, but this varies along the drain, as some areas are restricted by trees, vehicular access points or adjacent properties.

However, there are a few notable areas where there is a designated vehicular access road that connects private residences to main roads. These areas should be avoided on the preferred alignment when possible. Additionally, given the different needs of potential users, including walkers, joggers, bicyclists, and equestrian users, separated paths and alternative alignments should be considered so as to avoid potential conflict between users.

There are also areas where the navigable land adjacent to the drain is narrower than ideal – some points 20 feet or less:

- Between the Pajarito Lateral connection and north of Foothill Drive – west side
- Between Mule Farm Place and Blake Road – east side
- Between Blake Road and Barcelona Road – east side
- Between Don Felipe and Pajarito Roads – west side
- Between Glory Court and Malpais Road – west side

Constraints: Maintenance vehicular access (minimum of 15 feet) must be maintained on both sides of the Isleta Drain when possible. Through some sections of the corridor, the right-of-way is tighter, which may force the preferred alignment into a shared space with maintenance vehicles, which includes heavy equipment. In these segments, additional reinforcement for the trail should be considered to appropriately handle the shared use by vehicles. Additionally, the drain, like other water facilities, must be dredged to allow for optimized flow of water. The dredged material often must sit and dry out along the banks of the drain before it can be hauled away. Areas along the drain where encroachments are an issue should be addressed by partners as proactively as possible in order to mitigate issues in the future.

Opportunities: Many sections of the drain corridor have ample width to allow development of a trail while still leaving adequate width for a parallel maintenance road. Those facilities also provide opportunities for equestrian use on a separate, maintained, but soft-surfaced roadbed.

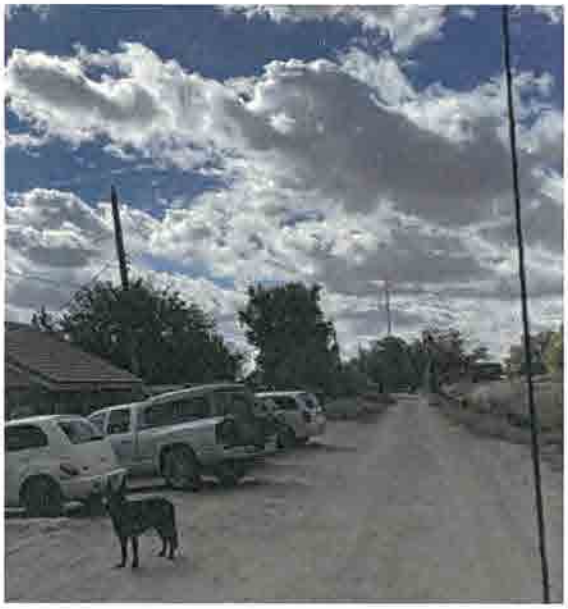


FIGURE 16. DRAIN BEING USED FOR PARKING IS AN ISSUE

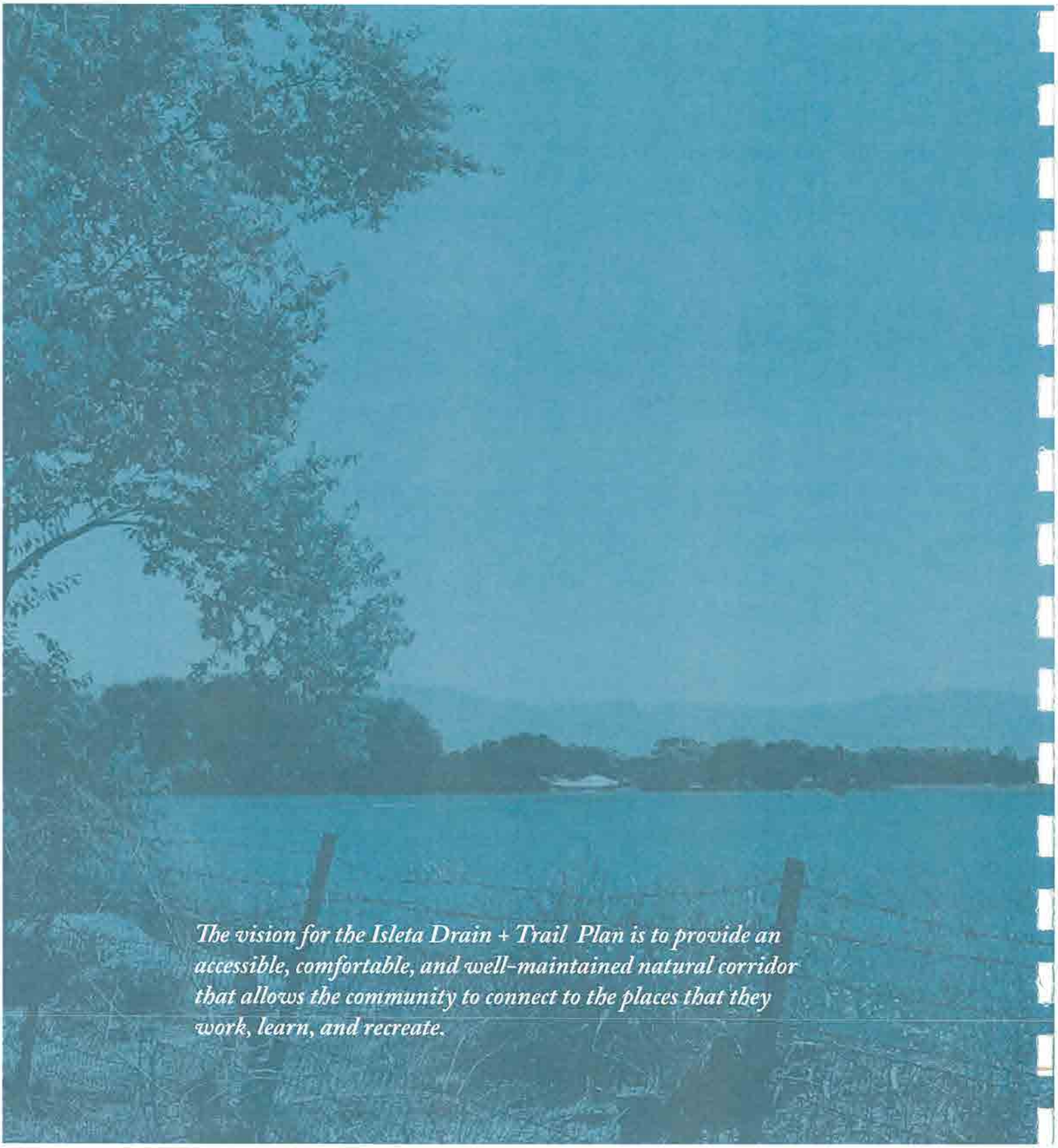
Water Quality

The Environmental Protection Agency (EPA) regulates storm water quality discharges from urbanized areas under the Clean Water Act Municipal Separate Storm Sewer System (MS4) program. Under this program, the Middle Rio Grande Watershed based permit was issued in December 2014, directing the improvement of programs and activities that enhance storm water quality through cooperative efforts between the City of Albuquerque, Bernalillo County, and 14 other co-permittees. Permit terms require permittees to develop and implement programs for the management and control of storm water pollutants that are known to occur in developed areas including particulates, solid waste (floatables), and biological pollutants.

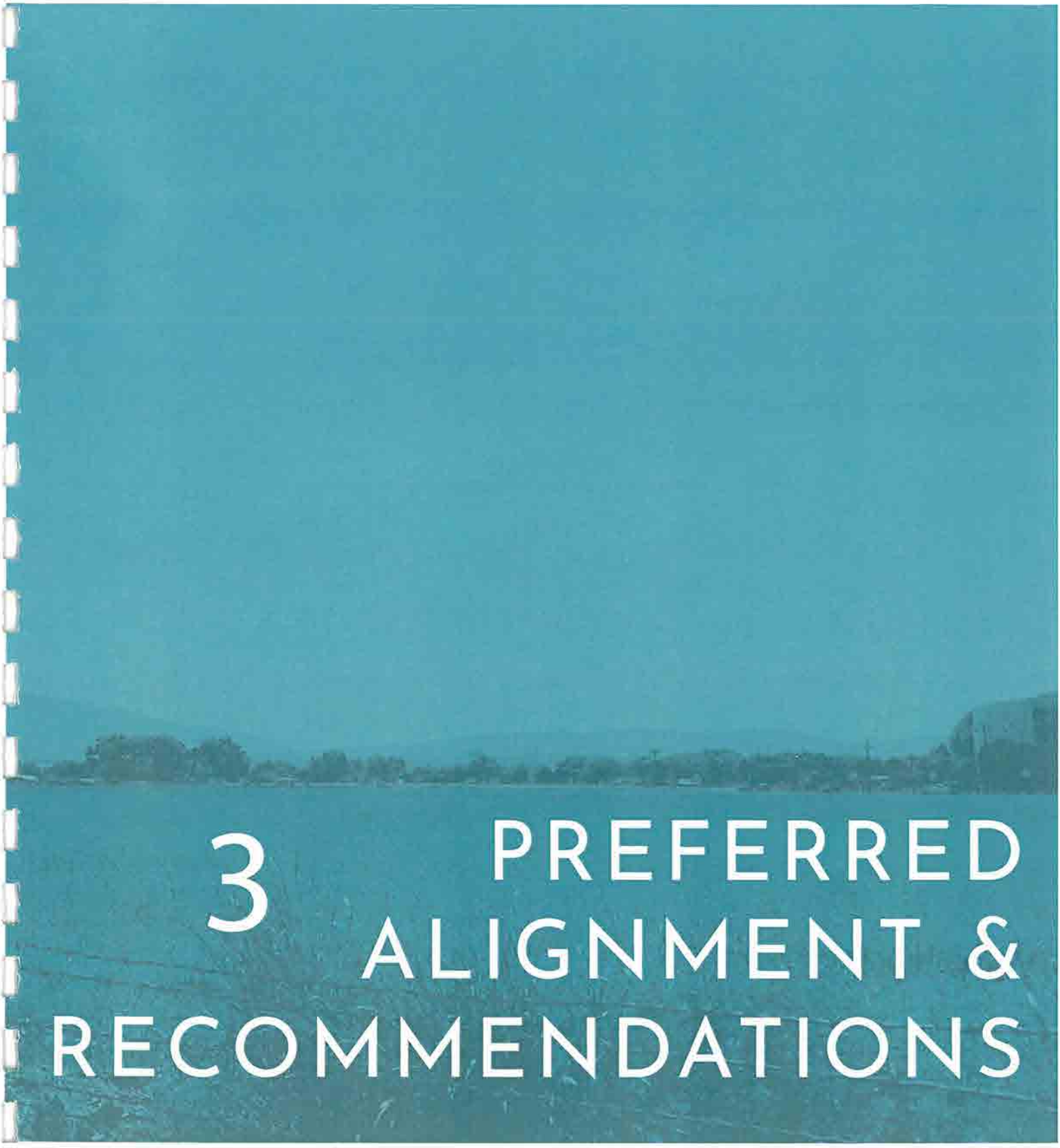
Constraints: A major provision of the permit requires that permittees address storm water quality impacts related to redevelopment activities. When and where possible, any developments and improvements along the Isleta Drain should try to mitigate the impacts of water quality within the drain from storm water discharges.

Opportunities: Development of any recreational facilities along the Drain would provide numerous opportunities for remediating stormwater runoff, through revegetation seeding, new landscape plantings, water harvesting, soil stabilization, and related dust reduction. Furthermore, trees and other landscaping along the channel would help reduce water temperature, further enhancing water quality.

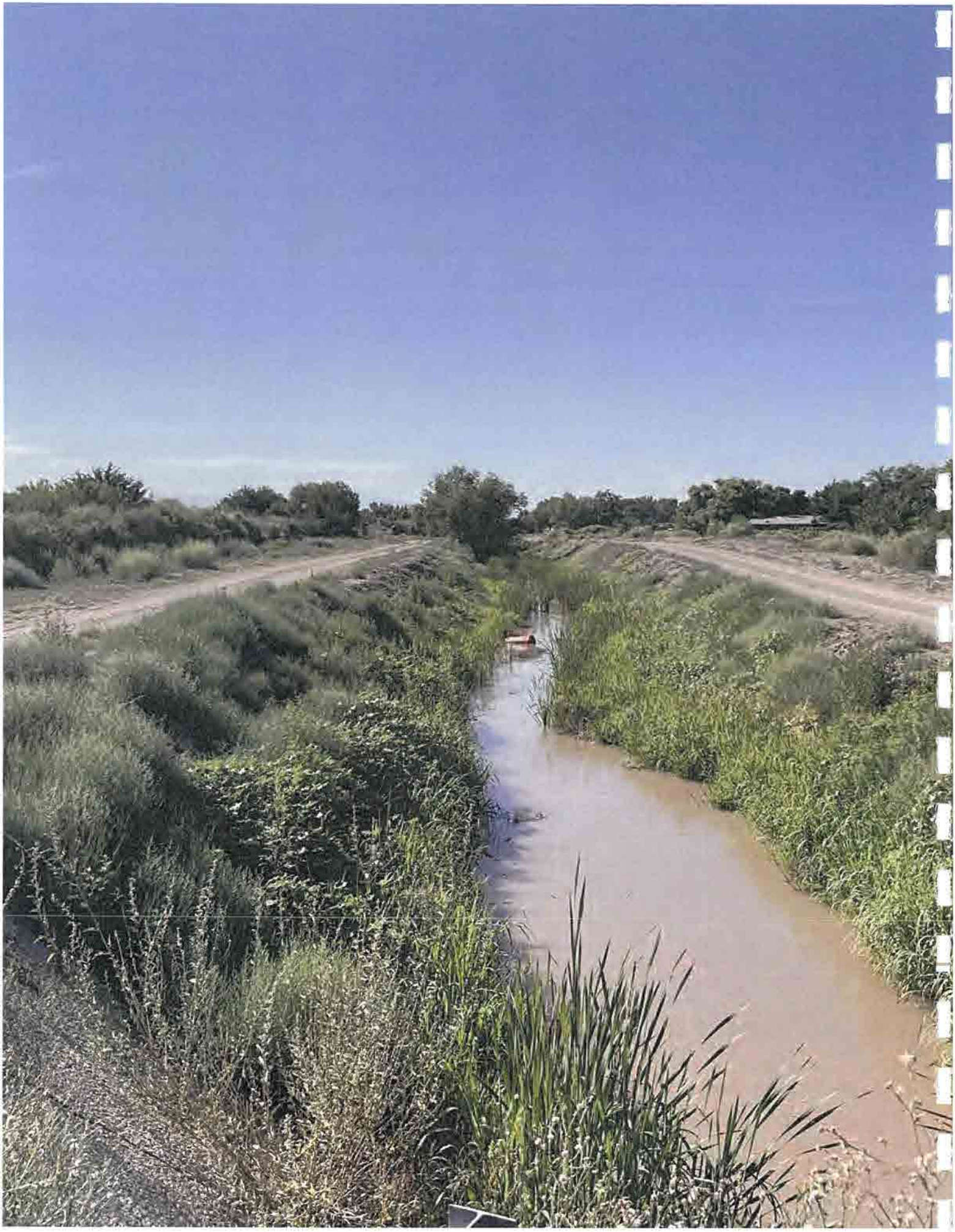
FIGURE 17. WATER FILTRATION AT ARENAL RD. CROSSING



The vision for the Isleta Drain + Trail Plan is to provide an accessible, comfortable, and well-maintained natural corridor that allows the community to connect to the places that they work, learn, and recreate.



3 PREFERRED ALIGNMENT & RECOMMENDATIONS



INTRODUCTION

The vision for the Isleta Drain + Trail Plan is to provide an accessible, comfortable, and well-maintained natural corridor that allows the community to connect to the places that they work, learn, and recreate. Residents have indicated that they appreciate the quiet setting and hope to maintain and improve habitat opportunities near the drain. This corridor should provide a safe transportation alternative to busy streets for walkers, recreators, bicyclists, mobility-limited and equestrians while also providing learning and recreation opportunities.

The following section describes the proposed preferred trail alignment, amenities and design concepts that will help to achieve that vision for the surrounding community.

PREFERRED TRAIL ALIGNMENT

The preferred trail alignment has been determined based on several considerations and criteria, including different user needs along dissimilar segments of the drain, right-of-way width and accessibility, connectivity to community destinations and residential access points, existing shade canopy and habitat or open space potential and overall continuity of the alignment to avoid unnecessary switching of drains sides. The following table provides a summary of the Isleta Drain's right-of-way widths on both sides, as this is a primary factor that influences where a possible trail could go, while accommodating enough space for maintenance activities. This analysis, in coordination with the above considerations have guided the preferred trail alignment.

			Approximate Corridor Width (feet)				
Segment	From	To	West Side	Drain	East Side	Total	Notes
Atrisco	Cypress Dr.	Foothill Rd.	30	40	35	105	
	Foothill Rd.	Hooper Rd.	24	48	22	94	
	Hooper Rd.	Atrisco Dr.	28	42	30	100	ROW narrows on the west side close to Atrisco; shared vehicular traffic to north
	Atrisco Dr.	Bridge Blvd.	32	45	34	111	Anthony Ln runs east side of Drain through this section
Arenal	Bridge Blvd.	Arenal-Atrisco Feeder	28	40	34	102	Anthony Ln runs east side of Drain through this section
	Arenal-Atrisco Feeder	San Ygnacio Rd.	26	42	25	93	The Feeder intersects the Drain on the west side
	San Ygnacio Rd.	Mares Rd.	32	30	30	92	Cars frequently park along east side of Drain north of Mares
	Mares Rd.	Arenal Rd.	20	34	26	80	Maintenance vehicles on east side; potential connection to Arenal Open Space
	Arenal Rd.	Pajarito Lateral	30	40	28	98	
	Pajarito Lateral	Foothills Dr.	28	32	26	86	The west side of the Drain is narrowed just south of the lateral crossing, then widens before the road
	Foothill Dr.	Blake Rd.	30	36	22	88	
Rio Bravo	Blake Rd.	Barcelona Rd.	22	40	24	86	East side of drain closest to Blake Rd. is very obscured by trees and overgrowth
	Barcelona Rd.	Rio Bravo Rd.	38	35	32	105	
	Rio Bravo Rd.	Las Estancias Dr.	28	40	40	108	Alignment anticipating future residential
	Las Estancias Dr.	Gun Club Rd.	20	38	24	82	West side of Drain intersects with the Los Padillas Extension
Pajarito Rd.	Gun Club Rd.	Don Felipe Rd.	24	40	30	94	Heavy vehicular use on east side of Drain south of Gun Club Rd.
	Don Felipe Rd.	Pajarito Rd.	24	34	26	84	Neighbors have vocalized desire to have main trail on west side
	Pajarito Rd.	Garner Rd.	22	36	34	92	Primary vehicular access point on east side of Drain
	Garner Rd.	Cottonwood Ln.	28	42	34	104	Trail could work on either side of the drain through this section
	Cottonwood Ln.	Raymac Rd.	22	38	26	86	Trail could work on either side of the drain through this section
Los Padillas	Raymac Rd.	Brooksmoor Dr.	20	30	28	78	
	Brooksmoor Dr.	Chanate Ave.	18	30	30	78	Land west of Drain in this section could be an opportunity area
	Chanate Ave.	Norment Rd.	22	35	22	79	
	Norment Rd.	Los Padillas Rd.	24	34	22	80	Lovely shaded section of the Drain
	Los Padillas Rd.	Malpais Rd.	16	38	18	72	Primary vehicular access on east side of Drain north of Malpais
	Malpais Rd.	Malpais Rd.	22	36	30	88	

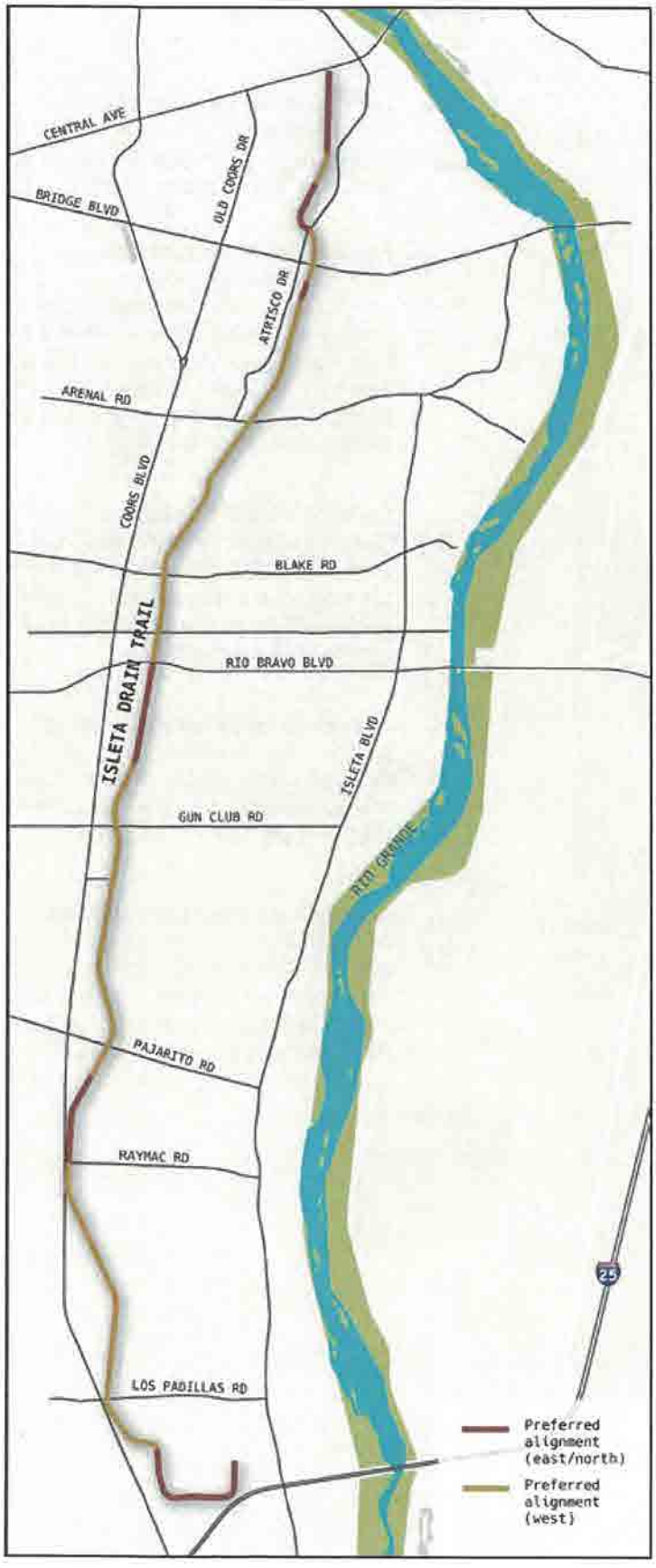


FIGURE 18. OVERALL PREFERRED ALIGNMENT MAP

The map in Figure 18 is a snapshot of the overall trail corridor illustrating the proposed alignment and highlighting which side of the drain would be preferred for trail development, based on existing conditions investigations.

Additional detail regarding the preferred alignment is provided on the Character Area Alignment Maps.

The colored cells in the table to the left show the initial preferred alignment, which is based primarily on the available right-of-way on either side of the drain, but also takes into account the physical conditions adjacent to the drain, shared-use areas and feedback received through the community engagement process.

