Nevada Irrigation District

Staff Report

for the Board of Directors Meeting of April 10, 2019

TO: Honorable Board of Directors

FROM: Greg Jones, M.B.A., Assistant General Manager GJ

DATE: April 4, 2019

SUBJECT: **Rollins Recreation and Tourism Based Economic Impact Study Overview**

ADMINISTRATION

RECOMMENDATION:
Receive a presentation on the 2018 Recreation and Tourism Based Economic Impact Study at Rollins Reservoir.

BACKGROUND:
Receive a presentation from BAE Urban Economics on the findings from the 2018 Recreation and Tourism Based Economic Impact Study at NID's recreation facilities on Rollins Reservoir.

The purpose of this study was to identify, document and report on the economic impact of recreation and tourism based services brought to the surrounding communities of City of Grass Valley, City of Colfax and the Chicago Park area from visitation to Rollins Reservoir. This study assessed the economic benefits to the surrounding city centers from recreational visitors to Orchard Springs, Long Ravine and Peninsula Campgrounds.

This study sought to identify recreation based economic drivers such as money spent, services utilized and number of visits in order to correlate reservoir users with City of Grass Valley, City of Colfax and the Chicago Park area business services. The study includes an assessment of the number of people visiting the reservoir, visitor area of origin, average length of stay, local community services utilized, and the amount of money spent per visit.

BUDGETARY IMPACT:
None

ATTACHMENTS:
- Final Report November 2018
- PPT Presentation

bae urban economics

Recreation and Tourism Based Economic Impact Study for Rollins Reservoir

Prepared for the Nevada Irrigation District

November 14, 2018

bae urban economics

November 14, 2018

Greg Jones
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Nevada Irrigation District
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Dear Mr. Jones:

BAE is pleased to submit this Final Rollins Reservoir Recreation and Tourism-Based Economic Impact Study. It has been a pleasure working with both you and your staff.

Sincerely,

Aaron Nousaine

Aaron Nousaine, MCRP
Vice President

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EXECUTIVE SUMMARY

The Nevada Irrigation District (NID), headquartered in Grass Valley, is a special district charged with providing a water supply for irrigation, municipal, industrial, and domestic purposes, serving a broad area covering parts of Nevada and Placer County. The district operates several reservoirs, including Rollins Reservoir, in support of its primary mission. In addition to providing water storage, the reservoir provides recreational opportunities, including day use and overnight activities such as picnicking, camping, fishing, swimming, and boating. In turn, these recreational activities support the local economy, as reservoir visitors purchase goods and services at nearby businesses. The district has retained BAE Urban Economics (BAE) to assist in assessing these impacts in surrounding communities. This assessment consists of two major components:

- Recreation and Tourism Industry Assessment
- Rollins Reservoir Visitor Survey

The recreation and tourism industry assessment provides an overview of tourism-related sectors in Nevada and Placer Counties and a Rollins Reservoir Study Area, consisting of nearby communities as defined below. Additionally, several interviews have been conducted with local visitor-supported businesses in the Study Area.

The survey was developed to provide a profile of the Rollins Reservoir daytime and overnight visitors, where they come from, how long they spend at the reservoir and in surrounding communities, what types of expenditures they make in the local area, and the magnitude of those expenditures. BAE provided assistance in developing the survey instrument, and NID staff then administered the surveys and collected and tabulated responses. This report provides an analysis of the survey results.

Study Area Definition

The focus of the analysis here is on the communities closest to Rollins Reservoir likely to benefit from the reservoir's local visitor expenditures. These include Colfax, Chicago Park, and Grass Valley. The Study Area has been defined as Zip Codes 95713, 95717, 95945, 95949, 95712, 95736, and 95924.

Recreation and Tourism Industry Assessment

Two counties containing the Study Area hosted an estimated 159,050 total jobs in 2015, according to the Census Bureau's Local Employment and Housing Dynamics (LEHD) program. Dean Runyan, a private data vendor, estimates that total destination spending by visitors to Placer and Nevada Counties in 2017 was estimated at about $1.6 billion, with industry earnings of $563 million supporting more than 17,000 local jobs. [1] Although not an exact comparison, this implies that around 10 percent of total employment in the two counties is, in at least some way, supported by the tourism and recreation sector.

For the Study Area, which constitutes a portion of the two counties, there are approximately 15,000 total jobs. Industry sectors linked to the visitor economy support an estimated 3,300 jobs. The accommodation, food services, and arts, entertainment, and recreation sectors that are most strongly linked to the visitor economy account for over half of the jobs in travel-related sectors. However, many if not all, of the businesses in these sectors serve local residents to some degree as well (e.g., grocery stores) and, in fact, may draw most of their customers from the local area; thus the jobs in these sectors only serve the visitors in part.

This difficulty in separating the visitor-serving economy from the local-serving economy was echoed in interviews conducted with local businesses, which show varying degrees of dependence on visitor dollars. Additionally, Rollins Reservoir is only one component of the visitor economy in the Study Area. In particular, Interstate 80 (I-80) allows the area to capture dollars from travelers passing through the area on their way to Tahoe and other destinations.

The potentially visitor-related businesses tend to be clustered around the population centers of the Study Area, mainly Grass Valley and Colfax. The largest clusters near Rollins Reservoir is Colfax, which is situated adjacent to I-80. Colfax has a number of accommodation and food service businesses serving local residents, visitors to the area, and travelers passing through. Chicago Park, which the closest established community to the reservoir, hosts only a small handful of businesses oriented mostly toward locals, but who also benefit from visitors to the reservoir and its campground and day use facilities, like Happy Apple Kitchen.

Visitor Survey Findings

Rollins Reservoir attracts most of its visitors and their expenditures from outside the area. Five northern California counties accounted for over three-fourths of all visitors, with Sacramento County responsible for nearly one-third of the total. Only 11 percent of visitors originated from within the Study Area. Almost all of the visitors came from within California.

On average, respondents had group sizes of 9.3 persons, with a median size of six persons. Overnight visitors generally have larger group sizes, compared to day trip groups. Over 60 percent of respondent group members were from 18 to 64 years old while an additional 37 percent were children under 18. Less than three percent were 65 and older.

Over 80 percent of the visitors stayed overnight, for an average of 2.7 nights. The remaining respondents were on day trips and remained at Rollins Reservoir for 4.5 hours on average.

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[1] *California Travel Impacts 2000-2017p*, Dean Runyan Associates, May 2018, for Visit California.

Almost all of the survey respondents indicated that they primarily stayed at overnight camping facilities and that Rollins Reservoir was the primary destination of their trip. Swimming was the most common activity at the reservoir for respondents, with 85 percent of respondents listing this as an activity their group participated in. Camping followed closely, at 79 percent.

The average total trip expenditures per respondent group per trip on consumable goods ranges from $380 to $424, depending on whether null values are assumed to represent missing values versus zeros. Respondents generally spent between 21 and 57 percent of their total budget within the local area, per trip. This equals local spending, per group, per trip, of between $79 and $240. The largest local expenditures, in absolute dollar terms, were generally made in the overnight accommodation, recreation, and grocery stores. Please note, however, that the survey responses include extreme variability in terms of the reported visitor spending estimates, both in absolute terms and the local purchasing percentage, and should thus be interpreted with caution.

Estimated Economic Impacts

Based on the survey results and reservoir visitor attendance data, as well as additional supplemental research, BAE developed approximate estimates of the total direct local spending associated with day trips and overnight camping at NID's facilities on Rollins Reservoir. It is important to note that the following represents very rough estimates that are intended to illustrate the order of magnitude of the dollars injected into the local economy each year as a result of overnight camping and daytime recreation at Rollins Reservoir.

Survey Based Direct Spending Estimate

Average local expenditures per person per day are estimated based on survey results at between $4.12 and $11.81 for day trips and between $6.13 and $17.30 per overnight trip, including consumable goods only, excluding one-time durable goods purchases. Recognizing that the likely spending total falls somewhere within this range, this analysis applies the mid-point values of eight dollars per person per day for day trips and $12 per person per day for overnight trips. NID staff estimate that in 2016, a total of 107,777 people visited the Long Ravine Camp (LRC), Orchard Springs Camp (OSC), and Peninsula Family Camp (PFC), including 45,154 individual person days (day trips) and 62,623 individual person nights (overnight trips). BAE estimates that total spending associated with visitation to the LRC, OSC, and PFC equals $359,535 for day trips and $733,776 for overnight trips, for combined total of $1.09 million. Based on a comparison to average spending estimates for camping produced by Dean Runyan and the National Parks Service (NPS), BAE concludes that these spending estimates are likely conservative, reflecting the lower end estimate of likely visitor spending.

Alternative Spending Estimate

Due to the concerns regarding the visitor survey response data, BAE deemed it appropriate to also review alternative estimates of typical spending patterns of overnight campers. BAE identified two recent studies published by the NPS and Dean Runyan. The NPS report estimated visitor spending at NPS facilities throughout the nation, concluding that day trip visitors spent approximately $14 per person, per day, while overnight visitors spent approximately $38 per person, per night. Alternatively, Dean Runyan estimated that visitors to North Lake Tahoe spent approximately $49 per person, per night, for overnight camping.

Using the Dean Runyan estimate of per person spending for overnight camping, which as adjusted for inflation, BAE developed an alternative high-end spending estimate for comparison purposes. BAE estimates spending associated with day trips assuming that such visitors spend approximately one-third less than overnight visitors. Using this approach, BAE estimates that at the high-end, visitors to Rollins Reservoir could potentially generate roughly $4.87 million per year in local spending. Please note, however, that this may somewhat overestimate the impacts within the local area due to differences in the propensity to spend among visitors to North Lake Tahoe versus visitors to Rollins Reservoir (e.g., visitors to the reservoir may have a tendency to spend less on average, as implied by the survey results). Local spending may also be hindered by a lack of dining, retail, and recreational amenities, compared to North Lake Tahoe, which is more highly developed by comparison.

Employment and Secondary Impact Estimates

While it is difficult to accurately ascertain what portion of the local economy is directly or indirectly supported by expenditures made by visitors to Rollins Reservoir based on the available data, BAE has endeavored to develop some general, order-of-magnitude, estimates. For example, based on the ratio of direct visitor spending to employment reported by Dean Runyan for both Placer and Nevada Counties, BAE estimates that spending associated with visitors to Rollins Reservoir could support between 12 and 54 jobs throughout the greater area.[2] While Dean Runyan estimates that the average economic multiplier for statewide visitor spending is approximately 2.01, that value would likely overstate the cumulative economic impacts in the Study Area due to the lesser diversity of business establishments and lower overall level of economic activity in the Study Area compared to the state as a whole.

[2] Note that the NPS reports an average of $75.694 in direct visitor spending per job for NPS operated facilities throughout California, while Dean Runyan estimates the ratio of direct visitor spending per job in Placer and Nevada Counties at approximately $90,010.

