Sedona Area Transit Implementation Plan

Prepared for:

TRANSPORTATION CONSULTANTS, INC.

TRANSIT marketing LLC

CITY OF SEDONA

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Sedona Area Transit Implementation Plan

Final Report

Prepared for:

City of Sedona
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Sedona, AZ 86336

Prepared by:

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LSC #184410

January 24, 2020

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Chapter A

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Chapter A

Introduction

The City of Sedona is moving forward to provide effective transit services across multiple jurisdictions, focusing primarily on the needs of visitors and residents within the greater Sedona area and Oak Creek Canyon. The goal is to design a transit system that will enhance visitor experiences while protecting the unique environment, and improve the mobility of visitors and locals alike by having a new transit system in operation. Reducing the number of vehicles on area roadways during the busiest tourist seasons when traffic delays can exceed one hour or more within Oak Creek Canyon is also a goal, as is reducing the number of vehicles seeking parking at specific trailheads and other locations where capacity to accommodate vehicles is lacking.

The intent of this study and implementation planning was to take what have been general concepts, created over many years of previous transit studies, to the point of actual implementation.

PLANNING PROCESS

Development of the implementation plan combined various approaches to complete a detailed technical assessment of service planning with significant community and visitor input. A planning Technical Advisory Committee was formed to review interim documents and to provide direction for development of the implementation plan. The technical analysis included a detailed evaluation of the need and potential demand for transit services in the communities of

Sedona and the Village of Oak Creek (VOC), in Oak Creek Canyon (OCC), and to Slide Rock State Park. Transit market segments that were considered included residents, day visitors, and overnight visitors with the different transportation needs of each group considered for service planning.

Significant efforts were made to involve the community in the planning process. This included community open houses and a community-wide survey questionnaire. Results of visitor surveys were analyzed and interviews were conducted with visitors at local lodging establishments and trailheads. Meetings were held with key stakeholder groups including the lodging businesses and recreation businesses. Separate meetings were held with Traffic Matters to obtain input and feedback. A service options workshop was held, which gave participants an opportunity to set priorities for service implementation.

REPORT OVERVIEW

A brief description of the report contents is provided in this section.

Chapter B

Chapter B presents a literature review of previous planning efforts that have studied aspects of transit in the Sedona area, as well as industry "best practices" for transit in visitor-focused areas like Sedona.

Chapter C

Chapter C presents the community conditions, demographics, and select local travel patterns for the Sedona-Oak Creek Canyon study area. Visitor activity is also evaluated, as is an analysis of the Verde Lynx service operated by Cottonwood Area Transit.

Chapter D

Chapter D presents the input gathered from stakeholders and the community through interviews, community open houses, and surveys. A summary of areas of consensus, as well as questions to be answered, is included. Target markets, shuttle destinations, service qualities, and major themes are identified.

Chapter E

To better understand the parking and transportation experiences of visitors, the LSC team conducted almost 200 interviews with visitors at local hotels, shopping areas, and various trailheads. The results of these interviews are presented in Chapter E.

Interviews ranged from just a few minutes while people were on the move going hiking to more in-depth, incentivized interviews in hotel lobbies. Some of the key findings from these interviews regarding if and how respondents might use a local transit service were:

- More than three-quarters of overnight visitors responded that they might use a shuttle for at least some trips if it existed, assuming it went where and when they needed it.
- Day visitors were less likely to respond that they would take a shuttle with the exception being those day-visitors going hiking at West Fork where a long wait for parking is common.
- Only about one in five of the overnight visitors interviewed at hotels and shopping locations had no interest in the shuttle while approximately a quarter of day visitors interviewed at trailheads responded that they wouldn't take a shuttle.
- Overnight visitors saw the potential to use a shuttle for a variety of trip purposes including accessing trailheads, going shopping, and dining or drinking at night, while day visitors only saw a shuttle as a potential for linking a park and ride with trailheads.
- Most visitors were including hiking as a focus activity, but were flexible with planning when they might hike and what trails they may do – planning around parking and crowds seemed to be expected.
- Many visitors commented on parking and traffic frustrations they experienced while others weren't bothered by lack of parking or congestion.

When it came to how the service operates and what factors would get someone to potentially use a service, the most important factors overall were frequency and availability of the service, followed by cost, ease of use, and marketing/awareness

of the shuttle operations. Many respondents thought that a free service would be good, but it was considered a large factor, as long as the service were affordable.

Chapter F

Demand estimation is presented in Chapter F utilizing several methods and methodologies from industry standard estimation techniques. Information collected from the various visitor surveys and interviews was used to develop estimates for the potential visitor use of transit services. The transit demand identified in this section was used to identify and evaluate the various transit service options.

Chapter G

Chapter G presents transit service criteria based on initial criteria from previous studies combined with input received through the public outreach process. These criteria were used for the development and evaluation of transit service options to meet public transportation needs in Sedona. The criteria were revised as part of the planning process to best reflect community priorities.

Chapter H

Chapter H presents associated challenges that must be considered or addressed to facilitate implementation of many of the possible service options. These issues are related to:

- Parking
    - In Oak Creek Canyon, at trailheads, and in the Uptown area
- Roadway Network
    - Connectivity of the overall roadway network and the lack of alternate routes in the greater Sedona area
- Road Capacity at the "Y"
    - Congestion and associated traffic delays at the "Y"
- Pedestrians and Cyclists
    - Lack of connectivity of bicycle and pedestrian infrastructure
    - Crosswalks and the impact on pedestrian safety/access and vehicular traffic

- Visitor capacity
    - Impact of a shuttle on recreational area capacity and possibility of a reservation system
- Fee revenue
    - Parking fees and relationship to a potential shuttle

LSC relied on many of the concepts included in the current Sedona Transportation Master Plan to inform the discussion of how they relate to a potential shuttle.

Chapter I

In Chapter I, ten different service option possibilities are presented and analyzed for Oak Creek Canyon. Nine of the options are for service to points in OCC. The tenth option is a sightseeing option best suited for a private operator and therefore not analyzed.

Many of the options were analyzed relative to policy considerations for possible parking controls and reservation systems – these policies significantly impact estimated performance. Without changes in parking controls in OCC, transit service will not be a viable option.

Chapter J

Eight different service options for the Sedona area are explored in Chapter J.

Many of the Sedona options analyzed are dependent on roadway improvements at the "Y" and development of a transit hub, either in Uptown or in the vicinity of the "Y".

Chapter K

Governance options are described in Chapter K, ranging from the City of Sedona operating a city transit system to participation as part of a larger regional transit system.

Chapter L

Available funding options are presented in Chapter L. In many cases, the funding sources are linked to the governance structure. Some governance options do not have independent funding sources and are dependent on the funding provided through participating government entities.

Chapter M

The transit implementation plan is presented in Chapter M and summarized in the following section. The implementation plan identifies the key steps and decisions which must be made to implement the new Sedona area transit service.

IMPLEMENTATION PLAN

The implementation plan provides the following recommendations:

Governance

The City should establish a city transit system with a contract operator. The City would be responsible for overseeing the operation and obtaining funds for capital investments and operations. The City should also look to future opportunities to partner with regional transit services through options such as a Joint Powers Authority, intergovernmental agreements, or extension of the Northern Arizona Intergovernmental Public Transit Authority (NAIPTA).

Service Plan

The recommended service is to be implemented in four phases. The first phase begins with core routes connecting West Sedona, VOC, and Uptown as shown in Figure A-1. Shuttle service to local trailheads in the Sedona area would be included as shown in Figure A-2. While these are the recommended trailheads to be included in the first phase of service, the actual trailheads will be determined through cooperative efforts with the U.S. Forest Service.

Figure A-1

Sedona Fixed Routes with Demand-Response Service

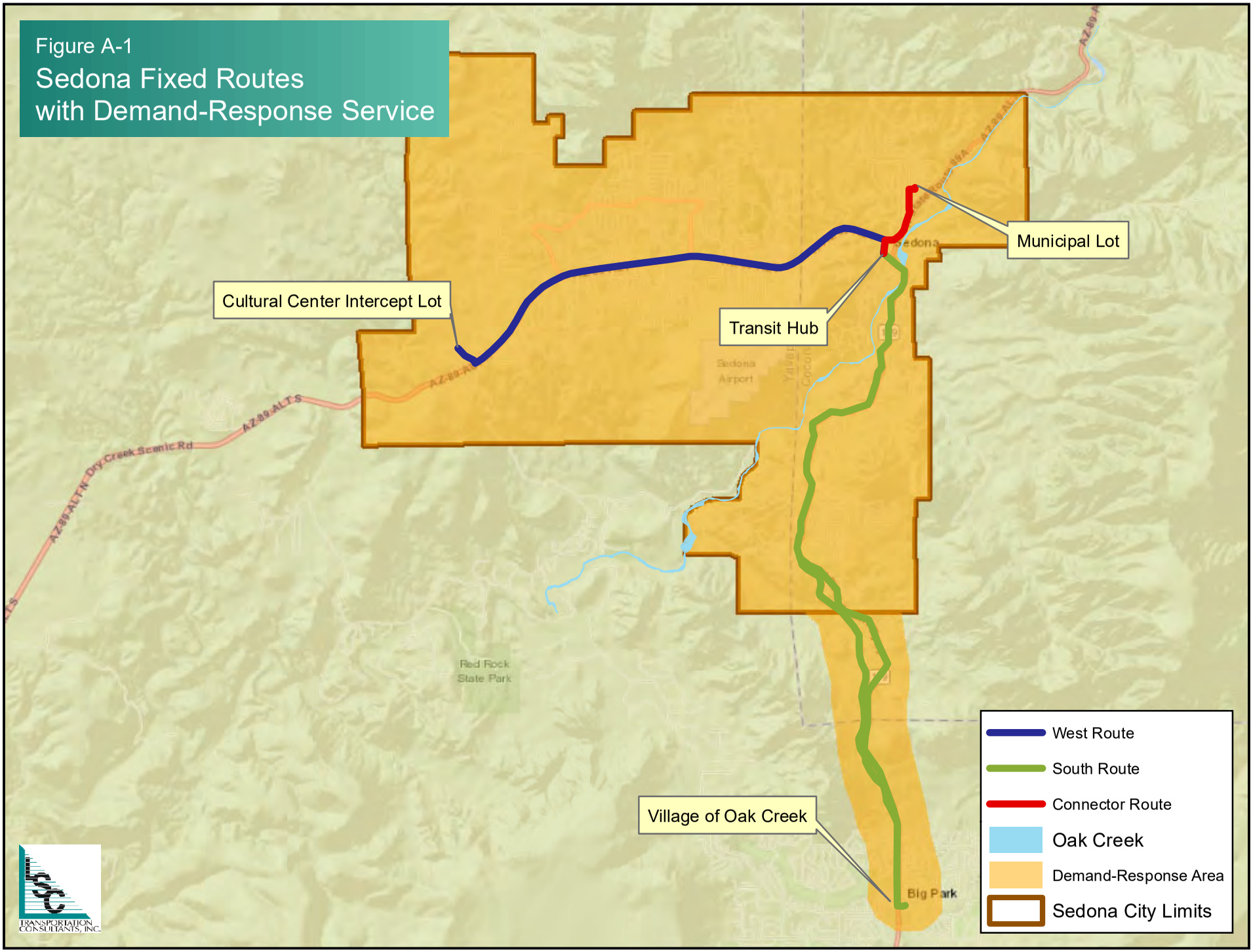
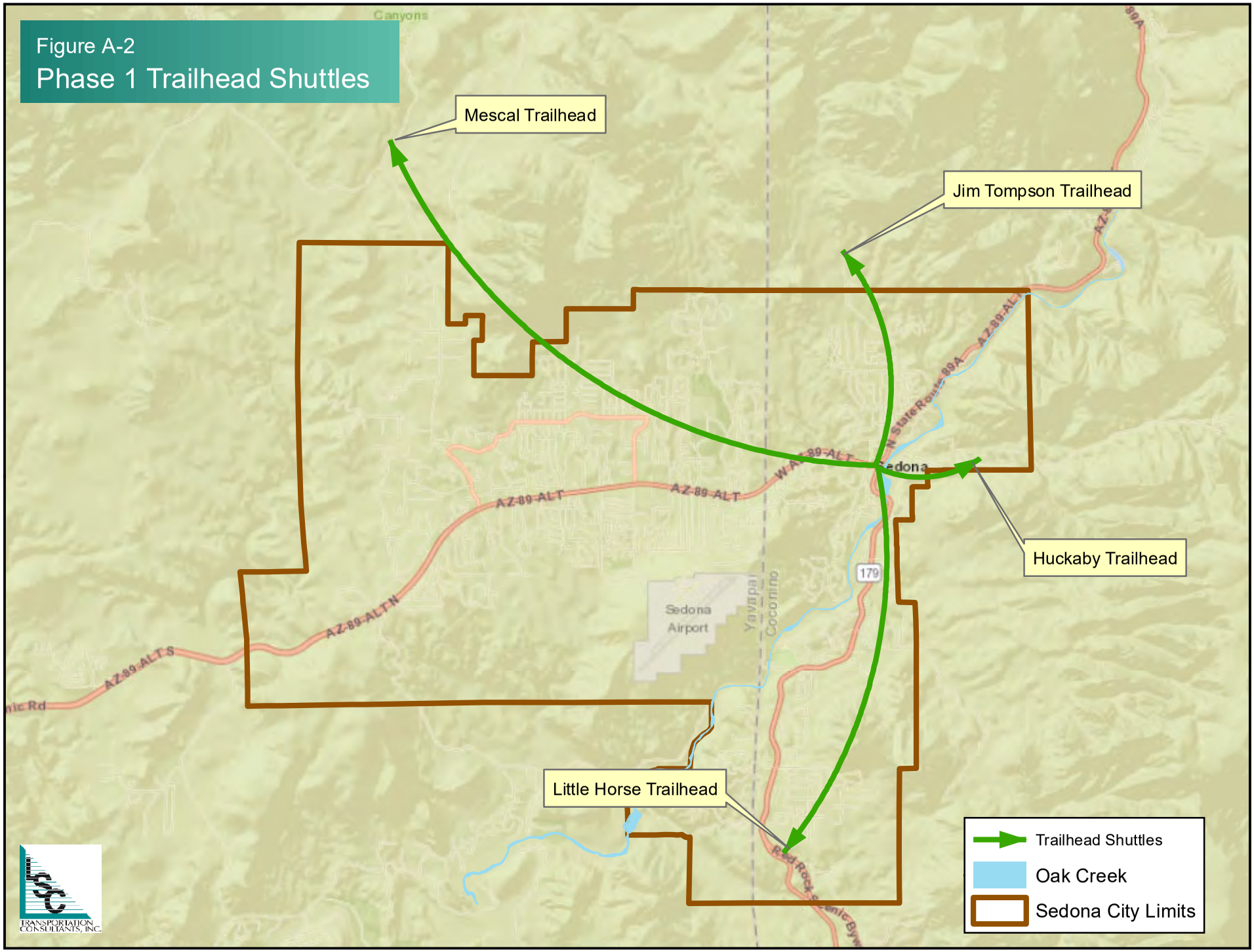


Figure A-2
Phase 1 Trailhead Shuttles



Phase 2 would add additional trailheads as shown in Figure A-3. Again, while these are the recommended trailheads to be added in Phase 2, final selection of the trailheads will be made through cooperation with the U.S. Forest Service.

Phase 3 will add service to destinations in OCC as shown in Figure A-4 and Phase 4 will add express service from an intercept parking lot near VOC to Slide Rock State Park as shown in Figure A-5.

Facilities and infrastructure will be required to support the new transit service. Facilities include a new transit hub and an operations and maintenance facility. Some bus stop improvements will also be needed along the proposed routes. Recommendations are provided for vehicles for each phase of the service plan with the vehicles selected to match the specific services to be provided.

Chapter M includes a ten-year financial plan and recommendations for steps that must be completed to implement each phase.

MARKETING PLAN

A separate marketing plan has been prepared with recommendations for developing a brand for the service and specific recommendations to develop awareness of the new service as it is implemented.

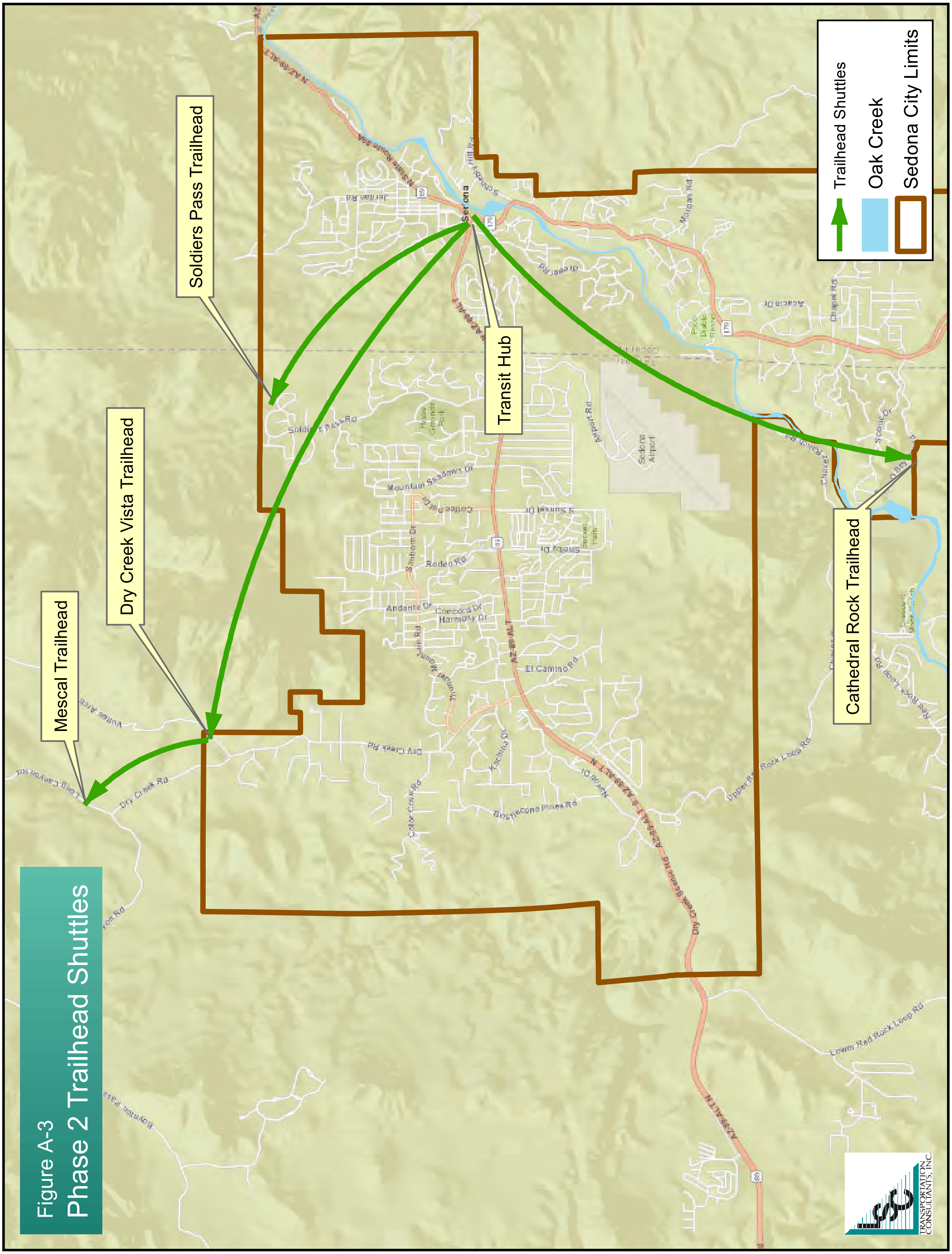


Figure A-3
Phase 2 Trailhead Shuttles
Soldiers Pass Trailhead
Transit Hub
Dry Creek Vista Trailhead
Mescal Trailhead
Cathedral Rock Trailhead
Trailhead Shuttles
Oak Creek
Sedona City Limits
Sedona
Sedona Airport
Soldiers Pass Rd
Mountain Shadows Dr
Coffee Pot Dr
Sanborn Dr
Rodeo Rd
Andante Dr
Concord Dr
Harmony Dr
El Camino Rd
Dry Creek Rd
Boynton Pass Rd
Upper Red Rock Loop Rd
Lower Red Rock Loop Rd
Airport Rd
Jordan Rd
Chapel Rd
Acacia Dr
Morgan Rd
Kachina Dr
Navajo Dr
Color Cove Rd
Bristlecone Pines Rd
Thunder Mountain Rd
Dry Creek Scenic Rd
Posse Grounds Park
Sunset Park
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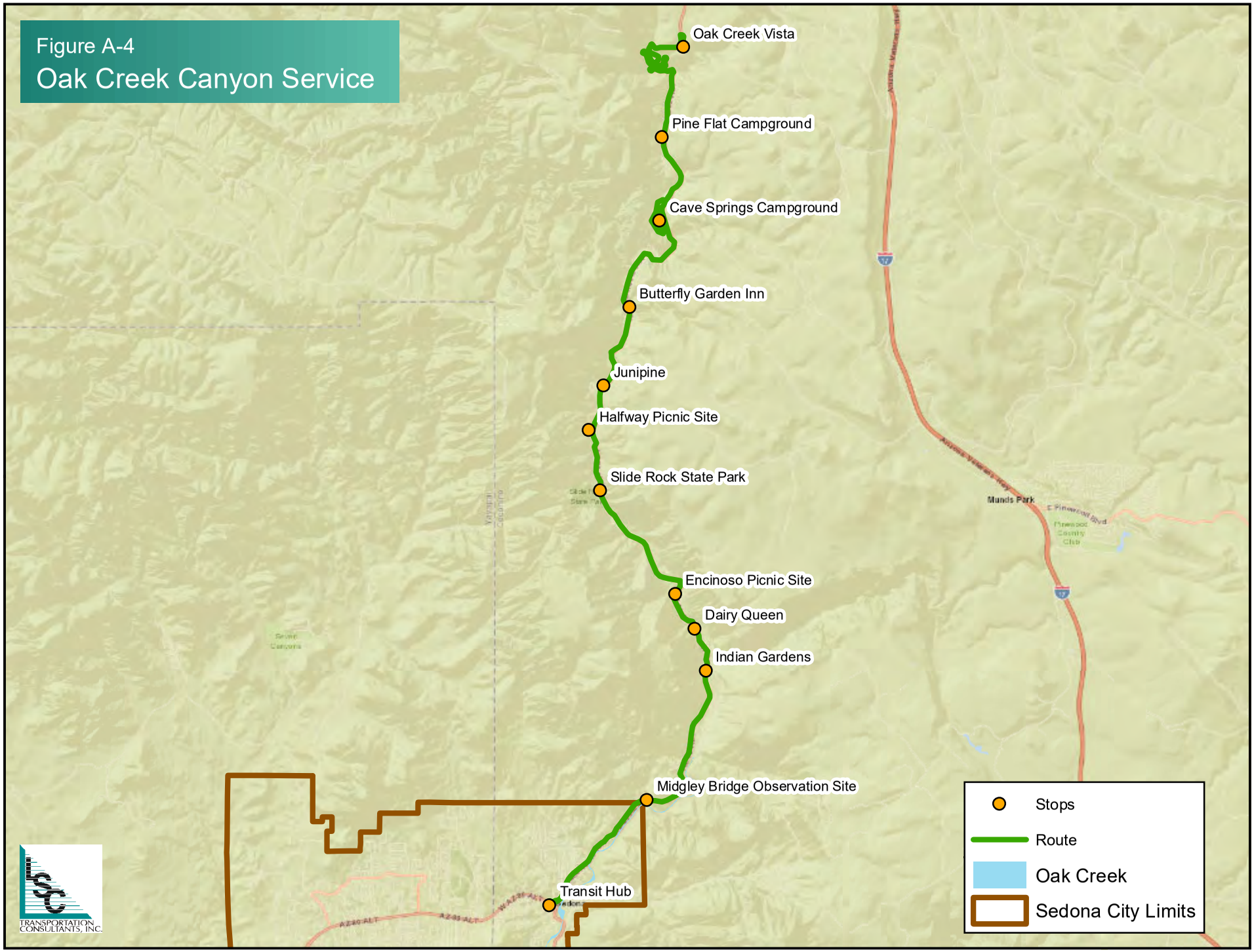
Figure A-4

Oak Creek Canyon Service



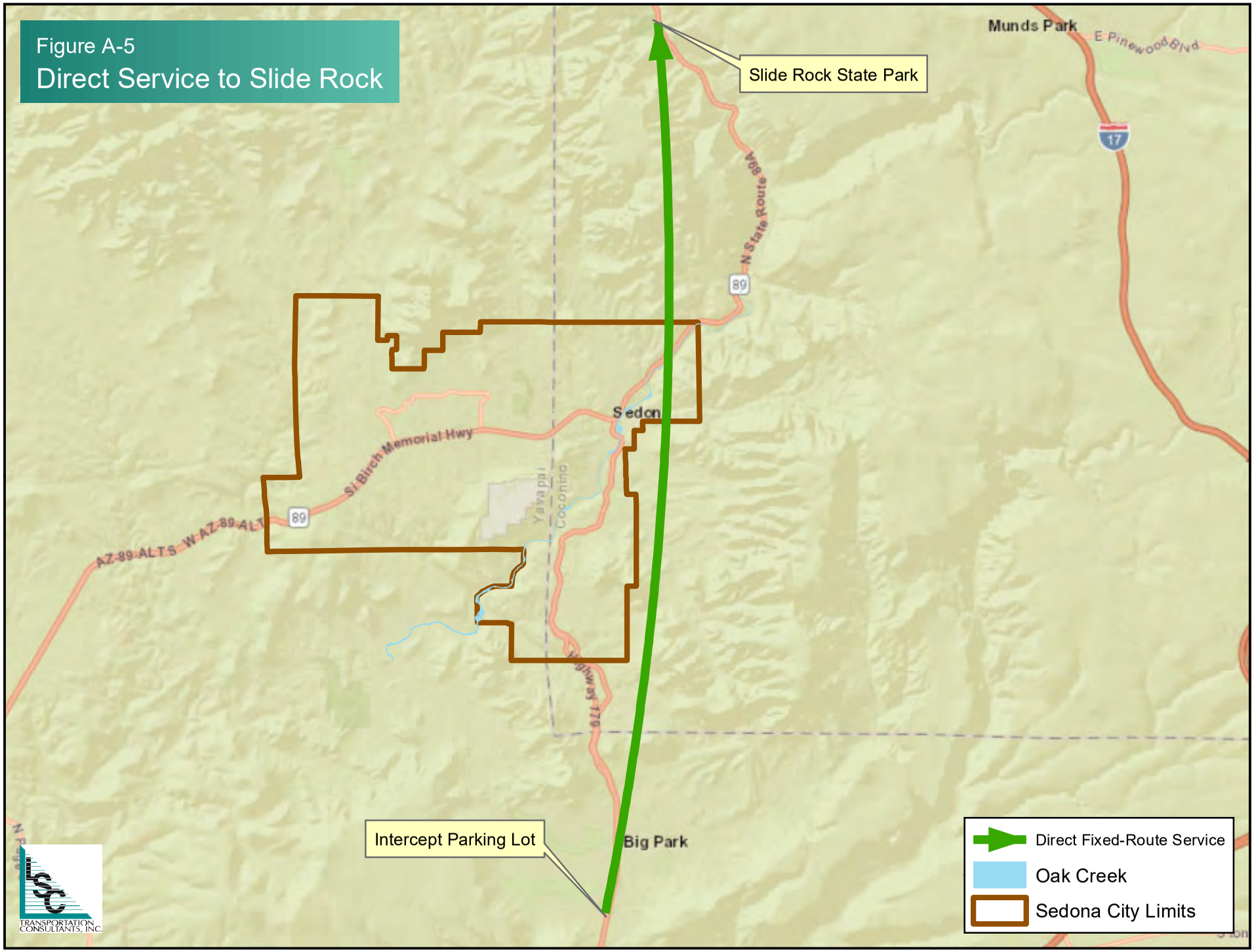


Figure A-5
Direct Service to Slide Rock
Slide Rock State Park
Munds Park
E Pinewood Blvd
17
N State Route 89A
89
Sedona
Si Birch Memorial Hwy
89
AZ-89A-ALT S-W-AZ-89A-ALT
Yavapai
Coconino
Big Park
Intercept Parking Lot
Direct Fixed-Route Service
Oak Creek
Sedona City Limits
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Chapter B

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CHAPTER B

Literature Review and Best Practices

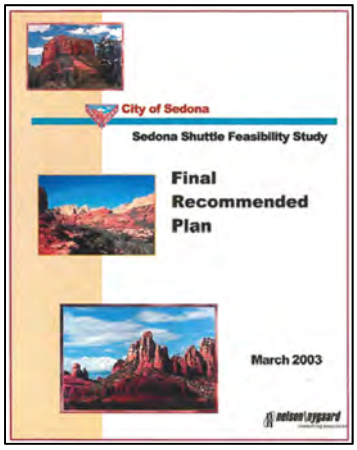
INTRODUCTION

This chapter provides a review of relevant plans and studies on transit, transportation, traffic/safety, tourism, economic development, recreation, and environment issues in the study area. The 10 documents included in this literature review were selected for their relevance to this study. This chapter also presents a review of visitor-focused transit service best practices.

REVIEW OF PREVIOUS PLANS AND STUDIES

Sedona Shuttle Feasibility Study

Prepared by: *Nelson\Nygaard Consulting Associates*
Prepared for: *The City of Sedona*
Date: *March 2003*



The Sedona Shuttle Feasibility Study was prepared by Nelson\Nygaard as a follow up study to the 1998 Vision Report, entitled *Ensuring a Livable Future: Transportation and a Strategic Vision for the Greater Sedona Community*. The purpose of the Sedona Shuttle Feasibility Study was to assess the feasibility of a public shuttle system that goes beyond the conceptual design phase of the Vision Report, and to determine the conditions necessary to ensure a financially and operationally viable shuttle.

The study reviewed existing conditions and found that a shuttle serving both residents and visitors would be feasible if sufficient incentives (i.e., convenient schedules, low fares, attractive buses, etc.) were in place to encourage auto users to shift to shuttle for at least some of their rides. Public input was sought throughout the entire planning process through presentations, public open houses, and newsletters. The public input overwhelmingly favored the implementation of some type of shuttle service in Sedona. The Recommended Plan consisted of three phases: 1) an introductory minimum operating serivce, 2)

an enhanced service scenario, and 3) a long-range maximum plan for optimal shuttle service.

As shown in Figure B-1, Phase 1 service focused resources on providing transit service along the corridor between the Village of Oak Creek and Uptown, in order to capture the tourist market and serve key destinations. The fixed-route service would operate every 30 minutes using three buses, and ADA complementary paratransit service would be provided. In addition, Phase 1 service included flex-route service in the West Sedona Area, with one bus circulating every hour in West Sedona and connecting to an Uptown transfer point where passengers could transfer to the Village service. Buses were to stop within 10 minutes of a scheduled time at four to six stops within the area. The projected ridership for Phase 1 service was approximately 186,000 passenger trips, with an annual operating cost of approximately $784,000. The primary benefits for Phase 1 service were the availability of a non-auto option for toursits traveling along SR179 and the provision of basic transit service for local residents who are transit dependent.

Figure B-1
Map of Phase 1 Transit Service

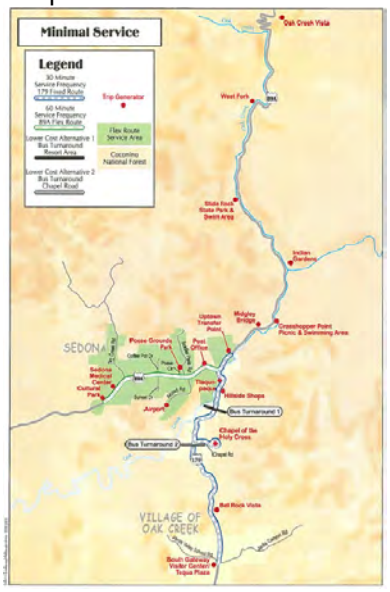


Figure B-2
Map of Phase 2 Transit Service

Phase 2 built upon Phase 1 service through a modular approach, allowing for maximum flexibility in system design, based on funding considerations and community preferences. As shown in Figure B-2, Phase 2 extended the 179 Village service beyond Uptown into the Oak Creek Canyon as far as Slide Rock State Park. The route connected with the West Sedona route at the Uptown Transfer Point. The operating cost of the Oak Creek Canyon service was $212,000. In West Sedona, Phase 2 added fixed-route service on top of the existing flex-route service in West Sedona. Fixed-route service would be provided every 30 minutes along the corridor and

the flex-route would feed into the fixed-route service on 89A. The operating cost of the West Sedona Fixed-route and Flex-Route services was $374,000. Finally, Phase 2 will add service between Cottonwood and Sedona. This service was to be operated via one or three vehicles (depending on which option is selected) that would travel between the Walmart in Cottonwood and the Uptown Transfer Point. Depending on final scheduling details, the bus could flex to the resort area in Sedona, as well as a number of other locations in the Cottonwood Walmart area. The Cottonwood to Sedona service would have an operating cost between $138,000 and $162,000. Benefits of Phase 2 transit service include: 1) reduction in environmental degradation in terms of litter, trails at non-designated locations, etc.; 2) visually more appealing as fewer vehicles parked throughout the canyon and other scenic locations; 3) high frequencies on shuttle service would make the system attractive and easier to use; 4) more local parking capacity as reduced presence of vehicles from Cottonwood; 5) people with disabilities have easy access to transit system; 6) less congestion on Higways 179 and 89A; and 7) Oak Creek Canyon hikers will have a service option through most daylight hours.

Figure B-3
Map of Phase 3 Transit Service

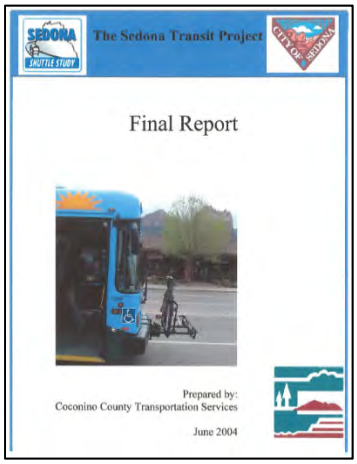
Phase 3, shown in Figure B-3, furthers Phase 2 service, primarily in the frequency of service and expansion of service span (hours) and area. The anticipated time frame for implementation of Phase 3 is 10 years, unless ridership and revenue projections exceed initial estimates. Phase 3 was characterized by significant supportive policies to create strong incentives for using the shuttle, and strong disincentives for driving into Uptown and the canyon areas. Phase 3 included service every 15 minutes between the Cultural Park and Uptown, along the 179 corridor, with service hours extended to 7:30 p.m. in the core service area (outside of Oak Creek Canyon). Phase 3 also included more frequent service to Cottonwood (peak 30 minute headway, off-peak 45 minute headway), and an extension of the shuttle canyon route to Oak Creek Vista. For Phase 3 to be successful, strict enforcement of parking charges and parking in non-designated areas was required. The annual operating cost of Phase 3 services was approximately

$2,390,000. The benefits of Phase 3 included all of the benefits of Phase 2, but enhanced due to higher ridership volumes and much more extensive service.

The study also evaluated the possibility of creating a self-supporting transit system, with the primary means of generating sufficient funds to cover all costs and eliminate the need for public subsidies would be through fare and parking revenues. Through a sensitivity analysis, the consultant team found that daily parking fees of $20 per vehicle would need to be charged at the intercept lot, while parking fees of at least $4 per hour will be required in Uptown Sedona in order to achieve a self-supporting maximum plan. The self-supporting plan is not recommended as these fees would likely be considered unreasonably high by potential visitors to Sedona and local residents.

Sedona Transit Project

Prepared by: Coconino County Transportation Services
Date: June 2004

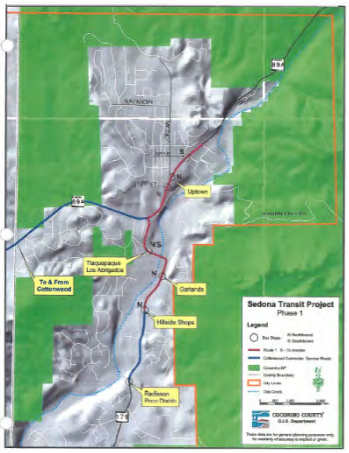


In March 2003, the Sedona City Council accepted the Sedona Shuttle Feasibility Study prepared by Nelson\Nygaard, but still felt that a clearer picture needed to be established as to how a desirable service proposal would be financed, implemented, and administered. In October 2003, the city of Sedona entered into an Intergovernmental Agreement (IGA) with Coconino County to lead a Planning Advisory Committee (PAC) to address the unresolved questions and provide a greater in-depth analysis of the community's level of support for public transit services relative to different service proposals.

Providing 30-minute frequency was established as a benchmark to help drive the evolution of the service proposal. Project staff and PAC studied the experiences of several resort communities that balance recreational and commercial demand outside of the National Park setting. For public outreach, the project staff conducted dozens of personal interviews, focus group meetings, a public open house, and a community attitudes random sample survey. The random sample

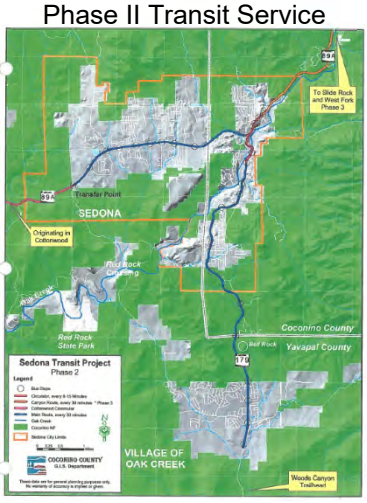
survey found that 72 percent of the public was very or somewhat supportive of the recommended service proposal.

Figure B-4
Phase I Transit Service



The recommended transit plan consists of a three-phase incremental service implementation. Phase One consists of a commercial circulator and commuter service from Cottonwood to Sedona. As shown in Figure B-4, the circulator will be operated by two buses along a 1.2 miles route between Hillside Galleries on SR 179 to Tlaquepaque to the north end of 89A in the Uptown area, providing approximately eight minute frequency. Phase one also consists of two commuter trips into Sedona from Cottonwood in the morning and two return trips in the early evening, as well as ADA paratransit service in Uptown Sedona residential areas. The estimated annual ridership for Phase One is 115,634. All buses will be based in the Cottonwood area in order to maximize the use of capital resources. The annual operating cost of Phase One was $489,000 and the capital costs were $965,000.

Figure B-5
Phase II Transit Service



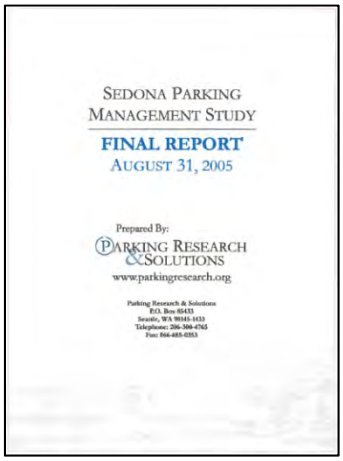
Phase Two built upon Phase One and offered additional commuter service to Sedona-area job centers. As shown in Figure B-5, Phase Two added ADA paratransit service within a ¾ mile buffer of the fixed route operating from West Sedona to the Village of Oak creek. The estimated annual ridership for Phase Two was 310,753. The annual operating cost of Phase Two was $1,462,150 and the capital costs were $1,854,758.

Phase Three required that the first two phases be well established in order to create the connectivity necessary to make this component viable. Phase Three adds service in Oak Creek canyon during Sedona's high visitor season (February through October). Phase Three also added mid-day commuter service between Cottonwood and Sedona. The estimated annual ridership for Phase One was 415,132. The annual operating cost of Phase Three was $1,977,534 and the capital costs were $1,066,389.

The recommended plan provided an in-depth analysis of operating and capital expenses, revenues, and funding sources. The final plan also analyzed the strengths and weaknesses of a variety of administrative and organizational structures. Based on the analysis, the PAC recommended the development of a Transit Authority, and recommended that the City of Sedona cooperate with Coconino County in conducting a Transit Authority Implementation Study. A staffing plan and implementation steps were also developed.

Sedona Parking Management Study

Prepared by: Parking Research & Solutions
Date: August 31, 2005



Parking Research & Solutions were hired by the City of Sedona to complete a comprehensive parking study between February and May 2005. The goals for the study were to quantify current parking demands, determine the utilization of parking spaces, determine the occupancy of all parking lots, analyze the average duration of vehicles parking, and assess the movement of vehicles parking multiple times in different parts of Sedona. The study included public outreach through surveys of key stakeholders and hundreds of visitors. In addition, current parking signs throughout Sedona were evaluated.

A total of 2,578 parking spaces were found in the survey areas, consisting of 1,435 parking spaces in Uptown Sedona and 1,143 parking spaces in the Hwy. 179 corridor. The City of Sedona currently owns and manages 128 on-street parking spaces along Hwy. 89A and 144 off-street parking spaces in the City parking lot. The remaining 2,306 parking spaces in Sedona are privately owned and managed.

Peak occupancies were found between 11:00 a.m. and 3:00 p.m. each day in most off-street parking lots available to the public. The highest overall parking occupancy levels were observed over lunchtime on Wednesday, March 30, 2005. The lowest overall occupancy levels were observed in early February and during morning survey periods throughout the study period. On-street parking along

Hwy. 89A in Uptown Sedona was more than 90 percent occupied most days. Parking along Hwy. 89A were fully occupied on most days from late February to May, and many businesses in the area have very limited or no off-street parking supply for patrons and employees. Several public parking areas in Uptown Sedona, including the City-owned parking lot, often had low occupancy levels, even during peak times. Visibility, directional signage, pedestrian access, and remoteness make these areas less desirable for both visitors and employees. Available parking for the Tlaquepaque shops and galleries is very limited during peak times relative to the number of visitors and employees seeking parking in that area. All of the parking along the east and north sides of Hwy. 179 was severely underutilized.

For most of the surveyed areas, the utilization rate was about 0.80-1.03 vehicles per parking space every hour. Most areas were fully occupied and parking spaces were typically only vacant for a few minutes at the most. These results were consistent with the 2004 RBF Traffic Circulation Study which found a utilization rate of 0.87-0.91 vehicles per space, per hour along Hwy. 89A.

Approximately 55 percent of vehicles surveyed parked for less than one hour, indicating a high level of parking turnover throughout multiple areas of Sedona. The Hyatt north lot, Sinagua Plaza, and the south end of Hwy. 89A had the highest percentage of vehicles parking for less than one hour, mostly due to the location of the visitor information center. The City lot and the on-street parking at the south end of Hwy. 89A had the highest percentage of vehicles parking over three hours.

More than 1,600 unique license plates were logged from vehicles parking on Hwy. 89A in Uptown during the study, and only seven percent of the vehicles parking on Main Street were registered to Sedona residents or with registered addresses that are 50 miles or less from Sedona.

The vehicle movement studies indicated that only between two and five percent of vehicles parking in Sedona park in both the Creek area and in Uptown. Survey results indicated that approximately 72 percent of stakeholders surveyed believed that on-street parking in Uptown should be regulated and most believed that employees and owners of businesses are utilizing on-street parking spaces, while

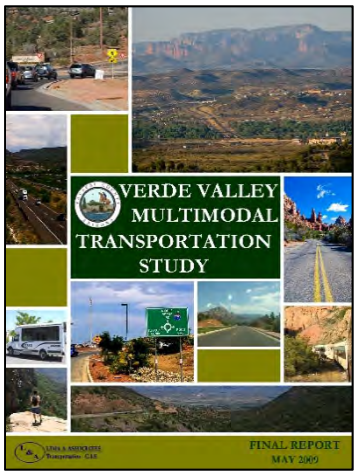
the data gathered in this report indicates that more than 90 percent of the 128 on-street parking spaces were being used by visitors. The vast majority of stakeholders (83 percent) believed that additional parking was needed in Seodona and 61 percent supported the formation of a parking district or a shared and managed public parking system between private property owners. A total of 57 percent of visitors surveyed stated that a shuttle was needed to Uptown, to the Gallery District, or both.

The study outlined nine recommendations for forming a new Parking Management Plan:

1. Creation and management of a public parking supply through public parking agreements
2. Designated employee parking
3. Promotion of public parking options
4. Comprehensive parking management, including time restricted parking and paid parking, and new meters for Main Street
5. Development of new parking sites after implementation of Parking Management Plan
6. Establish residential permit parking (if needed)
7. Reorganize parking management oversight within the City of Sedona
8. Utilize an automated ticket management system
9. Evaluate additional funding sources

Verde Valley Multimodal Transportation Study

Prepared by: Lima and Associates
Date: 2009



The Verde Valley is a region of 673 square miles in northeastern Yavapai County, about 100 miles north of central Phoenix and 40 miles south of central Flagstaff. The study area includes the incorporated municipalities of Camp Verde, Clarkdale, Cottonwood, Jerome, and Sedona, as well as the Yavapai-Apache Nation.

The Verde Valley Multimodal Transportation Study (VVMTS) is an update of the 1999 Verde Valley Transportation Study Update. The purpose of the VVMTS was to develop a long-range regional transportation plan to guide the implementation

of transportation improvements on the roads of regional significance in the Verde Valley, including I-17, State Routes, and roads on the County Regional Road System. Population in the Verde Valley was expected to grow from 72,200 people in 2007, to 85,400 people in 2015 and 108,900 people in 2030, and the number of housing units in the region was expected to increase from 30,600 in 2007, to 38,800 in 2015 and 49,500 in 2030. The increase in population and housing units will cause travel demands to change in the Verde Valley.

The analysis of existing conditions found that portions of several roadways were already at or over their level of service (LOS) capacity, as shown in Figure B-6. The report also includes LOS estimates projected for 2015 and 2030. The projected 2030 LOS on the Verde Valley network are presented in Figure B-7, and illustrate the portions of roadways include a level of service at or over capacity.

Figure B-6
Current Verde Valley Traffic Volumes and Level of Service

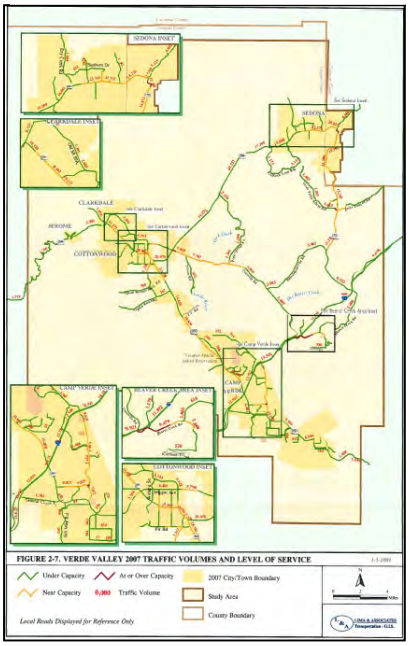
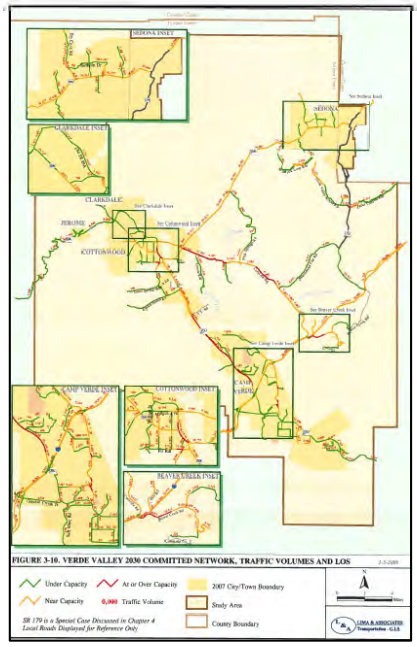


Figure B-7
Verde Valley 2030 Committed Network, Traffic Volumes, and LOS



The report recommends that regional roadway construction and upgrades are needed over the next 20 years to prevent congestion on the Verde Valley roadway system in 2030. Two models were run for alternative roadway networks in order to assess their performance in meeting the 2030 demand. Based on the analysis, a set of recommended projects emerged that would relieve congestion and that could be feasible in terms of public input, land availability for right-of-way, and environmental concerns. The recommended projects are described below.

The 2010 to 2020 projects under Yavapai County Government Jurisdiction, costing a total of $35,694,000, include:

- Cornville Road from SR 89A to Tissaw Road: upgrade from two-lane major collector to four lane arterial.
- Cornville Road from Tissaw Rd. to I-17: some improvements, but no new travel lanes or change to functional class.
- West Loop from Black Hills Dr. to Fir Street: access-controlled, two-lanes. Fir St. would be extended to connect to the West Loop.
- SR 260/SR 89A Bypass from I-17 (McGuireville) to I-17 (at SR 179 exit): Beaver Creek Rd., upgrade near I-17 to an arterial. From the Y to N.F. 119 would be a major connector. N.F. 119 would be a local roadway.
- Low Water Road, Beaver Creek from Beaver Creek Rd./Brocket Ranch Rd. to Coronado Trail/Indian Lakes area: Connection and emergency route.

The 2020 to 2030 project under Yavapai County Government Jurisdiction, costing a total of $14,918,000, include:

- Beaverhead Flat Rd. to SR 260: Construction of two-lane country road on roughly the Forest Service 119A alignment from Cornville Rd. to SR 260. Extend Middle Verde Rd. to connect to the Beaverhead Flat Rd. to SR 260 Rd. Includes the construction of a Verde River bridge.

The 2010 to 2020 projects under ADOT, City, or Town Government Jurisdiction, costing a total of $64,561,000, include:

- SR 260 from Thousand Trails Rd. to West of I-17: Last segment rquired to make SR 260 four lanes continuously from SR 89A in Cottonwood to about 1.2 miles east of the Verde River in souther Camp Verde (ADOT).
- Groseta Ranch Rd. from SR 89A to Old SR 89A: Upgrading Groseta Ranch Rd. to a two-lane minor collector (Cottonwood).
- Main St. (Cottonwood) from Minus Ave. to Willard: Upgrade from two lanes to four lanes and enhance for bicycle and pedestrian travel (Cottonwood).
- Main St. (Cottonwood) from Mingus Ave. to SR 89A: Safety and capacity enhancements (Cottonwood).
- Montezuma Castle Hwy. from Yavapai-Apache Nation Boundary to finnie Flat Rd.: Three lanes (Camp Verde).
- Bypass of "Y" from Sr 179 to SR 89A: Bypass, one lane each way (Sedona).

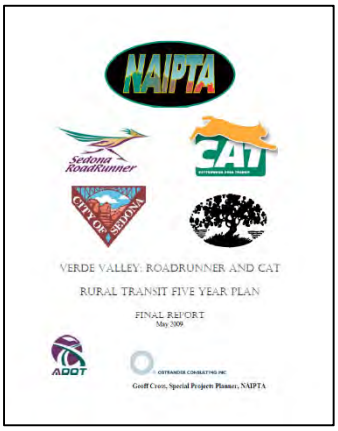
The 2020 to 2030 projects under ADOT, City, or Town Government Jurisdiction, costing a total of $275,174,000, include:

- I-17 from Milepost 282 to Milepost 304: three lanes per direction (ADOT)

- SR 260 bypass from Thousand Trails to General Cook Trail Interchange: to be constructed when needed, but right-of-way preservation for new interchange is recommended well in advance of construction (ADOT).
- Quail Springs Ranch Rd. from Old SR 279 to SR 260: one lane per direction (Cottonwood).
- Bypass Route SR 89A/Cornville Rd. Intersection from SR 89A/Bill Gray Rd. Intersection to Cornville Rd./Tissaw Rd. Intersection: four lanes, in a planned mixed use development (developer built, dedicated to Cottonwood).
- Finnie Flat Rd. from Fir St. to Quail Springs Ranch Rd./Old SR 279: access-controllled, two lanes (Cottonwood).
- Middle Verde Extension from Middle Valley Rd. to Beaverhead Flat Road: two-lane extension (Camp Verde).

Verde Valley: Roadrunner and CAT Rural Transit Five-Year Plan

Prepared by: Ostrander Consulting, Inc. and NAIPTA Planning
Date: May 2009



The Verde Valley: RoadRunner and CAT Rural Transit Five Year Plan addresses the transit services provided by the Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) in Sedona and Cottonwood.

NAIPTA was formed in 2006 and is Arizona's first multi-county transit authority, with members including Coconino and Yavapai Counties, the Cities of Flagstaff, Sedona, and Cottonwood, and Northern Arizona University. Current transit services operated by NAIPTA include: 1) Mountain Line fixed route service in Flagstaff; 2) Mountain Lift paratransit service in Flagstaff; 3) RoadRunner fixed route service in Sedona; 4) RoadRunner paratransit service in Sedona; and, 5) RoadRunner Cottonwood Express commuter service between Cottonwood and Sedona. NAIPTA also coordinates with Mountain Campus Transit fixed route service at Northern Arizona University and the Cottonwood Area Transit System (CAT) checkpoint deviation and demand response service in Cottonwood.

The community goals for transit were divided between Cottonwood and Sedona. For Cottonwood, the priorities included: 1) improving the productivity of the transit system; and 2) improving regional connectivity. For Sedona, the priorities

included: 1) improving financial viability; 2) serving more groups; and 3) increasing ridership. In addition, administrative issues to be addressed over the next five years were identified, including: 1) options for consolidation/transfer of CAT operations for City of Cottonwood to NAIPTA; 2) consolidation of the two Cottonwood and Sedona Section 5311 ADOT grants into one NAIPTA grant; 3) development of consistent expense categories for budget review; 4) development of consistent performance measures for operating review; 5) development of local Transit Advisory Committees to continue work of the Citizen Review Commissions; 6) joint facility development; and 7) identification/evaluation of other Verde Valley service areas.

Transit demand estimates for the study area were based on the Arkansas Public Transportation Needs Assessment methodology developed in 2000. The following annual rider rates were determined:

- **Elderly persons ages 60 and over:** trip rate of 6.79 annual one-way passenger trips
- **Persons with disabilities under age 60:** trip rate of 4.49 annual one-way passenger trips
- **Persons living in poverty under age 60:** trip rate of 20.5 annual one-way passenger trips

Within the region, the unmet need estimate for Clarkdale was 2,000 annual one-way passenger trips, the unmet need estimate for Cottonwood was 9,600 annual one-way passenger trips, and the unmet need estimate for Sedona was 42,300 annual one-way passenger trips.

In addition, unmet needs and coordination strategies were identified through a series of stakeholder meetings. Stakeholder input on unmet needs included: 1) public transit operating dollars were needed to expand the Cottonwood and Sedona public transit services; 2) consideration should be given to developing a voucher system for all services; 3) the Yavapai Meals-on-Wheels program needed van drivers, resources for training, help in managing rider medical needs and help in reducing vehicle insurance. There was no transportation to Prescott for jobs and medical appointments. At least one bus a day was needed. Coordination was needed with the VA Hospital/Mayo Clinic; and 4) the Sedona Community Center needed operating dollars.

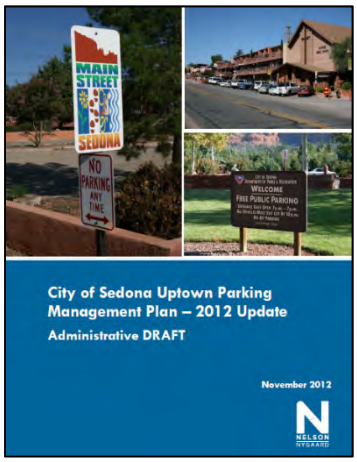
Stakeholder input on coordination strategies included: 1) there was significant coordination in the Verde Valley, primarily under the leadership of NAIPTA; 2) CAT was coordinating with NAIPTA and was on the NAIPTA Board. CAT and NAIPTA were working to coordinate advertising, branding, marketing, writing grants, etc. CAT was also planning a facility with NAIPTA. The facility would include a wash area, fuel station and shading structures; 3) CAT is also working with the Senior Center and Infinia to coordinate service on an as-needed basis; 4) NAIPTA operates the RoadRunner Cottonwood Express, providing commuter service between Cottonwood and Sedona. Paratransit service will be provided by the Sedona Senior Center in the Sedona area; and 5) express service will coordinate with CAT to transport express riders to the morning pick-up point in Garrison Park.

Projected additional coordination efforts were identified including: 1) building a 5,000 square foot transit office; 2) CAT potentially doing contract transportation for the senior center so the senior center can focus only on Meals-on-Wheels and other specialized services; 3) CAT expanding to one or two more buses on the checkpoint system and transitioning from demand response to fixed route service; 4) NAIPTA's RoadRunner Cottonwood Express service expanding to the Village of Oak Creek and West Sedona and providing half hour service during peak hours to and from Cottonwood (Phase II). The service would expand to seasonal service to Oak Creek (Phase III); 5) NAIPTA's RoadRunner Cottonwood Express service would expand to serve the hospital and medical offices; 6) connector service would develop a Park and Ride in the Clarkdale area; and 7) consider establishing a voucher system for all services or form some type of county-wide payment pool.

The conclusion of the Plan was a five-year financial plan and implementation plan addressing five key areas: 1) management structure and administrative alternatives; 2) the effectiveness of current services and options for expanded service; 3) marketing of service to encourage maximum ridership; 4) coordination of service locally and regionally; 5) a capital plan to address equipment and facility needs, along with a funding plan to support the preferred operating plan.

City of Sedona Uptown Parking Management Plan (2012 Update)

Prepared by: *Nelson\Nygaard Consulting Associates*
Date: *November, 2012*



In 2012, Nelson\Nygaard Consulting Associates was contracted by the City of Sedona to complete an update to the 2005 Sedona Parking Management Study completed by Parking Research & Solutions. The 2005 study was a comprehensive parking analysis that evaluated parking demand and behavior in the Uptown and Highway 179 corridors areas of Sedona, and ultimately concluded that parking management in Sedona, especially in the Uptown area, should undergo a comprehensive overhaul. Since 2005, much has changed in the City of Sedona as it adjusts to a new regional and national economic context, and this report represents the 2012 Update to the 2005 Uptown Parking Management Plan.

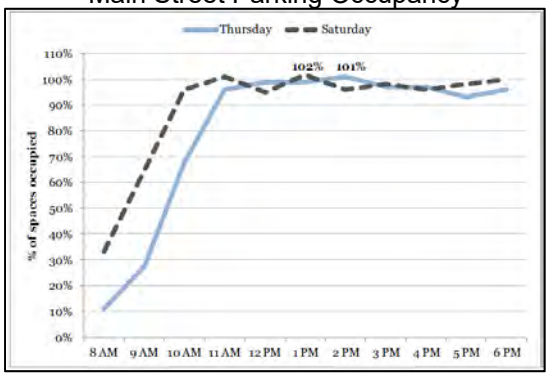
The 2012 Update includes a brief description of the project background and the scope of this study, an overview of the stakeholder feedback received in 2012, summary of the 2012 parking study (parking counts were conducted every hour on Thursday and Saturday, August 23 and 25, 2012 from 8:00 a.m. to 6:00 p.m.) and comparison of the 2012 data with the 2005 findings, and specific 2012 recommendations for improving parking in Uptown.

After a series of stakeholder interviews and a new detailed survey of actual parking conditions in Uptown, a number of key findings about parking trends, issues, and opportunities were identified, including:

Demand for on-street parking is very high, which impacts parking availability and traffic flow.

- The publicly available vehicle parking spaces on Main St. were consistently at or near 100 percent occupancy beginning at 10:00 a.m. until the end of the count period for both Thursday and Saturday, as shown in Figure B-8.

Figure B-8
Main Street Parking Occupancy



- The peak occupancy along Main St. was 101 percent on Thursday at 2:00 p.m. and 102 percent on Saturday at 1:00 p.m., meaning all legal parking spaces were occupied and some vehicles were parking illegally.
- As a result of these high occupancies, the typical motorist driving down Main Street will be unable to find an on-street parking space, which culminates in multiple vehicles driving down Main Street searching for parking and undoubtedly contributing to traffic congestion issues.

Demand for off-street spaces in the Municipal Lot and Sinagua Plaza is much lower than demand for on-street spaces.

- In the Municipal Lot, peak occupancies for Thursday were 35 percent and peak occupancies for Saturday were 64 percent.
- In Sinagua Plaza, peak occupancies for Thursday were 47 percent and and peak occupancies for Saturday were 89 percent.
- When only including public parking in these facilities (i.e., no employee spaces), peak occupancies for public parking were even lower on Thursday (38 percent) and Saturday (76 percent).

There is a geographical imbalance between parking supply and demand.

- During the on-street peak period on Thursday at 2:00 p.m., there were 98 available spaces in the Municipal Lot and 69 public spaces available in Sinagua Plaza.
- During the on-street peak period on Saturday at 1:00 p.m., there were 73 available spaces in the Municipal Lot and 4 public spaces available in Sinagua Plaza.
- This data suggests that there is not a lack of parking, but an imbalance between parking supply and demand, since during the peak demand times when there is no parking available on Main St., there are nearly 200 empty parking spaces available just a few blocks away.

Part of the imbalance in parking demand can be directly attributed to inadequate and inconsistent signage, limited lighting, and poor pedestrian conditions.

- Parking signage remains a key issue in Uptown even though efforts have been made since 2005 to improve signage. The lack of consistent, user-friendly, and intuitive signs makes it difficult for drivers and visitors to easily find parking.
- The large number of signs in private off-street facilities that announce parking restrictions and threaten vehicle towing actively discourage visitors.
- Poor lighting in the off-street lots contributes to employee and visitor concerns about perceived safety and security.
- Pedestrian access to off-street and remote lots can be challenging due to the lack of lighting, steep slopes, and gaps in the sidewalk network in the vicinity of off-street parking facilities.

While some vehicles exceed the three-hour parking limit, parking turnover does not appear to be a major issue in Uptown.

- On Thursday, the average length of stay for a vehicle was 1.8 hours, with Block #2, the east side of 89A from Forest Rd. to Jordan Rd., having the longest average length of stay at 1.9 hours.
- On Saturday, the average length of stay for a vehicle was 1.7 hours, with Block #4, the east side of 89A from Jordan Rd. to the loading zone, having the longest average length of stay at 1.9 hours.
- Only a small percentage of vehicles parked in the on-street parking spaces stay three or more hours, which means that increased enforcement of existing three-hour time limits for on-street parking in Uptown will likely be ineffective at increasing the availability of on-street parking spaces, as the majority of vehicles are not overstaying the current time limits.

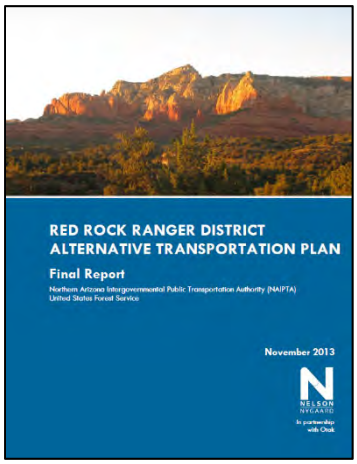
Parking recommendations from the 2012 Update are presented with an implementation timeframe in Figure B-9.

Figure B-9
2012 Uptown Parking Recommendations

Implementation Timeframe	No.	Recommendation
Immediate (within 6-12 months)	1	Continue with implementation of a more active parking enforcement program with the understanding that the fundamental parking challenge in Uptown is NOT related to violation of the current 3-hour limits. Conduct a study to monitor the effects of enhanced enforcement on parking turnover and availability.
	2	Improve awareness of, and access to, the underutilized off-street public parking facilities in Uptown through additional wayfinding improvements.
	3	Improve the motorist experience and perceived safety of using off-street parking through enhanced lighting and pedestrian improvements to and from existing off-street facilities.
	4	Expand the public parking supply in a cost-effective manner and improve the visitor experience by opening up privately-owned off-street lots to public parking through legally binding, public parking agreements.
	5	Lease a specific off-street lot and designate the lot for tour bus parking.
	6	Reevaluate a circulator shuttle to connect the greater Uptown area, Hillsdale area, and off-street parking facilities. Coordinate with NAIPTA on upcoming transportation study and possible shuttle service.
Short-term (within 1-3 years)	7	Designate a specific off-street facility for employee parking and implement an employee permit program.
	8	Install "smart" parking meters and use pricing to make parking more convenient and easier to find. Designate meter revenue specifically for improvements in Uptown that merchants and business owners want.
	9	Evaluate a parking validation program as a means to reward drivers who shop in Uptown.
	10	If needed to reduce parking spillover impacts in Uptown-adjacent neighborhoods, implement a residential parking program.
	11	Designate a part-time/seasonal "Uptown Parking and Transportation Manager" to serve as single point of contact for parking and transportation issues during peak season. The manager's first task would be to establish an ongoing data collection, monitoring, and evaluation process of the City's parking management program and regularly report back to community stakeholders and decision makers so adjustments can be made as needed.
Mid-term (within 3-5 years)	12	Identify additional opportunities to expand the public parking supply, either through a public-private partnership to create a mixed-use parking garage project in the Uptown District or the development of additional remote parking facilities connected by a shuttle circulator.

Red Rock Ranger District Alternative Transportation Plan Final Report

Prepared by: Nelson\Nygaard Consulting Associates in partnership with Otak
Date: November, 2013



The Red Rock Ranger Distric Alternative Transportation Plan was funded through a Paul S. Sarbanes Transit in the Parks Grant that was awarded to the US Forest Service and NAIPTA. The intent for the Red Rock Ranger District Alternative Transportation Plan is to develop transportation options that: 1) reduce vehicular congestion in key "hot spot" areas within Oak Creek Canyon, and 2) reduce the roadside ecologic impacts of visitor parking along Route 89A during peak times of year. The intent of the plan is to enhance opportunities to access recreational points of interest within the Red Rock Ranger District study area, which includes the main thoroughfares on the eastern portion of the Red Rock Ranger District, like Route 89A between Uptown Sedona on the south and Oak Creek Vista to the north. The United States Forest Service (USFS) has three primary goals for developing transportation options within Oak Creek Canyon, including: 1) reduce vehicular traffic congestion; 2) ensure the preservation of natural resources along the roadway; and 3) ensure safety of those living, working, or recreating within Oak Creek Canyon. Through the course of the study, qualitative and quantitative data was collected, analyzed, and used to develop recommended transportation options to consider for future implementation. Key opportunities and constraints based on the findings in the preliminary stages of the project are presented in Figure B-10.

Figure B-10
Key Project Opportunities and Constraints

Opportunities	Constraints
1. Develop a transportation service to address the specific challenges accessing and traveling to destinations in Oak Creek Canyon	1. Lack of key project champion or intergovernmental policymaking body
2. Focus on visitors, but consider the priorities of residents	2. Limited flexibility in modifying transportation regulations and dimensions on Route 89A
3. Create visitor-oriented transportation option within Oak Creek Canyon	3. High number of Oak Creek Canyon day trip visitors (requiring a potentially limited supply of park-and-ride facilities)
4. Enable car-free travel option within Oak Creek Canyon and to other recreational sites	4. Existing corridor bottlenecks (Uptown Sedona, Slide Rock State Park)
5. Reduce need for parking within Oak Creek Canyon and reduce congestion on Route 89A	5. Concerns about visitor capacity constraints in Oak Creek Canyon
6. Add transportation amenity/option for those staying in Sedona area lodging	6. Lack of representative decision-making body or committee to oversee implementation of transportation services within the project's study area
7. Deliver/pick up visitors in Uptown Sedona without additional parking supply	7. Regulations with respect to fees and fares from USFS
8. Provide additional transit connectivity within Sedona vicinity (Oak Creek Canyon, West Sedona, Village of Oak Creek)	

A variety of public outreach efforts were conducted to understand the opinions of residents, visitors, and those who rely on Oak Creek Canyon for their livelihood. Key issues that were raised and were directly relevant to the project scope included:

- Opportunity costs of operations
- Additional pollution caused by shuttles
- Access limitations for those with belongings
- Increased encounters on trailheads
- Increased E.coli levels
- Oak Creek Canyon traffic congestion

The service plan included three transit options for the study area focusing on the needs of key travel markets, including day-trip visitors, overnight visitors, and local residents, that emerged as potential clientele for a future transportation service.

Option 1: Corridor Congestion Reduction is designed to focus on day-trip travel within the study area. This includes surges of visitor traffic on weekends traveling from points southward like Phoenix, with a later phase of the project also focusing on travel coming from the north, like Flagstaff. Ridership estimates for Option 1 are from 25,000 to 40,000 annual passengers.

As shown in Figure B-11, Phase One (Option 1.1): Village of Oak Creek to Slide Rock State Park would include the following key characteristics:

1) Shuttle service between Village of Oak Creek to Slide Rock State Park;
2) Service frequencies of 15 minutes (peak) and 20 minutes (off-peak);
3) Service span between 8:00 a.m. and 8:00 p.m. on peak day-trip travel periods (March-October, weekends, and some Fridays); and
4) Park-and-ride facilities at route's southern terminus.

As shown in Figure B-12, Phase Two (Option 1.2): Village of Oak Creek to Vista Point would include the following key characteristics:

1) Shuttle service between Village of Oak Creek to Oak Creek Canyon Vista Point;
2) Service frequencies of 15 minutes (peak) and 20 minutes (off-peak);
3) Service span between 8:00 a.m. and 8:00 p.m. on peak day-trip travel periods (March-October, weekends, and some Fridays); and

4) Service between West Fork and the Vista Point may operate at lower frequency depending on demand levels.

Figure B-11
Option 1.1 – Corridor Congestion Reduction

Figure B-12
Option 1.2 – Corridor Congestion Reduction

Figure B-13
Option 2 – Local and Regional Access

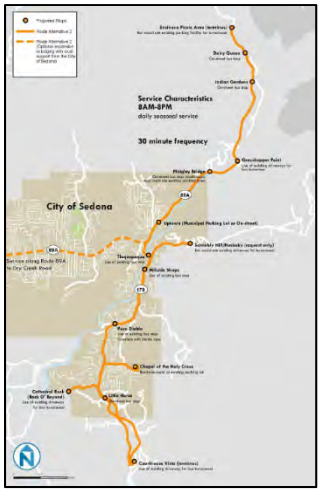
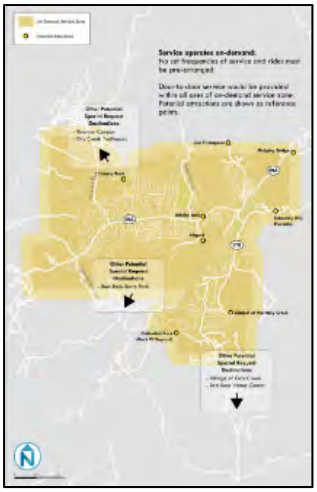


Figure B-14
Option 3 – On-Demand Service



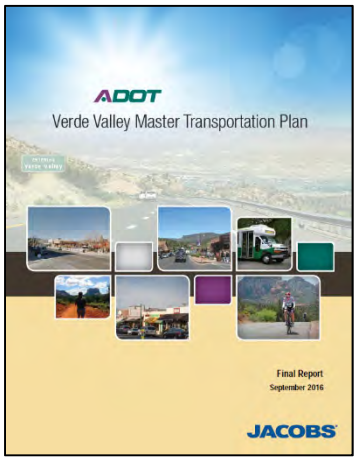
Option 2: Local/Regional Access focuses on travel to high-activity recreational sites within close proximity to the City of Sedona, primarily targeted toward overnight visitors to the Sedona area and local residents. As shown in Figure B-13, Option 2 is designed to provide general circulator service in and around Sedona to key recreational sites. Service is not designed in such a way in terms of frequency to provide enough service to reduce general congestion, but could ease demands on parking and could provide visitors and local residents with a simple, hassle free way to access various recreational locations. As compared to the previous RoadRunner service, this service option focuses more closely on some of the key sightseeing destinations in the general vicinity of Sedona and also provides trailhead access to some local trailheads. Ridership estimates for Option 2 are from 60,000 to 75,000 annual passengers.

Option 3: On-Demand Service requires that riders call ahead for pick-up and drop-off within a defined service area instead of providing a scheduled service. An on-demand service could equally benefit visitors and residents, as visitors could use the service to travel to various local points of interest or trailheads and hikers could use it to begin at one trailhead and end at another. The proposed service would operate between 8:00 a.m. and 5:00 p.m. daily. As shown in Figure B-14, the proposed service area would cover locations within approximately one-

quarter mile of the boundaries of the city of Sedona along with other key locations.

Verde Valley Master Transportation Plan

Prepared by: Jacobs
Date: September, 2016



The Verde Valley Master Transportation Plan was a joint effort by Yavapai County, the Verde Valley Transportation Planning Organization (VVTPO), and the Arizona Department of Transportation (ADOT) to identify and address the most critical current and future transportation needs within the Verde Valley. This plan is an update the 2009 Verde Valley Multimodal Transportation Study, and aims to develop a regionally cohesive framework of multimodal transportation improvements in order to provide VVTPO with a guiding document that provides realistic and feasible solutions to the current and future multimodal needs of the area. The need for this study stems directly from VVTPO member jurisdictions' need to 1) establish a regionally cohesive framework for an efficient, seamless transportation system, 2) enhance mobility and improve safety, 3) support planned land use and future growth, 4) address safety and operational needs, and 5) promote economic growth and community livability.

Based on an inventory and analysis of existing conditions, transportation system deficiencies and issues were identified, and were used as the basis for the next phase of the study which was the development of the long-range transportation plan.

The plan for improvements was split into near-term, mid-term, and long-term implementation phases. The timeframe of each project is intended to be used as a guide for future planning, and together these projects will strengthen the study area's existing roadway network, support economic development, improve safety and operations, as well as provide a network of pedestrian, bicycle, and transit facilities. Near-term projects, shown in Figure B-15, are typically projects needed to address the most critical needs and deficiencies and have a reasonable

potential for obtaining funding. Mid-term projects, shown in Figure B-16, are more complex projects that improve safety, expand mobility and access, or address future development needs. Long-term projects, shown in Figure B-17, are high cost projects that require additional time to obtain funding or are not needed until build-out conditions.

Figure B-15
Recommended Near-Term Improvement Projects

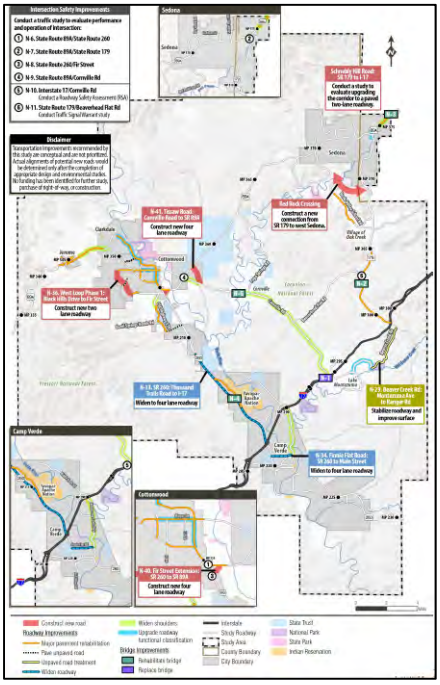


Figure B-16
Recommended Mid-Term Improvement Projects

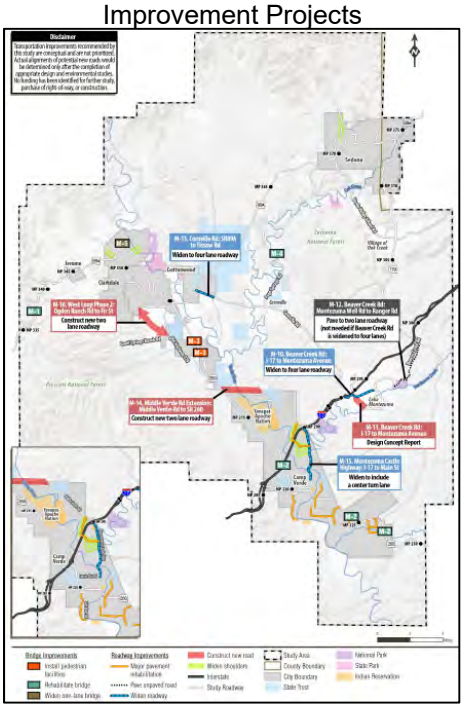
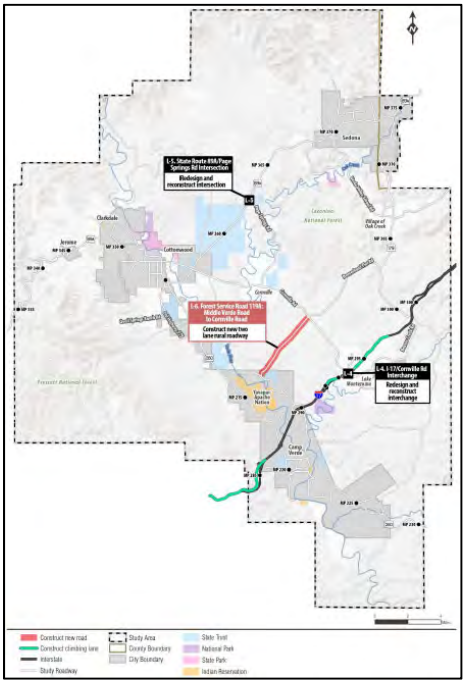


Figure B-17
Recommended Long-Term Improvement Projects



In addition, the plan identified four projects that may involve potential impacts to National Forest Lands or environmentally sensitive lands, which will require conducting a trade-off analysis to carefully determine trade-offs between wilderness values and the "incremental costs" of expanding the transportation network on the environment.

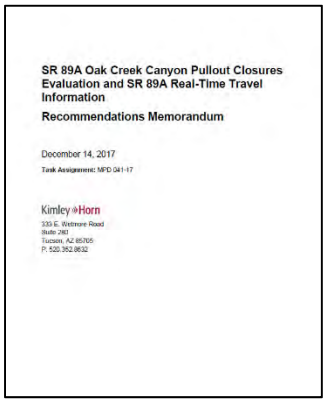
The plan also acknowledges that implementing low-cost congestion management strategies, may assist in reducing transportation demand and improving overall traffic flow. Congestion management strategies, including transportation demand management (TDM) and transportation system management (TSM), were evaluated for the study area to identify methods of improving circulation, reducing congestion, and meeting existing and future demand.

The plan provides pedestrian, bicycle, and trail improvement recommendations for the near-, mid-, and long-terms. Transit service recommendations were

provided based on discussions with Cottonwood Area Transit, the Yavapai-Apache Transit System, and input from the TAC, stakeholders, and public.

SR89A Oak Creek Canyon Pullout Closures Evaluation and SR89A Real-Time Travel Information Recommendations Memorandum

Prepared by: Kimley Horn
Date: December, 2017


SR 89A Oak Creek Canyon Pullout Closures Evaluation and SR 89A Real-Time Travel Information
Recommendations Memorandum
December 14, 2017
Task Assignment: MPD 041-17
Kimley»Horn
335 E. Wetmore Road
Suite 280
Tucson, AZ 85705
P: 520.352.0832

The purpose of the SR 89A Oak Creek Canyon Pullouts Closure Evaluation and SR 89A Real-Time Travel Information Recommendations Memorandum was to document and evaluate existing pullout areas on SR 89A in Oak Creek Canyon. This report takes public safety, maintenance needs, and physical and geographical constraints into consideration in order to make a recommendation to keep or to close each pullout.

Three closure options were developed for the sites, consisting of: **Closure Option A:** Full closure with guardrail; **Closure Option B:** Full closure with native vegetation using temporary traffic drums during landscape establishment; or **Closure Option C:** Closure with maintenance access (three sub-options of maintenance access were provided: decorative bollard (C-1), wooden posts (C-2), and flexible delineators and removable tubular markers (C-3)).

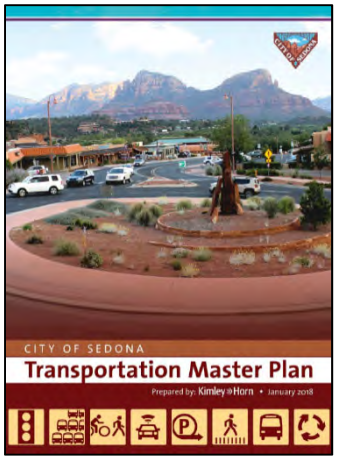
A total of 59 sites on SR 89A in Oak Creek Canyon were evaluated on Friday, September 1 and Saturday, September 2, 2017. Based on the findings of the field review, a recommendation was developed for each site. Of the 27 identified sites that were recommended for closure, approximately 67 percent were recommended for closure option A, four percent for closure option B, and 30 percent for closure option C. The report also provides recommended closure mechanisms and planning-level/programmatic cost estimates.

In addition, the report reviews the infrastructure needs to implement real-time travel information notifications through the SR 89A corridor between Sedona and Flagstaff. ADOT currently maintains a statewide network of electronic Dynamic Message Signs (DMS) that provide information about incidents, closures, restrictions, hazardous weather, and display travel times. Oak Creek Canyon

stakeholders, including ADOT and the City of Sedona, have expressed interest in installing DMS to provide real-time travel time information that will alert travelers of congestions and delays so that they are able to make an informed route choice.