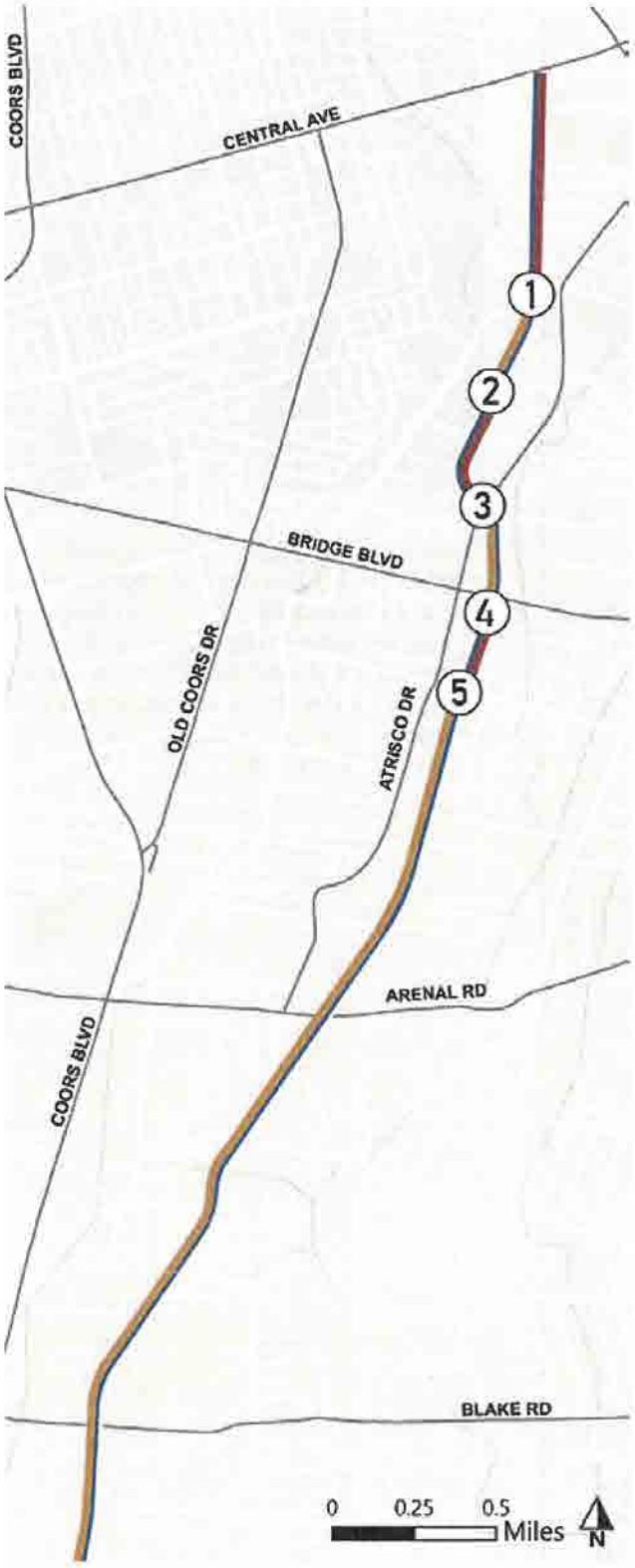


FIGURE 19. PREFERRED ALIGNMENT- NORTH

1 **Foothill Road Intersection**
Shifting alignment to the west was determined here due to vehicular access on the east side of the drain.

2 **Hooper Road Intersection**
The potential right-of-way narrows on the west side between Hooper Road and Atrisco Drive. Additionally, there are potential connections to nearby Holy Family Church and the South Valley Senior Multipurpose Center east of the drain.

3 **Atrisco Drive Intersection**
The trail alignment shifts back to the west south of Atrisco Drive, as there are several residences with primary access along Anthony Lane on the east side of the drain.

4 **Arenal-Atrisco Feeder Crossing**
Where the Arenal-Atrisco Feeder intersects the drain, the gate and access move back to the east side of the drain until San Ygnacio Road.

5 **San Ygnacio Road Intersection**
The alignment shifts back to the west at San Ygnacio Road to take advantage of ample right-of-way and potential connections to Atrisco Elementary and two churches.

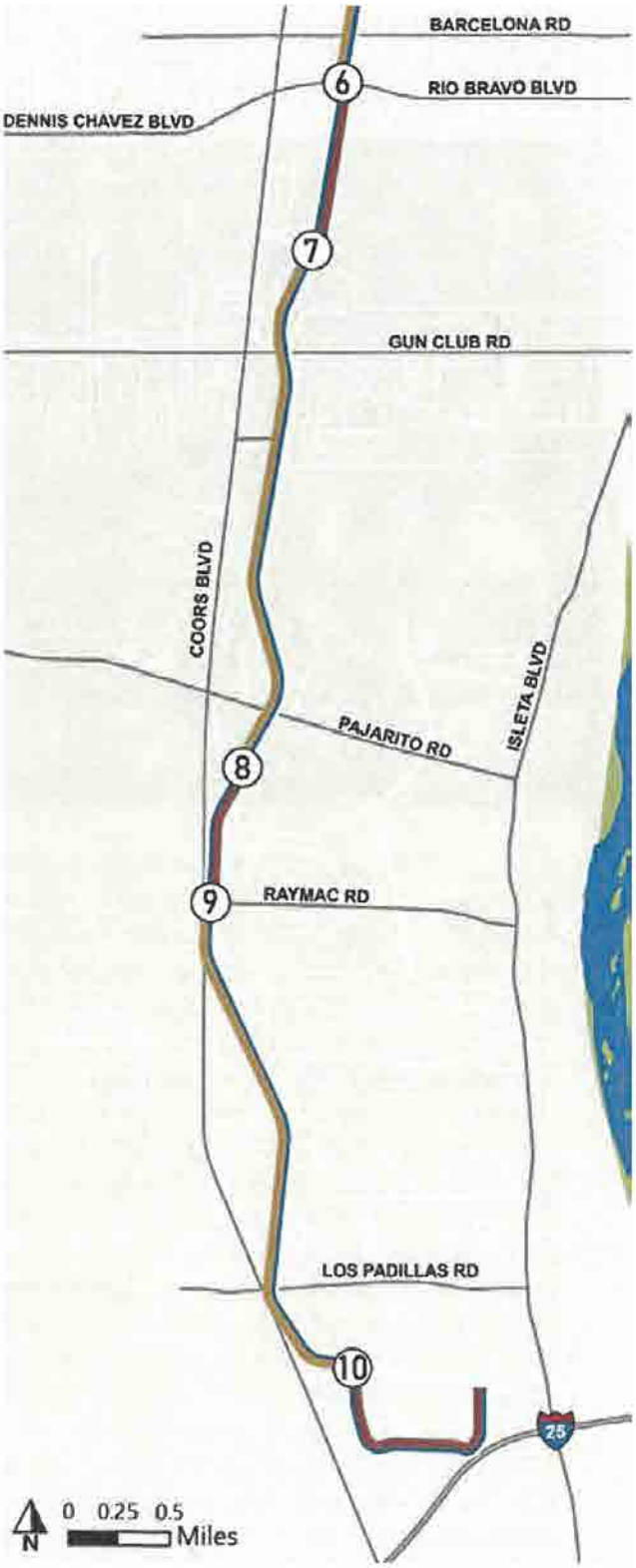


FIGURE 20. PREFERRED ALIGNMENT- SOUTH

6 Rio Bravo Boulevard Intersection
An existing signalized crossing at Loris Drive shifts the alignment back to the east, south of Rio Bravo Boulevard. This alignment was also chosen in anticipation of future residential development and access here.

7 Las Estancias Drive Intersection
The alignment moves back to the west at Las Estancias Drive, anticipating future connections to the Hubbell Oxbow Open Space. The Los Padillas Extension also creates a barrier on the east side of the drain.

8 Garner Road Intersection
There is slightly more right-of-way on the east side of the drain between Garner Road and Raymac Road. Also, this alignment provides better access for residential areas to the east.

9 Raymac Road Intersection
The alignment moves to the west at Raymac Road to avoid barriers along the east side of the drain. There are additional residential areas (Western Terrace) that could connect to the Isleta Drain from Chanate Avenue. There is also good shade from mature trees to the west through this section.

10 Malpais Road Intersection
Finally, it is recommended that the alignment shift back to the east/ north as it rounds the southern section of the Isleta Drain so as not to encroach on Tribal Lands.

TRAIL SURFACING

User Types

Any development within the Isleta Drain corridor should safely accommodate a range of user types. During the community engagement process, neighbors described the many ways that the Isleta Drain corridor is already used by the community. By far, walking was listed as the most common activity (nearly 50 percent of respondents listed this as the primary activity), followed by biking. An important priority for any future trail design is to consider whether and how to separate various uses to provide safe passage for everyone involved. Clear and simple signage should encourage the best uses of different trail sections so users understand and respect these guidelines.

In the case of the Isleta Drain corridor, trail users can generally be categorized into three types – on foot, equestrians, and non-motorized wheeled conveyances. "On foot" would include walkers and runners pursuing a variety of activities, including walking dogs or other pets, bird watching, etc. Wheeled trail users could include bicycles, strollers, scooters, rollerskates/blades, ski trainers, and other non-motorized forms of personal transportation.

In addition to the above categories of user groups, a major player within the corridor that must also be accommodated is maintenance activities. In order to meet the primary function of the corridor of carrying water, the channel must be maintained. That requires periodic access by vehicles ranging from pickup trucks to heavy equipment such as excavators and dump trucks. While both MRGCD and AMAFCA are amenable to sharing the corridor with recreational users, both have indicated a strong preference for keeping those uses separated, as maintenance and maintenance vehicle access must occur on both sides of the drain.

Given the wide range of uses and user groups, the potential for conflicts to arise is fairly great, particularly between those groups with the largest differential in size and/or speed. Maintenance vehicles comprise the proverbial elephant in the room, since they are hard to miss. Yet, despite the primacy of their mission to maintain the ditches, trail users often resent their presence. Second only to maintenance equipment, bicycles are seen as the next most prolific offender – at least by those who are not on bicycles. In almost all cases, the source of these conflicts is the greater speed differential between bicycles and pedestrian, or bicycles and horses. Trail etiquette signage and education are the primary tools that can be used to minimize those conflicts. For the safety of trail users and equipment operators, the MRGCD will work with Bernalillo County to notice trail users regarding scheduled maintenance and temporarily closed trail segments during maintenance activities.

Corridor Typologies

To accommodate the various anticipated trail uses, user types, and levels of mobility while respecting surrounding context, different trail types and combinations may be appropriate within different reaches of the Isleta Drain corridor. As evidenced by community feedback at the January 2022 Public Meeting/Workshop (see results of dot voting in the image below), there is a wide range of preferences for surface treatments, with nearly as many attendees favoring no improvements as those wanting a fully developed combined-surface trail. These preferences must be addressed, while also meeting the intentions to create a fully accessible trail within the County.

January 2022 Public Meeting Voting Results

The following are different trail typologies that are recommended along the Isleta Drain:

SHARED-USE PATH

Shared-use paths are by far the most common type of trail facility in urban and suburban settings. Shared-use paths provide a single surface that is shared by pedestrians and non-motorized wheeled vehicles, and in some cases can accommodate equestrians and other user groups. In order to serve the highest number of user groups, these paths are typically paved, although some trail management agencies prefer stabilized, unpaved, paths (see surfacing descriptions below). Shared-use paths provide the most economical solution for accommodating multiple user groups; however, a noted drawback is the likelihood of conflicts between user groups of different abilities, capabilities, and speeds.

SINGLE-USE SEPARATED PATHS

Far less common, but theoretically less likely to result in user conflicts, separated paths can be designated for different intended uses if adequate space is available. A minimalist example of single-use paths would include a wide paved surface with striped areas denoted for "wheels" (bicycles, scooters, etc.) and "feet" (walkers, runners), and a separated soft-surface path for horses and users who prefer an unpaved surface. More complex installations would further subdivide unpaved uses into smaller groups such as off-road runners, mountain bikes, and equestrians, with separate paths or even separate routes for each. Such single-use paths are by far the most land-intensive as they require minimum widths for each of the assigned uses. And while they are intended to avoid conflicts, if not adequately monitored and enforced, the same conflicts can occur from users who ignore the use distinctions.

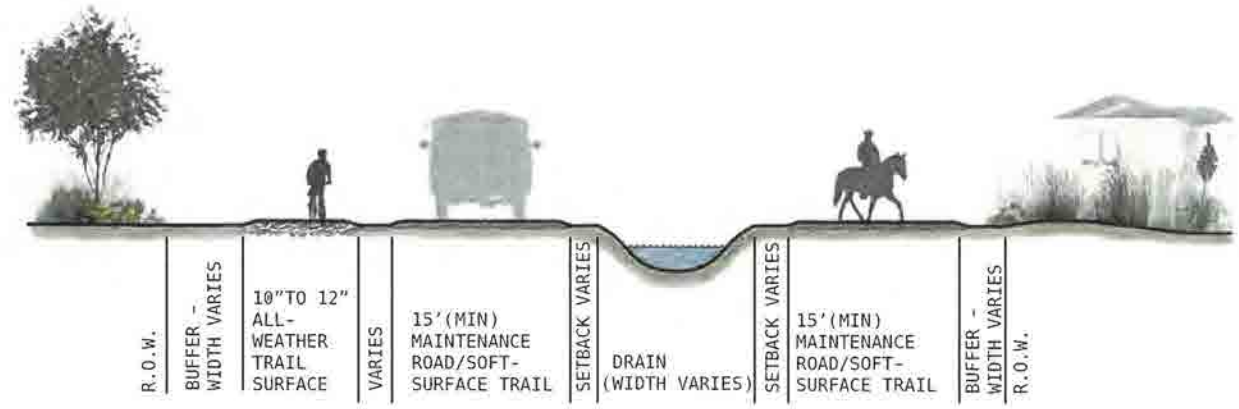
COMBINED MULTI-USE, MULTI-SURFACE PATHS

In a suburban/rural setting such as the Isleta Drain Corridor, the most likely compromise among these options is one that combines disparate uses on separate hard- and soft-surfaced paths. Much like the "minimalist" single-use option described above, this would include a stabilized all-weather path for both pedestrians and wheeled users (albeit without separate use demarcations), with a parallel unsurfaced path for equestrians, mountain bikes, and pedestrians who prefer a more natural walking surface. In most cases this unsurfaced path would also serve as the maintenance road for the drain. In a few areas where right-of-way is sufficient, it may be possible to have an unsurfaced maintenance road on both sides of the drain, while still providing a parallel all-weather trail surface on one side.

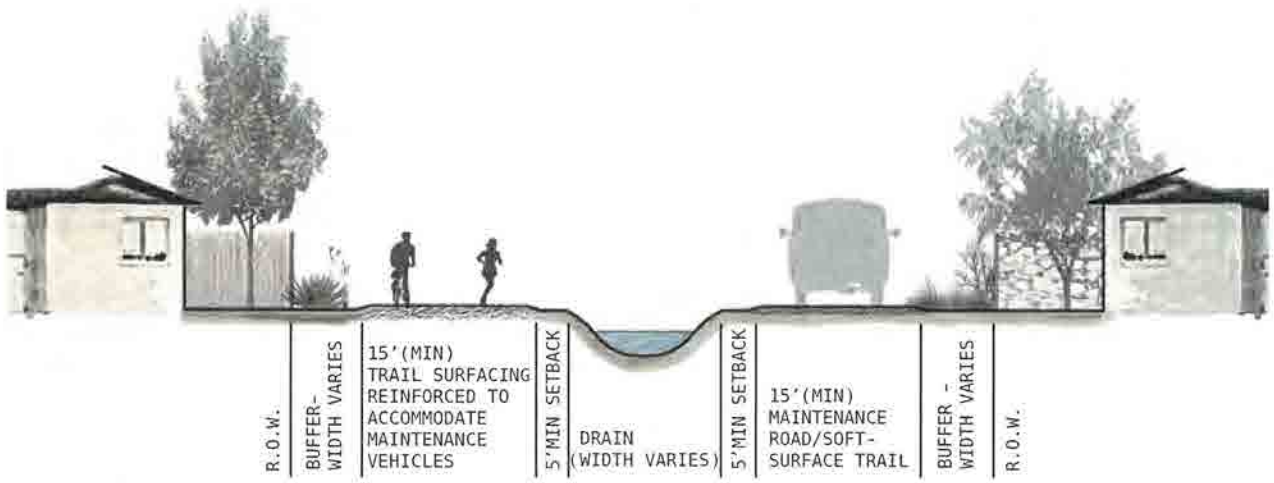
Trail treads should be sized to accommodate anticipated levels of use and surfaced with durable materials to maximize accessibility and reduce maintenance (see trail surfacing options).

Special consideration must be given to areas where the right-of-way is too narrow to sufficiently accommodate both trail uses and maintenance vehicles. In these cases, the trail and maintenance road may need to share the same space via reinforced surfacing, and care should be taken to locate any trail amenities outside the areas needed for maintenance vehicle movement.

Regardless of the trail configuration, clear and concise guidance should be provided regarding intended trail use should be posted at trailheads and regular intervals along the corridor. This will assist with educating the public about different intended trail uses and etiquette and improve overall user safety along the drain. This will be explored further in the wayfinding section of this chapter.



Typical Multi-use, Multi-surface Path Configuration



Multi-use, Multi-surface Path in Constrained Right-of-Way

Surfacing Alternatives

Several trail surfacing options were considered in order to meet the needs of the various user groups. Each has its own benefits, as described below. In order to be ADA compliant, the primary future trail will most likely be paved, with options for alternative surfacing on adjacent alignments.

NATURAL SURFACES

Natural surfacing, at its simplest, is merely the existing unimproved ground alongside the drain. By nature, it can vary from loose sand to silt to clay, and any combination of those soil types. This surfacing is well suited to equestrian trails and maintenance activities, but can be difficult for other users to navigate.

Natural Surface Ditch Bank

STABILIZED NATURAL SURFACING

In order to make natural surfaces more conducive to trail use, binders or stabilizers can be added to consolidate the natural soils, prevent displacement under loading, and help the surface shed water to remain passable when weather deteriorates. Available from several manufacturers in a wide range of proprietary formulations, these materials can be blended into in-situ soils or imported natural materials such as decomposed granite or fine crushed gravels and compacted to provide a surface that will last for several seasons before needing to be replenished. These surfaces blend well into the natural environment of the drain corridor, and are generally considered ADA accessible as long as they are maintained and refreshed when deterioration begins to be evident. They also will deteriorate more quickly under heavy loads such as horse hooves and maintenance vehicle traffic.

Stabilized Natural Surfaces

COMPACTED CRUSHER FINES

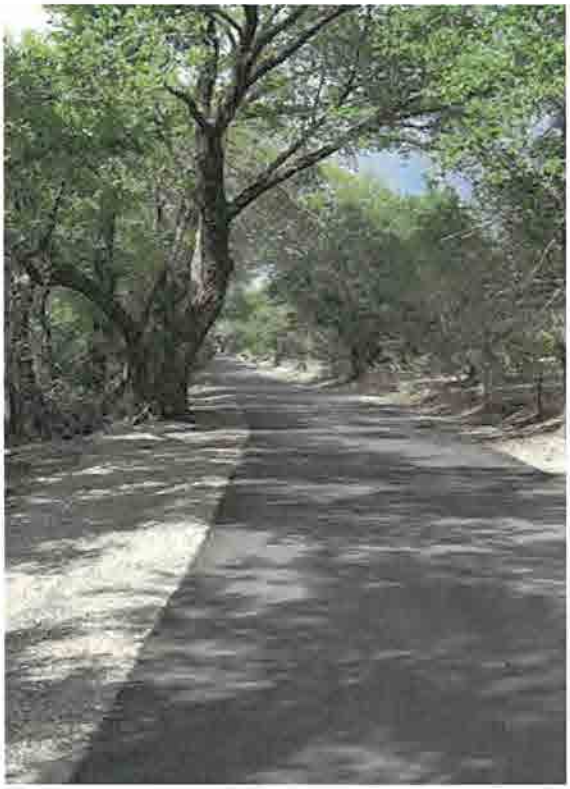
Crusher fines (the fine sand/gravel blend that is a byproduct of gravel crushing operations) can provide a very usable and cost-effective trail surface in many situations. It is particularly well suited for locations that already have a firm and relatively stable soil surface, such as sand/silt/clay blends, but is less effective in areas of loose sand. When properly compacted and maintained, crusher fines support a wide range of trail users, including bicycles and wheelchairs. However, proper drainage design and specification of a suitable material is critical, since not all crushed stone will remain consolidated under repeated

Compacted Crusher Fines Surfacing

freeze/thaw or rain events.

ASPHALT SURFACING

Asphalt is probably the most common multi-use trail surfacing, due to its relatively low cost and lower maintenance requirements than natural surfacing materials. It can last for many years if properly maintained, but does require periodic maintenance in the form of crack repair and occasional resurfacing as it becomes rough over time. Asphalt is well suited to almost all trail uses, with the exception of equestrians. With added thickness, it will also stand up to occasional maintenance vehicle crossings, although it can be damaged by tracked machinery like dredges or excavators.



Paved Trail (asphalt)

CONCRETE SURFACING

Although among the most expensive surfacing options, concrete provides an even more stable surface than asphalt, as it generally lasts longer, and is not prone to deformation by extreme heat or incursion of tree roots (although it can crack or heave under certain conditions). It is well suited to the same uses as asphalt, but is more resistant to damage by tracked equipment, when installed to a minimum thickness of 6". Concrete also retains less heat than asphalt, due to its lighter color. While that feature is welcome in the summer, it can result in a longer thaw times in winter, when we receive those increasingly rare winter snows.

Paved Trail (concrete)

ALTERNATIVE MATERIALS

Several alternatives surfacing materials have been developed in recent years, including recycled glass, recycled rubber, and tree resin binders. Of those materials, recycled rubber seems to show the most promise. Developed by tire companies as an outlet for disposing of used tires, these surfaces are weather resistant, permeable, and resilient, making them a comfortable, environmentally sensitive, walking surface, which also supports all other trail uses – including equestrians and maintenance vehicles. In a comparison test a number of years ago along the Santa Fe River, the recycled rubber surface held up the best of several experimental test samples (including recycled glass with a permeable binder, which deteriorated after several years). However, costs for this material exceed even that of concrete, due to a lack of local manufacturers and the resultant shipping costs. Nonetheless, recycled rubber can be a compelling surfacing option if environmental sensitivity (and/or all-weather walking comfort) is a high priority.

COMBINATION SURFACING

As noted above in the Multi-Use, Multi-Surface Path Typology, the most appropriate surfacing type for the Isleta Drain Corridor would probably be a combination of paved and unpaved surfaces, either next to each other or on opposite sides of the drain channel. This combination could be supplanted in more rural areas by a combination of crushed stone or stabilized natural surfacing with an unpaved natural surface.

RECYCLED RUBBER TRAIL SURFACING ON THE POPULAR OLD FAITHFUL TRAIL IN YELLOWSTONE NATIONAL PARK.

All final decisions about trail surfacing should be made during the design phase of each segment of the project, however note that visual trail continuity is important and should be emphasized during design.

Combination Path

ROAD CROSSINGS

Careful design of locations where the proposed trail alignment crosses roadways is important to ensuring a safe and comfortable experience for trail users.

Criteria for selecting road crossing treatments come from the Federal Highway Administration (FHWA) guidance, including the Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations (July 2018), accessibility standards including the United States Access Board's Public Right-of-Way Access Guidelines (PROWAG), and local standards including the Bernalillo County Technical Standards and the City of Albuquerque's Development Process Manual. These resources provide guidelines for implementation of roadway crossings mainly based on roadway traffic volume, roadway speed, and number of traffic lanes.

The project team also evaluated the feasibility of crossing treatments based on factors like the available right-of-way at the crossing location or existing crossing treatments in place near the proposed crossing location. The project team classified crossings into three types: Local, Collector, and Major. These groups generally correlate with the roadways' functional classification.

All but two roadway crossings along the Isleta Drain Trail alignment are County owned. Rio Bravo Boulevard is a state-owned highway, NM-500, and the portion of Gun Club Road that intersects with the Isleta Drain is owned by the City of Albuquerque.

The portions of Arenal Road, Barcelona Road, and Don Felipe Road crossed by the Isleta Drain + Trail alignment are school-related emergency routes. Treatments that include vertical deflection devices (such as speed bumps) are not recommended on these routes, as they can slow emergency vehicles.

Types of Roadways

The majority of street crossings along the Isleta Drain Trail alignment are crossings of residential streets with "local" functional classifications, according to the Mid-Region Council of Governments (MRCOG). These are categorized as Local Street Crossings. These streets do not exceed two lanes total in width and have speed limits of 25 miles per hour and present the least potential stress or safety risk to trail users. The trail alignment crosses 20 local streets.

The next-most common crossing type is of Collector Street Crossings. All of these are designated as collector roadways by MRCOG, although the category does not encompass all collector roadways along the alignment. These roadways also have two lanes total and have speed limits of 25 to 35 miles per hour. All but one of these streets have traffic volumes of less than 9,000 average weekday daily traffic (AWDT), according to the latest pre-Covid-19 figures from 2019. (The exception is Blake Road, which had an AWDT of nearly 11,000 vehicles.)

