“Wilderness is not a luxury but a necessity of the human spirit.”

Edward Abbey

McDowell Sonoran Preserve

ACCESS AREA DESIGN AND SITE STANDARDS

Mission Statement

To develop environmentally responsible public access areas that borrow from and blend into the natural desert landforms and landscape of each specific Preserve access location.

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Introduction

Background

In 1990, Scottsdale citizens, through the non-profit McDowell Sonoran Land Trust, initiated the vision for what ultimately will be the preservation of approximately 36,400 acres of Scottsdale's McDowell Mountains and Sonoran Desert. The McDowell Sonoran Preserve will consist of mountains, Sonoran Desert and natural corridors linking to natural open space in adjacent communities, the Tonto National Forest and the Maricopa County Regional Park. The goal is to preserve a large sustainable natural desert habitat for wildlife and desert flora with public access for appropriate passive recreational and educational use.

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When completed, the McDowell Sonoran Preserve will encompass approximately 1/3 of Scottsdale's total land area and will be one of the largest urban preserves in the country.

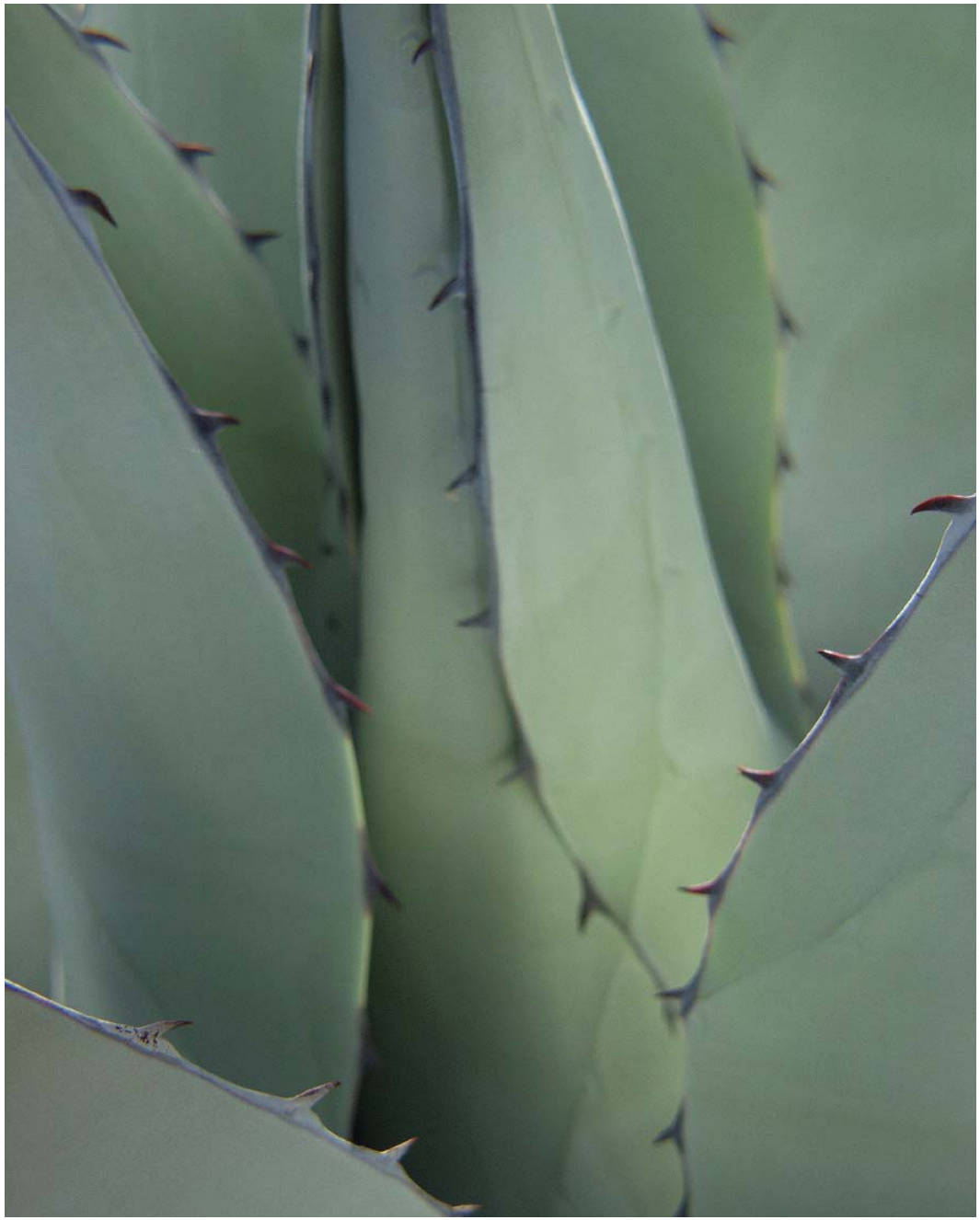
The McDowell Sonoran Preserve is intended to be preserved in as natural a state as possible. Limited amenities will be provided in strategically located access areas to accommodate appropriate public use and enjoyment of the Preserve. The McDowell Sonoran Preserve Access Areas Report identifies generalized locations for planned Community and Local Access areas as points of entry into the Preserve. Additional access locations may be identified in the future. Access areas range in size from Local Access, providing walk-in opportunities; Minor Community Access, which will include amenities needed to accommodate and support entry into and use of the Preserve and parking for up to 100 vehicles and equestrian trailers; Major Community Access, which will include a potentially expanded list of amenities and parking for up to 300 vehicles and equestrian trailers. Access areas are intended to allow visitors to experience the McDowell Sonoran Preserve through hiking, horseback riding, mountain biking, nature studies, bird watching, scenic viewing, picnicking, rock climbing and more.

The Sunrise - Via Linda Area is a unique situation. This access area lies outside, but near the Preserve. It is divided into two separate sites. Land and improvement funds for this access area were provided as a stipulation of a zoning case. Every effort will be made to adhere to the recommendations contained in this document when providing amenities in Hidden Hills; however, given the unique character and circumstances of this location, it may not be feasible to fully achieve the specific design and site standards.

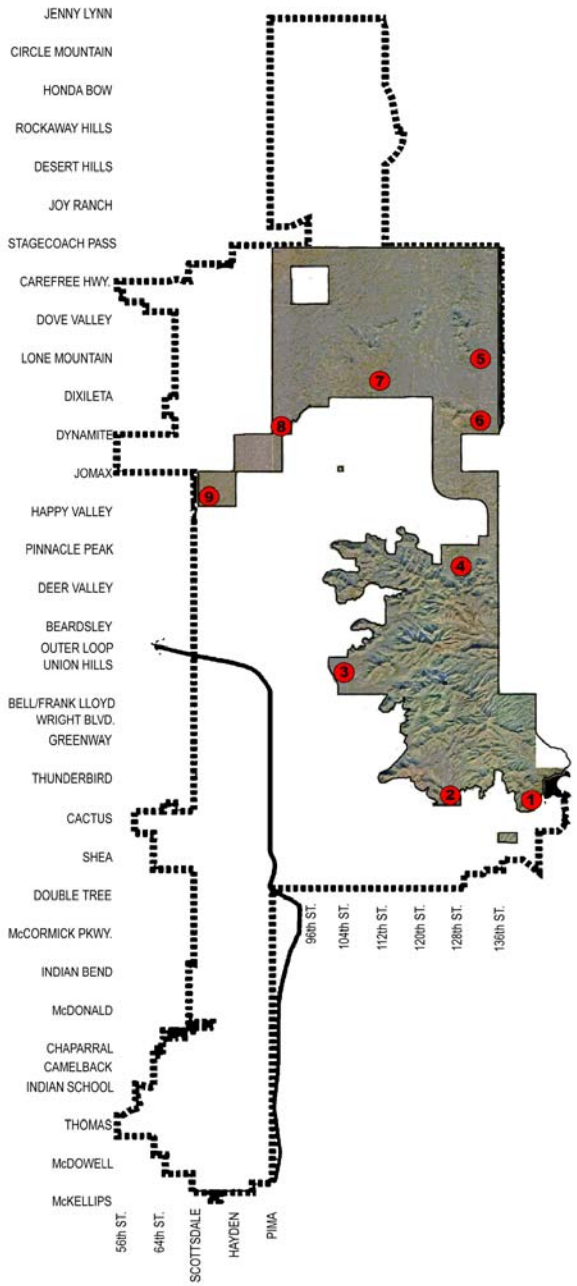
In addition, there is a planned Gateway to the McDowell Sonoran Preserve to be located in the general area north of Bell Road and east of the Thompson Peak Parkway alignment between Bell Road and Union Hills Drive. The Gateway will be the largest and most significant access area containing a broad range of amenities, possibly a Preserve maintenance facility and office, parking for up to 600 vehicles and potentially a Desert Discovery Center. While the intent is for the Gateway to adhere to the design principles established herein, it is anticipated that as design and construction planning for this particular area progresses, there will need to be flexibility to accommodate the unique functions of and to achieve the specific community objectives for this access area.

It is important that access areas be well planned to manage and control usage of the Preserve (quantity of people), managed to prevent unsafe and unwanted trails, minimize disruption of neighborhoods, disturbance of archaeological sites and destruction of sensitive plants and wildlife habitats.

Please refer to Scottsdale Revised Code Chapter 21 for more information. Also see www.scottsdale.gov/preserve.



McDowell Sonoran Preserve Access Areas



1 **Sunrise - Via Linda Trailheads***
minor community access

2 **Lost Dog Wash**
major community access

3 **Preserve Gateway***
gateway access

4 **North McDowell***
major community access

5 **Little Granite Mountain***
major community access

6 **Fraesfield Mountain***
minor community access

7 **Alma School***
minor community access

8 **Pima - Dynamite***
major community access

9 **Happy Valley - Scottsdale Road***
minor community access

*** Preserve access area names for reference only. Access areas will be named at a later date.**

Design Principles

Create environmentally responsive public accesses that borrow from and blend into the natural desert landforms and landscape of each specific Preserve site.

Site Design

- Preserve the natural character
- Minimize disturbance
- Integrate amenities
- Restore disturbed areas to replicate the natural character
- Provide habitat and biodiversity
- Minimize the use of potable water
- Maximize water harvesting (i.e. rainfall runoff irrigation) techniques
- Encourage educational and interpretive opportunities

Structures

- Encourage the use of native and/or naturally expressed materials
- Minimize environmental and, to the maximum extent feasible, negative visual impacts from other locations in the Preserve, from locations outside of the Preserve, and from within the access area site, through the design of architectural elements that respond to the Sonoran Desert and to the specific characteristics of the site.
- Design structures that borrow from and blend into the natural desert landforms and landscape of the specific Preserve sites
- When possible, use existing materials from the portion of the site that is to contain amenities
- Promote environmental processes (solar, etc.)

Construction

- Develop construction processes to mitigate activities that could potentially damage the site
- Promote environmentally responsible and green building construction practices
- Promote the use and re-use of available on-site materials

Approval Process Summary

Access areas in the McDowell Sonoran Preserve will serve to communicate to the public how the natural environment can be protected while at the same time accommodating public access and appropriate use. As such, it is critically important that the process to establish amenities in the access areas demonstrates environmentally responsible design and construction practices during all phases of the project. In order to ensure that the highest standards are adhered to, the design and construction process shall follow more rigorous standards than for typical projects outside of the Preserve.

The following outline of the Approval Process is intended to work in conjunction with the City of Scottsdale's Development Services Submittal and Approval requirements, including the Development Review Board process. In addition, the standards set forth herein are intended to be supplemental to other ordinances and regulations that may also apply, including, but not limited to, the Environmentally Sensitive Lands Ordinance, Native Plant Ordinance, Archaeology Ordinance, Federal 404 permitting requirements, Building Safety requirements and other submittals that may be required to receive construction permits.

Submittal and Approval Process

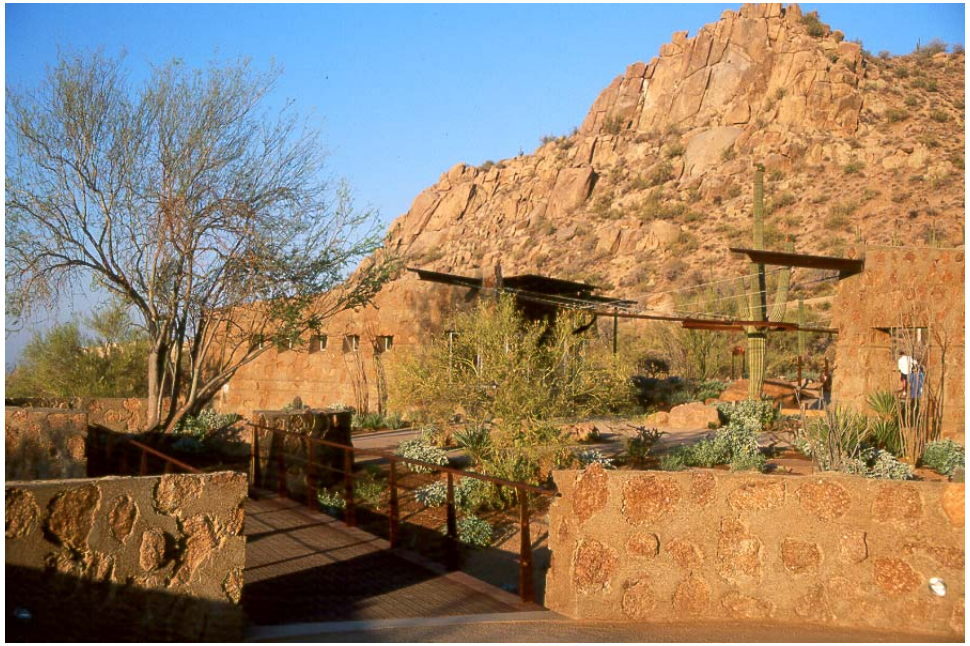
- Step 1: Archaeology Assessment
- Step 2: Site Analysis Submittal / McDowell Sonoran Preserve Commission review and staff approval
- Step 3: Preliminary Design Submittal / McDowell Sonoran Preserve Commission review and staff approval
- Step 4: Development Review Board Submittal / McDowell Sonoran Preserve Commission review, staff review and DRB approval
- Step 5: Construction Documentation / Staff review and Development Services approval
- Step 6: Construction Envelope Fencing Plan / Staff approval
- Step 7: Native Plant Salvage Permit / Staff approval and Development Services permit
- Step 8: Site Salvage Inspection / Staff approval
- Step 9: Site Inspection Prior to Project Closeout / Staff approval

See Section IV, "Design Approval and Inspection Process", for submittal requirements.