Sedona Transportation Master Plan

Prepared by: Kimley Horn
Date: January, 2018



The City of Sedona Transportation Master Plan (TMP) recommended a set of multimodal transportation strategies and guidance to address congestion and mobility needs of residents, visitors, and commuters. The Community Values captured in the Sedona Community Plan, including environmental stewardship, community connections, improved traffic flow, walkability, economic diversity, and sense of place, were adopted as the guiding principles in the development of the Sedona TMP. The plan was developed in a three-phase process:

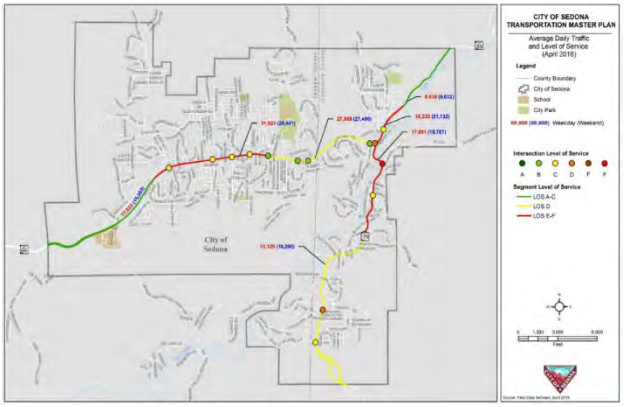
1) *Inform*: provides the City and study team the context and character of the current transportation system and the aspirations of the community;
2) *Analyze*: includes detailed analysis of needs and public input to shape alternative strategies; and
3) *Implement*: is critical to reaching an informed agreement on a recommended plan of action.

The Sedona TMP presented the following key findings on existing mobility conditions in the study area:

- Sedona's population fluctuates throughout the year due to part-time residents. The number of part-time residents increased from 892 to 1,674 between 2000 and 2010; however, overall population decreased from 10,244 to 10,045 during the same period.
- Sedona's population increased by about 300 residents between 2010 and 2015.
- Sedona's population is forecasted to grow to approximately 12,900 residents by 2040, which is 25 percent higher than the current population.
- Approximately 80 percent of trips in Sedona are made by short-term and long-term visitors, based on analysis of AirSage mobility pattern data.
- Tourism growth has approximated the increase in traffic volumes on SR 179 and SR 89A.

- SR 179 and SR 89A serve as the backbone of Sedona's transportation network, and must serve both regional trips and local traffic.
- Limited street connectivity between neighborhoods means there are no alternatives to SR 179 or SR 89A during congested conditions.
- Traffic volumes are significantly higher during peak season, which overwhelm the capacity of the roadway. Figure B-18 summarizes the 24-Hour Average Daily Traffic (ADT) volumes that were collected at seven locations on SR 89A and SR 179 on Thursday, April 14, 2016 and Saturday, April 16, 2016, as well as historical traffic volumes obtained from previous plans and studies and from other available count data.

Figure B-18
Traffic Volume Count Data



- With no traffic, it takes 12 minutes to travel from the Village of Oak Creek to the "Y," however, during the busiest weekends, travel time exceeded 36 minutes on several occasions.
- While SR 179 was reconstructed with comfortable sidewalks and bike lanes, bike lanes on SR 89A with high traffic volumes are uncomfortable for all but the most advanced bicyclists.
- Current bus service, with 45- to 90-minute frequency does not attract sufficient tourists to provide a congestion benefit.

The plan developed a series of 14 strategies, 13 of which were recommended. The strategies were selected to improve mobility within the City, while also respecting the guiding principles of the community values, and were developed by considering analysis of traffic and mobility data, input from stakeholders, City Council, TAC, and the public. The 13 recommended strategies include:

1. Uptown Sedona roadway improvements
2. Uptown Sedona pedestrian improvements
3. Uptown Sedona parking improvements
4. SR 179 improvements, Schnebly Hill roundabout to the "Y"
5. Major roadway connections
6. Neighborhood vehicular connections
7. Enhanced transit service – commuter/resident focused
8. Enhanced transit service – tourism focused shuttle service
9. Enhanced transit service – tourism focused

10. SR 89A/West Sedona access improvements
11. Bicycle and pedestrian improvements
12. Traveler information
13. Red Rock crossing (long-term recommendation)

The plan also identified three steps for project implemenetation, including:

1. An action plan for implementation with short-, mid-, and long-term actions;
2. Identifying partnering opportunities along with the lead agency, responsible party, and other agencies or stakeholders that would be involved in the projects; and
3. An overview of potential funding sources and strategies for the transportation improvement strategies.

VISITOR-FOCUSED TRANSIT BEST PRACTICES

Transit in a tourism-based, recreation-focused community like Sedona has the potential to successfully attract visitors to ride the bus and use it as a primary means of transportation within the community. Looking at best practices from other communities that have economies based on tourism and visitors is helpful as Sedona starts the planning process for a new transit system.

Sedona, with its proximity to state and federal recreation areas with unparalleled natural beauty, can learn from other communities with strong recreational and public land assets. Other areas with ski areas, national parks, national forest lands, and monuments have built transit systems with ridership that is much higher than would be expected based on traditional transit ridership models. A well thought out, visitor-focused transit system can attract riders who never use transit in their own communities but may consider it while on vacation. This success often comes from following key best practices.

BEST PRACTICES

Transit as a Community Ambassador

Visitor-focused transit succeeds when it acts as a positive community ambassador to the visitor. Unlike traditional urban transit systems that focus on residents and regular riders, many of whom are transit-dependent, a visitor-focused system should be designed to help introduce the visitor to the

community. The transit system can help the visitor have a more authentic and interesting Sedona experience by:

- Hiring and training drivers that are customer service experts and can give local tips
- Having local information available onboard the buses
    - Interior ads from local businesses, as shown in Figure B-19, area maps, and visitor guides should be available for a rider.

Figure B-19
Local Business Ads Onboard Bus
Source: Mountain Rides Transportation Authority

- Having local experts and guides onboard at key times
    - At the busiest times of the year, many visitor-focused systems will have a tour guide or host available to answer questions and educate passengers.

Ideally, being onboard the local bus makes the visitor feel like a local and should give them "insider access" to community information. It also creates the opportunity for locals and visitors to interact onboard the bus, further enhancing the visitor experience.

Branding that Matches Local Character

The best transit systems that attract visitor ridership often have strong vehicle branding and graphics that visually connects the bus system with the character of the local area. This can include:

- Logos that relate to the local landscape
    - As shown in Figure B-20, the Yosemite Area Regional Transportation System logo incorporates the iconic El Capitan.

Figure B-20
YARTS logo
Source: YARTS website

- Vehicle graphics that reflect local values
    - In the mountain ski resort community of Crested Butte, Colorado, The Mountain Express buses are painted by local artists in different themes that reflect the community, as shown in Figure B-21.
- Taglines and slogans that relate to the uniqueness of the area

Figure B-21
Painted bus in Crested Butte, CO
Source: The Mountain Express website

Specialty vehicles, like trolleys, aren't necessary to accomplish this branding, as much can be done with vinyl graphic applications. Many visitor systems have found specialty vehicles to be expensive to maintain and uncomfortable for passengers, so a more mainstream transit vehicle with good graphics often achieves better overall results than a specialty vehicle, especially in terms of customer satisfaction and vehicle serviceability.

Seasonality of Service

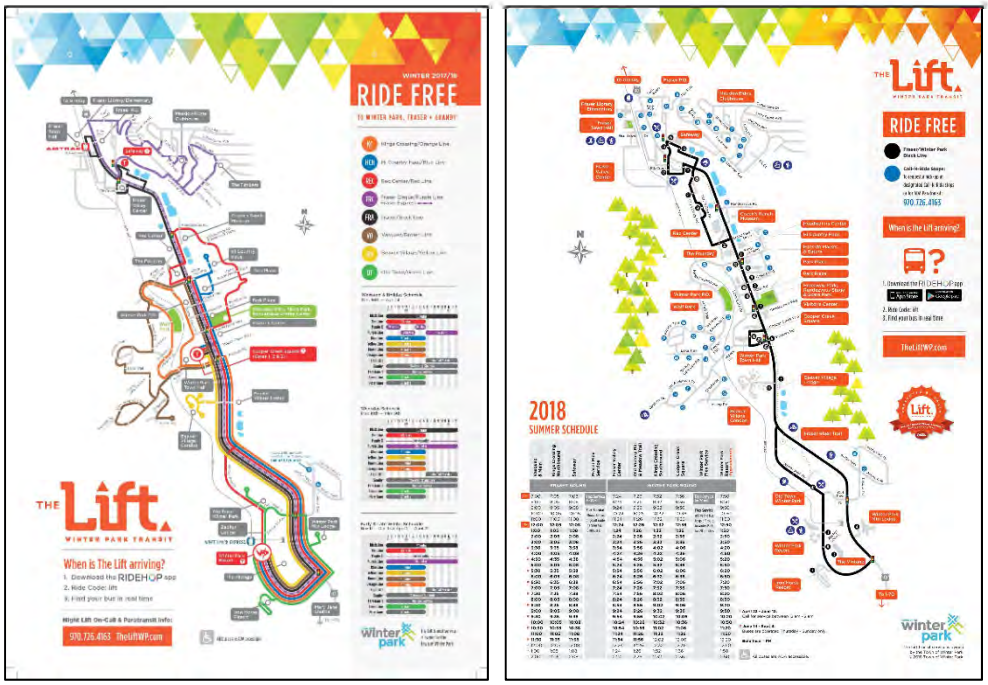
Given fluctuations in visitation to tourist destinations like Sedona, a transit system should be built around visitor numbers. Most visitor transit systems will vary the amount of service operated at different times throughout the year by:

- Having some routes and/or route extensions only run during peak visitor months.
- Extending late night service during peak visitor months.
- Increasing route frequency, also known as headways, during peak visitor months.
- Reducing operating hours, also known as span of service, and headways during the slowest months.

However, these changes in service can be challenging to attracting and retaining local ridership. Local riders may get frustrated or confused if the service is constantly changing, and creating printed schedules and marketing materials gets more challenging with many different seasonal schedule variations. In order to mitigate these challenges, visitor systems will often have a standard year-round base of service that remains constant with additional service during peak

visitation. An example of this is shown in Figure B-22, where The Lift in Winter Park, CO operates eight routes during the winter ski season but only one route plus on-demand stops during the summer season.

Figure B-22
Winter and Summer Schedule Differences of The Lift in Winter Park, CO
Source: The Lift Website, Winter Park, CO



Partnering with Local Businesses

Transit for visitors must attract riders who may not have considered using transit or may be unaware of the service. Visitors often find about the local transit system after arriving by car and deciding to take the local bus to get around town and leaving their car parked. Local businesses can support and facilitate this visitor transit use in many ways:

- Businesses can act as travel trainers
  - A visitor transit system needs to regularly inform local businesses on how to use the system through training of front-line staff, especially those in retail or lodging establishments.
- Businesses can help market the bus system
  - A transit system can provide bus information to local businesses to market the service - things like printed schedules, posters, countertop displays, and pocket cards.

- Shared website links, social media collaboration, and online cross promotion can be a win-win for businesses and the transit system.

- Partnerships during special events
  - One of the best ways to introduce riders to a transit system is during special events that may have limited parking – many visitor-focused transit systems will partner with businesses putting on special events to encourage attendees to use the bus to access the event, an example of which is Vine Transit in the Napa Valley, CA coordinating transit service with a community event shown in Figure B-23.

Figure B-23
Vine Transit Promotion for Special Event
Source: Napa Valley Transportation Authority, Napa, CA

- Participation in business groups
  - Being a part of the local chamber, business groups, and networking clubs help a transit system become top-of-mind in a visitor-focused community.

A visitor-focused transit system increases its effectiveness by leveraging local business support and should strive to be as omnipresent in the community as possible.

Fare Free or Low Cash Fare

Some of the most successful transit systems for visitors are those without a fare. Fare-free systems offer the advantage of attracting visitors who don't have to worry about carrying exact change or figuring out how to pay for the bus. Being able to just hop on the bus and go is helpful in attracting visitors and can also help expedite bus loading in areas where many visitors all load at once, like a

trailhead or park, and dealing with collecting the fare delays the bus. Fare-free visitor systems are typically for shorter trips within a core downtown area or district – trips beyond this core area usually still have a fare that is affordable and attractive, given a longer trip distance.

If not free, many resort areas have a nominal fare low enough to encourage visitor use. A visitor who already has driven to the area may not take transit, and may just drive instead, if the fare is too high. A low fare helps encourage use and incentivize transit. Visitor systems with fares have also used partnerships with local hotels and lodging providers to give out free passes for guests to use through a bulk pass program whereby one-way tickets are purchased in bulk at a discount for distribution to guests (also known as "first ride free" programs).

Coordination with Regional Services

Like Verde Lynx connecting Cottonwood with Sedona, as shown in Figure B-24, many other visitor-focused transit systems have regional transit connectivity that should be considered. A visitor-focused system is often more successful if it provides seamless integration with regional services that are typically more focused on commuters or local riders. This coordination to benefit passengers should include:

Figure B-24
Verde Lvnx bus in Sedona. AZ

- Timed transfers and schedule coordination
- Shared passenger amenities like bus stops
- Coordinated fares that allow for "pay once" access and transferable passes
- Shared schedule and customer information resources

Operational and administrative coordination between local visitor bus systems and regional transit services is also common in tourist towns. Examples of this include shared vehicle maintenance or use agreements, facility colocation, operating contracts, funding agreements, and shared governance.

Good examples of coordinated regional and local systems are found in Summit County, Colorado where the Summit Stage provides linkage throughout the county and the Town of Breckenridge operates a local service within the town. In

Eagle County, Colorado, ECO Transit provides regional service with connections to local services at the transit centers in Vail and Avon.

Multimodal Connections and Passenger Amenities

Since a visitor may not be comfortable or familiar with riding with transit, making a visitor transit system inviting and comfortable is critical as demonstrated by the Park City Transit Center shown in Figure B-25. Visitor systems should have high-quality passenger amenities such as:

Figure B-25
Park City Transit Center

- Well-lit bus stops with benches and shelters, as appropriate for ridership demand
    - An inviting bus stop attracts new riders.
- Visible, branded bus stop signage with bus schedule information posted
    - Visitors often learn about the system by stumbling on bus stop displays.
- Real-time bus information, as appropriate
    - Digital signage with real-time bus location info help put new passengers at ease.
- Buses that accommodate local recreation
    - In Sedona, buses should be equipped with adequate bike racks and room for backpacks and strollers.

Visitor transit must also be well-connected via pedestrian and bicycle infrastructure. It must be safe, easy, and accessible for visitors to get to and from the bus. Having well-designed sidewalks, pathways, crosswalks, bike racks, and bike lanes connected to bus stops helps encourage visitor transit use and build ridership.

Readily Available, Easy to Understand Customer Information

For a visitor to find and use the bus, the bus schedule information must be easy to find and available in a number of formats. A high-quality visitor-focused transit system invests in customer information such as:

- A modern, mobile-friendly website

- A smartphone app that often incorporates real-time bus location information, an example of which is shown in Figure B-26 at Sunline Transit in Thousand Palms, CA (Palm Desert area)
- Widely distributed, easy-to-understand printed schedules in locations where tourist information is available
- Social media tools and links from local tourist-related online information sources

Figure B-26
Sunline Transit Ad for Bus App
Source: Sunline Transit website

All customer information materials should be designed with the visitor in mind, who often times has never or rarely used a transit system and isn't familiar with reading bus schedules. What works for other transit systems, who have legions of regular riders, doesn't work well for a visitor system. Materials should be made as easy to understand as possible for visitors who often are transit neophytes.

Parking Management

Many visitor-focused transit systems include parking management strategies with the overall planning for transit. To act as a disincentive to driving and an incentive to riding the bus, many tourist destinations will price parking such that riding the bus is a cheaper option. In some cases, revenue from paid parking will go to operating the local transit services. With Sedona's uptown parking already being managed and charging for some on-street parking, as shown in Figure B-27, this system could be expanded upon and linked with a new transit system's goals.

Figure B-27
Sedona Uptown Parking
Source: City of Sedona

Park and ride lots are also often incorporated into visitor-focused transit systems and are usually free for long-term parking if someone is riding the bus. Park and ride lots may be located outside of or adjacent to central business districts, depending on the target market or end destination. Free long-term parking at

park and ride lots combined with paid parking for on street parking and close-in lots can help encourage drivers to avoid overparked, congested areas and take the bus instead.

Use of Advanced Technology and Emerging Mobility Solutions

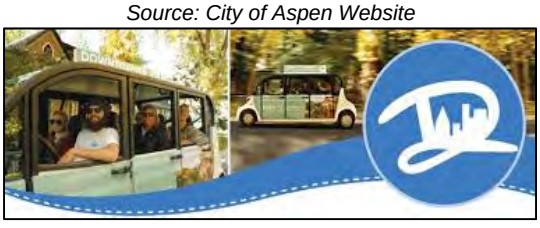
Many visitor-focused transit systems are in communities like Sedona where protection of the environment is an important community value and use of advanced technology is a common expectation. In addition to the use of customer information technology such as smartphone apps and real-time vehicle location previously highlighted in this chapter, some advanced technology and emerging mobility best practice trends for visitor-focused transit systems include:

- Migration of the vehicle fleet to clean, battery electric propulsion
    - Battery electric powered buses are now becoming commonplace in visitor-focused communities, such as Park City, UT (shown in Figure B-28), where the entire transit fleet is being transitioned to zero emission buses.

Figure B-28
Park City, UT Electric Bus
Source: City of Park City Website

- Use of partnerships with emerging mobility solutions
    - Many visitor-focused areas are incorporating new transportation options such as transit network companies (e.g., Uber and Lyft) and microtransit, an example of which is shown in Figure B-29 in Aspen, Colorado where a small, open-air electric golf cart type vehicle carries passengers on-demand via an app. Bikes and scooters that are electrically powered and reserved with a smartphone app are also being talked about or newly implemented in many resort areas.

Figure B-29
Downtowner Microtransit in Aspen, CO
Source: City of Aspen Website



- Real-time roadway and parking management
    - Many visitor-focused areas with significant traffic and congestion areas like Sedona are incorporating real-time monitoring of parking

lots and traffic via advanced sensing technology – these systems allow staff to dynamically change pricing and traveler information.

Public transportation is rapidly evolving and many visitor-focused systems are incorporating these changes into their solutions. Autonomous vehicles for public transportation are being researched and tested in larger cities and on university campuses, and some tourist towns are keeping an eye on these advances for potential application in the future.

Chapter C

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CHAPTER C

Community Conditions

INTRODUCTION

Chapter C presents the community conditions, demographics, and select local travel patterns for the Sedona-Oak Creek Canyon study area. In addition, this chapter evaluates visitor activity within the study area using data provided by the City of Sedona, the Sedona Chamber of Commerce and Tourism Bureau, and the Red Rock Ranger District of the Coconino National Forest. A brief overview and analysis of existing operations, ridership data, financial information, and performance measures for the Verde Lynx route operated by Cottonwood Area Transit is presented at the end of the chapter. Where appropriate, figures and tables are used for illustration.

DEMOGRAPHIC CHARACTERISTICS

Study Area Location

The study area is shown in Figure C-1. Sedona is located in the Verde Valley region of Arizona and is located in Coconino and Yavapai counties. It is approximately 29 miles south of the City of Flagstaff, AZ. Oak Creek runs through town along State Highway 89 and there are many recreational activities available along the canyon to the north of Sedona as well as in the surrounding area.

The demographic analysis was done by block group, which is a census-defined boundary. These boundaries do not necessarily denote neighborhoods or communities, but rather act as a standardized means for analysis. Figure C-2 shows the block groups analyzed as part of this study.

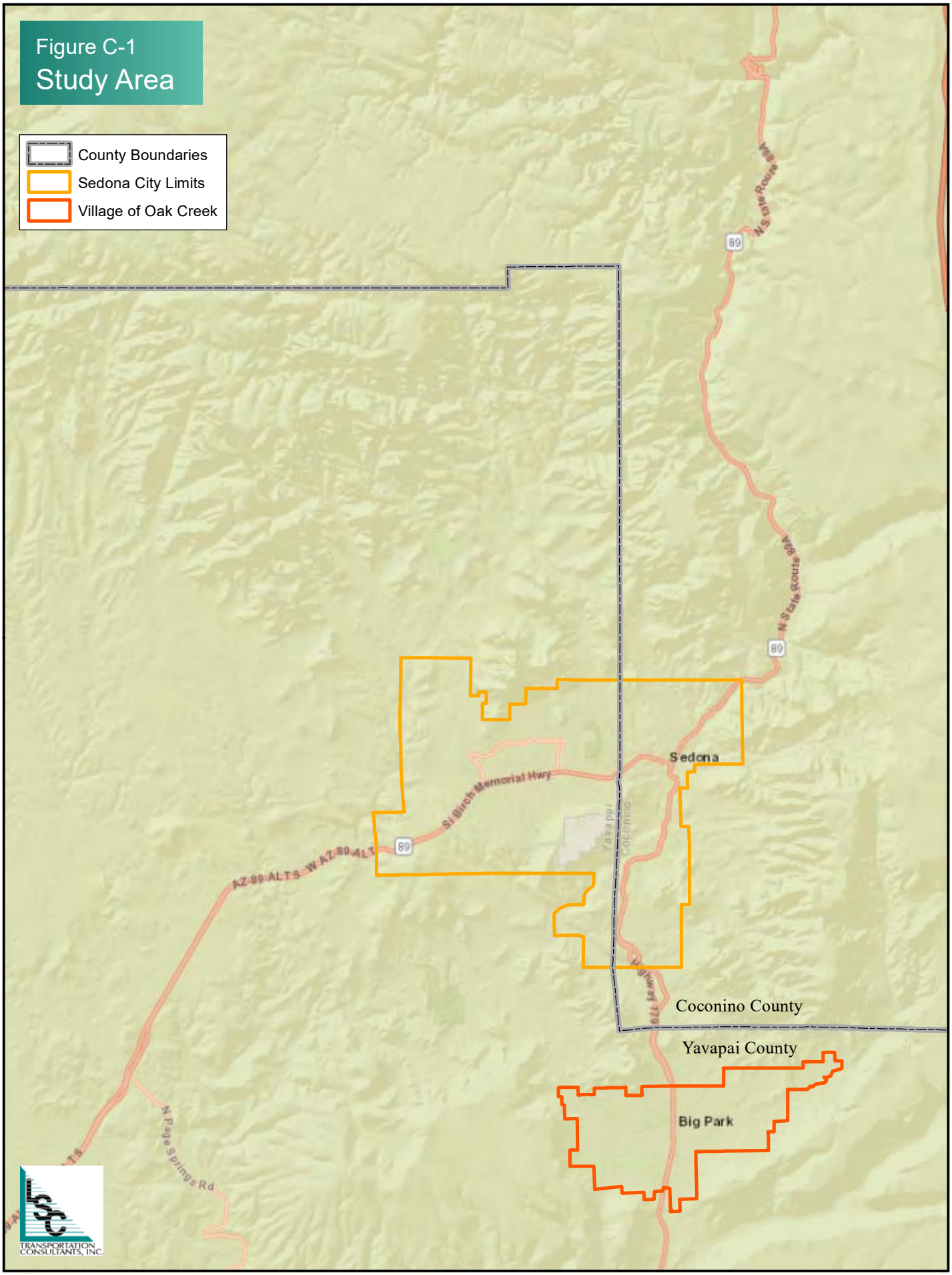
Figure C-1
Study Area
County Boundaries
Sedona City Limits
Village of Oak Creek
N State Route 89A
89
Sedona
Sr Birch Memorial Hwy
AZ-89A ALTS W
AZ-89A ALT
Coconino County
Yavapai County
Big Park
N Page Springs Rd
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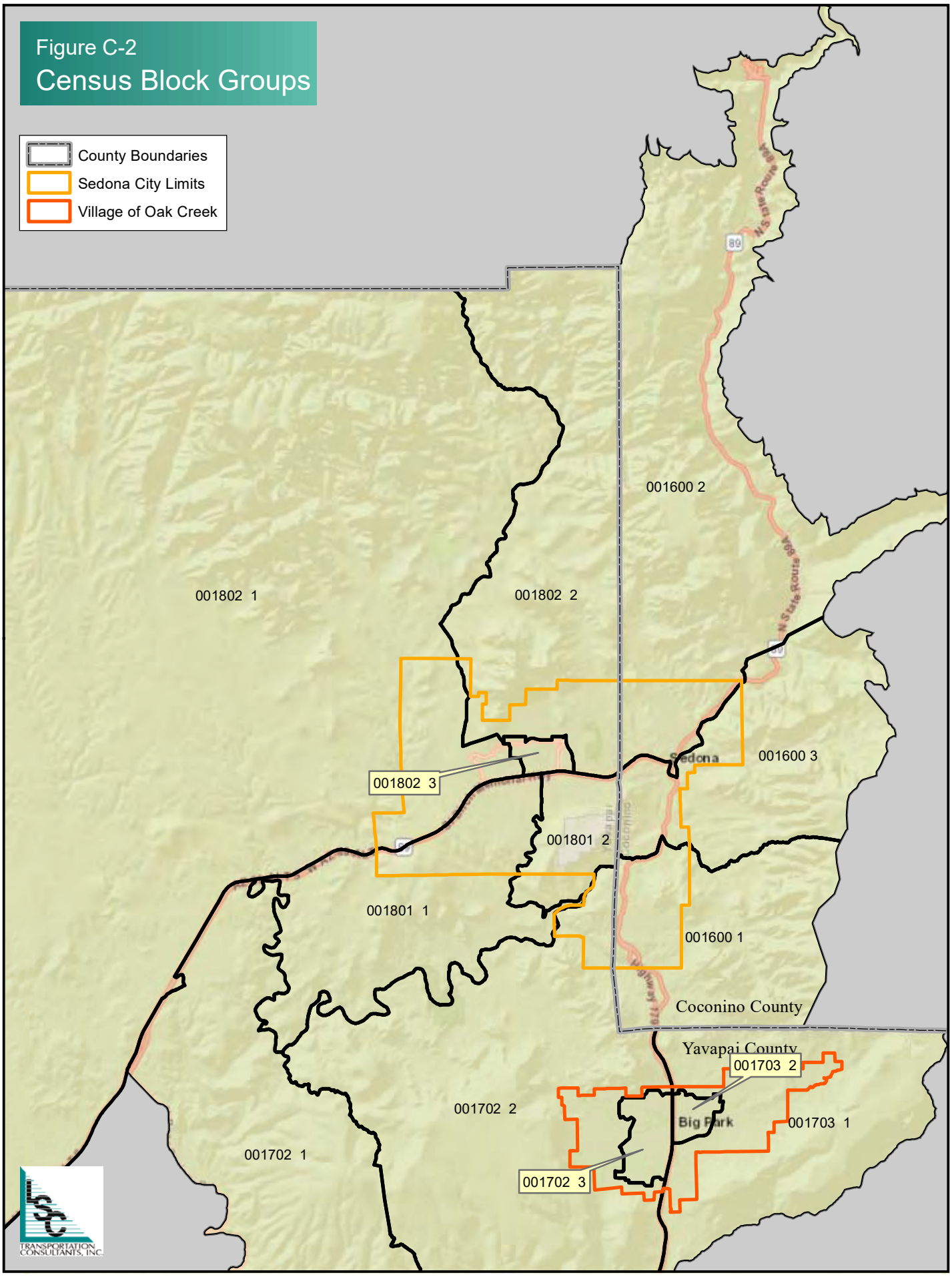
Figure C-2
Census Block Groups
County Boundaries
Sedona City Limits
Village of Oak Creek
001600 2
001802 1
001802 2
001802 3
Sedona
001600 3
001801 2
001801 1
001600 1
Coconino County
Yavapai County
001703 2
001702 2
Big Park
001703 1
001702 1
001702 3
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Demographics

Unless noted otherwise, all data listed in this chapter are from the 2012-2016 U.S. Census American Community Survey (2016 ACS) five-year estimates, the total population of the study area is 18,572. According to the *City of Sedona Land Use and Population Report – 2014*, the total population in 2014 was an estimated 11,862 persons. Of the 11,826 persons 1,696 were seasonal residents. In a study done by TischlerBise in 2018 (*City of Sedona Land Use Assumptions Study*) the estimated 2018 population is 12,557 with 2,044 being seasonal residents.

Population Density

Figure C-3 shows the population density for the study area by census block groups using the 2016 ACS data. The size of the census blocks skews the location of population concentrations. Population density is used to determine where population is concentrated. Transit is generally more successful in areas with greater concentrations of population. As shown in Figure C-3, the highest densities are located north of State Hwy 89 in central Sedona as well as central Village of Oak Creek. The area with the next highest density is in central Sedona south of State Hwy 89.

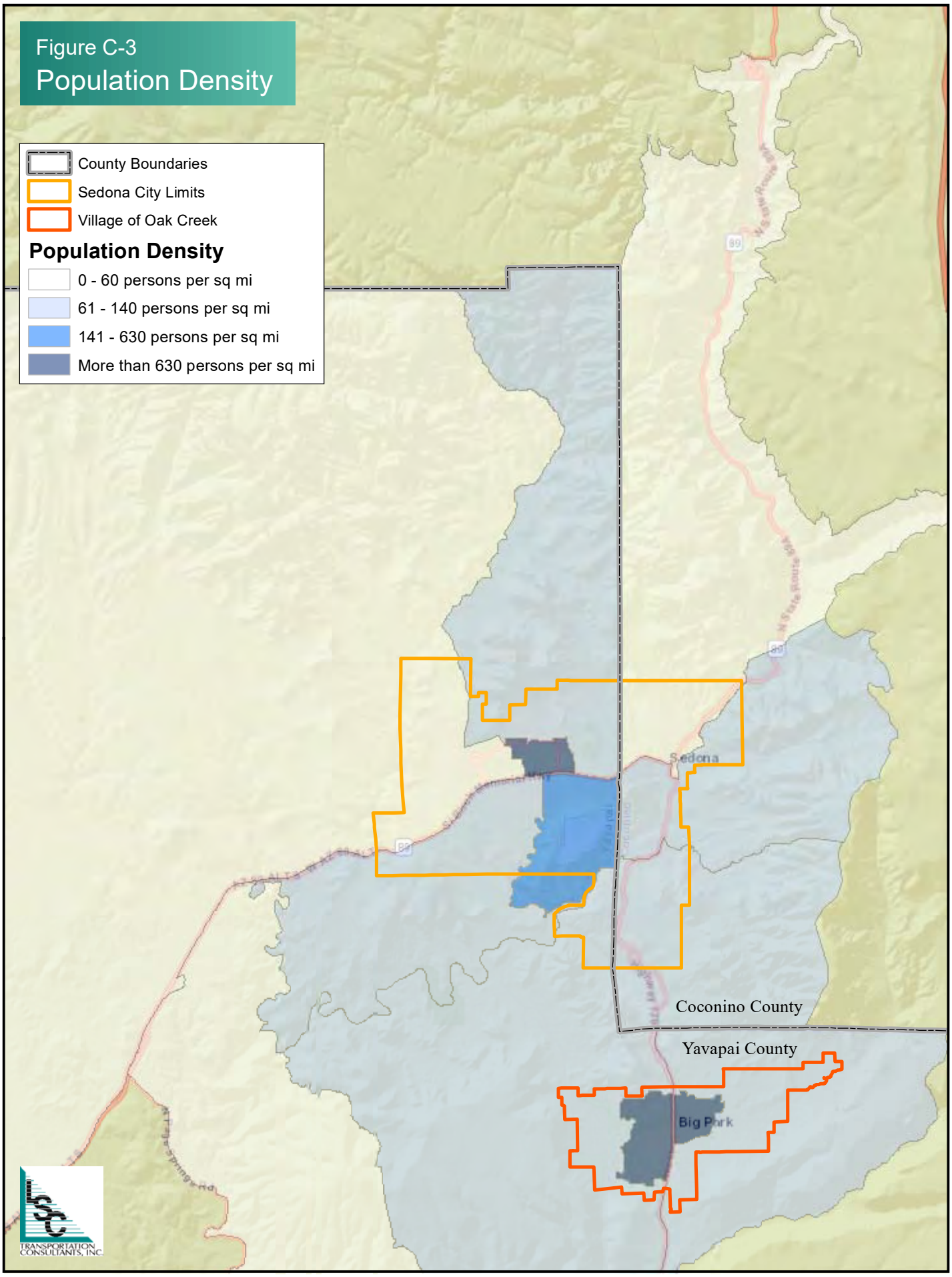
Figure C-3
Population Density
County Boundaries
Sedona City Limits
Village of Oak Creek
Population Density
0 - 60 persons per sq mi
61 - 140 persons per sq mi
141 - 630 persons per sq mi
More than 630 persons per sq mi
Sedona
Coconino County
Yavapai County
Big Park
LSC
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Transit-Dependent Population Characteristics

This section provides information on the individuals considered by the transportation profession to be dependent upon public transit. These population characteristics preclude most such individuals from driving, which leaves carpooling and public transit as the only motorized forms of available transportation.

The four types of limitations that preclude people from driving are physical limitations, financial limitations, legal limitations, and self-imposed limitations. Physical limitations may include permanent disabilities such as frailty, blindness, paralysis, or developmental disabilities to temporary disabilities such as acute illnesses and head injuries. Financial limitations include people who are unable to purchase or rent a vehicle. Legal limitations refer to limitations such as being too young to drive (generally under age 16). Self-imposed limitations refer to people who choose not to own or drive a vehicle (some or all of the time) for reasons other than those listed in the first three categories.

The US Census is generally capable of providing information about the first three categories of limitation. The fourth category of limitation represents a relatively small portion of transit ridership, particularly in areas with low density such as the study area. Table C-1 presents the study area's US Census statistics regarding the older adult population, youth population, ambulatory disability population, low-income population, and zero-vehicle households. These data are important to various methods of transit demand estimation.

Older-Adult Population

The older-adult population represents a significant number of the national transit-dependent population and represents 38.3 percent of the total population in the study area. The older adult population includes individuals over the age of 65 years. Figure C-4 illustrates the density of older adults in the study area using the 2016 ACS data. The area with the highest density of older adults is north of State Hwy 89 in central Sedona as well as central Village of Oak Creek. The area with the next highest density is in central and western Sedona south of State Hwy 89 as well as eastern Village of Oak Creek.

Table C-1
Estimated Population Characteristics
Sedona-Oak Creek Canyon Study Area

County	Census Tract	Census Block Group	Total Population 2016 ACS	Land Area (sq. miles)	Total Number of Households 2016 ACS	Zero-Vehicle Households 2016 ACS		Total Number of Older Adults 65 and Over 2016 ACS		Total Number of Youth 10-19 2016 ACS		Ambulatory Disabled Population 2016 ACS		Low-Income Population 2016 ACS	
					#	#	%	#	%		%	#	%	#	%
Coconino	16	1	827	9.59	398	7	1.8%	356	43.0%	46	5.6%	69	8.4%	128	15.5%
		2	1,074	26.13	643	25	3.9%	424	39.5%	108	10.1%	90	8.4%	167	15.5%
		3	1,219	10.48	645	22	3.4%	492	40.4%	25	2.1%	102	8.4%	189	15.5%
Yavapai	17.02	1	765	26.46	317	0	0.0%	195	25.5%	90	11.8%	60	7.8%	57	7.5%
		2	1664	27.52	793	18	2.3%	762	45.8%	0	0.0%	130	7.8%	125	7.5%
		3	2,030	1.06	1061	99	9.3%	881	43.4%	160	7.9%	159	7.8%	152	7.5%
	17.03	1	1,399	12.03	648	10	1.5%	624	44.6%	104	7.4%	85	6.0%	138	9.9%
		2	1,412	0.49	739	136	18.4%	688	48.7%	16	1.1%	85	6.0%	140	9.9%
	18.01	1	1,504	10.80	756	24	3.2%	571	38.0%	42	2.8%	73	4.9%	150	10.0%
		2	1,696	2.70	1042	56	5.4%	607	35.8%	29	1.7%	83	4.9%	169	10.0%
	18.02	1	1,780	150.00	778	0	0.0%	518	29.1%	179	10.1%	55	3.1%	116	6.5%
		2	2,009	15.93	977	18	1.8%	796	39.6%	126	6.3%	62	3.1%	131	6.5%
		3	1,193	0.51	519	0	0.0%	207	17.4%	60	5.0%	37	3.1%	78	6.5%
TOTALS			**18,572**	**293.69**	**9,316**	**415**	**4.5%**	**7,121**	**38.3%**	**985**	**5.3%**	**1,091**	**5.9%**	**1,741**	**9.4%**

Source: US Census Bureau, American Community Survey - 2016, LSC 2018.

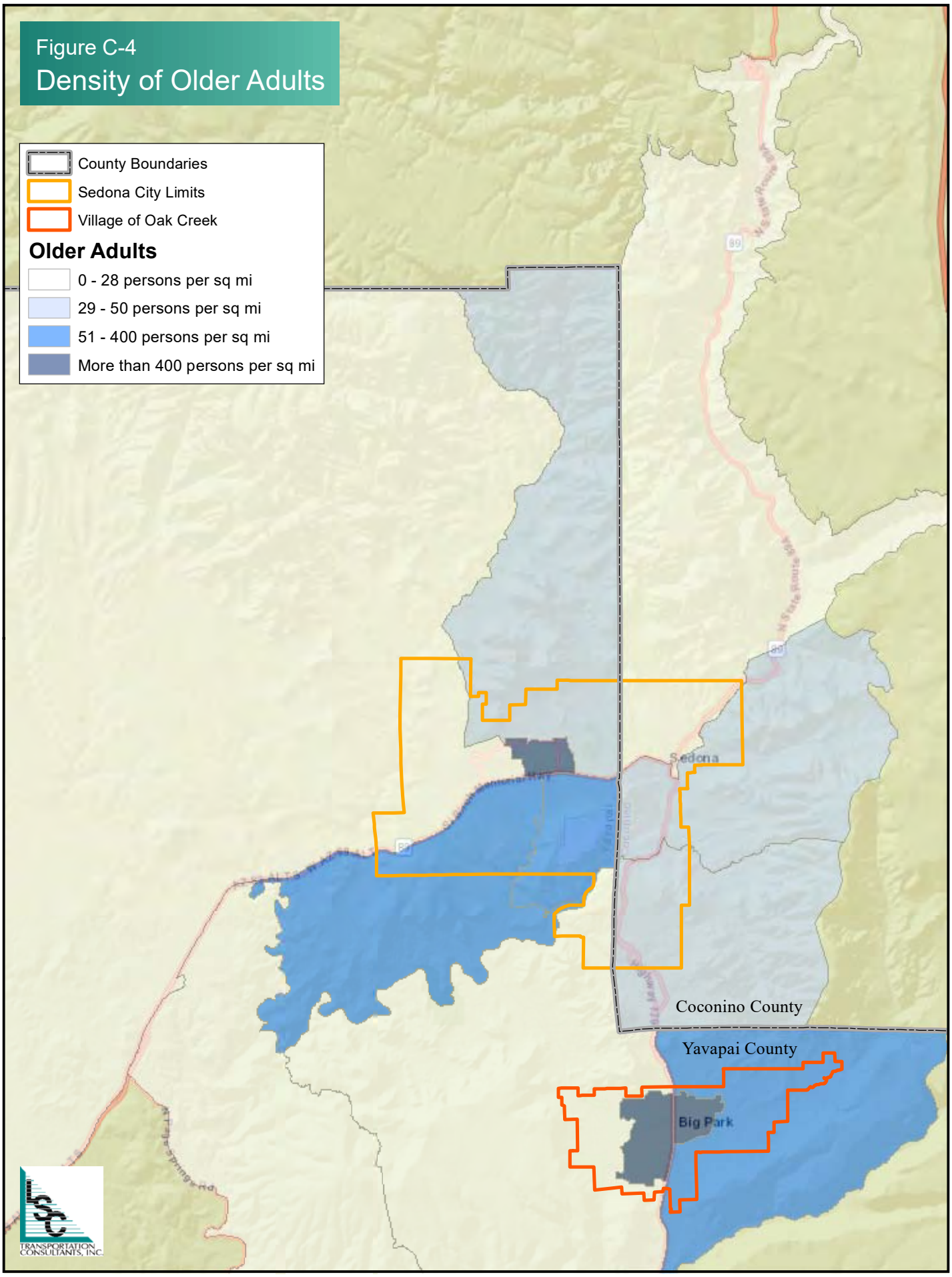
Figure C-4
Density of Older Adults
County Boundaries
Sedona City Limits
Village of Oak Creek
Older Adults
0 - 28 persons per sq mi
29 - 50 persons per sq mi
51 - 400 persons per sq mi
More than 400 persons per sq mi
Sedona
Coconino County
Yavapai County
Big Park
LSC
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Population of Persons with an Ambulatory Disability

Figure C-5 presents the 2016 ACS population of persons with an ambulatory disability in terms of people-per-square-mile density. An individual is classified as having "ambulatory disability" if they have serious difficulty walking or climbing stairs. Approximately 5.9 percent of the population in the study area has some type of ambulatory disability. The areas with the highest density are north of State Hwy 89 in central Sedona as well as central Village of Oak Creek. The area with the next highest density is in central Sedona south of State Hwy 89.

Low-Income Population

The low-income population tends to depend upon transit more than wealthier populations or those with a high level of disposable income. Figure C-6 illustrates the density of the low-income population in the study area using the 2016 ACS data. Low-income population, as defined by the FTA, includes persons whose household income is at or below the Department of Health and Human Services' poverty guidelines. The low-income population listed in the tables and GIS maps includes people who are living below the poverty line using the Census Bureau's poverty threshold.

Although low-income population data are available at the 2016 ACS level, the smallest level of geographical unit for which information was available is at the tract level. The information from the tract level was apportioned to the block group level based on the population of the block group compared to the total population in the tract. Approximately 9.4 percent of the population of the study area are considered low income. The areas with the highest density are north of State Hwy 89 in central Sedona as well as east central Village of Oak Creek. The area with the next highest density is in central Sedona south of State Hwy 89 as well as west central Village of Oak Creek.

Figure C-5

Density of Persons with Ambulatory Disabilities

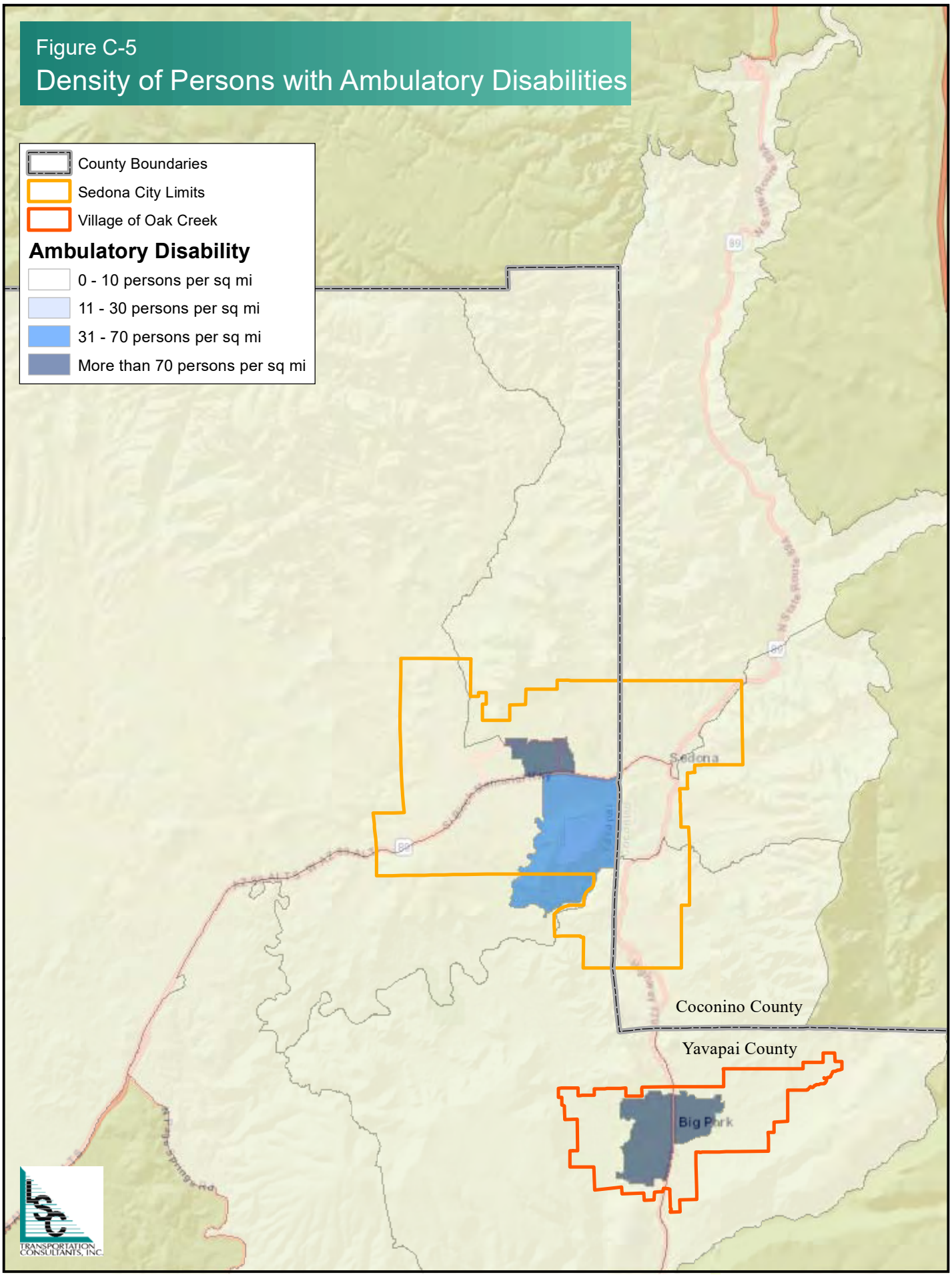
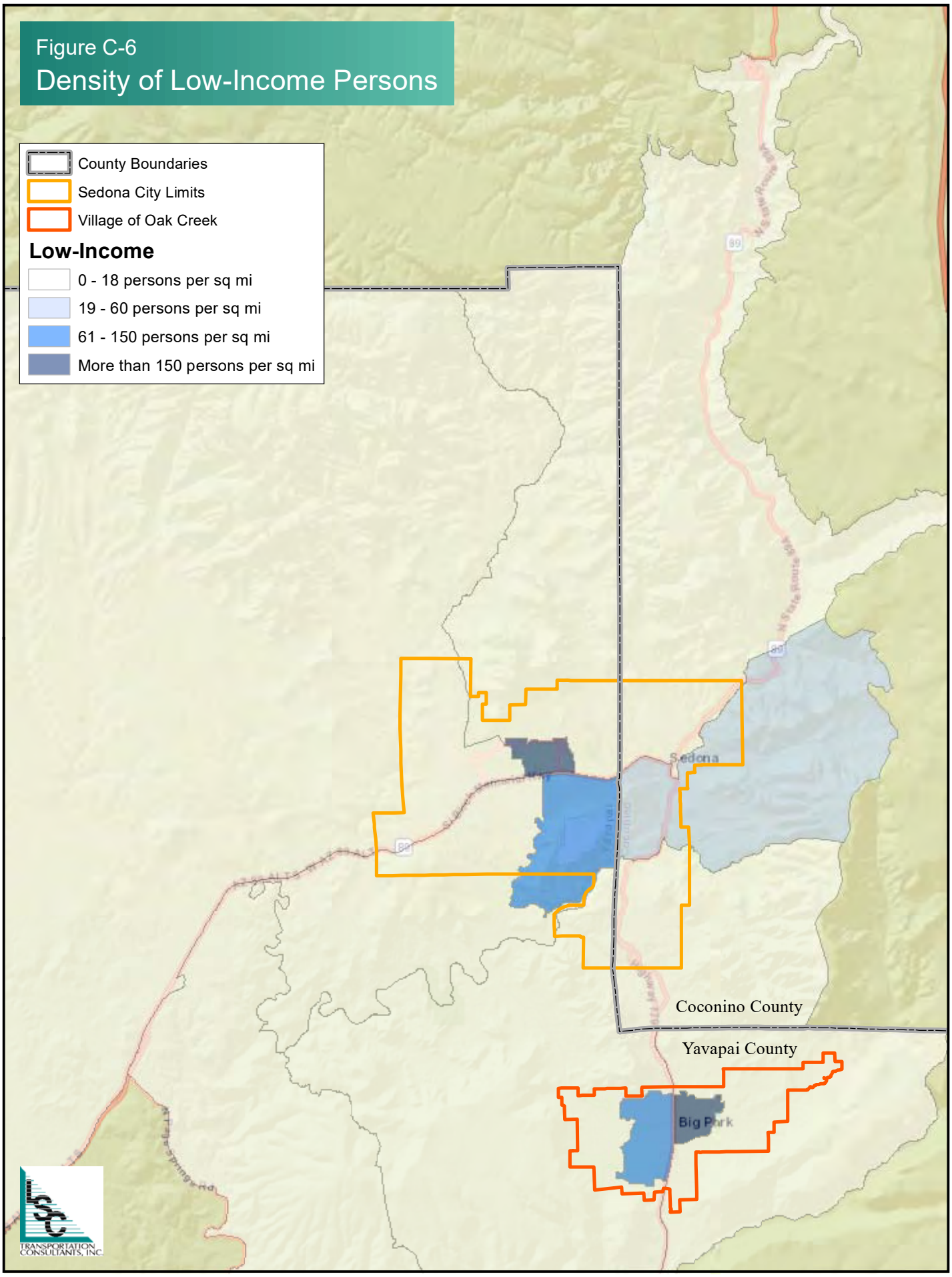


Figure C-6

Density of Low-Income Persons



Zero-Vehicle Households

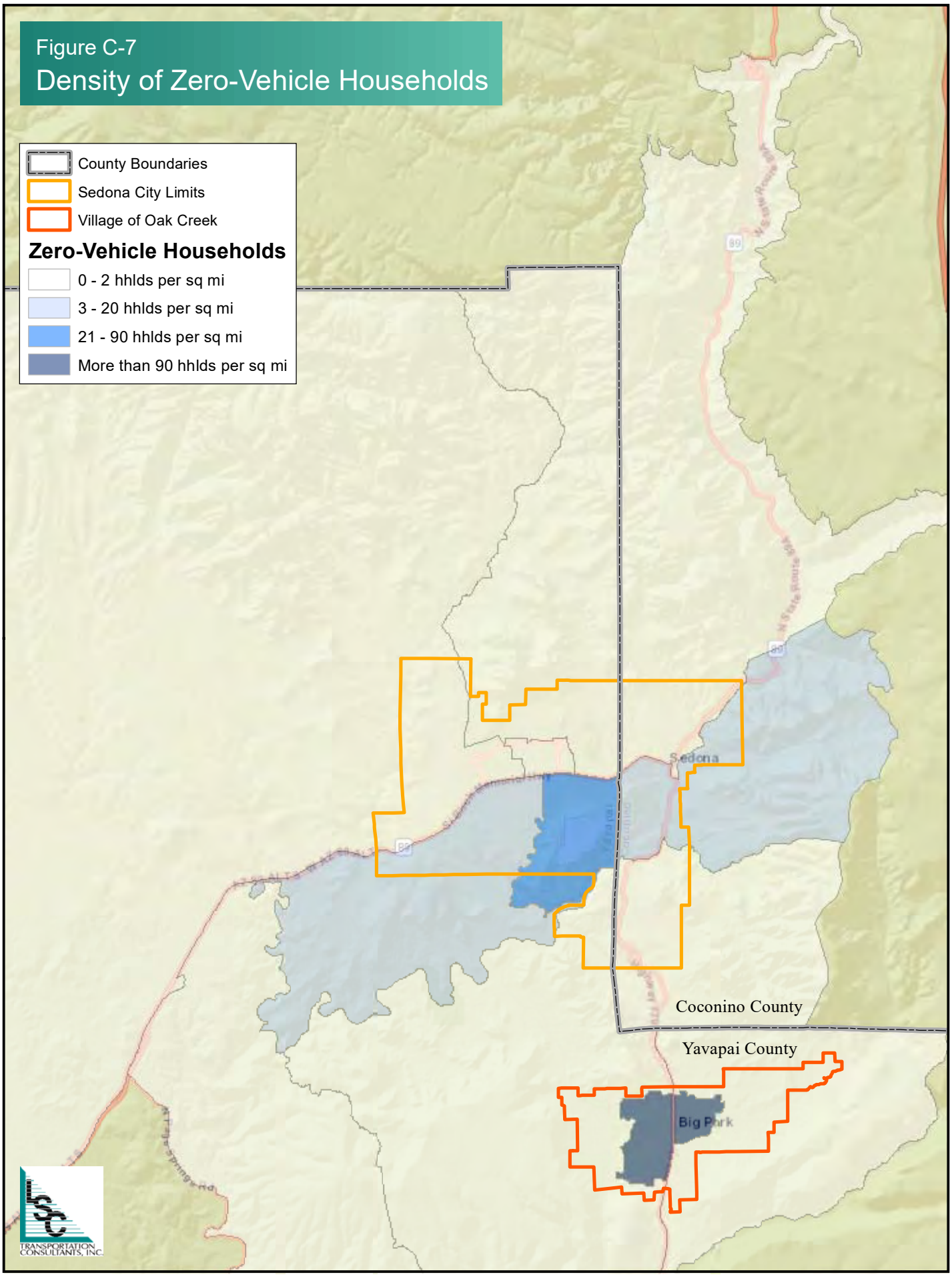
A zero-vehicle household is defined as a household in which an individual does not have access to a vehicle. These individuals are generally transit-dependent as their access to private automobiles is limited. Approximately 4.5 percent of the study area's households reported no vehicle available for use. The density of zero-vehicle households for the study area is shown in Figure C-7. The ranges for the density of zero-vehicle households are quite low due to the size of the block groups, combined with the small number of zero-vehicle households in the study area. The area with the highest density is in central Village of Oak Creek. Central Sedona south of State Hwy 89 is the area with the next highest density.

Youth Population

The population density of youth (10-19 years of age) for the study area is shown in Figure C-8. Approximately 5.3 percent of the population of the study area are youth. The areas with the highest density are north of State Hwy 89 in central Sedona as well as central Village of Oak Creek. The area with the next highest density is in central Sedona south of State Hwy 89.

Figure C-7

Density of Zero-Vehicle Households



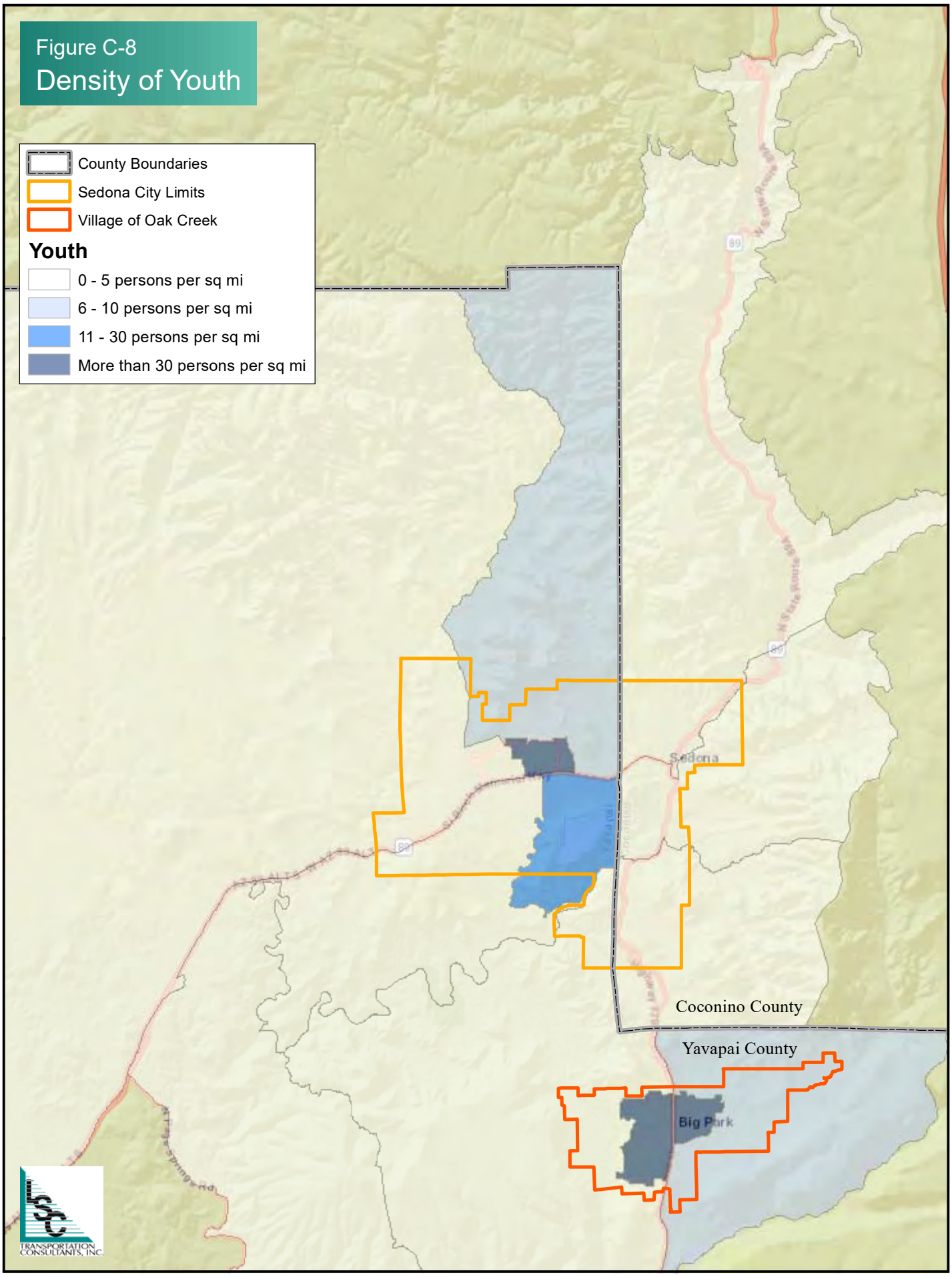


Figure C-8
Density of Youth
County Boundaries
Sedona City Limits
Village of Oak Creek
Youth
0 - 5 persons per sq mi
6 - 10 persons per sq mi
11 - 30 persons per sq mi
More than 30 persons per sq mi
Sedona
Coconino County
Yavapai County
Big Park
LSC
TRANSPORTATION CONSULTANTS, INC.

COMMUNITY ECONOMIC CHARACTERISTICS

The study area has a total civilian labor force of 7,401 with 508 being unemployed (approximately seven percent). This is slightly lower than the five-year average unemployment for the State of Arizona (eight percent). Of those in the civilian labor force, 5,070 are in Sedona with 354 being unemployed (seven percent). There are 2,331 persons in the civilian labor force in the Village of Oak Creek with 154 being unemployed (6.6 percent).

Employment Sectors

Table C-2 shows the available 2016 ACS employment information for Sedona and the Village of Oak Creek by employment sector as well as the study area as a whole. The Educational/Health/Social Services sector is the largest sector in the study area, accounting for approximately 18.9 percent of employment. The next highest industry sector for the study area is Arts, Entertainment, and Recreation/Accommodation and Food Services (18.8 percent). Professional, Scientific, and Management/Administrative/Waste Management is the third highest industry sector with 14.9 percent of employment. The employment numbers reflect a five-year average and do not accurately reflect current conditions.

The highest sectors in Sedona mirror those of the total study area with the Educational/Health/Social Services sector being the largest sector, accounting for approximately 21.5 percent of employment. The next highest industry sector for Sedona is Arts, Entertainment, and Recreation/Accommodation and Food Services (17 percent). Professional, Scientific, and Management/Administrative/ Waste Management is the third highest industry sector with 15.2 percent of employment. In the Village of Oak Creek, the Educational/Health/Social Services sector is the fourth highest sector with 13.4 percent of employment. The Arts, Entertainment, and Recreation/Accommodation and Food Services is the highest sector (22.8 percent) followed by Retail Trade (16.4 percent), and Professional, Scientific, and Management/ Administrative/Waste Management (14.3 percent).

Table C-2
Employment by Sector

	Sedona		Village of Oak Creek		Study Area Totals	
Industry	**Employees**	**Percent**	**Employees**	**Percent**	**Employees**	**Percent**
Educational services, and health care and social assistance	1,012	21.5%	291	13.4%	1,303	18.9%
Arts, entertainment, and recreation, and accommodation and food services	800	17.0%	497	22.8%	1,297	18.8%
Professional, scientific, and management, and administrative and waste management services	719	15.2%	311	14.3%	1,030	14.9%
Retail trade	461	9.8%	356	16.4%	817	11.9%
Construction	433	9.2%	102	4.7%	535	7.8%
Other services, except public administration	342	7.3%	188	8.6%	530	7.7%
Finance and insurance, and real estate and rental and leasing	256	5.4%	73	3.4%	329	4.8%
Manufacturing	252	5.3%	46	2.1%	298	4.3%
Transportation and warehousing, and utilities	191	4.1%	87	4.0%	278	4.0%
Public administration	120	2.5%	125	5.7%	245	3.6%
Wholesale trade	75	1.6%	20	0.9%	95	1.4%
Agriculture, forestry, fishing and hunting, and mining	26	0.6%	64	2.9%	90	1.3%
Information	29	0.6%	17	0.8%	46	0.7%
Total	**4,716**	**100%**	**2,177**	**100%**	**6,893**	**100%**

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Major Employers and Activity Centers

Major transit activity centers are important in terms of land use, trip generation, and the ability to be served by public transit. Many of these points of interest are clustered together into what can be referred to as "activity centers." Activity centers are locations that are typically shown to generate transit trips because they are prime origins or prime destinations. There is no set formula that is used to derive a list of activity centers as the process is subjective. Activity centers generally include a wide variety of land uses including shopping/retail areas, as well as commercial, hospital, and education centers. These are the most critical land uses for individuals who use transit. Figure C-9 shows locations of possible transit generators within the study area.

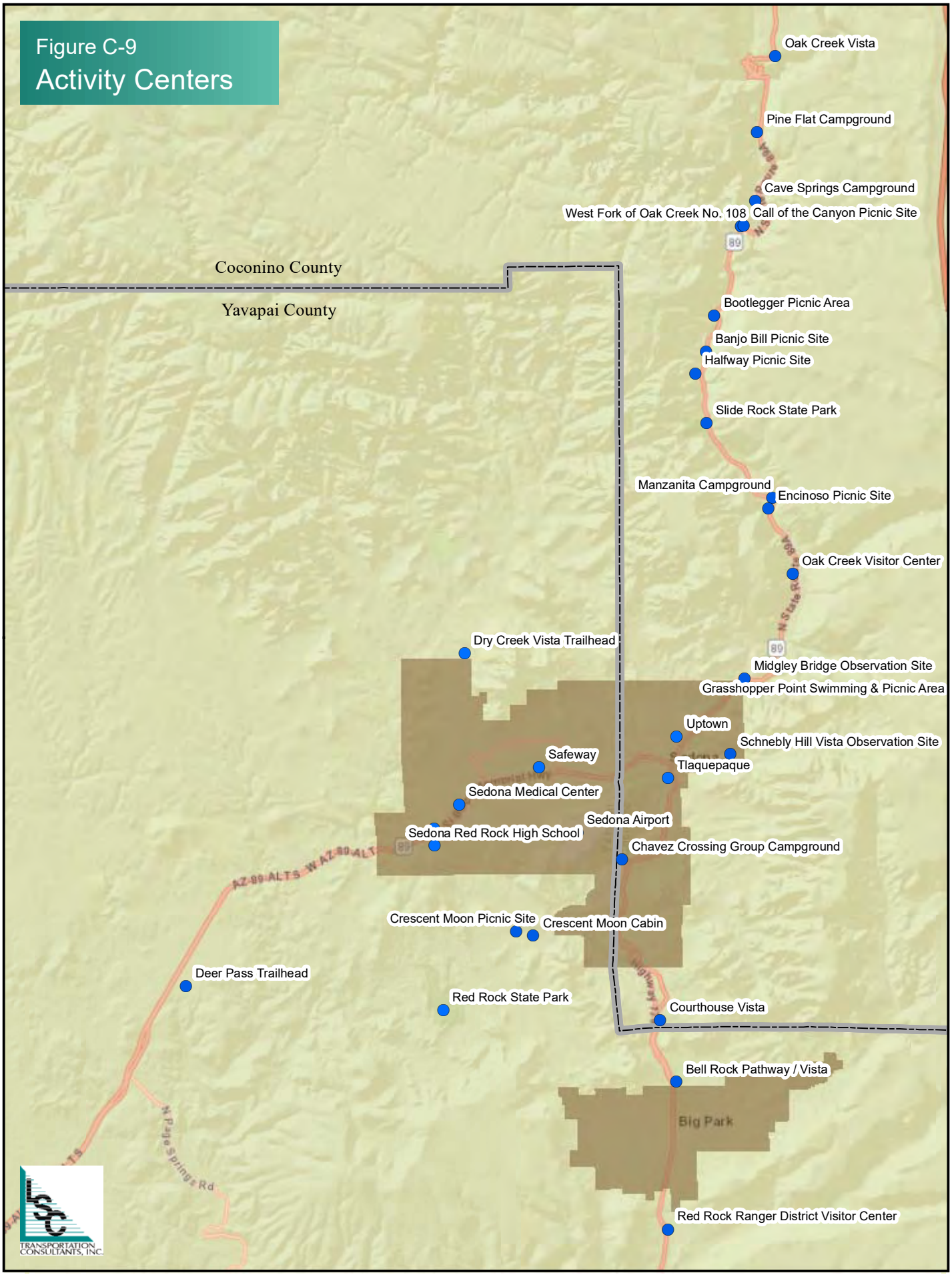


Figure C-9
Activity Centers
Oak Creek Vista
Pine Flat Campground
Cave Springs Campground
West Fork of Oak Creek No. 108
Call of the Canyon Picnic Site
Coconino County
Yavapai County
Bootlegger Picnic Area
Banjo Bill Picnic Site
Halfway Picnic Site
Slide Rock State Park
Manzanita Campground
Encinoso Picnic Site
Oak Creek Visitor Center
Dry Creek Vista Trailhead
Midgley Bridge Observation Site
Grasshopper Point Swimming & Picnic Area
Uptown
Schnebly Hill Vista Observation Site
Safeway
Tlaquepaque
Sedona Medical Center
Sedona Airport
Sedona Red Rock High School
Chavez Crossing Group Campground
AZ-89A ALTS
AZ-89 ALTS
Crescent Moon Picnic Site
Crescent Moon Cabin
Deer Pass Trailhead
Red Rock State Park
Courthouse Vista
Bell Rock Pathway / Vista
Big Park
N Page Springs Rd
Red Rock Ranger District Visitor Center
LSC
TRANSPORTATION CONSULTANTS, INC.

Places that have been identified as possible transit generators within the study area include many trailheads and campgrounds, Safeway, Tlaquepaque Arts & Shopping Village, Uptown, Sedona Medical Center, Sedona Red Rock High School, and Red Rock State Park.

TRAVEL PATTERNS

Work Transportation Mode

The 2016 ACS yields information useful to the study area regarding the means of transportation to and from work for the study area's residents. Table C-3 shows the number of people in the study area's workforce and their modes of travel. These data were tabulated for employees 16 years of age and older who were at work when the American Community Survey questionnaire was completed. The majority of the study area workforce drives alone to work (4,579 people or 83.6 percent). Carpooling (463 people or 8.5 percent) was the next highest mode of transportation to work for the study area. There were only 21 employees (less than one percent) who reported using public transportation. 1,237 reported that they worked from home, requiring no mode of transportation to work.

Table C-3
Means of Transportation to Work

Means of Transportation	Sedona		Village of Oak Creek		Study Area Totals	
	Workers	Percent	Workers	Percent	Workers	Percent
Drove alone	3,029	82.2%	1,550	86.5%	4,579	83.6%
Carpooled	329	8.9%	134	7.5%	463	8.5%
Walked	218	5.9%	27	1.5%	245	4.5%
Taxicab, motorcycle, bicycle or other means	90	2.4%	79	4.4%	169	3.1%
Public transportation (excluding taxicab)	20	0.5%	1	0.1%	21	0.4%
Total	**3,686**	**100%**	**1,791**	**100%**	**5,477**	**100%**

Note: Workers 16 years and over; Data does not include those who work at home

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Table C-4 shows that the mean commute time for study area residents was 22 minutes. The most frequent response for residents' travel time to work for the study area was less than 10 minutes (32 percent of the respondents) followed by 10 to 14 minutes with 17 percent of the respondents. This is followed by workers commuting between 20 to 24 minutes (15 percent of respondents). In Sedona the responses were similar to those of the combined study area. The most frequent response was less than 10 minutes (36 percent of respondents), followed by 10 to 14 minutes (22 percent) and 20 to 24 minutes (14 percent). Again, the Village of Oak Creek differed, though less than 10 minutes was still the most frequent response with 24 percent of respondents. This is followed by 20 to 24 minutes (17 percent), 15 to 19 minutes (15 percent) and 30 to 34 minutes (15 percent) of the respondents.

Table C-4
Travel Time to Work

	Sedona		Village of Oak Creek		Study Area Totals	
Travel Time	**Workers**	**Percent**	**Workers**	**Percent**	**Workers**	**Percent**
Less than 10 minutes	1,337	36%	431	24%	1,768	32%
10 to 14 minutes	823	22%	121	7%	944	17%
15 to 19 minutes	411	11%	270	15%	681	12%
20 to 24 minutes	523	14%	303	17%	826	15%
25 to 29 minutes	131	4%	126	7%	257	5%
30 to 34 minutes	268	7%	273	15%	541	10%
35 to 44 minutes	9	0%	52	3%	61	1%
45 to 59 minutes	102	3%	33	2%	135	2%
60 or more minutes	82	2%	182	10%	264	5%
Total	**3,686**	**100%**	**1,791**	**100%**	**5,477**	**100%**
Mean travel time to work:	16 minutes		28 minutes		22 minutes	

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.

Table C-5 shows the time ranges for study area residents leaving home to go to work. The most frequent response for the study area was between 8:00 and 8:29 a.m., with 17 percent of the total residents. The next most frequent response was between 9:00 and 9:59 a.m. with 16 percent, followed by 7:30 and 7:59 a.m. with 11 percent of total responses.

Table C-5
Time Leaving Home to Go to Work

Time Ranges	Sedona		Village of Oak Creek		Study Area Totals	
	Workers	Percent	Workers	Percent	Workers	Percent
12:00 a.m. to 4:59 a.m.	38	1%	134	7%	172	3%
5:00 a.m. to 5:29 a.m.	37	1%	31	2%	68	1%
5:30 a.m. to 5:59 a.m.	88	2%	71	4%	159	3%
6:00 a.m. to 6:29 a.m.	339	9%	166	9%	505	9%
6:30 a.m. to 6:59 a.m.	262	7%	114	6%	376	7%
7:00 a.m. to 7:29 a.m.	215	6%	163	9%	378	7%
7:30 a.m. to 7:59 a.m.	452	12%	147	8%	599	11%
8:00 a.m. to 8:29 a.m.	582	16%	344	19%	926	17%
8:30 a.m. to 8:59 a.m.	363	10%	76	4%	439	8%
9:00 a.m. to 9:59 a.m.	623	17%	267	15%	890	16%
10:00 a.m. to 10:59 a.m.	108	3%	79	4%	187	3%
11:00 a.m. to 11:59 a.m.	46	1%	5	0%	51	1%
12:00 p.m. to 3:59 p.m.	332	9%	99	6%	431	8%
4:00 p.m. to 11:59 p.m.	201	5%	95	5%	296	5%
Total	**3,686**	**100%**	**1,791**	**100%**	**5,477**	**100%**

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.

COMMUTER PATTERNS

Commuter patterns were analyzed for the study area using Longitudinal Employer-Household Dynamics (LEHD) data. In the absence of a better source of commuter pattern data, it is worthwhile to include these data as a general indicator of commuter patterns in the study area. However, it should be noted that LEHD data represent estimates of commuter patterns, synthesized from several sources of US Census residential locations, business locations, and commute data. These figures exclude federal, railroad, and self-employed employees, and include trips that are not made each workday. As such, these data should be used to provide only a general commuting pattern.

Figure C-10 shows the flow of workers in Sedona and the Village of Oak Creek. The figure shows that a large number of workers in Sedona are from outside of the city (3,617 workers). 1,206 workers live and work in Sedona and 1,967 Sedona residents work outside of the city. In contrast, a large number of residents in the Village of Oak Creek work outside of town (1,851 workers) with 161 residents staying in town for work and 393 workers commuting into the Village of Oak Creek for work.

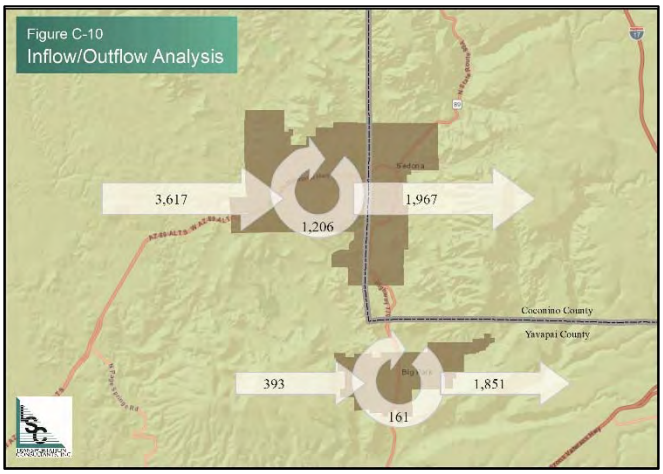


Table C-6 shows where Sedona residents are employed. The table shows that approximately 38 percent of Sedona residents work within the city, followed by 12 percent who work in Phoenix and seven percent who work in Flagstaff.

Table C-6
Employment Location of Sedona Residents

Area of Work	Sedona Residents #	Sedona Residents %
Sedona, AZ	1,206	38%
Phoenix, AZ	383	12%
Flagstaff, AZ	211	7%
Scottsdale, AZ	118	4%
Cottonwood, AZ	110	3%
Prescott, AZ	68	2%
Village of Oak Creek (Big Park), AZ	56	2%
Camp Verde, AZ	46	1%
Tempe, AZ	46	1%
Prescott Valley, AZ	31	1%
All Other Locations	898	28%

Source: LEHD; LSC, 2018

Table C-7 shows where Sedona workers live. The table shows that 25 percent of Sedona workers are from within Sedona. Approximately eleven percent are from Verde Village, approximately 10 percent are from Cottonwood and nine percent are from the Village of Oak Creek.

Table C-7 Residence Location of Sedona Workers		
	Sedona Workers	
Area of Residence	#	%
Sedona, AZ	1,206	25%
Verde Village, AZ	534	11%
Cottonwood, AZ	461	10%
Village of Oak Creek (Big Park), AZ	438	9%
Flagstaff, AZ	259	5%
Camp Verde, AZ	166	3%
Phoenix, AZ	159	3%
Cornville, AZ	144	3%
Prescott Valley, AZ	105	2%
Lake Montezuma, AZ	95	2%
All Other Locations	1,256	26%
Source: LEHD; LSC, 2018		

Table C-8 shows where residents of the Village of Oak Creek are employed. The table shows that 22 percent are employed in Sedona, 17 percent of residents are employed in Phoenix, and eight percent are employed within the Village.

Table C-8 Employment Location of Village of Oak Creek Residents		
	Village of Oak Creek Residents	
Area of Work	#	%
Sedona, AZ	438	22%
Phoenix, AZ	350	17%
Village of Oak Creek (Big Park), AZ	161	8%
Flagstaff, AZ	142	7%
Scottsdale, AZ	104	5%
Cottonwood, AZ	88	4%
Camp Verde, AZ	58	3%
Prescott, AZ	54	3%
Cornville, AZ	32	2%
Tempe, AZ	30	1%
All Other Locations	555	28%
Source: LEHD; LSC, 2018		

Table C-9 shows where workers of the Village of Oak Creek live. The table shows that 29 percent of workers live within the Village, 10 percent of workers live in Sedona, and seven percent live in Lake Montezuma.

Table C-9
Residence Location of Village of Oak Creek Workers

Area of Residence	Village of Oak Creek Workers	
	#	%
Village of Oak Creek (Big Park), AZ	161	29%
Sedona, AZ	56	10%
Lake Montezuma, AZ	38	7%
Verde Village, AZ	35	6%
Cottonwood, AZ	32	6%
Camp Verde, AZ	28	5%
Phoenix, AZ	25	5%
Cornville, AZ	22	4%
Flagstaff, AZ	14	3%
Clarkdale, AZ	12	2%
All Other Locations	131	24%

Source: LEHD; LSC, 2018

VISITATION DATA

This section evaluates a variety of visitor activity within the study area, using data provided by the City of Sedona, the Sedona Chamber of Commerce and Tourism Bureau, and the Red Rock Ranger District of the Coconino National Forest.

Sedona Lodging Inventory – May 2018

The Sedona Chamber of Commerce and Tourism Bureau released an inventory of lodging accommodations in the Sedona area in May 2018. As shown in Table C-10, the inventory included a total of 3,976 hotel and timeshare rooms located within and outside of the City of Sedona. Specifically, the inventory identified 1,605 hotel rooms within the City of Sedona (40 percent of all inventoried rooms), 867 hotel rooms outside the City of Sedona (22 percent of all inventoried rooms), 1,025 timeshare rooms within the City of Sedona (26 percent of all inventoried rooms), and 469 timeshare rooms outside the City of Sedona (12 percent of all inventoried rooms).

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Table C-10
Sedona Region Hotel and Timeshare Inventory

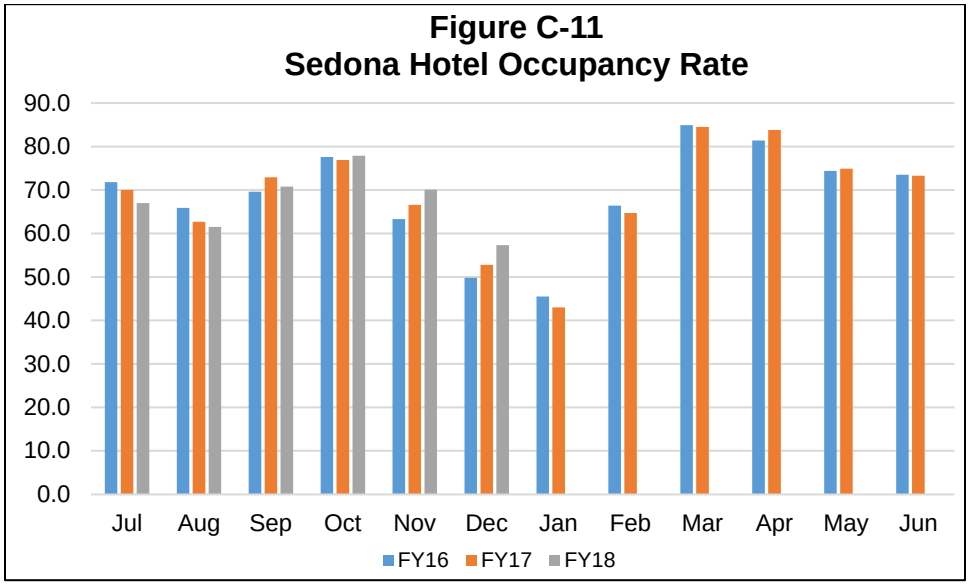
Inside/Outside City of Sedona	Area of Town	Name of Business	Number of Units	Percent of Total Units
Hotel Inside City of Sedona	State Route 179 & Village of Oak Creek	Arabella Hotel Sedona (Was Kings Ransom)	144	4%
Hotel Inside City of Sedona	State Route 179 & Village of Oak Creek	Poco Diablo Resort	137	3%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	Amara Resort & Spa	100	3%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	Best Western Plus Arroyo Roble Hotel & Creekside Villas	65	2%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	Cedars Resort on Oak Creek	38	1%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	El Portal Sedona Hotel	12	0%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	La Petite Sedona	14	0%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	L'Auberge de Sedona	88	2%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	Matterhorn Inn of Sedona	23	1%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	Orchards Inn of Sedona	70	2%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	Sedona Motel	16	0%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	Star Motel	10	0%
Hotel Inside City of Sedona	Uptown & Oak Creek Canyon	Vista Ridge in Sedona	6	0%
Hotel Inside City of Sedona	West Sedona	A Sunset Chateau B&B	24	1%
Hotel Inside City of Sedona	West Sedona	Adobe Grand Villas	16	0%
Hotel Inside City of Sedona	West Sedona	Andante Inn of Sedona (was Super 8)	66	2%
Hotel Inside City of Sedona	West Sedona	Arroyo Pinon Hotel (was Kokopelli Suites)	45	1%
Hotel Inside City of Sedona	West Sedona	Best Western Plus Inn of Sedona	110	3%
Hotel Inside City of Sedona	West Sedona	Casa Sedona Bed & Breakfast	16	0%
Hotel Inside City of Sedona	West Sedona	Courtyard by Marriott Sedona (Opened Oct 2016)	121	3%
Hotel Inside City of Sedona	West Sedona	Greentree Inn of Sedona	66	2%
Hotel Inside City of Sedona	West Sedona	Hampton Inn Sedona	55	1%
Hotel Inside City of Sedona	West Sedona	Saad Suites	8	0%
Hotel Inside City of Sedona	West Sedona	Sedona Bear Lodge	4	0%
Hotel Inside City of Sedona	West Sedona	Sedona Real Inn & Suites	89	2%
Hotel Inside City of Sedona	West Sedona	Sedona Rouge Hotel & Spa (32 unit expansion completed in 2016)	103	3%
Hotel Inside City of Sedona	West Sedona	Sky Ranch Lodge	94	2%
Hotel Inside City of Sedona	West Sedona	Southwest Inn at Sedona	28	1%
Hotel Inside City of Sedona	West Sedona	Sugar Loaf Lodge	15	0%
Hotel Inside City of Sedona	West Sedona	White House Inn Sedona	22	1%
		City Sedona Hotel Rooms	**1,605**	**40%**
Hotel Outside City of Sedona	State Route 179 & Village of Oak Creek	Days Inn Kokopelli	42	1%
Hotel Outside City of Sedona	State Route 179 & Village of Oak Creek	Desert Quail Inn	41	1%
Hotel Outside City of Sedona	State Route 179 & Village of Oak Creek	Hilton Sedona Resort & Spa	221	6%
Hotel Outside City of Sedona	State Route 179 & Village of Oak Creek	Holiday Inn Express Sedona - Oak Creek	100	3%
Hotel Outside City of Sedona	State Route 179 & Village of Oak Creek	Las Posadas of Sedona	20	1%
Hotel Outside City of Sedona	State Route 179 & Village of Oak Creek	Red Agave Resort	14	0%
Hotel Outside City of Sedona	State Route 179 & Village of Oak Creek	Sedona Village Lodge	18	0%
Hotel Outside City of Sedona	State Route 179 & Village of Oak Creek	The Views Inn Sedona	39	1%
Hotel Outside City of Sedona	State Route 179 & Village of Oak Creek	Wildflower Inn	28	1%
Hotel Outside City of Sedona	Uptown & Oak Creek Canyon	Briar Patch Inn	18	0%
Hotel Outside City of Sedona	Uptown & Oak Creek Canyon	Forest Houses Resort	16	0%
Hotel Outside City of Sedona	Uptown & Oak Creek Canyon	Garland's Oak Creek Lodge	16	0%
Hotel Outside City of Sedona	Uptown & Oak Creek Canyon	Junipine Resort	40	1%
Hotel Outside City of Sedona	Uptown & Oak Creek Canyon	Oak Creek Terrace Resort	20	1%
Hotel Outside City of Sedona	West Sedona	Enchantment Resort	218	5%
Hotel Outside City of Sedona	West Sedona	Mii amo, A Destination Spa at Enchantment	16	0%
		Non-City Sedona Hotel Rooms	**867**	**22%**
Timeshare Inside City of Sedona	State Route 179 & Village of Oak Creek	Los Abrigados Resort & Spa	196	5%
Timeshare Inside City of Sedona	State Route 179 & Village of Oak Creek	Villas at Poco Diablo	33	1%
Timeshare Inside City of Sedona	Uptown & Oak Creek Canyon	Arroyo Roble Resort	65	2%
Timeshare Inside City of Sedona	Uptown & Oak Creek Canyon	Hyatt Pinon Pointe	109	3%
Timeshare Inside City of Sedona	West Sedona	Sedona Springs Resort	75	2%
Timeshare Inside City of Sedona	West Sedona	Sedona Summit Resort	417	10%
Timeshare Inside City of Sedona	West Sedona	Villas of Sedona	40	1%
Timeshare Inside City of Sedona	West Sedona	Wyndham Sedona Resort	100	3%
		City Timeshare Rooms	**1,035**	**26%**
Timeshare Outside City of Sedona	State Route 179 & Village of Oak Creek	Bell Rock Inn	85	2%
Timeshare Outside City of Sedona	State Route 179 & Village of Oak Creek	The Ridge on Sedona Golf Course	236	6%
Timeshare Outside City of Sedona	West Sedona	Sedona Pines Resort	148	4%
		Non-City Timeshare Rooms	**469**	**12%**
		Total Hotel and Timeshare Rooms	**3,976**	**100%**

Source:Sedona Chamber of Commerce and Tourism Bureau, 2018.