INTRODUCTION

The Nevada Irrigation District (NID), headquartered in Grass Valley, is a special district charged with providing a water supply for irrigation, municipal, industrial, and domestic purposes, serving a broad area, covering parts of Nevada and Placer County. The district operates several reservoirs, including Rollins Reservoir, in support of its primary mission. In addition to providing water storage, the reservoir provides recreational opportunities, including day use and overnight activities such as picnicking, camping, fishing, swimming, and boating. In turn, these recreational activities support the local economy, as reservoir visitors purchase goods and services at nearby businesses. In early 2018, the district retained BAE Urban Economics (BAE) to assist in assessing these impacts in surrounding communities. This assessment consists of two major components:

- Recreation and Tourism Industry Assessment
- Rollins Reservoir Visitor Intercept Survey

The recreation and tourism industry assessment provides an overview of tourism-related sectors in Nevada and Placer Counties and the Rollins Reservoir Study Area, consisting of nearby communities as defined below. Additionally, several interviews have been conducted with local businesses within visitor-serving industries in the Study Area.

The survey was developed to provide a profile of the Rollins Reservoir daytime and overnight visitors, where they come from, how long they spend at the reservoir and in surrounding communities, what types of expenditures they make in the local area, and the magnitude of those expenditures. BAE developed the survey instrument, while NID staff then administered the survey and tabulated the responses.

The remainder of this report summarizes the results of both the recreation and tourism industry assessment and the visitor intercept survey and, to the extent possible, draws broad conclusions regarding the relative economic impacts of Rollins Reservoir visitor spending.

Description of Rollins Reservoir

Rollins Reservoir was created following the completion of the Rollins Dam in 1965. The reservoir's primary function is to provide water storage for the Nevada Irrigation District, but it also provides a strong recreational amenity for the region, with campgrounds, day use areas, swimming, fishing, and boating. There are four main recreational areas on the reservoir, including the Orchard Springs and Long Ravine, the Peninsula Resort, and the Greenhorn Campground. NID staff were able to provide historical visitation estimates, and organized survey administration, for three of the campgrounds. Visitation records are not available for the Greenhorn Campground, which likewise declined to participate in the visitor survey.

There were more than 100,000 visitors to Rollins Reservoir recreational facilities in 2017, including both day use and overnight visitors at the Orchard Springs, Long Ravine, and Peninsula Resort campgrounds, as reported in Table 1. Overnight visitors accounted for nearly 60 percent of total visitation, while day users accounted for just over 40 percent. Usage was strongly seasonal, with nearly 95 percent of visits occurring in May through September.

Table 1: Visitor Counts for Rollins Reservoir, 2017

	Orchard Springs	Long Ravine	Peninsula Resort	Total	
				Number	Percent
Day Trip	17,114	25,513	2,527	45,154	42%
Overnight Camping	21,930	24,239	16,454	62,623	58%
Total	**39,044**	**49,752**	**18,981**	**107,777**	**100%**

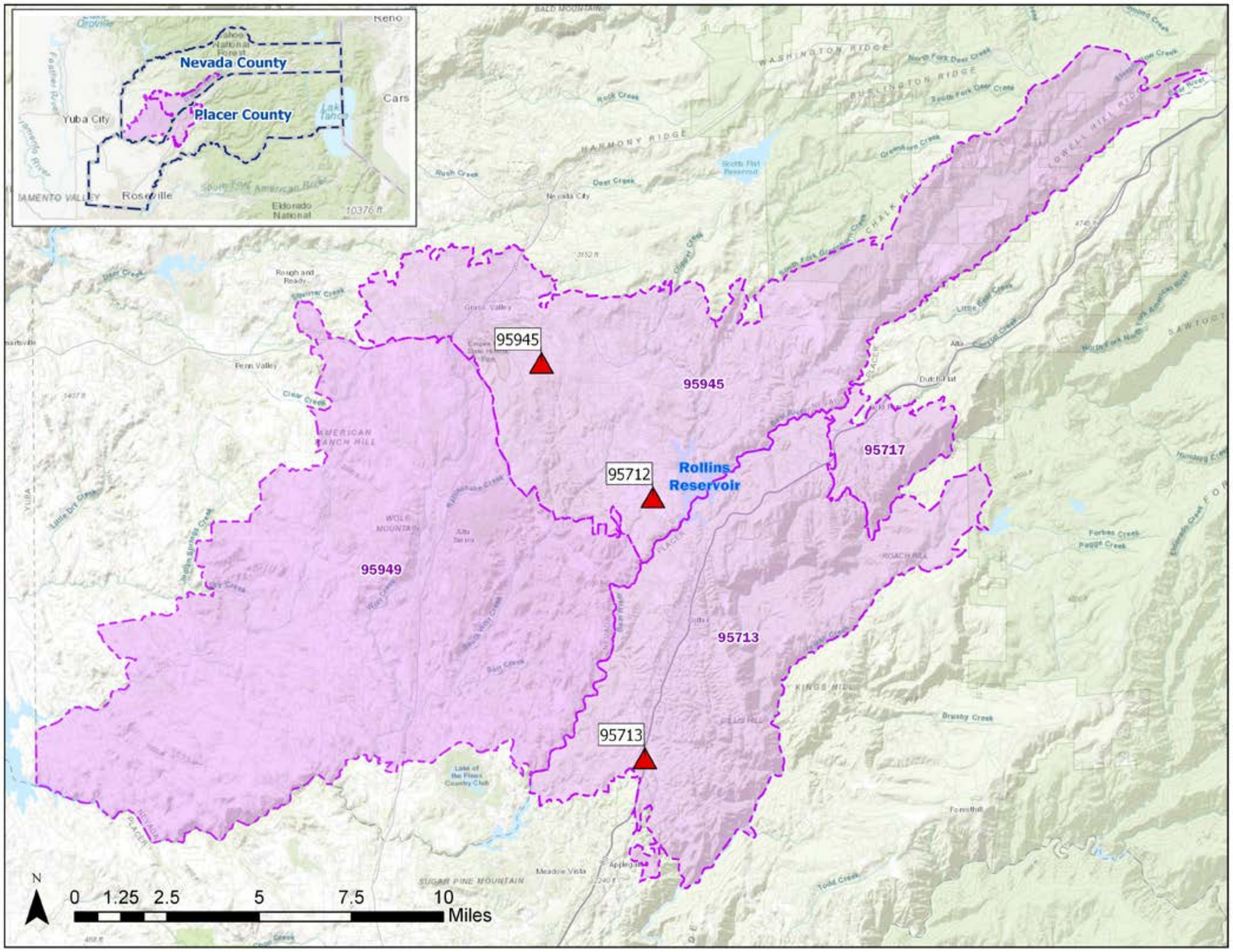
Note:
Visitation data for the Greenhorn Campground were not available as of this writing.

Sources: Nevada Irrigation District, 2018; BAE, 2018.

Study Area Definition

This study focuses on impacts that accrue within the communities closest to Rollins Reservoir. These communities are the most likely to benefit from the spending associated with recreational visits to the reservoir and related facilities. The established communities in closest proximity to the reservoir include Colfax, Chicago Park, and Grass Valley. Based on a consultation with NID Staff, BAE defined a Study Area that includes the 95713, 95717, 95945, 95949, 95712, 95736 , and 95924 ZIP Codes. The Study Area is also illustrated in Figure 1. Please note that the reservoir itself also straddles the 95713 and 95945 ZIP Codes.

Figure 1: Rollins Reservoir Visitor Impacts Study Area



Sources: United States Postal Service, 2018; U.S. Census Bureau, 2018; BAE, 2018.

RECREATION AND TOURISM INDUSTRY ASSESSMENT

Overview of the Local Economy

To provide context, this section provides an overview of the economy for the Study Area, based on employment by industry data from the U.S. Census Local Employment and Housing Dynamics (LEHD) program. The most recent LEHD data available are from 2015. According to this source, there were approximately 159,050 jobs in Placer and Nevada Counties, and roughly 14,700 jobs in the Zip Codes that make up the Study Area. This means that the study area accounts for approximately eight percent of total countywide employment.

Table 2: Employment by Industry Sector for Study Area, 2015

	Jobs	
Industry	**Number**	**Percent**
11 - Agriculture, Forestry, Fishing, and Hunting	52	0.4%
21 - Mining, Quarrying, and Oil and Gas Extraction	8	0.1%
22 - Utilities	270	1.8%
23 - Construction	1,141	7.7%
31-33 - Manufacturing	1,038	7.0%
42 - Wholesale Trade	274	1.9%
44-45 - Retail Trade	2,358	16.0%
48-49 - Transportation and Warehousing	254	1.7%
51 - Information	173	1.2%
52 - Finance and Insurance	350	2.4%
53 - Real Estate and Rental and Leasing	241	1.6%
54 - Professional, Scientific, and Technical Services	661	4.5%
55 - Management of Companies and Enterprises	25	0.2%
56 - Admin, Support, Waste Mgt, & Remediation Services	349	2.4%
61 - Educational Services	1,648	11.2%
62 - Health Care and Social Assistance	3,553	24.1%
71 - Arts, Entertainment, and Recreation	219	1.5%
72 - Accommodation and Food Services	1,322	9.0%
81 - Other Services (except Public Administration)	577	3.9%
92 - Public Administration	222	1.5%
Total, All Industries	**14,735**	**100.0%**

Source: OnTheMap, Local Employment and Housing Dynamics, U.S. Census Bureau.

As shown in the table, the largest three major economic sectors in the Study Area are health care and social assistance, retail trade, and educational services. These three major industry sectors account for over half of the total employment in the area.

Regional Visitor Industry

Visit California, a nonprofit organization which promotes the state's travel industry, provides annual estimates of the size of the visitor economy by County, as calculated by Dean Runyan

Associates.[3] For the two counties containing the Study Area, total visitor destination spending in 2017 was estimated at about $1.6 billion, with industry earnings of $563 million, supporting more than 17,000 jobs. Compared to the 2015 total jobs estimate for Placer and Nevada Counties, this implies that the tourism and recreation sector accounts for roughly ten percent of total employment. This is also confirmed based on a comparison with the 2017 total employment figures published by the Employment Development Department (EDD). As reported in Table 1, below, over three-fourths of the visitor spending in the bi-county region occurred in Placer County, due in large part to its larger population base and location on Interstate 80 (I-80), as well as Lake Tahoe and numerous national brand ski areas.

Table 3: Direct Travel Impacts, Placer and Nevada Counties, 2017

	Spending ($M)	Earnings ($M)	Jobs
Nevada County	$344	$139	3,668
Placer County	$1,222	$424	13,730
Total, Both Counties	**$1,566**	**$563**	**17,398**

Note:
Estimates are preliminary. Includes destination spending only.

Source: Dean Runyan Associates, 2018.

Visitor-Related Industries

Unfortunately, the LEHD data are only available for major industry sectors. To provide additional detail for visitor-related industries, BAE turned to data published by Dun & Bradstreet, a private data vendor, regarding individual business and government establishments within the four primary Zip Codes that make up the Study Area. This source is not entirely consistent with the LEHD data, but provides information not available from government sources. BAE relied on a categorization scheme for travel-related industries as used in the *California Travel Impacts 2000-2017p* economic impact model prepared by Dean Runyan Associates for Visit California and the Governor's Office of Business Development.

It is important to note that while these industries are tied to the visitor-serving economy, most primarily serve local area residents. For instance, many retail stores, like food & beverage stores, in most cases would derive most of their sales from local households, while visitors would account for a minority of their customer base. This means that the estimates of overall employment and revenues shown here are inclusive of the visitor-serving economy, but are not limited to it. Also, the portion attributable to tourism varies by sector; hotels would be largely dependent on travelers, while supermarkets would mostly serve residents of the area.

