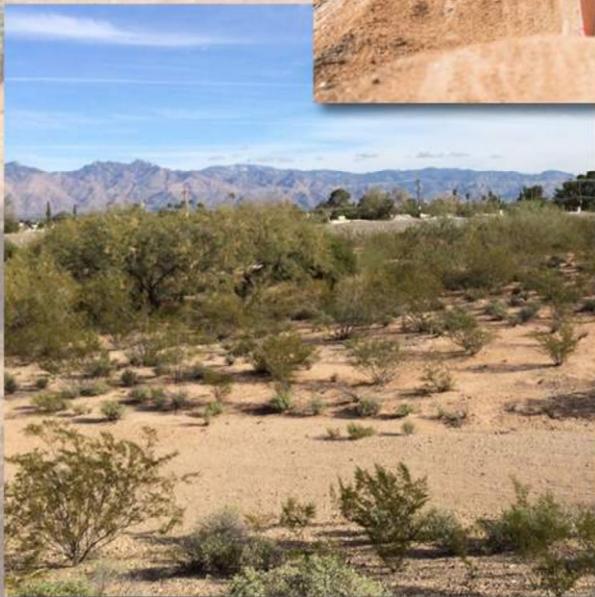


City of Tucson - Parks and Recreation Department

100 Acre Wood Community Bicycle Park Master Plan

MAY 2018



Prepared by
McGann & Associates
Landscape Architects

Acknowledgements:

This project would not have been possible without the financial support of the following local medical facilities: Banner/University Medical Center, Carondelet Medical Group, and Tucson Medical Center. Their donations have provided the funding necessary to produce the 100 Acre Wood Community Bicycle Park Master Plan.



**Banner
University Medical Center**



Carondelet. Be well.
Carondelet Health Network



This project also would not have been possible without the hard work, collaboration, and determination of the following agencies and organizations: Davis Monthan Air Force Base, United States Air Force, City of Tucson, City of Tucson Parks and Recreation, Pima County Natural Resources, Parks, and Recreation, Sonoran Desert Mountain Bicyclists, International Mountain Bicycling Association, and McGann & Associates Landscape Architects and Planners.



U.S. AIR FORCE



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Introduction:

In recent years interest and participation in all types of recreational cycling has increased dramatically throughout the United States. With favorable year-round weather, this trend has manifested itself in Tucson and southern Arizona with a large percentage of the population participating in some form of cycling. Additionally, local jurisdictions and private entities are hosting nationally recognized events for both road and off-road cyclists.

The City of Tucson has been a leader in recognizing and addressing the needs of cyclists using City streets for both recreation and commuting and has been granted a Gold Award as a bicycle friendly community by the League of American Bicyclists. Pima County and the City have also collaborated on the development of an extensive system of shared-use paths. The County has on-going programs to develop trails for off-road cyclists within its mountain park and preserve system.

While these efforts have resulted in Tucson and Pima County being given national recognition as a great community for cycling, a need that has gone unaddressed is the need for bicycle parks. Bicycle parks are urban parks that provide safe but challenging trails and features for users of all ages and skill levels. They are typically located within or near residential areas where they are accessible to local users. The development of the 100 Acre Wood Community Bicycle Park is an opportunity to address this need.

Project Location:

The 100 Acre Wood Community Bicycle Park site is located in Tucson near the entrance to Davis-Monthan Air Force Base. The site is bounded on the west by Alvernon Way, on the south by Golf Links Road, on the east by Swan Road, and on the north by the Roberts Neighborhood. (See Figures 1-A and 1-B). Access to the site is from Golf Links Road.

The (+/-) 100 acre site was formerly a part of the Davis-Monthan Air Force Base. The construction of Golf Links Road near the northern boundary of the base resulted in an isolated parcel that was not readily accessible from the remainder of the base and that was not longer needed to support the base's mission.

Purpose and Need:

This Master Plan is intended to serve as a guide for the phased development of the 100 Acre Wood Community Bike Park. The adoption of this plan by the City of Tucson Mayor and Council will enable funds to be allocated for the detailed design, engineering, construction, and operation of the park. It will also allow the Parks Department to pursue grants from outside agencies to assist in this effort.

Project History:

The history of the 100 Acre Wood Community Bicycle Park goes back 20 years, when Pima County Natural Resource Parks and Recreation Planning Division Manager, Steve Anderson, and others began developing long-range plans for bicycle facilities within the City of Tucson. Included in these plans were specialized bicycle parks that would address the needs and interest of cyclists of all ages and abilities.

