Silver City Greenways and Big Ditch Master Plan

Adopted 5/14/2013

Prepared for the Town of Silver City and Silver City MainStreet
Prepared by CommunityByDesign and the New Mexico MainStreet Program

RESOLUTION NO. 2013-17

ADOPTION OF THE SILVER CITY GREENWAYS AND BIG DITCH MASTER PLAN

Sponsored by Councilor Michael S. Morones.

WHEREAS, the 2004 Silver City Comprehensive Plan recommends encouraging public/private partnerships for the development and maintenance of park and recreation facilities and linking the major open space network to new and existing neighborhood parks, residential areas, and commercial centers; and

WHEREAS, the 2002 Floodplain Management Plan recommends the development of a trails system along Silva Creek, Pinos Altos Creek, and San Vicente Arroyo; and

WHEREAS, the 2002 Silver City Trails and Open Spaces Plan proposed greenway corridors along the Big Ditch, Pinos Altos Creek, Silva Creek, and San Vicente Arroyo; and

WHEREAS, the 2010 Silver City Downtown Action Plan and the 2013 Silver City Metropolitan Redevelopment Plan recommends specific improvements to the Big Ditch Park and the extension of pedestrian facilities along the vegetated creeks leading to and from the Big Ditch; and

WHEREAS, Big Ditch Park is a historic, cultural, and economic asset to the Town; and

WHEREAS, the Town recognizes that trails provide opportunities for alternative transportation, recreation, and connectivity; and

WHEREAS, a task force of citizen volunteers working with the Silver City Main Street Project conducted a series of monthly meetings, field studies, and site visits to develop the Silver City Greenways and Big Ditch Master Plan; and

WHEREAS, the community group identified the following benefits of the Greenways Path System, as outlined in the plan: fitness and wellness, family resiliency, economic development, increase in property values, increase in safety, and riparian protection; and

WHEREAS, the recommendations set forth in the Silver City Greenways and Big Ditch Master Plan are compatible with the goals and objectives of the 2004 Comprehensive Plan, the 2002 Floodplain Management Plan, the 2002 Silver City Trails and Open Spaces Plan, the 2010 Silver City Downtown Action Plan, and the 2013 Silver City Metropolitan Redevelopment Plan; and

WHEREAS, the Town of Silver City is committed to the conservation and protection of parks, open spaces, and trails to provide recreational opportunities and a high quality of life for residents and visitors;

NOW, THEREFORE BE IT *RESOLVED* BY THE COUNCIL OF THE TOWN OF SILVER CITY, GRANT COUNTY, NEW MEXICO, THAT:

The Town hereby adopts the Silver City Greenways and Big Ditch Master Plan as a guide for future development of Big Ditch Park and a greenways corridor trail network.

PASSED, APPROVED AND ADOPTED this 14th day of May 2013.

THE TOWN OF SILVER CITY

James R. Marshall, Mayor

ATTEST:

Ann L. Mackie, Town Clerk

Acknowledgements

Town of Silver City, New Mexico

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Community ByDesign
with
Engineers, Inc

Adopted May 14, 2013 by Resolution #2013-17

This Plan funded through the
NM MainStreet Program/Economic Development Department's Legislative appropriation.

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I. Existing Conditions

The Silver City Greenways corridor is approximately 10 miles of planned pathways along the riparian corridors within the Town of Silver City. The corridor includes segments of the Silva Creek, Pinos Altos Creek, San Vicente Creek and the section known as "The Big Ditch" through downtown Silver City. Approximately half of the planned corridor has been incised into steep channels that have been re-naturalized over the decades with native and non-native plant species. Other portions are still relatively natural such as the north extent of the Pinos Altos Creek and the south extent of the San Vicente Creek. Most of the planned corridor is within an urban or urbanizing setting.

A. LAND OWNERSHIP

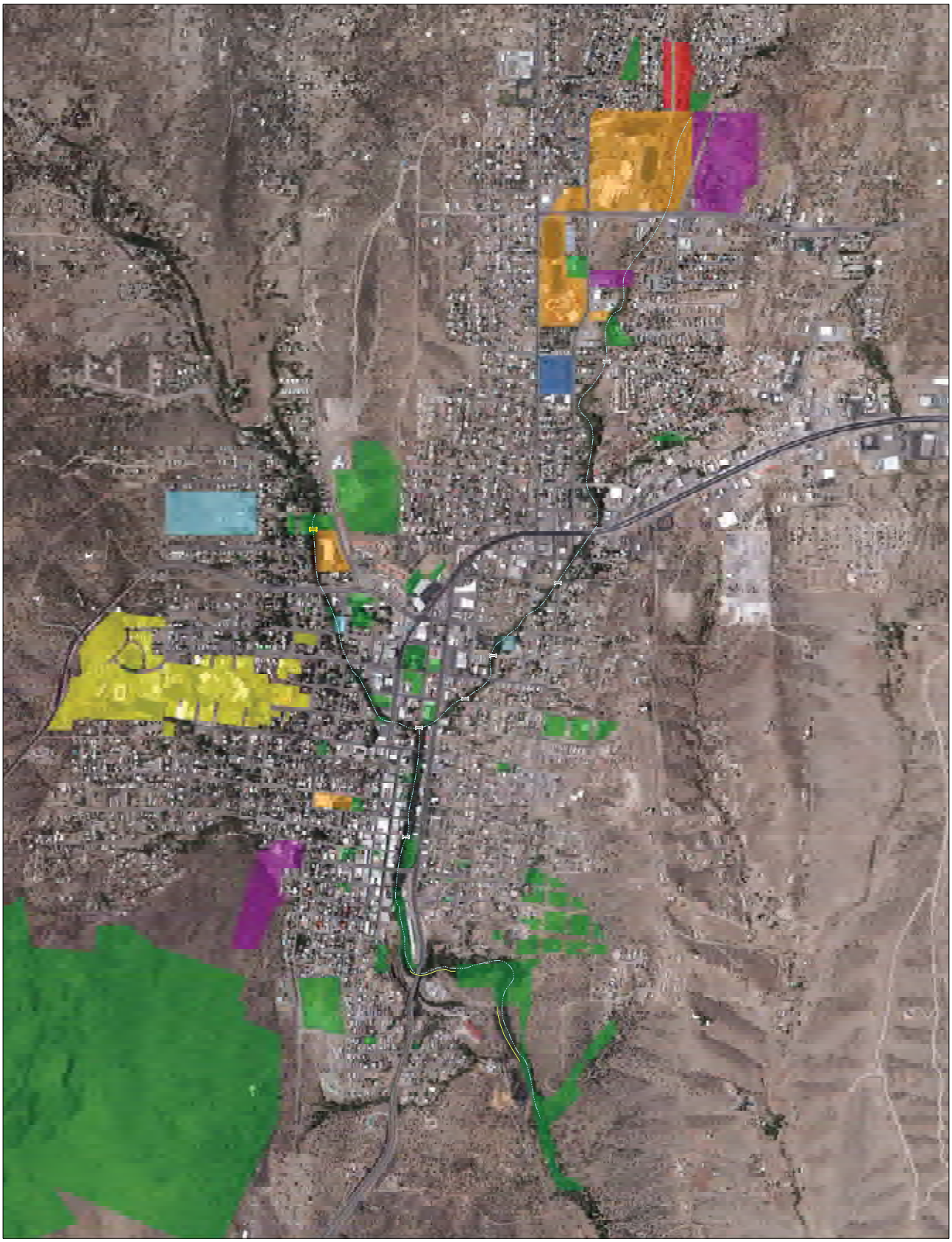
The majority of the land within the corridor is privately owned, with some properties under public ownership. Acquisition of easements or land in fee on the private ownership will be necessary to prior to development of the pathways system. The following map represents ownership status as per the County Assessor records. The map shows the properties under public ownership, with the exception of street right-of-ways, which are shown on the second ownership map with the parcels lines indicated. Land ownership maps for each section are included in the Appendix.

B. FLOODPLAIN/FLOODWAY

According to the recent FEMA mapping, the majority of the planned pathway corridor lies within the 100 year floodplain of the creeks. In most instances, due to the incised condition of the creeks, the floodplain and floodway are coterminous, with the exception of a floodplain that occurs at the confluence of the Silva and Pinos Altos Creeks. There are several sections of the creeks that have received bank stabilization and erosion control treatments. Some segments of the corridor have been subject to illegal dumping and use of non-compliant erosion control materials.

The following map indicates the areas of 100 year Floodplain, also as known as the area with a 1% annual chance of flood hazard, and the Floodway, which generally is the sandy creek bottom.

Also indicated on this map are the six sections (Sections A-F) that the corridor has been segmented for pathway planning purposes.



LAND OWNERSHIP

Big Ditch Master Plan

Town of Silver City, NM

Legend

- Parcels
- BD Study Drainage
- Existing Ped. Bridge
- Planned Ped. Bridge
- Trail Easements

Ownership

- Town of Silver City
- Grant County
- Silver City Schools
- WNMU
- Western Regional Housing Authority
- U.S. Government
- Institution

N

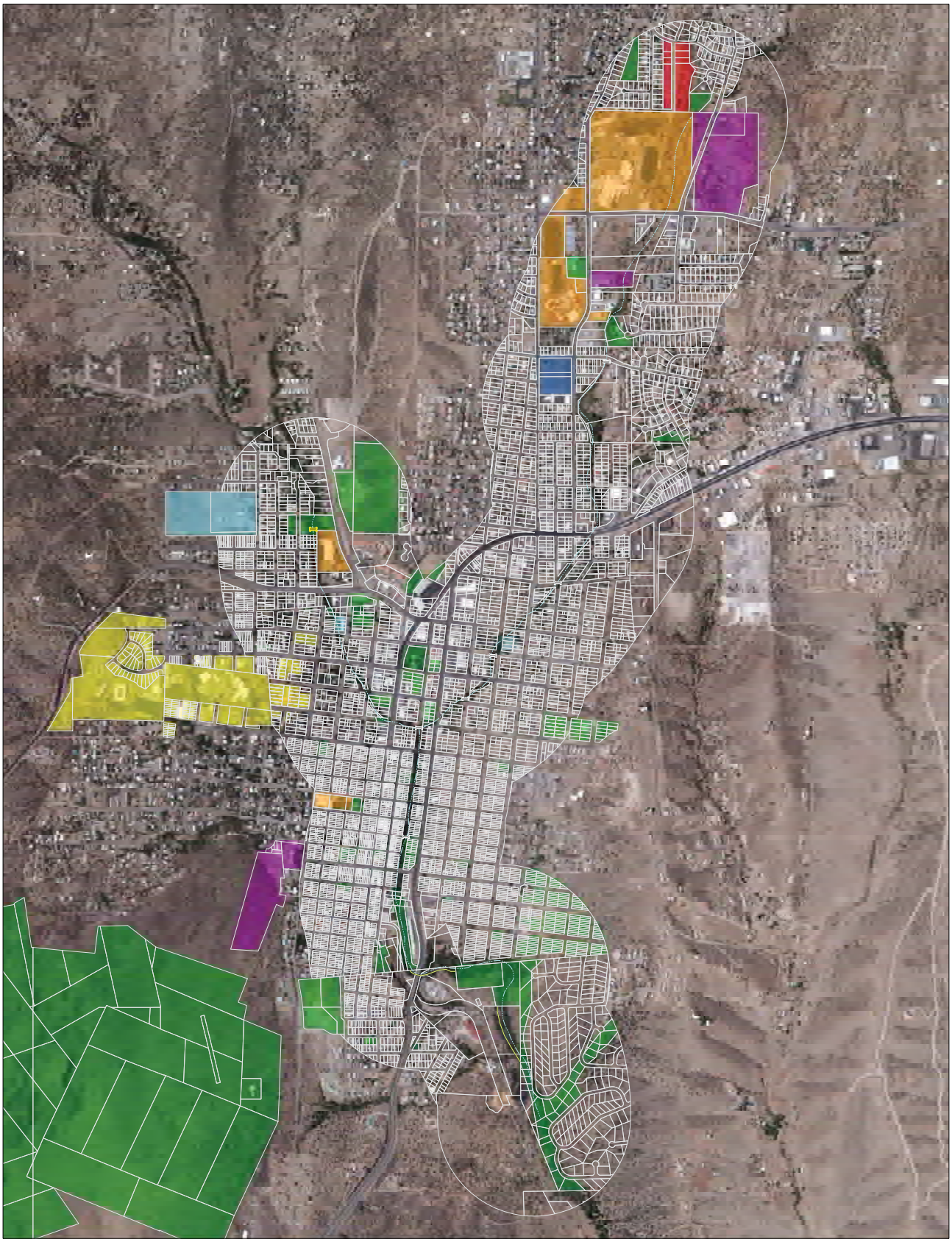
0 400 800 1,600 2,400 3,200 Feet

Map Date: May 10, 2012

2011 Aerial Imagery

Community ByDesign

The majority of data displayed on this map was provided by the Town of Silver City. All data is accepted with known and unknown inaccuracies.