Three other roadway crossings along the trail alignment were designated Major Street Crossings. Two of these, Rio Bravo Boulevard and Bridge Boulevard, are classified as major arterials by MRCOG.

Table 1 lists the roadways that the Isleta Drain Trail alignment would cross, from north to south, along with the crossing type (Local, Collector, or Major), the average weekday daily traffic (AWDT) volume, the roadway's posted speed limit, and its total number of vehicle lanes at the point where the Isleta Drain + Trail would cross it.

TABLE 1. ROADWAY CROSSINGS ALONG THE ISLETA DRAIN TRAIL ALIGNMENT

Roadway name (north to south)	Crossing type	Average weekly daily traffic (AWDT)	Posted speed limit (miles per hour)	Number of vehicle lanes (total)
Cypress Drive	Local	> 1,000	25	2
Felicitas Road	Local	> 1,000	25	2
Don Luis Road	Local	> 1,000	25	2
Foothill Drive (north leg)	Local	> 1,000	25	2
Hooper Road	Local	> 1,000	25	2
Atrisco Drive	Collector	4,300	30	2
Bridge Boulevard	Major	26,700	35	2
Anthony Lane	Local	> 1,000	25	2
San Ygnacio Rd	Local	> 1,000	25	2
Rosendo Garcia Road	Local	> 1,000	25	2
Kelly Road	Local	> 1,000	25	2
Mares Road	Local	> 1,000	25	2
Arenal Road	Major	11,900	35	3
Foothill Drive (south leg)	Local	> 1,000	25	2
Mule Farm Place	Local	> 1,000	25	2
Blake Road	Collector	11,700	30	2
Barcelona Road	Collector	4,600	30	2
Rio Bravo Boulevard	Major	23,000	45	5
Gun Club Road	Collector	5,400	30	2
Don Felipe Road	Collector	1,800	35	2
Pajarito Road	Collector	1,300	30	2
Garner Rod	Local	> 1,000	25	2
Cottonwood Lane	Local	> 1,000	25	2
Brooksmoor Drive	Local	> 1,000	25	2
Raymac Road	Collector	2,800	35	2
Chanate Avenue	Local	> 1,000	25	2
Acequia Drive	Local	> 1,000	25	2
Della Road	Local	> 1,000	25	2
Norment Road	Local	> 1,000	25	2
Los Padillas Road	Collector	2,000	25	2
Glory Court	Local	> 1,000	25	2
Malpais Road (west leg)	Collector	2,900	30	2
Malpais Road (east leg)	Collector	2,900	30	2

Crossing Treatments

The project team considered several treatments for crossings along the Isleta Drain + Trail alignment. Based on federal and local guidelines, these treatments may be appropriate for the streets the Isleta Drain + Trail alignment would cross. For all crossing treatments and additional signage along the drain, signs should not be place within the 15 feet of maintenance access where they might be damaged by equipment.

During or prior to the design phase, the County and design consultants must meet with Middle Rio Grande Conservancy District (MRGCD) and Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) staff to determine required access locations to the Isleta Drain from intersecting roads. Further review of types and locations of crossing treatments will be necessary as they could prevent access, especially by larger equipment, to drain banks.

Table 2 shows the feasibility of different treatments based on criteria including number of lanes and speed limit. The tables are adapted from the FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations and are presented for different ADT ranges. Treatments are described as being one of the following:
Feasible: The treatment is likely feasible at the given location.

- Feasible, but additional treatment needed: The treatment should not be installed alone and should be accompanied by an additional treatment.
- Engineering judgment, meaning the

LEGEND

✓	Feasible
✓+	Feasible, but additional treatment also needed
EJ	Engineering judgment
✗	Not feasible

TABLE 2. CROSSING TREATMENT FEASIBILITY AT ROADWAYS ALONG ISLETA DRAIN + TRAIL ALIGNMENT

Criteria: <9,000 ADT

Treatment	30 mph or less			35 mph			>35 mph	
	2 lane	2 lane with median	3 lane*	2 lane	2 lane with median	3 lane*	4+ lanes, no median (Bridge Blvd)	4+ lanes, w/ median (Rio Bravo)
Marked crosswalk with signage	✓	✓	✓	✓+	✓+	✓+	✓+	✓+
Crosswalk with yield lines	✗	✓	✓	✗	EJ	EJ	EJ	EJ
Raised crosswalk	✓	✓	✓	✗	✗	✗	✗	✗
Median refuge island	EJ	✓	EJ	EJ	✓	EJ	EJ	EJ
Rectangular Rapid-Flashing Beacon	✗	✗	✓	✓	✓	✓	✗	✗
Pedestrian hybrid beacon crossing	✗	✗	✓	✓	✓	✓	EJ	EJ
Full traffic signal crossing	✗	✗	✗	✗	✗	✗	EJ	EJ
Grade separated crossing	✗	✗	✗	✗	✗	✗	EJ	EJ

Criteria: 9,000-15,000 ADT

Treatment	30 mph or less			35 mph			>35 mph	
	2 lane	2 lane with median	3 lane*	2 lane	2 lane with median	3 lane*	4+ lanes, no median (Bridge Blvd)	4+ lanes, w/ median (Rio Bravo)
Marked crosswalk with signage	EJ	✓+	✓+	EJ	✓+	✓+	✓+	✓+
Crosswalk with yield lines	✗	✓	✓	✗	EJ	EJ	EJ	EJ
Raised crosswalk	✗	✗	✗	✗	✗	✗	✗	✗
Median refuge island	EJ	EJ	EJ	✓	✓	✓	✓	✓
Rectangular Rapid-Flashing Beacon	✓	✓	✓	EJ	EJ	EJ	✗	✗
Pedestrian hybrid beacon crossing	✗	✓	✓	✓	EJ	EJ	EJ	EJ
Full traffic signal crossing	EJ	EJ	EJ	EJ	EJ	EJ	EJ	EJ
Grade separated crossing	EJ	EJ	EJ	EJ	EJ	EJ	EJ	EJ

Criteria: >15,000 ADT

Treatment	30 mph or less			35 mph			>35 mph	
	2 lane	2 lane with median	3 lane*	2 lane	2 lane with median	3 lane*	4+ lanes, no median (Bridge Blvd)	4+ lanes, w/ median (Rio Bravo)
Marked crosswalk with signage	EJ	✓+	✓+	✓+	✓+	✓+	✓+	✓+
Crosswalk with yield lines	✗	EJ	EJ	EJ	EJ	EJ	EJ	EJ
Raised crosswalk	✗	✗	✗	✗	✗	✗	✗	✗
Median refuge island	EJ	EJ	EJ	✓	✓	✓	✓	✓
Rectangular Rapid-Flashing Beacon	✓	✓	✓	✓	EJ	✗	✗	✗
Pedestrian hybrid beacon crossing	✓	✓	✓	✓	EJ	EJ	EJ	EJ
Full traffic signal crossing	EJ	EJ	EJ	EJ	EJ	EJ	EJ	EJ
Grade separated crossing	EJ	EJ	EJ	EJ	EJ	EJ	EJ	EJ

*One lane in each direction, plus a center two-way left turn lane. Along the proposed Isleta Drain + Trail alignment, only Arenal Road meets the description

treatment should only be considered after an engineer's detailed assessment of the specific location and context

- Not feasible: The treatment is likely not appropriate at the given location

Table 3 describes four key crossing treatments that would be feasible at most crossings along the trail alignment, especially those that are across local streets or collector roadways. All crossings should have at least a marked crosswalk and trail-related signage indicating the location of the trail crossing and depicting who has the right-of-way.

TABLE 3. KEY ROADWAY CROSSING TREATMENT OPTION FOR ISLETA DRAIN + TRAIL ALIGNMENT

Marked Crosswalk & Signage	Raised Crosswalk
This is a recommended basic treatment for all street crossings along the Isleta Drain Trail alignment. A marked crosswalk indicates to trail users where they should cross and lets motorists anticipate trail users. With a marked crosswalk, painted markings are placed in the roadway in line with the path of the trail. The crosswalk markings should be at least as wide as the trail. A ladder-type or "continental"-type crosswalk pattern is recommended, as it allows vehicle tires to pass between the markings, reducing wear and extending the life of the markings. Marked crosswalks should always be installed along with signage along the roadway on the approach to the trail crossing. This signage should alert motorists to the presence of a trail crossing in advance of the crossing and indicate the location of the crossing. Signage must indicate who has the right-of-way at a crossing. Typically, a motorist retains the right-of-way, in which case stop signs are needed facing trail traffic. However, if trail users are given the right-of-way at a particular crossing, then signage, such as a "Yield to Bikes and Pedestrians" sign, must be installed, along with appropriate pavement markings, such as yield lines or a stop bar.	The raised crosswalk option is an enhanced marked crosswalk. It combines a crosswalk with a speed table. The elevated element encourages motorists to slow down and provides trail users a more seamless crossing, free of changes in grade. Raised crosswalks should be combined with the same signage that would accompany a regular marked crosswalk, along with signage indicating to motorists the presence of a speed table. Raised crosswalks are not recommended on roadways with posted speed limits of 35 miles per hour or higher. Raised crosswalks are typically not recommended on emergency routes because they slow emergency vehicles.
Pedestrian Refuge Island	**Centerline Pin Curb**
A pedestrian refuge island is a raised concrete median in the center of a roadway designed with space for pedestrians/ cyclists as they wait for traffic to clear. A refuge island allows trail users to cross one half of a roadway at a time, making the crossing safer and more comfortable. The median must typically be at least 4 feet wide, but in cases like with the Isleta Drain Trail where significant bicycle traffic is anticipated, they should be at least 8 feet wide in order to accommodate the length of a bicycle. Because most roadways along the Isleta Drain Trail alignment are only two lanes wide, the roadway would need to be widened to accommodate a median in the center of the roadway.	Centerline pin curb is curb built in place of the roadway centerline stripe. "Pin" refers to metal pins over which concrete that forms the curb is placed, helping to keep the concrete in place. As it takes the place of the centerline stripe, the curb is normally painted yellow to match a stripe. Like a stripe, a centerline pin curb helps delineate roadway lanes, but because it has a vertical component, it makes vehicle lanes feel narrower and encourages vehicles to slow down. It is therefore useful near pedestrian or trail crossings, where traffic calming may be needed. No guidelines exist for where centerline pin curb should be constructed. The decision to construct this treatment in a particular location should be based on engineering judgment; however, the treatment is likely feasible along most streets the Isleta Drain Trail would cross. Particular attention must be given to nearby driveways – centerline pin curb can block full access to driveway.

Local Street Crossings

All local crossings should have at least a marked crosswalk and trail-related signage indicating the location of the trail crossing and depicting who has the right-of-way. This treatment can be combined with a raised crosswalk at most crossings of local, residential streets. The raised crosswalk gives trail users a more seamless crossing experience and encourages motorists to slow down and exercise more caution as they cross the trail. Other key treatments are feasible are local street crossings, but given the low volumes and speeds on these roads, the other treatments may have limited impact on trail users' safety or comfort.

Figure 21 illustrates the recommended typical treatment for local street crossings.

Additional consideration is needed at local street crossings where the roadway approaches the trail crossing on a curve. These streets include Felicitas Road, Foothill Drive (south leg), and Acequia Drive. At these locations, the trail crossing would be obstructed by walls or fences. Approaching motorists would not see the crossing until they are very near it, and trail users would not see approaching motorists. These crossings require additional road signage and possibly pavement markings farther in advance of the crossing than on local streets that approach the crossing perpendicularly.

Acequia Drive does not have adequate sight line along the curve for a raised crosswalk so this intersection requires a rectangular rapid flashing beacon (RRFB) to alert oncoming eastbound motorists. If a curve provides adequate sight line, a raised crosswalk could be utilized in these areas. Figure 22 shows the typical treatment adapted for a curve approach.

FIGURE 21. ROSENDO GARCIA ROAD - LOCAL ROAD CROSSING TREATMENT EXAMPLE

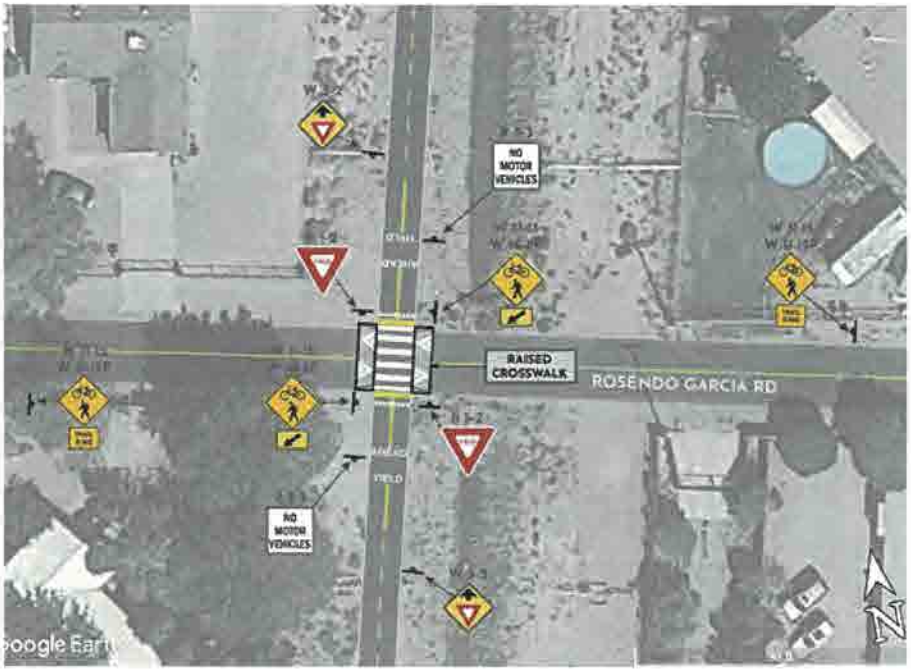


FIGURE 22. ACEQUIA DRIVE - LOCAL ROAD CROSSING TREATMENT EXAMPLE WITH CURVE APPROACH

Collector Roads

Table 4 shows the feasibility of key treatment on crossings at each collector street along the trail alignment, based on similar criteria to what is shown in Table 2, with the addition of centerline pin curb. Raised crosswalks can be employed on some collector streets where the speed limit is 30 miles per hour or lower. Other key treatments, including pedestrian refuge islands and centerline pin curb, may be feasible at different collector street crossings. The table also includes information about the current drain-to-drain width at each location. This is the distance between each drain opening measured across the roadway lanes and is relevant to understanding whether space exist for a raised median to be installed at the given crossing.

Figure 23 depicts a crossing treatment for Atrisco Drive and one that is feasible at many collector roads along the trail alignment. The trail would cross the road via raised crosswalk. A median refuge island would provide additional protection to trail users. As with most streets where a new median would be constructed, the roadway may need to be widened to accommodate the median. Alternatively, in such locations, the existing roadway width could be maintained and only a raised crosswalk installed, rather than the median. A median refuge of less than eight feet in width is not recommended.

The west leg of Malpais Road approaches the Isleta Drain on a curve and may require additional signage treatments, like with certain local streets. (See Figure 22).

TABLE 4. FEASIBILITY OF CROSSING TREATMENTS AT COLLECTOR STREETS ALONG ISLETA DRAIN TRAIL ALIGNMENT

Collector Roadways

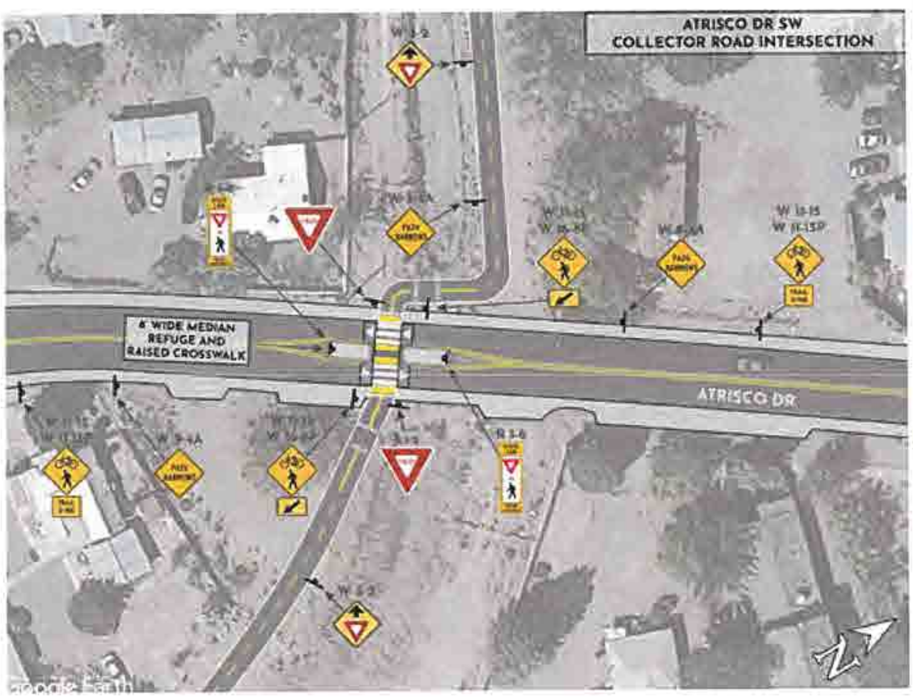
						Feasibility of key crossing options		
	Average weekday daily traffic (AWDT)	Posted speed limit (mph)	Lanes (total)	Available width (feet)*	Drain is access or cross-street parallel***	Median refuge island	Raised crosswalk	Centerline pin curb
Atrisco Drive	4,300	30	2	55	No	✓	✓	✓
Blake Road	11,700	30	2	72	Yes	EJ	✕	✕
Barcelona Road	4,600	30	2	60	Yes	✓	✓	✕
Gun Club Road	5,400	30	2	94	No	EJ	EJ	EJ
Don Felipe Road	1,800	35	2	51	No	EJ	✕	EJ
Pajarito Road	1,300	35	2	40	No	EJ	✕	✓
Raymac Road	2,800	35	2	80	No	✓	✕	EJ
Los Padillas Road	2,000	25	2	52	No	✓	✓	✓
Malpais Road (west leg)	2,900	30	2	38	No	✕	✓	✓
Malpais Road (east)	2,900	30	2	46	No	✕	✓	✓

* Approximate distance between drain openings across the roadway
** [illegible]
*** [illegible]

LEGEND

✓	Feasible
✓+	Feasible, but additional treatment also needed
EJ	Engineering judgment
✕	Not feasible

FIGURE 23. ATRISCO DRIVE - COLLECTOR ROAD CROSSING TREATMENT EXAMPLE



Major Street Crossings

The major crossings along the trail alignment, Rio Bravo Boulevard, Arenal Road, and Bridge Boulevard, require more intensive and tailored treatments due to the roads having higher automobile traffic volumes or unique land uses nearby, such as at Arenal Road, where Rio Grande High School and the planned Arenal Open Space are located immediately adjacent to the trail crossing. The following sections describe the intersections and the recommended trail crossing treatments at each.

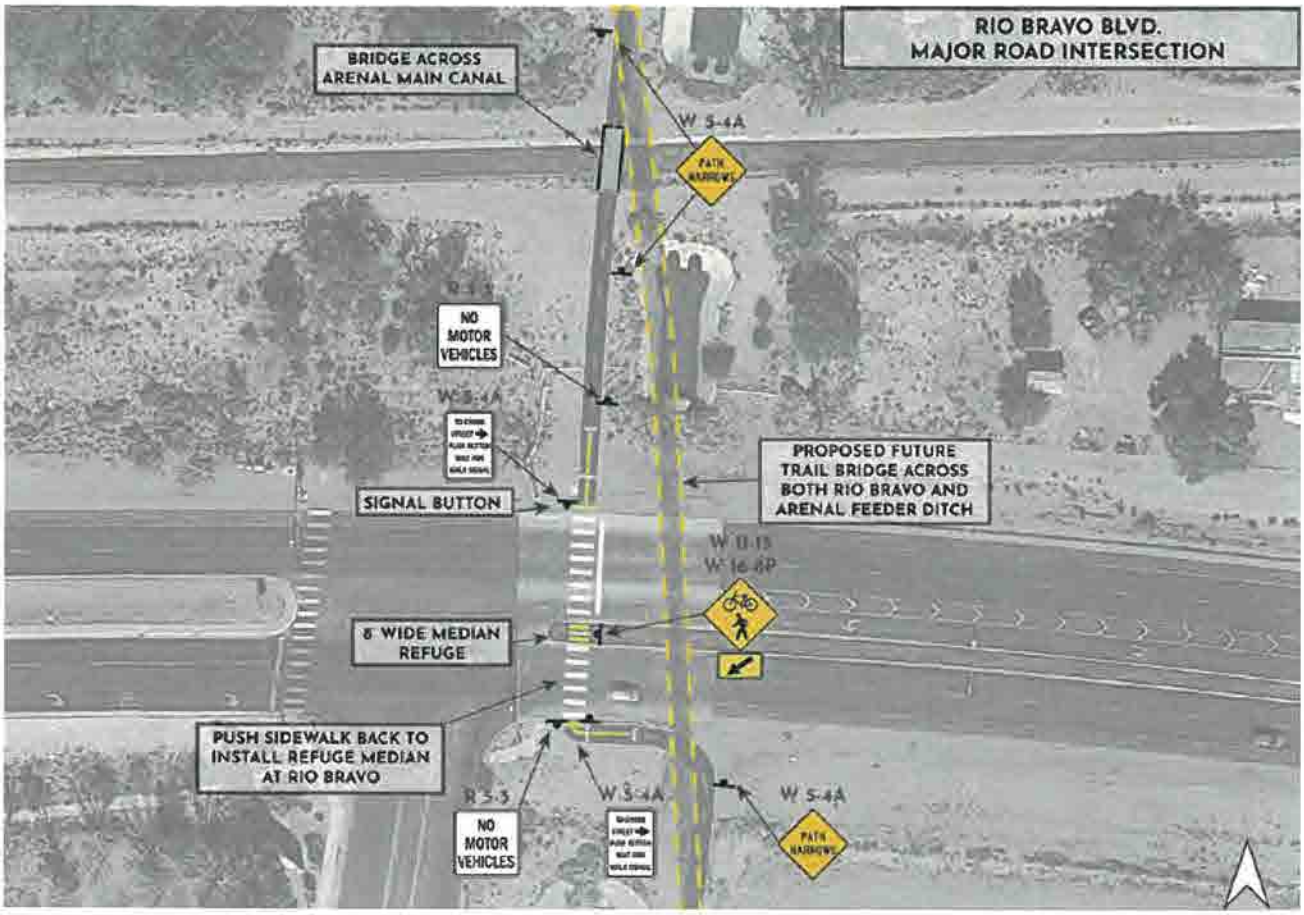
RIO BRAVO BOULEVARD

Rio Bravo Boulevard features two lanes in each direction and a speed limit of 40 miles per hour. The Isleta Drain cross the roadway directly east of the intersection of Rio Bravo Boulevard and Loris Drive. At this location, Rio Bravo has a 30-foot-wide concrete median. On the east side of the intersection there is dedicated left-turn lane for turns from eastbound Rio Bravo onto southbound Loris Drive. The lane reduces the width of the concrete median to approximately 10-12 feet.

The recommended trail crossing adapts the existing pedestrian cross on the east side of the street. The crossing would use the existing crosswalk that crosses Rio Bravo. The crosswalk markings have worn and need to be refreshed. The trail crossing would be controlled by pedestrian crossing signal coordinated with the traffic signal.

A future phase could include a new pedestrian bridge that would be constructed across Rio Bravo Boulevard and the Arenal Main Canal to the north. Signage north of the roadway would need to be carefully designed to warn trail users of the narrowing of the path at the bridge and of the nearby Rio Bravo crossing.