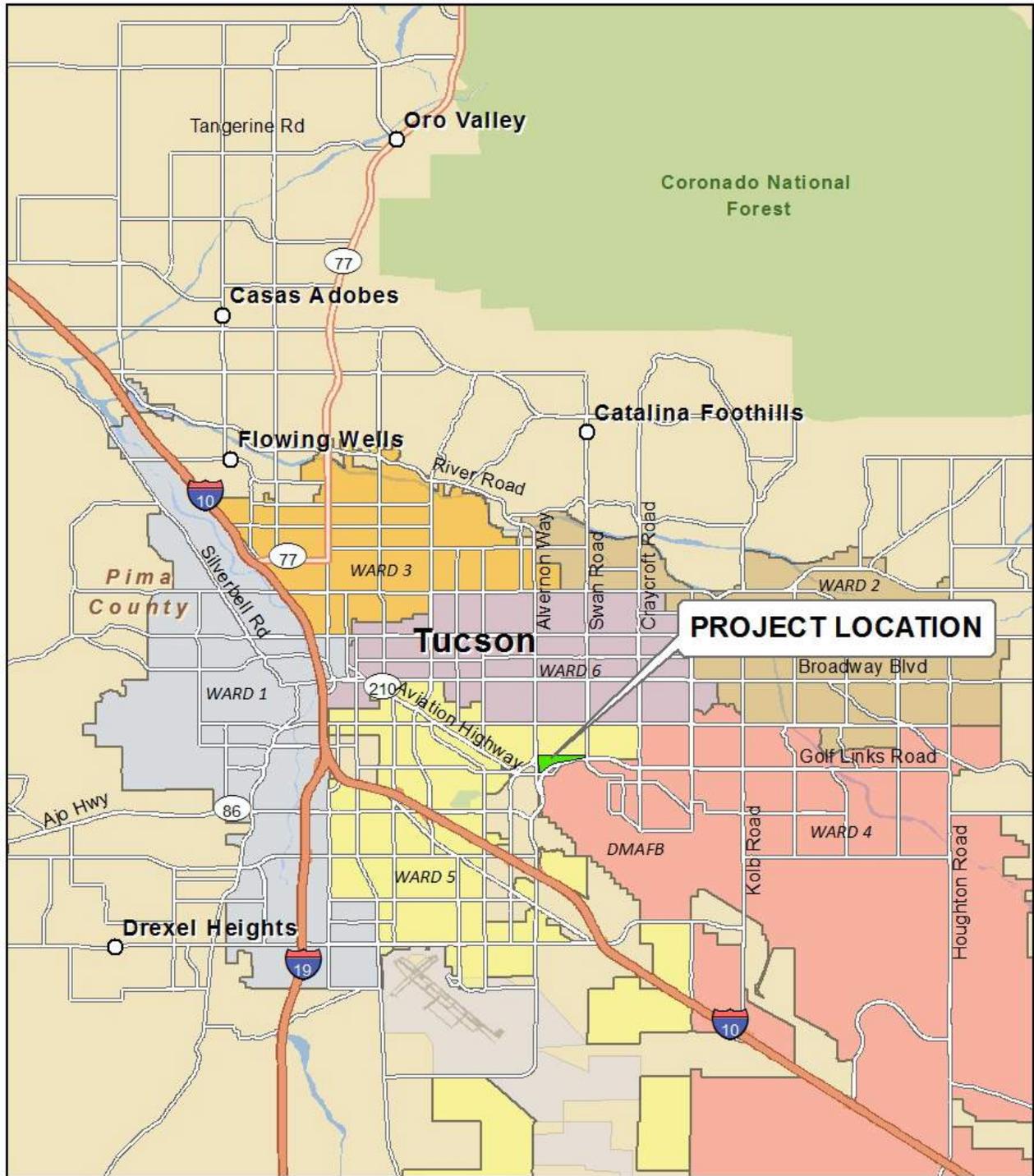


Figure 1-A – Location Map

1. Introduction

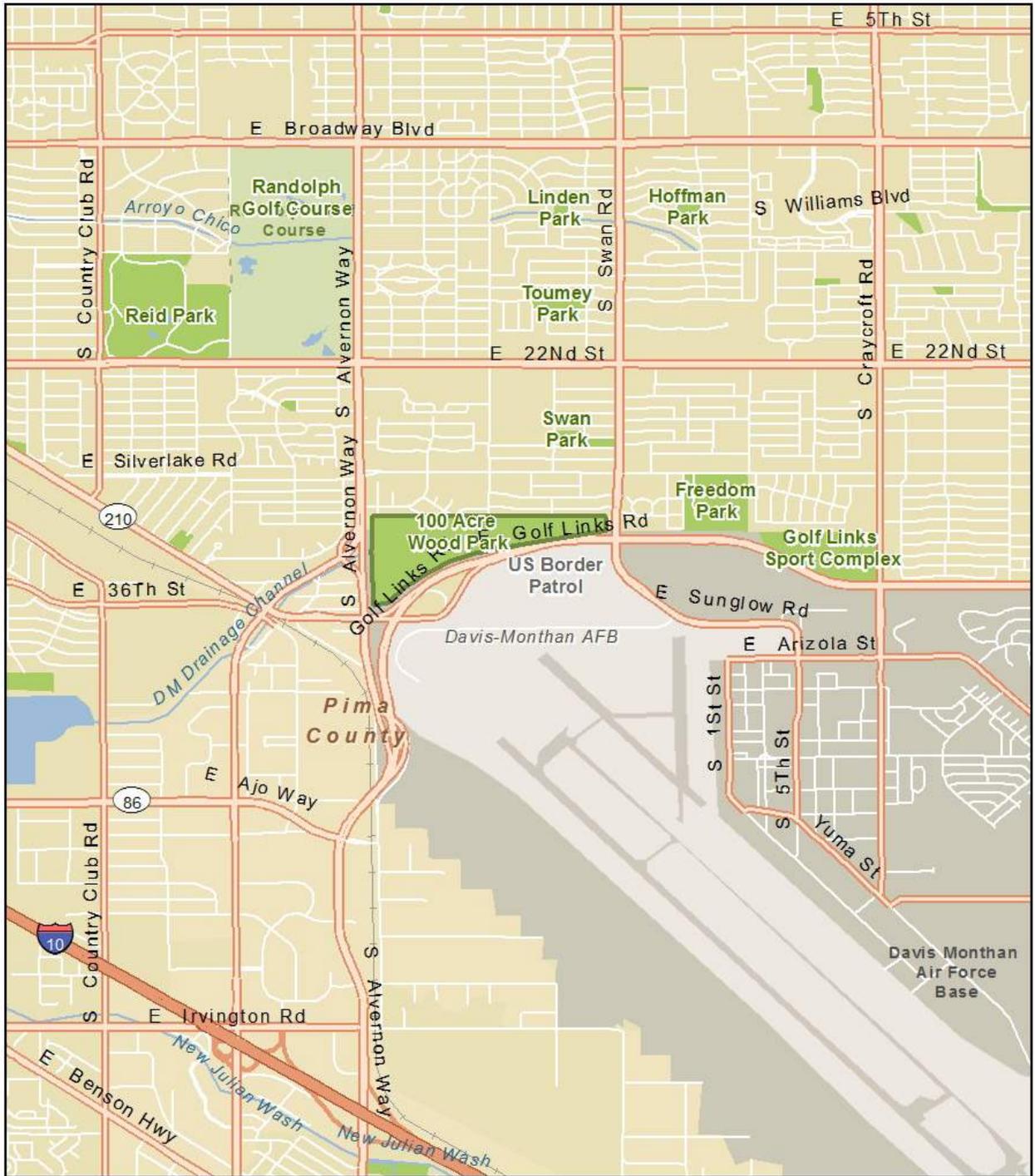


Figure 1-B: Vicinity Map

Approximately 18 years ago, Anderson and Glenn Hicks, a Project Manager and Trails Planner with the City of Tucson Parks and Recreation Department, started investigating the subject parcel as a potential park site noting that the site was vacant and that there were no plans to develop the site for other purposes. They also noted that the parcel could be accessed by an existing multi-use path that was constructed during the Golf Links Road extension and by an existing pathway north of the site that had been constructed on top of the Tucson Diversion Channel levee.

The concept of a bicycle park on the 100 Acre Wood site was incorporated into several planning documents but without funding for master planning, design, and construction it remained just an idea. This changed in 2014 when the City of Tucson Parks and Recreation Department (with the support of Mayor Jonathan Rothschild, the United States Air Force, and the Pima County Natural Resources, Parks and Recreation Department) began the master planning process. Local healthcare organizations contributed significantly to the effort with monetary grants that enabled the initiation of the planning and development effort. Grants were received from Banner/University of Arizona Medical Center, Carondelet Health Network, and Tucson Medical Center.

