

Santa Fe County Open Space and Trails Program

La Cieneguilla Open Space Management Plan

PRELIMINARY REVIEW DRAFT

May 13, 2016



Table of Contents

EXECUTIVE SUMMARY	3
1. INTRODUCTION	4
1.1. Management Plan Development Process	4
1.2. Plan Purpose.....	5
1.3. Property Description	6
2. THE LA CIENEGUILLA OPEN SPACE MANAGEMENT PLAN.....	9
2.1. A Vision for La Cieneguilla Open Space	9
2.2. Goals, Monitoring, and Information Management.....	10
Management Goal and Objectives	10
Monitoring.....	11
Information Management and Plan Updates	15
2.3. Conceptual Master Plan	16
Land Use and Conceptual Master Plan	16
Key Projects for Planning, Research, and Development.....	19
2.4. Community Relations	24
Information Exchange	24
Education, Coordination and Collaboration	24
2.5. Terrain Management	27
Summary Overview	27
Restoration Projects.....	29
Maintenance and Stewardship Activities.....	30
2.6. Plan Implementation and Financing Mechanisms	31
Implementation.....	31
Financing Mechanisms, Funding Sources, and Partners.....	32
APPENDICES (TBD).....	33

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EXECUTIVE SUMMARY

The La Cieneguilla Open Space (LCOS) Management Plan identifies short-term, mid-term, and long-term management priorities for the property. The short-term phase focuses on **ecological restoration**, and **public safety** measures related to flood and erosion control and site cleanup. Additionally, short-term activities include fence upgrades, installation of simple signage, and planning activities to prepare future recreational and interpretive educational uses. Santa Fe County will encourage neighbors and other local stakeholders to collaborate on **maintenance-oriented stewardship** activities. **Maintenance activities** include erosion and flood control, riparian area maintenance, fence repair, and grassland improvement. **Planning activities** focus on preparing future ecological restoration projects in the riparian and grassland areas, the possible development of trails and recreational facilities, and the development of interpretive education programming.

In the mid- to long-term, Santa Fe County will work with stakeholders to examine options for **trails and other recreational facilities**, and options for **dryland agricultural uses**. The Management Plan also identifies the importance of creating an **interpretive education program** at the LCOS to help visitors explore and understand the area's unique historical and ecological resources.

The Management Plan for the LCOS property emphasizes the importance of **collaboration regarding stewardship, conservation, and development** of the LCOS. This is particularly important because of the diversity of interests in the proposed uses of the LCOS. The Plan identifies several opportunities for active public participation in stewardship activities and in the gradual development process to reach of the vision for the LCOS.

1. INTRODUCTION

This Management Plan for the La Cieneguilla Open Space was developed with community members, property owners, neighbors and other stakeholders from the La Cieneguilla and La Cienega Valley. The planning team worked with them to formulate a vision for the La Cieneguilla Open Space and to verify the final plan components and priorities.

1.1. Management Plan Development Process

The LCOS Management Plan (LCOSMP) was developed between June 2015 and May 2016. This Plan was developed in response to a recommendation from the County Open Lands, Trails, and Parks Advisory Committee (COLTPAC) and with clear and strong support from the Board of County Commissioners (BCC).

The planning process included 3 phases: (1) a scoping and reconnaissance phase, (2) a research phase, and (3) a plan development phase.

Scoping and Reconnaissance Phase:

- Interviews with key stakeholders, community members, and County staff and policy makers to develop an initial understanding for engaging the community in the management plan process
- Review of relevant Santa Fe County plans and policies
- Site visits to identify specific research needs for this management plan
- The first public input meeting to develop an initial community vision for the site

Research Phase:

- Follow-up interviews with key-stakeholders and community members to refine the approach for the second public input meeting
- Research on topics identified in the Scoping and Reconnaissance phase
- Site visits to confirm terrain management units and collect data for a land suitability assessment and the development of management recommendations
- Mapping of findings of the Scoping/Reconnaissance and Research phases

Plan Development Phase:

- The second public input meeting to present research and land suitability findings and formulate ideas for management of the property
- Draft management plan
- Reviews with County staff to confirm plan coordination and implementation opportunities

- The third public meeting to confirm the draft vision statement and goal and review the major components of the draft management plan
- Final draft management plan for review and the approval process

The planning process was informed by the initial goals for the acquisition of the property and on a set of planning principles (Table 1). The planning principles were formulated during the Research Phase based on public input and management conditions within Santa Fe County. The Open Space Management Guidance Plan that accompanies the LCOS Management Plan describes technical planning methods, approaches to County capacity building, best management practices (BMPs), and guidance recommendations for plan implementation.

Table 1. Overview of initial purpose and goals for LCOS acquisition (Source: initial acquisition documents) and planning principles (Source: Santa Fe County staff and planning team).

Initial Goals for Acquisition
Create a buffer suburban expansion from the City of Santa Fe
Offer access to BLM sites for interpretive education
Conservation of water for acequias (downstream)
Conservation of wildlife habitat
Conservation of cultural resources
Create recreational open space for adjacent subdivisions and regional residents coming from urban and rural areas
Planning Principles
Adhere to goals and purpose of Santa Fe County Open Space and Trails Program
Ensure public access and safety (based on the reasons for acquiring the property)
Keep maintenance needs to a minimum (commensurate to County capacity and community-based stewardship support)
Minimize needed investments related to master planning
Minimize the disturbance of cultural and ecological resources
Identify and enhance opportunities for agricultural use of Open Space properties
Involve youth and create educational opportunities

1.2. Plan Purpose

The LCOS Management Plan is written for Santa Fe County staff, County policy makers, community stakeholders, and site stewards with the **purpose** to:

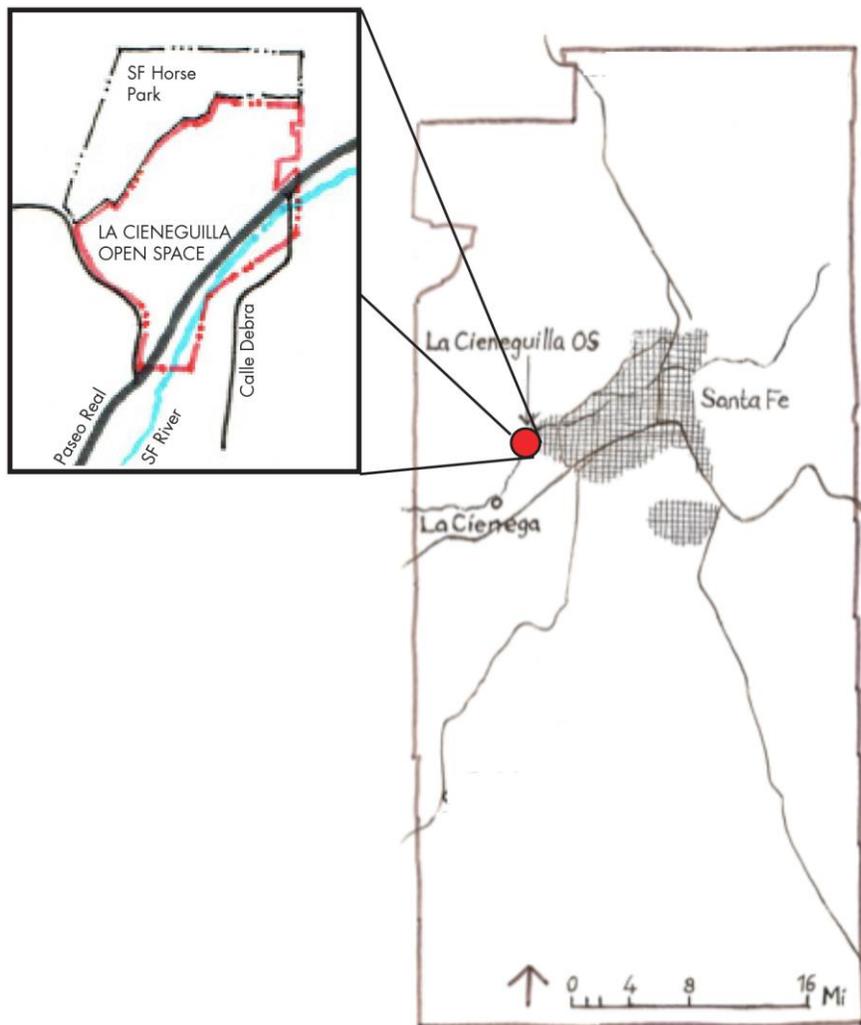
- Outline the management vision, goals, and objectives for the management of the property
- Help staff and the public understand terrain conditions and suitability of the land for different uses