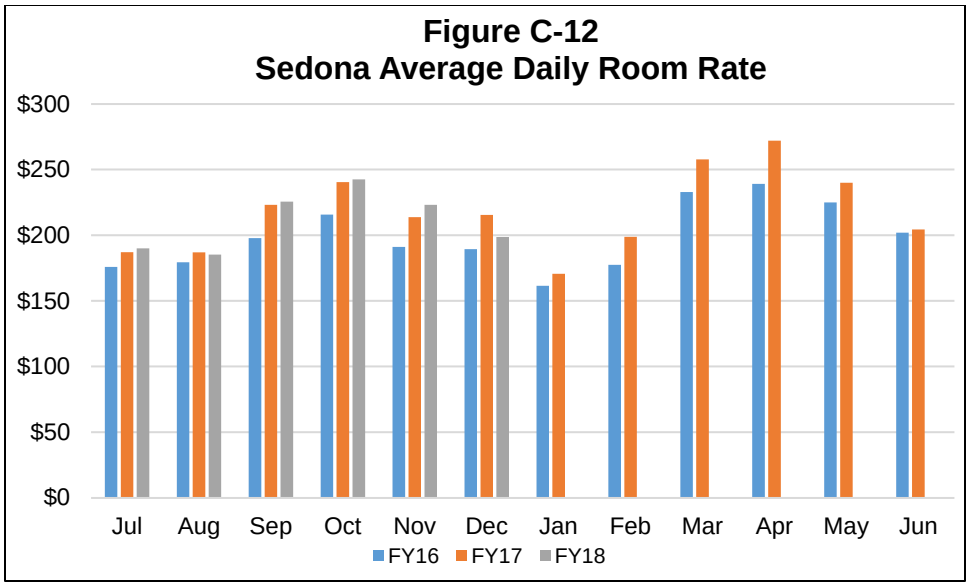
Sedona Occupancy and Average Daily Room Rate Data (2016-2018)

The Sedona Chamber of Commerce and Tourism Bureau provided monthly data on the average occupancy rate and average daily room rate in Sedona between FY 2016 and FY 2018.

The average hotel occupancy rate in Sedona during FY 2016 was 66.3 percent, during FY 2017 was 67.0 percent, and during the first half of FY 2018 was 67.4 percent. Figure C-11 illustrates the average hotel occupancy rate in Sedona by month. Hotel occupancy in Sedona is lowest during the month of January (2016: 45.5 percent; 2017: 43.0 percent) and highest during the month of March (2016: 84.9 percent; 2017: 84.5 percent).



The average daily hotel room rate in Sedona during FY 2016 was $192, during FY 2017 was $211, and during the first half of FY 2018 was $211. Figure C-12 illustrates the average daily hotel room rate in Sedona by month. Hotel room rates in Sedona are lowest during the month of January (2016: $161; 2017: $171) and highest during the month of April (2016: $239; 2017: $272).

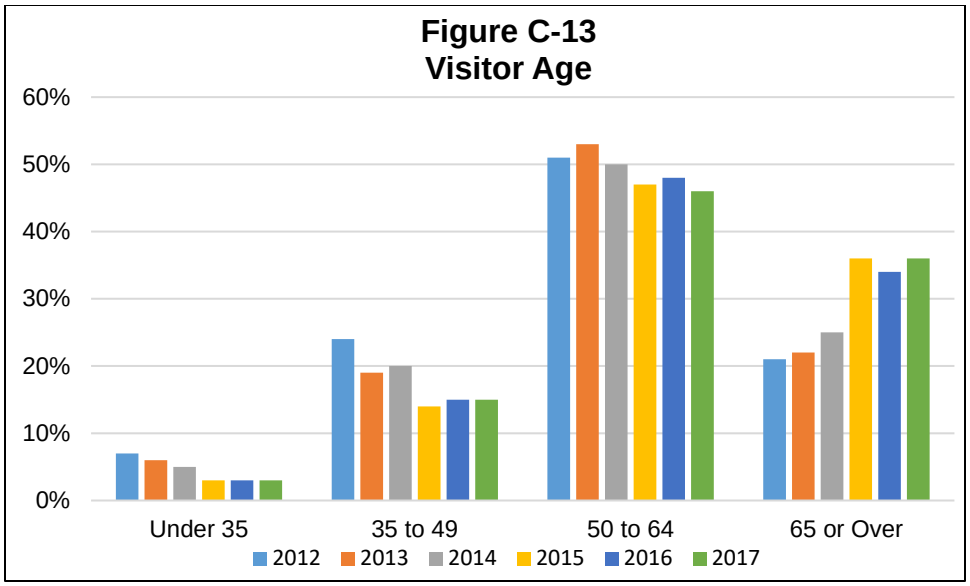


Sedona Visitor Survey (2012-2017)

The Sedona Chamber of Commerce and Tourism Bureau released an annual report of the results of visitor surveys conducted between 2012 and 2017. Interviews were conducted by the Sedona Chamber of Commerce and Tourism Bureau via a web-based survey which was sent to individuals who requested the Chamber's E-Newsletter request during 2012, 2013, 2014, 2015, 2016 and 2017. Only respondents who indicated they had visited Sedona or would visit Sedona in the next 12 months were included in the analyzed data.

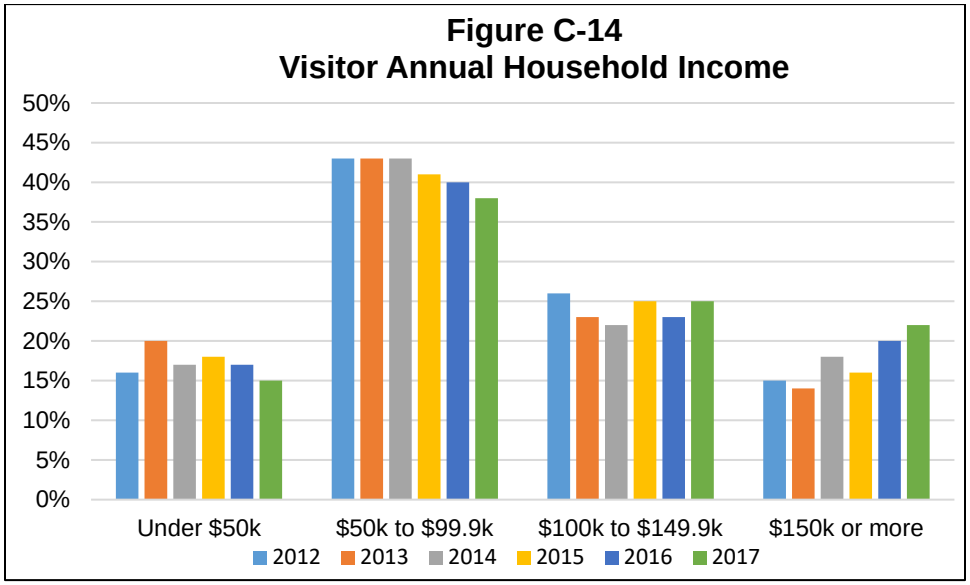
Visitor Age

Overall, the median age of surveyed Sedona visitors has been increasing, from 56.5 years old in 2012 to 60.6 years old in 2017. Figure C-13 presents the age ranges of surveyed visitors between 2012 and 2017. The figure clearly illustrates the increasing number of respondents age 65 and older, from approximately 21 percent of respondents in 2012 to about 36 percent of respondents in 2017.



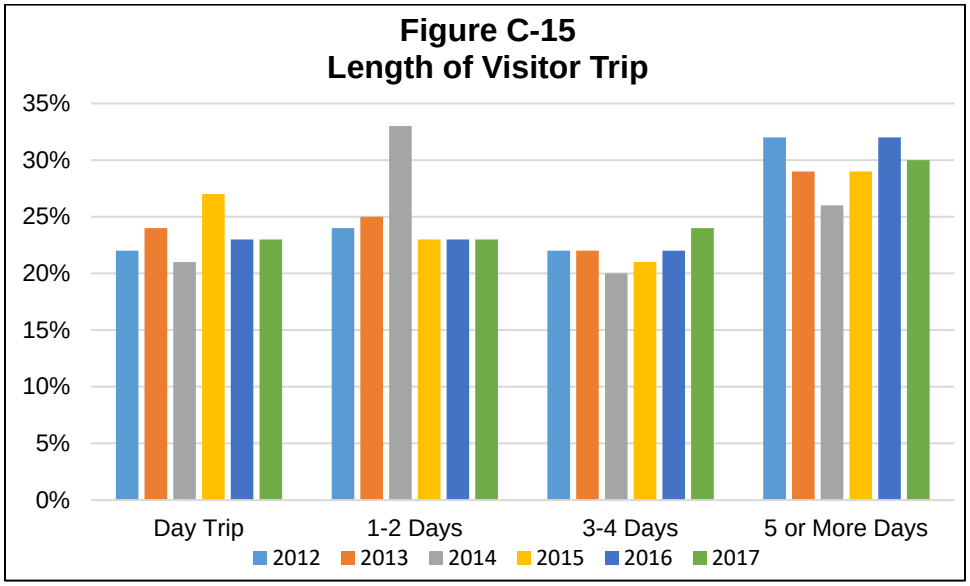
Visitor Annual Household Income

Overall, the median annual household income of surveyed Sedona visitors has been decreasing, from $97,000 in 2012 to $89,400 in 2017. Figure C-14 illustrates the annual household incomes of surveyed Sedona visitors. While the percent of surveyed visitors with annual household incomes under $50,000 and between $50,000 and $99,999 has decreased, the percent of surveyed visitors with annual household incomes between $100,000 and $149,999 and more than $150,000 has increased.



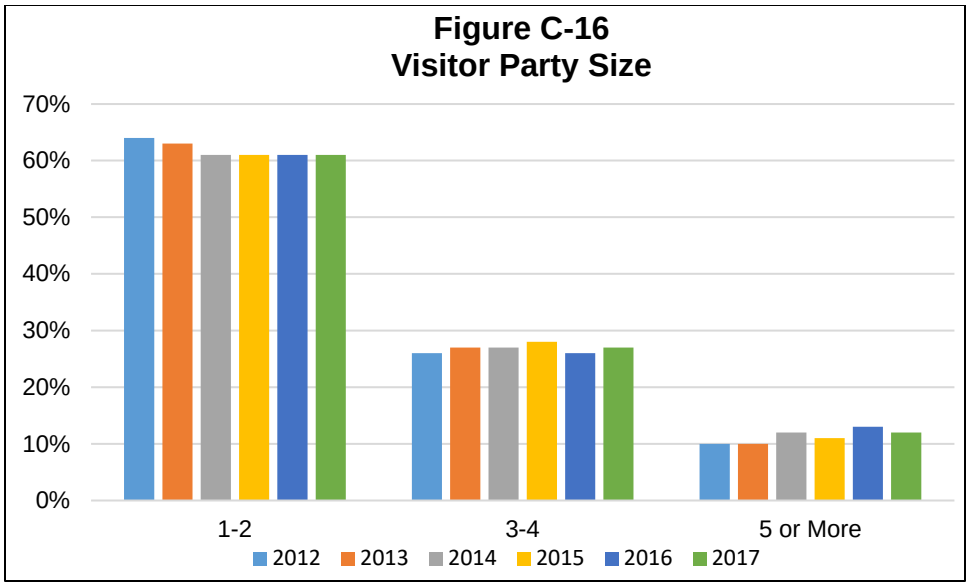
Length of Visitor Trip

Figure C-15 illustrates the average trip length of surveyed Sedona visitors between 2012 and 2017. In 2017, approximately 30 percent of visitors spent five or more days in Sedona, followed by 24 percent of visitors who spent three to four days in Sedona, 23 percent of visitors who spent one to two days in Sedona, and 23 percent of visitors who made a daytrip to Sedona. The median length of visitor trip in 2017 was 3.3 days.



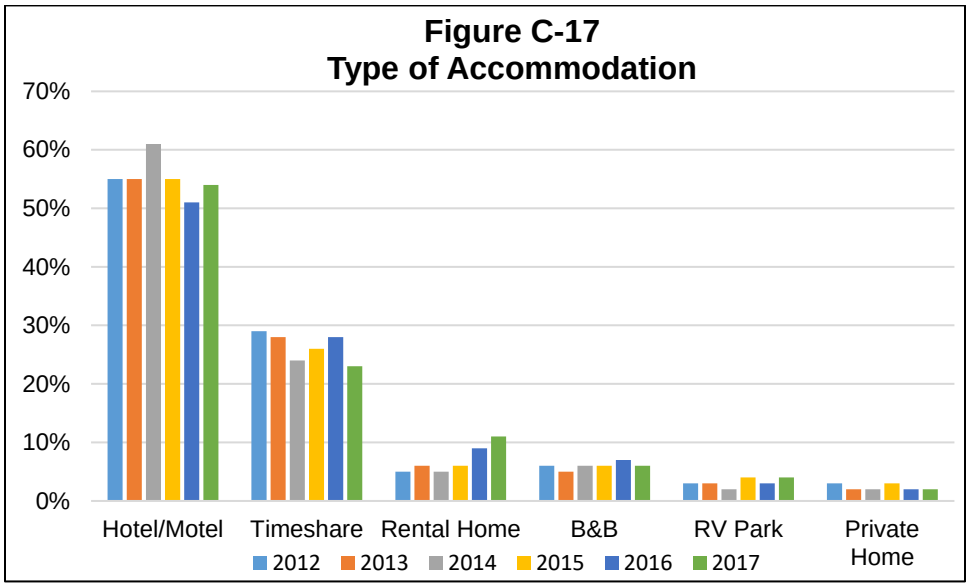
Visitor Party Size

Figure C-16 illustrates the average party size of surveyed Sedona visitors between 2012 and 2017. In 2017, approximately 61 percent of visitor parties contained one to two people, followed by 27 percent of visitor parties which contained three to four people, and 12 percent of visitor parties which contained five or more people.



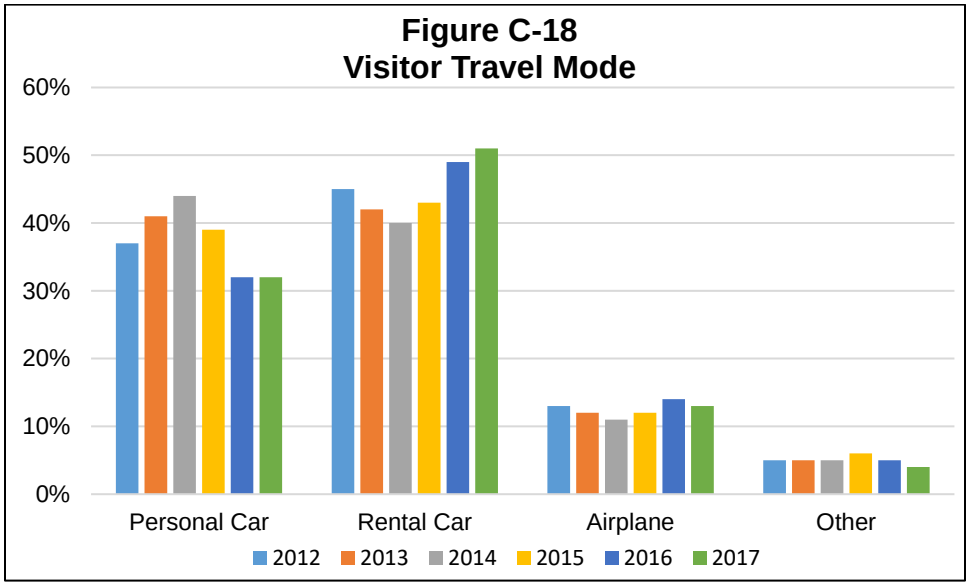
Type of Accommodation

Figure C-17 presents the type of accommodation of surveyed Sedona visitors between 2012 and 2017. In 2017, 54 percent of surveyed visitors stayed in a hotel/motel, followed by 23 percent who stayed in a timeshare, 11 percent who stayed in a rental home, six percent who stayed in a bed and breakfast, four percent who stayed in a RV park, and two percent who stayed in a private home.



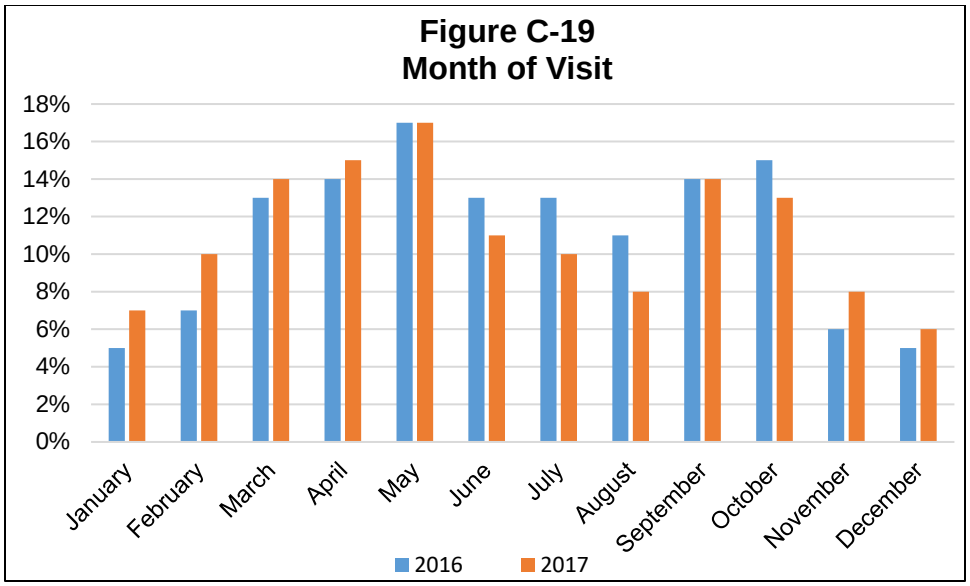
Visitor Travel Mode

Figure C-18 illustrates the travel mode of surveyed Sedona visitors between 2012 and 2017. In 2017, approximately 51 percent of surveyed visitors used a rental car, followed by 32 percent who used a personal car, 13 percent who used an airplane, and four percent who said they used another travel mode. Overall, the number of respondents using a personal car has been decreasing while the number using a rental car has been increasing.



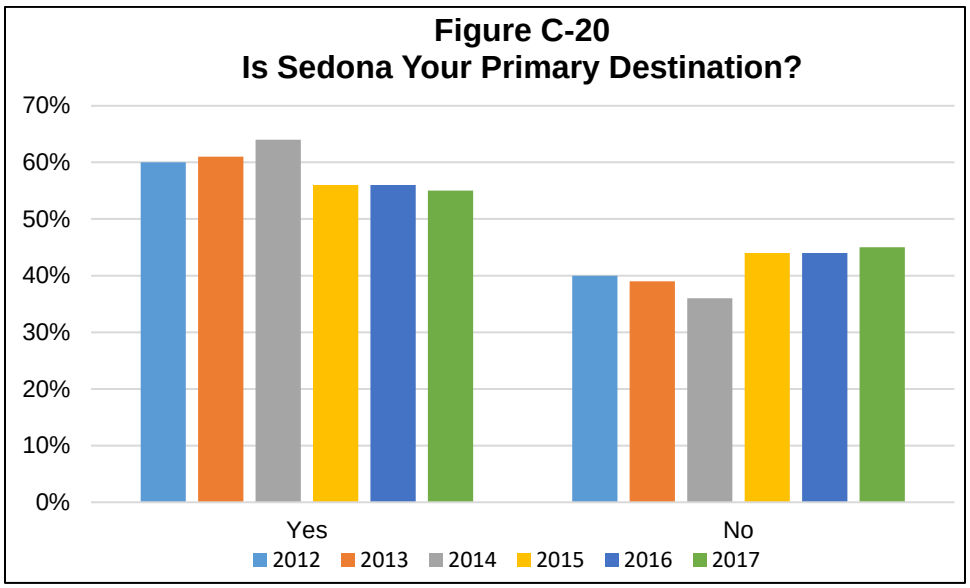
Month of Visit

Figure C-19 illustrates the month surveyed visitors traveled to Sedona in 2016 and 2017. In 2016, the majority of visitors traveled to Sedona during May (17 percent) October (15 percent), and September (14 percent), and in 2017, the majority of visitors traveled to Sedona during May (17 percent), April (15 percent), March (14 percent), and September (14 percent). The months with the fewest surveyed visitors were November through February.



Primary Destination

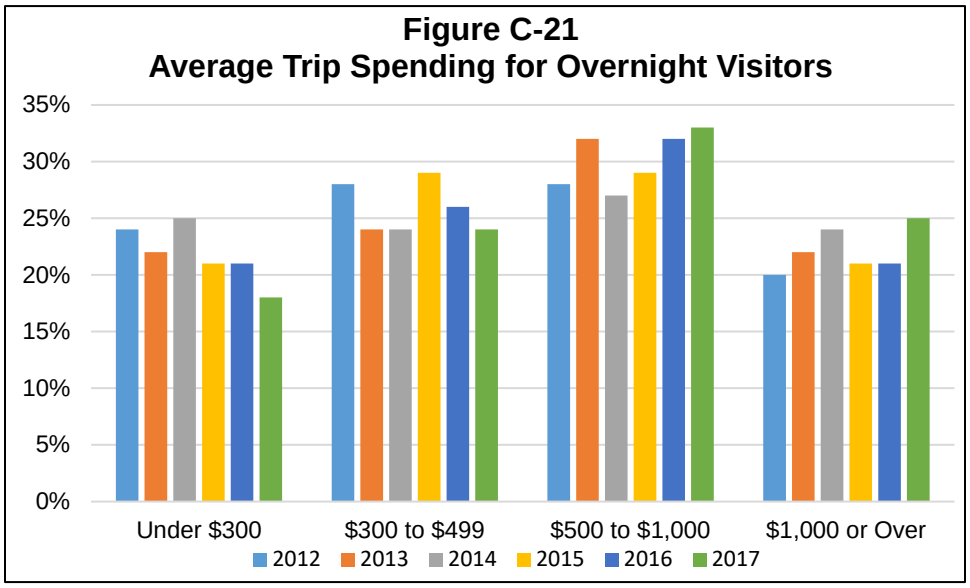
As shown in Figure C-20, the number of surveyed visitors whose primary destination is Sedona has been decreasing, from 60 percent in 2012 to 55 percent in 2017, while the number of surveyed visitors whose primary destination is not Sedona has been increasing, from 40 percent in 2012 to 45 percent in 2017.



Average Trip Spending for Overnight Visitors

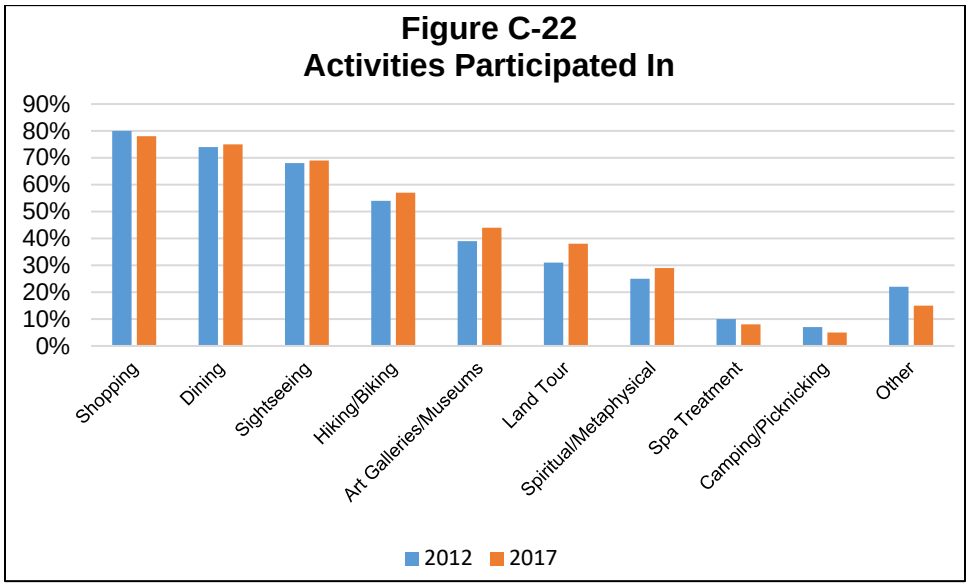
Figure C-21 illustrates the average trip spending for overnight surveyed visitors between 2012 and 2017. The figure illustrates that fewer surveyed overnight

visitors are spending under $300, and more surveyed overnight visitors are spending between $500 and $1,000, and $1,000 or more.



Activities Participated In

Figure C-22 illustrates the activities surveyed visitors indicated they participated in 2012 and 2017. The most popular activities stayed relatively consistent between the two years, with shopping being the most popular activity, followed by dining, sightseeing, and hiking/biking.



Comparative Analysis of Sedona Visitor Intercept Surveys (2002/2016)

Behavior Research Center, Inc., completed a comparative analysis of Sedona visitor intercept surveys for 2002 and 2016.

Visitor Age

The median age of surveyed Sedona visitors increased, from 49.8 years old in 2002 to 55.0 years old in 2016. As shown in Table C-11, approximately 60 percent of surveyed Sedona visitors in 2016 were age 50 or over.

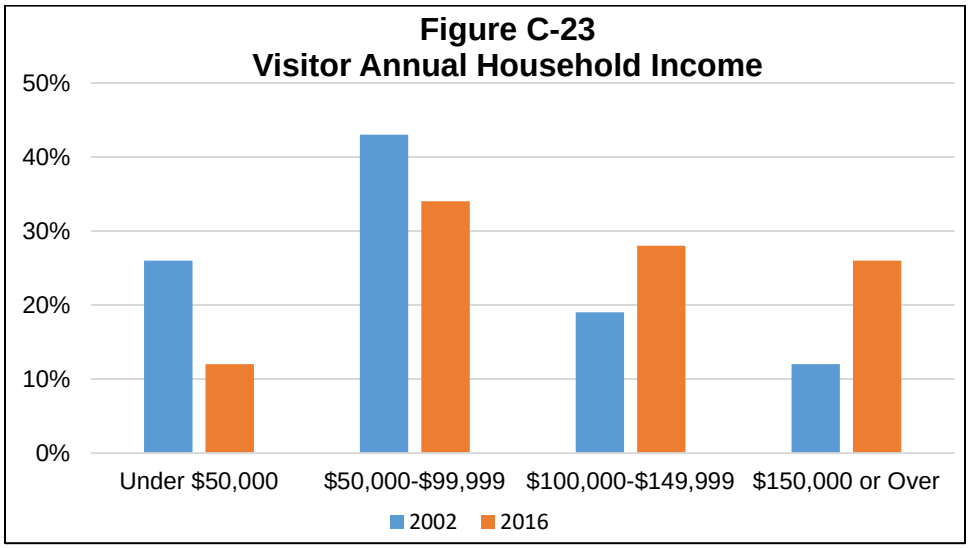
Table C-11
Visitor Age

2002		2016	
Under 35	16%	Under 35	7%
35 to 55	46%	35 to 49	33%
55 or Over	38%	50 to 64	30%
--	--	65 or Over	30%

Source: Behavior Research Center Inc., 2016.

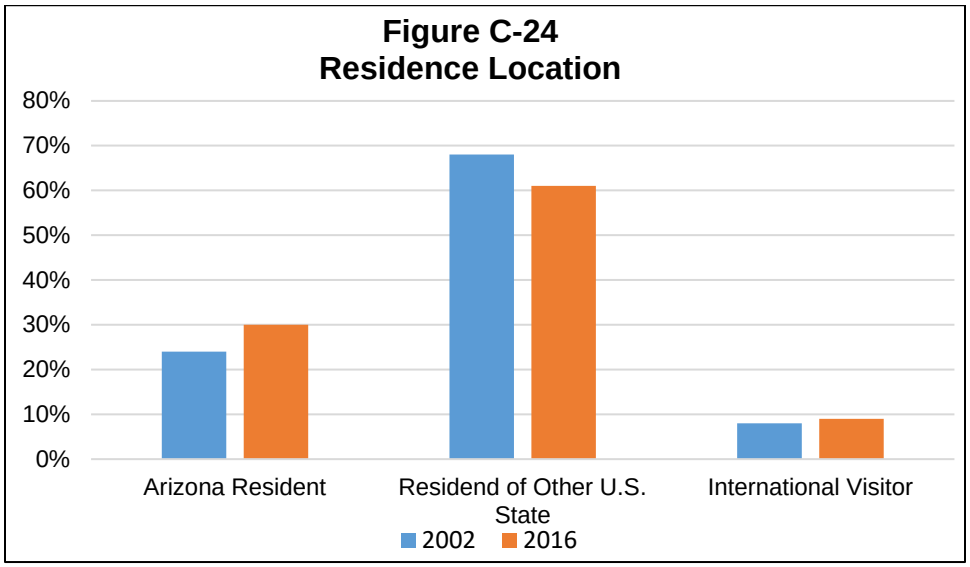
Visitor Annual Household Income

Overall, the median annual household income of surveyed Sedona visitors increased from $76,800 in 2002 to $107,100 in 2016. Figure C-23 illustrates the annual household incomes of surveyed Sedona visitors. While the percent of surveyed visitors with annual household incomes under $50,000 and between $50,000 and $99,999 has decreased, the percent of surveyed visitors with annual household incomes between $100,000 and $149,999 and more than $150,000 has increased.



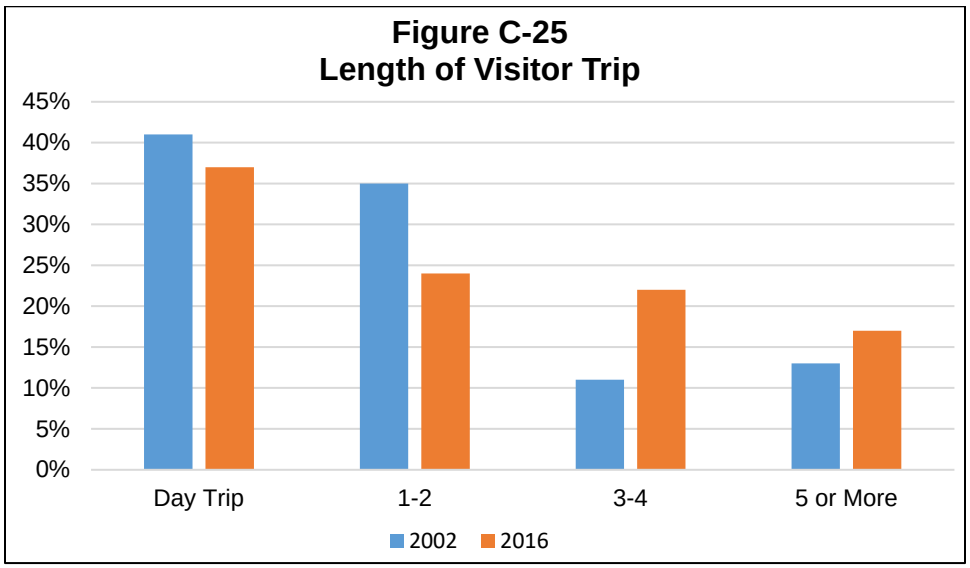
Residence Location

As shown in Figure C-24, the number of surveyed visitors residing in Arizona increased between 2002 and 2016, while the number of surveyed visitors residing in other U.S. state decreased. The number of international visitors remained relatively consisted between 2002 and 2016.



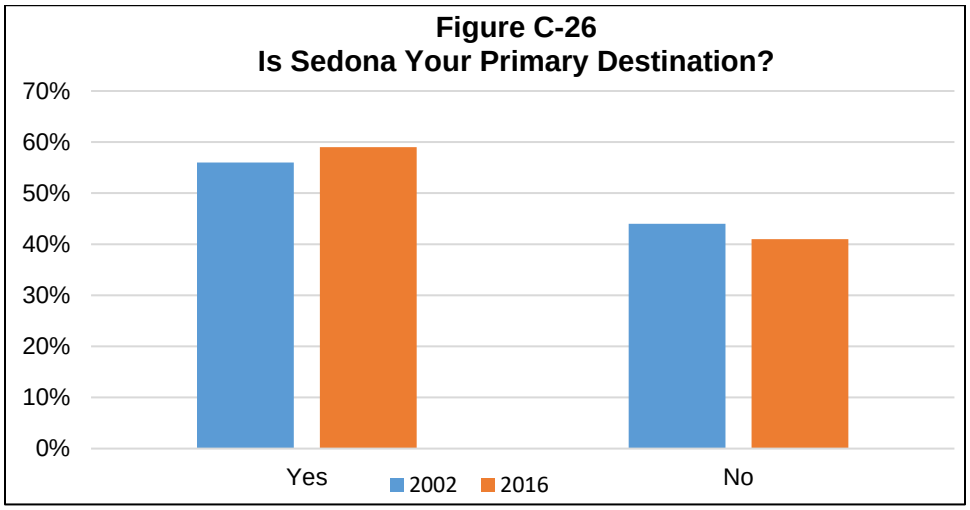
Length of Visitor Trip

Figure C-25 illustrates the average trip length of surveyed Sedona visitors in 2002 and 2016. Overall, the number of visitors making day trips or short overnight trips (one to two days) has decreased while the number of visitors making longer trips (three to four days and five or more days) has increased.



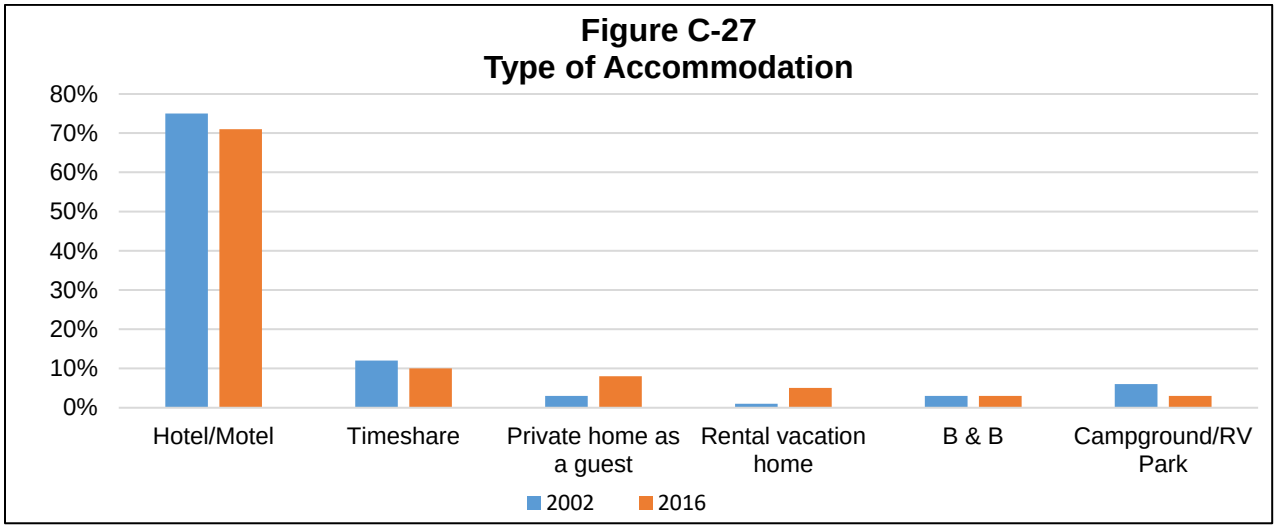
Primary Destination

As shown in Figure C-26, the number of surveyed visitors whose primary destination is Sedona slightly increased from 56 percent in 2002 to 59 percent in 2016, while the number of surveyed visitors whose primary destination is not Sedona slightly decreased from 44 percent in 2002 to 41 percent in 2016.



Type of Accommodation

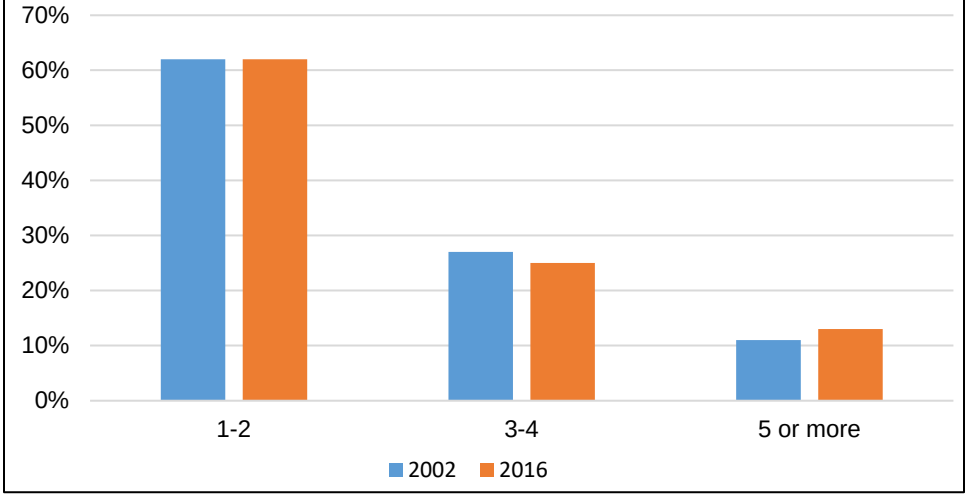
Figure C-27 presents the type of accommodation of surveyed Sedona visitors in 2002 and 2016. Between the two years, the number of visitors staying in a hotel/motel, timeshare, and campground/RV park decreased, while the number of visitors staying in a private home as a guest and at a rental vacation home increased. The number of visitors staying in a bed and breakfast remained the same from 2002 to 2016.



Visitor Party Size

Figure C-28 illustrates the average party size of surveyed Sedona visitors in 2002 and 2016. Overall, visitor party sizes have stayed relatively consistent over time, with a slight decrease in groups of three to four people, and a slight increase in groups of five or more people.

Figure C-28
Visitor Party Size



Average Trip Spending for Overnight Visitors

The median average trip spending for overnight surveyed visitors increased from $243 per party per day in 2002 to $508 per party per day in 2016. Table C-12 illustrates the average trip spending for overnight surveyed visitors in 2002 and 2016. Overall, significantly fewer surveyed overnight visitors are spending under $300, and more surveyed overnight visitors are spending $500 or more. In 2016, over half of overnight surveyed visitors spent at least $500.

Table C-12
Average Trip Spending for Overnight Visitors

2002		2016	
Under $300	62%	Under $300	19%
$300-$499	23%	$300-$499	30%
$500 or More	15%	$500-$999	43%
--	--	$1,000 or More	8%

Source: Behavior Research Center Inc., 2016.

Activities Participated In

Table C-13 presents the activities surveyed visitors indicated they participated in 2002 and 2016. Several activities were not included in the 2002 survey, including sightseeing, dining, air tour, and special occasion. The most popular activities in 2016 included sightseeing (85 percent), dining (73 percent), shopping (58 percent), and hiking/biking (56 percent).

Table C-13
Activities Participated In

Activity	2002	2016
Sightseeing	-	85%
Dining	-	73%
Shopping	83%	58%
Hiking/Biking	40%	56%
Art Galleries/Museums	43%	39%
Land Tours	20%	31%
Spiritual/Metaphysical	14%	12%
Camping/Picnicking	6%	6%
Special Events	9%	8%
Spa Treatment	9%	6%
Air Tour	-	4%
Special Occasion	-	4%
Golf	7%	2%

Source: Behavior Research Center Inc., 2016.

Most Desirable Qualities of Sedona

Table C-14 presents the qualities surveyed visitors indicated they liked most about Sedona in 2002 and 2016. For both years, the majority of surveyed visitors indicated their favorite quality about Sedona was the scenic beauty (2002: 81 percent; 2016: 73 percent). Other desirable qualities of Sedona included the weather (2002: seven percent; 2016: 10 percent), shopping (2002: four percent; 2016: six percent), and the relaxed/laid back atmosphere (2002: three percent; 2016: five percent).

Table C-14 Most Desirable Qualities of Sedona		
Qualities	**2002**	**2016**
Scenic Beauty	81%	73%
Weather	7%	10%
Shopping	4%	6%
Relaxed/Laid Back Atmosphere	3%	5%
Vortex/Spiritual Healing	2%	5%
Hiking/Biking Trails	-	5%
Chapel of the Holy Cross	-	4%
Family/Friends Live in Sedona	-	3%
Close to Home/Local Get Away	-	3%
Friendly People	3%	2%
Clean/Well Kept	-	2%
Outdoor Recreation Activities	6%	1%
Art Galleries	2%	1%
Restaurants	1%	1%
Lots of Bathrooms	-	1%
Hotels/Resorts	-	1%
Source: Behavior Research Center Inc., 2016.		

Least Desirable Qualities of Sedona

Table C-15 presents the qualities surveyed visitors indicated they liked least about Sedona in 2002 and 2016. For both years, a large portion of surveyed visitors indicated there was nothing they liked least about Sedona (2002: 42 percent; 2016: 40 percent). Other least desirable qualities of Sedona included traffic congestion (2002: 12 percent; 2016: 19 percent), lack of parking (2002: five percent; 2016: 18 percent), and too crowded (2002: 14 percent; 2016: five percent).

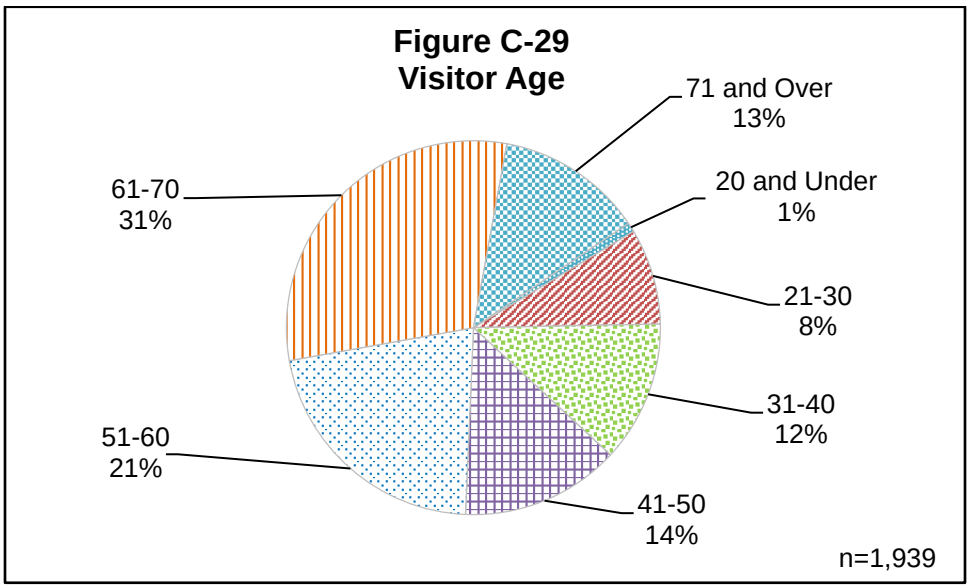
Table C-15 Least Desirable Qualities of Sedona		
Qualities	**2002**	**2016**
Nothing	42%	40%
Traffic Congestion	12%	19%
Lack of Parking	5%	18%
Too Crowded	14%	5%
Too Expensive	8%	4%
Too Much Commercialism	1%	4%
Weather	8%	2%
Limited Shopping	6%	1%
Limited Restaurants	1%	1%
Poor Public Transit	-	1%
Hiking Trails - limited, unsafe	-	1%
Rude/Snobby People	-	1%
Too Spiritual	-	1%
Source: Behavior Research Center Inc., 2016.		

Verde Valley Visitor Survey (2014-2015)

The Verde Valley visitor survey was prepared for the Arizona Office of Tourism by the Arizona Hospitality Research and Resource Center, Alliance Bank Business Outreach Center, and the W.A. Franke College of Business at Northern Arizona University. The purpose of the study was to understand and document changes in the Verde Valley visitor market, in order to assist Verde Valley tourism and economic development directors with targeted marketing, additional product development, and advocacy for an industry that is critical to the health of the regional economy. A total of 2,406 surveys were completed over a 12-month period from September 2014 through August 2015, and an additional 312 surveys were collected during an aborted start in April and May 2014, for an overall total of 2,718 collected surveys.

Visitor Age

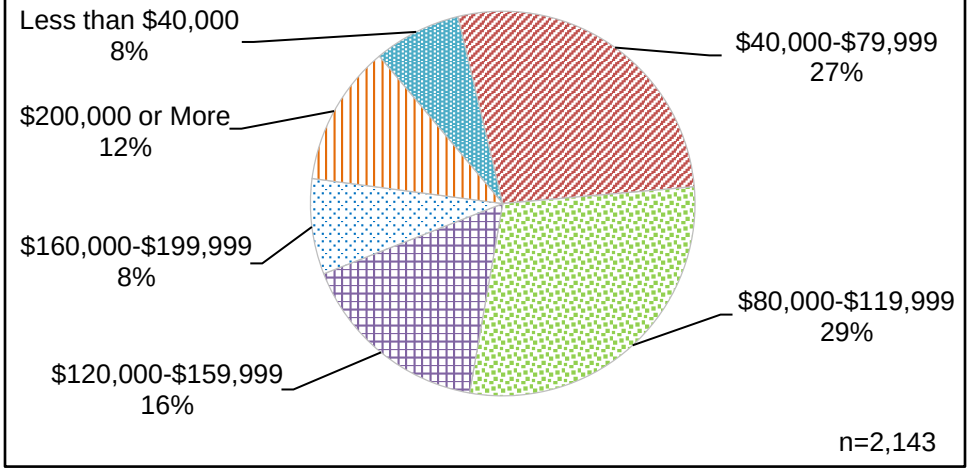
The average age of surveyed visitors to the Verde Valley was 54.6 years old and the median age of surveyed visitors to the Verde Valley was 58.0 years old. Figure C-29 presents the age ranges of surveyed visitors. Almost half of respondents were 61 or older, with 31 percent between the ages of 61 and 70, and 13 percent age 71 or older.



Visitor Annual Household Income

The average annual household income of surveyed visitors to the Verde Valley was $109,276. Figure C-30 illustrates the annual household incomes of surveyed visitors to the Verde Valley. Approximately eight percent of surveyed visitors indicated their annual household income was less than $40,000, while approximately 20 percent of surveyed visitors indicated their annual household income was $160,000 or more.

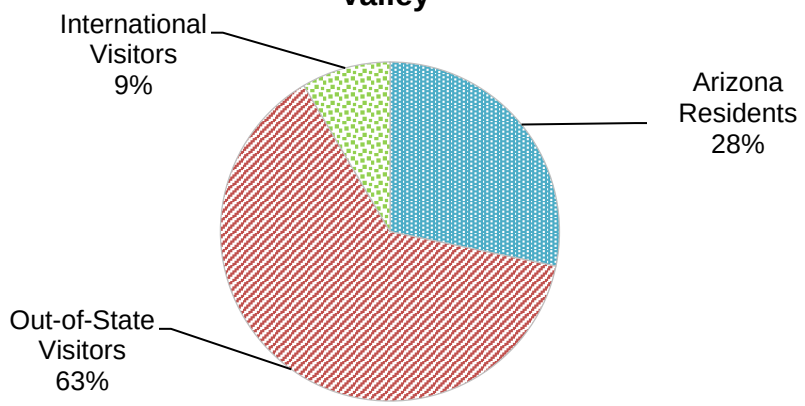
Figure C-30
Visitor Annual Household Income



Residence Location

As shown in Figure C-31, approximately 63 percent of surveyed visitors to the Verde Valley were out-of-state visitors, followed by Arizona residents (28 percent) and international visitors (nine percent). Of the out-of-state visitors, approximately 32 percent were from Arizona, followed by California (12 percent), and Wisconsin (four percent). Approximately 18 percent of visitors living in the State of Arizona were visiting from Phoenix, followed by Scottsdale (eight percent), Mesa (seven percent), and Glendale (five percent). International visitors were most commonly visiting from Canada (68 percent), the United Kingdom (13 percent), Australia (three percent), and Japan (two percent).

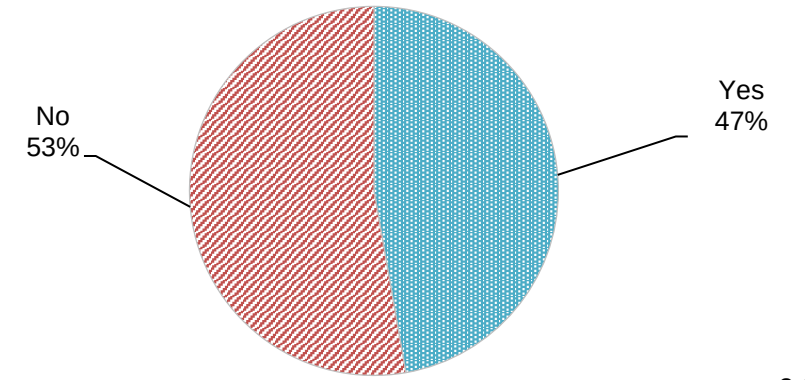
Figure C-31
Residence Location of Visitors to the Verde Valley



First Visit to the Verde Valley

As shown in Figure C-32, approximately 53 percent of surveyed visitors said this was not their first trip to the Verde Valley, while 47 percent of surveyed visitors said this was their first trip to the Verde Valley. For those who have previously visited the Verde Valley, the mean number of times they have visited was 8.3 and the median number of times they have visited was 4.0.

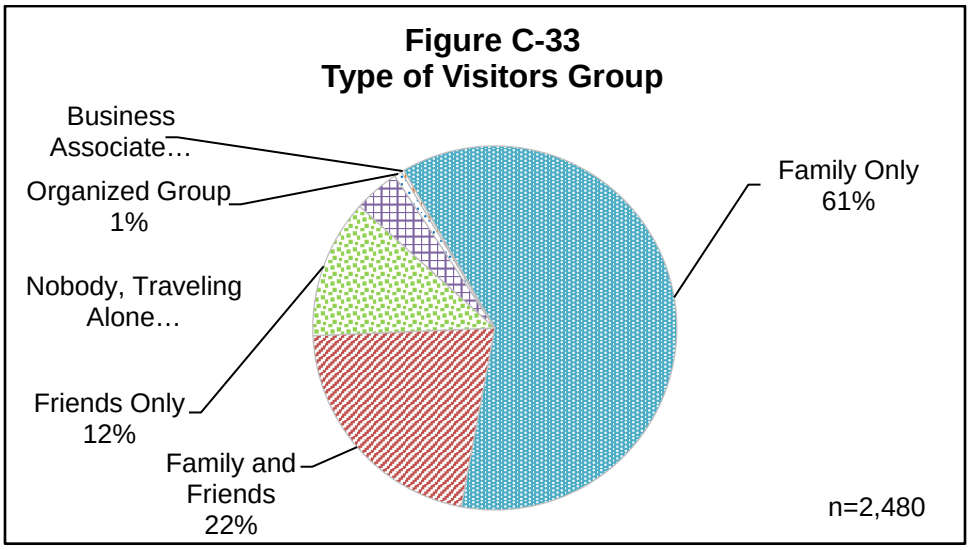
Figure C-32
First Trip to the Verde Valley?



Type of Visitor Group and Size

As shown in Figure C-33, almost two-thirds of surveyed visitors to the Verde Valley traveled in family only groups (61 percent). Almost a quarter of respondents indicated they traveled in a group of family and friends (22

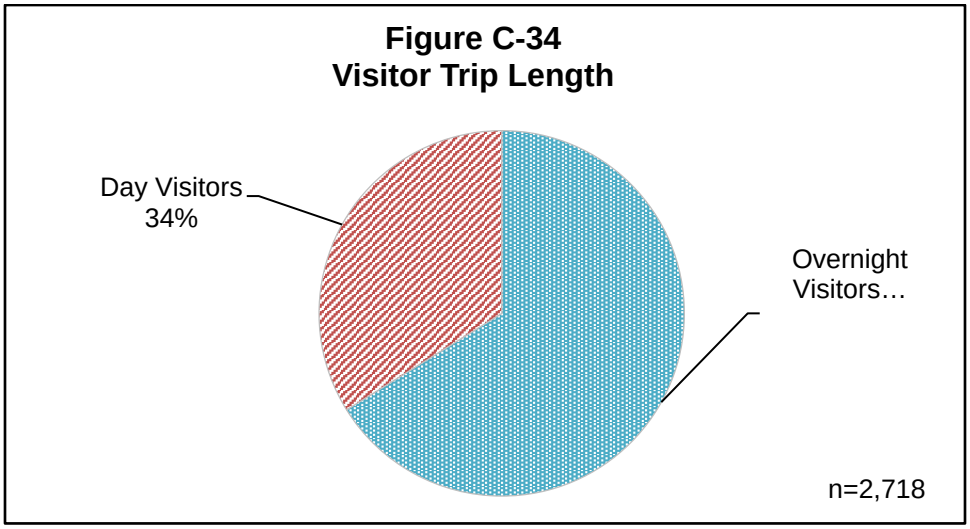
percent), followed by respondents who said they traveled in friend only groups (12 percent).



The average visitor party to the Verde Valley consisted of 3.1 people, while the median party size was two people. Children were included in approximately 10 percent of all visitor parties, and those with children in the party averaged 1.2 children (median of one child).

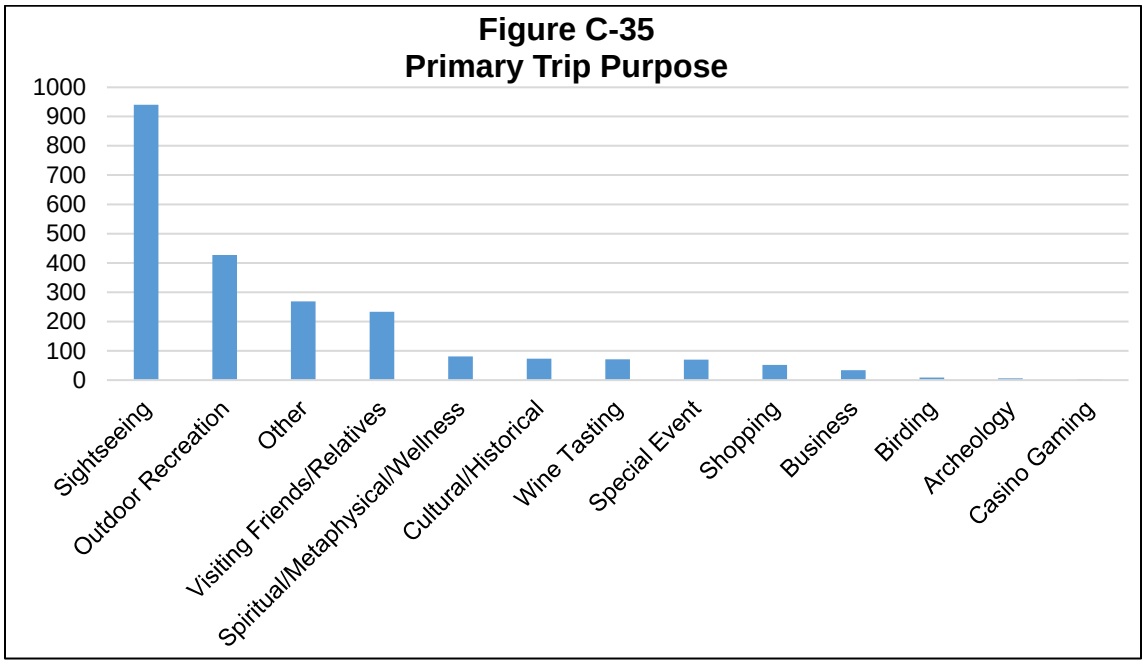
Visitor Trip Length

As shown in Figure C-34, approximately two-thirds of surveyed visitors to the Verde Valley indicated they were overnight visitors (66 percent), while approximately one-third of surveyed visitors to the Verde Valley indicated they were day trip visitors (34 percent).



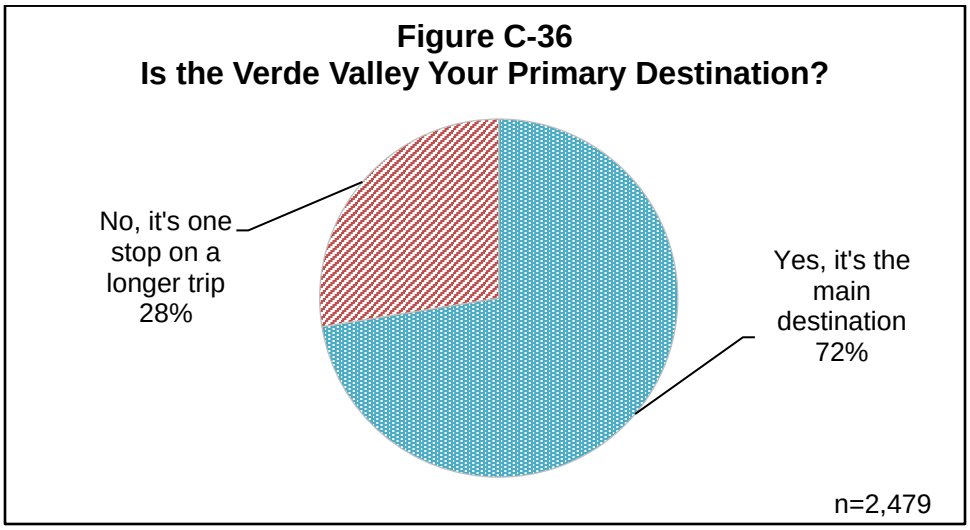
Primary Trip Purpose

As shown in Figure C-35, the most popular trip purpose of surveyed visitors to the Verde Valley was sightseeing (42 percent), followed by outdoor recreation (19 percent), other (12 percent), and visiting friends/relatives (10 percent).



Primary Destination

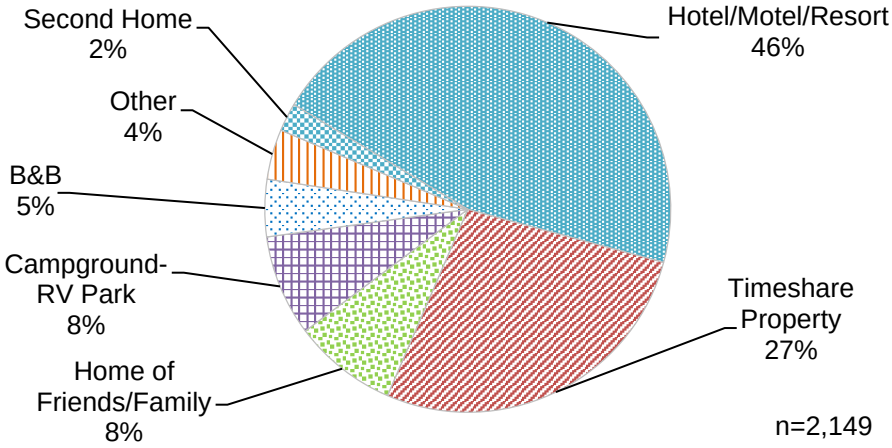
As shown in Figure C-36, approximately 72 percent of surveyed visitors to the Verde Valley indicated it was the main destination of their trip, while 28 percent of respondents said it was not their main destination, just a stop on a longer trip.



Type of Accommodation

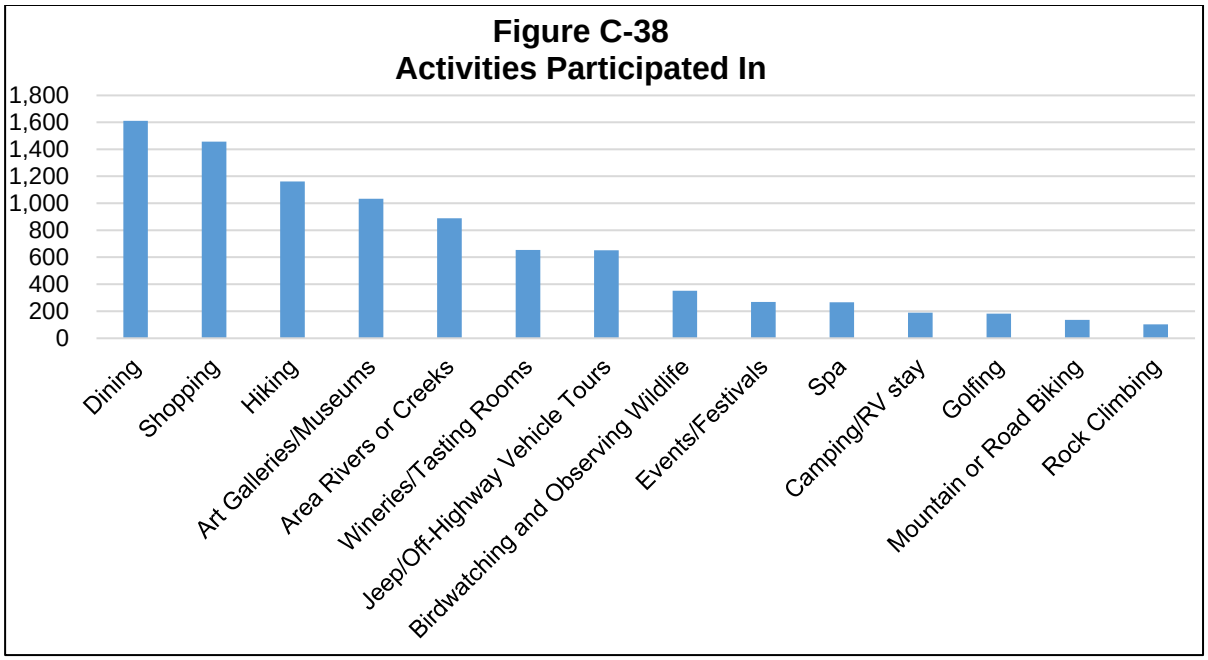
Figure C-37 presents the type of accommodation of surveyed visitors to the Verde Valley. The majority of respondents indicated they stayed in a hotel, motel, or resort (46 percent), followed by timeshare properties (27 percent), home of friends or family (eight percent), and campground-RV park (eight percent).

Figure C-37
Type of Accommodation



Activities Participated In

Figure C-38 illustrates the activities surveyed Verde Valley visitors indicated they participated in. The most popular activities included dining (59 percent), shopping (54 percent), hiking (43 percent), art galleries/museums (38 percent), and area rivers or creeks (33 percent).



Trip Spending

Table C-16 presents the mean and median trip spending by category for surveyed visitors to the Verde Valley. Visitors spent most of their money on lodging/camping, followed by restaurant/grocery.

Table C-16
Trip Spending

Category	Mean	Median
Lodging/Camping	$191	$125
Restaurant/Grocery	$112	$80
Transportation/Gas	$60	$32
Shopping/Souvenirs	$92	$50
Recreation/Tour/Entrance/Permit Fees	$94	$50
Spa/Spiritual/Metaphysical	$46	$38
Other	$60	$49

Source: Verde Valley Visitor Survey, Arizona Office of Tourism, 2015.

Visitor Satisfaction

Surveyed visitors were asked to rate their overall satisfaction with their visit to the Verde Valley for eight different attributes. Surveyed riders evaluated each attribute with a rating from one (low) to five (high). The responses from the survey and the mean scores are shown in Table C-17. The attributes with the highest mean scores were attractions (4.6), activities (4.5), accommodations

(4.5), and visitor information (4.5). The attributes with the lowest mean scores were prices (3.8), shopping (4.1), and entertainment (4.1).

Table C-17
Verde Valley Visitor Satisfaction

Attribute	Low 1	Somewhat Low 2	Neither Low nor High 3	Somewhat High 4	High 5	Mean Score
Attractions	0.1%	0.4%	5.6%	27.8%	66.1%	4.6
Activities	0.3%	0.8%	7.9%	29.6%	61.4%	4.5
Accommodations	0.5%	0.8%	9.4%	28.4%	61.0%	4.5
Visitor Information	0.6%	1.2%	8.8%	23.6%	65.7%	4.5
Food & Drink	0.4%	1.3%	10.8%	37.1%	50.4%	4.4
Entertainment	1.3%	3.4%	20.8%	31.7%	42.8%	4.1
Shopping	1.1%	3.8%	19.0%	34.0%	42.2%	4.1
Prices	1.8%	5.7%	26.5%	38.9%	27.0%	3.8

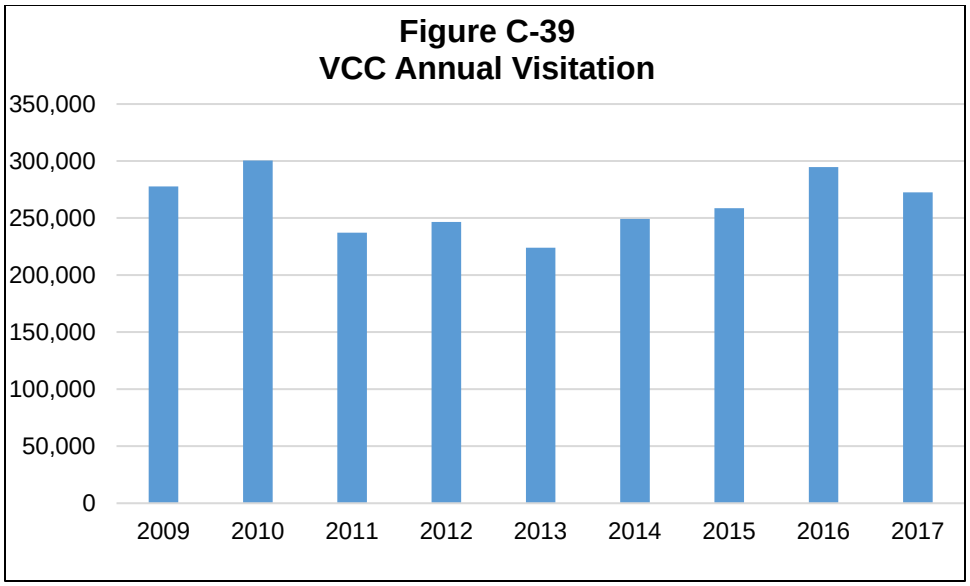
Source: Verde Valley Visitor Survey, Arizona Office of Tourism, 2015.

Red Rock Ranger District Visitation (2008-2017)

The Red Rock Ranger District of the Coconino National Forest provided detailed visitation data for five specific locations – the Red Rock Ranger District Visitor Contact Center, the Palatki Heritage Site, the V Bar V Heritage Site, the Oak Creek Vista Visitor Center, and the Honanki Heritage Site. Data were provided for 2008 through 2017.

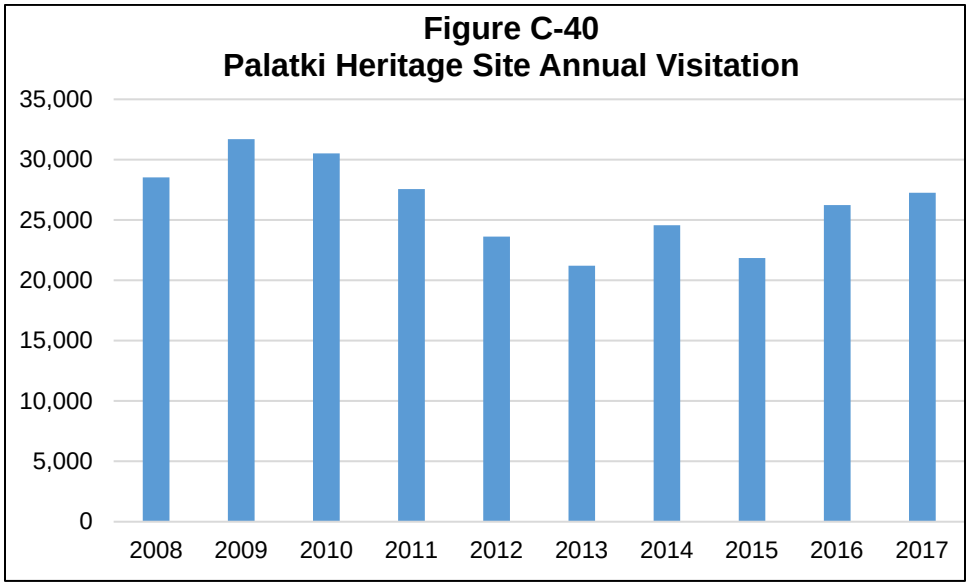
Red Rock Ranger District Visitor Contact Center

Figure C-39 illustrates annual visitation to the Red Rock Ranger District Visitor Contact Center (VCC) between 2009 and 2017. VCC visitation was highest during 2010 (300,311 visitors) and lowest during 2013 (223,865). In 2017, there were approximately 273,000 VCC visitors.



Palatki Heritage Site

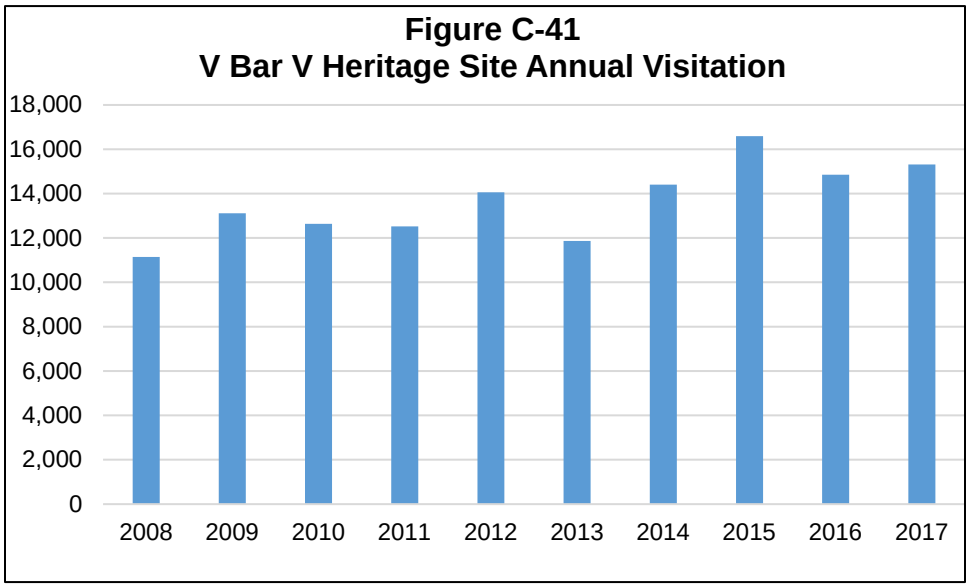
Figure C-40 illustrates annual visitation to the Palatki Heritage Site between 2008 and 2017. Visitation has fluctuated a bit year-to-year, but overall has stayed relatively consistent. Visitation was highest during 2009 (31,698 visitors) and lowest during 2013 (21,198). In 2017, approximately 27,300 people visited the Palatki Heritage Site.



V Bar V Heritage Site

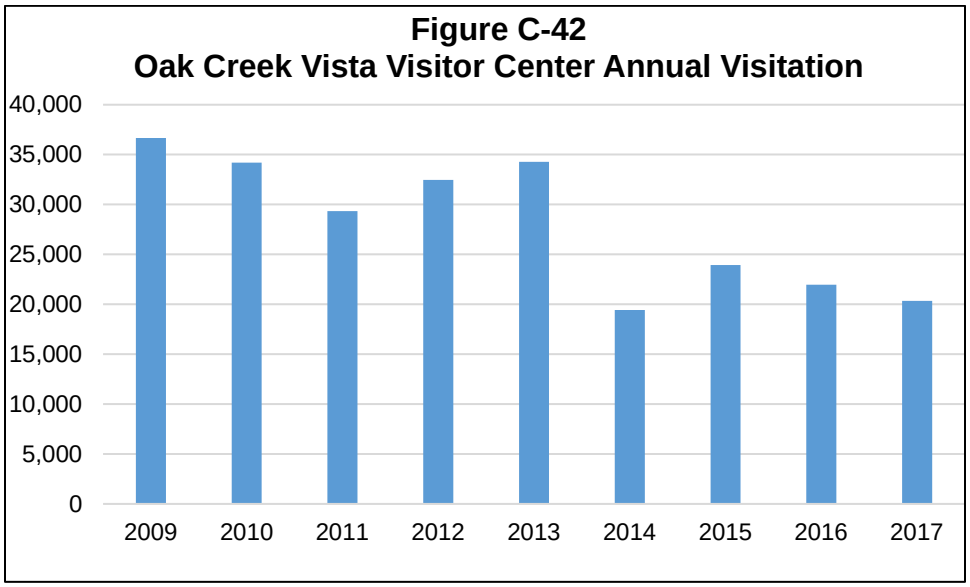
Figure C-41 illustrates annual visitation to the V Bar V Heritage Site between 2008 and 2017. Visitation was highest during 2015 (16,592 visitors) and lowest

during 2008 (11,146). In 2017, approximately 15,300 people visited the V Bar V Heritage Site.



Oak Creek Vista Visitor Center

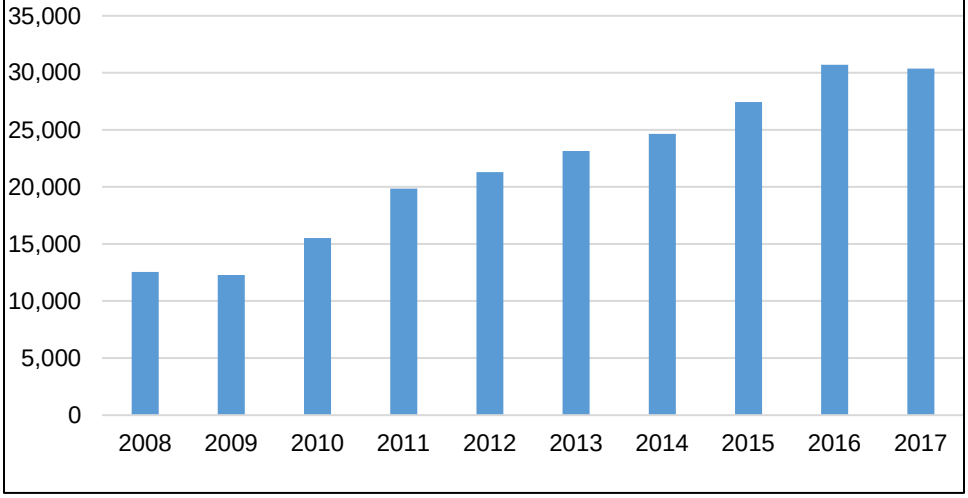
Figure C-42 illustrates annual visitation to the Oak Creek Vista Visitor Center between 2009 and 2017. Visitation was highest during 2009 (36,654 visitors) and lowest during 2014 (19,433). In 2017, approximately 20,300 people visited the Oak Creek Vista Visitor Center. Construction on Hwy. 89A during 2017 may have contributed to a lower number of visitors to the site.



Honanki Heritage Site

Figure C-43 illustrates annual visitation to the Honanki Heritage Site between 2008 and 2017. Visitation has been steadily increasing, with the highest number of visitors during 2016 (30,711 visitors) and the least during 2009 (12,276). In 2017, approximately 30,400 people visited the Honanki Heritage Site.

Figure C-43
Honanki Heritage Site Annual Visitation



Red Rock Ranger District Visitor Use Summary – 2015

The Red Rock Ranger District of the Coconino National Forest, part of the United States Forest Service (USFS), prepared a summary of visitor use data for the 2015 calendar year.

During 2015, approximately 2,841,000 people visited the Red Rock Ranger District. As shown in Figure C-44, the majority of visitors were trail visitors (61 percent), followed by outfitter and guide special uses (11 percent), concessionaire campgrounds and day use sites (11 percent), and visitor center (nine percent).

Figure C-44
Red Rock Ranger District 2015 Visitors

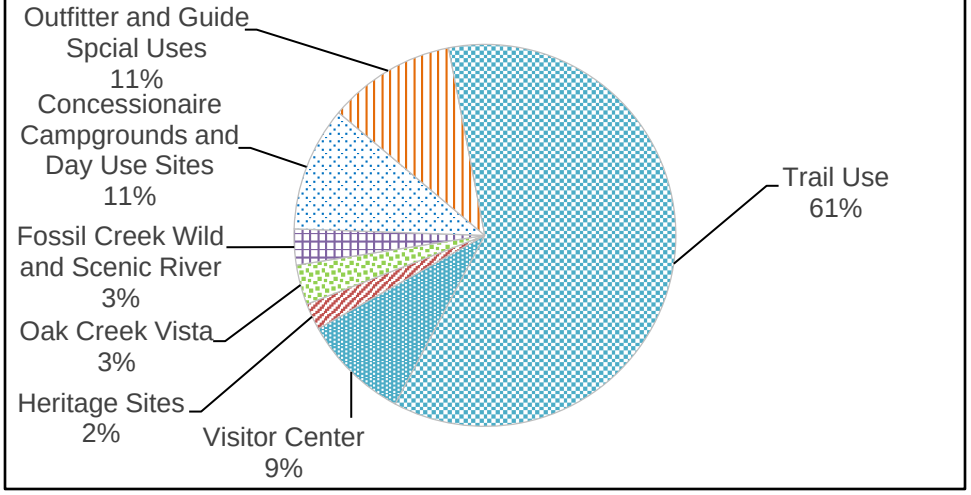
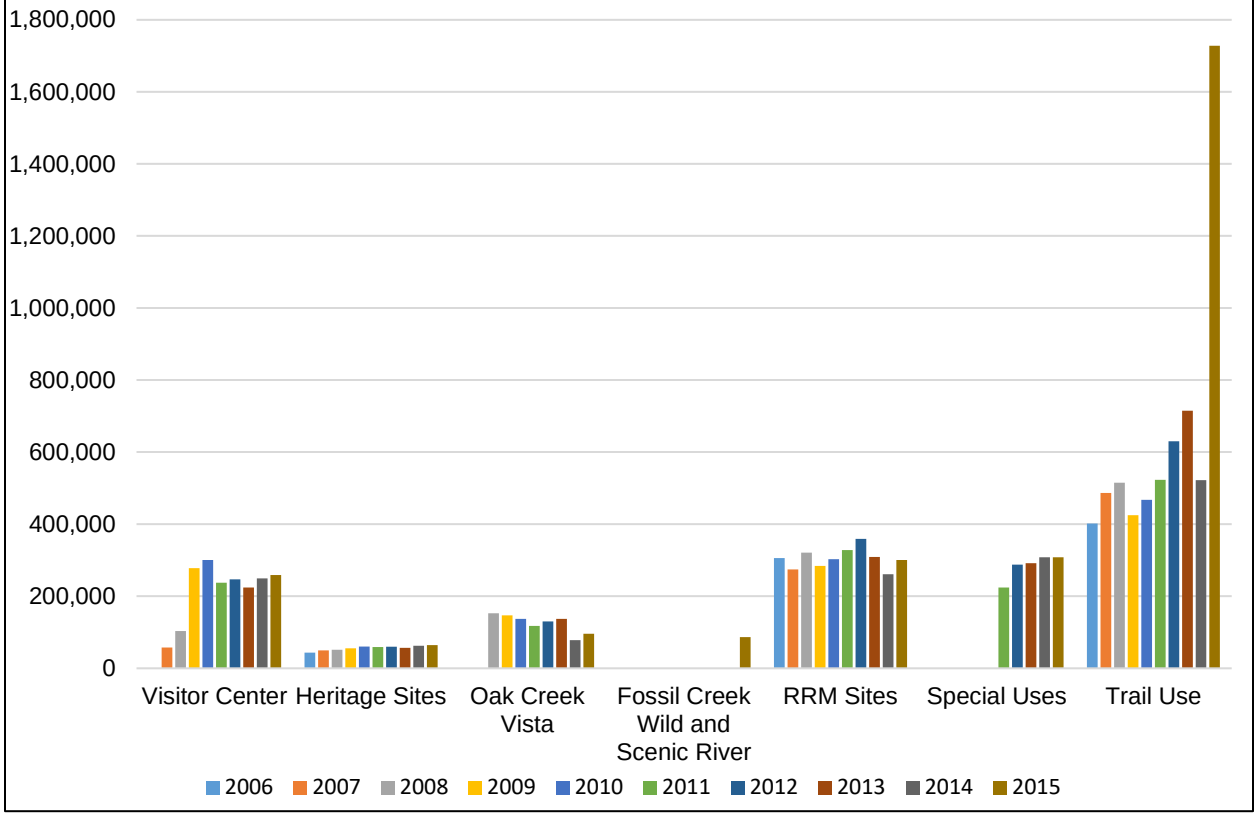


Figure C-45 illustrates the annual visitation data for the Red Rock Ranger District between 2006 and 2015. The number of visitors at the visitor center increased significantly (169 percent) between 2008 and 2009, and has since stayed relatively consistent. The number of visitors to the heritage sites has been gradually increasing between 2006 and 2015, from approximately 43,000 annual visitors in 2006 to 64,000 annual visitors in 2015. The number of visitors to Oak Creek Vista has been decreasing between 2006 and 2015, from approximately 153,000 visitors in 2008 to 96,000 visitors in 2015. The number of visitors to the RRM sites has fluctuated a bit year-to-year between 2006 and 2015, but overall has stayed relatively consistent. The number of visitors to special use sites has been gradually increasing between 2011 and 2015, from approximately 224,000 visitors in 2011 to 308,000 visitors in 2015. The most noticeable change in the visitor data occurred between 2014 and 2015, when there was a dramatic increase (231 percent) in the number of trail use visitors to the Red Rock Ranger District.