[3] *California Travel Impacts 2000-2017p*, Dean Runyan Associates, May 2018.

Table 4: Travel Impact Industries by NAICS Industry

Travel Impact Industry	NAICS Industry (Code)
Accommodation & Food Services	Accommodation (721)
	Food Services and Drinking Places (722)
Arts, Entertainment & Recreation	Performing Arts, Spectator Sports (711)
	Museums (712)
	Amusement, Gambling (713)
	Scenic and Sightseeing Transportation (487)
Retail	Food & Beverage Stores (445)
	Gasoline Stations (447)
	Clothing and Clothing Accessories Stores (448)
	Sporting Goods, Hobby, Book, and Music Stores (451)
	General Merchandise Stores (452)
	Miscellaneous Store Retailers (453)
Ground Transportation	Interurban and rural bus transportation (4852)
	Taxi and Limousine Service (4853)
	Charter Bus Industry (4855)
	Passenger Car Rental (532111)
	Parking Lots and Garages (812930)
Air Transportation	Scheduled Air Passenger Transportation (481111)
	Support Activities for Air Transportation (4881)
Administrative/Support Services	Travel Arrangement and Reservation Services (5615)
	Convention and Trade Show Organizers (56192)

Source: *California Travel Impacts 2000-2017p*, Dean Runyan Associates, May 2018.

Table 5 shows the distribution of Study Area business establishments in the sectors related to travel impacts. These 459 businesses have an estimated 3,305 workers spread across the various visitor-related industry sectors. The *accommodation and food services*, and *arts, entertainment, and recreation* sectors that are most strongly linked to the visitor economy and account for over half of the jobs in the overall travel-related sectors. While direct comparison with the total employment for the Study Area of approximately 14,700 for all sectors (as shown above in Table 2) should be made with caution, it appears that the visitor economy constitutes a substantial portion of the jobs and economy in the area surrounding the reservoir.

The annual revenue estimates reported in Table 5 should also be interpreted with a significant degree of caution. This data is known to often allocate revenue associated with some branch and franchise locations to the headquarters location. For example, the record for the Raley's Grocery Store in Grass Valley do not provide an annual revenue estimate. As a result of this allocation scheme, the total annual revenue associated with visitor related industries reported in Table 5 likely understates the total value of the associated industries by a large margin. Nonetheless, this data provide the only available benchmark for evaluating the relative significance of spending by Rollins Reservoir visitors on the tourism sector in the Study Area.

Table 5: Visitor-Related Industry Sectors in the Study Area

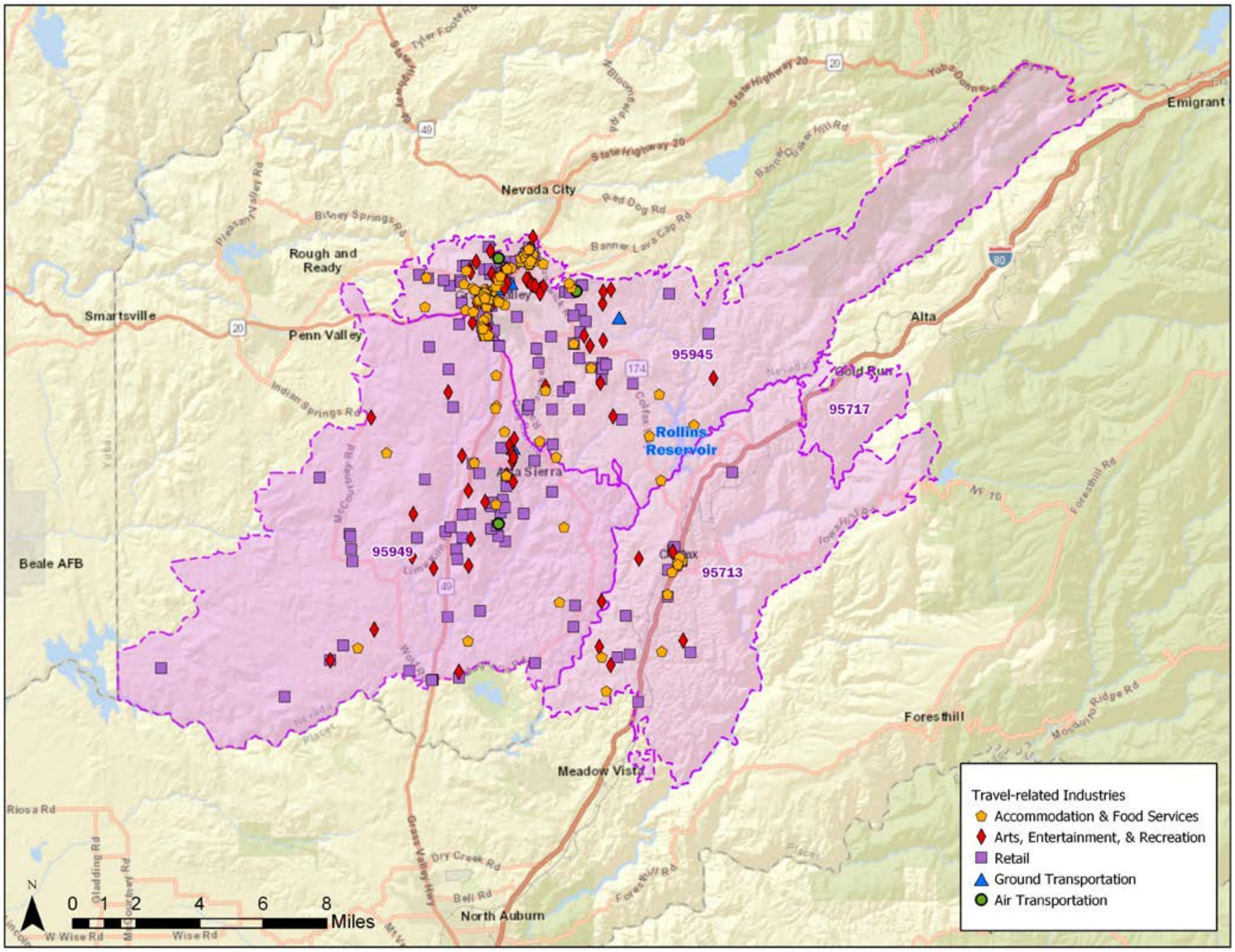
NAICS Industry Sector	Establishments	Jobs	Annual Revenue
Food & Beverage Stores (445)	51	494	$27,263,748
Gasoline Stations (447)	13	101	$4,742,615
Clothing and Clothing Accessories Stores (448)	52	155	$8,937,895
Sporting Goods, Hobby, Book, and Music Stores (451)	32	119	$6,343,109
General Merchandise Stores (452)	16	297	$8,031,068
Miscellaneous Store Retailers (453)	83	247	$36,967,844
Taxi and Limousine Service (4853)	2	5	$240,654
Support Activities for Air Transportation (4881)	3	9	$438,984
Passenger Car Rental (532111)	2	10	$334,521
Performing Arts, Spectator Sports (711)	27	266	$1,870,144
Museums (712)	12	24	$751,089
Amusement, Gambling (713)	33	223	$9,818,705
Accommodation (721)	26	152	$6,335,805
Food Services and Drinking Places (722)	107	1,203	$30,837,254
Total, Visitor Related Industries	**459**	**3,305**	**$142,913,435**

Note:
Not all establishments or jobs shown are necessarily linked to visitor-related expenditures. Establishment and employment counts may vary from other sources. Revenue estimates likely underestimate the total value of each industry, as the estimates exclude large corporate stores and establishments that are headquartered elsewhere.

Sources: Hoover's; Dean Runyan Associates; BAE, 2018.

The businesses located within potentially visitor-related industry sectors generally tend to be clustered around the major population centers within the Study Area, such as Grass Valley and Colfax (see Figure 2). The largest cluster of visitor-related businesses near to Rollins Reservoir is in Colfax, adjacent to I-80, which is the major interstate highway corridor within the Study Area. Colfax has a number of accommodation and food service businesses that primarily serve local residents, but also visitors to the area and travelers passing through on I-80.

Figure 2: Location of Travel-Related Businesses in the Study Area



Sources: Hoover's; ESRI; BAE, 2018.

Interviews

As part of its assessment of the recreation and tourism industry surrounding Rollins Reservoir, BAE conducted telephone interviews with business establishments in the Study Area. These businesses were selected based on a review of businesses listed in Dun & Bradstreet or were identified by NID staff. In both cases, BAE contacted businesses that are either located in close proximity to the reservoir, or that have known ties to the reservoir. Of the 23 businesses contacted by BAE, only four businesses agreed to be interviewed. The remaining 19 businesses declined to comment, were unavailable, were irrelevant to our study (e.g., online retailers), or had gone out of business. Responses varied when asked about their main customer base—one business said a majority of their customers are local regulars, while the others said their customer base is evenly split between visitors and locals. Consistently, the respondents interviewed all indicated that business has been increasing over the past five years, which many attributed to the improving economy since the last recession. Additionally, interviewees noted they regularly see increases in the number of customers during the summer and winter seasons due to camping and skiing activities in the area and region. Following are summaries of each of the four completed interviews.

1. Happy Apple Kitchen

Date Contacted: September 26, 2018

The Happy Apple Kitchen is a family-owned restaurant established in 1974 and located less than two miles west of Rollins Reservoir, between the Greenhorn and Orchard Springs campgrounds. They specialize in pies and only serves lunch. They sell typical American fare, such as burgers, chicken strips, chili, sandwiches, and apple pies.

The busiest season extends from June to just after Thanksgiving (because of an influx of pie orders for Thanksgiving dinners). There are many regulars who are locals, but the restaurant also has a significant following of people who camp and come every day while on camping trips. Many of these campers come back every year (mainly during the summertime). Even so, visitors to Rollins Reservoir are not the majority of the restaurant's customer base. For both visitors and locals, most (90 percent) are repeat customers. Customers usually spend around $12 to $15 per person per visit. Groups are typically couples, but there are some larger groups. The restaurant's business has noticeably increased over the past five years, which the manager attributing the increase to an improving economy.

Due to its rural location, there are not many businesses nearby, which limits the owner's ability to build synergistic relationships with other nearby businesses (i.e., provide complementary products and services). Visitors, and even the family who operates Happy Apple Kitchen, go to Colfax for most of their needs. Most nearby properties are primarily agricultural or forested.

2. Orion Mart/Valero Gas Station

Date Contacted: September 27, 2018

Orion Mart is a small market attached to the Valero Gas Station in Colfax. Due to its location just off I-80, less than five miles south of Rollins Reservoir, it has a large year-round customer base. The busiest times of year are during the summer tourist season and during the winter ski season (i.e., once the snow starts "sticking"). Other than gas, the establishment sells basic convenience items, such as snack food, soft drinks, beer, and wine. Not including gas, the typical customer spends about $5 in the market, especially visitors heading to Rollins Reservoir who are looking for a quick drink or to stock up on refreshments, such as beer, soft drinks, and ice. Business has been increasing, though the manager is not sure exactly why. The manager said that some visitors wish there was a Walmart or CVS nearby, as the closest alternative is 20 to 30 minutes away in Auburn and Grass Valley.