The Parks Department contracted with McGann & Associates to lead the planning effort and empanelled an Advisory Committee with representatives of both national and local bicycle organizations. The master plan that is presented herein reflects the technical expertise and vision of the agencies, organizations, firms, and individuals who participated in this effort.

Contributions by Davis-Monthan Air Force Base:

The United States Air Force and the Planning Department at Davis-Monthan Air Force Base were key partners in the development of this master plan. Lead by senior planner Sherrie McNamara, base personnel recognized the community benefits of the project and coordinated the effort required to get a lease drafted and approved so that the park can be constructed.

Site Location:

The subject parcel of land consists of portions of the south half of Section 22 and portions of the north half of Section 27 in Township 14 South, Range 14 East, Gila and Salt River Meridian, Arizona and contains approximately 100 acres. (See Figure 2-A)

Ownership and Lease Agreement:

The park site is owned by the United States of America and is managed by the United States Air Force. A lease agreement between the United States Air Force and the City of Tucson has allowed the City to develop, operate, and maintain the proposed community bicycle park.

Existing Easements:

Easements have been granted for the use of the site for flood control and utility system installation. These easements have been granted to the Pima Regional Flood Control District, Tucson Water, Pima County Regional Wastewater Management, and the Southwest Gas Corporation. The proposed park improvements have been designed to allow for the on-going operation and maintenance of the existing improvements associated with these easements. (See Figure 2-A)

Existing Utilities:

Existing utilities servicing or passing through the site include a 15" sanitary sewer line that extends along an east-west alignment near the southwest portion of the site. Paralleling this sewer line is a natural gas transmission line.

A potable water transmission line extends along the southern boundary in the western half of the site. Near the center of the site, this water line turns north and extends north along the alignment of South Columbus Boulevard. The Southwest Gas Corporation is the registered owner of an existing well, but this well is not currently in service.

There are no electric power lines on the project site but an overhead power line owned by Tucson Electric Power parallels the northern boundary of the site. Reclaimed water distribution mains have been constructed in the vicinity of the site but the closest reclaimed water main is approximately 1,000 feet north of the site in the Columbus Boulevard right-of-way.

Site Hydrology and Drainage:

The project site drains to the north to the Tucson Diversion Channel that conveys stormwater flows to the west as part of a regional stormwater management system. The construction of this channel was authorized in 1948 by the U.S. Congress to divert upstream watershed to the Santa Cruz River. A levee constructed on the north bank of the diversion channel prevents stormwater from draining north into the Roberts Neighborhood.

2. Existing Site Conditions

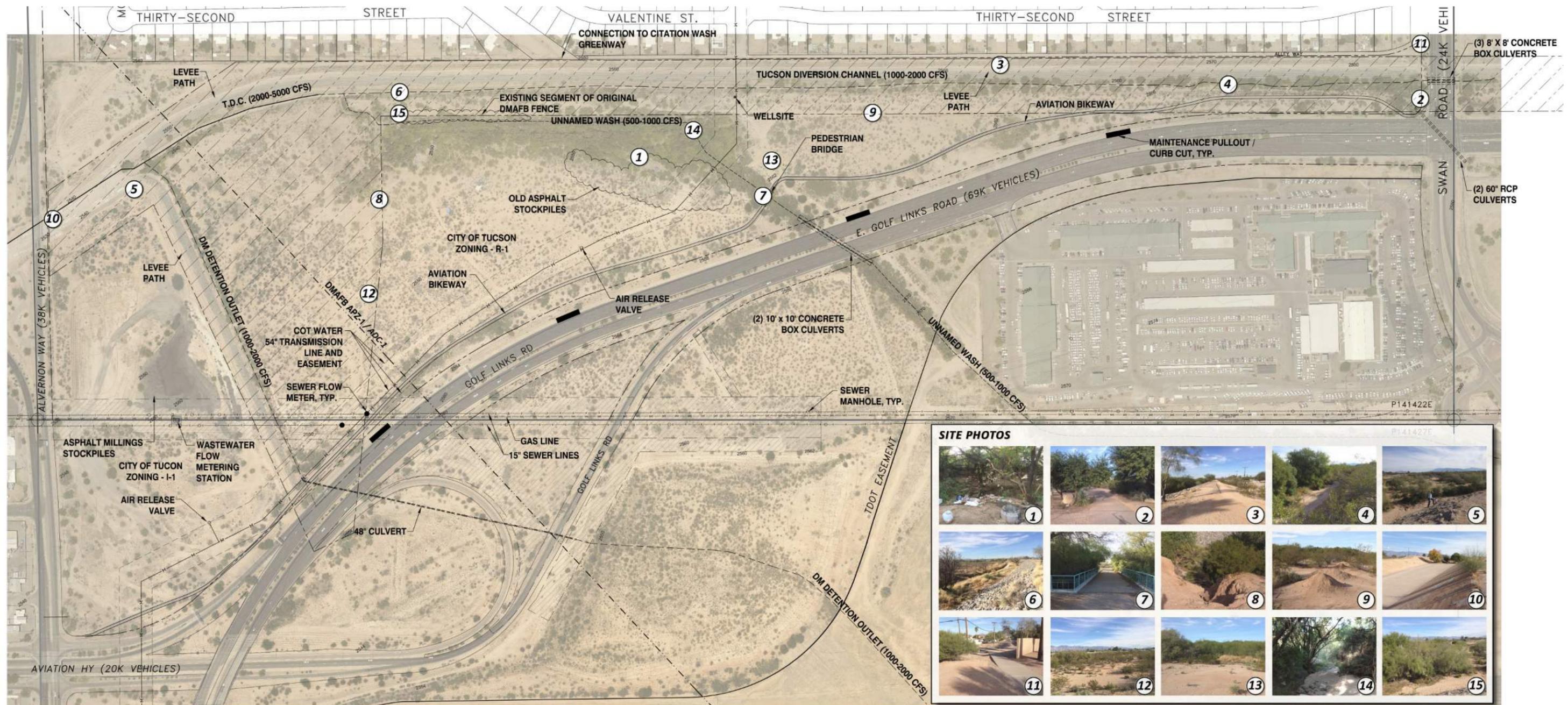


Figure 2-A: Existing Site Features

2. Existing Site Conditions

The site also receives water from Davis-Monthan Air Force Base. These flows are conveyed in culverts under Golf Links Road and then in an open channel bisecting the property. A second levee has been constructed near the western boundary of the site. This levee directs water from the Air Force Base to the Tucson Diversion Channel near the northwest corner of the site.