Intent

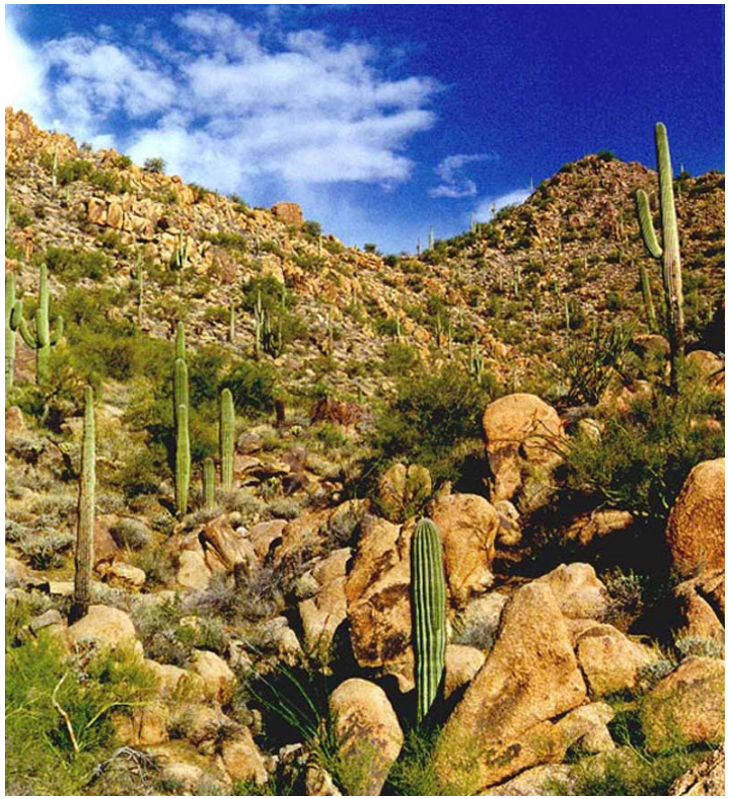
I. Design Standards: Site Design

Minimize environmental and, to the maximum extent feasible, visual impacts by performing a detailed site analysis and designing to fit amenities unobtrusively into the existing landscape.



"The extreme clarity of the desert light is equaled by the extreme individuation of desert life forms. Love flowers best in openness and freedom." - Edward Abbey

1.0 Planning



Goals

- Integrate amenities unobtrusively
- Where feasible, use previously disturbed locations to place amenities.
- Minimize visibility of structures from adjacent neighborhoods
- Maximize natural screens and buffers
- Avoid disturbing any archaeological sites
- Avoid disturbing significant natural features such as landforms, washes and significant stands of vegetation
- Protect significant landforms, boulder outcroppings, desert pavement topsoil and native plant materials
- Identify the inventory of available materials for re-use on the site

1.1 Site Analysis

All existing site features and conditions shall be thoroughly documented, including a digital photographic record.

Based on the existing conditions documentation, an analysis of each site's opportunities and constraints shall be conducted.

Field verification with Preserve staff shall be conducted for each aspect of the analysis.

See Section IV, "Design Approval and Inspection Process", for additional information.

1.2 Conceptual Site Plan Studies

Conceptual site plan options shall be developed which incorporate the required program elements and which address environmental and neighborhood concerns.

Plans shall delineate archaeologically and environmentally sensitive areas and historical drainage patterns, and address such concerns as minimizing site disturbances, grading concerns, construction staging areas, neighborhood visibility and preservation of significant site features.

Plans shall be reviewed by Preserve staff prior to proceeding with formal DRB process.

2.0 Parking

Goals

- Minimize environmental and negative visual impacts of parking

2.1 Layout

Parking areas shall be designed to minimize site disturbances, including cuts and fills, removal of significant vegetation and visibility from surrounding areas.

In sloped areas, parking shall be oriented to be generally parallel to the existing topography and shall be laid out in a tiered manner in order to minimize cross slopes.

Tiers shall be designed to minimize the overall area of grading disturbance. Tiers shall be graded to integrate parking into the site and vertical cuts and retaining situations will be considered to the extent they reduce overall site disturbance and visibility of the parking areas.

To the extent topography allows, parking areas should be broken into smaller "pods" separated by landscape areas to avoid large contiguous parking areas.

Parking shall not be allowed outside of designated parking areas to assist in controlling usage. The design of the parking areas shall discourage parking other than in designated areas through layout, signage and the use of landscape and barriers incorporated into the site design. Where appropriate, non-motorized transportation or mass transit systems will be encouraged for the public to reach Preserve access areas.

2.2 Materials

In order to reduce storm water runoff and the heat island effect, alternative materials, such as stabilized decomposed granite, should be considered for parking surfaces in lieu of asphalt.

Areas requiring ADA accessibility and areas prone to erosion and/or wear shall be identified and appropriately addressed through the use of alternate materials such as seeded and exposed aggregate concrete.

In order to reduce storm water runoff, large areas of impervious materials shall be avoided.

Water harvesting techniques shall be incorporated into the design to utilize storm water runoff to water adjacent landscape areas. This may include grading solutions that distribute surface water directly to landscape areas and/or to temporary storage areas that would store the water for future landscape uses.

In order to create seamless transitions between the built and natural environments, curbs should be avoided wherever possible. Where curbs are required for drainage or traffic control reasons, ribbon curbs and/or roll curbs should be considered as alternatives to raised curbs. In areas where raised curbs are unavoidable, curb cuts or other strategies shall be incorporated to allow for the movement of desert tortoises and other small desert creatures.

Material colors and finishes shall integrate and be compatible with the site and site architecture.

2.3 Landscape

Large areas of native landscape shall be designed into the parking layout between parking "pods" to further break up parking areas.

Enhanced densities of plant materials shall be used only within the parking areas in order to provide shade and to mitigate the visual impact of the parking areas. In all other locations, trees and other plant materials shall be used in a manner that will be consistent with the naturally occurring densities of vegetation in the area.

To the extent possible, plant material form the site shall be used as landscaping to visually buffer the parking areas from any surrounding uses and to integrate the parking areas into the site.

See Section 3.0, "Landscape", for additional information.

2.4 Gates

Gates will be required to restrict use after operating hours. Gates shall be integrated into the site and the site architecture.

Automatic exit gates with traffic loops or other sensing devices shall be utilized for egress. The use of treadles shall be avoided.

2.5 Lighting

Low-level lighting solutions such as at-grade drive over type fixtures or bollards shall be utilized for safety and security.

If pole mounted fixtures are required or desired in a particular area, height shall be limited to 12 feet maximum at the top of pole.

Light fixtures shall be constructed of naturally expressed materials that are compatible with the character of the site and site architecture. Light fixtures shall require low maintenance.

See Section 5.0, "Site Lighting", for additional information.

3.0 Landscape

Goals

- Preserve the natural character of each site
- Restore disturbed areas to replicate each site's natural character
- Provide natural habitat for indigenous animal species
- Minimize the use of potable water
- Provide educational and interpretive opportunities

3.1 Preservation

Develop a comprehensive program to preserve the natural character of each site.

Establish a baseline inventory of each site's vegetation community, including plant species list, natural plant densities, habitats, plant associations and soil characteristics.

Provide a comprehensive inventory of all vegetation found within established construction envelope.

Trees with a caliper of 10 inches or greater and all multi-arm saguaros shall be designated as significant site features and shall be left in place, undisturbed, to the greatest extent possible.

Develop a salvage program for each specific site, including inventory checklist, tracking system, salvage methodologies, storage area and warranty specifications. The storage area may be located off-site to minimize on-site disturbance.

In addition to those plants protected under the City of Scottsdale's Native Plant Ordinance, each site's salvage program should include the salvage of:

- All viable cacti of all sizes, including cholla, prickly pear, barrels, hedgehog, mammalarias, ocotillos, yuccas and immature saguaros
- All viable trees and shrubs with two inches or greater caliper
- A quantity of each species of shrub to satisfy the requirements of the site's restoration program shall be salvaged and/or procured prior to site clearing and grubbing in order to ensure availability

Develop a program to preserve native topsoils, including decomposed granite and "desert pavement" materials. Lichen covered rocks greater than 12 inches in diameter are to be salvaged and stockpiled for hand placement during restoration. Establish an area for stockpiling materials for use in top-dressing disturbed areas of the site. If practical, storage area may be located off-site to minimize on-site disturbance.

All rock top-dress materials shall match the character and color of the existing native stone.

See Section IV, "Design Approval and Inspection Process", for additional information.

Prior to the start of any site disturbance, all areas outside of disturbance envelope shall be fenced off from all access by placing a temporary 6-foot high chain link fence 5 feet inside of approved disturbance envelope. Access areas shall be clearly marked and no unauthorized activities shall be allowed outside of fence line.

See Section III, "Design Standards: Construction", for additional information.

3.2 Restoration

All areas of the site that were either previously disturbed or which are disturbed during the process of creating access area amenities, shall be restored to blend with the natural character of the site. The pre-disturbance baseline shall be referenced to establish proper vegetative and soil characteristics.

A comprehensive restoration and revegetation program shall be developed for each site. Considerations should include the use of site salvaged materials such as trees, shrubs, cacti and topsoil. In addition, supplemental materials may be utilized to ensure existing densities and plant associations are re-established in order to maintain and to promote wildlife habitat.

The restoration program shall use a combination of salvaged materials, one and five gallon size container plants, native seed mixes and native topdressing materials.

Native seed mixes shall be specified to include only those species of plants indigenous to the site and immediate surroundings, including wildflowers, grasses and other herbaceous perennials. If used, these materials should be dry scattered in the appropriate areas, ideally from mid-September through October. These materials shall not be hydroseeded and shall not require a permanent irrigation system.

All plant materials shall be native and indigenous to each specific site. Plant densities shall provide a seamless transition from newly planted areas to the existing, naturally occurring Preserve landscape.

3.3 Provide Habitat and Biodiversity

Develop a landscape program that considers the proper plant types and associations that provide native animal species with food and cover consistent with other sections under landscape.

3.4 Minimize the Use of Potable Water

Program shall be developed to maximize the use of rainwater harvesting, including surface runoff and on-site storage.

A long-term maintenance program shall be developed for each site that establishes a process to eventually remove all plant materials from all artificial irrigation methods. Parking lot islands and gathering areas may be exempted. Included in this program are considerations such as gel-type hydration soil amendments, maintenance specifications and a long-term irrigation schedule that gradually reduces the amount of potable water used for irrigation.

All revegetation and restoration areas shall be established utilizing a temporary surface irrigation system.

4.0 Site Elements

Goals

- Integrate into location and overall project design
- Find unique solutions that express environmentally responsible design

4.1 Bridges/Culverts

Bridges should be designed to minimize site disturbance, including the flow of natural watercourses. The use of culverted crossings should be avoided in favor of free span designs or dip sections where appropriate.

Pedestrian bridges should be utilized in all situations requiring the crossing of washes in excess of 75 c.f.s. or where washes are more than 3 feet deep. Vehicular bridges should be utilized for washes exceeding 250 c.f.s. This requirement shall apply only to wash crossings with the limits of the designated access area location.

Bridge materials should be constructed of naturally expressed materials such as steel or wood and should be designed to integrate with the surrounding landscape, other site structures, and with site amenities.

Where possible, bridges should be situated to enhance each location's entry experience.

Minimize the width of bridges to encourage the migration of native animal species.

4.2 Signage

Develop a comprehensive signage program for access areas ensuring consistency in design and message of wayfinding, identification and educational signs.

Develop a site specific interpretive signage package that takes advantage of educational opportunities to illustrate interesting aspects of the Sonoran Desert and the Preserve. Integrate wayfinding signage into the site and site architecture.

4.3 Educational Opportunities

As a component of the overall interpretive signage program describing the landscape, landforms and wildlife for each site, include explanatory information on the special considerations and processes put in place to maximize environmental conciseness and the expected outcomes concerning site planning.

Coordinate volunteer groups to participate in such activities as the salvage of the smaller plants and cacti for re-use on the project.

4.4 Pedestrian Barriers

Locate barriers to discourage unauthorized access into the Preserve and trailblazing, and to protect environmentally and archaeologically sensitive areas.

Design barriers and fencing to allow wildlife movement.

Utilize native and/or naturally expressed materials in the creation of the barriers.

Design barriers and fences to be transparent in nature.

4.5 Site Furnishings

Site furnishings such as trash receptacles, bike racks, watering troughs, benches and shade structures shall be designed to be integrated into the site and the site architecture and shall be constructed of naturally expressed materials.

Creative solutions and designs shall be incorporated to express the unique character of the access area environs. Pre-manufactured catalogue specifications should be avoided unless the above criteria can be met.

5.0 Site Lighting

Goals

- To the maximum extent feasible, eliminate light trespass from site
- Reduce impact on nocturnal environments and adjacent areas both inside and outside the Preserve
- Develop energy efficient solutions
- Design fixtures and poles to be unobtrusive during the day

5.1 Light Pollution

Site lighting shall be designed to minimize light trespass from the property and shall meet or exceed all ordinance requirements in this regard.

Access areas will be “Dawn to Dusk” facilities as set forth in the Preserve Ordinance. As such, lighting levels shall be designed to meet safety minimums required to assist site egress and should not be designed for nighttime activities.

5.2 Light Fixtures

The following lighting techniques are encouraged: indirect lighting, down lighting, at grade fixtures, L.E.D., low voltage and solar technologies.

The design of custom fixtures utilizing the above techniques is encouraged. Designs should utilize natural finishes and materials and should become natural expressions and extensions of the environment.

The following lighting techniques shall be avoided: shoebox type fixtures mounted on poles, fixtures over 12 feet in height, high-pressure sodium fixtures, fluorescent fixtures, unshielded floodlights and uplights.

See Section 2.0, “Parking”, for additional information on parking lot lighting.

6.0 Grading and Drainage

Goals

- Minimize engineered solutions to site constraints
- Develop solutions that are natural in appearance and which preserve the natural character of the site
- Reduce detention requirements
- Incorporate water harvesting techniques into drainage concepts

6.1 Site Grading

As part of the Preliminary Site Plan process, develop a Conceptual Grading Program that minimizes site disturbance.

Terrace parking into the site by following the topography.