Figure C-45
Red Rock Ranger District Annual Visitation Data 2006-2015



The 2015 summary of visitor use data also included the top five most visited trails in the Red Rock Ranger District. The top five visited trails accounted for 36 percent of all trail use visitors. The top five most visited trails during 2015 were:

1. Bell Rock Pathway (188,866 visitors)
2. Cathedral Rock (138,028 visitors)
3. West Fork (127,726 visitors)
4. Devil's Bridge (78,787 visitors)
5. Broken Arrow (74,536 visitors)

In addition, trail use was divided between wilderness and non-wilderness trails within the Red Rock Ranger District. Approximately 35 percent of trail use visitors accessed wilderness trails, while 65 percent accessed non-wilderness trails.

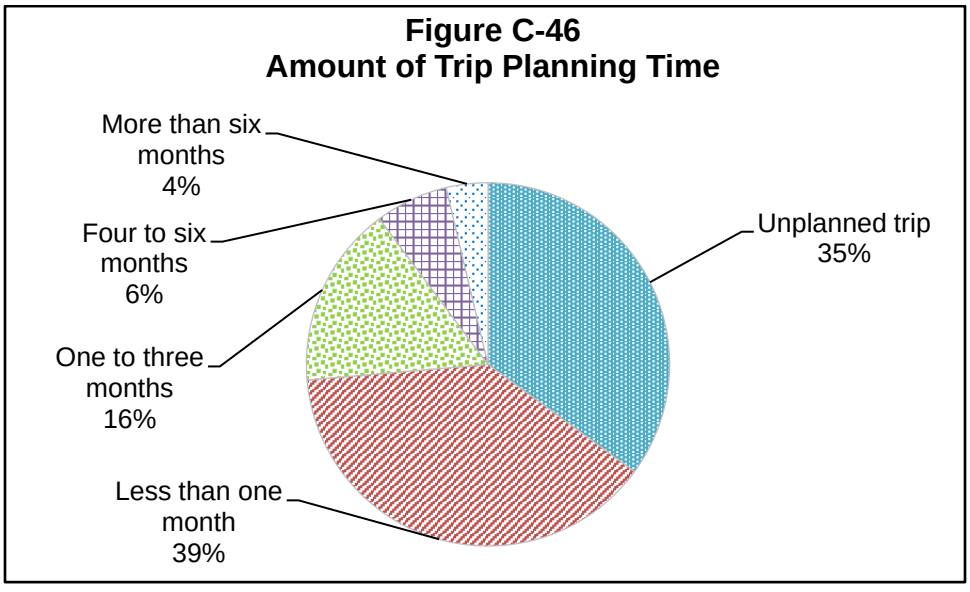
Slide Rock State Park Visitor Survey – August, 2017

The Arizona State Parks conducted a survey of visitors to Slide Rock State Park during August 2017. The survey was intended to ascertain visitors' perceptions of the park, specifically in terms of the impact to the parks' natural and cultural areas, air and water quality, parking, litter, and crowding, as well as feedback on how to provide park information and improve the visitor experience. Visitors were asked to complete a survey questionnaire at the end of their visit prior to exiting the park on seven specific days during August, 2017 (August 1, 5, 6, 7, 11, 12, and 13, 2017). Visitors were offered a free Arizona State Parks and Trails day pass as an incentive for completing the survey. A total of 479 completed survey were received.

Trip Planning Time

As shown in Figure C-46, almost three-quarters of respondents (74 percent) indicated they spent less than one month planning their trip to Slide Rock State Park, with 35 percent being unplanned trips and 39 percent being trips planned in less than one month. Approximately 16 percent of surveyed visitors spent one to three months planning their trip to Slide Rock State Park, about six percent spent four to six months planning their trip to Slide Rock State Park, and four percent spent more than six months planning their trip to Slide Rock State Park.

Figure C-46
Amount of Trip Planning Time



Group Size

The average group size of surveyed visitors was six people, with the majority of surveyed visitors traveling in groups of four.

Residence Location

Approximately 53 percent of surveyed visitors lived in the U.S. but outside the State of Arizona, while 40 percent were Arizona residents and seven percent were international visitors. Of the out-of-state visitors, approximately 30 percent were from California, followed by Texas (11 percent), and Nevada (seven percent). Approximately 81 percent of visitors living in the State of Arizona were visiting from the Phoenix metropolitan area. International visitors were most commonly visiting from Canada (29 percent), the Netherlands (24 percent), Belgium (12 percent), and England (12 percent).

Park Conditions

Surveyed visitors were asked to rate the park conditions of Slide Rock State Park for 10 different attributes. Surveyed riders evaluated each attribute with a rating of not a problem, slight problem, or serious problem. The responses from the survey are shown in Table C-18. The top attributes that surveyed Slide Rock State Park visitors identified as serious problems included parking (18 percent), overcrowding (14 percent), litter or trash dumping (11 percent), and impact to water quality (10 percent).

Table C-18 Slide Rock State Park Conditions			
Attribute	**Not a Problem**	**Slight Problem**	**Serious Problem**
Parking	46%	30%	18%
Overcrowding	43%	40%	14%
Litter or trash dumping	57%	26%	11%
Impact to water quality	49%	25%	10%
Decrease in wildlife sightings	41%	28%	9%
Impact to air quality	67%	11%	5%
Damage to park's natural area	61%	22%	4%
Shade structures near water/slide area	75%	12%	4%
Coolers/ice chests near the water's edge	70%	17%	4%
Damage to historical or archaeological sites	62%	16%	3%
Source: Arizona State Parks, 2017 Slide Rock State Park Visitor Survey.			

Importance when Visiting Slide Rock State Park

Surveyed visitors were asked to rate the importance of seven different attributes when visiting Slide Rock State Park. Surveyed riders evaluated each attribute with a rating of not important, somewhat important, or very important. The responses from the survey are shown in Table C-19. The top attributes that surveyed Slide Rock State Park visitors identified as very important included keep park and surrounding area in good condition (76 percent), prevent damage to environment and surrounding area (73 percent), and programs that promote safe and responsible recreation (68 percent).

Table C-19 Importance when Visiting Slide Rock State Park			
Attribute	**Not Important**	**Somewhat Important**	**Very Important**
Keep park and surrounding area in good condition	10%	11%	76%
Prevent damage to environment and surrounding area	9%	15%	73%
Programs that promote safe and responsible recreation	10%	19%	68%
Improve damage to environment and surrounding area	13%	20%	62%
Enforce existing rules and regulations	15%	26%	56%
Provide park signs	17%	31%	48%
Provide park maps and information	16%	34%	46%
Source: Arizona State Parks, 2017 Slide Rock State Park Visitor Survey.			

VERDE LYNX ROUTE

CAT Transit Services

Cottonwood Area Transit (CAT) operates the Verde Lynx route between Cottonwood and Sedona, which will be the focus of this analysis, as well as four local routes in Cottonwood, Clarkdale, and Verde Village, called the Blue Route (Central Circulator), the Red Route (Cottonwood to Clarkdale), the Yellow Route (Central Cottonwood Midday), and the Green Route (Cottonwood Shopping Loop).

CAT Routes

The four local CAT routes operate every 45 minutes, Monday thru Friday from 6:45 a.m. to 6:45 p.m. with a one-way cash fare of $1.25. In addition, CAT provides paratransit service for persons with disabilities who are unable to use CAT fixed-route buses. The paratransit service is a shared-ride and provides transportation to locations that are located within three-quarters of a mile of a fixed-route bus stop. The cost for a one-way paratransit trip is $2.25 and trips must be scheduled one day in advance.

Verde Lynx

Verde Lynx is CAT's commuter transit service providing transportation between Cottonwood and Sedona. Figure C-47 illustrates the Verde Lynx route, which operates between the Cottonwood Library and Poco Diablo and the Municipal Parking Lot in Uptown Sedona. Verde Lynx operates daily from 6:00 a.m. to 7:12 p.m. according to the schedule shown in Figure C-48. The Verde Lynx route has a total of 15 stops, of which, the following 12 are located in Sedona:

- Upper Red Rock Loop Rd. (High School)
- Foothills (Across from the Sedona Medical Center)
- Arroyo Pinon & Dry Creek
- Stutz Bearcat & Andante (Super 8 Motel)
- Shelby & Rodeo (Wells Fargo Bank)
- Sunset & Coffee Pot (Walgreens)
- Northview & Mountain Shadows
- Soldiers Pass Rd. (Biddles)
- Tlaquepaque
- Poco Diablo Resort
- Hillside Shops and Galleries
- Sedona Municipal Parking Lot

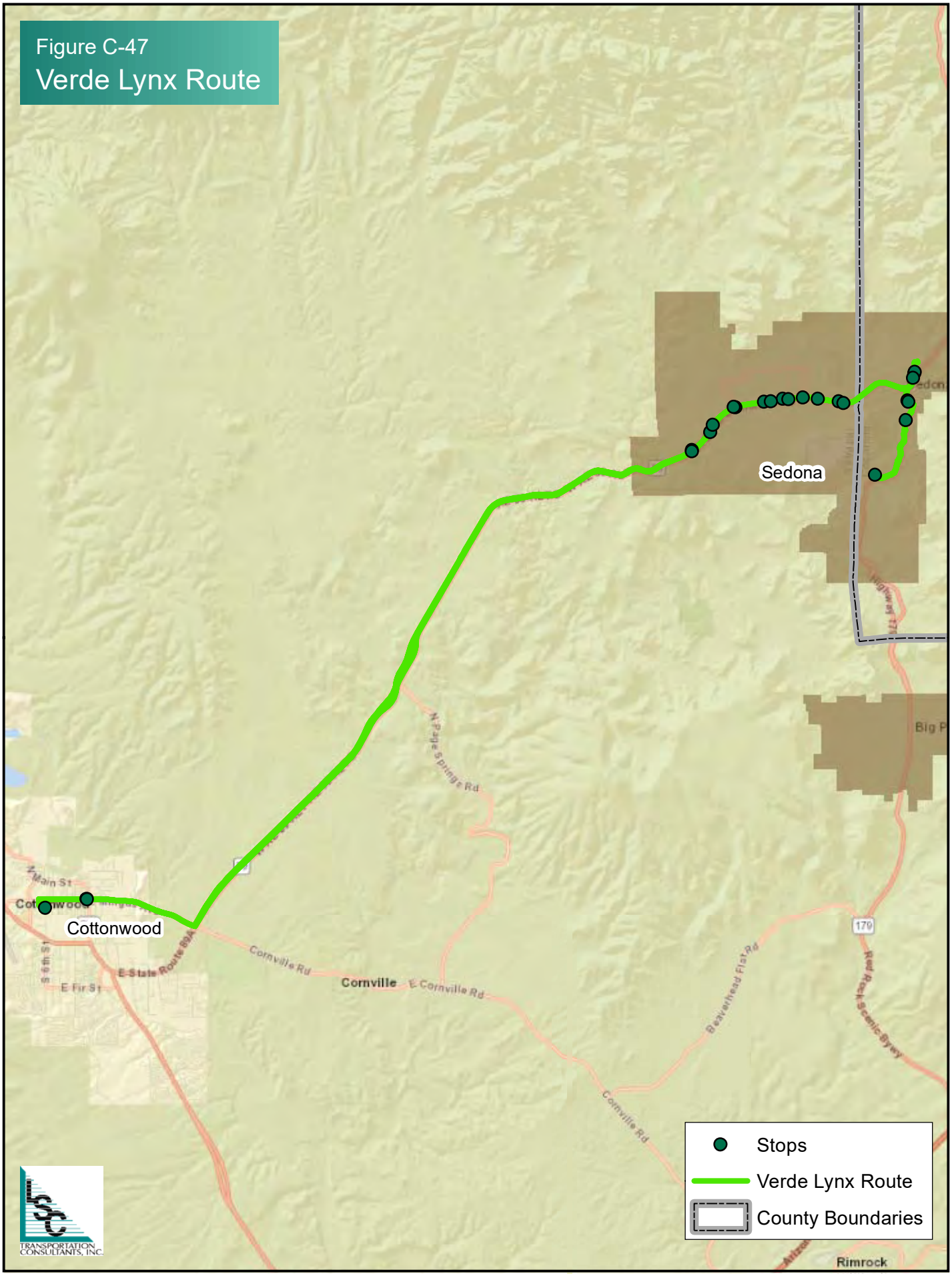


Figure C-47
Verde Lynx Route
Sedona
Cottonwood
Cornville
Rimrock
N Main St
E State Route 89A
Cornville Rd
E Cornville Rd
N Page Springs Rd
E Fir St
Beaverhead Flat Rd
Red Rock Scenic Byway
179
Stops
Verde Lynx Route
County Boundaries

Figure C-48
Verde Lynx Schedule

VERDE LYNX ROUTE WEEKDAYS (Monday through Friday) 6:00 a.m. – 7:12 p.m.

Bus Stop												
NORTHBOUND to Sedona												
1	Depart Cottonwood Library	6:00	6:45	7:30	8:15	9:00	10:30	1:00	1:30	2:30	3:00	4:00	6:00
2	Mingus at 8th *(By Walking Bridge)*	—	—	—	—	—	—	—	—	—	—	—	—
3	Mingus & Main *(Circle K)*	6:02	6:47	7:32	8:17	9:02	10:32	1:02	1:32	2:32	3:02	4:02	6:02
4	Upper Red Rock Loop Rd. *(High School)*	6:21	7:06	7:51	8:36	9:21	10:51	1:21	1:51	2:51	3:21	4:21	6:21
5	Foothills *(Across from Sedona Med Center)*	6:22	7:07	7:52	8:37	9:22	10:52	1:22	1:52	2:52	3:22	4:22	6:22
6	Arroyo Pinon & Dry Creek *(Kokopellis)*	6:24	7:08	7:53	8:38	9:23	10:53	1:23	1:53	2:53	3:23	4:23	6:23
7	Stutz Bearcat & Andante *(Andante Inn)*	6:25	7:09	7:54	8:39	9:24	10:54	1:24	1:54	2:54	3:24	4:24	6:24
8	Shelby & Rodeo *(Wells Fargo Bank)*	6:26	7:10	7:55	8:40	9:25	10:55	1:25	1:55	2:55	3:25	4:25	6:25
9	Sunset & Coffee Pot *(Wallgreens)*	6:27	7:12	7:57	8:42	9:27	10:57	1:27	1:57	2:57	3:27	4:27	6:27
10	Northview & Mountain Shadows	6:28	7:13	7:58	8:43	9:28	10:58	1:28	1:58	2:58	3:28	4:28	6:28
11	Soldiers Pass Rd. *(Biddles)*	6:30	7:15	8:00	8:45	9:30	11:00	1:30	2:00	3:00	3:30	4:30	6:30
12	Tlaquepaque	6:33	7:18	8:03	8:48	9:33	11:03	1:33	2:03	3:03	3:33	—	6:33
	Flag Stop *(Copper Cliffs – Across from Hillside)*	—	—	—	—	—	—	—	—	—	—	—	—
	Flag Stop *(Arrow Rd.)*	—	—	—	—	—	—	—	—	—	—	—	—
13	Poco Diablo Resort	6:37	7:22	8:07	8:52	9:37	11:07	1:37	2:07	3:07	3:37	—	—
	Flag Stop *(Morgan Rd.)*	—	—	—	—	—	—	—	—	—	—	—	—
14	Hillside Shops & Galleries *(Arabella)*	6:40	7:25	8:10	8:55	9:40	11:10	1:40	2:10	3:10	3:40	—	6:34
	Flag Stop *(Tlaquepaque North)*	—	—	—	—	—	—	—	—	—	—	—	6:35
	Flag Stop *(Outlaw BBQ)*	—	—	—	—	—	—	—	—	—	—	—	—
15	Sedona Municipal Parking Lot	6:44	7:29	8:14	8:59	9:44	11:14	1:44	2:14	3:14	3:44	4:33	6:38
SOUTHBOUND to Cottonwood												
15	Sedona Municipal Parking lot	6:45	7:30	8:15	9:00	9:45	11:15	1:45	2:15	3:15	3:45	5:00	6:39
	Flag Stop *(Outlaw BBQ)*	—	—	—	—	—	—	—	—	—	—	—	—
	Flag Stop *(Forrest & 89A)*	—	—	—	—	—	—	—	—	—	—	—	—
12	Tlaquepaque	—	—	—	—	—	—	—	—	—	—	5:03	—
	Flag Stop *(Copper Cliffs – Across from Hillside)*	—	—	—	—	—	—	—	—	—	—	—	—
	Flag Stop *(Arrow Rd.)*	—	—	—	—	—	—	—	—	—	—	—	—
13	Poco Diablo Resort	—	—	—	—	—	—	—	—	—	—	5:09	—
	Flag Stop *(Morgan Rd.)*	—	—	—	—	—	—	—	—	—	—	—	—
14	Hillside Shops & Galleries *(Arabella)*	—	—	—	—	—	—	—	—	—	—	5:11	—
	Flag Stop *(Tlaquepaque North)*	—	—	—	—	—	—	—	—	—	—	5:12	—
11	Soldiers Pass *(Whole Foods)*	6:50	7:35	8:20	9:05	9:50	11:20	1:50	2:20	3:20	3:50	5:15	6:43
10	Mountain Shadows & Northview *(Hampton Inn.)*	6:52	7:37	8:22	9:07	9:52	11:22	1:52	2:22	3:22	3:52	5:16	6:44
9	Coffee Pot & Sunset *(Arco / Bashas)*	6:53	7:38	8:23	9:08	9:53	11:23	1:53	2:23	3:23	3:53	5:17	6:45
8	Rodeo & Shelby *(Safeway)*	6:54	7:39	8:24	9:09	9:54	11:24	1:54	2:24	3:24	3:54	5:19	6:46
7	Andante & Stutz Bearcat *(Sedona Car Wash)*	6:55	7:40	8:25	9:10	9:55	11:25	1:55	2:25	3:25	3:55	5:20	6:47
6	Dry Creek & Arroyo Pinon	6:56	7:41	8:26	9:11	9:56	11:26	1:56	2:26	3:26	3:56	5:21	6:48
5	Sedona Medical Center	6:57	7:42	8:27	9:12	9:57	11:27	1:57	2:27	3:27	3:57	5.23	6:49
4	Cultural Park Pl. *(Culture Center / High School)*	6:58	7:43	8:28	9:13	9:58	11:28	1:58	2:28	3:28	3:58	5:24	6:50
3	Mingus & Main *(Goodwill)*	7:17	8:02	8:47	9:32	10:17	11:47	2:17	2:47	3:47	4:18	5:47	7:09
2	Mingus at 8th *(Across from Walking Bridge)*												
1	Arrive Cottonwood Library	7:19	8:04	8:49	9:34	10:19	11:49	2:19	2:49	3:49	4:19	5:49	7:12

VERDE LYNX ROUTE WEEKENDS (Saturday and Sunday) 6:00 a.m. – 7:12 p.m.

Bus Stop										
		Only shaded trips operate on Sunday								
NORTHBOUND to Sedona										
1	Depart Cottonwood Library	6:00	7:30	9:00	10:30	1:00	2:30	4:00	6:00	
2	Mingus at 8th *(By Walking Bridge)*	—	—	—	—	—	—	—	—	
3	Mingus & Main *(Circle K)*	6:02	7:32	9:02	10:32	1:02	2:32	4:02	6:02	
4	Upper Red Rock Loop Rd. *(High School)*	6:21	7:51	9:21	10:51	1:21	2:51	4:21	6:21	
5	Foothills *(Across from Sedona Med Center)*	6:22	7:52	9:22	10:52	1:22	2:52	4:22	6:22	
6	Arroyo Pinon & Dry Creek *(Kokopellis)*	6:23	7:53	9:23	10:53	1:23	2:53	4:23	6:23	
7	Stutz Bearcat & Andante *(Andante Inn)*	6:24	7:54	9:24	10:54	1:24	2:54	4:24	6:24	
8	Shelby & Rodeo *(Wells Fargo Bank)*	6:25	7:55	9:25	10:55	1:25	2:55	4:25	6:25	
9	Sunset & Coffee Pot *(Wallgreens)*	6:27	7:57	9:27	10:57	1:27	2:57	4:27	6:27	
10	Northview & Mountain Shadows	6:28	7:58	9:28	10:58	1:28	2:58	4:28	6:28	
11	Soldiers Pass Rd. *(Biddles)*	6:30	8:00	9:30	11:00	1:30	3:00	4:30	6:30	
12	Tlaquepaque	6:33	8:03	9:33	11:03	1:33	3:03	—	6:33	
	Flag Stop *(Copper Cliffs Across from Hillside)*	—	—	—	—	—	—	—	—	
	Flag Stop *(Arrow Rd.)*	—	—	—	—	—	—	—	—	
13	Poco Diablo Resort	6:37	8:07	9:37	11:07	1:37	3:07	—	—	
	Flag Stop *(Morgan Rd.)*	—	—	—	—	—	—	—	—	
14	Hillside Shops & Galleries *(Arabella)*	6:40	8:10	9:40	11:10	1:40	3:10	—	6:34	
	Flag Stop *(Tlaquepaque North)*	—	—	—	—	—	—	—	6:35	
	Flag Stop *(Outlaw BBQ)*	—	—	—	—	—	—	—	—	
15	Sedona Municipal Parking Lot	6:44	8:14	9:44	11:14	1:44	3:14	4:33	6:38	
SOUTHBOUND to Cottonwood										
15	Sedona Municipal Parking lot	6:45	8:15	9:45	11:15	1:45	3:15	5:00	6:39	
	Flag Stop *(Outlaw BBQ)*	—	—	—	—	—	—	—	—	
	Flag Stop *(Forrest & 89A)*	—	—	—	—	—	—	—	—	
12	Tlaquepaque	—	—	—	—	—	—	5:03	—	
	Flag Stop *(Copper Cliffs – Across from Hillside)*	—	—	—	—	—	—	—	—	
	Flag Stop *(Arrow Rd.)*	—	—	—	—	—	—	—	—	
13	Poco Diablo Resort	—	—	—	—	—	—	5:09	—	
	Flag Stop *(Morgan Rd.)*	—	—	—	—	—	—	—	—	
14	Hillside Shops & Galleries *(Arabella)*	—	—	—	—	—	—	5:11	—	
	Flag Stop *(Tlaquepaque North)*	—	—	—	—	—	—	5:12	—	
11	Soldiers Pass *(Whole Foods)*	6:50	8:20	9:50	11:20	1:50	3:20	5:15	6:43	
10	Mountain Shadows & Northview *(Hampton Inn.)*	6:52	8:22	9:52	11:22	1:52	3:22	5:17	6:45	
9	Coffee Pot & Sunset *(Arco / Bashas)*	6:53	8:23	9:53	11:23	1:53	3:23	5:18	6:46	
8	Rodeo & Shelby *(Safeway)*	6:54	8:24	9:54	11:24	1:54	3:24	5:19	6:47	
7	Andante & Stutz Bearcat *(Sedona Car Wash)*	6:55	8:25	9:55	11:25	1:55	3:25	5:20	6:48	
6	Dry Creek & Arroyo Pinon	6:56	8:26	9:56	11:26	1:56	3:26	5:21	6:49	
5	Sedona Medical Center	6:57	8:27	9:57	11:27	1:57	3:27	5.22	6:50	
4	Cultural Park Pl. *(Culture Center / High School)*	6:58	8:28	9:58	11:28	1:58	3:28	5:23	6:51	
3	Mingus & Main *(Goodwill)*	7:17	8:47	10:17	11:47	2:17	3:47	5:42	7:10	
2	Mingus at 8th *(Across from Walking Bridge)*									
1	Arrive Cottonwood Library	7:19	8:49	10:19	11:49	2:19	3:49	5:44	7:12	

Times are approximate and may vary due to weather and traffic conditions. AM times are shown in regular type. PM times are shown in **boldface type.**

Verde Lynx riders are able to transfer between local CAT routes and Verde Lynx at the Cottonwood Library by asking their driver for a transfer. Riders are also able to use the free 'Park & Ride' facilities at Garrison Park in Cottonwood and at the Municipal Lot in Sedona. Passenger fare information for Verde Lynx is presented in Table C-20.

Table C-20
Verde Lynx Fares

Type	Cost
Regular Fare	$2.00
Trips within Sedona	$1.00
Monthly Pass	$60.00
20-Ride Pass	$35.00
All Access Daily Pass*	$6.00
All Access Monthly Pass*	$75.00

**All Access Passes allow unlimited rides on Verde Lynx and CAT local routes.*

Source: Verde Lynx Rider Guide.

Vehicle Fleet & Facilities

CAT's vehicle fleet is presented in Table C-21. CAT currently has 17 vehicles, three of which are used for the Verde Lynx route. All of CAT's vehicles have wheelchair lifts and can accommodate between four and 30 passengers.

CAT's transfer center is located at the Cottonwood Library. All four local CAT routes and the Verde Lynx route stop at the Cottonwood Library. CAT also offers free 'Park & Ride' facilities at Garrison Park in Cottonwood and the Sedona Municipal Lot.

Table C-21
CAT Vehicle Fleet

ID#	Service Type	Make	Vehicle Type	Year	Miles	License	VIN#	Funding	Purchase Price	Engine Type	Air Suspension	Comp	Passenger Lift Type	# of Seats	Kneel
5701	RR	Ford	E-450 Eldorado Aerotech w/lift	2006	50894	G919GJ	1FDXE45S96HB37624	5311	$122,000	Gas	No	N/A	Side Lft	10	-
5711	CAT	Chevrolet	4500 ARBOC	2009	132474	G943GK	1GBJG31K391156191	5311	$127,250	Gas	Yes	Elect	Ramp	11	Man-dwn Auto-up
5712	CAT	Chevrolet	4500 ARBOC	2010	108569	G156GC	1GBJG31K281215410	5311	-	Gas	Yes	Elect	Ramp	14	Man-dwn Auto-up
5713	CAT	Chevrolet	4500 ARBOC	2015	60335	G540HE	1GB6G5BG1F1131121	5311	$133,500	Gas	Yes	Elect	Ramp	14	Man-dwn Auto-up
5714	CAT	Chevrolet	4500 ARBOC	2015	44703	G506HE	1GB6G5BG2F1209406	5311	$133,500	Gas	Yes	Elect	Ramp	14	Man-dwn Auto-up
5715	CAT	AMG	MV-1	2014	73862	G028HP	57WMD2A6XEM102163	5311	$44,000	Gas	Yes	Elect	Ramp	5	-
5716	CAT	AMG	MV-1	2014	76018	G027HP	57WMD2A65EM101793	5311	$44,000	Gas	Yes	Elect	Ramp	5	-
5702	CAT	Chevrolet	4500 ARBOC	2010	153941	G942GK	1GB9G5AG2A1103951	5311	$129,288	Gas	Yes	Elect	Ramp	19	Man-dwn Auto-up
5805	CAT	Chevrolet	4500 ARBOC	2010	205863	G949GK	1GB9G5AG7A1104349	5311	$133,405	Gas	Yes	Elect	Ramp	19	Man-dwn Auto-up
5812	CAT	Chevrolet	4500 ARBOC	2015	119372	G541HE	1GB6G5BG4F1129783	5311	$138,000	Gas	Yes	Elect	Ramp	19	Man-dwn Auto-up
5813	CAT	Chevrolet	4500 ARBOC	2015	106033	G507HE	1GB6G5BG8F1207093	5311	$138,000	Gas	Yes	Elect	Ramp	19	Man-dwn Auto-up
5814	CAT	Chevrolet	4500 ARBOC	2016	99055	G039HP	1GB6GUBG8G1182224	5311	$138,000	Gas	Yes	Elect	Ramp	19	Man-dwn Auto-up
5811	CAT	Navistar	El Dorado	2008	216647	G544FF	1HVBTAFM98W555046	5311	-	Diesel	Yes	Elect	Ramp	30	Man-dwn Auto-up
5901	Verde Lynx	Chevrolet	4500 ARBOC	2010	340847	G623GM	1GB9G5AGZA1103609	5311	$135,702	Gas	Yes	Elect	Ramp	23	Man-dwn Auto-up
5903	Verde Lynx	Navistar	El Dorado	2014	303466	G806GZ	5WEASAAM5FH126030	5311	$148,000	Diesel	Yes	Elect	Rear Lift	30	-
5904	Verde Lynx	Navistar	El Dorado	2014	314473	G807GZ	5WEASAAM7FH126031	5311	$148,000	Diesel	Yes	Elect	Rear Lift	30	-
5808	CAT	Chevrolet	Mini Van (Kitten)	2008	95110	G946GK	1GBDV13W98D212171	5311	$44,433	Gas	Yes	Elect	Ramp	4-5	-

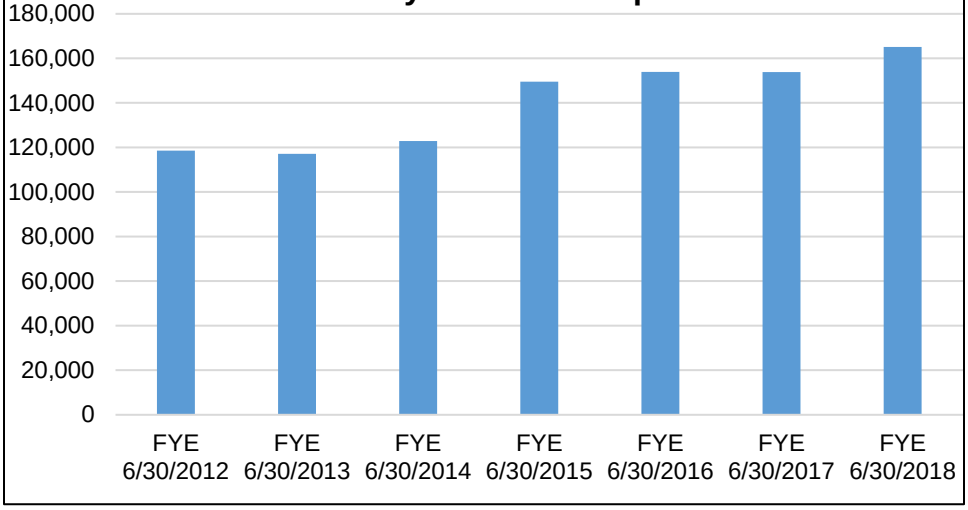
Source: Cottonwood Area Transit, 2018.

Ridership

CAT System Ridership

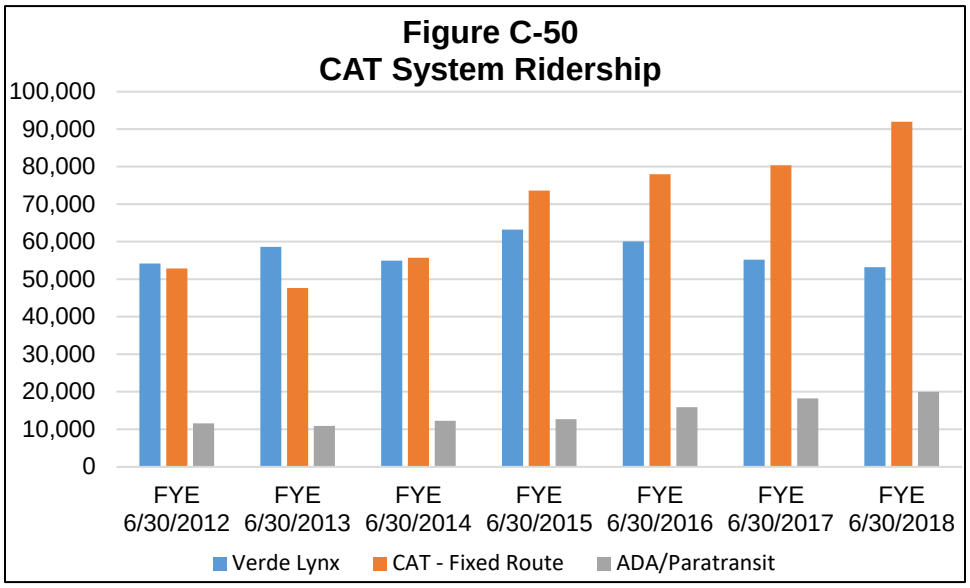
Annual passenger trip data for the CAT system, which includes passengers on the four local CAT routes, ADA paratransit services, and the Verde Lynx route, was provided for the Fiscal Year ending in June 2012 through the Fiscal Year ending in June 2018. As shown in Figure C-49, CAT's system ridership has grown by approximately 39 percent from approximately 119,000 passengers during the Fiscal Year ending in June 2012 to approximately 165,000 passengers during the Fiscal Year ending in June 2018.

Figure C-49
CAT System Ridership



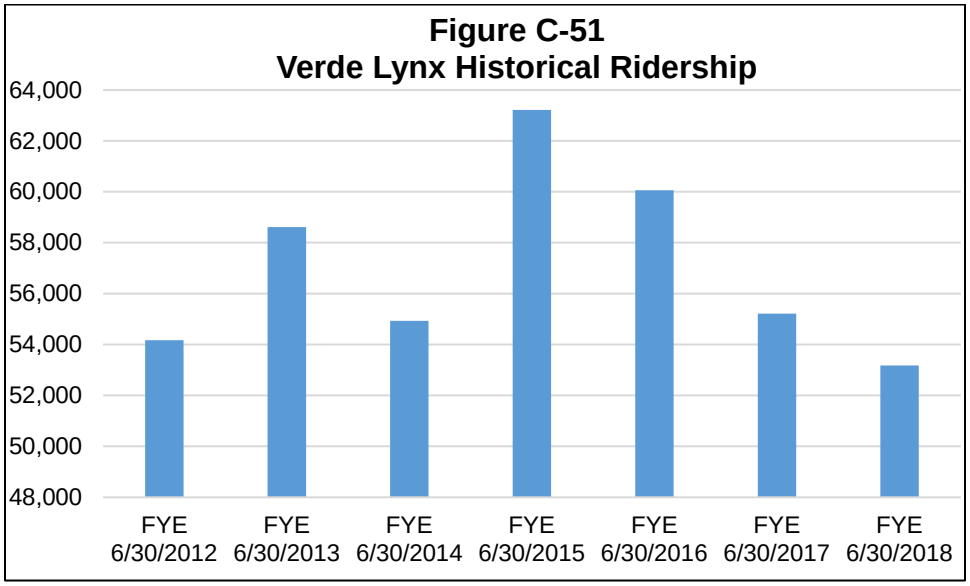
As shown in Figure C-50, Ridership on CAT's four local routes and ADA paratransit services have been increasing over the past several years, while ridership on the Verde Lynx route has been decreasing. Ridership on CAT's four local routes has grown by approximately 74 percent from approximately 53,000 passengers during the Fiscal Year ending in June 2012 to approximately 92,000 passengers during the Fiscal Year ending in June 2018. Ridership on CAT's ADA paratransit services has grown by approximately 73 percent from approximately 12,000 passengers during the Fiscal Year ending in June 2012 to approximately 20,000 passengers during the Fiscal Year ending in June 2018. On the other hand, ridership on the Verde Lynx route has decreased by approximately two percent from approximately 54,000 passengers during the

Fiscal Year ending in June 2012 to approximately 53,000 passengers during the Fiscal Year ending in June 2018.



Historical Ridership

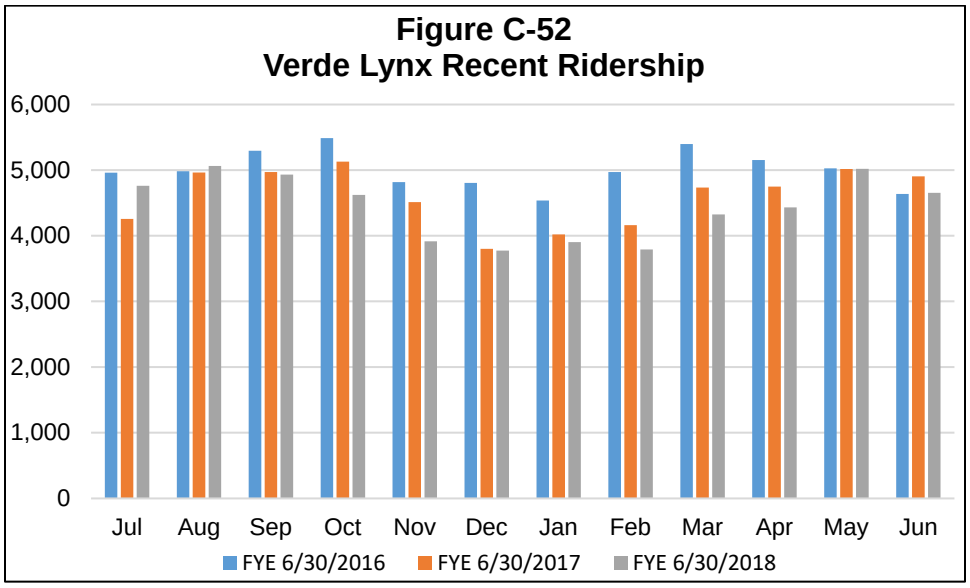
As shown in Figure C-51, ridership on the Verde Lynx route was highest during the Fiscal Year ending in June 2015, with approximately 63,000 passengers, and lowest during the Fiscal Year ending in June 2018, with approximately 53,000 passengers. Between the Fiscal Year ending in June 2015 and the Fiscal Year ending in June 2018, ridership on the Verde Lynx route decreased by approximately 16 percent.



Recent Ridership

It is important to look closely at ridership trends over the last three years to identify possible ridership changes based on route changes, economic influences such as increases in the price of gasoline, unemployment, or an economic downturn and its impact on the local economy. Figure C-52 illustrates the monthly ridership on the Verde Lynx route for the past three years. Monthly ridership was highest every month during the Fiscal Year ending in June 2016, with the exception of the months of August (when ridership was highest during the Fiscal Year ending in June 2018) and June (when ridership was highest during the Fiscal Year ending in June 2017).

Figure C-52
Verde Lynx Recent Ridership



Average Daily Boardings by Stop

Figure C-53 illustrates the average daily passenger boardings on the Verde Lynx route in Sedona for the month of September 2018. Daily averages were calculated assuming 30 operating days in September. The bus stops with the highest boarding volumes on the route are located in nearby Cottonwood, AZ and are not included in this analysis. Bus stops with the highest ridership include Outlaws BBQ (11 boardings), Arco/Bashas (10 boardings), Tlaquepaque North (nine boardings), Super 8 Motel (eight boardings), the Sedona car wash (seven boardings), Sedona Municipal Parking Lot (six boardings), and Soldiers Pass/Whole Foods (six boardings). The Sedona Medical Center, Arrow Rd, and Morgan Rd. bus stops all had less than one average daily boarding.

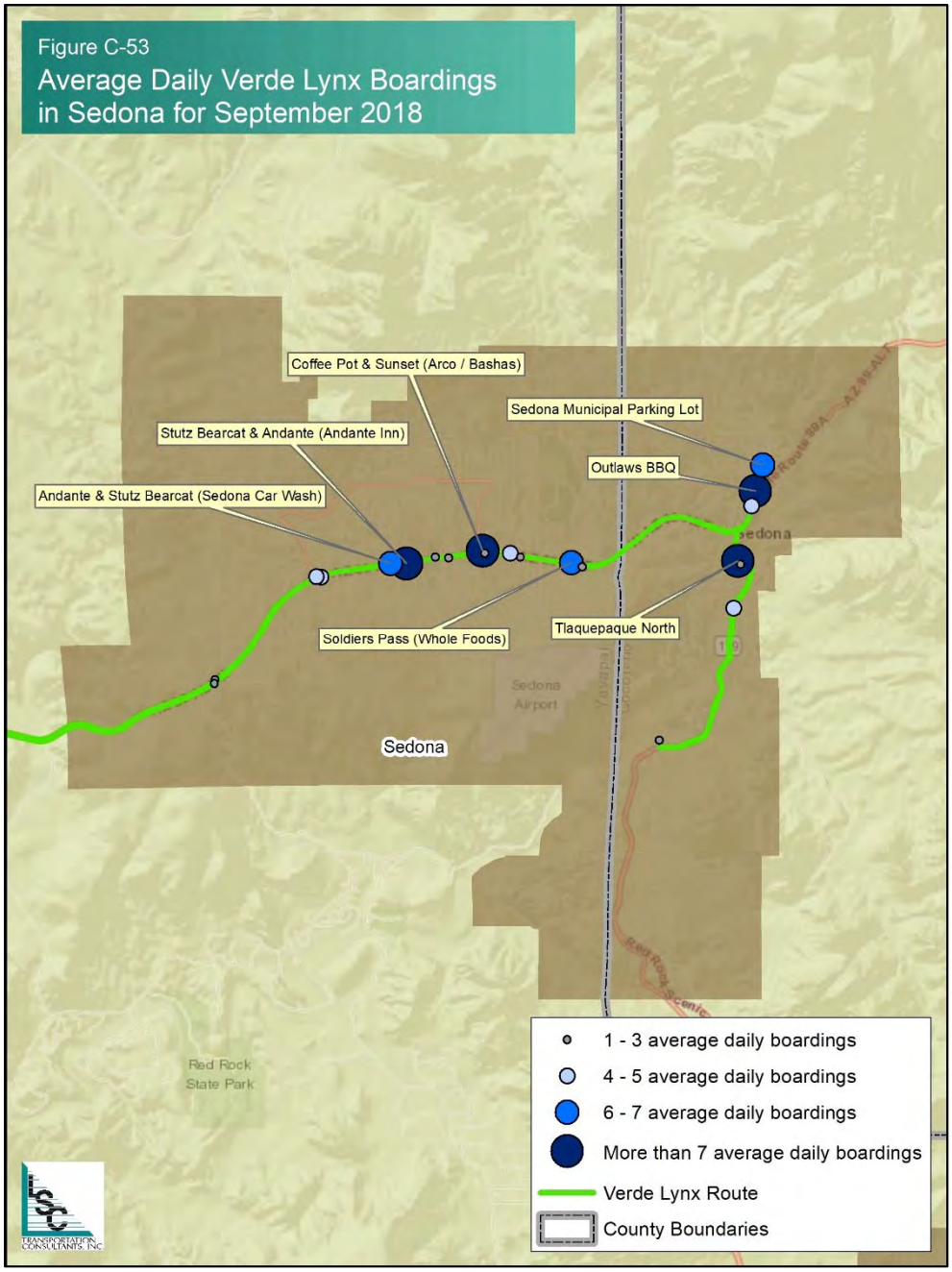
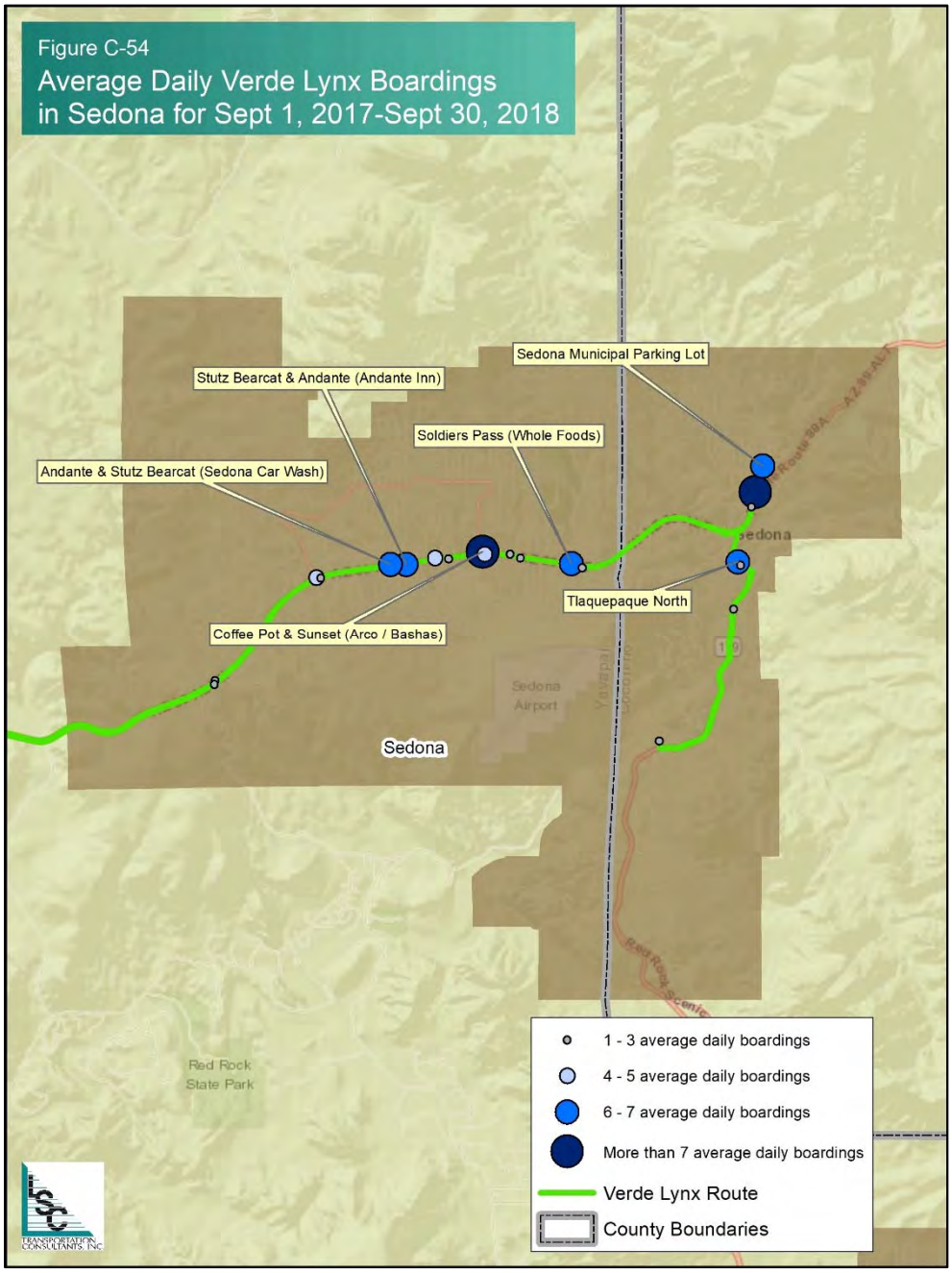


Figure C-54 shows the average daily passenger boardings on the Verde Lynx route in Sedona for the period between September 1, 2017 and September 20, 2018. Daily averages were calculated assuming 391 operating days during this span. The bus stops with the highest boarding volumes on the route are located in nearby Cottonwood, AZ and are not included in this analysis. Bus stops with the highest ridership include Outlaws BBQ (nine boardings), Arco/Bashas (nine boardings), Sedona Municipal Parking Lot (six boardings), Super 8 Motel (nine boardings), Sedona Car Wash (six boardings), Tlaquepaque North (six

boardings), and Soldiers Pass/Whole Foods (six boardings). The Sedona Medical Center, Arrow Rd, Cooper Cliffs, and Morgan Rd. stops all had less than one average daily boarding.



When comparing the bus stops with the highest boardings in September 2018 to the highest boardings between September 1, 2017 and September 30, 2018, the results are similar except for the stops at the Andante Inn and Tlaquepaque which both had higher numbers of boardings in September 2018.

Financial Review

An essential element of operating and sustaining transit service is a review of the financial characteristics of the system presented in this section.

Revenues

The revenue required to operate CAT services come from a variety of sources consisting of grants from ADOT, local community contributions from Clarkdale, Sedona, and Yavapai County, fare box revenues, and other sources. Total CAT operating revenue for the Fiscal Year Ending in June 2017 was approximately $1,357,000, as shown in Table C-22. Approximately one-third of CAT total revenues, were for the Verde Lynx route, while the remaining two-thirds, were revenues for CAT's local services. The largest revenue sources were ADOT grants which totaled almost a million dollars, with approximately $738,000 for CAT local services and $241,000 for Verde Lynx.

Table C-22
CAT Revenue Sources

Revenue Source	Actual FYE 6/30/17 Amount	Percentage
CAT Local Services (Account 15-1520)		
ADOT Grant	$737,716	54%
Yavapai County	$20,645	2%
Clarkdale	$24,650	2%
Fare Box	$115,779	9%
Fare Box - CSA CDBG	$12,492	1%
Other Income	$800	0.1%
Subtotal:	*$912,082*	*67%*
Verde Lynx (Account 15-1530)		
ADOT Grant	$240,829	18%
Sedona	$125,539	9%
Fare Box	$78,731	6%
Subtotal:	*$445,099*	*33%*
CAT Total Revenues:	**$1,357,181**	**100%**

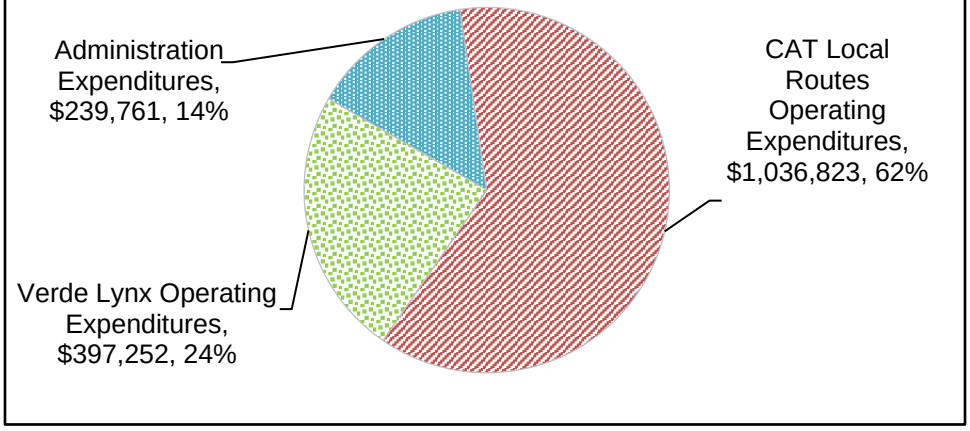
Source: CAT, 2018.

Expenditures

Total CAT operating expenditures for the Fiscal Year Ending in June 2017 were approximately $1,674,000. As shown in Figure C-55, approximately 14 percent of CAT expenditures were administration costs, 24 percent were Verde Lynx

operating expenditures, and 62 percent were expenditures for CAT's local services.

Figure C-55
CAT Expenditures



Cost Allocation Model

A cost allocation model provides base information by which current operations can be evaluated. In addition, the model is useful for estimating cost ramifications of proposed service changes.

Cost information from the Fiscal Year Ending in June 2017 was used to develop a two-factor cost allocation model of the current CAT operations. In order to develop such a model, each cost line item is allocated to one of two service variables—hours and miles and fixed costs. Fixed costs are those costs that are identified as being constant and do not increase or decrease based on the level of service. This is a valid assumption for the short term, although indirect costs could change over the long term as thresholds or "break points" are met or exceeded. Examples of the cost allocation methodology include allocating fuel costs to vehicle-miles and allocating operator salaries to vehicle-hours. The total costs allocated to each variable are then divided by the total quantity (i.e., total revenue-miles or vehicle-hours) to determine a cost rate for each variable. The cost allocation model for CAT is shown in Table C-23.

Table C-23 CAT Cost Allocation Model					
PROPOSED ACCOUNT	**Actual FY 6/30/17**		**Vehicle-Hours**	**Vehicle-Miles**	**Fixed Costs**
Admin - Salaries/Insurance/Retirement	$129,055				$129,055
Operating - Salaries/Insurance/Retirement	$955,129		$955,129		
Supplies, Building Maintenance, Furnishing/Equipment	$181,661				$181,661
Contractual Services	$20,824				$20,824
Advertising	$13,953				$13,953
Travel/Training	$3,972				$3,972
Vehicle/Radio Maintenance, Tools	$214,593		$214,593		
Fuel/Oil	$119,438			$119,438	
Liability Insurance	$35,211				$35,211
TOTAL OPERATING COSTS	**$1,673,836**		**$1,169,722**	**$119,438**	**$384,676**
Service Variable Quantities			veh-hrs	veh-mls	Fixed-Cost
Used for Planning Purposes			23,485	417,644	Factor
			$49.81	**$0.29**	**1.30**
Source: CAT, 2018					

The allocation of costs for the Fiscal Year Ending in June 2017 bus service yields the following cost equation for existing operations:

Total Cost = $384,676 + ($49.81 x Vehicle Revenue-Hours) + ($0.29 x Vehicle Revenue-Miles)

OR

Total Cost = ($49.81 x Vehicle Revenue-Hours) + ($0.29 x Vehicle Revenue-Miles) x Fixed Cost Factor (1.30)

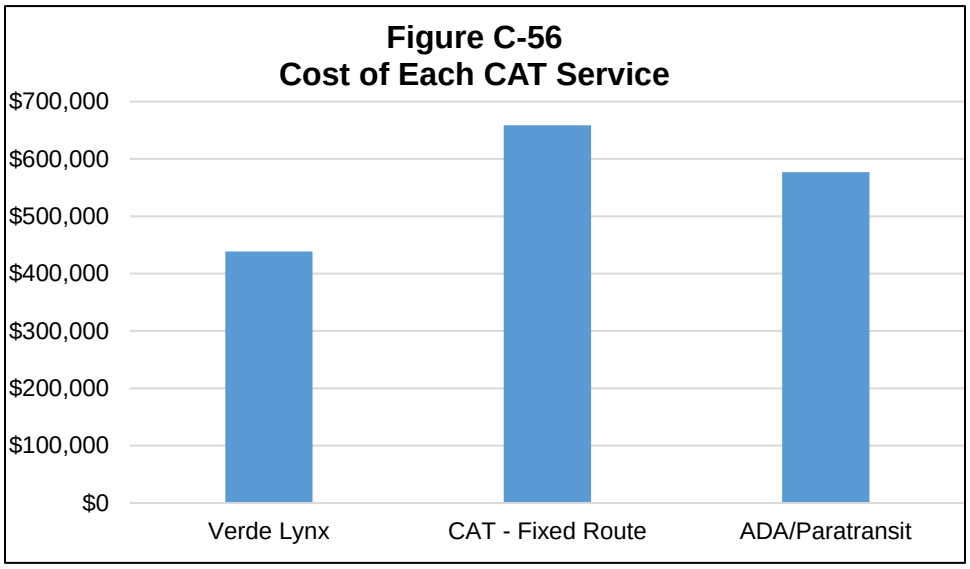
Incremental costs such as the extension of service hours or service routes/areas are evaluated considering only the mileage and hourly costs:

Incremental Costs = ($49.81 x Vehicle Revenue-Hours) + ($0.29 x Vehicle Revenue-Miles)

Cost of Each CAT Service

Using the cost allocation model for CAT services, the approximate cost for the Verde Lynx route during the Fiscal Year ending in June 2017 was $438,000, as shown in Figure C-56. The approximate cost for CAT Fixed-Route services was

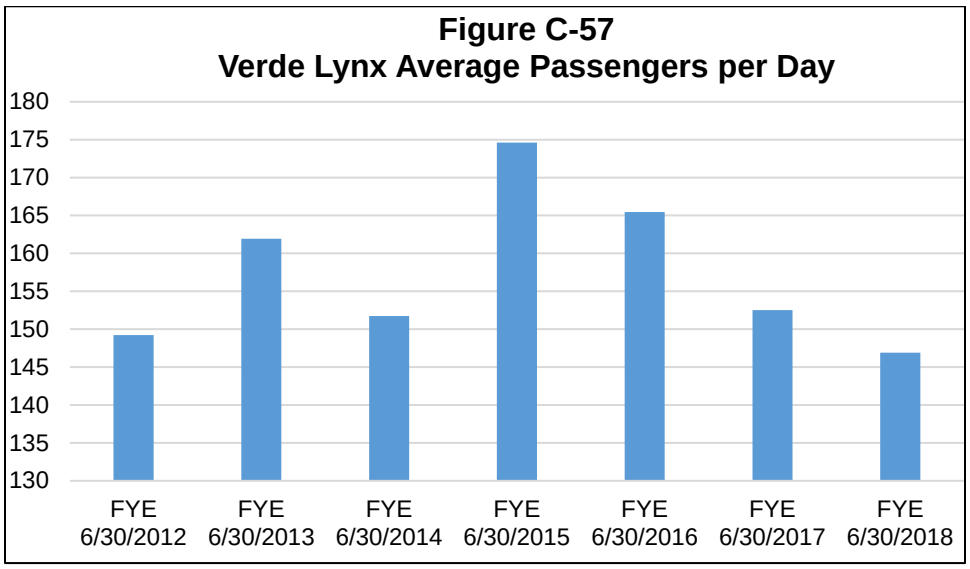
$659,000 and the approximate cost for the ADA/Paratransit services was $577,000.



Performance

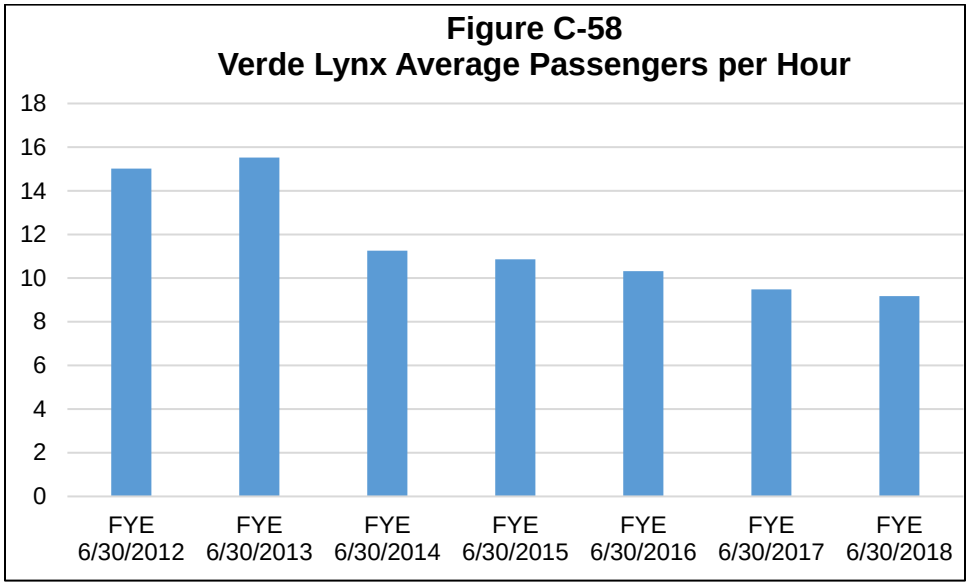
Passengers per Day

Figure C-57 illustrates the average number of passengers riding Verde Lynx per day over the past seven years. The average number of passengers riding Verde Lynx per day was highest during the Fiscal Year ending in June 2015, with approximately 175 passengers per day. The average number of passengers riding Verde Lynx per day was lowest most recently, during the Fiscal Year ending in June 2018, with approximately 147 passengers per day.



Passengers per Hour

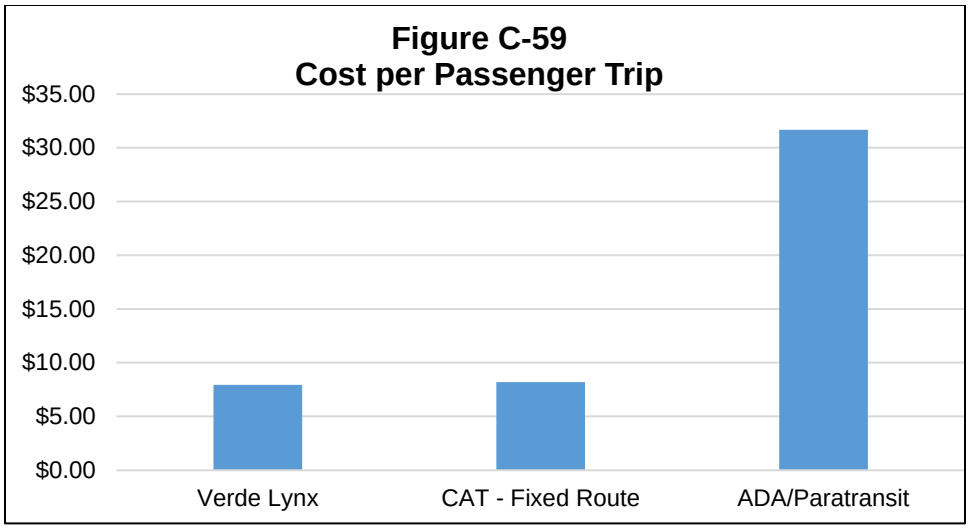
Figure C-58 illustrates the average number of passengers riding Verde Lynx per hour over the past seven years. The average number of passengers riding Verde Lynx per hour was highest during the Fiscal Year ending in June 2013, with approximately 16 passengers per hour. The average number of passengers riding Verde Lynx per hour was lowest most recently, during the Fiscal Year ending in June 2018, with approximately nine passengers per hour.



Cost per Passenger Trip

During the Fiscal Year ending in June 2017, CAT's system had an average cost per passenger of $10.88, slightly less than the average cost per passenger of $10.96 during the Fiscal Year ending in June 2016.

As shown in Figure C-59, during the Fiscal Year ending in June 2017, the Verde Lynx route had an average cost per passenger of $7.94, while the CAT Fixed-Route services had an average cost per passenger of $8.20 and the ADA/Paratransit services had an average cost per passenger of $31.66.



CHAPTER SUMMARY

Chapter C presented the community conditions, demographics, and local travel patterns for the study area, evaluated visitor activity within the study area, and provided a brief overview and analysis of the Verde Lynx route operated by CAT.

Key findings from Chapter C include:

- Sedona is a small city with a low resident population and a high visitor population, and due to the nature of the community, it is challenging to find a reasonable comparison to other communities.
- Sedona has a significantly higher older-adult population (38.3 percent) and the percentage of Sedona's seasonal residents is increasing.
- The unemployment rate of the study area is approximately 6.9 percent, slightly lower than the five-year average unemployment for the State of Arizona (eight percent).
- Only 21 employees (less than one percent) in the study area workforce reported using public transportation.
- Sedona is an employment center in the region and has a significantly higher inflow than outflow of workers. Approximately 74 percent of Sedona's workforce do not live in Sedona and about 61 percent of Sedona's residents do not work in Sedona.
- As of May 2018, there are approximately 4,000 hotel and timeshare rooms located within and outside of the City of Sedona.
- The average hotel occupancy rate in Sedona has been increasing and was 67.4 percent during the first half of FY 2018 while the average daily hotel room rate remained constant at $211 between FY 2017 and the first half of FY 2018.

- The number of visitors to the study area is significant – During peak periods the population in Sedona can increase by approximately 53 percent to approximately 28,000 people.
- Visitors to Sedona tend to be older adults in groups of one to two people and have a high annual household income.
- Visitors tend to stay in hotels and motels, but the number of visitors staying in Airbnb and vacation rentals has been increasing and results in a lack of affordable housing in the area. Recent state legislative action may accelerate this trend.
- The number of respondents using a personal car to visit Sedona has been decreasing while the number using a rental car has been increasing. The vast majority of visitors arrive either by personal car or rental car, which may impact potential transit usage.
- The most popular months to visit are March through July and September and October.
- In 2017, the median length of visitor trips to Sedona was 3.3 days, and day visitors accounted for 23 percent of all visitors.
- The most popular activities visitors indicated they participated in include shopping, dining, sightseeing, and hiking/biking. It is notable that both shopping and dining ranked higher than hiking, biking, or going to rivers/lakes.
- There were approximately 1,728,000 trail visitors to the Red Rock Ranger District in 2015, and the most visited trails were Bell Rock Pathway, Cathedral Rock, and West Fork.
- Visitors' favorite qualities about Sedona are the scenic beauty, the weather, and shopping while the least favorite include parking, traffic, and overcrowding.
- Visitors identified parking and overcrowding as serious problems to the park conditions of Slide Rock State Park.
- Verde Lynx Route:
    - Ridership has decreased by approximately 16 percent from FY 2014/2015 to FY 2017/2018.
    - The approximate cost for the Verde Lynx route during FY 2016/2017 was $438,000.
    - Verde Lynx's average passengers per hour has been decreasing and was nine passengers per hour during FY 2017/2018.
    - During FY 2016/2017, the Verde Lynx route had an average cost per passenger of $7.94.

Chapter D

TRANSPORTATION
CONSULTANTS, INC.

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CHAPTER D

Stakeholder and Community Input

Chapter D presents the input gathered from stakeholders and the community through interviews, a community open house, and surveys.

PUBLIC OUTREACH

Table D-1 lists the stakeholders we have talked to, including representatives from partner organizations, elected officials, the business community, recreation, Oak Creek Canyon, and others.

What We Have Heard

Is There a Need for a Visitor-Oriented Shuttle Service in the Sedona-Oak Creek Canyon Area?

There is a strong consensus that "something" needs to be done in order to address Sedona's growing traffic congestion, reduce parking congestion at trailheads, improve the visitor experience and provide employee transportation.

- Traffic backups have steadily gotten worse over the past 6 years and now pose safety risk and quality of life issue for Oak Creek Canyon home owners. *Oak Creek Canyon Resident*
- Horror stories of weekend traffic requiring hours to go short distances between VOC, Sedona, and the Canyon. *Numerous Residents*
- Hiking and biking are the main reasons people come to Sedona. Trailheads are all over the city. There is not enough parking at the trailheads so people park in the neighborhoods blocking local streets. *City Councilor*
- I hear a lot of complaints about parking and access – 99 percent relating to the Canyon area north of Sedona. *Outdoor Coordinator for REI*
- Biggest transportation issue in Sedona from Forest Service perspective is negative impact of traffic on the visitor experience. *Forest Service Representative*
- Transit may be the "only answer" to the traffic and congestion issues. Oak Creek Canyon area is highest priority/need but the backups are going all the way out to VOC and beyond, so it is an issue for all. *County Supervisor*
- Employee transportation is a critical concern for businesses in VOC. One sick employee who is the driver in a carpool can mean that you lose four staff people. *Hotelier in VOC*

Table D-1
Stakeholder Outreach

Type of Stakeholder	Name	Position, Organization
Partners		
	Karen Osburn	Assistant City Manager / Community Development Director, City of Sedona
	Cynthia Lovely	Senior Planner, City of Sedona
	Justin Clifton	Sedona City Manager ◆
	Stephen Craver	Engineering Supervisor, City of Sedona
	Bruce Morrow	Transit Manager, City of Cottonwood ◆
	Rudy Rodriguez	Deputy City Manager, City of Cottonwood ◆
	Tim Dalegowski	Transportation Planner, Coconino County Public Works
	Sara Allred	Program Manager, Transit, ADOT
	Audra Merrick	District Engineer, ADOT
	Dallas Hammit	State Engineer, ADOT ◆
	Mel Green, M.A., CPRP	Operations Manager, Arizona State Parks & Trails ◆
	James Meza	Hydrologist, Arizona State Parks & Trails
	Keith Ayotte	Arizona State Parks & Trails ◆
	Hank Vincent	Park Manager, Slide Rock State Park ◆
	Nicole Branton	District Ranger, Forest Service, Red Rock Ranger District, Coconino National Forest ◆
	Adam Barnett	Recreation and Wilderness Program Manager, Red Rock Ranger District ◆
	Aaron Mayville	Deputy Forest Supervisor
	Jennifer Wesselhoff	President/CEO, CDME, Sedona Chamber of Commerce & Tourism Bureau ◆
	Kris Kazian	Fire Chief, Sedona Fire District
Elected Official		
	Sandy Moriarty	Mayor
	John Martinez	Vice Mayor
	John Currivan	City Councilor
	Scott Jablow	City Councilor
	Jon Thompson	City Councilor
	Jessica Williamson	City Councilor
	Randy Garrison	Yavapai County Supervisor
	Tom Thurman	Yavapai County Supervisor
	Matt Ryan	Coconino County Supervisor
	Keith Brekhus	Constituent Service Representative
	Tom O'Halloran	Congressman
Business Community		
	Jennifer Wesselhoff	Sedona Chamber of Commerce and Tourism Bureau, Executive Director
	Steve Segner	El Portal Hotel Owner and Lodging Council Chair
	Wendy Lippman	Tlaquepaque, General Manager/Partner & Sedona Gallery Association
	Jesse Alexander	Sedona Trolley/Sedona Center Properties, COO
	Dave Swartwout	Safari Jeep Tours
	Al Comello	Comello Media
	Linda Goldenstein	Goldenstein Gallery
	Lodging Council:	
	Holiday Inn Express	
	Marriott Residence Inn	
	Sedona Rouge	
	L'Auberge	
	Lonnie Lillie	
	Greg Stevenson	The Hike House
	Eben and Ali Hartzenber	Bennalli's
	Rob Arbogast	Sedona Outdoors
Recreation		
	Mike Rainey	Over the Edge Bikes
	Kevin Adams	Red Rock Trail Fund
	Dr. Curtis Kommer	Red Rock Trail Fund
	Michael Yarbrough	President, Keep Sedona Beautiful
	Justin Inglis	Outdoor Programs and Outreach Coordinator, REI
Oak Creek Canyon		
	Marcie Ellis	Traffic Matters – Action Committee for Oak Creek Canyon
	W. M. Stalcup	Traffic Matters – Action Committee for Oak Creek Canyon
	Mary Garland	Traffic Matters – Action Committee for Oak Creek Canyon
	Max Licher	Architect
Other		
	Dennis Dearden	Superintendent, Sedona Oak Creek School District
	Janeen Trevelyan	Heritage Museum Volunteer
	Christopher Fox Graham	Editor, Red Rock News

Note:

◆ *Denotes stakeholder interviews with partner agencies in addition to TAC meetings.*

Who Should the Shuttle Serve?

There are a variety of target groups that might be served by a transit service. There were mixed views about the willingness of different market segments to leave their cars and use a shuttle.

Overnight Visitors

- **Hotel Guests**: There was generally a feeling that overnight visitors staying in hotels are the "low hanging fruit" for a shuttle service. Many hotels are located along the major highways and could be easily served; visitors can leave their vehicles at the hotel parking lot; and the hoteliers expressed a strong willingness to promote the service to their guests.
- **International Visitors:** Hoteliers mentioned that international visitors often arrive without a vehicle (via Arizona Shuttle) and would welcome a shuttle that served major destinations. They currently have to hire someone to drive them.
- **Airbnb Guests:** The proliferation of short-term rentals, particularly in West Sedona, was a topic that came up repeatedly during the outreach. It was noted that these guests would be much harder to serve with a shuttle since they are widely dispersed and not necessarily near the highway. They would need to drive to a Park-n-Ride or collector point to access a shuttle, or would need to be served by a demand response type service.
- **VOC Visitors:** There are a growing number of hotels in the Village of Oak Creek and a desire for a transportation service that would link them with Sedona and Oak Creek Canyon.
- **Campers:** Most input was that campers would be unlikely to use a shuttle service to any significant extent.

Day Visitors

Sedona and Oak Creek Canyon get a large number of day visitors from Phoenix, and to a somewhat lesser degree from Flagstaff. The Phoenix visitors contribute to the traffic from the freeway north, while the Flagstaff visitors contribute to the traffic in the Canyon. It was generally perceived that it would be more difficult to get these visitors to leave their cars and use a shuttle, particularly since they are often traveling with a lot of gear (ice chests, grills, etc.).

- **From Phoenix:** Participants discussed the potential for Park-n-Rides around the Red Rock Ranger Station, in the Village of Oak Creek and/or in uptown Sedona to intercept these visitors and get them on a shuttle before they reach the most congested areas.

- **From Flagstaff:** Day visitors from Flagstaff would need to be intercepted at the Overlook before entering Oak Creek Canyon. This was an audience of concern primarily to Oak Creek Canyon residents who feel that many NAU students and Grand Canyon visitors access the area from this direction.
- **Sightseers:** A subset of day trippers is those who wish to drive through the Canyon and take photos, but not actually stop anywhere. There was a suggestion that this type of visitor would be unlikely to use a destination-oriented shuttle, but might be served by a private sightseeing shuttle.

Tourism Industry Employees

Many tourism industry employees in Sedona currently use the Verde Lynx to commute from Cottonwood. This service was highly regarded by business representatives, and the planned expansion to later hours was welcomed. However, hoteliers in the Village of Oak Creek argued strongly for a service that would get employees from Cottonwood (and Camp Verde) to VOC. Other employers noted the need for more stops in Cottonwood, so that employees wouldn't have to drive or use a second bus route to get to the Verde Lynx stop. Some Sedona employers shuttle their own employees from Cottonwood or provide a van for them to drive. It was generally believed that the proposed shuttle service should meet the needs of employees as well as visitors.

Local Residents

During the outreach effort, we were repeatedly cautioned "not to forget the local residents." While most residents acknowledged that it would be difficult to get people out of their cars for day to day activities, they thought that residents should have an option. The times when residents would most likely use a shuttle would be to access trailheads where parking is limited, to attend festivals or special events in uptown or to go out in the evening without the concern of drinking and driving. A few participants discussed the need for transportation that would serve the aging population, providing easy access to grocery stores and medical facilities. It was generally acknowledged that this might need to be a demand response service in order to reach into the neighborhoods.

Where Should the Shuttle Go?

Broad input indicates that the transportation service needs to be relatively comprehensive – serving hotels, commercial destinations and trailheads

throughout Sedona, VOC and Oak Creek Canyon. It was repeatedly noted that it needs to be different than the prior RoadRunner service which served only a very limited area in the core Uptown to Hillside area.

- **Key Trailheads & Recreation Areas:** The single most common answer to the question of where the shuttle should serve was trailheads. Both locals and visitors use the trailheads throughout Oak Creek Canyon and West Sedona, resulting in congestion and spillover parking on the roadside and in neighborhoods. Among the most frequently mentioned locations were:

    - Oak Creek Canyon: West Fork, Slide Rock State Park, Grasshopper
    - West Sedona: Airport Overlook, Devil's Bridge, Dry Creek
    - South to Ranger Station: Cathedral Rock Trailhead, Bell Rock

The strong support for serving the destinations described above is somewhat complicated by the concerns of the Forest Service and State Parks regarding capacity of the various recreation areas. Up to this point, capacity has been (somewhat) constrained by parking. There is some fear that providing shuttle access (without truly reducing parking) will overload popular trails and destinations.

- **Uptown Sedona and Tlaquepaque:** For many day visitors these are the primary destinations. For longer term visitors they are important destinations for shopping and dining.

One business owner suggested a hop on-hop off service that would connect a few popular day-tripper destinations including uptown, Tlaquepaque and the Airport Overlook.

- **Hotels:** It was frequently noted that if overnight visitors are going to use the service, it has to serve the hotels throughout the service area in a convenient manner. There are significant concentrations of hotel rooms in:
    - Uptown Sedona and Hillside area
    - West Sedona
    - Village of Oak Creek
- **Park-n-Ride Lots:** Appropriately located shuttle pickup points with parking will be important to attract overnight visitors staying in short term

rentals and hotels not served by the shuttle system. They will also be critical in facilitating use by day visitors arriving from the south, west or north.

Desired Characteristics of the Shuttle Service

Asked what characteristics would make the shuttle service attractive to potential riders, stakeholders and residents noted the following factors:

- **Frequent:** The service needs to be frequent in order to be convenient. Asked how frequent, most people said every 15-30 minutes, possibly every hour in outlying areas. A few individuals argued for on-demand service that would come when requested, but most thought a predictable frequent schedule was preferable.
- **Hours:** Participants noted that the hours of the service need to accommodate various activities:
    - Outdoor activities: Sunrise to sunset – varying with the season.
    - Dining: late enough in the evening for people to go out for dinner and drinks
    - Working: service workers require service from early morning (6 a.m.) until the bars and restaurants close (11 p.m.)

  It was noted that service levels might need to vary with season and with weekday versus weekend.
- **Stay Primarily Along Highways:** Asked if bus stops should be primarily along the highway or include deviations into neighborhoods, views were somewhat mixed. Most people felt that for convenience, ease of understanding and speed of travel, the shuttle should primarily serve stops along 179 and 89A. This would provide easy access to most hotels and key destinations. However, serving trailheads in West Sedona will require going off the highway and into the neighborhoods. Some participants felt that a different type of service (demand response) would be needed for the trailheads.
- **Fare Free or Low Cost:** Most input indicated that a free service would be the most attractive and most likely to reduce traffic, if it could be afforded. It was noted that any fare could present a barrier to use and that this was particularly true for families or groups who would have to pay multiple fares. One alternate view was that, if there were virtually no parking allowed in Oak Creek Canyon, pricing of the Canyon shuttle could be used to limit demand.
- **Vehicles:** There was a strong consensus for vehicles very different than the RoadRunner trolleys. Key attributes that participants suggested for the vehicles included:
    - Green Vehicles: Electric or other low emission vehicles.

- Bike Racks: Recreation groups and businesses said it is critical that the vehicles provide capacity for as many bikes as practical since Sedona has become a mountain biking destination.
- Room for Gear: It was repeatedly noted that visitors bring a lot of gear with them when going to recreation sites and that the shuttles need to provide room for it.
- Right-sized: There was general consensus that smaller vehicles are more desirable – however they need to be large enough to accommodate families and group traveling together (average group at Slide Rock is 5+) and to allow for bikes and gear.

- **Easy to Understand:** Hoteliers in particular noted the need for the service to be easy to understand and promote to tourists. This includes clear signage and wayfinding, easy to read maps, predictable schedules, and real time information via app or at stop displays.
- **Boldly Branded/Promoted by Businesses:** The shuttle needs to be clearly branded and aggressively promoted. One hotelier advocated for a clear, identifiable branding (like Pink Jeeps), while another stakeholder suggested that the style needs to be "Enviro-Chic." Hoteliers represented at the Lodging Council expressed strong willingness to play a key role in promoting the service.
- **Education and Information:** The Forest Service, Park Service and businesses saw the shuttle as an opportunity to provide information and educate visitors. Specific comments related to GPS activated announcements about the area and educational messages about protecting the natural environment and leaving no trace.

Key Issues to be Addressed in Service Design

The limited road network in the Sedona-Oak Creek Canyon area makes the route design seem somewhat obvious – three legs serving Ranger Station to Uptown, Uptown to West Sedona and Uptown north through Oak Creek Canyon. However, there are three issues which must be addressed:

Locations for Park-n-Ride Lots

It would be desirable to have Park-n-Rides at the points where visitors enter the service area from the south, west, and north. Identifying and securing these locations will be critical to the service design. Suggestions for potential destinations included:

- **South:** Red Rock Ranger Station or Outlet Mall in VOC
- **Central:** Uptown Sedona – public parking lots/Jordan road location or lot by Tlaquepaque – potential for parking garage
- **West:** Land adjacent to waste-water facility or Cultural Park in West Sedona
- **North:** Overlook parking lot at the north end of Oak Creek Canyon

Two of the suggested parking locations belong to the Forest Service. The Deputy Superintendent notes that park and ride on Forest Service land is "uncommon, but not unheard of."