Existing Development:

The site is currently undeveloped except for the Aviation Bikeway, an asphaltic concrete paved pathway that extends along the southern boundary of the site. The bikeway includes a bike / pedestrian bridge near the middle of the site. There are also localized pedestrian improvements near the intersection of Golf Links Road and Swan Road.

Other Existing Uses:

The City of Tucson Department of Transportation, Streets and Traffic Maintenance Division, currently uses a portion of the site, near the western boundary, for the storage of asphalt millings and related aggregate materials. The subject area is separated by a constructed levee as noted above. It is anticipated that this materials storage activity will continue in the future. The proposed bicycle park does not include facilities in this area that could potentially be in conflict with this existing use.

Existing Vegetation:

There are two mapped areas of riparian vegetation on the project site. One is in the vicinity of the asphalt millings site that consists of approximately 3.4 acres of Xeroriparian "D" habitat (Per Pima County Riparian Habitat Classification Maps). The second, located along the on-site drainageways consists of approximately 20 acres of Xeroriparian "A" Habitat. The vegetation on the balance of the site consist of upland species with creosote being the dominant species. Native plant species present on the site include creosote, velvet mesquite, acacia spp., palo verde and bursage. Invasive species present include buffelgrass, Bermuda grass and African sumac.



Existing Vegetation along on-site Wash



Existing Vegetation along Tucson Diversion Channel

2. Existing Site Conditions

Waste Materials and Debris:

There are limited amounts of waste material and debris present on the project site. These includes localized piles of inert concrete rubble and old asphalt concrete paving material. These materials are located on the ground surface where they can easily be removed. Also present are areas with piles of household trash. These trash piles were created as part of temporary homeless encampments on the site.



Concrete and Asphaltic Concrete Rubble Pile



Trash and Debris from Homeless Encampment

Motor Vehicle Access:

Existing motor vehicle access to the site is provided via four curb-cuts / driveway aprons along the west-bound lanes of Golf Links Road. These aprons are intended to allow landscape and utility maintenance vehicles to access the right-of-way and only allow for right-in-/ right-out turning movement onto the west-bound lanes. There are no median openings associated with the existing driveways limiting direct access to the site from the east-bound lanes of Golf Links Road. There are no existing driveways along the west, north, or east boundaries of the site.

Existing Bicycle / Pedestrian Access:

Bicyclists and pedestrians can access the site from the Aviation Bike Path which extends along the southern boundary of the site. This pathway connects to existing walkways along Swan Road near the northeast corner of the site. The Aviation Bike Path also connects to the Pima County's "The Loop" multi-use path via Palo Verde Greenway / Tucson Diversion Channel Path to the Julian Wash Greenway segment of "The Loop".

The levee along the north side of the Tucson Diversion Channel prevents direct access to the site from the adjacent Roberts Neighborhood.

2. Existing Site Conditions



Tucson Diversion Channel Levee Trail



Aviation Bicycle Path

Davis-Monthan Air Force Base Approach Zone:

A fan associated with the flights arriving at or departing from Davis-Monthan Air Force Base encompasses the westernmost portions of the site. (See Figure 2-A). The area within this fan includes the City of Tucson's asphalt milling and aggregate stockpile area. Proposed park development within this fan is limited to small portions of the single-track trail system.

The balance of the site is outside of all restricted areas associated with flights arriving at or departing from Davis-Monthan Air Force Base.

Introduction:

The 100 Acre Wood Community Bicycle Park will be developed with a variety of bicycle features including:

- Central Gathering and Demonstration Area
- Dirt Jump Area
- Pump Track Area
- Intermediate Pump Track Area
- Kid's Pump Track Area
- Single Track Trails (Easy to Moderate Skill Level)
- Single Track Trails (Advanced Skill Level)
- Pedestrian Bridges along Trail Corridor
- Hill Start Areas
- Flow Trail
- Lighting System for Track Areas
- Resurfaced Aviation Bike Path
- Bike Park Signage (trail information and maps, rules, and regulations)

In addition to these bicycle related features, several support facilities will be developed. These will include:

- New entry drive from Golf Links Road
- Paved Parking Lot with Dusk-to-Dawn Lighting System
- Secure Maintenance and Storage Area
- Restroom Building
- Ramadas

The pump tracks, demonstration area, parking lot, and restroom will be located near the center of the site. The trails will start within the central core area of the park and extend out into the balance of the site. The locations for proposed park features are shown in Figure 3-A. Descriptions of individual features are provided below.

Entry Drive:

The paved entry drive will be constructed near the mid-point of the southern boundary and will provide access from the west-bound lane of Golf Links Road. It will be configured to provide for right-turn in and right-turn-out turning movements by reconfiguring the existing right lane on Golf Links Road to be right turn only into the site. A raised median curb will be added to only provide for this right-in /right-out circulation. Signage and pavement markings will also be added to Golf Links Road to alter drivers of the upcoming right turn only lane at the entrance. The location of the entry drive and median curb has been reviewed and approved by the City of Tucson Transportation Department.

