

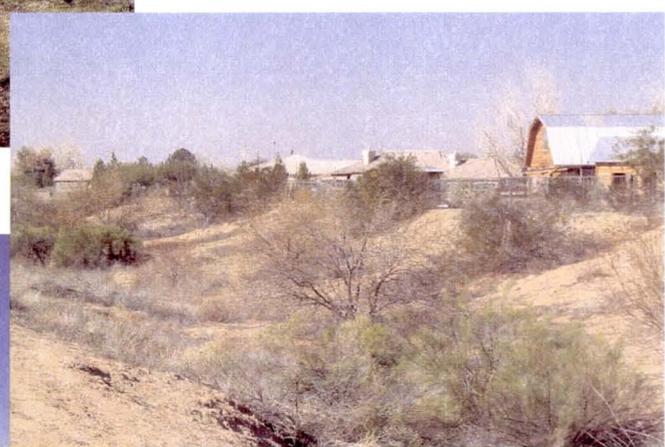
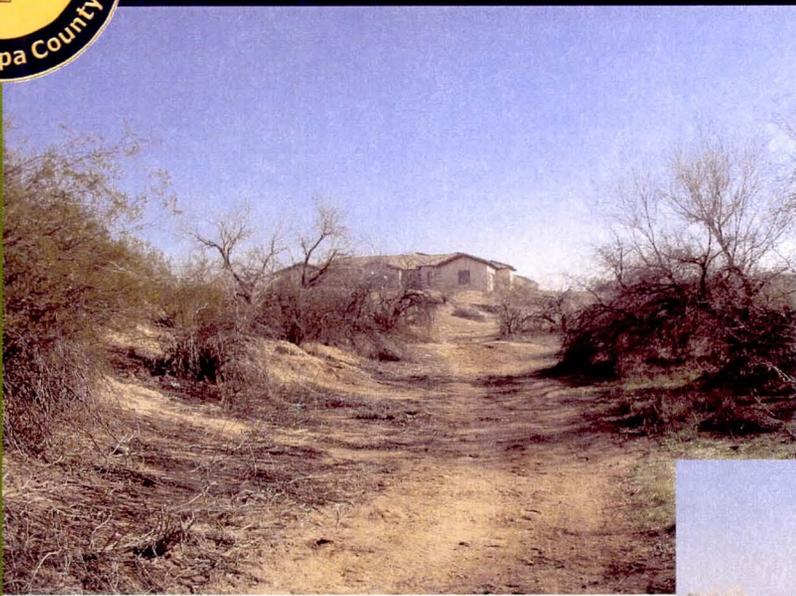
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SONOQUI WASH CHANNELIZATION

November 2004

EXISTING AND PLANNED CONDITIONS REPORT



Sonoqui Wash Channelization Existing and Planned Conditions Report

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Flood Control District of Maricopa County



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INTRODUCTION and METHODOLOGY

The Sonoqui Wash Channelization Project Site Analysis includes the documentation of existing and planned land use, ownership, zoning, infrastructure, environmental considerations, scenery resources, and existing and planned recreation facilities for the project area. The purpose of the project site analysis is to identify and describe the physical and functional relationship of the project area to the physical surroundings within and adjacent to the project area and the opportunities and constraints that apply based on this existing data. The project area is defined as the area approximately 100 feet on either side of the centerline of Sonoqui Wash.

This Site Analysis Report is organized into the following sections.

- Existing and Planned Land Use/Ownership/Zoning
- Existing Infrastructure
- Environmental Considerations
- Scenery Resource Assessment
- Multi-Use/Aesthetic Improvement Opportunities
- Multi-Use/Aesthetic Treatment Concepts

EXISTING AND PLANNED LAND USE/OWNERSHIP/ZONING

To understand the local context of the project area, the land use, ownership, and zoning within 0.25 mile of the project area were identified. The existing land use was based on the December 2003 aerial photography of the project area and field verified in February 2004. The source of the information for the planned land use and land ownership was taken from the *Town of Gilbert's 2003 General Plan*, the *Town of Queen Creek's 2002 General Plan and Open Space Plan*, the October 2003 Maricopa County Assessor's Map, and development plans provided by the Town of Gilbert, Town of Queen Creek, and the individual developers of Sossaman Estates, Sunridge Homes, Trilogy, Marbella Vineyards, and Shamrock Developments. This information was also verified by the Project Aesthetic Advisory Committee (PAAC) members at PAAC Meeting #2, on March 18, 2004.

EXISTING LAND USE

The following existing land use and/or ownership were identified within the 0.25 mile area adjacent to the project area.

- Farmland
- Residential
- Commercial
- Open Space
- Vacant
- Undeveloped Public Land

Figure 1. Existing Land Use/Ownership illustrates the existing land use and ownership for the project area and the lands within 0.25 mile of the Sonoqui Wash project area.

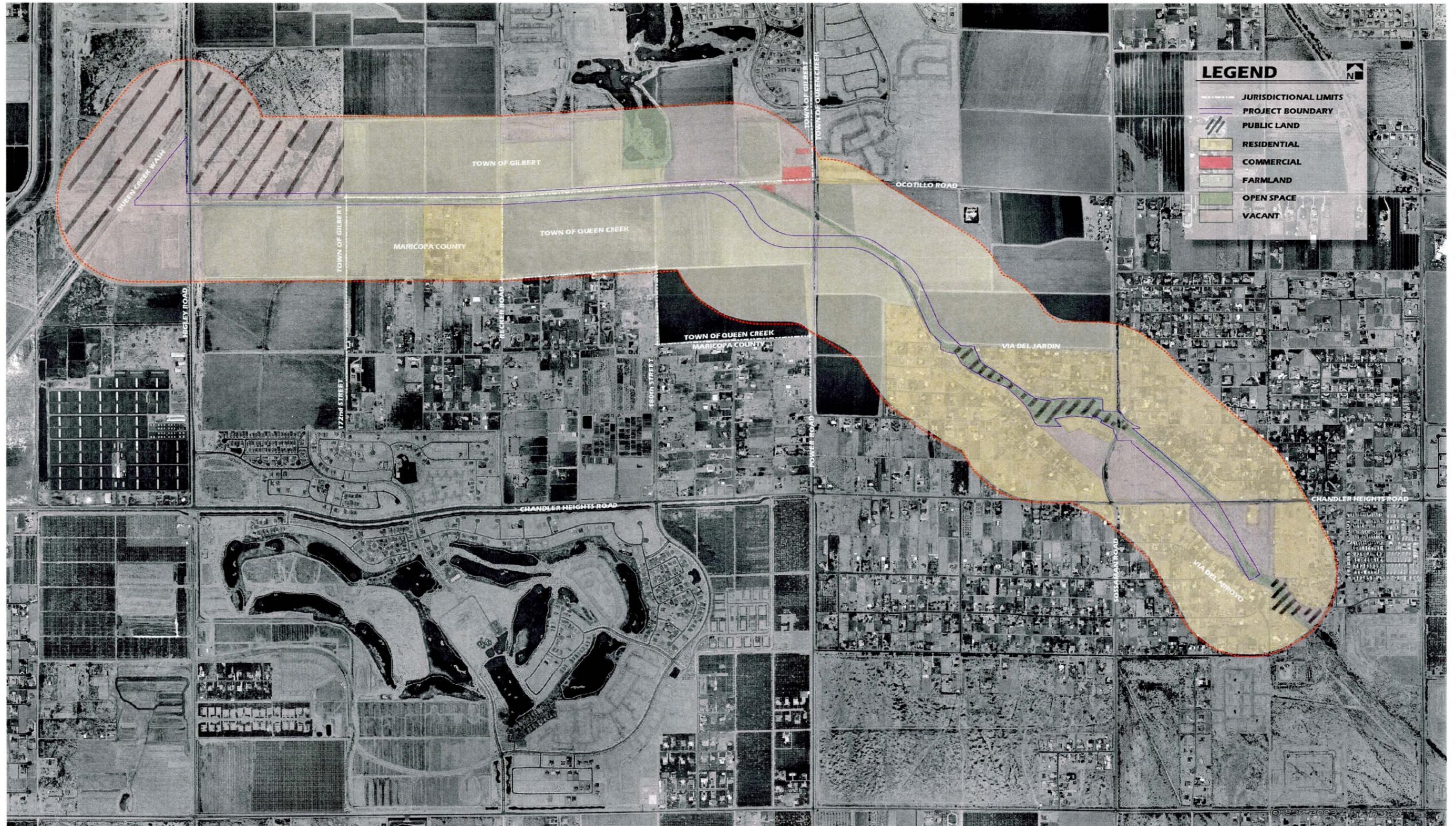
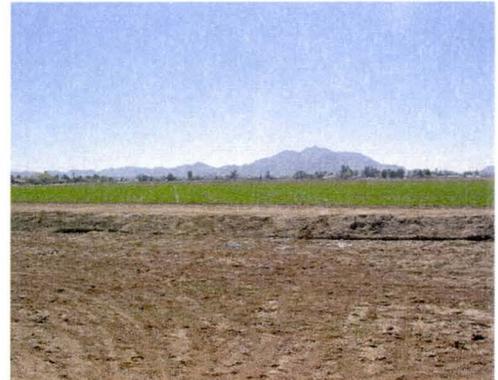


Figure 1. Existing Land Use/Ownership

Farmland

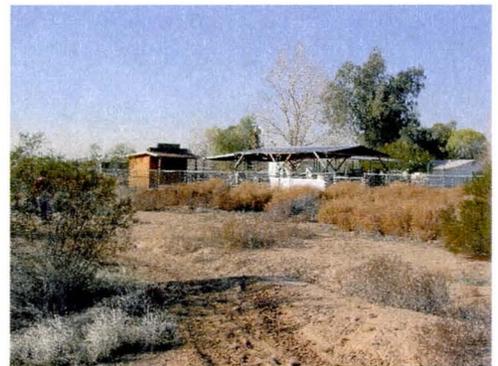
- Farmland is currently the most prominent land use within the project area and was uncultivated at the time of the site investigation. The farmland parcels or fields, adjacent to the wash corridor, are generally laid out in one-eighth and one-sixteenth section parcels with dirt roads providing access to each field. The majority of the farmland within the project area is located between Higley Road and Via Del Jardin. All fields are currently being flood irrigated.



Farmland

Residential

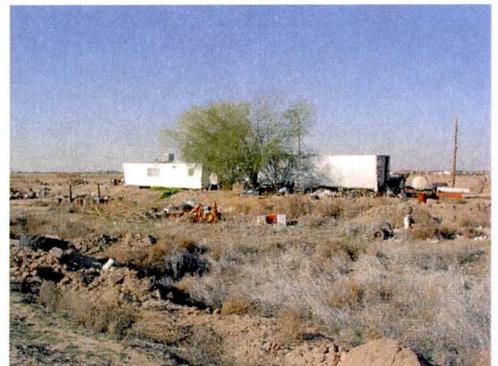
- Existing residential areas are located primarily between 186th Street and 197th Place and between Via Del Jardin and 197th Place and are currently zoned rural residential (R-43 and R1-43, respectively). These residential properties are generally located on 1-acre parcels and are identified as “horse properties” - properties that have the right to board horses and/or domestic farm animals. They typically consist of single-family residences, with the majority of properties directly adjacent to Sonoqui Wash having their own private access gates to the wash corridor. The Rancho Del Jardin subdivision, located west of Sossaman Road, is currently the most notable residential development within the project area.
- The existing subdivisions do not appear to have any Covenants, Conditions and Restrictions (CC&Rs) that would require a consistent aesthetic and/or requirements for architecture, outbuildings, fences, walls, or landscaping. Right-of-way fences, walls, and outbuildings along Sonoqui Wash vary in type and condition of materials and give a “hodge-podge” effect within these portions of the wash corridor identified above.



Residential

Commercial

- Existing commercial lands within the project area are located west of Power Road in close proximity to Sonoqui Wash. These properties are contractor construction areas associated with future housing developments that are being constructed and an adobe block manufacturer.



Commercial

Open Space

- Existing open space within the project area consists of Sonoqui Wash, the privately owned Trilogy Golf Course, and Queen Creek Wash. The Trilogy Golf Course is located within the Town of Gilbert, just north of Sonoqui Wash between Recker and Power Roads. The southern most portion of the golf course nearest the wash corridor provides a natural, drought-tolerant buffer with native plant materials. Queen Creek Wash is currently undeveloped open space.



Open Space

Vacant

- The existing vacant land consists of land that is currently not developed or being utilized for farmland. The majority of vacant land within the project area is located at the northwest, southwest, and northeast corners of Higley and Ocotillo Roads. Vacant land within the project area is also located between Recker and Power Roads north of Sonoqui Wash and between Sossaman Road and 196th Street adjacent to the wash corridor. A small parcel of vacant land exists west of Sossaman Road, south of Sonoqui Wash.



Vacant

Undeveloped Public Land

- The majority of the land within and immediately adjacent to Sonoqui Wash is under private ownership. The Town of Queen Creek owns the delineated open space area that is just south of Via Del Jardin and east of Via Del Arroyo, which reaches to just east of Sossaman Road. The other parcel of public land owned by Queen Creek is located just south of Via De Arboles. Future use of these parcels is currently identified as parkland.
- The Town of Gilbert owns the land just west of the Sonoqui Wash project boundary and has future plans to make this area into a regional park that also serves as a water retention basin. The other area that is publicly owned by the Town of Gilbert is located just east of Higley Road and will be a water recharge facility; the Town has future plans to develop this area as a riparian preserve.



Public Land

PLANNED LAND USE

The following planned land uses were identified within and/or immediately adjacent to the project area.

- Residential
- Commercial
- Business Park
- Park/Retention
- Golf Course
- Public

Figure 2. Planned Land Use/Zoning, illustrates the planned land use and zoning for the project area and the lands within 0.25 mile of the Sonoqui Wash project area.

Residential

There are several planned residential developments adjacent to the project area. These include Sossaman Estates, Sunridge Homes, Trilogy, Marbella Vineyards, and Shamrock Development and are generally located between Power and Higley Roads. The following is a summary of the planned residential lands within the project area.

- In addition to the existing R-43 and R1-43 residential properties, the majority of the existing farmland and half of the vacant land is planned for residential development. The majority of the planned residential land is zoned R-43, R1-43, or R1-45, which are rural residential (one acre per dwelling unit). Areas of exception are:
 - R1-5 Single-Family Residential (5,000 sq. ft. per dwelling unit)
 - R1-6 Single-Family Residential (6,000 sq. ft. per dwelling unit)

- R1-7 Single-Family Residential (7,000 sq. ft. per dwelling unit)
- R1-8 Single-Family Residential (8,000 sq. ft. per dwelling unit)
- R1-10 Single-Family Residential (10,000 sq. ft. per dwelling unit)

R1-5 is located between Recker and Power Roads, north of Sonoqui Wash. R1-6, R1-7, and R1-8 lands are located between 172nd Street and Queen Creek Wash. R-10 is located between 172nd Street and Recker Road, north of Sonoqui Wash. A small parcel of planned residential land at the southwest corner of Higley and Ocotillo Roads is zoned Light Commercial District (C-1). The remaining planned residential land is zoned Planned Area Development (PAD) and located between 180th Street and Sossaman Road.

The overall planned residential land use within the project area increases in density from the eastern end (R1-43) to the western end (R1-6) of the wash corridor.

Commercial

- Planned commercial lands are proposed at two general locations; the southwest and southeast corners of Power and Ocotillo Roads, and at the southeast and northwest corners of Higley and Ocotillo Roads. The zoning for the commercial parcels at Higley and Ocotillo Roads is R-43, R1-6, R1-7, and C-2 (General Commercial District). It is anticipated that the commercial properties at these locations will be small retail indicative of Circle Ks, Walgreens, strip centers, etc.
- The zoning for the commercial parcels on the south side of Ocotillo Road at Power Road is PAD. It is anticipated that these parcels will also be small retail/restaurant type developments. The two parcels located on the west side of Power Road and directly adjacent to Sonoqui Wash lend the best opportunities for connection to the wash corridor.

Business Park

- A planned business park is located east of Higley Road and north of the wash corridor with a zoning of R1-43. Although it is planned Business Park, the Town of Gilbert anticipates utilizing this parcel for its water recharge site, which currently has isolated areas of moderate, well established vegetation.

Park/Retention

- A planned park/retention area is located west of Higley Road and the Queen Creek Wash, and is referred to as the Chandler Heights Basin. It is publicly owned by the Town of Gilbert and zoned R-43. This area has recently been designed through a Maricopa County Flood Control District project and will include native plantings and natural landforms.

Golf Course

- The existing Trilogy Golf Course located between Recker and Power Roads, north of Sonoqui Wash, is the only golf course land use within the project area. It is located within a gated community.

Public

- The area of Sonoqui Wash located between Via Del Jardin and Sossaman Road is planned Public Land (RL).

LAND USE OPPORTUNITIES AND CONSTRAINTS

The existing and planned land use, ownership, and zoning present both opportunities and constraints for meeting the project's goals and objectives.

- The rural character of the existing farmland and residential ranch developments reflect the history and values of the Towns of Queen Creek and Gilbert. Integrating architectural principles, materials, forms, and patterns indicative of this character into the wash corridor aesthetics would serve to provide a unifying element with the adjacent land uses and preserve and maintain both the Towns' images.

- New planned developments provide the opportunity to connect the Sonoqui Wash corridor to their multi-use path and open space systems. Open space areas located on the perimeter of the planned developments and adjacent to Sonoqui Wash would enhance the openness of the wash corridor and lessen the linear monotony of the channel.
- The transition of residential densities from the eastern to western end of the project will be reflected in the number and locations of site amenities, access points, and flood control facilities within the corridor.
- The proposed channel facilities may take advantage of the landscaping/aesthetic treatments/easements utilized by the new planned developments to create continuity throughout the project area.
- New commercial developments provide opportunities to front their facilities onto the wash corridor to take advantage of the public open space and provide amenities such as food, drinks, and rest for corridor users as well as the general public. Connectivity and linkages to commercial developments adjacent to the Sonoqui Wash corridor would be mutually beneficial by providing access to services from the corridor and/or by providing trailhead access.
- The Town of Gilbert's recharge facility and its Chandler Heights Basin recreation facilities will provide the opportunity for destination points along the project's planned multi-use path.

EXISTING INFRASTRUCTURE

This section describes the existing infrastructure within and immediately adjacent to the project area and the opportunities and constraints that apply based on this existing data. To understand the availability and convenience of access to the project area, the type and level of service of existing transportation and utility corridors within 0.25 mile of the project area were identified.

Sources for the base infrastructure information included the *Town of Gilbert's 2003 General Plan*, the *Town of Queen Creek's 2002 General Plan*, the *Maricopa Association of Governments (MAG) Regional Transportation Plan*, and field survey information. The existing infrastructure information was compiled and identified on the December 2003 aerial photography of the project area and verified in the field in February 2004.

The following existing infrastructure elements were identified within and/or immediately adjacent to the project area.