FIGURE 24. PROPOSED TRAIL CROSSING AT RIO BRAVO BOULEVARD

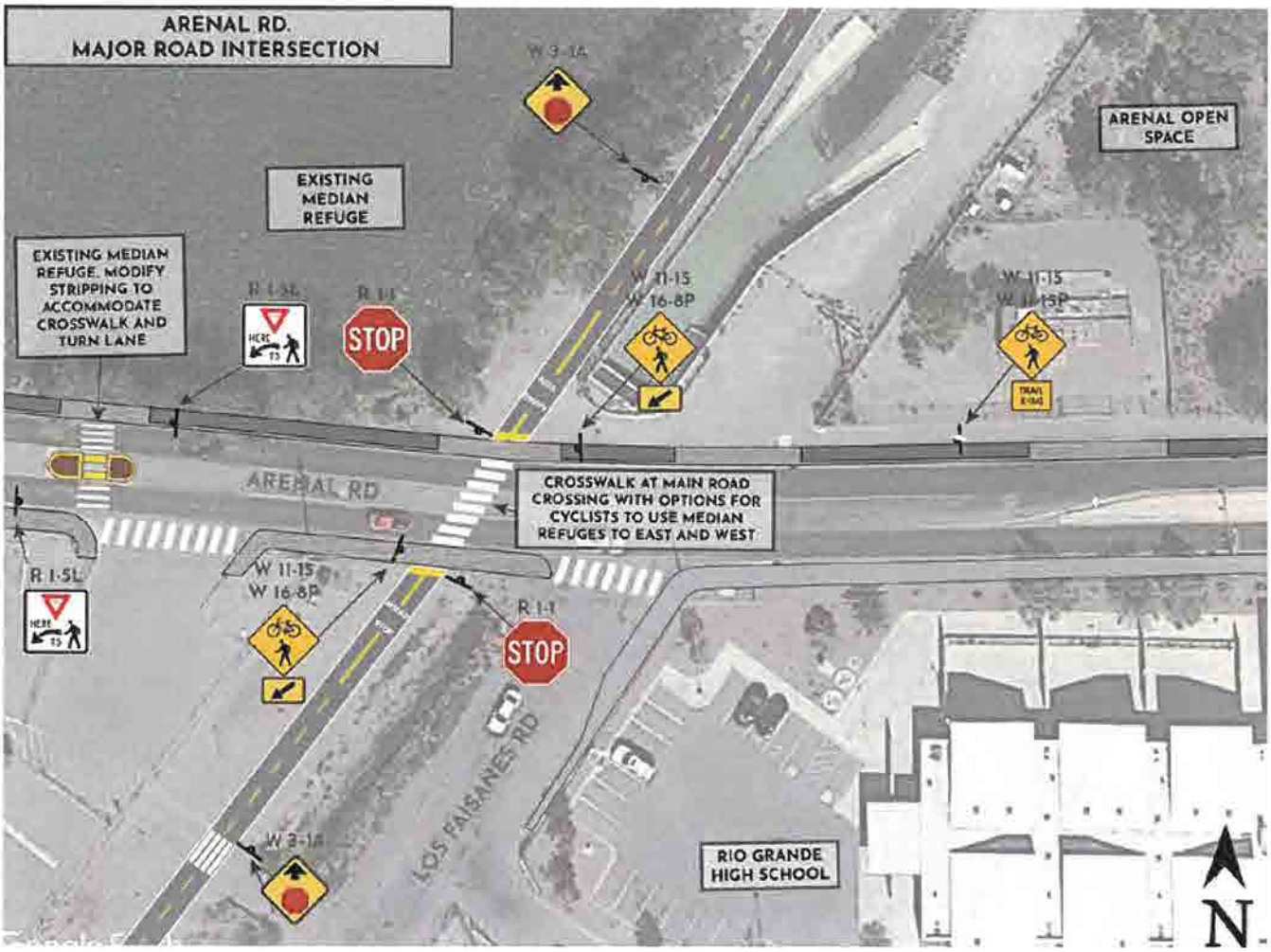


ARENAL ROAD

The Arenal Road crossing would be located at a complex intersection, with various land uses, driveways, and traffic control devices converging on one location. At the point where Arenal Road crosses the Isleta Drain, the roadway has one lane in each direction with an additional center left-turn lane. The turn lane provides access to the Rio Grande High School's main parking lot, located west of the drain on the south side of Arenal Road, and to Los Faisanes Road, which runs along the west side of the high school and provides access to parts of the school complex. In addition to the high school complex to the southeast of the crossing, the planned Arenal Open Space recreation area is planned for the area to the northeast of the crossing.

Prior to design of the trail crossing at this location, Bernalillo County and any design consultants should observe traffic behavior – especially around school start and end times – and coordinate with APS on the crossing's design. The recommended crossing treatments are intended to provide trail users a direct path across the roadway, while keeping trail user movement visible and predictable for motorists. In the recommended treatment, shown in Figure 5, a marked crosswalk would extend across Arenal Road in line with the trail alignment on the west side of the drain. During school morning arrival, automobiles are likely to stack within the left-turn lane and block the crosswalk. Signage should encourage yielding to trail users crossing the roadway.

FIGURE 25. PROPOSED TRAIL CROSSING AT ARENAL ROAD (MAJOR STREET)



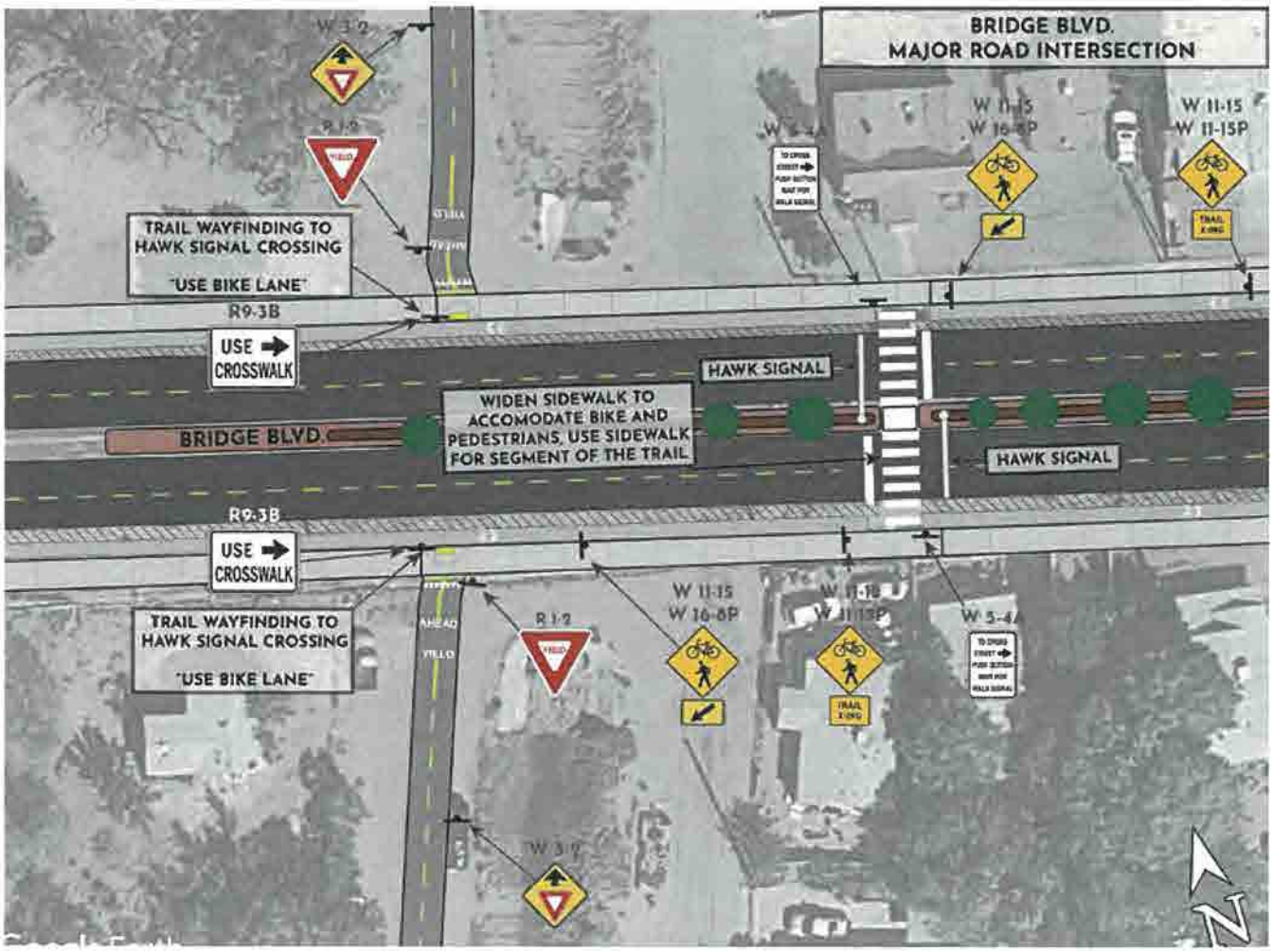
BRIDGE BOULEVARD

Bridge Boulevard is being reconstructed at the time of this study. As shown in Figure 26, the new roadway cross section will have two vehicle lanes in each direction, with bicycle lanes on both sides of the roadway. A landscaped median will replace the existing central turn lane. A mid-block crossing, with marked crosswalk and pedestrian hybrid beacon signal, is being installed a short distance to the east of the Isleta Drain.

Both sides of the Isleta Drain on both sides of Bridge Boulevard are used for residential access. The east side of the drain is a paved road, Anthony Lane, while the west side of the drain is an unpaved easement access.

The proposed trail alignment would follow the easement to the west side of the drain. The trail crossing would use the new mid-block crossing. This would require trail users to travel a short distance to the east of the drain using the sidewalk, activate the pedestrian hybrid beacon, cross via the marked crosswalk, and then return to the trail to the west along the sidewalk. At each end of the trail, a curb cut would provide a connection between the trail and the adjacent bike lane. Signage would direct users to either use the marked crosswalk or, if they are riding bicycles, to use the bike lane. The trail would need to narrow to six feet wide where it merges with the sidewalk.

FIGURE 26. PROPOSED TRAIL CROSSING AT BRIDGE BOULEVARD (MAJOR STREET)



TRAIL FEATURES

Beyond the basic functional aspects of a trail, incorporating special features and amenities can enhance users' experience and provide a "sense of place" that uniquely characterizes the Isleta Drain corridor. Proposed improvements are concentrated and organized around areas of highest potential and use, based on the earlier analysis of existing conditions along the Isleta Drain. These feature areas include:

- **Gateway Trailheads** - The most highly developed and enhanced spaces that serve as gateways to the corridor and welcoming entry points from the surrounding community
- **Major Community Nodes–** These are opportunity areas that have natural features or important community connections
- **Minor Neighborhood Nodes** – Road crossings that are close to or provide connections to community spaces; local trailheads

Determination of appropriate levels of development of those feature areas was driven primarily by public input. Throughout the planning process community members shared their ideas and preferences for features they would like to see via the Community Survey, comments offered on the project website, and feedback solicited during pop-up events and the community workshop. Additional discussions were held with agency representatives regarding appropriateness of various facilities at different points along the drain.

The following recommendations suggest effective ways of clustering trail amenities at key locations within the Isleta Drain corridor, while concentrating resources in areas of highest potential impact. As noted above, these areas are described as, 1) Gateway Trailheads, 2) Major Community Nodes, and 3) Minor Neighborhood Nodes.