3. Pizza Factory

Date Contacted: September 27, 2018

Located less than five miles south of Rollins Reservoir, this restaurant serves basic Italian fare including pizza, pasta, and sandwiches. The current owner took over the 25-year-old business five years ago. There is a consistent flow of customers, with influxes of those who are going to the lake during the summer and those who are going to the snow during the winter.

There is an even split between customers who are locals and those who are visitors; though the owner was not sure how many of these visitors were on their way to or from Rollins Reservoir specifically. The owner recognizes seeing "a lot of new faces," but that there are also many familiar regulars that come to the area annually for road trips and camping.

On average, groups spend between $25 and $100 per visit. The volume of business has improved over the past five years, which the owner attributes to improved operations and management. According to him, many nearby businesses maintain irregular operating hours and provide inconsistent service. This business attributes much of its success to a commitment to maintaining consistent operating hours and quality customer service.

4. NAPA Auto Parts

Date Contacted: October 16, 2018

Located about three miles south of Rollins Reservoir, NAPA Auto Parts sells automobile parts and some recreational products, such as trailer hitches, and off-road accessories. It does not have any auto shop component, so it does not provide repair services. The manager interviewed has been there for 19 years, but lives in Nevada City. Although it is in close proximity to the reservoir, only about five percent of its customer base is made up of visitors to the area, while 95 percent are local residents. Many of the local patrons have built loyal relationships with the store and are on friendly terms with the manager. During the winter, customers purchase for snow chains, while during the summer, customers come to get their auto parts updated ahead of planned trips. The manager says there is no peak season for either visitors or locals, as the store keeps reasonably busy year-round. Over the past five years, he says his business has increased. Though he is not confident of the reason, he attributes it to the good economy.

Summary of Recreation and Tourism Industry Assessment

The LEHD estimates that there were approximately 159,050 jobs in Placer and Nevada Counties in 2015. Additional data published by Dean Runyan Associates indicates that visitor spending in the bi-county area supported approximately $1.6 billion in sales in 2017, with industry earnings of $563 million supporting more than 17,000 local jobs.[4]

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[4] *California Travel Impacts 2000-2017p*, Dean Runyan Associates, May 2018, for Visit California.

The Study Area, which constitutes a portion of the two counties, there were approximately 17,500 total jobs in 2015, which means employment within the Study Area represented approximately eight percent of total employment in the bi-county region. The largest concentrations of employment in the Study Area were in health care and social assistance, retail trade, and educational services. These three major industry sectors accounted for over half of the total employment in the area. Within the Study Area sectors linked to the visitor economy, there are an estimated approximately 3,300 jobs, meaning that employment in industry sectors tied to the tourism and recreation industry, at least loosely, account for approximately 22 percent of total areawide employment. The accommodation, food services, and arts, entertainment, and recreation sectors that are most strongly linked to the visitor economy account for over half of the jobs in the overall travel-related sectors. However, many if not all of the businesses in these sectors that serve visitors also serve local residents to some degree (e.g., grocery stores), and in fact may draw most of their customers from the local area; thus the jobs in these sectors serve the visitor economy only in part.

This difficulty in separating the visitor-serving economy from the local-serving economy is confirmed by the interviews conducted with local businesses, which show varying degrees of dependence on visitor spending. Additionally, Rollins Reservoir is only one component of the visitor economy in the Study Area; in particular, Interstate 80 allows the area to capture dollars from travelers passing through the area on their way to Tahoe and other destinations. The cities of Grass Valley and Nevada City, by comparison, have significant daytime and overnight visitation partaking of the historical downtown character, sights of interest like the Empire Mine, and a well-established hotel and bed and breakfast inventory.

Visitor-related businesses in the area are generally clustered around major population centers, particularly incorporated Grass Valley. This likely corresponds with the interview findings, which indicate that most businesses rely on local patronage, while support from visitors makes up a smaller portion of their overall consumer base. Thus, proximity to area population centers provides access to their core market, while also providing visitors with natural points of concentration where they can access the services and products they are looking for. The business clusters nearest to Rollins Reservoir include Colfax and Chicago Park. Located along I-80, Colfax has a number of accommodation and food service businesses serving local residents, visitors to the area, and travelers passing through on I-80, while Chicago Park hosts only a small handful of businesses oriented mostly toward locals, but who also benefit from visitors to the reservoir and its campground and day use facilities, like Happy Apple Kitchen.

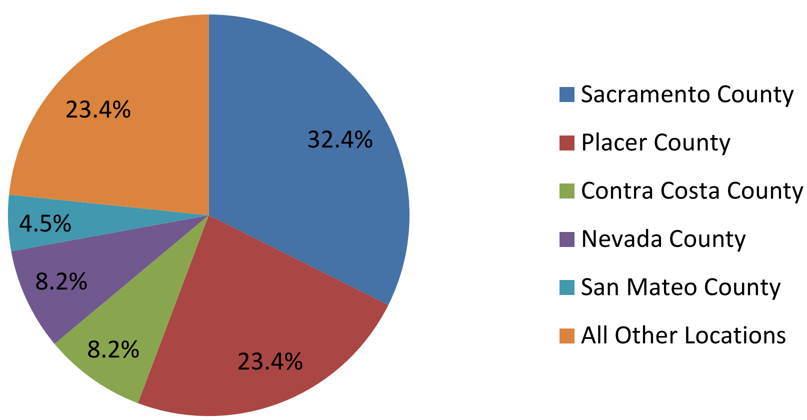
VISITOR INTERCEPT SURVEY

This section of the report presents the findings from a survey of visitors to Rollins Reservoir conducted between June 22 and August 16 of 2018. NID staff administered the Rollins Reservoir Economic Impact Survey at the Long Ravine Campground (LRC), Orchard Springs Campground (OSC), and Peninsula Family Camp (PFC). NID staff contacted representatives from the Greenhorn Campground regarding participation in the survey, but did not receive a response. The survey was administered in two different ways. NID staff were directed to request that each visiting group complete one copy of the survey upon their first entry to the campground, in conjunction with their day use or overnight registration. Notices were also posted at bulletin boards and at the camp store, where visitors were provided with an opportunity to complete the survey. Visitors were requested to complete only one survey per group, per visit. Individuals or groups that visited the reservoir multiple times during the survey period were requested to complete the survey once upon each visit. In total, NID staff received and tabulated a total of 240 unique responses to the survey, including 82 responses from LRC, 96 responses from PFC, and 62 responses from OSC.[5] For a complete copy of the survey instrument and administration guide, please refer to Appendix A.

Visitor Home Location

As shown in Figure 3 and Figure 4, five northern California counties accounted for over three-fourths of all visitors;[6] with Sacramento County responsible for nearly one-third of the total.

Figure 3: Visitor Home Residence by County



Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

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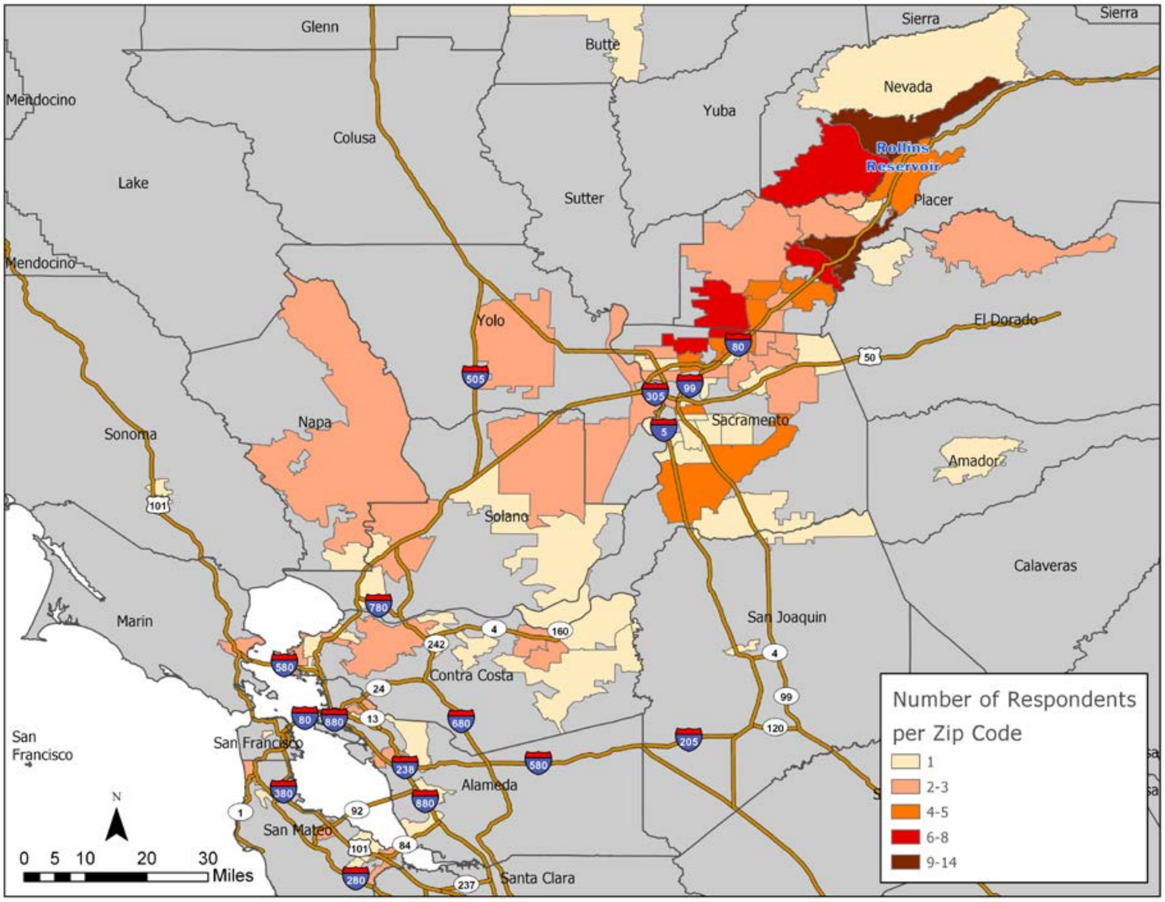
[5] Note that not all respondents answered all questions.

[6] To accommodate travel groups with members from more than one location, the survey allowed for up to four home location responses for each group.

Figure 4: Map of Respondent Zip Codes



Sources: Rollins Reservoir Visitor Impact Survey, 2018; ESRI; BAE, 2018.

Only 11 percent of surveyed visitors originated from within the Study Area, with approximately one-third coming from Placer or Nevada Counties, as shown in Table 6. This indicates that the reservoir attracts most of its visitors and their expenditures from outside the area. This assumes that the results are truly representative and are not overly influenced by selection bias (e.g., locals disproportionately chose not to complete the survey). Aside from the five counties shown above, visitor groups came from 19 additional California counties and two counties in Nevada (in the Reno/Tahoe area), with one group from Philadelphia, Pennsylvania.