LAND OWNERSHIP
Big Ditch Master Plan
Town of Silver City, NM

Legend

- Parcels
- BD Study Drainage
- Existing Ped. Bridge
- Planned Ped. Bridge
- Trail Easements

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0 400 800 1,600 2,400 3,200 Feet

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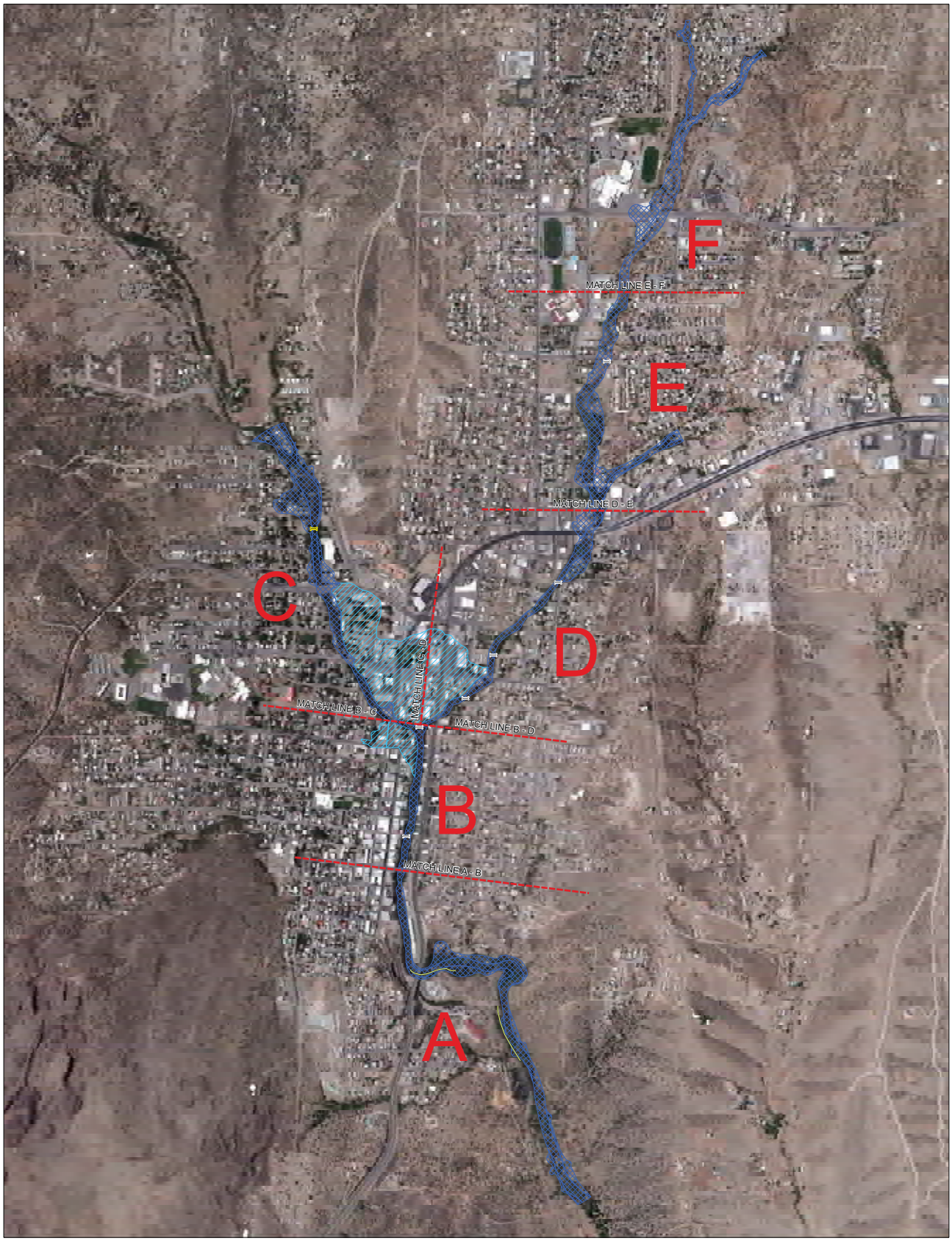

TRAIL PLANNING SECTIONS

Big Ditch Master Plan

Town of Silver City, NM

Legend

- Existing Ped. Bridge
- Planned Ped. Bridge
- Matchlines
- Parcels
- BD Study Drainage
- Trail Easements
- FEMA MAPPED FLOODWAY
- 1% ANNUAL CHANCE FLOOD HAZARD

N

0 400 800 1,600 2,400 3,200 Feet

Map Date: May 10, 2012

2011 Aerial Imagery

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Community ByDesign

EXISTING PLANS RELATED TO THE GREENWAY SYSTEM

There are a number of relevant plans and studies encompassing the Greenways and Big Ditch Master Plan area.

The **San Vicente Heritage District Plan** is a master plan for a sustainable economic, cultural, and environmental future of the area along the San Vicente Creek south of downtown Silver City. The plan for this overlapping area consists of a conceptual land use plan that identifies potential locations for a number of desirable educational, historical, and cultural activities and uses. The preferred land use plan reflects uses to create economic benefit, revitalize the blighted areas and protect the cultural and natural resources of this area.

The **2002 Trails and Open Spaces Plan** is a comprehensive plan for all of Silver City. It recommends an interconnected trail system that utilizes the creeks as greenways. The goals of this plan apply to this project by adding to and improving the area-wide trail system, and protecting existing open spaces. Specifically, the Plan references the Big Ditch area for capital improvements in the form of beautification, parks, pedestrian bridges and walks, additional parking and flood control in order to create a dynamic Central Business District. If developed properly the green strips along the arroyo offer an attractive environment as well as a functional component of the downtown area for the entire Silver City community.

The **University of New Mexico School of Architecture and Planning** conducted a study of a two-block radius within the Big Ditch Plan area. The foundation of the study was to investigate the potential of the Big Ditch Park and to look at economic vitality by increasing tourism and creating a more sustainable central environment for the community. The design visions in this study are possibilities for the community to discuss for the future development of this area.

The **Silver City Downtown Action Plan/MRA Plan** recommended several projects related to Big Ditch improvements. These improvements included utilizing the stub streets between Bullard St and the Big Ditch as green extensions into the Big Ditch with additional landscaping and street enhancements. It also recommended the Main Street Plaza improvements, as well as signage and interpretive facilities.

COMMUNITY PARTICIPATION

There were a number of ways that the community participated in the development of the Greenways and Big Ditch Master Plan. An 18 member Greenways Citizen Steering Committee was assembled and met once a month over the 10 month planning process. The committee walked the entire proposed system and was instrumental in coming up with the pathway alignments.

There were also two community workshops conducted, one at the Silver City Farmers Market along the Big Ditch, and one at the Silco Theater. Many comments were received in support of the Greenways Master Plan (included in the Appendix).

II. Proposed Greenways System

At the outset of planning for a connected pathway system through the Town of Silver City, the following Benefits, Vision and Goals statements were established.

A. BENEFITS OF THE GREENWAYS PATH SYSTEM

Fitness and wellness: by increasing knowledge of the health benefits of pathway use and promoting awareness and activity on the trails and open spaces in Silver City. Citizens, and particularly children, and able to exercise and lower the incidence of obesity, for all ages.

Family resiliency: by encouraging families to enjoy the Silver City pathway system together, and make active, healthy living a priority choice for all family members.

***Community economic development*:** by creating and promoting Silver City's existing pathway system for hiking, biking, walking, and horseback riding, opportunities for tourism and supporting the town's businesses will be increased. By expanding the pathways north and south from the Big Ditch, will increase the connectivity and accessibility for residents and tourists into the downtown area for shopping, entertainment and dining.

Increase in property values: in Denver, a survey of homeowners near trails and paths showed that 29% felt their property value increased and 43% said they had no effect. Among real estate agents 73%, felt a home near a trail would be easier to sell and 55% felt that comparable homes near trails would sell at a higher price. In Santa Rosa, CA, a similar survey found that 64% of the residents near a trail felt their quality of life had improved; 33% said their home would be easier to sell while the remainder felt the trail had no effect on values.

Increase in safety: studies have shown that crime rates are lower on trails and paths than in other environments. There is no correlation between crime and trails. Trails are safer places to be on and live near than streets, parking lots, and shopping malls. This is often because by developing pathways will increase the public use of the corridors and create "eyes in the neighborhood" to deter crime and undesirable behaviors. Trails are associated with preventing death and injury by providing bicyclists and pedestrians with a safe path away from traffic, particularly for routes for schoolchildren and elders.

Riparian protection: restoration and protection of the watershed and riparian areas can result from a well-planned greenways system, and through educating and enhancing the public's appreciation and respect through experiencing these areas.

B. VISION FOR THE GREENWAYS SYSTEM:
Establish an interconnected greenway corridor and pathway system that promotes health, social, and economic opportunities for the citizens and visitors of Silver City and Grant County.

C. GOALS OF THE GREENWAYS AND BIG DITCH MASTER PLAN:

- Protect and enhance the health of the riparian corridors.
- Connect Silver City neighborhoods to downtown and public facilities by off-street paths and trails.
- Strive to meet all state surface water quality standards.
- Create a pathway system that is feasible and minimizes operations and maintenance.
- Free and open to the public with drinking water, access and parking facilities.
- Improve public health by providing an interconnected off-road non-motorized multi-modal transportation route that encourages outdoor recreation and creates a healthy community.
- Use the trail system to create access and economic and social opportunities for underserved populations such as youth, seniors and those physically-impaired.
- Creates public open spaces and gathering places and links the existing community amenities, facilities and businesses.
- Protect and enhance property rights and economic values through a well-planned and managed neighborhood-sensitive pathway system.
- Protect public health, safety and welfare with properly designed and designated pathway alignments.
- Provide safe access to streamside opportunities within the Big Ditch downtown section.

The following maps identify the proposed interconnected and continuous pathway system for each of the pathway sections A – F. In general, there are two parallel pathways proposed, one is a creek bottom trail that follows the incised creek channels. These are proposed as Primitive trails that will utilize minimal improvements except for signage and stones placed along the trail edge for identification purposes. Typically, this trail will require light upkeep and maintenance after a storm event. These pathways are predominately for walking/hiking and equestrian users. The second parallel pathway is outside the creek bottom and generally follows the top of bank where there is adequate space, and also utilizes the public right of way for connecting the top of bank segments. These pathways are generally wider and more improved for pedestrians, bicyclers, skaters, and skateboarders. Each map indicates the specific pathway design standard for that segment, based on the four pathway types that have been defined in the overall pathway standards.

The Pathway Design Standards for each of the four pathway types, Primitive, Rural, Urban, and Shared Streets, are described and defined as to their construction guidelines. For the Primitive, or creek bottom pathway network, the majority of the pathway alignments will need to be acquired by the Town as easements or in fee. The Rural pathway segments are often on top of bank or in public right-of-way, and will require acquisition of easements where the path traverses private lands. The Urban pathway design occurs primarily in the Big Ditch section of the Greenways system, and is predominately on publically-owned land. On the segments that are privately owned, easements will be negotiated with the property owners to create a continuous pathway system.

SAN VICENTE CREEK - SECTION A

Silver City Greenways Master Plan

Town of Silver City, NM

LEGEND

- Existing Ped. Bridge
- Proposed Ped. Bridge

Proposed Pathways

- Enhanced Pedestrian Street Crossing (major streets)
- Primitive Pathway (Creek Bottom)
- Rural Pathway
- Urban Pathway
- Shared Street/Woonerf

N

0 100 200 400 600 800 Feet

Community ByDesign
1539 Burro Lane
Santa Fe, NM 87507
Phone: 505.473.4218

The majority of data displayed on this map was provided by the Town of Silver City. All data is accepted with known and unknown inaccuracies.

Map Date: April 2, 2013
2011 Aerial Imagery

BIG DITCH - SECTION B

Silver City Greenways Master Plan

Town of Silver City, NM

N

LEGEND

- Existing Ped. Bridge
- Planned Ped. Bridge
- Acquisition

Proposed Pathways

- Enhanced Pedestrian Street Crossing (major streets)
- Primitive Pathway (Creek Bottom)
- Rural Pathway
- Urban Pathway
- Shared Street/Woonerf

0 60 120 240 360 480 Feet

Map Date: April 3, 2013

2011 Aerial Imagery

Community ByDesign
1539 Burro Lane
Santa Fe, NM 87507
Phone: 505.471.4218

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SILVA CREEK - SECTION C

Silver City Greenways Master Plan

Town of Silver City, NM

N

LEGEND

- Existing Ped. Bridge
- Proposed Ped. Bridge
- Acquisition

Proposed Pathways

- Enhanced Pedestrian Street Crossing (major streets)
- Primitive Pathway (Creek Bottom)
- Rural Pathway
- Urban Pathway
- Shared Street/Woonerf

