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Financial Analysis Fee Study

Prepared for

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Executive Summary

In late June 2018, the Larimer County Department of Natural Resources (LCDNR) engaged Harvey Economics (HE) to conduct a Financial Analysis Fee Study (Study). The main purpose of the Study was to evaluate the current schedule of user fees, including entrance permit fees and camping fees, charged at the County's Reservoir Parks and Open Spaces. Revenues generated by those fees were compared with current and future expenses to determine necessary fee adjustments. Additional tasks provided support for that analysis and for the specific recommendations and strategies presented in the Study report. Summary results for each of the topics addressed as part of this Study follow:

Historic visitation and finances. Over the past 10 years, visitation to Reservoir Parks and Open Spaces has increased substantially, as evidenced by the increase in entrance permit sales and camping nights. Fee revenues for Reservoir Parks grew by 93.4 percent since 2008, while fee revenues for Open Spaces grew by over 67 percent since 2013.¹ Operating costs increased even faster than revenues since 2008, by 69 percent for Reservoir Parks and 142 percent for Open Spaces. In 2017, Reservoir Parks expenses were about 13 percent greater than revenues; Open Space expenses were almost four times more than revenues. Historically, fee revenues have only covered a portion of operating costs for either Reservoir Parks or Open Spaces.

Demographics and visitation. Past and future demographic changes in Larimer County and northern Colorado help drive visitation to Reservoir Parks and Open Spaces. Almost 60 percent of visitors are between the ages of 30 and 69. Larimer County's population has grown by more than 51,500 people since 2008 and is expected to increase by over 110,000 people by 2035. These projections support anticipated increases in future visitation, although visitor growth is likely to slow over time due to capacity constraints at certain Reservoir Parks and Open Spaces.

Projected revenue shortfalls and required fee increases. Future fee revenues will grow at an increasingly slower pace with capacity constraints. LCDNR staff project operating costs to increase steadily in the future. The difference between projected fee revenues and projected operating costs warrants about a 30 percent fee increase for all types of fees if Reservoir Parks revenues are to fully cover operating costs over the next several years. Entrance permit fees at Open Spaces would increase by 50 percent to remain in line with those of the Reservoir Parks; increased permit fees and camping fees would cover a larger portion of costs for Open Spaces. However, the expenditure - revenue gap widens for both Reservoir Parks and Open Spaces through 2033.

¹ Fees were implemented at Horsetooth Mountain Open Space in 2013, substantially increasing Open Space fee revenues from then on.

Potential revenue at Devil's Backbone. Devil's Backbone Open Space is a high visitation, intensively managed area at which no fees are currently charged at the southern entrance. However, as much as \$350,000 to \$500,000 could be generated at Devil's Backbone each year if entrance permit fees were required at that location. That estimate is consistent with the amount of fee revenue collected at Horsetooth Mountain Open Space, which is a similar type of location.

Opportunities for lower-income visitors. The LCDNR offers several opportunities for low-income visitors to access Reservoir Parks and Open Spaces, including a number of free locations, discounted annual entrance permits for certain groups and other free entrance options. Additionally, the LCDNR may explore low-income eligible processes that could allow access to LCDNR locations at a reduced rate. There are also many other locations in Larimer County managed by federal, state and city entities that offer free outdoor recreational opportunities to the public.

Fees at comparable locations. Many different locations were researched to identify and understand potentially comparable places. In the end, the State Park System emerged as most comparable due to funding similarities, along with visitation levels and similarities in amenities. In terms of price sensitivity, studies suggest that visitation to outdoor recreation locations are relatively price inelastic, indicating that price increases would not reduce visitation levels.

Revenue generation concepts. This report identifies and discusses a number of revenue generation concepts as future options for the LCDNR beyond simple fee escalation. Those include differential pricing by day of the week (weekends, weekdays, holidays), dynamic pricing strategies, evaluation of annual pass pricing and a lottery or auction for prime parking or camping spots. Differential pricing and a further examination of how to price and promote annual passes appear to be especially promising.

Approach to future fee adjustments. Several different approaches to adjusting fees in the future are described and discussed. The recommended strategy would be thorough projections of revenues and expenses, and then a calculation that divides projected expenses by projected costs (operating costs, plus any desired portion of capital costs). The percentage would represent a goal that might need to be achieved over time. Differential pricing and other revenue generation ideas should be considered as well.

Section 1

Introduction

In late June 2018, the Larimer County Department of Natural Resources (LCDNR) engaged Harvey Economics (HE) to conduct a Financial Analysis Fee Study (Study) to evaluate the current schedule of user fees, including annual and daily entrance permits and camping fees, charged at the County's Reservoir Parks and Open Spaces.² The LCDNR currently operates multiple Reservoir Parks and Open Space areas, located throughout Larimer County. Specific fees are charged at seven of those locations, depending on the amenities and recreational opportunities available. Exhibit 1-1 lists each of the County's Reservoir Parks and Open Space areas and identifies those which charge fees and those which are available to the public for free.

Exhibit 1-1.

Larimer County Reservoir Parks and Open Spaces and Indication of Fees Charged

<u>Fees Charged</u>	<u>No Fees Charged</u>
Blue Sky Trailhead at Devil's Backbone	Big Thompson Parks: Narrows, Glade, Forks, Sleepy Hollow
Carter Lake	Devil's Backbone Open Space - Loveland/South Trailhead
Flatiron Reservoir	Eagle's Nest Open Space
Hermit Park Open Space	Lions Open Space
Horsetooth Reservoir	Red Mountain Open Space
Horsetooth Mountain Open Space	River Bluffs Open Space
Pinewood Reservoir	Long View Farm Open Space
Ramsay - Shockey Open Space	Bingham Hill Park

Source: Larimer County Department of Natural Resources, 2018.

Study Purpose and Goals

Given anticipated continued increases in visitation, along with projections of increasing operational costs and the need to cover future capital replacement/ maintenance costs, the LCDNR is seeking an analysis of current user fees and recommendations for future fee levels and pricing strategy. Although LCDNR revenues are generated via several different sources, the focus of this study is on revenues generated directly from the use of Reservoir Parks and Open Space properties via the sale of permits and camping fees.³ As directed by the LCDNR, the Study includes the following focus areas, each of which are addressed in various sections of this report:

² The LCDNR also charges fees for special event permits and group permits. Those fees bring in small amounts of revenue and were not evaluated as part of this study.

³ LCDNR revenue sources include certain sales and property taxes; user fees and service charges; intergovernmental transfers; lottery funds; General County Governmental funds and occasional grants for specific purposes.

- A summary of data describing historic visitation, number of entrance permits sold and number of campground nights between 2008 and 2017. This information sets the stage for understanding the revenues associated with those activities;
- Summaries of historic revenues and expenses – historic revenues generated by the sale of entrance permits and campground nights and historic operating costs;
- Projections of population or demographic characteristics that may influence future visitation levels at Reservoir Parks and Open Space areas;
- An analysis of future revenue requirements, incorporating projections of future operating revenues and expenses;
- Calculation of potential revenues generated at Devil’s Backbone Open Space, if entrance fee requirements were to be implemented at that location;
- Summary of opportunities for low-income visitors to access Reservoir Parks and Open Spaces;
- An examination of fees at locations “comparable” to Larimer County’s Reservoir Parks and Open Spaces, in terms of amenities and recreational opportunities;
- Development of specific concepts for increasing revenue generation at Reservoir Parks and Open Spaces;
- Development of alternative approaches to adjusting fee schedules in the future.

A Study kick-off meeting was held in early July 2018 to discuss each of these topic areas, discuss data needs and availability and to hone in on the LCDNR’s desired Study outputs. HE also met with LCDNR staff and several Reservoir Parks and Open Space Advisory Board members in mid-August 2018 to gather feedback from Advisory Board members. Inputs from LCDNR staff and Advisory Board members have been incorporated into this Study.

Historical and Current Fee Levels

Many fees charged at Reservoir Parks and Open Spaces have not increased for over 10 years - since at least 2008. For example, the prices of daily entrance permits, which make up the bulk of total permit sales, have remained constant since 2008. Prices of annual vehicle entrance permits increased by about \$10 over the past 10 years. Many campsite fees have remained constant over time (i.e. non-electric sites, off-season sites, camper cabins) or have increased by small amounts (\$5) since 2008. Exhibit 1-2 presents a summary of the individual types of fees charged in 2008 and 2018.

Exhibit 1-2.**Summary of 2018 and 2008 Entrance Permit Prices and Camping Fees for Applicable Larimer County Reservoir Parks and Open Spaces**

Type of Permit or Fee	2018 Fee Amount	2008 Fee Amount
<i>Daily Entrance Permits</i>		
Carter Lake, Flatiron, Pinewood and Horsetooth reservoirs (per vehicle and per boat trailer)	\$7	\$7
All other permitted open spaces (per vehicle)	\$6	\$6
<i>Annual Entrance Permit Prices</i>		
Vehicle – Larimer County Resident	\$75	\$65
Vehicle – Nonresident	\$95	\$85
Vehicle – Senior (Senior (65+ or turning 65 in month of purchase)	\$45	\$35
Vehicle – Disabled	\$10	\$10
Combination Vehicle and Boat (trailered) – Larimer County Resident	\$150	\$65
Combination Vehicle and Boat (trailered) – Nonresident	\$190	\$85
Combination Vehicle and Boat (trailered) – Senior (65+)	\$120	NA
Combination Vehicle and Boat (trailered) – Disabled	\$85	NA
<i>Camping Prices (in addition to entrance permits; prices are per night, per site)</i>		
<u>Reservoirs</u>		
Non-electric campsite (January – December)	\$15	\$15
Electric campsite (April – September)	\$25	\$20
Electric campsite (October – March)	\$15	\$15
Full hookups campsite – Horsetooth Reservoir (April – September)	\$30	\$25
Full hookups campsite – Horsetooth Reservoir (October – March)	\$20	\$20
2nd camping unit (January – December)	\$10	\$10
Boat-in camping – Horsetooth Reservoir (May – September)	\$20	\$15
Camper cabins for up to 5 people in the cabin and 3 people in one tent (April – September)	\$60	\$60
Camper cabins for up to 5 people in the cabin and 3 people in one tent (October – March)	\$30	\$30
Tipis (Flatiron reservoir FT1, FT2, FT3, May 1 – October 15)	\$35	NA
<u>Hermit Park Open Space</u>		
Non-electric campsite (March – December)	\$24	\$20
Equestrian campsite (May – September)	\$30	NA
2nd camping unit (March – December)	\$10	NA
Camper cabins (May – October)	\$80	\$80
Camper cabins (November, December, March, April)	\$60	\$60

Notes: (1) The walk-in camping registration fee is an additional \$2.50 per site.

(2) Hermit Park Open Space campgrounds are subject to a 2% local marketing district tax.

Source: Larimer County Department of Natural Resources, 2018.

Although entrance permit fees and camping fees have remained generally constant over the last 10 years; maintenance costs and other operational expenses have increased steadily each year. Cost increases are due to increased visitation and the need to maintain facilities and provide visitor services, including safety features. The LCDNR is proud to offer a high-quality visitor experience; however, that comes at an increasing cost, given the popularity of many locations.

Historically, daily entrance permit fees have differed slightly between Reservoir Parks and Open Spaces. As shown in Exhibit 1-2, the current price of a daily entrance permit at fee-based Open Spaces is \$1 less than at the Reservoir Parks. However, according to the LCDNR, high visitation Open Space areas require the same types of management activities, time investment and expenses as the Reservoir Parks. Therefore, this Study considers one single daily entrance permit fee at all fee-based LCDNR locations regardless whether that location is a Reservoir Park or Open Space. That approach would appropriately reflect consistent management costs at different locations. The increase in daily permit prices at Open Spaces would support the LCDNR in their efforts to offer the level of service currently provided at these locations.

Section 2

Historic Reservoir Parks and Open Space Visitor Activity

The size of the surrounding population base plus interest in recreating at Larimer County's Reservoir Parks and Open Spaces is what drives visitor numbers, which in turn drives the sale of entrance permits and campsite nights at various locations. Section 2 of the report describes changes in historical permit sales, camping activity and visitation at specific locations. Along with additional demographic data, these historical trends will help to inform projections of future activity levels at Reservoir Parks and Open Spaces. Demographic data used to support assumptions of future visitation are presented in Section 4 of the report.

This Section presents three sets of visitation statistics and background discussion:

- Total entrance permits sold, by location, since 2008. Entrance permits include several types of daily and annual permits applicable at the locations identified in Exhibit 1-1. Entrance permits are per vehicle, regardless of the number of occupants. A discussion of the distribution of permits sold, by type is also included;
- Number of camping nights, by location, since 2008. In addition to campsite fees charged on a per site basis, campers must also purchase a daily or annual entrance permit. Therefore, in terms of visitation, campers are a subset of the vehicles purchasing entrance permits;
- Estimates of visitors at specific Open Space locations since 2013. These estimates are of the actual number of people (as opposed to vehicles) at these locations over the course of a year.

Sales of Entrance Permits

Number of entrance permits sold. Total entrance permits sold at various Reservoir Parks and Open Spaces and through outside vendors almost doubled over the last 10 years, increasing from about 112,000 permits in 2008 to almost 217,000 in 2017. During this period, there was some annual variability in total permits sold at different locations, but increases have been more consistent in recent years. Overall, sales of entrance permits increased at an average annual rate of about 7.7 percent between 2008 and 2017.⁴

Exhibit 2-1 presents the total number of entrance permits sold, by location, between 2008 and 2017. Total entrance permit sales include *annual* permits of all types (disabled and senior vehicle permits; disabled and senior boat permits; regular resident and non-resident boat

⁴ In 2017, the increase in total permit sales was lower than the historic annual average, at about 1.4 percent.

permits; regular resident and non-resident vehicle permits) and *daily* reservoir and regular (non-reservoir locations) permits.

Exhibit 2-1.

Number of Entrance Permits Sold by Location, 2008 - 2017

	Hermit	Carter Lake	Horsetooth	Open Space	Online/ Outside	
<u>Year</u>	<u>Park</u>	<u>District</u>	<u>Reservoir</u>	<u>District</u>	<u>Vendors</u>	<u>TOTAL</u>
2008	3,086	44,817	63,718			111,621
2009	6,535	42,880	66,214		5,938	121,567
2010	5,513	35,684	57,008		5,614	103,819
2011	6,751	45,030	77,914		6,511	136,206
2012	8,106	38,499	48,149		7,137	101,891
2013	7,886	40,711	66,625	33,166	4,746	153,134
2014	5,161	47,080	77,961	37,901	4,368	172,471
2015	10,241	51,825	88,914	43,950	4,414	199,343
2016	12,743	53,746	92,374	50,255	4,800	213,918
2017	12,916	52,392	94,575	52,119	4,915	216,917
Total % Change	318.5%	16.9%	48.4%	57.1%	-17.2%	94.33%
Average Annual % Change	17.2%	1.8%	4.5%	12.0%	-2.3%	7.66%

Notes: (1) Permit numbers include annual passes and daily passes for all types of visitors.

(2) The Carter Lake District includes Carter Reservoir, Flatiron Reservoir and Pinewood Reservoir.