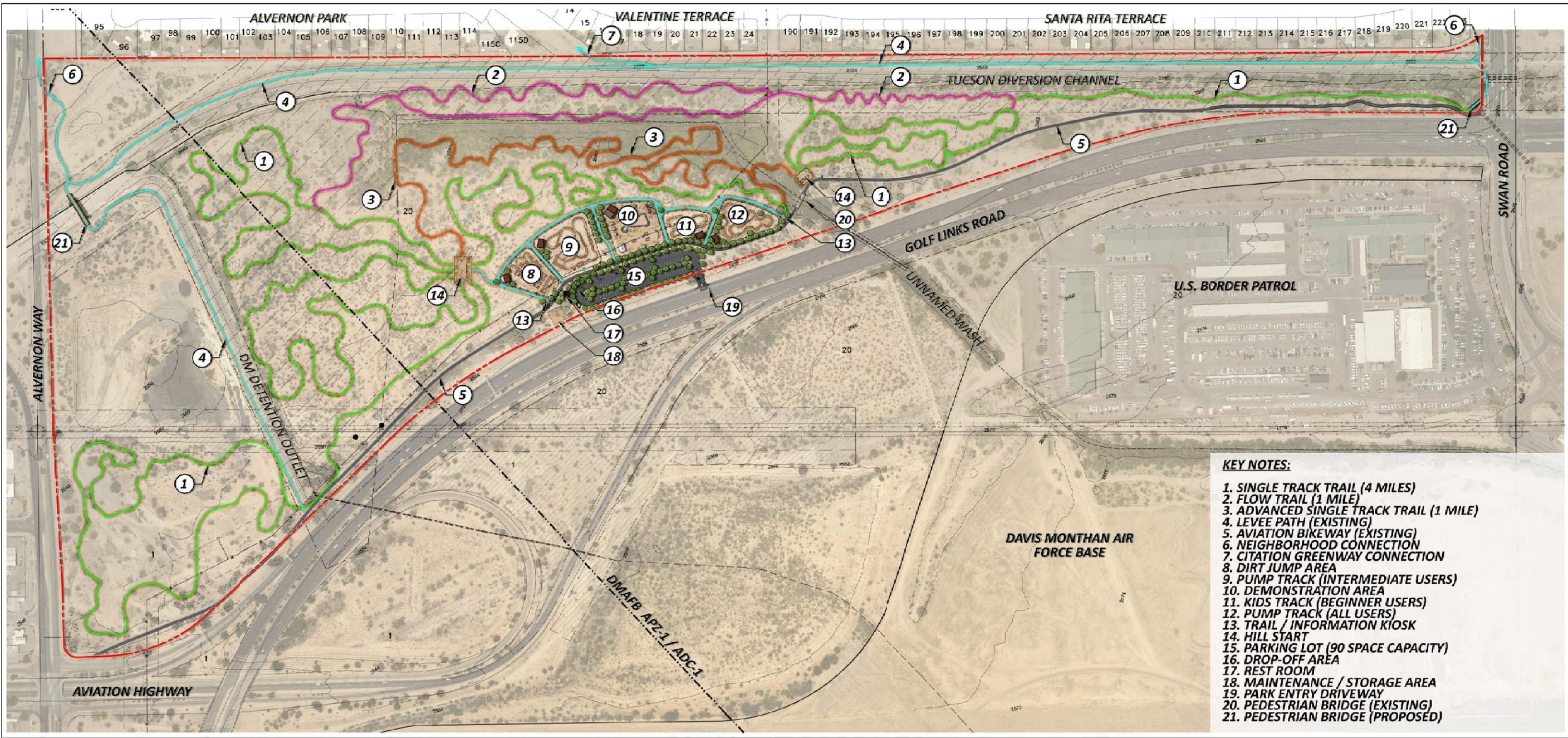


Figure 3-A: Conceptual Master Plan

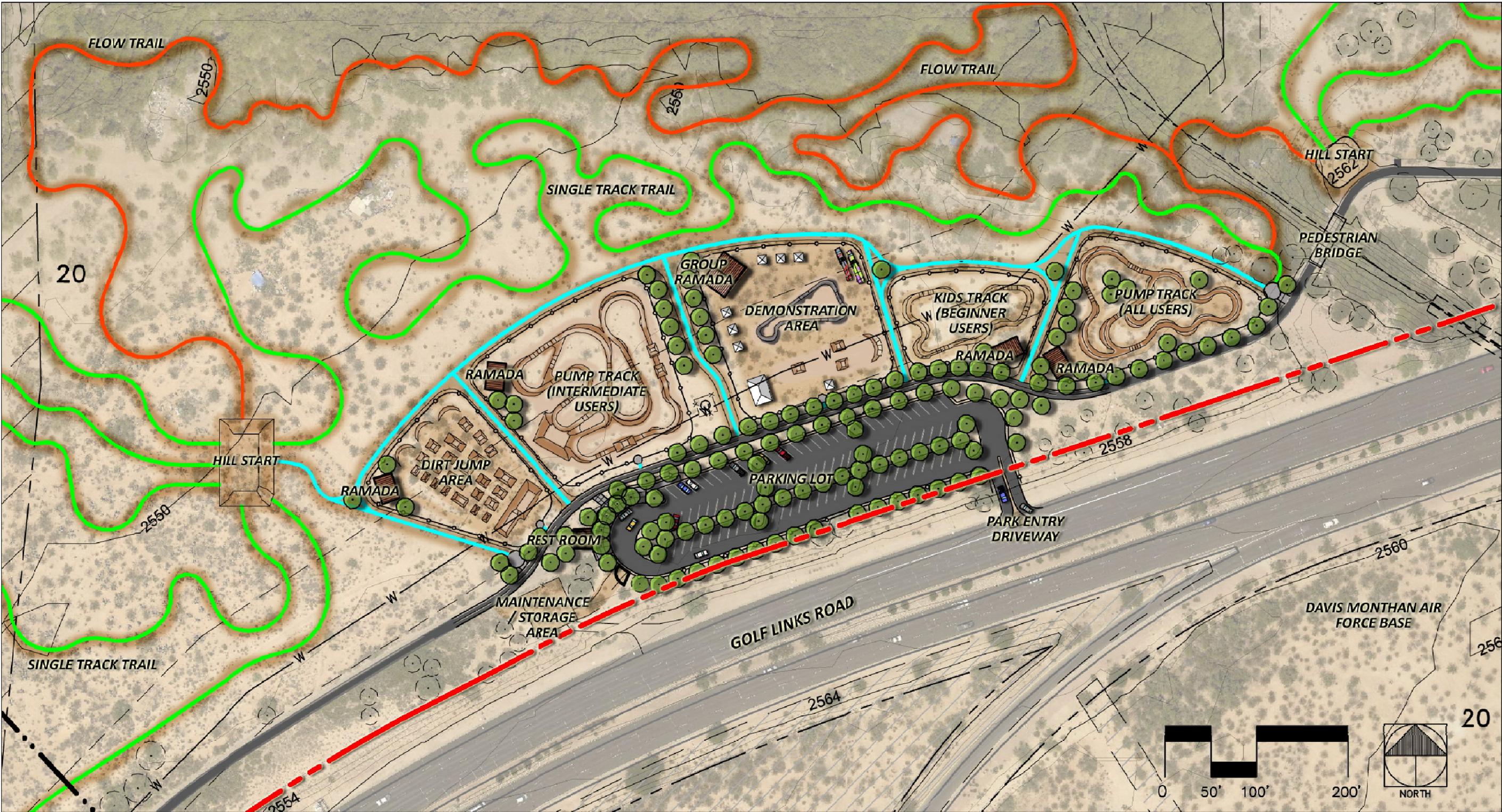


Figure 3-B: Enlargement of Entry, Demonstration Area, Pump Tracks, and Dirt Jump Areas

3. Proposed Development

Parking Lot:

At full build-out, the paved parking lot will include approximately 90 parking spaces. It will be designed to allow for construction in one or more phases. The parking lot development will be constructed in accordance with City of Tucson Parks Department standards and will include a dusk-to-park closing time lighting system. Selected fixtures within this system will operate dusk-to-dawn to provide for site security.

