

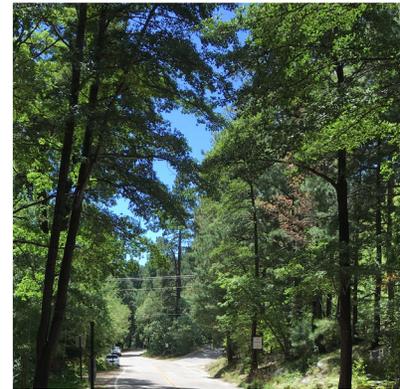
SUMMERHAVEN

CONGESTION MANAGEMENT CONCEPTS STUDY



RECOMMENDATIONS REPORT

Prepared for:



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1. INTRODUCTION

Summerhaven, on Mount Lemmon, Pima County, is a popular summer attraction. On summer weekends and holidays, the limited parking in the village center and off the main road (Sabino Canyon Park), results in vehicles lining the roadway, impacting pedestrian mobility, comfort, and safety. Pima County receives Traffic Action Requests on a regular basis concerning congestion and parking issues.

The *Summerhaven Congestion Management Concepts Study* identifies congestion relief concepts to improve mobility and safety for vehicles, bicyclists, and pedestrians in Summerhaven.

This *Recommended Improvements* memorandum documents the recommended improvements to be made within Summerhaven to address the needs of local businesses, residents, and visitors. Recommended projects are described in Chapters 2 through 5.



*Labor Day Weekend 2019,
Summerhaven*

STUDY OBJECTIVES

Objectives for the *Summerhaven Congestion Management Concepts Study* are:

- Assess study area current conditions including congestion, parking capacity and demand, roadway infrastructure, safety, bicycle and pedestrian infrastructure, and potential redevelopment sites;
- Identify transportation issues and needs, including off-site parking and shuttle services;
- Identify feasible alternatives for addressing the needs;
- Prepare planning-level cost estimates; and
- Recommend high-priority projects for consideration to include in the Pima County capital improvement program (CIP) development or other funding sources, such as federal grants.

STUDY AREA

Summerhaven is a small unincorporated community and census-designated place on Mount Lemmon in the Santa Catalina Mountains north of Tucson in Pima County, Arizona, United States. Summerhaven is approximately 45 minutes northeast of Tucson, following Catalina Highway (also known as General Hitchcock Highway). As of the 2010 U.S. Census, it had a permanent population of 40.

The study area is illustrated in **Figure 1** and includes an approximately eight-square-mile area that encompasses Summerhaven and the surrounding areas of the Coconino National Forest.

The area is characterized by steep, mountainous terrain and pine forests. Summerhaven is at an elevation of 7,600 feet and the summit of Mount Lemmon is almost 9,200 feet above sea level. The mild summer temperatures and snowfall during the winter make the area a popular tourist destination.

CURRENT CONDITIONS

Existing conditions information, including transportation infrastructure, parking occupancy, traffic data, multimodal facilities, traffic safety data, property ownership information, as well as stakeholder and public input is included in *Technical Memorandum 1: Needs Assessment*, dated November 2018.

Technical Memorandum 1 also includes an initial list of project ideas, encompassing suggestions from local stakeholders, the public, Pima County Staff, and the consultant team, which forms the basis for the projects that have been further analyzed and refined in this document.

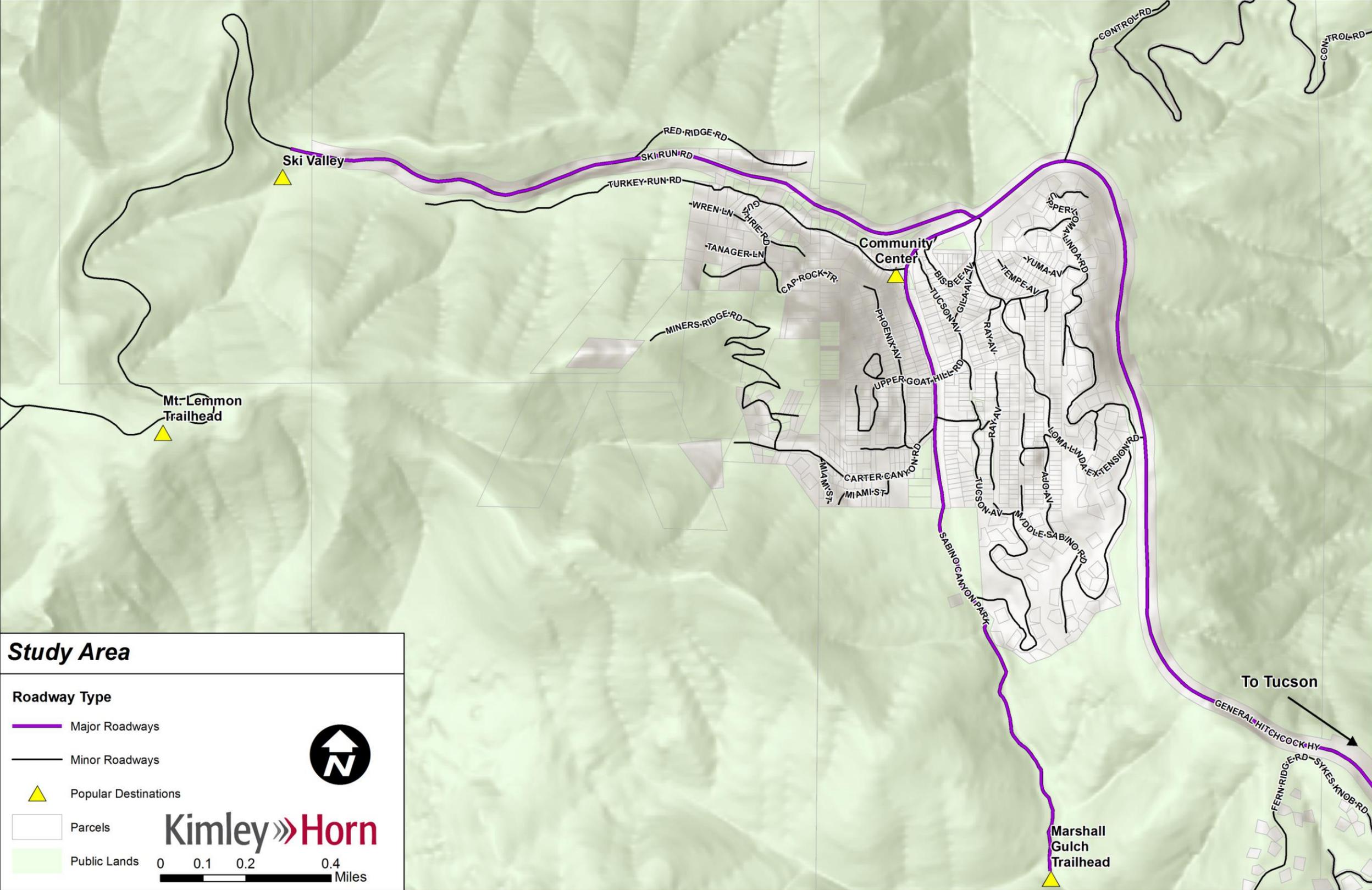
Transportation issues in and around Summerhaven primarily pertain to a lack of parking within Summerhaven and recreation areas near the village. The most prevalent observed issues include:

- Limited parking within Summerhaven to destinations including Sawmill Run, the Community Center, Cookie Cabin, and the Living Rainbow Gift Shop
- Insufficient parking at recreation areas including Marshall Gulch and the Mount Lemmon trailhead
- Overflow on-street parking along Sabino Canyon Park that encroaches into the roadway
- Pedestrians walking in the roadway on Sabino Canyon Park due to a lack of sidewalks and parked vehicles along the side of the road
- Little suitable land for new parking facilities due to steep terrain and property ownership



*Labor Day Weekend 2019,
Summerhaven*

Figure 1: Summerhaven Study Area



2. SABINO CANYON PARK CONCEPTS

Eight projects are identified along Sabino Canyon Park within the Summerhaven Village area. These projects not only improve the safety of pedestrians walking along the corridor, but also provide additional parking to support recreational activities and local businesses, and accommodate demand on peak weekends. A conceptual plan for these eight projects is provided in **Figure 2** on the following page.

Preliminary opinions of probable costs were developed for these eight projects along Sabino Canyon Park. The total cost to construct all eight projects is estimated to be approximately \$2,540,500.

Table 1 below provides an overview of the preliminary opinions of probable costs for each of the eight projects.

Table 1: Sabino Canyon Park Preliminary Opinion of Probable Cost

Project No.	Project Name	Opinion of Probable Cost
1	Community Center/General Store Area Off-Street Parking	\$292,600
2	Cookie Cabin Area Off-Street Parking	\$117,000
3	Carter Canyon Road On-Street Parking	\$61,200
4	Off-Street Parking and Restrooms South of Water Treatment Plant	\$437,100
5	Water Treatment Plant Area On-Street Parking	\$49,100
6	Cookie Cabin Area On-Street Parking	\$59,700
7	Shared-Use Path	\$305,200
8	Sabino Canyon Park Sidewalk Extensions	\$635,800
	<i>Environmental, Design, Utility Relocations, Contingency</i>	\$582,800
	Total	\$2,540,500

Each of the eight projects are illustrated and described in more detail in the subsequent subsections. The detailed preliminary estimates of probable costs, including assumed quantities and unit costs, are provided in **Appendix A**.