(3) The Open Space District includes Horsetooth Mountain Open Space.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Observations from the data presented in Exhibit 2-1 include:

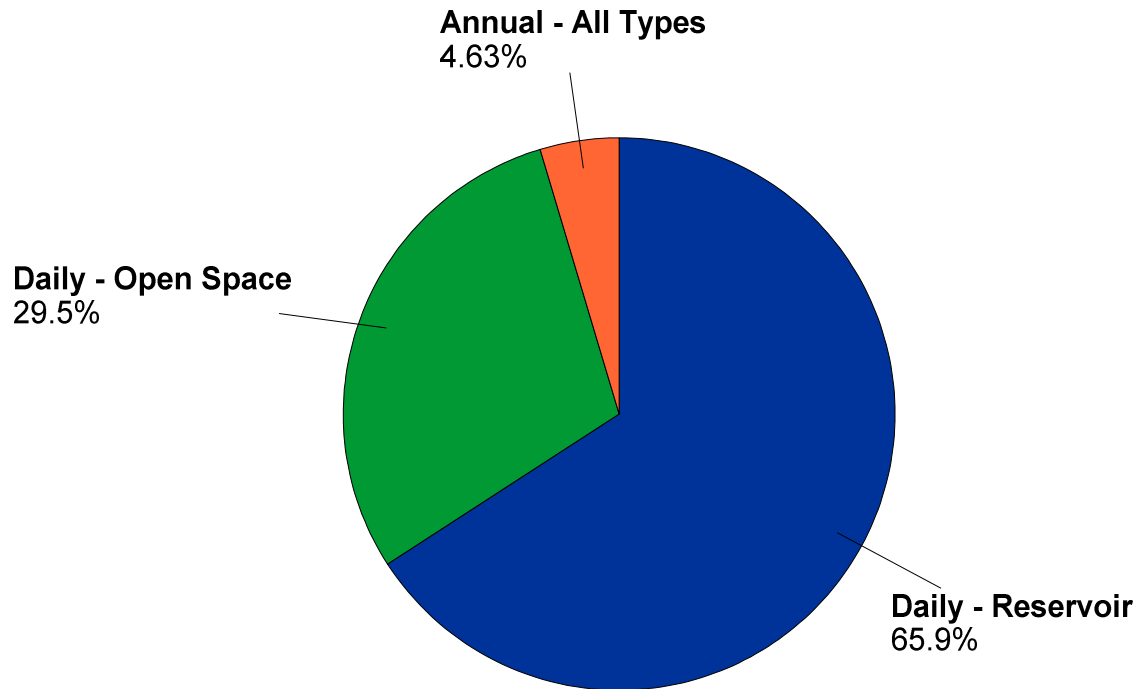
- Total permit sales more than doubled between 2012 and 2017;
- Hermit Park Open Space experienced that largest percentage growth in permits sales, more than quadrupling since 2008;
- The Open Space District has experienced large increases in annual permit sales since 2013, when fees were implemented at Horsetooth Mountain Open Space;
- The largest number of permits are sold at Horsetooth Reservoir, with about 44 percent of total entrance permit sales occurring at that location in recent years. Growth at that location has been solid, averaging about 4.5 percent per year since 2008.

Entrance permits by type. As shown in Exhibit 2-2, the vast majority of entrance permits sold in 2017 were daily permits at reservoir locations. Daily reservoir permits (vehicle and boat trailer passes at Horsetooth Reservoir, Carter Lake and Pinewood Reservoir) made up about 66 percent of total permit sales. Another 30 percent of permit sales

were daily passes at non-reservoir locations (daily regular passes). Less than five percent of all entrance permits sold in 2017 were annual passes.

Exhibit 2-2.

Number of Permits Sold by Permit Type, 2017



Notes: (1) These data include permits sold at all locations and through outside vendors.

(2) Annual passes include resident and non-resident vehicle permits and combination permits, annual senior permits and annual disabled permits.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

The fact that almost all entrance permit sales were daily entrance permits was not unique to 2017. Exhibit 2-3 provides a summary breakdown of daily versus annual permit sales since 2008. Since 2013, over 95 percent of permits sold each year have been daily permits.

Exhibit 2-3.**Sales of Daily versus Annual Entrance Permits, 2008 - 2017**

<u>Year</u>	<u>Daily Permits</u>	<u>% of Total</u>	<u>Annual Permits</u>	<u>% of Total</u>
2008	103,247	92.5%	8,374	7.5%
2009	113,120	93.1%	8,447	6.9%
2010	95,387	91.9%	8,432	8.1%
2011	127,506	93.6%	8,700	6.4%
2012	92,623	90.9%	9,268	9.1%
2013	147,068	96.0%	6,066	4.0%
2014	164,622	95.4%	7,849	4.6%
2015	190,675	95.7%	8,668	4.3%
2016	204,456	95.6%	9,462	4.4%
2017	206,883	95.4%	10,034	4.6%

Note: Daily permits include reservoir and regular entrance permits.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Trends in day use activity. According to LCDNR staff, day use at many Reservoir Parks and Open Space locations is constricted by the available parking spots. The demand for parking exceeds the supply of parking Spaces in many areas, especially on the weekends. At certain trailheads, parking is at capacity in the spring and fall as well as during the peak summer season. As an example of vehicle capacity issues, many cars are turned away from Horsetooth Reservoir on weekends in the peak season. Although some additional parking may be developed at Horsetooth Reservoir in the future, uncertainties surround that project in terms of timing or the extent of the development.

Camping Nights and Camping Activity

Number of camping nights. Overnight camping is permitted at each of the Reservoir Reservoir Parks and at Hermit Park Open Space. The number of camping nights at those locations has increased steadily since 2008, averaging gains of about 12 percent per year, as shown in Exhibit 2-4. Reflecting the trends in permits sales previously discussed, Hermit Park Open Space has seen the largest increase in camping nights, on a percentage basis, while Horsetooth Reservoir has experienced the largest number of total camping nights at any location.

Exhibit 2-4.
Camping Nights by Location, 2008 - 2017

<u>Year</u>	<u>Hermit Park</u>	<u>Carter Lake</u>	<u>Flatiron Reservoir</u>	<u>Pinewood Reservoir</u>	<u>Horsetooth Reservoir</u>	<u>TOTAL</u>
2008	1,818	5,073	2,783	948	7,511	18,133
2009	2,747	5,381	2,725	907	8,593	20,353
2010	3,430	5,256	2,454	945	8,940	21,025
2011	4,977	5,801	2,714	1,038	9,843	24,373
2012	5,727	6,109	2,657	1,037	9,144	24,674
2013	5,471	7,511	3,430	1,421	13,029	30,862
2014	3,549	9,252	3,666	1,350	17,252	35,069
2015	6,967	10,578	4,023	1,711	19,869	43,148
2016	7,980	11,424	4,318	2,471	21,456	47,649
2017	8,177	12,072	4,554	2,501	22,875	50,179
Total % Change	349.8%	138.0%	63.6%	163.8%	204.6%	176.7%
Average Annual % Change	18.2%	10.1%	5.6%	11.4%	13.2%	12.0%

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Trends in camping activity. As noted in the 2017 Reservoir Reservoir Parks Master Plan,

“Recreational use varies seasonally and throughout the week; however, there is a growing trend of more use during the shoulder seasons and during the week. The heaviest use, approximately 80 percent, continues to occur on the weekends and holidays between late May and early September. Camping reservations are highest during the peak season, between Memorial Day and Labor Day. Occupancy rates continue to rise for all seasons, with the late shoulder season and off seasons showing strong increases in occupancy.”

According to the Master Plan, campsite occupancy rates at Horsetooth Reservoir increased from 29 percent in 2011 to 49 percent in 2016. During the peak season (Memorial Day to Labor Day) occupancy rates increased from 54 percent in 2011 to 87 percent in 2016 at Horsetooth. Similar patterns were seen at Carter Lake and Flatiron Reservoir.

Those trends were reiterated in Study meetings with LCDNR staff. Highlights from those discussions include the following:

- Campsites at Horsetooth Reservoir are filled to capacity on weekends and increasingly on many weeknights as well;
- Carter Lake sees the overflow from Horsetooth Reservoir and most weekends are at capacity at this location too. There is an increasing demand for additional facilities at Carter Lake, to mirror those available at Horsetooth Reservoir;

- Use of the Reservoir Reservoir Parks is spreading into the shoulder seasons and weekdays; occupancy rates are increasing outside of the peak season and weekends at all locations;
- Opportunities to expand camping activity at Horsetooth Reservoir are limited, due to physical constraints on the ability to develop additional campsites and increased occupancy rates throughout the extended season.⁵

Open Space Visitor Data and Visitation Patterns

Visitation at Open Spaces is available for five separate locations. Exhibit 2-5 presents the available visitation data at those locations. Visitation data was collected on a monthly basis and summed to total annual reflect visitors.

Exhibit 2-5.
Recent Visitation Data at Specific Locations

Year	Devil's Backbone Open Space	Blue Sky Trailhead	Rimrock Open Space	Red Mountain Open Space	Horsetooth Mountain Open Space
2013					96,155
2014	67,936	24,694	13,500		
2015				6,008	
2016					
2017					
2018					175,000
Total % Change at HTMOS					82%
Average Annual % Change at HTMOS					12.72%

Notes: (1) Blue Sky Trailhead is located on the west side of Horsetooth Reservoir. It provides a northern access point to Devil's Backbone.

(2) 2018 data for Horsetooth Mountain Open Space reflects estimated visitation between August 2017 and August 2018

Source: Larimer County Department of Natural Resources, 2018.

Horsetooth Mountain Open Space is the only location where visitors have been counted in multiple years. At that location, visitor estimates indicate increases of about 12.7 percent per year since 2013.

Day of the week visitation. At all locations included in Exhibit 2-5, about half of total visitation (50 percent) occurred on Saturdays and Sundays. For all locations other than Red Mountain Open Space, the remaining visitation was generally evenly spread out over each weekday (about 10 percent each weekday). At Red Mountain Open Space, an additional 20 percent of people visited on Fridays, with smaller numbers of people visiting on the remaining weekdays.

⁵ Although year-round camping is permitted at the Reservoir Reservoir Parks, winter months are not as popular as other times of the year. Therefore, camping does not generally extend into winter months at these locations.

Seasonal visitation. Seasonal variation in visitation is evident, but vary by location. For example, the data collected in 2014 indicates that peak visitation at Devil’s Backbone Open Space occurred in March, while peak visitation occurred in June at Blue Sky Trailhead and in April / May at Rimrock Open Space. 2013 visitation to Horsetooth Mountain Open Space peaked in June, as did 2015 visitation to Red Mountain Open Space. The amount of drop-off in visitation outside of those peak times also appears to vary by location. However, limited data availability precludes definitive observations.

Observations and Implications

The historical visitor data and activity trends presented in this Section provide the following insights useful to this Study:

- Over the last 10 years, visitation to Reservoir Parks and Open Spaces has increased dramatically, with permit sales almost doubling and camping nights almost tripling;
- Many Reservoir Parks and Open Spaces see high weekend visitation and are experiencing increasing visitation on weekdays and other off-peak times;
- Visitation will likely continue to increase at many Reservoir Parks and Open Space locations, although constraints to growth exist in the form of limited parking Spaces, limited camp sites and seasonal availability;
- The low number of annual permits sold in comparison to the number of daily permits sold in a year suggests a future opportunity for marketing annual permits.

Section 3

Historic Reservoir Parks and Open Space Revenues and Expenses

Section 3 presents a discussion of the fee revenues and expenses associated with the Reservoir Parks and Open Space activities identified in the previous section of this report. Fee revenues include entrance permit fees, campsite revenue and special permit fees for Reservoir Parks and for Open Space (reported separately). Expenditures include operating costs (personnel and operations activities) and historic capital expenses for Reservoir Parks (Horsetooth Reservoir, Carter Lake, Flatiron Reservoir and Pinewood Reservoir) and Open Space (all of the open Space areas). This section of the report focuses on the LCDNR's historic operating revenues and operating expenses; projected expenditures are discussed in Section 5 along with an analysis of future revenue requirements.

The LCDNR receives revenues from several different sources, including:

- Intergovernmental transfers (36 percent of total 2017 revenue);
- Specific designated taxes (i.e. open Spaces sales and use tax, property tax) (27 percent of total 2017 revenue);
- User fees and service charges (22 percent of total 2017 revenue);
- Lottery funds and other miscellaneous sources, including grants (14 percent of total 2017 revenue); and
- Larimer County's General governmental fund (1 percent of total 2017 revenue).

The focus of this Study is on user fees and service charges (entrance permit fees, camping fees, special events permits and group use permits) and on the comparison of those fees to operating expenses and certain capital expenditures. Revenues from other sources are used to fund a number of other activities, including open Space acquisition and development.

Historic Revenues

Reservoir Parks revenues. In 2017, total Reservoir Parks fee revenue was almost \$2.9 million. Exhibit 3-1 offers data on historic revenues generated by the sale of entrance permits, camping fees and other required permits, including special event permits and group use permits, at the four Reservoir Parks. Revenue from all sources increased steadily between 2008 and 2017, with camping revenue almost quadrupling. Overall, total revenue from all sources increased by an average of about 7.6 percent per year over that time; however, 2017 saw slower than average revenue growth with a total increase in Reservoir Parks fee revenues of about three percent.

Exhibit 3-1.**Historic Permit Sales, Camping Fees and Other Revenue Generated by Activity at Reservoir Parks, 2008 - 2017**

<u>Year</u>	<u>Total Permit Sales</u>	<u>Total Camping Fees</u>	<u>Other Revenue</u>	<u>Total Fee Revenue</u>
2008	\$1,183,000	\$310,000	\$0	\$1,493,000
2009	\$1,212,000	\$332,000	\$0	\$1,544,000
2010	\$1,088,000	\$425,000	\$7,000	\$1,520,000
2011	\$1,320,000	\$497,000	\$14,000	\$1,831,000
2012	\$1,330,000	\$568,000	\$14,000	\$1,912,000
2013	\$1,219,000	\$665,000	\$24,000	\$1,908,000
2014	\$1,438,000	\$796,000	\$24,000	\$2,258,000
2015	\$1,588,000	\$803,000	\$24,000	\$2,415,000
2016	\$1,673,000	\$1,103,000	\$29,000	\$2,805,000
2017	\$1,712,000	\$1,148,000	\$28,000	\$2,888,000
Total % Change	44.7%	270.3%	300.0%	93.4%
Average Annual % Change	4.2%	15.7%	21.9%	7.6%

Notes: (1) Permit sales include sales made online or through outside vendors.

(2) Other revenue includes special events permits and group use permits.

(3) Numbers have been rounded to the nearest thousand.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

In 2008, entrance permit fees comprised about 79 percent of total Reservoir Parks fee revenues; however, over time, growth in camping nights and associated camping fees increased at a faster rate than the increase in permit sales. By 2017, permit sales comprised about 59 percent of total revenue, while camping fees accounted for almost 40 percent of revenue. Revenues from special events and group use permits have historically comprised about one percent of total fee revenues at the Reservoir Parks.

Open Space revenues. Exhibit 3-2 offers data on historic revenues generated by the sale of entrance permits, camping fees, special event permits and group use permits at the County's Open Spaces.⁶ Permit revenues from 2008 through 2012 include Hermit Park Open Space only; beginning in 2013, the LCDNR also charged entrance fees at Horsetooth Mountain Open Space. Total revenue from permit sales increased by an average of about 10 percent per year between 2013 and 2017; however, 2017 saw slower than average growth with a total increase of about four percent. Camping fee revenues generated by activity at Hermit Park Open Space have increased dramatically since 2008, at the rate of about 22 percent per year. Revenues from special events permits and group use permits at Open

⁶ Entrance fees are currently only charged at Horsetooth Mountain Open Space and Hermit Park Open Space. Camping is only allowed at Hermit Park Open Space.