Central Gathering and Demonstration Area:

A 0.75 acre site located near the parking lot will be developed as a central gathering and demonstration area. This area will include a ramada, open areas for event staging, areas for equipment demonstrations, space for instructional sessions, and signs or kiosks that display park maps and that list park use rules and regulations. It will also include a bike repair kiosk where park users can make minor mechanical repairs, fix flat tires, and fill water bottles. Low level dusk to park closing time lighting will be provided in this area.

Rest Room:

A small restroom will be provided near the west end of the parking lot. This location will enable a (gravity flow) connection to the existing sanitary sewer and will place it in a convenient and visually prominent location. This prominent location will allow police officers to see the restroom when patrolling along Golf Links Road. The restroom will be designed in accordance with City of Tucson Parks Department standards for durability and user safety.

Dirt Jump Area:

A dirt jump area will be constructed on a (+/-) 0.5 acre site near the west end of the parking lot. The dirt jump area will feature a series of earthen mounds or ramps with flat or slightly inclined ground in between. This portion of the park will be designed for more advanced cyclists and will allow them to launch themselves off these ramps and briefly “take flight.” An area lighting system is proposed for the dirt jump zone to allow for evening use of the facility.



Dirt Jump Example (Photo Credit: www.parkcity.org)

3. Proposed Development

Pump Tracks:

Pump tracks consist of rollers and earthen berms that vary in height and frequency. These land forms allow riders to navigate through the pump track course without pedaling.

Three pump tracks serving users with varying skill levels are proposed. The three pump tracks will be equipped with area lighting to enable safe use of the facilities during the evening hours.

The use of materials other than compacted soil may be considered in the construction of pump tracks. These other materials will be selected based on durability and their need for on-going maintenance.



Pump Track Example (Photo Credit Brice Shirbach)

Pump Track for Advanced Users:

The main pump track will occupy an area of approximately __ acres and will be located adjacent to the Demonstration / Central Gathering Area. This pump track will incorporate features designed for advanced skill level users.

Pump Track for Intermediate Users:

A second pump track will be constructed near the east end of the parking lot. This pump track will be designed with features that are suitable for riders with some experience but without advanced skill level.

Pump Track for Kids:

A third pump track will be developed specifically for young and inexperienced riders. It will be designed to allow riders to develop the skills and experience needed for the more advanced pump tracks.



Kids Pump Track Example (Photo Credit Richard Masoner)

Flow Trail:

Flow trails utilize many of the same concepts as pump tracks but arrange these features in a linear manner to create a trail. The topography in the vicinity of the Tucson Diversion Channel is conducive to the construction of a trail of this type and a one mile long flow trail is proposed for the park.



Flow Trail Example (Photo Credit Bob Allen)

Single-Track Trails:

Single track trails resemble traditional mountain bike trails that extend across and around a wide range of site topography and features. Approximately four miles of single track trail are proposed for the park.

Portions of the single track trail system will include features for more advanced users while the balance will be more suitable for warm-up and novice use.

Start Hills:

Start hills are elevated earthen platforms that allow riders to generate speed as they begin riding on a flow trail, pump track, or single-track trail. Two start hill areas are proposed for the park.

Reconstructed Aviation Bike Path and “The Loop” Connection:

The pavement associated with the existing Aviation Bike Path has deteriorated to a point where it should be removed and replaced. The repaving of this path, as needed to provide for a safe and accessible surface, is included in the scope of the project. The existing alignment of the path will be retained as will be the existing pedestrian / bicycle bridge.

The reconstruction of the Aviation Bike Path will continue to preserve the connection to “The Loop” multi-use path network. This will ultimately provide park users a non-motorized commute/connection to the park utilizing the City of Tucson’s and Pima County’s network paths and greenways that form “The Loop”.

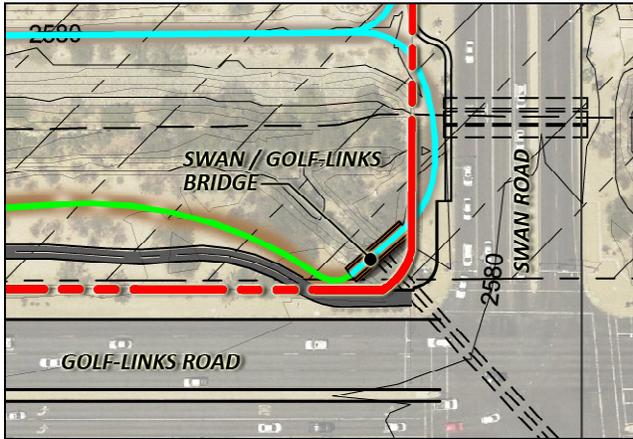
Levee Shared-Use Path:

The levees on the north side of the Tucson Diversion Channel and within the western portion of the site were constructed with paved pathways on top of the levee structures. The pavement associated with the initial construction has deteriorated and will need to be replaced.

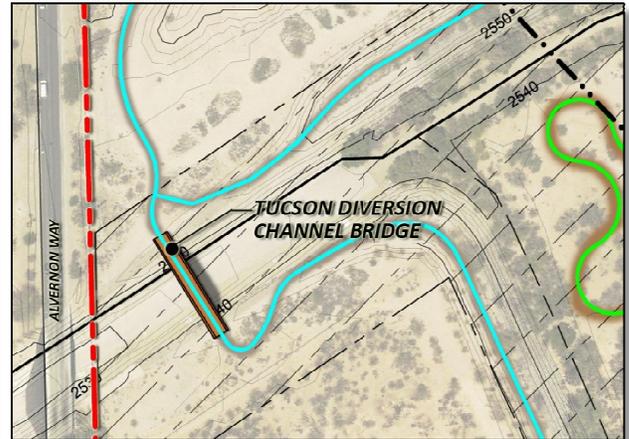
3. Proposed Development

Pedestrian Bridges:

It will also be necessary to install two bicycle / pedestrian bridges to connect these levee shared-use pathways to the balance of the park. These bridge structures will be near the eastern and western boundaries of the park. The proposed bridge locations are shown below. These bridges will provide access to the site from the adjacent Roberts Neighborhood.



Swan / Golf Links Bike / Pedestrian Bridge



Tucson Diversion Channel Bike / Pedestrian Bridge

Secure Storage Area:

A small, secure fenced yard with a shipping container type enclosure for the storage of tools and materials will be provided to facilitate the operation and maintenance of the park.