0 80 160 320 480 640 Feet

Community ByDesign
1539 Burro Lane
Santa Fe, NM 87507
Phone: 505.471.4218

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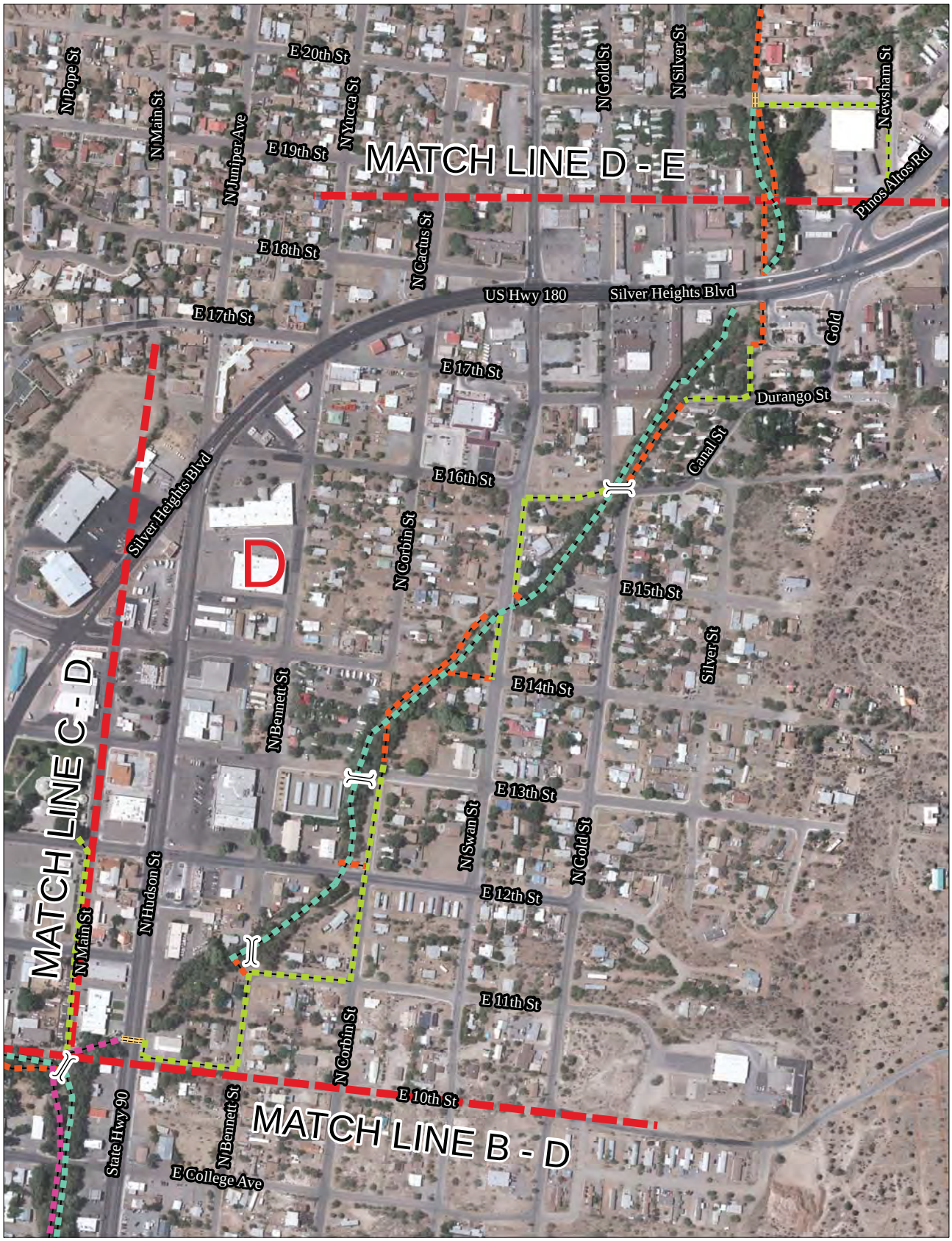
Map Date: April 3, 2013
2011 Aerial Imagery



PINOS ALTOS CREEK - SECTION D

Silver City Greenways Master Plan

Town of Silver City, NM

LEGEND

- Existing Ped. Bridge
- Proposed Ped. Bridge
- Acquisition

Proposed Pathways

- Enhanced Pedestrian Street Crossing (major streets)
- Primitive Pathway (Creek Bottom)
- Rural Pathway
- Urban Pathway
- Shared Street/Woonerf

N

0 100 200 400 600 800 Feet

Community ByDesign
1539 Burro Lane
Santa Fe, NM 87507
Phone: 505.471.4218

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Map Date: April 3, 2013
2011 Aerial Imagery

PINOS ALTOS CREEK - SECTION E

Silver City Greenways Master Plan

Town of Silver City, NM

N

LEGEND

- Existing Ped. Bridge
- Proposed Ped. Bridge
- Acquisition

Proposed Pathways

- Enhanced Pedestrian Street Crossing (major streets)
- Primitive Pathway (Creek Bottom)
- Rural Pathway
- Urban Pathway
- Shared Street/Woonerf

0 100 200 400 600 800 Feet

Community ByDesign
1539 Burro Lane
Santa Fe, NM 87507
Phone: 505.471.4218

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Map Date: April 3, 2013
2011 Aerial Imagery

PINOS ALTOS CREEK - SECTION F

Silver City Greenways Master Plan

Town of Silver City, NM

LEGEND

Existing Ped. Bridge

Proposed Ped. Bridge

Proposed Pathways

Enhanced Pedestrian Street Crossing (major streets)

Primitive Pathway (Creek Bottom)

Rural Pathway

Shared Street/Woonerf

N

0 100 200 400 600 800 Feet

Map Date: April 2, 2012

2011 Aerial Imagery

Community ByDesign
1539 Burro Lane
Santa Fe, NM 87507
Phone: 505.471.4218

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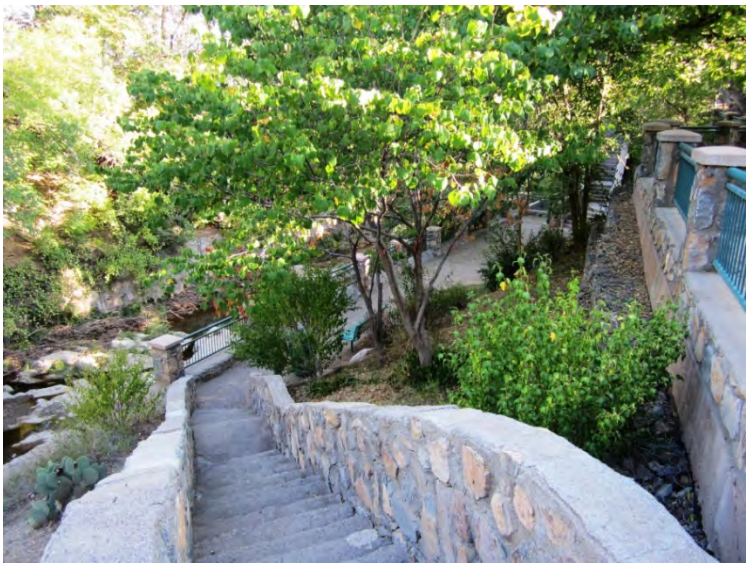
III. Big Ditch Park Conceptual Design

A conceptual design was created for the Big Ditch segment of the Greenways system that provides additional details on the improvement of this existing asset. Many of the proposed improvements are enhancements to the existing paths to increase their accessibility for multiple users and to create a continuous pathway that utilizes ramps to avoid relying solely on steps to make connections between grade changes. The following north half and south half Big Ditch plans represent these improvements. There are constraints in the original improvements of the Big Ditch by the Civilian Conservation Corps, and later the improvements made during the 1990s, that may necessitate modifying the Urban pathway standards to maintain the integrity of the existing design elements.



Big Ditch Improvements Conceptual Plan (North Section)

Silver City Greenways Master Plan

Town of Silver City, NM

N

0 30 60 120 180 240 Feet

Community ByDesign
621 Vassar Dr. NE
Albuquerque, NM 87106
505-508-3361

Map Date: October 16, 2012
2011 Aerial Imagery

The majority of data displayed on this map was provided by the Town of Silver City. All data is accepted with known and unknown inaccuracies.

Big Ditch Improvements Conceptual Plan (South Section)

Silver City Greenways Master Plan

Town of Silver City, NM

N

0 30 60 120 180 240 Feet

Community ByDesign
621 Vassar Dr. NE
Albuquerque, NM 87106
505-508-3361

The majority of data displayed on this map was provided by the Town of Silver City. All data is accepted with known and unknown inaccuracies.

Map Date: October 16, 2012
2011 Aerial Imagery

IV. Pathway Design Standards

The following Pathway Design Standards are proposed as guidelines for the planning, design and construction of the four pathway sections. Modifications to these standards are allowed when appropriate to specific circumstances that further achieve the goals of the pathway system.

1. PRIMITIVE PATHWAY

These pathways are predominantly located within the creek bottoms; however, they may also be located wherever a narrow path is desired. They are built with greater sensitivity to the existing natural environment and are therefore narrower than the paths used in more developed parts of the system, but still should accommodate multiple user groups who prefer an unpaved surface. Primitive paths should be no wider than they need to be, with two to four feet being the recommended width range, and consisting of in-situ native soils on existing grade.

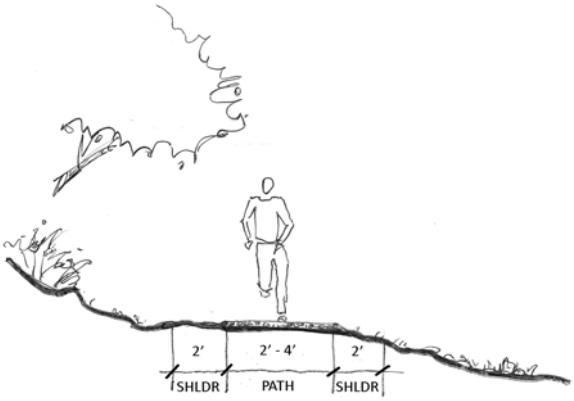
DESIGN CONSIDERATIONS

Sight Lines. Lay out paths to maximize visibility of approaching path users, thereby increasing reaction time and minimizing conflicts.

Grades. Lay out paths to minimize extreme slopes and grade changes thereby allowing users to stay under control at all times. A variety of slopes creates a more interesting and positive experience.

Plant Preservation. Care should be given during path construction to preserve vegetation in place.

Width	Two to four feet	**Turning Radius**	Five foot minimum
Shoulder	Minimum two-foot soft/mowed/six-inch max. height herbaceous plants/native soil.	**Surface Material**	Compacted native soil.
Vertical Clearance	8-foot minimum	**Running Grade***	N/A
Clearance	Minimize obstacles within a three-foot high by three-foot wide space each side.	**Cross Slope**	Existing grade
Clearance to Trees	Minimum two feet	**Barriers**	N/A.



PRIMITIVE PATHWAY
8' – 20' Easement

2. RURAL PATHWAY

Rural Paths may be used by multiple user groups such as mountain/recreational bicyclists, walkers, runners, hikers, equestrians, and others who prefer a resilient, natural surface rather than a hard paved surface, when the pathway width allows for multi-use. Paths connect local and regional destinations and neighborhoods within a larger path network. They are located in all types of situations: along roadways, washes, utility corridors, and within small and large open space areas. They may be used by small maintenance and emergency response vehicles.

DESIGN CONSIDERATIONS

Sight Lines. Lay out paths to maximize visibility of approaching path users, thereby increasing reaction time and minimizing conflicts.

Grades. Lay out paths to minimize extreme slopes and grade changes thereby allowing users to stay under control at all times. A variety of slopes creates a more interesting and positive experience.

Alignment. Vary the path alignment to create an interesting variety of views and to avoid specimen plants.

Drainage. Provide drainage control techniques that avoid any drainage flow across a path.

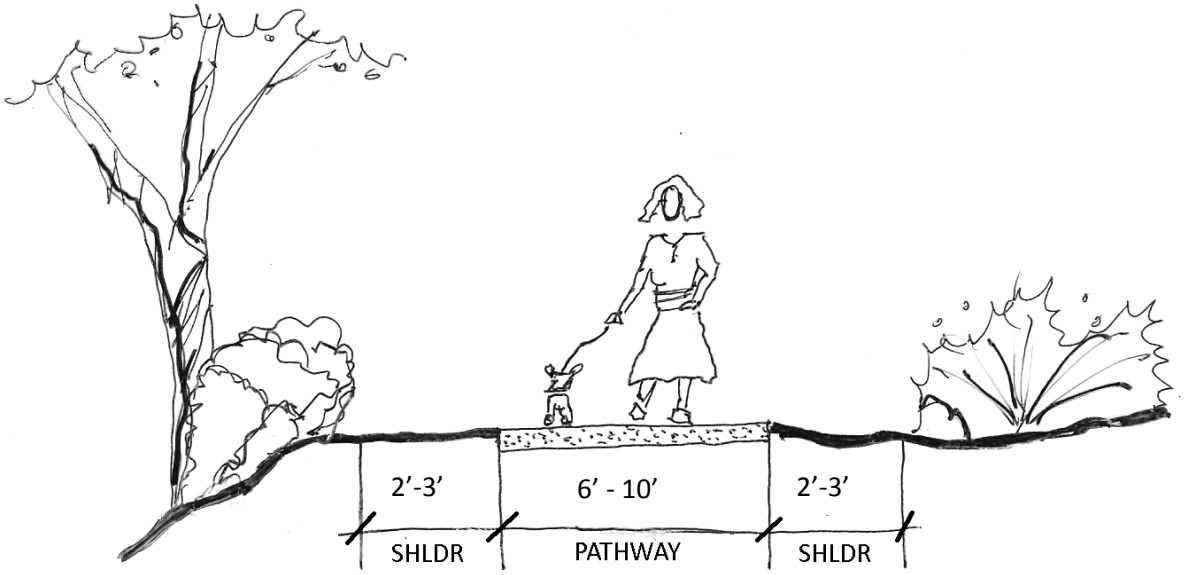
Setbacks. Landscape setback standards are expressed as minimums. They should be as wide as possible.

Plant Preservation. Care should be given during path construction to preserve existing vegetation in place.

Transitions. For new and existing paths, where they intersect with roads with or without bike lanes, provide pedestrian and bicycle-friendly transitions between the two facilities such as a ramp or curb cut.

Width	6' to 10', with 10' needed for two-way bike traffic.	**Turning Radius**	12-foot minimum
Shoulder	Minimum two-foot soft/mowed/six-inch max. height herbaceous plants/native soil.	**Surface Material**	Compacted soil cement, concrete, crusher fines or native soil or stabilized decomposed granite.
Vertical Clearance	10-foot minimum	**Running Grade**	5-8% = 800'-1500' 8-10% = 500'-800' >10% = max 500'
Side Clearance	Minimize obstacles within a three-foot high by three-foot wide space each side. Three-foot minimum to signs, benches, or any vertical element.	**Cross Slope**	Two percent (5 percent maximum; 4 percent maximum at paved crossings).
Clearance to Trees	Minimum two feet	**Barriers**	New barriers should not change water flow and be wildlife friendly, providing a minimum 18-inch gap between the bottom horizontal rail and finish grade.

At-grade pathway street crossing designs and locations will be determined on a case-by-case basis using best practices appropriate to the existing conditions and projected user profile and volumes.