How to Serve Trailheads in Neighborhoods

As previously noted, many of the popular trailheads are located in neighborhoods and at some distance from the highway. How to serve these locations with a shuttle is a question that came up repeatedly during the outreach. Some advocated for a separate demand response service.

Bus Stops Locations Along Highway

The shuttle is likely to operated largely on state highways 179 and 89A. Stakeholder noted that identifying convenient stop locations, on or off the highway, will be a key part of the service design challenge.

Traffic - Impact on Bus Schedule

It was commented frequently that the shuttles are likely to be "stuck in traffic" and unable to stay on a schedule. Finding ways to overcome this (by staging extra buses) was considered critical to creating a reliable system – otherwise people would be waiting for long periods and would give up.

Other Challenges to be Addressed in Implementing a Shuttle Service

Other challenges to implementation that were addressed by stakeholders included:

Governance Structure

Who will govern and who will operate the shuttle service were topics that were discussed by stakeholders but without a clear opinion about the appropriate direction. Some assumed that the shuttle would be an extension of the Verde

Lynx operated by Cottonwood. Others thought that an entirely separate operation would be needed. The number of jurisdictions involved – City of Sedona, Yavapai and Coconino Counties, Forest Service and State Parks – suggests the potential for some kind of joint powers authority or transit district.

Funding

Most respondents assumed that funding the service would be difficult and would require a combination of funding sources. Specific comments relating to funding included:

- The service needs to serve both visitors and residents, but should be paid for by visitor taxes. *Sedona resident at Open House*
- Arizona has not previously provided rural transit funding (5311) for visitor-oriented services. *ADOT*
- The Chamber of Commerce is using a portion of their bed tax allotment to expand Verde Lynx service into the evenings and might play a role in funding the shuttle. *Chamber of Commerce*
- Funding will be a challenge. All of the buses, turnouts, bus stops, etc. will take a lot of money and who will pay for that? There is no money to do road widening or improvements. The fare will need to help pay for service. Private public partnerships will be critical. *Elected Official*
- Suggestion to ask hotels that have shuttles to pool resources to support citywide hotel shuttle. *Elected Official*

Actions on Forest Service lands will Require NEPA Review and Potential Permits

Many of the key destinations for the shuttle are located in or adjoining the Coconino National Forest. According to the Deputy Forest Supervisor, any action where "turning dirt" is required will necessitate a National Environmental Policy Act (NEPA) review. Other actions which don't involve construction, such as serving an existing Forest Service parking lot or dropping off near a Forest Service trailhead, may also require a NEPA review or at least a thorough capacity/impact study. Understanding and incorporating this NEPA or impact study process, and associated completion time, into planning the service is necessary. It could take 18-24 months to complete.

Forest Service permits are required for drop-offs on Forest Service sites or if the shuttle creates an impact to forest lands. Commercial vehicles (including taxis) are not allowed to drop people there.

Emergency Evacuation of Canyon in the Event of a Fire

Residents of Oak Creek Canyon and the Sedona Fire District have noted the need for a plan for how to evacuate shuttle-riders in the event of a fire or other emergency in the canyon.

Transit Is Only Part of the Solution

In speaking with elected officials, business owners, project partners and residents it was constantly made clear that transit alone cannot resolve the issues of traffic, congestion, and overcrowding that are at the heart of this project's objectives. Making real progress will require additional actions on the part of the City, DPS, Coconino National Forest and Arizona Parks.

Parking Limitation/Enforcement

The limitation of parking in Oak Creek Canyon and the enforcement of parking regulations both in the Canyon and at trailheads were seen as critical components of reducing traffic and congestion.

The current efforts by ADOT and the National Forest Service to block roadside areas currently used for parking are very welcomed by residents.

Other specific comments included:

- If people can continue to park illegally, they will. They need to be ticketed every time. *Sedona Resident.*
- Overflow parking in neighborhoods degrades the experience of both residents and visitors. There needs to be better signage and enforcement. (One respondent said they had counted 130 cars parked at Dry Creek as they walked a long distance to the trailhead. Other residents told of having hikers park on their private property.)
- There is only a single patrol officer assigned to the canyon. In a car, they are unable to get in to address the problem. They need to be on motorcycles. *Canyon Resident*

Capacity of Destinations

There is some concern from the National Forest Service, Arizona Parks, and residents that, without mitigating actions, a shuttle could simply add more people to already crowded trails and recreation areas. Possible actions which were suggested to improve access while protecting the natural resource included:

- Establishing capacity limitations for trails and enforcing those in ways other than by the number of parking places
- Potential reservation-based parking at Slide Rock, West Fork, and other locations.
- Policies/amenities at Slide Rock to reduce the amount of "stuff" that visitors bring – encouraging them to use the shuttle instead of driving.

Pedestrian Access in Canyon

Many people commented on the danger of walking along the road in Oak Creek Canyon and the lack of options for providing pedestrian access from a shuttle stop to other destinations. One stakeholder and canyon resident proposed that there be a continuous trail that parallels the road to allow hikers to walk without having to be on the roadway.

Fees for State Park and National Forest

Both Arizona Parks and the Coconino National Forest rely on vehicle-based fees for critical income. Slide Rock charges visitors $30 per car-load, while the Red Rock Pass is required for those parking in Forest Service recreation areas. A critical concern is how to protect income which is used to maintain and support the resources, while providing an incentive for visitors to use the shuttle. It was discussed that this may mean changing the way visitors pay for access to an individual-based, rather than vehicle-based, strategy.

Diversionary Signage at Freeway

There was much discussion of the plan for dynamic signage at the freeway to inform travelers about travel times through the canyon and to encourage through travelers to use the freeway route. Similar signage was suggested at perimeter

Park-n-Rides to let visitors know about parking limitations or reservation systems and direct them to the free parking/free shuttle.

Need for Comprehensive Solution in Order to Succeed

A number of stakeholders noted that the shuttle must be relatively comprehensive in nature, if it is to succeed. They noted that the RoadRunner, which was Phase 1 of a larger plan, was too limited to make a real difference and therefore easy for elected officials to eliminate even though it was accomplishing its limited objective.

- This system needs to implement enough of a change to significantly solve congestion in the corridor, or it will be ineffective and unused. This will require changing parking enough to force day trippers to use the shuttle. *Resident and Business Owner*
- Caution about trying to take on too much at once, but taking on only one part may not be enough because people may not see the success. *NAIPTA*
- While the service needs to be designed primarily for visitors, it needs to be broad enough to provide a benefit for residents too. Otherwise they will resent "their tax dollars" paying for it. *Media Representative*
- There were a number of comments about making the service truly regional – providing links to Flagstaff and other Verde Valley communities.

Public Outreach Summary

The public outreach effort consisted of talking to a variety of stakeholders including representatives from partner organizations, elected officials, the business community, recreation, and Oak Creek Canyon. Key findings from the discussions included:

- There is a strong consensus that "something" needs to be done in order to address Sedona's growing traffic congestion, reduce parking congestion at trailheads, improve the visitor experience and provide employee transportation.
- There are a variety of target groups that might be served by a transit service and there were mixed views about the willingness of different market segments to leave their cars and use a shuttle.
    - General belief that overnight visitors staying in hotels are the "low hanging fruit" for a shuttle service.

- International visitors often arrive without a vehicle and would welcome a shuttle that served major destinations.
- Airbnb guests would be much harder to serve with a shuttle since they are widely dispersed and not necessarily near the highway.
- Visitors staying at hotels in the Village of Oak Creek would desire a transportation service that would link them with Sedona and Oak Creek Canyon.
- Campers would be unlikely to use a shuttle service to any significant extent.
- It was generally perceived that it would be more difficult to get daytrip visitors to leave their cars and use a shuttle, as they are often traveling with a lot of gear.
- Park-n-Rides may be an option to intercept some daytrip visitors and get them on a shuttle before they reach the most congested areas.
- It was generally believed that the proposed shuttle service should meet the needs of employees as well as visitors.
- While most residents acknowledged that it would be difficult to get people out of their cars for day-to-day activities, they thought that residents should have an option to use local transportation. It was generally acknowledged that this might need to be a demand response service in order to reach into the neighborhoods.

- Broad input indicates that the transportation service needs to be relatively comprehensive, serving hotels, commercial destinations, and trailheads throughout Sedona, VOC, and Oak Creek Canyon, and it needs to be different than the limited area the prior RoadRunner service operated.
  - Key trailhead locations to serve included: Oak Creek Canyon (West Fork, Slide Rock State Park, Grasshopper), West Sedona (Airport Overlook, Devil's Bridge, Dry Creek), and South to Ranger Station (Cathedral Rock Trailhead, Bell Rock).
  - Key shopping and dining locations to service included: Uptown Sedona and Tlaquepaque.
  - The transit service needs to serve the concentrations of hotels located in uptown Sedona and the Hillside area, West Sedona, and the Village of Oak Creek.
  - Appropriately located shuttle pickup points (Park-n-Rides) will be important to attract overnight visitors staying in short-term rentals and hotels not served by the shuttle system.

- The most important characteristics that would make the shuttle service attractive to potential riders, stakeholders, and residents included:
    - Frequency – the majority of people said every 15-30 minutes, possibly every hour in outlying areas.
    - Service Hours – needs to accommodate a variety of users, including outdoor activity participants (sunrise to sunset), people dining (late enough in the evening for people to go out for dinner and drinks), and workers who are commuting (early morning until late evening).
    - Roads - the majority of people felt that for convenience, ease of understanding and speed of travel, the shuttle should primarily serve stops along 179 and 89A.
    - Fares - the majority of people indicated that a free service would be the most attractive and most likely to reduce traffic, if it could be afforded.
    - Vehicles – many people felt that green vehicles were needed, along with appropriately sized vehicles that could accommodate bike racks and room for gear.
    - The shuttle service should be easy to understand in order to promote it to tourists.
    - The shuttle needs to be clearly branded and aggressively promoted.
    - The shuttle is an opportunity to provide information and educate visitors about protecting the natural environment.

- It would be desirable to have Park-n-Rides at the points where visitors enter the service area from all directions. These locations include the Red Rock Ranger Station or Outlet Mall in VOC (south), public parking lots/Jordan road location or lot by Tlaquepaque in Uptown Sedona (central), land adjacent to waste-water facility or Cultural Park in West Sedona (west), and overlook parking lot at the north end of Oak Creek Canyon (north).

- Identifying convenient bus stop locations, on or off the state highways 179 and 89A, will be a key part of the service design challenge.

- The shuttles will need to be able to stay on a schedule and be reliable despite the existing traffic.

- Other challenges to implementation that were addressed by stakeholders included governance structure, funding, NEPA review and potential permits for actions on Forest Service lands, emergency evacuation of Oak Creek Canyon in case of a fire, transit alone cannot resolve the traffic and congestion issues, parking limitation and enforcement in Oak Creek Canyon, capacity of destinations, pedestrian access in Oak Creek Canyon,

fees for State Park and National Forest, diversionary signage at the freeway, and need for comprehensive solution in order to succeed.

CHAMBER VISITOR SURVEY

The Sedona Chamber of Commerce and Tourism Bureau collects survey data from visitors who request information. Data were collected using a web-based survey which was sent to individuals who requested the Chamber's E-Newsletter. Between May 1, 2018 and August 17, 2018, a total of 2,066 survey responses were received. Key findings from analyzed data are summarized in the following pages.

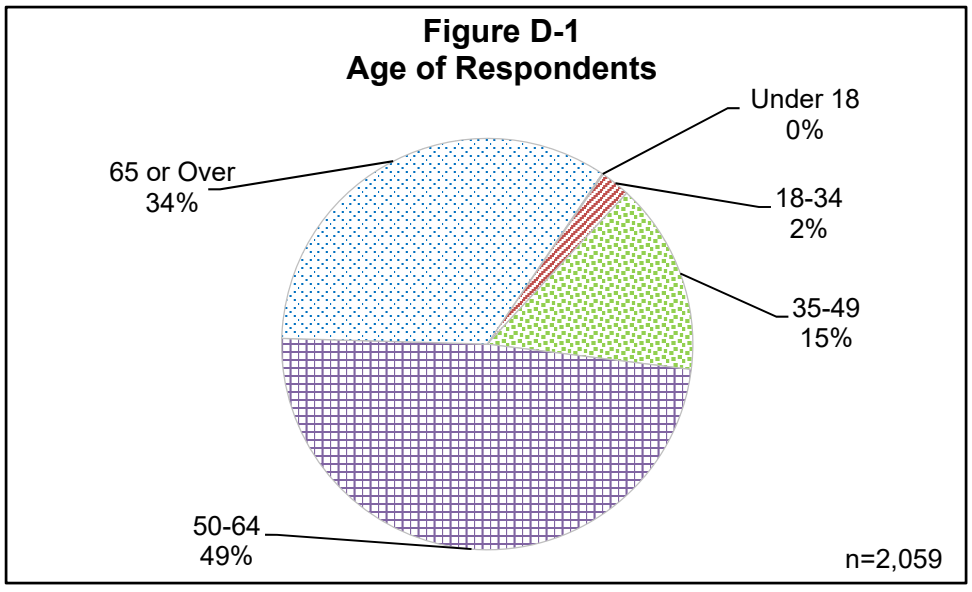
Residence Location

Survey respondents indicated they resided in each of the 50 U.S. States and the District of Columbia. The top five most frequent residence locations included California (190 responses, 10 percent of all responses), Illinois (121 responses, six percent of all responses), Florida (116 responses, six percent of all responses), Arizona (110 responses, six percent of all responses), and New York (104 responses (five percent).

Age of Respondents

As shown in Figure D-1, the majority of respondents (82 percent) were over the age of 50, with 49 percent being between the ages of 50 and 64 and 34 percent being age 65 or older. Approximately two percent of respondents were age 34 or younger.

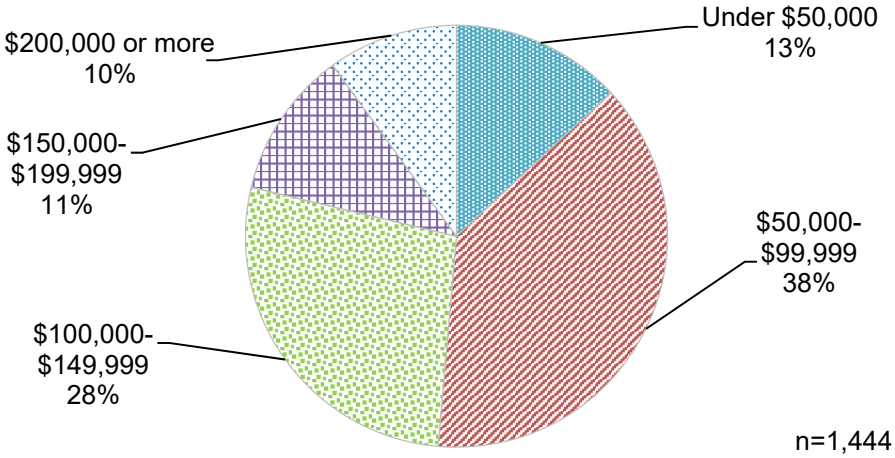
Figure D-1
Age of Respondents



Annual Household Income

Slightly more than half of respondents reported an annual household income under $100,000, while the other half of respondents indicated an annual household income over $100,000. As shown in Figure D-2, most respondents indicated their annual household income was between $50,000 and $99,999 (38 percent), followed by $100,000 to $149,999 (28 percent), and under $50,000 (13 percent).

Figure D-2
Annual Household Income



Previous Visits to Sedona

Respondents were asked to indicate if they have previously visited Sedona. Approximately half of respondents (51 percent) indicated that they have previously visited Sedona, while the other half of respondents (49 percent) reported that they have not previously visited Sedona.

Month of Visit to Sedona

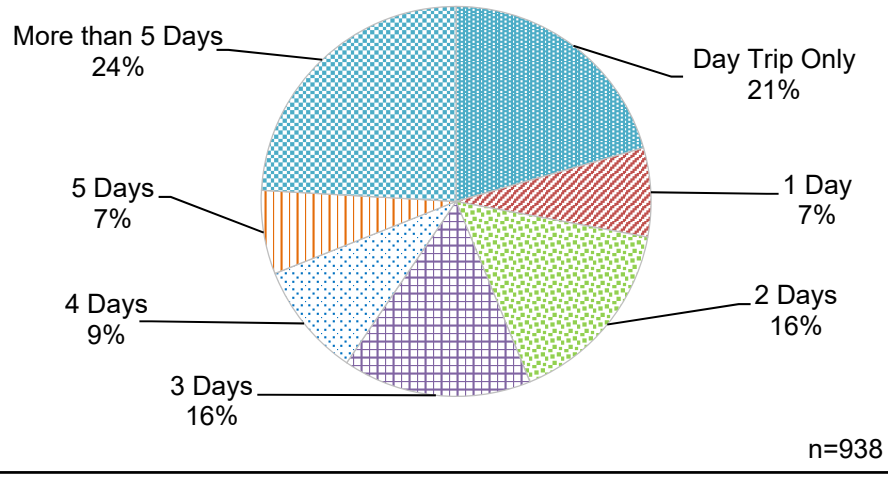
Approximately 87 percent of respondents said their last trip to Sedona occurred between the months of March and July. As shown in Table D-2, most respondents indicated their last trip to Sedona occurred during the month of April (23 percent), followed by May (21 percent), March (17 percent), and June (14 percent).

Table D-2 Month of Visit		
Month	Number of Responses	Percent of Total Respondents
January	30	3%
February	85	9%
March	163	17%
April	218	23%
May	200	21%
June	132	14%
July	104	11%
August	55	6%
September	93	10%
October	76	8%
November	40	4%
December	37	4%
TOTAL	**1,233**	**131%**
Source: Sedona Chamber of Commerce and Tourism Board, 2018.		

Length of Visit in Sedona

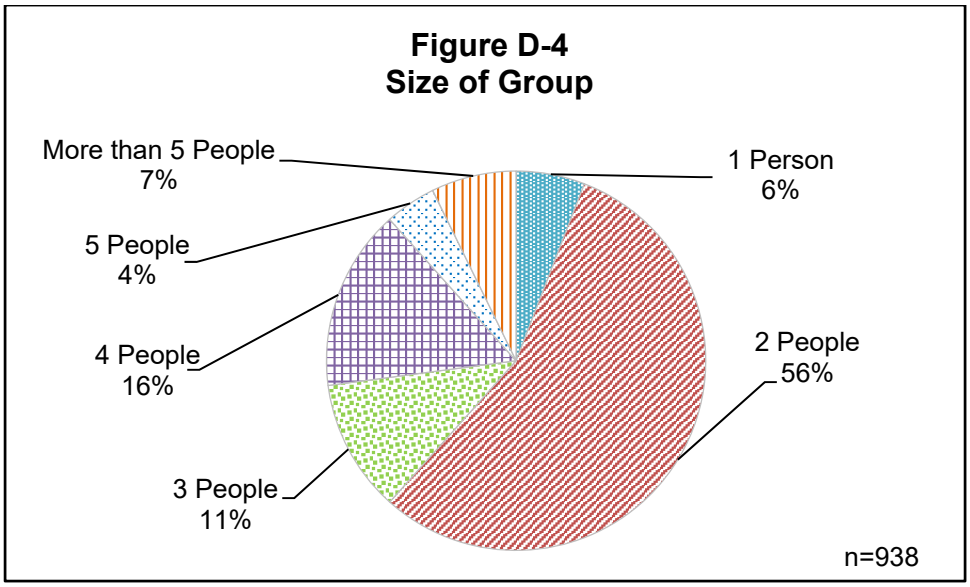
As shown in Figure D-3, approximately a quarter of respondents (24 percent) said their last trip to Sedona was for more than five days, followed by day trips to Sedona, which accounted for about 21 percent of respondents.

Figure D-3
Length of Visit in Sedona



Size and Age of Group

As shown in Figure D-3, over half of respondents (56 percent) said their last trip to Sedona was for a group of two people, followed by groups of four people (15 percent) and groups of three people (11 percent).



As shown in Table D-3, over half of respondents (55 percent) said during their last trip to Sedona their group contained someone between the ages of 50 and 65, followed by groups containing someone age 65 or over (39 percent) and groups containing someone between the ages of 34 and 49 (23 percent).

Table D-3
Age of Group

Age	Number of Responses	Percent of Total Respondents
5 or younger	25	3%
6 to 17	122	13%
18 to 34	158	17%
34 to 49	218	23%
50 to 64	516	55%
65 or over	362	39%
TOTAL	**1,401**	**149%**

Source: Sedona Chamber of Commerce and Tourism Board, 2018.

Transportation to Sedona

As shown in Table D-4, nearly two-thirds of respondents (62 percent) said they used a rental car as transportation to Sedona during their last trip, followed by respondents who used their personal car (33 percent) and respondents who took an airplane. Of the respondents who traveled by airplane, the majority flew into Phoenix (89 percent), followed by Las Vegas, NV (nine percent), Flagstaff (two percent), and Sedona (one percent).

Table D-4 Transportation to Sedona		
Transportation Mode	**Number of Responses**	**Percent of Total Respondents**
Personal Car	312	33%
Rental Car	577	62%
Airplane	132	14%
Tour Bus	16	2%
Shuttle	9	1%
Motorcycle	3	0%
RV/Camper	20	2%
Other	13	1%
TOTAL	**1,082**	**115%**
Source: Sedona Chamber of Commerce and Tourism Board, 2018.		

Chamber Visitor Survey Summary

The Sedona Chamber of Commerce and Tourism Bureau collected survey data from 2,066 visitors who requested information between May 1, 2018 and August 17, 2018. Key findings from the survey included:

- Survey respondents lived in each of the 50 U.S. States and the District of Columbia.
- Most frequent residence locations included California (10 percent), Illinois (six percent), Florida (six percent), and Arizona (six percent).
- Approximately 82 percent of respondents were over the age of 50.
- Approximately half of respondents reported an annual household income under $100,000, while the other half of respondents indicated an annual household income over $100,000.
- Approximately half of respondents indicated that they have previously visited Sedona.
- Approximately 87 percent of respondents said their last trip to Sedona occurred between the months of March and July.
- About a quarter of respondents said their last trip occurred during the month of April.
- Approximately a quarter of respondents said their last trip to Sedona was for more than five days.
- Over half of respondents said their last trip to Sedona was for a group of two people.
- Approximately 94 percent of respondents said during their last trip to Sedona their group contained someone age 50 or older.

- Nearly two-thirds of respondents said they used a rental car as transportation to Sedona during their last trip
- About one-third of respondents said they used their personal car as transportation to Sedona during their last trip.
- Approximately 89 percent of respondents who took an airplane on their trip, flew into the Phoenix airport.

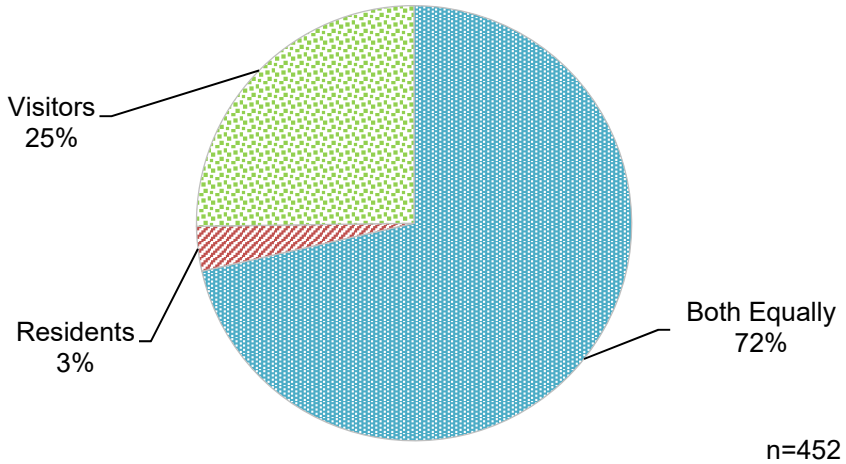
ONLINE RESIDENT SURVEY

As part of the effort to obtain input from the community, a separate survey questionnaire was used for residents in the study area. The questionnaire was developed with input from City of Sedona staff and then distributed as widely as possible. The survey asked respondents to answer a series of questions about a new public transportation system serving the Sedona-Oak Creek Canyon area. The survey was available online for approximately one month (from August 27, 2018 through September 30, 2018) and a total of 469 responses were received. A short summary of key takeaways from the survey will be shared in this section and the detailed analysis is located in Appendix A.

Key findings from the online resident survey include:

- The majority of respondents (60 percent) are full-time Sedona residents and have been for more than five years.
- The majority of respondents believe there is a need for a local public transportation within Sedona (80 percent), between Sedona and Oak Creek Canyon (74 percent), and between Sedona and the Village of Oak Creek (83 percent).
- As shown in Figure D-5, the majority of respondents (72 percent) believe the transit service primarily serve both residents and visitors equally.

Figure D-5
Who Should The Transit Service Primarily Serve



- The majority of respondents (27 percent) indicated that they would be somewhat likely to use a public transit service for some trips within Sedona, followed by 26 percent who would be not very likely to use a public transit service for some trips within Sedona and 26 percent who would be very likely to use a public transit service for some trips within Sedona.

- The majority of respondents (31 percent) indicated that they would be very likely to use a public transit service for trips to trailheads or recreation areas in Oak Creek Canyon, followed by 28 percent who would be somewhat likely to use a public transit service for trips to trailheads or recreation areas in Oak Creek Canyon.

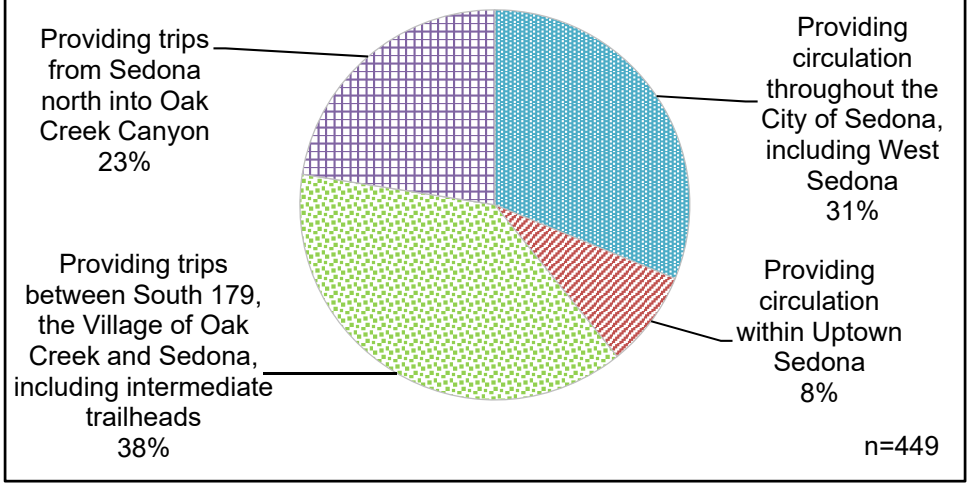
- The majority of respondents (32 percent) indicated that they would be somewhat likely to use a public transit service for trips to trailheads or recreation areas outside of Oak Creek Canyon, followed by 27 percent who would be not very likely to use a public transit service for trips to trailheads or recreation areas outside of Oak Creek Canyon and 23 percent who would be very likely to use a public transit service for trips to trailheads or recreation areas outside of Oak Creek Canyon.

- The majority of respondents (32 percent) indicated that they would be very likely to use a public transit service for trips between Sedona and the Village of Oak Creek, followed by 25 percent who would be somewhat likely to use a public transit service for trips between Sedona and the Village of Oak Creek.

- The majority of respondents (59 percent) indicated that reducing traffic and congestion is the most important benefit for the transit system to deliver.

- As shown in Figure D-6, the majority of respondents (38 percent) indicated that it is most important for the transit service to provide trips between South 179, the Village of Oak Creek and Sedona, including intermediate trailheads, followed by 31 percent of respondents who said that it is most important for the transit service to provide circulation throughout the City of Sedona, including West Sedona

Figure D-6
Most Important Trip Type to Serve

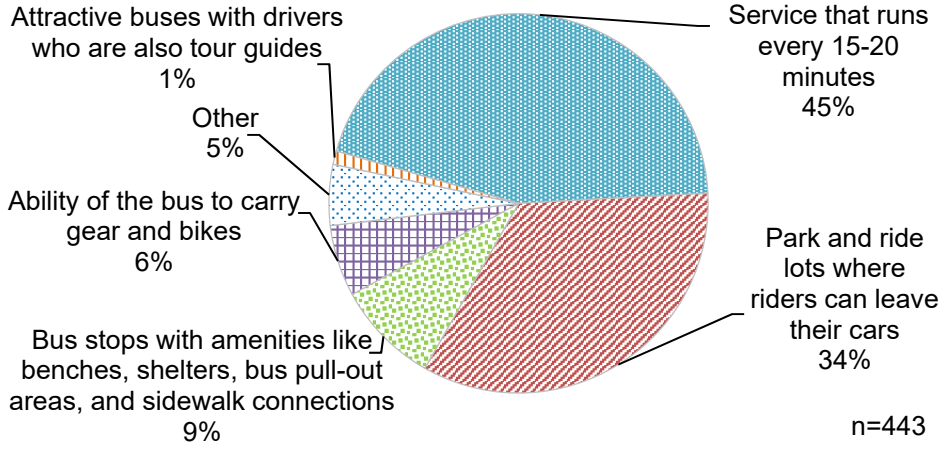


- The majority of respondents (60 percent) indicated that transit buses should only operate on the main state highways (179, 89A).

- The majority of respondents (38 percent) indicated that the transit service should travel as far north into Oak Creek Canyon as the West Fork/Call of the Canyon, followed by the Canyon Overlook (23 percent) and Slide Rock (22 percent).

- As shown in Figure D-7, the majority of respondents (45 percent) indicated that having transit service that runs every 15 to 20 minutes is the most important factor for making the transit system attractive to residents and visitors, followed by park and ride lots where riders can leave their cars (34 percent).

Figure D-7
Most Important Factor to Make the Transit Service Attractive



- The majority of respondents (32 percent) indicated that a reasonable transit service fare would be a low fare for trips within Sedona ($0.50 - $1.00 one-way) with a higher fare for Sedona to Oak Creek Canyon or Village of Oak Creek.

ONLINE CHAMBER BUSINESS SURVEY

As part of the effort to obtain input from the community, a separate survey questionnaire was used for businesses in the study area that are a part of the Sedona Chamber of Commerce and Tourism Board. The questionnaire was developed with input from City of Sedona staff and then distributed as widely as possible. The survey asked respondents to answer a series of questions about a new public transportation system serving the Sedona-Oak Creek Canyon area. The survey was available online for approximately one month (from August 27, 2018 through September 30, 2018) and a total of 77 responses were received. A short summary of key takeaways from the survey will be shared in this section and the detailed analysis is located in Appendix D.

Key findings from the online chamber business survey include:

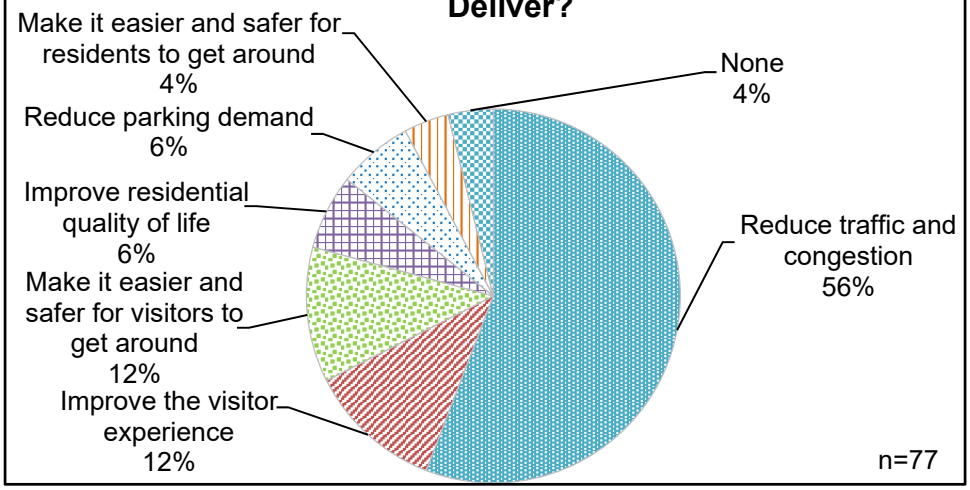
- The majority of respondents (24 percent) indicated that they represent a business in the service industry, followed by other (22 percent), lodging (20 percent), and retail (15 percent).
- The majority of respondents (88 percent) indicated that a visitor-focused shuttle system is needed within the Sedona-Oak Creek Canyon area.

- The majority of respondents (69 percent) indicated that improved employee transportation is needed within the Sedona-Oak Creek Canyon area.

- Respondents indicated that it is most important for the transit service to provide trips between South 179, the Village of Oak Creek and Sedona, including intermediate trailheads.

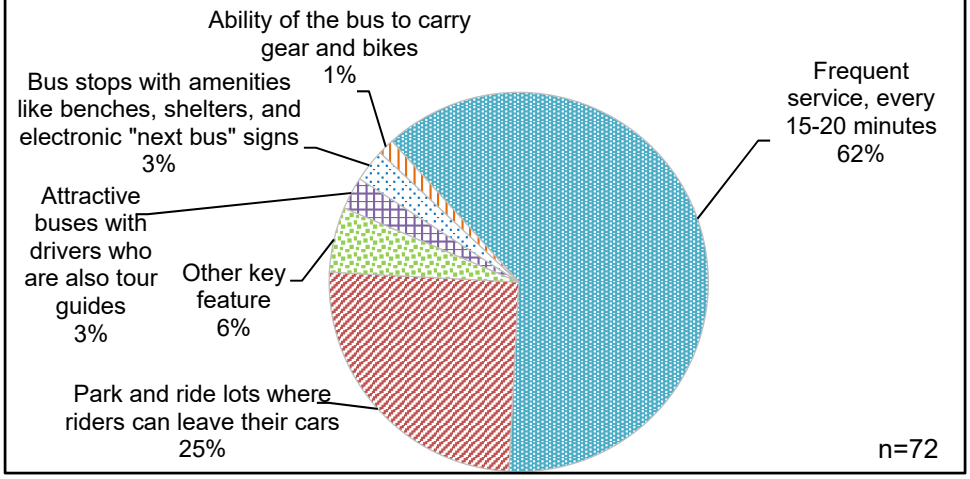
- As shown in Figure D-8, the majority of respondents (56 percent) indicated that reducing traffic and congestion is the most important benefit for the transit system to deliver.

Figure D-8
Most Important Benefit for the Transit System to Deliver?



- As shown in Figure D-9, the majority of respondents (62 percent) indicated that having transit service that runs every 15 to 20 minutes is the most important factor for making the transit system attractive to residents and visitors, followed by park and ride lots where riders can leave their cars (25 percent).

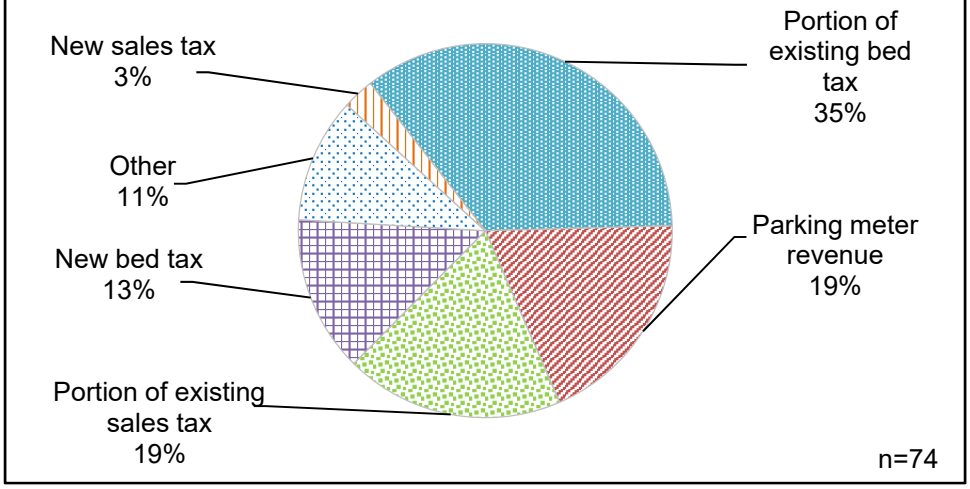
Figure D-9
Most Important Factor for a Visitor Shuttle



- The majority of respondents (84 percent) indicated they would be willing to play an active role in promoting a new shuttle service to their customers via their front-line staff, literature distribution, on-line information, etc.

- As shown in Figure D-10, the majority of respondents (35 percent) indicated that the best funding source for the transit service would be a portion of the existing bed tax, followed by parking meter revenue (19 percent) and a portion of the existing sales tax (19 percent).

Figure D-10
Best Funding Source



- In addition, respondents indicated that passenger fares, support from hotels/tourism industry/Chamber of Commerce, grants, Park-n-Ride revenues, and advertising should be considered as potential sources of funding for a local shuttle service.

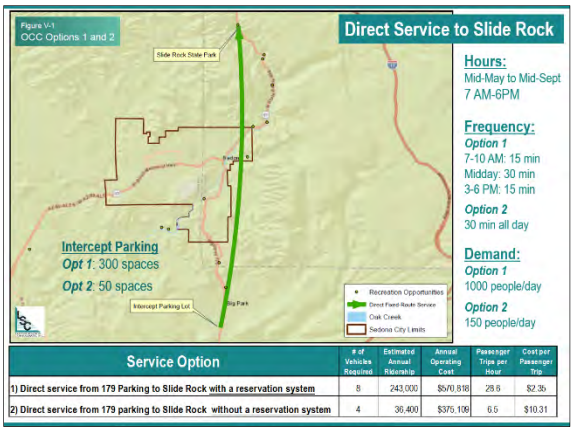
- The majority of respondents (37 percent) indicated that a reasonable transit service fare would consist of free trips within Sedona, and a fare for trips between Sedona and Oak Creek Canyon ($2.00-$3.00 one-way) and between Sedona and the Village of Oak Creek ($1.00-$2.00 one-way).

- The factors respondents believe will be the most important in implementing a successful public transit shuttle service within the Sedona-Oak Creek Canyon area include the topics of parking (25 percent), frequent service (23 percent), helpful signage/information/marketing (20 percent), easy to use (18 percent), and fares (16 percent).

TRANSIT SERVICE OPTIONS WORKSHOP

As part of the effort to obtain input from the community, LSC held a Transit Service Options workshop in January 2019 to present the various transit service options and engage the public in a budgeting exercise to prioritize the potential options.

LSC presented each of the potential service options for Oak Creek Canyon and Sedona, including the route structure, hours of operation, frequency of service, number of vehicles required, estimated annual ridership, annual operating cost, and performance measures.



Budgeting Exercise

Participants were then divided into break-out groups to discuss the Oak Creek Canyon and Sedona service options. Each group was tasked with working towards a consensus on the highest priority options, referring to the maps, characteristics, and performance for each option.

After discussion, each group was given 20 coins in total that approximate $200,000 each for a total annual operating budget of $4 million dollars. This operating budget was to be "spent" on the group's top transit priorities for the region. The 20 coins were to be divided among the top options according to the "cost" (number of coins) and placed in the envelope corresponding to numbered options, as shown in Table D-5.

Table D-5 Cost of Service Options			
OCC Options	**# of coins**	**Sedona Options**	**# of coins**
1 - 179 Parking to Slide Rock; reservations	3	1 - Shuttle from Transit Hub to Cathedral Rock TH	3
2 - 179 Parking to Slide Rock; no reservations	2	2 - Shuttle from Transit Hub to Dry Creek and Mescal THs	2
3 - 179 Parking to Cave Springs Campground; parking controls	4	3 - Shuttle from Transit Hub to Soldiers Pass TH	3
4 - 179 Parking to Cave Springs Campground; no parking controls	4	4 - Fixed-Route Service from VOC to Uptown Parking	7
5 - 179 Parking to Oak Creek Vista; parking controls	4	5 - Fixed-Route Service from West Sedona to Uptown Parking	5
6 - Uptown Parking to Slide Rock; reservations	1	6 - Connector from Transit Hub to Uptown Parking	3
7 - Uptown Parking to Oak Creek Vista; parking controls	4	7 - Entirely Demand-Response Service	34*
8 - Cultural Center Parking to Slide Rock; reservations	1	8 - Demand-Response Service Supplementing Core Fixed-Route Service	3
9 - Oak Creek Vista Parking to Slide Rock	1		

The rules of the game included:

- No partial funding of options allowed. Each option must be fully funded, with one exception – Sedona Option 7* costs more to operate than the available budget, so the group's total 20 coins would go toward this option.
- Having unused coins is acceptable if the groups is able to fund all top priorities in less than 20 coins.
- Participants have 15 minutes to complete the activity.

The results of the budgeting exercise are presented in Table D-6. The most funded OCC service options included 5 – 179 Parking to Oak Creek Vista with parking controls (funded by seven groups) and 1 – 179 Parking to Slide Rock with reservations (funded by two groups). The most funded Sedona service options included 4 – Fixed-Route Service from West Sedona to Uptown Parking (funded by six groups) and 5 – Fixed-Route Service from VOC to Uptown Parking (funded by five groups).

Table D-6 Results of Budgeting Exercise			
	Service Option	Online Input Rating	Workshop Groups Funded
OCC Service Option	1 - 179 Parking to Slide Rock; reservations	7.12	2
	2 - 179 Parking to Slide Rock; no reservations	4	
	3 - 179 Parking to Cave Springs Campground, parking controls	6.92	
	4 - 179 Parking to Cave Springs Campground, no parking controls	3.38	
	5 - 179 Parking to Oak Creek Vista, parking controls	7.35	7
	6 - Uptown Parking to Slide Rock, reservations	5.77	1
	7 - Uptown Parking to Oak Creek Vista, parking controls	5.92	1
	8 - Cultural Center Parking to Slide Rock, reservations	6.62	
	9 - Oak Creek Vista Parking to Slide Rock	6.12	
Sedona Service Option	1 - Shuttle from Transit Hub to Cathedral Rock Trailhead	5.96	2
	2 - Shuttle from Transit Hub to Dry Creek and Mescal Trailheads	6.04	3
	3 - Shuttle from Transit Hub to Soldiers Pass Trailhead	6.04	1
	4 - Fixed-Route Service from West Sedona to Uptown Parking	6.33	6
	5 - Fixed-Route Service from VOC to Uptown Parking	7.29	5
	6 - Connector from Transit Hub to Uptown Parking	6.14	4
	7 - Entirely Demand-Response Service	4.05	
	8 - Demand-Response Service Supplementing Core Fixed-Route Service	5.26	1*
*A few groups noted the need for complimentary paratransit. One group put an extra coin towards that.			

PROPOSED TRANSIT PLAN OPEN HOUSE

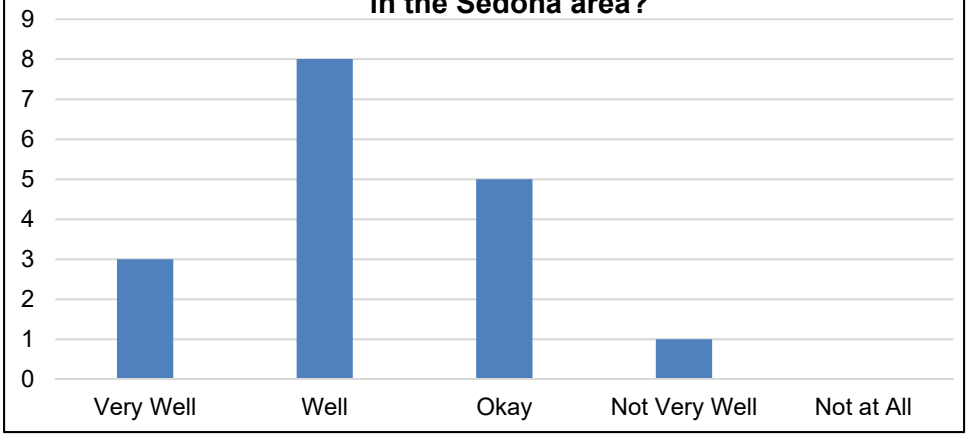
In April 2019, LSC held a public open house at the Sedona Library's Community Room to provide residents the opportunity to provide input on the Proposed Sedona-Oak Creek Canyon Transit Plan. The proposed transit plan included a description of the types of service to be implemented, as well as the potential phasing of the transit services. In addition, the proposed transit plan highlighted the benefits of the proposed plan, as well as the operating and capital costs for implementing the transit services.

"This will be the last big opportunity for the public to weigh in before this planning process concludes."

- Karen Osburn, City of Sedona Assistant City Manager and Community Development Director

During the meeting, attendees were asked "How well does the plan address public transit needs in the Sedona area?" As shown in Figure D-11, two-thirds of respondents thought the plan addressed needs either very well or well.

Figure D-11
How well does the plan address public transit needs in the Sedona area?



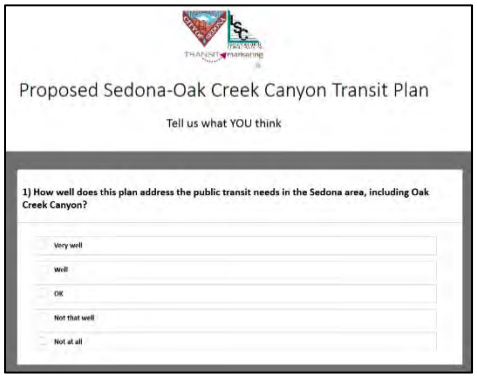
Also during the meeting, LSC lead attendees in a discussion of the pros and cons of the Proposed Sedona-Oak Creek Canyon Transit Plan, as well as suggestions. The results are shown in Figure D-12.

Figure D-12
Public Input on Proposed Sedona-Oak Creek Canyon Transit Plan

Pros	Cons	Suggestions
•Comprehensive approach •Reduced parking in Canyon & Uptown •Electric Vehicles •Zero Fares on local routes •Hub at Brewer/Ranger •Trailhead Shuttles •Reduce visitor traffic	•Want to implement faster •Cost commitment – who will pay? •Doesn't serve residents/get into neighborhoods/Residents won't use •Service that will attract day visitors are in later phases – should be sooner	•Lease buses to reduce risk •Solar Panels to shade and charge electric buses •Amenities at stops to encourage people to walk or bike there •Provide service to day visitors •VOC Route to intercept parking at Ranger Station •Intercept parking at Western Gateway •Make trailhead shuttles free for local residents •Have parking at Transit Hub

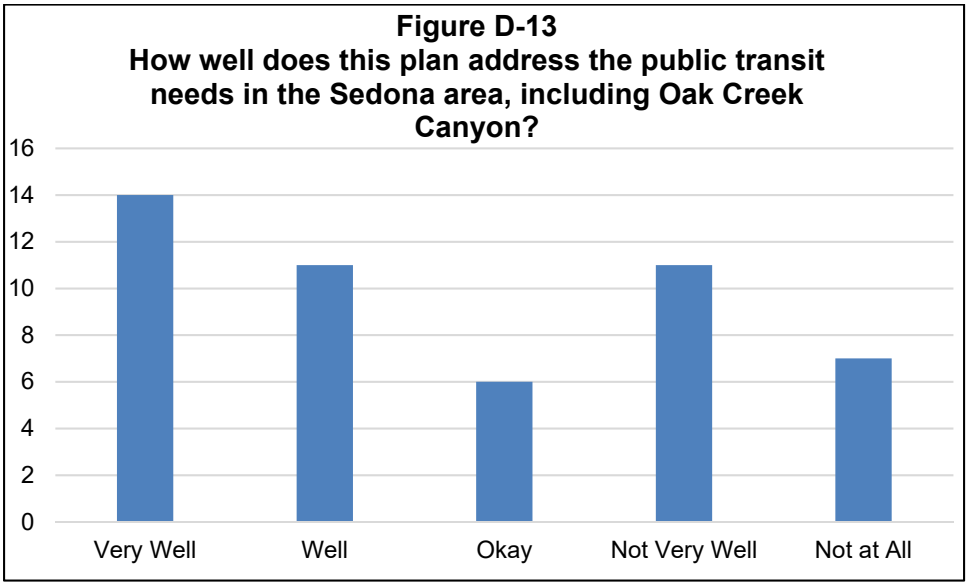
Online Feedback Form

In addition, a feedback form was available for residents to provide input on the transit options. A total of 49 responses was received.



As shown in Figure D-13, when asked "How well does this plan address the public transit needs in the Sedona area, including Oak Creek Canyon?", 14 respondents (29 percent) answered very well, followed by 11 respondents who answered well and 11 respondents who answered not very well.

Figure D-13
How well does this plan address the public transit needs in the Sedona area, including Oak Creek Canyon?



When asked what respondents like about the plan, the most frequent responses included:

- Reducing existing traffic issues and getting cars off the road
- Reducing existing parking problems
- Provides a comprehensive look at transit for the greater Sedona area
- Shuttle service to trailheads would be very convenient since it's currently almost impossible to park at those locations
- Frequency of service is attractive

When asked what respondents did not like about the plan, the most frequent responses included:

- Need additional bus stops in VOC
- Need service to other trailheads
- Need higher frequency service
- Confusion over existing and new transit hub location
- Need to provide incentives to use transit and implement parking fees/time limits
- New service needs to equally benefit tourists and locals
- Seems like transit will increase tourist traffic
- Seems costly and not sure where the funding will come from
- What will the impact be on the environment?

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Chapter E

TRANSPORTATION
CONSULTANTS, INC.

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Chapter E

Visitor Intercept Summary

Intercept interviews were conducted by consulting team members at a variety of locations within the Greater Sedona area during October 2018 including hotels, trailheads, and Tlaquepaque. These were qualitative conversations to explore visitor travel patterns and destinations, experiences with traffic and parking perceptions, the potential to use a shuttle system, and characteristics which would be required to make a shuttle an attractive transportation option. A total of 191 interviews were conducted.

INTERVIEW LOCATIONS

Incentivized Interviews

Incentivized interviews were conducted with 50 visitors at pre-arranged hotels in Uptown, West Sedona and the Village of Oak Creek.

- Arabella (9)
- Orchards (2)
- Sedona Rouge (8)
- Marriott Courtyard (13)
- Holiday Inn Express (12)
- Las Posadas (6)

Visitors were offered a $20 gift card for taking time to be interviewed, and the conversations were more in-depth than the short interviews.

Short Interviews

Shorter, non-incentivized interviews were conducted with 141 visitors and residents at a variety of locations including:

- Tlaquepaque (22)
- Marriott Courtyard (4)
- Bell Rock Trailhead (34)
- Cathedral Rock Trailhead (22)

- West Fork Trailhead (22)
- Dry Creek Trailhead (37)

These shorter interviews were two to three minutes and conducted as people were going hiking, biking, shopping, or dining out.

SUMMARY OF FINDINGS – HOTEL & TLAQUEPAQUE INTERVIEWS

Visitor Profile

The incentivized interviews were conducted with overnight visitors who had a range of stays, from a single night to a week or more. About six out of ten of the respondents were first time visitors, others had been to Sedona before, and a number were regular visitors.

Most were couples, but several were families with children or groups traveling together. The majority were from U.S. states other than Arizona. Eight of the 50 groups were from Arizona, while one was international. We encountered a few other international travelers at the hotels but were unable to conduct interviews, as they did not speak English.

The interviews included a mix of ages from young people in their twenties to senior citizens. Based on observation only – about twenty percent of respondents were under 30, about half were 30-60 and almost a third were over 60.

The short intercepts conducted at Tlaquepaque included four international groups, as well as a mix of Arizona residents and travelers from other states. Most were overnight visitors.

Travel Plans

For nearly half of the incentivized interviewees, Sedona was the traveler's primary destination, though many were making day trips from Sedona to nearby destinations. For the remaining respondents, Sedona was part of a larger trip that most often included the Grand Canyon, Flagstaff, and/or Las Vegas.

Of the 50 groups interviewed, 48 had driven to Sedona. Most drove a rental car from Phoenix or Las Vegas, while a few couples from California and New Mexico had driven from home. Two had taken the shuttle from Phoenix.

Virtually all of the respondents used either a smartphone (Google Maps app) or a GPS unit to navigate locally. Several also used paper maps, but generally in combination with Google Maps.

Activities and Destinations

The interviewees fell into two groups—those who came to hike or mountain bike and those who came for other things such as shopping, sightseeing, golf, a spiritual experience, or an event such as a wedding, conference, or training. While some of the hikers, who constituted a little more than half of the interviewees, were in Sedona strictly to hike, others were also doing a bit of shopping and sightseeing.

Several of the respondents were taking Pink Jeep tours, other off-road tours, or trolley tours and quite a few were making day trips to nearby attractions including the Grand Canyon, Cottonwood, Jerome, Out of Africa, or the Clarksdale Train. The common activity for almost all the respondents was dining, though it is more of a focus for some visitors than others.

About three quarters of the respondents said that they planned to visit destinations in the Uptown area for dining, shopping or galleries. Tlaquepaque was a destination for most visitors at some point in their trip. Respondents who were intercepted at Tlaquepaque for shorter interviews were less likely to be hikers (about 20%) and more likely to be interested in shopping.

About a quarter of interviewees specifically noted a plan to go to Oak Creek Canyon but for some this was a pass-through trip. Several had or would drive through the Canyon on their way to or from Flagstaff or the Grand Canyon. Only two of the 76 groups we talked with said they planned to visit Slide Rock. This is consistent with Slide Rock's own research that shows most of their guests are day-visitors from the Phoenix area that visit during the summer months.

Much of the discussion of specific destinations revolved around hiking trails that respondents planned to visit. Some came to Sedona with detailed plans regarding what hikes they wanted to do based on internet searches and hiking books; however, many of the respondents were relying on local sources, such as The Hike House, Sedona Visitor Center, and hotel concierges, to suggest hikes appropriate for their needs. The top hiking or sightseeing destinations mentioned were:

- Chapel of the Holy Cross (9)
- Cathedral Rock (8)
- Bell Rock (7)
- Devils Bridge (6)
- Red Rock (Ruins) (6)
- Broken Arrow (3)

There were many other trails cited as destinations including Soldier's Pass, Fay Canyon, Airport Overlook, Brin's Mesa, Enchantment, West Fork, Templeton Trail, Highline Trail, Brighton Canyon, Mt. Wilson, Baldwin Trail, Crescent Moon, Sugar Loaf, and Thunder Mountain.

Traffic and Parking Issues

Among the incentivized interviewees, about four out of ten said traffic and parking were no problem at all. Approximately one quarter made comments about traffic congestion.

"We stay in VOC to avoid traffic. Parking is a problem in Uptown. We stayed at Sedona Real last time but traffic was much worse there."

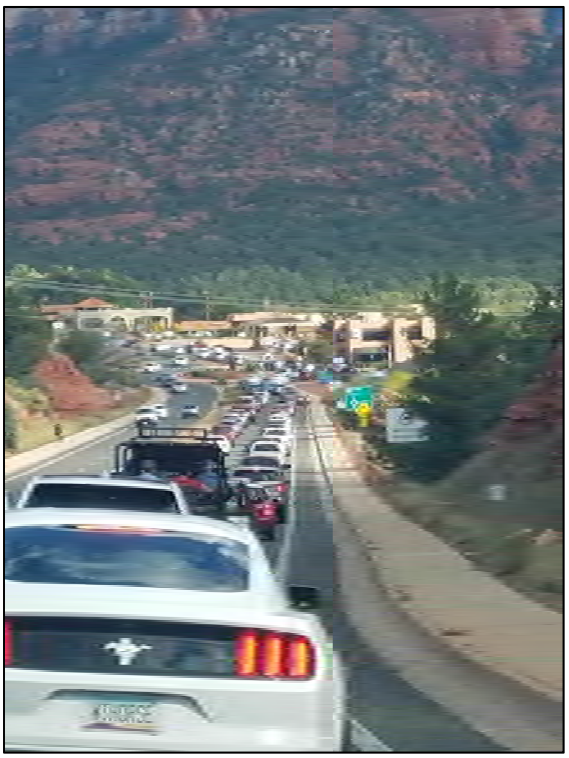
"Sedona is its own worst enemy. The only way to get here is by car and it is getting overcrowded like other beautiful places."

"Traffic seems to increase each time I come." (respondent visits every year)

"Crossing highway at night (in West Sedona) when walking to restaurants is taking your life in your hands."

"We experienced a backup from VOC to Sedona on weekend coming in."

"Crazy drivers—scary!"



Other comments related to roundabouts and how they are difficult to navigate for some, not well understood or liked, and confusing for newcomers.

About half of respondents noted difficulties parking – most related to the Uptown area. One group wanted to stop in Uptown on their way out of Sedona, but there was no parking so they just drove through. Others shared similar frustrations with lack of parking and congestion in Uptown and Tlaquepaque. The area around the Visitor Center was mentioned as particularly challenging. One respondent noted that her husband is disabled and that when they come together to Uptown parking is difficult and parking signage could be improved.

Some hikers noted parking issues at trailheads, primarily Bell Rock. However, several said they went very early, based on advice they had received, or avoided places where they heard parking was limited. Parking at Chapel of Holy Cross was also mentioned as challenging. Several respondents said that they adjusted their hiking plans because of a lack of parking – it seems many people move on to another trailhead if they can't find parking. One respondent joked that they could have sold their parking spot for a lot of money when they left.

Shuttle Potential

While discussing traffic and parking, a few respondents made the unsolicited comment that there needs to be another way to get around in Sedona besides driving, noting that it would be great if there was a trolley or a shuttle system in Sedona. Others wondered if there was Uber or Lyft available in Sedona.

Asked if they think there needs to be a visitor-oriented shuttle system and if they'd use it, more than three quarters of respondents said yes, they would use it for at least some trips.

About a quarter of the respondents gave an immediate and enthusiastic yes to the idea of a shuttle. The highest level of enthusiasm was among younger people in their twenties or early thirties and those over 60.

"Definitely would use it – I've used shuttles in other places like Zion."

"Oh gosh yes! It would encourage people to go to shops and galleries."

"Would use in a heartbeat." (respondent knew of the Lynx bus stop outside the Arabella)

"Absolutely, especially if it was kid-friendly."

"A shuttle would allow me to go many more places." (respondent without car)

"I would use it if it was a hop-on, hop-off service. And went to Uptown, dining, and attractions like Chapel of the Holy Cross."

"It would add value to Sedona, especially if hotels gave a pass and info."

"If there had been a shuttle, we would have skipped renting a car" (respondents were a young couple from California who are hikers and repeat visitors)

Others were more measured in their response to the shuttle concept. Some initially said they probably wouldn't use it, but went on to say they might use a shuttle if it ran a regular route at predictable intervals and went to the places they wanted to go. Other respondents started with no interest but then thought a shuttle to shopping centers and dining at night could be a good thing. Some thought they would still drive but might consider using a shuttle if they were staying longer. Many didn't think a shuttle would work for day-trippers.

Many noted that they had used shuttles in other national parks, such as Yosemite, Zion, Grand Canyon, or resort areas and thought that there should be one in Sedona. There seemed to be a comfort level among many respondents about needing to use a shuttle to access popular natural wonders like those found in Sedona. Several respondents mentioned the hop-on/hop-off aspect of other shuttles and how that seemed to work well and give good flexibility.

When asked what they would use the shuttle for, the respondents were split into three groups with specific comments on how they would use it:

1. Those who would park their car and use it for a variety of trips throughout the day and into the evening. They saw potential for using a shuttle for all their needs such as going out to dinner, shopping, general sightseeing, trailheads for hiking and biking, and accessing other forms of transportation like Jeep tours.
2. Those who would use it specifically to visit busy destinations such as trailheads, Uptown, and shopping only during the day. These respondents saw benefit of a shuttle for destinations with limited parking – Tlaquepaque was frequently mentioned. Taking the shuttle from a hotel to trailheads was seen as a benefit for many in this group.
3. Those who only wanted an alternative for going out in the evening for dinner without having to worry about drinking and driving, driving on very dark streets, or dealing with parking in Uptown. These respondents didn't think they would use it during the day but saw the benefit for evening travel.

About <u>one out of five respondents had little or no interest in using a shuttle for any reason</u> with common themes that included:

- Liking the freedom and flexibility that comes with driving and being able to change plans

- Seeing how it might be good for younger people who are used to Uber or transit, but the shuttle wouldn't be for them
- A dislike for the concept of using buses in general
- Only thinking of the need for a shuttle for larger groups
- A feeling that traffic isn't that bad if you plan around it
- A concern that a shuttle might cause overcrowding – one group of avid mountain bikers feared that a shuttle might encourage more competition for space on the trails. They initially embraced the idea of a shuttle, but after discussion weren't sure it was a good idea simply because it would make their favorite spots more accessible.

Factors that Would Make Shuttle Attractive

There was broad consensus that what people want is a hop-on/hop-off bus that runs regularly, goes to the most popular destinations during the day time, and allows for dining out in the evening.

Frequency: Most people said that a frequency of every 15-30 minutes would make the shuttle attractive, some wanted frequency every 10 minutes, and others wanted hourly frequency for a trailhead shuttle.

Hours: In order to serve the daytime activity riders, the shuttle would need to run quite early. Many people said 7 AM, while others said sunrise. To serve the "dinner" riders, respondents said the shuttle needed to run until 10 PM or midnight.

Proximity to hotel: Most respondents seemed willing to walk to a stop that was within a block or so of the hotel and didn't expect the shuttle to pick up at the door. It should be noted that many of the respondents were hikers used to walking longer distances.

Type of vehicle: The vehicles themselves were not as much a focus as frequency and destinations. Respondents focused on different elements of the vehicle, including bike racks, room for gear such as backpacks and baby strollers, big windows to provide views, comfortable vehicles with air conditioning, green and clean such as an electric vehicle, information about stops and destinations as you go such as an onboard audio or video tour, others just wanted to know where they were going and what was at each stop

Shuttle Stops: The general sentiment was that stops need to be within a short walk of the hotel and very clearly marked. They need to provide information about the route and when the next bus will arrive. Several people mentioned electronic signs to show how many minutes until the shuttle arrives. A few people mentioned amenities such as a shelter, bench and trash can, but this was not a frequent topic. Convenience and frequency of the route was the top of mind issue.

Destinations: During the daytime travelers want to be able to get from their hotels (in Uptown, West Sedona, and VOC) to popular destinations for hiking, shopping, galleries and sightseeing. In the evening, they want to be able to travel from hotels to restaurants which tend to be concentrated uptown and along 89A.

Other comments: Some respondents commented on specific benefits they thought the shuttle would provide such as ability to do thru-hikes and friendly drivers that give you some local history and facts.

Free or Paid

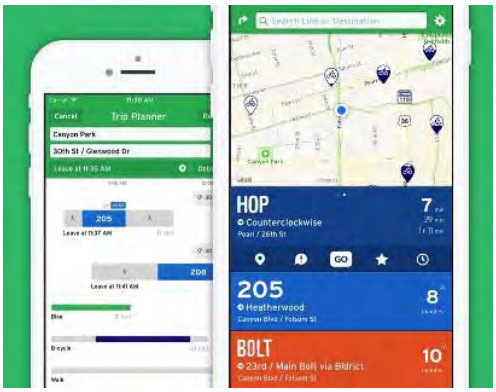
Only a few respondents felt that the shuttle had to be free; however, quite a few other people noted that a free shuttle would likely attract more use and that shuttles in other resort areas and national parks are often free. A free shuttle was associated with convenience.

Most respondents said that a low fare, such as $1 to $3 one-way, would be acceptable as long as it was easy to pay. Many brought up the idea of a day pass, which they could purchase at the hotel or be given when they checked in – some thought if they had to go out of their way to buy a pass it would be a barrier to use. Respondents made various comments about fares including increasing the bed tax to help fund the shuttle, having discounts for groups, and being able to combine with the Red Rock Pass.

Marketing and Communications

Several respondents noted that a key feature of the shuttle service would be marketing. They stressed that shuttle information should be easy, apparent, and promoted by the hotel staff when you check-in. Specific recommendations that we heard repeatedly included:

Figure E-1
Boulder County, CO Transit App



- An app with real-time next bus info plus real-time bus info through electronic signage at bus stops
  - Most respondents used Google Maps
- Online information that could be accessed when travel planning through a website, the Chamber website, Trip Advisor, Yelp, and hotel websites
- Map showing route and local destinations that could act as both a tool for using the bus and a helpful area guide
- Having front desk staff provide info and pass during check-in
- Promotion through visitor resource centers such as Red Rock Ranger Station and Uptown Visitor Center

SUMMARY OF FINDINGS – TRAILHEAD INTERVIEWS

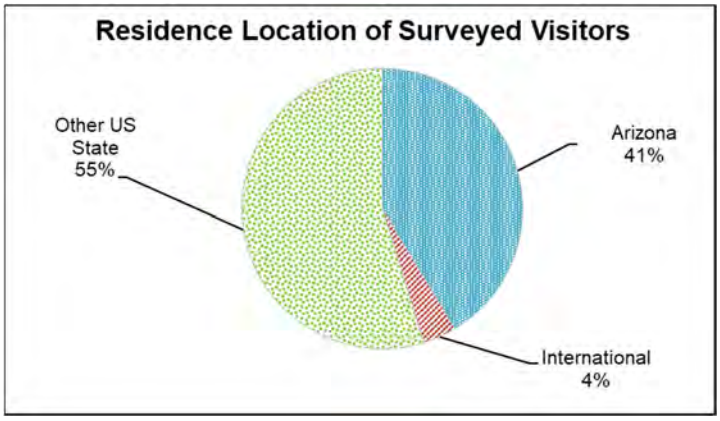
The short trailhead intercept interviews yielded similar input and themes as the longer hotel interviews. However, there were differences in visitor profile (trailhead interviews included many day visitors), travel plans, input on Oak Creek Canyon issues, comments on parking, shuttle potential, and factors for shuttle attractiveness.

Visitor Profile

Of those interviewed at trailheads, all but a few were visitors. Two-thirds of the visitors were staying overnight and one-third were day visitors. The majority of respondents had two people in their group and nine out of ten of those interviewed had four or less people in their group. As shown in Figure E-2, the

majority were from states other than Arizona, but in-state visitors were still a significant proportion.

Figure E-2
Where Visitors Live



Of the overnight visitors, half were staying at hotels or a resort and approximately a quarter were staying at a short-term rental property. The rest were staying at a mix of accommodation types. The length of stay varied from one night to an entire week.

Travel Plans

For those who were day visitors, most were from the Phoenix area. Of overnight visitors interviewed at trailheads, almost two-thirds said Sedona was their primary destination while approximately one-third were visiting Sedona as part of a bigger tour of the southwest that often included Flagstaff and the Grand Canyon.

Approximately half of those interviewed at trailheads arrived by personal car and half by rental car.

Activities and Destinations

Overall, the vast majority of interviewees were going hiking with only a handful of respondents going mountain biking or just taking pictures and sightseeing.

Day visitors were often just doing one activity in the Sedona area, mostly hiking, while overnight visitors noted other activities that they planned to do including

three quarters who said dining out, half who said general sightseeing, and half who said shopping.

Of all respondents, approximately three quarters said they were doing multiple hikes in the area. A common theme of these respondents was the flexibility of their hiking plans—they had a list of hikes they wanted to try but many respondents indicated that they would be "playing it by ear."

Traffic and Parking Issues

Opinion among visitors was almost evenly split among those who thought parking was a problem (45 percent) compared to those who said it wasn't a problem (55 percent).

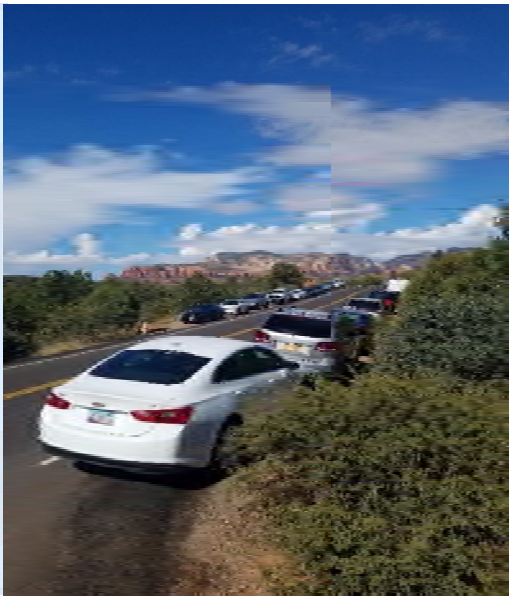
"We arrived early so parking wasn't a problem."

"It was relatively easy to park at Bell Rock."

"I expect it to be crowded with long line to park." (West Fork)

"Parking is always challenging."

"Parking at West Fork is very difficult and requires having to wait a long time to park." (respondent had already waited 30-40 min to park at West Fork)



Those waiting in line at West Fork were the most likely to say that parking was a problem and were most likely to say that they would use a park-and-ride style shuttle to avoid waiting in a long parking line.

Shuttle Potential

Responses on whether someone would use a shuttle varied based on the type of visitor and how they might use it. About two-thirds of overnight visitors said they would likely take a shuttle from their lodging location to the trailhead, while slightly less than half of overnight visitors said they might use it to get around

town to shopping or dining. Day visitors were split over whether they would use with just four out of ten saying that they might use a shuttle, about a quarter saying they wouldn't use a shuttle, and the rest undecided.

"Cars take away from the wilderness experience, so a shuttle would be great!"

"Safety in the canyon is big issue and has gotten worse over years; Cathedral Rock is crazy with too many people." (respondent was a long-time visitor)

"An Uber-like service would be great."

"Not having to deal with parking is big motivator for using a possible shuttle."

"Other national parks have shuttles."

Those who didn't like the idea of a shuttle had several concerns. Many of those who said they wouldn't use a shuttle mentioned the convenience of their car, issues with carrying a lot of gear like for mountain biking, and wondering how they would go about using a shuttle if they were a day visitor or just passing through. A few trailhead respondents thought parking was the issue and that local officials should focus on increasing parking. Two respondents had concerns that a shuttle wouldn't protect the natural resources and could add too many people to already crowded trails. Some respondents said it wouldn't be for them but that it might be good for other people such as older adults, overnight visitors, or younger people who use Uber. One respondent mentioned that they were recently at Zion and hated having to take the shuttle because it took away from the experience.

There were only three of 115 respondents who were local residents, and all said they would not take a shuttle to access a trailhead. Some did note that they thought it would be "good for the tourists."

Factors for Shuttle Attractiveness

The overwhelming majority of respondents said frequency was the most important factor in considering whether or not to use a shuttle. The other two most important factors for trailhead respondents were cost and marketing/awareness of the shuttle. Many thought that the service area, in terms of which trailheads were served, was also very important. A few mentioned that they would only take the shuttle if dogs were allowed.

Overall, availability and ease of use were most important to trailhead respondents.

Chapter F

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CHAPTER F

Transit Needs and Demand Assessment

INTRODUCTION

A key step in developing and evaluating transit plans is a careful analysis of the mobility needs of various segments of the population and potential transit riders. There are several factors that affect demand, not all of which can be forecast. Demand estimation is an important task in developing any transportation plan, and several methods of estimation have been developed. This analysis makes use of the demographic data and existing Cottonwood Area Transit (CAT) ridership, as discussed in Chapter III of this Interim Report, as well as the stakeholder and community input presented in Chapter IV.

This chapter presents an analysis of the demand for transit services in the study area based upon standard estimation techniques. These methodologies are standard approaches to estimate transit needs and demand. Some may be more appropriate for the Sedona area than others. Areas with significant visitor markets are unique and specific approaches must be developed based on the unique characteristics of community and the population segments. The transit demand identified in this section will be used with information to be obtained through surveys and interviews to identify and evaluate various transit service options. This chapter describes several models and formulas to help quantify different segments of transit need and demand in the study area, including:

- Mobility Gap
- General Public Rural Non-Program Demand
- Small City Fixed-Route Demand
- Commuter Transit Demand
- ADOT Traffic Count Data and Mode Split Demand
- 2016 Sedona Visitation Estimate
- AirSage Data

Data were taken from the 2012-2016 U.S. Census American Community Survey (2016 ACS) five-year estimates for all of the population groups. Each of these approaches helps to show the patterns that are likely to arise regarding transit needs within the study area. Estimating demand for services is not an exact science and therefore must be carefully evaluated.

MOBILITY GAP

The mobility gap methodology is used to identify the amount of service required to provide an equal mobility to households that have access to vehicles and those that do not. The National Household Travel Survey (NHTS) provides data that allow for calculations to be made relating to trip rates. Separate trip rates are generated for various regions throughout the United States to help account for any locational inequities. Trip rates are also separated by general density and other factors such as age. This methodology was updated using the most recent NHTS data available (2009).

Arizona is part of the U.S. Census Mountain Division. The trip rate for zero-vehicle households in rural areas of the Mountain Division was determined to be 5.2 daily trips. For rural households with one vehicle, the trip rate was 6.0 daily trips. The mobility gap is calculated by subtracting the daily trip rate of zero-vehicle households from the daily trip rate of households with one vehicle. Thus, the mobility gap is represented as 0.8 household trips per day. This mobility gap is lower than the national average of 1.5 for rural households. To calculate the transit need for each census block group in the study area, the number of zero-vehicle households is multiplied by the mobility gap number. Table F-1 shows this information broken out by block group. In total, 332 daily trips need to be provided by transit to make up for the gap in mobility. This calculates to an annual transit need of approximately 100,000 trips.

Table F-1
Mobility Gap Transit Need

Area/Place	Census Tract	Census Block Group	Total Number of Households 2016 ACS	Zero-Vehicle Households 2016 ACS	Mobility Gap	Transit Need (Daily Trips)
Coconino	16	1	398	7	0.8	6
		2	643	25	0.8	20
		3	645	22	0.8	18
Yavapai	17.02	1	317	0	0.8	0
		2	793	18	0.8	14
		3	1,061	99	0.8	79
	17.03	1	648	10	0.8	8
		2	739	136	0.8	109
	18.01	1	756	24	0.8	19
		2	1042	56	0.8	45
	18.02	1	778	0	0.8	0
		2	977	18	0.8	14
		3	519	0	0.8	0
		TOTAL:	**9,316**	**415**		**332**

Source: US Census Bureau, American Community Survey - 2016, LSC 2018.

GENERAL PUBLIC RURAL NON-PROGRAM DEMAND

TCRP Report 161 provides a method of estimating general public rural transit demand. This methodology applies transit-dependent population statistics and trip rates to estimate the annual demand for non-program and overall general public rural transportation. The general public rural non-program demand estimation technique described in TCRP Report 161 is calculated by the following formula:

Annual Demand = (2.20 x Population Age 60+) + (5.21 x Mobility Limited Population Age 18-64) + (1.52 x Residents of Households Having No Vehicle)

Annual Demand = (2.20 x 9,646) + (5.21 x 123) + (1.52 x 495)

As calculated above, transit demand is estimated at approximately 22,600 passenger-trips annually.

SMALL CITY FIXED-ROUTE DEMAND

TCRP Report 161 provides a method for estimating fixed-route demand for small urban areas with populations less than 50,000. The demand estimation technique considers the total population and estimated annual vehicle hours of service and is calculated by the following formula:

Annual Demand = (5.77 x Revenue-hours) + (1.07 x population) + (7.12 x College/University Enrollment)

Annual Demand = (5.77 x 8,760) + (1.07 x 18,572) + (7.12 x 0)

Assuming a local fixed-route service, like a circulator, operates throughout the study area using two vehicles, each operating 12 hours a day and seven days a week throughout the entire year, the annual vehicle hours for the service would be 8,760. As presented in Chapter III, the population of the study area is 18,572. The formula also includes college/university enrollment (not including community college enrollment), which is zero as there are no four-year resident colleges or universities in the study area. The forecasted ridership for a fixed-route service in the Sedona study area would be an estimated 70,400 one-way trips annually.

COMMUTER TRANSIT DEMAND

The demand estimation technique established in *TCRP Report 161: Methods for Forecasting Demand and Quantifying Need for Rural Passenger Transportation* to estimate commuter demand between places is presented by the following formula:

Commuter trips by transit from Place A to Place B per Day = Proportion using transit for Commuter Trips from Place A to Place B x Number of Commuters x 2

Proportion using Transit for Commuter Trips from Place A to Place B =
0.024 + (0.0000056 x Workers Commuting from Place A to Place B)
– (0.00029 x Distance in Miles from Place A to Place B)
+ 0.015 (if the Place is a state capital)

Census Longitudinal Employer-Household Dynamics (LEHD) data were used to determine how many individuals were commuting between various employment centers in the study area. Figure F-1 and Table F-2 show the associated demand estimates. Overall, the demand for daily commuter transit is relatively low throughout the study area using this methodology. The highest levels of commuter demand were from Verde Village to Sedona (20 daily trips, 5,600 annual trips), the Village of Oak Creek to Sedona (20 daily trips, 5,400 annual trips), and Cottonwood to Sedona (20 daily trips, 4,800 annual trips). This methodology may not be as useful in areas like Sedona because of the high number of service workers in the tourism industry, the lack of affordable housing within the community, and the high cost of commuting by private auto. Seasonal employees may not be included in the estimates of commuters.

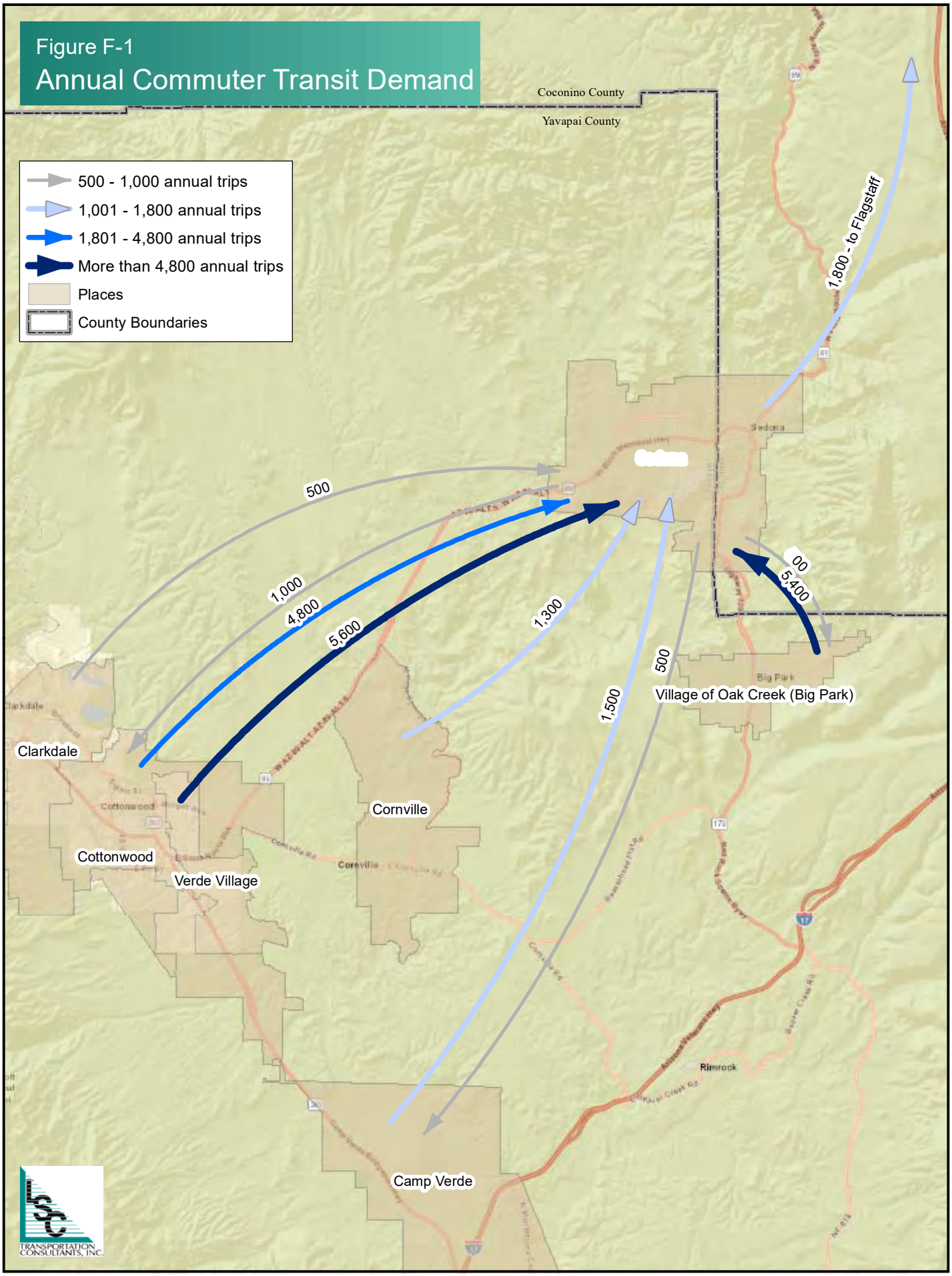
Figure F-1
Annual Commuter Transit Demand
Coconino County
Yavapai County
500 - 1,000 annual trips
1,001 - 1,800 annual trips
1,801 - 4,800 annual trips
More than 4,800 annual trips
Places
County Boundaries
1,800 - to Flagstaff
Sedona
500
1,000
4,800
5,600
1,300
1,500
500
00
5,400
Big Park
Village of Oak Creek (Big Park)
Clarkdale
Cottonwood
Cornville
Verde Village
Rimrock
Camp Verde
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Table F-2
Commuter Transit Demand

Residence Location	Work Location	Count	Percent Transit	Daily Transit Demand *(one-way trips)*	Annual Transit Demand *(one-way trips)*
Verde Village, AZ	Sedona, AZ	534	2%	20	5,600
Village of Oak Creek, AZ	Sedona, AZ	438	2%	20	5,400
Cottonwood, AZ	Sedona, AZ	461	2%	20	4,800
Sedona, AZ	Flagstaff, AZ	211	2%	10	1,800
Camp Verde, AZ	Sedona, AZ	166	2%	10	1,500
Cornville, AZ	Sedona, AZ	144	2%	10	1,300
Sedona, AZ	Cottonwood, AZ	110	2%	0	1,000
Sedona, AZ	Camp Verde, AZ	46	2%	0	500
Clarkdale, AZ	Sedona, AZ	50	2%	0	500
Sedona, AZ	Village of Oak Creek, AZ	56	2%	0	500

Source: LEHD, LSC 2018.