See Section 2.0, "Parking", for additional information.

Where appropriate, utilize grading cuts to lower the finished elevation of such elements as buildings and parking, in order to better integrate the elements into the site.

Utilize retaining structures where required to minimize the horizontal length of proposed cuts.

Cuts or fills in excess of 3 feet in height should be avoided unless it can be demonstrated that doing so would reduce the extent of site disturbance. In these instances, staff shall review grading design and slope treatments on an individual basis to determine acceptability of the solution.

In suitable access areas, provide appropriate ADA access.

6.2 Cut and Fill Slopes

Where appropriate, shorten the length of slopes through the prudent use of retaining methods.

Slopes should mimic the grades and character of the adjacent topography to the greatest extent possible.

Avoid the appearance of "engineered" slopes, i.e. unnaturally straight slopes.

Avoid slopes in excess of 5:1 in order to mitigate potential soil erosion.

Where slopes are justified to be in excess of 5:1, provide methodology to mitigate potential erosion through the use of accepted control techniques such as check dams, revegetation techniques and biodegradable erosion mats.

6.3 Retaining Situations

Utilize where appropriate to minimize horizontal site disturbance.

Minimize height of retaining walls by terracing and stepping walls back.

Integrate structures into the site by utilizing site appropriate and naturally expressed materials such as boulders.

The use of pre-manufactured retaining wall systems shall be avoided.

6.4 Detention

Utilize detention structures only where absolutely necessary to remove pollutants from parking and driveway areas.

Minimize storm water detention requirements by reducing the areas of impervious surfaces (such as asphalt) and maximizing the use of pervious materials (such as decomposed granite).

Minimize use of non-porous material and high run-off coefficient surfaces for walks and paving.

Avoid disturbing the natural flow of existing site washes.

Develop a program to maximize the use of water harvesting techniques for re-use in the landscape and account for quantities harvested in retention calculations. Use natural channels to convey runoff from rainfall to areas of natural and restored vegetation to supplement necessary irrigation.

Establish appropriate runoff coefficients for permeable and semi-permeable materials such as stabilized decomposed granite paving.

Locate required on-site detention basins to fit into the site's topography and to be as unobtrusive as possible. A series of smaller and shallower detention basins shall be preferred in lieu of a single deep basin.

Avoid the appearance of engineered basins, i.e. straight sides and flat bottoms.

If necessary, new drainage ways shall mimic the character of existing washes by using similar topography, topdress materials and associated plant materials.

6.5 Erosion Control

Avoid potential erosion problems through proper site planning and grading practices.

Where pre-existing problems exist or where unavoidable, provide solutions that are natural in appearance or which use naturally expressed materials to integrate protection into the site such as gabions, "grasscrete" and filter fabrics with native plantings.

Avoid the use of group riprap unless covered by natural materials. All proposed rock materials shall match the existing character of the site. No river stone shall be allowed unless it exists in a natural condition on the particular access area site.

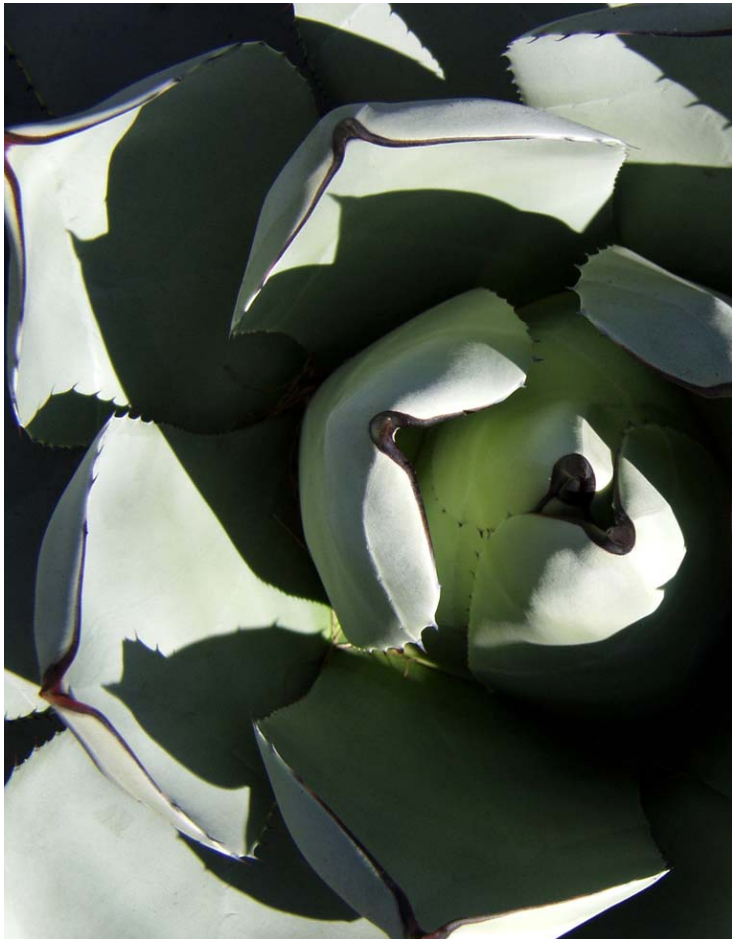
Intent

II. Design Standards: Amenities

Develop environmentally responsive architectural elements that borrow from and blend into the natural desert character of each individual Preserve access area site.

"The wilderness holds answers to questions man has not yet learned how to ask."

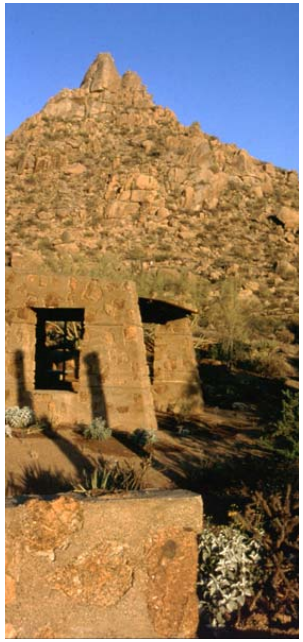
- Nancy Newhall



1.0 Building Massing / Solar Orientation

Goals

- Employ building massing to blend with the character of the natural desert landforms and landscape
- Use solar orientation to minimize unwanted heat gain and to maximize natural daylighting and ventilation, while providing a strong connection between interior and exterior spaces



1.1 Building Massing

Building massing shall fit the character of the native landscaping, geology and topography of the specific site.

Buildings should have multiple massing components following the natural flow of the landforms.

Maximum building heights shall not exceed 16 feet above existing grade. Appropriate building appendages such as cooling towers shall not exceed 24 feet above existing grade. All structural elements above the 16-foot limitation shall require staff review and approval on an individual basis.

Building massing shall match the scale of the site and blend into the topography and site landscape, particularly when viewed from a distance. Vertical elements which provide a sharp contrast to the site shall be avoided.

Provide visual interest in site architecture to avoid long expanses of flat wall planes.

Articulate building forms to provide shade and shadow, creating visual interest and relief.

Avoid obstructing view corridors both onto and off of the site.

Avoid building forms that are contrary to the topography of the site.

Building entries shall include overhead shade elements to provide transition from exterior to interior space.

All opening shall be recessed to provide shade and shadow.

1.2 Solar Orientation / Daylighting

Solar orientation should be used to maximize north daylight and summer protected south daylight, while minimizing east and west solar exposure where feasible.

Provide a strong connection between indoor and outdoor environments through views and natural daylighting.

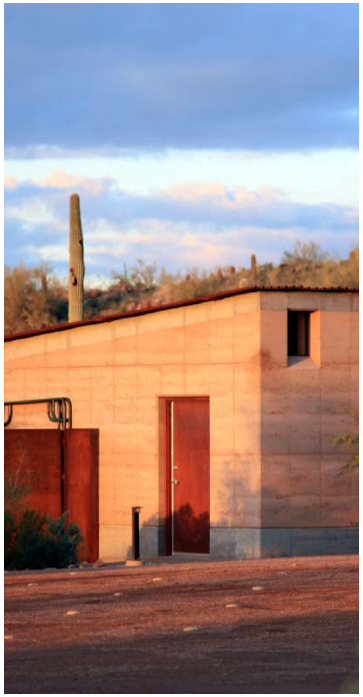
Provide direct lines of sight to vision glazing (c-9 glass) from a minimum of 75% of all regularly occupied spaces. The use of interior light shelves, exterior fins and louvers is encouraged.

Depending on the scale of the structure and the plan layout, courtyards, atriums, clerestory windows and skylights may also be appropriate design elements to maximize natural daylighting potential.

1.3 Passive Solar Heating and Natural Cooling

Where feasible and appropriate, integrate the design principles of passive solar heating and natural cooling in order to minimize energy consumption for the structures. Passive solar heating should provide for the following:

- South facing glazing (for winter sunlight only)
- Thermal storage mass through the incorporation of such elements as thickened walls and concrete slab construction



2.0 Material Palette

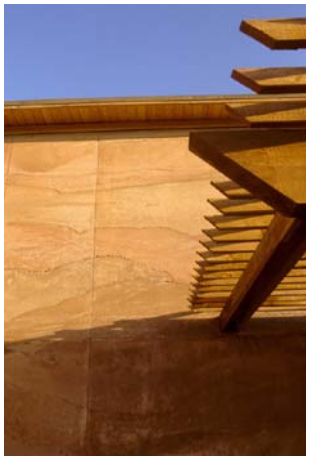
Goals

- Utilize “naturally” expressed materials that blend with the texture and color palette of the natural desert site

Examples of appropriate materials:

- Desert masonry, stone, stone filled gabions
- Concrete (e.g. cast-in-place, pre-cast, sand-blasted, exposed aggregate, integrally colored)
- Corten steel with rust finish, weathered steel, copper, natural steel
- Wood
- Rammed earth, cast earth, adobe
- Integrally colored masonry (e.g. textured, sand-blasted)
- Non-reflective glazing
- Fabric for shade structures

When used, stone shall be from the site or shall match the character and coloration of naturally occurring stone at the site.



Natural cooling principles shall include the following:

- Minimize unwanted summer heat gain
- Integration of landscaping around the structure to shade exterior building surfaces
- Maximize use of natural ventilation for cool periods utilizing the prevailing winds. Locate doors and windows to provide cross ventilation
- Consider evaporative cooling systems such as cool towers

Reference Arizona Solar Center (www.azsolarcenter.com) for a more in depth study explanation on each of these subjects.

3.0 Green Building Program

Goals

- Minimize the environmental impact of the project and create healthy building environments
- Use guidelines and requirements of the Scottsdale Green Building Program and/or the US Green Building Council's LEED Program in the design of access area structures. Through the frame work of either of these programs, the design team shall integrate design strategies that address the following issues:
  - Site Development
  - Water Efficiency
  - Energy and Atmosphere
  - Materials and Resources
  - Indoor Environmental Quality
- Composting restroom facilities shall be considered, particularly at locations with remote infrastructure locations

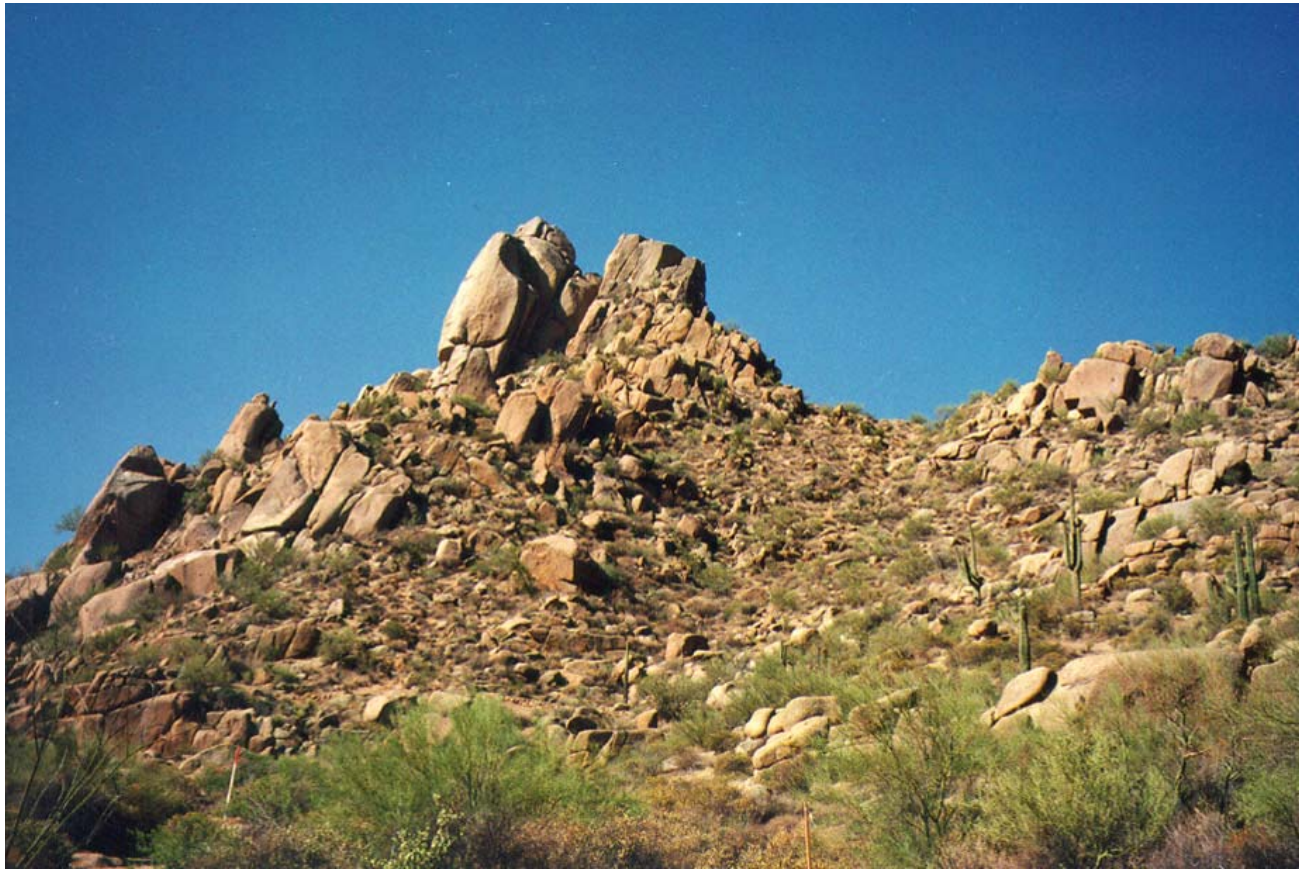
The Preserve Gateway / Desert Discovery Center project shall be registered in the USGBC LEED program and shall be certified to a minimum of Silver Level.