Bike Park Lighting:

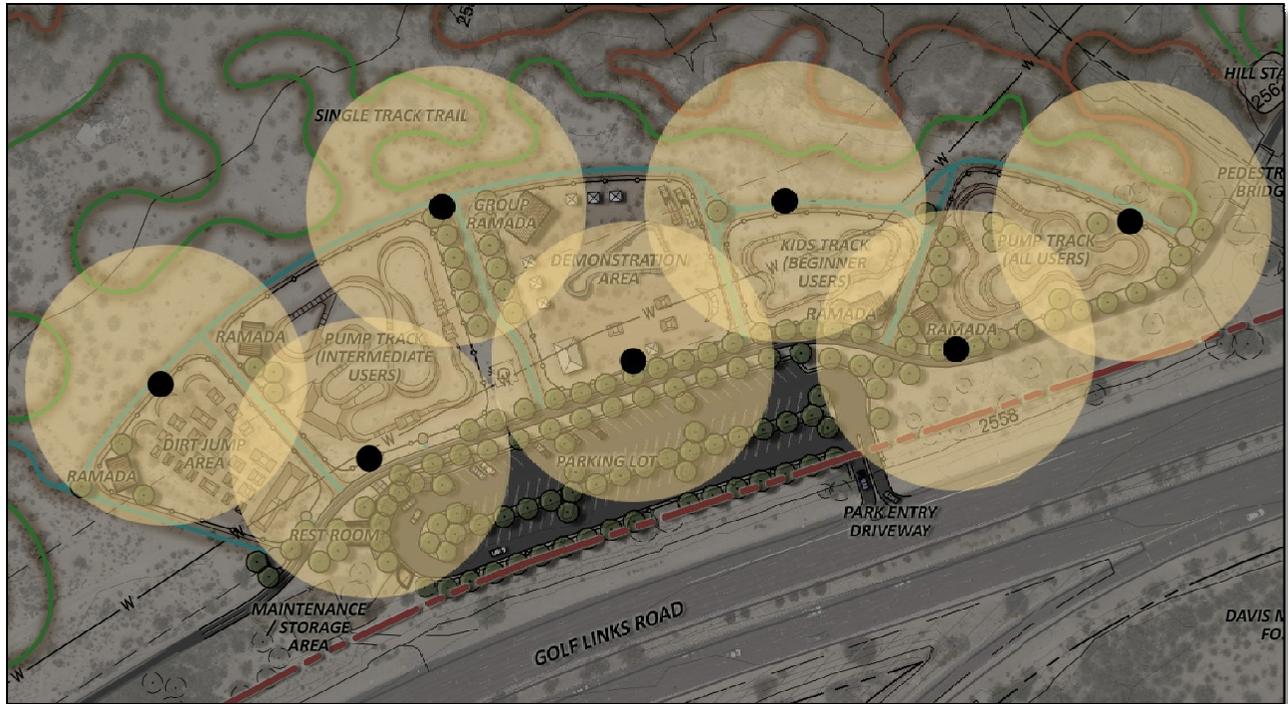
To maximize the potential use of the park, it is recommended that lighting be provided for the demonstration area, the dirt jump area, and the pump tracks. Due to the area encompassed by the trail system, lighting is not proposed for the flow trail or single-track trail system.

Full cut-off sports field type lighting fixtures will be used for this purpose. The light levels provided will be in the range of 15 to 20 footcandles. A control system that enables the Parks Department to operate the lighting system from a remote location will be a central feature of the bike park lighting system. (See Figure 30-C).

General Area Lighting:

General area lighting will be provided within the parking lot, within the demonstration area, along pedestrian walkways, and near the restroom building. This lighting system will be designed to have most of the fixtures operate from dusk to park closing time with a few of the fixtures operating from dusk-to-dawn to provide site security.

3. Proposed Development



Approximate Location of Fixtures and Potential Coverage of Bike Park Lighting

Ramadas:

A total of five ramada structures are proposed for the park. The ramada constructed within the demonstration area will be a large group ramada suitable for group presentations and instructional programs. The other four ramadas, one associated with the dirt jump area and one associated with each pump track will be small, providing shade and seating areas for park users.

Signs and Site Furnishings:

Signs or kiosks with sign panels will be installed in prominent locations throughout the park. The signs will typically include an overall park / trail map. They will also clearly convey the authorized hours of use for the park and the rules and regulations pertaining to the use of park facilities.

Bike park signage shall include:

- Park Rules, Regulations, and Liability Disclaimer Signs
- Informational Sign or Kiosk (basic park information, park and trail etiquette, and bulletins for upcoming events)
- Trail Maps Signs (to be located at all major trail intersections)
- Trail Description Signs (including skill features and difficulty levels; beginner, intermediate, and advanced located at the beginning of every trail)
- Trail Directional Signs (indicating the direction of travel for one-way trails)

Site furnishings will include picnic tables and each ramada and benches shall be located around all major feature areas (demonstration, dirt jump, and pump track areas). Trash receptacles will also be provided at key locations on the site.

Reclaimed Water “Irrigation” System:

The maintenance of many of the park features will require periodic maintenance including watering, compaction, and fine grading of hills, ramps, and jumps. It is recommended that reclaimed water be extended to the site and that a reclaimed water distribution system be constructed.

This system would include sprinklers in some area as well as quick-coupling valves for temporary connection to the distribution system.

To comply with federal and state regulations related to the use of reclaimed water, the system will need to be designed to prevent inadvertent contact between the reclaimed water and park users.

Other Utility Systems:

Other on-site utility systems that will be required for the operation of the park include: potable water, electric power, and sanitary sewage systems.

4. Cost Estimate

Order-of-Magnitude Cost Estimate:

The estimated cost for the design, engineering, and construction of the 100 Acre Wood Community Bicycle Park is approximately \$2,530,000.00. Provided below is a worksheet indicating the estimated cost for the major components of the project.

This order-of-magnitude cost estimate is based on the conceptual plans presented herein and on 2017 construction costs without escalation. It is anticipated that the construction of the proposed improvements will be phased. This estimate does not account for any private donations, grants, or volunteer labor.