USFS to review feasibility of future parking improvements

Mt. Lemmon Trailhead

WATER TREATMENT PLANT

E. CARTER CANYON RD
19 - 90° Parking Spaces

28 - 90° Parking Spaces

COOKIE CABIN
12 - 90° Parking Spaces

60 - 90° Parking Spaces

21 Existing Spaces - 90° Parking Spaces

COMMUNITY CENTER

SAWMILL RUN

88 - 90° Parking Spaces
2 - ADA Toilet Rooms

8 - Parallel Parking Spaces/
Shuttle Loading

14 - Parallel Parking Spaces

GENERAL STORE

11 - Parallel Parking Spaces

6 - Parallel Parking Spaces/
Shuttle Loading

9 - Parallel Parking Spaces

SHARED USE PATH

USFS GATE

Turn-around

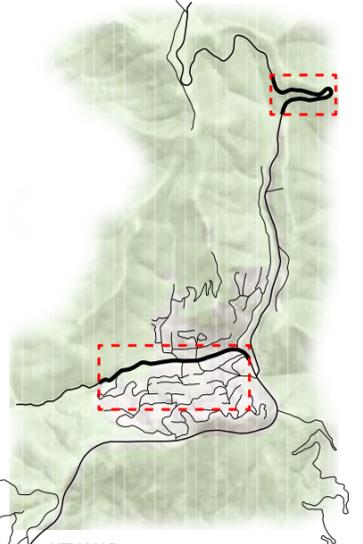
SHARED USE PATH

N. MIDDLE SABINO RD.

E. UPPER GOAT HILL RD.

E. TURKEY RUN RD.

N. GENERAL FITCHER CREEK FWY



KEY MAP



PROJECT 1 – COMMUNITY CENTER/GENERAL STORE AREA OFF-STREET PARKING

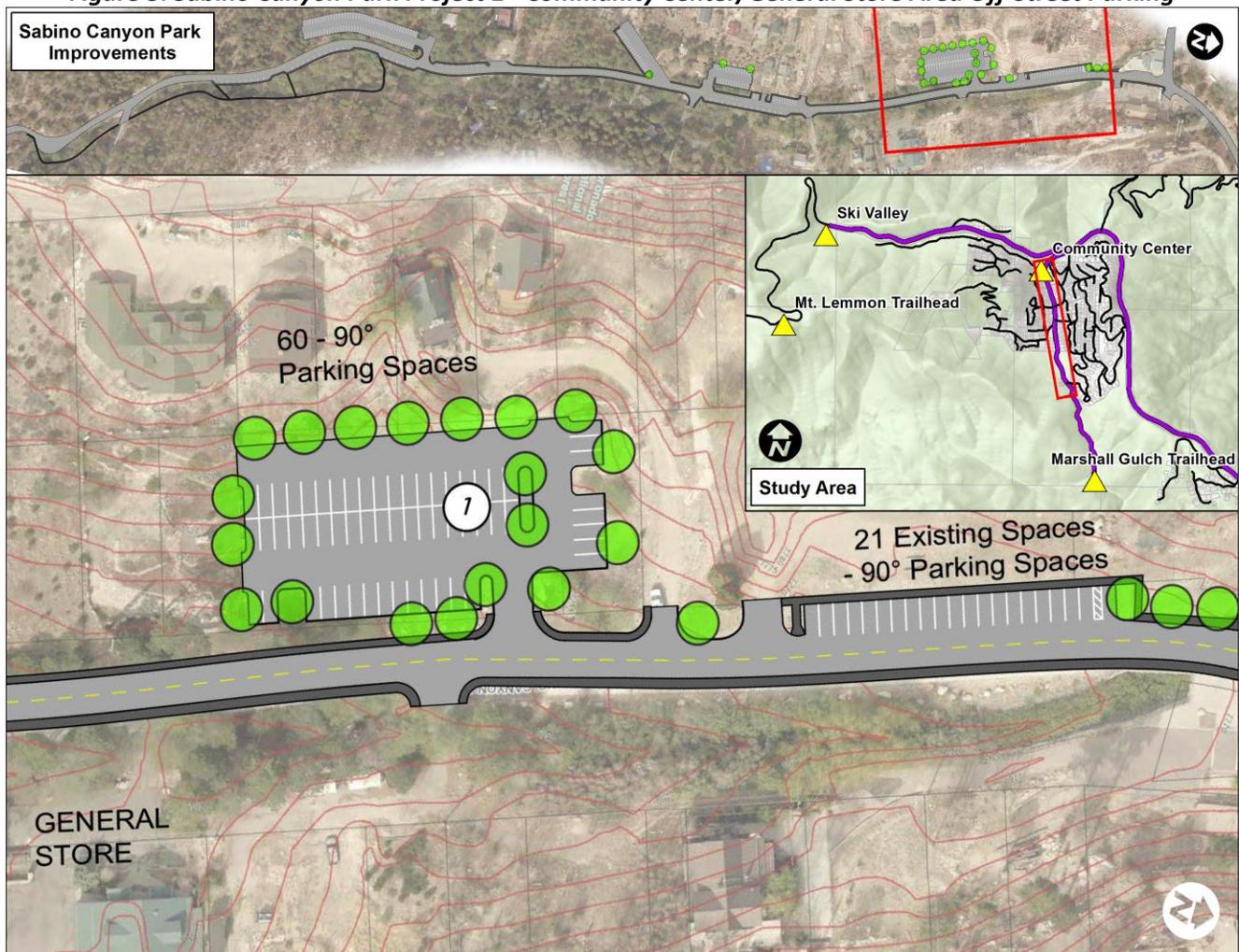
Six vacant parcels serve as overflow parking lots for some events at the discretion of the property owners in coordination with the business community. These privately-owned vacant parcels are located along the west side of Sabino Canyon Park between the Community Center and Upper Goat Hill Road.



The southernmost four parcels are relatively flat and could be improved to maximize their use and accessibility, resulting in the addition of 60 new off-street parking stalls as shown in **Figure 3**. This new parking facility would have direct access to Sabino Canyon Park south of the existing perpendicular parking along the west side of the roadway.

The preliminary estimate of probable cost for Project 1 is \$292,600.

Figure 3: Sabino Canyon Park Project 1 - Community Center/General Store Area Off-Street Parking



PROJECT 2 – COOKIE CABIN AREA OFF-STREET PARKING

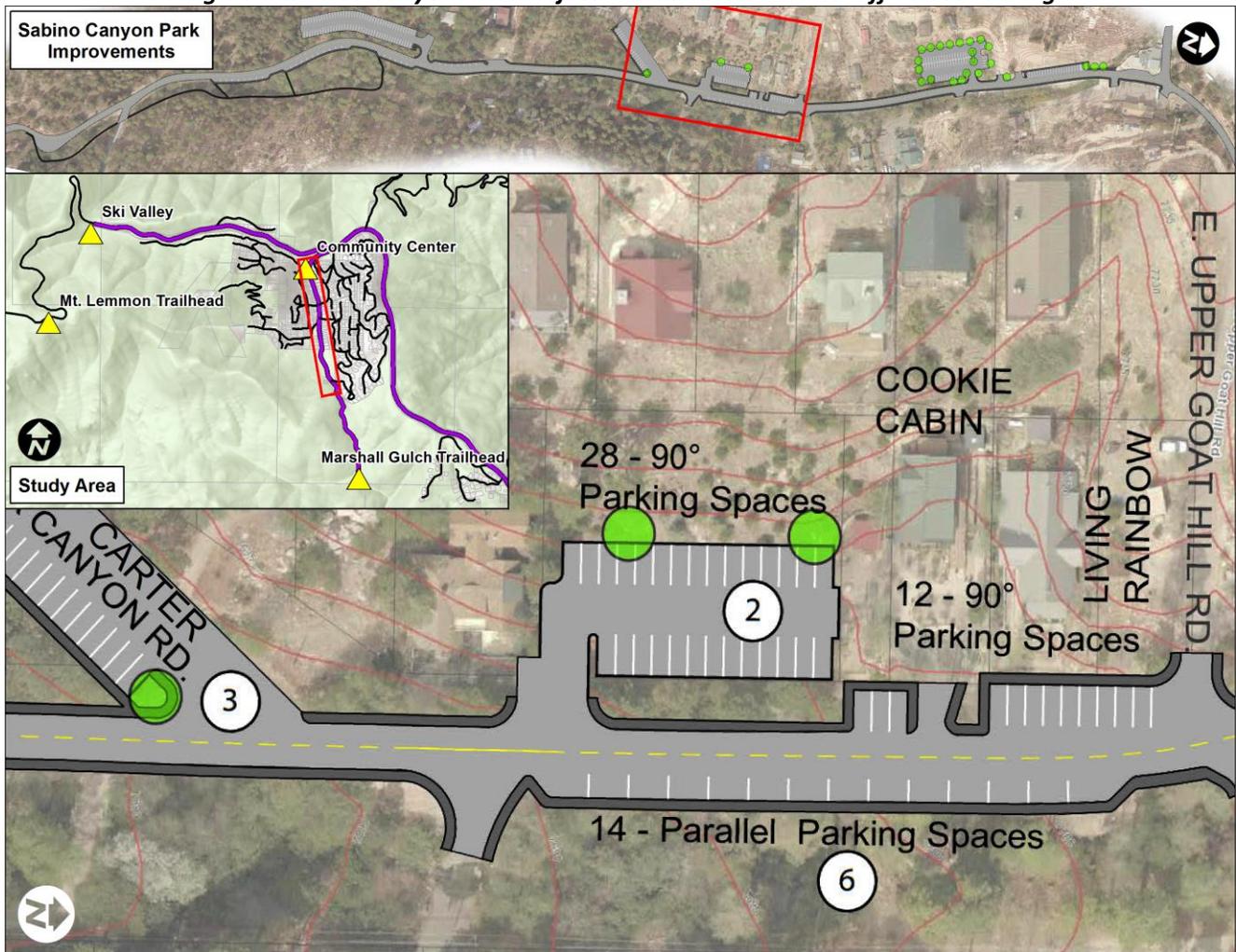
A privately-owned vacant lot exists directly south of the Cookie Cabin, along the west side of Sabino Canyon Park between Upper Goat Hill Road and Carter Canyon Road. This area experiences more parking demand than can be accommodated in the immediate vicinity, particularly during peak weekends in the summer.

The eastern half of this lot is relatively flat and has reasonable access from Sabino Canyon Park. It is anticipated that two rows of perpendicular parking could be accommodated within this lot, as shown in **Figure 4**, resulting in the addition of 28 new off-street parking stalls.

The preliminary estimate of probable cost for Project 2 is \$117,000.



Figure 4: Sabino Canyon Park Project 2 - Cookie Cabin Area Off-Street Parking



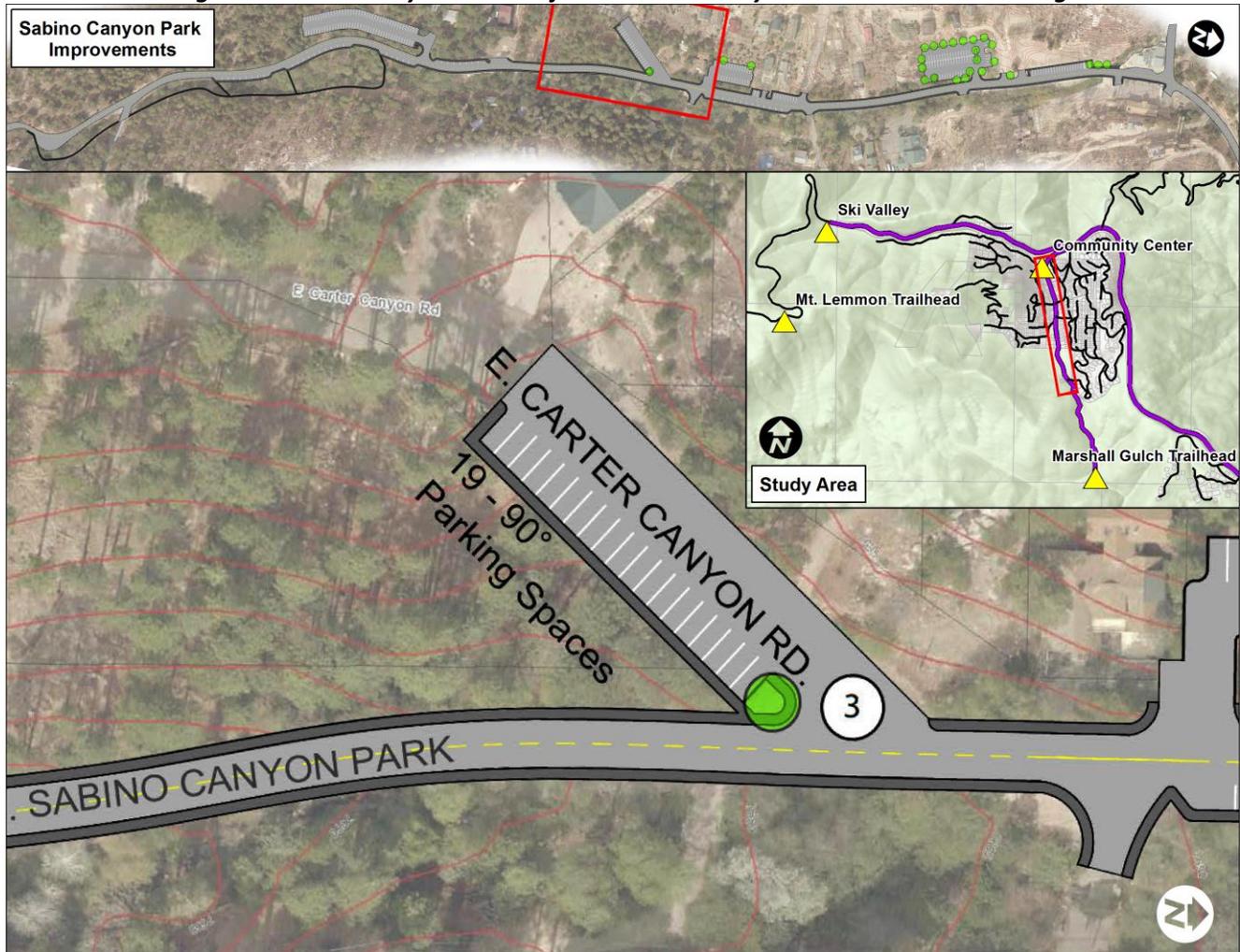
PROJECT 3 – CARTER CANYON ROAD ON-STREET PARKING

Carter Canyon Road directly west of Sabino Canyon Park has a pavement width and right-of-way larger than needed for a low-volume local roadway. The parcel on the south side of the roadway is owned by the University of Arizona and is anticipated to remain open space for the foreseeable future, which provides an opportunity to create additional on-street parking that does not have adverse impacts or access issues for adjacent property owners.



Nineteen perpendicular parking spaces and sidewalk can be constructed on the south side of Carter Canyon Road directly west of Sabino Canyon Park with relatively minor improvements to the roadway. This would provide additional parking to absorb overflow parking from the nearby commercial establishments during peak weekends. Design of this concept should ensure that tour buses are able to make a three-point-turn at the intersection of Sabino Canyon Park and Carter Canyon Road, as they do today. The preliminary estimate of probable cost for Project 3 is \$61,200.

Figure 5: Sabino Canyon Park Project 3 - Carter Canyon Road On-Street Parking



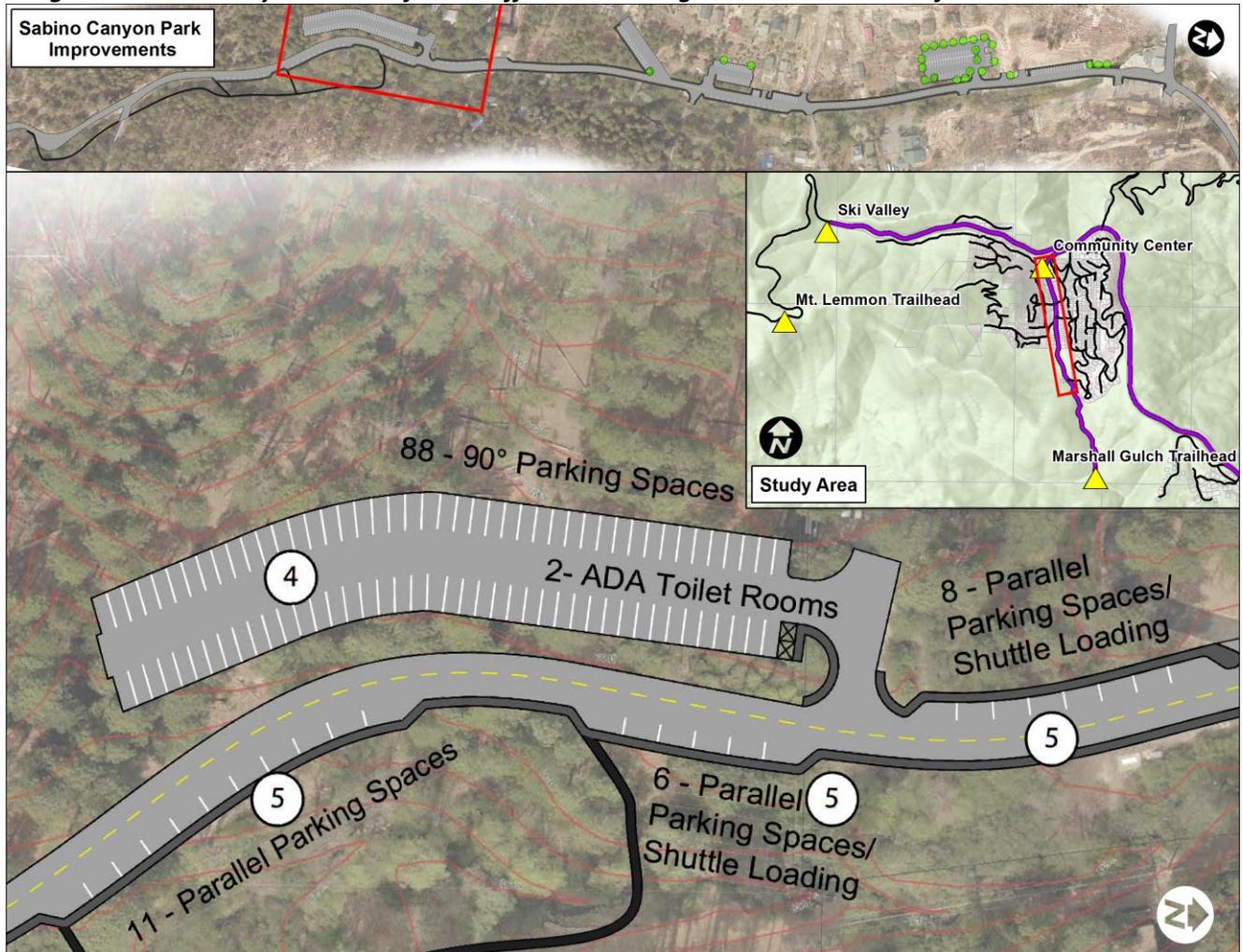
PROJECT 4 – OFF-STREET PARKING AND RESTROOMS SOUTH OF WATER TREATMENT PLANT

Additional parking is needed to accommodate overflow demand at the Marshall Gulch Trailhead and picnic area. However, options to provide additional parking at Marshall Gulch are limited due to the topography and geology.

Project 4 provides new parking on USFS land to serve Marshall Gulch parking demand. The new parking would be located on the west side of Sabino Canyon Park, just south of the Water Treatment Plant.

Approximately 88 new parking spaces could be constructed on this site, as shown in **Figure 6**. These new parking spaces would be accessed from Sabino Canyon Park, just south of the Water Treatment Plant. Additionally, two Americans with Disabilities Act (ADA) compliant toilet rooms could be added (currently the only public restrooms are in the Community Center at the opposite end of Summerhaven, and at Marshall Gulch Trailhead). The preliminary estimate of probable cost for Project 4 is \$437,100.

Figure 6: Sabino Canyon Park Project 4 - Off-Street Parking & Restrooms South of Water Treatment Plant



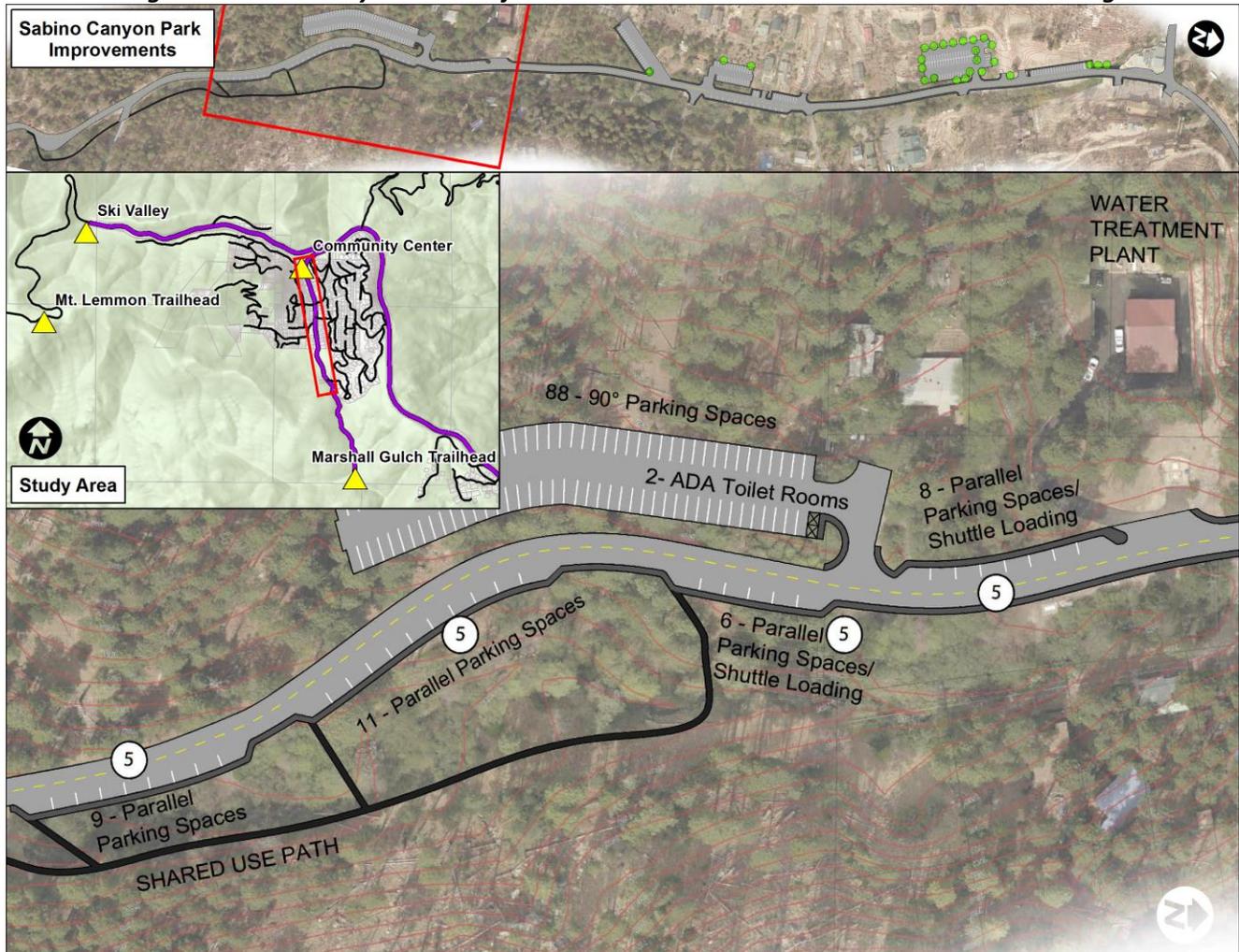
PROJECT 5 – WATER TREATMENT PLANT AREA ON-STREET PARKING

During peak weekends and holidays, vehicles line Sabino Canyon Park. The informal on-street parking is disorganized. The informal on-street parking also makes it challenging for pedestrians.

Project 5 creates formal on-street parking along Sabino Canyon Park. These new parking areas will be constructed with appropriate ADA accommodations and sidewalks. This additional on-street parking will help absorb overflow parking demand for the Marshall Gulch Trailhead area during peak seasons.

Based on observations and measurements conducted during a field review, it is estimated that eight parallel parking spaces could be constructed on the west side of the roadway between the Water Treatment Plant and the entrance to the proposed new off-street parking described in Project 4. Three separate locations along the east side of the roadway, south of the proposed off-street parking facility entrance, will also add 26 additional parallel parking spaces in as shown in **Figure 7**. A portion of the new parallel parking spaces could be marked as a shuttle loading area, accommodating shuttle service between Summerhaven and Marshall Gulch, as discussed in Chapter 3. The preliminary estimate of probable cost for Project 5 is \$49,100. Final design should consider angle parking as an alternative to parallel parking along Sabino Canyon Park.

Figure 7: Sabino Canyon Park Project 5 - Water Treatment Plant Area On-Street Parking



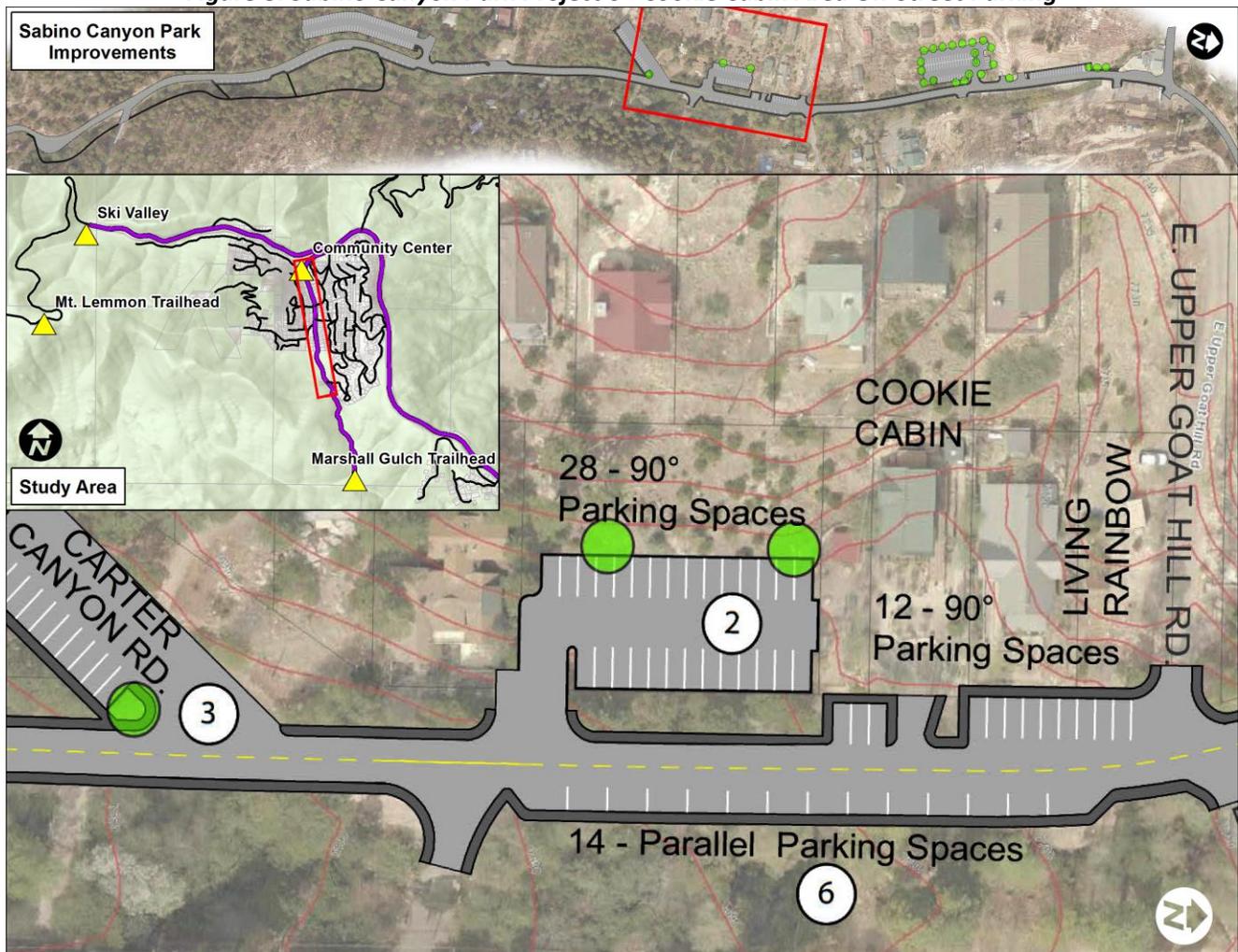
PROJECT 6 – COOKIE CABIN AREA ON-STREET PARKING

Informal parking spaces line both sides of Sabino Canyon Park between Upper Goat Hill Road and Retreat Road. There are gravel perpendicular parking spaces fronting the Cookie Cabin and Living Rainbow properties, as well as gravel parallel parking spaces on the east side of the roadway (though signed for NO PARKING). Project 6 formalizes these spaces with pavement, striping, and ADA-compliant accessibility.



Twenty-six new parking spaces could be constructed along Sabino Canyon Park near the Cookie Cabin and Living Rainbow, as shown in **Figure 8**. 12 perpendicular parking spaces could be created on the west side of the road, fronting the Cookie Cabin and Living Rainbow properties. An additional 14 parallel parking spaces could be created on the east side of the roadway between Upper Goat Hill Road and Retreat Road. The preliminary estimate of probable cost for Project 6 is \$59,700. Final design should consider angle parking as an alternative to perpendicular parking along Sabino Canyon Park.

Figure 8: Sabino Canyon Park Project 6 - Cookie Cabin Area On-Street Parking



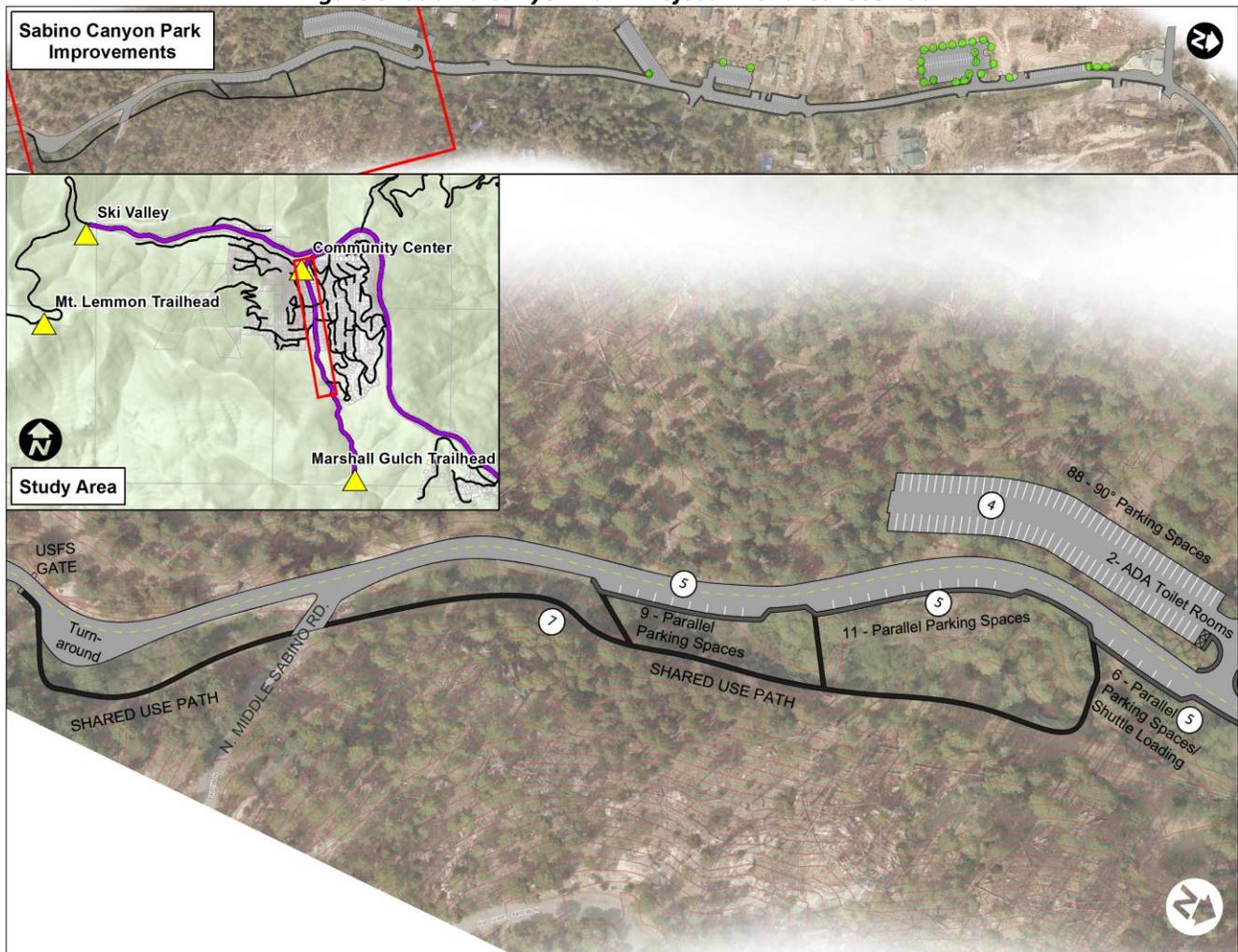
PROJECT 7 – SHARED-USE PATH

Project 5 proposes a shared-use path to connect new sidewalks in Summerhaven to the USFS gate approximately half-way between Summerhaven and Marshall Gulch. This path would provide a safe alternative to pedestrians walking in the roadway.

The proposed shared-use path would be located east of the creek which runs parallel to Sabino Canyon Park on the east side, as shown in **Figure 9**. There is an existing utility corridor along the east side of the creek which provides a relatively flat alignment for a shared-use path that is mostly clear of trees and other obstructions. Supplemental crossings over the creek can be constructed to connect the shared-use path to the proposed parallel parking spaces on the east side of the roadway, as described in Project 5. The shared-use path would terminate at the USFS gate. The preliminary estimate of probable cost for Project 7 is \$305,200.



Figure 9: Sabino Canyon Park Project 7 - Shared-Use Path

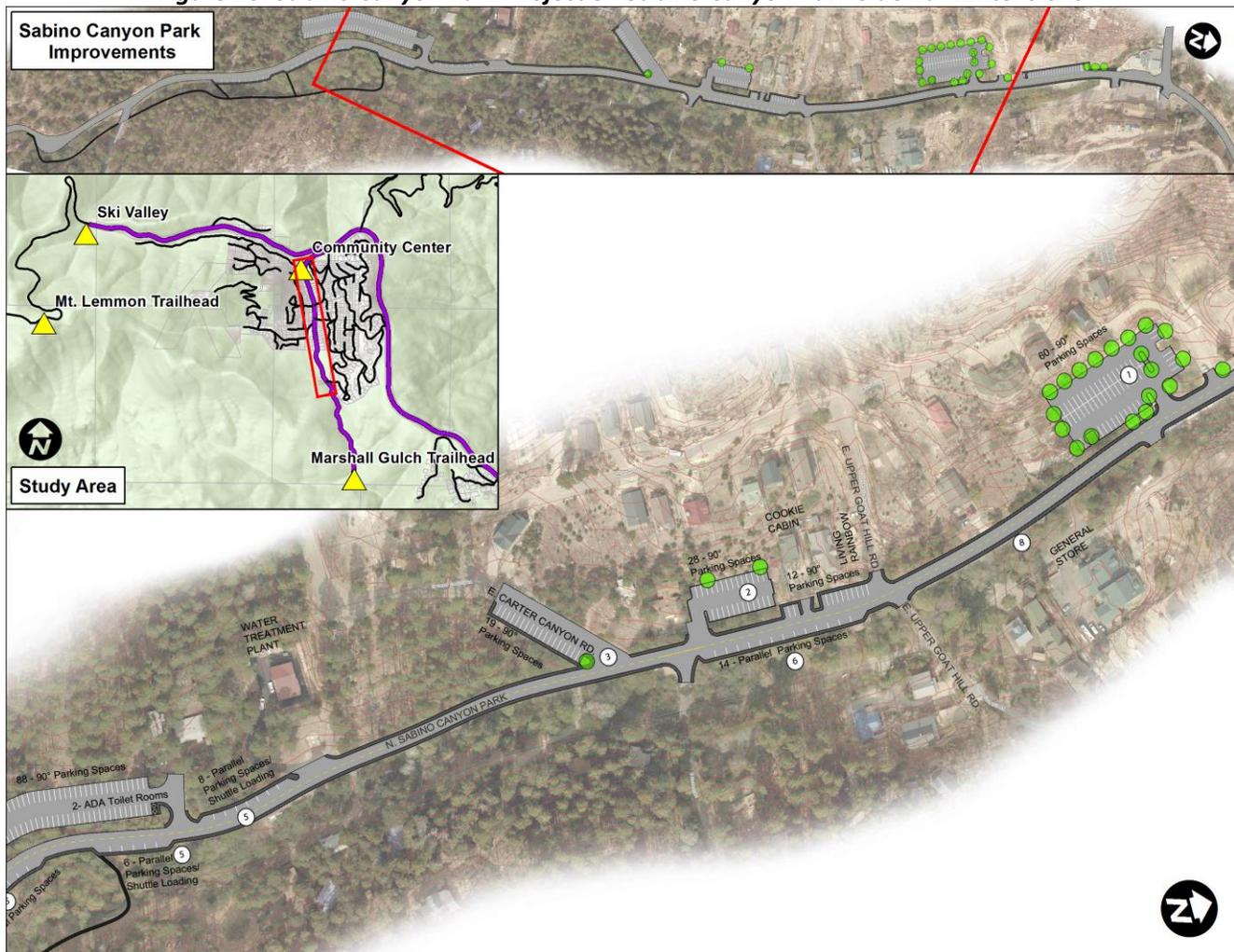


PROJECT 8 – SABINO CANYON PARK SIDEWALK EXTENSIONS

Project 8 proposes continuous sidewalks on both sides of Sabino Canyon Park. These sidewalks would connect the existing sidewalks to businesses, the proposed parking facilities, and the shared-use path at the south end of the village, as shown in **Figure 10**.

The existing sidewalks on the west side of Sabino Canyon Park currently end south of the on-street perpendicular parking located south of the Community Center. The proposed extensions would continue sidewalks along the west side of the roadway, around the proposed on-street parking fronting the Cookie Cabin and Living Rainbow properties, and ultimately connect to the proposed off-street parking facility located south of the Water Treatment Plant. The existing sidewalk on the east side of the roadway ends at Upper Goat Hill Road. The proposed project would extend sidewalks along the east side of the roadway, around the proposed parallel parking between Upper Goat Hill Road and Retreat Road, connect to the proposed shared-use path described in Project 7, and connect the proposed parallel parking on the east side of Sabino Canyon Park south of the Water Treatment Plant. The preliminary estimate of probable cost for Project 8 is \$635,800.

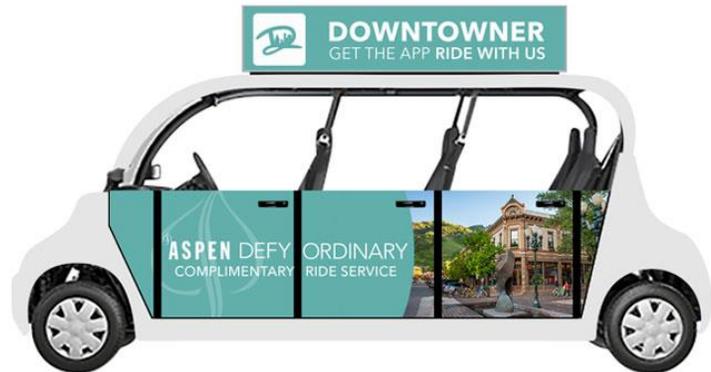
Figure 10: Sabino Canyon Park Project 8 - Sabino Canyon Park Sidewalk Extensions



3. SABINO CANYON PARK CLOSURE (PEAK SEASONS)

An additional concept to reduce congestion during peak periods is to close Sabino Canyon Park to vehicle traffic south of the USFS Gate, located south of the Water Treatment Plant. When closed to vehicular traffic, Sabino Canyon Park, south of the USFS gate, would become pedestrian-only or require travel via shuttle golf carts driven by volunteers.

The success of this concept relies on the completion of parking improvements on Sabino Canyon Park, and the new off-site parking located south of the Water Treatment Plant.



In conjunction with the USFS gate closure, golf-cart style shuttles would transport visitors between Marshall Gulch and the village center. Shuttle stop locations would be located at the new off-street parking facility south of the Water Treatment Plant, near Carter Canyon Road and Cookie Cabin, and the off-street parking facility south of the Community Center. The golf-cart shuttles would be operated by volunteers.

Removal of private vehicles from Sabino Canyon Park during peak holidays converts Sabino Canyon Park to a peaceful walking area, where visitors can enjoy the canyon without conflicting with parked vehicles or vehicles traveling to and from Marshall Gulch along the narrow roadway.

4. SIGNAGE IMPROVEMENTS

Improvements to way-finding signage are recommended. Changes to both information signs and roadway intersection signage are proposed.

Proposed changes to tourism-oriented signs include specific business names, directionality with arrows, and distances to the listed businesses. An example of the information signage is included in **Figure 11** below.

Figure 11: Proposed Tourism Signage Changes



Proposed changes to intersection signage include grouping closely-spaced intersections together on a single sign as well as adding arrows indicating which direction different roadways are located. An example intersection sign is shown in **Figure 12** below.

Figure 12: Proposed Intersection Signage Changes (Before/After)



5. PROJECTS REMOVED FROM CONSIDERATION

Several concepts suggested early in the project development process, described in Technical Memorandum 1, were removed from further consideration due to cost, environmental constraints, or feasibility. These projects are described in **Table 2**, along with the reason for their removal from further consideration.

Table 2: Projects Removed from Further Consideration

Project	Description	Reason for Removal
Remote Parking	Provide remote parking outside of Summerhaven along with a shuttle service to transport visitors to the village and Marshall Gulch. Locations included Sykes Knob, a USFS property north of Summerhaven, Ski Valley, and two locations on Ski Run Road.	Visitors desire to park as close to their destination as possible. Remote locations would be difficult to encourage visitors to park at. Remote parking would also require frequently operating shuttle service.
Off-Street Parking Directly South of Community Center	Construct an off-street parking facility on two vacant lots directly south of the Community Center.	The two northern vacant properties are anticipated to be redeveloped for another use.
Off-Street Parking North of the General Store	Construct an off-street parking facility on the vacant lot directly north of the General Store.	The lot would not provide a large enough supply of parking to justify improvement costs.
Improve Access to Disused USFS Lot near Marshall Gulch	Repair the washed-out bridge connecting Sabino Canyon Park to the disused USFS lot and make minor improvements to increase parking capacity.	The bridge has already been repaired and parking is now available at this location.
Restripe the Turnaround at the USFS Gate for Parking	Restripe the turnaround at the USFS gate to accommodate 10 additional parking spaces.	The space will be needed when the USFS gate is closed to allow vehicles to turn around.
New Roadway Connection South of Summerhaven	Construct a new roadway corridor south of Summerhaven to connect Sabino Canyon Park to General Hitchcock Highway.	A new roadway corridor would be cost prohibitive due to the steep grades and other environmental challenges in the area.
Formalize Parking at the Ski Equipment Storage Area	Pave and stripe the gravel lot on Ski Run Road that currently stores disused ski equipment to provide more formalized parking for the Mount Lemmon Trailhead.	Further discussions with the USFS will be required to evaluate the feasibility of formalizing parking at this location.
General Hitchcock Hwy & Ski Run Rd Roundabout	Construct a roundabout at the intersection of General Hitchcock Highway and Ski Run Road/Loma Linda Extension Road to reduce vehicle speeds entering Summerhaven and provide an aesthetic gateway to the village.	The roundabout may present operational challenges due to weather conditions and the roadway profile.

6. POTENTIAL FUNDING SOURCE

The Federal Lands Access Program (FLAP) grant from the Federal Highway Administration Office of Federal Lands Highway is a potential project funding source. This grant provides funds for projects on lands owned or maintained by local agencies that provide access to Federal Lands. A 5.7 percent local match is required. The next tentative call for projects is Winter 2020. Future coordination between Pima County and USFS will occur to discuss the potential for an application submittal.

Further potential funding sources can be identified and discussed outside of this planning-level study to implement the recommended projects.

APPENDICES

APPENDIX A: SABINO CANYON PARK COST ESTIMATES

Estimate 1: Community Center/General Store Area Off-Street Parking

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 REMOVALS/EXCAVATION					
1.1	Remove Miscellaneous	LSUM	1	\$ 2,500.00	\$ 2,500.00
1.2	Grading, Excavation and Embankment	LSUM	1	\$ 5,000.00	\$ 5,000.00
					\$ 7,500.00
2 SITE IMPROVEMENTS					
2.1	2.5" Asphalt Wearing Course	SQ. YD.	2,516	\$ 15.00	\$ 37,800.00
2.2	Aggregate Base Course, 4"	SQ. YD.	2,516	\$ 6.00	\$ 15,100.00
2.3	Subgrade Preparation, 6"	SQ. YD.	2,516	\$ 6.00	\$ 15,100.00
2.4	Curb and Gutter	L. FT.	4,463	\$ 18.00	\$ 80,400.00
2.8	Stripe Parking Lines	L. FT.	1,062	\$ 0.50	\$ 600.00
2.10	Precast Parking Wheel Bumper	EA	59	\$ 60.00	\$ 3,600.00
					\$ 152,600.00
3 LANDSCAPE IMPROVEMENTS					
5.1	Landscape Installation	LSUM	1	\$ 15,000.00	\$ 15,000.00
5.2	Irrigation Installation	LSUM	1	\$ 12,500.00	\$ 12,500.00
					\$ 27,500.00
4 MISC					
8.2	Mobilization, Bond, Insurance (12%)	LSUM	1	\$ 23,000.00	\$ 23,000.00
8.3	Construction Staking (3%)	LSUM	1	\$ 6,000.00	\$ 6,000.00
8.4	Design Engineering and Construction Administration (20%)	LSUM	1	\$ 38,000.00	\$ 38,000.00
8.6	Contingency (20%)	LSUM	1	\$ 38,000.00	\$ 38,000.00
					\$ 105,000.00
Total Direct Costs:					\$ 292,600.00

Estimate 2: Cookie Cabin Area Off-Street Parking

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 REMOVALS/EXCAVATION					
1.1	Remove Miscellaneous	LSUM	1	\$ 2,500.00	\$ 2,500.00
1.2	Grading, Excavation and Embankment	LSUM	1	\$ 5,000.00	\$ 5,000.00
					\$ 7,500.00
2 SITE IMPROVEMENTS					
2.1	2.5" Asphalt Wearing Course	SQ. YD.	968	\$ 15.00	\$ 14,600.00
2.2	Aggregate Base Course, 4"	SQ. YD.	968	\$ 6.00	\$ 5,900.00
2.3	Subgrade Preparation, 6"	SQ. YD.	968	\$ 6.00	\$ 5,900.00
2.4	Curb and Gutter	L. FT.	1,700	\$ 18.00	\$ 30,600.00
2.8	Stripe Parking Lines	L. FT.	468	\$ 0.50	\$ 300.00
2.10	Precast Parking Wheel Bumper	EA	28	\$ 60.00	\$ 1,700.00
					\$ 59,000.00
3 LANDSCAPE IMPROVEMENTS					
5.1	Landscape Installation	LSUM	1	\$ 5,000.00	\$ 5,000.00
5.2	Irrigation Installation	LSUM	1	\$ 3,500.00	\$ 3,500.00
					\$ 8,500.00
4 MISC					
8.2	Mobilization, Bond, Insurance (12%)	LSUM	1	\$ 9,000.00	\$ 9,000.00
8.3	Construction Staking (3%)	LSUM	1	\$ 3,000.00	\$ 3,000.00
8.4	Design Engineering and Construction Administration (20%)	LSUM	1	\$ 15,000.00	\$ 15,000.00
8.6	Contingency (20%)	LSUM	1	\$ 15,000.00	\$ 15,000.00
					\$ 42,000.00
Total Direct Costs:					\$ 117,000.00

Estimate 3: Carter Canyon Road On-Street Parking

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 REMOVALS/EXCAVATION					
1.1	Remove Miscellaneous	LSUM	1	\$ 2,500.00	\$ 2,500.00
1.2	Grading, Excavation and Embankment	LSUM	1	\$ 5,000.00	\$ 5,000.00
					\$ 7,500.00
2 SITE IMPROVEMENTS					
2.1	2.5" Asphalt Wearing Course	SQ. YD.	387	\$ 15.00	\$ 5,900.00
2.2	Aggregate Base Course, 4"	SQ. YD.	387	\$ 6.00	\$ 2,400.00
2.3	Subgrade Preparation, 6"	SQ. YD.	387	\$ 6.00	\$ 2,400.00
2.4	Curb and Gutter	L. FT.	700	\$ 18.00	\$ 12,600.00
2.8	Stripe Parking Lines	L. FT.	324	\$ 0.50	\$ 200.00
2.10	Precast Parking Wheel Bumper	EA	19	\$ 60.00	\$ 1,200.00
					\$ 24,700.00
3 LANDSCAPE IMPROVEMENTS					
5.1	Landscape Installation	LSUM	1	\$ 3,500.00	\$ 3,500.00
5.2	Irrigation Installation	LSUM	1	\$ 2,500.00	\$ 2,500.00
					\$ 6,000.00
4 MISC					
8.2	Mobilization, Bond, Insurance (12%)	LSUM	1	\$ 5,000.00	\$ 5,000.00
8.3	Construction Staking (3%)	LSUM	1	\$ 2,000.00	\$ 2,000.00
8.4	Design Engineering and Construction Administration (20%)	LSUM	1	\$ 8,000.00	\$ 8,000.00
8.6	Contingency (20%)	LSUM	1	\$ 8,000.00	\$ 8,000.00
					\$ 23,000.00
Total Direct Costs:					\$ 61,200.00

Estimate 4: Off-Street Parking and Restrooms South of Water Treatment Plant

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 REMOVALS/EXCAVATION					
1.1	Remove Miscellaneous	LSUM	1	\$ 4,000.00	\$ 4,000.00
1.2	Grading, Excavation and Embankment	LSUM	1	\$ 7,500.00	\$ 7,500.00
					\$ 11,500.00
2 SITE IMPROVEMENTS					
2.1	2.5" Asphalt Wearing Course	SQ. YD.	2,758	\$ 15.00	\$ 41,400.00
2.2	Aggregate Base Course, 4"	SQ. YD.	2,758	\$ 6.00	\$ 16,600.00
2.3	Subgrade Preparation, 6"	SQ. YD.	2,758	\$ 6.00	\$ 16,600.00
2.4	Curb and Gutter	L. FT.	4,892	\$ 18.00	\$ 88,100.00
2.6	Stripe Parking Lines	L. FT.	1,530	\$ 0.50	\$ 800.00
2.7	Precast Parking Wheel Bumper	EA	67	\$ 60.00	\$ 4,100.00
2.8	ADA Restroom	EA	1	\$ 95,000.00	\$ 95,000.00
					\$ 262,600.00
3 LANDSCAPE IMPROVEMENTS					
5.1	Landscape Installation	LSUM	1	\$ 3,500.00	\$ 3,500.00
5.2	Irrigation Installation	LSUM	1	\$ 2,500.00	\$ 2,500.00
					\$ 6,000.00
4 MISC					
8.2	Mobilization, Bond, Insurance (12%)	LSUM	1	\$ 34,000.00	\$ 34,000.00
8.3	Construction Staking (3%)	LSUM	1	\$ 9,000.00	\$ 9,000.00
8.4	Design Engineering and Construction Administration (20%)	LSUM	1	\$ 57,000.00	\$ 57,000.00
8.6	Contingency (20%)	LSUM	1	\$ 57,000.00	\$ 57,000.00
					\$ 157,000.00
Total Direct Costs:					\$ 437,100.00

Estimate 5: Water Treatment Plant Area On-Street Parking

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 REMOVALS/EXCAVATION					
1.1	Remove Miscellaneous	LSUM	1	\$ 2,500.00	\$ 2,500.00
1.2	Grading, Excavation and Embankment	LSUM	1	\$ 5,000.00	\$ 5,000.00
					\$ 7,500.00
2 SITE IMPROVEMENTS					
2.1	2.5" Asphalt Wearing Course	SQ. YD.	242	\$ 15.00	\$ 3,700.00
2.2	Aggregate Base Course, 4"	SQ. YD.	242	\$ 6.00	\$ 1,500.00
2.3	Subgrade Preparation, 6"	SQ. YD.	242	\$ 6.00	\$ 1,500.00
2.4	Curb and Gutter	L. FT.	429	\$ 18.00	\$ 7,800.00
2.8	Stripe Parking Lines	L. FT.	716	\$ 0.50	\$ 400.00
2.10	Precast Parking Wheel Bumper	EA	27	\$ 60.00	\$ 1,700.00
					\$ 16,600.00
3 LANDSCAPE IMPROVEMENTS					
5.1	Landscape Installation	LSUM	1	\$ 3,500.00	\$ 3,500.00
5.2	Irrigation Installation	LSUM	1	\$ 2,500.00	\$ 2,500.00
					\$ 6,000.00
4 MISC					
8.2	Mobilization, Bond, Insurance (12%)	LSUM	1	\$ 4,000.00	\$ 4,000.00
8.3	Construction Staking (3%)	LSUM	1	\$ 1,000.00	\$ 1,000.00
8.4	Design Engineering and Construction Administration (20%)	LSUM	1	\$ 7,000.00	\$ 7,000.00
8.6	Contingency (20%)	LSUM	1	\$ 7,000.00	\$ 7,000.00
					\$ 19,000.00
Total Direct Costs:					\$ 49,100.00

Estimate 6: Cookie Cabin Area On-Street Parking

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 REMOVALS/EXCAVATION					
1.1	Remove Miscellaneous	LSUM	1	\$ 2,500.00	\$ 2,500.00
1.2	Grading, Excavation and Embankment	LSUM	1	\$ 5,000.00	\$ 5,000.00
					\$ 7,500.00
2 SITE IMPROVEMENTS					
2.1	2.5" Asphalt Wearing Course	SQ. YD.	338	\$ 15.00	\$ 5,100.00
2.2	Aggregate Base Course, 4"	SQ. YD.	338	\$ 6.00	\$ 2,100.00
2.3	Subgrade Preparation, 6"	SQ. YD.	338	\$ 6.00	\$ 2,100.00
2.4	Curb and Gutter	L. FT.	600	\$ 18.00	\$ 10,800.00
2.8	Stripe Parking Lines	L. FT.	396	\$ 0.50	\$ 200.00
2.10	Precast Parking Wheel Bumper	EA	14	\$ 60.00	\$ 900.00
					\$ 21,200.00
3 LANDSCAPE IMPROVEMENTS					
5.1	Landscape Installation	LSUM	1	\$ 5,000.00	\$ 5,000.00
5.2	Irrigation Installation	LSUM	1	\$ 3,000.00	\$ 3,000.00
					\$ 8,000.00
4 MISC					
8.2	Mobilization, Bond, Insurance (12%)	LSUM	1	\$ 5,000.00	\$ 5,000.00
8.3	Construction Staking (3%)	LSUM	1	\$ 2,000.00	\$ 2,000.00
8.4	Design Engineering and Construction Administration (20%)	LSUM	1	\$ 8,000.00	\$ 8,000.00
8.6	Contingency (20%)	LSUM	1	\$ 8,000.00	\$ 8,000.00
					\$ 23,000.00
Total Direct Costs:					\$ 59,700.00

Estimate 7: Shared-Use Path

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 REMOVALS/EXCAVATION					
1.1	Remove Miscellaneous	LSUM	1	\$ 3,500.00	\$ 3,500.00
1.2	Grading, Excavation and Embankment	LSUM	1	\$ 10,000.00	\$ 10,000.00
					\$ 13,500.00
2 SITE IMPROVEMENTS					
2.1	2.5" Asphalt Wearing Course	SQ. YD.	6,725	\$ 15.00	\$ 100,900.00
2.2	Aggregate Base Course, 4"	SQ. YD.	6,725	\$ 6.00	\$ 40,400.00
2.3	Subgrade Preparation, 6"	SQ. YD.	6,725	\$ 6.00	\$ 40,400.00
					\$ 181,700.00
3 LANDSCAPE IMPROVEMENTS					
5.1	Landscape Installation	LSUM	0	\$ -	\$ -
5.2	Irrigation Installation	LSUM	0	\$ -	\$ -
					\$ -
4 MISC					
8.2	Mobilization, Bond, Insurance (12%)	LSUM	1	\$ 24,000.00	\$ 24,000.00
8.3	Construction Staking (3%)	LSUM	1	\$ 6,000.00	\$ 6,000.00
8.4	Design Engineering and Construction Administration (20%)	LSUM	1	\$ 40,000.00	\$ 40,000.00
8.6	Contingency (20%)	LSUM	1	\$ 40,000.00	\$ 40,000.00
					\$ 110,000.00
Total Direct Costs:					\$ 305,200.00

Estimate 8: Sabino Canyon Park Sidewalk Extensions

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 REMOVALS/EXCAVATION					
1.1	Remove Miscellaneous	LSUM	1	\$ 5,000.00	\$ 5,000.00
1.2	Grading, Excavation and Embankment	LSUM	1	\$ 10,000.00	\$ 10,000.00
					\$ 15,000.00
2 SITE IMPROVEMENTS					
2.5	Concrete Sidewalk (MAG DET. 230)	SQ. FT.	26,250	\$ 15.00	\$ 393,800.00
					\$ 393,800.00
3 LANDSCAPE IMPROVEMENTS					
5.1	Landscape Installation	LSUM	0	\$ -	\$ -
5.2	Irrigation Installation	LSUM	0	\$ -	\$ -
					\$ -
4 MISC					
8.2	Mobilization, Bond, Insurance (12%)	LSUM	1	\$ 50,000.00	\$ 50,000.00
8.3	Construction Staking (3%)	LSUM	1	\$ 13,000.00	\$ 13,000.00
8.4	Design Engineering and Construction Administration (20%)	LSUM	1	\$ 82,000.00	\$ 82,000.00
8.6	Contingency (20%)	LSUM	1	\$ 82,000.00	\$ 82,000.00
					\$ 227,000.00
Total Direct Costs:					\$ 635,800.00

Estimate 9: Overall Estimate for All Sabino Canyon Park Projects

	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
1 REMOVALS/EXCAVATION					
1.1	Remove Miscellaneous	LSUM	1	\$ 25,000.00	\$ 25,000.00
1.2	Grading, Excavation and Embankment	LSUM	1	\$ 52,500.00	\$ 52,500.00
					\$ 77,500.00
2 SITE IMPROVEMENTS					
2.1	2.5" Asphalt Wearing Course	SQ. YD.	13,934	\$ 15.00	\$ 209,100.00
2.2	Aggregate Base Course, 4"	SQ. YD.	13,934	\$ 6.00	\$ 83,700.00
2.3	Subgrade Preparation, 6"	SQ. YD.	13,934	\$ 6.00	\$ 83,700.00
2.4	Curb and Gutter	L. FT.	12,784	\$ 18.00	\$ 230,200.00
2.5	Concrete Sidewalk (MAG DET. 230)	SQ. FT.	26,250	\$ 15.00	\$ 393,800.00
2.6	Stripe Parking Lines	L. FT.	3,033	\$ 0.50	\$ 1,600.00
2.7	Precast Parking Wheel Bumper	EA	214	\$ 60.00	\$ 12,900.00
2.8	ADA Restroom	EA	1	\$ 95,000.00	\$ 95,000.00
					\$ 1,015,000.00
3 LANDSCAPE IMPROVEMENTS					
5.1	Landscape Installation	LSUM	1	\$ 35,500.00	\$ 35,500.00
5.2	Irrigation Installation	LSUM	1	\$ 26,500.00	\$ 26,500.00
					\$ 62,000.00
4 MISC					
8.1	Private Utility Relocation	LSUM	1	\$ 250,000.00	\$ 250,000.00
8.2	Mobilization, Bond, Insurance (12%)	LSUM	1	\$ 139,000.00	\$ 139,000.00
8.3	Construction Staking (3%)	LSUM	1	\$ 35,000.00	\$ 35,000.00
8.4	Design Engineering and Construction Administration (20%)	LSUM	1	\$ 231,000.00	\$ 231,000.00
8.5	Environmental Control Measures (Clearance and SWPPP)	LSUM	1	\$ 500,000.00	\$ 500,000.00
8.6	Contingency (20%)	LSUM	1	\$ 231,000.00	\$ 231,000.00
					\$ 1,386,000.00
Total Direct Costs:					\$ 2,540,500.00