Reference the US Green Building Council (www.usgbc.org) and the City of Scottsdale Green Building Program (www.scottsdaleaz.gov/greenbuilding) for more in depth information on the requirements and scope of each program.

4.0 Structure Design Standards

Goals

- Coordinate structure design with requirements of City of Scottsdale "Design Standards and Policy Manual" (DSPM), including, but not limited to, DSPM Section 7.5 - Park Facilities. The Park Design Standards & Policies are not intended to provide specific design criteria, but to serve as a general guide regarding routine standards and policies during the design phase. The design review of each access area facility will be done on an individual basis.



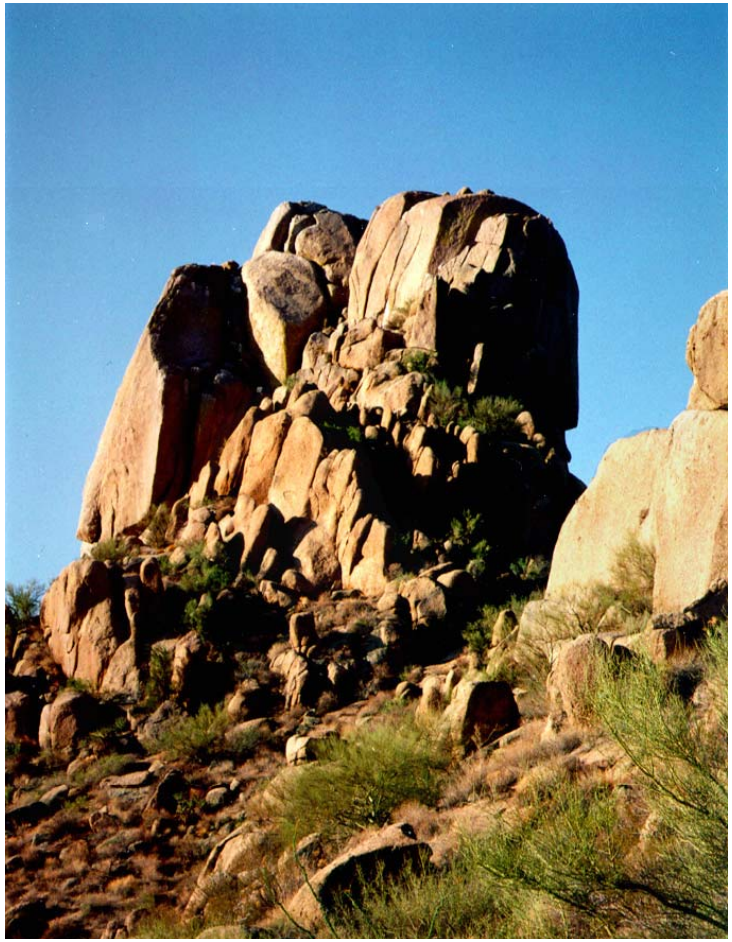
Intent

III. Design Standards: Construction

Program and organize all construction activities to minimize adverse environmental and visual impacts to the site.

"The wild things of the earth are not ours to do with as we please.

They have been given to us in trust." - William T. Hornaday



1.0 Construction Envelope

Goals

- Reduce to a minimum the total area of site disturbance
- Develop a program to limit all construction activities to designated areas
- Encourage environmental stewardship

Develop a plan delineating proposed area required for construction, including all access points, staging areas, nursery locations, waste disposal areas and parking. Plan should be developed as part of the site plan approval process and should be made part of the construction bid documents.

See Section IV, "Design Approval and Inspection Process - Step 2: Preliminary Design Approval", for additional information.

Encourage the use of off-site staging, construction parking and nursery areas.

Upon review and acceptance by the City of Scottsdale Preserve staff, all activities shall be restricted to the area within the established construction envelope.

Contractor shall be required to have all employees and sub-contractors sign an agreement to restrict all activities to the designated construction envelope.

Contractor shall be required to maintain the site and the immediate surrounding area, free of all construction debris and litter, including food and beverage wrappings and containers.

Contractor shall be required to post bonding against the cost of any damage caused during construction outside of the construction envelope.

Construction envelope shall be fenced off with a 6-foot chain link fence prior to start of any construction.

Contractor shall make provisions for salvaging and stockpiling native pavement and/or native decomposed granite from areas that will be disrupted, for re-use as topdressing on restoration areas.

2.0 Restricted Uses

Contractor shall designate an area, either within the construction envelope or outside of the planned Preserve boundary, for all equipment cleaning, wash out and repairs. Such area shall be lined with plastic liner prior to use and shall be completely removed prior to project acceptance.

3.0 Recycling

Develop a program for recycling the maximum amount of construction waste as practical.

Intent

IV. Design Approval and Inspection Process

In order to ensure the environmental integrity of the Preserve access areas and to mitigate any potential conflicts with adjacent and surrounding areas, the approval and development process for the access areas shall conform to a stringent submittal, approval and inspection process. The following requirements are intended to be supplemental to standard City of Scottsdale ordinance and approval processes and are intended to be followed in a sequential manner with each subsequent Step requiring the approval of each previous Step.

"We need wilderness whether or not we ever set foot in it. We need a refuge even though we may never need to go there." - Edward Abbey

Step 1: Site Analysis

Intent

To document all existing site features in graphic, photographic and written form to be used as a tool during the site planning process, thereby minimizing environmental and visual impacts to the site. All site planning proposals shall illustrate an in-depth understanding of existing site features for each specific site through the cataloging and graphic re-creation of the existing site conditions. The graphic and written narrative of these recorded features will become the foundation of all site plan documentation and for subsequent design and planning activities for access area amenities.

Goals

- Conduct archaeological survey
- Record existing site conditions, natural cycles, relationships, etc.
- Graphically display collected information as the basis for site planning proposals
- Provide a photographic account of all significant site features
- Summarize cataloged information in a written narrative

Approval Process

Submit the following for presentation to McDowell Sonoran Preserve Commission and review and acceptance by City of Scottsdale Preserve staff:

Archaeological Survey and Clearance: Prior to the start of work on any planned access area, a comprehensive archaeological survey shall be completed and clearance received per Arizona State Historic Preservation Office (SHPO) requirements.

Topographic Mapping: All site contours are to be shown in one-foot increments, with every contour in ten-foot increments to be a darkened shade. The location and elevations of all built structures, walls, sidewalks, existing trails, roadways, trees, significant stands of vegetation, boulder outcroppings, and cacti over six feet in height on the site, or immediately adjacent to the site, shall be shown on survey. Scale shall be 100 scale or larger.

Aerial Mapping: Aerial photo exhibit at the same scale as the topographic mapping, with ten-foot contour intervals.

Slope Analysis: Slope percentages shall be recorded and graphically displayed for the following increments: 0-5%, 6-10%, 11-20%, 21-30% and 31% and greater. No construction may take place on slopes greater than 30% and construction on slopes between 21-30% shall require approval of Preserve staff. Slope aspect shall illustrate the cardinal direction orientation of the slope.

Drainage Analysis: All drainage courses shall be recorded and graphically illustrated on plan, including 50-year flood volumes and flood zones for all washes in excess of 75 c.f.s.

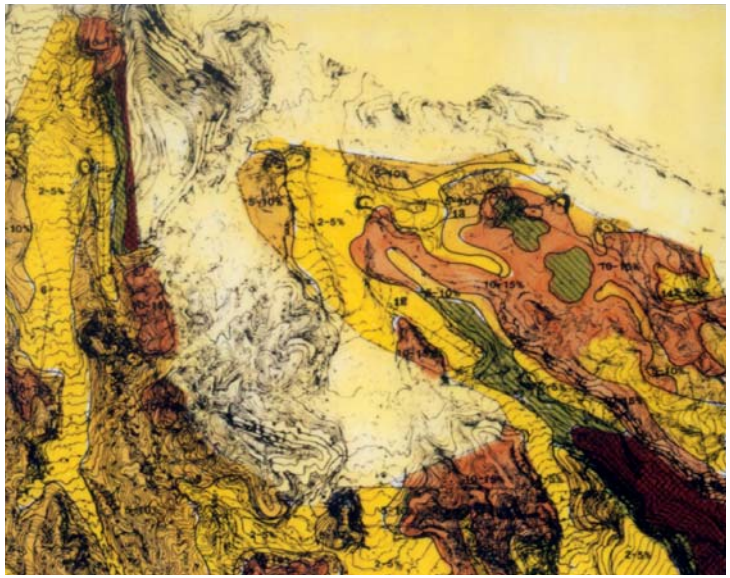
Baseline Inventory of Vegetative Communities: Inventory of existing plant communities, including plant species, natural plant densities, plant associations, wildlife habitats and soil characteristics.

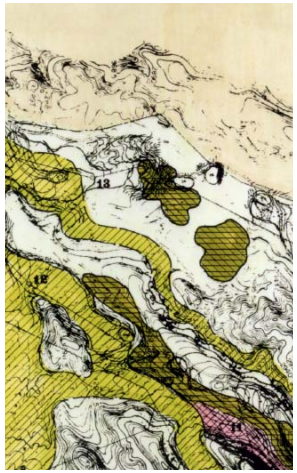
Vegetation Survey: Preliminary survey to locate significant stands of vegetation, trees with calipers of ten inches or greater and all multi-arm cacti six feet or greater in height. Vegetation shall be graphically located on aerial photo with a corresponding schedule listing size and species information.

Soil Topography: All soil conditions shall be documented, including type and general appearance. Photographic records shall be made of the undisturbed desert topsoil conditions for use in restoration and revegetation efforts. Exposed site boulders shall be cataloged by general size and rock type.

Wildlife / Habitat Survey: All wildlife species that inhabit the site shall be cataloged through direct participation with Arizona Game and Fish Department and other entities where appropriate. Existing nesting sites, as well as potential nesting sites, are to be cataloged. Potential nesting sites shall be ranked on the value of the nesting site, such as likely, highly likely, and most likely an area where nesting would occur. Areas where nesting sites are located and there is a strong likelihood that wildlife will remain, shall be treated as special site features.

View Corridors: All scenic vistas are to be cataloged and illustrated by site sections. Section lines are to be displayed on the site plan.





Significant Features Map: All existing site features, including boulder and/or rock outcroppings, significant stands of vegetation and major washes, shall be cataloged on the site plan and photographically recorded. Potential protection strategies for these features are to be identified and described in the written narrative section. All site areas that have been exposed to major disturbance such as fire, off roading, vandalism, dumping or land clearing shall be cataloged and shown on the site plan accordingly.

Opportunities and Constraints Map / Composite Overlay of Significant Site Conditions: Composite map displaying an overlay of the following conditions:

- Archaeological findings
- Slopes greater than 10%
- Significant stands of vegetation, including all trees with 10 inches or greater caliper and all multi-arm cacti (spears) over 6 feet in height
- Washes in excess of 200 c.f.s.
- Boulder outcroppings
- Significant wildlife habitat
- Previously disturbed areas
- Views

Photographic Record: Photograph the contextual environment from the site in each of the four cardinal directions every 500 feet along the site perimeter. Indicate photo locations on a site plan with an aerial site photograph that shows the entire site plus contextual land uses and corresponding zoning for 100 feet in each of the four cardinal directions.

Written Narrative: Prepare a written narrative documenting the findings of all site analysis surveys, catalogs and corresponding site plan documents. Narrative shall include a summary of the site's attributes and description of the site's natural character. Based on an understanding of the existing site, narrative shall include a comprehensive program for preserving the natural character of each site throughout design and construction.

Step 2: Preliminary Design Approval

Intent

To directly involve the City of Scottsdale Preserve staff in the design process, in order to ensure that the intentions of the Preserve Access Area Design and Site Standards are met.

Goals

- Minimize disruptive impact to significant site features, archaeological sites, natural cycles/processes, and wildlife habitats
- Protect scenic vistas/view corridors from site to contextual environment
- Minimize impact to surrounding built environment and areas of the Preserve outside of the access area location
- Minimize volume of storm water detention
- Minimize total area of site grading
- Minimize need for engineered retaining situations
- Restore disturbed areas to replicate each site's natural character
- Minimize the use of potable water
- Subordinate the automobile versus the site and pedestrians
- Respect the existing topography of each site
- Simplify parking area standards to facilitate better site integration
- Screen parking areas with landscape materials
- Minimize the impact of site lighting and utilities
- Integrate traffic control devices into parking layout and overall site design
- Utilize naturally occurring materials and finishes and organic forms
- Promote energy efficient, low maintenance design solutions

Approval Process

- Preliminary Site Plan at an appropriate scale to show the following:
  - Building scale
  - Building massing
  - Building orientation
  - Parking areas
  - Entry roads

- As may be required by Preserve staff:
  - Site sections showing proposed development and adjacent developments, including sight lines and proposed methods to shield views both onto and off of the site property and/or
  - Site review by staff of proposed structure locations

- Building Elevations identifying proposed materials and colors

- Native Plant Inventory:
  - Inventory shall follow the same methodology as is required under the Native Plant Ordinance (Ord. No. 2262 Section 7.500) with regard to tagging plants in the field and recordation. See www.scottsdale.az.gov/nativeplant for additional information. In addition to the requirements of the Native Plant Ordinance, all trees and shrubs with 2 inches or greater caliper and all cacti 2 feet or greater in height shall also be located and shall be measured for height, spread, and trunk caliper.
  - All plants shall be graphically located on an aerial photo plan with a corresponding schedule that lists size and species information.
  - Trees with calipers of 10 inches or greater shall be designated as significant site features and shall be left in place, undisturbed, to the greatest extent practical.
  - All viable smaller cacti shall also be inventoried for salvage and re-use. These plants shall be flagged in the field with red ribbon; however, they will not be required to be shown on the graphic exhibit.

- Preliminary Landscape Plan

- Materials Palette

- Overlay Map of Preliminary Site Plan over Existing Conditions Map

- Written Narrative describing how the design best achieves the stated goals, minimizes site disturbance and mitigates potential conflicts

Preliminary Design Submittal shall be reviewed by Preserve staff prior to proceeding with formal DRB submittal process.

Step 3: Development Review Submittal

Intent

To facilitate public input into the design process as outlined by the City of Scottsdale Development Services review process.