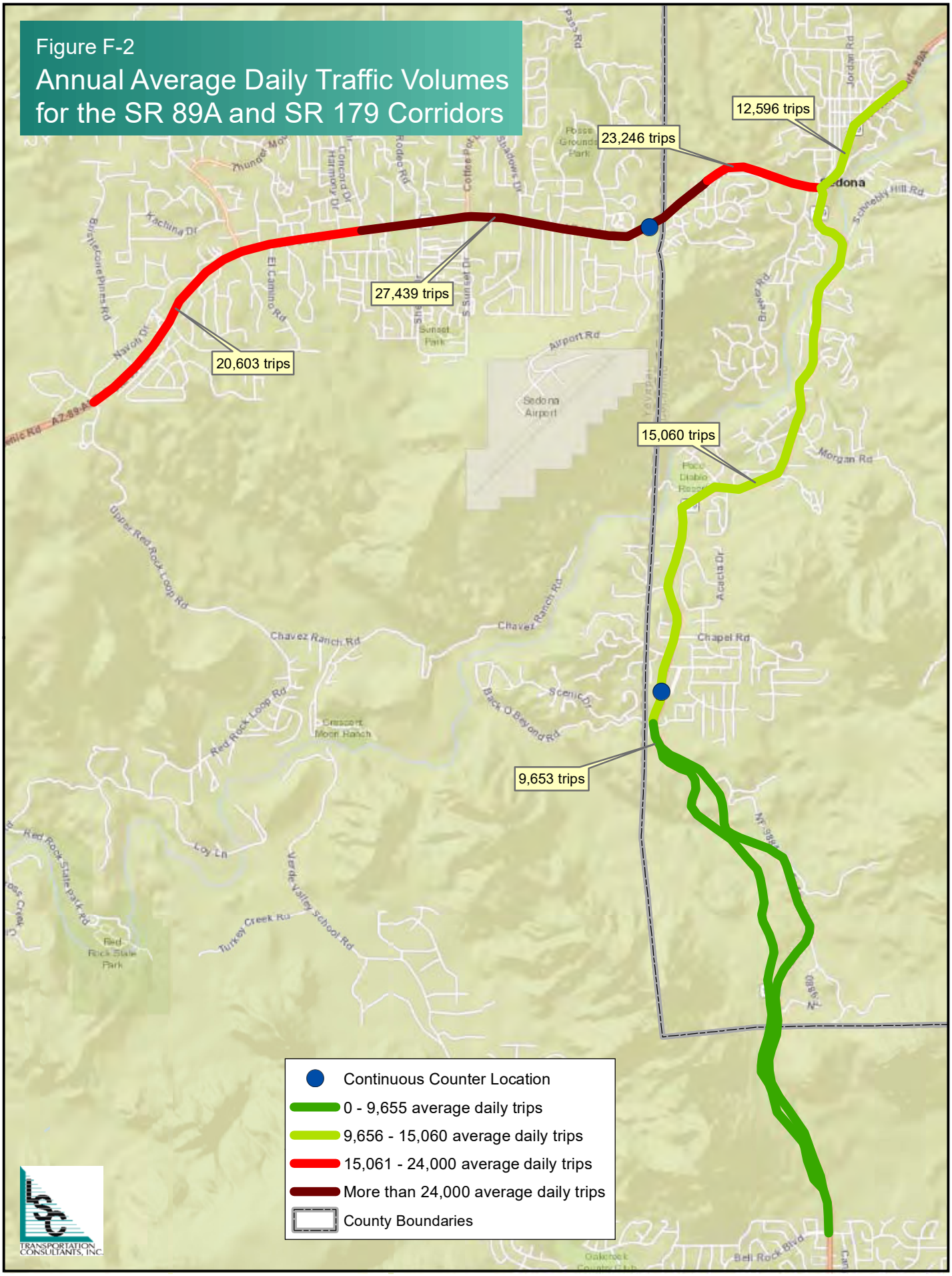
ADOT TRAFFIC COUNT DATA AND MODE SPLIT DEMAND

The Arizona Department of Transportation (ADOT) collects information on traffic volumes for major roadways which are available as Annual Average Daily Traffic (AADT) volumes. AADTs are helpful in determining areas of heavy traffic that could be alleviated by transit services. Figure F-2 shows the most recent AADT count data along the SR 89A and SR 179 corridors in the study area. The area with the highest traffic volume is along SR 89A between Andante Rd. and Airport Rd.

As shown in Figure F-2, there are two continuous traffic counters located within the study area, one along SR 89A and one along SR 179.

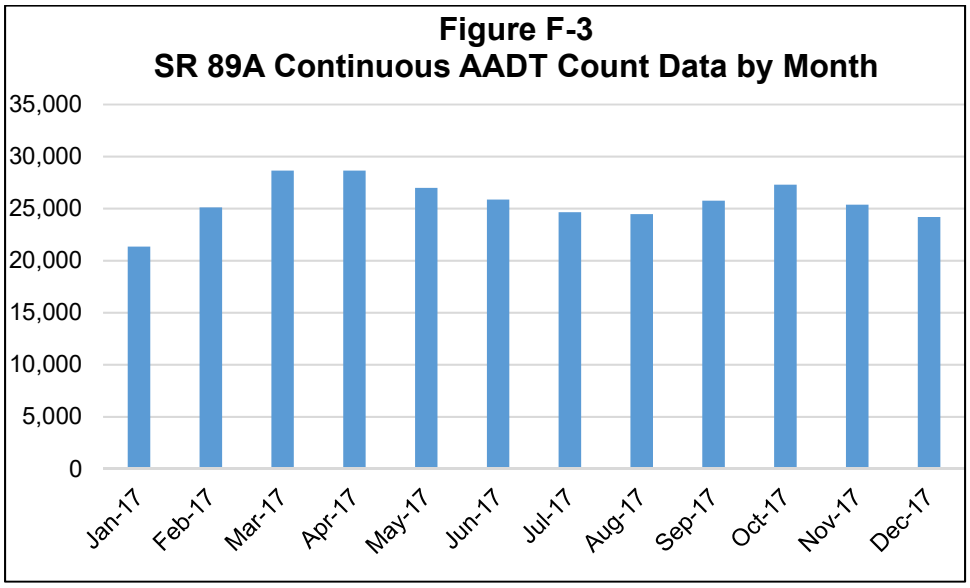
Figure F-2

Annual Average Daily Traffic Volumes for the SR 89A and SR 179 Corridors



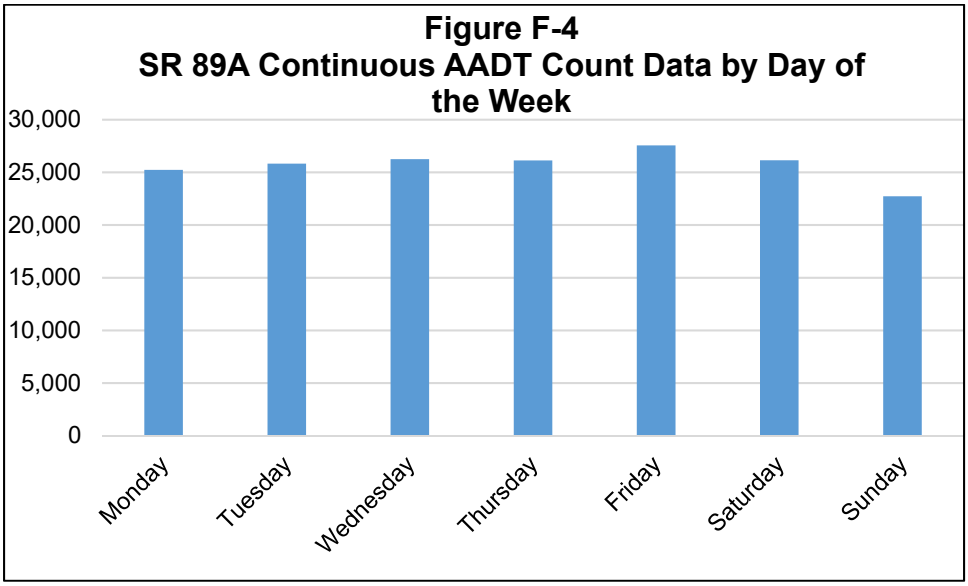
As shown in Figure F-3, traffic volumes along SR 89A were highest during the month of March (approximately 29,000 vehicles) and lowest during the month of January (approximately 21,000 vehicles). This data is consistent with hotel occupancy rates in Sedona (presented in Chapter III), which were highest during March 2017 (84.9 percent occupancy) and lowest during January 2017 (46.5 percent).

Figure F-3
SR 89A Continuous AADT Count Data by Month

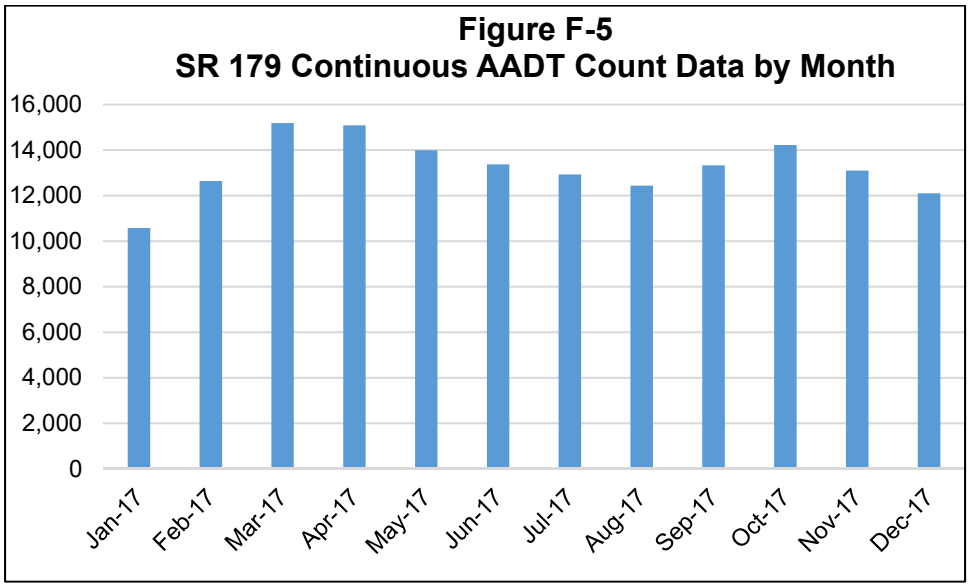


As shown in Figure F-4, traffic volumes along SR 89A were relatively consistent throughout the week, with the highest volumes on Fridays throughout 2017 (approximately 28,000 vehicles) and lowest volumes on Sundays throughout 2017 (approximately 23,000 vehicles).

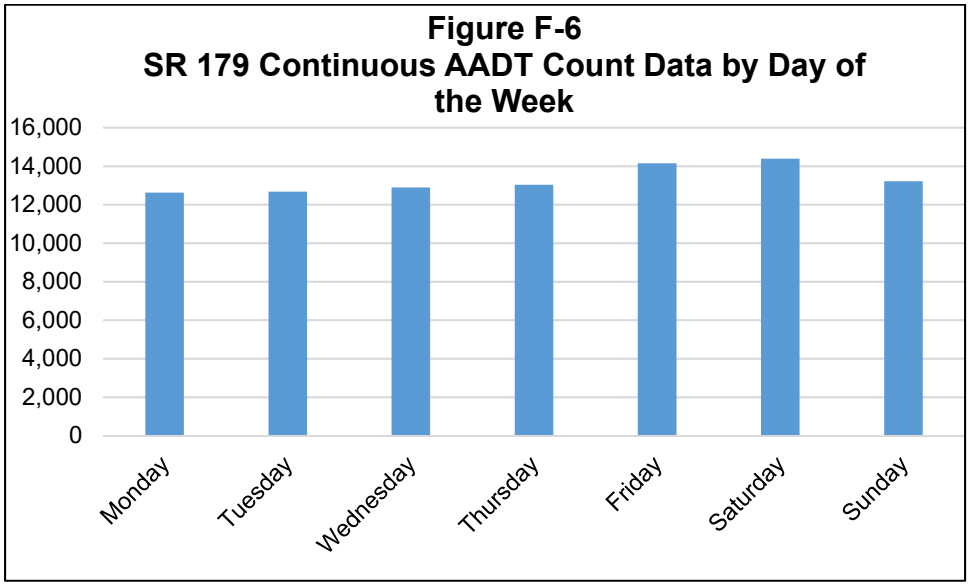
Figure F-4
SR 89A Continuous AADT Count Data by Day of the Week



As shown in Figure F-5, traffic volumes along SR 179 were highest during the month of March (approximately 15,000 vehicles) and lowest during the month of January (approximately 11,000 vehicles). This data is consistent with hotel occupancy rates in Sedona (presented in Chapter III), which were highest during March 2017 (84.9 percent occupancy) and lowest during January 2017 (46.5 percent).



As shown in Figure F-6, traffic volumes along SR 179 were relatively consistent throughout the week, with the highest volumes occurring on Saturdays (approximately 14,000 vehicles) and lowest volumes occurring on Sundays (approximately 13,000 vehicles).



These AADT volumes were then used in calculating regional travel demand in the study area. A mode split based on traffic volumes was used to calculate travel demand throughout the study area. A 1.5 percent mode split was used to determine the number of transit trips and a 1.8 vehicle occupancy was assumed. The demand for public transportation along the SR 89A corridor is approximately 744 passenger-trips per day, which calculates to approximately 272,000 annual passenger-trips, assuming 365 days per year. The demand for public transportation along the SR 179 corridor is approximately 410 passenger-trips per day, which calculates to approximately 150,000 annual passenger-trips, assuming 365 days per year.

2016 SEDONA VISITATION ESTIMATE

The Sedona Chamber of Commerce and Tourism Bureau provided an estimate of the total number of visitors to Sedona and the total number of visitor days for 2016, using the regional hotel room base, annual occupancy rate, number of room nights, and average length of stay. As shown in Table F-3, the methodology estimated a total of approximately 3,064,000 visitors, with approximately 28 percent being overnight visitors and 72 percent being day visitors. The methodology also estimated a total of approximately 5,025,000 visitor days, with approximately 56 percent being overnight visitor days and 44 percent being daytrip visitor days.

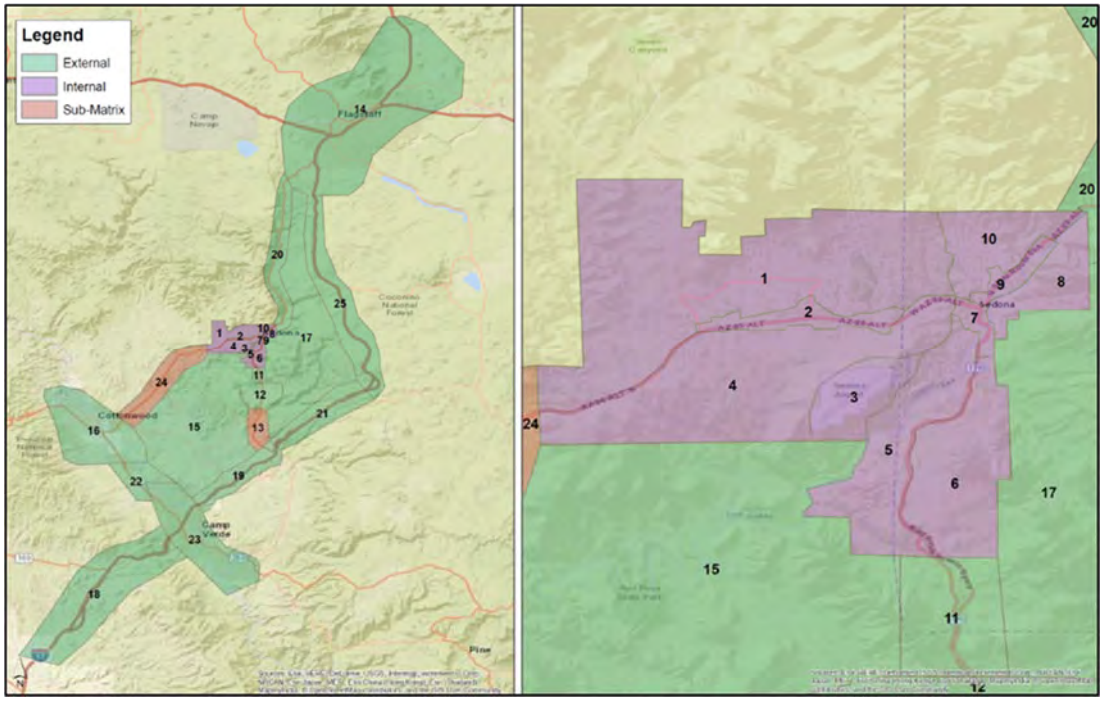
Table F-3 Estimate of Sedona Visitors for 2016		
Estimate of Base Lodging Demand		
Regional Hotel Room Base	2,589	
Annual Occupancy Rate	68.8%	
Occupied Room Nights	650,150	
Average Length of Stay	3.3	
Estimate of Overnight Stays		
Number of Overnight Hotel/B&B Party Nights	650,150	67%
Timeshare Nights	232,889	24%
Private Home Nights	63,074	7%
RV Park Nights	19,407	2%
Total Overnight Party Nights	*970,373*	*100%*
Estimate of Total Stays		
Percent of Total Overnight Stays	970,373	56%
Percent Daytrippers Stays	762,436	44%
Total Stays	*1,732,808*	*100%*
Party Size		
Persons/Party	2.90	
Estimate of Total Number of Visitors		
Overnight Visitors	852,752	28%
Daytrip Visitors	2,211,063	72%
Total Visitors	*3,063,815*	*100%*
Estimate of Total Number of Visitor Days		
Overnight Visitor Days	2,814,081	56%
Daytrip Visitor Days	2,211,063	44%
Total Visitor Days	*5,025,144*	*100%*
Source: Sedona Chamber of Commerce and Tourism Bureau, 2018.		

AIRSAGE DATA

The consulting firm, Kimley-Horn, completed the Sedona Transportation Master Plan (TMP), which was published in January 2018. The TMP used origin-destination mobility pattern data, provided by AirSage, to understand the mobility patterns of residents, commuters, and visitors during the peak tourist season in Sedona. AirSage, a wireless information and data provider, processed anonymous location and movement data of mobile cell phones from wireless signaling data in the City of Sedona for the month of March 2016.

AirSage collected data for 10 zones located within City of Sedona limits (called internal zones) and 13 zones located outside the City of Sedona limits (called external zones), shown in Figure F-7. The external zones included the neighboring communities of the Village of Oak Creek, Cottonwood, Camp Verde, and Flagstaff.

Figure F-7
AirSage Mobility Zones
Source: Kimley-Horn, Sedona Transportation Master Plan Final Report, January, 2018.



The complete data set is provided in Table F-4. The patterns observed from the origin-destination data show distinct trip pairs within and around Sedona.

Table F-4
AirSage Origin and Destination Data Summary

Trip Pair	Weekday Daily Trips	Visitors		Commuters		Weekend Daily Trips	Visitors		Commuters	
		#	%	#	%		#	%	#	%
Sedona and Cottonwood	17,866	8,817	49%	6,623	37%	11,644	6,828	59%	3,287	28%
Sedona and Flagstaff	7,230	6,169	85%	589	8%	7,247	6,703	92%	265	4%
Sedona and Camp Verde	5,080	4,147	82%	7,151	15%	4,610	4,013	87%	364	8%
Sedona and Village of Oak Creek	14,558	10,302	71%	2,896	20%	11,359	9,303	82%	1,442	13%
Sedona and Oak Creek Canyon	5,968	5,713	96%	77	1%	6,265	6,069	97%	57	1%
Oak Creek Canyon and areas outside Sedona	7,342	7,282	99%	43	1%	10,136	10,048	99%	74	1%

Source: Kimley-Horn, Sedona Transportation Master Plan Final Report, January, 2018.

The aggregated data identified the average number of weekday and weekend trips made by individuals arriving, departing, and staying in Sedona by walking, riding a bicycle, driving, being a passenger in a vehicle, taking a jeep tour, riding a bus, or any other mode. On an average weekend day in March 2016, residents and visitors made approximately 101,700 person trips to, from, and within the City of Sedona, of which 25,000 were made entirely within the City of Sedona limits. The TMP infers that this data indicates that most travelers do not spend their entire day within Sedona City limits, rather they visit other nearby attractions or commute in from other communities.

The AirSage data also revealed that most trips began and ended within the same zone, indicating there may be opportunities for non-vehicular travel by bicycle, walking, or transit due to the short travel distances. West Sedona had the highest number of trips that began and ended in different zones, which the TMP indicated emphasized the importance of enhancing multimodal connections between West Sedona and hotel/lodging destinations along SR 179, and with the Uptown area.

CHAPTER SUMMARY

This chapter presented an analysis of the demand for transit services in the study area based upon standard estimation techniques, including mobility gap, general public rural non-program demand, small city fixed-route demand, commuter transit demand, ADOT traffic count data and mode split demand, 2016 Sedona visitation estimates, and AirSage data. The transit demand estimation tools described in this chapter will be used to identify and evaluate various transit service options later in the planning process.

Key findings from Chapter V include:

- **Mobility Gap:** A total of 332 daily trips, or 100,000 annual trips, need to be provided by transit to make up for the gap in mobility.
- **General Public Rural Non-Program Demand:** Transit demand is estimated at approximately 22,600 annual passenger-trips using this demand model.
- **Small City Fixed-Route Demand:** Transit demand is estimated at approximately 70,400 annual passenger-trips within the Sedona study area using this demand model. The model assumes a local fixed-route service operating throughout the study area using two vehicles, each

operating 12 hours a day and seven days a week throughout the entire year.

- **Commuter Transit Demand:** Using LEHD data and this demand model, overall demand for daily commuter transit is relatively low throughout the study area. The highest levels of commuter demand were from Verde Village to Sedona (20 daily trips, 5,600 annual trips), the Village of Oak Creek to Sedona (20 daily trips, 5,400 annual trips), and Cottonwood to Sedona (20 daily trips, 4,800 annual trips).
- **ADOT Traffic Count Data and Mode Split Demand:**
    - The area with the highest traffic volume in the study area is along SR 89A between Andante Rd. and Airport Rd.
    - Traffic volumes along SR 89A were highest during the month of March (approximately 29,000 vehicles) and lowest during the month of January (approximately 21,000 vehicles), which is consistent with hotel occupancy rates in Sedona.
    - Traffic volumes along SR 89A were relatively consistent throughout the week, with the highest volumes on Fridays throughout 2017 (approximately 28,000 vehicles) and lowest volumes on Sundays throughout 2017 (approximately 23,000 vehicles).
    - Traffic volumes along SR 179 were highest during the month of March (approximately 15,000 vehicles) and lowest during the month of January (approximately 11,000 vehicles), which is consistent with hotel occupancy rates in Sedona.
    - Traffic volumes along SR 179 were relatively consistent throughout the week, with the highest volumes occurring on Saturdays (approximately 14,000 vehicles) and lowest volumes occurring on Sundays (approximately 13,000 vehicles).
    - The demand for public transportation along the SR 89A corridor using a mode split is approximately 744 passenger-trips per day, or 272,000 annual passenger-trips.
    - The demand for public transportation along the SR 179 corridor using a mode split is approximately 410 passenger-trips per day, or 150,000 annual passenger-trips.
- **2016 Sedona Visitation Estimates:** The Sedona Chamber of Commerce and Tourism Bureau provided an estimate of the total number of visitors to Sedona and the total number of visitor days for 2016, using the regional hotel room base, annual occupancy rate, number of room nights, and average length of stay. The methodology estimated a total of approximately 3,064,000 visitors, with approximately 28 percent being overnight visitors and 72 percent being daytrip visitors. The methodology also estimated a total of approximately 5,025,000 visitor days, with approximately 56

percent being overnight visitor days and 44 percent being daytrip visitor days.

- **AirSage Data:** The 2018 Sedona Transportation Master Plan used AirSage origin-destination mobility pattern data provided to understand the mobility patterns of residents, commuters, and visitors during the peak tourist season in Sedona (March 2016). AirSage collected data for 10 internal zones located within City of Sedona limits and 13 external zones located outside the City of Sedona limits.
    - On an average weekend day in March 2016, residents and visitors made approximately 101,700 person trips to, from, and within the City of Sedona, of which 25,000 were made entirely within the City of Sedona limits, indicating that most travelers do not spend their entire day within Sedona City limits, rather they visit other nearby attractions or commute in from other communities.
    - Most trips began and ended within the same zone, indicating there may be opportunities for non-vehicular travel by bicycle, walking, or transit due to the short travel distances.
    - West Sedona had the highest number of trips that began and ended in different zones, which emphasize the importance of enhancing multimodal connections between West Sedona and hotel/lodging destinations along SR 179, and with the Uptown area.
    - The AirSage data, together with the input obtained from the visitor and intercept surveys, will be used to help inform demand estimates for specific service scenarios that we develop later in the planning process.

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Chapter G

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Chapter G

Transit Service Criteria

This chapter presents criteria used for the development and evaluation of transit service options to meet public transportation needs in Sedona. The initial criteria were taken from the Red Rock Ranger District Alternative Transportation Plan (November 2013) and were modified based on input received from the Advisory Committee, community stakeholders, local businesses, and members of the community. The draft criteria were presented to the Advisory Committee on October 23, 2018 and revised based on feedback from the Committee.

The following are the service criteria used in this evaluation.

- Service will increase mobility opportunities for those visiting, working, or living within the greater Sedona area.
    - Service must be frequent enough to be an attractive option.
    - Service must run late enough for visitors to be able to return to hotels after dining at local restaurants.
    - Service must connect lodging with major visitor destinations.
    - Local service will provide connectivity with regional commuter service.
- Service will provide connectivity between Oak Creek Canyon, Sedona, and the Village of Oak Creek.
    - Service types and levels will be appropriate for the demand between these locations.
    - Service will be adjusted to meet seasonal variations in demand.
- Service for Oak Creek Canyon and other trailheads will focus on congestion mitigation and reducing parking impacts.
    - Transit service should be integrated with intercept parking facilities.
    - The service must support USFS management policies on visitor capacity and use of Forest Service lands.

    - Service to Slide Rock State Park should enhance access to the park without adversely impacting the park visitor capacity.
- Service will be operated efficiently and effectively.
    - Performance measures will be established for efficiency of service operations.
    - Performance measures will be established for effectiveness of service delivery.
    - Policies which are needed to support successful implementation will be identified.
- Sustainable funding sources must be identified for implementation of transit service.
    - Multiple funding sources including local government, private sector, state, and federal should be identified for capital and operating costs to implement the service.
    - Service implementation may be phased based on availability of funding.

Chapter H

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Chapter H

Issues and Considerations

As we consider how to implement a transit system in the Sedona area, there are broad transportation issues, considerations, and impacts that must be included in our planning effort. These include:

- Parking, both in town and at trailheads
- Roadway network and operations
- Capacity of roundabouts at the "Y"
- Pedestrian infrastructure
- Trailhead capacity and possible reservation systems
- Pass and parking revenue impact for State and USFS

PARKING

Parking has been identified as a major issue in the Sedona area and has been addressed in previous studies. This section provides a discussion of parking issues specifically related to transit service. The issues are grouped in three categories: Oak Creek Canyon, Trailheads, and Uptown.

Oak Creek Canyon

The parking issues in Oak Creek Canyon were addressed in the study of Oak Creek Canyon Pullout Closures by Kimley-Horn in 2017. Of the 60 locations studied, closures were recommended at 27 sites. Parking management in OCC is important for the service options considered in this corridor. Without control of parking, most visitors will continue to hunt for a place to park and without enhanced enforcement, people will be comfortable parking in poor locations. Restricting parking will provide an incentive to use the transit service in OCC. Parking controls are particularly important in the vicinity of Slide Rock State Park. Currently there are many people who park on the roadside and walk into the park, often without passing through the entrance station and paying the entrance fees. Control of parking and unauthorized access to the state park will serve as incentives to use the transit service.

Traveler information is also important to support the transit service. With limited parking availability, travelers need to be informed when parking is not available and what other options are available.

The recommendations for control of parking in OCC should be implemented in conjunction with any transit service in the corridor.

Trailhead Parking

Several popular trailheads experience significant parking congestion. In particular, Bell Rock, Courthouse Rock, Cathedral Rock, Soldier's Pass, Dry Creek Vista, and West Fork are frequently filled to capacity with people parking on nearby roads if possible or waiting to obtain a parking space. Traffic is frequently observed in a queue along the road waiting to gain entrance to the West Fork parking lot which is controlled by an entrance gate and parking fee.

Some of these trailheads may provide an opportunity to reduce parking congestion by providing transit access that is convenient and relatively inexpensive. Many people interviewed at trailheads, as discussed in Chapter B would prefer a transit service and many others would consider it. The service to trailheads will have to provide as direct a routing as possible and frequent so that people are not spending much time waiting for the bus.

Transit service could also provide an alternative for people to take less popular trails although this would be a challenge. The most popular trails have received publicity through social media and have become an attraction for people traveling to Sedona.

Uptown Parking

Parking in Uptown was analyzed thoroughly in 2012. Two key findings from that analysis are that on-street parking is in high demand and used to capacity while off-street parking is under used. Most of the on-street parking along SR 89A is paid parking which provides some incentive to use other parking facilities, but recent observations as part of this transit study show that the on-street parking is heavily used.

As many as half of the people interviewed indicating parking was a problem in the Sedona area. Some mentioned parking problems at trailheads and others in Uptown. Some who are more frequent visitors to Sedona indicated they either stay in Uptown and can walk to most places or they know where to find parking in Uptown. The parking data indicate that much of the time it is possible to find parking in off-street lots just a few blocks from SR 89A and the area of highest demand for on-street parking.

Lack of available parking is a major incentive for use of a local transit system. If parking is available at little or no cost, the majority of people will continue to drive their personal vehicles rather than use the transit service. Parking management will have to be a consideration for transit service implemented in the Uptown area to create an incentive for transit use and a decrease in parking demand and traffic. Marketing of a transit service as an alternative to driving and searching for parking will be important.

ROADWAY NETWORK

For roadways, there are two primary issues: one is the lack of roadway connections between neighborhoods and the other is the lack of alternate routes.

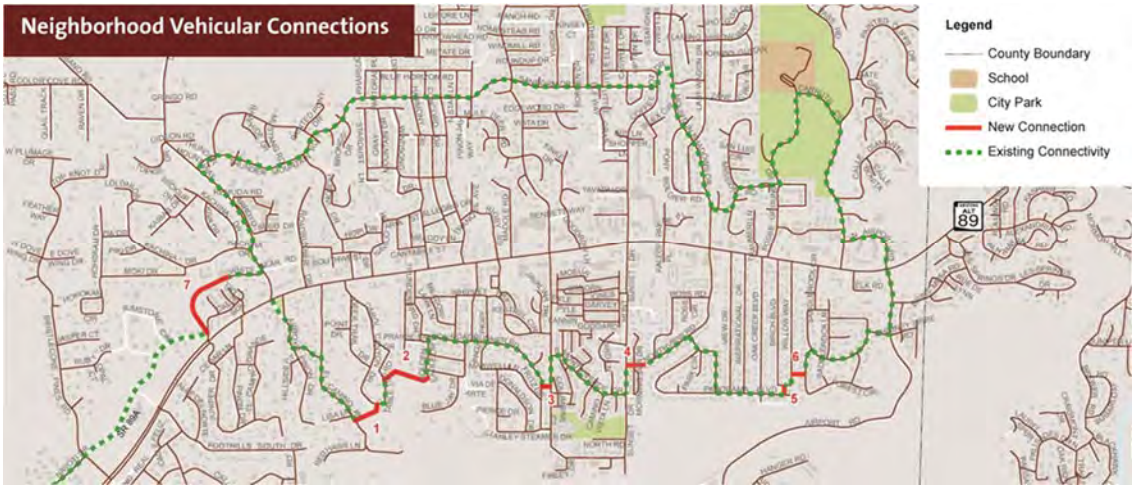
Connectivity of Overall Roadway Network

The lack of connectivity of the Sedona area road network creates challenges for operating bus service. With disconnected neighborhood roads and the absence of a grid street network, as noted in the Sedona Transportation Master Plan (TMP), buses are not able to have routes that run parallel to SR 89A or SR 179. If a bus has to go into a neighborhood for a bus stop or passenger, it will have to retrace its path to return to the main road to access other neighborhoods.

This results in an either inefficient routing or routes that don't serve neighborhoods and stick only to SR 89A or SR 179. As shown in Figure H-1, the TMP identifies seven possible locations for creating new vehicular connections to help improve the road network. These connections could help create more opportunity for transit routes that better serve neighborhoods; however, the TMP states that "the city will only pursue neighborhood street connections in areas

where homeowners are interested in connections and their associated amenities." Adding buses into neighborhoods may be viewed favorably by some and unfavorably by others.

Figure H-1
TMP Street Connections Recommendation



This TMP approach to making "small, local-traffic, residential street connections in logical locations, adding walking and bike pathways as neighborhood amenities," may also provide related walking and bicycling benefits for potential transit riders who can more easily access the bus.

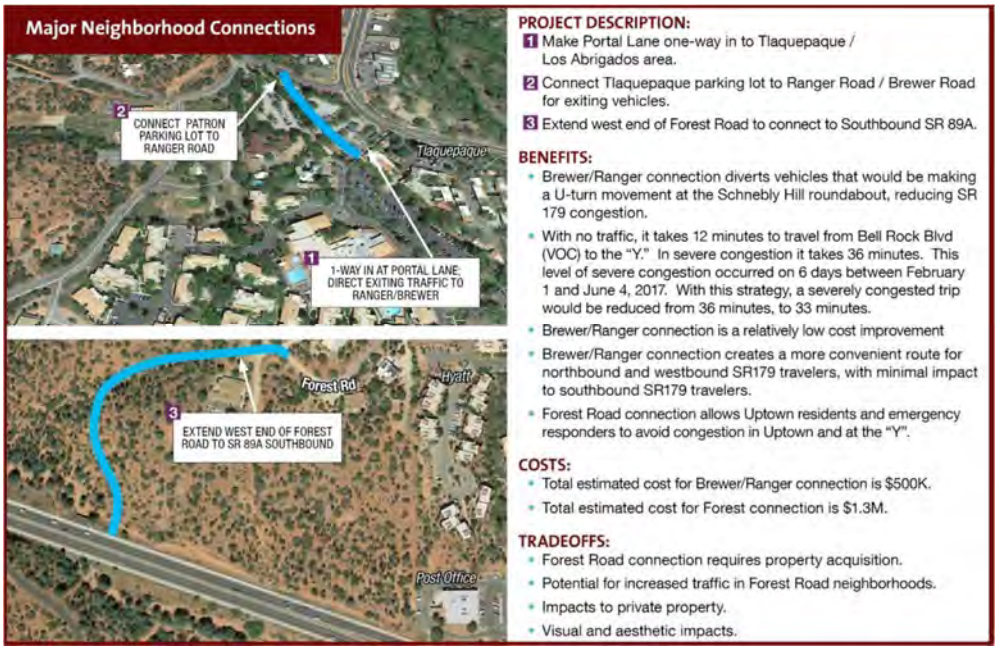
Lack of Alternate Routes

Related to road connectivity is the lack of alternate routes along both SR 179 and SR 89A. As noted in the TMP, locals have no alternate routes to avoid traffic and visitor congestion, so three connections are recommended and shown in Figure H-2:

1. Make Portal Lane one-way in to the Tlaquepaque/Los Abrigados area.
2. Connect Tlaquepaque parking lot to Ranger Road/Brewer Road for exiting vehicles. Improve the Brewer Road/Ranger Road intersection.
3. Extend the west end of Forest Road to connect to Southbound SR 89A.

These same connections could help transit operations of a potential Sedona Shuttle by giving operational options and routing possibilities. Alternate routes could help a shuttle to stay on schedule during peak traffic conditions.

Figure H-2
Major Neighborhood Connections



ROAD CAPACITY AT THE "Y"

The Transportation Master Plan identified congestion and capacity issues at the Y. The congestion and delay which occurs at this intersection will adversely impact transit operations. Buses operating in traffic will be delayed and maintaining a schedule will be difficult or impossible. Traffic delays will create high variability for transit travel times.

Recommendations in the Transportation Master Plan are to add lanes to the roundabout at the Y and the Schnebly Hill roundabout with an additional travel lane in each direction between the two roundabouts. While this will improve capacity at the intersections and between the roundabouts, SR 179 south of Schnebly Hill Road will still have only one lane and will become the congestion point for traffic traveling south from the Y.

The pedestrian crossing at Tlaquepaque also creates a point of congestion as traffic stops to allow pedestrians to cross. The use of traffic control personnel at the crossing is a help, but this crossing still serves as a point of congestion and causes traffic to back up in both directions at various times of the day. With widening of the road to two lanes in each direction, the delay will be increased as pedestrians have to cross two lanes instead of one.

One approach which is shown in the service options is to create a hub which will limit the routes that go through the roundabouts and reduce the number of time buses pass through the roundabouts. Locating a transit hub in the vicinity of Brewer Road and Ranger Road would reduce the number of buses passing through the roundabout at the Y. If a transit hub is located in Uptown, all buses will have to travel through the Y roundabout and will experience significant delay. Another approach would be to provide a shoulder lane for buses to bypass traffic delays. This is the approach used in the Park City area between Park City and Kimball Junction and would improve transit performance if a shoulder lane was available from Airport Road to the Y.

Modeling of traffic flows was completed with assumptions of roadway improvements included in the TMP and additional improvements to support the transit system. The results are described in the benefits of the recommended service plan in Chapter M.

PEDESTRIANS AND CYCLISTS

Biking and walking conditions vary considerably within the Sedona area – this variability is challenging for operating a shuttle system since every transit trip starts and ends with a walking or biking trip. The inconsistency of pedestrian and bicycling infrastructure could mean:

- Less ridership, as potential riders may decide it's too difficult or dangerous to get to or from a bus stop
- More paratransit trips because potential riders may not be able to navigate to or from a bus stop – these trips are much more expensive to operate

- Inefficient and circuitous bus routing to serve neighborhoods without pedestrian connectivity that are relatively close (1/2 mile or less) to main roads like SR 89A – an example of this is shown in Figure H-3.

Pedestrian and Bicycle Connectivity

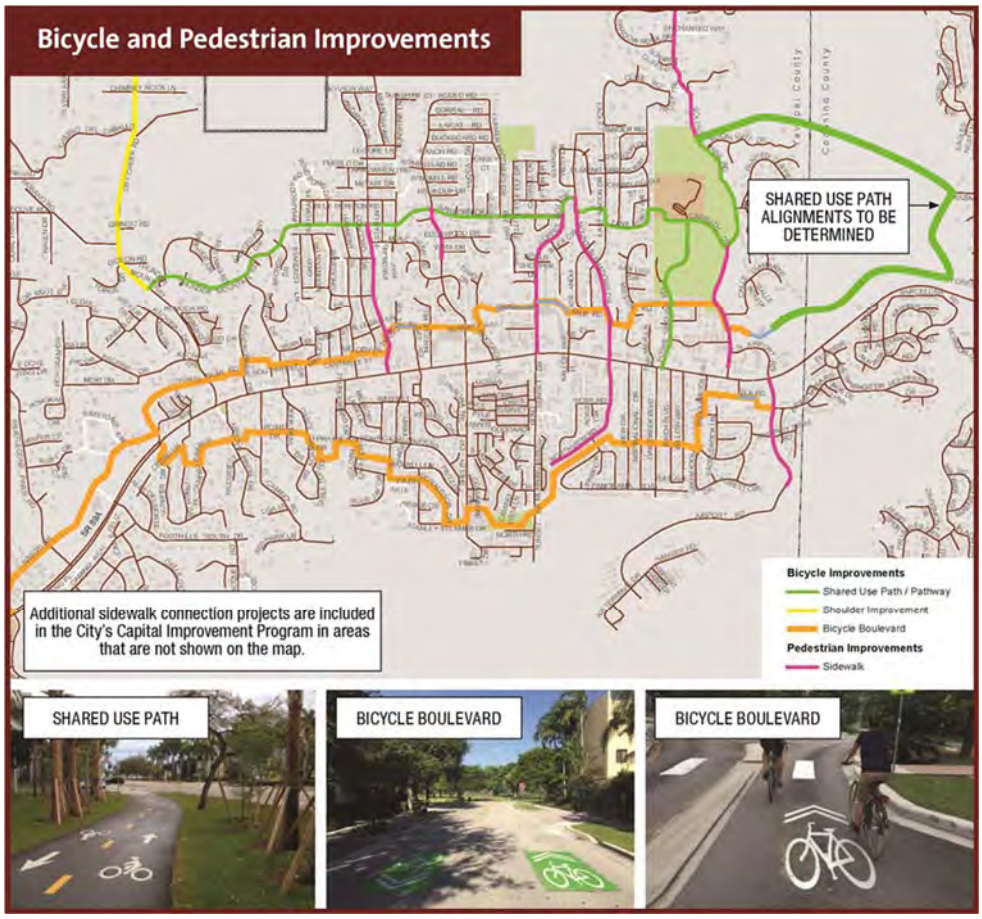
The City of Sedona is actively working on improving the overall pedestrian and bicycling network as a transportation priority. The TMP has a vision for more connected pedestrian and bicycle facilities such as sidewalks, shoulder improvements, shared use pathways, and bicycle boulevards, as shown in Figure H-4.

Currently, the City is working to plan and implement the following high priority path and sidewalk projects:

- Schnebly Hill Road – from the roundabout along the west side to Bear Wallow Lane

- Southwest Drive – from City Hall along Southwest Drive to Rodeo Road. Sunset Park – from the Shelby Drive thru Sunset Park to Sunset Drive
- Shelby Drive – bike lane on west side, from State Route 89A to the entrance to Sunset Park.

Figure H-4
TMP Recommended Pedestrian and Bicycle Improvements



According to the City of Sedona, other possible future bicycle and pedestrian implementation projects include:

- A multi-use path from Uptown to West Sedona: the Sedona Trails and Pathways System would be used by walkers and bike-riders.
- Wide paved shoulders on Dry Creek Road to support safe bike riding.
- Bike boulevard running parallel and to the north and south of SR 89A using existing streets with some new connecting pathways.
- Sidewalk connections to link neighborhoods and provide better resident access to parks and services, and opportunities for more outdoor activities.

All of these projects, once complete, will support a transit system and allow for more potential ridership.

Crosswalks

Another consideration for pedestrians, motorists, and overall traffic is crosswalks, existing and needed. For pedestrians, crosswalks are often across very busy roadways with limited sight distances. For motorists, multiple crosswalks within a relatively short distance create frustration and potential for more incidents and accidents. For area traffic, crosswalks add to delays and congestion due to vehicles stopping frequently for pedestrians.

The City of Sedona is trying to mitigate these issues in the Uptown area by posting crossing guards at crosswalks during the busiest times. These guards will alternatively stop vehicles and pedestrians, much like a pedestrian crossing signal would. This solution is helpful in the mid-term but may not be the best long-term fix.

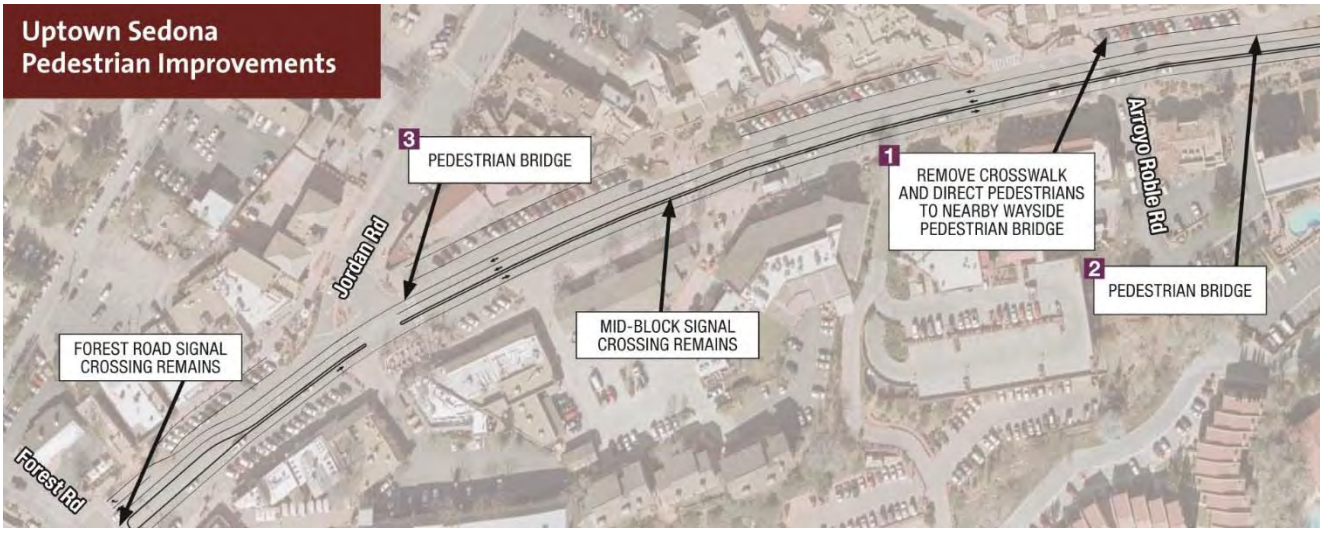
Recognizing the challenge with crosswalks in the Uptown area, the City states that "managing pedestrian movements will improve traffic flow and safety in Uptown, and help pedestrians more easily access businesses on both sides of Main Street. Improvements in hardscaping and landscaping will make Sedona's Uptown area more attractive and pedestrian-friendly."

As shown in Figure H-5, potential pedestrian design elements being considered include:

- A raised median with landscaping and/or art elements to improve the street's appearance and reduce uncontrolled pedestrian crossings.
- Crossing bridges with art elements to improve safety and eliminate conflicts with traffic.
- Removing the crosswalk at Arroyo Roble. Direct pedestrians to bridges with art elements at Wayside Chapel and Jordan Road.

These pedestrian crosswalk improvements in Uptown could help reduce traffic, which would improve transit operations, and encourage more walking within Uptown, which could boost potential transit ridership.

Figure H-5
Pedestrian Considerations for Uptown



VISITOR CAPACITY

A concern when providing access to trails or Slide Rock State Park is the possibility of increasing the number of visitors and exceeding the visitor capacity of the natural resource. A cooperative effort will be needed between the State Park, USFS, and the City to ensure that access is provided without overwhelming the destination.

A reservation or permit system and transit can be an effective means of limiting the number of people at any one point or during a specified period of time. Many attractive tourist destinations have been forced to implement either a permit system or reservations to access the site. Muir Woods National Monument requires reservations for parking and the shuttle to visit the Redwoods forest. Zion National Park has restricted private vehicle access and requires use of the shuttle service. The USFS implemented a shuttle system and eliminated private vehicle parking at the trailhead for Hanging Lake in Colorado for the summer of 2019. Use of the shuttle with a fee is required to access the trail during the peak visitor season. Reservations are required to use the shuttle. The trailhead capacity was based on preference surveys of visitors using the trailhead in recent years and the capacity set to enhance the visitor experience.

Access to some Federal lands requires a separate permit and, in some cases, the number of permits issued each day is limited to ensure an acceptable experience for visitors. This is true for many designated wilderness areas. Many people visiting national recreation areas are familiar with these systems and understand the benefits. There are other locations where trailheads are served by local public transit with bus stops located at or near the trailheads, including trails that provide access to designated wilderness areas. Examples are in Eagle County and Summit County, Colorado, and in the Mount Bachelor area of central Oregon.

The USFS and Slide Rock State Park should determine the acceptable visitation levels at key recreation sites and the work with the transit service to implement a schedule that supports the goals of the Park and the USFS for visitation.

FEE REVENUE

Both the State Park and USFS receive revenue from visitor fees. Slide Rock State Park has a visitor entrance fee and the USFS has the Red Rock Pass for use of many parking areas around Sedona. The fees are used to support maintenance and improvements of the facilities. Any transit system that is implemented should be at least neutral with the revenue received by the USFS and State Park. This could be structured through premium fees for some services such as parking personal vehicles and a lower fee for those using transit. West Fork serves as a good example of the willingness to pay a fee for access. Vehicles are waiting in line to gain access to the parking area to be able to access the trail. While the fee of $10 per vehicle is not insignificant, it is not high enough to keep the parking area from filling by 9:30 a.m. or earlier and people waiting for 30 minutes to gain entry. A similar fee or higher fee could be charged at the most popular locations to generate revenue offset by people access trails by bus.

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Chapter I

TRANSPORTATION
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Chapter I

Service Options in Oak Creek Canyon

INTRODUCTION

This chapter focuses on service options for Oak Creek Canyon. Options include direct, non-stop service to Slide Rock State Park and service with multiple stops in the Canyon at various trailheads, picnic areas, and campgrounds. Four locations for intercept parking were used to define the options. The first possible location for intercept parking was along SH 179 in the vicinity of the Village of Oak Creek and the Red Rock Ranger Station. A specific location has not been identified or evaluated, but will have to be addressed as part of the implementation if one of these options is selected. The second location for intercept parking is the municipal parking lot #5 in Uptown. The third location for an intercept parking lot is in West Sedona at or near Cultural Park. Finally, intercept parking at Oak Creek Vista was considered for an option to serve people coming to Oak Creek Canyon from the north.

Service to Slide Rock State Park has been evaluated with and without a reservations system for access to the park. With a reservations system a limited number of people could reserve access to the park on specific days for vehicle entry. An additional number of reservations would be accepted for access by bus with parking at the intercept parking lot. The Park could control the number of people entering the park by the number of reservations that are accepted. This approach could be financially neutral by charging a premium for vehicular access and a per person charge for those parking at the intercept lot and using the bus.

Parking restrictions in Oak Creek Canyon have been used to compare service options for the canyon service. One option is to continue the current parking scenario with possible minor changes. The second option is to implement a more aggressive program of strict parking controls by eliminating roadside parking through barriers and enhanced enforcement. Strict parking controls would also require traveler information through the use of variable message signs and smart phone apps to alert travelers when parking is not available within the Canyon.

The number of vehicles required for operation of each option has been identified. In addition to the number of vehicles in operation, spare vehicles will be required to cover times for routine maintenance and repairs. The number of spare vehicles will be determined by which options are implemented and how the service options are combined in the implementation plan. Typically, a transit fleet requires the number of spare vehicles to be about 20 percent of the number of vehicles in operation at peak times.

OCC OPTION 1 – 179 PARKING TO SLIDE ROCK WITH RESERVATION SYSTEM

In this option, an intercept parking lot would be established in the vicinity of the Village of Oak Creek and the Red Rock Ranger Station. A specific location has not been determined. It could be located at the Ranger Station or near the south end of the Village. If the location is moved farther north in the Village, it will become less effective. The service concept is illustrated in Figure I-1.

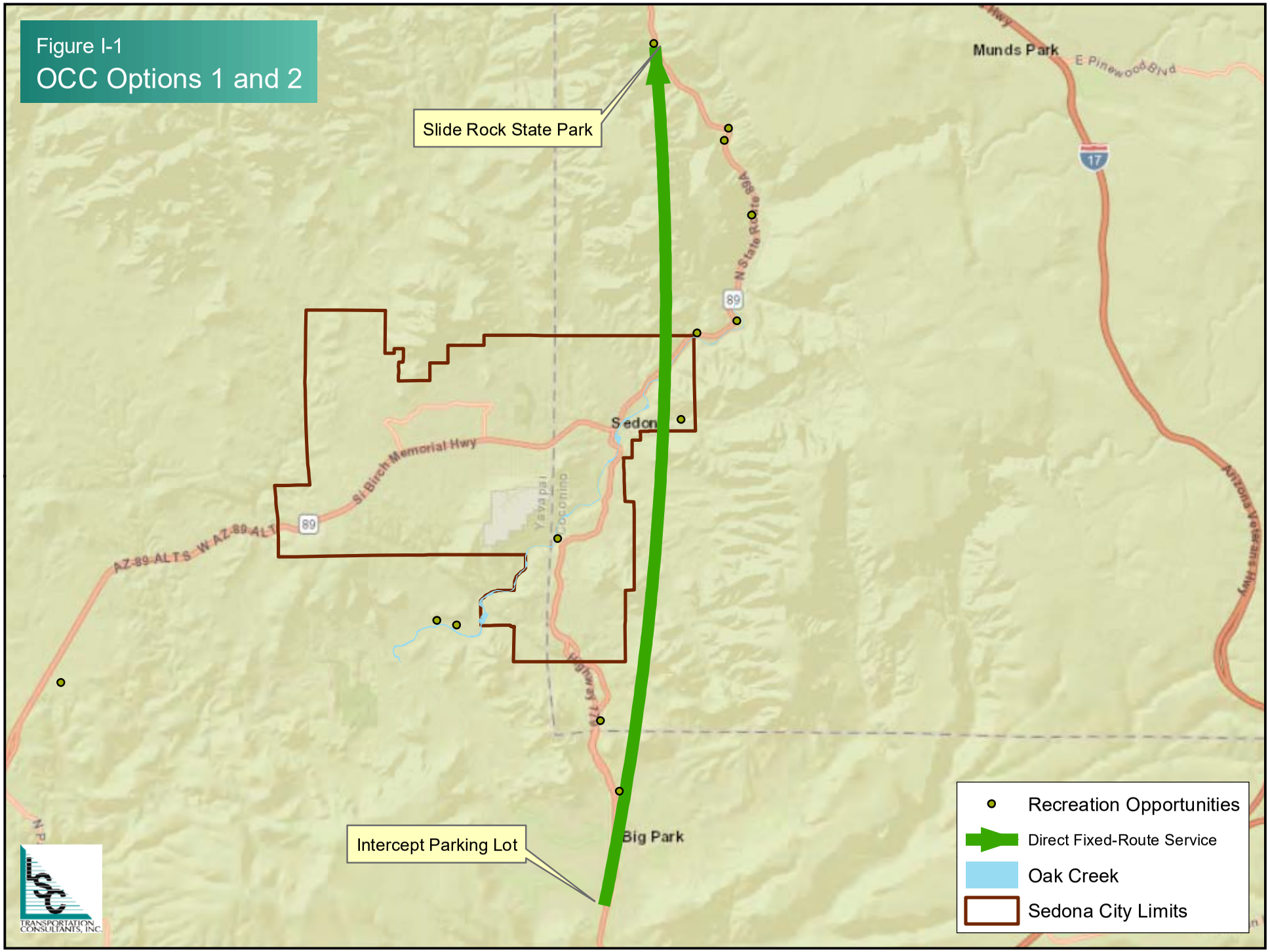
Service to Slide Rock State Park would be operated daily from mid-May through mid-September. The reservation system has been assumed to accommodate 1,000 visitors arriving by bus. With a vehicle occupancy of 3.5 to 4 people per car, the lot will have to accommodate at least 300 cars. If this option is combined with one of the options serving the remainder of Oak Creek Canyon, additional capacity will be required.

Sufficient capacity will be required to transport 1,000 people to Slide Rock over a few hours in the morning. Buses will have to be staged to depart as they are filled or after some maximum waiting time if the bus is not full. For this service, a bus capacity of 40 passengers has been assumed.

The following characteristics describe this option.

- Peak vehicles in operation: 8
- Annual operating days: 121
- Estimated ridership: 243,000
- Annual operating cost: $570,000
- Passenger-trips per hour: 28.6
- Average cost-per passenger-trip: $2.35

Figure I-1
OCC Options 1 and 2



Performance

Table I-1 shows the performance evaluation of OCC Option 1 relative to the established service criteria.

Table I-1
Performance – OCC Option 1

Service Criteria	Evaluation
Increase mobility options	No – focused on direct service to Slide Rock State Park
Provide connectivity between VOC, Sedona, and OCC	Limited – direct service from VOC to Slide Rock State Park
Traffic congestion mitigation	Yes – would reduce traffic volumes in OCC and congestion at entrance to Slide Rock
Parking congestion mitigation	Yes – would reduce parking demand at Slide Rock
Passenger-trips per hour of service	28.6
Cost per passenger trip	$2.35
Requires other policy changes	Yes – reservations for Slide Rock and parking controls on SR 89A in OCC

OCC OPTION 2 – 179 PARKING TO SLIDE ROCK WITHOUT RESERVATION SYSTEM

In this option, an intercept parking lot would be established in the vicinity of the Village of Oak Creek and the Red Rock Ranger Station as in OCC Option 1. A specific location has not been determined. It could be located at the Ranger Station or near the south end of the Village. If the location is moved farther north in the Village, it will become less effective. The service concept is illustrated in Figure I-1.

Service to Slide Rock State Park would be operated daily from mid-May through mid-September. Without a reservations system and restrictions on how many people may enter the park, the demand for this service will be low. Visitors will continue to drive to the park as they do currently, hoping to arrive early enough to be able to enter the park.

Buses would operate throughout the time the park is open with service every 30 minutes. A daily average of only 150 people are expected use this service which would require a much small parking lot than in OCC Option 1. A total of about

50 spaces would be required for this option. Smaller vehicles with a capacity of 25 to 30 passengers could be used for this service.

The following characteristics describe this option.

- Peak vehicles in operation: 4
- Annual operating days: 121
- Estimated ridership: 36,000
- Annual operating cost: $375,000
- Passenger-trips per hour: 6.5
- Average cost-per passenger-trip: $10.31

Performance

Table I-2 shows the performance evaluation of OCC Option 2 relative to the established service criteria.

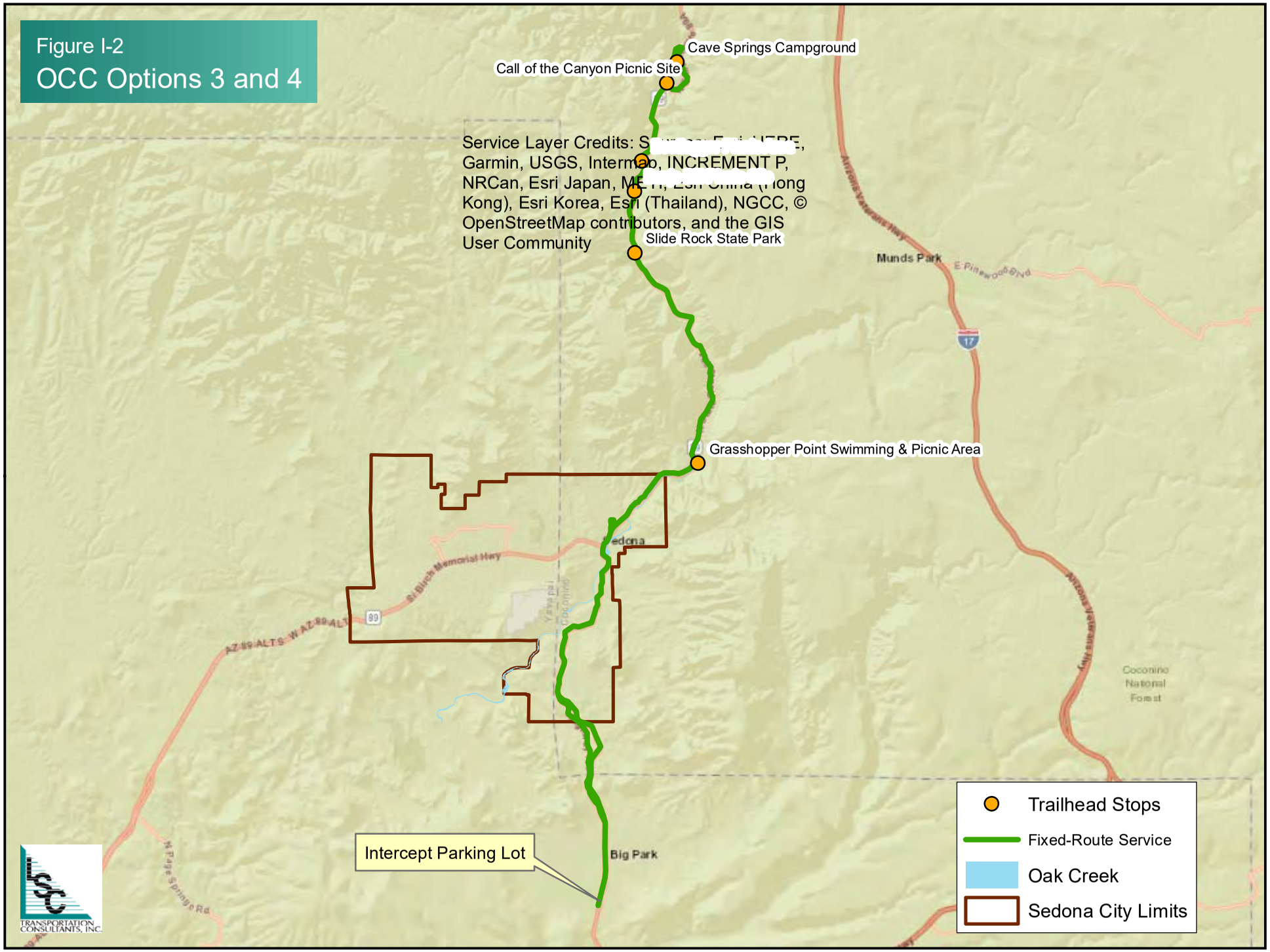
Table I-2
Performance – OCC Option 2

Service Criteria	Evaluation
Increase mobility options	No – focused on direct service to Slide Rock State Park
Provide connectivity between VOC, Sedona, and OCC	Limited – direct service from VOC to Slide Rock State Park
Traffic congestion mitigation	No – negligible impact on traffic volumes in OCC and congestion at entrance to Slide Rock
Parking congestion mitigation	Limited – would reduce some parking demand at Slide Rock
Passenger-trips per hour of service	6.5
Cost per passenger trip	$10.31
Requires other policy changes	No – doesn't have policy requirements

OCC OPTION 3 – 179 PARKING TO CAVE SPRINGS CAMPGROUND WITH STRICT PARKING CONTROLS

In this option, an intercept parking lot would be established in the vicinity of the Village of Oak Creek and the Red Rock Ranger Station as in OCC Option 1. A specific location has not been determined. It could be located at the Ranger Station or near the south end of the Village. If the location is moved farther north in the Village, it will become less effective. The service concept is illustrated in Figure I-2.

Figure I-2
OCC Options 3 and 4



Service would be provided to trailheads, day use areas, and campgrounds from the Village of Oak Creek through Oak Creek Canyon as far as Cave Springs Campground. The service would operate from 7:00 a.m. to 6:00 p.m. with service every 30 minutes. This route would operate from April 1 through October 31.

In this option, implementation of strict parking controls has been assumed. Recommendations for elimination of roadside parking in OCC along with enhanced enforcement will serve to encourage use of a shuttle service between an intercept parking location, trailheads, and other day use areas. Using AirSage data for day visitor volumes from areas south of Sedona, the average daily use of this service is estimated to be about 300 people.

The following characteristics describe this option.

- Peak vehicles in operation: 4
- Annual operating days: 244
- Estimated ridership: 146,000
- Annual operating cost: $773,000
- Passenger-trips per hour: 13.0
- Average cost-per passenger-trip: $5.28

Performance

Table I-3 shows the performance evaluation of OCC Option 3 relative to the established service criteria.

Table I-3
Performance – OCC Option 3

Service Criteria	Evaluation
Increase mobility options	Limited – focused on recreation areas
Provide connectivity between VOC, Sedona, and OCC	Yes – connects VOC with OCC destinations and intermediate recreation areas
Traffic congestion mitigation	Yes – would reduce traffic volumes in OCC and congestion at recreation areas
Parking congestion mitigation	Yes – would reduce parking demand at key trailheads
Passenger-trips per hour of service	13.0
Cost per passenger trip	$5.28
Requires other policy changes	Yes – parking controls on SR 89A in OCC

OCC OPTION 4 – 179 PARKING TO CAVE SPRINGS CAMPGROUND WITHOUT STRICT PARKING CONTROLS

In this option, an intercept parking lot would be established in the vicinity of the Village of Oak Creek and the Red Rock Ranger Station as in OCC Option 3. A specific location has not been determined. It could be located at the Ranger Station or near the south end of the Village. If the location is moved farther north in the Village, it will become less effective. The service concept is illustrated in Figure I-2.

This option is similar to OCC Option 3. Service would be provided to trailheads, day use areas, and campgrounds from the Village of Oak Creek through Oak Creek Canyon as far as Cave Springs Campground. The service would operate from 7:00 a.m. to 6:00 p.m. with service every 30 minutes. This route would operate from April 1 through October 31.

In this option, only minimal changes to parking restrictions and enforcement on SR 89A in OCC are considered. Demand for this service is expected to be very low without parking restrictions and traveler information. Using AirSage data for day visitor volumes from areas south of Sedona, the average daily use of this service is estimated to be about 100 people.

The following characteristics describe this option.

- Peak vehicles in operation: 4
- Annual operating days: 244
- Estimated ridership: 24,000
- Annual operating cost: $773,000
- Passenger-trips per hour: 2.2
- Average cost-per passenger-trip: $31.67

Performance

Table I-4 shows the performance evaluation of OCC Option 4 relative to the established service criteria.

Table I-4 Performance – OCC Option 4	
Service Criteria	**Evaluation**
Increase mobility options	Limited – focused on recreation areas
Provide connectivity between VOC, Sedona, and OCC	Yes – connects VOC with OCC destinations and intermediate recreation areas
Traffic congestion mitigation	No – negligible impact on traffic
Parking congestion mitigation	No – insignificant OCC parking reduction
Passenger-trips per hour of service	2.2
Cost per passenger trip	$31.67
Requires other policy changes	No – doesn't have policy requirements

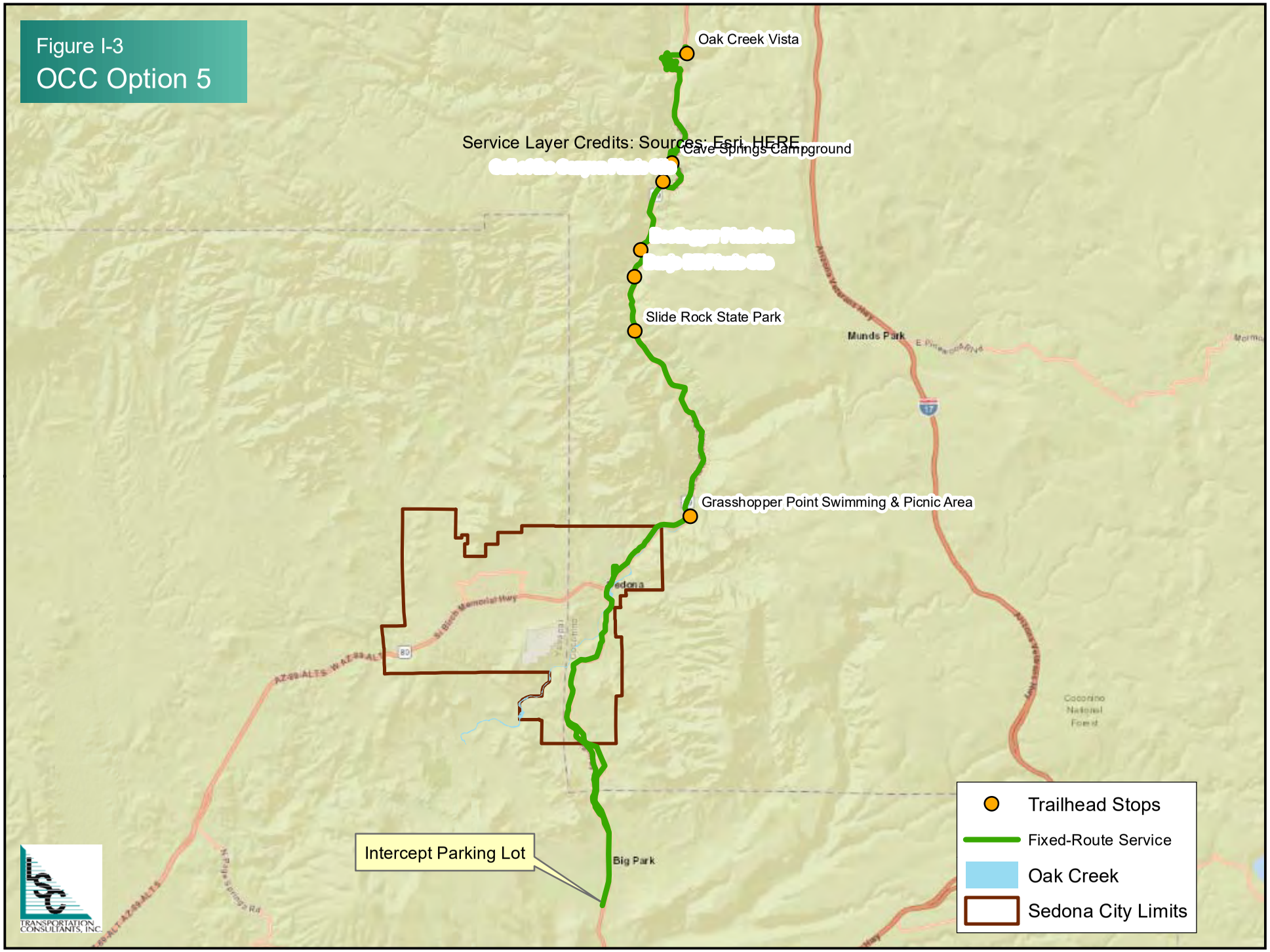
OCC OPTION 5 – 179 PARKING TO OAK CREEK VISTA WITH STRICT PARKING CONTROLS

In this option, an intercept parking lot would be established in the vicinity of the Village of Oak Creek and the Red Rock Ranger Station as in OCC Option 3. A specific location has not been determined. It could be located at the Ranger Station or near the south end of the Village. If the location is moved farther north in the Village, it will become less effective. The service concept is illustrated in Figure I-3.

Service would be provided to trailheads, day use areas, and campgrounds from the Village of Oak Creek through Oak Creek Canyon to Oak Creek Vista on the north. The service would operate from 7:00 a.m. to 6:00 p.m. with service every 30 minutes. This route would operate from April 1 through October 31.

In this option, implementation of strict parking controls has been assumed. Recommendations for elimination of roadside parking in OCC along with enhanced enforcement will serve to encourage use of a shuttle service between an intercept parking location, trailheads, and other day use areas. Using AirSage data for day visitor volumes from areas south of Sedona, the average daily use of this service is estimated to be about 300 people.

Figure I-3
OCC Option 5



The following characteristics describe this option.

- Peak vehicles in operation: 4
- Annual operating days: 244
- Estimated ridership: 146,000
- Annual operating cost: $773,000
- Passenger-trips per hour: 13.0
- Average cost-per passenger-trip: $5.28

Performance

Table I-5 shows the performance evaluation of OCC Option 5 relative to the established service criteria.

Table I-5
Performance – OCC Option 5

Service Criteria	Evaluation
Increase mobility options	Limited – focused on recreation areas
Provide connectivity between VOC, Sedona, and OCC	Yes – connects VOC with OCC destinations and intermediate recreation areas
Traffic congestion mitigation	Yes – would reduce traffic volumes in OCC and congestion at recreation areas
Parking congestion mitigation	Yes – would reduce parking demand at key trailheads
Passenger-trips per hour of service	13.0
Cost per passenger trip	$5.28
Requires other policy changes	Yes – parking controls on SR 89A in OCC

OCC OPTION 6 – UPTOWN PARKING TO SLIDE ROCK WITH RESERVATION SYSTEM

In this option, municipal parking lot #5 would be used as an intercept parking lot. The service concept is illustrated in Figure I-4.

Service to Slide Rock State Park would be operated daily from mid-May through mid-September. The reservation system has been assumed to accommodate 1,000 visitors arriving by bus. With a vehicle occupancy of 3.5 to 4 people per car, the lot will have to accommodate at least 300 cars. If this option is combined with one of the options serving the remainder of Oak Creek Canyon, additional capacity will be required.

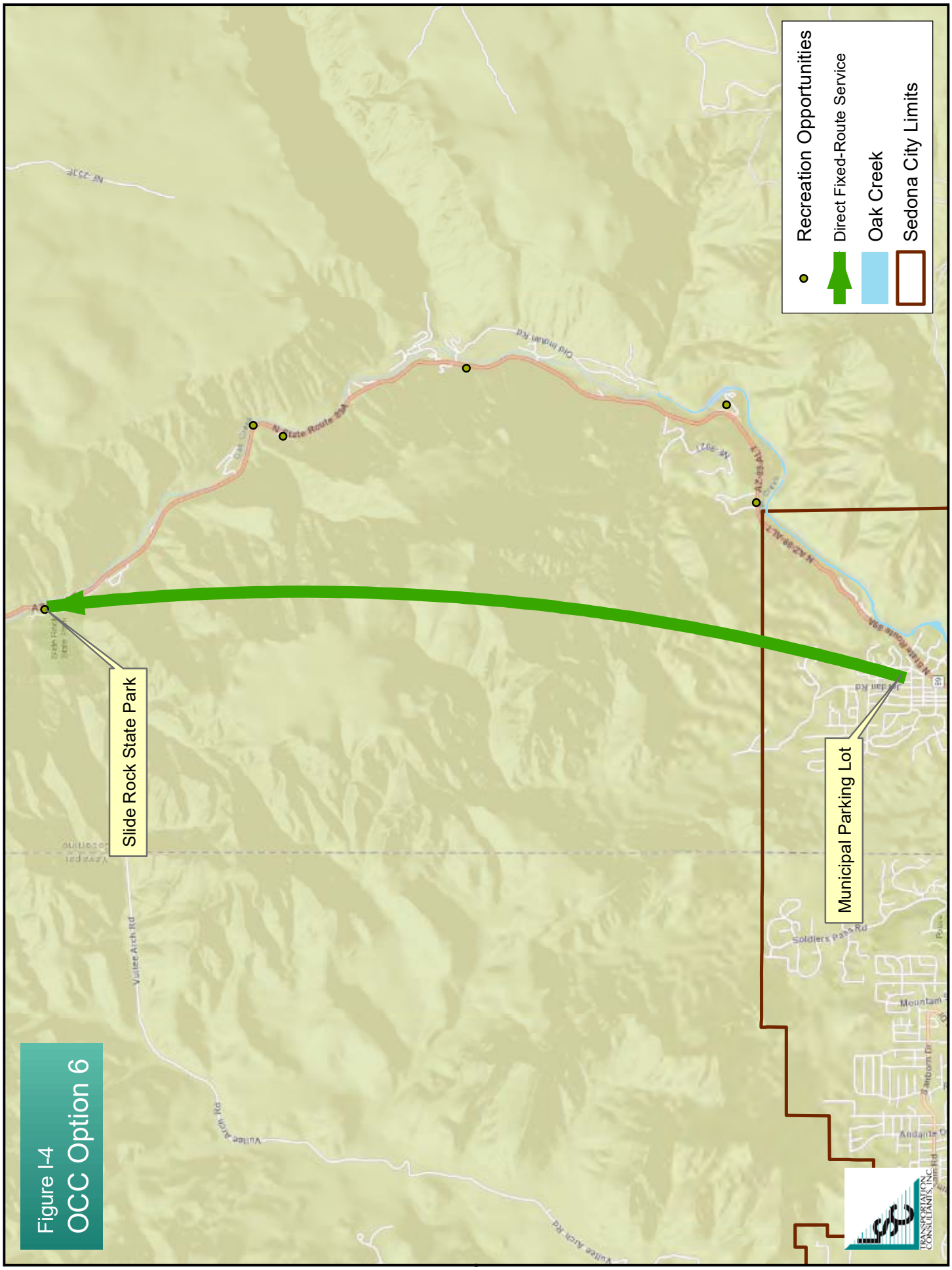


Figure I-4
OCC Option 6

Sufficient capacity will be required to transport 1,000 people to Slide Rock over a few hours in the morning. Buses will have to be staged to depart as they are filled or after some maximum waiting time if the bus is not full. For this service, a bus capacity of 40 passengers has been assumed.

The following characteristics describe this option.

- Peak vehicles in operation: 4
- Annual operating days: 121
- Estimated ridership: 243,000
- Annual operating cost: $243,000
- Passenger-trips per hour: 66.8
- Average cost-per passenger-trip: $1.00

Performance

Table I-6 shows the performance evaluation of OCC Option 6 relative to the established service criteria.

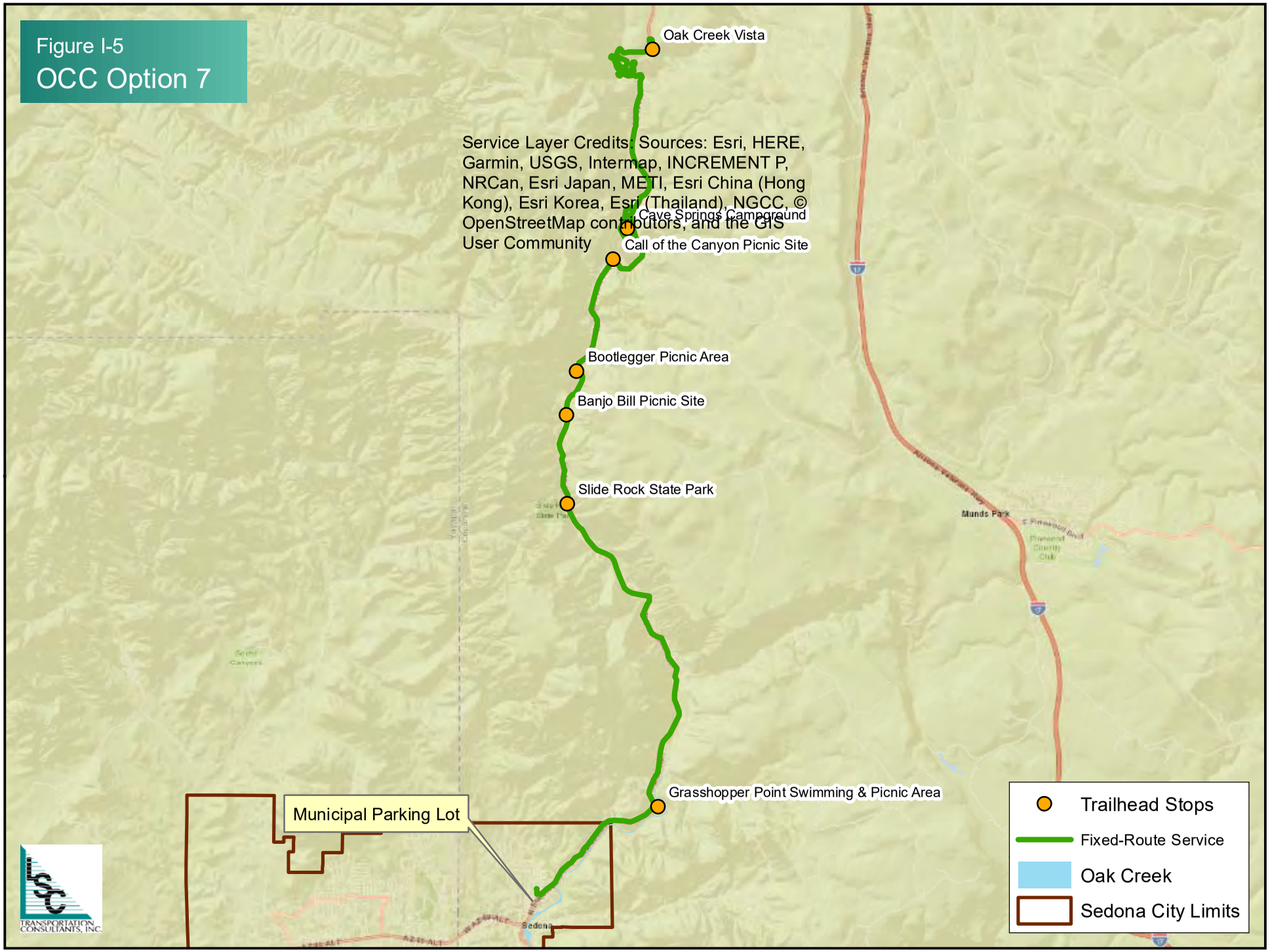
Table I-6
Performance – OCC Option 6

Service Criteria	Evaluation
Increase mobility options	No – focused on direct service to Slide Rock State Park
Provide connectivity between VOC, Sedona, and OCC	No – direct service from Uptown to Slide Rock State Park
Traffic congestion mitigation	Yes – would reduce traffic volumes in OCC and congestion at entrance to Slide Rock
Parking congestion mitigation	Yes – would reduce parking demand at Slide Rock
Passenger-trips per hour of service	66.8
Cost per passenger trip	$1.00
Requires other policy changes	Yes – reservations for Slide Rock

OCC OPTION 7 – UPTOWN PARKING TO OAK CREEK VISTA WITH STRICT PARKING CONTROLS

In this option, municipal parking lot #5 would be used as an intercept parking lot. The service concept is illustrated in Figure I-5.