RURAL PATHWAY
12' – 20' Easement

DRAINAGE CULVERTS/UNDER CROSSINGS
Existing drainage culverts provide opportunities to avoid conflict between automobiles and pedestrians, mountain bikers or equestrians and can be used to tie together the primitive pathway system in drainage bottoms. These structures vary in scale and adaptability for use in a pathway network. In addition to potential risk due to flooding, culverts may also present security problems due to the reduced visibility and light levels. A vertical clearance of at least 3 m (10 ft) is preferred for under crossings. A minimum clearance of 2.4 m (8 ft) may be acceptable if a greater clearance is not needed for maintenance or emergency vehicles, and users approaching the structure have an unobstructed view all the way through the underpass. Illumination is needed in under crossings where visibility is poor; however, light fixtures should be designed to withstand vandalism. Culvert crossings under State Highways will require design and approval by NM Department of Transportation.

A retrofit culvert underpass on State Hwy 300 in Santa Fe (7.5' height)

3. URBAN PATHWAY

This paved facility is intended to be used by bicyclists, pedestrians, joggers, strollers, wheelchair users, in-line skaters, other non-motorized users, and anyone wanting a smooth and consistent surface. Urban paths may include an adjacent two to four-foot unpaved shoulder on one side to provide greater options for the diversity of non-motorized users from rollerbladers, who prefer a paved surface, to joggers, who prefer an unpaved surface. Where possible, Urban paths should be designed according to ADA standards. Constructing paths may have limitations that make meeting ADA standards difficult and sometimes prohibitive. A clear separation from roadway traffic will give the safest experience for the user. Avoid the use of sidewalks for multi-use paths, they rarely are wide enough to accommodate multiple users and motorists do not expect bicyclists to enter crosswalk areas at intersections.

DESIGN CONSIDERATIONS

Corridor Width: Secure as broad a corridor as possible to enhance the user experience.

Landscape: Landscaping is an opportunity to highlight and enhance regional and local character, therefore, landscaping should be native and/or near native. Water harvesting techniques should be integrated into design wherever possible. Refer to local jurisdictions for specific approved plant lists.

Respite Areas: Provide respite areas with seat walls, pocket parks, plazas, and other design features at logical locations along path corridors. Compliment amenities at entry nodes and trailheads.

Driveway Crossings: Limit driveway path crossings where possible.

Signs: Include high-quality signs and interpretive exhibits where appropriate. Sign vehicular crossings of the paths with stop and warning signs to help ensure user safety.

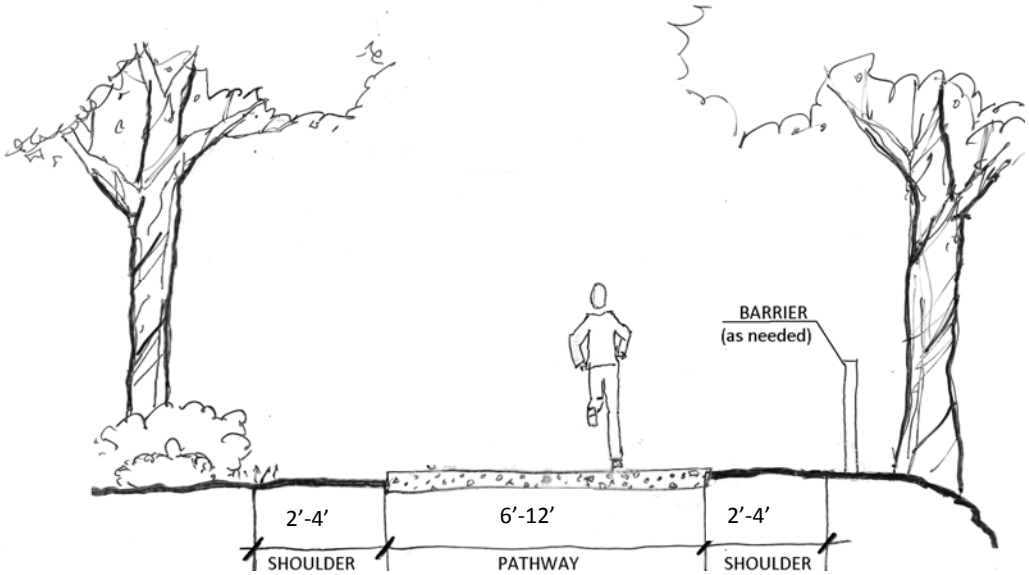
Connectivity: Enhance connectivity to community features, such as parks, schools, shopping, offices, and neighborhoods by supplementing the recommendations of this plan and provide additional linked routes and connections.

Sight Lines: Lay out paths to maximize visibility of approaching path users, thereby increasing reaction time and minimizing conflicts.

Setbacks: Landscape setback standards are expressed as minimums. They should be as wide as possible.

Transitions: For new and existing paths, where they intersect with roads with or without bike lanes, provide pedestrian and bicycle-friendly transitions between the two facilities such as a ramp or curb cut. Example, don't end a path at a sidewalk with a drop-off and not provide a smooth transition to the sidewalk.

Width	6’ to 12’, with 10’ needed for two-way bike traffic	**Turning Radius**	Five foot minimum
Shoulder	Minimum two-foot soft/mowed/six-inch max. height herbaceous plants/native soil.	**Surface Material**	Soil cement, Concrete or asphalt for paved portion; Compacted and stabilized imported decomposed granite, crusher fines or native soil for unpaved portion.
Vertical Clearance	10-foot minimum	**Running Grade***	6% up to 800 feet 7% up to 400 feet 8% up to 300 feet 9% up to 200 feet 10% up to 100 feet 11% and greater up to 50 feet
Side Clearance	No vegetation or obstacles within a three-foot high by three-foot wide space each side. Three-foot minimum to signs, benches, or any vertical element.	**Cross Slope**	Two percent (5 percent maximum; 4 percent maximum at paved crossings).
Clearance to Trees	Minimum six feet	**Barriers**	New barriers should be wildlife friendly, providing a minimum 18-inch gap between the bottom horizontal rail and finish grade.
Lighting	All outdoor lighting will be non-glare and shielded down to prevent light trespass onto to adjacent properties and protect dark skies.	**Horizontal Alignment**	Refer to AASHTO Guidelines. Gentle meander acceptable with minimum 200-foot radius.
***** Anything above 5% is not considered accessible per ADA. Grades above 5% should only occur where terrain dictates.			



URBAN PATHWAY
16’- 20’ Easement

4. SHARED STREETS/*WOONERFS*

Markings on the roadway define uses other than auto. In several instances along the proposed pathway system, either existing streets or right of way are utilized to interconnect the Greenway system in conjunction with the top of bank pathways.

Depending on the street and its pedestrian/bike improvements, there are proposed design standards to designate the Greenways paths. One arterial streets, a Green Lane may be appropriate for the short distances that these higher volume streets are used to interconnect the pathway. On local streets, or in unimproved rights of way, a 'Shared street' as signed and ground-marked designation may be more appropriate. These shared streets with minimal markings are known as "Woonerfs". Woonerfs are a Dutch word that translates roughly as "street for living," and refers to an innovative and increasingly popular contribution to urban design: a streetscape with no lane markers, curbs, sidewalks, and other obvious boundaries denoting spaces meant for single forms of transportation. While at first blush such a street would seem to make the street more dangerous for its users, the woonerf actually ensures increased safety for drivers, cyclists, and pedestrians alike, because of how the ambiguous design mixes otherwise discrete user groups.

This is the sign alerting approaching motorists of a woonerf ahead. The hybrid space of the woonerf is governed by intuition and mutual respect. The only rule of the woonerf is that there aren't really any rules, beyond using common sense to "read" the street. Blurring the boundary between street and sidewalk, woonerfs combine innovative paving, landscaping and other urban designs to allow for the integration of multiple functions in a single street, so that pedestrians, cyclists and children playing share the road with slow-moving cars.

A Silver City neighborhood "shared" street that could be signed and connected to the Silva Creek pathway.

Bennett St looking north at Pinos Altos Creek pedestrian bridge that could be signed as a "woonerf".

V. Implementation Plan

The Greenways and Big Ditch Master Plan is seen as a long range vision for an interconnected pathway system that strives to achieve the goals set out for the plan, As such, the implementation of the system will occur as quickly as possible through a wide range of implementation strategies and efforts. It should be noted that the Town of Silver City will not be solely responsible in implementing the plan, but a partner with a number of organizations and volunteers who will work collaboratively in the acquisition, funding and construction, and maintenance of the pathway system and improvements.

The Town can play a key role in a number of ways to implement the plan that requires little or no use of Town funds. These include the acquisition of trail easements from private landowners through its Land Use Code review of projects on rezonings, variances and subdivision plat approvals. It can also implement sections of the pathways and "shared street" improvements in accordance with the plan when improving town streets or constructing flood control projects, or in working with other agencies such as the County or NM Department of Transportation when they are proposing streets, highways or flood control improvements under their jurisdictions.

The Town should also consider initiating a Floodprone Land Acquisition Program (FLAP) for the acquisition and management of the floodways that comprise the heart of the Greenways and Big Ditch Master Plan. The floodways (sandy bottoms and channel sides) of the creeks that traverse the town are almost entirely under private ownership. This makes it very difficult for the Town to manage erosion control, prevent wildcat dumping, and protect the riparian resources that exist in these floodprone areas. A model program the Town could consider is the Pima County FLAP. This is a voluntary acquisition program that may also include the implementation of a flood control district that levies a small assessment in properties within the floodway for further management and protection of the private property. A description of this program is included in the Appendix.

PRIORITY PATHWAYS AND IMPROVEMENTS

A three to five year pathway prioritization has been identified on the following maps to focus the efforts of the Town, organizations and volunteers toward implementing these priority projects. The priority pathways are shown as a yellow line overlay.

A table of estimated costs to construct these priority pathways and improvements are also provided following the maps.

SAN VICENTE CREEK - SECTION A

Silver City Greenways Master Plan

Town of Silver City, NM

LEGEND

- Existing Ped. Bridge
- Proposed Ped. Bridge

Proposed Pathways

- Enhanced Pedestrian Street Crossing (major streets)
- Primitive Pathway (Creek Bottom)
- Rural Pathway
- Urban Pathway
- Shared Street/Woonerf

N

0 100 200 400 600 800 Feet

Community ByDesign
1539 Burro Lane
Santa Fe, NM 87507
Phone: 505.473.4218

The majority of data displayed on this map was provided by the Town of Silver City. All data is accepted with known and unknown inaccuracies.

Map Date: April 2, 2013
2011 Aerial Imagery

BIG DITCH - SECTION B

Silver City Greenways Master Plan

Town of Silver City, NM

LEGEND

- Existing Ped. Bridge
- Planned Ped. Bridge
- Acquisition

Proposed Pathways

- Enhanced Pedestrian Street Crossing (major streets)
- Primitive Pathway (Creek Bottom)
- Rural Pathway
- Urban Pathway
- Shared Street/Woonerf

N

0 60 120 240 360 480 Feet

Community ByDesign
1539 Rivera Lane
Santa Fe, NM 87507
Phone: 505.473.4218

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Map Date: April 3, 2013
2011 Aerial Imagery

PINOS ALTOS CREEK - SECTION E

Silver City Greenways Master Plan

Town of Silver City, NM

LEGEND

- Existing Ped. Bridge
- Proposed Ped. Bridge

Proposed Pathways

- Enhanced Pedestrian Street Crossing (major streets)
- Primitive Pathway (Creek Bottom)
- Rural Pathway
- Urban Pathway
- Shared Street/Woonerf

N

0 100 200 400 600 800 Feet

Community ByDesign

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Map Date: April 2, 2013

2011 Aerial Imagery

PINOS ALTOS CREEK - SECTION F

Silver City Greenways Master Plan

Town of Silver City, NM

LEGEND

- Existing Ped. Bridge
- Proposed Ped. Bridge
- Acquisition

Proposed Pathways

- Enhanced Pedestrian Street Crossing (major streets)
- Primitive Pathway (Creek Bottom)
- Rural Pathway
- Shared Street/Woonerf

N

0 100 200 400 600 800 Feet

Community ByDesign
15 Fl Burro Lane
Santa Fe, NM 87507
Phone: 505.471.4218

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2011 Aerial Imagery

COST ESTIMATES FOR PRIORITY PATHWAYS AND IMPROVEMENTS

Pathway construction costs for three of the Pathway classifications (Urban, Rural, and Primitive) are provided as a range of costs for each classification based on linear feet (LF) of path. These costs include the described assumptions described in Appendix D. Pathway land acquisition costs for the priority pathways are shown as a line item in the cost matrix below.

Urban Pathways: $40 to $80/LF - assumes 10' concrete width; moderate earthwork/grading and landscaping (3 trees/100' LF) with irrigation and lighting.

Rural Pathways: $6 to $12/LF - assumes 6' to 8' width surfaced with granular material; light to moderate earthwork.

Primitive Pathways: $3 to $6/LF - assumes 4' to 5' graded natural surface only; minimal earthwork.

Additional improvements: Safety railings estimated @ $20/LF and Prefab footbridges @ $1,500/LF.

Given that the proposed pathway system is a ten to twenty year projection to achieve full build-out, the following tables identifies a 3 to 5 year prioritized pathway and improvements and provides a cost estimate for each recommended priority . The prioritization of the paths and improvements were based on the input from the steering committee and community workshop.

This priority is intended to be flexible to provide a logical sequence to pathway development, but the Town should be prepared to respond to opportunities that may arise for easement acquisition or development that may not be identified on the priority list.