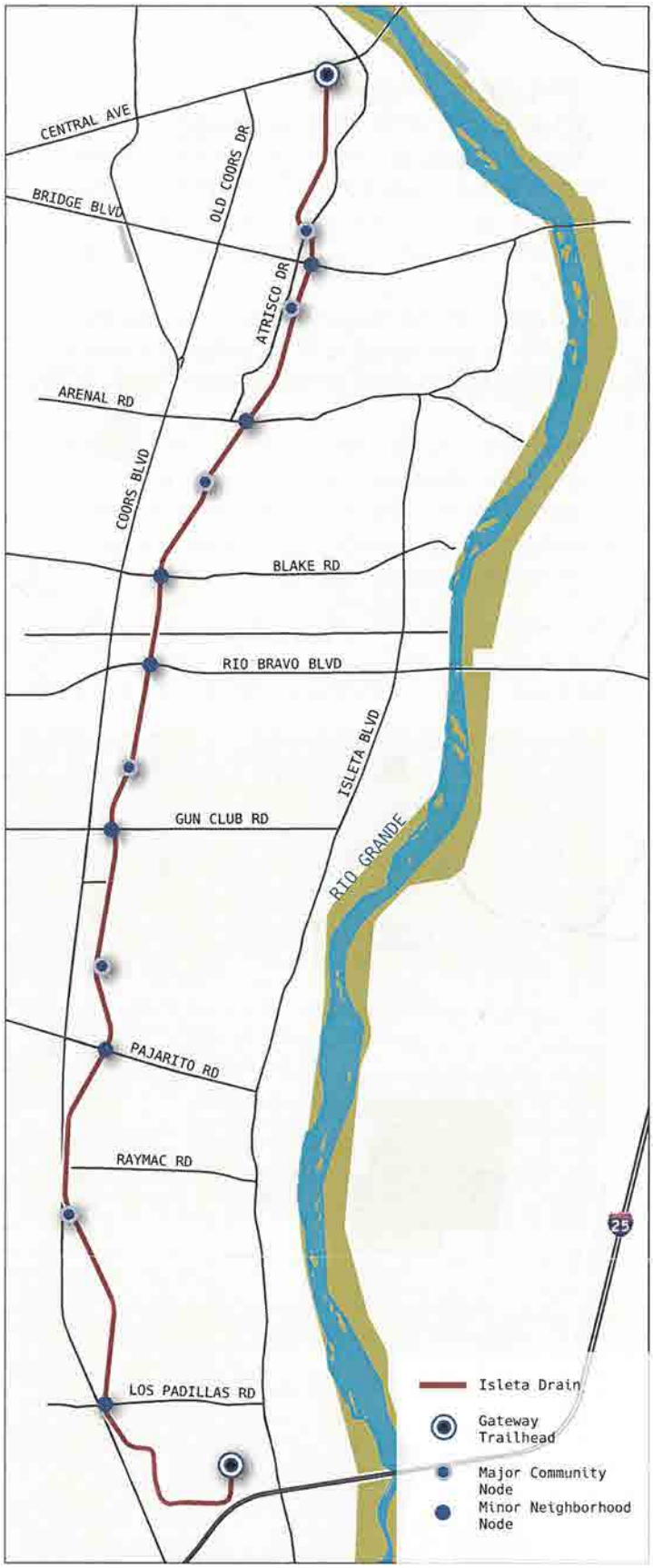


FIGURE 27. TRAIL FEATURE LOCATIONS

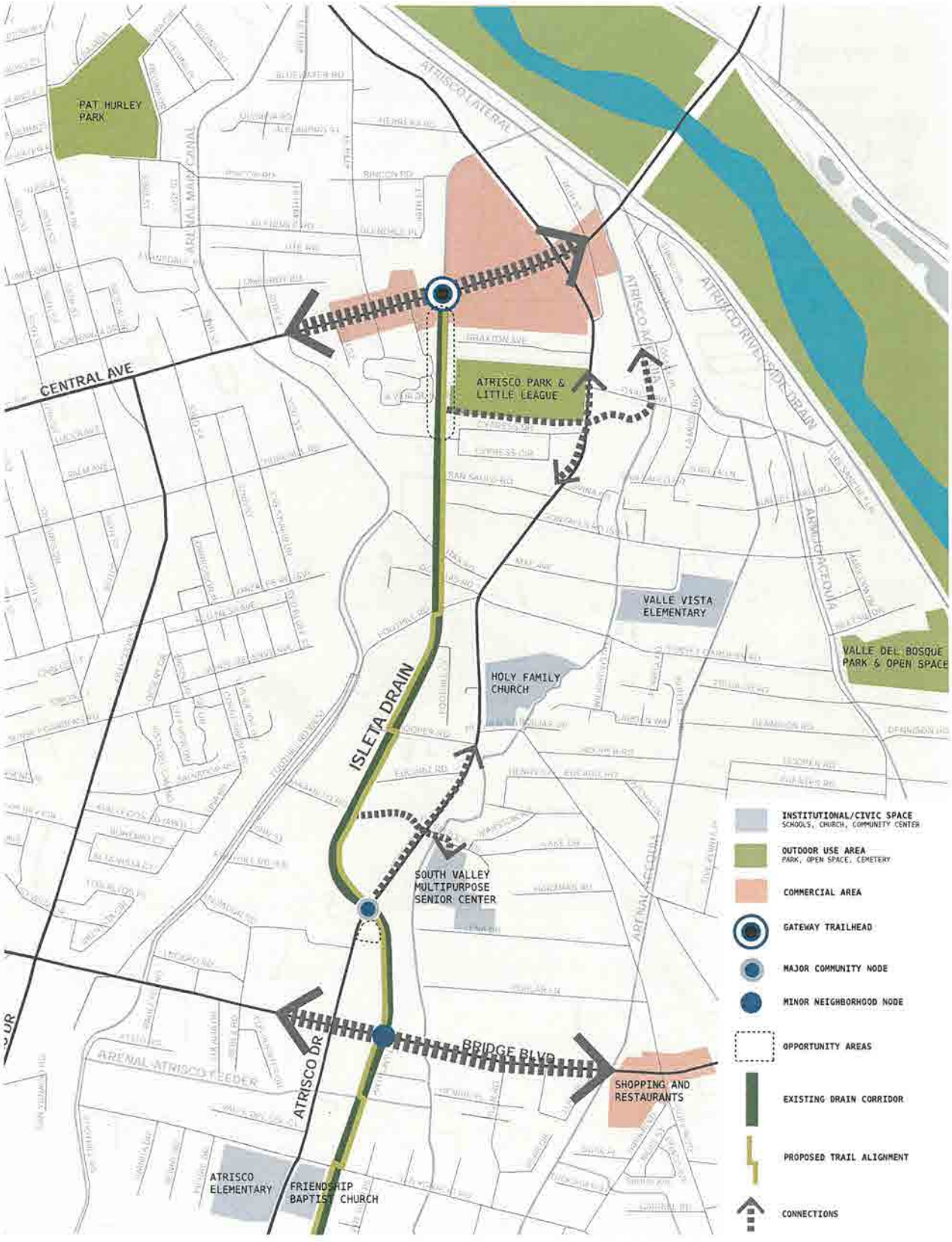


FIGURE 28. ATRISCO - TRAIL FEATURES

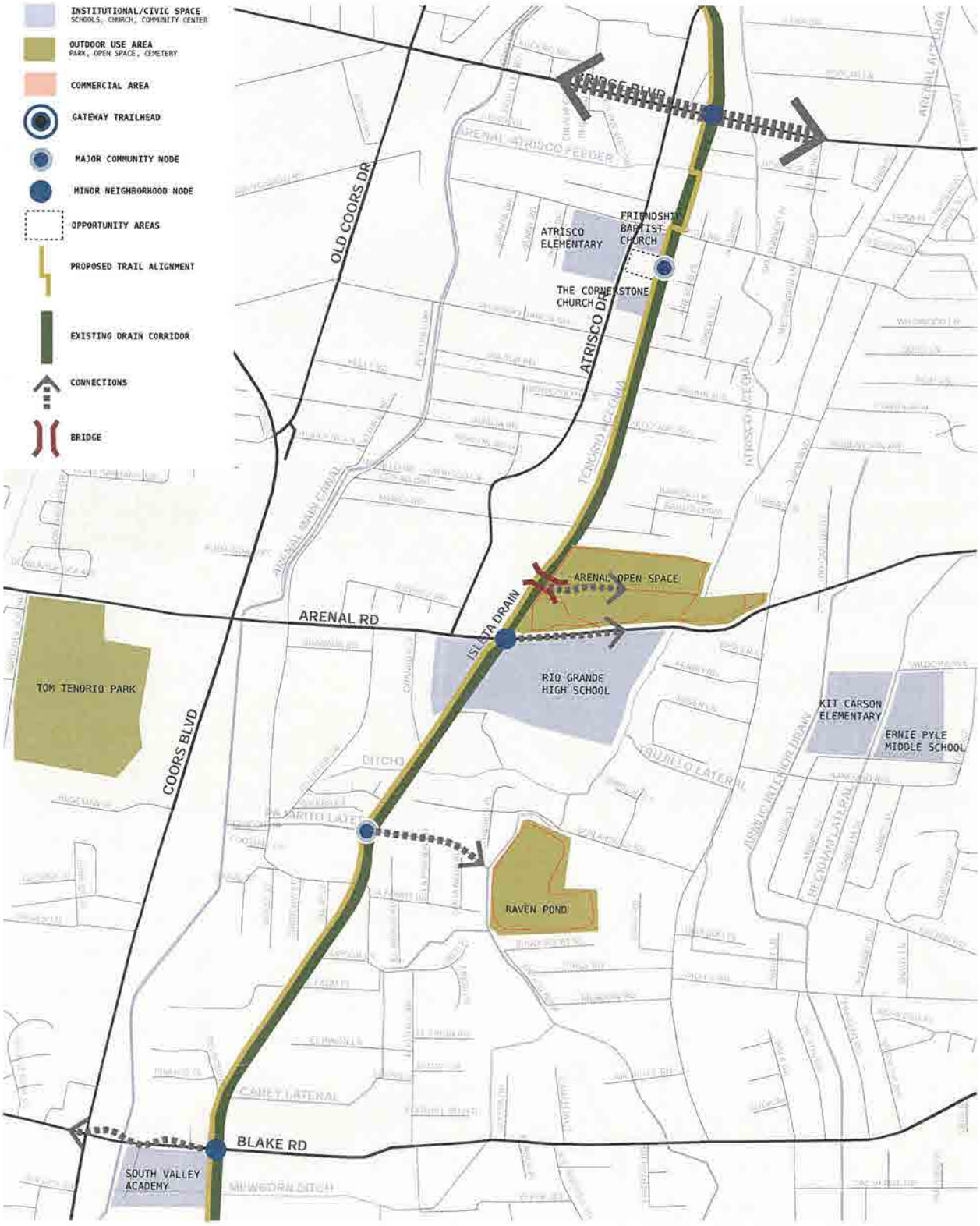


FIGURE 29. ARENAL - TRAIL FEATURES

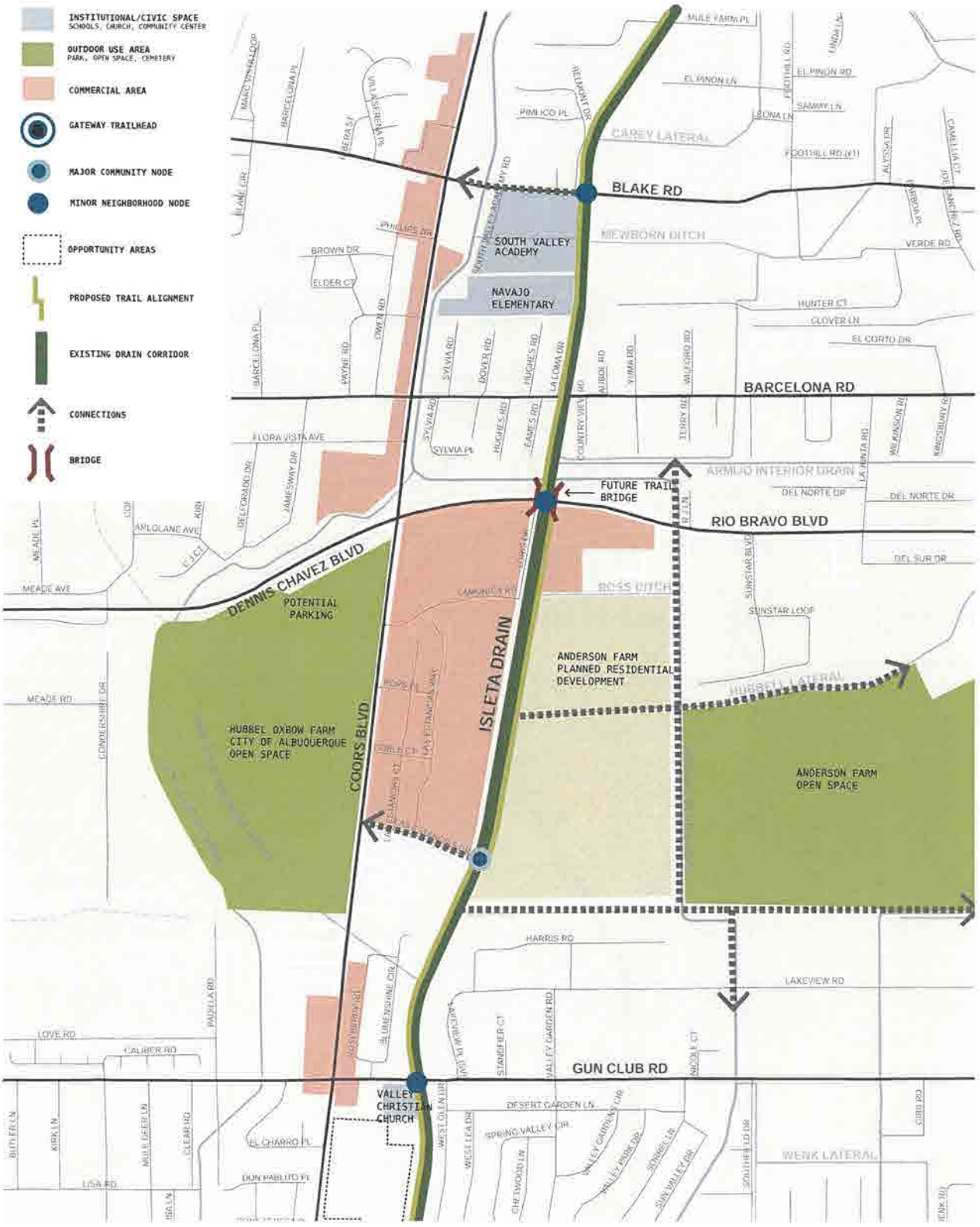


FIGURE 30. RIO BRAVO - TRAIL FEATURES

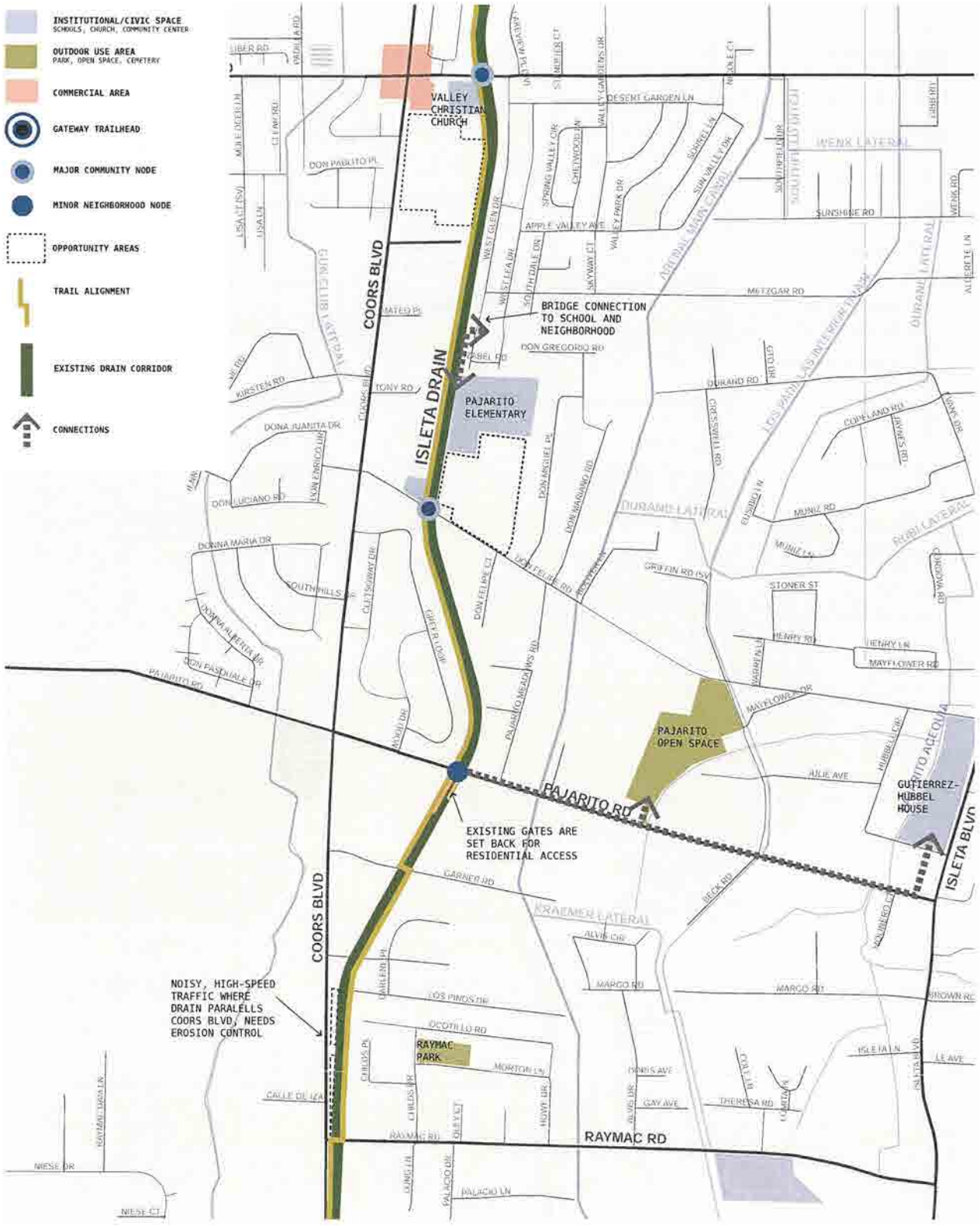


FIGURE 31. PAJARITO - TRAIL FEATURES

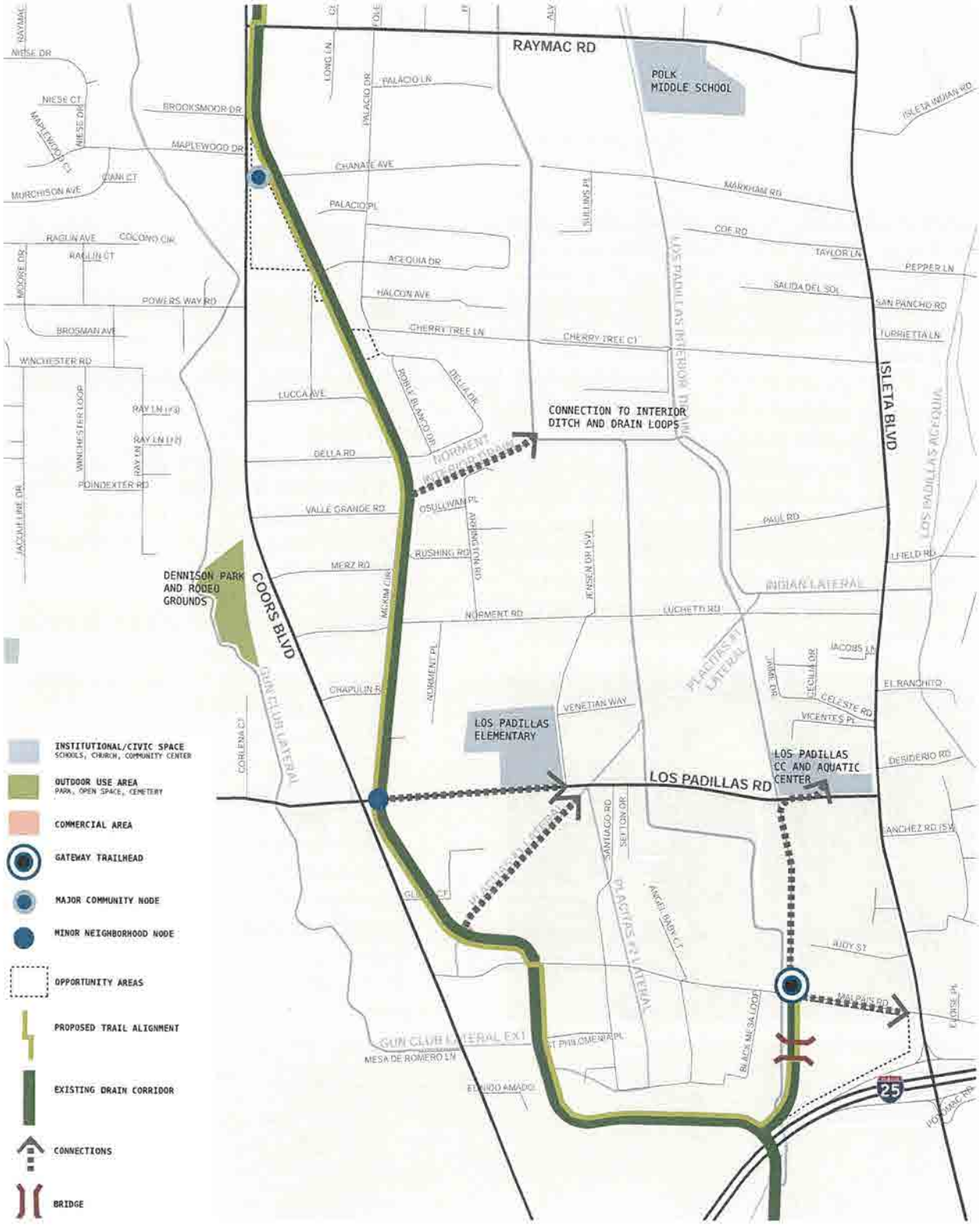
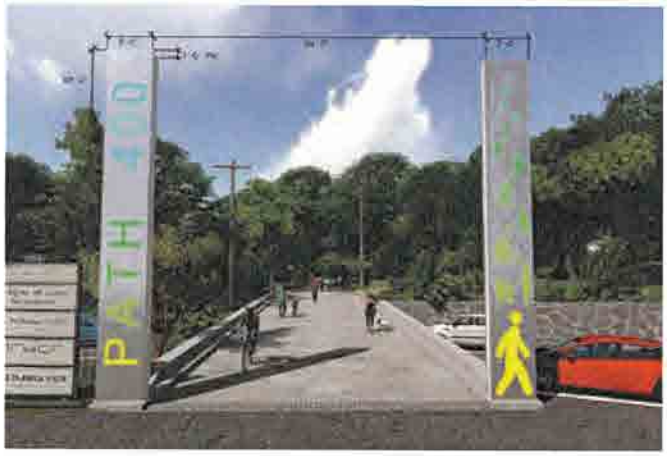


FIGURE 32. LOS PADILLAS - TRAIL FEATURES

Gateway Trailheads

Gateway Trailheads are the two key locations that bookend the proposed Isleta Drain + Trail. They would allow users to park, access the trail, and orient themselves. They could also provide basic facilities such as restrooms, potable water stations, shade (either through vegetation or overhead canopies), and places to rest, eat or gather. Interpretive and educational signage can inform trail users about the function, heritage, and habitats that have developed around the ditch and drain system. Large signs announcing the Drain + Trail Corridor would provide an immediate identity and invite potential users to stop and experience the corridor. Public art could play a prominent role in these areas.

Proposed Gateway Trailheads are limited to the north and south ends of the corridor, and strategically located in areas where it would be appropriate for users who do not live adjacent to or near the drain to access this space without inconveniencing local residents. In between trailheads and throughout the corridor, there are additional locations where users might access shared parking facilities; however, those are not considered Gateway Trailheads since they would not have the additional amenities proposed here.



PLACEMENT CRITERIA:

- At beginning/end of the trail
- Must have sufficient right-of-way and space for amenity development
- Should not impose significant impacts on adjacent residential areas
- Should be close to community centers and activity areas
- Beneficial to be near other transit opportunities
- Should have access to utilities

POTENTIAL AMENITIES:

- Accessible parking lot with all-weather path connection to the trail
- Solar lighting
- Gateway & interpretive signage
  - Trail/corridor identification
  - Informational/educational exhibits
  - Map kiosks
  - Wayfinding
- Seating & Site Furnishings
  - Trash receptacles (must be near a road/access point for maintenance)
  - Bike facilities (racks, maintenance stands)
  - Benches, picnic tables
  - Water fountains
  - Dog waste stations (focus more in higher density residential areas and crossings)
  - Shaded areas
  - Gathering Areas
- Exercise equipment or ADA challenge stations
- Playgrounds and opportunities for Children
- Restrooms (not in drain right-of-way)
- Landscaping (plantings, irrigation, native seeding)
- GSI/LID Improvements
- Public Art

Example Trailheads

CONCEPTUAL PLAN FOR GATEWAY TRAILHEAD AT ATRISCO PARK

The north end of the corridor provides a prime opportunity for a gateway trailhead with several tie-ins to the local community. The drain conveyance is buried in this location, leaving a 100-foot-plus open space that can serve multiple purposes. It abuts Atrisco Park and Little League to the east, so could serve as an extension of the park, and provide additional parking for park events, as well as trailhead parking. As shown in the graphic on the next page, the parking access road would also provide necessary access to a drainage pump station that lies along the west edge of the park.

Another key opportunity is the potential for a connection to Central Avenue to the north, which would provide easy access to mass transit, as well as the restaurants and stores in the area. It would also enhance site security (currently an issue due to the "abandoned lot" character of the property) by increasing desirable traffic through the site, and enabling police and emergency access from multiple points around the perimeter. Since any connection to Central Avenue would be through private property, this may be an opportunity for a public/private partnership in urban redesign. The graphic below shows one possibility for such a connection.

During the public outreach effort, there were suggestions for including both general and ADA-accessible challenge or outdoor exercise courses to complement trail use within the corridor. The north gateway trailhead would provide a perfect opportunity for such facilities, as illustrated by the looped path in the north half of the graphic. The site could also provide a picnic overlook for the park and baseball fields, along with a pedestrian connection out to the Vida Nueva residential loop roads accessed from 46th and 47th Streets. Gateway signage at both (or either) the north and south ends of the trailhead park would announce the presence of the trailhead facility and trail beyond, and set the character for the corridor.

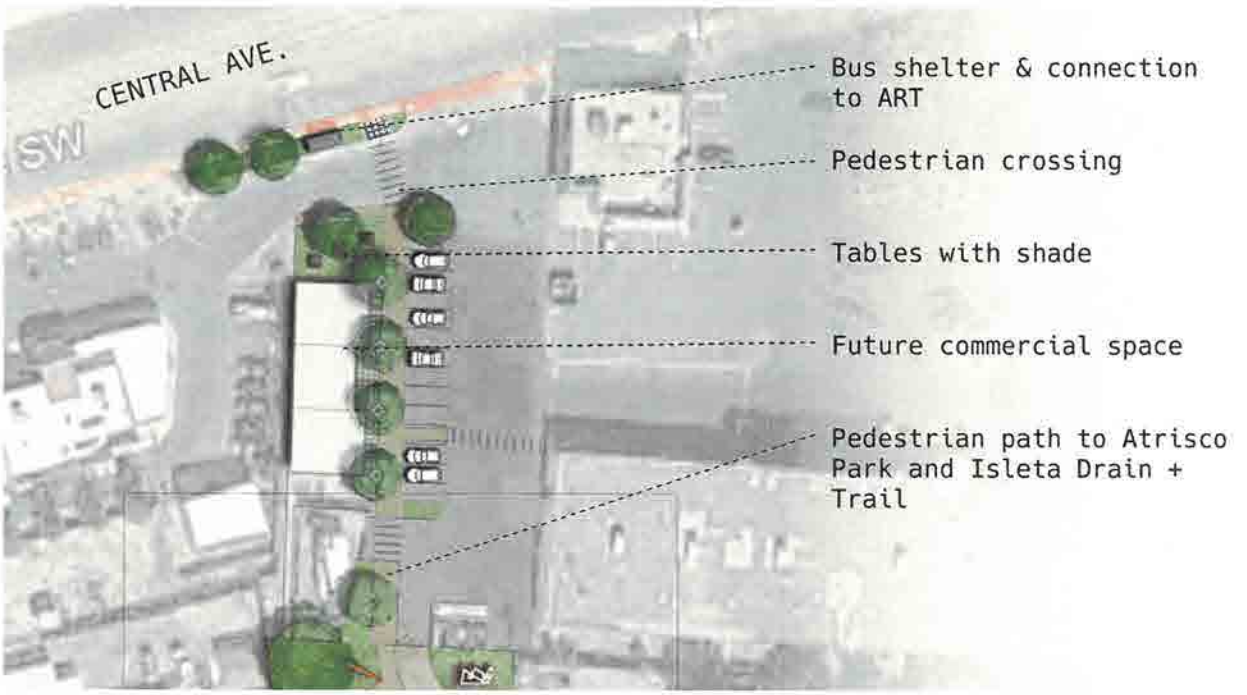


FIGURE 33. NORTH GATEWAY TRAILHEAD - CONNECTION TO CENTRAL AVE.

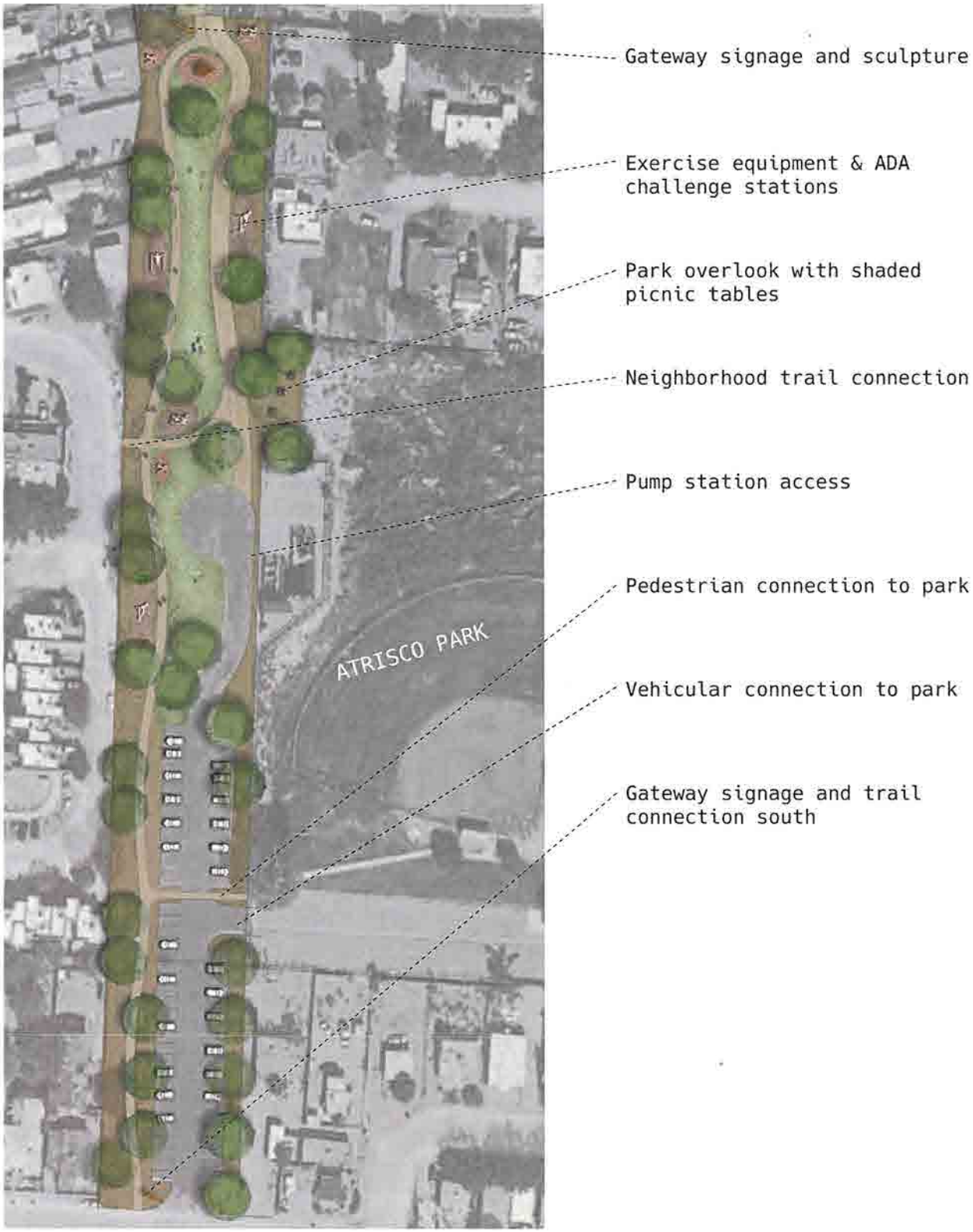


FIGURE 34. NORTH GATEWAY TRAILHEAD - ATRISCO PARK

CONCEPTUAL PLAN FOR GATEWAY TRAILHEAD AT MALPAIS ROAD

At the south end of the corridor, the Isleta Drain passes under I-25 and crosses into Isleta Pueblo lands. However, the Los Padillas drain empties into the Isleta Drain just north of I-25, creating a continuous loop around to Malpais Road, where AMAFCA owns a 23-acre tract that is slated for potential use as a future drainage detention pond. Currently leased to local farmers, and easily accessible from Isleta to the east, that tract – or at least a portion of it – offers a perfect opportunity for a southern gateway trailhead. Given its proximity to the mesa that defines the north edge of Isleta Pueblo, the adjacent farm fields, and the presence of both a drain and irrigation lateral along its west edge, the site offers educational/ interpretive opportunities for both cultural and geologic elements of the local landscape. Trees and a picnic shelter can offer shade, while a trail map kiosk would provide orientation to the trail and surrounding area. A pit toilet could provide necessary relief to trail users, if maintenance responsibilities can be worked out. As illustrated below, a gated access point would also provide authorized access to the fields and/or future pond area. And as with the northern trailhead, gateway signage would announce the trail and corridor to passersby. The image below is a conceptual illustration of what this could look like. It should be noted that drought-tolerant landscaping should be utilized throughout.

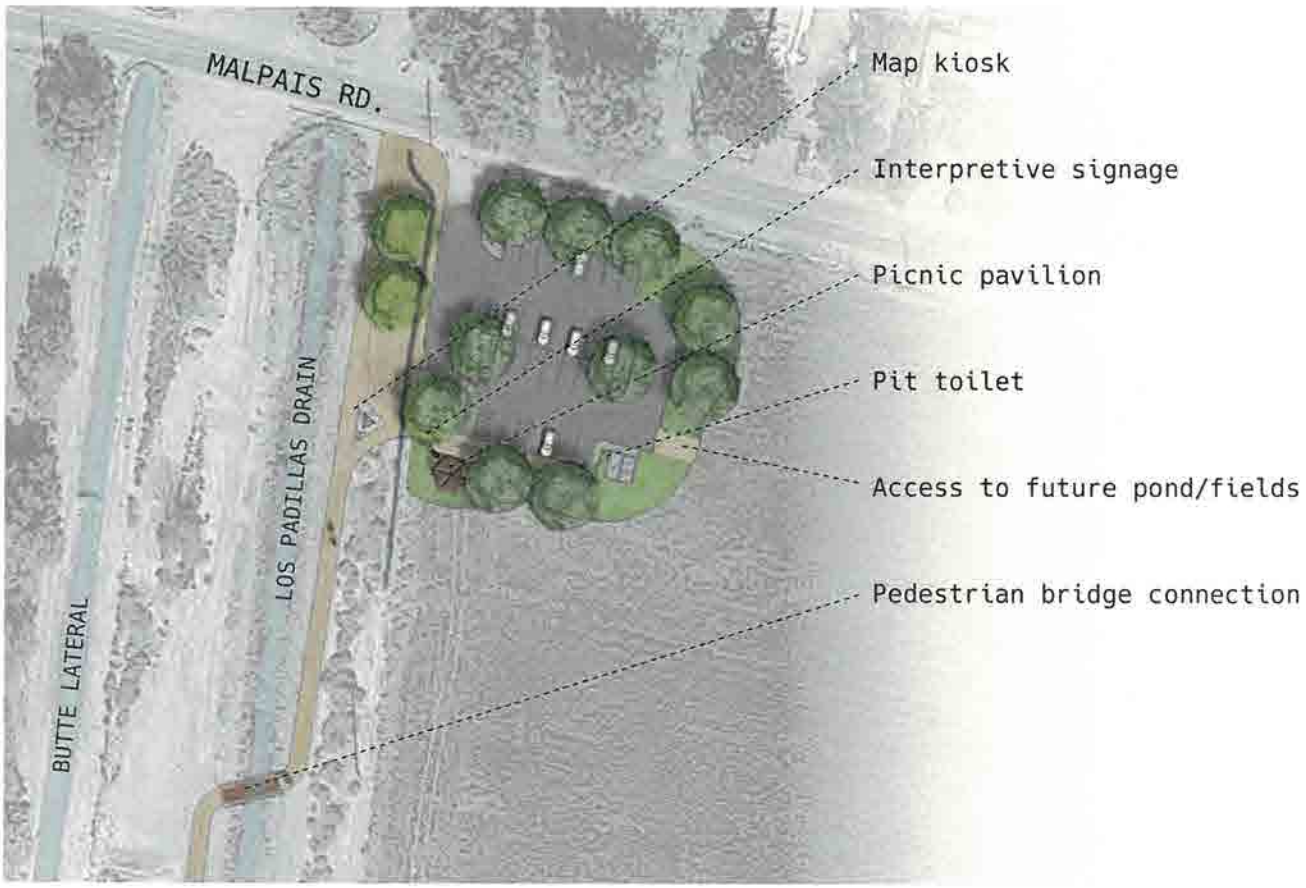


FIGURE 35. SOUTH GATEWAY TRAILHEAD - MALPAIS RD.