- Local and Regional Transportation Corridors
- Utilitarian Circulation and Access (for farming activities)
- Informal Connectivity and Access
- Surficial Utilities

Figure 3. Existing Infrastructure illustrates the existing transportation and utility corridors for the project area and the lands within 0.25 mile of Sonoqui Wash.

LOCAL AND REGIONAL TRANSPORTATION CORRIDORS

- Power Road is the only road of regional significance within the project area classified by MAG and the Town of Gilbert. Currently developed as a rural two-lane paved roadway with dirt shoulders, future planned improvements to Power Road will include widening the road to six lanes with a median and bike lane to achieve the regional road service level.
- Higley Road, classified as a major arterial within the Town of Gilbert, is currently developed as a rural two-lane paved roadway with dirt shoulders. Future roadway plans will make Higley Road a four-lane paved roadway with paved shoulders.

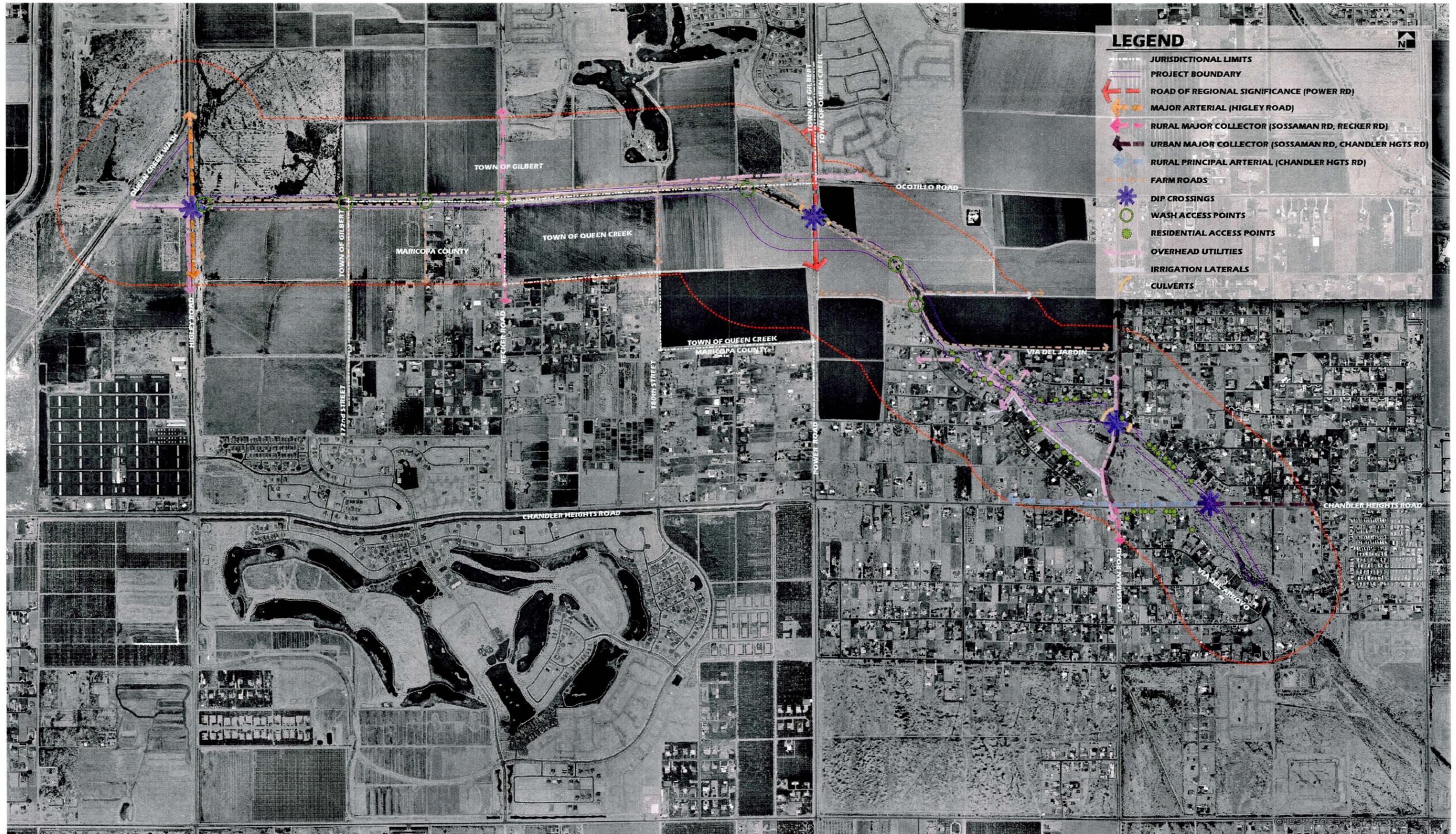


Figure 3. Existing Infrastructure

- Sossaman Road and Recker Road are both classified as rural major collectors. The existing stretch of Recker Road that is located south of the project area boundary is a rural two-lane paved roadway. The portion of Recker Road that is within the project area and north of the project boundary is an existing two-lane dirt road. Sossaman Road south of Chandler Heights Road is currently classified as a rural major collector consisting of a two-lane paved roadway with dirt shoulders. Future roadway improvements to Recker and Sossaman Roads, in these areas will consist of a two-lane paved roadway with a turn lane and paved shoulders.
- Sossaman Road and Chandler Heights Road are classified as urban major collectors. The section of Sossaman Road that is located north of Chandler Heights Road is classified as an urban major collector consisting of two-lane paved roadway with dirt shoulders. The section of Chandler Heights Road located east of Sonoqui Wash is classified as an urban major collector. Future roadway improvements to Sossaman and Chandler Heights Roads, in these areas will consist of a four-lane paved roadway with a turn lane and a bike lane.
- Chandler Heights Road is classified as a rural principal arterial west of Sonoqui Wash, and currently consists of a two-lane paved roadway with dirt shoulders. Future roadway improvements to this section of Chandler Heights Road will consist of a four-lane paved roadway with a turn lane and paved shoulders.
- There are currently three dip crossings located at Power, Sossaman, and Chandler Heights Roads. While the dip crossings allow for vehicular traffic to cross the wash, they provide unsafe crossings for Sonoqui Wash users who must cross with limited site visibility lines in both directions of oncoming traffic.
- Existing 18"-24" concrete culverts are located at the dip crossings of Power and Sossaman Roads. These culverts allow for through drainage of Sonoqui Wash's low flow events and provide a vegetative microclimate from the regular ponding of water at the culvert outlets.
- The future Ocotillo Road from Higley Road to Power Road will be developed as a minor arterial street with a right-of-way of 110'. It will consist of a four-lane paved roadway with a striped median, bike lanes, and detached sidewalks on both sides.

UTILITARIAN CIRCULATION AND ACCESS (for farming activities)

- Several dirt farm roads are located parallel to Sonoqui Wash along the edge of adjacent cultivated fields, while others actually cross the wash to provide access between fields. The farm road crossings of the wash are somewhat graded or cut into the slope to allow for access down the wash embankment.

INFORMAL CONNECTIVITY AND ACCESS

- Many informal dirt trails are located within and adjacent to the Sonoqui Wash corridor. The main recreational users of the corridor appear to be equestrians, hikers/walkers, mountain bikers, and/or motorized all terrain vehicle (ATV) users. Many of the trails have been cut into and/or across existing wash landforms, which has increased erosion and produced a potential dust control issue.
- There are many individual private access points/gates to single-family equestrian properties along the wash corridor from Via Del Jardin to 196th Street. Many of the private access points traverse the natural slope of the wash embankments, however some have built-up dirt ramps from the wash bottom to the residential gate, which may impede floodwater flows.

SURFICIAL UTILITIES

- Surficial utilities are those utilities that are on or near the surface. Existing utilities include overhead power lines and flood irrigation laterals. While many of the utilities are located within roadway rights-of-way, some run parallel and/or connect perpendicular to the wash corridor with an individual utility right-of-way. This occurs mostly within the Rancho Del Jardin subdivision between Sossaman Road and Via del Jardin, which also provides additional access points for the Sonoqui Wash users.

INFRASTRUCTURE OPPORTUNITIES AND CONSTRAINTS

The existing infrastructure and future planned improvements to the existing infrastructure present both opportunities and constraints for meeting the project's goals and objectives.

- Major roads of significance, arterials, and collectors can provide wash corridor access points by connecting on-street sidewalks, paths, and/or bike routes to the wash corridor multi-use path system.
- Safe roadway and wash corridor crossings can be addressed by providing vehicular bridges or at-grade crossings. Bridges will need to provide a minimum 10-foot clearance to allow equestrian users to pass under the bridge. Dip crossings will need to be evaluated for the most appropriate location to cross as well as providing pavement markings and signage for multi-use path crossings.
- Existing farm road wash crossings may identify logical access points for future path connections due to the fact that the majority are located at mile, half-mile, and quarter-mile locations which development has a tendency to adhere to.
- Existing dirt trail locations and usage provide an understanding of how the corridor is used today, to what extent, and by whom. Existing recreational usage and future trends need to be evaluated for overall compatibilities and/or conflicts in meeting the project's goals and objectives.
- The amount and frequency of individual residential access points may interfere with the safety and liability of the "through" wash corridor user, since the function of a regional trail is much like a "limited access" roadway. The physical constraints of the wash corridor may also preclude direct access of individual properties to the main multi-use path.
- Joint use of easements or rights-of-way for some utilities may provide additional opportunities for pathway access points, alignments, and/or amenities.

ENVIRONMENTAL CONSIDERATIONS

This section describes the existing environmental considerations within and immediately adjacent to the project area and the opportunities and constraints that apply based on this existing data. To understand the overall environmental considerations of the project area, the type and level of value of existing considerations within 0.25 mile of the project area were identified. The existing environmental considerations information was based on a site reconnaissance survey in February 2004 and from technical information provided by the Flood Control District of Maricopa County (District).

The following existing environmental considerations were identified within and/or immediately adjacent to the project area.

- Cultural Considerations
- Section 404 Considerations
- Topography Considerations
- Vegetation and Habitat Considerations
- Hazardous Materials Considerations
- Miscellaneous Considerations

Figure 4. Environmental Considerations illustrates the existing natural, physical, and cultural considerations for the project area and the lands within 0.25 mile of the Sonoqui Wash project area.

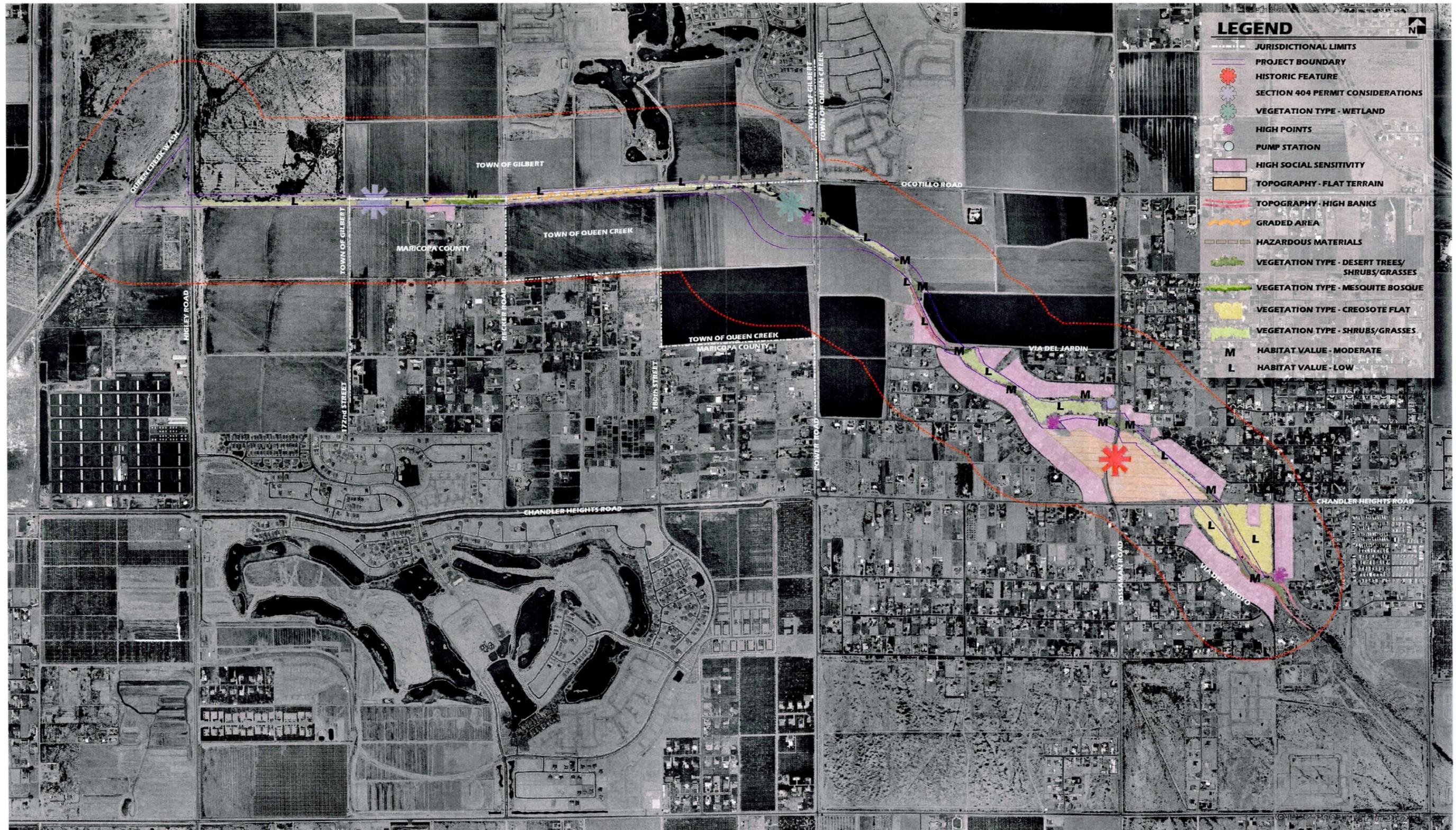


Figure 4. Environmental Considerations

CULTURAL CONSIDERATIONS

- The Desert Wells Stage Stop ruin is the only known culturally significant property located within the project area. The ruin is located east of Sossaman Road within a fenced area. An identification marker, sign, and hitching posts allow people to stop and look at what remains of the stone building. A Class III Intensive Pedestrian Survey was completed by the Scientific Archeological Services; no other significant cultural resources were identified within the project area.

SECTION 404 CONSIDERATIONS

- Sonoqui Wash falls under the jurisdiction of the US Army Corps of Engineers. Any modification to the channel will require a Section 404 permit. An individual permit is anticipated and will require mitigation as part of the permitting process.

TOPOGRAPHY CONSIDERATIONS

- The natural lay of the land was evaluated and placed into two categories, flat terrain and high banks.
- Three relative high points that allow unobstructed views of the wash corridor have been identified. The specific locations of each of these high points are identified in Figure 4. Environmental Considerations.

VEGETATION AND HABITAT CONSIDERATIONS

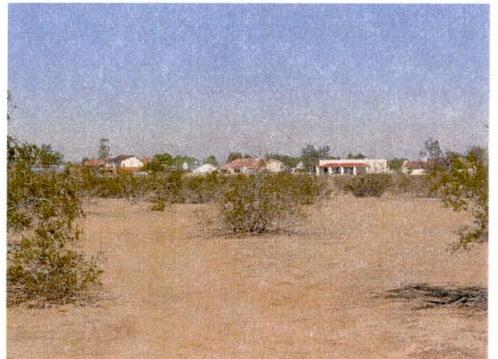
- Four categories of vegetation types indicative of the Sonoran Desert were identified within the project area and describe the natural plant associations found within each type. The “Desert Trees/Shrubs/Grasses” type indicates a higher diversification of individual plant species generally consisting of native mesquite, blue palo verde, tamarisk, parkinsonian palo verde, cat claw acacia, creosote, desert broom, triangle-leaf bursage, and a variety of grasses. The “Mesquite Bosque” type indicates a predominate monoculture of native mesquite trees that is commonly found in riparian areas. The “Creosote Flat” type indicates another type of predominate monoculture typically found on flat alluvial terrain adjacent to a main drainage corridor. The “Shrubs/Grasses” vegetation generally consists of creosote, desert broom, triangle-leaf bursage, and a variety of grasses. The “Shrubs/Grasses” vegetation type provides a median between the diversity of the “Desert Trees/Shrubs/Grasses” type and the monocultures of the “Mesquite Bosque” and “Creosote Flat” types.
- Wildlife habitat was also evaluated based on vegetation density, canopy cover, variety of plant species, amount of disturbance, and connectivity. There was no “high” habitat value found within the project area. “Moderate” and “low” habitat values were identified and directly related to the vegetation types and densities.



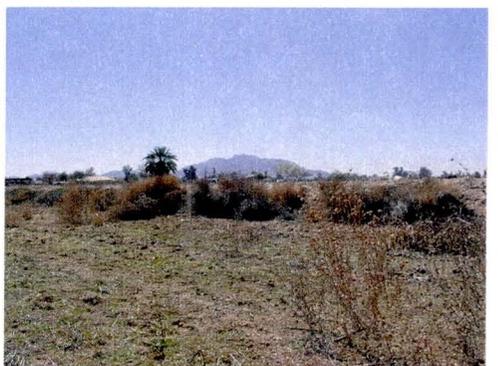
Desert Trees/Shrubs/Grasses



Mesquite Bosque



Creosote Flat



Shrubs/Grasses

HAZARDOUS MATERIALS CONSIDERATIONS

Kleinfelder, Inc. conducted a Phase I Environmental Site Assessment (Phase I ESA) along Sonoqui Wash between Queen Creek and 196th Street (*Phase I Environmental Site Assessment Sonoqui Wash Channelization Project Within Towns of Gilbert and Queen Creek, Arizona PCN #480-04-31, June 2004*). The Phase I ESA covered a 300-foot wide swath and reviewed past and current land uses practices. According to the Kleinfelder report, household debris and organic matter were observed at the northeast corner of Higley and Ocotillo Roads and in an area just west of Recker and Ocotillo Roads. Household debris and old 55-gallon drums are present on and adjacent to the San Tan Adobe property located near Power and Ocotillo Roads. Asphalt emulsion (material identified according to a San Tan Adobe employee) was adhered to the exterior of numerous 55-gallon drums, five above ground storage tanks, and an old tanker trucker located either on the San Tan Adobe property or in Sonoqui Wash just south of the property.

At least 20 pole-mounted and one pad-mounted transformers are located within the project area, primarily on residential properties between Via Del Jardin Street and Sossaman Road. Soil staining was noted at the base of a water well located just east of Recker and Ocotillo Road in addition to staining observed on the concrete pad and on the ground beneath a drum of turbine oil used as a lubricant. In this same area, two mounds of soil, most likely fill dirt, were observed as well as a large quantity of organic debris and mounded soil. Piles of construction material were found just east of 174th Street and on property southeast of Power Road.

Pesticide/herbicide residuals from the surrounding agricultural lands may flow into Sonoqui Wash. Elevated concentrations of the residuals may be present in the soil. The information evaluated for this Phase I ESA did not indicate an excessive amount of pesticide and/or herbicide use (i.e., mixing sheds, impoundments, or crop dusting air strips).