PATHWAY SECTION	LAND OWNERSHIP	PATHWAY CLASSIFICATION	LENGTH (LF)	COST RANGE/LF	COST RANGE
Section A- San Vicente	Town/Private	Primitive	2,170’	$3-$6/LF	$6,510-$13,020
Section B - Big Ditch	Town	Urban	400'	$40-$80/LF	$16,000-$32,000
Section E- Pinos Altos	Private	Primitive	3,770’	$3-$6/LF	$11,310-$22,620
Section F- Pinos Altos	Private/County	Primitive	1,620’	$3-$6/LF	$4,860-$9,720
Private Land Acquisition			4,000’ @ 20’ width	$6,000/ac	$11,000
TOTAL PRIORITY PATHWAYS			7,960' (1.5 miles)		$49,680-$88,360
MainStreet Plaza Improvements	Town	Porous Paving, Lighting, Landscaping, Performance Area, Storage, Bathrooms	18,500 SF	$4/SF	$130,000
TOTAL PRIORITY ACQUISITION AND IMPROVEMENTS					$179,680-$218,360

VI. Funding Sources

There are a number of funding sources available from federal, state and other agencies. The Town can assist organization who apply for some of these sources when there are match requirements (funds and/or in lieu assistance). Some potential funding source partners are non-profits, state or federal agencies, foundations, land trusts, other local governments and conservation groups. It is important to note that these partnerships and additional funding sources often come with restrictions. The following list is not intended to be inclusive, but to provide a short list of some potential sources.

Land and Water Conservation Fund (LWCF).
The LWCF Program is administered nationally by the U.S. Department of the Interior, National Park Service. Annual appropriations of federal funds are made to the states to provide fifty (50) percent matching grants for general public outdoor parks, recreation and conservation projects. The New Mexico State Parks Division of the Energy, Minerals and Natural Resources Department administers the Land and Water Conservation Fund (LWCF) federal grant Program. The LWCF Fund Act of 1965 (P.L. 85-578) created a program to stimulate, encourage and assist state and local governments to acquire, develop and improve viable outdoor recreation areas and facilities. New Mexico has received $37.4 million dollars from the LWCF program since its inception 40 years ago and funded hundreds of projects around the state from baseball and soccer fields to trails, playgrounds and picnic areas. State agencies, municipalities, counties, schools, and tribes have developed and improved over 1,000 close to home outdoor recreation areas in response to the needs of its citizens and visitors by providing a permanent legacy of parks, facilities and open space. These federal matching funds are available for open space acquisitions, but are dependent upon annual appropriations from Congress. These funds are awarded in a highly competitive process, and are generally used for high-profile, expensive acquisitions. Projects with highly coordinated, assertive fundraising committees with the support of local Congressional representatives and Senators are most likely to be funded.

North American Wetlands Conservation Fund.
Federal grants are available to public and non-profit entities for constructed wetlands projects that offer or enhance values in wildlife and fisheries; and improve water supply, water quality, flood control, or erosion protection. Wetland acquisition, enhancements and restoration projects may also be eligible. The program is administered through the North American Waterfowl and Wetlands Office of the U.S. Fish and Wildlife Service to encourage partnerships to conserve North American wetland ecosystems for waterfowl and other migratory birds and other fish and wildlife that depend upon such habitats. Both a regular grant program and a streamlined small grant program are available.

National Fish and Wildlife Foundation Challenge Grants.
The National Fish and Wildlife Foundation funds projects to conserve and restore fish, wildlife and native plants through challenge grant programs. The Foundation awards challenge grants to projects that:

- Address priority actions promoting fish and wildlife conservation and the habitats on which they depend;
- Work proactively to involve other conservation and community interests;•
- Leverage Foundation provided funding; and•
- Evaluate project outcomes.

Eligible grant recipients include federal, state and local governments, educational institutions, and nonprofit organizations. Project proposals are received on revolving basis with two decision cycles per year.

Rivers, Trails, and Conservation Assistance (RTCA) Program.
The Rivers, Trails, and Conservation Assistance Program is a community resource that works with local citizen groups to revitalize nearby rivers, preserve valuable open spaces, and develop local trail and greenway networks. The program does not provide funding; rather it offers expertise to local groups trying to get their project off the ground. Information on trails acquisition, construction and maintenance can be found on their webpage at http://www.nps.gov/rtca/.

Moving Ahead for Progress in the 21st century (MAP-21)
Congress reauthorized the former SAFETEA-LU Enhancement funds to the MAP-21 program. This program provides federal transportation funds to the states, which have more control on how they are utilized. There are funds allocated for sub-programs such as Multi-modal projects and Enhancement projects that may be used for trails, bike paths and pedestrian infrastructure enhancements.

American Hiking Society
The American Hiking Society's National Trails Fund is dedicated solely to building and protecting hiking trails in the United States. National Trails Fund grants are designed to give local organizations the resources they need to secure access, volunteers, tools, and materials to repair and protect America's hiking trails. Grants will be awarded for projects designed primarily to serve hikers, although multi-purpose human-powered trail uses are eligible; projects that secure trail lands, including acquisition of trails and trail corridors and the costs associated with acquiring conservation easements; projects that will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage; and projects that promote constituency-building surrounding specific trail projects, including volunteer recruitment and support. Higher preference is often given to projects that utilize volunteer labor. To be eligible, applicants must be a nonprofit 501(c)(3) organization and must be an AHS Alliance member. Grants will range from $500 to $5,000 per project. Visit the AHS Web site for complete grant guidelines, the online application form, an FAQ, and information on becoming an AHS Alliance Member.

Local Funds
General Obligation Bond Issue. GO bonds can be used to fund trails and open space projects. Often new bond projects are approved when they are additional phases of a successful program.

Quality of Life Tax
The Town or County can approve and put to the voters a Quality of Life gross receipts tax increase to fund the Big Ditch improvements and pathways acquisition and construction costs. This GRT increment can be a minimum of 1/16 %.

Development Impact Fees
These are fees or taxes assessed on new commercial and residential property. Impact Fees reflect the need for facilities created by new development.

Public/Private Partnerships
There are a number of opportunities for partnerships to occur between various entities. Partnerships hold the highest potential for redevelopment opportunities to occur in the Big Ditch area.

NM MainStreet Capital Outlay Fund
The NM State legislature has allocated between $1.5 and $2 million the two past years for MainStreet communities in NM. These funds can be used for master planning, design, engineering and construction purposes for projects that have been identified in a community-based downtown master planning process.

Infrastructure Capital Improvement Plan
The Town of Silver City's Infrastructure Capital Improvement Program (ICIP) is to enhance the physical and cultural development of the Town by implementing the Silver City Comprehensive Plan and other adopted plans and policies. Through a multi-year schedule of public physical improvements, ICIP administers approved Capital Expenditures for systematically acquiring, constructing, replacing, upgrading and rehabilitating Silver City's built environment. In practice, the ICIP develops, and sometimes directly implements, diverse projects and improvements to public safety and rehabilitation of aging infrastructure such as drainage systems and parks and trails.

Private Sector Grants
Corporate Contributions.
These are grants of funds or in-kind materials or services by businesses. Companies generally will expect a promotional or advertising benefit commensurate with the grant amount.

Local Policies and Regulatory Measures
Zoning and Subdivision Regulations.
The Town has zoning and subdivisions regulations that presently require developers to submit plans for review and approval. The plans must meet certain engineering criteria as stipulated in the Town zoning ordinance and municipal codes. The Town can require that land unsuitable for development due to flooding, improper drainage, steep slopes, unsuitable soil conditions, utility rights of way and other conditions that may be harmful to public safety, health and general welfare may not be developed unless adequate methods are formulated and approved. In addition, developers could be required to dedicate land for parks, open space and recreational facilities or make cash-in-lieu-of-land dedication and pay fees for park and recreation facilities.

Floodplain Ordinances.
Requires that all structures or land modifications in the designated floodway and floodplain comply with certain requirements. Specifically, a permit is required before any construction can take place in the floodplain. Any encroachment in the floodway is prohibited unless a licensed professional engineer or architect can demonstrate that encroachment will not increase the flood level of the 100-year flood by more than one foot in the floodway fringe and result in no flood level increase in the floodway.

Buffer Zones.
Requires the developer to dedicate open space and/or setbacks along the edges of stream corridors, wetlands, and other places where potentially incompatible land use may abut. The goals may include preserving water quality, protecting groundwater discharge, attenuating stormwater runoff and other general health, safety and welfare benefits.

Conservation Subdivision Techniques.
Encourage the developer to plan the property with an emphasis on preserving the natural and cultural resources of the site. The developer is also given the flexibility to cluster lots. on land more suitable for

building in order to set aside more sensitive areas such as floodplains and floodplain buffer areas for open space. The open space might be held by a non-profit land trust controlled by the homeowners affording certain tax benefits. Under such a program the Town may provide technical assistance as well as certain incentives such as reduced application fees, increased density bonuses, and expedited application review.

Watershed Protection and Storm Drainage Impact Fees.
Provides for an impact fee based on the square footage of impervious surfaces such as those created by roads or rooftops. The funds are earmarked for storm drainage facilities including acquisition of open space (including stream corridors, wetlands and ponds) for stormwater storage and conveyance.

Dedication/Density Transfers.
Allow the dedication of greenway corridors or open space by the transfer of density to other portions of the property or to contiguous land that is part of a common development plan. The greenway or open space may be deeded to the City or owned and maintained by a property owners association. While the overall density of the development remains the same, development may be clustered onto smaller lots. Some communities also allow the transfer or sale of density bonuses to other developers or locations.

Federal Policies and Regulations
Clean Water Act. Section 404.
Probably the most powerful and effective non-local regulatory tool. Permits are required when a project will disturb wetlands defined as jurisdictional waters of the U.S. Related programs such as the Wetlands Reserve Program and Conservation Reserve Program promote the preservation of wetlands on agricultural properties.

National Flood Insurance Program (NFIP).
The Federal government will provide for flood hazard insurance to property owners in communities that meet guidelines set by the Federal Emergency Management Agency (FEMA). This provides a strong incentive for communities to write and enforce floodplain protection ordinances. FEMA has also created a community rating system that provides an insurance premium reduction if communities go beyond the minimum requirements.

Land and Right of Way Acquisition Techniques
Note: New Mexico has a Recreational Use Statute, meaning that the liability of property owners and adjacent property owners who grant right of way for recreational purposes is limited.

Fee Simple Purchase. Includes the entire bundle of rights in perpetuity and is usually the most costly type of acquisition.

Easements and Purchase of Development Rights (PDRs). .
A conveyance of certain, but not all, rights associated with a property. Several types of easements may be applicable here including: ***public access*** **(**i.e. for trails**);** ***conservation*** *(*to protect natural resources, floodplain or water quality values); and ***preservation*** (to protect historic integrity or values of a property) or combinations thereof. Many easements may allow the owner to continue his use of the property for compatible purposes such as farming and some easements may allow the owner to restrict public access. In some cases, the Town may simply purchase the development rights.

Donation/Tax Incentives.
A willing property owner conveys the property or interest in property as a charitable contribution or at a less than fair market value price (bargain sale). The donor may be eligible for federal, state and local tax deductions and may be able to avoid inheritance taxes, capital gains or recurring property taxes. In some cases, the owner may donate a future interest in the land or retain a life tenancy allowing the donor to remain on the property, use the property, or take income from the property for the remainder of their life or lives.

Option, Lease-Option or First Right of Refusal.
This is an agreement with the owner to secure the right to acquire the property in the future. This protects the land in the short term until funds are found to make the purchase. Variations on this might include transaction through a third party such as a land conservancy or The Trust for Public Lands, where the third party buys and holds the land on the city's behalf. The city might make rent payments or installment payments on the property over an extended period of time.

License or Revocable Permit—
A property owner grants the right to use the property (usually a trail right-of-way) for a period of years (usually 25 yrs. or more). In the case of a revocable permit, the grantor may terminate the right of use or access under certain conditions. Examples include the right for a trail to pass through a State Highway right-of-way or through a property where the owner is hesitant to grant permanent access.

Cooperative Partnership Land Management.
Certain public agencies may choose to cooperate and partner in the pursuit of mutual land management benefits. Under this scenario, public land owners (county, school districts, state) agree to manage the land for multiple objectives such as conservation, land treatment of wastewater, wetland banking, joint use recreational/ maintenance trails and water quality benefits. These might be implemented through short and long term intergovernmental agreements.

Appendix

A. Section Maps A-F of Public Ownership

B. Community Workshop Display ad/flyer

C. Community Workshop Comments

D. MainStreet Plaza Improvements Cost Estimates

E. Greenways Pathways Estimated Construction Costs Source

F. Pima County Floodprone Land Acquisition Program (FLAP) Information

G. Example of Trail Easement Between Public Agencies for $1.00

STUDY SECTION A OWNERSHIP

Big Ditch Master Plan

Town of Silver City, NM

Legend

- Existing Ped. Bridge
- Planned Ped. Bridge
- Matchlines
- Trail_Easements
- Parcels
- BD Study Drainage

Ownership

- Town of Silver City
- Grant County
- Silver City Schools
- Western Regional Housing Authority
- WNMU
- U.S. Government
- Institution

N

0 100 200 400 600 800 Feet

Map Date: May 10, 2012

2011 Aerial Imagery

Community ByDesign
621 Vassar Dr. NE
Albuquerque, NM 87106
505-508-3361

The majority of data displayed on this map was provided by the Town of Silver City. All data is accepted with known and unknown inaccuracies.