Figure I-5
OCC Option 7



Service would be provided to trailheads, day use areas, and campgrounds from the Village of Oak Creek through Oak Creek Canyon to Oak Creek Vista on the north. The service would operate from 7:00 a.m. to 6:00 p.m. with service every 30 minutes. This route would operate from April 1 through October 31.

In this option, implementation of strict parking controls has been assumed. Recommendations for elimination of roadside parking in OCC along with enhanced enforcement will serve to encourage use of a shuttle service between an intercept parking location, trailheads, and other day use areas. Using AirSage data for day visitor volumes from areas south of Sedona, the average daily use of this service is estimated to be about 300 people.

The following characteristics describe this option.

- Peak vehicles in operation: 4
- Annual operating days: 244
- Estimated ridership: 305,000
- Annual operating cost: $750,000
- Passenger-trips per hour: 27.2
- Average cost-per passenger-trip: $2.47

Performance

Table I-7 shows the performance evaluation of OCC Option 7 relative to the established service criteria.

Table I-7
Performance – OCC Option 7

Service Criteria	Evaluation
Increase mobility options	No – focused on OCC only
Provide connectivity between VOC, Sedona, and OCC	Limited – only links Uptown and OCC
Traffic congestion mitigation	Yes – would reduce traffic volumes in OCC
Parking congestion mitigation	Yes – would reduce parking demand in OCC
Passenger-trips per hour of service	27.2
Cost per passenger trip	$2.47
Requires other policy changes	Yes – parking controls on SR 89A in OCC

OCC OPTION 8 – CULTURAL CENTER PARKING TO SLIDE ROCK WITH RESERVATION SYSTEM

In this option, an intercept parking lot would be located in the vicinity of Cultural Park. The service concept is illustrated in Figure I-6.

Service to Slide Rock State Park would be operated daily from mid-May through mid-September. The number of visitors coming to the Sedona area via Cottonwood and SR 89A is a relatively small percentage of the total visitors. The demand for this service is expected to be no more than 100 people per day.

The following characteristics describe this option.

- Peak vehicles in operation: 3
- Annual operating days: 121
- Estimated ridership: 24,000
- Annual operating cost: $280,000
- Passenger-trips per hour: 5.8
- Average cost-per passenger-trip: $11.56

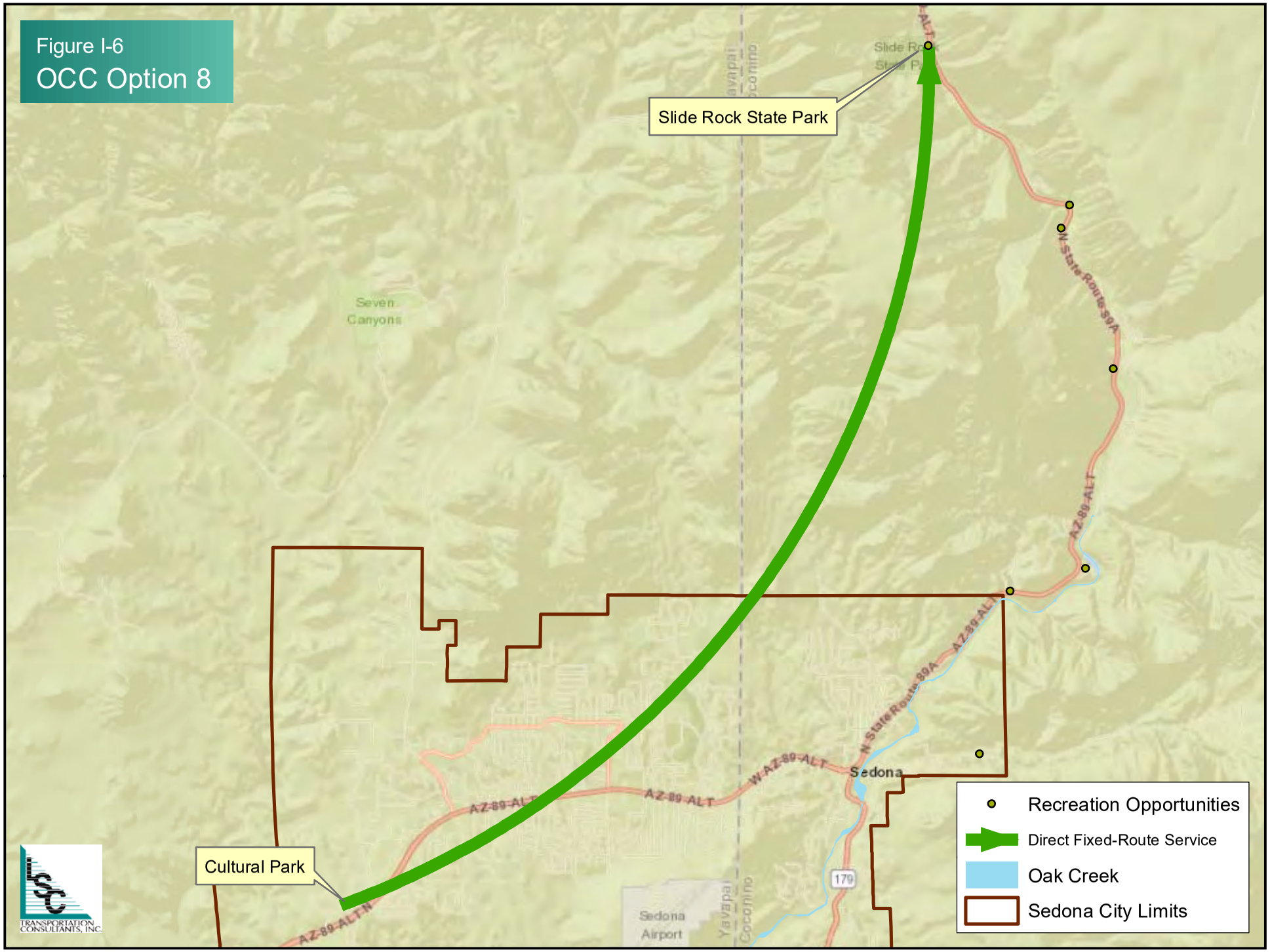
Performance

Table I-8 shows the performance evaluation of OCC Option 8 relative to the established service criteria.

Table I-8
Performance – OCC Option 8

Service Criteria	Evaluation
Increase mobility options	No – focused on direct service to Slide Rock State Park
Provide connectivity between VOC, Sedona, and OCC	Limited – direct service from W. Sedona to Slide Rock State Park
Traffic congestion mitigation	No – negligible impact on traffic
Parking congestion mitigation	Limited – small OCC parking reduction
Passenger-trips per hour of service	5.8
Cost per passenger trip	$11.56
Requires other policy changes	Yes – reservations for Slide Rock

Figure I-6
OCC Option 8



OCC OPTION 9 – OAK CREEK VISTA PARKING TO SLIDE ROCK

In this option, an intercept parking lot would be located in the vicinity of Oak Creek Vista. A new parking facility would be required to support this service. The service concept is illustrated in Figure I-7.

Service to Slide Rock State Park would be operated daily from mid-May through mid-September. Only about ten percent of the visitors to OCC enter from the north based on the AirSage data. Assuming that this service could capture 25 percent of the visitors, the demand for this service is expected to be no more than 150 people per day.

The following characteristics describe this option.

- Peak vehicles in operation: 4
- Annual operating days: 121
- Estimated ridership: 36,000
- Annual operating cost: $247,000
- Passenger-trips per hour: 10.0
- Average cost-per passenger-trip: $6.78

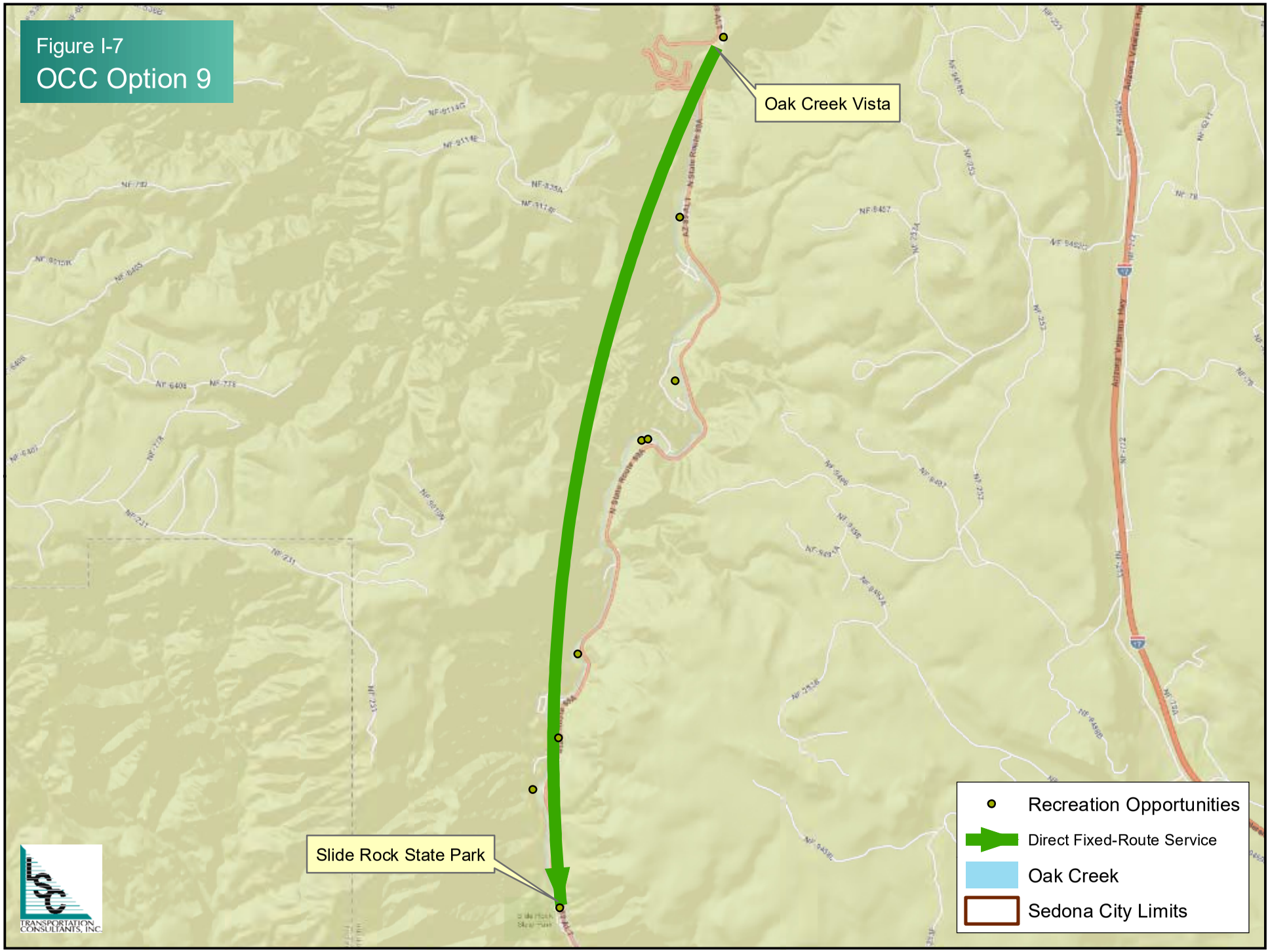
Performance

Table I-9 shows the performance evaluation of OCC Option 9 relative to the established service criteria.

Table I-9
Performance – OCC Option 9

Service Criteria	Evaluation
Increase mobility options	No – focused on direct service to Slide Rock State Park
Provide connectivity between VOC, Sedona, and OCC	No – only connects Oak Creek Vista to Slide Rock
Traffic congestion mitigation	No – negligible change in traffic volumes in OCC and congestion at entrance to Slide Rock
Parking congestion mitigation	Limited – small parking demand reduction at Slide Rock
Passenger-trips per hour of service	10.0
Cost per passenger trip	$6.78
Requires other policy changes	No – doesn't have policy requirements

Figure I-7
OCC Option 9



OCC OPTION 10 – SIGHT SEEING TOUR

An additional option to consider for OCC is a visitor-oriented tour. Many of the visitors to the Sedona area are interested primarily in sight-seeing and are not taking hikes or involved in other active recreation. A narrated tour through the canyon with a few designated stops would have the potential to attract some visitors and reduce the number of vehicles on SR 89A through OCC.

This option has not been evaluated separately as it should be a role for the private sector. There are several tour operators in the Sedona area that could operate this service. It may be necessary for the community to provide some incentives or encouragement to initiate the service. A separate narrated tour with transit services operating in the same corridor follows the model used in Denali National Park. Visitors may use the transit service to travel between points within the park while a separate narrated tour travels the same route, but provides a tour and passengers are not able to get on or off except at the start and end of the tour. This option should be considered independently of the other service options.

Chapter J

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CHAPTER J

Service Options in Sedona

INTRODUCTION

This chapter focuses on service options in Sedona. Options include shuttles to several popular trailheads, fixed-route service from West Sedona and the Village of Oak Creek (VOC) to Uptown Sedona, a fixed-route service connector from a new transit hub located near Tlaquepaque, and demand response service in Sedona. Demand response service in Sedona has been evaluated as an entirely demand response transit system and as a demand response service that supplements core fixed-route transit service in Sedona.

These options were evaluated and presented to the community for input and comment. Based on the input received, the options were modified and refined to develop the recommended service plan presented in Chapter M.

The number of vehicles required for operation of each option has been identified. In addition to the number of vehicles in operation, spare vehicles will be required to cover times for routine maintenance and repairs. The number of spare vehicles will be determined by which options are implemented and how the service options are combined in the implementation plan. Typically, a transit fleet requires the number of spare vehicles to be about 20 percent of the number of vehicles in operation at peak times.

SEDONA OPTION 1 – SHUTTLE FROM TRANSIT HUB TO CATHEDRAL ROCK TRAILHEAD

In this option, a new transit hub would be established in Sedona, either in Uptown or near Tlaquepaque, with a shuttle operating between the transit hub and Cathedral Rock Trailhead. The service concept is illustrated in Figure J-1.

Transit service to Cathedral Rock Trailhead, located at the south end of Sedona, would be operated daily from April through October, with a 15-minute frequency. Cathedral Rock is one of the most popular trailheads in Sedona and the demand for this service is expected to be about 400 people per day.

The following characteristics describe this option.

- Peak vehicles in operation: 3
- Annual operating days: 244
- Estimated ridership: 98,000
- Annual operating cost: $592,000
- Passenger-trips per hour: 10.9
- Average cost-per passenger-trip: $6.04

Performance

Table J-1 shows the performance evaluation of Sedona Option 1 relative to the established service criteria.

Table J-1
Performance – Sedona Option 1

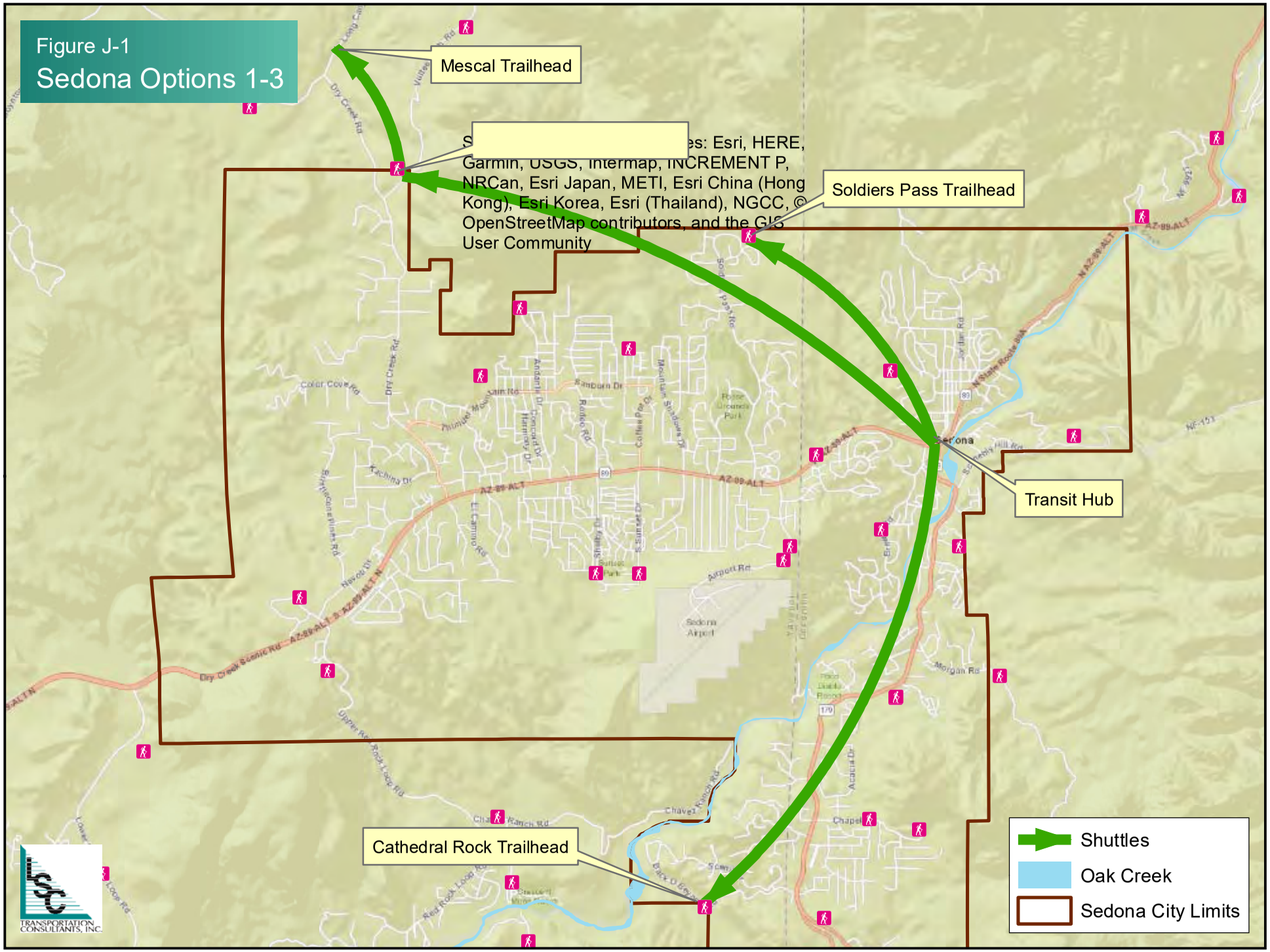
Service Criteria	Evaluation
Increase mobility options	Limited – focused on direct service to Cathedral Rock
Provide connectivity between VOC, Sedona, and OCC	Limited – direct connection from Sedona to Cathedral Rock
Traffic congestion mitigation	No – negligible impact on local traffic
Parking congestion mitigation	Yes – would reduce parking demand at the Cathedral Rock trailhead
Passenger-trips per hour of service	10.9
Cost per passenger trip	$6.04
Requires other policy changes	No – doesn't require any new policies

SEDONA OPTION 2 – SHUTTLE FROM TRANSIT HUB TO DRY CREEK VISTA AND MESCAL TRAILHEADS

In this option, a new transit hub would be established in Sedona, either in Uptown or near Tlaquepaque, with a shuttle operating between the transit hub, Dry Creek Vista Trailhead, and Mescal Trailhead. The service concept is illustrated in Figure J-1.

Transit service to Dry Creek Vista and Mescal Trailheads, both located on the north end of Sedona, would be operated daily from April through October, with a 30-minute frequency. Dry Creek Vista is one of Sedona's most popular trailheads and Mescal trailhead provides an alternate route to Devil's Bridge. The demand for this service is expected to be about 600 people per day.

Figure J-1
Sedona Options 1-3



The following characteristics describe this option.

- Peak vehicles in operation: 2
- Annual operating days: 244
- Estimated ridership: 146,000
- Annual operating cost: $392,000
- Passenger-trips per hour: 24.9
- Average cost-per passenger-trip: $2.68

Performance

Table J-2 shows the performance evaluation of Sedona Option 2 relative to the established service criteria.

Table J-2
Performance – Sedona Option 2

Service Criteria	Evaluation
Increase mobility options	Limited – focused on direct service to Dry Creek and Mescal Trailheads
Provide connectivity between VOC, Sedona, and OCC	Limited – direct connection from Sedona to Dry Creek and Mescal Trailheads
Traffic congestion mitigation	No – negligible impact on local traffic
Parking congestion mitigation	Yes – would reduce parking demand at the Dry Creek and Mescal Trailheads
Passenger-trips per hour of service	24.9
Cost per passenger trip	$2.68
Requires other policy changes	No – doesn't require any new policies

SEDONA OPTION 3 – SHUTTLE FROM TRANSIT HUB TO SOLDIERS PASS TRAILHEAD

In this option, a new transit hub would be established in Sedona, either in Uptown or near Tlaquepaque, with a shuttle operating between the transit hub and Soldiers Pass Trailhead. The service concept is illustrated in Figure J-1.

Transit service to Soldiers Pass Trailhead, located on the north end of Sedona, would be operated daily from April through October, with a 15-minute frequency. Soldiers Pass Trailhead is one of the most popular trailheads in Sedona and the demand for this service is expected to be about 400 people per day.

The following characteristics describe this option.

- Peak vehicles in operation: 3
- Annual operating days: 244
- Estimated ridership: 97,600
- Annual operating cost: $585,000
- Passenger-trips per hour: 10.9
- Average cost-per passenger-trip: $5.97

Performance

Table J-3 shows the performance evaluation of Sedona Option 3 relative to the established service criteria.

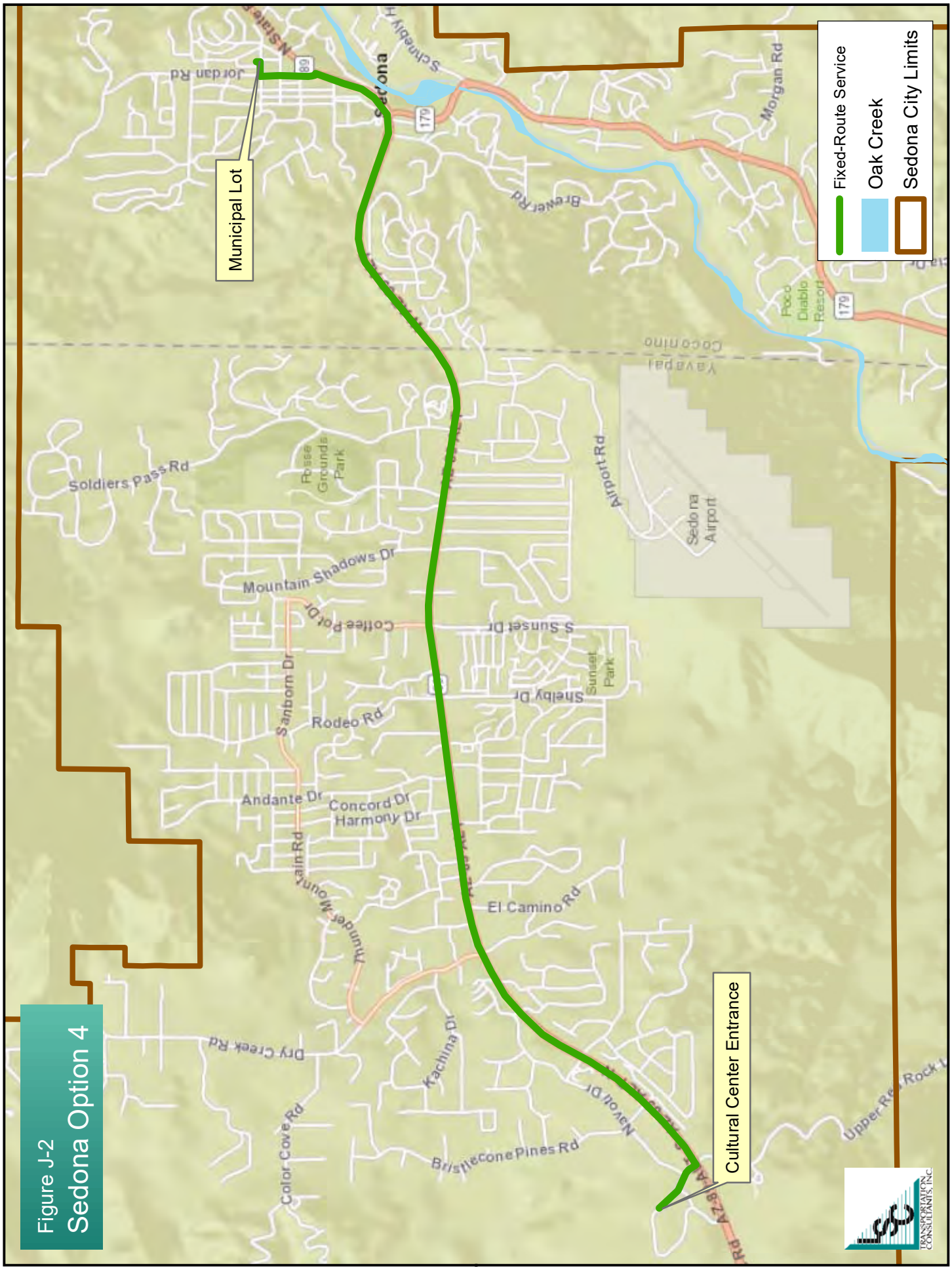
Table J-3
Performance – Sedona Option 3

Service Criteria	Evaluation
Increase mobility options	Limited – focused on direct service to Soldiers Pass Trailhead
Provide connectivity between VOC, Sedona, and OCC	Limited – direct connection from Sedona to Soldiers Pass Trailhead
Traffic congestion mitigation	Limited – could reduce traffic impacts in adjacent neighborhood
Parking congestion mitigation	Yes – would reduce parking demand at the Soldiers Pass Trailhead
Passenger-trips per hour of service	10.9
Cost per passenger trip	$5.97
Requires other policy changes	No – doesn't require any new policies

SEDONA OPTION 4 – FIXED-ROUTE SERVICE FROM WEST SEDONA TO UPTOWN SEDONA MUNICIPAL PARKING LOT

In this option, a shuttle would operate between the Cultural Park in West Sedona and the Municipal Parking Lot in Uptown Sedona. The service concept is illustrated in Figure J-2.

This fixed-route transit service along SR 89A would be operated daily, year-round, with a 15-minute frequency. Using lodging and occupancy rate data for overnight Sedona guests, the average daily use of this service is estimated to be about 1,600 people.


Fixed-Route Service
Oak Creek
Sedona City Limits
Municipal Lot
Cultural Center Entrance
Figure J-2
Sedona Option 4
Jordan Rd
Sedona
Schnebly Hill Rd
Morgan Rd
Brewer Rd
Posse Grounds Park
Soldiers Pass Rd
Airport Rd
Sedona Airport
Mountain Shadows Dr
Coffee Pot Dr
S Sunset Dr
Sunset Park
Shelby Dr
Sanborn Dr
Rodeo Rd
Andante Dr
Concord Dr
Harmony Dr
Thunder Mountain Rd
El Camino Rd
Dry Creek Rd
Kachina Dr
Navoti Dr
Bristlecone Pines Rd
Cocopah
Yavapai
Upper Red Rock Loop Rd
179
89

The following characteristics describe this option.

- Peak vehicles in operation: 4
- Annual operating days: 365
- Estimated ridership: 590,000
- Annual operating cost: $1,361,000
- Passenger-trips per hour: 28.4
- Average cost-per passenger-trip: $2.31

Performance

Table J-4 shows the performance evaluation of Sedona Option 4 relative to the established service criteria.

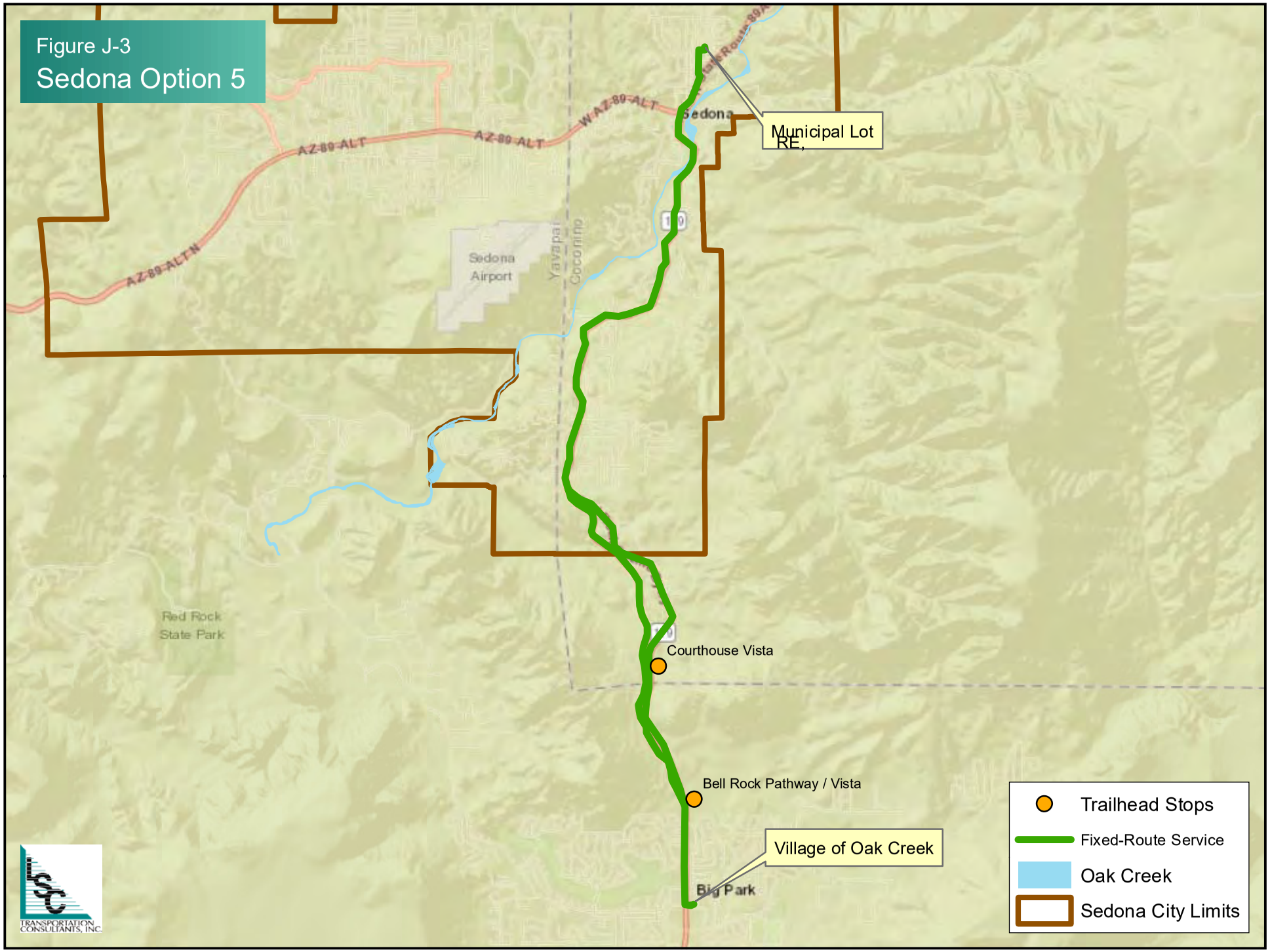
Table J-4
Performance – Sedona Option 4

Service Criteria	Evaluation
Increase mobility options	Yes – could be used by a variety of users for a variety of trip purposes
Provide connectivity between VOC, Sedona, and OCC	Yes – provides good connectivity between Uptown and West Sedona
Traffic congestion mitigation	Limited – small reduction in traffic volumes through the "Y"
Parking congestion mitigation	Yes – would reduce parking demand in Uptown
Passenger-trips per hour of service	28.4
Cost per passenger trip	$2.31
Requires other policy changes	Possibly – might require policy changes for Uptown parking and roadway operations, e.g. allowing bus on shoulder and improvements at the "Y"

SEDONA OPTION 5 – FIXED-ROUTE SERVICE BETWEEN VOC AND UPTOWN SEDONA MUNICIPAL PARKING LOT

In this option, a shuttle would operate between VOC and the Municipal Parking Lot in Uptown Sedona. A specific location in VOC has not been identified or evaluated, but will have to be addressed as part of the implementation if this option is selected. In addition, this route would serve Bell Rock Trailhead and Courthouse Trailhead in both directions. The service concept is illustrated in Figure J-3.

Figure J-3
Sedona Option 5



This fixed-route transit service along SR 179 would be operated daily, year-round, with a 30-minute frequency. Using lodging and occupancy rate data for overnight VOC guests, the average daily use of this service is estimated to be about 800 people.

The following characteristics describe this option.

- Peak vehicles in operation: 3
- Annual operating days: 365
- Estimated ridership: 290,000
- Annual operating cost: $1,018,000
- Passenger-trips per hour: 18.9
- Average cost-per passenger-trip: $3.51

Performance

Table J-5 shows the performance evaluation of Sedona Option 5 relative to the established service criteria.

Table J-5
Performance – Sedona Option 5

Service Criteria	Evaluation
Increase mobility options	Yes – could be used by a variety of users for a variety of trip purposes and incorporates trailheads along route
Provide connectivity between VOC, Sedona, and OCC	Yes – provides good connectivity between Sedona Uptown and VOC
Traffic congestion mitigation	Limited – small reduction in traffic volumes through the "Y"
Parking congestion mitigation	Yes – would reduce parking demand in Uptown
Passenger-trips per hour of service	18.9
Cost per passenger trip	$3.51
Requires other policy changes	Possibly – might require policy changes for Uptown parking and improvements at the "Y"

SEDONA OPTION 6 – CONNECTOR FROM TRANSIT HUB TO UPTOWN MUNICIPAL PARKING LOT

In this option, a new transit hub would be established in Sedona near the intersection of Brewer Road and Ranger Road. This option would incorporate

service options 4 and 5, but adjust them slightly to serve the transit hub location. Option 6 would introduce a connector route providing service from the transit hub to the Municipal Parking Lot in Uptown Sedona. The service concept is illustrated in Figure J-4.

The new connector service would be operated daily, year-round, with a 10-minute frequency. Using lodging and occupancy rate data for overnight Sedona and VOC guests, the average daily use of this service is estimated to be about 1,500 people.

The following characteristics describe only the connector from the hub to Uptown and do not include Options 4 and 5.

- Peak vehicles in operation: 2
- Annual operating days: 365
- Estimated ridership: 557,000
- Annual operating cost: $663,000
- Passenger-trips per hour: 54.5
- Average cost-per passenger-trip: $1.19

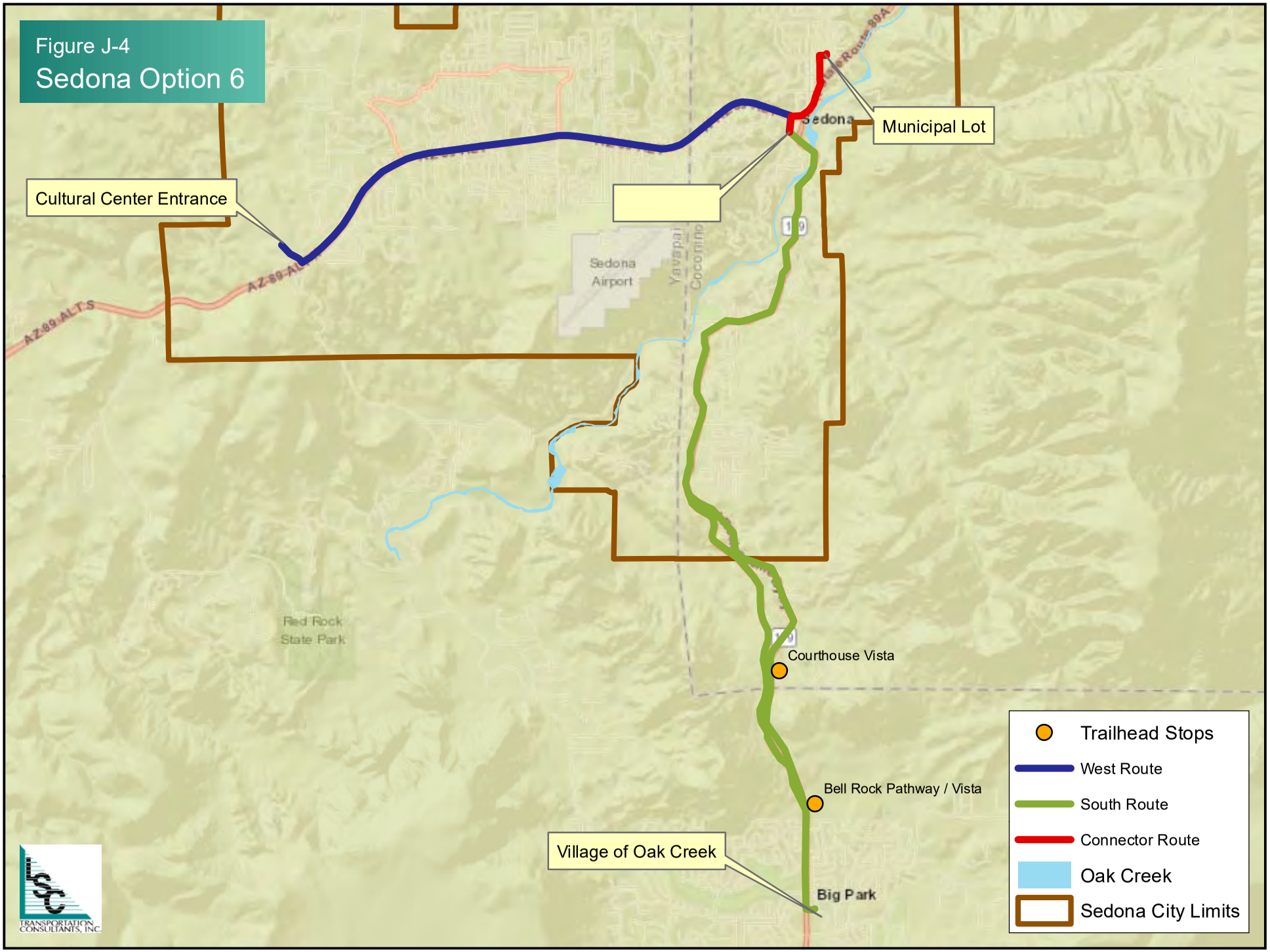
Performance

Table J-6 shows the performance evaluation of Sedona Option 6 relative to the established service criteria. This performance assumes that Options 4 and 5 are implemented in conjunction with this route to provide the connections between West Sedona, Uptown, and VOC.

Table J-6
Performance – Sedona Option 6

Service Criteria	Evaluation
Increase mobility options	Yes – could be used by a variety of users for a variety of trip purposes
Provide connectivity between VOC, Sedona, and OCC	Yes – provides connections to West Sedona, VOC, and Uptown
Traffic congestion mitigation	Limited –small reduction in traffic volumes
Parking congestion mitigation	Yes – would reduce parking demand in Uptown
Passenger-trips per hour of service	54.5
Cost per passenger trip	$1.19
Requires other policy changes	Possibly – could require Uptown parking policy changes, shoulder lane for buses, and improvements at "Y"

Figure J-4
Sedona Option 6



SEDONA OPTION 7 – ENTIRELY DEMAND RESPONSE SERVICE

In this option, transit service in Sedona would be served entirely by a demand response service. The service would operate daily, year-round and the service area is illustrated in Figure J-5.

A demand response service designed to provide 600,000 annual trips in Sedona would require significant capital resources, including 18 vehicles to operate the service, not to mention significant operating resources due to an annual operating cost of approximately $6.7 million.

The following characteristics describe this option.

- Peak vehicles in operation: 18
- Annual operating days: 365
- Estimated ridership: 600,000
- Annual operating cost: $6,722,000
- Passenger-trips per hour: 5.7
- Average cost-per passenger-trip: $11.20

Performance

Table J-7 shows the performance evaluation of Sedona Option 7 relative to the established service criteria.

Table J-7
Performance – Sedona Option 7

Service Criteria	Evaluation
Increase mobility options	Yes – could be used by a variety of users for a variety of trip purposes
Provide connectivity between VOC, Sedona, and OCC	Yes – would connect all communities
Traffic congestion mitigation	No – could result in more traffic with 18 vehicles operating daily
Parking congestion mitigation	Limited – could provide small reduction in Uptown parking
Passenger-trips per hour of service	5.7
Cost per passenger trip	$11.20
Requires other policy changes	No – doesn't require any new policies

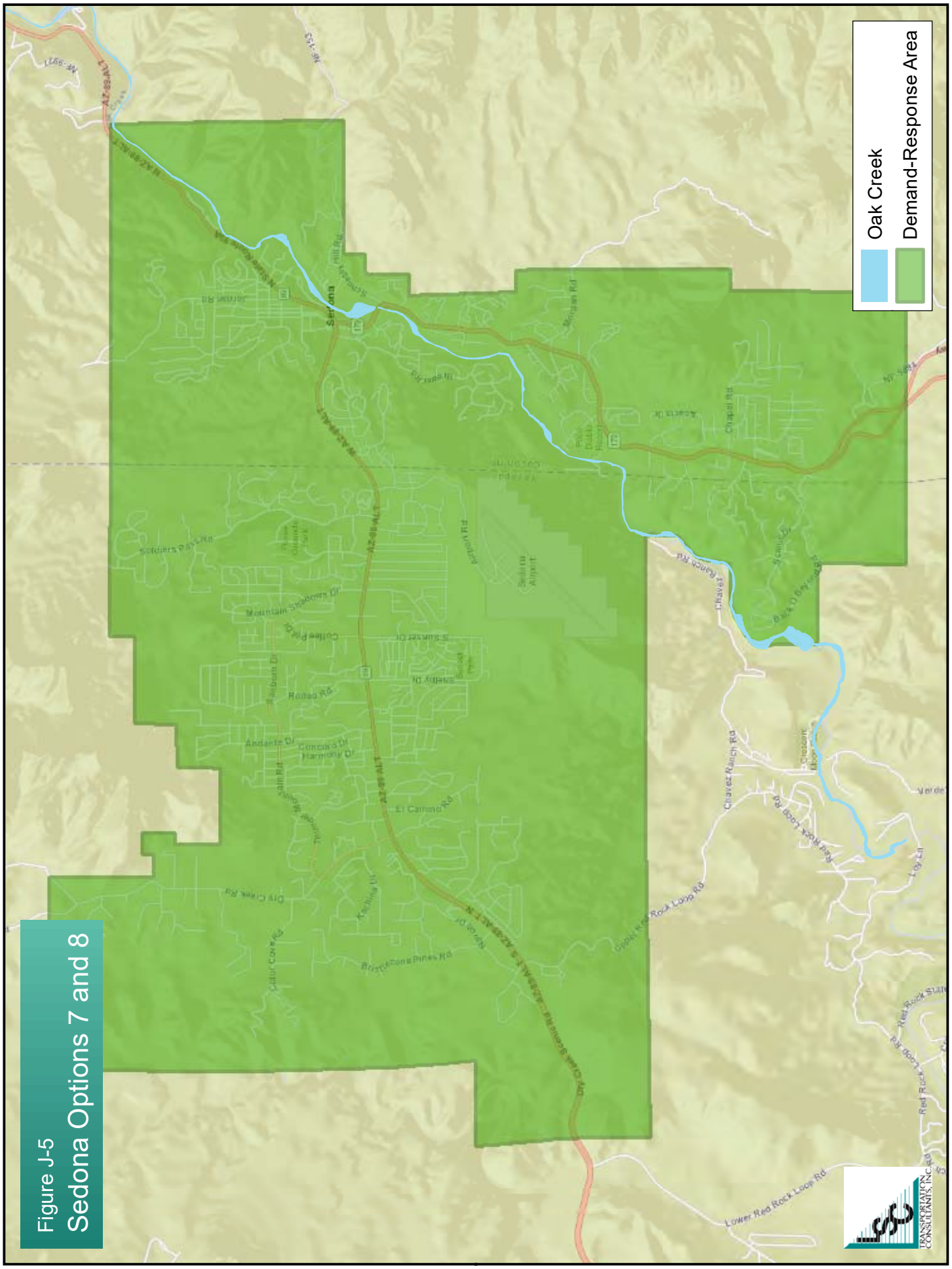


Figure J-5
Sedona Options 7 and 8

SEDONA OPTION 8 – DEMAND RESPONSE SERVICE SUPPLEMENTING CORE FIXED-ROUTE SERVICE

In this option, demand response transit service would supplement core fixed-route transit service in Sedona. The demand response service would operate daily, year-round and the service area is illustrated in Figure J-5.

The following characteristics describe this option.

- Peak vehicles in operation: 2
- Annual operating days: 365
- Estimated ridership: 15,000
- Annual operating cost: $607,000
- Passenger-trips per hour: 1.6
- Average cost-per passenger-trip: $40.47

Performance

Table J-8 shows the performance evaluation of Sedona Option 8 relative to the established service criteria.

Table J-8
Performance – Sedona Option 8

Service Criteria	Evaluation
Increase mobility options	Yes – could help a variety of people access fixed route service for a variety of trip purposes
Provide connectivity between VOC, Sedona, and OCC	Indirectly – helps extend connectivity of fixed route service
Traffic congestion mitigation	No – adds vehicle miles to neighborhood areas
Parking congestion mitigation	No – parking is not impacted
Passenger-trips per hour of service	1.6
Cost per passenger trip	$40.47
Requires other policy changes	No – doesn't require any new policies

Chapter K

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Chapter K

Governance Options

An important consideration for implementation of community public transit service is the organizational and governance structure. The purpose of this chapter is to describe the options available to Sedona and the surrounding area. LSC has identified four basic options that could be used. Each has advantages and disadvantages. There are also limitations regarding the available funding sources which are described in Chapter B. Each of these are described in the following sections.

SEDONA CITY SYSTEM WITH CITY EMPLOYEES

The first option is for the City of Sedona to establish a transit system within City government with all employees being hired by the City. This option provides the greatest control for the City as all operations would be directly under the City government structure. The option provides flexibility for the City to make changes without cooperation of other entities or contract changes.

The City has the legal authority to operate a community public transit system, to receive Federal Transit Administration funds, and to raise local revenue. However, this option would require the City to develop the transit system within the organizational structure and hire all employees. The City would also need to develop a maintenance and administrative facility.

There is uncertainty about the City operating the future routes for OCC and the express to Slide Rock State Park. It is possible that the City could be the operator, but this would require intergovernmental agreements with authorization to operate outside the City. The City has authority under Arizona Revised Statutes 40-1152 to operate public transportation within and without the corporate limits. While the City has authority, service to VOC should be based on a funding partnership with Yavapai County to support the route between the Sedona transit hub and VOC.

City System with City Employees

Benefits	Challenges	Implications
•The City has legal authority to operate a public transit service •The City has authority to receive Federal grants •The City is able to generate local funding •Provides flexility for the City to make changes •Provides greatest level of control for the City	•Requires changes in City organizational structure •Expands the number of City employees •Would require funding agreements and approvals for service outside the City •The City may be limited in providing service to OCC and Slide Rock •Requires new maintenance and administrative facilities	•City of Sedona could implement without agreements from other entities in the reigon •Would require approval from ADOT and USFS to serve OCC, and from State Parks to serve Slide Rock •The City would become a recipient of FTA 5311 funds

SEDONA CITY SYSTEM WITH CONTRACT OPERATOR

This option is similar to the current organizational structure where Cottonwood Area Transit (CAT) operates the Verde Lynx. It has similarities with the City System option, but the City would contract with an operator to provide the service. This could be CAT following the current arrangement, a new agreement with NAIPTA, or it could be a private company that manages and operates public transit services. Currently, CAT receives grant funding from ADOT for the Lynx route. This would change with the City becoming a recipient of the funding for the Sedona service.

With this option the City loses a small amount of flexibility as any service changes would have to be implemented through the contract agreement. The City would need to incorporate control of the service into the contractual agreement including specific performance metrics to be met by the contract operator.

An advantage to this option is that the City would need to hire only a contract administrator and all management, administration, and operations would be the responsibility of the contract operator. The contract operator would be responsible for developing personnel and operating policies which would be approved by the City.

City System with Contract Operator

Benefits	Challenges	Implications
•The City has legal authority to operate a public transit service •The City has authority to receive Federal grants •The City is able to generate local funding •Model already operating and working with CAT as operator of Verde Lynx •City would only hire a contract manager	•Requires contractual agreement with transit service operator •Less control for the City of Sedona •Branding and marketing would have to be distinct for the Sedona service •Would require funding agreements for service outside the City •The City may be limited in providing service to OCC and Slide Rock •Would require additional maintenance and storage facilities	•Could limit the ability to implement Phase 2 with expansion to OCC and Slide Rock. Would require approvals from USFS, ADOT, and State Parks •Service changes would require contract changes •The City would become a recipient of FTA 5311 funds

JOINT POWERS AUTHORITY

Transit service could be operated in the Sedona area through a Joint Powers Authority (JPA). A JPA may be formed by any governmental entities that each have authority to provide a service. The City and other governmental entities - whether a city, county, IPTA, or RTA - could jointly form a transit system to serve Sedona and the surrounding areas in Coconino and Yavapai Counties. Funding of a JPA is dependent on the funding sources available to the participating governmental entities. The structure of a JPA differs from the Intergovernmental Public Transit Authority (IGPTA) in that many aspects of the IGPTA are determined by statute, but the organization of the JPA is determined by the agreements established by the participating governmental entities. The participants may decide the board structure and representation as well as the funding agreements.

Joint Powers Authority

Benefits	Challenges	Implications
•The City and Counties have legal authority to operate a public transit service •The City and Counties have authority to receive Federal grants •The City and Counties are able to generate local funding	•Less control for the City of Sedona •Branding and marketing would have to be distinct for the Sedona service •Requires participation by another entity with authority to provide public transportation •Would require funding agreements for service outside the City •The City may be limited in providing service to OCC and Slide Rock •Would require maintenance and storage facilities	•Could limit the ability to implement Phase 2 with expansion to OCC and Slide Rock. Would require approvals from USFS, ADOT, and State Parks •The City or other participating entity would become a recipient of FTA 5311 funds

INTERGOVERNMENTAL PUBLIC TRANSPORTATION AUTHORITY

An intergovernmental public transportation authority is authorized under Arizona Revised Statutes, Title 8, Chapter 26. This is the structure for the Northern Arizona Intergovernmental Public Transportation Authority. The Authority is established through a petition by one or more municipalities to the County Board of Supervisors which then establishes the authority. This authority is limited to counties with populations of 200,000 or less. The authority has no direct power to raise revenue and is dependent on revenue from participating local governments and other entities. Coconino County has a population of less than 200,000, but Yavapai County is larger. The Northern Arizona Intergovernmental Transit Authority (NAIPTA), serving Flagstaff and the surrounding areas, is organized under this statute. It is possible that NAIPTA could be the service operator through an agreement with the City. It is also possible for NAIPTA to expand the service area to include Sedona and portions of Yavapai County or to become part of a JPA with the City.

The City would have less control over the transit service as the authority is governed by a board with representatives from the participating governmental entities as established by state statutes. Approval of any grant agreements, contract, or service changes would be made by the authority board.

Intergovernmental Public Transportation Authority

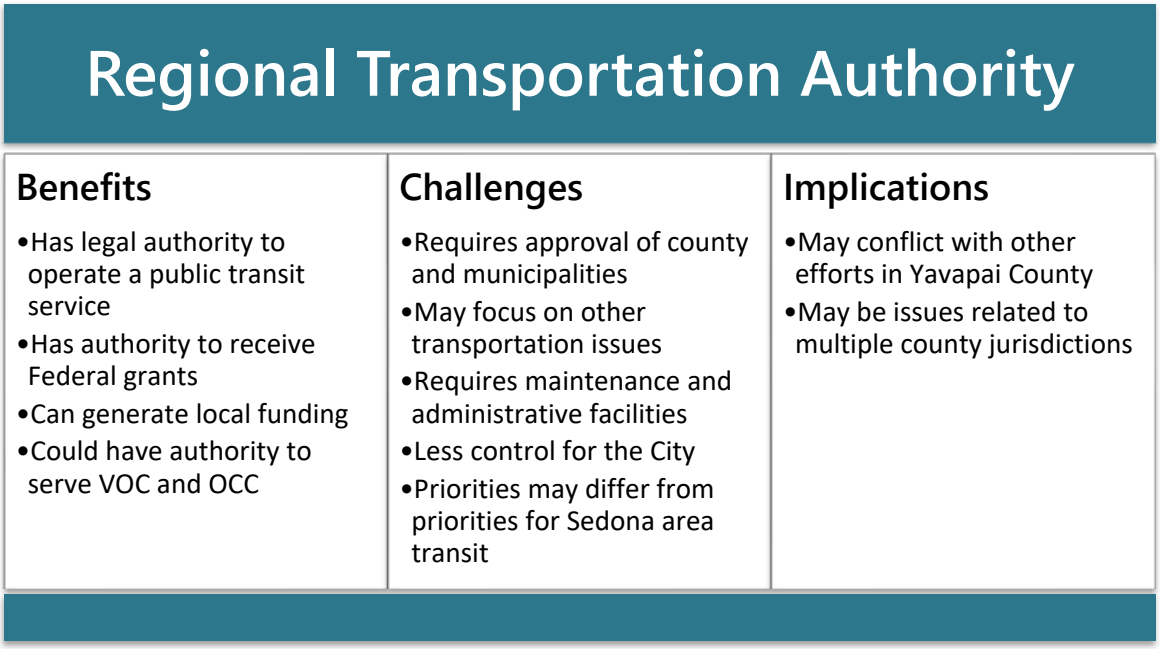
Benefits	Challenges	Implications
•Has legal authority to operate a public transit service •Has authority to receive Federal grants •Governed by board from participating government entities •Could have authority to serve VOC and OCC •Yavapai College could be a participating entity	•Does not have authority to raise local revenue, dependent on participating entities •Dependent on funding partnerships •Less control for the City of Sedona •Will require maintenance and administrative facilities	•Requires strong partnerships for local funding •Able to provide regional transit service

REGIONAL TRANSPORTATION AUTHORITY

A regional transportation authority may be established by the county supervisors in counties with a population of 400,000 or less under Arizona Revised Statutes, Title 48, Chapter 30. The scope of a regional transportation authority is broader than public transportation and may be responsible for other transportation facilities. This could shift the focus from public transportation to other transportation issues. It is possible to create a funding source for the authority, but public transportation may have to compete with other transportation priorities as determined by the authority board.

Yavapai County and the Central Yavapai Metropolitan Planning Organization (CYMPO) are exploring the option to create an RTA in Yavapai County. Efforts by the Sedona area to form an RTA could be in conflict with the current efforts and should be coordinated closely with the County and CYMPO to avoid conflicts. If

an RTA is established for Yavapai County, it is unlikely that the RTA would fund service in Coconino County, although portions of Sedona are within Coconino County. Prioroties of the RTA are likely to differ from priorities for service in the Sedona area and particularly OCC.



REGIONAL PUBLIC TRANSPORTATION AUTHORITY

A regional public transportation authority may be established under Arizona Revised Statutes, Title 48, Chapter 29. However, this is limited to counties with a population of 1,200,000 or greater and is not applicable to the Sedona area.

SUMMARY

Each of the options have some advantages and disadvantages as summarized in Table K-1.

While the RTA has the ability to serve multiple jurisdictions, the ability to serve multiple counties is low and is therefore rated as medium. The RTA could serve all of Yavapai County and could enter into a JPA to serve areas outside Yavapai County.

Table K-1 Summary of Governance Models					
	City	City	JPA	IGPTA	RTA
Legal Authority	Yes	Yes	Yes	Yes	Yes
Level of City Control	High	High	High	Medium	Low
Ability to Generate Revenue	High	High	High	High	Medium
Ease of Implementation	High	High	High	Medium	Low
Ability to Serve Multiple Jurisdictions	Medium	Medium	High	High	Medium

Governance options must be considered jointly with the funding options described in Chapter L. The analysis of these governance options and the funding options formed the basis for the recommendations in Chapter M. The final governance structure will be determined as part of the implementation.

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Chapter L

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Chapter L

Funding Options

This chapter provides a summary of the primary funding options for public transportation service in the greater Sedona area. This analysis is not exhaustive and other funding sources may be found, but these are the primary sources of sustainable community transit services in a community like Sedona.

FEDERAL FUNDING SOURCES

Federal Transit Administration

The Federal Transit Administration (FTA) is funded through the surface transportation program. Funds are distributed through several programs as established in the current transportation authorization. Programs provide funding for capital facilities, equipment, and operations.

Bus and Bus Facilities

The Section 5339 bus and bus facilities funding program provides funding for facility construction, renovation, and vehicles. There are both formula apportionments to the states and competitive grants. The grant program for low or no emission vehicles is part of this appropriation. Sedona would be eligible for this funding source to purchase vehicles and construct required facilities.

FTA Section 5311 Formula Grants for Rural Areas

The Formula Grants for Rural Areas program provides capital, administrative, and operating assistance to states to support public transportation in rural areas with populations of less than 50,000, where many residents often rely on public transit to reach their destinations. The program also provides funding for state and national training and technical assistance through the Rural Transportation Assistance Program (5311(b)(3)), where funds are eligible for developing training, technical assistance, research, and related support services in rural areas. In addition, a portion of the funds are made available for the support of intercity bus transportation (5311 (f)), in response to a long-term trend of national intercity bus carriers discontinuing routes in rural areas not served by an interstate

highway. Sections 5311 and 5340 received approximately $716 million in authorized funding for FY 2019. In accordance with language in the FAST conference report, apportionments for Section 5311 and Section 5340 were combined to show a single amount. Section 5311(b)(3) received approximately $12 million in authorized funding for FY 2019.

The Arizona Department of Transportation (ADOT) is the direct recipient for Section 5311 funds and distributes these funds competitively to eligible grant partner organizations. Eligible organizations include state or local government authorities, nonprofit organizations, and operators of public transportation or intercity bus service. Eligible activities include planning, capital, operating, job access and reverse commute projects, and the acquisition of public transportation services.

FTA Section 5310 Enhanced Mobility of Seniors and Individuals with Disabilities

This program is intended to improve mobility for seniors and individuals with disabilities by removing barriers to transportation service and expanding transportation mobility options. This program supports transportation services planned, designed, and carried out to meet the special transportation needs of seniors and individuals with disabilities in all areas—large urbanized (with a population over 200,000), small urbanized (with a population between 50,000-200,000), and rural (with a population under 50,000). Eligible projects include both traditional capital investment and nontraditional investment beyond the Americans with Disabilities Act (ADA) complementary paratransit services. This program allows states or localities that provide transit service to be direct recipients under this program. Funding for this program is approximately $278 million authorized for FY 2019, with non-urbanized areas receiving approximately $56 million (20 percent).

In Arizona, ADOT is the direct recipient for Section 5310 funds and distributes these funds to eligible grant partner organizations. Eligible grant partners include private non-profit organizations, governmental authorities where no non-profit organizations are available to provide service, and governmental authorities approved to coordinate services.

Federal Lands Access Program (FLAP)

FLAP is a program under the Federal Highway Administration to support access to Federal lands. These may include national parks, national forests, and tribal lands. Authorized projects include capital improvements, purchase of transit vehicles, and transit operations. This is a competitive grant program administered by Central Federal Lands for Arizona under the Federal Highway Administration. Improvements for transit access to Coconino National Forest destinations would be eligible for funding through this program. This funding source requires support by the specific Federal lands to be served. For the Sedona area, this would be Coconino National Forest.

LOCAL FUNDING SOURCES

Local funding will be required to implement public transportation service in the Sedona area. Many of the Federal funding programs require a local funding match and sufficient funding may not be available from Federal sources.

Sedona Transportation Privilege Tax

Sedona approved a sales tax to implement the Transportation Master Plan. This tax has a limited period, but could be extended if voters support using future funds to support a public transportation system.

Sedona Lodging Tax

A lodging tax is collected from visitors who stay at lodging facilities in the Sedona area. Funds from this source should support tourism and visitor services. The proposed transit service is oriented to serve visitors to the Sedona area and would be a legitimate use of this funding source.

Parking Revenues

Revenue from paid parking can be a source of funding for public transportation services. In areas with high parking demand, parking rates may be set to more than cover the cost of the parking system and capital construction. The additional funds may then be used to support the public transportation system.

Sedona General Funds

City general funds may be used to support transit service. It may be appropriate to use general funds for facilities and capital equipment, but a dedicated source of funding is better for sustainability of the transit service.

County Excise Taxes

Arizona counties are authorized to enact a transportation excise tax. Yavapai County has a transportation excise tax to fund transportation improvements. Transit service in unincorporated Yavapai County would be eligible for funding, but may not have the support of the County. Yavapai County is also in discussions to determine the need and potential for forming a transportation authority. There may be limited funds available for both the Sedona area service and other services in Yavapai County.

Fares

Fares are often a source of revenue for transit services. The core Sedona area service is recommended to be a zero-fare system to attract as many visitors as possible and to make boarding as fast as possible. However, service to trailheads in the Sedona area, the OCC route, and express service to Slide Rock State Park should have user fares to support the operating cost of the service. For Slide Rock, this could be part of the entry fee with a funding agreement between the State Park and the transit operator. Fares and entry fees should be structured so that Coconino National Forest and the State Park do not lose revenue, but collect sufficient revenue to maintain current programs and cover a portion of the transit operating cost.

OTHER SOURCES

ADOT may be a source of funding for many of the roadway improvements to support transit service in the area. Parking closures along SR 89A in OCC could be funded using Federal Highway Administration (FHWA) funding for roadway improvements. Bus stop improvements could be funded through FHWA funding or the FLAP program.

SUMMARY

The ability of each organizational structure to access funding sources is summarized in the following table. The City of Sedona has the broadest ability to access funding sources followed by the counties. The Intergovernmental Agency has limited ability to access funds and is dependent on the financial support of the participating governmental entities.

Summary of Access to Funding Sources				
	City of Sedona	Counties	IGRTA	RTA
Federal Transit Formula Funds	✓	✓	✓	✓
Federal Transit Discretionary Funds	✓	✓	✓	✓
Federal Lands Access Program	✓	✓	✓	✓
Sedona Transportation Tax	✓			
Lodging Tax	✓			
Parking Revenues	✓			
General Funds	✓	✓		
County Excise Tax		✓		✓
Fares	✓	✓	✓	✓

PRELIMINARY RECOMMENDATION

The recommended organizational structure for public transportation in the Sedona area is a system set up as part of city government with a contract operator. The city system gives the City of Sedona the greatest control over the service provided and the broadest ability to access funding. While there are advantages to a more regional focus through the RTA, the priorities will be very different in various areas of Yavapai and Coconino Counties. Distinct branding for the Sedona area service will be very important, as discussed in the marketing plan. Control over the branding and marketing would be better accomplished by a city system rather than a regional system. The type of service is likely to be very different in the Sedona area from the rest of either county. The importance of

providing a zero-fare service in the Sedona area may not be understood and not seen as a priority as part of a regional service.

To provide service to VOC, OCC, and Slide Rock will require funding partnerships and operating agreements with Yavapai County, the U.S. Forest Service (USFS), and Arizona State Parks. Phase 1 would require agreements with the County and the USFS. Implementation of Phases 2 and 3 would require a more extensive agreement with the USFS and a comprehensive agreement with Slide Rock State Park.

As Yavapai County moves forward with the possibility of creating the RTA, Sedona should participate in the discussions to determine if the benefits outweigh the challenges of operating as part of a larger regional system.

Chapter M

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Chapter M

Implementation

This chapter describes all the necessary aspects of implementing a new public transit service in the Sedona area including:

- Governance
- Service Plan
  - Routes
  - Costs
  - Vehicles
  - Infrastructure, including bus stops
  - Facilities
- Financial Plan
- Monitoring Plan
- Implementation steps and timing

GOVERNANCE

The preferred governance model is for the City of Sedona to operate the new public transportation system in the Sedona area as part of its overall city government operations but with the day-to-day operations contracted to a public or private operator. This model gives the City of Sedona the greatest control over the service provided and the broadest ability to access funding. While there are advantages to other governance options, such as a more regionally focused RTA, the City of Sedona governance model offers the most control over setting the priorities of public transit within the Sedona area, as well as marketing and branding the service. As a tourist destination, the transit service priorities of Sedona will be much different from other communities in the region. Transit in Sedona will need to focus on both residents and visitors simultaneously.

This preferred model gives the City of Sedona control over the system, but doesn't require the City to build in-house transit operation skills and capacity. Contracting the new service could be through an intergovernmental agreement

with CAT similar to the current arrangement, through an intergovernmental agreement with NAIPTA, expansion of the NAIPTA service area to include the Sedona area, or a private company that manages and operates public transit services. The City would need to incorporate control of the service into the contractual agreement including specific performance metrics to be met by the contract operator.

This preferred governance model allows the City to limit its hiring to only a contract administrator, with all management, administration, and operations staffing falling under the responsibility of the contractor. The contractor would also be responsible for developing policies and completing many of the operational details for service implementation.

Transit Advisory Committee

LSC recommends that the current advisory committee formed to guide this study be formalized as the Sedona Transit Advisory Committee (TAC), which would help guide the development and implementation of the Sedona public transit system. TACs are a common tool used to provide guidance to and foster community collaboration for meeting local transportation needs. The role of the TAC is to advise staff and the City Council on matters related to transit service.

It is likely that not all organizations currently serving on the study advisory committee would have the time or interest to participate, but a reasonable goal for TAC membership might be 8-12 members. Participation should also include representatives of transit users for both the fixed-route service and complementary paratransit service.

The TAC should meet at least quarterly and may need to meet monthly in the first year as services are established. The TAC would be an advisory body to the City of Sedona City Council, assuming that the City of Sedona were to operate the new system with a contract provider.

Policies and Procedures

Public transportation operations and use of federal funding from the FTA come with many compliance requirements and reporting. Ahead of starting transit operations, policies and procedures must be developed and approved by the governing body. If the City operated the service, the City Council would be the governing body and board, so most of the organizational policies would be satisfied by current city policies. Policies that must be considered include:

- Organizational operations
  - Format for agendas, minutes, and orientation of board members
  - Mission and goals for the public transportation operation
  - By-laws, updated if necessary, to support management of public transportation services
  - Process for adopting annual budget and format for monthly financial reports
  - Grant reimbursement process
  - Conflict of interest policy and code of conduct
  - Organizational chart
  - Document control and records retention policy
  - Personnel manual and Equal Employment Opportunity (EEO) compliant job applications and job advertisements
- Provision of transit service
  - Driver manual
  - Complaint resolution process and policy
  - Rider code of conduct
  - Rider suspension process and policy
  - Title VI Civil Rights complaint procedures
  - Charter and school bus service prohibition provisions
- Safety
  - Fleet and facility maintenance plan
  - Drug and alcohol testing policy and agreement with third party administrator
  - Accident and incident procedures
  - Safety and security plan

This list is not meant to be exhaustive—there may be additional policies and procedures that need to be established. LSC recommends that City of Sedona

staff use the available ADOT resources and staff, as well as training and conferences available from the Arizona Transit Association. Operational policies may be the responsibility of the contract operator.

Staffing

With transit operations and maintenance contracted through an outside provider, City staff would be limited to a Transit Manager with support from existing City resources for legal, human resources, and financial needs, as shown in Figure M-1.

Figure M-1
Organizational Chart

The Transit Administrator job description would include duties such as:

- Applying for and managing state and federal grants
- Developing and maintaining necessary partnerships with government, non-profit, and private organizations
- Obtaining necessary approvals and permits
- Transit budgeting and financial reporting
- Procuring equipment, services, and supplies
- Managing the contractor operating the service
- Establishing policies and procedures

Partnership Development

In order to support the long-term success and sustainability of a new public transportation service, there are many partnerships that should be pursued. These partnerships could be for marketing, coordination, funding, or operations. Some examples of potential partnerships to be developed include:

- Marketing and promotional arrangements with the Chamber of Commerce, local businesses, and the lodging community to support public awareness of the new service
- Partnerships and agreements to provide local funds for transit operations and to build political support
- ADOT and Forest Service partnerships and agreements necessary for transit operations
- Relationships with healthcare providers, local schools, employers, and tourism groups to coordinate service schedules

*Successful community transportation services leverage a multitude of partnerships with local businesses, nonprofits, community members, and municipalities to succeed – **a grassroots strategy works best!***

SERVICE PLAN

As shown in Figure M-2, the Sedona transit plan is a phased approach with core routes, trailhead connections, OCC route, and Slide Rock express routes.

Overview

The final transit service plan for the Sedona area is based on the culmination of study activities that have included analysis of transit needs and potential demand, evaluation of multiple service options, and significant community input.

Characteristics of the service plan are summarized in Table M-1, with phases one, two, three, and four detailed by type of service – core routes, demand response, trailhead services, and Slide Rock shuttles. The cost estimates for the service are based on current operating costs of Cottonwood Transit with an increase in wage rates and benefits of 20 percent. These costs include all direct operating costs (e.g., wages and fuel), maintenance costs, and administrative costs.

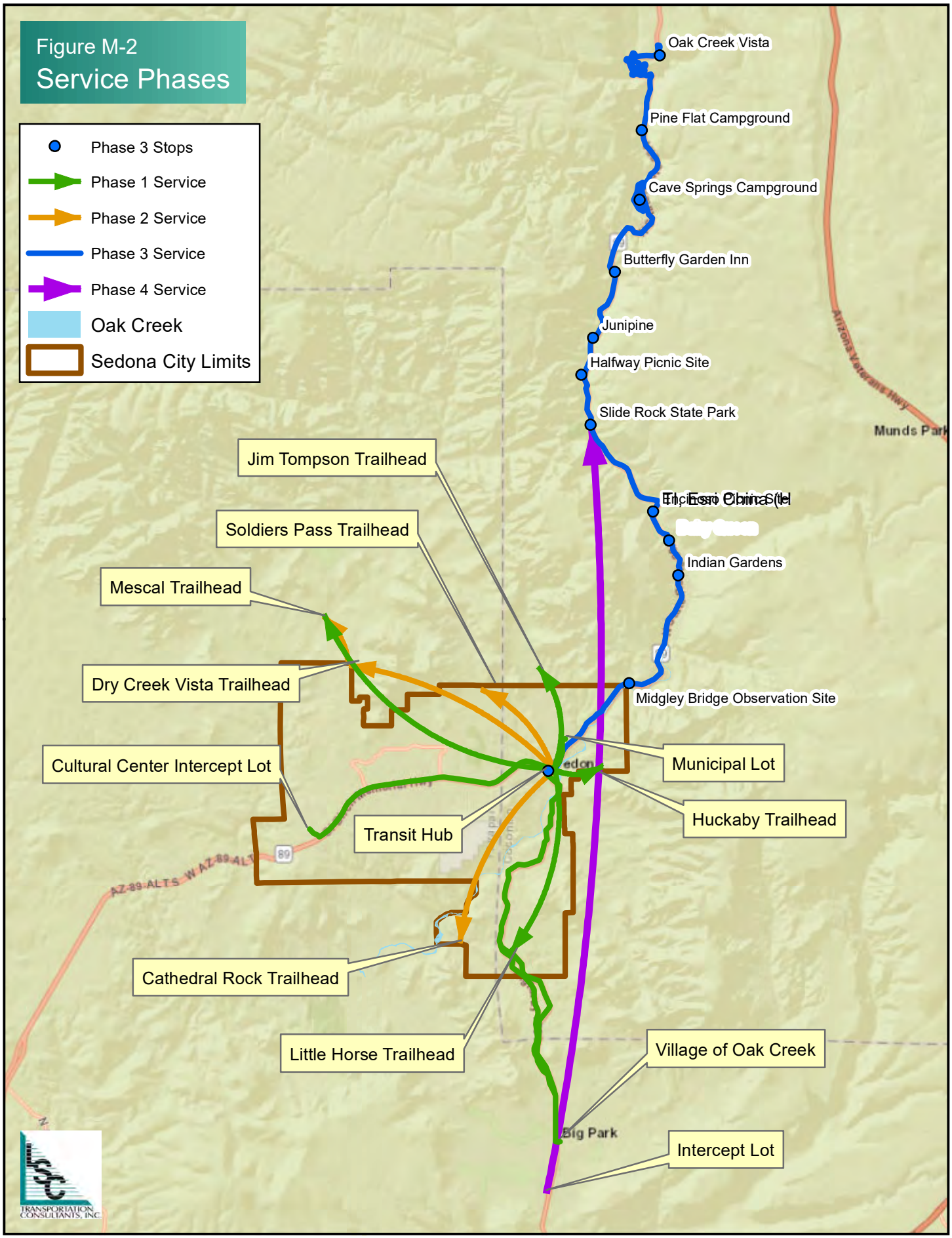


Figure M-2
Service Phases
Phase 3 Stops
Phase 1 Service
Phase 2 Service
Phase 3 Service
Phase 4 Service
Oak Creek
Sedona City Limits
Oak Creek Vista
Pine Flat Campground
Cave Springs Campground
Butterfly Garden Inn
Junipine
Halfway Picnic Site
Slide Rock State Park
Indian Gardens
Midgley Bridge Observation Site
Jim Tompson Trailhead
Soldiers Pass Trailhead
Mescal Trailhead
Dry Creek Vista Trailhead
Cultural Center Intercept Lot
Transit Hub
Municipal Lot
Huckaby Trailhead
Cathedral Rock Trailhead
Little Horse Trailhead
Village of Oak Creek
Intercept Lot
Munds Park
AZ-89A
89

Table M-1
Preliminary Recommended Service Plan

Service Description	# of Vehicles Required	Total Daily Revenue Miles	Total Daily Revenue Hours	Total Annual Revenue Miles	Total Annual Revenue Hours	Annual Operating Days	Annual Ridership	Annual Operating Cost	Passengers per Hour	Cost per Passenger
PHASE 1										
CORE ROUTES										
Fixed-route service from West Sedona to the Transit Hub										
Peak Season (March - October): Daily service with frequency every 30 minutes between 6-10am, every 15 minutes between 10am-8pm, every 30 miinutes between 8-11pm. Roundtrip run time of 45 minutes. Total of 54 trips per day.	3	464	41	113,004	9,855	243	516,000	$727,000	52.4	$1.41
Off-Peak Season (November - February): Daily service with frequency every 30 minutes. Roundtrip run time of 30 minutes. Total of 34 trips per day.	1	292	17	35,575	2,068	122	84,000	$156,000	40.6	$1.86
TOTAL:	**3**	**757**	**58**	**148,579**	**11,923**	**365**	**600,000**	**$883,000**	**50.3**	**$1.47**
Fixed-route service between VOC (in-town) and the Transit Hub										
Peak Season (March - October): Daily service with frequency every 30 minutes between 6-10am, every 15 minutes between 10am-8pm, every 30 miinutes between 8-11pm. Roundtrip run time of 60 minutes. Total of 54 trips per day.	4	767	54	186,588	13,140	243	218,000	$980,000	16.6	$4.50
Off-Peak Season (November - February): Daily service with frequency every 30 minutes. Roundtrip run time of 45 minutes. Total of 34 trips per day.	2	483	34	58,741	4,137	122	73,000	$309,000	17.6	$4.23
TOTAL:	**4**	**1,250**	**88**	**245,329**	**17,277**	**365**	**291,000**	**$1,289,000**	**16.8**	**$4.43**
Fixed-route service between Uptown Sedona and the Transit Hub										
Peak Season (March - October): Daily service with frequency every 30 minutes between 6-10am, every 15 minutes between 10am-8pm, every 30 miinutes between 8-11pm. Roundtrip run time of 45 minutes. Total of 54 trips per day.	3	76	41	18,396	9,855	243	462,000	$700,000	46.9	$1.52
Off-Peak Season (November - February): Daily service with frequency every 30 minutes. Roundtrip run time of 30 minutes. Total of 34 trips per day.	1	48	17	5,791	2,068	122	102,000	$147,000	49.3	$1.44
TOTAL:	**3**	**123**	**58**	**24,187**	**11,923**	**365**	**564,000**	**$847,000**	**47.3**	**$1.50**
DEMAND RESPONSE										
ADA Demand Response Service in Sedona and VOC										
Daily service between 6am-11pm.	**2**	**219**	**22**	**80,045**	**8,004**	**365**	**15,000**	**$512,000**	**1.9**	**$34.13**
TRAILHEAD SERVICES										
Shuttle from Transit Hub to Jim Thompson/Jordan Rd. Trailhead										
Peak Season (March - October): Daily service with 14 trips per day. Roundtrip run time of 30 min.	1	92	12	22,387	2,798	243	67,000	$204,000	23.9	$3.04
Off-Peak Season (November - February): Weekend service with 14 trips per day. Roundtrip run time of 30 min.	1	92	12	3,128	391	34	9,000	$28,000	23.0	$3.11
TOTAL:	**1**	**184**	**23**	**25,515**	**3,189**	**277**	**76,000**	**$232,000**	**23.8**	**$3.05**
Shuttle from Transit Hub to Little Horse Trailhead										
Peak Season (March - October): Daily service with six trips per day. Roundtrip run time of 45 min.	1	96	9	23,360	2,190	243	35,000	$161,000	16.0	$4.60
Off-Peak Season (November - February): Weekend service with six trips per day. Roundtrip run time of 45 min.	1	96	9	3,264	306	34	5,000	$23,000	16.3	$4.60
TOTAL:	**1**	**192**	**18**	**26,624**	**2,496**	**277**	**40,000**	**$184,000**	**16.0**	**$4.60**
Shuttle from Transit Hub to Huckaby Trailhead										
Peak Season (March - October): Daily service with 22 trips per day. Roundtrip run time of 30 min.	1	66	11	16,060	2,677	243	64,000	$193,000	23.9	$3.02
Off-Peak Season (November - February): Weekend service with 22 trips per day. Roundtrip run time of 30 min.	1	66	11	2,244	374	34	9,000	$27,000	24.1	$3.00
TOTAL:	**1**	**132**	**22**	**18,304**	**3,051**	**277**	**73,000**	**$220,000**	**23.9**	**$3.01**
Shuttle from Transit Hub to Mescal Trailhead										
Peak Season (March - October): Daily service with 22 trips per day. Roundtrip run time of 30 min.	1	273	11	66,381	2,677	243	64,000	$208,000	23.9	$3.25
Off-Peak Season (November - February): Weekend service with 22 trips per day. Roundtrip run time of 30 min.	1	273	11	9,275	374	34	9,000	$29,000	24.1	$3.22
TOTAL:	**1**	**546**	**22**	**75,657**	**3,051**	**277**	**73,000**	**$237,000**	**23.9**	**$3.25**
PHASE 1 TOTAL:	**16**	**3,403**	**310**	**644,239**	**60,914**	**365**	**1,732,000**	**$4,404,000**	**28.4**	**$2.54**

Table M-1
Recommended Service Plan (continued)

Service Description	# of Vehicles Required	Total Daily Revenue Miles	Total Daily Revenue Hours	Total Annual Revenue Miles	Total Annual Revenue Hours	Annual Operating Days	Annual Ridership	Annual Operating Cost	Passengers per Hour	Cost per Passenger
PHASE 2										
TRAILHEAD SERVICES										
Shuttle from Transit Hub to Cathedral Rock Trailhead										
Peak Season (March - October): Daily service with frequency every 30 minutes between 7am-6pm. Roundtrip run time of 30 min. Total of 23 trips per day.	1	184	12	44,773	2,798	243	97,000	$210,000	34.7	$2.16
Off-Peak Season (November - February): Weekend service only with frequency every 30 minutes between 7am-6pm. Roundtrip run time of 30 min. Total of 23 trips per day.	1	184	12	6,256	391	34	7,000	$29,000	17.9	$4.14
TOTAL:	**1**	**368**	**23**	**51,029**	**3,189**	**277**	**104,000**	**$239,000**	**32.6**	**$2.30**
Shuttle from Transit Hub to Soldiers Pass Trailhead										
Peak Season (March - October): Daily service with frequency every 30 minutes between 7am-6pm. Roundtrip run time of 30 min. Total of 23 trips per day.	1	133	12	32,461	2,798	243	97,000	$207,000	34.7	$2.13
Off-Peak Season (November - February): Weekend service only with frequency every 30 minutes between 7am-6pm. Roundtrip run time of 30 min. Total of 23 trips per day.	1	133	12	4,536	391	34	7,000	$29,000	17.9	$4.14
TOTAL:	**1**	**267**	**23**	**36,996**	**3,189**	**277**	**104,000**	**$236,000**	**32.6**	**$2.27**
Shuttle from Transit Hub to Dry Creek Vista and Mescal Trailheads										
Peak Season (March - October): Daily service with frequency every 30 minutes between 7am-6pm. Roundtrip run time of 45 min. Total of 23 trips per day.	2	311	12	75,555	2,798	243	146,000	$219,000	52.2	$1.50
Off-Peak Season (November - February): Weekend service only with frequency every 30 minutes between 7am-6pm. Roundtrip run time of 45 min. Total of 23 trips per day.	2	311	12	10,557	391	34	10,000	$31,000	25.6	$3.10
TOTAL:	**2**	**621**	**23**	**86,112**	**3,189**	**277**	**156,000**	**$250,000**	**48.9**	**$1.60**
PHASE 2 TOTAL:	**4**	**1,256**	**69**	**174,138**	**9,568**	**365**	**364,000**	**$725,000**	**38.0**	**$1.99**
PHASE 3										
OCC SERVICE										
Shuttle from an intercept parking lot on 179 (potentially at the ranger station) to OCC trailheads (Cave Springs Campground, Banjo Bill, Slide Rock) as far as Oak Creek Vista										
Peak Season (March - October): Daily service with frequency every 30 minutes. The first shuttle departs at 7am and the last shuttle departs at 6pm. Roundtrip run time of 150 min. (2.5 hr.). Total of 23 trips per day.	5	1,185	58	288,228	13,992	243	170,000	$1,070,000	12.2	$6.29
Off-Peak Season (November - February): Weekend service only with frequency every 30 minutes. The first shuttle departs at 7am and the last shuttle departs at 6pm. Roundtrip run time of 120 min. (2 hr.). Total of 23 trips per day.	5	1,185	46	40,273	1,564	34	17,000	$122,000	10.9	$7.18
PHASE 3 TOTAL:	**5**	**2,369**	**104**	**328,501**	**15,556**	**277**	**187,000**	**$1,192,000**	**12.0**	**$6.37**
PHASE 4										
Slide Rock Express Shuttles										
Slide Rock Express Shuttle: VOC - Slide Rock State Park (with a reservation system)										
Peak Season (Memorial Day - Labor Day): Daily service with 53 trips per day. Roundtrip run time of 90 minutes.	10	1,696	80	178,080	8,348	105	368,000	$640,000	44.1	$1.74
PHASE 4 TOTAL:	**10**	**1,696**	**80**	**178,080**	**8,348**	**105**	**368,000**	**$640,000**	**44.1**	**$1.74**

Source: LSC, 2019.