- Clarify priorities for site restoration and maintenance
- Identify projects for future investment and financing mechanisms to fund those projects
- Streamline management protocols within Santa Fe County

The LCOS Management Plan outlines specific action priorities, spanning short-term, mid-term, and long-term phases. The overarching Open Space Management Guidance Plan describes general management planning methods, procedures, recommendations, Best Management Practices, and guides Santa Fe County staff in implementing the LCOS Management Plan and other open space management plans.

1.3. Property Description

The La Cieneguilla Open Space (LCOS) is a **150-acre County Open Space property along the Santa Fe River in La Cieneguilla, just west of the City of Santa Fe**, located in the center of what used to be the La Cieneguilla Land Grant (Figure 1). Paseo Real (County Road 56) traverses the LCOS from the northeast to the southwest on the banks of the Santa Fe River. The LCOS is



bordered on the east side by the Santa Fe Airport and the Calle Debra subdivision, on the north and northwest side by The Santa Fe Horse Park, NAME and on the west and south sides by land managed by the BLM.

Figure 1. Location Map detailing the location of La Cieneguilla Open Space in Santa Fe County.

The LCOS property includes **unique natural resources** associated with the Santa Fe River and with grasslands and former fields on old river terraces. The area offers a unique riparian ecosystem and valuable wildlife habitat and corridors. The area offers 360-degree views of the Santa Fe County landscape along with the rural, open landscape. The LCOS is located north of the historic settlement of La Cieneguilla and close to many prehistoric cultural sites. The area is also a desired location of potential future recreational opportunities for local residents as well as an area for ongoing education and research programs.

For purposes of maintenance and land use suitability, this plan identifies several **Terrain Management Units** (TMUs) (Figure 2). Each TMU encompasses an area with similar landscape features maintenance requirements, and land suitability characteristics (i.e., a unique set of options for land use). The identification of TMUs organizes the spatial management aspects of this plan. Santa Fe County will manage each TMU according to its particular needs and terrain characteristics.

A more in-depth terrain characterization is described in “A Field Characterization for the La Cieneguilla Open Space Property Santa Fe County, New Mexico - An Existing Conditions and Inventory Report” (2016).

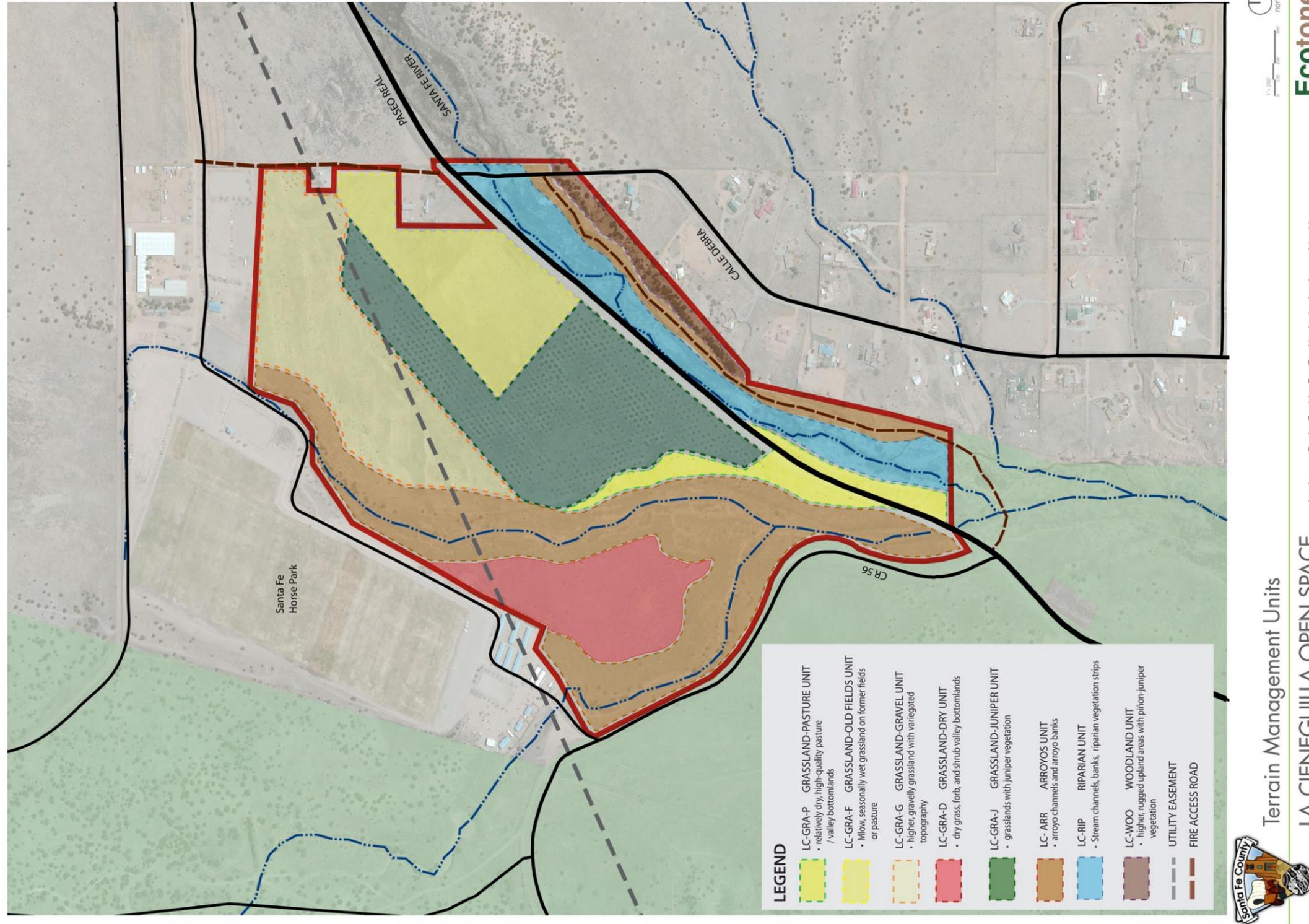


Figure 2. LCOS Terrain Management Unit (TMU) map.