STUDY SECTION B OWNERSHIP

Big Ditch Master Plan

Town of Silver City, NM

Legend

- Existing Ped. Bridge
- Planned Ped. Bridge
- Matchlines
- Trail_Easements
- Parcels
- BD Study Drainage

Ownership

- Town of Silver City
- Grant County
- Silver City Schools
- Western Regional Housing Authority
- WNMU
- U.S. Government
- Institution

N

0 60 120 240 360 480 Feet

Map Date: May 10, 2012

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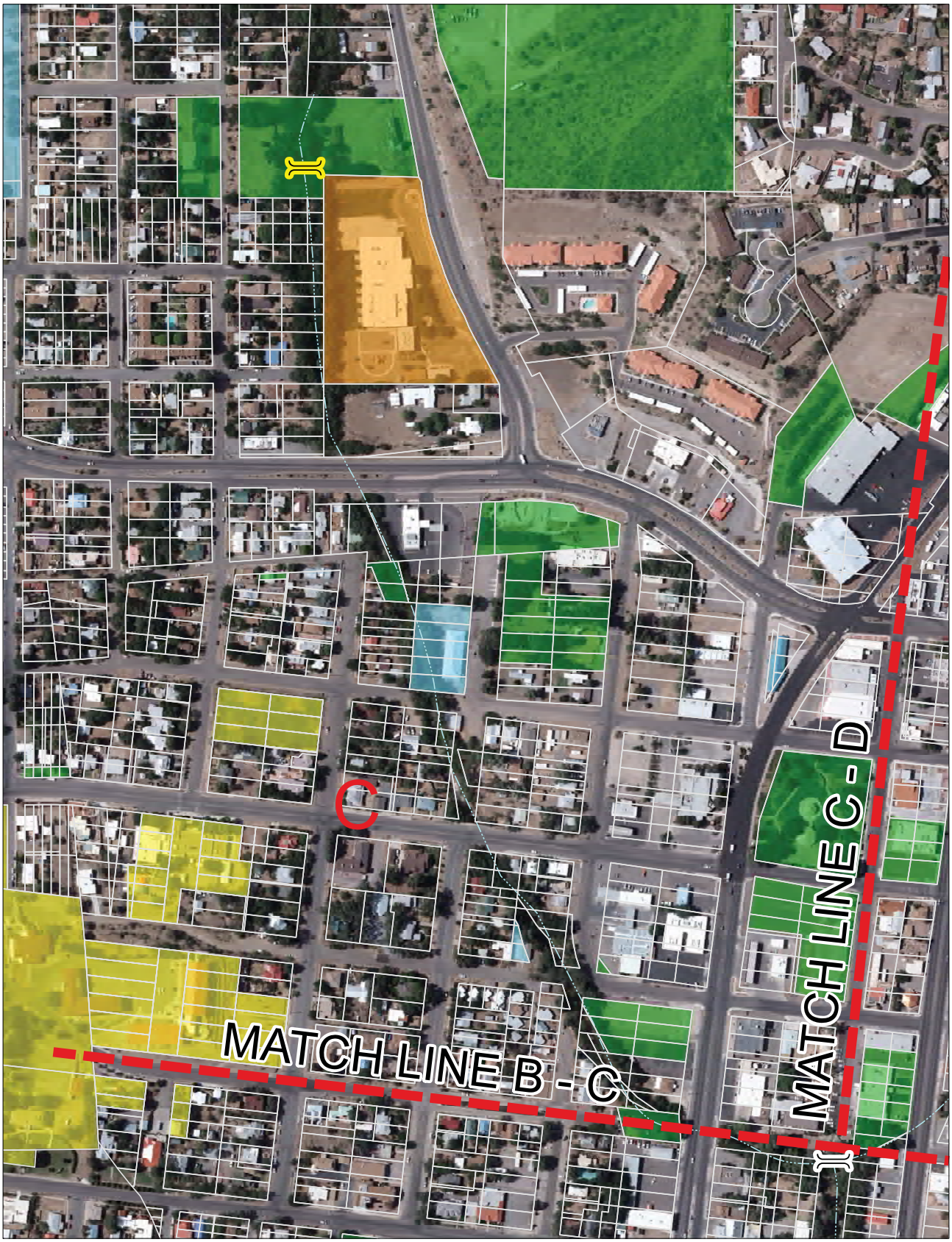

STUDY SECTION C OWNERSHIP

Big Ditch Master Plan

Town of Silver City, NM

Legend

- Existing Ped. Bridge
- Planned Ped. Bridge
- Matchlines
- Trail_Easements
- Parcels
- BD Study Drainage

Ownership

- Town of Silver City
- Grant County
- Silver City Schools
- Western Regional Housing Authority
- WNMU
- U.S. Government
- Institution

N

0 80 160 320 480 640 Feet

Map Date: May 10, 2012

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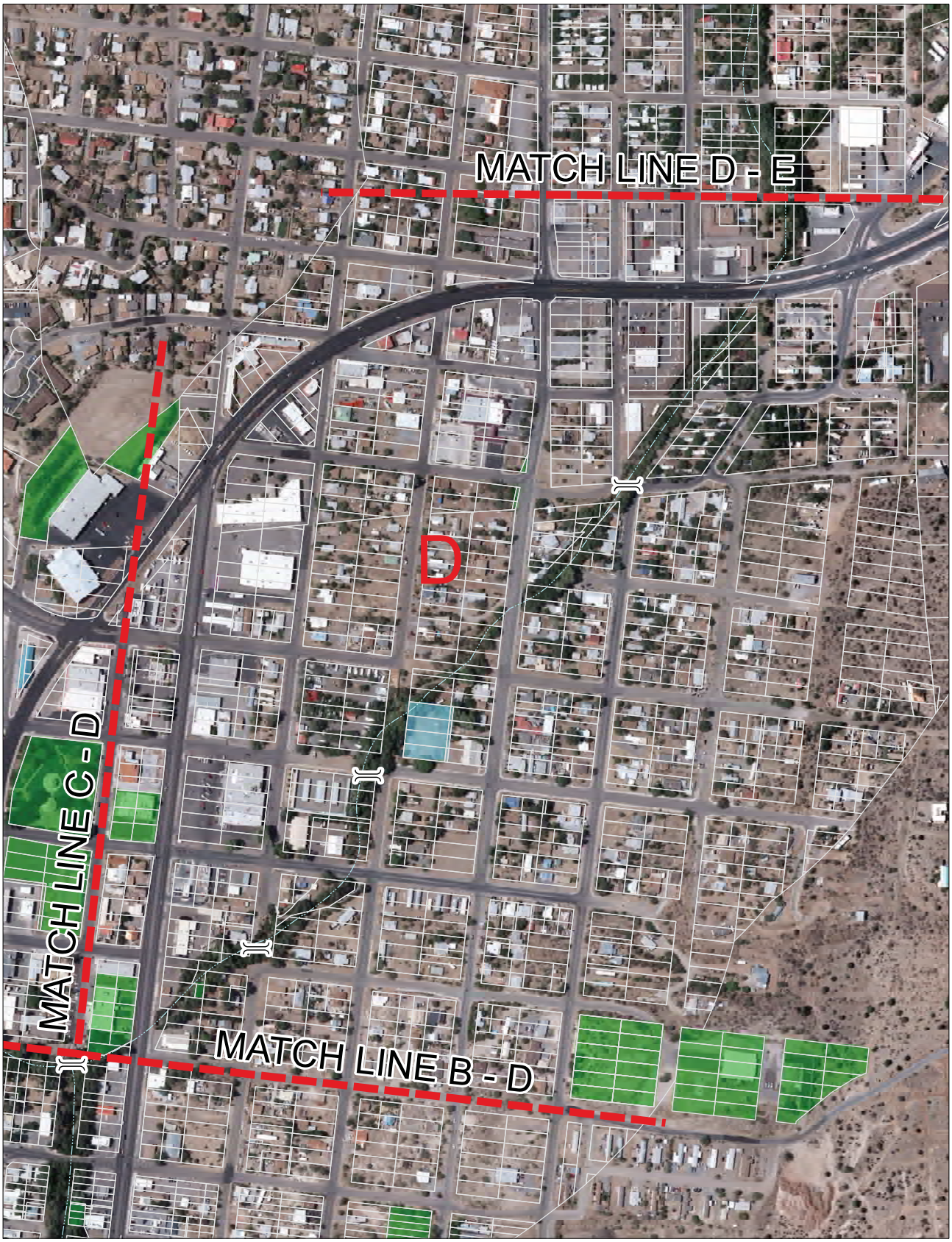

STUDY SECTION D OWNERSHIP

Big Ditch Master Plan

Town of Silver City, NM

Legend

- Existing Ped. Bridge
- Planned Ped. Bridge
- Matchlines
- Trail_Easements
- Parcels
- BD Study Drainage

Ownership

- Town of Silver City
- Grant County
- Silver City Schools
- Western Regional Housing Authority
- WNMU
- U.S. Government
- Institution

N

0 100 200 400 600 800 Feet

Map Date: May 10, 2012

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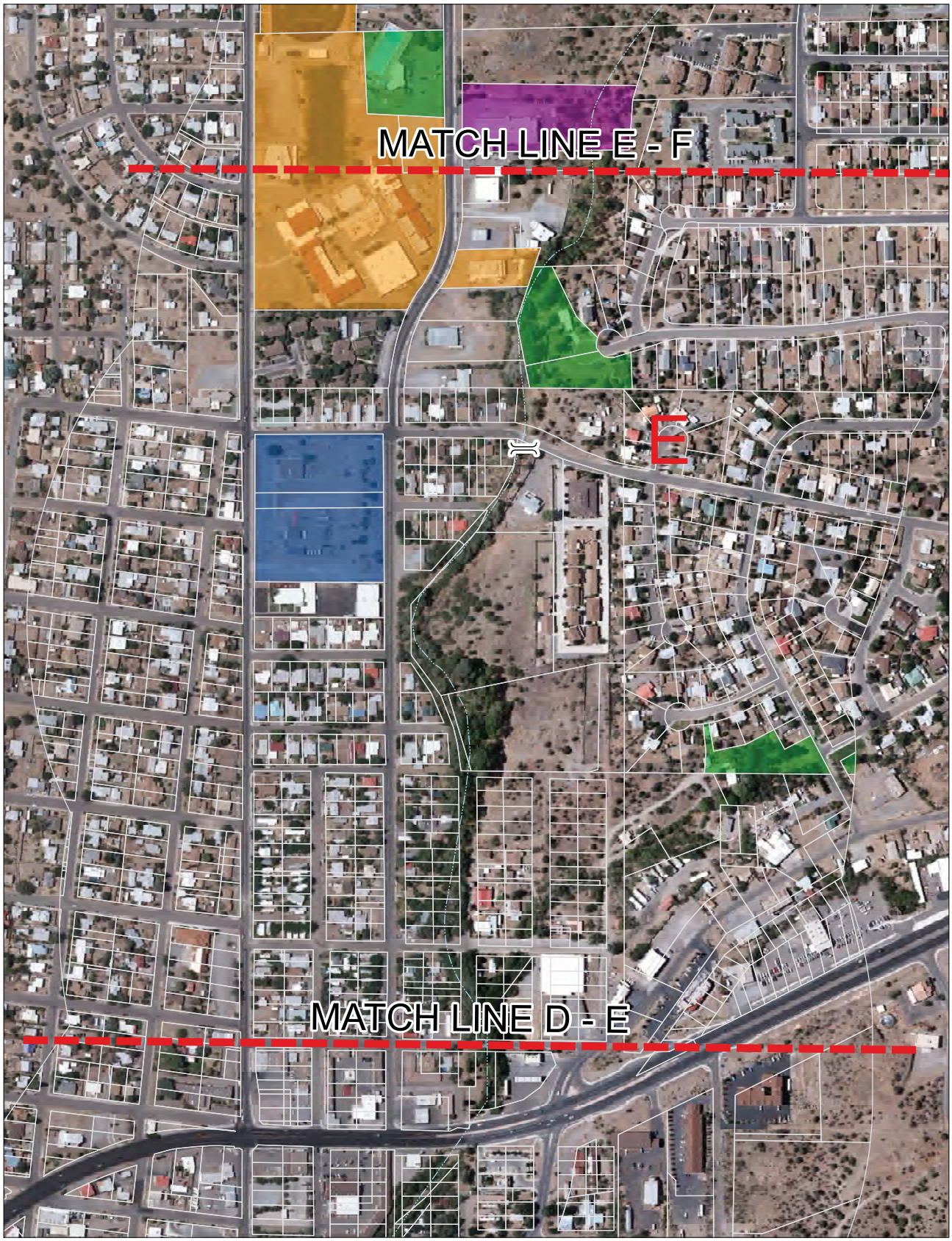

STUDY SECTION E OWNERSHIP

Big Ditch Master Plan

Town of Silver City, NM

Legend

- Existing Ped. Bridge
- Planned Ped. Bridge
- Matchlines
- Trail_Easements
- Parcels
- BD Study Drainage

Ownership

- Town of Silver City
- Grant County
- Silver City Schools
- Western Regional Housing Authority
- WNMU
- U.S. Government
- Institution