Major Community Node

Major Community Nodes are recommended for locations that are notable due to existing habitat, extraordinary view sheds, adjacencies to community spaces, or potential for educational opportunities. These locations could also include orientation maps, points of interest such as historic features, or serve as portals to other nearby open spaces or transportation linkages to transit. These spaces may lie along the drain or a short distance away, and would offer an opportunity for users to rest, learn, gather, or simply enjoy the beauty of their surroundings. Major Community Nodes can serve as secondary welcome points along the trail for the local community as well as for visitors from nearby neighborhoods.

The conceptual illustration in Figure 36 shows an example of what a Major Community Node might look like. This particular location takes advantage of a change in alignment to create pockets of native landscaping and respite. This also shows where trail surfacing would need to be reinforced for both pedestrian and vehicular traffic (maintenance vehicles) on the east side of the drain for a short section. Around the residential buffer, shrubs would be used to support privacy and separation from the public realm.

PLACEMENT CRITERIA:

- Sufficient existing right-of-way, or potential for acquisition or cooperative development
- Beneficial to have access to irrigation for landscaping
- Should have existing natural historic, or cultural features of note

POTENTIAL AMENITIES:

- Shade (vegetative or shade structures)
- Lighting (solar preferred)
- Seating & Site Furnishings
  - Trash receptacles (must be near a road/access point for maintenance)
  - Benches
  - Dog waste stations (focus more in higher density residential areas and crossings)
- Native Landscaping in keeping with the valley environment (plantings, irrigation, native seeding)
- Public Art Opportunities
- Overlooks or Small Plazas (where views of natural areas or distant features are provided)
- Interpretive/Educational signage (particularly at crossings/lateral connections)
  - Interactive elements (possibly near schools)
  - Learning/community gardens
  - Nature Play
  - Wayfinding/nearby Points of Interest
- Potable water (where we have landscaping)
- GSI/LID improvements

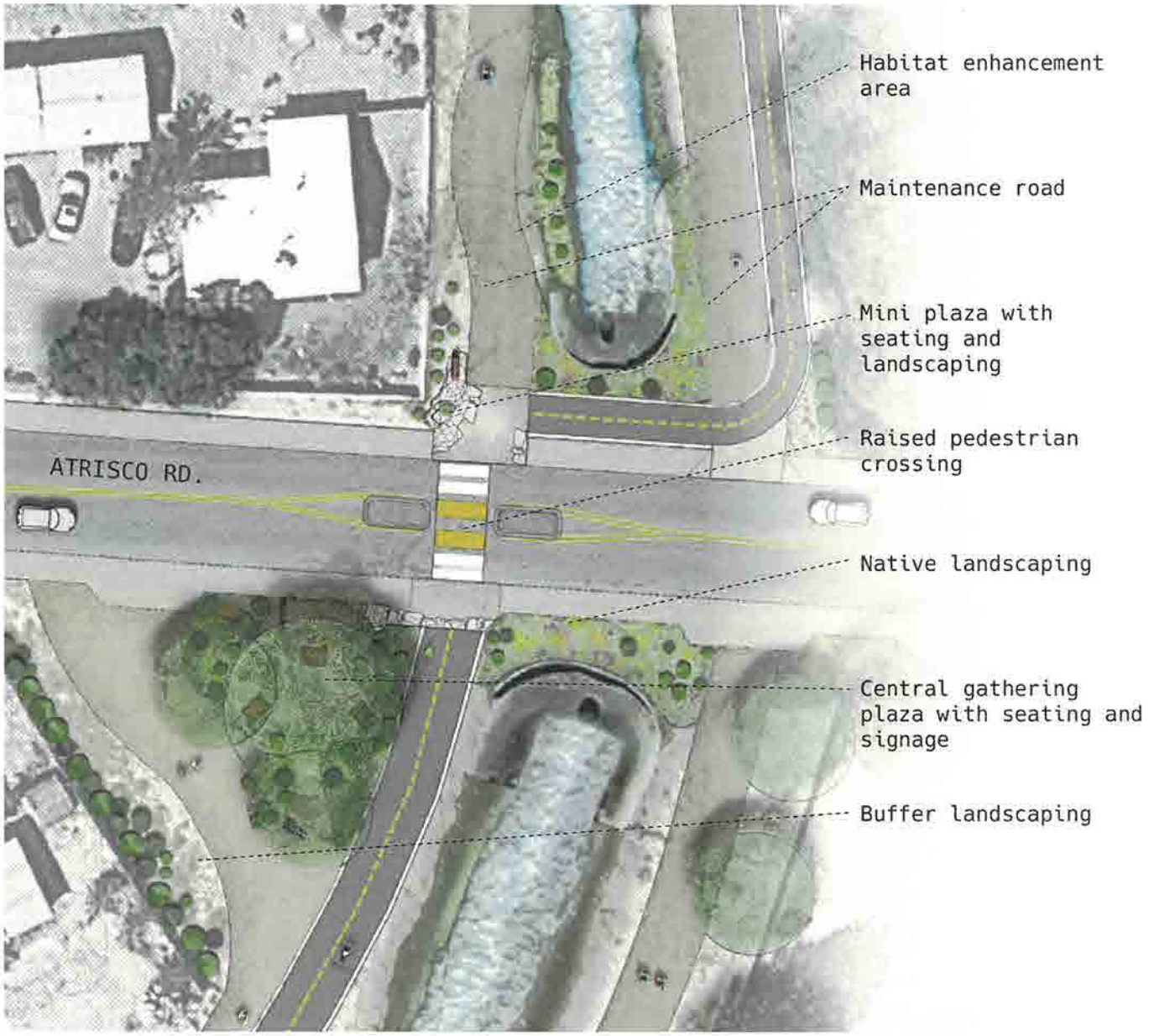


FIGURE 36. MAJOR COMMUNITY NODE EXAMPLE - ATRISCO CROSSING

Minor Neighborhood Node

Minor Neighborhood Nodes (local trailheads) are located at road crossings where users might naturally connect to the proposed trail from bike lanes, streetscapes (e.g. bridge), or other transportation routes. Additional pockets of amenities and service improvements might bring greater visibility of the trail to local neighborhoods and allow users to orient themselves and determine their proximity to other destinations near the Isleta Drain + Trail. These smaller trailhead nodes should include more limited amenities focused on safety, rest, transition and orientation. Enhanced roadway crossings at these locations would provide additional safety to trail users by alerting motorists to the presence of the trail crossing.

The conceptual illustration on the opposite page depicts soft, native landscaping concentrated between the road and the culvert, while keeping space for maintenance to access. Height will be considered with plantings to make sure that visibility from signage and bus stops is maintained.

PLACEMENT CRITERIA:

- Road or other ditch facility crossings along possible connection routes
- Sufficient right-of-way or the potential to expand the usable area along the drain by extending culverts at road crossings
- May provide connections to nearby spur trails or local community destinations
- Should provide high visibility and opportunity to enhance safety at crossings

POTENTIAL AMENITIES:

- Trash receptacles and dog waste facilities
- Seating
- Wayfinding signage & map kiosks
- Bike facilities
- Traffic calming elements for both road and trail
- Intermodal connectivity
- Reclamation and Native Landscaping with Passive Irrigation (LID/GSI opportunities)

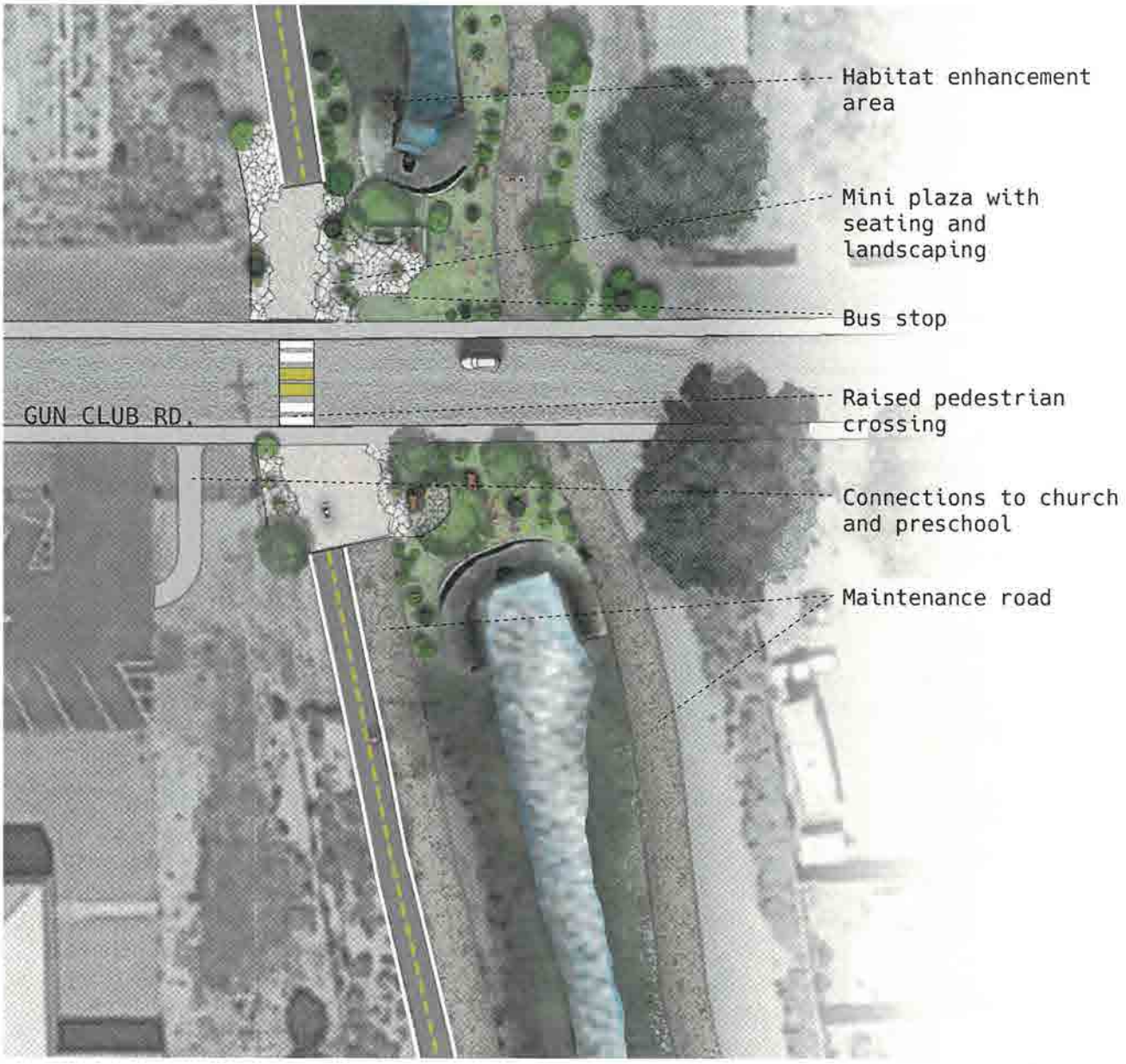


FIGURE 37. MINOR NEIGHBORHOOD NODE EXAMPLE - GUN CLUB CROSSING

PEDESTRIAN BRIDGES

Pedestrian bridges are necessary to provide continuity at two locations along the corridor: the first approximately one-half mile south of Arenal Road (Rio Grande High School) where the Pajarito Lateral intersects the Isleta Drain; and the second at the similar ditch intersection where the Arenal Main Canal crosses the drain, just north of Rio Bravo Boulevard. In those locations, relatively short prefabricated bridges can easily address the needed crossings, while minimizing interference with ditch maintenance activities. Three other locations have been noted for lateral crossings via new pedestrian bridges.

The first is adjacent to the Arenal Open Space, across from Rio Grande High School. If a west side alignment is chosen for the Isleta Drain + Trail in this area, placement of a pedestrian bridge across the drain near the midpoint of the open space would provide access to a proposed walking path that follows an existing acequia that bisects the irrigated fields of the open space facility.

The second location for a recommended pedestrian bridge falls within the Pajarito Character area, just north of Pajarito Elementary School. There is a foot path connecting the neighborhood here to the drain corridor that exists on a utility right of way. This location would be ideal to allow neighbors easy access to a future trail.

The third location is near the southern gateway trailhead off Malpais Road. Here, a bridge would be needed to cross the Los Padillas Drain to provide a direct connection to the proposed southern Gateway Trailhead. That bridge locations are shown on the Amenities maps as well as in Figure 38.

In addition to those crossings the addition of pedestrian bridges at major road crossings are recommended to enable users of the Isleta Drain + Trail corridor to safely cross busy thoroughfares. Due to the need for greater height and spans, if attractively designed these pedestrian bridges could also serve as focal points and attractions for the trail corridor, helping to highlight the corridor as a destination. Primary among these is Rio Bravo Boulevard, with its high-speed, high-volume traffic, and proximity to several existing and proposed commercial developments. A trail bridge at this location could be combined with the bridge crossing of the Arenal Main Canal noted above, to offer a safe passage over both the canal and Rio Bravo Boulevard at the same time. The proposed bridge locations described above are highlighted in Figure 38.

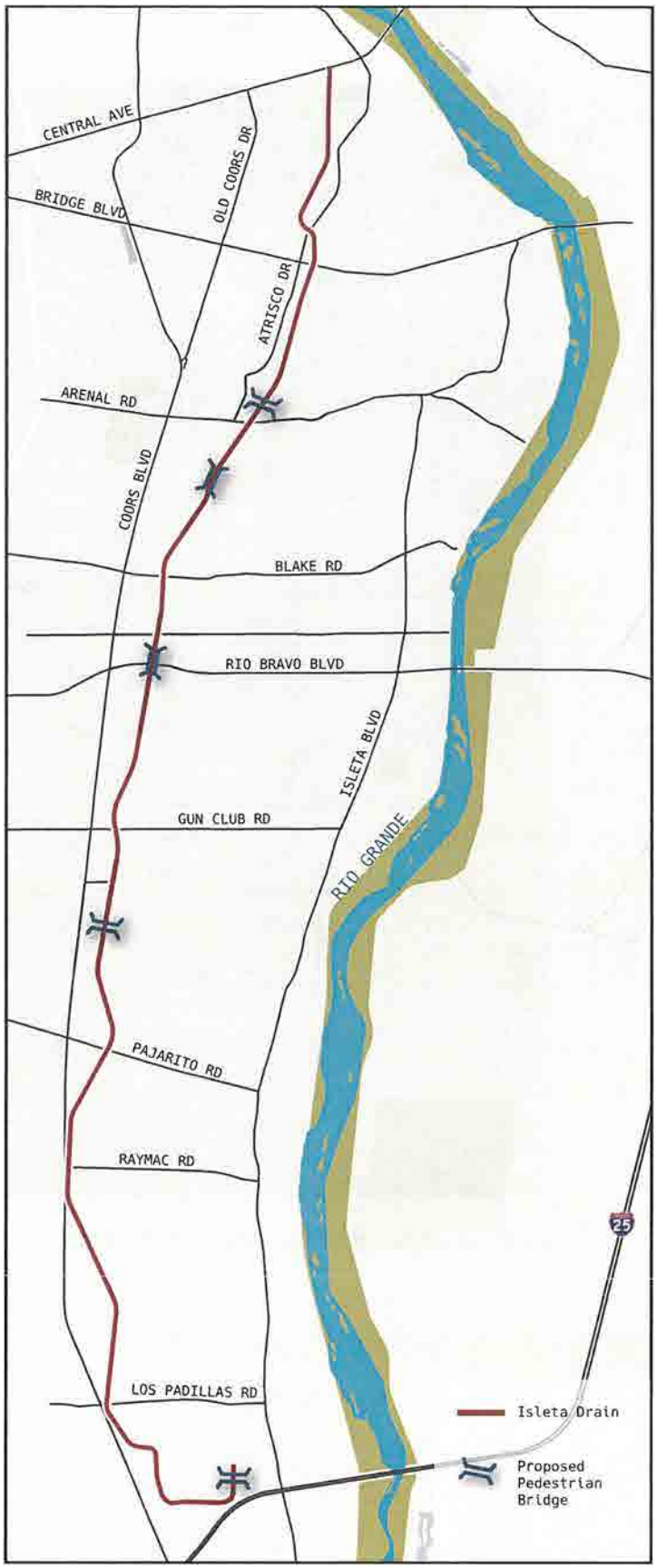
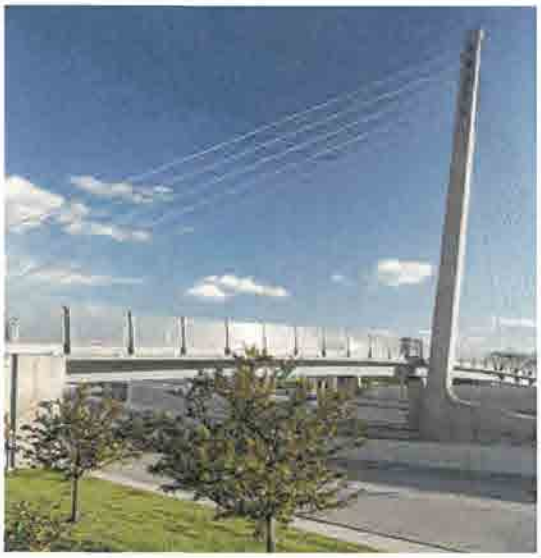


FIGURE 38. PROPOSED BRIDGE LOCATIONS

The following images illustrate "artistic" options of varying complexity for pedestrian crossings of major roadways or sensitive habitat areas:

Trinity River Bridge, Dallas

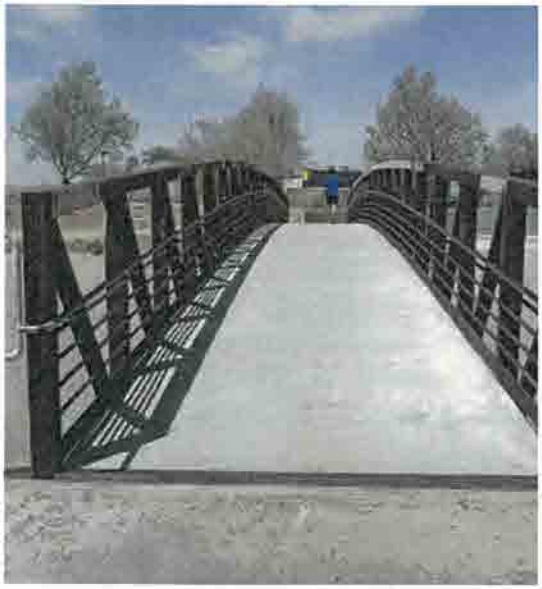
Pedestrian Bridge, Alcalde Place SW, ABQ



Bagley Pedestrian Bridge, Detroit

Rio Grande Valley State Park pedestrian bridge

Ridgefield Wildlife Refuge Bridge, Ridgefield, WA



North Diversion Channel Bridge, ABQ

2nd Street Bridge, Albuquerque

LANDSCAPE AND ENVIRONMENT

The Rio Grande traverses the high desert of Bernalillo County and creates a green ribbon of bosque as it winds its way south. The juxtaposition of this forest surrounded by the sagebrush of the desert is an example of the great contrasts of this arid environment where water becomes the determining factor of green and verdant versus a more desert palette of plants and colors. Even along the acequia and drain systems of the Rio Grande valley, interesting contradiction plays out with portions of the valley being marshy and moist depressions with bulrushes and cattails and others supporting the lower water regimes of chamisa and sagebrush.

Owing to decades of water conveyance for agricultural irrigation distribution, the acequia and drain network along the Rio Grande creates oases of Cottonwoods, New Mexico Olive and their symbiotic plant associations interspersed with plant communities more likely found in the surrounding desert. Further, portions of the corridor have been subjected to constant vehicular and foot traffic that has destroyed any semblance of plant ecosystems and more closely resembles the expanses of sand found in the harshest of desert environments. Nonetheless, the unique collocation of desert and more water-oriented plant communities offer equally unique opportunities for landscape improvements within the Isleta Drain + Trail corridor that could provide users with more comfortable environments for habitat and wildlife viewing, recreation and more passive transportation alternatives like walking and riding bikes.

Along with advancements like trailheads, trails, road crossings, pedestrian tables, respites and other transportation upgrades, the Isleta Drain + Trail can also provide users with an environment that balances transportation improvements with environmental improvements. This can be done by harvesting water to provide shade, lower temperatures, habitat and a more balanced landscape along the Isleta Drain.

Improvements that are recommended to temper the environment along the Isleta Drain + Trail include Habitat Enhancement Areas, Landscape Nodes and Parklets, Trail Greenways, and other zones to repair the general environment. These improvements can be irrigated but the project team recommends putting stormwater to beneficial use, still following the New Mexico State Engineers requirements for return flows, that will help sustain the greenway and other improvements passively and with resilience in mind.

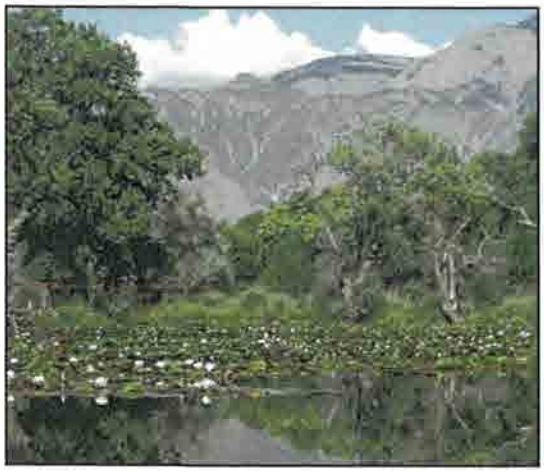
Landscape Repair

Revegetation of the general environment along the Isleta Drain + Trail, excluding the MRGCD service roads used for dredging and maintenance and the trail and its built amenities should consist of reseeding with a drill seeder, hydro-mulching, and native revegetation with low-growing wetland plants. To help sustain the landscape repair areas we recommend the use of soil imprinting, mulching, berming with vegetation to control dust and blow sand from the direction of the winds and other techniques to hold the soil in place and protect the budding landscape

Habitat Enhancement Areas

While the Isleta Drain primarily functions as a drainage channel, it is also a transportation route for residents and visitors, and habitat for the wildlife that migrates through the valley and populates water and riparian environments. These pockets of natural and sometimes endemic native plants punctuate the drain in areas where some ponding occurs. Based on many comments received from stakeholders and residents, setting aside areas for habitat along the corridor, where space allows, should be a priority. These areas would be designed and designated for wildlife and native plants, while still allowing for important MRGCD functions to take place along the entirety of the corridor.

Images below offer examples of various plants and plant communities that are suitable for use along the Isleta Drain corridor.