The regulatory agency search (U.S. Environmental Protection Agency and Arizona Department of Environmental Quality) did not indicate any records of environmental concern with regard to the project area or to the immediate surrounding area.

Kleinfelder recommended that on property that the District will acquire, any discarded debris be removed, transformers should be checked for polychlorinated biphenyls (PCB), environmental oversight be conducted during the removal of soil mounds, and soil sampling and laboratory analysis be conducted for pesticide/herbicide residuals in areas where landscape material will be planted. In addition, all traces of asphalt emulsion be removed and only trained professionals conduct the removal of the substance.

MISCELLANEOUS CONSIDERATIONS

- Areas of High Social Sensitivity were identified where impacts to the wash corridor would directly affect existing adjacent residents. The majority of the social impacts would occur in the Rancho Del Jardin subdivision between Via Del Jardin and 196th Street, where the residents have direct visual and physical access to the wash.
- An existing pump station located south of Via del Verde may also be affected by modifications to the wash corridor.
- A section of the existing wash corridor has currently been cleared and rough graded for construction of an adjacent planned development between Recker Road and 180th Street. In addition, a small area between 172nd Street and Recker Road has been cleared.
- An area of the wash corridor west of Power Road, adjacent to an adobe brick manufacturing company, contains many steel barrel containers and other types of trash that have been dumped there over the years. The contents of the barrels may be a hazardous materials consideration. Sporadic wildcat dumping was also found along the wash corridor; specific locations of these areas are identified in Figure 4. Environmental Considerations.

ENVIRONMENTAL CONSIDERATION OPPORTUNITIES AND CONSTRAINTS

The existing environmental considerations present both opportunities and constraints for meeting the project's goals and objectives.

- The Desert Wells Stage Stop provides a historic feature that may be developed as an interpretive node with shade canopies, drinking water, signage, and/or benches, which Sonoqui Wash users could utilize for a respite. Providing a limited number of parking spaces could also serve as a trailhead for the wash corridor.
- The mitigation requirements for the Section 404 permit may provide a means to upgrade proposed revegetation types to a higher level than what currently exists in the wash and thereby enhance the wildlife habitat values for the project area.
- Utilizing the varying Sonoran Desert vegetation types similar to the existing range would allow the development of distinct and recognizable zones throughout the project area. A combination of plant species indicative of the riparian habitat of the channel and the upland habitat of the flood plain allow an opportunity to utilize plant species that provide a wide range of unique and distinct interest levels within the corridor and reflect the existing natural Sonoran Desert Character.
- The existing flat terrain topography may allow for open space amenities that would complement the channel development and provide a more spacious feeling and opportunity for Sonoqui Wash users to divert from the mainline corridor. Opportunities for rest nodes, trailheads, secondary interpretive trails, etc. would be more compatible with flat open space areas.
- The existing high points and banks of the wash corridor provide an opportunity to create "enclosure" for the users in the bottom of the wash, and an opportunity for viewpoints for users at the top of the wash.
- Channel improvements need to be evaluated for the impact they will have on the physical and visual aspects of the adjacent residents (e.g., maintaining view corridors, access points). In addition, staging and phasing of channel improvement activities should be organized in a way that minimizes the impact to the adjacent residents throughout construction.
- The disturbed areas of the wash corridor, where dumping of materials and clearing of vegetation has occurred, detract from the overall scenic quality of the corridor and will require varying efforts of reclamation. As previously noted, the miscellaneous trash and materials will need to be cleaned up prior to or during construction.

SCENERY RESOURCE ASSESSMENT

This section describes the scenery resources within and immediately adjacent to the project area, the opportunities and constraints that apply based on this assessment, and the preliminary landscape theme. To understand the overall visual considerations of the project area, the type and quality of existing scenic features within 0.25 mile of the wash were identified. The existing scenery resources information was based on a field survey of publicly accessible areas in the project area and was documented on the December 2003 aerial photography of the project area.

The methodology, terms, and premises used in the evaluation of the visual resources are based on the United States Department of Agriculture Forest Service's *Landscape Aesthetics: A Handbook for Scenery Management* (1995), and the Flood Control District of Maricopa County's *Existing Landscape Character Assessment for Maricopa County* (unpublished draft 2003). The Forest Service's visual resource management process is used as the basis of this visual analysis. This process has been generally accepted throughout the United States as the standard in defining and managing landscape aesthetics. The Forest Service's methodology has been modified for this project to account for assessing a more developed rural setting rather than the predominately natural landscape that the Forest Service typically evaluates.

The following existing scenery resource elements were identified within and/or immediately adjacent to the project area.

- Distinct Features
- Notable Forms
- Views and View Corridors (Visual Sensitivity)
- Manmade Visual Concerns (Scenic Integrity)

Figure 5. Scenery Resource Assessment illustrates the existing scenery resources for the project area and the lands within 0.25 mile of Sonoqui Wash.

DISTINCT FEATURES

There are four natural and built elements within the project area that are identified as “Distinct Features” (landscape elements and patterns that make a memorable impression).

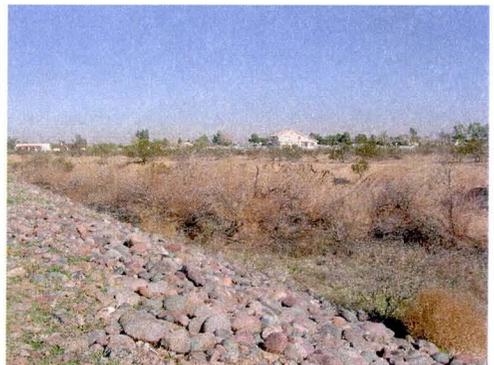
- The historic Desert Wells Stage Stop is a rustic stone built feature located on the east side of Sossaman Road south of Sonoqui Wash.
- Three areas within the wash corridor itself have good quality mesquite bosques. These areas of distinct vegetation are located at the east end of the project area near 196th Street, west of 172nd Street, and west of Recker Road.
- Water dependent reeds are regionally scarce and are distinct elements in the landscape. Two areas containing these special aquatic vegetations are along the dip crossing areas on Sossaman Road and west of Power Road. These areas consist of tall grasses and/or reeds.
- Both Sonoqui and Queen Creek Washes are distinct linear watercourse features, creating notable visual forms in the rural agricultural landscape.



Desert Wells Stage Stop



Mesquite Bosque



Sonoqui Wash

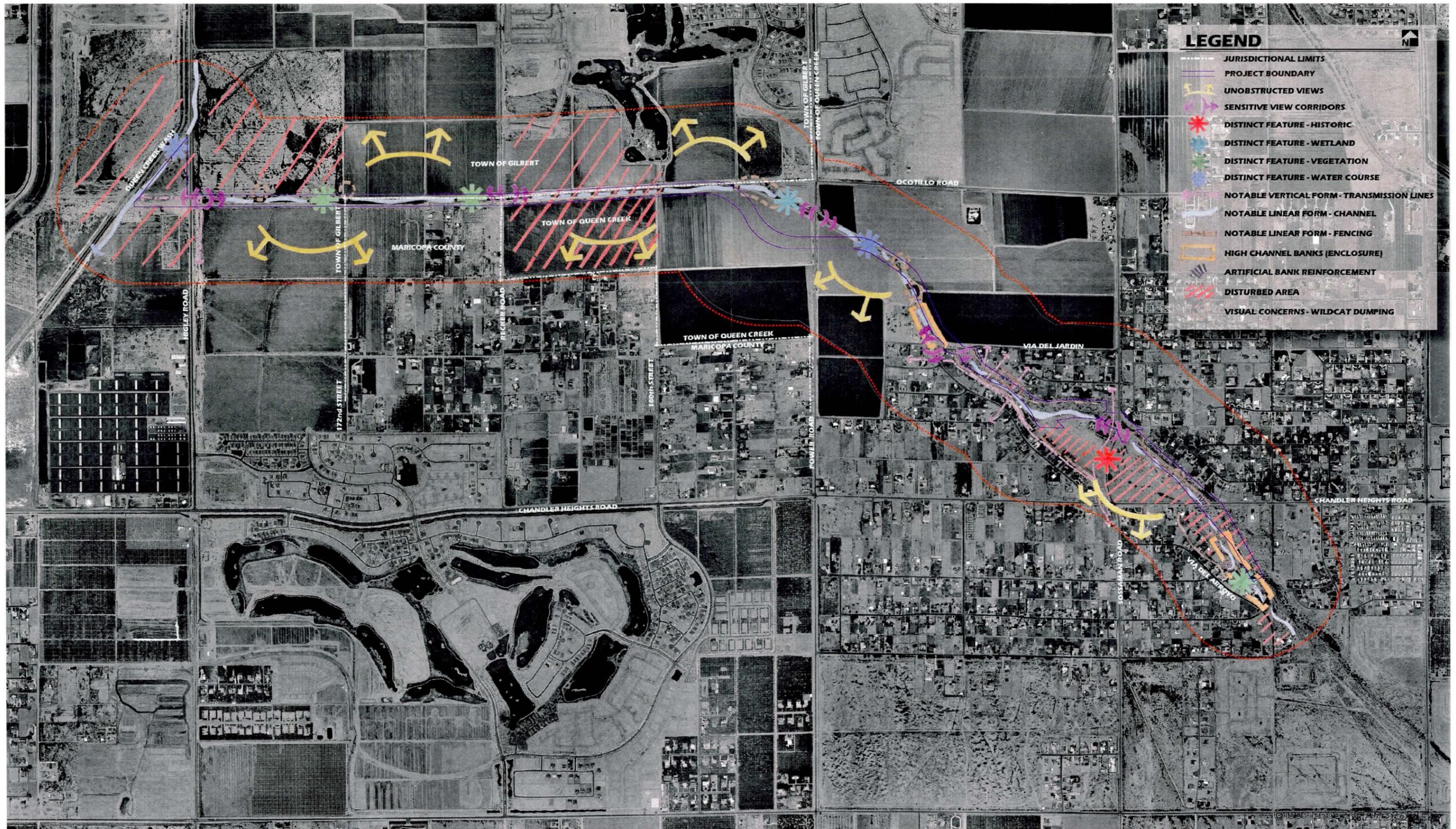


Figure 5. Scenery Resource Assessment

NOTABLE FORMS

Notable forms are identified as linear or vertical elements within the landscape and can be either natural or manmade features.

- The notable natural forms within the project area consist of the wash's channel, which is linear in nature, and the high channel banks at the east end of the project area, which creates a sense of enclosure for the users of the Sonoqui Wash bottom. While some areas of the channel reinforce the natural linear character of the corridor and provide a sense of enclosure, other portions of the wash are characterized by low banks or banks that have been graded and unobstructed views of the surrounding landscape.
- The notable manmade forms consist of existing fencing and/or walls that are primarily located on the channel's right-of-way line and are linear in nature, and the existing transmission lines located mostly between Via del Jardin and 196th Street that are vertical in form. The existing fencing and/or walls vary in types of materials, heights, and physical condition, which detract from the visual character of the corridor. The existing overhead transmission lines interrupt and detract from the distant mountain views.



Low Bank Area of Sonoqui Wash



Residential Fencing

IEWS AND VIEW CORRIDORS (VISUAL SENSITIVITY)

- With the exception of the built areas adjacent to the wash corridor, existing farmland provides unobstructed views of the mountain ranges to the north and northeast (McDowell and Superstition Mountain ranges), and to the south (San Tan Mountain range), from the top of channel embankments. Views from the bottom of the wash vary from the east end of the project area to the west end as the depth of the channel diminishes from east to west. Existing views to the San Tan Mountains appear to be more dramatic at the western end of the project area where the tallest peak is in more direct view and the wash channel has marginally low banks.
- Sensitive view corridors were identified at Higley, Recker, Power, Via Del Jardin, and Sossaman Roads where they cross the wash corridor. Channel improvements in these areas would be highly visible both up and down stream of these roadway crossings.



San Tan Mountains

MANMADE VISUAL CONCERNS (VISUAL INTEGRITY)

There are three types of manmade elements within the wash corridor that impact the visual integrity of the natural riparian corridor.

- Artificial bank reinforcement in the form of 6”–12” river run rock is located on the south bank west of 196th Street. Since Sonoqui Wash has very little rock material of any sort, the river run rock is very apparent and unnatural looking in the “sandy” wash landscape.
- Several areas consist of lands that are not in their natural state or are not being farmed. Having been cleared and graded at some time, these areas of cleared desert plains have varying degrees and densities of voluntary vegetation from mesquite trees to weeds. Most of the disturbed areas are slated for planned residential developments or open space.
- “Wildcat” dumping occurs throughout the project and consists of abandoned furniture, car parts, construction materials, full garbage bags, horse manure and/or stable waste, glass bottles, cans, etc. While some areas are truly “wildcat” dump-and-run activities, many areas appear to be littered from the adjacent properties. This is an activity that occurs in many unused and unprogrammed open space areas surrounded by or adjacent to urban areas today.



Cleared Desert Plains



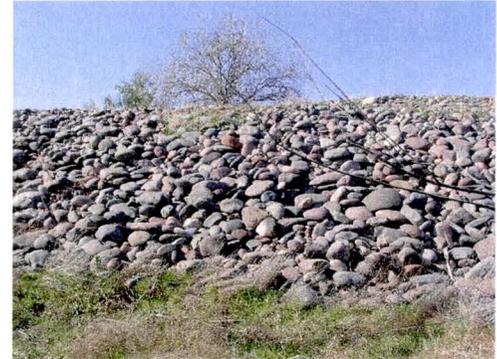
“Wildcat” Dumping

SCENERY RESOURCE OPPORTUNITIES AND CONSTRAINTS

The existing scenery resources present both opportunities and constraints for meeting the project’s goals and objectives.

- The Desert Wells Stage Stop provides a visually interesting historic feature that is historically significant and should be preserved and integrated into the multi-use/recreation opportunities of the wash corridor. The Stage Stop may be developed as an interpretive node with shade canopies, drinking water, signage, and/or benches, which Sonoqui Wash users could utilize for a respite. The rustic architectural character and/or materials are complementary to the surrounding rural environment and may provide a basis for developing more site-specific theming for the wash corridor aesthetics. Providing a limited number of parking spaces at this location could also serve as a trailhead for the wash corridor. The setting of the stage stop could easily be enhanced since there are no landscape material or landform features present.
- Building on distinctive features such as the mesquite bosques provides the opportunity to develop recognizable reaches throughout the project area with vegetative zones that may be used for respite and/or interpretive areas or areas of interest for corridor users. Mesquite bosques are a natural predominant recognizable element in Sonoran Desert riparian areas, which may provide the primary landscape theme and unity for the wash corridor character.
- The linear form of the channel will need to be evaluated for the opportunities to create meandering interest and vertical interjections at a pedestrian scale, to break the monotonous aspect of a long linear form.

- The existing linear form of the property fences/walls magnifies the channel's linear form and depth. A visually unifying theme to integrate these elements and create an aesthetic continuity within the channel would provide visual harmony within the corridor. Techniques to provide a comfortable, safe environment for Sonoqui Wash users would also need to be developed and evaluated. A balance between creating a sense of enclosure versus isolation for users would need to be achieved.
- Anticipating future view corridors through planned residential development would assist in maintaining some of the currently unobstructed views. Existing view corridors within the developed portions of the wash corridor will be maintained through the appropriate types and locations of channel improvements.
- Proposed channel improvements within the sensitive view corridors provide an opportunity to create a visually pleasing aesthetic that would be viewed by both the roadway and wash corridor users.
- The manmade visual concerns would be addressed as the wash corridor is developed into a public open space.
- There is the opportunity to use the changes in density of vegetation and spatial enclosure to create a visually interesting wash corridor.
- The proximity of residential land uses and the evidence of existing use of the wash as a recreation corridor (single and double track trails and bank erosion from informal accesses) indicate the need to better integrate the multiple use aspect so that the channel is not degraded. Any improvements to the wash should accommodate the high level of use by mountain bikes, pedestrians, and equestrians.
- The majority of the vegetation associated with the channel is native Sonoran Desert species, indicating that the use of a native plant palette should be used to maintain the existing landscape character such as mesquite and paloverde trees.
- Sonoqui Wash provides the opportunity to create a cohesive, linear element in the landscape that would provide a visually interesting open space to complement the rural character and create an aesthetic continuity to help unify the adjacent existing and planned land uses. The sinuosity of the natural desert wash should be preserved.
- Slope warping to slightly meander the channel invert will help to replicate the sinuosity of a natural desert wash.



River Rock Bank Reinforcement

LANDSCAPE CHARACTER UNITS, SUBUNITS, AND REACHES

As part of the project level scenery resources assessment for the Sonoqui Wash Channelization project, the project area was delineated into landscape character units, subunits, and reaches. *Landscape character* is the physical appearance of the landscape including the natural, physical, and architectural/cultural features that provide an identity and “sense of place.” The existing landscape character is based on defining areas of similar land use, vegetation, spatial enclosure, landforms, or cultural (built features) patterns.

The project area lies within the Sonoran Desert Landscape Character Type, and the Sonoran Valley Lands Subtype. Within the Sonoran Valley Lands Landscape Character Subtype, there are three Landscape Character Units - the Natural and Pastoral, Rural, and Suburban Valley Plains found within and immediately adjacent to the project area.

For each landscape character subunit, the general visual character by distance zones, relative scenic attractiveness, and level of scenic integrity were determined.

- *Distance zones* refer to the relative position of the observation point as follows: (1) foreground - up to 0.25 miles; (2) middleground - 0.25 miles to three miles; and (3) background - 3 to 5 miles.
- *Scenic attractiveness* or quality is a combination of attributes based on landforms, waterforms, vegetation patterns, and cultural (built) elements. Scenic attractiveness is classified as Class A – Distinctive, Class B – Typical, or Class C – Indistinctive.
- *Scenic integrity* relates to the integrity of existing visual conditions relative to the natural and built landscape and the extent to which the landscape elements, and patterns that they create, are altered. The level of visual intactness was expressed as very low, low, moderate, high, or very high.

Visual sensitivity is the measure of people's concern for the visual environment based on the viewer's activity and awareness as well as their values, opinions, and preconceptions. The general visual sensitivity of the project area was determined to be high because of the existing and future residential and recreational uses immediately adjacent to the project area.

As previously stated, the following Landscape Character Units were identified within the immediate foreground area of the project area:

- Natural and Pastoral Valley Plains
- Rural Valley Plains
- Suburban Valley Plains

The Landscape Character Units were further subdivided into seven subunits based on field observations completed in February 2004. The following Landscape Character Subunits were identified within the immediate foreground area of the project area:

- cleared desert plains
- disturbed creosote flats
- natural desert wash
- modified desert wash
- agricultural croplands
- rural ranch residential
- suburban ranch residential

Future uses that will influence the development of the landscape and aesthetic treatments for this project were identified by subunit because there will be substantial changes to the existing land uses immediately adjacent to the project area within the foreseeable future. These included future commercial, flood control facilities, public facility, and planned area development.