N

0 100 200 400 600 800 Feet

Map Date: May 10, 2012

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Albuquerque, NM 87106
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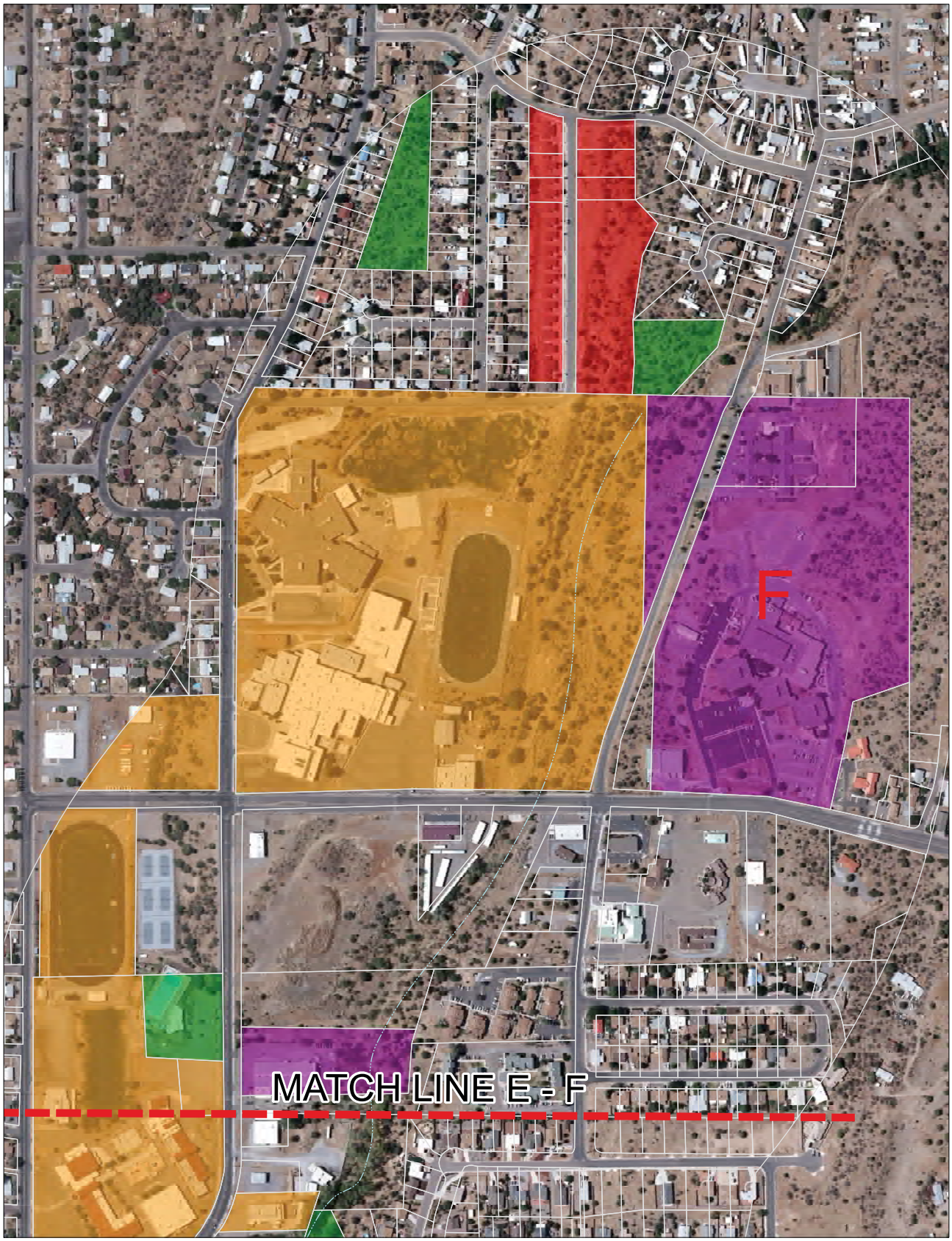

STUDY SECTION F OWNERSHIP

Big Ditch Master Plan

Town of Silver City, NM

Legend

- Existing Ped. Bridge
- Planned Ped. Bridge
- Matchlines
- Trail_Easements
- Parcels
- BD Study Drainage

Ownership

- Town of Silver City
- Grant County
- Silver City Schools
- Western Regional Housing Authority
- WNMU
- U.S. Government
- Institution

N

0 100 200 400 600 800 Feet

Map Date: May 10, 2012

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Albuquerque, NM 87106
505-508-3361

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SILVER CITY MAINSTREET PLAZA COST ESTIMATE 2/2013

Project	Qty	Unit	Cost per unit	Cost to Implement
MainStreet Plaza/Farmers Market/Parking	***18,500***	***Square Feet***		***$121,622.00***
Demo/Mobilization/Grading/Stabilized Gravel Surfacing	2056	SY	$22.00	$45,232.00
2 Stall ADA Public Restroom w/ 3.5' X 15' Storage attached	1	EA	$40,000.00	$40,000.00
Removable Bollards	3	EA	$200.00	$600.00
8' Shielded Solar Light Standard & Luminere	4	EA	$3,000.00	$12,000.00
Tree (1.5")	3	EA	$350.00	$1,050.00
Shrub (5 Gal)	11	EA	$40.00	$440.00
Stage/Performance Area with Lighting & Power	650	SF	$11.00	$7,150.00
4' Art Wall along Ditch, 246' (masonry/wire combo)				$15,150.00
4' Masonry Fence, 120 LF	*480*	*SF*	*$25.00*	*$12,000.00*
4' Wire Fence, 126 LF	*126*	*LF*	*$25.00*	*$3,150.00*

Note: The cost of running utility improvements (water, sewer, power) to the site features is not included.

TWO OPEN HOUSE WORKSHOPS

SATURDAY, OCTOBER 27

SILVER CITY GREENWAYS MASTER PLAN

- INTERESTED IN CREATING A TRAILS AND OPEN SPACE SYSTEM THROUGH SILVER CITY?
- INTERESTED IN REVITALIZING DOWNTOWN SILVER CITY?

THEN ATTEND **ONE** OF **TWO** COMMUNITY OPEN HOUSE WORKSHOPS ON:

SATURDAY, OCTOBER 27TH

9 AM - 12 NOON AT THE **SILVER CITY FARMERS MARKET** ALONG THE BIG DITCH AT 7TH STREET

1 PM- 3 PM AT THE **SILCO THEATER**, 311 N. BULLARD

COME AND PROVIDE YOUR IDEAS AND COMMENTS ON A PROPOSED PATHWAY SYSTEM ALONG THE BIG DITCH AND THE SILVA, PINOS ALTOS, AND SAN VICENTE CREEKS.

For more information or special accomodation please contact Nick Seibel, Silver City Main Street, 575-534-1700, nick@silvercitymainstreet.com or Charlie Deans, 505-471-4218, charlie@communitybydesign.biz.

SILVER CITY MAINSTREET PROJECT

The Silver City Greenways Master Plan is available for review at www.downtownsilvercity.com, at the Silver City MainStreet Office, 213 Bullard Street and the Silver City Community Development Office, 1203 North Hudson Street.

Greenways Master Plan Workshop
Saturday, October 27, 2012
MainStreet Plaza/Farmers Market and Silco Theater

Comments from Workshop Participants:

- Greenways Master Plan is "cool"
- Cool idea- need to focus on downtown tie-in to business/tourism
- Change all the existing lighting to fully shielded fixtures (recessed lamps)
- Please include bicycles
- Please extend further on north and south
- Make it bike friendly
- Please include bicycle accessibility. Very important
- Well needed
- Consider future linkage to Boston Hill
- Great idea! Wonderful addition to our community!
- Crosswalks should be across from east side of Stout using county or city property access
- Wonderful idea. I have seen this done on a larger scale in New York state with terrific results. Getting easements can be tricky. Best wishes for success.
- Sounds like a good idea- good luck!
- Connections to schools and business area that will use the trails to commute.
- Great ideas and plans
- Bike lanes on Broadway and Cooper and Market to connect Boston Hill. There is enough room from the Courthouse up Cooper towards Tyrone.
- La Capilla connection- there is room.
- Make sure the whole thing is bike-accessible!
- Make street lighting compliant with State law
- Makes healthy walking fun and a no-brainer
- Nice!
- Bike paths along Little Walnut, Cottage San/Alabama, Swan St, etc.
- Greenways need protection!
- Forward thinking- bike access too.
- Thank you- yes! And do add bikepaths and connections.
- Foot traffic/trails system are good social areas.
- Not comfortable in Big Ditch and San Vicente Creek trail
- Nice plan- how realistic is it?
- Staff a Big Ditch Ambassador or Ranger to patrol the Ditch and maintain and provide information
- Find a connection to the Continental Divide Trail via University property
- Connect Boston Hill Trail to Greenways (via Cooper/Broadway)
- Add Little Walnut extensions beyond Water Works. Safe bike/walk path up to Gila NF would be a big tourist draw
- Prioitize Master Plan for early implementation phases. Suggest path from schools (Silver, La Plata, Stout) across 180 down to junction of PA Creek and Big Ditch
- Connect trail to Stout/La Plata schools

TABLE 3: ESTIMATED COST FOR NATURAL SURFACE TRAILS: 5-FOOT WIDTH

Trail Element	Unit	Price Per Unit	Element Width	Units Per Mile	Trail Cost Per Mile
Clearing and Grubbing	Acre	$2,550	9 feet	1	$2,550
Grading	Mile	$3,200		1	$3,200
Seed/mulch	Acre	$2,040	4 feet	.5	$1,020
Subtotal					**$6,770**
Other Costs	10% of trail cost				$ 677
Contingency	15% of trail cost				$1,015
TOTAL COST PER MILE					**$8,462**

TABLE 4: ESTIMATED COST FOR WOOD CHIP HIKING TRAILS: 5-FOOT WIDTH

Trail Element	Unit	Price Per Unit	Element Width	Units Per Mile	Trail Cost Per Mile
Clearing and Grubbing	Acre	$2,550	9 feet	1	$ 2,550
Grading	Mile	$3,200		1	$ 3,200
Wood chips	Sq. ft.	$.50	5 feet	26,400	$13,200
Seed/mulch	Acre	$2,040	4 feet	.5	$ 1,020
Subtotal					**$19,970**
Other Costs	10% of trail cost				$ 1,997
Contingency	15% of trail cost				$ 2,995
TOTAL COST PER MILE					**$24,962**

TABLE 5: ESTIMATED COST FOR GRANULAR HIKING TRAILS: 5-FOOT WIDTH

Trail Element	Unit	Price Per Unit	Element Width	Units Per Mile	Trail Cost Per Mile
Clearing and Grubbing	Acre	$2,550	9 feet	1	$ 2,550
Grading	Mile	$3,800		1	$ 3,800
Granular subbase	Sq. ft.	$.50	7 feet	36,960	$18,480
Granular surfacing	Sq. ft.	$.50	5 feet	26,400	$13,200
Seed/mulch	Acre	$2,040	4 feet	.5	$ 1,020
Subtotal					**$39,050**
Other Costs	10% of trail cost				$ 3,905
Contingency	15% of trail cost				$ 5,857
TOTAL COST PER MILE					**$48,812**

TABLE 6: ESTIMATED COST FOR PEDESTRIAN TRAILS: ASPHALT SURFACE: 6-FOOT WIDTH

Trail Element	Unit	Price Per Unit	Element Width	Units Per Mile	Trail Cost Per Mile
Clearing and Grubbing	Acre	$2,550	10 feet	1.25	$ 3,187
Grading	Mile	$3,800		1	$ 3,800
Granular subbase	Sq. ft.	$.50	8 feet	42,240	$21,120
Asphalt	Sq. ft.	$1.30	6 feet	31,680	$41,184
Seed/mulch	Acre	$2,040	4 feet	.5	$ 1,020
Subtotal					**$70,311**
Other Costs	10% of trail cost				$ 7,031
Contingency	15% of trail cost				$10,547
TOTAL COST PER MILE					**$87,889**

TABLE 7: ESTIMATED COST FOR PEDESTRIAN TRAILS: CONCRETE SURFACE: 5-FOOT WIDTH

Trail Element	Unit	Price Per Unit	Element Width	Units Per Mile	Trail Cost Per Mile
Clearing and Grubbing	Acre	$2,550	9 feet	1	$ 2,550
Grading	Mile	$3,800		1	$ 3,800
Granular subbase	Sq. ft.	$.50	7 feet	36,960	$18,480
Concrete	Sq. ft.	$3.00	5 feet	26,400	$79,200
Seed/mulch	Acre	$2040	4 feet	.5	$ 1,020
Subtotal					**$105,050**
Other Costs	10% of trail cost				$ 10,505
Contingency	15% of trail cost				$ 15,757
TOTAL COST PER MILE					**$131,312**

TABLE 8: ESTIMATED COST FOR NON-MOTORIZED MULTI-USE TRAILS (SINGLE TREADWAY): GRANULAR SURFACE, 10-FOOT WIDTH

Trail Element	Unit	Price Per Unit	Element Width	Units Per Mile	Trail Cost Per Mile
Clearing and Grubbing	Acre	$2,550	14 feet	1.7	$ 4,335
Grading	Mile	$3,800		1	$ 3,800
Granular subbase	Sq. ft.	$.50	12 feet	63,360	$31,680
Granular surfacing	Sq. ft.	$.50	10 feet	52,800	$26,400
Seeding/mulch	Acre	$2,040	4 feet	.5	$ 1,020
Subtotal					**$67,415**
Other Costs	10% of trail cost				$ 6,741
Contingency	15% of trail cost				$ 10,112
TOTAL COST PER MILE					**$84,268**

TABLE 9: ESTIMATED COST FOR NON-MOTORIZED MULTI-USE TRAILS (SINGLE TREADWAY) ASPHALT SURFACE, 10-FOOT WIDTH

Trail Element	Unit	Price Per Unit	Element Width	Units Per Mile	Trail Cost Per Mile
Clearing and Grubbing	Acre	$2,550	14 feet	1.7	$ 4,335
Grading	Mile	$3,800		1	$ 3,800
Granular subbase	Sq. ft.	$.50	12 feet	63,360	$31,680
Asphalt	Sq. ft.	$1.30	10 feet	52,800	$68,640
Seed/mulch	Acre	$2,040	4 feet	.5	$ 1,020
Subtotal					**$109,475**
Other Costs	10% of trail cost				$10,947
Contingency	15% of trail cost				$16,421
TOTAL COST PER MILE					**$136,843**

TABLE 10: ESTIMATED COST FOR NON-MOTORIZED MULTI-USE TRAILS (SINGLE TREADWAY): CONCRETE SURFACE, 10-FOOT WIDTH

Trail Element	Unit	Price Per Unit	Element Width	Units Per Mile	Trail Cost Per Mile
Clearing and Grubbing	Acre	$2,550	14 feet	1.7	$ 4,250
Grading	Mile	$3,800		1	$ 3,800
Granular subbase	Sq. ft.	$.50	12 feet	63,360	$ 31,680
Concrete	Sq. ft.	$3.00	10 feet	52,800	$158,400
Seed/mulch	Acre	$2,040	4 feet	.5	$ 1,020
Subtotal					**$199,150**
Other costs	10% of trail cost				$ 19,915
Contingency	15% of trail cost				$ 29,872
TOTAL COST PER MILE					**$248,937**

It is important to note that the per-mile costs listed above may vary drastically, depending on the trail's location, the construction schedule, and many other unforeseen issues. Trail cost estimates throughout the project should always be reviewed by a qualified engineer or other design professional. It is not unusual for actual trail costs to exceed initial estimates.