Spaces has fluctuated annually, making up about two to three percent of total fee revenue in recent years. In 2017, total Open Space fee revenue was almost \$870,000.

Exhibit 3-2.

Historic Permit Sales, Camping Fees and Other Revenue Generated by Activity at Open Spaces, 2008 - 2017

<u>Year</u>	<u>Total Permit Sales</u>	<u>Total Camping Fees</u>	<u>Other Revenue</u>	<u>Total Fee Revenue</u>
2008	\$21,000	\$66,000	\$0	\$87,000
2009	\$53,000	\$98,000	\$0	\$151,000
2010	\$46,000	\$124,000	\$23,000	\$193,000
2011	\$56,000	\$172,000	\$8,000	\$236,000
2012	\$69,000	\$194,000	\$11,000	\$274,000
2013	\$318,000	\$189,000	\$12,000	\$519,000
2014	\$325,000	\$127,000	\$7,000	\$459,000
2015	\$394,000	\$239,000	\$14,000	\$647,000
2016	\$450,000	\$352,000	\$14,000	\$816,000
2017	\$466,000	\$389,000	\$11,000	\$866,000
Total % Change	46.5%	589.4%		66.9%
Average Annual % Change	10.0%	21.8%		13.7%

- Notes: (1) Permit sales include sales made online or through outside vendors.
(2) The percentage changes in permit revenue and in total revenue are for 2013 – 2017 only. Fees were implemented at Horsetooth Mountain Open Space in 2013, increasing total permit revenue for Open Space substantially from that time.
(3) Camping is allowed at Hermit Park Open Space.
(4) Other revenue includes special events permits and group use permits.
(5) Numbers have been rounded to the nearest thousand.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Annual versus daily entrance permit revenue. As discussed in Section 2 and presented in Exhibit 2-3, less than five percent of total entrance permits sold in recent years were annual permits. However, it is important to note that the sale of those annual permits comprised between 35 and 36 percent of total entrance permit revenues in the last couple of years. The sale of a small number of annual permits generated a large portion of permit fee revenues. Exhibit 3-3 provides the revenues generated specifically by the sale of daily and annual entrance permits.

Exhibit 3-3.**Revenue Generated by Sales of Daily and Annual Entrance Permits**

<u>Year</u>	<u>Revenue from Daily Permits</u>	<u>% of Total Permit Revenue</u>	<u>Revenue from Annual Permits</u>	<u>% of Total Permit Revenue</u>
2008	\$712,000	59.1%	\$492,000	40.9%
2009	\$776,000	61.4%	\$488,000	38.6%
2010	\$652,000	57.5%	\$482,000	42.5%
2011	\$875,000	63.6%	\$501,000	36.4%
2012	\$629,000	45.0%	\$770,000	55.0%
2013	\$989,000	64.4%	\$547,000	35.6%
2014	\$1,110,000	63.0%	\$652,000	37.0%
2015	\$1,281,000	64.7%	\$700,000	35.3%
2016	\$1,369,000	64.5%	\$754,000	35.5%
2017	\$1,384,000	63.5%	\$794,000	36.5%

Note: Numbers have been rounded to the nearest thousand.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Historic Expenditures

Together, operating expenses for Reservoir Parks and Open Space doubled over the last decade, increasing from about \$3.3 million in 2008 to over \$6.5 million in 2017. Those increases were largely due to increased visitation to the Reservoir Parks and Open Spaces over that time. The LCDNR increased personnel time in recent years to address visitor and vehicle management, visitor safety and to provide other visitor services. Additionally, the LCDNR faced increasing costs for maintenance of existing facilities and amenities, as well as the need to provide additional amenities at many locations. Operating costs also include care for and management of environmental resources, including vegetation, habitat, geologic, cultural and other resources at Reservoir Parks and Open Spaces.

Reservoir Parks operating expenses. Total Reservoir Parks operating expenses grew by about 69 percent over last decade, increasing from about \$1.9 million in 2008 to about \$3.3 million in 2017, as shown in Exhibit 3-4.⁷ Overall, Reservoir Parks operating costs have increased by an average of about six percent per year since 2008, although cost increases in individual years have reached as high as about 19 percent. Several years also show small cost decreases.

⁷ Total operating expenses include personnel and operations costs.

Exhibit 3-4.
Historic Reservoir Parks Operating Expenses, 2008 - 2017

<u>Year</u>	<u>Total Expenses</u>	<u>Annual % Change</u>
2008	\$1,927,000	
2009	\$2,187,000	13.5%
2010	\$2,097,000	-4.1%
2011	\$2,411,000	15.0%
2012	\$2,322,000	-3.7%
2013	\$2,367,000	1.9%
2014	\$2,428,000	2.6%
2015	\$2,580,000	6.3%
2016	\$3,068,000	18.9%
2017	\$3,258,000	6.2%
Total % Change		69.1%
Avg Annual % Change		6.0%

Notes: (1) Total operating expenses include personnel and operations costs.
(2) Numbers have been rounded to the nearest thousand.

Source: Larimer County Department of Natural Resources, 2018.

Open Space operating expenses. Total Open Space operating expenses more than doubled over last decade, increasing from about \$1.4 million in 2008 to about \$3.3 million in 2017, as shown in Exhibit 3-5.

Exhibit 3-5.
Historic Open Space Operating Expenses, 2008 - 2017

<u>Year</u>	<u>Total Expenses</u>	<u>Annual % Change</u>
2008	\$1,366,000	
2009	\$1,553,000	13.7%
2010	\$1,462,000	-5.9%
2011	\$1,568,000	7.3%
2012	\$1,981,000	26.3%
2013	\$2,120,000	7.0%
2014	\$2,097,000	-1.1%
2015	\$2,449,000	16.8%
2016	\$2,785,000	13.7%
2017	\$3,312,000	18.9%
Total % Change		142.5%
Avg Annual % Change		10.3%

Notes: (1) Total operating expenses include personnel and operations costs.
(2) Numbers have been rounded to the nearest thousand.

Source: Larimer County Department of Natural Resources, 2018.

Overall, Open Space operating costs have increased by an average of about 10.3 percent per year since 2008, although cost increases in individual years have reached as high as about 26 percent. Several years also show small cost decreases. In the very recent past (2015 through 2017), operating expenses have increased by between 14 and 19 percent per year.

Capital expenditures. Between 2008 and 2017, capital expenditures ranged from about \$2.1 million in 2012 and 2013 up to about \$17.4 million in 2016. Annual capital expenditures are highly variable and dependent on specific projects undertaken in individual years. For example, in 2010, almost \$1 million was spent on improvements to the South Bay swim beach at Horsetooth Reservoir, while in 2016 and 2017, the acquisition and development of several specific properties required several million dollars in funding.

Capital projects are funded with revenues from multiple sources, including the Bureau of Reclamation, lottery funds, the open Space sales tax, park operations, loans and other revenue sources.

Comparison of Revenues and Expenditures

Exhibits 3-6 and 3-7 present comparisons of fee-based revenues and operating costs between 2008 and 2017 for Reservoir Parks and Open Spaces. Differences between fee revenues and expenses have historically been covered by funds from the Bureau of Reclamation, Larimer County's General Fund, the Open Space sales tax and lottery funds.

Exhibit 3-6.

Comparison of Historic Reservoir Parks Operating Revenues and Expenses

<u>Year</u>	<u>Total Fee Revenue</u>	<u>Total Operating Expenses</u>	<u>Expenses > Revenues</u>	<u>% of Expenses Covered by Revenues</u>
2008	\$1,494,000	\$1,927,000	\$433,000	77.5%
2009	\$1,544,000	\$2,187,000	\$643,000	70.6%
2010	\$1,520,000	\$2,097,000	\$577,000	72.5%
2011	\$1,831,000	\$2,411,000	\$580,000	75.9%
2012	\$1,912,000	\$2,322,000	\$410,000	82.3%
2013	\$1,908,000	\$2,367,000	\$459,000	80.6%
2014	\$2,258,000	\$2,428,000	\$170,000	93.0%
2015	\$2,415,000	\$2,580,000	\$165,000	93.6%
2016	\$2,805,000	\$3,068,000	\$263,000	91.4%
2017	\$2,888,000	\$3,258,000	\$370,000	88.6%

Note: (1) Numbers have been rounded to the nearest thousand.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

For Reservoir Parks, operating expenses have exceeded fee revenues every year since 2008. The difference between fees and expenses was as little as \$171,000 in 2014 and as much as about \$645,000 dollars in 2009. In recent years, fee revenues have covered about 90 percent of total Reservoir Parks operating costs.

Exhibit 3-7.**Comparison of Historic Open Space Operating Revenues and Expenses**

<u>Year</u>	<u>Total Fee Revenue</u>	<u>Total Operating Expenses</u>	<u>Expenses > Revenues</u>	<u>% of Expenses Covered by Revenues</u>
2008	\$87,000	\$1,366,000	\$1,279,000	6.4%
2009	\$151,000	\$1,553,000	\$1,402,000	9.7%
2010	\$193,000	\$1,462,000	\$1,269,000	13.2%
2011	\$236,000	\$1,568,000	\$1,332,000	15.1%
2012	\$274,000	\$1,981,000	\$1,707,000	13.8%
2013	\$518,000	\$2,120,000	\$1,602,000	24.4%
2014	\$460,000	\$2,097,000	\$1,637,000	21.9%
2015	\$647,000	\$2,449,000	\$1,802,000	26.4%
2016	\$816,000	\$2,785,000	\$1,969,000	29.3%
2017	\$866,000	\$3,312,000	\$2,446,000	26.1%

Note: Numbers have been rounded to the nearest thousand.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

For Open Spaces, operating expenses have also exceeded fee revenues in every year since 2008. Over the last 10 years, the difference between expenses and revenues for Open Spaces has increased from about \$1.3 million in 2008 to about \$2.5 in 2017. Additional fee revenue generated by entrance permit sales at Horsetooth Mountain Open Space beginning in 2013 increased the percentage of Open Space expenses covered by fee revenue considerably, but a large gap between revenues and expenses remains.

Observations and Implications

The historical revenue and cost data presented in this Section provide the following insights useful to this Study:

- Fee revenues generated by the sale of entrance permits, camping nights and special use permits have increased steadily since 2008. A larger amount of fee revenue is generated by Reservoir Parks, as compared to Open Spaces;
- Increases in visitation have also resulted in increases in operating and capital costs. Operating expenses for both Reservoir Parks and Open Spaces have increased at steady pace since 2008. In 2017, operating expenses for Reservoir Parks and for Open Space were each about \$3.3 million;
- Revenues generated by Reservoir Parks activity covered about 89 percent of operating costs in 2017, while revenues for Open Spaces covered only about 26 percent of operating costs in that year.

Section 4

Demographic Impacts and Future Visitation

As discussed in Section 2, total entrance permit sales and total camping nights at Reservoir Parks and Open Spaces have increased continuously for several years. Although the increases in permit sales and camping nights were smaller in 2017 than in previous years, using those items as a proxy for visitation suggests that Reservoir Parks and Open Space locations will continue to experience increased visitation in future years. That conclusion is supported by trends in historic and future population growth and attitudes towards outdoor recreation. Section 4 of the report describes current visitor demographics, population growth in northern Colorado and the Denver area and the potential for future increases in visitation.

Visitor Demographics and Attitudes

Open Space visitor survey. In 2005, an Open Spaces Visitor Survey was conducted specifically to provide the LCDNR with information about visitors to certain Open Space areas, including Devil’s Backbone, Horsetooth Mountain Park, Eagle’s Nest, Fossil Creek, Ramsey-Shockey, Lyons Park and to LCDNR administrative offices. Survey results describe the following visitor demographics:

- 36.3 percent of visitors are between the ages of 30 and 49;
- Another 26.3 percent of visitors were between the ages of 50 and 69;
- Visitation was about 50 percent male and 50 percent female;
- About 86 percent of visitors were Caucasian;
- Over 82 percent of visitors were residents of Larimer County;
- Over 41 percent of visitation occurred at Devil’s Backbone Open Space.

Survey results suggest that visitors to the County’s Open Space areas are largely local residents and that Devil’s Backbone is a highly popular location. Although that survey is over 10 years old, the demographics of current visitors, specifically to Open Spaces, might be similar to those described in the survey.

Campsite registration data. The demographics of visitors, including campers, at Reservoir Parks is different than those of the Open Spaces. Exhibit 4-1 offers recent data collected from campsite reservations showing that Larimer County residents made up only about 26 percent of total camp nights at locations where camping is allowed (Reservoir Parks and Hermit Open Space) in 2017. The remaining 74 percent of camp nights are due to residents of other areas of Colorado and out-of-state visitors. That information suggests that the Reservoir Parks and Hermit Open Space are destination locations for many visitors from

outside of Larimer County. These areas are, and will continue to be, a draw to the residents of Larimer County, as well to residents of other areas of Colorado and even outside the state.

Exhibit 4-1.

Larimer County Resident vs Non-County Resident Camping Nights, 2015 - 2017

<u>Year</u>	<u>Larimer County</u>	<u>% of Total</u>	<u>Non-Larimer County</u>	<u>% of Total</u>
	<u>Resident Nights</u>	<u>Camping Nights</u>	<u>Resident Nights</u>	<u>Camping Nights</u>
2015	11,539	27%	31,606	73%
2016	12,674	27%	34,975	73%
2017	13,240	26%	36,939	74%

Source: Larimer County Department of Natural Resources, 2018;

Larimer County Master Plans and visitor surveys. The 2017 Reservoir Parks Master Plan describes statewide and local (Larimer County) trends and attitudes towards recreation and recreational amenities. As noted in that document, 90 percent of Coloradoans participate in some form of outdoor recreation, with many of those people indicating an interest in increasing those activity levels. Colorado residents, including those of Larimer County, place high importance on outdoor recreation and participation in activities such as boating, biking, hiking and camping are increasing across the State. The Master Plan and various visitor surveys indicate that Larimer County Reservoir Parks and Open Spaces are popular with County residents and non-residents due to the types and quality of amenities offered at those locations.

Regional Historic and Projected Population Growth

The adult population in Colorado and Larimer County has grown over time, leading to increased participation in recreational activities. Historic and projected growth is addressed below.

Northern Colorado. Exhibit 4-2 offers information about historic and projected growth rates in Larimer County and in northern Colorado as a whole (Larimer and Weld Counties). Both areas have historically experienced steady population growth and are projected to continue growing through at least 2045. Although growth rates are expected to decline percentage-wise over time, annual increases in the absolute number of people living in the area are projected to remain relatively steady for Larimer County and increase for northern Colorado overall.