Figure 6 illustrates the Landscape Character Units, Subunits, and Reaches for the project area of Sonoqui Wash. Table 1 describes each of the subunits in terms of landscape features, scenic attractiveness, scenic integrity, and future landscape character. Based on the Landscape Character Units and Subunits, the project area was delineated into Landscape Character Reaches. These reaches were determined based on existing visual conditions, hydrology and hydraulic criteria requirements for the Sonoqui Wash channel, and existing and future land use.

Opportunities and constraints specific to each Landscape Character Reach are described below:

Reach 1 (includes Cleared Desert Plains/Future Planned Area Development, Cleared Desert Plains/Future Commercial, Cleared Desert Plains/Future Flood Control Facility, Cleared Desert Plains/Future Public Facility, Agricultural Croplands/Future Commercial, and Agricultural Croplands/Future Planned Area Development Subunits)

- Currently located within the Cleared Desert Plains subunit, this reach's character is highly influenced by the future development of the Town of Gilbert's Water Recharge project and the Flood Control's East Maricopa Floodway Chandler Heights Basin project. The scale and function of these two projects provide the opportunity to develop an overall scenic quality indicative of broad open plains and landforms integrated with hydrologic functions of water recharge and water retention basins.

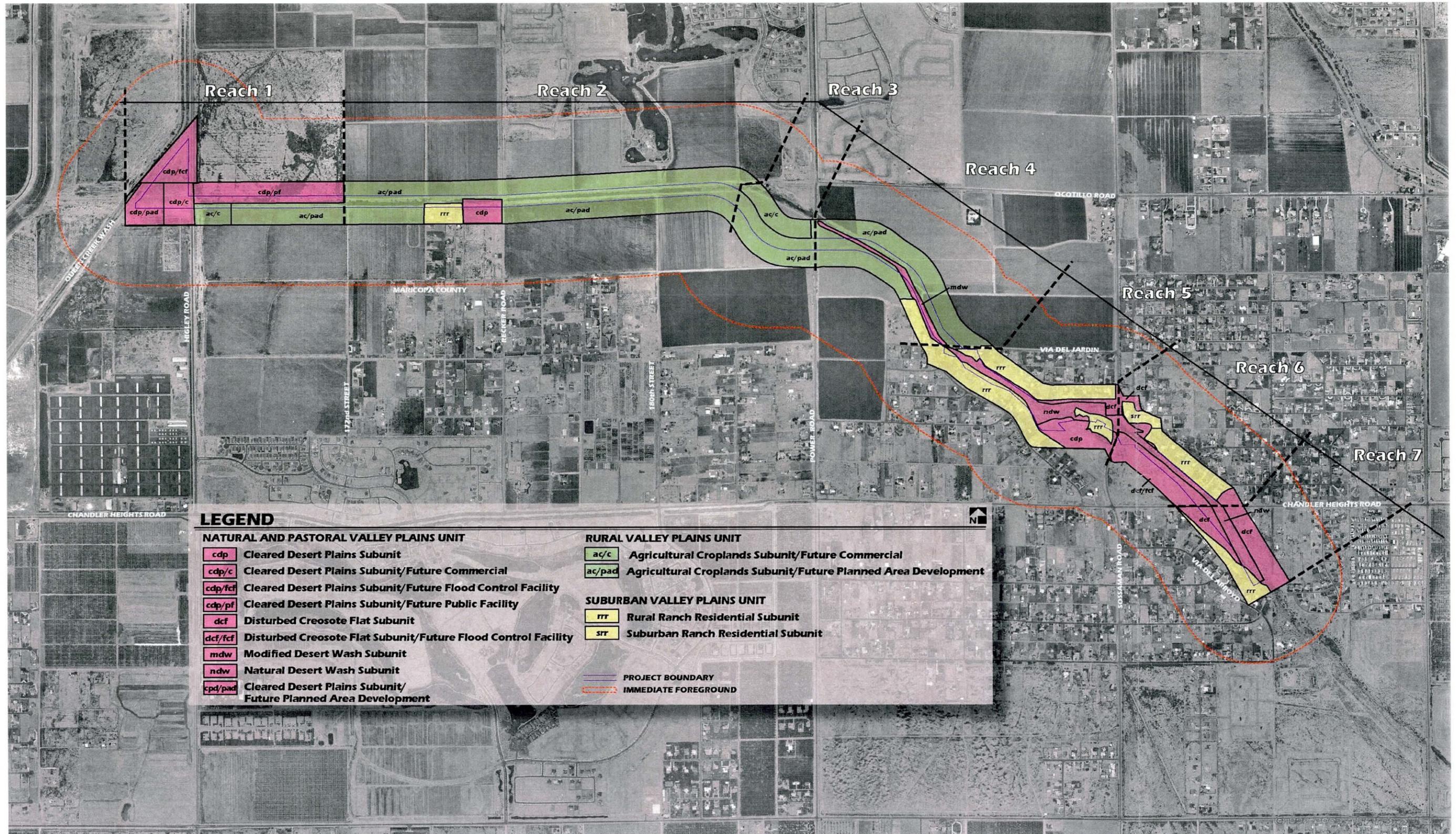


Figure 6. Landscape Character Units, Subunits, and Reaches

Table 1. Landscape Character Units and Subunits

Landscape Character Unit	Landscape Character Subunit	Landscape Features	Scenic Attractiveness/Character	Scenic Integrity	Future Landscape Character	
Natural & Pastoral Valley Plains	Natural Desert Wash (ndw)		<p>Foreground</p> <ul style="list-style-type: none"> • Wide sandy channel spatially defined by earthen banks ranging in height from approximately 4' to 18' and covered by dense xero-riparian vegetation • Grey-green, coarse textured trees on channel banks and in channel bottom • Views beyond channel partially obscured by presence of native trees along banks and height of earthen banks • Upper portion of higher adjacent residential structures visible • Informal single tracked trail visible in channel bottom • Informal access points evident along channel banks <p>Middleground</p> <ul style="list-style-type: none"> • Not visible <p>Background</p> <ul style="list-style-type: none"> • Not visible 	<p>Class B Typical</p> <ul style="list-style-type: none"> • Sonoqui Wash within this subunit exhibits typical Sonoran Desert wash stream bed characteristics of a sandy bottom with xero-riparian vegetation within and along channel banks creating a sinuous horizontal line and form in the landscape • Variable width channel bottom with variable side slopes and bank heights 	<p>High</p> <ul style="list-style-type: none"> • The landscape within this subunit appears relatively intact. Well-used, single-track trails in channel bottom and bank erosion are visually evident, but repeat the form and color common to the existing landscape elements. 	Natural Desert Wash
	Modified Desert Wash (mdw)		<p>Foreground</p> <ul style="list-style-type: none"> • Incised drainage channel • Intermittent trees on channel banks • Sandy channel bed • Views beyond drainage channel partially obscured by presence of earthen channel banks • Informal access points evident along channel banks <p>Middleground</p> <ul style="list-style-type: none"> • Not visible <p>Background</p> <ul style="list-style-type: none"> • Not visible 	<p>Class B Typical</p> <ul style="list-style-type: none"> • Sonoqui Wash within this subunit is characterized by defined earthen channel with scattered xero-riparian vegetation creating a sinuous horizontal line and form in the landscape • Relatively consistent width channel bottom with variable side slopes and bank heights 	<p>Low</p> <ul style="list-style-type: none"> • Landscape character has been moderately altered from the removal of vegetation and the presence of informal access points down the channel banks 	Natural Desert Wash
	Disturbed Creosote Flats (dcf)		<p>Foreground</p> <ul style="list-style-type: none"> • Open, coarse textured creosote bush and grasses dominates vegetation with scattered mesquite trees • Vegetation pattern noticeably interrupted by areas of disturbance created by single/double track dirt roads, off-road vehicle use, or other activities that eliminate vegetation • Unobstructed views to surrounding landscape • Desert Wells Stage Stop notable cultural feature in the landscape <p>Middleground</p> <ul style="list-style-type: none"> • Not visible <p>Background</p> <ul style="list-style-type: none"> • Views of San Tan Mountains to the south 	<p>Class C Indistinctive</p> <ul style="list-style-type: none"> • Grey-green scrub vegetation is common to the area and region • Dirt roads, off-road vehicle use, and other uses create contrast in terms of color and line in the landscape and visually detract from the setting • Variable width channel bottom with variable side slopes and bank heights 	<p>Low</p> <ul style="list-style-type: none"> • Presence of off-road vehicle use, notable areas devoid of vegetation, and dirt roads encroach on the setting 	Private lands- development plans not known and flood control facility (detention basin)

Table 1. Landscape Character Units and Subunits - continued

Landscape Character Unit	Landscape Character Subunit	Landscape Features	Scenic Attractiveness	Scenic Integrity	Future Landscape Character
Natural & Pastoral Valley Plains	Cleared Desert Plains (cdp)	 <p> Foreground <ul style="list-style-type: none"> • Cleared area dominates the setting • Unobstructed views of adjacent land uses • Relatively flat terrain Middleground <ul style="list-style-type: none"> • Not visible Background <ul style="list-style-type: none"> • Views of San Tan Mountains to the south </p>	<p>Class C Indistinctive</p> <ul style="list-style-type: none"> • Landscape has low scenic quality because it lacks vegetation, landform, or cultural land uses that would create visual interests or distinctive patterns • Variable width channel bottom with variable side slopes and bank heights 	<p>Very Low</p> <ul style="list-style-type: none"> • Landscape is substantially altered from the existing natural and cultural character • Barren earth dominates the setting 	Commercial, public facility (City of Gilbert Recharge Facility), and flood control facility (sediment basin)
Rural Valley Plains Unit	Agricultural Croplands (ac)	 <p> Foreground <ul style="list-style-type: none"> • Farmlands provide homogenous land use pattern that varies in color, texture, and line with rotation of crops and fallow periods • Crops create notable vegetation pattern and color • Terrain is relatively flat • Unobstructed views of adjacent land uses Middleground <ul style="list-style-type: none"> • Not visible Background <ul style="list-style-type: none"> • Views of San Tan Mountains to the south and Userly Mountains to the north </p>	<p>Class B Typical</p> <ul style="list-style-type: none"> • Cropland provides vegetation patterns and cultural features common to the area • Constant width channel bottom, side slopes, and bank heights 	<p>High</p> <ul style="list-style-type: none"> • Cultural landscape appears intact 	Planned Area Development
Suburban Valley Plains Unit	Suburban Ranch Residential (srr)	 <p> Foreground <ul style="list-style-type: none"> • Single-family residences with the complimentary modern architectural styles, colors, and materials most often on large lots • Vegetation consisting of a mixture of native species and species indigenous to the area • Buildings have similar orientations to the street • Fences most often consists of masonry block walls • Streets are paved with no shoulders or curb and gutter Middleground <ul style="list-style-type: none"> • Not visible Background <ul style="list-style-type: none"> • Intermittent views of San Tan Mountains to the south </p>	<p>Class B Typical</p> <ul style="list-style-type: none"> • Infrastructure and buildings create consistent visual pattern common to the area • Variable width channel bottom with variable side slopes 	<p>High</p> <ul style="list-style-type: none"> • Cultural landscape appears intact • Cohesive built features 	Suburban Ranch Residential
	Rural Ranch Residential (rrr)	 <p> Foreground <ul style="list-style-type: none"> • Single family residences with varied architectural styles, colors, and materials most often on large lots with ancillary buildings such as storage sheds, corrals, and barn structures • Vegetation consisting of a mixture of native species and species indigenous to the area • Buildings have varied orientations to the street • Fences most often chain link, barbed wire, or open corral fencing • Streets are unpaved and paved with no shoulders or curb and gutter Middleground <ul style="list-style-type: none"> • Not visible Background <ul style="list-style-type: none"> • Intermittent views of San Tan Mountains to the south </p>	<p>Class B Typical</p> <ul style="list-style-type: none"> • Infrastructure and buildings create visual pattern common to the area • Variable width channel bottom with variable side slopes and bank heights 	<p>Moderate</p> <ul style="list-style-type: none"> • Limited cohesion among built features • Form, color, texture, and pattern are not repeated to form a consistent, compatible architectural style 	Rural Ranch Residential

- The confluence of Sonoqui Wash and Queen Creek Wash provides an opportunity for educational and interpretive features relating to natural water distribution systems, flood control, and environmental considerations such as stormwater quality, water recharge, and riparian habitat.
- The additional right-of-way and sediment basin area, which provides the largest open space area within the project, will lend itself to developing viewpoints and rest nodes that Sonoqui Wash users can enjoy the San Tan Mountain views from.
- The integration of view corridors and “borrowed scenery” from the Water Recharge and Chandler Heights Basin sites provides the opportunity to increase or enhance the “sense of openness” for a Sonoqui Wash user who has just moved through a more constrained reach of the channel.

Reach 2 (includes Agricultural Croplands/Future Commercial, Agricultural Croplands/Future Planned Area Development, Rural Ranch Residential, and Cleared Desert Plains Subunits)

- The character of Reach 2 is representative of the Agricultural Croplands subunit in that it is linear in nature and reflective of a flood irrigated crop row on a much larger scale. While crop rows are the most spatially effective way of utilizing farmland space, this reach is challenged with the most effective way to utilize the narrow Sonoqui Wash channel right-of-way.
- The linear nature of this reach provides the opportunity to create a contrast to Reach 1, which will enhance the user’s sense of openness upon reaching the Reach 1 character zone and the feeling of moving through vegetative zones within the corridor.
- Reach 2 may also provide the opportunity to tie into and/or integrate adjacent development character and open spaces either physically or visually to allow for nodes of connection, openness, or viewpoints. These areas could assist in providing interim points of heightened or distinctive interest within a somewhat constrained reach of the corridor.

Reach 3 (includes Agricultural Croplands/Future Commercial and Agricultural Croplands/Future Planned Area Subunits)

- Reach 3 provides the first major opportunity for curvature in the linear form of the channel from the western origin at Queen Creek Wash. Similar in nature to Reach 2, the right-of-way becomes more constrained as the channel turns south away from Ocotillo Road and the additional adjacent right-of-way the road lent for “borrowed landscape” disappears.
- The narrowed right-of-way and abrupt turns in the channel may provide the opportunity to emulate the quick turns, rapids, and excitement in a moving watercourse physically and/or visually for the Sonoqui Wash user. While the somewhat linear alignment of the multi-use path aids a faster pace for the user, the landscape and aesthetic character can assist in the creation of “movement” through this reach.

Reach 4 (includes Modified Desert Wash, Agricultural Croplands/Future Planned Area Development, and Rural Ranch Residential Subunits)

- Similar to Reach 2, its distinctive difference is that it is more sinuous in character. It is a character that diagonally bisects the agricultural croplands rather than aligns with it. It is this bisecting nature that provides the opportunity for a somewhat modified version of the Reach 2 character, which has a similar right-of-way and hydraulic constraint.

Reach 5 (includes Cleared Desert Plains, Disturbed Creosote Flats, Natural Desert Wash, and Rural Ranch Residential Subunits)

- Reach 5 consists of an area that has the most diversified character and the most contrasting transition of rights-of-way within the corridor. Transitioning from a narrow rural ranch corridor on the west end to a natural desert wash and cleared desert plains on the east end, the Sonoqui Wash user's experience is perhaps the greatest and highest quality within the project corridor,
- The opportunity to provide the broad open landforms and landscape character is greatest near the east end by Sossaman Road. This "sense of openness" provides a great contrast to the "narrows" part of the reach where the right-of-way is the most constrained within the entire project corridor.

Reach 6 (includes Disturbed Creosote Flats, Disturbed Creosote Flats/Future Flood Control Facility, Natural Desert Wash, Rural Ranch Residential, and Suburban Ranch Residential Subunits)

- Reach 6 is similar to Reach 1 in that it provides the opportunity to integrate a broad open plain and land forms with a future water retention basin and provide the same attributes as discussed in Reach 1 on a somewhat smaller scale.
- The proposed channelization of Sonoqui Wash will provide the opportunity to warp the channel side slopes to create the sinuosity of the natural channel in this reach.

Reach 7 (includes Disturbed Creosote Flats, Natural Desert Wash, and Rural Ranch Residential Subunits)

- Reach 7 is very similar to the east end of Reach 5 with a variety of natural desert wash and rural ranch character. A distinctive difference is the addition of the disturbed creosote flats in the upland areas of the project corridor. It is this blend of landscape character zones that will be maintained and transitioned to from Reach 6.

PRELIMINARY LANDSCAPE THEME

A Project Aesthetic Advisory Committee (PAAC) was formed for the Sonoqui Wash Channelization project, in accordance with the District's Landscaping and Aesthetics Policy, to assist in the identification of appropriate aesthetic and multi-use concepts, features and designs to be incorporated into the final plans and construction documents for the project. The role of the PAAC included the review of the project aesthetic and multi-use recreation objectives, data collection, site analysis, and project landscape themes. The PAAC was made up of representatives from the communities, Towns of Gilbert and Queen Creek, developers representing planned residential developments, and the District. The PAAC committee reviewed the Landscape Aesthetic Goals and Objectives of the Queen Creek/Sonoqui Wash Hydraulic Master Plan and revised the goals and objectives to better fit this Channelization project. Refer to Table 2, Landscape Aesthetic and Recreation Multi-Use Goals and Objectives for the updated landscape aesthetic goals and objectives, landscape themes and their applications, and the aesthetic design guides.

The PAAC identified a natural Sonoran Desert Wash as the overall landscape theme for the project. The application of the Sonoran Desert Wash theme will include use of materials, forms, lines, colors, textures and compositions thereof that characterize the existing natural state of Sonoqui Wash or natural washes found within the Sonoran Valley Lands Landscape Character Subtype. For the purposes of this project, a natural Sonoran Desert Wash theme within the Sonoran Valley Lands Landscape Character Subtype would be characterized by:

- the use of plant material native to Sonoran Desert riparian areas
- channel banks varying in height from 7 to 12 feet
- varying top of channel widths
- channel side slopes varying from 4:1 to 8:1

Table 2. Landscape Aesthetic and Recreation Multi-Use Goals and Objectives (February 23, 2004)

Landscape Aesthetic Goals and Objectives

1. Design the Sonoqui Wash Channelization Project to protect, enhance, and complement the scenic character of the surrounding natural, rural, and suburban settings and help preserve the rural agricultural community character of the Town of Queen Creek.
2. Minimize the visual impacts of proposed flood control facilities upon views of trail users within the project area and views from use areas located outside the project area.
3. Design the project to protect and enhance views of high quality landscape features and other positive focal points located within and outside the project area.
4. Design the landscaping and aesthetic treatments to provide a variety of spaces that will enhance the recreation experience and safety of trail users.
5. Design all landscaping and aesthetic treatments to fully accommodate and provide for the flood control functions of the project.
6. Preserve existing scenic features located within the project area to the extent practicable.