Phase 1 Sedona Community Service

The core component of the new service is focused on mobility within Sedona and the Village of Oak Creek (VOC). Three routes are proposed which will link West Sedona, Uptown, and the VOC through a central transit hub as shown in Figure M-3. Each route is described separately, but the three routes are designed to function as a system, and in order for the service to be effective, it will require implementation of all three routes. Communities which start with a system that is too small are not successful in implementing the service. There must be sufficient coverage of both origin and destination locations to attract riders.

West Sedona Route

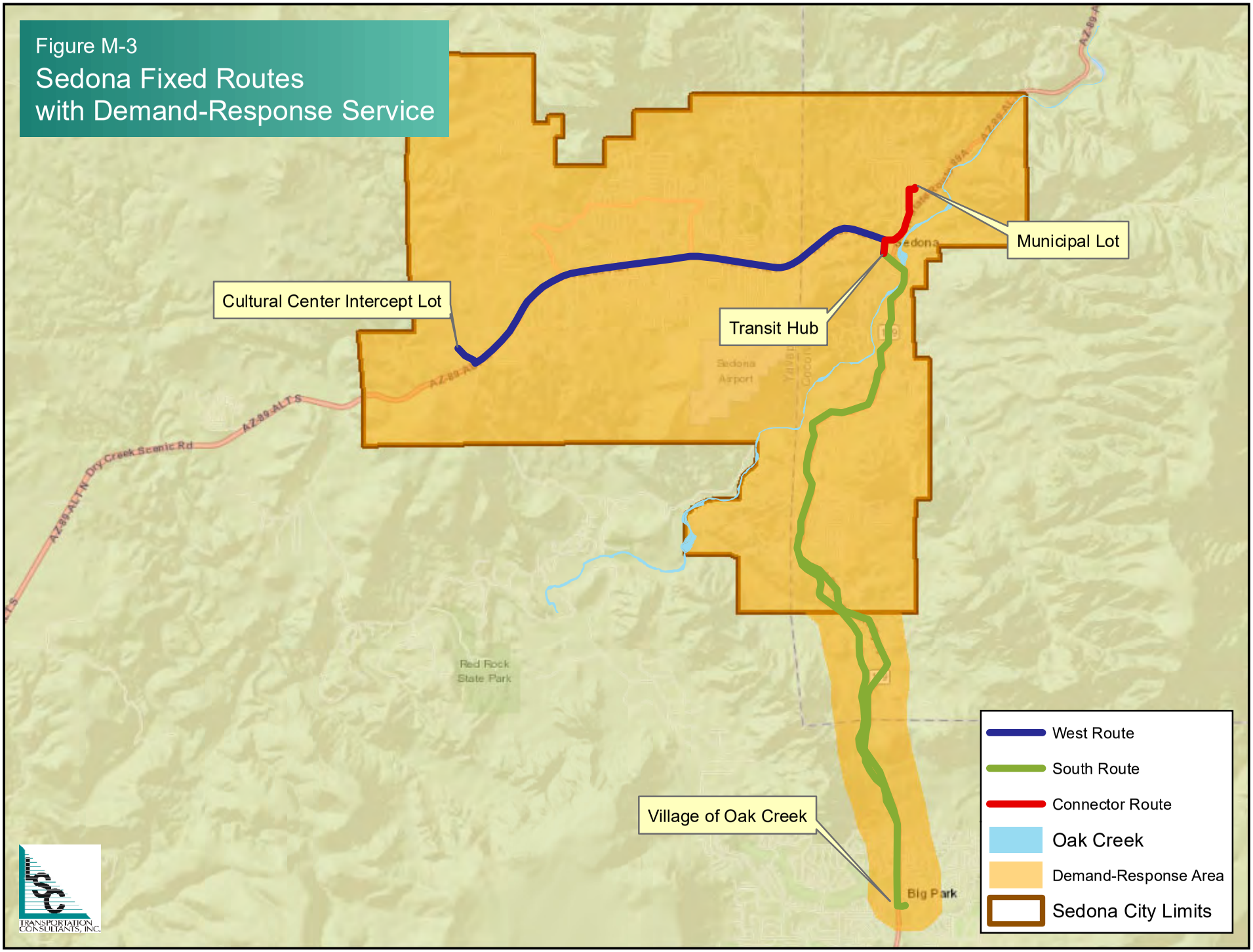
One route would operate between the Cultural Park in West Sedona and the transit hub. A park-and-ride lot should be provided at the Cultural Park for people driving who may choose to use the bus rather than dealing with parking issues and traffic congestion. This fixed-route transit service along SR 89A would be operated daily, year-round, with frequencies varying by season and time of day. The off-peak season would be from November through February with service every 30 minutes from 6:00 a.m. to 11:00 p.m. During the peak season from March through October, service would be every 30 minutes from 6:00 a.m. to 10:00 a.m., every 15 minutes from 10:00 a.m. to 8:00 p.m., and every 30 minutes from 8:00 p.m. to 11:00 p.m. Estimated demand is based on community population characteristics along the route, lodging occupancy rates, and survey results. The following characteristics describe this route.

- Peak vehicles in operation: 3
- Annual operating days: 365
- Estimated ridership: 600,000
- Annual operating cost: $883,000
- Passenger-trips per hour: 50.3
- Average cost-per passenger-trip: $1.47

Scheduling for this route should be coordinated with the Lynx service to either shorten the Lynx route to end at the Cultural Park with a transfer to the Sedona service or using the Lynx route to operate some of the runs on the West Sedona route. The Lynx route would end either at Cultural Park or at the proposed transit hub and would not continue on SR 179 or to Uptown.

Figure M-3

Sedona Fixed Routes with Demand-Response Service



VOC Route

This route would operate between the VOC and the central transit hub with daily service throughout the year. The terminus in VOC would be the southern roundabout on SR 179. During the off-peak season from November through February, service would be every 30 minutes from 6:00 a.m. to 11:00 p.m. During the peak season from March through October, service would be every 30 minutes from 6:00 a.m. to 10:00 a.m., every 15 minutes from 10:00 a.m. to 8:00 p.m., and every 30 minutes from 8:00 p.m. to 11:00 p.m. Estimated demand is based on community population characteristics along the route, lodging occupancy rates, and survey results. This route will provide a desired connection at the transit hub from West Sedona. Passengers from the Verde Lynx to VOC would be able to transfer to the Sedona service at either Cultural Park or the transit hub depending on the final service schedule. The following characteristics describe this route.

- Peak vehicles in operation: 4
- Annual operating days: 365
- Estimated ridership: 291,000
- Annual operating cost: $1,289,000
- Passenger-trips per hour: 16.8
- Average cost-per passenger-trip: $4.43

Uptown Route

The third route in the system is a connector between the transit hub and Uptown. This route will provide the connection for areas served by the other routes to Uptown, as well as circulation within the Uptown area. The route would operate between the transit hub in the vicinity of Brewer Road and Ranger Road and the municipal lot in Uptown. During the off-peak season from November through February, service would be every 30 minutes from 6:00 a.m. to 11:00 p.m. During the peak season from March through October, service would be every 30 minutes from 6:00 a.m. to 10:00 a.m., every 15 minutes from 10:00 a.m. to 8:00 p.m., and every 30 minutes from 8:00 p.m. to 11:00 p.m. Estimated demand is based on community population characteristics along the route, lodging occupancy rates, and survey results. This route would provide the connection between the

Verde Lynx and Uptown through Cultural Park and the transit hub. The Lynx route would no longer serve Uptown. The following characteristics describe this route.

- Peak vehicles in operation: 3
- Annual operating days: 365
- Estimated ridership: 564,000
- Annual operating cost: $847,000
- Passenger-trips per hour: 47.3
- Average cost-per passenger-trip: $1.50

Complementary Paratransit Service

Under the Americans with Disabilities Act (ADA), any entity providing fixed-route public transit service is required to provide a complementary paratransit service. The service must be available during the same hours (6:00 a.m. to 11:00 p.m.) and provide a level of service comparable to the service provided by the fixed-route system. A certification process is required to determine eligibility. Eligibility is determined by the inability to use the fixed-route service and not just by the presence of some type of disability. Typical reasons for eligibility are the inability to walk to the bus stop or inability to get on or off the bus. The following characteristics describe the complementary paratransit service.

- Peak vehicles in operation: 2
- Annual operating days: 365
- Estimated ridership: 15,000
- Annual operating cost: $512,000
- Passenger-trips per hour: 1.9
- Average cost-per passenger-trip: $34.13

The Verde Valley Caregivers Coalition is a private, non-profit corporation which provides transportation services for older adults and individuals with disabilities in the Verde Valley and Yavapai County. This transportation provider creates an opportunity for coordinated and consolidated specialized transportation services in the greater Sedona area. Consolidated services invariably create opportunities for higher productivity and lower costs of service delivery. The City should partner with Verde Valley Caregivers for the complementary paratransit service.

Vehicles

Two types of vehicles are recommended for the core service. The first is a 30- to 35-foot heavy duty coach for the three core routes. This would have room for approximately 30 passengers with two wheelchair positions and 10 to 12 standing passengers. This size is recommended as a larger vehicle would have difficulty maneuvering in some of the areas to be served. The preferred buses for the core service are battery electric buses with a fast charging station location at the transit hub. A total of ten buses for peak service with two spare buses would be required for the core routes as shown in Table M-2. Diesel buses have the advantage of a lower initial cost, but have higher annual operating and maintenance costs. Battery electric buses have the potential to save approximately $20,000 each per year over the life of the bus (typically 12 years). Other challenges with battery electric buses are the operating range. Battery electric buses do not have sufficient range for operating either the West Sedona route or the VOC route, particularly during colder months and possibly during hotter months with the need to operate air conditioning in the vehicles. Use of battery electric buses with current technology would require the purchase of three additional vehicles to serve the peak period. The operating cost savings may not be sufficient to justify purchase of battery electric buses, particularly if additional vehicles are required because of the limited operating range. Initial discussions with Arizona Public Service (APS) indicate that there may not be sufficient electrical infrastructure to support charging a fleet of battery electric buses. This technology continues to evolve rapidly and may be viable when Sedona is selecting vehicles to purchase. Diesel buses or hybrid buses are recommended as a secondary option based on the current state of battery electric technology, but the City should consider battery electric buses in the future if the battery electric bus will meet the service requirements and can be supported by the electrical distribution infrastructure.

Table M-2 Heavy Duty Buses for Core Sedona/VOC Routes					
		All diesel buses ($415k ea.)		Battery Electric Bus Mix (BEB=$ 1 million ea.)	
Route	Peak Bus Requirement	Qty	Cost	Qty	Cost
W Sedona to Hub	3	3	$1,245,000	4	$4,000,000
VOC to Hub	4	4	$1,660,000	6	$6,000,000
Hub to Uptown	3	3	$1,245,000	3	$3,000,000
Subtotal	*10*		*$4,150,000*		*$13,000,000*
Spares (20%)	2	2	$830,000	2	$2,000,000
TOTAL Buses/Cost:	**12**	**12**	**$4,980,000**	**12**	**$15,000,000**

Two smaller vehicles would be required for the complementary paratransit service. These could be either a minivan vehicle or a larger body on van chassis. If the trailhead service is implemented with the core service, the recommendation is to use the larger vehicle so that the spare vehicles could be shared between the paratransit and trailhead routes. A third vehicle would be required for a spare at a total cost of $270,000.

Bus Stop Improvements

For the West Sedona Route and Uptown route, the existing bus stops used by the Verde Lynx service will work well and improvements are not needed – many of these existing stops already have bus stop improvements such as shelters, benches, signage, and areas for the bus to pull off the roadway. Improvements will be required for a park-and-ride and transfer point at the Cultural Park.

For the VOC Route, new bus stops must be established and improvements made before the VOC Route could operate, as shown in Table M-3.

All bus stops located on state highways will require an encroachment permit from ADOT. Use of existing Verde Lynx stops should only require a modification of the existing permit and changes to reflect the branding and identity of the Sedona service. Bus stops at trailheads along SR 179 between VOC and Sedona would be included only in Phase 3 with approval of the USFS.

Table M-3
VOC to Sedona Bus Stop Locations and Improvements

Stop locations in northbound order from VOC	Northbound	Southbound
SH 179 and roundabout at Ave De Piedras/Ridge Trail Dr.	 Passengers woud use the southbound stop for both boarding and alighting, as this is the southernmost stop on VOC Route - stop in left-hand turn lane; add landing pad for boarding, connected to existing sidewalk, add signage and possible bench	
SH 179 and roundabout at Jacks Canyon/Verde Valley School	 Use existing turn-out on 179, north of roundabout; add signage, bench or bus shelter	 Use existing turn-out on 179, north of roundabout; add signage
SH 179 and Cortez/Castle Rock	 North of Cortez, using righthand turn lane at Shell; add signage, bench	 North of Castle Rock, using right-hand turn lane at Chevron; add signage
SH 179 and roundabout at Bell Rock Blvd.	 South of Bell Rock roundabout, using right-hand turn lane at Bell Rock Plaza	 South of Bell Rock roundabout, using right-hand turn lane at Wildflower
Trailheads between VOC and Sedona (for Phase 3 trail service)	 Pull into existing parking lots (Bell Rock example shown); add signage. Note: Yavapai Point can only have southbound stop	
SH 179 and roundabout at Indian Cliffs/Back 'o Beyond	 South of roundabout in bike lane; need landing pad and signage	 South of roundabout in bike lane; need landing pad and signage
SH 179 and roundabout at Chapel Rd.	 Use existing turn-out on 179, north of roundabout; add signage, bench or bus shelter	 Use existing turn-out on 179, south of roundabout; add signage, bench or bus shelter
SH 179 at Mallard Dr.	 South of Mallard, using righthand turn lane; add sidewalk connection, signage, bench	 South of Mallard, using righthand turn lane; add sidewalk connection, signage, bench
SH 179 and roundabout at Morgan/Arrow	 Use existing turn-out on 179, north of roundabout; add signage, bench or bus shelter	**NO PICTURE AVAILABLE** Use existing turn-out on 179, north of roundabout; add signage, bench or bus shelter

Facilities

A maintenance and operations facility will be required to store vehicles and perform vehicle maintenance. This facility should also provide space for administrative functions. The initial requirement is a facility to accommodate 12 large vehicles and seven small vehicles for the core routes, paratransit, and the Phase 1 trailhead service. Expansion for all four phases of the recommended service would require a facility that could accommodate 40 vehicles. An estimated cost for a facility of this size is expected to be about $15 million without land acquisition costs. The full facility for all phases will require approximately two to three acres depending on site configuration and access. The City has land by the wastewater treatment plant which could be a possible site. Vacant land by the Cultural Park and other privately-owned land could also be considered as possible sites. Implementation will require a site selection study and an environmental analysis.

A transit hub is recommended in the vicinity of the intersection of Ranger Road and Brewer Road. This location creates the opportunity to keep buses on the West Sedona Route and the VOC Route out of the "Y" and the greatest congestion, which will impact schedule reliability. If electric buses are chosen for the core route service, a fast charging station should be included at the hub for vehicle charging during layovers at a cost of $150,000 to $200,000. Three-quarters to one acre would be needed for the transit hub depending on the site configuration and access. The cost for this transit hub is estimated to be $2.5 million including space for buses, passenger shelters, and a fast charging station; but does not include land acquisition or site improvements.

Infrastructure Improvements

Implementation of transit service in the Sedona area will depend on roadway infrastructure improvements. The TMP recommendations at the "Y" include a right-turn bypass lane from SR 89A to SR 179, a right-turn bypass lane from northbound SR 179 to SR 89A, and two southbound lanes from Uptown approaching the "Y". The TMP included extension of a second lane on SR 179 through the Schnebly Hill roundabout in each direction.

To provide access to the transit hub, two changes for intersection configurations were considered. These are shown in Figure M-4. These improvements will allow buses on the West Sedona and VOC routes to avoid the "Y" completely and reduce the potential for delay that occurs at the intersection. The first option would be to extend Ranger Road to US 89A and construct a new roundabout with improvements at the intersections of Ranger Road with Brewer and Ranger Road with SR 179. The second option would to use Brewer Road for access to the transit hub with intersection improvements at the intersections of Brewer with Ranger and Ranger with SR 179. Intersection improvements would be needed at Ranger Road and SR 179 to allow buses coming from VOC to turn left. This could be a bus-activated signal to stop traffic long enough for the bus to make the left turn onto Ranger Road.

An additional recommended improvement is changing the lane configuration on US 89A from Airport Road to the Brewer Road roundabout to allow buses to operate on the shoulder/bike lane. This would require reducing the width of the center paved median and shifting the northbound lanes to provide sufficient width in the bicycle lane. This minor change would allow buses on the West Sedona route to bypass traffic queues approaching the "Y" from West Sedona.

The roadway improvements were analyzed in combination with the transit services to evaluate the benefits of the improvements in conjunction with the potential reduction in traffic as a result of implementing the transit services. The modeling effort and results are included in Appendix I. Three base levels were modeled using updated traffic count data: no roadway improvements, the improvements recommended in the TMP, and limited improvements recommended in the TMP. Without either the limited or full roadway improvements recommended in the TMP, traffic congestion will continue to increase and transit will be ineffective as buses will not be reliable or convenient. Key results from the modeling show that the limited TMP improvements will significantly reduce congestion at the "Y" and reduce travel times. The full improvements would have better results, but the limited improvements are adequate. The transit supportive improvements do not have an impact on congestion or travel time, but would improve travel time for buses and support

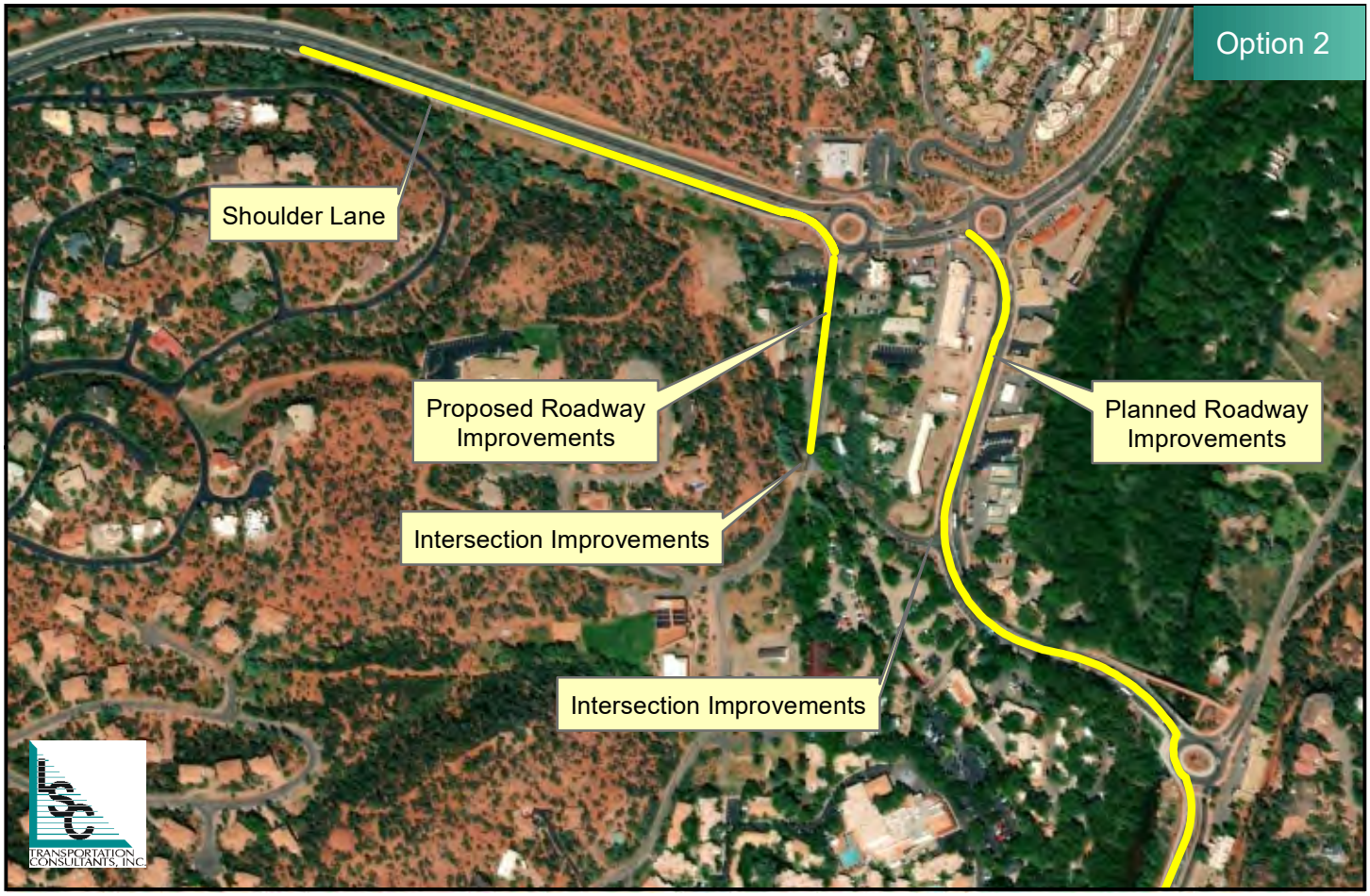
reliability of the bus service. For modeling purposes, transit phases were combined. Phases 1 and 2, including the core service and the Sedona area trailhead shuttles, were combined for modeling purposes. The trailhead shuttle routes will have minimal impact on traffic congestion and delay at the "Y" and adjacent intersections because the volume reduction is spread throughout the day and does not have a significant peak period impact. The OCC route and the Slide Rock State Park express service were combined for modeling the changes in traffic volume. Congestion and delay at the "Y" would be reduced as a result of implementing these services, primarily because of the peak nature of traffic to and from OCC and Slide Rock.

As a result of the modeling effort, the recommended improvements to support transit service and for access to a new transit hub include:

- Two lanes approaching the "Y" from Uptown (currently in progress)
- The right-turn bypass lane from SR 89A to southbound SR 179 at the "Y"
- The right-turn bypass lane from northbound SR 179 to 89A at the "Y"
- Elimination of the at-grade pedestrian crossing at Tlaquepaque
- Reconfiguration of lanes on SR 89A from Airport Road to Ranger or Brewer to allow for a bus bypass lane
- Extension of Ranger Road to SR 89A or improvements to Brewer Road to provide access to the transit hub
- Intersection improvements at Ranger Road and Brewer Road
- Intersection improvements at Ranger Road and SR 179 including bus priority for left turns from SR 179 to Ranger Road

While not an essential improvement, extension of two lanes through the Schnebly Hill roundabout in both directions would improve traffic flow and support bus access to and from the transit hub.


Figure M-4
Intersection Improvements
Option 1
Add Roundabout
Shoulder Lane
Planned Roadway Improvements
New Road Segment
Intersection Improvements


Option 2
Shoulder Lane
Proposed Roadway Improvements
Planned Roadway Improvements
Intersection Improvements
Intersection Improvements
TRANSPORTATION CONSULTANTS, INC.

Required Approvals

Changes to the roadways may require an update to the Transportation Master Plan for the improvements to Brewer Road. Other changes to the roadways could be approved by the Arizona Department of Transportation (ADOT) as minor improvements. As part of the analysis, changes in traffic volumes and possible changes in roadways will be evaluated using the City's traffic model.

There are existing bus stops on US 89A and at some locations on SR 179. Use of existing Lynx stops and new stops will have to be approved by ADOT as the stops are in the state highway right-of-way. Existing stops should require only a modification to existing encroachment permits.

Changes to parking policies in Uptown should be considered. Currently only parking along SR 89A is paid parking and other on-street and off-street parking has no fee. The 2012 Uptown parking study showed that much of the off-street parking was under-utilized. The City has implemented several parking management policies, but parking demand is increasing with the increase in the number of visitors to Sedona. The City is beginning to complete an updated study of Uptown parking. This provides an opportunity to reconsider parking policies. Rather than building additional off-street parking in Uptown, the City should consider building intercept parking along the bus routes to reduce the amount of traffic to Uptown. A coordinated parking and transit strategy will function to reduce parking demand by providing an attractive alternative. With service to Uptown every 15 minutes during peak times, visitors will have an option to leave their cars parked at their place of lodging. Increasing the areas that have paid parking and capping the amount of available parking will serve as an incentive for visitors to use the transit service. These should be policy considerations as the new parking study is completed.

Fares

The core routes and complementary paratransit service are recommended to be operated with a zero fare. A zero-fare policy serves as an incentive to attract as many people as possible from driving their own vehicles for circulation within the Sedona area. Implementing a fare would slow down the bus boarding process and decrease the number of passengers by as much as 50 percent.

Benefits

The core service will reduce parking demand in Uptown and the amount of traffic, particularly through the "Y." Parking demand in Uptown could be reduced by as much as 250 cars and traffic through the "Y" could be reduced by up to 500 cars a day during peak periods. Estimated changes in traffic flow will be analyzed using the City's traffic demand model.

A local transit system will enhance the visitor experience. Input from visitor surveys and interviews indicates a strong likelihood of using a local transit service in the Sedona area. While parking is often available in Uptown, the feedback from visitors has been that finding parking is difficult and traffic congestion is a major issue. The transit service will help people get to destinations throughout the community without dealing directly with the traffic or worrying about where to park. Many visitors to the Sedona area are familiar with other tourist destinations such as Mammoth Lakes, Park City, Durango, and Steamboat Springs that have local transit service and have wondered why Sedona does not have something similar.

Another benefit for visitors would be the ability to visit Sedona without a car. The vast majority of visitors arrive by private automobile although shuttle service is available from Phoenix. With local transit service, the shuttle service from Phoenix could be promoted with the information that you can visit Sedona without a car. This could help reduce the number of people coming to Sedona with cars, helping to alleviate the traffic congestion and parking demand.

Phase 1 Sedona Trailhead Service

The United States Forest Service (USFS) has estimated capacity at several trailheads in the Sedona area for use by private shuttles. Permits have been issued to serve some of these trailheads, but use at many locations is below the carrying capacity. There may be an opportunity to initiate a pilot shuttle service to some of the key trailheads in the area. Four trailheads that may have capacity to accommodate hikers using the shuttle are the Jim Thompson/Jordan Road trailhead, Little Horse trailhead, Mescal, and Huckaby trailhead as shown in Figure M-5. These trailheads would be served daily during the peak season from roughly 7:00 a.m. to 6:00 p.m.

with the number of trips determined by the USFS permit as shown in Table M-1. Characteristics of each route are shown in the following sections.

Jim Thompson Trailhead

Service to the Jim Thompson/Jordan Road trailhead will be 14 trips per day with additional trips if needed to pick up returning hikers. The final number of trips will be determined based on permitting from USFS at the time of implementation. The following characteristics describe this route.

- Peak vehicles in operation: 1
- Annual operating days: 277
- Estimated ridership: 76,000
- Annual operating cost: $232,000
- Passenger-trips per hour: 23.8
- Average cost-per passenger-trip: $3.05

Little Horse Trailhead

Service to the Little Horse trailhead will be six trips per day with additional trips if needed to pick up returning hikers. The final number of trips will be determined based on permitting from USFS at the time of implementation. The following characteristics describe this route.

- Peak vehicles in operation: 1
- Annual operating days: 277
- Estimated ridership: 40,000
- Annual operating cost: $184,000
- Passenger-trips per hour: 16.0
- Average cost-per passenger-trip: $4.60

Huckaby Trailhead

Service to the Huckaby trailhead will be 22 trips per day with additional trips if needed to pick up returning hikers. The final number of trips will be determined based on permitting from USFS at the time of implementation. The following characteristics describe this route.

- Peak vehicles in operation: 1
- Annual operating days: 277
- Estimated ridership: 73,000
- Annual operating cost: $220,000
- Passenger-trips per hour: 23.9
- Average cost-per passenger-trip: $3.01

Mescal Trailhead

Mescal trailhead is located north of West Sedona and access via Dry Creek Road. This trailhead offers an alternate route to Devil's Bridge, one of the most popular hiking destinations in the Sedona area. Service would be 22 trips per day with the final number of trips to be determined based on permitting from USFS at the time of implementation. The following characteristics describe this route.

- Peak vehicles in operation: 1
- Annual operating days: 277
- Estimated ridership: 73,000
- Annual operating cost: $237,000
- Passenger-trips per hour: 23.9
- Average cost-per passenger-trip: $3.25

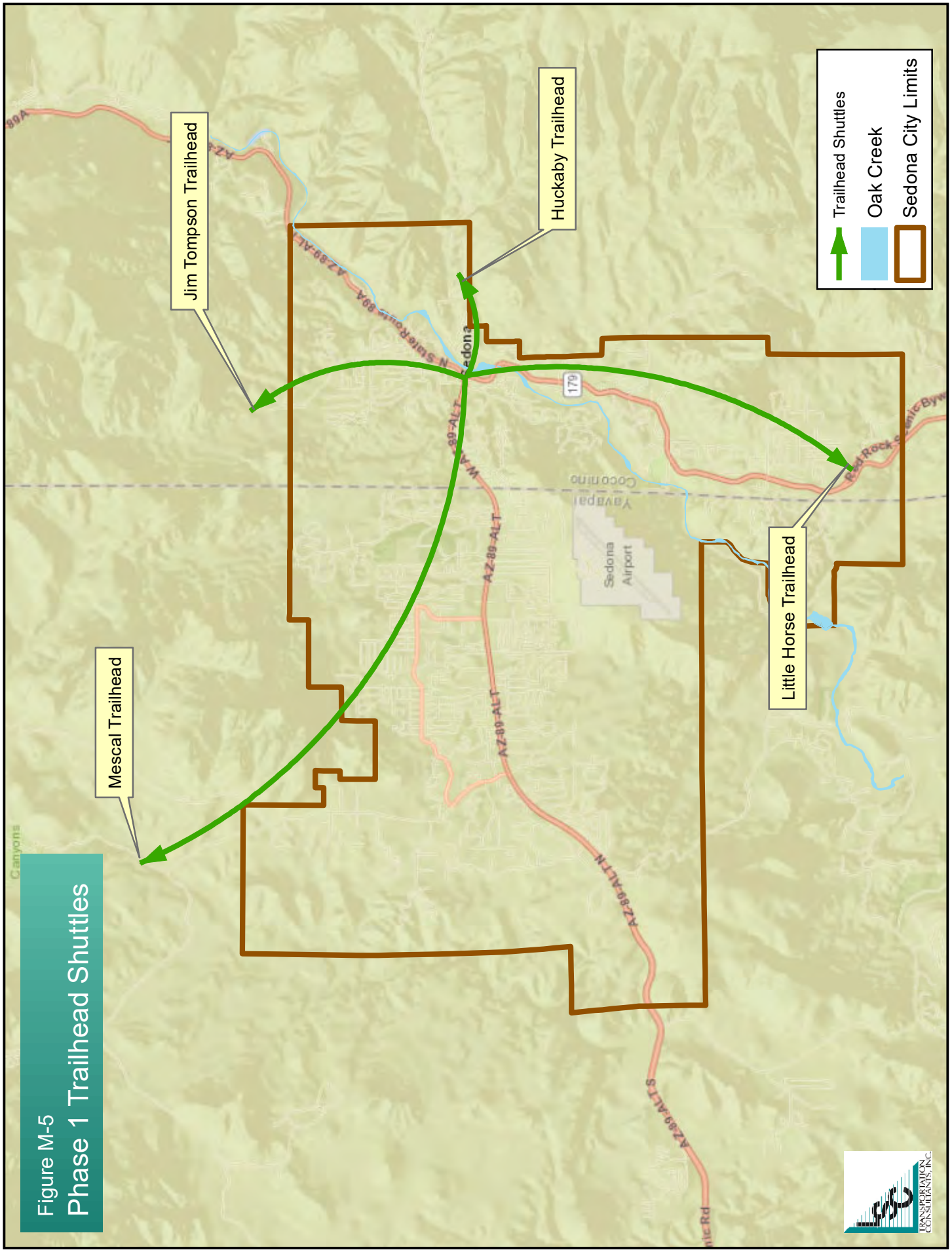


Figure M-5
Phase 1 Trailhead Shuttles

Vehicles

This service will require four vehicles in peak service plus one spare vehicle. The vehicle recommended for this service is the same as for the complementary paratransit service. Purchase of five vehicles is estimated to be $450,000.

Required Approvals

Service to each of these trailheads will require approval by the USFS. This could be a streamlined process as the USFS has made a determination of capacity and has permitted private shuttles to serve these locations. Most of the permits are not being used consistently by the shuttle operators. The City could potentially contract with the permitted operators or the permits could be transferred for use by the Sedona transit system. Additional review will be required as determined by USFS.

It is also possible that trailheads accessed from City streets could be served by the transit system with a stop on the City street and not within the Forest Service Boundary. This is the model of service to a number of trails in several National Forests including the White Mountain National Forest and the Arapaho and Roosevelt National Forests.

Fares

The proposed fare for the local trailhead service is $3.00 for a day pass for adults aged 16 and older. Children under age 16 would ride for free.

Benefits

Access to local trailheads will improve the options for visitor mobility and access to recreational opportunities. It also may disperse hikers among lesser used trailheads and reduce impacts at some of the more popular hiking areas. There is the potential to reduce the number of cars traveling to these trailheads by 100 to 200 vehicles per day. The most likely users of these trailhead shuttles will be overnight visitors and local residents.

Phase 2 Sedona Trailhead Service

Service to some of the more active trailheads in the Sedona area is recommended as part of the initial implementation. Three trailheads have been selected based on input from the community, input from the USFS, and observations of activity at multiple trailheads. The service concept is illustrated in Figure M-6.

Cathedral Rock Trailhead

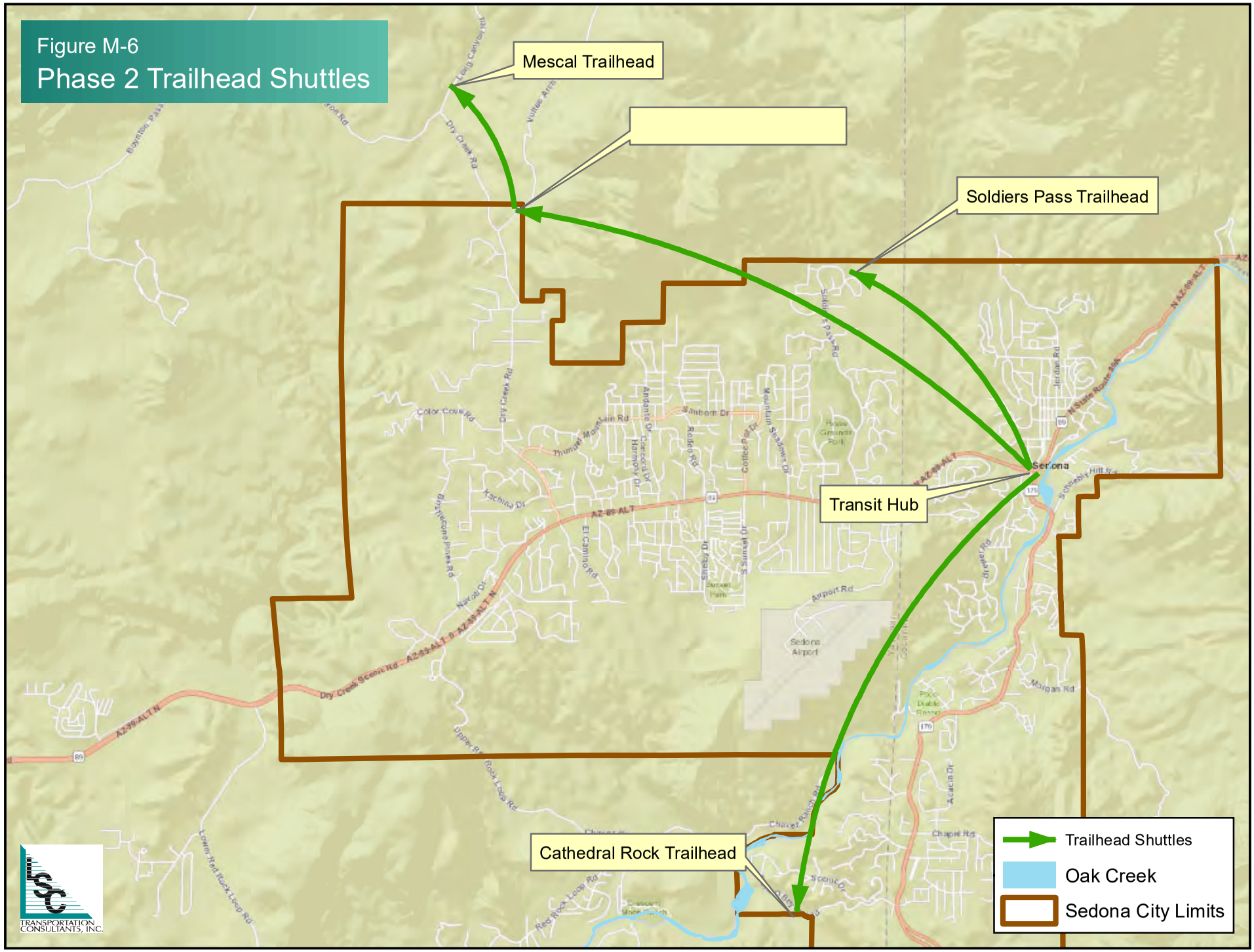
This route would consist of a shuttle operating between the transit hub and Cathedral Rock trailhead. Transit service to the Cathedral Rock trailhead, located at the south end of Sedona, would be operated daily from March through October, with a 30-minute frequency and weekend service from November through February. Service would be provided from 7:00 a.m. to 6:00 p.m. Cathedral Rock is one of the most popular trailheads in Sedona and the demand for this service is expected to be about 400 people per day. The following characteristics describe this route.

- Peak vehicles in operation: 1
- Annual operating days: 277
- Estimated ridership: 104,000
- Annual operating cost: $239,000
- Passenger-trips per hour: 32.6
- Average cost-per passenger-trip: $2.30

Soldiers Pass Trailhead

Transit service to Soldiers Pass trailhead, located on the north end of Sedona, would be operated daily from March through October, with a 30-minute frequency and weekend service from November through February. Service would be provided from 7:00 a.m. to 6:00 p.m. Soldiers Pass trailhead is one of the most popular trailheads in Sedona and the demand for this service is expected to be about 400 people per day. The Soldiers Pass trailhead offers an opportunity for a pilot test of restricted parking in combination with transit service. The parking lot at the trailhead has room for only 14 cars and is typically congested with people waiting or looking for a place to park. Parking at the trailhead could be prohibited during the peak season and on weekends with access only by transit.

Figure M-6
Phase 2 Trailhead Shuttles



This could help reduce traffic congestion in the neighborhood and would control the number of people using the trail based on the capacity of the transit service. If access is desired for more people, the capacity could be increased by adding a second bus during peak times. The following characteristics describe this route.

- Peak vehicles in operation: 1
- Annual operating days: 277
- Estimated ridership: 104,000
- Annual operating cost: $236,000
- Passenger-trips per hour: 32.6
- Average cost-per passenger-trip: $2.27

Dry Creek Vista and Mescal Trailheads

Transit service to Dry Creek Vista trailhead would be added to the route serving Mescal trailhead, both located on the north end of Sedona, and would be operated daily from March through October, with a 30-minute frequency and weekend service from November through February. Service would be provided from 7:00 a.m. to 6:00 p.m. Dry Creek Vista is one of Sedona's most popular trailheads and Mescal trailhead provides an alternate route to Devil's Bridge. The combined demand for this service is expected to be about 600 people per day. The following characteristics describe this route.

- Peak vehicles in operation: 2
- Annual operating days: 277
- Estimated ridership: 156,000
- Annual operating cost: $392,000
- Passenger-trips per hour: 24.9
- Average cost-per passenger-trip: $2.68

SR 179 Trailheads

As part of Phase 2, stops at Bell Rock and Courthouse Vista are recommended as part of the VOC route. These stops would be added to the route implemented in Phase 1 between VOC and the transit hub. Analysis of the capacity at these trailheads and approval by the USFS will be required to add these stops. There is no additional cost for including these stops as part of the VOC route.

Vehicles

This service will require the purchase of three additional vehicles for peak service. No additional spare vehicles will be required as the recommended vehicle is the same as for the Phase 1 service. Estimated cost for these vehicles is $270,000.

Required Approvals

Service to each of these trailheads will require USFS approval. Analysis will be required to determine the carrying capacity of each trailhead and the current usage level. The level of service that could be provided to each trail must be established and approved by the USFS through the National Environmental Policy Act (NEPA) process, which could cost $400,000 to $600,000 and take three to five years to complete.

Fares

The proposed fare for the local trailhead service is $3.00 for a day pass for adults aged 16 and older. Children under age 16 would ride for free.

Benefits

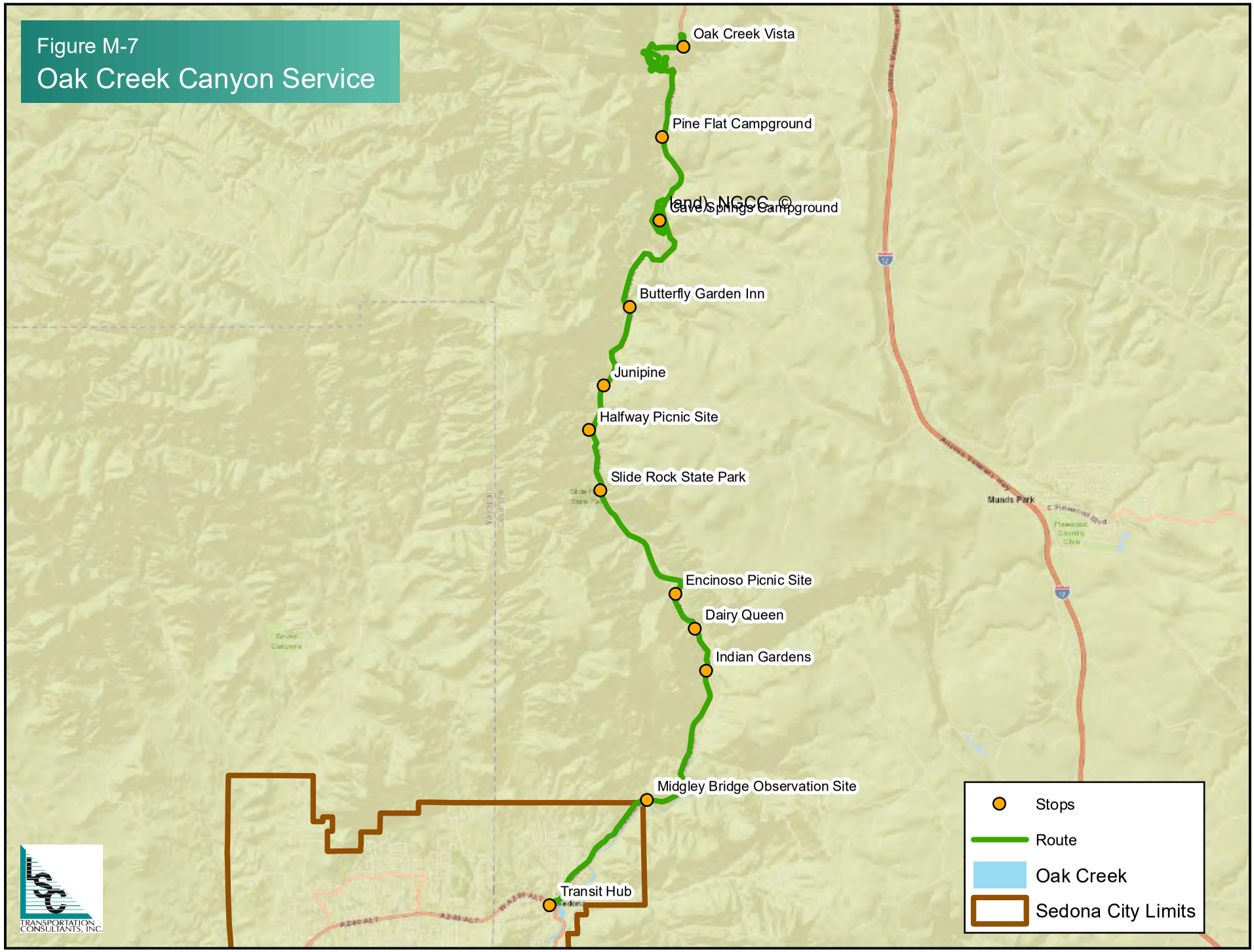
Access to local trailheads will improve the options for visitor mobility and access to recreational opportunities. It may also disperse hikers among lesser used trailheads and reduce impacts at some of the more popular hiking areas. There is the potential to reduce the number of cars traveling to these trailheads by up to 400 on a peak day. The most likely users of these trailhead shuttles will be overnight visitors and local residents. There is also the opportunity to reduce the amount of parking spaces provided at these trailheads as discussed under the Soldiers Pass shuttle. The connection to Mescal trailhead could be used to disperse hikers traveling to Devil's Bridge, particularly if the service bypassed the Dry Creek Vista trailhead and went directly to Mescal with a return pickup at Dry Creek Vista.

Phase 3 Oak Creek Canyon Service

For this service, an intercept parking lot would be established in the vicinity of the VOC and the Red Rock Ranger Station. A specific location has not been determined. It could be located at the Ranger Station or near the south end of the Village. If the location is moved farther north in the Village, it will become less effective. The service concept is illustrated in Figure M-7.

Figure M-7

Oak Creek Canyon Service



Service would be provided to trailheads, day use areas, and campgrounds from the VOC through Oak Creek Canyon (OCC) to Oak Creek Vista on the north. The service would operate from 7:00 a.m. to 6:00 p.m. with service every 30 minutes. This route would operate daily from March 1 through October 31 and on weekends during the off-peak season from November through February.

In this OCC phase, implementation of strict parking controls has been assumed. Recommendations for elimination of roadside parking in OCC along with enhanced enforcement will serve to encourage use of a shuttle service between an intercept parking location, trailheads, and other day use areas. The recommendations for *SR 89A Oak Creek Canyon Pullout Closures* evaluated 60 locations for closure of roadside pullouts and parking. Recommendations were made to close 27 of the locations. Because these are used as informal parking areas, it is not possible to have a precise number of parking spaces that would be eliminated, but a reasonable estimate is 180 to 200 spaces. With an assumed utilization rate of only two vehicles per space per day, this could be as many as 400 cars a day that currently park in OCC and would no longer have parking. The OCC route would provide an alternative. Without an option, many of these visitors would continue to drive to OCC and search for parking, likely increasing congestion as they search for a parking space.

Using AirSage data for day visitor volumes from areas south of Sedona, the average day visitor use of this service is estimated to be about 300 people with additional use by overnight visitors.

Traveler information will also be an important part of this option as visitors must know that parking is not available in OCC, but the shuttle service is operating as an alternative. Information signs will be needed on I-17, SR 179, and US 89A approaching Sedona and from Flagstaff before the SR 89A exit and approaching Oak Creek Vista.

The following characteristics describe this route.

- Peak vehicles in operation: 5
- Annual operating days: 277
- Estimated ridership: 187,000

- Annual operating cost: $1,192,000
- Passenger-trips per hour: 12.0
- Average cost-per passenger-trip: $6.37

Vehicles

The recommended vehicle is a 30- to 35-foot heavy duty coach for the OCC route. This would have room for approximately 30 passengers with two wheelchair positions and 10 to 12 standing passengers. This size is recommended as a larger vehicle would have difficulty maneuvering in some of the areas to be served. The buses for this route should be diesel because of the route length and configuration, which is not well-suited for service using electric buses. A total of five buses for peak service with one spare bus would be required for the OCC route at a cost of approximately $2.5 million.

Bus stops

Operating the OCC route safely and effectively will require significant bus stop improvements within the Canyon. LSC thoroughly reviewed possible OCC stop locations and decided many locations were unsuitable for stops:

- Grasshopper Point: Pulling in and out is not easy and is not a likely destination for shuttle riders.
- Manzanita Campground: Only a very small amount of possible pullout space northbound and no room for a pullout southbound. It is also not a likely destination for shuttle riders.
- Banjo Bill: Only a very small amount of possible pullout space southbound at the entrance road (pulling though the picnic area would be too slow and congested) and no room for a pullout northbound.
- Bootlegger: Only a very small amount of possible pullout space southbound at the entrance road (or possibly pull through picnic area) and no room for a pullout northbound.
- West Fork, Call of Canyon Trail: Given existing parking, trail capacity issues and concerns, and the busy road on a curve, this is not a good bus stop location. There is limited space for a pullout southbound and practically no space northbound.

However, there are many OCC locations where it would be possible to establish a bus stop, if infrastructure were developed. Potential stops with notes about needed improvements are provided in Table M-4.

Table M-4
OCC Bus Stop Locations and Improvements needed

Stop Locations in Northbound Order	Northbound	Southbound
Midgley Bridge	Possible but needs pullout, retaining wall, crosswalk	Space available to pull out in parking lot
Indian Gardens	Space available but need to define bus pullout area; need crosswalk	Space available to pull out in parking lot
Dairy Queen/Oak Creek Terrace	Space available but need to define bus pullout area; need crosswalk	Space available to pull out in parking lot
Encinoso	Pullout exists, would need a crosswalk	Possible to pull into entrance to day use site
Slide Rock	Space available across from entrance but needs guardrail moved to give space to create and define bus pullout area; would need crosswalk	Space available to pull out in entrance lane, need to define exactly where
Halfway Picnic Site	Space available across from entrance but need to define bus pullout area; need crosswalk	Possible to pull into entrance and through picnic site to exit point
Junipine	Space available to pull out; need crosswalk	Space available to pull out in parking lot
Butterfly Gardens	Space available but need to define bus pullout area; need crosswalk	Space available to pull out in parking lot
Cave Springs	Would have to make a left turn and pull into campground or create a new pullout, which requires removing trees and re-grading.	Space available to pull off into entrance road
Pine Flats	Could pull off at entrance road or pull into campground	Could pull off at entrance road or pull into campground

Facilities

This service will require two intercept parking lots. The primary lot should be located along SR 179 near the south end of VOC or possibly near the Red Rock Ranger Station. This lot will need to accommodate up to 250 vehicles with space for larger recreation vehicles in addition to automobiles with an estimated cost of $3.8 million exclusive of land acquisition. The second lot should be located in the vicinity of Oak Creek Vista at the north end of the canyon with an estimated cost of $750,000 exclusive of land acquisition. It could be located closer to the I-17

interchange where it may be easier to find land and construct the parking lot. This lot would need to have a capacity of about 50 vehicles including space for larger recreation vehicles.

Improvements for bus stops will also be required. A list of stop locations with needed improvements is shown in Table M-4. These stops are at locations with high visitor activity and the opportunity to create a bus pullout for a stop. Costs for bus stop improvements have not been determined.

Required Approvals

Construction of the new intercept parking lots will require review and approval through the National Environmental Policy Act (NEPA) process if they are located on federal lands or if they involve the use of federal funding. Service to stops in OCC will require approval of both the USFS and ADOT. Service to National Forest recreation sites will require approval through the NEPA process, which could require an extensive review with determination of recreation visitor carrying capacity at each trailhead or stop location. This process could cost $500,000 or more and take three to five years to complete. ADOT may have to approve bus stops along SR 89A. ADOT controls the right-of-way and typically must approve bus stops as an encroachment in the state right-of-way. Approval of the stops will likely be a cooperative effort of ADOT and the USFS. Approval and construction of the parking lots could require up to five years. Approval for bus stops may require three to five years depending on the level of review.

This service is closely linked to the closure of roadside pullouts along US 89A in OCC. ADOT and USFS have jointly identified 27 locations to be closed, which will reduce the amount of roadside parking in the canyon. Reduction in parking will serve as an incentive to use the transit service and the transit service provides an option for people wanting to reach recreation areas in OCC. Enforcement of parking restrictions will be needed to ensure that illegal parking does not occur and that new, informal pullouts are not created. Relocation of parking from the roadside in OCC to intercept lots with transit service will not increase the number of visitors in the canyon, but will reduce the number of cars along SR 89A.

Fares

The recommended fare for this service would be $5.00 for an adult day pass with children under the age of 16 riding free. This is comparable to what is currently paid for a Red Rocks day pass per vehicle. The fares would not cover the full cost of the service which means additional funding will be required to operate this service.

Benefits

Two major benefits will result from this service. The first is an alternative for access to recreation areas in OCC when parking pullouts are eliminated. The second, and greater benefit, will be the reduction in traffic along SR 89A and SR 179. By providing a convenient option, people will use the transit service and will not drive to OCC in the hope of finding a parking place. This has the potential to reduce the number of vehicles entering OCC by as much as 400 cars per day and to reduce the number of vehicles through the "Y" by 800 cars per day (round-trip to and from OCC). This could be a reduction in peak-hour traffic of as much as ten percent through the "Y."

Phase 4 Service to Slide Rock

Future service is proposed for Slide Rock State Park. Phase 3 service in OCC would include stops at Slide Rock State Park, but this is proposed as an express service from a new intercept parking lot along SR 179 to the park as shown in Figure M-8.

An intercept parking lot would be established in the vicinity of the VOC and the Red Rock Ranger Station. A specific location has not been determined. It could be located at the Ranger Station or near the south end of the Village. If the location is moved farther north in the Village, it will become less effective

Service to Slide Rock State Park would be operated daily from Memorial Day weekend through Labor Day. The reservation system has been assumed to accommodate all visitors arriving by car. No parking would be available at the park during the peak season, but would be open to private vehicles during the

off-peak season. With a vehicle occupancy of 3.5 to 4 people per car, the lot will have to accommodate at least 300 cars.

Sufficient capacity will be required to transport 1,000 people to Slide Rock over a few hours in the morning. Buses will have to be staged to depart as they are filled or after some maximum waiting time if the bus is not full. For this service, a bus capacity of 50 passengers has been assumed.

The following characteristics describe this option.

- Peak vehicles in operation: 10
- Annual operating days: 105
- Estimated ridership: 368,000
- Annual operating cost: $640,000
- Passenger-trips per hour: 44.1
- Average cost-per passenger-trip: $1.74

Vehicles

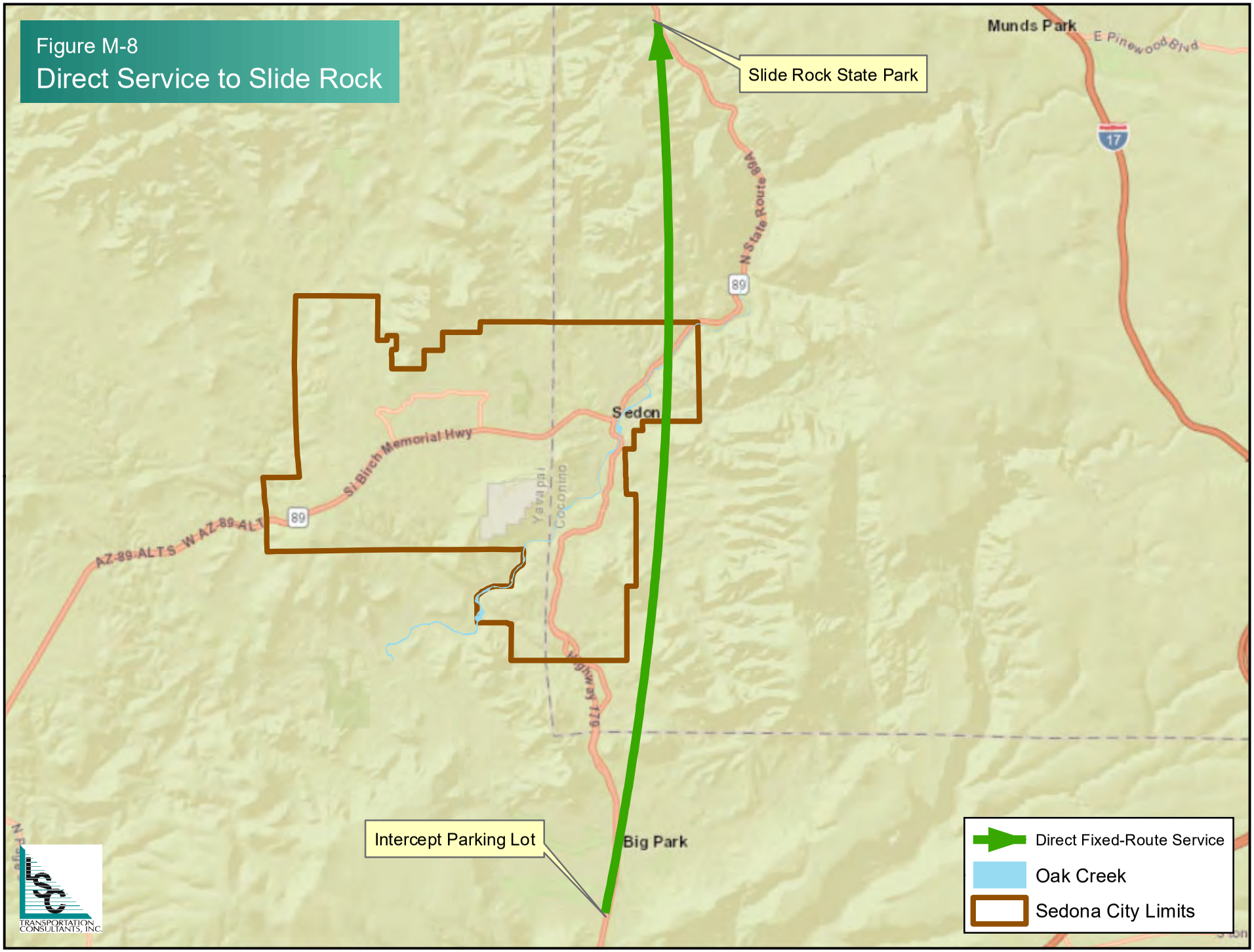
Vehicles for this service should be over-the-road commuter type coaches with storage bays to carry recreational equipment to the state park. The capacity of these coaches is 50 to 55 passengers. The service will require 10 vehicles in operation for peak service to move up to 1,000 people in a short time. Two spare vehicles will be required to ensure uninterrupted service. These coaches cost about $750,000 each for a total cost of $9 million.

Facilities

The maintenance facility will need to accommodate the fleet for this service. The facility discussion under Phase 1 Sedona Community Service includes space to incorporate these vehicles. The facility could be built initially to serve Phase 1 and 2 fleets, and designed for expansion to meet the needs of Phases 3 and 4.

An intercept parking lot will be required in the vicinity of VOC to accommodate 300 vehicles at a cost of $4.5 to $5 million. This may be a new parking lot or it could be an expansion of the parking lot developed for the OCC service in Phase 3.

Figure M-8
Direct Service to Slide Rock



No improvements are anticipated for the state park as the buses will only operate when no private vehicles are allowed to enter the park and the parking lot may be used as the bus loading/unloading area and turn around.

Required Approvals

This service will have to be developed jointly with Slide Rock State Park. The park will need to create the reservation system and restrict parking during the peak summer season. The park system will have to implement a fee collection system so that visitors pay a single fee for the bus service and entrance to the park.

Fares

The cost of a round-trip will be about $3.50 to $4.00 per person. This should be combined with a park entrance fee to ensure that the change is at least revenue neutral for the park and covers the transit operating cost on this route. The total fee should be set so that it is not too high for families who currently benefit from a single fee per vehicle, but high enough to cover the full cost.

Benefits

This service has the potential to significantly reduce traffic congestion on US 89A in OCC and at the entrance to Slide Rock State Park. On busy days, traffic is backed up on the state highway waiting to turn into the park entrance. This congestion would be eliminated. As many as 500 cars would be removed from OCC and traffic through the "Y" could be reduced by up to 1,000 cars a day on peak summer days.

Visitors would benefit by knowing they have a reservation at the park and would not drive up the canyon hoping that there are still spaces within the park. Instead of circulating within OCC looking to find parking, visitors would know in advance when they could arrive at the remote parking lot and travel to the park on the bus.

Cumulative Benefits

Each of these services have benefits for traffic reduction and parking congestion. Combined, the benefits could be significant. By fully implementing all four

phases, parking demand in OCC and Uptown would be reduced significantly. Traffic volumes through the "Y" could be reduced by as much as 1,800 cars per day during peak times. Traffic on SR 179 could be reduced by 1,300 cars per day during peak times. While these reductions may not be immediately noticeable to motorists, they will result in fewer times of severe delay and will be an overall improvement for traffic flow. One task for development of the implementation plan will be to model the potential impacts of each phase on traffic conditions in Sedona.

A good transit service may reduce the need to add new parking facilities in Uptown as parking is moved to the outer edges of the community and overnight visitors are able to leave their cars at lodging facilities with access to other destinations using transit.

TEN-YEAR FINANCIAL PLAN

This section presents a financial plan with projected expenditures and required revenues for both operating and capital expenses. Table M-5 presents a ten-year transit financial plan in constant dollars while Table M-6 presents the plan with the assumption of an annual three percent inflation rate every year from year one.

The financial plan is comprehensive and includes all costs detailed by route or type of improvement – assumptions are noted about revenue sources. Capital costs for vehicles to operate the core routes are based on battery electric buses with a larger fleet to meet the peak service requirements based on the current operating range of battery electric buses. Use of battery electric buses would have higher capital costs than diesel as discussed earlier, but lower operating and maintenance costs.

Capital cost estimates do not include property acquisition, infrastructure improvements, or electrical infrastructure to support battery electric buses. These costs are unique to the chosen sites and must be determined as part of the site selection study.

Table M-5
Sedona Transit Ten-Year Financial Plan (constant dollars)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
EXPENSES										
Operation										
Pre-startup administrative costs (staff, OH, misc.)*	$168,000	$168,000	$168,000							
Environmental Analysis and approvals	$100,000	$300,000	$100,000							
Phase 1										
Fixed Route from West Sedona to Transit Hub				$883,000	$883,000	$883,000	$883,000	$883,000	$883,000	$883,000
Fixed Route from VOC to Transit Hub				$1,289,000	$1,289,000	$1,289,000	$1,289,000	$1,289,000	$1,289,000	$1,289,000
Fixed Route between Uptown and Transit Hub				$847,000	$847,000	$847,000	$847,000	$847,000	$847,000	$847,000
Complementary ADA Paratransit				$512,000	$512,000	$512,000	$512,000	$512,000	$512,000	$512,000
Initial Trailhead Shuttles				$636,000	$636,000	$636,000	$636,000	$636,000	$636,000	$636,000
Phase 2										
Additional Trailhead Shuttles						$725,000	$725,000	$725,000	$725,000	$725,000
Phase 3										
OCC Route							$1,192,000	$1,192,000	$1,192,000	$1,192,000
Phase 4										
Slide Rock Shuttle									$640,000	$640,000
Operation Subtotal	**$268,000**	**$468,000**	**$268,000**	**$4,167,000**	**$4,167,000**	**$4,892,000**	**$6,084,000**	**$6,084,000**	**$6,724,000**	**$6,724,000**
Capital										
Phase 1										
Battery electirc buses for core routes (15 buses)			$7,500,000	$7,500,000						
Vehicles for paratransit			$100,000	$170,000						
Vehicles for trailhead routes			$200,000	$250,000						
Operations & maintenance facility	$200,000	$2,000,000	$10,000,000	$2,800,000						
Transit hub		$100,000	$1,000,000	$1,400,000						
Transit technology			$25,000	$50,000						
Bus stop improvements (VOC/179 only)			$50,000	$100,000	$50,000					
Phase 2										
Vehicles for trailhead routes					$100,000	$170,000				
Phase 3										
Vehicles for OCC route						$1,500,000	$1,000,000			
VOC intercept parking lot					$100,000	$500,000	$3,200,000			
Oak Creek Vista parking lot improvements					$50,000	$200,000	$500,000			
Phase 4										
Vehicles for Slide Rock route						$1,000,000	$2,000,000	$6,000,000		
VOC intercept parking lot						$100,000	$500,000	$3,900,000		
Capital Subtotal	**$200,000**	**$2,100,000**	**$18,875,000**	**$12,270,000**	**$300,000**	**$3,470,000**	**$7,200,000**	**$9,900,000**	**$0**	**$0**
TOTAL EXPENSES	**$468,000**	**$2,568,000**	**$19,143,000**	**$16,437,000**	**$4,467,000**	**$8,362,000**	**$13,284,000**	**$15,984,000**	**$6,724,000**	**$6,724,000**
REVENUES										
REVENUES										
Operation										
FTA 5311 Operational Grant Funding^				$775,000	$775,000	$775,000	$775,000	$775,000	$775,000	$775,000
Federal Land Access Program (FLAP)**							$238,400	$238,400	$238,400	$238,400
Yavapai County (apportioned VOC route = 1/3 of route miles)				$386,313	$386,313	$386,313	$386,313	$386,313	$386,313	$386,313
Coconino County (apportioned OCC route = 2/3 of route miles)							$298,000	$298,000	$298,000	$298,000
City of Sedona (inclusive of all possible taxation sources)	$268,000	$468,000	$268,000	$2,637,687	$2,627,687	$2,980,187	$3,009,787	$2,999,787	$2,989,787	$2,989,787
Partner Participation				$25,000	$30,000	$30,000	$50,000	$50,000	$50,000	$50,000
Advertising				$25,000	$30,000	$40,000	$50,000	$60,000	$70,000	$70,000
Passenger Fares^^				$318,000	$318,000	$680,500	$1,276,500	$1,276,500	$1,916,500	$1,916,500
Operation Subtotal	**$268,000**	**$468,000**	**$268,000**	**$4,167,000**	**$4,167,000**	**$4,892,000**	**$6,084,000**	**$6,084,000**	**$6,724,000**	**$6,724,000**
Capital										
FTA/ADOT 5311 Capital Grant Funding***			$60,000	$120,000	$40,000					
FTA 5339 Capital Grant Funding^^^	$100,000	$1,050,000	$5,740,000	$2,436,000	$130,000	$1,586,000	$2,400,000			
FTA 5339c Low or No Emissions Vehicles			$6,000,000	$6,000,000						
Coconino County						$150,000	$100,000			
Yavapai County			$225,000	$225,000						
Sedona Local Funds and Match	$100,000	$1,050,000	$6,850,000	$3,489,000	$80,000	$434,000	$1,700,000			
Federal Land Access Program (100% of Oak Creek Vista prkg)					$50,000	$200,000	$500,000			
AZ State Parks (100% of Slide Rock buses and intercept lot)						$1,100,000	$2,500,000	$9,900,000		
Capital Subtotal	**$200,000**	**$2,100,000**	**$18,875,000**	**$12,270,000**	**$300,000**	**$3,470,000**	**$7,200,000**	**$9,900,000**	**$0**	**$0**
TOTAL REVENUES	**$468,000**	**$2,568,000**	**$19,143,000**	**$16,437,000**	**$4,467,000**	**$8,362,000**	**$13,284,000**	**$15,984,000**	**$6,724,000**	**$6,724,000**

* After Year 3, administrative costs are included in route operation costs.

^ Due to competitive Arizona 5311 funding, only 10% federal share was estimated for core Sedona-VOC route operations only.

** Assume FLAP would fund 20% of OCC operating costs

^^ Farebox recovery of 50% of Trailhead shuttles, 50% of OCC route, and 100% of Slide Rock route

*** Assume 5311 would pay 80% of transit technology and VOC/179 bus stop improvements

^^^ Assume 5339 would pay 80% of all vehicle costs, 50% of ops/maint facility, 50% of transit hub, and 50% of OCC route intercept lot in VOC

Note: Capital costs do not include property acquisition, site improvements, or roadway infrastructure.

Source: LSC, 2019.

Table M-6
Sedona Transit Ten-Year Financial Plan (3% annual inflation)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
EXPENSES										
Operation										
Pre-startup administrative costs (staff, OH, misc.)*	$168,000	$173,040	$178,231							
Environmental Analysis and approvals	$100,000	$300,000	$100,000							
Phase 1										
Fixed Route from West Sedona to Transit Hub				$964,878	$993,824	$1,023,639	$1,054,348	$1,085,979	$1,118,558	$1,152,115
Fixed Route from VOC to Transit Hub				$1,408,525	$1,450,781	$1,494,304	$1,539,133	$1,585,307	$1,632,867	$1,681,853
Fixed Route between Uptown and Transit Hub				$925,540	$953,306	$981,905	$1,011,362	$1,041,703	$1,072,954	$1,105,143
Complementary ADA Paratransit				$559,476	$576,261	$593,548	$611,355	$629,695	$648,586	$668,044
Initial Trailhead Shuttles				$694,974	$715,824	$737,298	$759,417	$782,200	$805,666	$829,836
Phase 2										
Additional Trailhead Shuttles						$840,474	$865,688	$891,659	$918,408	$945,961
Phase 3										
OCC Route							$1,423,310	$1,466,010	$1,509,990	$1,555,290
Phase 4										
Slide Rock Shuttle									$810,733	$835,055
Operation Subtotal	**$268,000**	**$473,040**	**$278,231**	**$4,553,393**	**$4,689,995**	**$5,671,169**	**$7,264,614**	**$7,482,553**	**$8,517,762**	**$8,773,295**
Capital										
Phase 1										
Battery electric buses for core routes (15 buses)			$8,195,453	$8,441,316						
Vehicles for paratransit			$109,273	$185,764						
Vehicles for trailhead routes			$212,180	$273,182						
Operations & maintenance facility	$200,000	$2,060,000	$10,609,000	$3,059,636						
Transit hub		$103,000	$1,060,900	$1,529,818						
Transit technology			$26,523	$54,636						
Bus stop improvements (VOC/179 only)			$53,045	$109,273	$56,275					
Phase 2										
Vehicles for trailhead routes					$112,551	$197,077				
Phase 3										
Vehicles for OCC route						$1,738,911	$1,194,052			
VOC intercept parking lot					$112,551	$579,637	$3,820,967			
Oak Creek Vista parking lot improvements					$56,275	$231,855	$597,026			
Phase 4										
Vehicles for Slide Rock route						$1,159,274	$2,388,105	$7,379,243		
VOC intercept parking lot						$115,927	$597,026	$4,796,508		
Capital Subtotal	**$200,000**	**$2,163,000**	**$20,266,373**	**$13,653,624**	**$337,653**	**$4,022,681**	**$8,597,177**	**$12,175,751**	**$0**	**$0**
TOTAL EXPENSES	**$468,000**	**$2,636,040**	**$20,544,604**	**$18,207,017**	**$5,027,648**	**$9,693,850**	**$15,861,791**	**$19,658,304**	**$8,517,762**	**$8,773,295**
REVENUES										
REVENUES										
Operation										
FTA 5311 Operational Grant Funding^				$775,000	$775,000	$775,000	$775,000	$775,000	$775,000	$775,000
Federal Land Access Program (FLAP)**							$284,662	$293,202	$301,998	$311,058
Yavapai County (apportioned VOC route = 1/3 of route miles)				$422,135	$434,799	$447,843	$461,278	$475,117	$489,370	$504,051
Coconino County (apportioned OCC ROUTE = 2/3 of route miles)							$355,828	$366,502	$377,497	$388,822
City of Sedona (inclusive of all possible taxation sources)	$268,000	$473,040	$278,231	$2,958,771	$3,062,284	$3,589,440	$3,763,638	$3,892,798	$4,026,132	$4,173,766
Partner Participation				$25,000	$30,000	$30,000	$50,000	$50,000	$50,000	$50,000
Advertising				$25,000	$30,000	$40,000	$50,000	$60,000	$70,000	$70,000
Passenger Fares^^				$347,487	$357,912	$788,886	$1,524,208	$1,569,934	$2,427,765	$2,500,598
Operation Subtotal	**$268,000**	**$473,040**	**$278,231**	**$4,553,393**	**$4,689,995**	**$5,671,169**	**$7,264,614**	**$7,482,553**	**$8,517,762**	**$8,773,295**
Capital										
FTA/ADOT 5311 Capital Grant Funding***			$63,654	$131,127	$45,020					
FTA 5339 Capital Grant Funding^^^	$100,000	$1,081,500	$6,092,112	$2,661,883	$146,316	$1,838,609	$2,865,726			
FTA 5339c Low or No Emissions Vehicles			$6,556,362	$6,753,053						
Coconino County						$173,891	$119,405			
Yavapai County			$245,864	$253,239						
Sedona Local Funds and Match	$100,000	$1,081,500	$7,308,381	$3,854,321	$90,041	$503,125	$2,029,889			
Federal Land Access Program (100% of Oak Creek Vista prkg)					$56,275	$231,855	$597,026			
AZ State Parks (100% of Slide Rock buses and intercept lot)						$1,275,201	$2,985,131	$12,175,751		
Capital Subtotal	**$200,000**	**$2,163,000**	**$20,266,373**	**$13,653,624**	**$337,653**	**$4,022,681**	**$8,597,177**	**$12,175,751**	**$0**	**$0**
TOTAL REVENUES	**$468,000**	**$2,636,040**	**$20,544,604**	**$18,207,017**	**$5,027,648**	**$9,693,850**	**$15,861,791**	**$19,658,304**	**$8,517,762**	**$8,773,295**

* After Year 3, administrative costs are included in route operation costs.
^ Due to competitive Arizona 5311 funding, only 10% federal share was estimated for core Sedona-VOC route operations only.
** Assume FLAP would fund 20% of OCC operating costs
^^ Farebox recovery of 50% of Trailhead shuttles, 80% of OCC route, and 100% of Slide Rock route
*** Assume 5311 would pay 80% of transit technology and VOC/179 bus stop improvements
^^^ Assume 5339 would pay 80% of all vehicle costs, 50% of ops/maint facility, 50% of transit hub, and 50% of OCC route intercept lot in VOC
Note: Capital costs do not include property acquisition, site improvements, or roadway infrastructure.
Source: LSC, 2019.

MONITORING PLAN

LSC recommends closely monitoring the new Sedona transit system performance and quality – this is especially important in the early years of implementation to help understand how the service is succeeding and where it is challenged. A monitoring program is essential to determine the efficiency and effectiveness of the service being provided. Monthly reports (including information on productivity measures and cost information) should be created and presented to the TAC and the Sedona City Council. In addition, a rider survey should be conducted at a minimum every other year.

Metrics to track should include:

- Miles by bus and by route reported daily
- Hours by bus and by route reported daily
- One-way passenger-trips by bus, by route, and by passenger type
- Productivity in the number of passengers per revenue-hour
- Fares collected by bus, by route, and by fare type as applicable
- Vehicle breakdowns that require a road call or vehicle replacement
- Accidents and incidents

If Sedona chooses to implement transit technology for capturing ridership through an onboard tablet and having real-time bus location information available for passengers, data and reporting could be pulled out of such a software system. If not, ridership data would have to be captured manually by the driver. In either case, data should be segmented by fare category (if applicable), route, and time (peak hours and off-peak hours). Cost information should include the cost per passenger, cost per revenue-hour, ridership, and average fare. The data should be collected and tracked based on each route of the transit system.

The monthly reports on productivity and costs should be prepared in spreadsheet or database format to analyze each bus stop, route, and service type. The data will help to analyze ridership patterns and operating cost trends, and determine if transit system changes are needed. If fixed-route software is used, reports should have graphical dashboard style report templates that allow easy and appealing visual representation of the performance data.

Driver Monitoring Program

Service can also be monitored through a driver tracking program. The drivers use a tracking sheet to gather data for evaluating the transit system's performance. The tracking sheet is designed to have the driver log in the number of passengers on each bus at each bus stop; the type of rider by fare; and the starting and ending mileage of the vehicle for each day. The information from the tracking sheet should be entered into a spreadsheet or database to analyze the performance of each bus stop, route, and service type.

Customer Comment Collection

LSC recommends that the new transit service provide comment cards and comment boxes on each transit vehicle so the passengers have an opportunity to provide input regarding the transit system. This input should be reviewed and summarized on a monthly basis to the TAC and the Sedona City Council. LSC also recommends having a customer comment page on the transit website that allows customers to give feedback on services, which is different than the ADA or Title VI complaint procedures.

For all comment methods, there should be a check box if the customer would like to have a staff member contact them. Contact with customers who request it should be made when comments are reviewed in order to provide timely follow-up.

IMPLEMENTATION STEPS

Implementing a completely new transit service for the Sedona area will require significant planning and preparation. The first three years will be focused on building the foundation for the service. These initial activities will occur prior to the start of any service operating and include:

1. Organizational
    a. Coordinate ongoing discussions with political partners such as Cottonwood, VOC, Yavapai County, Coconino County.
    b. Make final decision on governance structure.
    c. Develop startup resources for operating new transit service – policies, procedures, partnerships, and staffing development plan.

d. Coordinate implementation of initial marketing, such as name and branding. This could be completed with assistance from a consultant specializing in transit marketing.
e. Participate in regional groups, efforts, and committees that are ancillary to new transit services in Sedona such as NAIPTA, NACOG, Arizona Transit Association, and ADOT Transit Planning.

2. On-street infrastructure
    a. Prioritize bus stop improvements and develop implementation plan.
    b. Coordinate necessary bus stop improvements with ADOT and seek required approvals such as encroachment permits.
    c. Update Transportation Master Plan, as needed.
    d. Apply for appropriate grants according to application timeframes.
    e. Construct roadway improvements needed for transit service
3. Maintenance Facility
    a. Refine project programming and budget for transit maintenance facility.
    b. Coordinate with CAT on current maintenance operations and possible facility needs for new location in Sedona (assuming scenario that CAT operates service).
    c. Lead effort for site selection – secure land, funding, and entitlements to develop, including NEPA analysis.
    d. Contract with a consultant to assist with facility programming, site selection, and NEPA analysis.
    e. Contract with architectural firm for facility design.
4. Sedona Parking and Transit Hub
    a. Integrate transit operations with City parking plan, especially for Uptown – transit system may reduce need for additional parking structures.
    b. Develop project plan and budget for transit hub near the "Y."
    c. Lead effort to define transit hub site – site selection study, secure land, develop design, apply for appropriate grants, and coordinate possible NEPA process for construction
    d. Contract with a consultant to assist with facility programming, site selection, and NEPA analysis.
    e. Contract with architectural firm for facility design.
5. OCC Parking and Service
    a. Continue discussions on OCC parking plan and how/when canyon parking will be reduced and controlled.
    b. Coordinate transit planning with Slide Rock parking changes.

c. Look at park and ride opportunities and begin development process including securing land, permits, funding, and design.
d. Coordinate discussion and process with Forest Service to establish new service in OCC including NEPA and capacity study.
e. Define Red Rock Pass relationship to new transit service and help develop necessary agreements.
f. Secure any necessary special use permits for stopping at other NFS trailheads, vistas, and day use areas that are outside of OCC for Phases 1 and 2, including NEPA analysis and capacity study.

6. Operations
    a. Review relationship with CAT and possibilities for expanding current operational arrangement to the new Sedona transit system or developing agreement with NAIPTA for operation of service.
    b. Research possible private contract operators and example operating costs for similar systems.
    c. Coordinate discussion within City about operating scenarios and associated benefits and tradeoffs associated with different operating models.
    d. Make final selection of vehicles to be uses, whether battery electric buses, compressed natural gas buses, or diesel buses.
    e. Staffing and hiring or development of operating contract request for proposals.
7. Funding
    a. Refine operating and capital budgets and communicate within the City internally on needs and funding scenarios.
    b. Prepare and submit grant applications for vehicles, facilities, and operating funds.
    c. Develop and coordinate local funding partnership with counties and public sector partners.
    d. Lead discussion with local business community on funding partnership possibilities.
    e. Investigate innovative and unique funding opportunities.
8. Refine Implementation Plan
    a. Based on all activities, input, and decisions made, update implementation plan and approach to phased transit service implementation – include scenario flexibility for unknowns.
    b. Communicate proactively with City Council and all partners on progress, challenges, opportunities, and adjustments.

Timeline

The timeline for implementation is shown in Figure M-9 and requires multiple years of planning before any service starts due to the significant time and process required to apply for and receive funding. Initial decisions will be required to determine the governance structure and funding partnerships. Development of facilities is a multi-year process including facility programming, site selection, environmental approvals, funding, and construction. Vehicle purchase typically requires multiple years from selection of a vehicle type, preparing specification, purchasing, and construction of the vehicle. Service in OCC will require funding agreements with the USFS and State Parks, approval of stop locations, and development of the remote parking lots.

Throughout this implementation process there will be continuous, ongoing service refinement, continuation of previous years' services, performance monitoring, and adjustments to the service plan as needed.

Figure M-9

Timeline of Implementation Steps