100 Acre Wood Bike Park Improvements - Order-of-Magnitude Cost Estimate

(Based on August 2017 Master Plan drawing without detailed engineering / design work)

Item	Unit	Quantity	Unit Cost	Extension	Category Subtotal
Site Clean-up					\$40,000.00
Removal of existing debris / homeless camps	LS	1	\$25,000.00	\$25,000.00	
Invasive Plant Removal	LS	1	\$15,000.00	\$15,000.00	
Trail and Path System					\$230,442.50
Single Track Trail	LF	22,000	\$1.00	\$22,000.00	
Advanced Signal Track Trail	LF	5,000	\$1.25	\$6,250.00	
Flow Trail	AC	2	\$14,000.00	\$28,000.00	
Skill Features	EA	40	\$500.00	\$20,000.00	
Aviation Bikeway Asphalt Repaving (55,650SF)	SY	6,184	\$15.00	\$92,760.00	
Levee Path (Stabilized DG - 55,720SF)	SY	6,191	\$7.50	\$46,432.50	
Neighborhood Connections	EA	3	\$2,000.00	\$6,000.00	
Park / Trail Map Signs	EA	30	\$200.00	\$6,000.00	
Trail Directional and Description Signage	EA	30	\$100.00	\$3,000.00	
Kids Track Area					\$31,970.00
Site Grading	SF	17,000	\$0.25	\$4,250.00	
Post and Cable Fencing / Gates	LF	465	\$8.00	\$3,720.00	
Kids Track (0.25 ACRES)	LS	1	\$20,000.00	\$20,000.00	
Skill Features	EA	3	\$500.00	\$1,500.00	
Track Info Sign / Kiosk	EA	1	\$500.00	\$500.00	
Track Signage	EA	10	\$200.00	\$2,000.00	
Pump Track Area (All Users)					\$69,620.00
Site Grading	SF	28,000	\$0.25	\$7,000.00	
Post and Cable Fencing / Gates	LF	640	\$8.00	\$5,120.00	
Pump Track (0.5 ACRES)	LS	1	\$30,000.00	\$30,000.00	
Skill Features	EA	10	\$500.00	\$5,000.00	
Ramada	EA	1	\$20,000.00	\$20,000.00	
Track Info Sign / Kiosk	EA	1	\$500.00	\$500.00	
Track Signage	EA	10	\$200.00	\$2,000.00	

4. Cost Estimate

Pump Track Area (Intermediate Users)					\$86,350.00
Site Grading	SF	43,000	\$0.25	\$10,750.00	
Post and Cable Fencing / Gates	LF	700	\$8.00	\$5,600.00	
Pump Track (0.75 ACRES)	LS	1	\$40,000.00	\$40,000.00	
Skill Features	EA	15	\$500.00	\$7,500.00	
Ramada	EA	1	\$20,000.00	\$20,000.00	
Track Info Sign / Kiosk	EA	1	\$500.00	\$500.00	
Track Signage	EA	10	\$200.00	\$2,000.00	
Dirt Jump Area					\$95,025.00
Site Grading	SF	22,500	\$0.25	\$5,625.00	
Post and Cable Fencing / Gates	LF	550	\$8.00	\$4,400.00	
Dirt Jump Features (0.5 ACRES)	LS	1.00	\$40,000.00	\$40,000.00	
Skill / Jump Features	EA	15	\$1,500.00	\$22,500.00	
Ramada	EA	1	\$20,000.00	\$20,000.00	
Track Info Sign / Kiosk	EA	1	\$500.00	\$500.00	
Track Signage	EA	10	\$200.00	\$2,000.00	
Demonstration Area					\$54,980.00
Site Grading	SF	36,800	\$0.25	\$9,200.00	
Post and Cable Fencing / Gates	LF	660	\$8.00	\$5,280.00	
Demonstration Area	LS	1	\$0.00	\$0.00	
Ramada	EA	1	\$40,000.00	\$40,000.00	
Track Info Sign / Kiosk	EA	1	\$500.00	\$500.00	
Bike Park Area Lighting					\$255,000.00
Kids Track Area	LS	1	\$51,000.00	\$51,000.00	
Pump Track Area (All Users)	LS	1	\$51,000.00	\$51,000.00	
Pump Track Area (Intermediate Users)	LS	1	\$51,000.00	\$51,000.00	
Dirt Jump Area	LS	1	\$51,000.00	\$51,000.00	
Demonstration Area	LS	1	\$51,000.00	\$51,000.00	
Park Entrance, Drop-off Plaza and Rest Room, and Parking Area (90 Spaces)					\$282,300.00
Site Grading	SF	36,000	\$0.25	\$9,000.00	
Concrete Plaza Paving	SF	2,500	\$5.00	\$12,500.00	
Seat Walls	LF	40	\$75.00	\$3,000.00	
Entry Monument Wall	LS	1	\$4,000.00	\$4,000.00	
Parking Lot Paving	SY	3,700	\$15.00	\$55,500.00	
Concrete Curb and Gutter	LF	500	\$15.00	\$7,500.00	
Striping	LF	25	\$60.00	\$1,500.00	
Golf Links Curb Cut	LF	25	\$60.00	\$1,500.00	
Irrigation System	SF	8,000	\$0.75	\$6,000.00	
Restroom Building	LS	1	\$100,000.00	\$100,000.00	
Parking Area Lighting	FIXTURE	10	\$4,000.00	\$40,000.00	
Entry Features / Public Art	LS	1	\$5,000.00	\$5,000.00	
Park Rules/Regulations Sign	EA	1	\$300.00	\$300.00	
Informational Kiosk	EA	1	\$2,500.00	\$2,500.00	
Post and Cable Fencing	LF	1,000	\$8.00	\$8,000.00	
Tree Planting	EA	105	\$200.00	\$21,000.00	
Miscellaneous	LS	1	\$5,000.00	\$5,000.00	

4. Cost Estimate

Maintenance and Storage Area					\$13,000.00
Site Grading	SF	4,000	\$0.25	\$1,000.00	
Perimeter Fencing	LF	200	\$20.00	\$4,000.00	
Gates	EA	2	\$1,200.00	\$2,400.00	
Aggregate Surfacing	SF	4,000	\$0.40	\$1,600.00	
Security Lighting	FIXTURE	1	\$4,000.00	\$4,000.00	
 Utility Systems					 \$125,875.00
New Potable Water Distribution System (2" Size)	LF	2,225	\$5.00	\$11,125.00	
New Sanitary Sewer to New Restrooms (4" HCS)	LF	875	\$50.00	\$43,750.00	
New Irrigation Main (2" Size)	LF	2,400	\$5.00	\$12,000.00	
Electrical Service and Distribution System	LS	1	\$50,000.00	\$50,000.00	
Miscellaneous	LS	1	\$9,000.00	\$9,000.00	
 Pedestrian Bridges					 \$372,000.00
Ped. Bridge - 12' wide x 130' Long (TDC)	SF	1,560	\$200.00	\$312,000.00	
Ped. Bridge - 12' wide x 40' Long (Swan)	SF	480	\$125.00	\$60,000.00	
 Bike Park Lighting System					 \$255,000.00
Bike Park Lighting and Controls	LS	1	\$255,000.00	\$255,000.00	
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Subtotal					\$1,911,562.50
Contingency (15%)					\$286,734.38
Design, Engineering, Survey, Testing, Construction Management (15%)					\$329,744.53
 Estimated Project Cost					 \$2,528,041.41