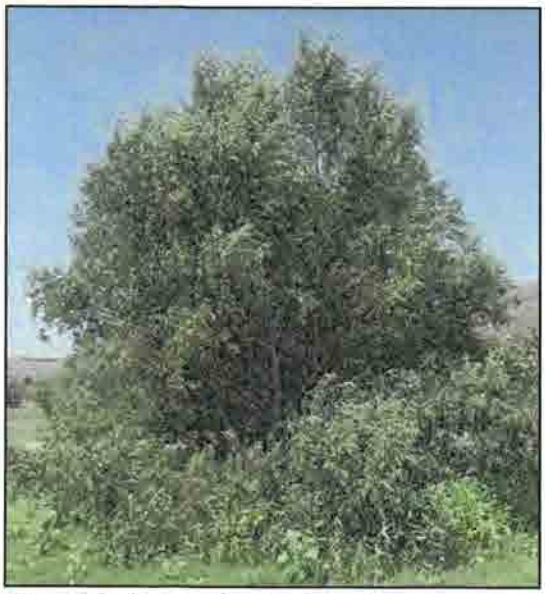
Riparian wetland at Shady Lakes

Learning wetland at Sandia High School

Understory shrub - New Mexico privet

Native Wildflowers - Globemallow a Spectaclepod

Native Wildflowers - Yerba mansa and Purple Prairie clover



Riparian shade - Gooding's willow

Blue grama grass

Habitat Enhancement Areas are recommended at specific points along the Isleta Drain + Trail. These areas will be augmented with native plant communities to provide enhanced habitat for birds and other wildlife that already inhabit the corridor and those that might be drawn to the area because of increased habitat. These enhancement areas include:

- Low-growing wetland and riparian plants such as sedges and others to enrich soils and create habitat for wildlife
- Native shrubs, grasses, and wildflowers that provide food and cover for desirable or threatened species
- Natural pollution treatment by filtration of runoff through permeable soils in planting beds (see following subsection)
- Increased carbon sequestration
- Interpretive signage that describes the elements listed above
- Shaded seating and learning areas to encourage observation of the function and interactions of the represented native plant and animal communities or just relaxation

Landscape Nodes and Parklets

There are points along the Isleta Drain + Trail corridor that are appropriate for parklets or nodes of landscaping that can be used for respites from the sun, and passive recreation like eating or resting. Some could also be trailheads. Any improvements and amenities should be place outside the maintenance right-of-way along the drain. A few notable locations include the northern gateway and Atrisco Park; the Atrisco Drive intersection with the Isleta Drain + Trail; the area near Rio Grande High School and Arenal Road; Land near San Ignacio Road that could be shared with the Iglesia Bautista Nuevas Alturas; shared open space at Rio Bravo and the Isleta Drain + Trail; the lands between Coors Boulevard Southwest and the Drain near Raymac; and the southernmost gateway to the project. These Landscape Nodes and Parklets could include:

- Both native and turfgrasses for their cooling effects and for recreational opportunities and relaxation
- Sitting and picnicking areas for trail users that may want to stop and have lunch, a snack or refreshments
- Walkways and linkages to the Isleta Drain + Trail to allow users to explore from the trail through a parklet
- Shade trees and shade structures to offer a break from the sun and to reduce the heat island effect along the trail
- Availability of drinking water for refilling water bottles to help corridor users stave off the effects of heat and the sun
- Interpretive signage opportunities to nearby attractions
- Parking

Water Harvesting and Green Stormwater Infrastructure

The Isleta Drain + Trail, like many riparian areas in New Mexico, is a corridor made up of a waterway that slices through our desert ecosystem and exposes contrasting environments. In the recommendations in this section of the master plan we plan to soften that contrast by describing Water Harvesting and Green Stormwater Infrastructure systems to collect as much drainage water as possible to "green" the environment, with a greater density of landscape materials. These recommendations will be done within the confines of the Office of the State Engineer, the MRGCD and AMAFCA requirements and regulations. The area in which we'll be concentrating these efforts will be in the overbank areas outside of the Isleta Drain itself. These techniques include slowing drainage and using some of it, holding water in place in specific areas, and treating the soil to act like a sponge. Below, we offer a number of methodologies that will help native plants survive. There are primarily two or three options for harvesting water along the overbank of drains like the Isleta: collecting water from street crossings, collecting water from the trail surface, and directing water to planting beds by contouring areas of bare dirt. The key in each case is to direct water to planting beds that are located where they will do the most good, to protect soil, to shade, and to create habitat. Below we have descriptions and depictions of the methods that we would recommend for the Isleta Drain + Trail project.

MULCHING AND SOIL AMENDING

Mulches will reduce evaporation of water stored in the ground and lessen the amount of ambient dust on the corridor. The types of mulches that we recommend for the project vary based on use. For any sloped areas like the outside slopes of perched sections of the drain we recommend 2"-6" cobblestone to hold the soil and retain water under them. Another technique that works very well on slopes is to add a 1" of small gravel mulch along slopes with native grass and forb seed, the gravel in such a thin layer helps to hold down erosion but also allows seeds to germinate and grow, during times of higher humidity, water can also condense under them to assist in plant health. For flat portions of the land, we recommend the use of organic mulch like bark or shredded wood, unless there are concentrations of water flow. Organic mulch will, over time, enrich the soil and help it retain moisture in subsurface layers. Organic mulch should be place in 4" layers when used.

SUBSURFACE RESERVOIRS AND WICKS

These subsurface reservoirs are good sources of longer-term water for most of the surface devices described in this section of the master plan. They are similar to French Drains in that they are subsurface pockets of gravel surrounded by filter fabric. However, with subsurface reservoirs and wicks we recommend the use of scoria or even straw instead of gravel to retain more water for longer periods of time and we also favor the use of perforated pipe to interconnect them in series and increase the area that they might cover. These reservoirs act like sponges and when placed correctly can increase the concentration of water particularly for trees.

INTERCONNECTED BASINS

Along portions of the greenway that are primarily flat or very shallow slopes, a series of interconnected basins can help to revegetate the area and provide a greater concentration of water to assist in plant sustainability. Each basin should be planted and mulched to reduce evapotranspiration.

MOIST SOIL DEPRESSIONS

Moist soil depressions are larger areas that are depressed in the overbank of the corridor that would collect enough water to sustain larger trees. Moist soil depressions can be as long as 100' and as wide as 25' in size and mimic the way the

areas of the Rio Grande Bosque work, collecting large amounts of water when it rains and slowly dissipating it into its historic flow areas albeit in a slightly more concentrated way. These areas can be interconnected like the basins but this will be more difficult given the confines of the corridor.

CONTOUR SWALES AND WAFFLE GRIDS

Contour swales are swales that are built on topographic contour lines. Instead of allowing water to flow down slopes these devices will collect water instead of allowing it to form rivulets along the outside side slopes of the drain near the property lines. They are typically formed and then clad with rock work or a combination of rock work and wood mulch in the "linear basins". The basins should be planted with forbs and grasses to control erosion and utilize water flow to thrive. The plants that would be seeded or planted there would be those that have very dense fibrous root systems to hold the soil in place with more strength.

TRAIL, SERVICE ROAD AND ROADWAY WATER CAPTURE

The trail and service roads along the Isleta corridor are potential sources of water collection. The roadway crossings of the Isleta Trail Corridor are also potential sources of harvested water. The sometimes-impermeable surfaces (in the case of asphalt, concrete, or tightly packed gravels) can be utilized for their impermeability to collect and direct water to planting beds that can help revegetate and shade the trail. We recommend that the cross slope on trails and services roads be 1% to 2% and not crowned, if possible, to collect as much water as possible in one area. These linear swales can be interconnected like the connected basins described above or be long swales.

SHADE STRUCTURES AND WATER HARVESTING

Any impermeable surfaces can be used for harvesting water. The roofs of shade structures are a perfect source for this water and the idea has been used in the past along a trail. The Hahn Arroyo in NE Albuquerque has a shade structure just east of Comanche Road that has a butterfly roof, it collects water and distributes it to the landscape surrounding it. We suggest that similar types of shade structures could be used on the Isleta Drain + Trail.

POLLUTION MITIGATION THROUGH BIOSWALES

Hydrocarbon pollution from automobiles is present in street runoff. This runoff should be directed into bioswales for filtering before re-entering the water table through harvested water. These devices typically use the biology of plants and subsurface soils that are mostly sand to remediate the pollution. The project team recommends that this pollution be mitigated near street crossings primarily.

FOREBAYS

Where storm drains dump into the drain, it may be possible to create a natural forebay that serves both to dissipate the force of the incoming water, as well as provide expanded opportunities for additional riparian vegetation, while also cleaning the incoming water. We recommend these designs at all storm drain outfalls along the corridor.

Maintenance Considerations

As important as landscaping is to the overall character of the corridor, it is important to consider the implications of any landscape improvements on necessary maintenance activities within the drain corridor. Any stormwater interventions must provide mechanisms for easy clean-out of accumulated trash and debris, and water harvesting landscape beds should be placed so as not to interfere with movement of equipment.

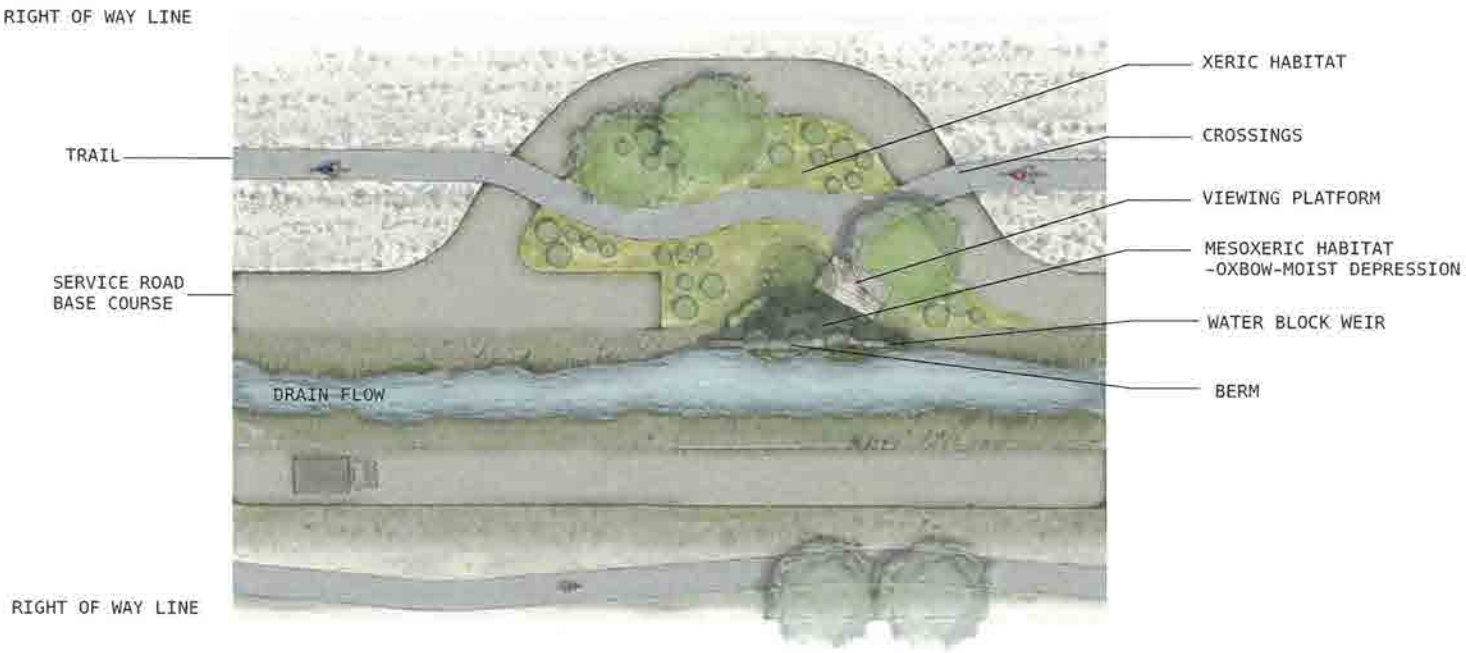


FIGURE 39. ILLUSTRATIVE EXAMPLE OF OXBOW ENHANCEMENT

DRAIN IMPROVEMENTS

The proposed trail improvements as shown will have minimal impact to the capacity of the drain in the areas of the study. The increased storm runoff from the trail will occur much earlier in the storm event than the occurrence of the peak water surface elevation in Isleta Drain. However, capacity will need to be confirmed by future engineering analysis of Isleta Drain with incorporation of new or future connections to determine impacts.

All future designs for the Isleta Interior Drain trail and associated improvements must be consistent with the SWVFRP and include the necessary analysis and SWMM updates to ensure that stormwater conveyance and flood protection will be maintained.

The existing and future conditions of the Isleta Interior Drain cannot be easily described with a typical section due to the complexity of existing structures, utilities, roadways, and other various components.

Any future trail projects will need to include and evaluate:

- Existing and future stormwater inputs and diversions that increase and decrease the flow-rate and water surface elevations at various locations within the Drain which could require the widening/excavation of the Drain and/or raising of the top of the Drain,
- The project footprint to accommodate any required changes to the Drain configuration and include maintenance access due to such changes, potentially limiting the space for trail improvements, and
- Input from Bernalillo County, MRGCD, and AMAFCA on the operation and maintenance of the Drain as a critical stormwater conveyance and flood control facility.

WAYFINDING AND SIGNAGE

Wayfinding and signage improve the overall trail user experience by improving trail navigation, establishing regulations, providing interpretation and context, and trail identification. Providing a cohesive and legible sign package for the Isleta Drain + Trail highlights the unique character and distinguishes the trail from adjacent paths and roadways. The Isleta Drain + Trail signage and wayfinding package utilizes both unique designs and standard roadway signage based upon anticipated need of trail users. It is recommended that water symbology is incorporated as well as design that echoes that which has already been used on similar projects, such as the Alameda Drain Trail.

Overall Goals

- Create a consistent, legible sign package which highlights the unique character of the Isleta Drain
- Facilitate easy access and navigation of the trail and neighboring community destinations
- Provide educational and interpretive opportunities that highlight the cultural, natural, and historical significance of the Isleta Drain
- Make the trail feel safe and welcoming through providing regulations and contact information
- Provide direction and distance information to help trail users make informed decisions on their trail usage

Materials

Signage comes in a variety of materials determined by environment, maintenance, and cost considerations. Signs may be printed on aluminum, vinyl, or plastics depending on the size and location. Standard road signs are often printed on aluminum while other interpretive elements like trail blazers, trail kiosks, and mile markers may be constructed out of more natural materials like wood or stone. For ease of replacement and maintenance, vinyl and plastic signs are recommended. Mounting materials also vary but tend to either be wood, metal, or aluminum depending upon sign and environment needs. In addition to vertical signs, road decals can also be printed and installed directly onto the path for additional wayfinding and branding opportunities. Road decals using paint may be an alternative to mile markers and trail blazers to denote mileage and provide branding where deemed feasible.

Sign Plan

The recommended sign plan includes three types of signs including trail markers, directional, and interpretive signage. Although each serves a different purpose, cohesive use of colors, logos, and layout help trail users identify the trail.

Trail Marker Signage

Trailhead signs, trail maps, and trail markers/trail blazers at trailheads and along the trail provide both a welcoming element and essential user information. Trail marker signage provides trail specific information including maps, trail details, contextual information, regulations, contact information, and branding elements. They also provide critical branding and placemaking elements to the Isleta Drain + Trail. Trailhead signs will be located at the north terminus at Atrisco Little League Park and the south terminus at Malpais Road. Trail maps will be located at Major Community Nodes and other community centers where deemed beneficial to wayfinding.

Where smaller trail markers are needed, trail markers will be used. Their intended purpose is to identify the trail, provide mileage, permitted user groups, and denote character areas. Trail markers help differentiate the trail from adjacent paths and help with trail branding. By using different colors, trail markers are a great tool to help with differentiating character areas throughout the trail. Trailhead signs may also include regulatory information including permitted user groups, restricted uses, and contact information for maintenance and emergency response.

SIGN TYPES

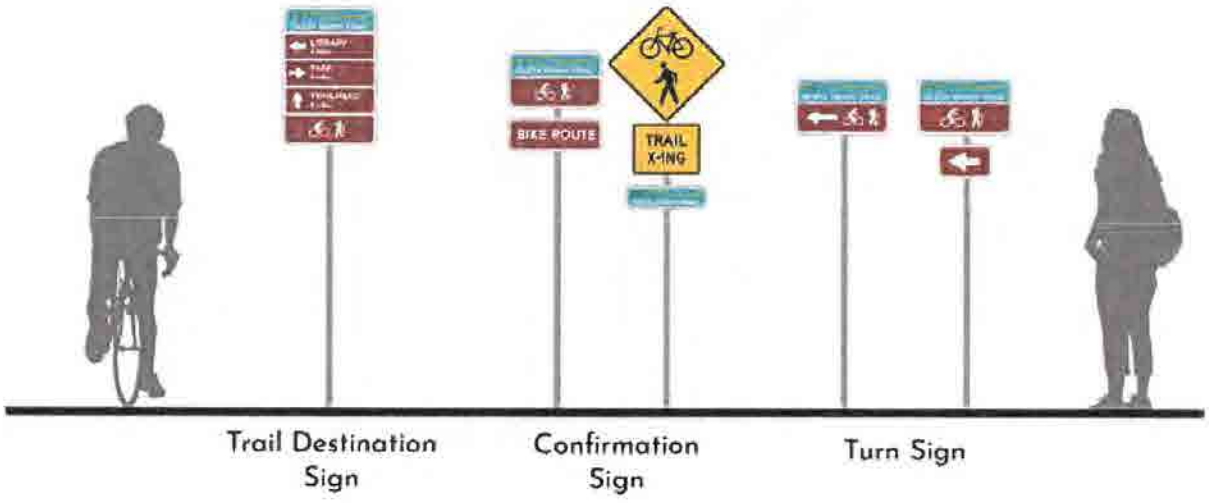
- Trailhead signs
- Trail maps
- Trail Markers/Trail Blazers

Directional Wayfinding/Signage

Directional wayfinding provides essential navigational information to trail users in a quick and concise manner. These signs are often characteristic of standard signage used on roadways. These signs identify the trail, denote location, and provide directional information to nearby roads, trails, open spaces, and community resources. These signs will also provide distance in mileage to each of these features to assist trail users in orientation. These signs can be paired with existing roadway regulation signs to reduce needed infrastructure.

SIGN TYPE

- Trail Destination Sign
- Confirmation Sign
- Turn Sign

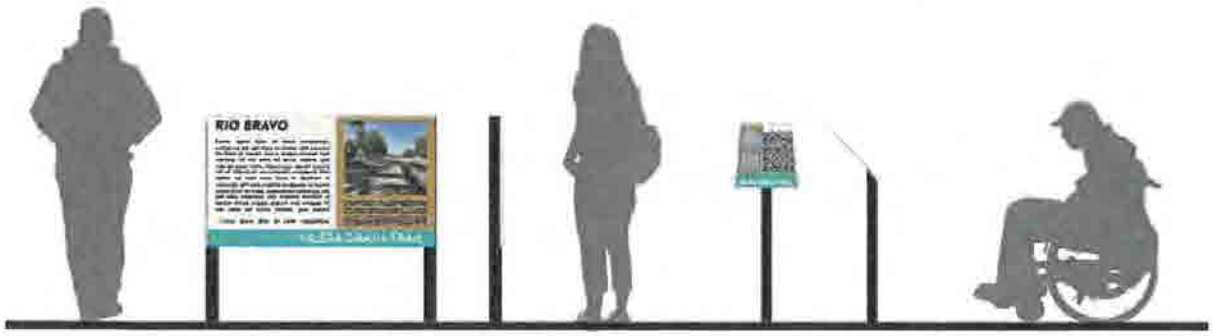


Educational and Interpretive Signage

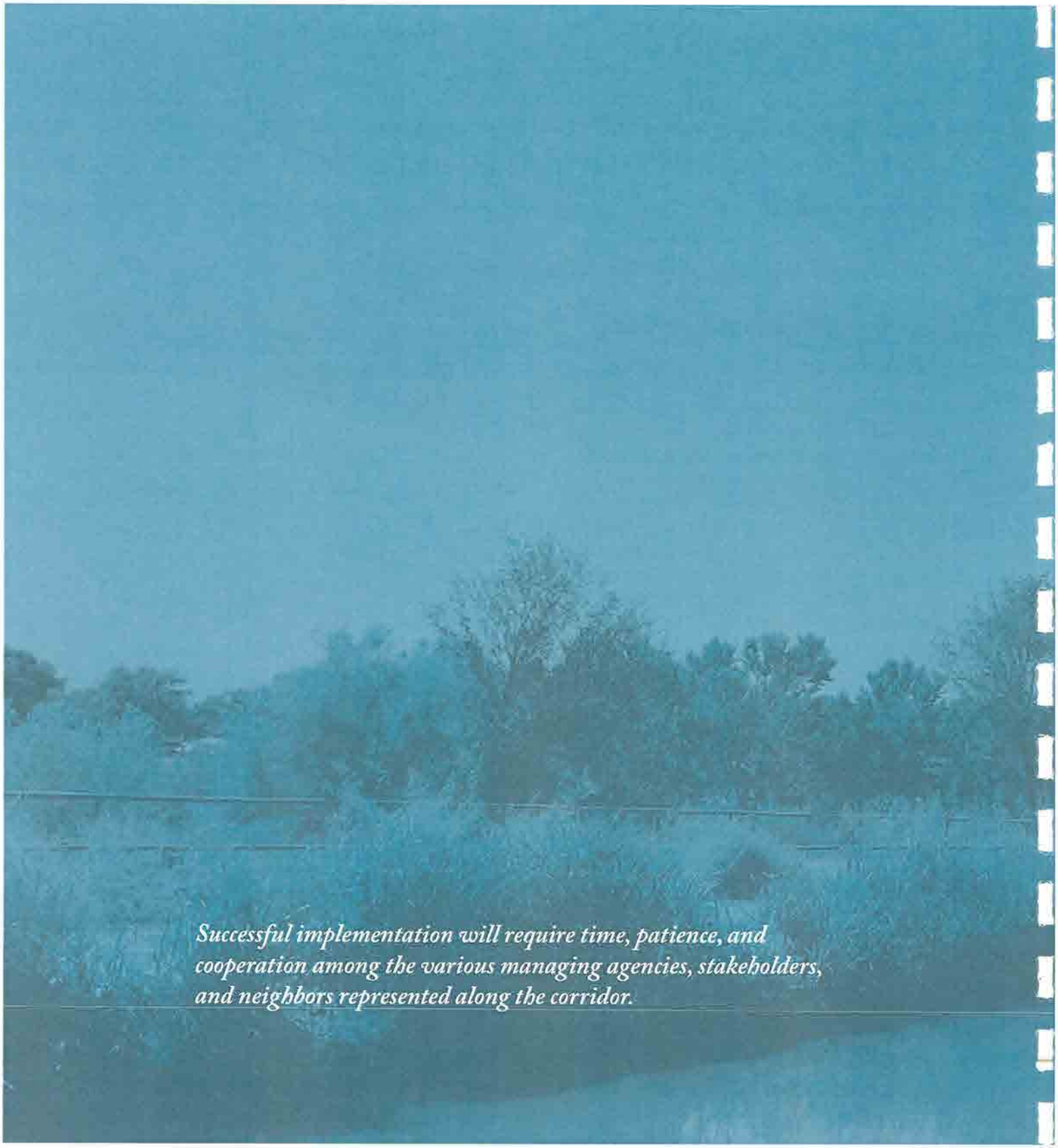
Educational and interpretive signage consists of large and small panels that include topical information on the natural, cultural, and recreational significance of the Isleta Drain. Interpretive signage is essential to assisting trail users to garner a deeper appreciation and understanding of trails and the environment they occupy through text, photographs, maps, and diagrams. These larger panels will be located at trailheads and major community nodes. MRGCD and community members should be engaged in the creation of interpretive signage content.