2. THE LA CIENEGUILLA OPEN SPACE MANAGEMENT PLAN

2.1. A Vision for La Cieneguilla Open Space

This vision statement is based on responses from community meeting participants to questions that asked “What would “good” look like?”, “What do you want for the future of this place?”, “What might other people think would be good for this site, but you don’t?”, and “What would worry you if it happened on the site?” The draft vision statement was shared and verified with community members at the third community meeting.

*In 2025, the La Cieneguilla Open Space (LCOS) is **a healthy ecosystem with native grasslands, a flowing river, clean water, irrigation water, and high-quality native wildlife habitats**. Wildlife pathways connect to the larger landscape. The open space is **managed holistically** so that the land and water resources are protected, monitored, and maintained; the cultural resources are protected; and there are educational opportunities for the public to learn about the land, water, ecology, human history, and past and current uses of the place.*

*The LCOS may include one or more **trails**, including a trail to improve the safety of walkers and bikers. The area may include family-friendly, safe outdoor **recreation opportunities** for neighborhood residents and their children. It may also include **agricultural activities** that protect and regenerate the grasslands.*

*Local **residents, especially youth, are actively involved** in the maintenance and stewardship of LCOS.*

2.2. Goals, Monitoring, and Information Management

This section describes the central management goal and the specific management objectives that originate from the vision for LCOS. This section also describes the methods for tracking progress toward the goal and objectives as well as systems for managing information.

Management Goal and Objectives

Based on the vision statement, the central management goal for LCOS is:

*Santa Fe County and the community of the Santa Fe River valley around La Cieneguilla **collaboratively** maintain and enhance the land and water resources of LCOS for wildlife, recreation, education, and other low-impact uses. LCOS is managed in such a way that opportunities are developed gradually for **interpretive education, research and public education, and low-impact recreational uses** by neighborhood families and the public, at a scale that requires little maintenance, encourages local community stewardship, and protects the land and water.*

Specific management objectives in support of this vision and central goal are:

1. **Holistic & Inclusive.** Manage the property in a way that the different values and objectives are balanced holistically (and not one despite another), and that improvements and changes are introduced in a gradual way, and seek and maintain working relationships with neighbors and other local stakeholders
2. **Public Safety.** Enhance public safety for example, by cleaning up old waste dumps, maintaining appropriate fencing of flood zones and steep slopes, and developing a trail along Paseo Real.
3. **Access.** Control access by managing roads, trails, fences, gates, stiles, river crossings, and signage
4. **Natural Appearance.** Maintain the area's natural appearance, sweeping scenic views, and cultural-historical qualities, keep maintenance limited, and maintain a rural, natural visual quality by using natural design principles and natural materials, and by choosing deliberately when to let nature run its course
5. **Education.** Provide and maintain interpretive education, and explore and use educational and research opportunities
6. **Infrastructure.** Develop basic infrastructure such as community gathering areas and play areas that are as natural and low-maintenance as possible

7. **Ecological Health.** Maintain the ecological health, resilience, and productivity of the LCOS uplands and riparian area, and maintain wildlife habitat qualities and connectivity across the landscape
8. **Grazing.** Explore and use – when appropriate – managed, restorative grazing practices (and rest periods) as a way to improve grassland health and respond to the need to develop an agricultural use for County Open Space properties
9. **Grasslands.** Evaluate the removal of some junipers to improve the regeneration of the grasslands while maintaining visual benefits.

Santa Fe County acquired the LCOS to preserve the character of this part of the Santa Fe River valley as well as to conserve wildlife habitat, water resources, and the cultural resource heritage of nearby prehistoric settlements and the historic La Cieneguilla Land Grant. Another original goal was to offer access to adjacent BLM lands to enhance interpretive options about the area’s cultural heritage. Santa Fe County, the BLM, and local stakeholders acknowledge that the LCOS is connected to the surrounding landscape. Therefore, Management Objective #1 regarding Holistic & Inclusive management extends beyond the LCOS. Management of the LCOS property will need to take place in connection with processes and conditions of the surrounding landscape, and plan implementation will require coordination and collaboration with neighbors and other stakeholders in the area.

Monitoring

In order to ascertain that progress is made toward achieving the goals, County staff and local community partners will periodically monitor certain indicators of progress.

A basic set of monitoring activities for LCOS includes first tier measurements for which a base-line of data was established during the management planning process (Table 2), and a second tier consisting of additional monitoring activities that Santa Fe County staff may conduct in the future if staff time and budget allow (Table 3). The proposed monitoring activities are numbered and their locations are indicated by number on a TMU map (Figure 3).

Based on the monitoring overview described below, and as part of plan implementation, Santa Fe County staff will develop a detailed **and accumulative monitoring plan**. It will enable staff and stakeholders to track progress made toward specific goals and objectives. Ideally, the monitoring plan will be updated annually with community members and stakeholders.

A monitoring plan specifies how the indicators will be measured or documented, when and where this will be done, who will do this, and what equipment or supplies are needed. Additionally, a monitoring plan will establish thresholds and conditions that serve to indicate whether corrective action is needed.

For example, to maintain or improve the ecological health, resilience, and productivity of the LCOS riparian area, and maintain wildlife habitat qualities and connectivity along the Santa Fe River, a simple threshold for ecological health could be the baseline levels of (a) native vegetation cover, (b) presence of non-native plant species, (c) the amount of dead wood material, or (d) the diversity of animal species in the riparian unit, as established in 2015 or in a previous monitoring year. Corrective action must be taken if the new conditions have declined in relation to the baseline or previous year's conditions. In such a case, causes for the impairment need to be established and addressed. This might mean that non-native plant species or dead woody material need to be removed, or that access, forage, shelter, water, or predation conditions for wildlife must be improved.