Landscape Themes and their Applications

1. The overall landscape theme for the project is a natural Sonoran Desert Wash.
2. The application of the project landscape theme will include use of materials, forms, lines, colors, textures and compositions thereof that characterize the existing natural state of Sonoqui Wash or natural washes found within the Sonoran Valley Lands Landscape Character Subtype.
3. Use of concrete or other hard-lined facilities should not be considered unless necessary. If use of these materials becomes necessary, surface treatments employing appropriate natural appearing materials and colors that are consistent with the project landscape theme should be utilized to minimize the visual impact of the facilities.

Aesthetic Design Guides¹

1. Vary slopes from 4:1 to 8:1 (variable slopes) and meander toe and top of slopes where channel widths allow.
2. Minimum slopes shall be 3:1.
3. Utilize short retaining walls to provide flatter slopes for easier access in most constrained areas.

Recreation Multi-Use Goals and Objectives

1. Provide a continuous path or trail extending the entire length of the project area that connects to the Maricopa Regional Trail system and other approved public and private access points.
2. Design the project operations and maintenance road as a multi-purpose facility that provides the needs of the trail identified above in Objective 1.
3. Incorporate the spatial needs of trail entry points and other needed trail support facilities into the grading design for the project.
4. Provide for equestrian trail use within the bottom area of the conveyance channel.
5. Incorporate vertical height clearance needs for equestrian users at road crossings.
6. Incorporate opportunities for enjoyment of interpretive historical and environmental features within the project such as the stage stop, wildlife, etc.
7. Provide an emergency response plan for recreation users within the project area.
8. Provide a passive multi-use recreational corridor.

Recreation Multi-Use Design Guides

1. The pedestrian path shall be a meandering 10 feet wide hard surface unless there is an adjacent parallel sidewalk.
2. The equestrian trail shall be 12 feet minimum width compacted dirt path.

¹ The District's *Aesthetic & Multi-Use Design Guidelines for Channel Conveyance Facilities* will be referenced to the extent possible for this project. Additional refinements to the guidelines will be developed as needed to tailor them to the specific achievable project goals and objectives.

- channel banks covered with native soil and a sandy bottom
- density of plant material varying from “bosque-like” tree plantings and perennial flow plantings to open grassland/reed areas

The plant material palette to achieve the natural Sonoran Desert Wash Theme is provided in Table 3, Preliminary Plant List. As previously identified, seven separate Landscape Character Reaches comprise the Sonoqui Wash project area based on the Landscape Character Units/Subunits and existing and future land use, the hydraulic criteria requirements, and the cultural settings. In order to identify whether the natural Sonoran Desert Wash theme may be achievable for each reach, the opportunities and constraints to achieving the Natural Sonoran Desert Wash Landscape Theme within the Sonoran Valley Lands Landscape Character Subtype are described below.

Reach 1

- Currently located within the Cleared Desert Plains subunit, this reach’s character is highly influenced by the future development of the Town of Gilbert’s Water Recharge project and the Flood Control’s East Maricopa Floodway Chandler Heights Basin project. Additional right-of-way adjacent to the Town of Gilbert’s Water Recharge project provides the opportunity to develop a meandering watercourse more similar to a natural watercourse and landscape that transition from the existing linear form of the Sonoqui Wash channel into the sinuous character of the Chandler Heights Basin design.
- The additional right-of-way of Sonoqui Wash in this reach will also provide the opportunity to warp the channel side slopes to create the highest degree of sinuosity of a natural channel within the project’s entire length.
- Integration of the channel design and vegetation treatment with Gilbert’s Water Recharge project could increase the landscape variety and visual interest by increasing the apparent size of the channel, as well as modify the linear form of the channel.
- Developing landforms and vegetation consistent with the East Maricopa Floodway Chandler Heights Basin allows for an overall consistency and integration of flood control features on a larger regional scale.
- The additional upland area provides opportunities for developing mesquite bosques, braided secondary wash or water harvesting areas, and/or native grass knolls overlooking the confluence or water recharge basins on a scale not available elsewhere within the project area.
- Creating pockets of vegetation attractive to riparian wildlife would complement the future water recharge habitat and provide an environment indicative of natural Sonoran wash corridors.

Reach 2

- The longest reach of the project, utilization of the adjacent Ocotillo Road right-of-way allows the opportunity to “borrow” more space for creating slight meanders and warping of the channel side slopes to create the sinuosity of a natural channel.
- The massing and placement of plant materials are critical to provide a sense of progression and movement through the long linear corridor. While many natural Sonoran washes are similar in form, the density and variety of trees and shrubs at or near the hinge point sometimes break out down the slope to near the toe of the channel. This approach would assist in providing the appearance of undulation within the channel.
- Meandering the multi-use path in a way that complements the arcs of the top of the channel would provide varying landscape spaces that may appear more braided in nature and reflect the form and scale of naturally braided washes through landform and plant material choices.

Table 3. Preliminary Plant List

<u>Scientific Name</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Common Name</u>
Trees		Cacti/Succulent Accents	
<i>Cercidium floridum</i>	Blue Paloverde	<i>Agave species</i>	Agave
<i>Cercidium microphyllum</i>	Foothills Paloverde	<i>Carnegiea gigantea</i>	Saguaro
<i>Chilopsis linearis</i>	Desert Willow	<i>Fouquieria splendens</i>	Ocotillo
<i>Olneya tesota</i>	Ironwood	<i>Opuntia species</i>	Prickly Pear
<i>Prosopis glandulosa</i> 'Maverick'	Texas Honey Mesquite	<i>Yucca species</i>	Yucca
<i>Prosopis velutina</i>	Velvet Mesquite		
Shrubs/Groundcovers		Forbes/Wildflowers	
<i>Acacia greggii</i>	Catclaw Acacia	<i>Abronia villosa</i>	Sand Verbena
<i>Ambrosia ambrosioides</i>	Giant Bursage	<i>Baileya multiradiata</i>	Desert Marigold
<i>Ambrosia deltoidea</i>	Triangle Bursage	<i>Eschscholtzia mexicana</i>	Mexican Gold Poppy
<i>Artiplex canescens</i>	Four –winged Saltbush	<i>Glandularia gooddingii</i>	Desert verbena
<i>Artiplex lentiformis</i>	Quailbrush	<i>Kallstroemeria grandiflora</i>	Arizona Poppy
<i>Asclepias subulata</i>	Desert Milkweed	<i>Lesquerella gordonii</i>	Bladder Pod
<i>Atriplex polycarpa</i>	Desert Saltbush	<i>Lupinus sparsiflorus</i>	Desert Lupine
<i>Calliandra eriophylla</i>	Fairy Duster	<i>Lupinus succulentus</i>	Arroyo Lupine
<i>Celtis pallida</i>	Desert Hackberry	<i>Melampodium leucanthum</i>	Blackfoot Daisy
<i>Dyssodia pentachaeta</i>	Dyssodia	<i>Oenothera caespitosa</i>	Evening Primrose
<i>Encelia farinosa</i>	Brittle Bush	<i>Phacelia crenulata</i>	Desert Phacelia
<i>Eriogonum fasciculatum</i> var. <i>poliofolium</i>	Arizona Buckwheat	<i>Penstemon eatoni</i>	Firecracker Penstemon
<i>Hyptis emoryii</i>	Desert Lavender	<i>Penstemon parryi</i>	Parry Penstemon
<i>Justicia californica</i>	Chuparosa	<i>Penstemon pseudospectabilis</i>	Showy Penstemon
<i>Larrea tridentata</i>	Creosote	<i>Plantago ovata (insularis)</i>	Indian Wheat
<i>Lycium andersonii</i>	Wolfberry	<i>Sphaeralcea ambigua</i>	Globe Mallow
<i>Lycium fremontii</i>	Fremont Thornbush	<i>Viguiera deltoidea</i>	Desert Sunflower
<i>Psilostrophe cooperi</i>	Paperflower		
<i>Senna species</i>	Senna	Grasses	
<i>Trixis californica</i>	Trixis	<i>Aristida purpurea</i>	Purple Three-Awn
<i>Zinnia acerosa</i>	Desert Zinnia	<i>Bouteloua aristidoides</i>	Needle Grama
<i>Ziziphus obtusifolia</i>	Graythorn	<i>Bouteloua gracilis</i>	Blue Grama
		<i>Bouteloua rothrockii</i>	Rothrock Grama
		<i>Digitaria californica</i>	Arizona cottontop
		<i>Distichlis spicata</i>	Desert Saltgrass
		<i>Hilaria belangeri</i>	Curly Mesquite
		<i>Hilaria rigida</i>	Big Galleta
		<i>Panicum obtusum</i>	Vine mesquite
		<i>Sporobolus airoides</i>	Alkalai Sacaton
		<i>Sporobolus cryptandus</i>	Sand Dropseed

Reach 3

- As the channel moves away from the Ocotillo Road alignment and the additional right-of-way the road afforded, the channel becomes narrower and makes an abrupt “s-curve”. It is the “s-curve” that provides a natural meander in the channel and provides the sense of moving faster. Providing varying side slopes creates natural “markers” for the sense of movement through the corridor.
- While the upland width is very narrow and the channel is at its deepest within the entire project length, it is the type and placement of plant materials at the hinge point of the channel that will emulate a deeply incised natural wash.
- The density of plant materials at the hinge point of the channel that occasionally break down the slope or across the upland area that will serve to screen residential yards and the commercial property to the north, as well as provide shade for the trail and path users.

Reach 4

- Similar in character to Reach 2 and 3, it combines the cultural setting of Reach 2 with the narrow right-of-way of Reach 3. Sinuosity is created with long, sweeping arcs of the channel along with warping of the side slopes. Because the depth of the channel is not as deep as Reach 3, the landscape character could be similar to Reach 2.

Reach 5

- The narrowest reach of the project area, the sense of enclosure and respite from the open desert plains closely emulates the natural “narrows” present in many Sonoran desert washes. The vertical heights of the natural embankments provide the ability to create a vegetative shade canopy reflective of desert canyons.
- The potential for developing vertical walls to address physical constraints within this area would enhance the “canyon” effect by providing opportunities for plants to appear as though they are growing out of niches. Plant material reflective of riparian species and tolerant of shady areas would provide an intimate, unique environment as users move through the corridor.
- The east end of the reach is more open and provides the opportunity for developing mesquite bosques, braided secondary wash or water harvesting areas, and/or creosote flats overlooking the Sonoqui Wash channel.

Reach 6

- Integration of the channel design and vegetation treatment with the adjacent detention basin could increase the landscape variety and visual interest by increasing the apparent size of the channel, similar to the Reach 1 approach.
- The additional upland area provides opportunities for developing mesquite bosques, braided secondary wash or water harvesting areas, and/or native grass knolls overlooking the Sonoqui Wash channel and detention basin on a scale similar to the Reach 1 area.
- Creating pockets of vegetation attractive to riparian wildlife would complement the seasonal or perennial environment created by the water catchment area and expand upon the Reach 1 opportunities.
- Due to the development of the detention basin and the required weir length, the opportunity to warp the channel side slopes to create sinuosity will be somewhat limited, however the upland landforms may provide a natural appearing edge to the top of the channel.

Reach 7

- Similar to the east end of Reach 5, Reach 7 is also more open and provides the opportunity for developing mesquite bosques, braided secondary wash or water harvesting areas, and/or creosote flats overlooking the Sonoqui Wash channel.
- Slight meanders and warping of the channel side slopes creates the sinuosity of a natural channel. The density and variety of trees and shrubs at or near the hinge point may break out down the slope to near the toe of the channel to assist in creating a natural channel edge.

MULTI-USE/AESTHETIC IMPROVEMENT OPPORTUNITIES

This section describes the multi-use and aesthetic opportunities within and/or immediately adjacent to the project area based on existing and planned informational data related to recreational facilities and the entire previous site analysis sections.

To understand the potential multi-use and aesthetic opportunities within the project area, the types and locations of these elements within 0.25 mile of the wash were identified. Sources for developing the multi-use and aesthetic opportunities information included the *Town of Gilbert's 2003 General Plan*, the *Town of Queen Creek's 2002 General Plan*, the *MAG Regional Transportation and Bikeways Plans*, *Maricopa County Regional Trail System Plan*, *City of Mesa's 2025 General Plan*, *City of Chandler's General Plan*, planned private development plans, and field survey information. The existing and planned source information was compiled and documented on the December 2003 aerial photography of the project area.

The following existing and planned multi-use elements were identified within and/or immediately adjacent to the project area.

- Local and Regional Multi-Use Corridors
- Existing and Planned Private Development Facilities
- Existing and Planned Infrastructure Opportunities
- Cultural and Environmental Opportunities
- Land Use Opportunities
- Aesthetic Improvement Opportunities

Figure 7. Multi-Use/Aesthetic Improvement Opportunities illustrates the multi-use and aesthetic improvement opportunities for the project area and the lands within 0.25 mile of Sonoqui Wash.

LOCAL AND REGIONAL MULTI-USE CORRIDORS

Figure 8. Multi-Use Regional Context illustrates the following corridors.

- The Phase One Maricopa County Regional Trail System Plan identifies Sonoqui Wash as a regional trail corridor from the San Tan Mountain Regional Park to the East Maricopa Floodway (EMF). The Phase Two Maricopa County Regional Trail System Plan identifies Queen Creek Wash as a regional trail corridor from the EMF to the Central Arizona Project (CAP) Canal, which connects to other Phase Two trails that eventually connect to the Arizona Trail through Tonto National Forest.
- The *MAG Bikeways Plan* identifies the EMF, Eastern Canal, and the Consolidated Canal East as regional multi-use trail corridors.
- The *Town of Gilbert's 2003 General Plan* and the *Town of Queen Creek's 2002 General Plan* identified bike and pedestrian trails, on-road bike routes, and equestrian trails predominantly located along arterial roadways. These plans also identified existing and planned park and recreation facilities as well as educational facilities within the regional context area.

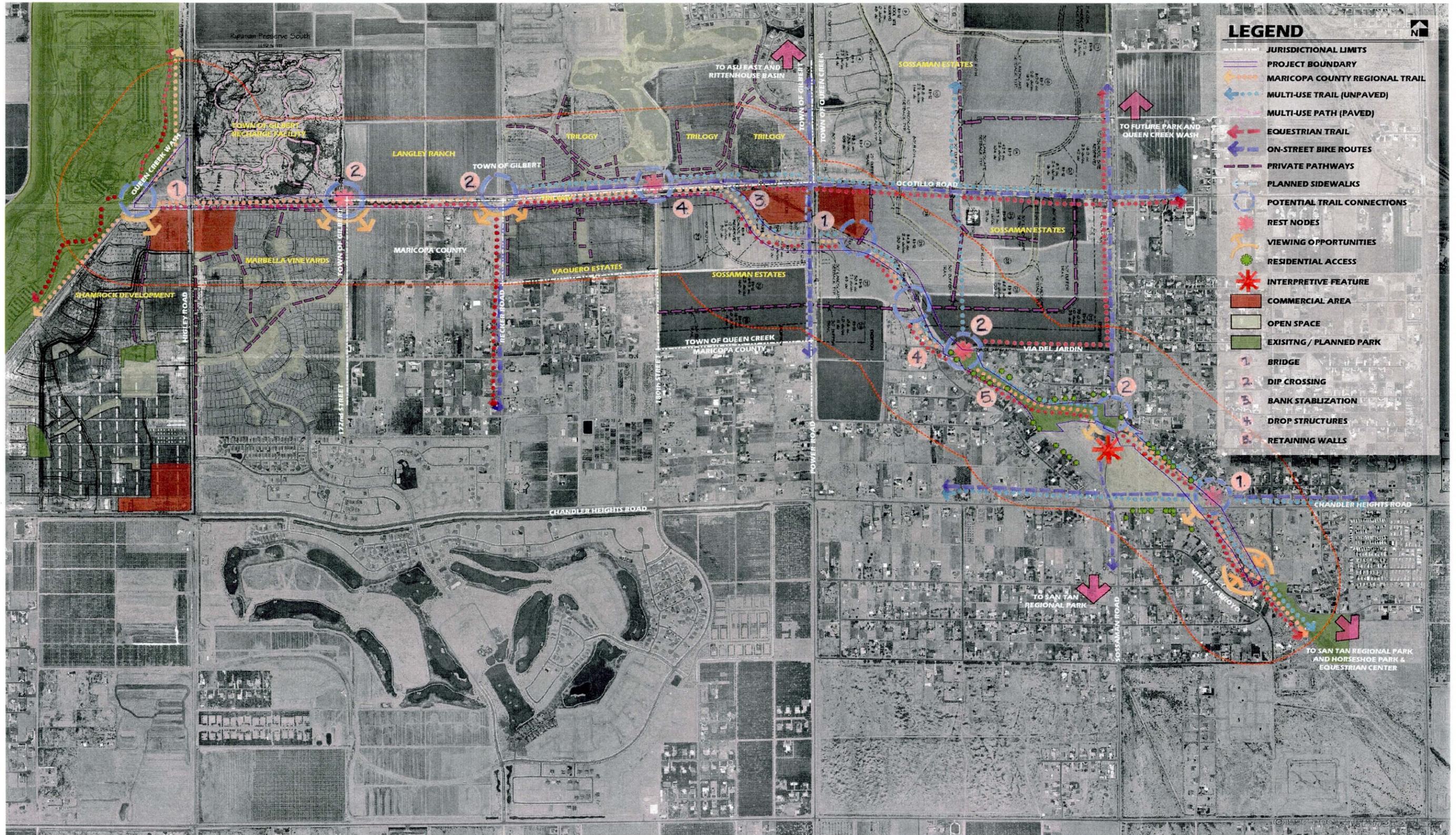


Figure 7. Multi-use/Aesthetic Improvement Opportunities

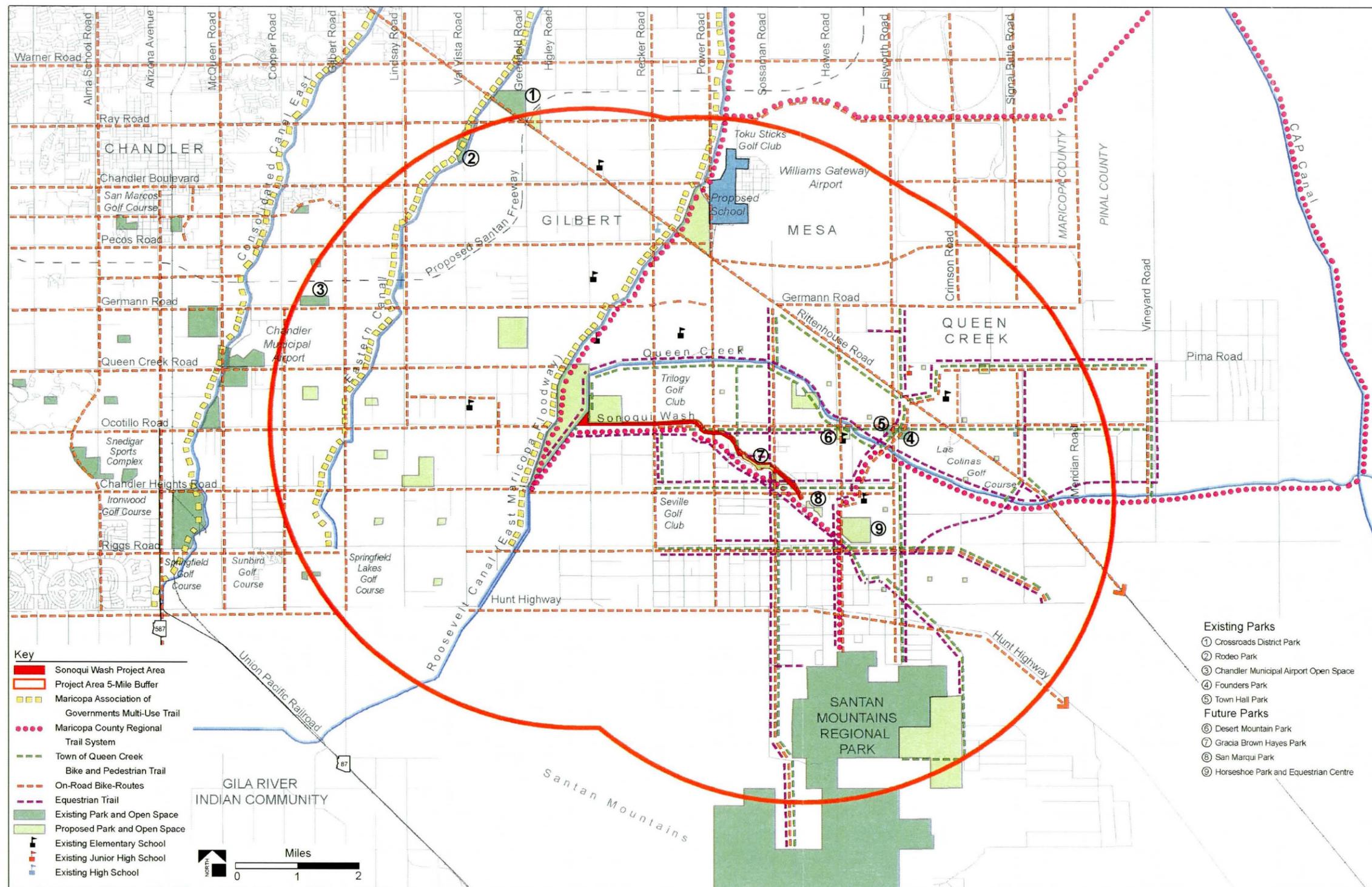


Figure 8. Multi-Use Regional Context

The *City of Mesa's 2025 General Plan* and *City of Chandler's General Plan, 2001*, identified on-road bike routes and park and recreation facilities within the regional context area.