Approval Process

In addition to the standard requirements of the Planning and Development Services Department, submittal shall include the following as deemed appropriate by Preserve staff:

- Preliminary grading and drainage plan including:
  - Cut and fill areas
  - Retention areas, plans and sections
  - Retaining situations, plans and details
  - Construction envelope plan
  - Site protection plan
- Sight line / view analysis
- Native plant inventory
- Site salvage program including:
  - Native plants and cacti
  - Native soils and top dressing
  - Native rocks and boulders

Step 4: Construction Documentation

Intent

To develop construction documents and specifications for bid and construction that maintain the integrity of the established project goals and design principles.

Approval Process

- Process project through City of Scottsdale Capital Project Management
- Preserve staff shall review each progress submittal for compliance to project goals and design standards
- Project shall not be advertised for bid until Preserve staff has reviewed final documents

Step 5: Construction Envelope Fencing Approval

Intent

To ensure the site is properly protected during construction.

Approval Process

- Survey and stake location of the Construction Envelope per approval plan
  See Step 3, this section.
- Site review by Preserve staff prior to installation of fencing
  See Section III, "Design Standards: Construction", for additional information.
- Fencing shall be in conformance with approved Site Protection Plan
  See Step 3, this section.

Staff approval shall be a pre-condition to issuance of Native Plant Salvage Permit.

Step 6: Native Plant Salvage Permit

Intent

To allow the salvage of protected native plants to occur in a timely fashion by qualified contractors prior to the start of construction.

Approval Process

Native Plant Salvage Review Process shall occur concurrently with the Building Permit Review process.

- Separate permit and salvage contract

- Work may be completed prior to start of construction upon approval of final grading and drainage plan

- Submittal shall include the following information:
  - Photographic record of existing conditions
  - Location of temporary construction fence and limit of disturbance line
  - Location of nursery and plan for maintenance of landscape materials during construction
  - Schedule for Salvage Process
  - Warranty specifications
  - Maintenance program

- Scope of Work allowed under Permit includes:
  - Installation of temporary construction fence
  - Salvage of all trees and cacti designated for salvage in the approved Native Plant Inventory Program, in addition to conformance with Native Plant Ordinance
    See Step 2, this section, for additional information.
  - Nursery set-up

Step 7: Site Salvage Inspection

Intent

To ensure all aspects of the approved Site Salvage Program are properly completed prior to start of construction.

Approval Process

- In conformance with approved Site Salvage Program, including all small shrubs, cacti, desert pavements and topsoils
  See Section I, "3.0 Landscape" and Step 3, this section for additional information.

- Staff approval shall be a pre-condition to issuance of Clearing and Grubbing Permit

Step 8: Site Inspection Prior to Project Closeout

Intent

To ensure all aspects of the project are properly completed and in accordance with the approved site plan submittals.

Approval Process

Project shall be reviewed by Preserve staff to ensure conformance with the standards prior to receiving Certificate of Occupancy.

“Nature is not a place to visit, it is a home.” - Gary Snyder

V. Access Areas Location Analysis

Intent

Based on extensive fieldwork and input from user groups, the McDowell Sonoran Preserve Commission identified generalized locations for Preserve access areas and a list of potential amenities for each type of access area in the McDowell Sonoran Preserve Access Area Report. The descriptions and list of amenities in this section for each access area (this list may change as more detailed site analysis is performed) build on the information contained in the Access Area Report. The site maps identify a smaller geographic area within the broader access area location to conduct further site analysis and site planning studies for the placement of amenities. These areas are indicated in red on the site maps. The Preserve Gateway site is not included in this analysis, pending further study.

Sunrise *

Minor Community Access

Primary Users

- Hikers
- Mountain bikers

Amenities

- Up to 30 parking spaces
- Displays
- Drinking fountain (dog friendly)
- Signage
- Shade ramada

Typology

- Decomposed granite
- Foothill Palo Verde
- Saguaro, Ocotillo, Cholla
- Bursage, Brittlebush, Jojoba

Opportunities

- Available infrastructure
- Mid-density vegetation
- Location previously established through negotiation with developer

Constraints

- Nearby homes

Via Linda *

Minor Community Access

Primary Users

- Hikers
- Equestrian

Amenities

- Up to 24 parking spaces
- Horse trailer parking
- Drinking fountain (dog friendly)
- Water trough
- Signage
- Shade ramada

Typology

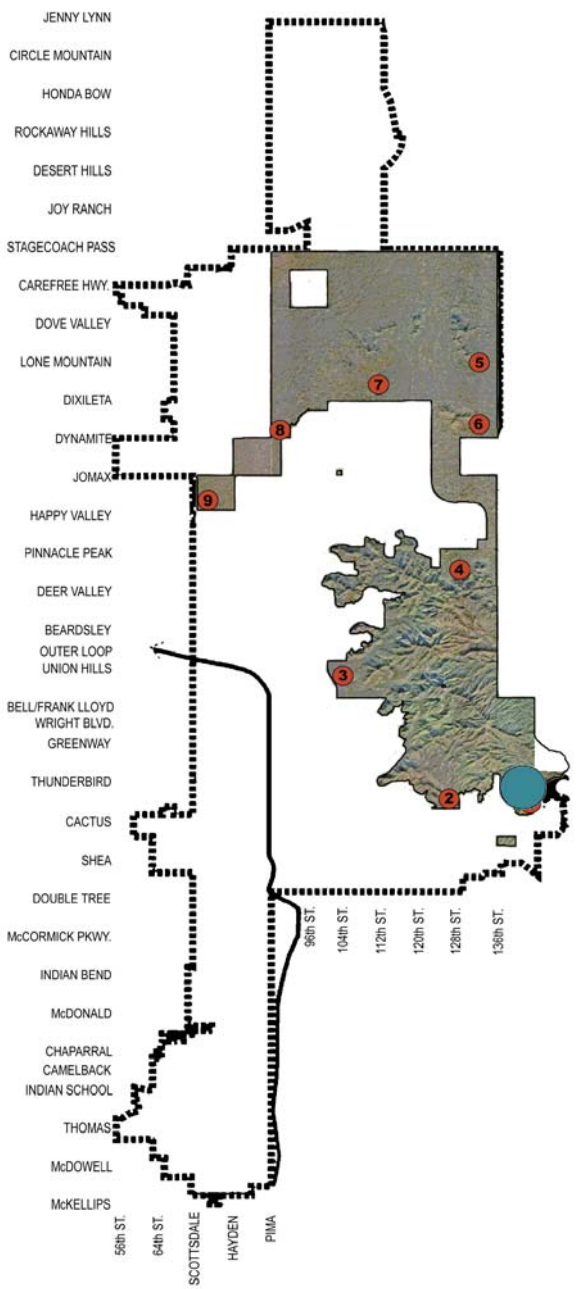
- Decomposed granite
- Foothill Palo Verde, Ironwood
- Saguaro, Ocotillo, Cholla, Barrel
- Bursage, Jojoba

Opportunities

- Available infrastructure
- No nearby homes
- Dramatic adjacent arroyo
- Location previously established through negotiation with developer

Constraints

- Close to existing road
- Limited site area



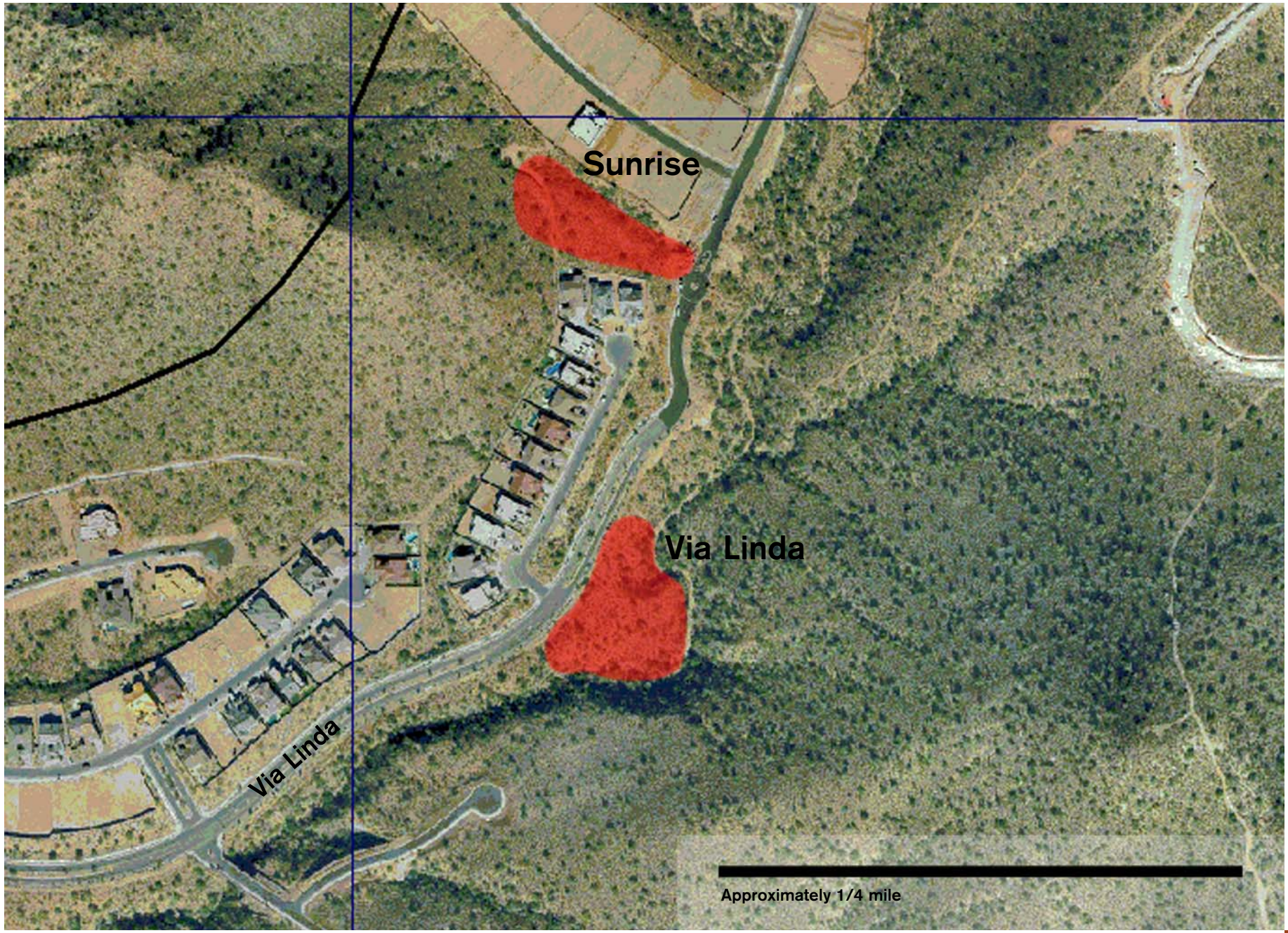
Sunrise

Via Linda

Rationale:
Sunrise trailhead location previously established through negotiation with developer. Situated in area of relatively level terrain above adjacent wash and below steeper slopes to west.

Via Linda location situated on relatively level terrain adjacent to existing road to accommodate equestrian trailer parking with good access.

* Note: This access area is comprised of two separate sites.


Sunrise
Via Linda
Via Linda
Approximately 1/4 mile

Lost Dog Wash

Major Community Access

Primary Users

- Hikers
- Equestrian
- Mountain bikers

Amenities

- Up to 300 parking spaces
- Horse trailers
- Storage
- Restrooms
- Educational gathering area
- Picnic areas
- Shade ramadas
- Interpretive displays
- Drinking fountains (dog friendly)
- Water trough
- Signage

Typology

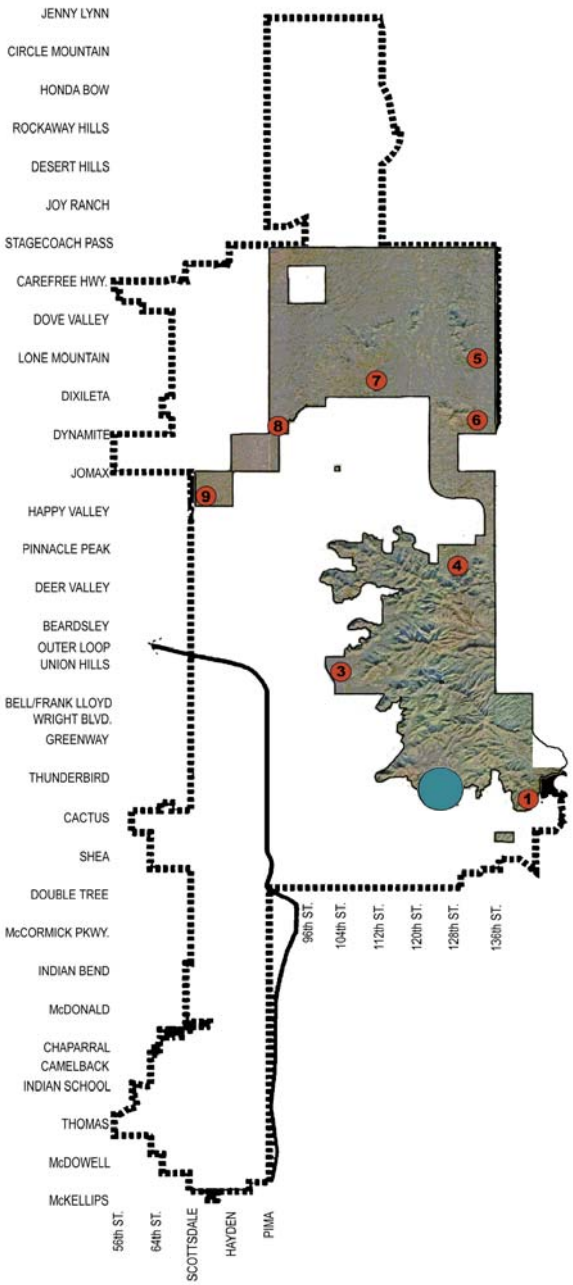
- Desert pavement
- Foothill Palo Verde, Ironwood, Mesquite
- Saguaro, Ocotillo, Cholla, Barrel
- Bursage, Brittlebush, Jojoba, Creosote