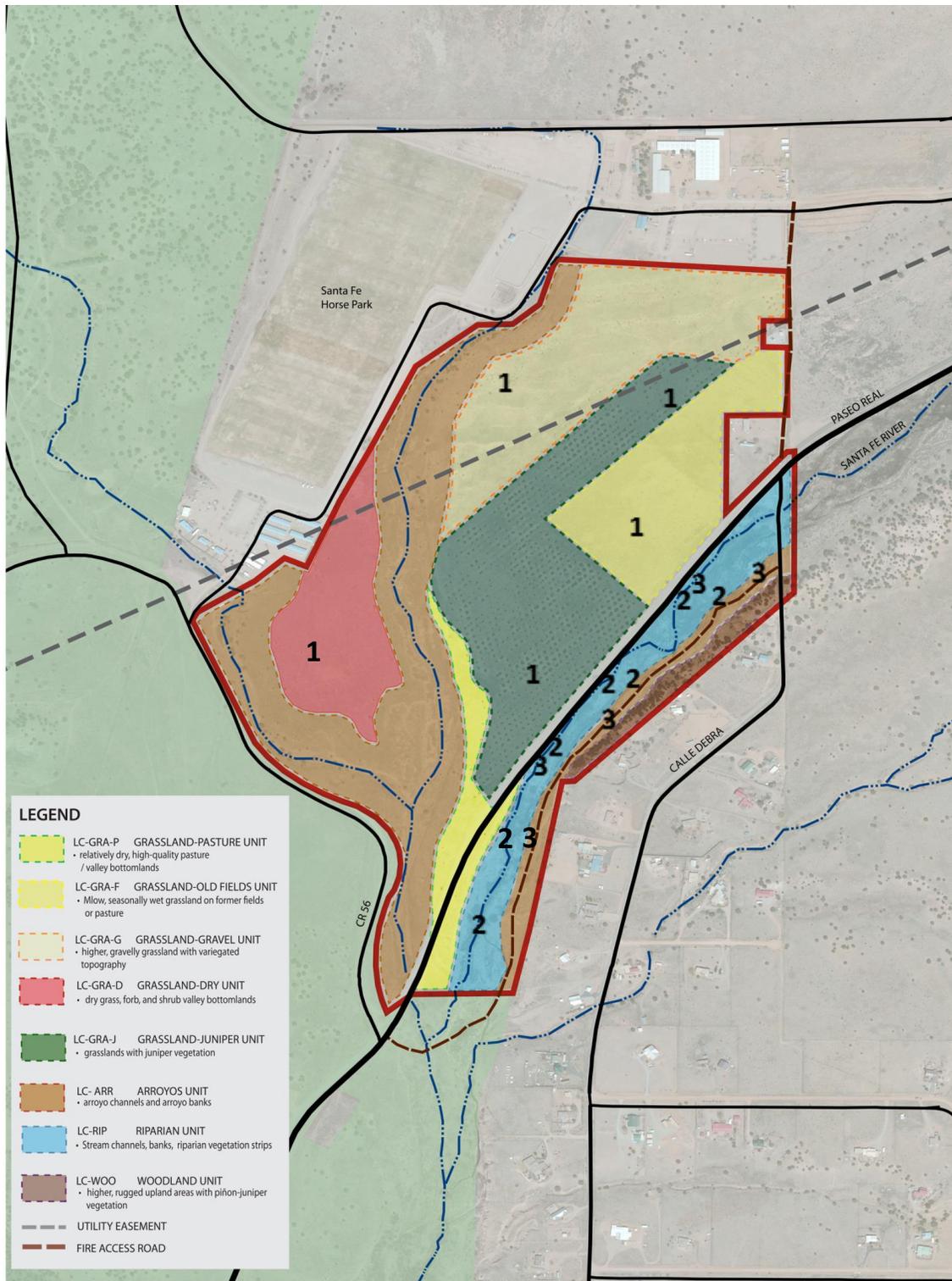
Baseline methods and findings are described in “A Field Characterization for the La Cieneguilla Open Space Property Santa Fe County, New Mexico - An Existing Conditions and Inventory Report” (2016). Methods for additional monitoring activities are referenced in a list of BMPs in the Open Space Management Guidance Plan.

Table 2. Monitoring overview for existing baseline monitoring conducted for specific landscape conditions in 2015.

Nr.	Conditions Monitored	Mgmt. Objectives	Indicators and Monitoring Method	Monitoring Frequency and Season
1	Grassland vegetation cover and richness, and potential forage quality of grasslands	Ecological Health / Grazing / Grasslands	Species richness and plant cover assessments in 10 sample plots along a transect; literature review of forage quality quantity of plants found in transects	Once in 2-3 years (in the fall)
2	Fuel load of riparian zone	Ecological Health	“Brown’s Line” transects for fuel load estimates	Every 3 years in spring or fall
3	Erosion and drainage along Paseo Real and Fire Management Road	Ecological Health	Visual observation during walk-through and photo point and GPS/Avenza PDF Map documentation of erosion and drainage problems	Bi-annually in spring and fall

Table 3. Monitoring overview for additional monitoring activities and field inspections.

Nr.	Conditions Monitored	Mgmt. Objectives	Indicators and Monitoring Method	Monitoring Frequency and Season
4	Neighbor and stakeholder stewardship and relations	Holistic & Inclusive	Public participation and initiative; public feedback and expressions of support	Annually
5	Scenic quality	Holistic & Inclusive / Natural Appearance	Visual observation during walk-through and photo point and GPS/Avenza PDF Map documentation of scenic quality problems	Annually (spring or fall)
6	Public safety risks related to solid waste, water quality, erosion, and flooding	Holistic and Neighborly / Public Safety	Visual observation during walk-through and photo point and GPS/Avenza PDF Map documentation of public safety hazards	Quarterly (inspection of culverts, road sides, waste dumps, river)
7	Infrastructure conditions; fence effectiveness	Public Safety/ Access	Visual observation during walk-through and photo point and GPS/Avenza PDF Map documentation of fencing or infrastructure problems	(Bi-)Annually (spring and/or fall)
8	Stream channel morphology, efficiency and stability	Ecological Health	Visual observation during walk-through and photo point and GPS/Avenza PDF Map documentation of stream channel problems	(Bi-)Annually (spring and/or fall)
9	Vegetation health and botanical conditions	Ecological Health	Plant list comparison with knowledge of native plants; visual observation during walk-through and photo point documentation (identify noxious weeds)	Annually (spring or fall)
10	Pollution originating from The Horse Park	Public Safety/ Ecological Health	Visual observation during walk-through and photo point and GPS/Avenza PDF Map documentation of any form of pollution on SPOS origination from The Horse Park	Annually (spring or fall)



Terrain Management Units

LA CIENEGUILLA OPEN SPACE LA CIENEGUILLA NM



Ecotone

Figure 3. Map of recommended monitoring locations in relation to TMUs.

Information Management and Plan Updates

Santa Fe County will gradually streamline and enrich the procedures that help staff **acquire, store, and share knowledge that is essential for effective resource management** of the LCOS property. Recommendations about County capacity building, knowledge development, information management, plan updates, and community involvement methods are described in the Open Space Management Guidance Plan.

This plan is a living document which will be updated and amended when necessary. The scope of this plan is approximately 15-20 years. Plan information is specific for the short-term (years 1-5), descriptive for the mid-term (years 6-10), and preliminary for the long-term (year 11 and beyond).

Changing community needs, terrain conditions, and County management capacity will inevitably lead to the need for plan adjustments. Priorities and timelines may shift, and objectives for planned projects, maintenance activities, and community relations may change, or expand. Following completion and assessment of actions beyond the mid-term period of this plan (10-15 years), this plan may need to be renewed.

2.3. Conceptual Master Plan

The Conceptual Master Plan for LCOS describes proposed land improvement projects and associated investments that are necessary to meet the central management goal and the LCOS vision. The proposed projects result from stakeholder wishes and planning opportunities, prescribed by the suitability of the land. The Conceptual Master Plan describes alternative options for projects, the specific locations of projects, their purpose, priority, as well as suggested timeline for implementation.

Land Use and Conceptual Master Plan

The LCOS Conceptual Master Plan conserves open land and natural resources. The plan aims to preserve scenic beauty and integrity, wildlife habitat, conserve water resources, maintain riparian habitat, and preserve the rural integrity of the traditional communities of La Cieneguilla and La Cienega. Future uses may also include **small-scale recreational uses**, including unimproved trails and interpretive signage, and certain **agricultural uses** that protect and regenerate the grasslands. Such uses are subordinate to the predominant conservation designation and will be in service to achieving the vision for the LCOS.

Natural resource conservation is already the *de facto* land use. As a result, this plan does not propose any changes to the current land use in the short term. Agricultural uses, such as managed grazing are possible in the context of grassland restoration. In the mid- to long-term, it is possible that agricultural uses are expanded toward dryland gardening and agriculture, and that local recreational uses are developed, such as trails, interpretive signage, and other small-scale recreational facilities. The development of other uses in support of the vision will take place gradually after an initial maintenance and restoration phase.

The proposed development projects are designed to **improve ecological health** of the different terrain types and vegetation across the property, **improve the effectiveness of infrastructure**, **improve public safety** on the property, and develop a **local trail system** and an interpretive education and research program. Improvements will include:

- placement of simple signs and a bulletin board,
- fence upgrades,
- drainage management along the fire management road and Paseo Rael,
- erosion control and bank stabilization along the Santa Fe River,
- dumpsite cleanup and bank stabilization along the Arroyo de las Calabasas,
- and grassland improvement and wind erosion control – possibly using managed, restorative grazing techniques.

Longer-term improvements will also focus on reengineering of the Calle Debra crossing, trail development, and interpretive signage (Table 4).

Prioritization and phasing for LCOS is based on the terrain conditions of early 2016. The starting baseline site conditions include needed maintenance on the riparian area, the grasslands, fencing, and the Arroyo de las Calabasas. The proposed Conceptual Master Plan activities follow the prioritization criteria outlined in the Open Space Management Guidance Plan.

- Short-term:
 - All activities focus on **land restoration and maintenance**, with an emphasis on fencing, drainage, erosion control, and riparian area management, to address the conditions caused by deferred maintenance
- Mid-term:
 - **Implementation of several larger restoration projects**, such as cleanup of Arroyo de las Calabasas, the Calle Debra crossing, and grassland improvements
 - development of a simple trail loop
- Long-term:
 - Conceptual Master Plan components, such as further development and implementation of a **recreational master plan and interpretive education program**
 - Expanded trail and small-scale recreational facilities
 - Expansion of eco-agricultural projects.

Table 4 depicts a timeline of the proposed activities.

Planning and preparation is required for all Conceptual Master Plan improvements listed above. Implementation of improvements will be based on maintenance and repair activities. The following section describes what key projects for planning, research and development are required to prepare maintenance and proposed improvements.

Community involvement is essential for many of the proposed Master Plan projects. Public involvement include feedback on proposed project details during future planning and design sessions and active engagement in the planning and implementation of the projects. Several maintenance activities will be suitable for community or volunteer participation, which will facilitate community stewardship for open space care and maintenance.

Table 4. Prioritized list of proposed master plan projects for LPOS.

#	Project	Location	Purpose	Priority	Time Line
1.1	Improve road drainage	Fire management road	Prevent erosion and improve access	Highest	Short Term
1.2	Stabilize eroding stream banks	A few locations along fire management road and Paseo Real	Prevent erosion and costly future infrastructure repairs	Highest	Short Term
1.3	Install of signs and bulletin boards	Calle Debra gate, Paseo Real, and east side gate	Community outreach & education	Highest	Short Term
1.4	Fence off Arroyo de las Calabasas	Arroyo de las Calabasas TMU	Prevention of ongoing dumping and access management	Very high	Short Term
1.5	Emergency cleanup of Arroyo Calabasas; prepare long-term cleanup	Arroyo de las Calabasas TMU	Plan development and first-phase rehabilitation to reduce the most immediate hazards	Very high	Short Term
1.6	Repair priority fence problems	Select locations	Public safety and access management	Very high	Short term
2.1	Boundary fence upgrades and gates	Along road and around perimeter	Public safety and access management and wildlife passage	High	Mid Term
2.2	Grassland improvement: soil improvement, weed removal, managed grazing, partial juniper removal	All grasslands; different treatments for each TMU (grassland area)	Wind erosion control, weed control, increasing vegetation cover and diversity, and preparing agricultural use	High	Mid Term
2.3	Arroyo de las Calabasas cleanup and rehabilitation	Arroyo de las Calabasas	Public safety improvement, ecological improvement	High	Mid Term
2.4	Calle Debra bridge reconstruction	Calle Debra bridge	Improve bridge stability and increase flow capacity of river passage	Medium	Mid + Long Term
2.5	Trail development (phase-1)	Grassland units and connection with fire road/trail	Local recreational use	Medium	Mid + Long Term
3.1	Trail development and implementation of other recreational facilities	TBD: Selected upland locations	Recreation uses	Medium -Low	Long Term
3.2	Installation of interpretive education signs	TBD: Selected locations	Improve public awareness and , appreciation	Medium -Low	Long Term

#	Project	Location	Purpose	Priority	Time Line
3.3	Dryland gardens or eco-agricultural facilities	TBD: Selected upland locations	Agricultural use development	Low	Long Term

A comprehensive overview of planning activities along with maintenance activities, Conceptual Master Plan projects, and community stewardship activities is included in Table 5. The activities are listed by functional group (planning, maintenance, community services, and projects/improvements) relative to Santa Fe County’s organization of departments, and split over short-term, mid-term, and long-term phases.

Alternatives for proposed Conceptual Master Plan projects will be developed during the planning process of each individual project. Alternatives vary between (1) No Action, (2) Preferred Solution, and (3) Alternative Solution(s).

For example, for Grassland Improvement (Project 2.2), the No Action alternative will involve that in dry years, the vegetation cover and plant species diversity will dwindle. There will most likely be an increase of forbs and weedy plant species and an increase of bare soil. Wind erosion will increase, as well as associated dust storms and air pollution from dust in the surrounding areas. The risk of wildfire will also increase.

One alternative solution may consist of managed, restorative grazing with goats and/or cattle for a short duration (several weeks to a few months). Cattle grazing may be most effective on the better grassland parcels. Goat grazing may be more effective to remove forbs, weedy plants, and plant species that are generally unpalatable for cattle. Fencing and water will need to be brought in. Rest periods and monitoring would be part of the managed grazing regime.

Another alternative may include the removal of selected juniper trees that have caused the surrounding grassland to die off and become bare and be infested with invasive plants. Cut juniper material can be spread as mulch and juniper slash can be spread to stimulate grass regeneration, and supported by reseeding of native grass if necessary.

Another alternative may consist of the cultivation of a cover crop, in collaboration with eco-agricultural partner organizations and The Horse ParkNAME?. This alternative may be effective for the fine-sandy and loamy degraded grasslands between the two forks of Arroyo de las Calabasas. This alternative would require soil amendments such as compost or mulch and some form of irrigation.

Key Projects for Planning, Research, and Development

The Conceptual Master Plan projects for LCOS require initial work through a series of planning and research projects. In the short term such projects include:

1. Developing protocols for communication and verification about maintenance and land restoration work, mapping, monitoring, and team coordination
2. Developing a monitoring plan to identify base-line data for all scheduled activities and associated terrain conditions

3. Developing a basic signage plan with signs for boundary marking and/or acknowledgement of the LCOS, along with a bulletin board that will serve to post flyers and announcements;
4. Planning community stewardship activities for the Santa Fe River area
5. Planning drainage improvements and erosion control work on the fire management road and along Paseo Real
6. Research for short-term fencing and priority cleanup and mid-term cleanup and rehabilitation of the Arroyo de las Calabasas TMU
7. Developing a simple grassland and grazing management plan, including juniper management, revegetation strategies, weed management, and soil improvement
8. Developing a grazing lease program and a plan for managed, restorative grazing for years 4-5
9. Research for mid-term and long-term trail and recreational development
10. Plan and coordinate the Calle Debra bridge reengineering project

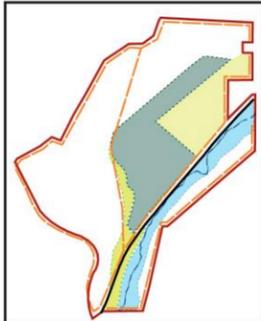
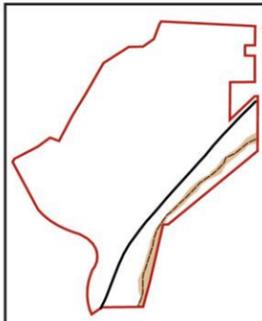
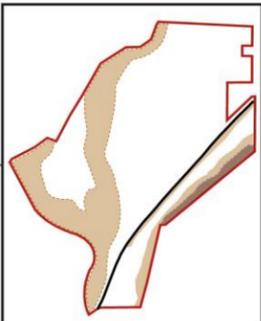
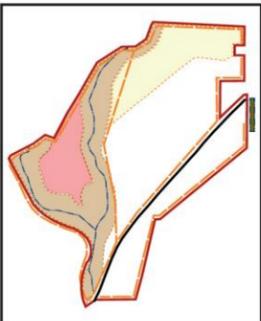
Mid-term and long-term research and planning projects would include:

11. A Recreation Master Plan for the LCOS
12. Arroyo de las Calabasas cleanup and rehabilitation project
13. Grassland improvement, managed grazing and juniper removal projects
14. An interpretive education program
15. Research a possibly expanded eco-agricultural program based on dryland (low external input) gardening and/or agriculture activities

The listed projects can be spread over Planning, Projects, and Community Services staff.

Coordination at one central point will, however, be critical to their effective completion, and should ideally be under the responsibility of the Open Space and Trails Planner.

MAINTENANCE / IMPROVEMENT / PLANNING

	SHORT TERM	MID-LONG TERM
MAINTENANCE	 <p>ANNUAL / BI-ANNUAL</p> <ul style="list-style-type: none"> Riparian management <ul style="list-style-type: none"> deadwood removal invasive species removal channel cleaning manage pond levelers tree protection Fence inspection and repair 	 <p>ANNUAL / BI-ANNUAL - CONTINUED</p> <ul style="list-style-type: none"> Riparian management <ul style="list-style-type: none"> deadwood removal invasive species removal channel cleaning manage pond levelers tree protection Fence inspection and repair Managed grazing for weed control grasslands (pasture unit, juniper unit, old field unit)
IMPROVEMENTS	 <p>DRAINAGE IMPROVEMENTS</p> <ul style="list-style-type: none"> Drainage improvements on fire road  <p>ECOLOGICAL IMPROVEMENTS</p> <ul style="list-style-type: none"> Erosion bank stabilization on Paseo Real + fire road Arroyo Calabasas clean-up and safety improvements 	 <p>CONTINUED IMPROVEMENT OPPORTUNITIES</p> <ul style="list-style-type: none"> Boundary fence upgrade and gates Restorative grazing for weed management <ul style="list-style-type: none"> grassland gravel unit grassland dry unit Arroyo Calabasas continued clean-up, hazard removal, vegetation management Calle Debra bridge re-engineering Trail improvements Signage and interpretive education program
PLANNING	<p>DRAINAGE - RIPARIAN PLANNING</p> <ul style="list-style-type: none"> Plan Paseo Real + fire road erosion control, drainage improvement Plan Arroyo Calabasas rehabilitation <p>COMMUNITY STEWARDSHIP</p> <ul style="list-style-type: none"> Organize community stewardship group Community stewardship events for riparian area maintenance <p>GRAZING PLANNING</p> <ul style="list-style-type: none"> Plan for restorative grazing, weed management Plan for juniper management and revegetation between junipers Master plan for trails 	<p>GRAZING PLANNING</p> <ul style="list-style-type: none"> Grazing management plan Grazing lease or contract <p>AGRICULTURAL PLANNING</p> <ul style="list-style-type: none"> Feasibility study on gardens and agricultural opportunities <p>DRAINAGE PLANNING</p> <ul style="list-style-type: none"> Plan and redesign Calle Debra bridge <p>TRAIL + RECREATIONAL PLANNING</p> <ul style="list-style-type: none"> Fund and implement initial trails for site Study expanded trails improvements and other possible recreational opportunities <p>COMMUNITY STEWARDSHIP</p> <ul style="list-style-type: none"> Strengthen community stewardship group Continue community events Develop educational opportunities



MAINTENANCE / IMPROVEMENTS / PLANNING

LA CIENEGUILLA OPEN SPACE LA CIENEGUILLA NM

Ecotone

Figure 4. Graphic display of phased management activities for LCOS relative to functional activity groups.

Table 5. Overview of phased management activities for LCOS for each functional activity group.

PLANNING

Short Term	Mid Term	Long Term
Establish protocols for maintenance work and team coordination	Update and manage the grazing program	Update and manage the grazing program
Develop a monitoring plan and gathering base-line data	Update and manage the riparian area program	Update and manage the riparian area program
Develop a basic signage plan	Guide the Arroyo Calabasas cleanup process	Update and manage the upland vegetation management program
Ongoing community outreach and coordination of riparian area management	Plan and coordinate implementation of gradual juniper removal and revegetation work	Implement the recreation plan
Plan erosion and drainage improvement on the fire management road and along Paseo Real	Plan and coordinate detailed plans and designs for trails and other recreational uses	Implement an interpretive education program
Plan and design coordination for the Calle Debra bridge/crossing re-engineering project	Plan development of an interpretive education program	Plan and design a dryland ag/garden program
Plan coordination for the Arroyo Calabasas cleanup and rehab work	Secure funding for recreation plan implementation	Identify and prepare funding for dryland ag/garden plan implementation
Develop a grazing management plan (including a grassland management plan: fencing, revegetation, and juniper management)	Plan a feasibility study for dryland ag/garden development	
Prepare a managed grazing pilot program (and lease)		
Launch + oversee + evaluate the managed grazing program		
Develop Recreation Master Plan		

COMMUNITY and County SERVICES

Short Term	Mid Term	Long Term
Community organizing for maintenance work, such as woody debris removal, invasive species removal, and tree protection	Community organizing for maintenance work and for community input on recreation planning and dryland ag/garden program development	Community organizing for maintenance, recreation plan implementation, and dryland ag/garden program development

MAINTENANCE

Short Term	Mid Term	Long Term
Clean out culvert and remove debris	Clean out culvert and remove debris	Clean out culvert and remove debris
Remove dead wood, debris, and overgrown willows in river channels	Remove dead wood, debris, and overgrown willows in river channels	Remove dead wood, debris, and overgrown willows in river channels
Remove dead wood and debris across riparian area	Remove dead wood and debris across riparian area	Remove dead wood and debris across riparian area
Remove invasive tree species	Remove invasive tree species	Remove invasive tree species
Move and maintain pond levelers	Move and maintain pond levelers	Move and maintain pond levelers
Protect (cage) trees	Protect (cage) trees	Protect (cage) trees
Inspect and repair fences	Inspect and repair fences	Inspect and repair fences
Fire management road drainage improvement	Fire management road drainage improvement	Fire management road drainage improvement

PROJECTS/IMPROVEMENTS

Short Term	Mid Term	Long Term
Fence improvements	Boundary fence upgrades and gates	Repair and improve all fences as needed
Erosion and drainage management on the fire management road and along Paseo Real	Arroyo de las Calabasas cleanup/rehabilitation project	Second phase of gradual juniper removal and revegetation
Fencing and preliminary cleanup activities of the Arroyo de las Calabasas	First phase of gradual juniper removal and revegetation	Recreation facilities, trails, and signage
	Calle Debra bridge improvement	Interpretive educ. program
	Weed management as needed	Weed management as needed

2.4. Community Relations

Santa Fe County intends to develop and maintain productive, neighborly and collaborative relations with the communities of La Cieneguilla and La Cienega regarding the implementation of the LCOS Management Plan.

Information Exchange

In the short term, Santa Fe County plans to expand and develop several methods for information exchange with community members and stakeholders.

Signage

Santa Fe County will install **simple signage** to identify the Open Space property. Signage will also inform the public about safety, leave-no-trace principles, general care and stewardship behavior, and contact information for Santa Fe County. Boundary markers will be installed for maintenance and access control. **Bulletin boards** will be placed at the gate on Calle Debra, at the southern end of the property along Paseo Real and at the gate to the grassland area on the eastern end of the property to provide public information, such as specific events, meetings, and terrain management activities.

Website

Santa Fe County will maintain **website pages** dedicated to the County Open Space program. The website may be expanded with a specific webpage describing the LCOS landscape and history, management plan information and activities, and planned events at the LCOS.

Community Contact

Santa Fe County will work with the community to identify a communication structure to field comments and questions for follow-up actions. Critical communication will address signage, riparian area management (e.g., removal of wood and invasive plants and tree protection), work on gates and fences, and work on the fire management road, among other initiatives, especially in the initial phase of plan implementation.

Education, Coordination and Collaboration

Santa Fe County and community members understand that it is important to **cultivate educational activities** at LCOS to raise awareness about the area's unique history and ecology and to mobilize support for future stewardship. Santa Fe County and community members encourage more youth engagement like school groups in educational activities and site maintenance.

A significant portion of community communication will revolve around maintenance of the open space property, both to announce maintenance work done by Santa Fe County and its contractors

and to plan and **coordinate maintenance work done in collaboration with community members**. All maintenance and restoration activities will be discussed with affected neighbors and stakeholders prior to implementation, or presented and coordinated in community meetings.

Maintenance activities that are suitable for **(small) groups of volunteer stewards** include:

- Removal of dead wood and woody debris in the river channel (during low flows) and on the floodplain of the bosque (in the late winter and early spring to prepare for spring runoff and summer storms)
- Removal of invasive plants (esp. elm, Russian olive, and tamarisk) (in the late fall and in the early spring)
- Protecting cottonwood trees with chicken-wire type baskets or fence material to prevent beaver damage to the trees.

Maintenance activities can provide **benefits for the community**. Such benefits may include the distribution of dead wood as firewood for community members, and sharing of information about cultural resources or wildlife in the area.

There is a diverse group of community stakeholders that Santa County intends to mobilize for volunteer stewardship work. These **stakeholder groups** include:

- Immediate neighbors in La Cieneguilla
- The Santa Fe Horse Park
- Downstream residents, farmers, and ranchers
- The Santa Fe River Traditional Communities Collaborative
- Area schools and their students, such as the MASTERS Program (high school as Santa Fe Community College), Santa Fe Indian School, the Santa Fe Girls' School, Desert Academy, and nearby elementary schools
- Several regional conservation groups (such as Santa Fe Watershed Association), hiking and outdoor organizations, and other entities that could become interested in the LCOS

Collaboration on maintenance activities will be effective if it starts with organizing community partners around **specific, tangible projects** to foster communication and trust, and generate additional objectives, priorities, and creative new ideas for problem solving.

Such projects will support the development of communication and between Santa Fe County and interested community members. The following topics are of interest in the community and may serve as pilot projects the implementation of this plan:

- Management of the bosque, including wood removal, caging of trees, removal of invasive tree species, and tracking beaver activity and their impacts on trees and streambanks, and monitoring of the effectiveness of pond levelers
- Trail identification on the fire management road and additional trail building and stewardship in subsequent years

- Interpretive programming
- Public and youth education

A more detailed list of community involvement is included in section 2.6 about short-term Plan implementation activities.

2.5. Terrain Management

Terrain management activities are described in detail in a separate Maintenance Plan for LCOS. The following sections summarize terrain management in the context of this plan. The proposed terrain management activities also reference specific Best Management Practices (BMPs), which are described in the Open Space Management Guidance Plan.

Summary Overview

Property management includes land restoration, maintenance, and community stewardship. Terrain management activities are specific for each Terrain Management Unit (TMU). Each TMU requires a discrete set of management activities to maintain their ecological functions in support of the central management goal for the LCOS. An overview of terrain management activities is included in Table 6. Detailed lists of terrain management activities are included in Tables 7 and 8.

Table 6. Overview of Terrain Management Units and anticipated regular maintenance activities related to the management objectives for the property.

Where	What	Why	When
TMU	Anticipated Regular Maintenance Activities	Objective	Maintenance Frequency*
All TMUs	Communication and outreach with neighbors and stakeholders and integrate feedback in planning	Holistic & Inclusive	Annually
All TMUs	Inspect and repair of: a. Fences, gates, and stiles b. Culverts, stream crossing c. Roads, trails (fire road) d. Signage	Public Safety / Access / Education / Infrastructure	a. Annually b. Monthly c. Quarterly d. Annually
1. Grassland – Gravel: upland gravel terrace	a. Invasive species inspection b. Managed grazing	Ecological Health / Grazing	a. Annually b. Annually after yr 3
2. Piñon-Juniper area	a. Invasive species inspection b. Managed grazing c. Gradual reduction of junipers and reseeded with grasses	Ecological Health / Grazing / Grasslands	a. Annually b. Annually after yr 3 c. Periodically, after careful planning

Where	What	Why	When
TMU	Anticipated Regular Maintenance Activities	Objective	Maintenance Frequency*
3. Grassland – Old Fields: former pastures	a. Invasive species inspection b. Managed grazing	Ecological Health / Grazing	a. Annually b. Annually after yr 3
4. Grassland: lower grassland strips	a. Invasive species inspection b. Managed grazing	Ecological Health / Grazing	a. Annually b. Annually after yr 3
5. Grassland – Damaged: loamy rangeland	a. Invasive species inspection b. Restorative and after that managed grazing and reseeding where necessary	Ecological Health / Grazing	a. Annually b. Annually after yr 3
6. Arroyo Embankment: arroyos with buffer zone	a. Invasive species inspection b. Cleanup and grading c. Restorative and after that managed grazing and reseeding where necessary	Public Safety	a. Annually b. One-time, and inspect annually c. Annually after yr 3
7. Riparian Zone	a. Removal of dead wood b. Removal of invasive plant species c. Channel cleaning; removal of debris d. Culvert cleaning e. Moving / maintenance of pond levelers f. Tree protection g. Fence repair and inspection	Ecological Health	a. Annually for 2-3 years and then as needed by volunteers b. Annually c. Twice annually d. When needed / at least twice annually e. When needed f. Annually g. Annually
8. Pinon-Juniper Slope	a. Fire management road inspection and drainage maintenance b. Thinning/pruning of junipers to reduce cover but maintain visual and wildlife habitat qualities c. Erosion control (e.g., using slash from thinned and pruned trees)	Ecological Health	a. Annually b. Once in 3-5 years c. Once in 3-5 years

***) Note:** The table indicates the minimum suggested frequency. In some circumstances frequencies may need to be increased if/when staff time and funds allow or if maintenance activities can be conducted by community volunteers.

Restoration Projects

Table 7. List of Terrain Management project activities for year-1 aimed at land health restoration.

Location Code	Management Activity	Location	Staff Prep	Volunteer Activity	SF County-M (Crew)	Contractor	Costs
LC-RIP	Piling and burning	Select area (once in 4 or 5 yr)					TBD: based on bid
LC-RIP	County Road repair	When need arises					TBD: based on bid
LC-RIP	Berm removal for proper drainage along fire management road	Select areas when need arises	One time to establish standards and prescription				TBD: based on bid
LC-RIP	Drainage and bank stabilization along Paseo Rael	Select areas when need arises	One time to establish standards and prescription				TBD: based on bid
LC-ARR	Fencing of Arroyo de las Calabasa area	Entire arroyo area	One time to establish standards and prescription				TBD: based on bid
LC-ARR	Cleanup or removal of priority hazard features	Entire arroyo area	One time to establish standards and prescription				TBD: based on bid

Maintenance and Stewardship Activities

Table 8. List of Terrain Management maintenance and stewardship activities for year-1 aimed at land health maintenance.

Location Code	Management Activity	Location	Staff Prep	Volunteer Activity	SF County-M (Crew)	Contractor	Costs
LC-All TMUs	Fence inspection and repair (all exterior fence)	Entire upland area: approx 10,500 lf	One time to establish standards and prescription				Annually, 1-2 days for 2 people (16 hours)
LC-RIP	Field inspection	Entire riparian area: approx 19 ac					35 times/y: 4 h for one person: 140 h/y
LC-RIP	Dead wood removal	Select area yearly; 4 ac/y	One time to establish standards and prescription				TBD; based on bid (rough estimate: \$14,175-\$22,680/y)
LC-RIP	Invasive spp removal	Select area yearly					TBD: based on bid
LC-RIP	Tree protection	Select trees for caging	One time to establish standards and prescription				TBD: based on bid; OR approx. 1 day/y for 2 people (16 h/y)
LC-RIP	Pond leveler maintenance or relocation; dam removal	Select locations					TBD; perhaps 4-6 crew member days/y (48 person hours/y)
LC-RIP	Culvert cleanout						TBD: based on bid OR approx. 64 h/y for crew
LC-RIP	Fence repair	Select areas when need arises	One time to establish standards and prescription				TBD: based on bid

2.6. Plan Implementation and Financing Mechanisms

Plan implementation will start by identifying priorities, and timelines among staff for activities regarding maintenance, planning and project preparation, community outreach, and community stewardship involvement. This prioritization will be based on the recommended tasks at hand and the staff and funding available to accomplish the tasks. This section lists planned activities with suggested funding mechanisms for each activity.

Implementation

Implementation of this plan will start upon approval of the plan by the Santa Fe County Board of County Commissioners.

Recommended implementation activities include:

1. **Periodic community meetings** to explain the planned implementation activities with an emphasis on:
 - a. Terrain inspections, baseline data collection, priority maintenance activities, and planning activities for key projects for repairs and improvements
 - b. Identifying community interest and capacity to assist with the planned activities
 - c. Developing outlines for collaborative projects between Santa Fe County and neighbors and other local stakeholders, and
 - d. Coordinating specific community involvement for the selected projects, and
 - e. Annual review of prior year activities and next year implementation planning.
2. Implementation of selected **terrain inspection, base-line data collection** (for future monitoring), and **maintenance activities** by County maintenance staff, assisted by neighbors and local volunteers; inspections, data gathering and priority maintenance will include:
 - a. Interior and exterior fence conditions and repairs
 - b. Weed removal, especially invasive tree species in the bosque area
 - c. Removal of dead wood, fallen trees, and debris in the stream and floodplain
 - d. Protection of cottonwood trees with wire mesh caging
3. Planning, collaboration, and **community organizing to implement** priority projects; possible projects may include:
 - a. Development and placement of signs and a bulletin board
 - b. Drainage improvements and erosion control on the fire management road and along Paseo Real and identification of the road as an accessible trail
 - c. Fencing of the entire Arroyo de las Calabasas area

- d. Identification, cleanup, or removal of the highest priority waste dumps
 - e. Removal of invasive tree species
4. **Research and planning for the preparation of larger initiatives** to be implemented at a later date, including:
- a. Development of protocols for communication, staff development, and coordination
 - b. Development of a signage plan that includes site specific signs, public outreach and communication strategies
 - c. Grassland management planning and the development of a managed, restorative grazing program
 - d. A juniper removal plan
 - e. A plan for the improvement of the LC-GRA-D TMU
 - f. Trail planning
 - g. Evaluation of the roll-out phase and adaptive planning for subsequent years.

Financing Mechanisms, Funding Sources, and Partners

Santa Fe County owns and manages more than 6,600 acres of open space properties and parks, but it has insufficient funding and staff resources to meet the acquisition and management goals for the properties. Santa Fe County will be able to implement this plan if it successfully continues to develop new funding mechanisms, identify new funding sources, and cultivate collaborative relationships with neighbors, local stakeholders, and other interest groups.

To implement this plan, Santa Fe County will **include neighbors, stakeholders and other partners** in planning, maintenance, and data gathering for purposes of monitoring, planning, and development of specific projects. This collaborative approach will reduce the need for outside funding for property management and it will help build neighborly relationships and increase stewardship by the people with the greatest interest in the property.

APPENDICES (TBD)

- A. Planning Team and Participants
- B. Site Characterization Reports
- C. Maintenance Plans
- D. Community Meeting Notices and Summaries of Meetings
- E. Public Comments