EXISTING AND PLANNED PRIVATE DEVELOPMENT FACILITIES

- Existing residential development plans have identified equestrian trail, landscape, and/or utility easements within the project area. These easements may provide additional opportunities to provide access to Sonoqui Wash.
- Existing private residential access gates to Sonoqui Wash were identified in the field survey. The existing access points will be maintained where physically possible. A secondary trail to connect private access to the main path will minimize through traffic conflicts.
- Planned private development plans for Sossaman Estates, Sunridge Homes, Trilogy, Marbella Vineyards, and Shamrock have all identified multi-use paths, pathways, trails, sidewalks, landscape buffers, easements, and/or open space corridors adjacent to Sonoqui Wash and within the project area. This information assists in identifying key linkages and access to Sonoqui Wash from each respective development.

EXISTING AND PLANNED INFRASTRUCTURE OPPORTUNITIES

- Existing and planned infrastructure and infrastructure improvements-as discussed in the *Existing Infrastructure Analysis*-identified bike lanes, on-street bike routes, paved shoulders, sidewalks, and easements that may provide additional linkages and connections to Sonoqui Wash. Sossaman, Power, and Recker Roads are key linkages and connectors to Sonoqui Wash that provide a potential user volume at an arterial level. Sossaman Road also provides a direct multi-modal connection to the San Tan Mountain Regional Park.

CULTURAL AND ENVIRONMENTAL OPPORTUNITIES

- The Desert Wells Stage Stop provides an opportunity to develop an interpretive/rest node for Sonoqui Wash users.
- Unobstructed views and view corridors located at north-south roadway corridors provide an opportunity to develop scenic/rest nodes for Sonoqui Wash users when the adjacent land use becomes fully developed.

LAND USE OPPORTUNITIES

- Commercial land use identified in the *Existing and Planned Land Use/Ownership/Zoning Analysis*, provides natural “crossroad” connections for the multiple recreational paths and trails that cross at Higley and Power Roads as illustrated on *Figure 8, Multi-Use Regional Context*. These locations are key as potential trailheads and/or destination points for Sonoqui Wash corridor users, which would warrant two- to three-sided development to capture both roadway and Sonoqui Wash markets.
- Similar to the commercial lands listed above, the planned park facilities located at Hawes, Sossaman, and Higley Roads also provide natural “crossroad” connections for the multiple recreational paths and trails that cross at each respective location. Each of these park facilities also function as destination points at community and regional levels that would be compatible to providing a level of trailhead amenities that are not normally possible when private development is the adjacent land use.
- Open space land use identified in the *Existing Land Use/Ownership Analysis* and on *Figure 7, Multi-Use/Aesthetic Improvement Opportunities*, provides local and regional linkages between neighborhoods, communities, community nodes, and regional destinations. Sonoqui Wash provides a critical linkage and “collector” for the entire service area bounded by the physical barriers of the San Tan Mountains, EMF, and the Union Pacific Railroad.

AESTHETIC IMPROVEMENT OPPORTUNITIES

The following existing and planned aesthetic improvement elements were identified within and/or immediately adjacent to the project area.

- Viewing Opportunities
- Flood Control Features
- Infrastructure Facilities
- Grading and Channel Aesthetic Opportunities

Viewing Opportunities

- Viewing opportunities at high points and view corridors will be integrated into the overall project aesthetic and combined with trail rest nodes, trailheads, and/or destination points where possible. Viewing opportunities will also take into consideration the adjacent land use/owners.

Flood Control Features

- Dip crossings at Sossaman and Recker Roads, Via Del Jardin, and 172nd Street will be integrated into the actual roadway structure itself, or be developed in a manner upstream or downstream from the actual road crossing to create a natural wash feature with interest.
- Drop structures, potentially located between Via Del Jardin and 180th Street, to make up the vertical grade change within the wash corridor may be developed in a manner that provides natural wash features at several locations (independently or sequentially). Some may be in conjunction with roadway crossings or bridge structures.
- Retaining walls located at the most constrained areas within the wash corridor, potentially within the Rancho del Jardin area, will potentially be developed to meet flood control capacity clearances and to provide a terrace to maintain the ability to access the existing private residential gates. The retaining walls may be developed to reflect the natural character of the wash embankments or integrate the overall architectural aesthetic for the channel.

Architectural styles, materials, or colors of the Rancho Del Jardin character may provide the basis for the architectural features in this reach of the wash corridor, in order to maintain the continuity of the rustic “ranch” theme reflective of the existing development.

- Bank stabilization may be required at locations where the channel alignment makes abrupt turns to minimize cutting and erosion of the channel. The type of stabilization will reflect the natural wash character indicative of the specific types and colors of materials found in this area of the native Sonora Desert. Since Sonoqui Wash is predominantly a sandy loam wash with minimal naturally occurring rock and boulder material, techniques to maintain a natural looking embankment that blends with the adjacent embankment material would provide continuity and visual intactness throughout the wash corridor. Bank stabilization will strive to provide the color, form, and texture of materials that is consistent with the overall project aesthetic of a natural Sonoran wash corridor.

Infrastructure Facilities

- Potential bridge locations at Chandler Heights, Power, and Higley Roads may be developed to provide a consistent aesthetic throughout the wash corridor. The bridge form, structure, and abutments create the largest architectural feature the Sonoqui Wash users will interact with. While they are utilitarian in nature, they also provide the opportunity to develop shaded rest areas and areas of interest if aesthetics and/or educational elements are integrated into the design.
- Suggested theming for these types of facilities would reflect the color, materials, and textures of the native Sonoran Desert as well as incorporate the rural, agricultural character of the immediate area’s architecture. Architectural elements may also incorporate materials and/or details from the facilities within the Queen Creek Wash corridor improvements to provide a visual cue or linkage between the two main open space corridors within the community.
- Neutral or earth tone colors are indicative of the native Sonoran Desert inert materials as well as the rustic, rural character of the adjacent ranch developments and could be integrated into the wash corridor aesthetics by choice of materials.

- The bridge structure will need to provide vertical and horizontal clearances to address all types of path users, as well as provide a safe, user-friendly environment.

Grading and Landscape Aesthetic Opportunities

- The contouring of the channel bottom, sides, and top will be developed in a manner to soften the harsh lines and monotony of the channel's linear form. The varying of slopes and additional landforms at the top, where possible, will serve to integrate adjacent buffer and open space areas.
- Landscape character will be developed to provide an overall continuity within the corridor while utilizing types of plant materials and densities that emphasize the distinct use areas and functions within and adjacent to the channel. Developing slightly different types of character zones at rest nodes, path connections, physically constrained areas, destination points, etc. will provide a variety of interest for Sonoqui Wash users as they move through the corridor.
- The canopies of specific tree types; seasonal interest of specific shrubs and perennials; scale and type of land forms; and the colors, textures, and materials of architectural elements that reflect the native Sonoran Desert and the rural character of the adjacent area will provide the overall visual unity of the wash corridor.
- Adjacent developments may provide the opportunity for convenient entry points and resting or meeting places for wash corridor users. Aesthetic integration and compatibility with the adjacent developments will also be key to providing consistency in the overall aesthetic and character of the wash corridor.

Figures 9 through 18 were prepared to illustrate the various grading and channel aesthetic concepts. These concepts were presented to the PAAC then to the community at a public meeting.

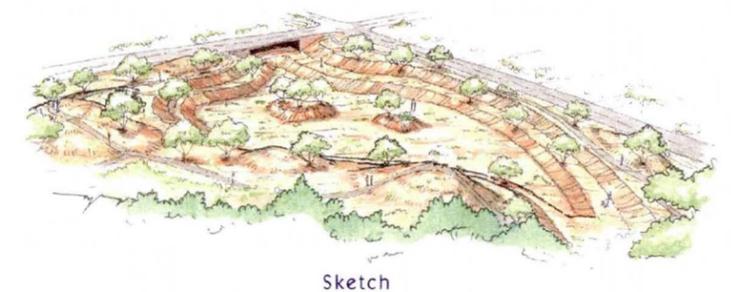
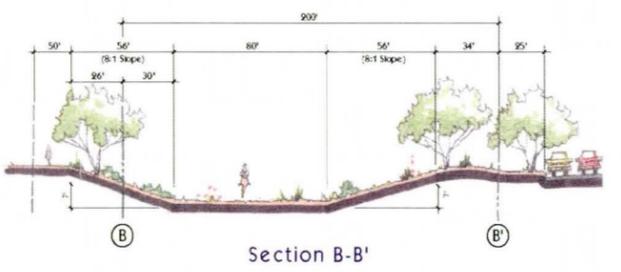
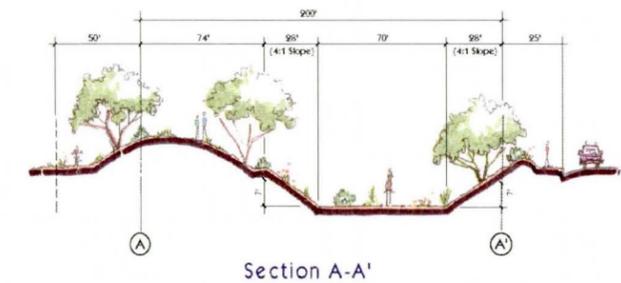
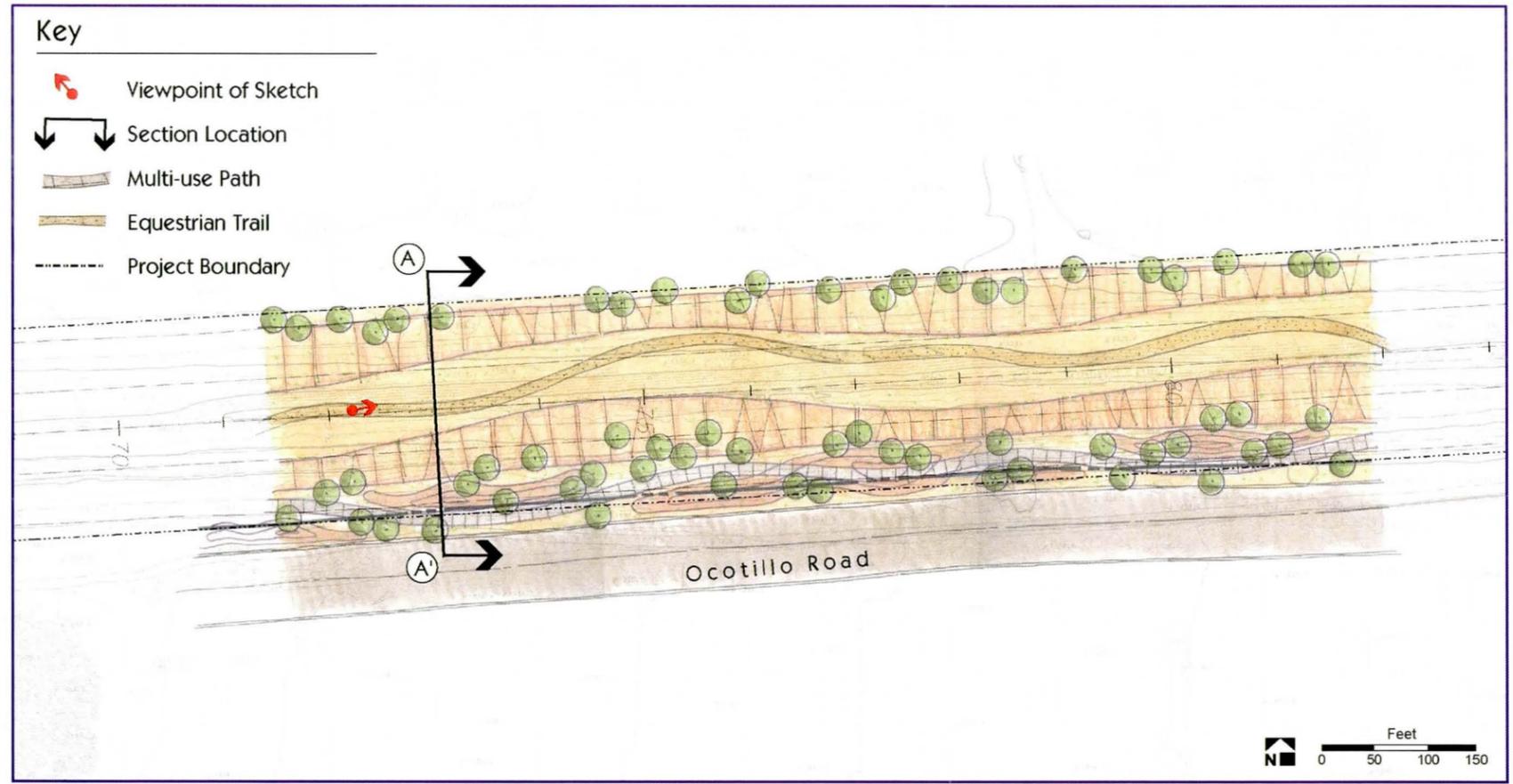