SIGN TYPE

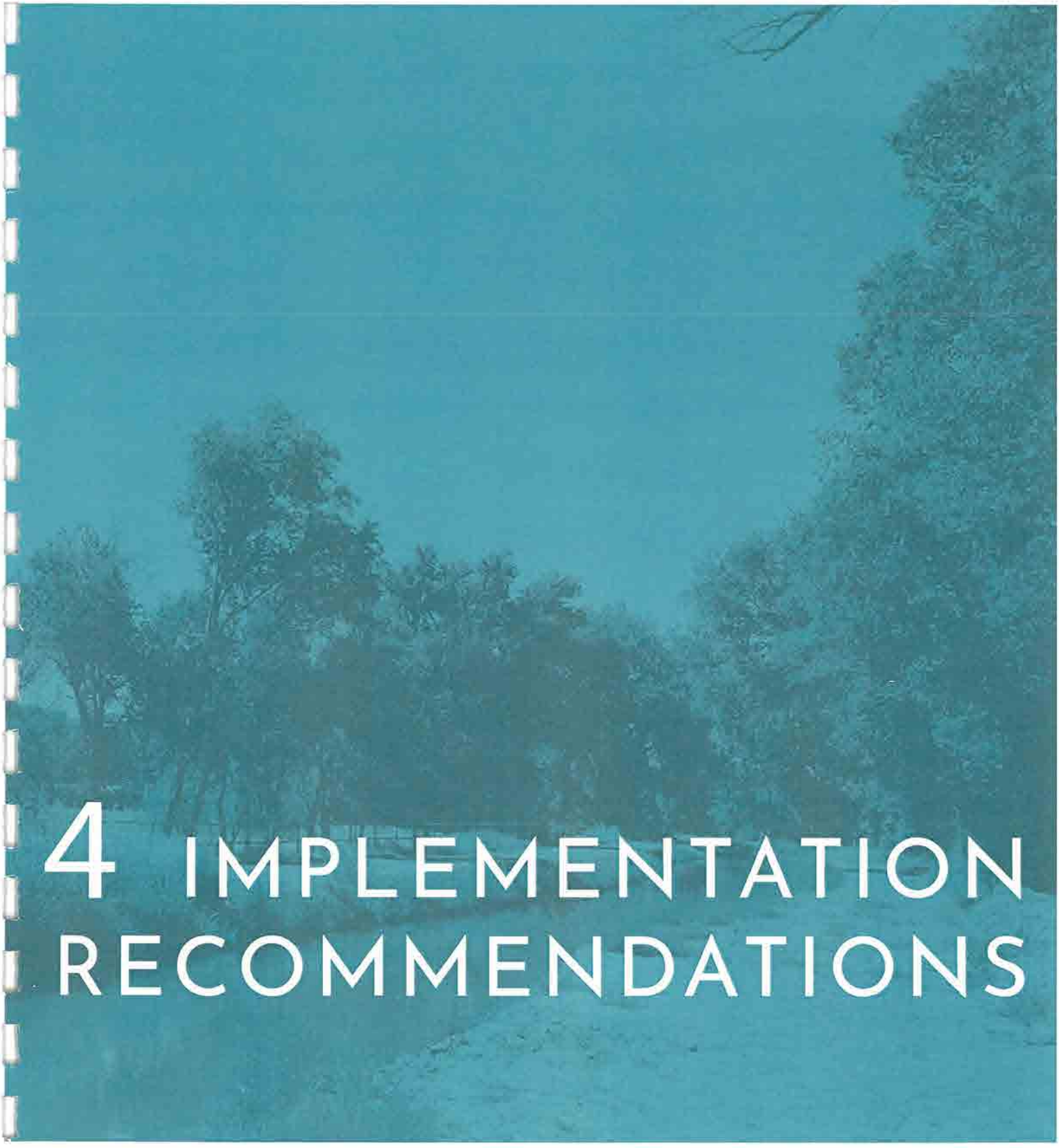
- Interpretation panel
- Education panel



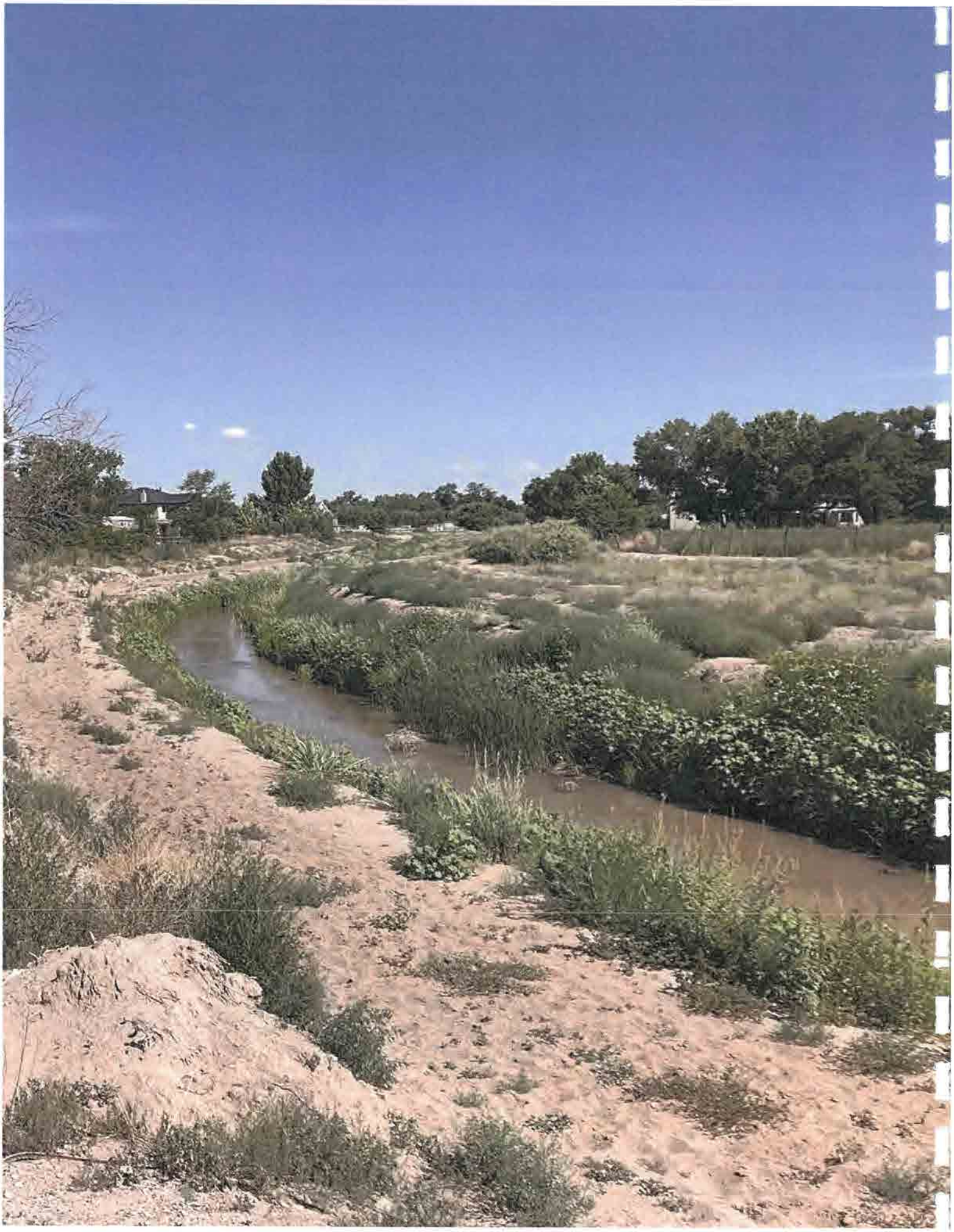
Interpretation Panel Educational Panel



Successful implementation will require time, patience, and cooperation among the various managing agencies, stakeholders, and neighbors represented along the corridor.



4 IMPLEMENTATION RECOMMENDATIONS



IMPLEMENTATION

Following adoption of this Master Plan, the trail and related facilities will need to be designed, permitted, and constructed. Since it is unlikely that funding will be available to build the entire 13 miles of recommended improvements along the Isleta Drain at one time, a phased implementation plan is needed to guide development of the corridor over the coming years. Successful implementation will require time, patience, and cooperation among the various managing agencies, stakeholders, and neighbors represented along the corridor. The following are key steps that will need to be accomplished during that implementation process.

Atrisco Park & Little League

MAINTENANCE, OPERATIONS AND MANAGEMENT RECOMMENDATIONS

Agreements and Partnerships

Interagency Corridor Management – The existing OMRRR (referenced in the Existing Plans and Regulations section of the Existing Conditions chapter) has established an interjurisdictional framework for managing the day-to-day operations of the Isleta Drain. However, as the corridor is developed further for recreational use, that document should be updated to reflect any changes in management and operations that may be required. All parties to the OMRRR should be included in the update process to ensure an equitable outcome. In general, though, it is anticipated that management responsibilities will break down as follows:

- Stormwater management will remain the primary responsibility of AMAFCA
- Ditch/drain maintenance and operations will remain under the jurisdiction of MRGCD
- Trail and trail related improvements will become the responsibility of Bernalillo County Public Works and/or Land Management

Public-Private Partnerships – In some cases, opportunities have been identified in the plan for potential future amenities or trail-related development on private property. These include properties whose owners have indicated an interest in working with the County to explore trail-related opportunities, as well as the proposed urban infill opportunity suggested to accomplish a connection to Central Avenue at the north end of the corridor. If outright acquisition of those properties is not feasible, it may be possible to move forward through the use of public-private agreements that would allow public use of certain portions of the private properties in a manner that would be beneficial to both parties. In such cases, those agreements would be expected to address any relevant maintenance or management agreements.

Community Stewardship & Programs

Beyond the partnerships described above, which may be necessary for initial implementation, development of additional long-term partnerships can be beneficial to the ultimate success of the Isleta Drain + Trail. Opportunities that exist may include:

- Community partnerships with adjacent neighborhood associations or newly developed "Friends" or "Adopt a Trail" groups can generate support and excitement about the corridor through planned events and activities, including "community night out" gatherings, cleanup days, and other social activities.
- Safe Routes to School (SRTS) is a national program with state and local affiliates that

promotes walking and biking activities aimed primarily at school-age children, but with benefits that can be realized by all age groups. In addition to that basic mission, SRTS programs are eligible for both state and federal funding through grant cycles (see next chapter for additional information). Since a number of schools lie along the Isleta Drain corridor, it should be possible to make use of that funding for certain aspects of trail and related development here.

- Similar in concept to the SRTS program, Prescription Trails is a healthcare-based program that aims to get people involved in outdoor activities such as walking, jogging, or biking. With appropriate wayfinding and mileposts, the Isleta Drain + Trail would provide a ready avenue for such prescribed activities, which in turn would serve to increase the use and stewardship of the trail.
- Local after-school programs can take advantage of a trail along the Isleta Drain, as well as be valuable promoters of the trail corridor. One example is the Center of Southwest Culture's Story Riders, which through association with the South Valley Academy "empowers children and youth of color to reconnect with our natural and cultural heritage, while providing practical training in bicycle safety, maintenance, and guided cycling experiences in which participants explore local stories and spaces." (https://www.centerofsouthwestculture.org/storyriders)

Volunteers at bosque cleanup - City of Albuquerque

Community Safety Recommendations

Although much of the Isleta Drain corridor winds through urban and suburban neighborhoods and near several commercial centers, it has not traditionally been a center of community activity. This is due in large part to locked maintenance gates and discouragement of high impact recreational uses (such as ATV use) by managing agencies concerned about liability related to the unfenced water conveyance. As a result, the drain corridor can seem remote and potentially unsafe to those accustomed to more public settings. It can also become an attractive nuisance, providing a few relatively isolated pockets for those engaging in illicit activities. While liability concerns will be addressed through management agreements and public awareness campaigns described above and earlier, personal safety of trail users and neighboring residents should remain a priority.

- Crime Prevention Through Environmental Design (CPTED) has become an internationally recognized, multidisciplinary approach to crime reduction that relies on environmental design, spatial planning, and social involvement to create safer neighborhoods. Techniques include
  - Providing good site lines into and out of public spaces to enable more "eyes" to serve as informal or "natural surveillance" of an area
  - Increasing legitimate activity – such as trail use – within any area will naturally make it less attractive to criminal activity
  - Lighting can be used in combination with other CPTED principles to illuminate otherwise dark or isolated corners, etc.
  - Access control is important from both inclusion and exclusion points of view. Opening up certain areas to allow pedestrians and cyclists to gain access to the corridor will encourage use, while exclusion of unauthorized vehicles will provide additional safety for trail users.
- Partnering with Law Enforcement reinforces the CPTED concepts above, while ensuring that officers' concerns are addressed during the design process so that adequate access is provided for effective patrols in and through the area.
  - Mobile Community Action Team to assist with biking the future drain trail
  - Provide signage with emergency phone number (505-798-7000)
  - Work with law enforcement (or other appropriate City/County agencies) to address concerns about illegal activities, dumping, stray dogs, graffiti, etc.

GATES AND ACCESS CONTROL

Gates and Access Control at road intersections was found to be an important concern of many neighbors along the drain. In some cases, the ditch roads serve as the sole access to some properties, and those uses are permitted by MRGCD. Far more often, though, gates are broken, locks are cut, or sometimes just left open, resulting in unauthorized, and often inappropriate, use of the ditch roads. MRGCD and AMAFCA have coordinated to develop new designs for their access gates, and many are in the process of being replaced. However, those gates do not account for future trail use, so additional coordination will be necessary to develop effective gates and other access control techniques to allow sanctioned uses, while preventing unauthorized uses of the drain and trail.

- In addition to gates, protective barriers should be installed in areas where motor vehicles may try to access the right-of-way along the trail. These may include bollards, decorative boulders or salvaged logs.

Gate south of Bridge Boulevard

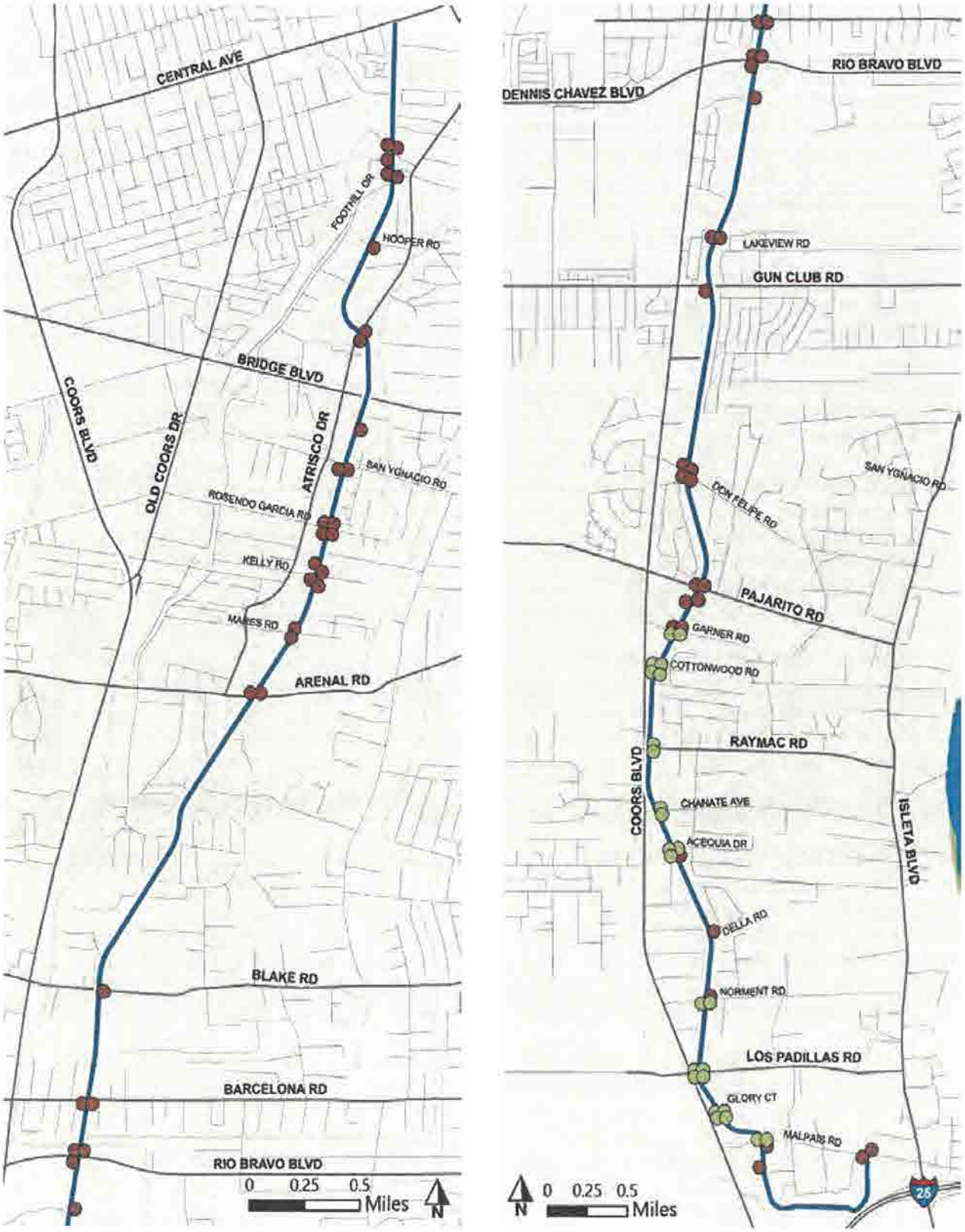


FIGURE 40. EXISTING AND NEW ACCESS GATES - NORTH AND SOUTH

ESTIMATED PROJECT COSTS

Any discussion of project costs must be prefaced by an acknowledgment that in the post-2020-pandemic era, the construction bidding climate is highly variable, to say the least. As such, depending on the timing of implementation of various phases, actual construction costs may vary significantly from these scoping estimates. While it is hoped that at some point pricing may begin to recede toward pre-pandemic levels, there are no assurances that such will occur, or if so, when. Since no specific designs have been proposed at this point, the following costs are based on basic assumptions of what might be expected for each segment, based on experience from similar types of projects. Pricing assumes asphalt paving for all-weather trail surfacing; alternative surfacing could be less or more expensive, depending on the type chosen.

ATRISCO SEGMENT (1.3 MILES) $3,847,000

- Trail construction, landscaping, and related work $1,235,000
- 1 Gateway Trailhead $1,693,000
  (Central Avenue Public/Private Connection included)
- 1 Major Community Node $260,000
- 1 Minor Neighborhood Node $200,000
- 5 Local Road Crossings $125,000

ARENAL SEGMENT (2.3 MILES) $3,706,000

- Trail construction, landscaping, and related work $2,185,000
- 2 Major Community Nodes $520,000
- 2 Minor Neighborhood Nodes $400,000
- 7 Local Road Crossings $175,000
- 2 Trail Bridges, including Abutments $160,000

RIO BRAVO SEGMENT (1.7 MILES) $4,202,000

- Trail construction, landscaping, and related work $1,615,000
- 1 Major Community Node $260,000
- 2 Minor Neighborhood Nodes $400,000
- 1 Collector Road Crossings $50,000
- 1 Local Road Crossings $25,000
- 1 OPTIONAL Trail Bridge Crossing $1,670,000

PAJARITO SEGMENT (2.3 MILES) $2,985,000

- Trail construction, landscaping, and related work $2,185,000
- 1 Major Community Node $260,000
- 1 Minor Neighborhood Node $200,000
- 1 Collector Road Crossings $50,000
- 3 Local Road Crossings $75,000
- 1 Trail Bridge, including Abutments $80,000

LOS PADILLAS SEGMENT (3.2 MILES) $4,314,000

- Trail construction, landscaping, and related work $3,040,000
- 1 Gateway Trailhead $534,000
- 1 Major Community Node $260,000
- 1 Minor Neighborhood Node $200,000
- 2 Collector Road Crossings $100,000
- 4 Local Road Crossings $100,000
- 1 Trail Bridge, including Abutments $80,000

TOTAL PROJECT COST $19,262,000

THE APPROXIMATE COST PER MILE IS $950,000.

RECOMMENDED PROJECT PHASING

1. ARENAL

The Arenal segment of the Isleta Drain extends from Bridge Boulevard to Blake Road and is one of the highest density residential areas along the drain. This section also runs by several schools, including Rio Grande High School, Atrisco Elementary and South Valley Academy. Many students already use the drain corridor as a path to their respective schools. Additionally, the Arenal Open Space plans will be implemented in the near future and the Isleta Drain + Trail could offer a welcome extension of the trails through the open space. For these reasons, the team proposes beginning with the Arenal segment for the first phase of project implementation.

2. ATRISCO

The Atrisco section – extending from Central Avenue to Bridge Boulevard offers connections between neighborhoods, commercial corridors and community hubs. This natural gateway segment off Route 66 will be an important second phase of Isleta Drain + Trail improvements, offering a safe connection into the heart of the South Valley from the city of Albuquerque along an iconic waterway.

3. RIO BRAVO

The Rio Bravo segment of the Isleta Drain (from Blake Road to Gun Club Road) will see the most dramatic commercial and residential development in the next decade. For this reason, the Isleta Drain + Trail Plan provides clear direction for pedestrian and bicycle improvements that must be prioritized as this development comes to fruition.

4. PAJARITO

The Pajarito section of the Isleta Drain (Gun Club Road to Raymac Road) marks the beginning of a noticeably rural character. It is recommended that this phase of the Isleta Drain and Trail improvements come after the first three, given the relative degree to use and connections to nearby community amenities and residential areas.

5. LOS PADILLAS

Last but not least, the Los Padillas segment provides a natural conclusion for the Isleta Drain + Trail. This segment offers sweeping views of the Isleta escarpment to the south and namesake of the drain. Completing this segment with a clear and accessible Gateway Trailhead and corresponding facilities will provide a lovely natural resting and staging area for users of the Isleta Drain + Trail.

FUNDING SOURCES

The table below outlines several potential funding resources to assist with implementation of the Isleta Drain + Trail Plan. As the Isleta Drain falls within the Albuquerque Metropolitan Planning Area, any proposed transportation projects that apply to receive federal highway or transit funding must be included in the MRCOG Transportation Improvement Plan (TIP). The TIP is updated every four years.

	Name	Description	Source	Match	Project Size	Time	Eligible Trail Activities
NMDOT Active Transportation Programs	Recreational Trails Program (RTP)	The Recreational Trails Program (RTP) provides funding to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Funds are administered by their respective states and requirements vary. Projects must be listed within the Statewide Transportation Improvement Plan (STIP) to qualify. 30% non-motorized, 30% motorized, and 40% diverse trails.	FHWA through NMDOT	14.56% match with 5% required to come from a non-Federal match	$5,000-$100,000 per project, $1.4 mil available annually	Varies	Construction, maintenance, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation.
	Transportation Alternatives Program (TAP)	The Transportation Alternatives (TA) Set-Aside from the Surface Transportation Block Grant (STBG) Program provides funding for a variety of generally smaller-scale transportation projects such as pedestrian and bicycle facilities; construction of turnouts, overlooks, and viewing areas; community improvements such as historic preservation and vegetation management; environmental mitigation related to stormwater and habitat connectivity; recreational trails; safe routes to school projects; and vulnerable road user safety assessments.	FHWA through NMDOT	14.56%	Varies; range from $10,000-$1 mil per project	Annual	Planning, design, and construction of on-road and off-road trail facilities for pedestrian, bicyclists and other non-motorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related transportation projects
	Safe Routes to School	Safe Routes to School (SRTS) programs encourages children to walk and/or bicycle to and from school safely on a daily basis. New Mexico has a statewide program that provides funding, technical assistance, training opportunities and other resources. Funding available for infrastructure projects within 2 miles of a school.	FHWA through NMDOT	No match requirement	Infrastructure projects up to $250 K; Non-infrastructure activities up to $25 K	Varies	Infrastructure, planning, engineering, and construction
	Congestion Mitigation and Air Quality Improvement Program (CMAQ)	The CMAQ program provides funding for projects, programs, and operational strategies that reduce vehicle congestion and air pollutants regulated by the Environmental Protection Agency (EPA). Eligible projects could include transit vehicle replacement, facility development, multi-use trails, and bicycle sharing programs.	FHWA through NMDOT	14.56%	Varies, $500,000 available annually	Annual	Projects that improve air quality, including on- and off-street bikeways that help reduce vehicle trips for transportation. Other eligible projects include planning, intersection improvements, roundabouts, park and ride facilities.

	Name	Description	Source	Match	Project Size	Time	Eligible Trail Activities
	The Outdoor Recreation Trails+ Grant	The Outdoor Recreation Trails+ (formerly known as the Special Projects and Infrastructure Fund) is a grant program that supports projects enhancing community outdoor recreation opportunities. This grant funds shovel-ready projects that directly provide access to parks, rivers, trails, outdoor recreation opportunities, and wildlife viewing opportunities.	NMEDD	50%	$7 mil allocated in 2022	Annual	Design, engineering plans, and construction, of shovel-ready structures and other infrastructure that enhances public nature-based outdoor recreation in a community. Projects that take a regional approach (i.e. a trail that connects to a broader system) will be weighed more heavily.
	Capital Outlay	Capital outlay funds are used to build, improve, or equip physical property that will be used by the public. In NM, state capital outlay is authorized by the Legislature and generally is nonrecurring—one-time money	NMDFA	Can serve as matching funds for Federal programs	Varies; $99,713,878 allocated in Bernalillo County in 2021	Annual	Trails, facilities, amenities, and structures open to the public.
	Local / Private Funding	Funding provided by local municipalities and private entities. This includes GO Bonds.	City/ County/ Private	Can serve as matching funds for Federal programs	Varies; County has a 5% bond set aside for GO Bonds	Varies	Infrastructure, planning, engineering, and construction