Opportunities

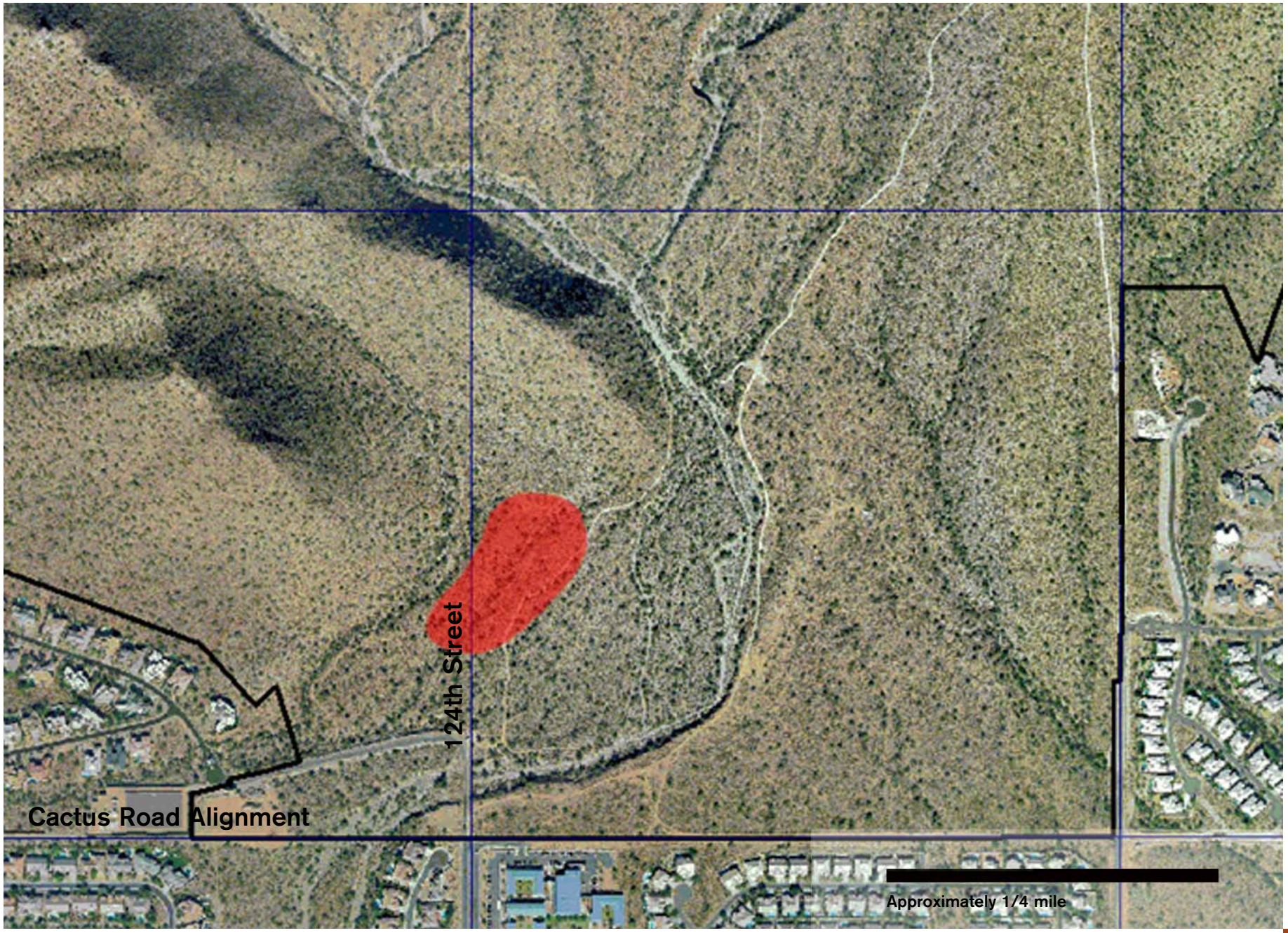
- Excellent urban views
- Educational partnership with adjacent schools
- Well defined wash
- Adequate land area
- Relatively flat
- Remote

Constraints

- No infrastructure
- Large existing washes



Rationale:
Site is remote to provide adequate buffer from neighborhoods. Terrain is relatively flat and access to site can utilize existing road scar without crossing major washes.


124th Street
Cactus Road Alignment
Approximately 1/4 mile

North McDowell

Major Community Access

Primary Users

- Hikers
- Equestrian
- Mountain bikers
- Rock climbers

Opportunities

- Views
- Connection to McDowell Mountain County Park
- Isolated, no neighbors

Amenities

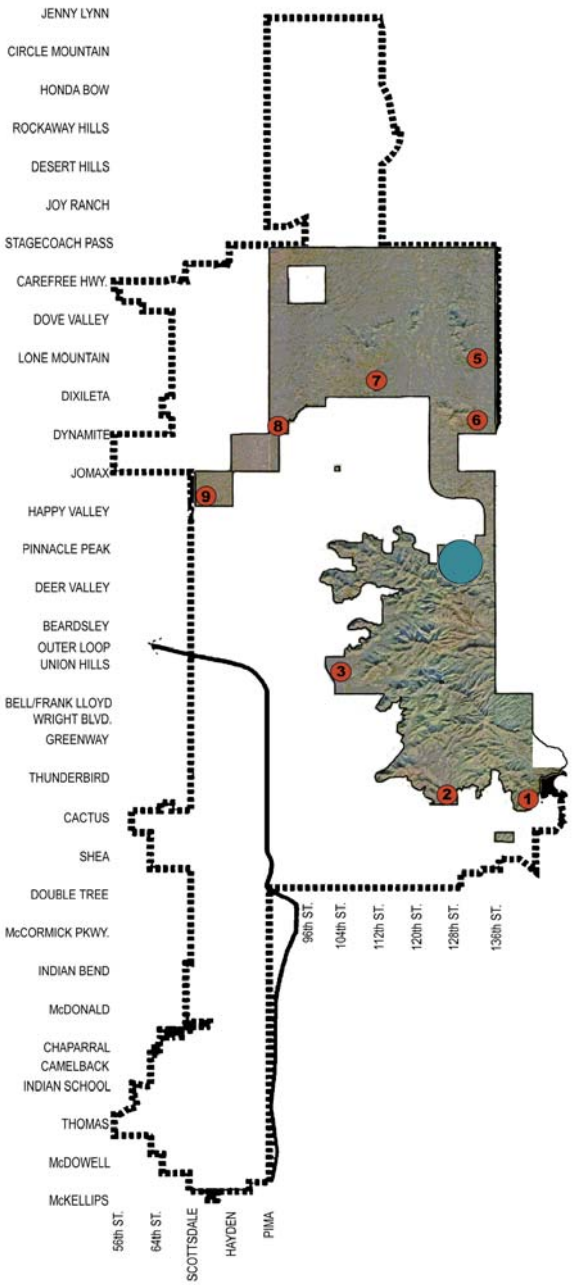
- Up to 300 parking spaces
- Horse trailers
- Storage
- Restrooms
- Picnic areas
- Shade ramadas
- Gathering areas
- Interpretive displays
- Drinking fountains (dog friendly)
- Water troughs
- Signage

Constraints

- Rugged / steep topography
- Lack of infrastructure
- Difficult access
- Disparate user groups

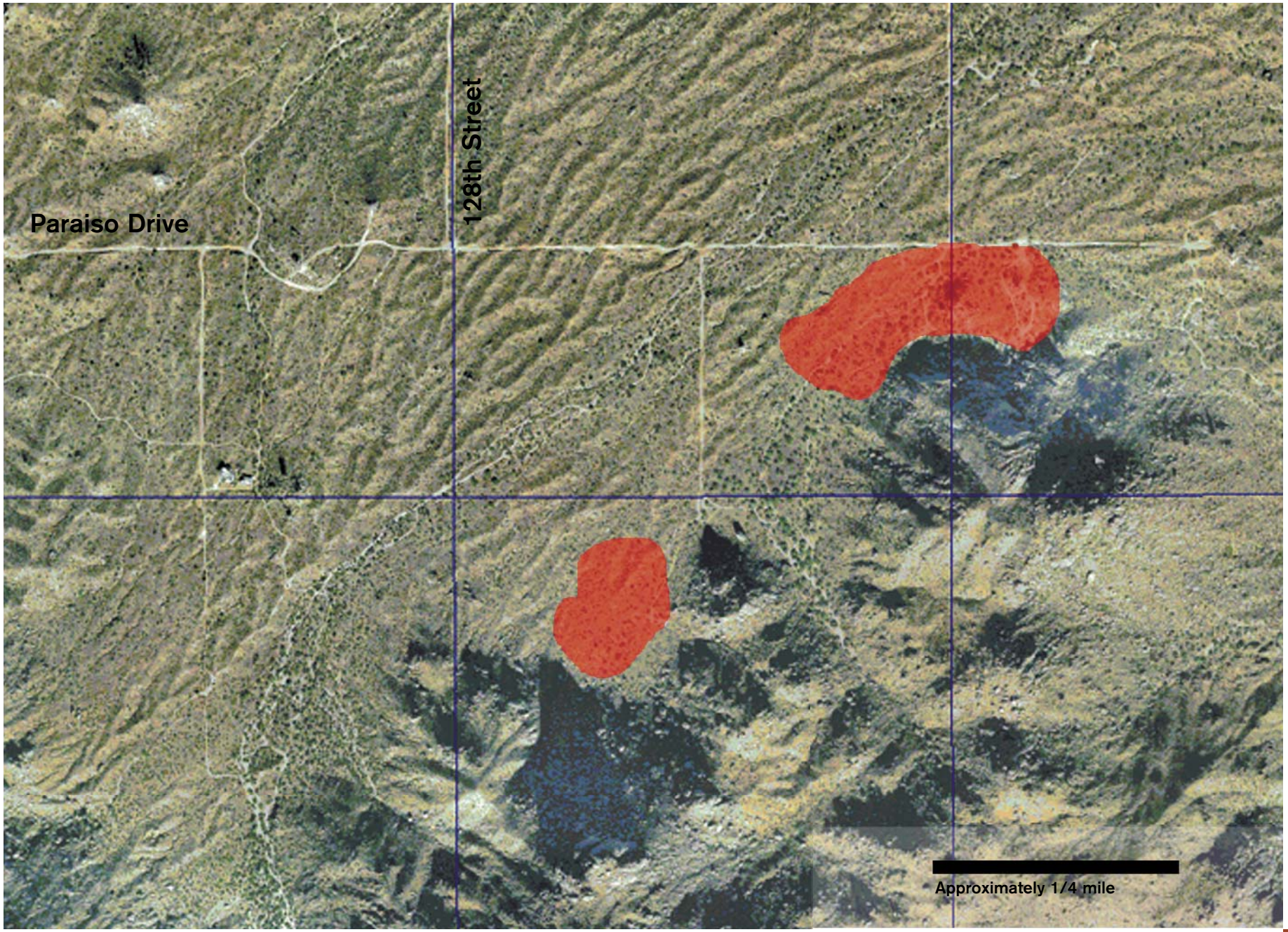
Typology

- Rugged topography
- Boulder outcroppings
- Decomposed granite
- Foothill Palo Verde
- Barrel, Ocotillo, Cholla
- Bursage, Jojoba



Rationale:
Relatively large main access area location to allow amenities to be integrated into terrain. Smaller secondary study sites to accommodate primitive parking access for climbers (show in green).

Terrain and number of washes will require parking areas to be situated in pods.


Paraiso Drive
128th Street
Approximately 1/4 mile

Little Granite Mountain

Major Community Access

Primary Users

- Hikers
- Equestrian
- Mountain bikers
- Rock climbers

Amenities

- Up to 300 parking spaces
- Horse trailers
- Storage
- Restrooms
- Picnic areas
- Shade ramadas
- Interpretive displays
- Drinking fountain (dog friendly)
- Water troughs
- Signage

Typology

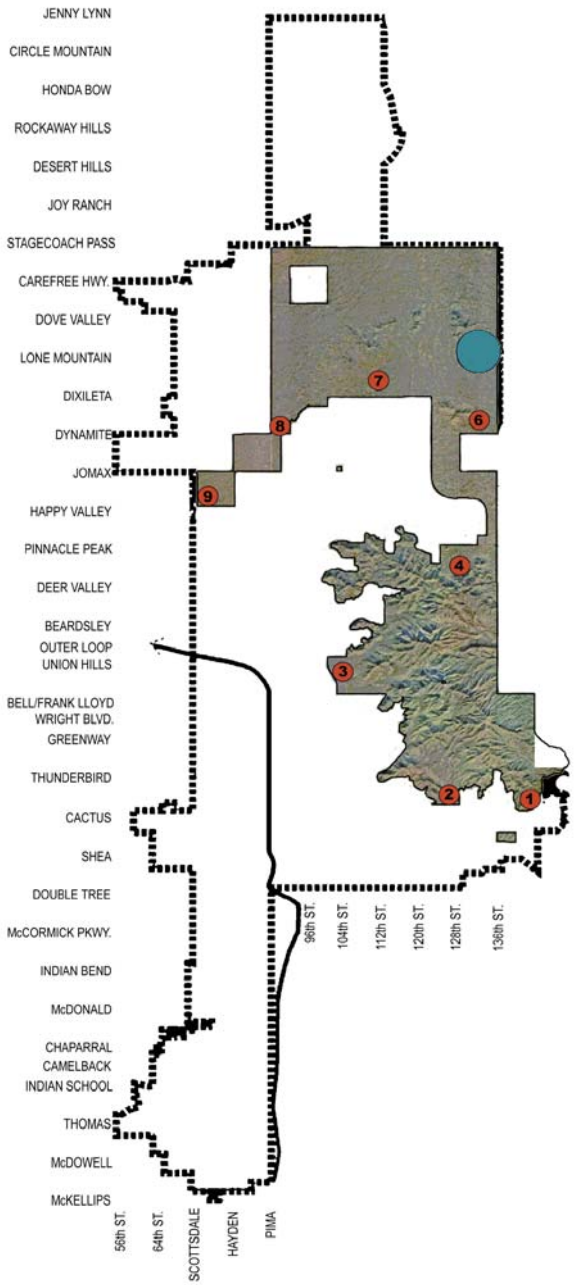
- Decomposed granite
- Foothill Palo Verde, Hackberry, Mesquite, Crucifixion Thorn
- Saguaro, Ocotillo, Cholla
- Jojoba, Brittlebush, Creosote

Opportunities

- No nearby neighbors
- Excellent views
- Existing maintenance road could provide access
- Connection to Tonto National Forest