Figure 9. Reach 1 – 4:1 to 8:1 Side Slopes and Sediment Basin Aesthetic Concept



Sketch

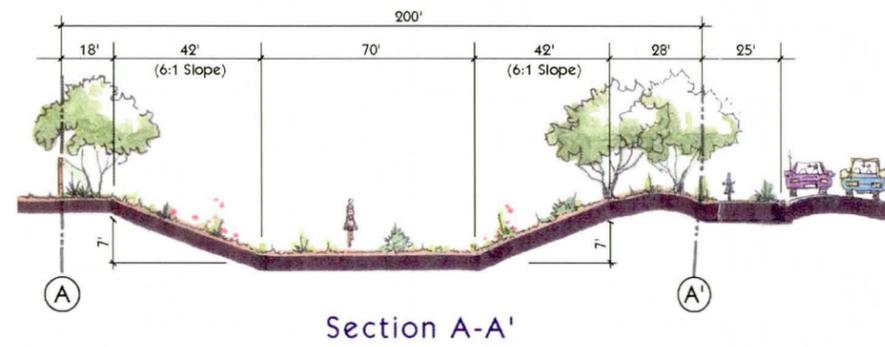


Figure 10. Reach 2 – 4:1 to 8:1 Side Slopes Aesthetic Concept

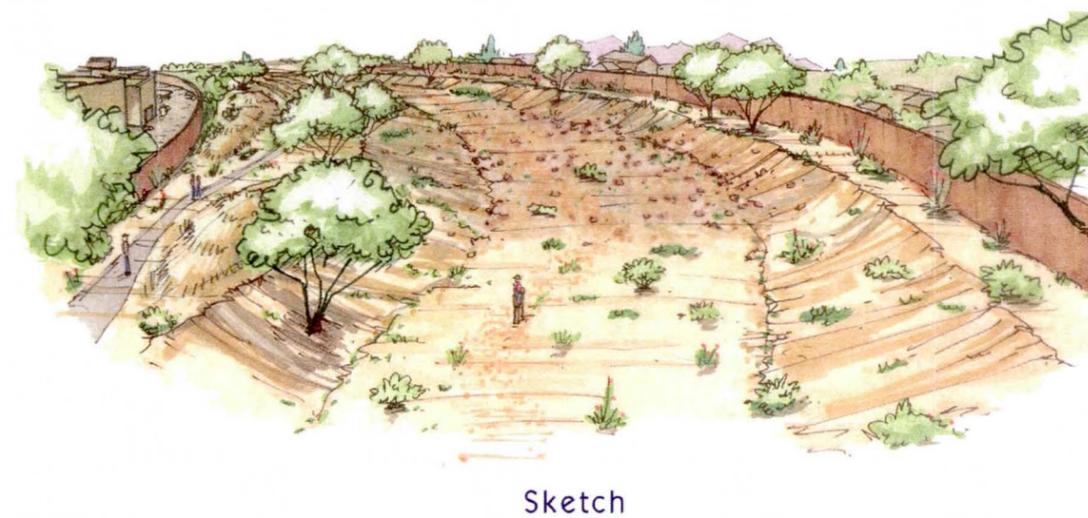
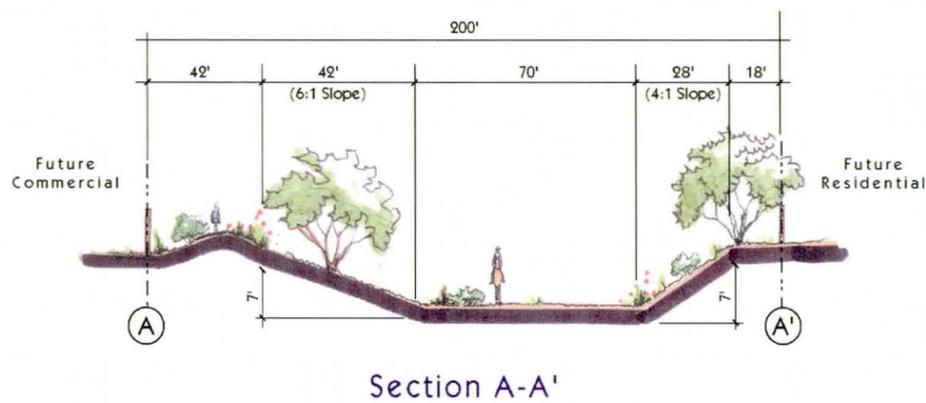
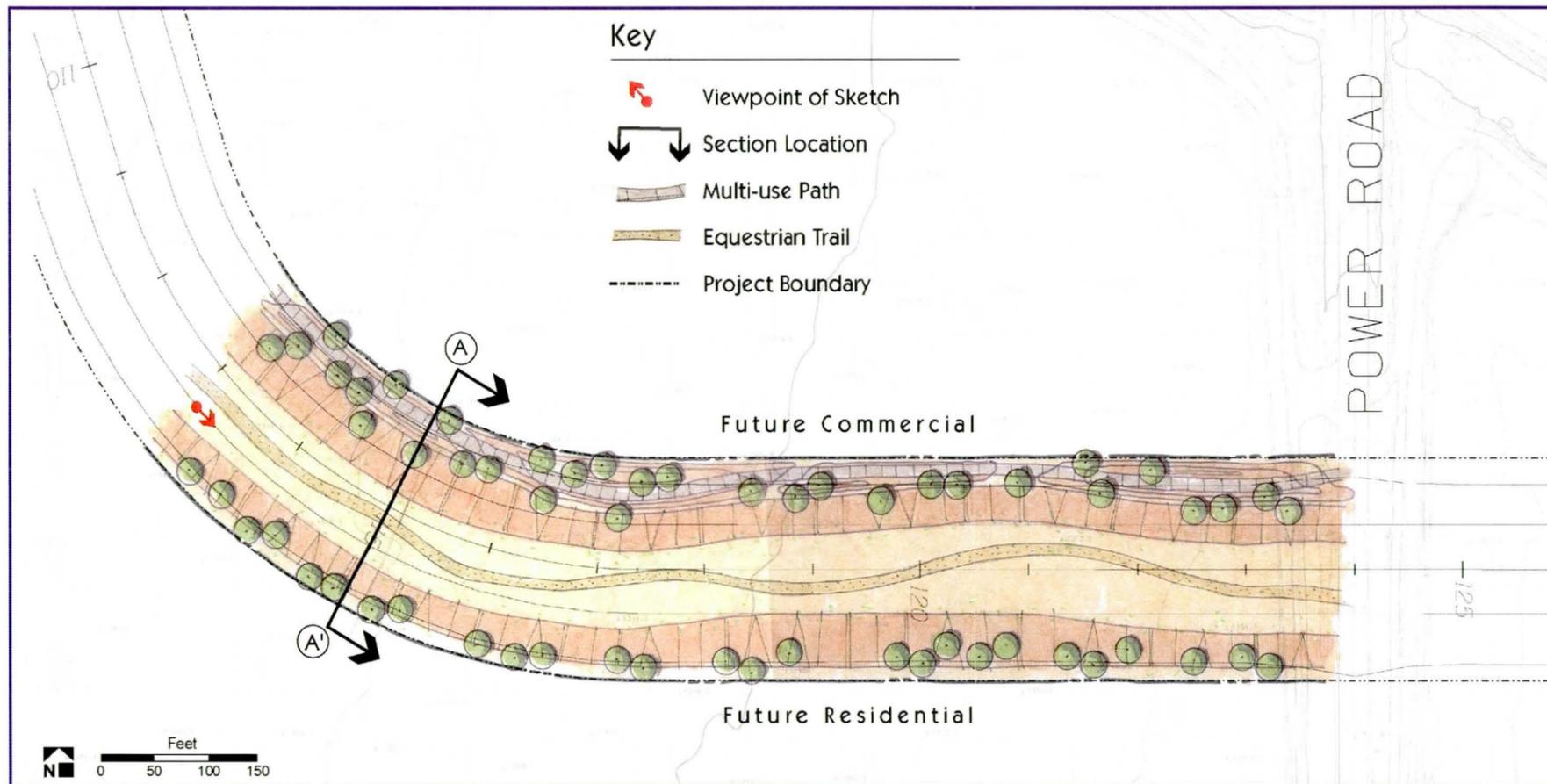
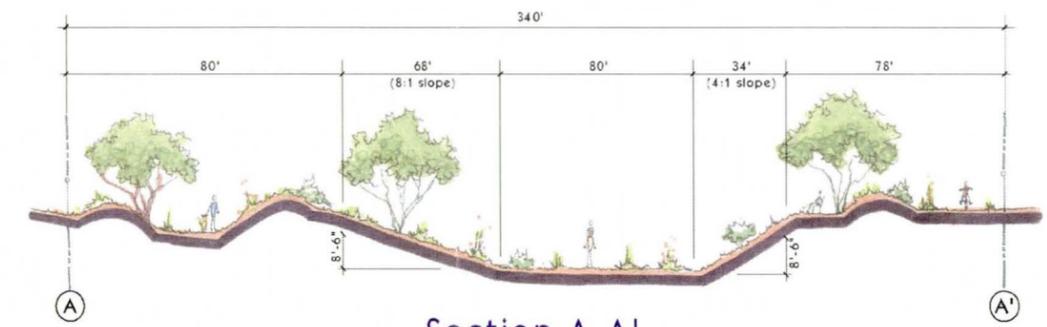
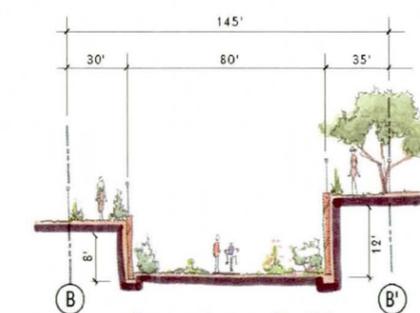


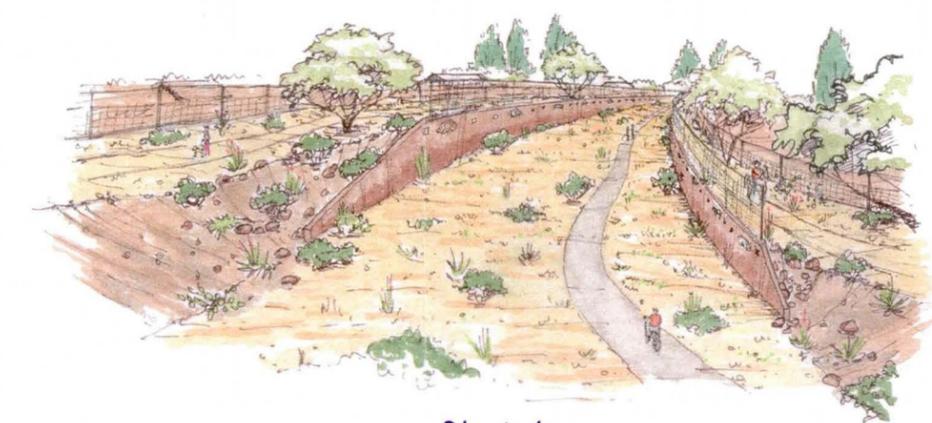
Figure 11. Reach 3 – 4:1 to 6:1 Side Slopes Aesthetic Concept



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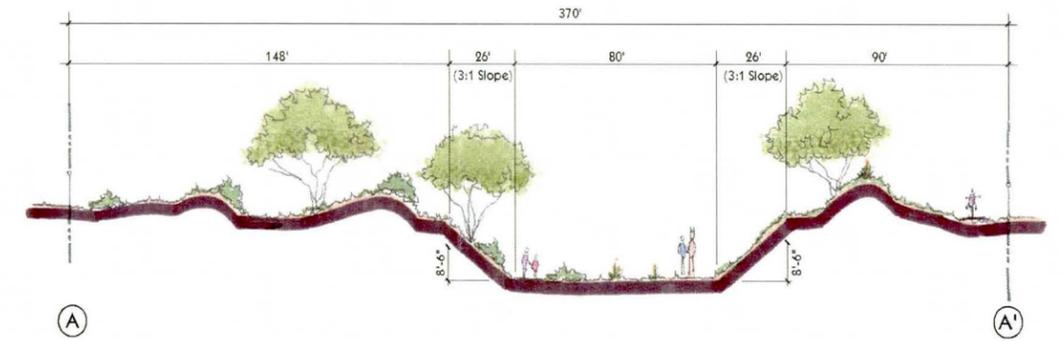


Section B-B'

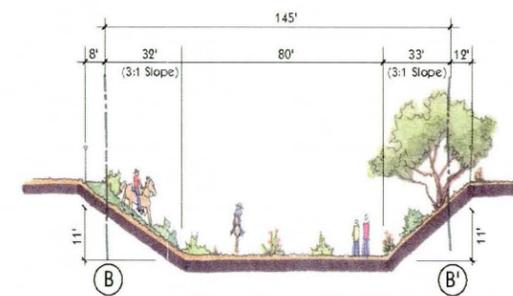


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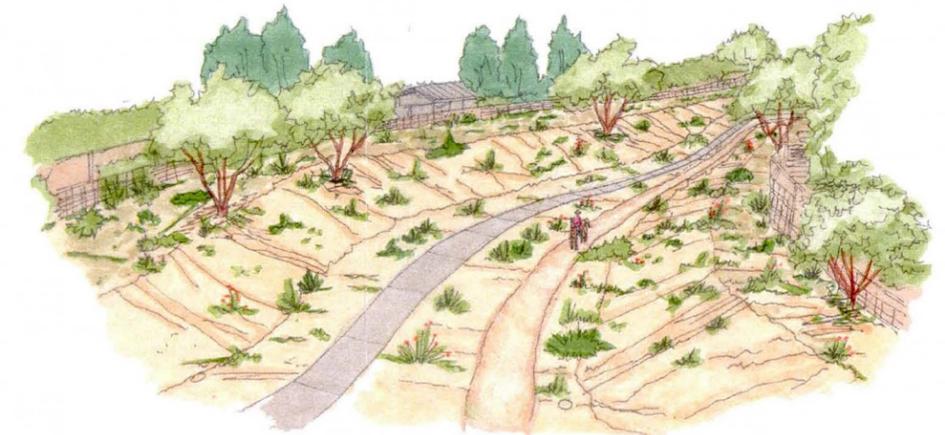
Figure 13. Reach 4 Concept B – 4:1 to 8:1 Side Slopes with Wall Option Aesthetic Concept



Section A-A'

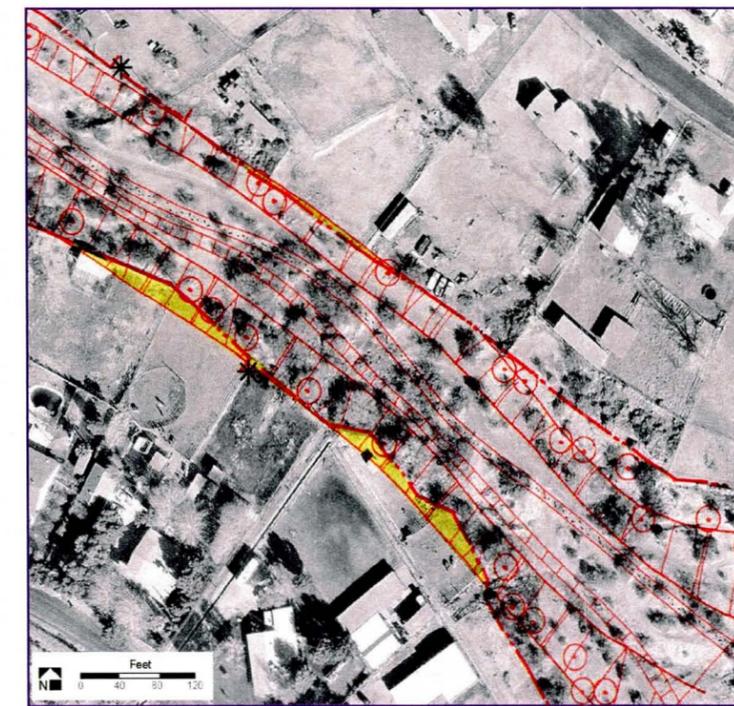
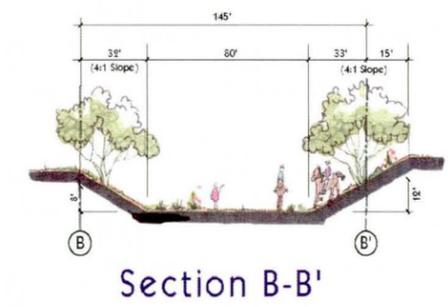
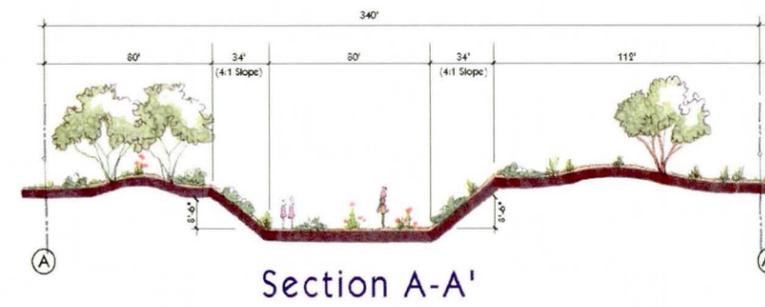
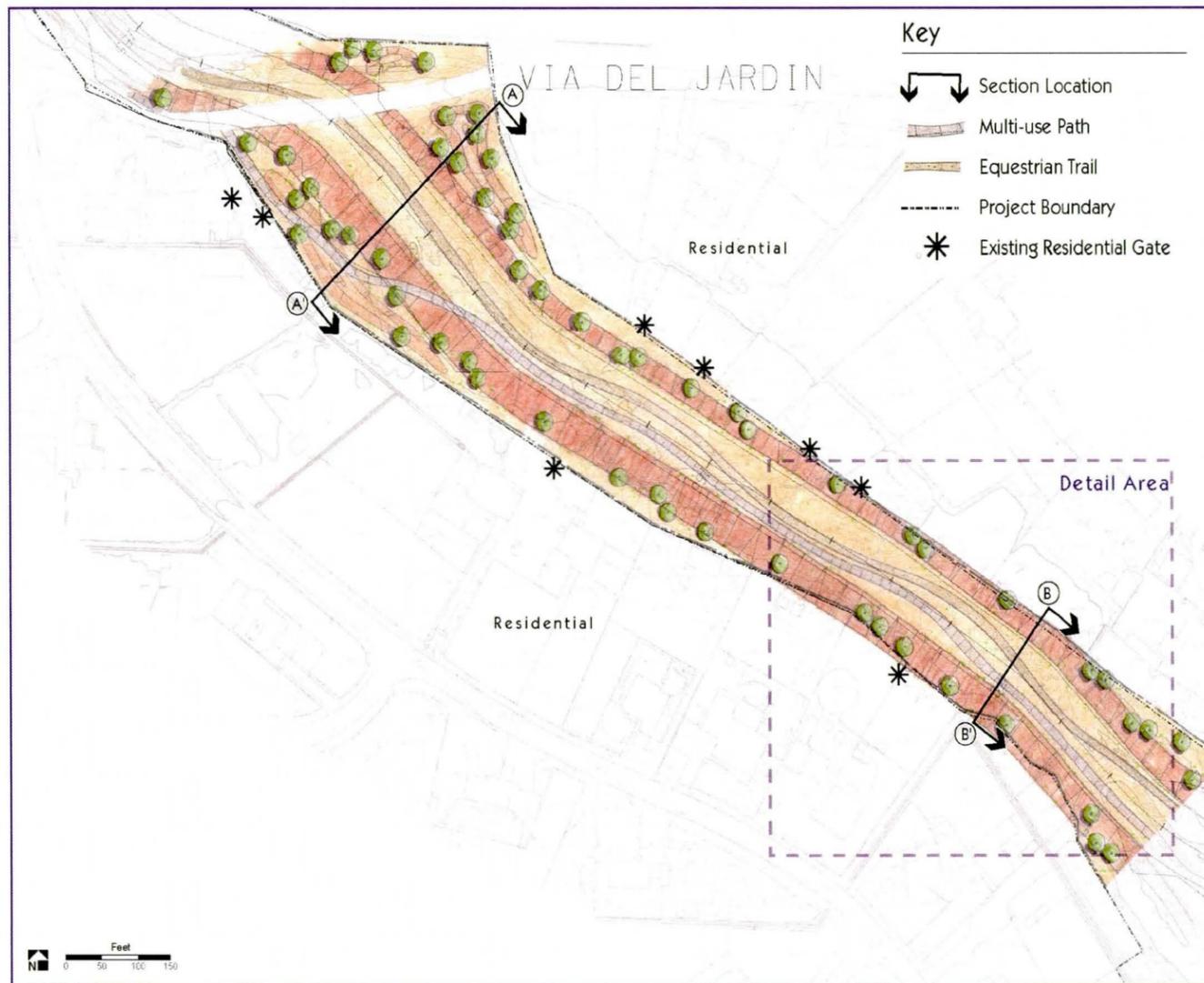