Table 6: Survey Respondent County of Residence

	Number	Percent
Study Area	26	5.4%

Home County/State	Number	Percent
California Counties		
Sacramento County	79	16.4%
Placer County	57	11.9%
Contra Costa County	20	4.2%
Nevada County	20	4.2%
San Mateo County	11	2.3%
Alameda County	9	1.9%
Solano County	8	1.7%
El Dorado County	5	1.0%
Santa Clara County	4	0.8%
Yolo County	4	0.8%
Los Angeles County	3	0.6%
Napa County	3	0.6%
Butte County	2	0.4%
Marin County	2	0.4%
Amador County	1	0.2%
Humboldt County	1	0.2%
Orange County	1	0.2%
Riverside County	1	0.2%
San Benito County	1	0.2%
San Diego County	1	0.2%
San Francisco County	1	0.2%
San Joaquin County	1	0.2%
Santa Cruz County	1	0.2%
Sonoma County	1	0.2%
Total, California Counties	**237**	**49.3%**
Other States		
Washoe County, NV	5	1.0%
Lyon County, NV	1	0.2%
Philadelphia County, PA	1	0.2%
Total, Other States	**7**	**1.5%**
Total Responses	**481**	**100%**

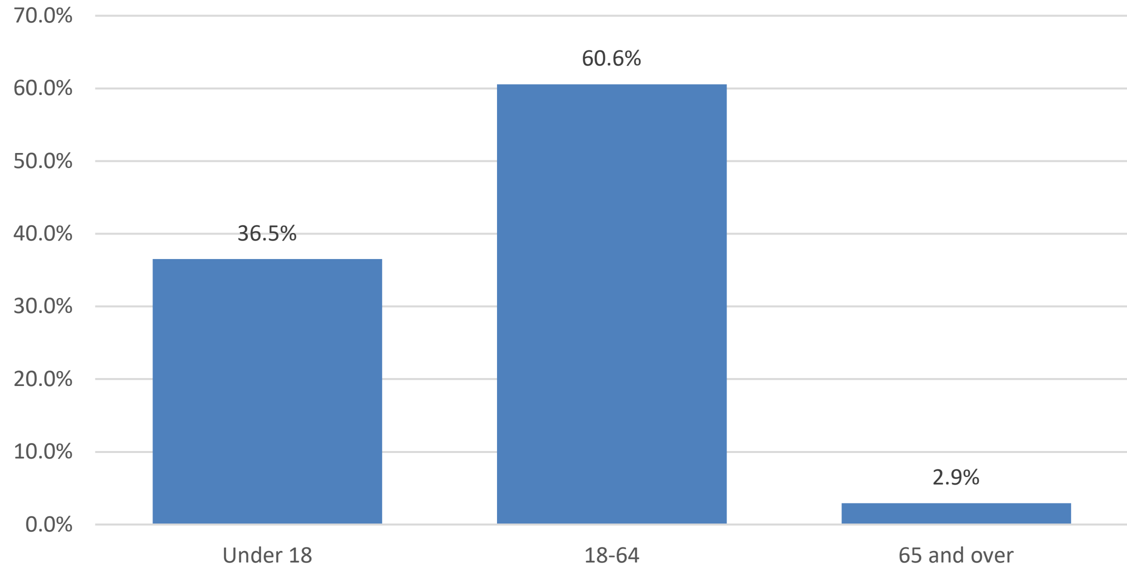
Note:
This table is based on the ZIP Codes that respondents reported as being associated with their place of residents. Respondents were able to specify more than one Zip Code if their party came from multiple locations.

Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

Visitor Demographics Profile

On average, respondents had a group size of 9.3 persons, with a median size of six persons. Overnight visitors had a higher average group size of 9.74 persons, while day trippers had a lower average group size of 4.48 persons. Over 60 percent of respondent group members were from 18 to 64 years of age, while an additional 37 percent were children under the age of 18. Less than three percent of respondent group members were aged 65 years or older. Respondents who were age 65 and over were typically part of group with younger members (i.e., under age 65) and generally were not travelling as part of a seniors only group.

Figure 5: Number of Visitors by Age Group



Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

Length of Trip and Trip Type

Table 7 illustrates the distribution of respondent groups by trip type, and the average length of stay at the reservoir. Over 80 percent of respondent visitor groups stayed at or near the reservoir overnight, for an average of stay 2.7 nights. The remaining respondents were on day trips and remained at Rollins Reservoir for approximately 4.5 hours on average.

Table 7: Length of Trip by Visitor Type

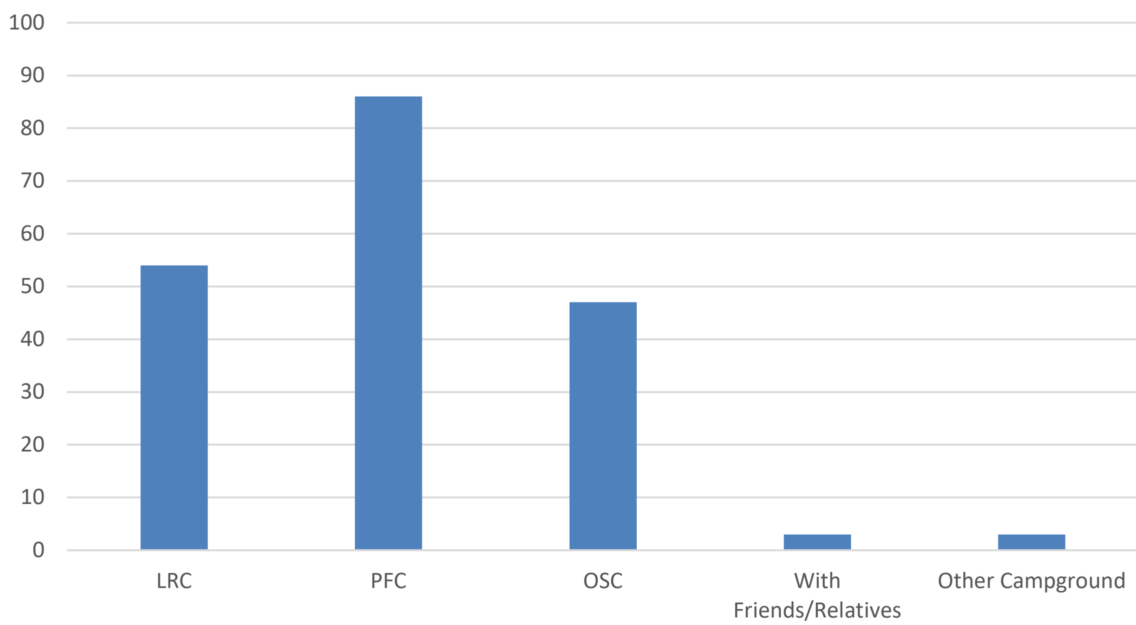
Trip Type	Number of Groups	Percent of Total	Average Trip Length	
Day Trips	46	19.2%	4.5	Hours
Overnight Camping	193	80.8%	2.7	Nights
All Trips	**239**	**100%**		

Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

Respondent groups who reported staying overnight in the area were also asked to describe their overnight accommodations as part of the survey. As shown in Figure 6, 86 respondents stayed at the PFC, 54 respondents stayed at the LRC, and 47 respondents stayed at the OSC.

While there is a significant difference between the number of respondents in each of the three campgrounds, this in part reflects the overall response rate at each location (i.e., 96 of the 240 total respondents were located in PFC, 82 in LRC, and 62 in OSC when they were intercepted to take this survey). In the survey, some respondents reported staying in more than one type of overnight accommodation. For the purposes of Figure 6, BAE only tabulated the first accommodation listed. Additional types of accommodations most frequently included "With Friends/Relatives." There were also three respondents who stayed in a rented home or cabin and one respondent that stayed in a hotel or motel.

Figure 6: Primary Overnight Accommodation



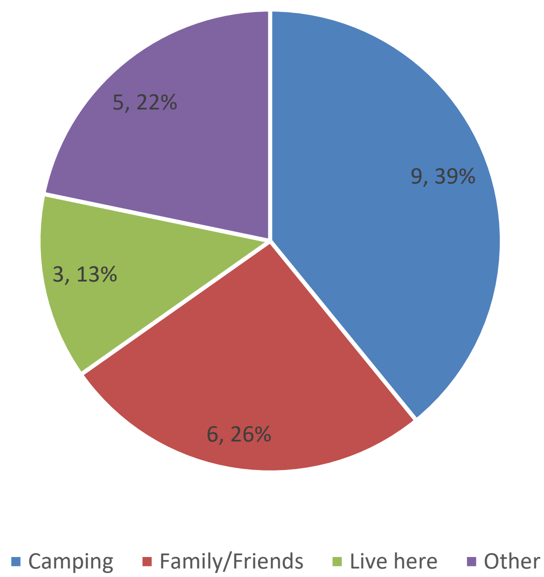
Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

Reasons for Trip

Ninety percent of respondents stated that visiting Rollins Reservoir was a reason for their trip, and 96 percent of those who stated this said it was the primary reason for their trip.

The most prevalent reason for those who did not come primarily for the reservoir was "camping," which may indicate that they were interested in camping, but not specifically in Rollins Reservoir. Some of these responses could in part be a product of a misunderstanding of the survey question. This may be true as well for some of the other primary reasons listed, which included barbeque, leisure, and the lake, as shown in Figure 7.

Figure 7: Other Primary Reasons for the Trip



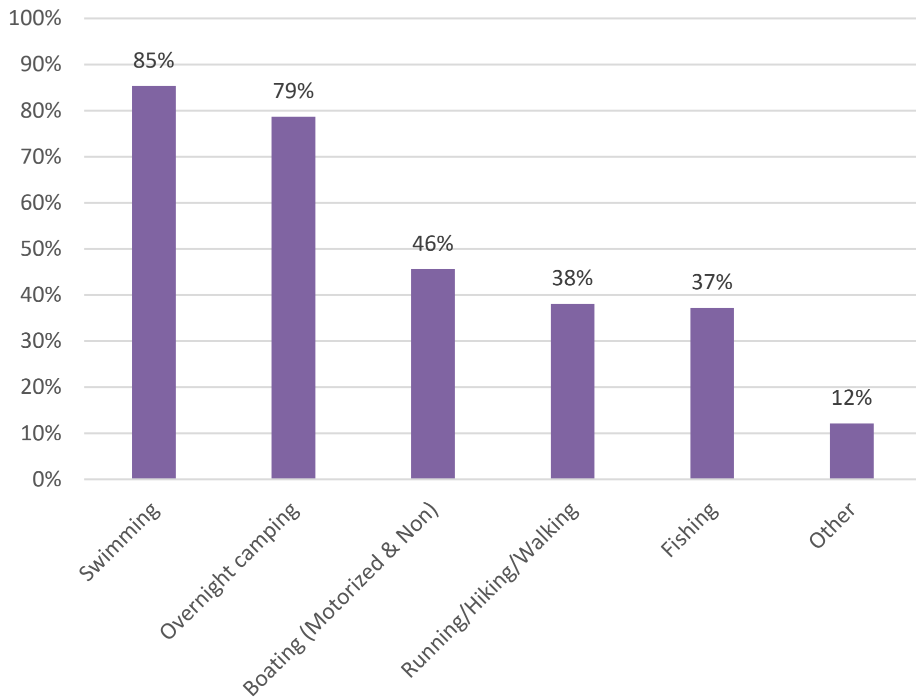
Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

Activity Participation

The survey asked respondents to identify the activities they or their groups participated in during each particular trip. Respondents were able to choose from up to five listed activities, along with specifying an additional activity in an "other" category.

Swimming was the most common activity mentioned, with 85 percent of respondents listing this as an activity their group participated in. Camping followed closely, at 79 percent of respondents. Slightly fewer than half (46 percent) participated in boating, 38 percent in hiking/walking/running, 37 percent in fishing, and 12 percent in other activities not covered specifically by the survey. The other activities listed included picnicking and bicycling.

Figure 8: Percent of Respondents by Activity Type



Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

Visitor Spending

To assess some of the economic impacts of Rollins Reservoir visitors on the local economy, respondents were asked about spending during their trip, including the percentage of spending done locally in the Colfax/Chicago Park/Grass Valley area. The query was broken out into several categories of consumable goods and services, and also covered "big ticket" durable goods used for more than one trip that were intended for use at the reservoir.

Also, the dataset compiled by NID staff includes only those survey responses that are greater than zero, meaning that it is not possible discern which blank or "null" entries represent non-responses and which should represent values of zero. Therefore, Table 8 on the following page summarizes the visitor spending data in two different ways. The first approach is to assume that all of the null values should represent a zero value, rather than a non-response. This provides a highly conservative estimate of the average per person group spending. The second approach calculates the average based only on those responses that provided an estimate of greater than zero, meaning that it represents only those respondents whom we known spent money during their visit, based on their survey responses. This approach, however, likely overestimates the true average, recognizing that some respondents may likely have not spent any money within certain categories during their visit (e.g., people on day trips don't spend money on overnight accommodations).

Table 8: Total and Local Visitor Spending by Category

Spending Category (d)	Average Expenditure Per Respondent Group: Including Null/Zero Values (a) Total $	Local $	% Local	Excluding Null/Zero Values (b) Total $	Local $	% Local	Number of Respondent Groups Showing Expenditures >$0 (c) Total	Local
Overnight Accommodation	$106	$34	32%	$153	$155	101%	167	52
Ground Transportation	$58	$10	17%	$78	$57	73%	177	42
Grocery Stores	$117	$14	12%	$150	$87	58%	187	40
Restaurant & Bars	$16	$7	41%	$77	$79	102%	50	20
Recreation & Entertainment	$23	$11	47%	$83	$114	137%	67	23
Retail Shopping	$15	$2	16%	$52	$56	109%	70	10
Recreational Equipment	$9	$1	11%	$64	$39	62%	35	6
Other	$36	$0	0%	$452	$25	6%	19	1
Total Consumable Items	**$380**	**$79**	**21%**	**$424**	**$240**	**57%**		
"Big Ticket" Durable Items	**$170**	**$21**	**12%**	**$584**	**$425**	**73%**	70	12

Notes:
(a) Includes all 240 respondent surveys; assuming that a non-response regarding total expenditures by category was equivalent to zero dollars, and that a non-response for percent expenditures locally was equivalent to zero percent local expenditures, thus these estimates are conservative.
(b) Includes only those respondents that provided an estimated expenditure total and local purchase percentage and excludes non-responses, thus these estimates may likely overestimate the true average.
(c) Number of survey responses where total or local expenditures were recorded.
(d) Based on respondent estimates of expenditures made during this particular trip to Rollins Reservoir. Estimates may be approximate.

Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

Based on the responses, the average total expenditure per respondent group on consumable good likely ranges from roughly $380 to $424. Among all respondents, assuming that a non-response was equal to zero dollars spent, visitors reported spending an average of 79 per group. If looking only at those respondents that reported spending money within the local community, the average expenditure was closer to $240 per group. Overall, the largest expenditures were generally on Overnight Accommodations, with an average of $106 to $153 spent per group, and Grocery Stores, with an average of $117 to $150 spent per group. The categories in which respondents were most likely to spend money locally include Recreation and Entertainment, Retail Shopping, Restaurants and Bars, and Overnight Accommodation.

While the analysis is not definitive, due to a lack of detail in the data, the available information does indicate that respondents who reported a local purchasing percentage generally spent more on average than those who only reported total spending. This may represent one of two things. First, it could mean that the more people spend on their trip, the more likely they are to spend money within the local area, versus purchasing all of their supplies in their home community. This makes some sense, in that people on a tighter budget may take greater pains to purchase supplies at the lowest cost, while people who are willing and able to spend more on their trip can afford to spend money at will, versus needing to shop around for the best deal. However, this may also reflect a form of response bias, whereby people who spent more were simply more likely to take the time to report local spending.

Another important finding, as illustrated in Table 9, is that there is an extreme amount of variability in the visitor spending estimates. There are a wide variety possible reasons for this, including the wide range of respondent group sizes (ranging from one to 62 persons), the propensity of some visitors to purchase their supplies closer to home, versus others who are more willing to “stock up” or “resupply” while on their trip. Prior research indicates that day-trip spending differs greatly from overnight spending. There are also a wide variety of potential biases, which may be influencing the data, but which are outside the scope of this research.

Table 9: Highs and Lows of Visitor Spending by Category

	Recorded Non-Zero Responses	
Spending Category	**Minimum**	**Maximum**
Overnight Accommodation	$11	$1,000
Ground Transportation	$4	$500
Grocery Stores	$5	$2,000
Restaurant & Bars	$5	$200
Recreation & Entertainment	$6	$1,636
Retail Shopping	$3	$400
Recreational Equipment	$4	$600
Other	$6	$5,000
"Big Ticket" Durable Items	$10	$12,000

Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

Another factor is the inclusion of respondents who were visiting the reservoir only for the day. For example, Table 10 reports the average spending per visitor and per group, by trip type. For day trip visitors, the estimates are calculated per day. For overnight visitors, the estimates are calculated per night. These estimates include all categories of spending, excluding large one-time expenditures on equipment and durable item purchases, which are discussed in more detail below. This data generally illustrates that, according to the survey data, day trippers generally spend approximately one-third less per day, per person, than overnight visitors.

Table 10: Average Local Visitor Spending by Type of Trip

	Average Local Expenditure Per Person Per Day/Night		Average Local Expenditure Per Group Per Day/Night (a)	
Trip Type	Including Null/Zero Values	Excluding Null/Zero Values	Including Null/Zero Values	Excluding Null/Zero Values
Day Trips	$4.12	$11.81	$19.73	$56.56
Overnight Camping	$6.13	$17.30	$29.37	$82.90
All Trips	**$5.73**	**$16.23**	**$27.47**	**$77.77**

Sources: Rollins Reservoir Visitor Impact Survey, 2018; BAE, 2018.

Summary of Visitor Survey Findings

Rollins Reservoir attracts most of its visitors and their expenditures from outside the area. Five northern California counties accounted for over three-fourths of all visitors, with Sacramento County responsible for nearly one-third of the total. Only 11 percent of visitors originated from within the Study Area, with approximately one-third coming from Placer or Nevada Counties, as shown in Table 6. Almost all of the visitors came from within California.

On average, respondents had group sizes of 9.3 persons, with a median size of six persons. Overnight visitors generally have larger group sizes, compared to day trip groups. Over 60 percent of respondent group members were from 18 to 64 years old while an additional 37 percent were children under 18. Less than three percent were 65 and older.

Over 80 percent of the visitors stayed overnight, for an average of 2.7 nights. The remaining respondents were on day trips and remained at Rollins Reservoir for 4.5 hours on average. Respondents who reported staying overnight in the area also described their overnight accommodations. Almost all of the respondents to the survey who reported staying overnight in the area stayed in the reservoir's three campgrounds. Additional accommodations most frequently reported include staying with "Friends/Relatives."

Almost all of the survey respondents also stated that Rollins Reservoir was the primary destination of their trip. Swimming was the most common activity at the reservoir for respondents, with 85 percent of respondents listing this as an activity their group participated in. Camping followed closely, at 79 percent of respondents. Slightly fewer than half participated in boating, 38 percent in hiking/walking/running, 37 percent in fishing, and 12 percent in other activities not covered specifically by the survey. The other activities listed included picnicking and bicycling.

The average total trip expenditures per respondent group per trip on consumable goods ranges from $380 to $424. Respondents generally spent between 21 and 57 percent of their total budget within the local area, per trip. This equals local spending, per group, per trip, of between $79 and $240. The largest local expenditures, in absolute dollar terms, were generally made in the overnight accommodation, recreation and entertainment, and grocery stores categories. By category, the local proportion of total expenditures was highest for recreation and entertainment (e.g., day use fees and boat rental), restaurants and bars, and overnight accommodation.

Another important finding is the extreme variability in the visitor spending estimates provided by survey respondents. There are a wide variety possible reasons for this, including the wide range of respondent group sizes (ranging from one to 62 persons), the propensity of some visitors to purchase their supplies closer to home, versus others who are more willing to “stock up” or “resupply” while on their trip. Prior research indicates that day-trip spending differs greatly from overnight spending. There are also a wide variety of potential biases, which may be influencing the data, but which are outside the scope of this research.

ESTIMATED ECONOMIC IMPACTS

Based on the survey results and reservoir visitor attendance data, as well as additional supplemental research, BAE developed approximate estimates of the total direct local spending associated with day trips and overnight camping at NID's facilities on Rollins Reservoir. It is important to note that the following represents very rough estimates that are intended to illustrate the order of magnitude of the dollars injected into the local economy each year as a result of overnight camping and daytime recreation at Rollins Reservoir.

Survey Based Direct Spending Estimate

As noted above, average local expenditures per person per day are estimated at between $4.12 and $11.81 for day trips and between $6.13 and $17.30 per overnight trip, including consumable goods only, excluding one-time durable goods purchases. Recognizing that the likely spending total falls somewhere within this range, the following analysis applies the mid-point values of eight dollars per person per day for day trips and $12 per person per day for overnight trips. As reported earlier, NID staff estimate that in 2016, a total of 107,777 people visited the LRC, OSC, and PFC, including 45,154 individual person days (day trips) and 62,623 individual person nights (overnight trips). Based on these figures, BAE estimates that total spending associated with visitation to the LRC, OSC, and PFC equals approximately $359,535 for day trip visitors and $733,776 for overnight visitors, for a grand total of $1.09 million.

Alternative Direct Spending Estimate

Due to the previously discussed shortcomings of the visitor survey response data, BAE deemed it appropriate to also review alternative estimates of typical spending patterns of overnight campers. BAE identified two ready available studies, among a variety of options, which are uniquely pertinent to this research. The first study reviewed was published by the National Park Service (NPS) in 2017 and summarizes the estimated economic contributions of national park visitation to local economies.[7] This study provides a national level benchmark that can be used to better understand whether the survey results match boarder trends. The second study was published in 2017 by Dean Runyan and summarizes the economic contributions of visitors to North Lake Tahoe, including spending associated with overnight campers.[8]

Based on the estimates reported by the NPS, overnight campers nationwide spend around $125 per group per night and have an average group size of 3.3 persons. This equals an average expenditure of $38 per person, per night. By comparison, local day trippers to

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[7] Thomas, C., Koontz, L., and Cornachione, E. (April 2018). 2017 National Park Visitor Spending Effects: Economic Contributions to Local Communities, States, and the Nation. Fort Collins, CO: U.S. Department of the Interior, National Park Service. Retrieved from: https://www.nps.gov/nature/customcf/NPS_Data_Visualization/docs/NPS_2017_Visitor_Spending_Effects.pdf

[8] Dean Runyan Associates. (October 2017). The Economic Significance of Travel to the North Lake Tahoe Area: 2003-2018 Detailed Visitor Impact Estimates. Tahoe City, CA: North Lake Tahoe Resort Association. Retrieved from: http://www.nltra.org/documents/pdfs/Runyan%20Economic%20Report(2016).pdf

national park facilities typically spend around $42 per visit with an average group size of 2.9 persons, for an average expenditure of $14 per person per day. While these estimates are notably higher than what BAE estimates based on the Rollins Reservoir survey data, it is worth noting that the general ratio between day trip spending and overnight spending is similar.

Compared to the NPS report, the Dean Runyan report for North Lake Tahoe should provide estimates of visitor spending that are more closely associated with spending behavior of Northern California campers. Indeed, North Lake Tahoe is located within Placer County, as is a portion of the Study Area. While the two destinations (i.e., North Lake Tahoe versus Rollins Reservoir) differ in many important ways, the spending estimates for North Lake Tahoe provide a useful counterpoint to the Rollins Reservoir survey results that are normalized for differences in regional spending patterns. Dean Runyan estimates that the average amount spent per person, per night, is much higher than that estimated by the NPS at $49. While Dean Runyan also reports an average amount spent for day trips, that estimate is likely impacted by comparatively high wintertime spending at the regions many ski resorts.[9]

Using the Dean Runyan estimate of per person spending for overnight camping, which was adjusted to 2018 dollars based on the Bureau of Labor Statistics (BLS) Consumer Price Index (CPI), BAE developed an alternative high-end spending estimate for comparison with the estimates that are derived based on the Rollins Reservoir survey results. BAE estimates spending associated with day trips assuming that such visitors spend approximately one-third less than overnight visitors. Using this approach, BAE estimates that at the high-end, visitors to Rollins Reservoir could potentially generate roughly $4.9 million per year in local spending. Please note, however, that this may somewhat overestimate the impacts within the local area due to differences in the propensity to spend among visitors to North Lake Tahoe versus visitors to Rollins Reservoir (e.g., visitors to the reservoir may have a tendency to spend less on average, as implied by the survey results). Local spending may also be hindered by a lack of dining, retail, and recreational amenities, compared to North Lake Tahoe, which is more highly developed by comparison.

[9] Dean Runyan estimates the average spending for day trips in North Lake Tahoe is $128 per person.

Table 11: Estimated Annual Local Visitor Expenditures

Trip Type	Total Trips (a)
Day Trips	45,154
Overnight Camping	62,623
Total, All Trips	**107,777**

	Visitor Spending Per Person Per Day	
Daily Spending	Low-End (b)	High-End (c)
Day Trips	$8	$35
Overnight Camping	$12	$52

	Total Visitor Spending (d)	
Trip Type	Low-End (b)	High-End (c)
Day Trips	$359,535	$1,580,390
Overnight Camping	$733,776	$3,286,594
Total, All Trips	**$1,093,311**	**$4,866,984**

Notes:
(a) Includes visitors to Orchard Springs, Long Ravine, and Peninsula Family Camp, based on visitor counts from 2017, as reported by NID staff.
(b) Based on the mid-point of the estimated range in average daily per visitor spending, as reported in Table 10 and recorded by the Rollins Reservoir Impact Survey.
(c) Based on the average daily per visitor spending estimate reported by Dean Runyan Associates for the Lake Tahoe region for overnight camping, which has been adjusted to 2018 dollars based on the Bureau of Labor Statistics (BLS) Consumer Price Index (CPI). Assumes that day trip spending is equal to two-thirds of overnight spending, as estimated based on the Rollins Reservoir Impact Survey results.
(d) Equals the average spending per person, per day, multiplied by the total number of person trips.

Sources: Rollins Reservoir Visitor Impact Survey; Nevada Irrigation District; BAE, 2018.

Employment and Secondary Impact Estimates

While it is difficult to accurately ascertain what portion of the local economy is directly or indirectly supported by expenditures made by visitors to Rollins Reservoir based on the available data, BAE has endeavored to develop some general, order-of-magnitude, estimates. For example, based on the ratio of direct visitor spending to employment reported by Dean Runyan for both Placer and Nevada Counties, BAE estimates that spending associated with visitors to Rollins Reservoir could support between 12 and 54 jobs throughout the greater area.[10] While Dean Runyan estimates that the average economic multiplier for statewide visitor spending is approximately 2.01, that value would likely overstate the cumulative economic impacts in the Study Area due to the lesser diversity of business establishments and lower overall level of economic activity in the Study Area compared to the state as a whole.

[10] Note that the NPS reports an average of $75.694 in direct visitor spending per job for NPS operated facilities throughout California, while Dean Runyan estimates the ratio of direct visitor spending per job in Placer and Nevada Counties at approximately $90,010.

APPENDIX A: SURVEY INSTRUMENT

[Serial Number] Date: ____ / ____ / 2018

Grass Valley, CA 95945
(530) 273-6185
www.nidwater.com

What's the impact of recreation at Rollins Reservoir?

The Nevada Irrigation District (NID) is conducting a survey to determine the impact that visitors to Rollins Reservoir have on the local economy, including the area between Colfax and Grass Valley. Please take a few moments to answer the following questions. Please complete only one survey per group, per visit.

Tell us about your group?

What is your group's home ZIP code(s)?

____

How many people are in your group? *

Children (under age 18) ______ Adults (age 18-64) ______ Seniors (age 65+) ______

Is this a single daytime trip or are you staying in the Rollins Reservoir area overnight? *

☐ Day Trip — How long do you expect to stay? _________ hours

☐ Overnight — How many nights will you stay? ____________ nights

If you are staying overnight in the area, select the option that best matches your accommodations?

☐ Long Ravine Campground ☐ Orchard Springs Campground ☐ Peninsula Resort ☐ Other Campground

☐ Hotel/Motel ☐ Rented Home/Cabin ☐ With Friends/Relatives ☐ Other (Please Specify)

____

Before you set out, was visiting Rollins Reservoir one of the reasons for your trip to this area?

☐ YES — If YES, was it the primary reason? ☐ Yes ☐ No

☐ NO — If NO, what was the primary reason? ______________________________

What activities did you or your group participate in during this trip to Rollins Reservoir? *(Check all that apply)*

☐ Overnight camping ☐ Running/Hiking/Walking ☐ Swimming
☐ Boating (motorized & non) ☐ Fishing ☐ Other (Please Specify)

____

- *Continue on Next Page* -

How much did/will your group spend on this trip?

How much did/will your group spend on the following items during THIS TRIP and what percent of that amount did/will you spend in the local Colfax/Chicago Park/Grass Valley area? *(Rough estimates are OK)* *

Spending Type	Amount ($)	Spent Local (%)
Overnight Accommodations *(camping fees, hotel/motel, etc.)*		
Ground Transportation *(gas, parking, etc.)*		
Grocery Stores and Markets *(food and beverages, ice, etc.)*		
Restaurants and Bars *(prepared meals, etc.)*		
Recreation and Entertainment *(day use fees, boat rental, etc.)*		
Retail Shopping *(personal items, souvenirs, etc.)*		
Recreational Equipment *(fishing tackle/bait, etc.)*		
Other Spending *(Please describe)*		

Please indicate how much your group spent during the past 12 months on "big ticket" items that you specifically intended to use at Rollins Reservoir? *(Only include "durable" items that are used for more than one trip, such as bicycles, boats, etc. Do not list items already included above. Rough estimates are OK.)* *

Description	Amount ($)	Spent Local (%)

* *Identifies a particularly important question.*

RECREATION AND TOURISM ECONOMIC IMPACTS OF ROLLINS RESERVOIR

NID
Board of Directors

April 10, 2019

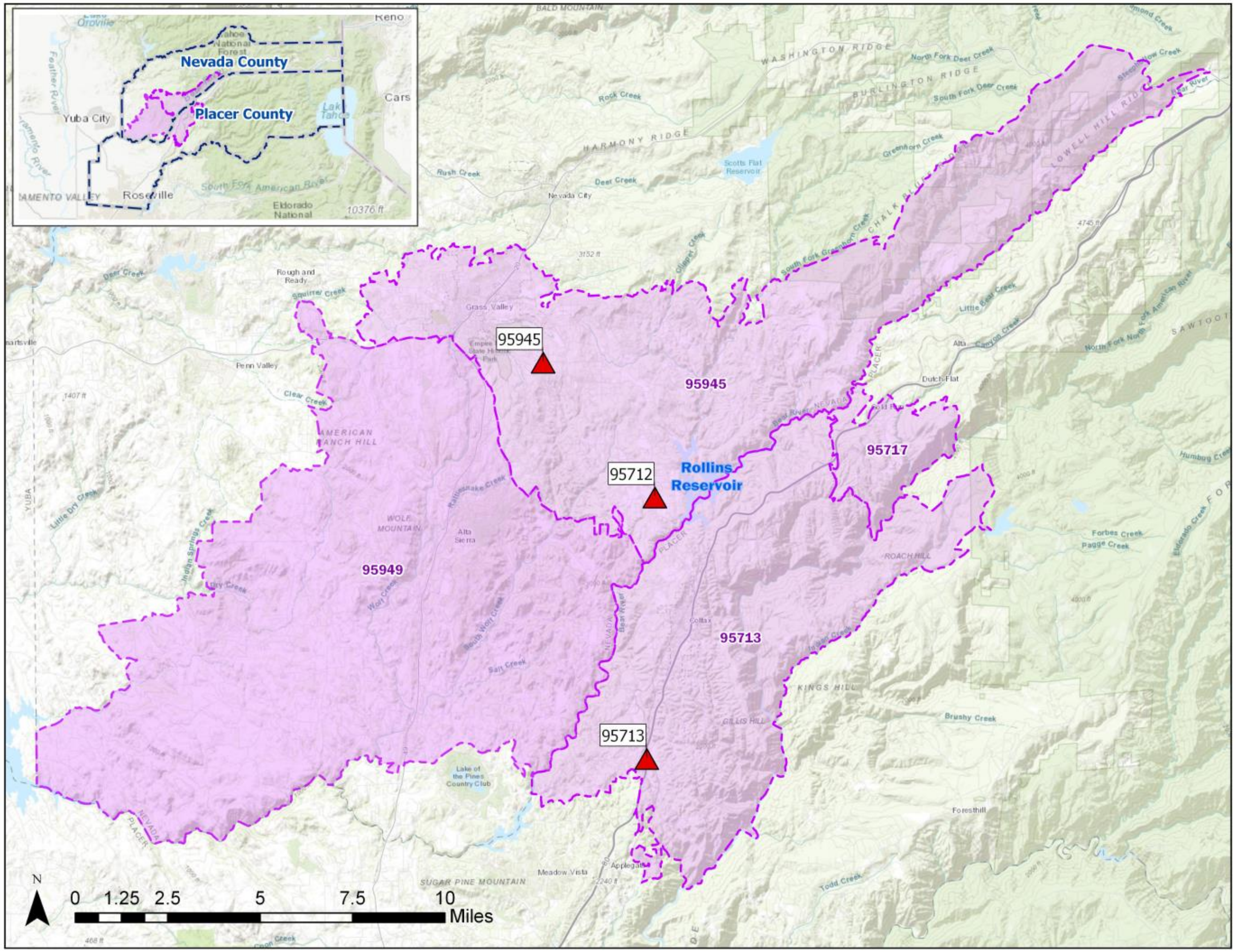
ABOUT BAE

- A national urban economics practice
- Offices in Berkeley, Davis, New York, and D.C.
- Extensive work experience in:
  - Economic and fiscal impacts analysis
  - Economic and workforce development
  - Parks and community facilities
  - Other related economic studies/analysis

PROJECT OVERVIEW

- Nevada Irrigation District (NID) issued a RFP for an Economic Impact Assessment in early 2018
- Focused on understanding the contributions of visitors to Rollins Reservoir on the local economy
- The work consisted of two main components:
  - Recreation and Tourism Industry Assessment
  - Day-time and overnight visitor Intercept survey

DEFINING THE MARKET



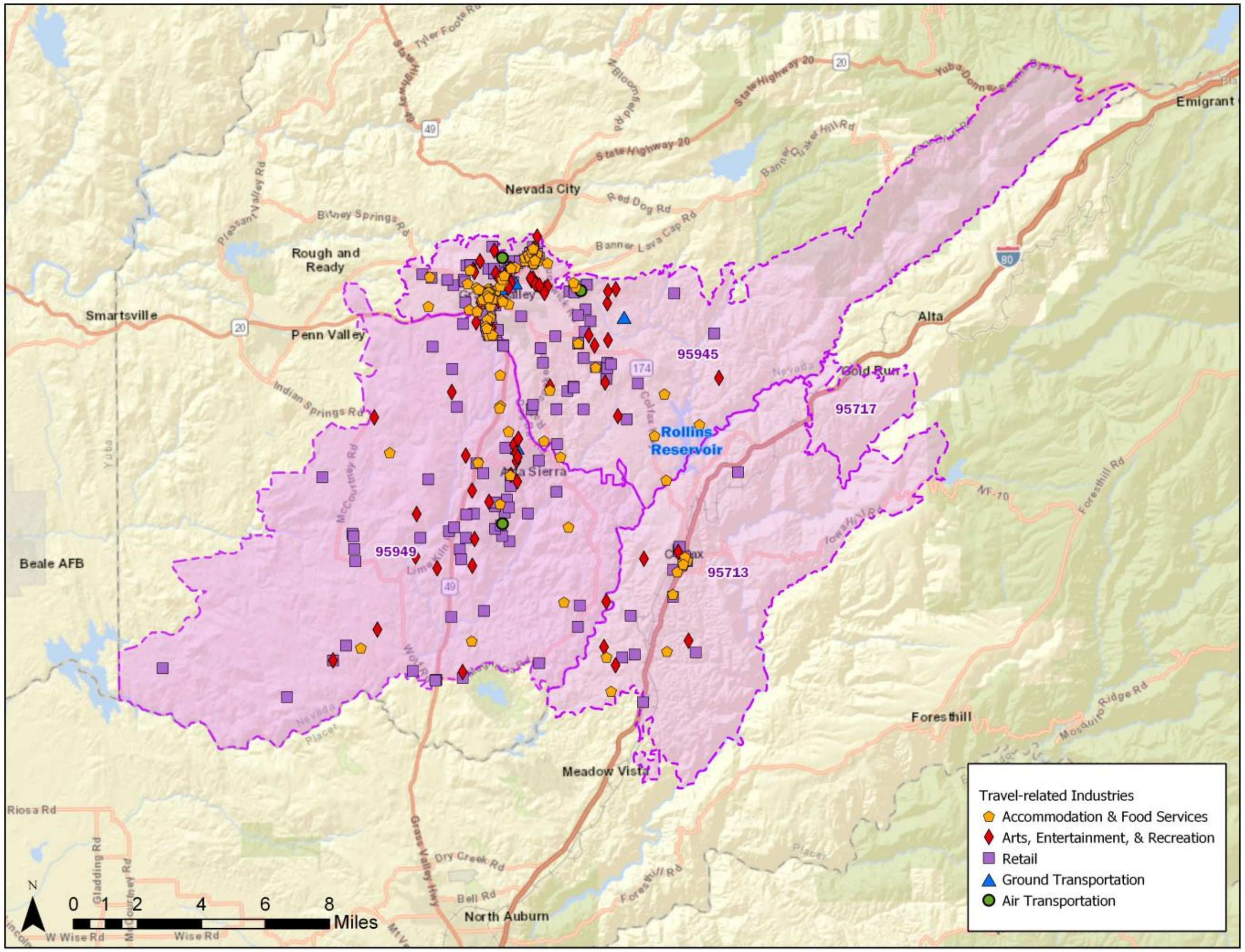
TOURISM INDUSTRY ASSESSMENT

- *Visit California* estimates visitor spending in Placer and Nevada Counties at **$1.6 billion**
- Employment supported by visitor spending is **10 percent of all jobs** in both counties
- **Three-fourths** of the jobs are **in Placer County** with larger population & freeway orientation

TOURISM INDUSTRY ASSESSMENT *CON'T*

- Used the Longitudinal Employer-Household Dynamics (LEHD) dataset for study area jobs
- Used the Dean Runyan industry sector scheme (i.e., same as Visit California)
- There are **459 tourism oriented businesses** in the study area with **3,305 workers**
- These jobs equal around **22 percent of all jobs**
- Mainly concentrated in Colfax and Grass Valley

TOURISM-RELATED BUSINESSES



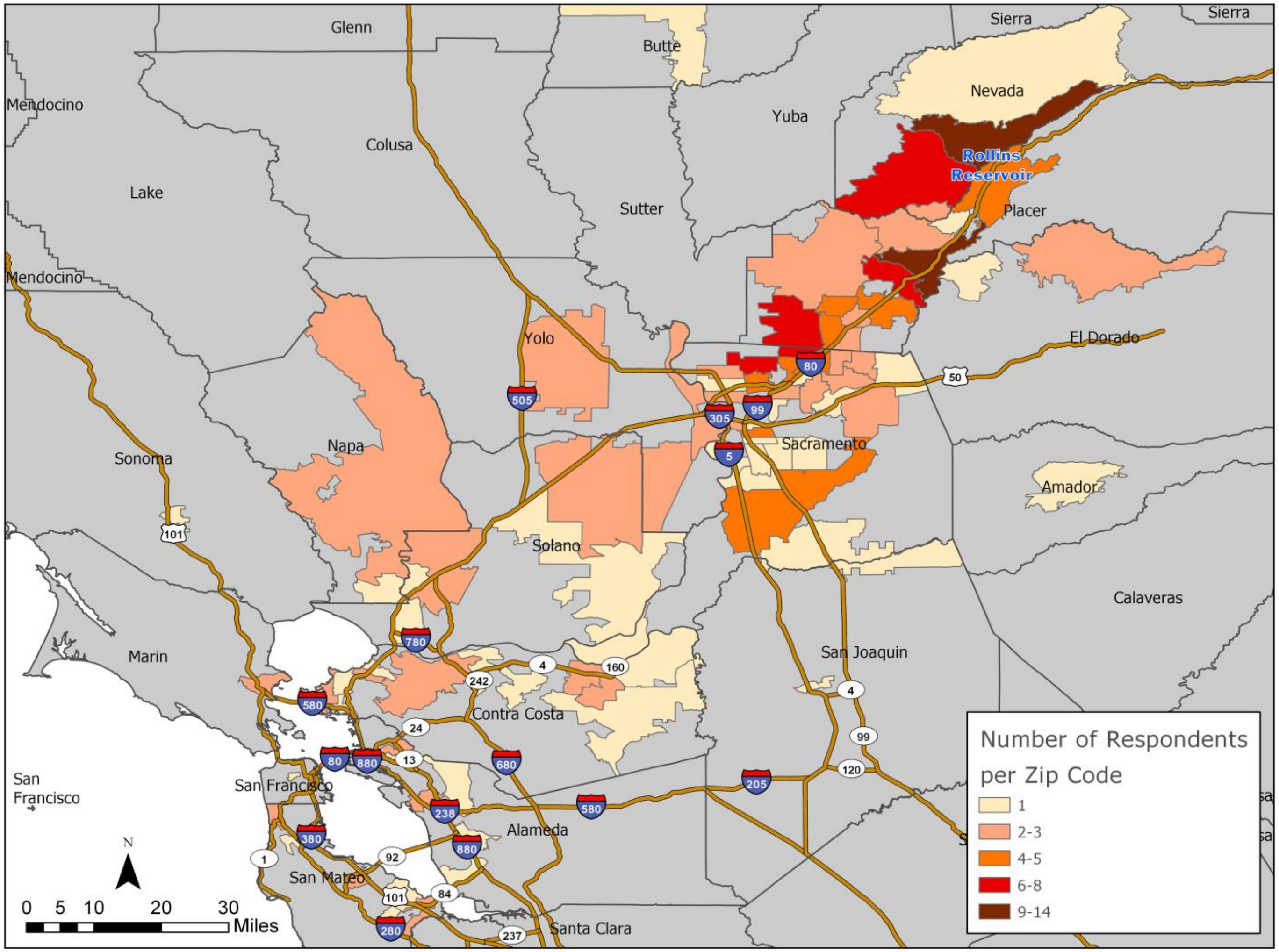
TOURISM INDUSTRY ASSESSMENT *CON'T*

- Conducted interviews with businesses to better understand their relationships to the reservoir
- Used Dun & Bradstreet to identify specific firms
- Only four businesses spoke on the record:
  - Happy Apple Kitchen
  - Pizza Factory
  - Orion Mart/Valero Gas
  - NAPA Auto Parts
- Difficult to separate visitors and non-visitors

VISITOR INTERCEPT SURVEY

- Survey of day-time and overnight visitors to document characteristics and spending
- Distributed by NID from June to August
- Surveys handed out at check-in and check-out
- Included Long Ravine (LRC), Orchard Springs (OSC), and Peninsula Family Camp (PFC)
- There were a total of **240 unique responses**

VISITORS BY HOME ZIP CODE



VISITOR INTERCEPT SURVEY

- Group average of 9 and median of 6 persons
- Around one-third of visitors were under age 18
- More than 80 percent of visitors stayed overnight, with an average stay of 2.7 nights
- Daytime visitors stayed an average of 4.5 hours

ESTIMATED VISITOR SPENDING

- Survey respondents were asked how much they spend per trip on different items
- Average local spending on consumable goods:
  - Day Trips = ~$8 per person/day
  - Overnight = ~$12 per person/day
- Largest share of spending in overnight accommodations and grocery stores
- Issues of sampling bias and incomplete responses

ESTIMATED VISITOR SPENDING *CON'T*

- BAE also prepared alternative visitor spending estimates based on published sources
- Reviewed studies by the National Park Services (NPS) and Dean Runyan and Associates
- The Dean Runyan study provides estimates that better reflect behavior of California campers
  - Day Trips = ~$35 per person/day
  - Overnight = ~$52 per person/day

ESTIMATED VISITOR SPENDING *CON'T*

Trip Type	Person Days
Day Trips	45,154
Overnight	62,623
Total, All	**107,777**

	Visitor Spending Per Person Per Day	
Trip Type	Low -End	High-Ennd
Day Trips	$8	$35
Overnight	$12	$52

ESTIMATED VISITOR SPENDING *CON'T*

Trip Type	Total Estimated Visitor Spending	
	Low-End	High-Ennd
Day Trips	$359,535	$1,580,390
Overnight	$733,776	$3,286,594
Total, All	**$1,093,311**	**$4,866,984**
Employment	**12**	**54**

ADDITIONAL COMMENTS/QUESTIONS?

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