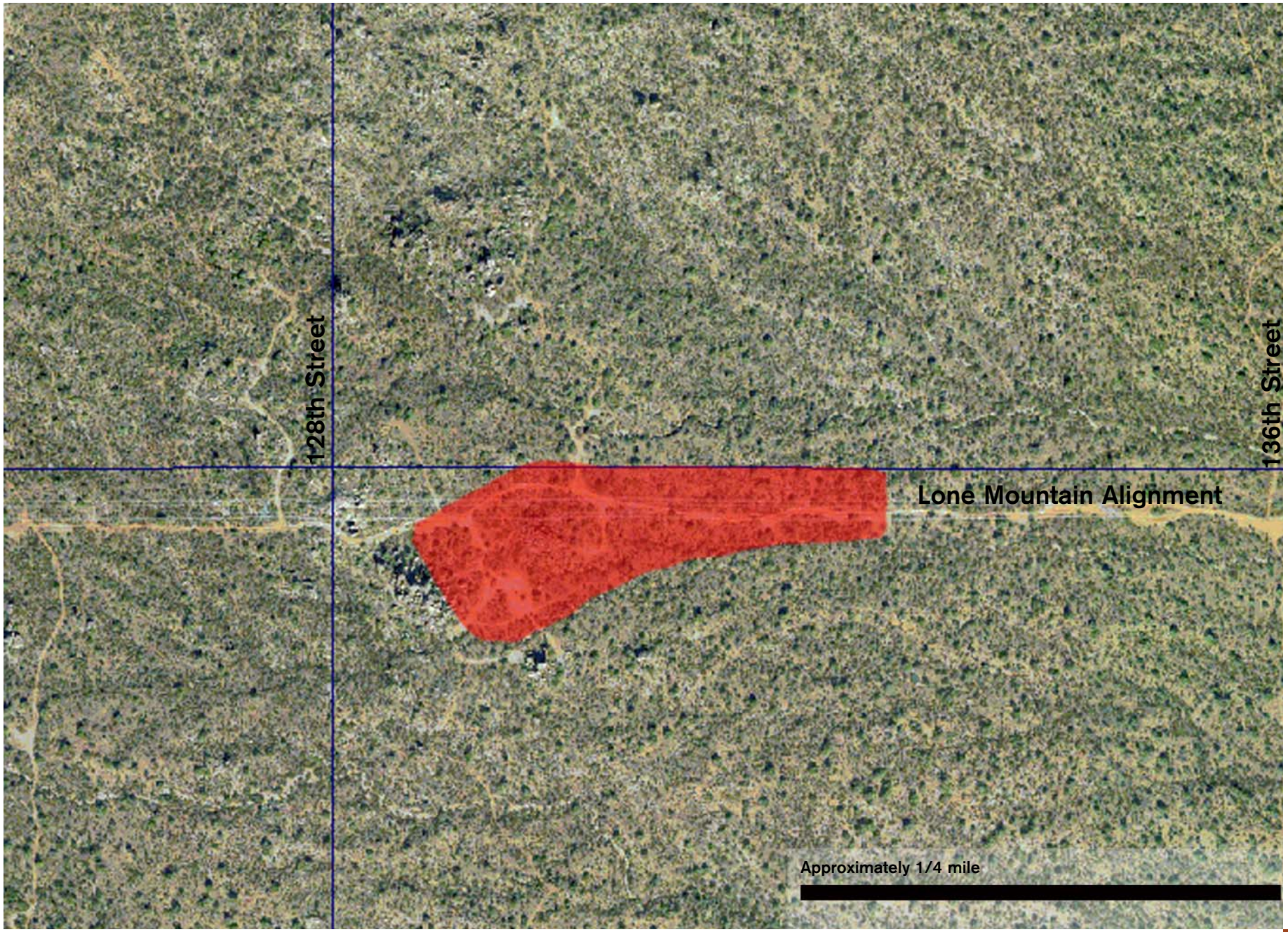
Constraints

- Transmission lines
- Lack of infrastructure and utilities



Rationale:
Location utilizes existing transmission line access road and existing disturbed site to provide access to Preserve interior. Configuration allows parking to be spread out and integrated into terrain, utilizing existing access road and disturbed areas.

Note:
This area may provide an opportunity for jeep tour operators (as an interpretive stop/location), should the public feel this activity is appropriate.


128th Street
136th Street
Lone Mountain Alignment
Approximately 1/4 mile

Fraesfield Mountain

Minor Community Access

Primary Users

- Hikers
- Equestrian
- Mountain bikers

Amenities

- Up to 100 parking spaces
- Horse trailers
- Storage
- Restrooms
- Picnic areas
- Interpretive displays
- Drinking fountain (dog friendly)
- Water troughs
- Signage
- Shade ramadas

Typology

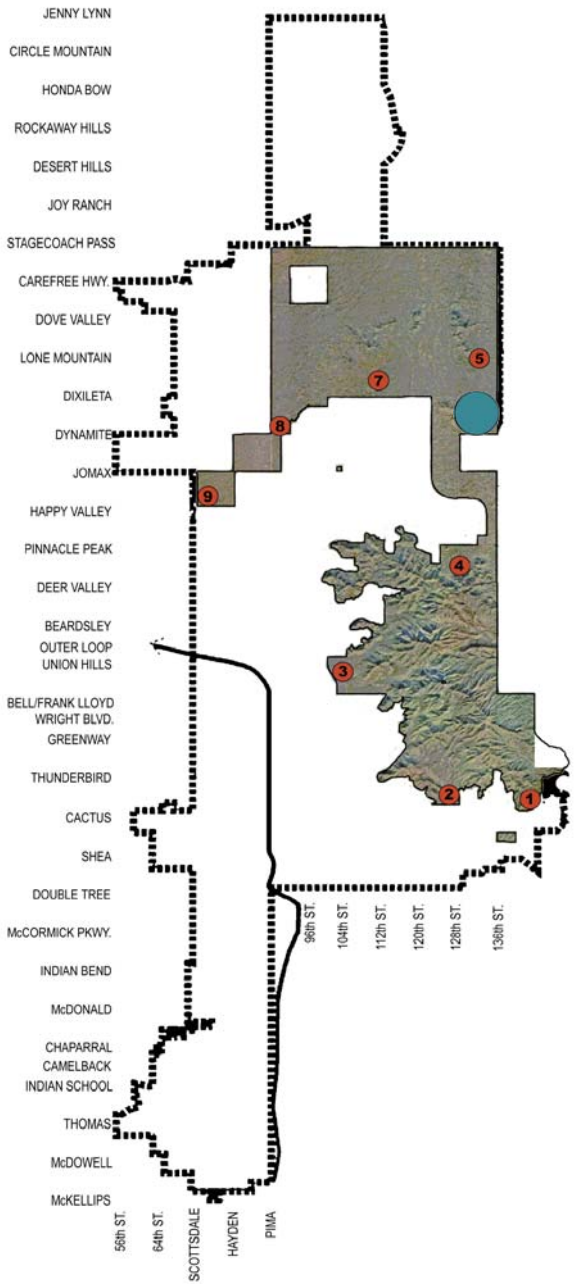
- Fire damage
- Decomposed granite
- Foothill Palo Verde, Mesquite
- Saguaro, Yucca

Opportunities

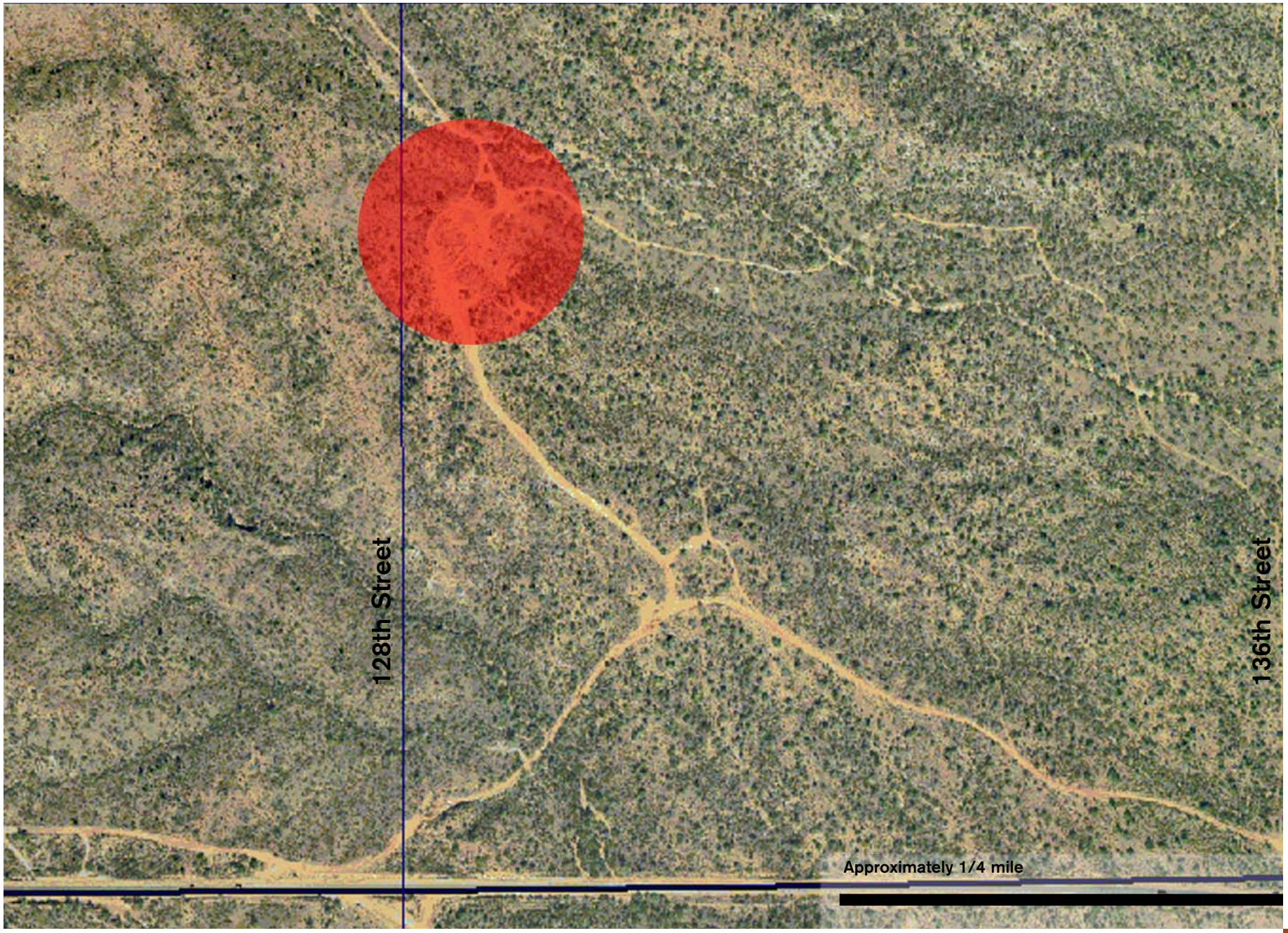
- Previously disturbed site
- No nearby neighbors

Constraints

- Lack of infrastructure and utilities
- Fire damaged landscape



Rationale:
Location utilizes existing jeep trail for access and existing disturbed area for amenities. Well screened from Dynamite Boulevard. Terrain relatively flat.


128th Street
136th Street
Approximately 1/4 mile

Alma School

Minor Community Access

Primary Users

- Hikers
- Equestrian
- Mountain bikers

Amenities

- Up to 100 parking spaces
- Horse trailers
- Storage
- Restrooms
- Picnic areas
- Interpretive displays
- Drinking fountain (dog friendly)
- Water troughs
- Signage
- Shade ramadas

Typology

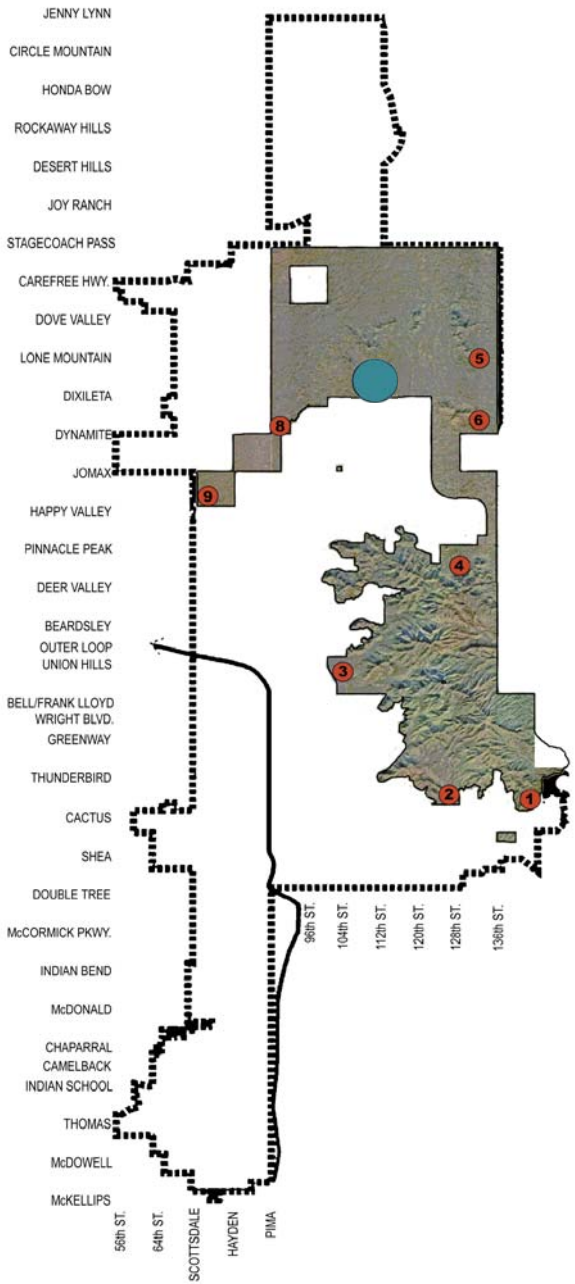
- Fire damage
- Decomposed granite
- Foothill Palo Verde, Mesquite
- Saguaro, Ocotillo, Yucca, Barrel

Opportunities

- Existing access road
- Landforms allow site to be tucked behind hill
- Panoramic view for individuals not able to hike

Constraints

- Lack of infrastructure and utilities other than access road



Rationale:
Terrain allows amenities to be located behind hill and well hidden from view. Location relatively flat with excellent views to west, north and east. Existing jeep trail can provide for site access.


Alma School Road
Approximately 1/4 mile

Pima - Dynamite

Major Community Access

Primary Users

- Hikers
- Equestrian
- Mountain bikers

Amenities

- Up to 300 parking spaces
- Horse trailers
- Storage
- Restrooms
- Picnic areas
- Shade ramadas
- Interpretive displays
- Drinking fountain (dog friendly)
- Water troughs
- Signage

Typology

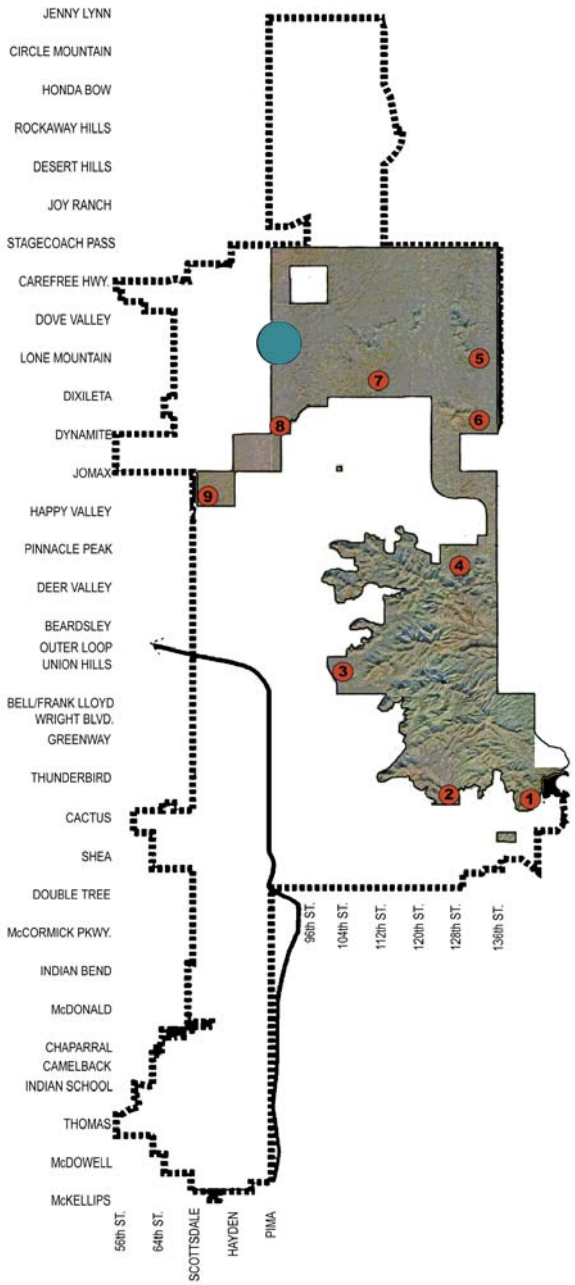
- Decomposed granite
- Moderate slope
- Palo Verde, Ironwood
- Saguaro, Ocotillo, Cholla, Barrel
- Bursage, Jojoba

Opportunities

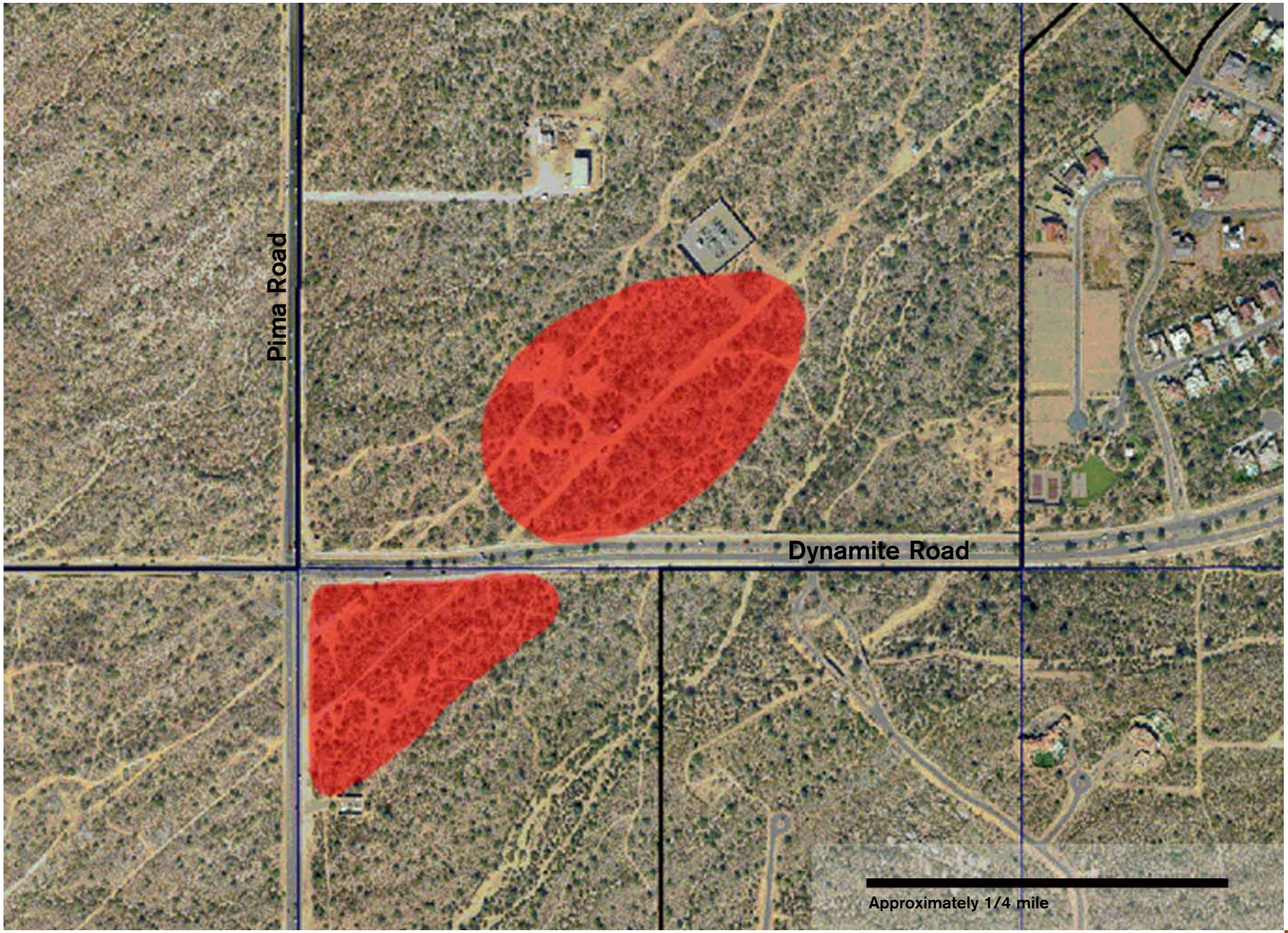
- Previously disturbed area
- Convenient vehicular access
- No adjacent neighbors
- Signalized intersection
- Potential for overflow parking

Constraints

- Transmission lines



Rationale:
Previously disturbed areas with good access to existing roads and infrastructure. Relatively flat terrain.


Pima Road
Dynamite Road
Approximately 1/4 mile

Happy Valley - Scottsdale Rd.

Minor Community Access

Primary Users

- Hikers
- Equestrian
- Mountain bikers

Amenities

- Up to 100 parking spaces
- Horse trailers
- Picnic areas
- Shade ramadas
- Displays
- Drinking fountain (dog friendly)
- Water troughs
- Signage

Typology

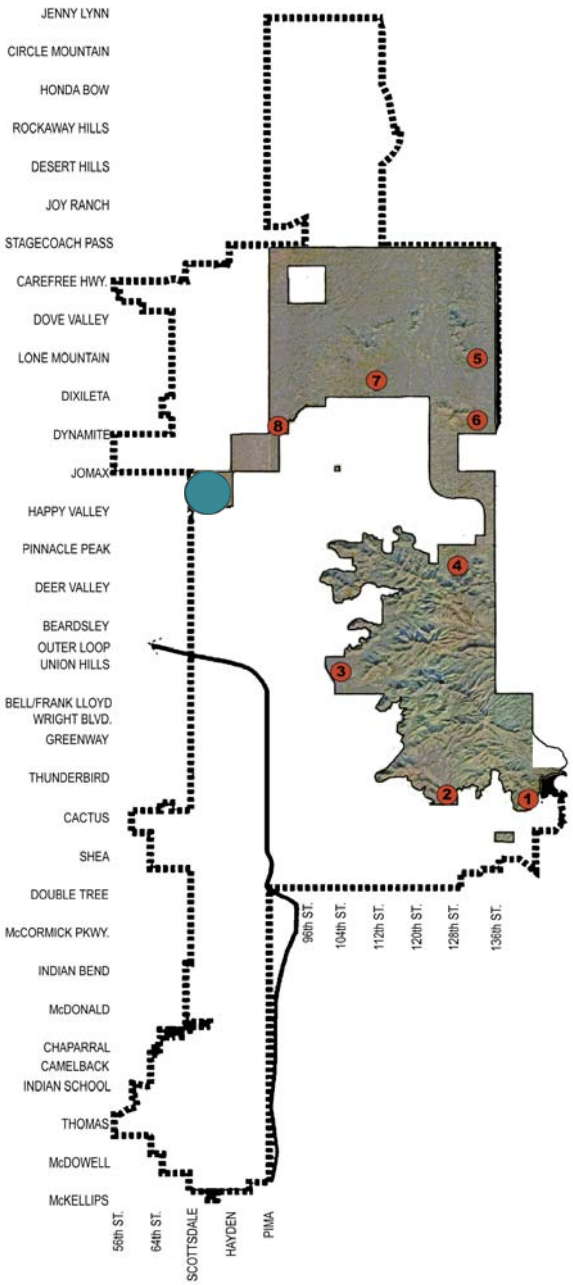
- Flat topography
- Fine decomposed granite / sand
- Blue Palo Verde, Ironwood, Mesquite
- Saguaro, Barrel
- Bursage, Creosote

Opportunities

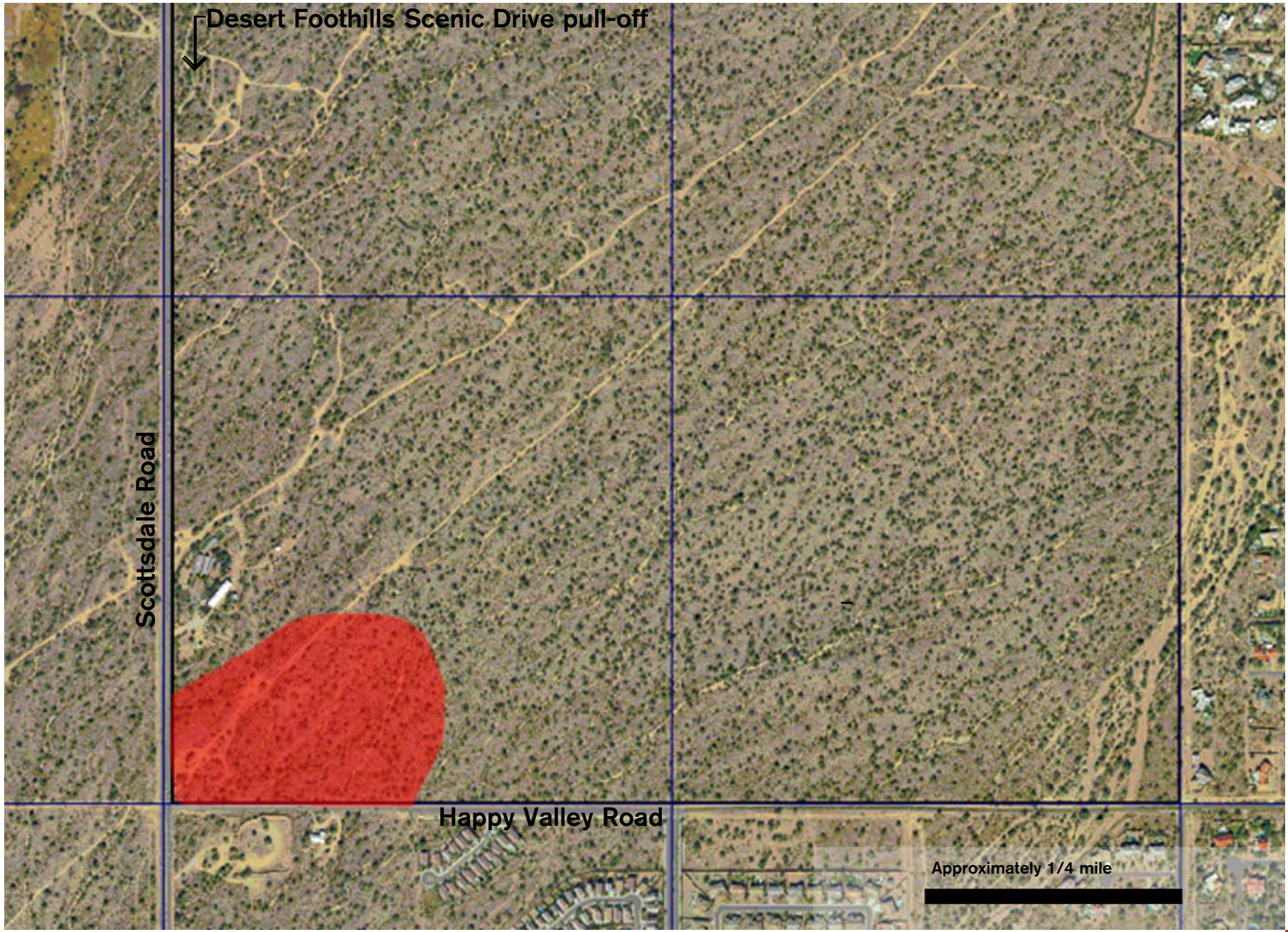
- Good access
- No adjacent neighbors
- Flat topography
- Connection to City of Phoenix's proposed trail system
- Scenic corridor/tourist interest

Constraints

- Heavy adjacent traffic
- Transmission lines



Rationale:
Previously disturbed area with convenient access to existing roads and infrastructure. Flat terrain. Connection to City of Phoenix's proposed trail system and scenic corridor.


Desert Foothills Scenic Drive pull-off
Scottsdale Road
Happy Valley Road
Approximately 1/4 mile

acknowledgments

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