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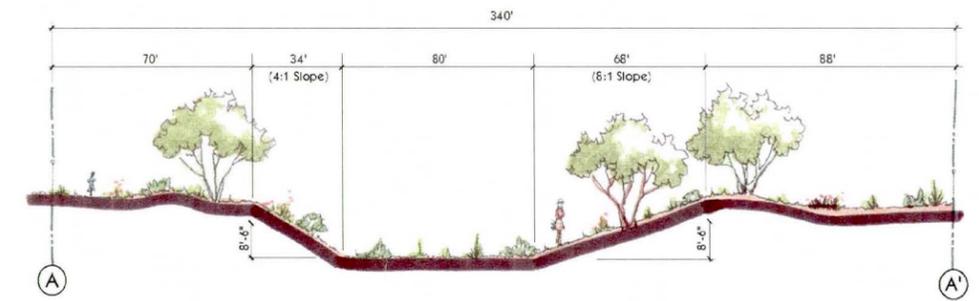
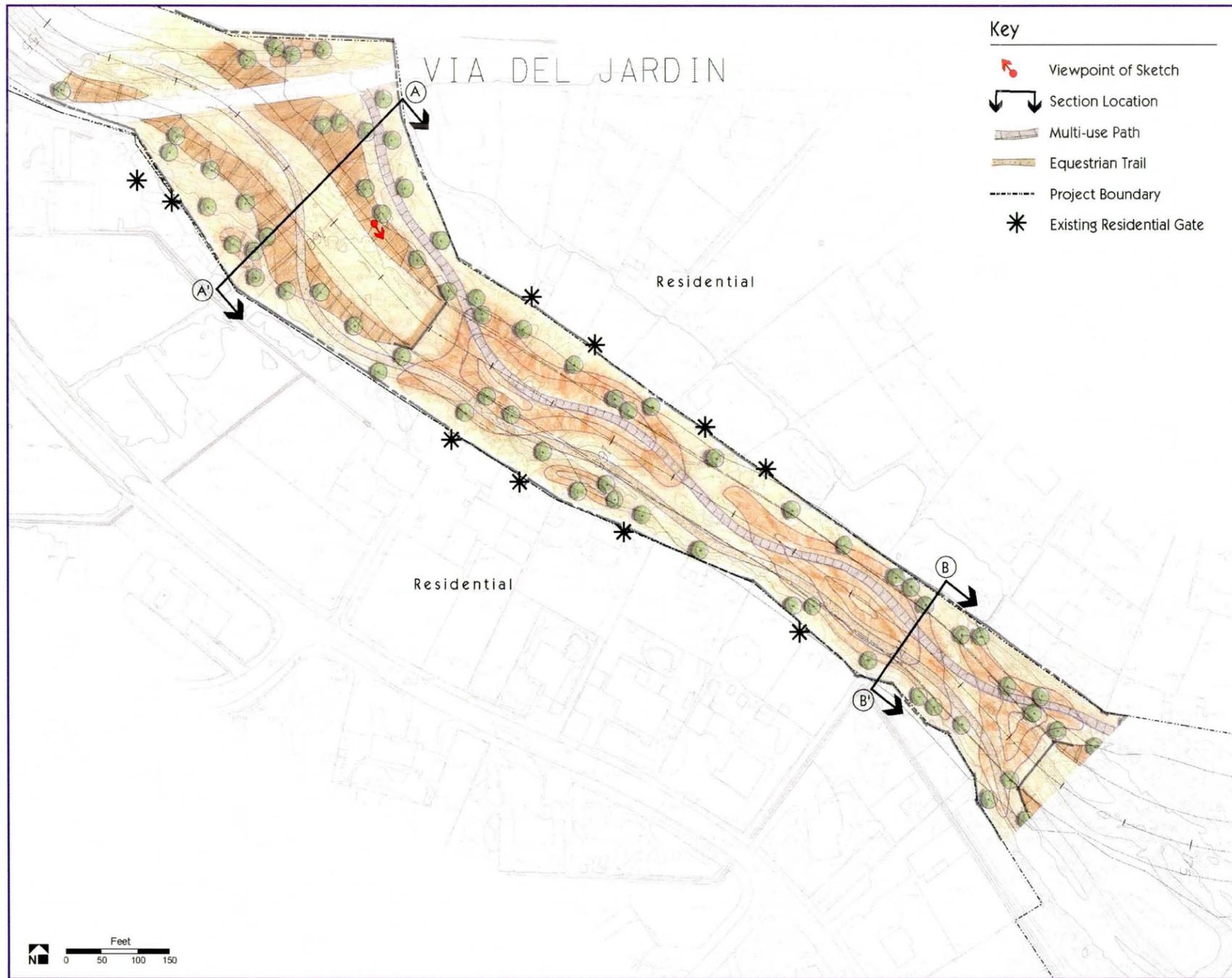
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Figure 14. Reach 4 Concept C – 3:1 Side Slopes Aesthetic Concept

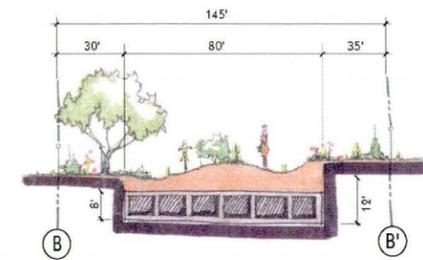


Detail Area

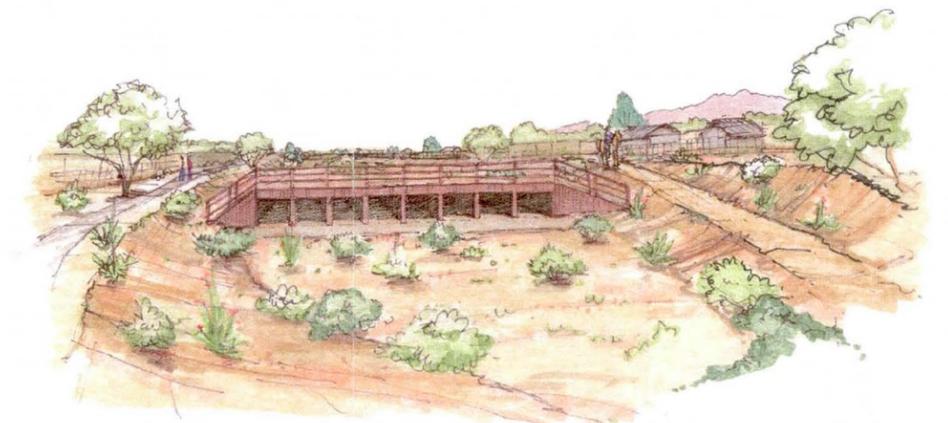
Figure 15. Reach 4 Concept D – 4:1 Side Slopes Aesthetic Concept



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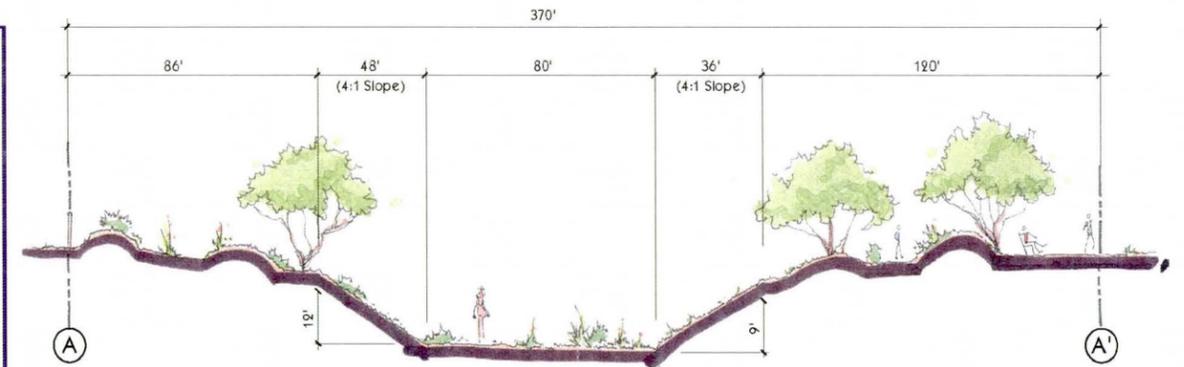
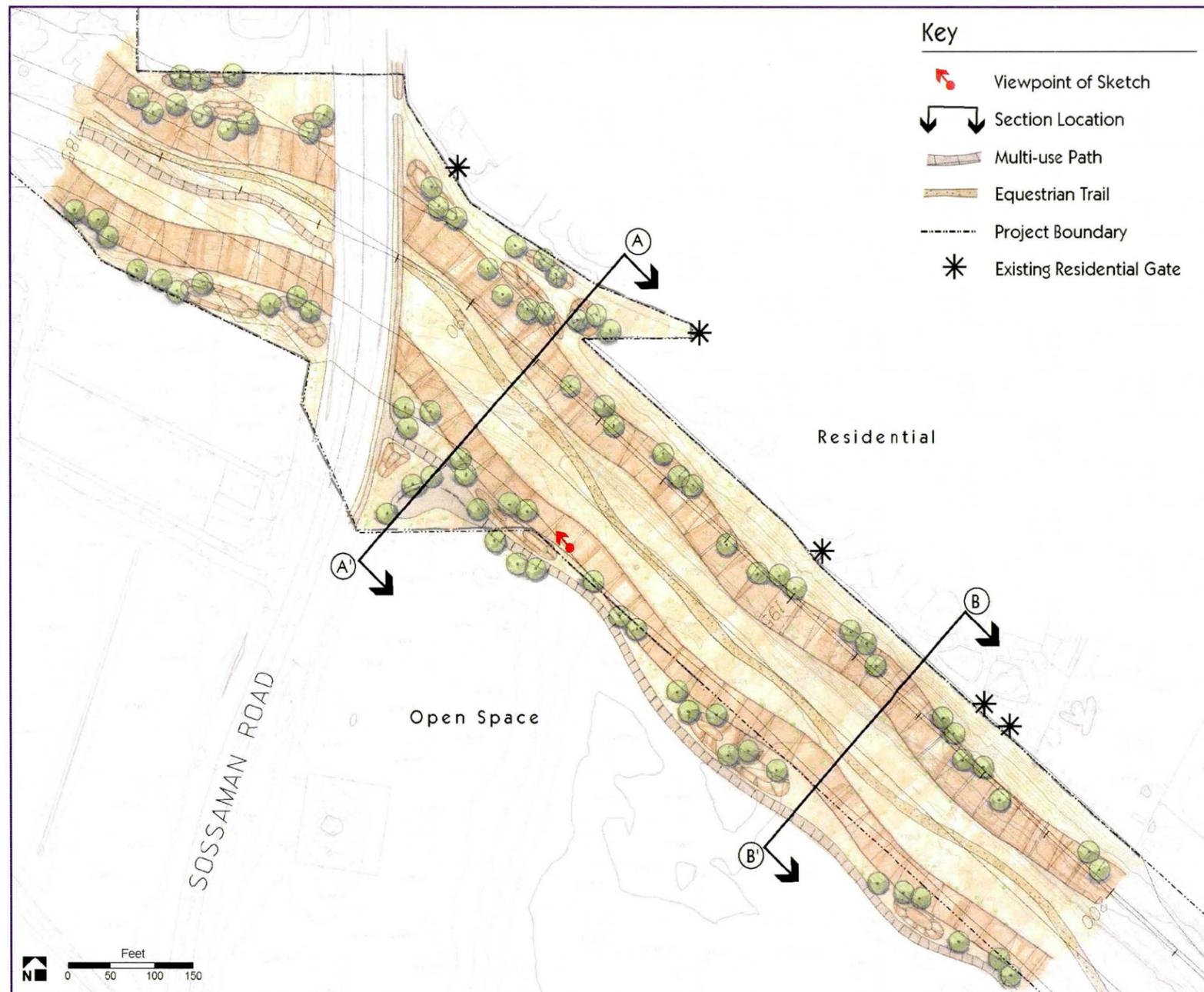


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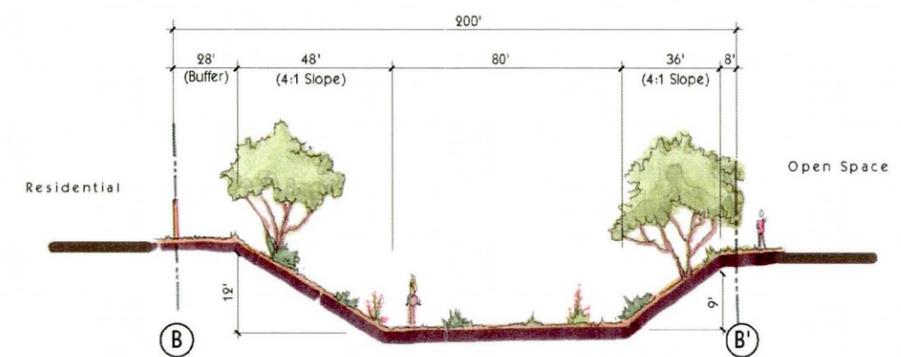


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Figure 16. Reach 4 Concept E – Culvert Option Aesthetic Concept



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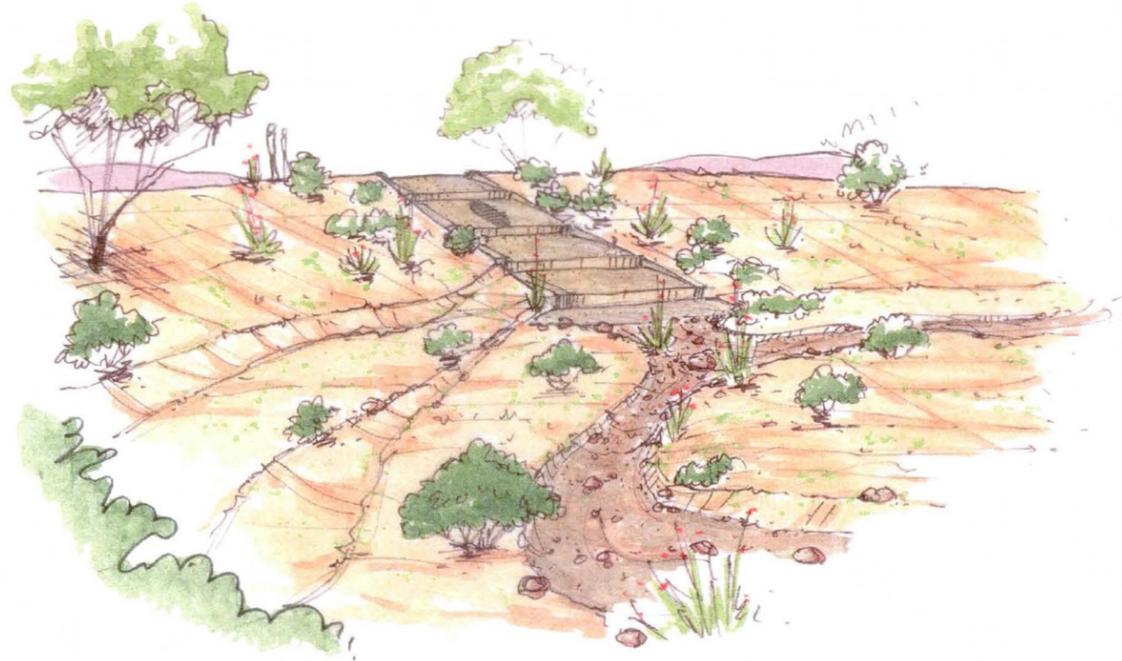


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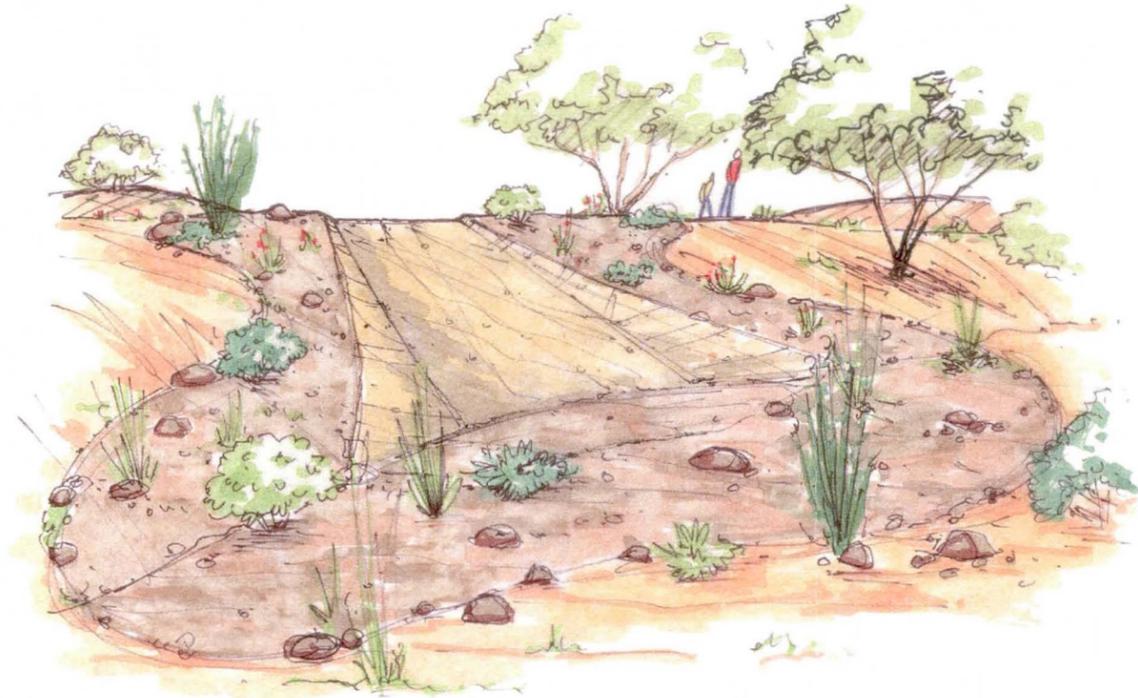


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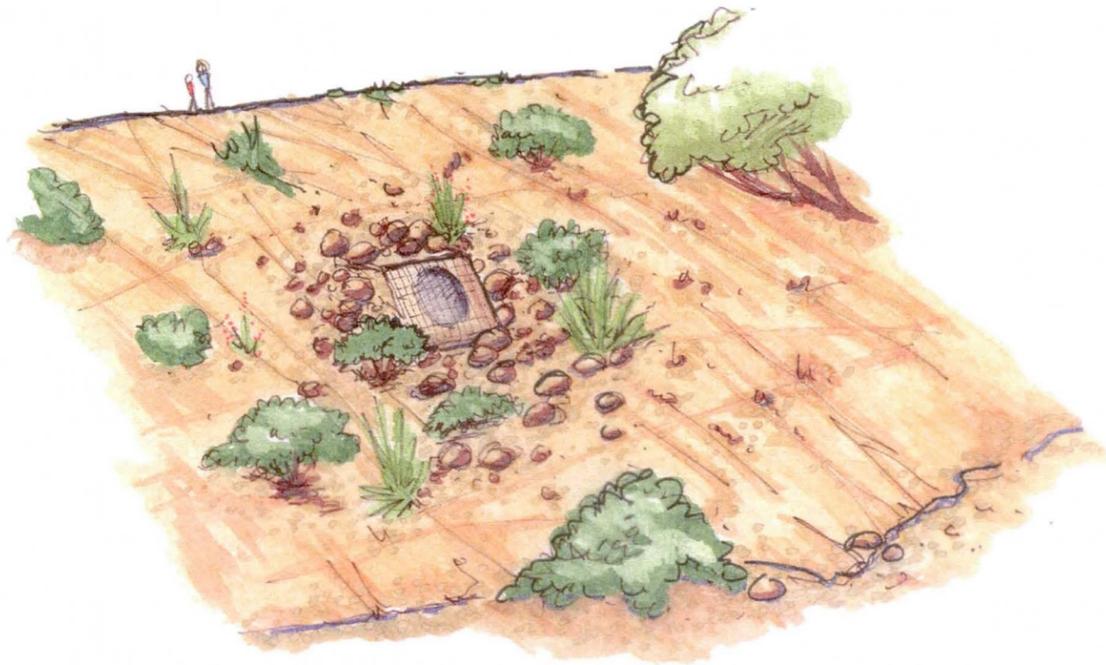
Figure 17. Reach 5 – 4:1 Side Slopes with 20'-30' Residential Buffer Aesthetic Concept



Surface Drainage Inlet #1



Surface Drainage Inlet #2



Pipe Drainage Inlet #1



Pipe Drainage Inlet #2

Figure 18. Side Drainage Inlet Aesthetic Treatment Concepts