Exhibit 4-2.**Historic and Projected Population and Growth Rates for Larimer County and Northern Colorado**

<u>Year</u>	<u>Larimer County</u>			<u>Northern Colorado</u>		
	<u>Population</u>	<u>Annual Increase</u>	<u>% Annual Growth</u>	<u>Population</u>	<u>Annual Increase</u>	<u>% Annual Growth</u>
2008	292,394			536,510		
2009	297,502	5,108	1.7%	546,461	9,951	1.9%
2010	300,545	3,043	1.0%	554,785	8,324	1.5%
2011	305,078	4,533	1.5%	563,629	8,844	1.6%
2012	310,717	5,639	1.8%	574,641	11,012	2.0%
2013	316,284	5,567	1.8%	586,265	11,624	2.0%
2014	324,105	7,821	2.5%	599,950	13,685	2.3%
2015	332,830	8,725	2.7%	617,401	17,451	2.9%
2016	338,663	5,833	1.8%	633,060	15,659	2.5%
2017	343,976	5,313	1.6%	648,609	15,549	2.5%
2020	363,216	6,413	1.8%	699,653	17,015	2.6%
2025	395,294	6,416	1.7%	791,266	18,323	2.5%
2030	426,293	6,200	1.5%	886,065	18,960	2.3%
2035	455,823	5,906	1.3%	983,424	19,472	2.1%
2040	484,597	5,755	1.2%	1,080,258	19,367	1.9%
2045	514,458	5,972	1.2%	1,178,790	19,706	1.8%

Note: Data for Northern Colorado includes Larimer and Weld Counties.

Sources: Colorado Department of Local Affairs, State Demography Office, <https://demography.dola.colorado.gov/>; U.S. Census Bureau, <https://www.census.gov/quickfacts/fact/table/US/PST045217>.

Projections of increasing population in northern Colorado certainly support the notion of future increases in visitation to Larimer County's Reservoir Parks and Open Spaces.

Denver Metropolitan area. Population trends in the Denver – Boulder region of Colorado differ slightly from those of northern Colorado.⁸ Historic population growth in the Denver – Boulder area, as shown in Exhibit 4-3, has been slightly slower than in Northern Colorado on a percentage basis and projected future growth rates are anticipated to decline more rapidly; however, the number of people being added to regional population base is considerable. Projections of future population growth indicate the addition of several thousand people per year in the greater Denver area. Those people will be looking for places to recreate throughout the state.

⁸ The Denver Boulder region includes Adams, Arapahoe, Broomfield, Boulder, Denver, Douglas and Jefferson counties.

Exhibit 4-3.**Historic and Projected Population and Growth Rates for the Denver Boulder Region**

Year	Denver- Boulder Region		
	Population	Annual Increase	% Annual Growth
2008	2,716,819		
2009	2,762,164	45,345	1.7%
2010	2,797,867	35,703	1.3%
2011	2,847,521	49,654	1.8%
2012	2,898,560	51,039	1.8%
2013	2,952,768	54,208	1.9%
2014	3,008,726	55,958	1.9%
2015	3,069,690	60,964	2.0%
2016	3,116,501	46,811	1.5%
2017	3,151,607	35,106	1.1%
2020	3,316,066	54,820	1.7%
2025	3,576,972	52,181	1.5%
2030	3,834,179	51,441	1.4%
2035	4,048,018	42,768	1.1%
2040	4,230,465	36,489	0.9%
2045	4,360,388	25,984	0.6%

Note: The Denver Boulder Region includes the following counties: Adams, Arapahoe, Broomfield, Boulder, Denver, Douglas and Jefferson.

Sources: Colorado Department of Local Affairs, State Demography Office, <https://demography.dola.colorado.gov/>; U.S. Census Bureau, <https://www.census.gov/quickfacts/fact/table/US/PST045217>.

Future Reservoir Parks and Open Space Visitation

Historical population growth in northern Colorado and in the Denver area has been consistent with annual increases in permit sales and camping nights at Reservoir Parks and Open Spaces. Future population projections indicate that growth will continue and therefore, it seems likely that the trend of increasing visitation at Reservoir Parks and Open Spaces will also continue. As discussed in Section 2, several Reservoir Parks currently reach maximum capacity at certain times of the year; however, additional people are increasingly visiting during the off-season or during mid-week, or are visiting other Reservoir Parks locations, accommodating some portion of new visitors. Additionally, the LCDNR actively engages in the acquisition of additional land for Reservoir Parks and Open Spaces and the development of amenities at those locations. Therefore, increases in permit sales and camping nights will likely continue in the near future. Future visitation assumptions and associated revenues are addressed in Section 5.

Section 5

Future Revenue Requirements

As indicated in Section 3, it has been necessary for the LCDNR to rely on funds from sources other than fee revenue to cover the County's Reservoir Parks and Open Spaces operational costs in the past. The LCDNR's goal is that fee revenue be sufficient to fully cover future operating expenses and perhaps even contribute towards a portion of certain capital costs for Reservoir Parks and to cover an additional portion of operating costs for Open Space. That approach to user fees would allow other funds to be applied to development and capital improvements; the continued preservation of open Space is a priority for the LCDNR and the County. This Section of the report provides an analysis of the additional revenues that would need to be generated by user fees in order to reach those goals. Future revenue projections are compared to projected operating expenses and applicable capital costs to determine revenue requirements.⁹

Projected Fee Revenues

Projected Reservoir Parks fee revenue (without fee increases). As described in Exhibit 3-1, historic increases in total fee revenues for Reservoir Parks amounted to about 7.6 percent per year. Historic annual increases are explained mainly by increases in visitation, as reflected by permit sales and campsite registrations, since few increases in fee amounts were implemented during that time. As discussed in Section 4, demographic data and other inputs suggest that visitation to Reservoir Parks will continue in the future. However, future increases in visitation to the four Reservoir Parks will likely level off over time due to capacity constraints, initially at Horsetooth Reservoir and eventually at Carter Lake and other locations. Exhibit 5-1 presents the assumptions behind the projections of permit fee, camping fee and other fee revenue (special events and group use permits) for the Reservoir Parks.

Exhibit 5-1.

Assumptions used to Project Reservoir Parks Fee Revenue, 2018 – 2033

<u>Projection Years</u>	<u>Annual Increase in Permit Fees</u>	<u>Annual Increase in Camping Fees</u>	<u>Annual Increase in Other Revenue</u>
2018 - 2021	4.2%	11.0%	4.4%
2022 - 2029	3.0%	7.0%	4.4%
2030 - 2033	2.0%	4.0%	4.4%

Note: Other revenue includes fee revenue generated by special events and group use permits.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Annual increases in permit fee revenues are initially based on the historical annual average and then decreased over time to reflect capacity issues. According to LCDNR staff, the

⁹ All projections are constant 2018 dollars.

number of permits sold at Horsetooth Reservoir will likely level off and reach capacity within the next two to three years. The number of permits sold at Carter Lake is anticipated to level off within the next 10 years. Initial annual increases in camping fee revenues are based on the average annual increase in camping fee revenues in more recent years, exclusive of 2016, which showed unusually high camping fee increases.¹⁰ Camping revenue increases in later years were decreased to reflect capacity constraints at existing campgrounds. Revenues from special events and group fees were relatively constant since 2013 and the average annual increase since 2013 was applied to future revenues from those sources.

Exhibit 5-2 shows the projected revenues, by source, calculated by applying the assumptions described in Exhibit 5-1 to 2017 revenue data. Between 2018 and 2033, Reservoir Parks revenues are projected to increase from about \$3.1 million to about \$6.3 million. Increases in Reservoir Parks revenues will slow over time as parking and campsite capacity places constraints on increases in visitation and campsite nights.

Exhibit 5-2.
Projected Reservoir Parks Fee Revenues, 2018 – 2033

<u>Year</u>	<u>Permit Sales</u>	<u>Camping Fees</u>	<u>Other Revenue</u>	<u>Total Fee Revenue</u>	<u>Total % Change</u>
2018	\$1,784,000	\$1,274,000	\$30,000	\$3,088,000	6.9%
2019	\$1,858,000	\$1,414,000	\$31,000	\$3,304,000	7.0%
2020	\$1,936,000	\$1,570,000	\$32,000	\$3,539,000	7.1%
2021	\$2,018,000	\$1,743,000	\$34,000	\$3,794,000	7.2%
2022	\$2,078,000	\$1,865,000	\$35,000	\$3,978,000	4.8%
2023	\$2,140,000	\$1,995,000	\$37,000	\$4,173,000	4.9%
2024	\$2,205,000	\$2,135,000	\$38,000	\$4,378,000	4.9%
2025	\$2,271,000	\$2,284,000	\$40,000	\$4,595,000	5.0%
2026	\$2,339,000	\$2,444,000	\$42,000	\$4,825,000	5.0%
2027	\$2,409,000	\$2,615,000	\$44,000	\$5,068,000	5.0%
2028	\$2,481,000	\$2,799,000	\$46,000	\$5,326,000	5.1%
2029	\$2,556,000	\$2,994,000	\$48,000	\$5,598,000	5.1%
2030	\$2,607,000	\$3,114,000	\$50,000	\$5,771,000	3.1%
2031	\$2,659,000	\$3,239,000	\$52,000	\$5,950,000	3.1%
2032	\$2,712,000	\$3,368,000	\$54,000	\$6,135,000	3.1%
2033	\$2,766,000	\$3,503,000	\$57,000	\$6,326,000	3.1%

Notes: (1) Revenues are constant 2018 dollars.
(2) Numbers have been rounded to the nearest thousand.
Source: Harvey Economics, 2018.

Projected Open Space fee revenue (without fee increases). As presented in Exhibit 3-2, historic increases in total fee revenues for Open Space have amounted to about 13.7 percent per year. Similar to Reservoir Parks, those increases are mainly explained by increased visitation because of the lack of increases in fee levels. Based on historical trends

¹⁰ Part of the increase in camping fee revenue in 2016 is likely due to the increase of higher priced sites.

and future population projections, visitation to Open Spaces that charge fees will likely continue to grow in the future. However, as with Reservoir Parks, there are certain capacity constraints that must be accounted for in future visitation estimates. Horsetooth Mountain and Hermit Park are the only Open Space areas that charge fees; visitation to those areas are also constrained by parking Spaces. Hermit Park is near capacity now in terms of camping nights and because the campground at that location closes for the winter, there is not much room to grow camping fee revenues there. Exhibit 5-3 presents the assumptions behind the projections of permit fee, camping fee and other fee revenue (special events permits and group use permits) for Open Space.

Exhibit 5-3.

Assumptions used to Project Open Space Fee Revenue, 2018 – 2033

Annual Increase in		Annual Increase in	
Projection Years	Permit Fees	Projection Years	Camping Fees
2018 - 2021	10.1%	2018	10.6%
2022 - 2029	5.0%	2019 - 2020	5.0%
2030 - 2033	2.0%	2021 - 2022	2.0%
		2021 - 2033	Capped at \$500K

Annual Increase in	
Projection Years	Other Revenue
2018	\$12,500
2019 - 2033	\$500/yr

Note: Other revenue includes fee revenue generated by special events and group use permits.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

The assumptions used to develop revenue projections for Open Space are more nuanced than those for Reservoir Parks due to the historic trends in different types of Open Space revenues and the limited number of Open Space locations where fees are charged. Annual increases in permit fee revenues are initially based on the historical annual average (2013 – 2017) and then decreased over time to reflect capacity issues. The increase in camping fee revenue for 2018 is the same as the 2017 increase in camping fee revenue; from that point on, projected increases in fee revenue are decreased over time until growth in camping revenues is capped by 2021 due to capacity constraints at Hermit Park. Historically, fee revenues from special events and group use permits have fluctuated without discernable pattern; therefore, the historical average annual revenue for that category was used as a starting point and was increased by \$500 per year through 2033.

Exhibit 5-4 shows the projected revenues, by source, calculated by applying the assumptions described in Exhibit 5-3 to 2017 revenue data. Between 2018 and 2033, Open Space revenues are projected to increase from just under \$1 million to about \$1.6 million. Increases in Open Space revenues will slow over time as parking and campsite capacity places constraints on increases in visitation and campsite nights.

Exhibit 5-4.
Projected Open Space Fee Revenues, 2018 – 2033

<u>Year</u>	<u>Permit Sales</u>	<u>Camping Fees</u>	<u>Other Revenue</u>	<u>Total Fee Revenue</u>	<u>Total % Change</u>
2018	\$513,000	\$430,000	\$13,000	\$956,000	10.3%
2019	\$565,000	\$452,000	\$13,000	\$1,029,000	7.7%
2020	\$621,000	\$474,000	\$14,000	\$1,109,000	7.8%
2021	\$684,000	\$484,000	\$14,000	\$1,182,000	6.5%
2022	\$718,000	\$494,000	\$15,000	\$1,226,000	3.8%
2023	\$754,000	\$500,000	\$15,000	\$1,269,000	3.5%
2024	\$792,000	\$500,000	\$16,000	\$1,307,000	3.0%
2025	\$831,000	\$500,000	\$16,000	\$1,347,000	3.1%
2026	\$873,000	\$500,000	\$17,000	\$1,389,000	3.1%
2027	\$916,000	\$500,000	\$17,000	\$1,433,000	3.2%
2028	\$962,000	\$500,000	\$18,000	\$1,480,000	3.2%
2029	\$1,010,000	\$500,000	\$18,000	\$1,528,000	3.3%
2030	\$1,031,000	\$500,000	\$19,000	\$1,549,000	1.4%
2031	\$1,051,000	\$500,000	\$19,000	\$1,570,000	1.4%
2032	\$1,072,000	\$500,000	\$20,000	\$1,592,000	1.4%
2033	\$1,094,000	\$500,000	\$20,000	\$1,614,000	1.4%

Notes: (1) Revenues are constant 2018 dollars.
(2) Numbers have been rounded to the nearest thousand.
Source: Harvey Economics, 2018.

Projected Operating Expenses and Capital Expenditures

According to data provided by the LCDNR, personnel costs and other operational costs are projected to increase by 10 percent per year for both Reservoir Parks and Open Spaces. Projected cost increases appear to be generally consistent with historic increases in operating costs.

Projected Reservoir Parks and Open Spaces operating expenses. Total projected operating costs for Reservoir Parks and for Open Spaces are presented in Exhibit 5-6. Between 2018 and 2033, total expenses are projected to increase from about \$3.8 million to about \$15.7 million for Parks and from about \$3.6 million to about \$15.2 million for Open Spaces.

Exhibit 5-5.**Projected Reservoir Parks and Open Spaces Operating Expenses, 2018 - 2033**

<u>Year</u>	<u>Parks</u>	<u>Open Spaces</u>
2018	\$3,792,000	\$3,648,000
2019	\$4,127,000	\$4,005,000
2020	\$4,539,000	\$4,406,000
2021	\$4,993,000	\$4,846,000
2022	\$5,493,000	\$5,331,000
2023	\$6,042,000	\$5,864,000
2024	\$6,646,000	\$6,451,000
2025	\$7,311,000	\$7,096,000
2026	\$8,042,000	\$7,805,000
2027	\$8,846,000	\$8,586,000
2028	\$9,730,000	\$9,444,000
2029	\$10,704,000	\$10,389,000
2030	\$11,774,000	\$11,428,000
2031	\$12,951,000	\$12,570,000
2032	\$14,246,000	\$13,827,000
2033	\$15,671,000	\$15,210,000
Total % Chg	313.3%	316.9%
Average Annual % Chg	9.9%	10.0%

Notes: (1) Operating costs are presented in constant 2018 dollars.

(2) Numbers have been rounded to the nearest thousand.

Source: Larimer County Department of Natural Resources, 2018.

Future capital expenditures. Capital expenditures will vary by year due to project specific costs in individual years. Exhibit 5-6 provides estimates of the total future capital expenditures for Reservoir Parks and for Open Spaces.

Exhibit 5-6.**Estimated Capital Expenditures, 2018 - 2022**

<u>Year</u>	<u>Capital Expenses</u>	
	<u>Parks</u>	<u>Open Spaces</u>
2018	\$1,497,000	\$7,437,000
2019	\$2,284,000	\$1,885,000
2020	\$1,065,000	\$400,000
2021	\$1,859,000	\$2,715,000

Notes: (1) Capital expenses are presented in constant 2018 dollars.

(2) Numbers have been rounded to the nearest thousand.

Source: Larimer County Department of Natural Resources, 2018.

Projected Revenue and Expense Comparison and Required Fee Increases - Reservoir Parks

Comparison of projected Reservoir Parks fee revenue (w/o fee increases) and operating expenses. Exhibit 5-7 includes a comparison of projected fee revenue and projected operating costs for Reservoir Parks. In 2019, the difference between revenues and costs is estimated to be about \$823,000. That difference increases to about \$9.3 million by 2033, based on the projections assumptions for revenues and operating costs described previously.

Exhibit 5-7.

Comparison of Projected Fee Revenues (w/o fee increases) and Operating Expenses for Reservoir Parks, 2018 - 2033

Year	Projected Revenues	Total Operating Expenses	Expenses > Revenues	% Difference
2018	\$3,088,000	\$3,792,000	\$704,000	22.8%
2019	\$3,304,000	\$4,127,000	\$823,000	24.9%
2020	\$3,539,000	\$4,539,000	\$1,000,000	28.3%
2021	\$3,794,000	\$4,993,000	\$1,199,000	31.6%
2022	\$3,978,000	\$5,493,000	\$1,515,000	38.1%
2023	\$4,173,000	\$6,042,000	\$1,869,000	44.8%
2024	\$4,378,000	\$6,646,000	\$2,268,000	51.8%
2025	\$4,595,000	\$7,311,000	\$2,716,000	59.1%
2026	\$4,825,000	\$8,042,000	\$3,217,000	66.7%
2027	\$5,068,000	\$8,846,000	\$3,778,000	74.5%
2028	\$5,326,000	\$9,730,000	\$4,404,000	82.7%
2029	\$5,598,000	\$10,704,000	\$5,106,000	91.2%
2030	\$5,771,000	\$11,774,000	\$6,003,000	104.0%
2031	\$5,950,000	\$12,951,000	\$7,001,000	117.7%
2032	\$6,135,000	\$14,246,000	\$8,111,000	132.2%
2033	\$6,326,000	\$15,671,000	\$9,345,000	147.7%

Notes: (1) Projected revenues include fees from entrance permits, camping nights, special events and group permits.
 (2) Projected revenues are based on current (2018) fee levels for entrance permits and camping nights.
 (3) Numbers have been rounded to the nearest thousand.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Impacts to entrance permit fees and camping fees. In order for revenues generated by permit sales, camping fees and other fees to better address projected 2019 and 2020 operating expenses, current entrance permit fees and camping fees would need to be increased by about 30 percent across the board (all types of permits and all types of campsites).¹¹ It is important to note that the estimate of a 30 percent increase is sensitive to

¹¹ Annual senior and annual disabled permits make up a very small portion of total permit sales. Increasing fees for those types of permits would not generate enough money to make a real difference in the revenue

the assumptions used to project revenues and operating costs; if the assumptions of the percentage increases used to project either category are inaccurate, then the estimated fee increase required to ensure that revenues cover costs will also be incorrect.

Fees would need to be increased by an additional amount in order for revenues to also cover a portion of the future capital expenditures described in Exhibit 5-6.

Entrance permit fees. Given that over 95 percent of entrance permits sold are daily passes, the brunt of increases would be felt by day users. A 30 percent increase in daily entrance fees at Reservoir Parks would increase fees from \$7.00 per vehicle or trailer to \$9.00 per vehicle or trailer. Annual vehicle and boat permits for Larimer County residents and non-residents would also increase by about 30 percent: at the lower end, an annual resident vehicle pass would be raised from \$75 to \$95; at the higher end, an annual non-resident boat pass would be raised from \$190 to \$250. A full schedule of proposed fee increases is provided in Appendix A.

Camping night fees. A 30 percent increase in camping fees would have the following effects: a non-electric site would increase from \$15 per night to \$20 per night; an electric site would increase from \$25 per night in the peak season to about \$32 per night; a full hookup site at Horsetooth Reservoir would increase from \$30 per night in peak season to \$40 per night. Fees for other types of camping would increase similarly and are presented in Appendix A.

Comparison of projected Reservoir Parks fee revenue (w/ 30 percent fee increase) and operating expenses. Exhibit 5-8 provides revenue projections for Reservoir Parks, including a 30 percent increase in entrance permit fees and camping fees.¹² Those revenue projections are compared to projected operating expenses; the difference between fee revenues, given a 30 percent increase in fees, and operating costs are presented through 2033.

shortfall; additionally, these visitors may be less likely to be able to pay increased entrance fees. Therefore, the LCDNR may not want to increase fees for annual senior and disabled permits.

¹² Fees for special events permits and group use permits were assumed to remain at current levels.

Exhibit 5-8.**Comparison of Projected Reservoir Parks Fee Revenues (with 30 percent fee increase) and Operating Expenses, 2018 - 2033**

<u>Year</u>	<u>Projected Revenues</u>	<u>Total Operating Expenses</u>	<u>Expenses > Revenues</u>	<u>% Difference</u>
2018	\$3,088,000	\$3,792,000	\$704,000	22.8%
2019	\$4,286,000	\$4,127,000	-\$159,000	-3.7%
2020	\$4,591,000	\$4,539,000	-\$52,000	-1.1%
2021	\$4,922,000	\$4,993,000	\$71,000	1.4%
2022	\$5,161,000	\$5,493,000	\$332,000	6.4%
2023	\$5,413,000	\$6,042,000	\$629,000	11.6%
2024	\$5,680,000	\$6,646,000	\$966,000	17.0%
2025	\$5,962,000	\$7,311,000	\$1,349,000	22.6%
2026	\$6,260,000	\$8,042,000	\$1,782,000	28.5%
2027	\$6,576,000	\$8,846,000	\$2,270,000	34.5%
2028	\$6,910,000	\$9,730,000	\$2,820,000	40.8%
2029	\$7,263,000	\$10,704,000	\$3,441,000	47.4%
2030	\$7,487,000	\$11,774,000	\$4,287,000	57.3%
2031	\$7,719,000	\$12,951,000	\$5,232,000	67.8%
2032	\$7,959,000	\$14,246,000	\$6,287,000	79.0%
2033	\$8,207,000	\$15,671,000	\$7,464,000	90.9%

Notes: (1) Fee increases were applied to entrance permits and camping fees only.

(2) Numbers have been rounded to the nearest thousand.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Implementing the 30 percent fee increase in 2019 would close the “gap” between fee revenues and operating expenses for several years.¹³ The gap widens thereafter due to the smaller percentage increase in projected revenues as compared to projected costs. The need for additional future fee increases will depend on actual revenues and operating costs for Reservoir Parks. Several approaches to addressing future increases are discussed in Section 9 of this report.

¹³ That estimate assumes no decrease in the number of passes or change in the types of passes sold because of fee increases. Visitor reaction to fee increases is addressed in Section 7 of the report.

Projected Revenue and Expense Comparison and Required Fee Increases – Open Space

Comparison of projected Open Space fee revenue (w/o fee increases) and operating expenses. Exhibit 5-9 includes a comparison of projected fee revenue and projected operating costs for Open Space. In 2019, the difference between revenues and costs is estimated to be about \$2.7 million. That difference increases to about \$13.6 million by 2033.

Exhibit 5-9.

Comparison of Projected Open Space Fee Revenues (w/o fee increases) and Operating Expenses, 2018 - 2033

Year	Projected Revenues	Total Operating Expenses	Expenses > Revenues	% Difference
2018	\$956,000	\$3,648,000	\$2,692,000	281.59%
2019	\$1,029,000	\$4,005,000	\$2,976,000	289.21%
2020	\$1,109,000	\$4,406,000	\$3,297,000	297.29%
2021	\$1,182,000	\$4,846,000	\$3,664,000	309.98%
2022	\$1,226,000	\$5,331,000	\$4,105,000	334.83%
2023	\$1,269,000	\$5,864,000	\$4,595,000	362.10%
2024	\$1,307,000	\$6,451,000	\$5,144,000	393.57%
2025	\$1,347,000	\$7,096,000	\$5,749,000	426.80%
2026	\$1,389,000	\$7,805,000	\$6,416,000	461.92%
2027	\$1,433,000	\$8,586,000	\$7,153,000	499.16%
2028	\$1,480,000	\$9,444,000	\$7,964,000	538.11%
2029	\$1,528,000	\$10,389,000	\$8,861,000	579.91%
2030	\$1,549,000	\$11,428,000	\$9,879,000	637.77%
2031	\$1,570,000	\$12,570,000	\$11,000,000	700.64%
2032	\$1,592,000	\$13,827,000	\$12,235,000	768.53%
2033	\$1,614,000	\$15,210,000	\$13,596,000	842.38%

Notes: (1) Projected revenues include fees from entrance permits, special events and group permits.
 (2) Projected revenues are based on current (2018) fee levels for entrance permits and camping nights.
 (3) Numbers have been rounded to the nearest thousand.

Sources: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Increases in entrance permit fees. According to the LCDNR, there is no substantial difference in the types of management activities, time required or expenses associated with operating the Reservoir Parks as compared to those associated with managing high visitation Open Spaces. Therefore, it would make sense that the entrance permits at all fee-based LCDNR locations were the same price. A single daily entrance permit price, regardless of location, would be simple for visitors to understand, would be easy to implement and would appropriately reflect consistent management costs at different locations. That approach would raise the daily fee at Open Space locations from \$6.00 per vehicle to \$9.00 per vehicle, an increase of 50 percent. The increase in permit prices at Open Spaces would support the

LCDNR in their efforts to offer the level of service currently provided at these locations, which is expected and enjoyed by visitors.

Increases in camping fees. Camping fees at Hermit Park Open Space would increase by the same overall percentages as for the Reservoir Parks – about 30 percent. Proposed fee increases for specific types of camping can be found in Appendix A.

Comparison of projected Open Space fee revenue (w/ fee increases) and operating expenses. Exhibit 5-10 provides revenue projections for Open Space, including a 50 percent increase in entrance permit fees and a 30 percent increase in camping fees.¹⁴

Exhibit 5-10.

Comparison of Projected Open Space Fee Revenues (with fee increase) and Operating Expenses, 2018 - 2033

<u>Year</u>	<u>Projected Revenues</u>	<u>Total Operating Expenses</u>	<u>Expenses > Revenues</u>	<u>% Difference</u>
2018	\$956,000	\$3,648,000	\$2,692,000	281.59%
2019	\$1,447,000	\$4,005,000	\$2,558,000	176.78%
2020	\$1,562,000	\$4,406,000	\$2,844,000	182.07%
2021	\$1,669,000	\$4,846,000	\$3,177,000	190.35%
2022	\$1,733,000	\$5,331,000	\$3,598,000	207.62%
2023	\$1,796,000	\$5,864,000	\$4,068,000	226.50%
2024	\$1,853,000	\$6,451,000	\$4,598,000	248.14%
2025	\$1,913,000	\$7,096,000	\$5,183,000	270.94%
2026	\$1,976,000	\$7,805,000	\$5,829,000	294.99%
2027	\$2,042,000	\$8,586,000	\$6,544,000	320.47%
2028	\$2,111,000	\$9,444,000	\$7,333,000	347.37%
2029	\$2,184,000	\$10,389,000	\$8,205,000	375.69%
2030	\$2,214,000	\$11,428,000	\$9,214,000	416.17%
2031	\$2,246,000	\$12,570,000	\$10,324,000	459.66%
2032	\$2,278,000	\$13,827,000	\$11,549,000	506.98%
2033	\$2,310,000	\$15,210,000	\$12,900,000	558.44%

Notes: (1) Fee increases were applied to entrance permits and camping fees only.

(2) Numbers have been rounded to the nearest thousand.

Source: Larimer County Department of Natural Resources, 2018; Harvey Economics, 2018.

Implementing those increases in 2019 would reduce the “gap” between fee revenues and operating expenses by about \$420,000 in 2019 and by about \$450,000 in 2020.¹⁵ Similar to Reservoir Parks, the gap widens annually for Open Space due to the smaller percentage increase in projected revenues as compared to projected costs.

¹⁴ Fees for special events permits and group use permits were assumed to remain at current levels.

¹⁵ That estimate assumes no decrease in the number of passes or change in the types of passes sold because of fee increases. Visitor reaction to fee increases is addressed in Section 7 of the report.

Observations and Implications

Fee revenues are anticipated to increase in future years for both Reservoir Parks and Open Spaces due to increased visitation; however, both visitation and revenue increases will be constrained by certain physical limitations, mainly in the form of camping sites and parking spaces. Operating costs are also projected to increase annually, but at a faster rate than fee revenues. Given projected fee revenue and projected operating costs for Reservoir Parks in 2019 and 2020, a 30 percent increase in entrance fees and camping fees would allow revenues to cover operating costs in those years; fee revenue for Open Spaces would also increase, but would not fully cover those operating costs. However, even with fee increases, the difference between revenues and operating costs will continue to grow over time due to the differences in growth assumptions for revenues and costs.

Section 6

Potential Revenue Generated at Devil's Backbone Open Space

Devil's Backbone Open Space is located on the north side of US Highway 34, just west of the City of Loveland. It is a popular location that offers trails for hiking, biking and horseback riding (with connections to Rimrock Open Space and Horsetooth Mountain Open Space), as well as unique rock formations; wildlife viewing opportunities; picnic areas; drinking water and restrooms. Devil's Backbone is open for day use only - no camping is allowed within open Space boundaries.

Currently, entrance fees are charged at three other open space locations (Hermit Park, Horsetooth Mountain, and Ramsay-Schockey).¹⁶ Fees are also charged at the Blue Sky Trailhead, which provides the primary northern trailhead access to Devil's Backbone Open Space. However, there is no fee charged at the southern Devil's Backbone Open Space entrance on US Highway 34. The southern entrance receives high levels of visitation and demand that exceeds supply, in terms of parking spaces, during peak periods (i.e. weekends). The high level of use at this location requires a higher level of service, resulting in higher costs of management, as compared to other, less visited, Open Space locations. Additionally, inconsistently applied fees (where access from one area is fee-based and access from another area is free) may be part of what is driving use at the southern non-fee entrance. Therefore, LCDNR is considering requiring entrance permits at the Devil's Backbone Open Space in the future. Other Open Spaces identified in Section 1 do not currently qualify as highly visited areas where additional operational support is warranted.

Existing IGA's between Larimer County and the cities of Loveland and Fort Collins, developed during the acquisition of parcels that comprise the Devil's Backbone Open Space, contemplated future revenue generation and stipulate that any revenues generated at the Devil's Backbone Open Space be used for maintenance and improvements of that area. Permit fee revenue generated by visitation to Devil's Backbone would help to offset the costs of operations and maintenance at this location. This section of the report presents HE's projections of the revenues that could be generated by requiring entrance permits at Devil's Backbone.

Potential Revenue Generation at Devil's Backbone

2014 visitation and associated revenue. The LCDNR has limited visitor data available for Devil's Backbone. Based on a trail counter located along the Wild Loop (an easy loop trail located close to the parking area), an estimated 67,936 people visited Devil's Backbone between January and December 2014. Assuming an average of two people per

¹⁶ Fees may also be implemented at Chimney Hollow Open Space given future plans for the approved Chimney Hollow Reservoir. Chimney Hollow Reservoir is expected to be a highly visited area almost the size of Carter Lake.

vehicle, about 33,968 vehicles would have been subject to entrance fees in that year. The estimated revenues generated by that level of visitation were based on the following inputs:

- the number of permits sold by type of permit (i.e. annual passes versus daily passes)
- the cost of each type of permit

HE estimated the number of different types of passes that could have been sold at Devil's Backbone based on the distribution of annual vehicle passes and daily regular passes sold at Hermit Park Open Space and within the Open Space District in 2017.¹⁷ Those distribution percentages were then applied to the estimate of vehicles at Devil's Backbone in 2014. Fees for each type of pass were applied to vehicle estimates to calculate revenues.

Exhibit 6-1 presents the distribution of permit sales, by type; the fee rate for each type of permit; and the estimated revenues generated at Devil's Backbone based on 2014 visitation levels.

Exhibit 6-1.
Potential Revenues Generated by Entrance Permit Fees at Devil's Backbone,
based on 2014 Visitor Data

	Permit Type					
	<u>Annual Disabled</u>	<u>Annual Senior</u>	<u>Annual Vehicle Non Resident</u>	<u>Annual Vehicle Resident</u>	<u>Daily Regular</u>	<u>Total</u>
% of Permits	0.08%	0.20%	0.03%	1.23%	98.46%	100.00%
# of Permits	26	69	10	418	33,445	33,968
Permit Fee	\$10.00	\$45.00	\$95.00	\$75.00	\$6.00	
Revenue	\$256	\$3,127	\$943	\$31,385	\$200,667	\$236,377

Notes: (1) The percentage of permits sold by type is based on the distribution of non-boating permits sold at Hermit Park Open Space and within the Open Space District (locations without reservoirs).
(2) The total number of permits sold is based on 2014 visitor estimates and the assumption of an average of 2 people per vehicle.

Source: Harvey Economics, 2018.

Given 2014 visitor levels and current fee levels, total permit fee revenue generated at Devil's Backbone would be about \$236,000 per year. No camping is allowed at Devil's Backbone; therefore, no camping fees would be generated by visitors to this location. However, that level of revenue generation may be a conservative number, given that visitation at Devil's Backbone has likely increased since 2014. A discussion and estimation of current and future visitation numbers and permit fee revenues potentially generated at Devil's Backbone follows.

Future visitation and associated revenue. Although visitor data specific to Devil's Backbone is only available for 2014, annual increases in non-boating/ non-reservoir permit sales can act as a proxy for increases in visitation. Those permit sales increased by about 16

¹⁷ Those are all non-boat annual permits and non-reservoir daily permits.

percent in 2015; by about 14 percent in 2016 and by about four percent in 2017.¹⁸ Those percentages were applied to the estimate of 2014 visitation to Devil's Backbone to estimate visitor and vehicle numbers at that location in 2017. The four percent increase seen in 2017 was applied on an annual basis going forward, as a conservative estimate of future increases in visitation.¹⁹

Exhibit 6-2 offers estimates of revenues that could be generated at Devil's Backbone in 2019 and 2020, if fees were to be implemented at that location. Those revenue estimates assume 2017 distribution of permit sales, by type and the proposed 2019 fee rate for each type of permit.

Exhibit 6-2.
Potential Revenues Generated by Entrance Permit Fees at Devil's Backbone, 2019 and 2020

	Permit Type					
	Annual Disabled	Annual Senior	Annual Vehicle Non Resident	Annual Vehicle Resident	Daily Regular	Total
% of Permits	0.08%	0.20%	0.03%	1.23%	98.46%	100.00%
<u>2019 Permits</u>	38	103	15	619	49,466	50,240
Permit Fee	\$10.00	\$45.00	\$125.00	\$95.00	\$9.00	
Revenue	\$379	\$4,625	\$1,835	\$58,797	\$445,191	\$510,827
<u>2020 Permits</u>	39	107	15	642	51,300	52,103
Permit Fee	\$10.00	\$45.00	\$125.00	\$95.00	\$9.00	
Revenue	\$393	\$4,796	\$1,903	\$60,978	\$461,704	\$529,774

Notes: (1) The percentage of permits sold by type is based on the distribution of non-boating permits sold at Hermit Park Open Space and within the Open Space District (locations without reservoirs).
(2) Estimates of the total number of permits sold by year are based on changes in permit sales within the Open Space District between 2014 and 2017.
(3) Permit fees reflect the proposed 2019 fee increases.

Source: Harvey Economics, 2018.

Potential revenues generated by permit fees at Devil's Backbone are estimated at about \$510,000 for 2019, based on assumed increases in visitation since 2014 and proposed 2019 permit fee levels.^{20,21}

Comparison with Horsetooth Mountain Open Space. Entrance permits are currently required at Horsetooth Mountain Open Space and at Hermit Park Open Space. Horsetooth Mountain Open Space may be considered a close comparable to Devil's

¹⁸ Visitor data from Horsetooth Mountain Open Space indicates an average increase in visitation at that location of over 12 percent per year since 2013.

¹⁹ The average annual increase in non-boating and non-reservoir permits sales between 2014 and 2017 was about 11 percent.

²⁰ Fees for annual disabled and annual senior entrance permits were not increased.

²¹ That estimate assumes no decrease in the number of passes or change in the types of passes sold because of fee increases.

Backbone due to the high visitation levels at both locations and the intensity of required management related to that visitation. Exhibit 6-3 provides data on the number of entrance permits sold and the permit revenue generated at Horsetooth Mountain Open Space as a comparison to the revenue estimates and projections made for Devil's Backbone. Given the 2017 entrance permit fee revenue at Horsetooth Mountain Open Space, the estimate of permit fee revenue that could have been generated at Devil's Backbone in that same year appears reasonable.

Exhibit 6-3.

Permit Sales and Permit Revenue at Horsetooth Mountain Open Space

<u>Year</u>	<u>Number of Permits Sold</u>	<u>Permit Revenue</u>
2013	33,166	\$259,969
2014	37,901	\$280,088
2015	43,950	\$314,879
2016	50,255	\$353,186
2017	52,119	\$367,181

Note: Permits sold online or via outside vendors are not included in these data.

Source: Larimer County Department of Natural Resources, 2018.

Observations and Implications

Devil's Backbone Open Space is an increasingly popular location for hiking, biking and other outdoor recreational activities. Currently, no entrance fees are charged to visitors at Devil's Backbone; however, the LCDNR does incur expenses to maintain facilities, trails and other amenities and to manage people and vehicles at that location. Similar intensively managed locations, such as Horsetooth Mountain Open Space, do charge entrance fees. Requiring entrance fees at Devil's Backbone could potentially generate an additional \$500,000 or more in fee revenues for the LCDNR every year.

Section 7

Opportunities for Low-Income Visitors

As part of managing the County's Reservoir Parks and Open Spaces, it is important to the LCDNR that these areas are accessible to County residents and to visitors to northern Colorado, regardless of income. Therefore, the LCDNR currently provides many opportunities for low-income visitors to access Reservoir Parks and Open Spaces and will continue to provide those opportunities in the future. This Section of the report highlights the recreational opportunities for low-income residents and visitors using Larimer County's Reservoir Parks and Open Spaces and also notes other free or low-cost recreational opportunities throughout the County.

Larimer County Reservoir Parks and Open Space Opportunities

Non- fee based Reservoir Parks and Open Spaces. As discussed in Section 1 and listed in Exhibit 1-1, the LCDNR operates several Reservoir Parks and Open Space locations where no entrance permits are required. The following places, which are located throughout Larimer County, are currently free and open to the public:

- Big Thompson Reservoir Parks
- Devil's Backbone Open Space – Loveland/South Trailhead
- Eagle's Nest Open Space
- Lions Open Space
- Red Mountain Open Space
- River Bluffs Open Space
- Long View Farm Open Space
- Bingham Hill Park

Due to increasing visitation and the need for more intensive management at Devil's Backbone Open Space, the LCDNR is considering implementing a fee requirement at this location in the future; Section 6 addresses that issue.

Discounted entrance permits. The LCDNR offers discounted annual permits to senior citizens and people with disabilities. Discounted prices for both vehicle permits and combination (vehicle and boat trailer) permits are available.

Free entrance opportunities. Carter Lake and Horsetooth, Flatiron and Pinewood Reservoirs are free of charge if entering by foot. These visitors can paddle board, swim or engage in land-based activities, such as hiking, picnicking or wildlife viewing, for free. All Reservoir Parks and Open Spaces are free to cyclists.

Educational partnerships. The LCDNR has a strong working relationship with school districts in Larimer County. With LCDNR coordination, schools are currently allowed to bring groups of students to Reservoir Parks and Open Spaces for educational excursions at no charge. This opportunity provides many benefits to students and to schools. In this way, the LCDNR is helping to instill a knowledge and love of the outdoors at a young age.

Additional opportunities for future consideration. If the LCDNR is interested expanding opportunities for low-income visitors, “free days” are popular at all types of attractions throughout the State, including National Reservoir Parks, other outdoor locations, museums and other facilities. The LCDNR could consider offering one or more free days at certain times throughout the year, potentially outside of peak season or on a mid-week day of the week. The LCDNR might also partner with certain community groups to bolster these free days with nature walks, bird watching excursions or other activities.

Other Opportunities for Low-Income Residents and Visitors

In addition to Larimer County Reservoir Parks and Open Spaces, there are a number of other free or low-cost outdoor recreational opportunities in the area, including the following:

- The Arapahoe and Roosevelt National Forest is free of charge for many activities, including hiking, biking, picnicking, wildlife viewing and other recreation.
- The City of Fort Collins manages 46 Natural Areas. Of those, 45 are completely free of charge and available to visitors of all income levels.
- The City of Loveland manages a number of Open Space and Natural Areas that are open to the public for recreation, including fishing, trail activities, picnicking and wildlife viewing. Loveland does not charge fees for the use of those areas.
- Colorado Reservoir Parks and Wildlife manage several State Wildlife Areas (SWA) in Larimer County. Those areas offer wildlife-related recreation to the public; permitted activities focus on hunting and fishing, but other types of recreation are available depending on location.

Section 8

Comparable Location Fee Study and Fee Tolerance

Larimer County's Reservoir Parks and Open Spaces offer one set of recreational opportunities to County residents and visitors, but people have many outdoor recreation options across northern Colorado and the greater Denver area. Recreationists might choose a certain place to visit based on a number of factors, including proximity, cost, quality of amenities, crowds and other factors. HE conducted a study of fees charged at locations comparable to the County's Reservoir Parks and Open Spaces; places that might be alternatives for current Reservoir Parks and Open Space venues. That work included identifying comparable sites, gathering data on the fees charged and placing that information in context. This Section of the report summarizes HE's approach to conducting that study and the important findings.

Evaluation of Comparable Entities

Although there are many places within Larimer County and along the Front Range that offer arguably comparable reservoir Parks and open Space experiences, there are not many, if any, places that can be considered directly comparable to the LCDNR's Reservoir Parks and Open Spaces. There are places that have comparable amenities and similar fees, but those places also receive very different funding from than of the LCDNR. There are also a number of places that do not offer the quality of amenities available at Larimer County's Reservoir Parks and Open Spaces, but have similar fees. Other places have very few amenities, but offer experiences similar to those at LCDNR's Open Space locations.

This evaluation of comparable fees was split into three parts: (1) comparable campsite locations, (2) comparable reservoirs and (3) comparable open Space locations. This approach provides a better understand of what is available outside of the County's Reservoir Parks and Open Spaces from a visitor standpoint and how the sites might compare, by type of activity. This approach also offers the opportunity to discuss how different types of facilities or programs are funded worked to determine financial comparability.

Campsites. The LCDNR has over 400 campsites located throughout all the Reservoir Parks and Open Space areas; those sites include a mix of electric and full hookup sites and basic tent camping sites. HE found a vast number of camping spots throughout the County and along the Front Range, which formed the comparable camping analysis. Due to the large pool, we separated these findings into RV capable camping and tent camping. Exhibit 8-1 lists a selection of comparable tent camping locations and the per night camping fees at those locations.

Exhibit 8-1.**Comparable Tent Camping Locations and Cost per Night**

<u>Place</u>	<u>Cost/Night</u>	<u>Operator</u>
Lory State Park	\$10.00	Colorado State Reservoir Parks
Sleeping Elephant Campground	\$17.00	USDA Forest Service
Chatfield State Park	\$17.00	Colorado State Reservoir Parks
Cherry Creek State Park	\$20.00	Colorado State Reservoir Parks
Stove Prairie Campground	\$21.00	USDA Forest Service
Kelly Flats Campground	\$22.00	USDA Forest Service
Jacks Gulch Campground	\$25.50	USDA Forest Service
Aspen Glen Campground	\$26.00	Rocky Mountain National Park
Long Draw Campground	\$27.00	USDA Forest Service
Dutch George Flats Campground	\$31.50	USDA Forest Service
Bellaire Campground	\$33.00	USDA Forest Service
Estes Park KOA	\$48.00	Private
<i>Average</i>	\$24.83	
<i>Median</i>	\$23.75	
<i>Range</i>	\$10.00 - \$48.00	

Source: Harvey Economics, 2018.

Exhibit 7-1 indicates that there is a wide range of tent camping available to visitors. The list varies from State and National reservoir Parks to for-profit camping companies. Many of these places have different types of amenities than those at the Reservoir Parks and at Hermit Park Open Space. For example, Lory State Park has basic camping sites with flush toilets and showers available year-round, while Estes Park KOA sites have a tent area bathhouse with running water and showers, a dog walk area and dog park. From a visitor perspective, this list portrays the general range of what is available in the area with regards to tent camping. The median tent camping price is approximately \$24 per night and the range is from \$10 to \$48 per night. The LCDNR currently charges \$15 per night for tent camping at the Reservoir Parks and \$24 per day at Hermit Park Open Space. Comparison of the LCDNR's camping fees with those of other tent camping options indicates that there is room to increase tent camping rates without substantial price competition.

Larimer County and the surrounding area also have a wide range of RV capable camping sites. The LCDNR charges anywhere from \$15-\$30 for RV camping per night. Exhibit 8-2 depicts comparable RV capable campsites and the per night camping fees at those locations.

Exhibit 8-2.**Comparable RV Capable Camping Locations and Cost per Night**

<u>Place</u>	<u>Cost/Night</u>	<u>Operator</u>
Boyd Lake State Park	\$24.00	Colorado State Parks
Chatfield State Park	\$26.00	Colorado State Parks
Cherry Creek State Park	\$30.00	Colorado State Parks
Archer's Poudre River Resort	\$44.00	Private
Lake John Resort	\$45.00	Private
Glen Echo Resort	\$47.50	Private
Canyonside Campground	\$50.00	Private
River Forks Inn	\$57.50	Private
Paradise on the River	\$62.00	Private
Elk Meadow Lodge and RV Resort	\$71.00	Private
Spruce Lake RV Resort	\$71.00	Private
<i>Average</i>	\$48.00	
<i>Median</i>	\$47.50	
<i>Range</i>	\$24.00 - \$71.00	

Source: Harvey Economics, 2018.

The places listed in Exhibit 8-2 include a wide range of amenities. For example, Spruce Lake RV Resort has mini golf, a heated pool and access to the Big Thompson River. Canyonside Campground has fewer amenities with sparse camping spots, shared fire pits, and a playground. The median cost per night for RV camping was nearly \$48, with a range of \$24-\$71 per night. LCDNR's RV pricing is well below the median which indicates an opportunity for a justifiable RV camping fee increase.

Reservoirs. Exhibit 8-3 lists comparable reservoirs in the Front Range region and the cost per day entrance fees at those locations. Visitors throughout the State and the Front Range enjoy visiting reservoirs for recreation and take advantage of various places and what they have to offer. Activities available at comparable reservoirs range from motor boating to jet skiing, swimming to fishing, sailing to paddle boarding. Visitors also enjoy picnicking and nature walking around the reservoirs.

Exhibit 8-3.**Comparable Front Range Reservoirs and Costs per Day**

Reservoir	Cost/Day (per vehicle)	Cost/Day (with boat)	Operator
Windsor Lake	\$0.00	\$40.00	Town of Windsor
Lake Estes	\$5.00	\$10.00	EVRPD
Boulder Reservoir	\$7.00	\$7.00	City of Boulder
Boyd Lake	\$8.00	\$8.00	Colorado State Parks
Chatfield Reservoir	\$8.00	\$8.00	Colorado State Parks
Cherry Creek Reservoir ⁽¹⁾	\$9.00	\$9.00	Colorado State Parks
Aurora Reservoir ⁽²⁾	\$10.00	\$10.03	City of Aurora
Quincy Reservoir ⁽²⁾	\$10.00	\$10.03	City of Aurora
<i>Average</i>	\$7.13	\$12.76	
<i>Median</i>	\$8.00	\$9.50	
<i>Range</i>	\$0.00 - \$10.00	\$8.00 - \$40.00	

Notes: (1) Cherry Creek State Park charges an additional dollar for water quality monitoring at the reservoir that is later directed to the Cherry Creek Basin Water Quality Authority.

(2) Both Aurora and Quincy Reservoirs charge a yearly boat inspection fee of \$10.

(3) EVRPD is the Estes Valley Recreation and Parks District.

Source: Harvey Economics, 2018.

All the listed reservoirs are comparable with the LCDNR's Reservoir Parks from a visitor perspective. Many of the operating entities are funded differently from the LCDNR, as discussed later on in this Section. Most of the comparable reservoirs do not charge an additional fee for boating. Windsor Lake, and Lake Estes do have a higher fee for boating. LCDNR charges \$7 per day per vehicle and \$14 per day per vehicle with a boat. The median cost per day for the comparable reservoirs is \$8 with a range of \$0 to \$10. Larimer County may need to be conservative with the fee increase here, as they are close to the median for the cost per day and above the median for the cost per day with a boat.

Open Space. Many counties in northern Colorado and the greater Denver metro area have Open Space programs and offer recreational opportunities to visitors at those locations. Some municipalities also offer similar programs. State Reservoir Parks are also comparable in terms of the types of recreational opportunities available at some locations. Exhibit 8-4 represents the comparable open Space programs along the Front Range and the cost of per vehicle entrance fees at open Space locations.

Exhibit 8-4.**Comparable Front Range Open Space Programs and Cost per Vehicle Entrance Fees**

<u>Place</u>	<u>Cost/Day</u>
Boulder County	\$0.00
Jefferson County	\$0.00
Arapahoe County	\$0.00
Adams County	\$0.00
Broomfield County	\$0.00
City of Loveland	\$0.00
City of Boulder	\$0.00
Lory State Park	\$7.00
Chatfield State Park	\$8.00
Cherry Creek State Park*	\$9.00
<i>Average</i>	\$2.40
<i>Median</i>	\$0.00
<i>Range</i>	\$0.00 - \$9.00

Note: (1)* Cherry Creek State Park charges an additional dollar for water quality monitoring at the reservoir that is later directed to the Cherry Creek Basin Water Quality Authority

(2) Lory State Park, Chatfield State Park, and Cherry Creek State Park are all operated by Colorado State Reservoir Parks. All others listed are operated by the entity named.

Source: Harvey Economics, 2018.

Like the LCDNR's Open Spaces, the open Spaces available in other locations have a mix of recreational offerings, such as extensive trail systems with trail heads, group picnic areas, parking lots, and a mix of flush and non-flush toilets. Unlike Larimer County's Open Spaces, most of these open Space locations are free to the public. The LCDNR currently only charges entrance fees at three of its open Space locations, \$6 per vehicle per day. Larimer County's entrance fee compared with the comparable open Space median fee of \$0 per day would seem high without understanding the differences in funding between most of the open Space programs on the list and the LCDNR.

For the most part, the funding behind each comparable county and city open Space program comes from sales and use tax and General Fund dollars. In turn, these entities do not rely on fee revenue to fund their open Space programs. This is significant, as Larimer County relies heavily on fees to fund their Reservoir Parks and Open Space program and receives only a small portion of their revenues from the County's General Fund. The last three comparable open Space programs are part of the State Reservoir Parks system. The State Reservoir Parks face the same funding challenges as LCDNR; they are the closest to being truly comparable.

Colorado State Parks. Not only are Colorado's State Parks comparable in terms of their funding limitations and park offerings, but they are also currently undergoing an internal state-wide fee analysis. Cherry Creek, Chatfield, Lory and Boyd Lake State Parks are quite

comparable to the LCDNR. All of those State Parks experience high volumes of visitation and offer similar amenities to Larimer County's Reservoir Parks and Open Spaces. In addition, both Lory and Boyd Lake State Parks are in Larimer County, so they are also geographically comparable to Larimer County's Reservoir Parks and Open Spaces.

According to State Parks staff, State Parks function on a fee-based revenue stream, similar to the LCDNR.²² Due to increasing visitation and lack of sufficient funds to cover costs, the State Parks helped to pass Senate Bill 18-143 in 2018.²³ This bill will allow the State Parks to increase fees statewide to help with maintenance and infrastructure improvements associated with increased visitation. The State Parks are currently conducting an internal study to determine how much to raise fees and at which locations. Just as LCDNR needs to establish a more reasonable fee structure, so does their most comparable entity.

Price Sensitivity Analysis

In thinking about raising prices, it is important to analyze how the market, in this case, visitors, might react. Larimer County will want to ensure they don't drive away too much visitation based on fee increases. This economic concept is called price elasticity of demand. Price elasticity of demand is an economic measure to show responsiveness or elasticity of the quantity demanded of a good or service to a change in its price when nothing but price changes. If the price increase has no impact whatsoever on the quantity demanded, (or visitation in this case), the good or service, (or the LCDNR Reservoir Parks and Open Space programs in this case), would be considered perfectly inelastic.

One thing to consider in this analysis is the current supply and demand at the Reservoir Parks and Reservoirs; many locations experience higher visitation demand than there is supply of available parking. Because of this, there is more room to increase fees, and the price point of Larimer County fees is automatically more inelastic due to the current demand disequilibrium. In other words, Larimer County visitors are more likely to have a higher fee tolerance due to overcrowding and lack of being able to enter the Reservoir Parks at times of capacity.

There have been many studies conducted on the price sensitivity of park visitation and the correlation of entrance fees and visitation rates. One study found that while the National Parks visitor entry fee was statistically significant, its overall effect on visitation was small. This same study went on to suggest that for most people, entry price is small relative to overall total cost.²⁴ It should be noted that National Parks may not be closely comparable with LCDNR, as visitors come from all around the country. Thus, the total cost for each trip is generally higher.

²² Interviews with staff from Boyd Lake State Park, Lory State Park, Chatfield State Park, and Cherry Creek State Park

²³ Coloradoan. *You're about to pay more for hunting, fishing and visiting Colorado State Reservoir Parks*. May 2018.

²⁴ Stevens, Thomas H; More, Thomas A; Markowski-Lindsay, Marla. *Declining National Park Visitation; An Economic Analysis*. 2014

Another study on the effects of per-vehicle entrance fees on National Park visitation states, “The analysis did not find a clear relationship between per-vehicle entrance fees and visitation rates. However, the possibility remains that such a relationship exists, at least for some Parks”.²⁵ Taking these studies into account and considering the current supply and demand imbalance, it is likely that LCDNR visitation will be more price inelastic than elastic. Hence, visitation is not likely to decline appreciably with an increase in fees.

²⁵ Factor, Seth. *Effects of Per-Vehicle Entrance Fees on U.S. National Park Visitation Rates*. 2007.

Section 9

Revenue Generation Concepts

As evidenced in Section 5, the LCDNR will need to generate additional revenue in future years in order to fully cover Reservoir Parks operating expenses (and perhaps a portion of capital costs) and to increase the portion of Open Space operating costs covered by revenues. This section discusses several approaches to generating additional revenues through changes in fees, fee structure and other activities. Although there are numerous ways to generate revenue, the following ideas were discussed with the LCDNR and several advisory board members as concepts which the LCDNR could implement quickly and without much additional expense:

- Simple fee increases – flat percentage increase in all types of existing entrance permit fees and camping fees;
- Fees at Devil’s Backbone Open Space – the possibility of implementing entrance permit fees at Devil’s Backbone and the potential additional revenue generated by that action was discussed in detail in Section 6. This concept could also be applied to Chimney Hollow Open Space, although that specific idea was not explored as part of this Study;
- Differential fee pricing – implementation of different prices for certain days of the week, seasons based on visitation patterns;
- Dynamic pricing – a strategy in which prices for products or services are based on current market demands;
- Evaluation of annual permit pricing – analysis of customer behavior and price sensitivity to result in increased annual permit sales and revenues.
- Lottery or auction for prime camping or parking spots at certain locations.

Each of those concepts are described in more detail below. Simple fee increases were discussed and quantified in Section 5. This section includes a quantitative analysis of differential pricing for a day of the week strategy. All other approaches are discussed qualitatively to provide an understanding of the individual concept and how it would work. However, each of those concepts would need additional analysis to fully understand the costs of implementation and actual revenue generation before moving forward.

Simple Increase in Entrance Permit Fees and Camping Fees

As discussed in Section 1, the LCDNR has not raised the majority of entrance permit fees or camping fees in at least 10 years. Permit sales, camping night and visitation data presented in Section 3 shows that during that same 10-year period, there has been a considerable increase in demand for the LCDNR’s Reservoir Parks and Open Space areas and substantial increases

in the cost of maintaining and operating those locations. Section 5 provides an in-depth comparison of historical and projected revenues and costs for Reservoir Parks and for Open Spaces and also presents an analysis of future revenue requirements and the fee increase necessary to meet those requirements. From these data and analyses, we found that about a 30 percent increase in all types of fees would bring Reservoir Parks revenues in line with the projected Reservoir Parks operating expenses for the next several years.

Differential Fee Pricing

An additional approach to revenue generation is to implement differential pricing for daily entrance permits and camping fees. Differential pricing is the practice of selling the same product to different customers at different prices. The 2017 Larimer County Reservoir Parks Master Plan discusses the concept of differential pricing and indicates that the idea is something that the LCDNR may be interested in pursuing. Several of the concepts discussed below elaborate upon ideas addressed in the Master Plan, while others are new concepts for consideration.

Day of the week pricing. A fee differential based on day of the week would be easy to implement and would address some of the issues surrounding high weekend and holiday visitation at many locations. Weekends and holidays have historically been busier than week days, at both Reservoir Parks and Open Spaces. For example, at Horsetooth Reservoir, LCDNR staff often turn away between 100 and 150 vehicles per weekend due to lack of parking spots. Day of the week pricing was evaluated for two time periods: (1) the traditional peak season of Memorial Day through Labor Day and (2) an extended peak season of mid-April through mid-October, based on discussion with LCDNR staff regarding recent activity trends.²⁶ For each time period, this pricing strategy was quantified for two scenarios: (1) assuming a constant distribution of revenue generated per day and (2) assuming that half of revenues are generated specifically on the weekends.

Daily permit revenue and camping revenues over the course of each season were estimated using 2017 revenue data and the distribution of camping nights and Open Space visitation by month of the year. For this analysis, entrance permit fees and camping fees were increased by 50 percent on holidays and by 30 percent on weekend days.

Traditional peak season. In 2017, the traditional peak season included 102 total days, four holidays and 29 weekend days. Exhibit 9-1 depicts the analysis of differential day of the week pricing for daily permits and camping nights at all Reservoir Parks and Open Space locations that charge fees during the traditional peak season (Memorial Day through Labor Day).²⁷ Based on historical visitation patterns, implementing day of the week pricing could generate about an additional \$96,000 to \$155,000 in camping fee revenue and an additional \$83,000 to \$135,000 in daily permit revenue, if implemented during the traditional peak season. Total additional revenue generated would range from about \$180,000 to \$290,000

²⁶ Other approaches to day of the week pricing might include weekend versus weekday pricing applied to the entire year, without regard for season.

²⁷ Day of the week pricing would not apply to the purchase of annual entrance permits.

based on 2017 revenue data and the assumptions of a 50 percent price increase on holidays and a 30 percent price increase for other weekend days during the peak season.

Exhibit 9-1.

Revenue Generated by Day of the Week Pricing, Memorial Day – Labor Day, 2017

	<u>Daily Permit Revenue</u>	<u>Camping Revenue</u>	<u>Total</u>
Revenue/Season	\$795,000	\$911,000	\$1,706,000
Revenue/Day	\$8,000	\$9,000	\$17,000
Revenue/Weekend Day (Weighted)	\$14,000	\$16,000	\$30,000
Revenue/Holidays (50% Increase)	\$47,000	\$54,000	\$101,000
Revenue/Weekend Days (30% Increase)	\$294,000	\$337,000	\$631,000
Revenue/Weekend Days (Weighted) (30% Increase)	\$517,000	\$592,000	\$1,109,000
Additional Revenue Generated	\$83,000	\$96,000	\$179,000
Additional Revenue Generated (Weighted)	\$135,000	\$155,000	\$290,000

Notes: (1) Revenue projections are based on increases to current (2018) fee levels.
(2) Weighted weekend day revenues assume that 50 percent of visitation comes on the weekends.
(3) Numbers have been rounded to the nearest thousand.

Source: Harvey Economics, 2018.

Extended peak season. The extended peak season (mid-April through mid-October) included 159 total days, six holidays and 49 weekend days in 2017. Exhibit 9-2 depicts the analysis of differential day of the week pricing during that extended peak season. Over the extended season, day of the week pricing could generate an estimated \$161,000 to \$243,000 in additional camping fee revenue and an additional \$113,000 to \$171,000 in daily permit revenue. Total additional revenue generated would range from about \$275,000 to \$415,000 based on 2017 revenue data and the assumptions of a 50 percent price increase on holidays and a 30 percent price increase for other weekend days.

Exhibit 9-2.**Revenue Generated by Day of the Week Pricing, Mid-April – Mid-October, 2017**

	Daily Permit Revenue	Camping Revenue	Total
Revenue/Season	\$1,013,000	\$1,441,000	\$2,454,000
Revenue/Day	\$6,000	\$9,000	\$15,000
Revenue/Weekend Day (Weighted)	\$10,000	\$15,000	\$25,000
Revenue/Holidays (50% Increase)	\$38,000	\$82,000	\$120,000
Revenue/Weekend Days (Weighted) (30% Increase)	\$658,000	\$936,000	\$1,594,000
Additional Revenue Generated	\$113,000	\$161,000	\$274,000
Additional Revenue Generated (Weighted)	\$171,000	\$243,000	\$414,000

Notes: (1) Revenue projections are based on increases to current (2018) fee levels.

(2) Weighted weekend day revenues assume that 50 percent of visitation comes on the weekends.

(3) Numbers have been rounded to the nearest thousand.

Source: Harvey Economics, 2018.

As evidenced by the high-level estimates presented in Exhibits 9-1 and 9-2, a day of the week pricing strategy would generate additional revenue. Derivation of the fee increases would be simple, but awareness of the differentiation by day on the part of visitors might present implementation challenges. The LCDNR would need to decide on a specific percentage increase for holidays and weekend days.

It is worth noting that this type of pricing is common, especially in the recreation industry. For example, when booking a trip that includes a flight and hotel or vacation rental, prices will vary based on day of the week. Therefore, Reservoir Parks and Open Space visitors may be somewhat accustomed to this type of pricing based on other types of purchases.

Recreational activity pricing. The LCDNR could also implement differential fees based on type of recreation type. One of the main constraints at the busier Reservoir Parks and Open Spaces is parking. Visitors with boat trailers take up more Space in the parking lots. Although the LCDNR currently charges separate entrance fees for vehicles and for boat trailers, it may make sense to increase trailer fees. The philosophy behind this pricing strategy is twofold. First, boats take up a large amount of Space in constrained parking lots. Second, it could be argued that visitors with boats are more likely to stay at a specific Park all day, as compared with visitors engaging in other, less equipment-intensive, activities.

That second line of reasoning would need to be confirmed and could be analyzed through an evaluation of the number and type of vehicles entering and exiting the Reservoir Parks. The LCDNR could be missing out on multiple vehicle entrances, and a larger amount of revenue, than they currently generate from boating visitors. As such, the LCDNR could justify an additional fee for visitors with boats as compared with visitors who plan to swim, hike, picnic, fish or paddle board.

Locational pricing. Similar to recreational pricing, the LCDNR could implement locational pricing. Locational pricing would be implementation of higher fees at the more

popular Reservoir Parks and Open Spaces, as compared to and less visited areas. For example, Horsetooth Reservoir and Carter Lake are very popular. They are also locations that experience capacity constraints on a regular basis. Therefore, the LCDNR could charge a higher rate at those Reservoir Parks as compared to other areas. This locational pricing structure would require an understanding of user response to price increases to thoughtfully raise fees at over-capacity locations. Once the new price structure is derived, this locational pricing should be easy to implement within the Reservoir Parks and Open Spaces and is not an uncommon approach to fees. Colorado Reservoir Parks and Wildlife currently apply locational pricing within the State Reservoir Parks system. Boyd Lake, Chatfield and Cherry Creek State Reservoir Parks are among those that charge a higher entrance fee based on popularity.²⁸

Dynamic Pricing

The LCDNR explored dynamic pricing in the 2017 Reservoir Parks Master Plan. As stated in the Master Plan, *“dynamic pricing is an evolution of value pricing, or pricing that involves setting the cost of a product or service that is highly flexible and can change at any point in time. Pricing levels are set using analytical data and can be based on real-time market conditions.”* Many different industries use dynamic pricing. The key to dynamic pricing lies in the product or service’s supply and demand factors. As mentioned earlier in this report, the LCDNR is experiencing an imbalance in supply and demand, with more people interesting in visiting certain Reservoir Parks and Open Spaces than there is parking availability at those locations. Dynamic pricing strategies could help the LCDNR reach an equilibrium in terms of number of visitors and the capability to serve those visitors. However, establishing a dynamic pricing system would require more visitation data and modelling. Implementation by LCDNR and public understanding of the system might be challenging.

Seasonal pricing. One form of dynamic pricing is seasonal pricing. This could work well for the LCDNR since many Reservoir Parks and Open Spaces experience changes in visitation by season. Although the peak season is growing longer, most visitation still occurs within the seven-month period between April and October. For example, most visitors are unlikely to camp during the winter due to weather. The LCDNR could set up a system that increases fees during the peak season and decreases fees in the off-season. As stated in the Master Plan, in a traditional supply and demand sense, as fewer products become available, their value increases to their prospective customers. As visitation increases to a level of capacity during the busy season, the LCDNR should be able to raise prices to adjust for this supply/demand disequilibrium.

Examples of seasonal pricing are tourist destinations whose visitation is primarily seasonal. For example, Vail, Colorado sees most of its visitation in the winter, followed by summer months. The shoulder seasons see significantly reduced visitation. Because of that pattern, most local retailers and outfitters offer discounts on goods and services during the shoulder

²⁸ Entrance fees at those reservoir Parks are \$1 higher per day than the State’s less popular reservoir Parks. Cherry Creek State Park also charges an additional dollar for water quality monitoring at the reservoir by the Cherry Creek Basin Water Quality Authority.

seasons to additional visitation during that time. During the peak season, prices for these same goods and services increase again.

Annual Pass Pricing

As noted in Section 3, the sale of a small number of annual entrance permits generates a large portion of the overall permit fee revenue. In recent years, fewer than five percent of total permit sales were annual permits, while the revenue associated with the sale of annual permits comprised more than 35 percent of entrance permit revenue. That data suggests there is an opportunity to generate more revenue through an increase of annual permit sales. Given current daily and annual entrance fee pricing, a visitor would need to visit a Park or Open Space eleven times per year to make the purchase of an annual permit a better deal than the purchase of multiple daily passes. As indicated by LCDNR staff, 10 to 11 visits is generally the standard for the industry when pricing annual permits. However, it is clearly not the “sweet spot” for Larimer County’s Reservoir Parks and Open Spaces, given the small number of annual permits sold each year.

A detailed evaluation of annual permit pricing would likely result in an adjustment of the price to a level that would generate additional annual permit sales and additional net revenue for the LCDNR.²⁹ This may even require consideration of a price reduction for annual permits in order to generate sales of these higher dollar permits. This type of analysis would consider visitor behavior, in terms of permit purchases. A focused research effort could illuminate the factors that visitors take into consideration when deciding between a daily permit and an annual permit. A marketing program to promote the annual passes might be in order.

Ski passes are a good example of an annual pass that works. Skiing can cost as much as \$189/day (weekend adult price at Vail Resorts) The Epic Ski Pass costs \$929 for the early bird pricing. This means the visitor only needs to visit the ski hill five days to make the pass make monetary sense.

Lottery / Auction for Camping or Parking Spots

An additional strategy the LCDNR could implement to generate revenue would be through auctioning off prime parking or camping spots at the most popular locations. Knowing that one of the largest constraints to visitation is parking, a lottery or auction could be set up to offer a prime parking spot at either Horsetooth Reservoir, Carter Lake, or both. This would require the LCDNR to do some analysis in order to set a minimum price for the reserved spot, so that revenue was not lost. An idea of how much revenue might typically be associated with a parking spot would be the baseline. A lottery or auction could offer a spot for the entire season or for one or more high visitation weekends throughout the year. A seasonal spot would be priced much higher and would likely be easier to implement.

²⁹ Some purchasers of daily permits would switch to an annual permit, reducing the fee revenue generated by daily permits, but increasing the total fee revenue from all permits.

An auction or lottery could be announced on the LCDNR website, with information getting out to the public by word of mouth over time. Either of these activities could take place before the start of the busy season. In those months, visitors could enter an auction bid, at or above the starting bid price, or purchase a lottery ticket on the website in hopes of winning the spot. This approach would be low cost in terms of time as the LCDNR would rely on their web presence and word of mouth for participation. However, that would also mean participation might start out small and would grow over time. With an auction strategy, the LCDNR would need to ensuring that they made a certain minimum amount in order to make this strategy effective.

The same program could be set up for prime camping locations such as right on the water or easy access. To make the program implementable, the idea could be to grow the pool over time as the event gained traction each year. This idea could be very popular and could add in a fun factor that might attract certain kinds of visitors. Conversely, some visitors could feel that higher paying visitors are favored and feel marginalized by the program.

Section 10

Future Fee Increase Scenarios

If the LCDNR's goal is to have revenues generated by permits sales, camping fees and other fees to fully cover, or even exceed, future operating costs (on the Reservoir Parks side) and reduce reliance on other funding sources (on the Open Space side), those fee amounts will need to be reviewed and updated periodically. As part of this Study, the LCDNR requested that HE develop several optional approaches to address future fee increases. This Section of the report identifies, describes and reflects upon different methodologies for determining future fee levels.

Approaches to Increasing Visitor Fees

Option #1: Use of the Consumer Price Index (CPI). The CPI is a measure of the change in the average price of a specific basket of specific goods and services purchased by consumers over a specified period of time (i.e. food, clothing, medical care, transportation). Developed by the Bureau of Labor Statistics (BLS), the CPI is available by geographic areas and for different types of purchased items; data is reported on a monthly basis. The BLS reports historical CPI data for Recreation related items; however, that category is largely focused on purchases of recreational equipment as opposed to entrance fees and campsite fees.

Some considerations for use of CPI data to update permit and camping fees:

- This would be the simplest of all methods for increasing Reservoir Parks and Open Space fees;
- The CPI is a measure of changes in prices that consumers pay for specific items. However, The CPI for Recreation does not reflect the same types of goods or services provided by the LCDNR;
- The CPI does not reflect changes in the costs of maintaining and operating Park and Open Space facilities, which historically have risen faster than the CPI. There is no relationship between the CPI and the changes in LCDNR operating expenses to provide those facilities;
- Application of any CPI data would be based on historical changes in the CPI over time applied to future prices and not on projected operating cost increases.

The Producer Price Index (PPI) measures the average change over time in the selling prices received by producers for their output. The PPI generally measures the change in prices of commercial transactions of goods and some services. In terms of the recreational sector, the PPI only measures changes in prices of recreational vehicles and prices of fitness and sports centers; amusement reservoir Parks and golf courses, none of which are applicable to the management of Reservoir Parks or Open Spaces.

Option #2: Comparison and evaluation of projected expenses and projected revenues over time.

This option entails a calculation of projected expenses (operating or operating and capital costs) divided by projected fee revenues over a period of several years in the future (i.e. the next five years). That calculation would result in the required percentage increase in fees to fully cover operating (and some capital) costs through that period. This type of calculation was completed in Section 5 when discussing future revenue requirements for 2019 and 2020. A longer-term approach, as compared with evaluating revenues and costs for just the following year, would allow the LCDNR to implement steady annual increases over a period of time or to implement larger periodic increases. For example, the need to generate an addition 20 percent in fee revenues in the next five years could be seen as a steady four percent annual increase in fees or a one-time 20 percent increase in fees.

Some considerations for use of this approach include:

- Relatively easy to explain and understand;
- A schedule for reaching full coverage of costs would need to be agreed on by decision-makers, i.e. would fee increases be implemented on an annual or periodic basis;
- Would “smooth” out annual fee increases if either projected revenues or projected operating costs change considerably in a particular year;
- Does not require fee revenue to be equal to costs in the year prior to the increase;
- Adjustments could easily be made to the percentage of operating costs that the LCDNR would like to cover with fee revenue, or additional capital costs could easily be added into the calculation;
- If properly developed with underlying data, this technique incorporates recent trends in visitation, revenue generation and changes in operating costs, as indicated by LCDNR financial data;
- To be implemented accurately, this approach requires careful projections of revenues by type and by venue and justifiable cost projections by location. A simplified cost of service template would need to be created and then completed each year.³⁰

³⁰ We have not proposed a full cost of service study as an option in this report, although it is a common approach to fee setting. Such a study would require an examination of each type of cost and the drivers for how that cost would change, plus similar level of detail on the revenue side. Such a level of effort is not considered justified in this instance.

Option #3: Increase fees by the same percentage as projections of operating (or operating plus capital) costs. Fees could be increased annually by the projected increase in costs in future years. For example, a 10 percent per year fee increase would account for a projected 10 percent increase in operating (or operating plus capital) costs.

Some considerations for use of this approach include:

- If entrance permit fees and camping fees were increased such that those revenues were equal to total costs before instituting this policy, future expenses could be met with fee revenues. If revenues were not equal to costs when this fee escalation plan were implemented, the gap between revenues and expenditures could increase;
- This approach assumes that visitation (in the form of number of permits sold and number of camping nights) would remain constant at the 2019 level – that is, the 10 percent increase in annual operating costs would be covered by a 10 percent annual increase in prices, with visitor numbers unchanged. That does not appear to be the case for the LCDNR at this point in time;
- This approach is based on LCDNR specific cost data. Cost projections for the following year must be accurate in order for fee revenue to cover costs in future years.

Implementation Schedule

Any of the options above could be implemented on an annual or periodic basis, according to the desire of the LCDNR or County Commissioners. For example, fee increases could be implemented every three or five years using the most recent data available at that time. However, a periodic approach may result in larger fee increases at the end of each cycle, which may be more difficult for visitors to accept than smaller annual fee increases. Annual fee adjustments would also allow fee revenues to keep up with cost increases, reducing reliance on other revenue sources to cover any differences in non-adjustment years.

Recommendation

Option #2, projecting expenses and revenues and then dividing expenses by projected revenues in a future year, would offer a sufficiently comprehensive and transparent approach to increasing fees. The approach will be simple to explain and justify, as long as the underlying projections and assumptions are sound. The data would also be specific to Reservoir Parks and Open Spaces. Use of this approach would not require that fee revenue be equal to expenses in order to set appropriate fee increases for the future. Differential fee increases and other forms of revenue generation could also fit in with this alternative. Annual fee increases could be implemented at a steady rate over a specified period of time, eliminating large variations in annual fee changes.

Appendix A

Proposed 2019 Fee Rates

Type of Permit or Fee	2018 Fee Amount	2019 Fee Proposed
Daily Entrance Permits		
Carter Lake, Flatiron, Pinewood and Horsetooth reservoirs (per vehicle and per boat trailer)	\$7	\$9
All other permitted open spaces (per vehicle)	\$6	\$9
Annual Entrance Permit Prices		
Vehicle – Larimer County Resident	\$75	\$95
Vehicle – Nonresident	\$95	\$125
Vehicle – Senior (Senior (65+ or turning 65 in month of purchase)	\$45	\$45
Vehicle – Disabled	\$10	\$10
Combination Vehicle and Boat (trailer) – Larimer County Resident	\$150	\$190
Combination Vehicle and Boat (trailer) – Nonresident	\$190	\$250
Combination Vehicle and Boat (trailer) – Senior (65+)	\$120	\$140
Combination Vehicle and Boat (trailer) – Disabled	\$85	\$105
Camping Prices (in addition to entrance permits; prices are per night, per site)		
<u>Reservoirs</u>		
Non-electric campsite (January – December)	\$15	\$20
Electric campsite (April – September)	\$25	\$32
Electric campsite (October – March)	\$15	\$20
Full hookups campsite – Horsetooth Reservoir (April – September)	\$30	\$40
Full hookups campsite – Horsetooth Reservoir (October – March)	\$20	\$25
2nd camping unit (January – December)	\$10	\$13
Boat-in camping – Horsetooth Reservoir (May – September)	\$20	\$25
Camper cabins for up to 5 people in the cabin and 3 people in one tent (April – September)	\$60	\$80
Camper cabins for up to 5 people in the cabin and 3 people in one tent (October – March)	\$30	\$40
Tipis (Flatiron reservoir FT1, FT2, FT3, May 1 – October 15)	\$35	\$45
<u>Hermit Park Open Space</u>		
Non-electric campsite (March – December)	\$24	\$30
Equestrian campsite (May – September)	\$30	\$40
2nd camping unit (March – December)	\$10	\$13
Camper cabins (May – October)	\$80	\$105
Camper cabins (November, December, March, April)	\$60	\$80