The following items are commonly found in trail projects. Because of their variability of types and, therefore, cost, specific unit cost numbers are not included. Trail implementers should determine to what extent these items will be included in the trail project, and estimate them accordingly.

- Fencing, either for safety or ornamental reasons (or both)
- Walls
- Special drainage considerations, such as fabrics and soil supplements in wet areas
- Interpretive facilities
- Associated parks, trailheads, or other amenities besides basic access points and rest areas
- Other custom design elements, such as bridges, walls, signage, bollards, benches, trash cans, or bicycle racks.

Floodprone Land Acquisition Program

The Floodprone Land Acquisition Program

Purpose of the program

The goal of the Pima County Regional Flood Control District's (District) Floodprone Land Acquisition Program (FLAP) has been to purchase properties located in flood zones with many of the structures authorized prior to the adoption of the Floodplain Ordinance. The program is strictly voluntary with residents contacting the District for acquisition consideration. Properties are scored and rated based on the type of use, with occupied residentially zoned land in floodplains being given the highest priority; the higher the flood zone, the higher the priority. Vacant land is the lowest priority with the assumption that development requirements and the permitting process will ensure compliance with the floodplain ordinance. Potential acquisitions are also reviewed for riparian habitat under the Sonoran Desert Conservation Plan criteria. The lush riparian environments along watercourses serve many populations of birds, reptiles, plants, and mammals and often provide Priority Conservation Areas for endangered or threatened species. Lastly, a hierarchical rating of watercourses in Pima County with certain watercourses being ranked more favorably than others based on flood potential or flood histories.

Funding

Following the significant floods of 1983, Pima County voters approved the sale of $8.6 million in bonds to fund the initial FLAP program with an additional $20 million being approved in 1986. The District receives funding through the secondary property tax with a small amount of the overall levy being directed to the Floodprone Land Acquisition Program. Over the years, the District's levy rate has been as high as $0.7630 per $100 dollars (1988) of assessed valuation to its current reduced rate of $0.2635. While FLAP is not guaranteed any set annual amount for acquisitions, in recent years the program was able to use funds of approximately $3 million per year. Voters also approved $5 million in bond funding for the program in 2004. That same year, a $3 million dollar federal grant was received by the District following a large relocation effort in the flood damaged Cañada del Oro area of northern Pima County. Given the recent financial crisis and downturn in the economy, the program does not anticipate any significant funding in the immediate future, however, the program remains a viable method of reducing the numbers of properties and property owners in floodplains. To date, the District has been able to purchase over 10,300 acres of floodprone land at a combined cost in excess of $66 million dollars.

One of the most significant acquisitions made using both FLAP monies and other voter-approved land conservation programs was the Cienega Creek Natural Preserve, which spans nearly 4,000 acres along a 12-mile long reach of Cienega Creek. These acquisitions protect one of the region's few remaining perennial streams, along with natural ecosystem functions such as groundwater recharge and regeneration of floodplain vegetation. Establishment of the Preserve in 1986 marked Pima County's first major flood control effort that included riparian habitat preservation. In response to eliminating grazing and off-road vehicle activity, the density of cottonwoods, willows and other trees and shrubs along the stream have increased dramatically.

Flood damage, Rillito Creek 1983

Flood damage, First Avenue and Rillito Creek 1983

Accomplishments

Aside from the acquisition of many acres of floodprone land, other rewards of the FLAP program include: removing residents from floodprone areas; removing non-conforming floodplain uses; reducing the need for structural flood control improvements; reducing infrastructure maintenance costs; reducing the need for community disaster assistance and emergency relief efforts; maintaining overbank storage areas along watercourses; reducing flooding and erosion damage; enhancing groundwater recharge; protecting water quality; preserving wildlife habitat; providing recreational opportunities; and preserving open space. Additionally, with FLAP as an integral part of the District's floodplain management philosophy, it has helped Pima County achieve a high Community Rating System (CRS) ranking with FEMA (Federal Emergency Management Agency) thereby reducing the cost of flood insurance to Pima County residents.

In summary, the Flood Control District's Floodprone Land Acquisition Program has proven to be a valuable tool in the District's comprehensive approach to floodplain management, and with adequate funding, will continue to provide this beneficial service to residents of Pima County.

June 1998 – Looking east along Cienega Creek towards bedrock outcrop west of "railroad horseshoe bend , J. Fonseca

July 2008 – Looking along the same stretch of Cienega Creek towards bedrock outcrop, D. Scalero

GRANT OF TEMPORARY TRAIL EASEMENT

KNOW ALL PERSONS BY THESE PRESENTS that the Board of Education of the Las Cruces Public School District, Dona Ana County, State of New Mexico, the governing body of local political subdivision of the State (hereinafter "Grantor"), pursuant to the authority granted under NMSA 1978 Section 13-6-2, in consideration for the sum of One Dollar ($1.00) and other good and valuable consideration, does hereby grant, convey and confirm unto the City of Las Cruces, County of Dona Ana, State of New Mexico, a New Mexico municipal corporation (hereinafter "Grantee"), for a period of twenty-five (25) years, a temporary easement for a pedestrian/bicycle trail, as more particularly set forth below, over School District owned land located at the Camino Real Middle School site, in the City of Las Cruces, County of Dona Ana, State of New Mexico (hereinafter the "Trail Easement"), which is more particularly shown on the survey attached hereto as Exhibit A. The Trail Easement may be improved as provided below. This Grant of Easement also contains covenants on the part of Grantor and the Grantee to do or refrain from doing certain acts as set forth below. As an express condition subsequent to the approval of this easement, Grantee's governing body shall accept this Easement by resolution prior to approval of this grant of easement by the State Board of Finance, in order to provide public access for pedestrians and bicycles throughout the Trail Easement. This Grant of Easement and any subsequent amendments or modifications hereof is expressly conditioned upon approval by the New Mexico State Board of Finance pursuant to NMSA 1978 Section 13-6-2.1.

I. PURPOSES. The purposes of this Easement are as set forth below. Grantor and Grantee acknowledge that the purposes of this Easement are:

1. **Primary Purpose:** The primary purpose is to provide public, recreational use of the Trail Easement, and to locate the Trail Easement so that it provides public access to a recreational trail for pedestrian/bicycle use, which may be referred to as the Alameda Arroyo Recreational Trail, in a manner that enhances the transportation options for students and parents, as well as promotes exercise and healthier lifestyle choices for students and the community at large and to implement these purposes, while limiting any adverse impact on the students, staff, parents and patrons of Camino Real Middle School and the Grantor's use of the property as public school property.

II. TEMPORARY EASEMENT. This Easement shall terminate upon the occurrence of one of the following, whichever occurs first: (1) a date twenty-five years after the execution of this Easement; or (2) a date six months after receipt of written notice of termination from one party to the other party. Notwithstanding the above, in the event of emergency or the presence of a condition dangerous to the health, safety or welfare of students, staff, parents or patrons of the Camino Rael Middle School or to the public, Grantor may terminate this Trail Easement temporarily, without any liability whatsoever, upon twenty-four (24) hour's prior written notice to Grantee.

III. USES AND OBLIGATIONS.

1. **Public Access:** Grantee may permit, in its sole discretion, public access to the Trail Easement for four-season, pedestrian or other non-motorized recreational activities, such as walking, bicycling, or in-line skating, Except as provided below, motor vehicles shall not be permitted.

Overnight camping, campfires and activities prohibited by the criminal laws of the local, state or federal governments are not permitted. Grantee shall be responsible for restricting or limiting public use of and access to the Trail Easement to the purposes specified herein. If use of the Trail Easement materially interferes with Grantor's use of the property as a public school on a frequent, continuous basis, and measures taken by Grantee do not, in Grantor's reasonable opinion, sufficiently abate the interference, Grantor may close the Trail Easement for a period not to exceed two weeks to enable Grantee to take corrective action. Grantor shall provide written notice to Grantee of such Trail Easement closure.

2. Easement Location: While Grantor and Grantee acknowledge that the current location of the Trail Easement is depicted on the map attached hereto as Exhibit A, the Grantor and Grantee both agree that the end portion of the easement located at the southwest corner of the Grantor's property is not the desired end point of the Trail Easement. Grantor grants this Trail Easement with the expectation that the Grantee will secure the final portion of the Trail Easement through that private property located due north and adjacent to the entrance of Camino Real Middle School, thereby securing direct access to Roadrunner Parkway and alleviating the necessity of the trail ending at the entrance to Camino Real Middle School.

3. **Trail Location:** The location of the trail within the Trail Easement, as generally described in the attached Exhibit A, shall be fixed on the ground by mutual agreement of Grantee and Grantor, and marked by blazing, signs or otherwise along the length and perimeter of the Trail Easement by Grantee. The Trail location may be altered from time to time by mutual consent of Grantee and Grantor.

4. **Trail Construction:** Grantee shall, at Grantee's sole cost and expense, construct, manage, use, repair and maintain a Trail, including the right to install, maintain, repair and replace waterbars, steps and other trail surface structures, as well as bridges and/or culverts as necessary to traverse surface waters within the Trail Easement. Prior to initial Trail installation, or any major maintenance activity exceeding $5,000, Grantee shall give at least two weeks notice to Grantor by certified mail, Return Receipt Requested. The Trail itself shall not exceed 12 feet in width within the 60 foot wide Trail Easement. The Trail may be relocated within the Trail Easement at the Grantee's sole discretion after giving notice to Grantor as provided above.

5. **Vegetation Management:** Grantee shall not cut or remove any vegetation from the Property until the Trail has been located on the ground as provided above. Grantee may clear brush as required to maintain the Trail and may remove dead, dying or diseased vegetation within the Trail Easement which poses a safety risk to Trail users after the Trail has been constructed; otherwise Grantee may cut or remove additional vegetation only with the prior written consent of Grantor. Grantee shall not employ herbicides, pesticides, growth inhibitors or other chemicals within the Trail Easement without the prior written consent of Grantor. Grantor shall not harvest any trees in the Trail Easement without the prior written consent of Grantee, except that Grantor may remove dead, diseased or dying trees without prior permission of Grantee, provided that Grantor has given Grantee notice of the proposed activity so that Grantee can divert public use of the Trail, if necessary.

6. **Fencing, Barriers and Signs:** Grantee shall, at Grantee's sole cost and expense, install and maintain landscaping or other natural barriers such as boulders as may be reasonably necessary to deter access to either side of the trail by motor vehicles. Grantee shall have the right to erect reasonable signs, blazing or other markings within the Trail Easement to inform the public of the Trail location or other Trail features.

7. **Motor Vehicles:** Grantee may use motorized vehicles and equipment within the Trail Easement to construct, relocate, maintain, repair and patrol the Trail, and for medical emergencies. Grantor and Grantee shall not use or permit the use of motor vehicles within the Trail Easement, except as specifically provided herein.

8. **Handicapped Access:** Grantee may permit motor-driven wheelchairs or similar devices for the use of handicapped persons within the Trail Easement so long as consistent with the Purposes of this Easement.

9. **Driveways and Other Access:** Except as specifically permitted under this Easement, no rights-of-way, easements of ingress or egress, driveways, roads, utility lines or other easements shall be constructed, developed or maintained into, on, over, under, or across the Trail Easement, without the prior written permission of the Grantee. Grantee shall not unreasonably withhold or condition Grantee's permission, provided that granting permission would not materially impair the recreational use of the Trail Easement and is otherwise not inconsistent with the Purposes of this Easement.

10. **Buildings and other Non-Recreational Uses:** Grantor shall use the Trail Easement exclusively for trail and open space purposes. No residential, commercial or industrial activities shall be permitted, and no building or structure shall be constructed, created, erected or moved into the Trail Easement, other than the necessary Trail surfacing, equipment or structures required for Trail construction, upkeep or maintenance.

11. **Excavation, Mining and Trash:** Except as provided in this Section II and consistent with the purposes hereof, there shall be no disturbance of the surface of the Property, including but not limited to filling, excavation, removal of topsoil, sand, gravel, rocks or minerals, or change of the topography of the Trail Easement in any manner. In no case shall surface mining or extraction of subsurface oil, gas, or other minerals or materials be permitted. Further, Grantee shall not permit the presence of any nuisance or the placement, collection, or storage of trash, human waste, ashes, chemicals, hazardous or toxic substances, or any other unsightly or offensive material within the Trail Easement.

12. **Miscellaneous:** No use shall be made of the Trail Easement, and no activity shall be permitted in the Trail Easement which, in the reasonable opinion of Grantee, is or may possess the potential to become inconsistent with the Purposes of this Easement.

Grantor covenants that Grantor has the right to convey this Grant of Temporary Easement to Grantee, and that Grantor shall make no use of this Grant of Temporary Easement which is inconsistent with the rights hereby conveyed.

IN WITNESS WHEREOF, the Grantor has caused this instrument to be executed by its School Board President and duly authorized representative as of this ___ day of _____, 2010.

Grantor:

Board of Education of the
Las Cruces Public School District

By:_____
Connie Phillips, Ph.D., Its School Board President and authorized representative

STATE OF NEW MEXICO
DOÑA ANA COUNTY
CITY OF LAS CRUCES

The foregoing instrument was acknowledged before me this _____ day of _____, 2010, by Dr. Connie Phillips, as School Board President and authorized representative for and on behalf of the Board of Education of the Las Cruces Public School District, the governing body of a local political subdivision of the State of New Mexico.

_____
Notary Public

_____
My commission expires: