

City of Durango Parks and Recreation Department Economic Impact Study

January 2022

Prepared by:



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Executive Summary

This study culminates with an evaluation of the return on investment for City of Durango Parks and Recreation Department expenditures. Identifying and quantifying the local economic impacts of the Parks and Recreation Department facilities, programs and services was central to this task. The economic impact analysis first required an accounting of the amount and type of use of Durango Parks and Recreation Department land, facilities and services. Intercept surveys on city trails, at Lake Nighthorse and at Chapman Hill along with other primary and secondary data sources allowed the project team to estimate the level of use by visitors from outside of the Durango area. The new dollars added to the local economy by visitors who used Parks and Recreation Department facilities act as inputs into the economy and generate multiplier effects.

The Parks and Recreation Department provided over a half million documented services in 2018 and 2019. Documented services include tracked attendance and participation such as Community Recreation Center admissions and Chapman Ski Hill ticket sales as well as program participation such as youth soccer participants. In addition to these documented services, the project team estimated an additional 159,500 user days on city trails during peak season, 24,900 annual commercial rafting user days, 38,200 permitted special event attendees and 7,420 athletic event attendees on city athletic facilities. The Parks and Recreation Use Study section of this study identifies several Parks and Recreation Department facilities and activities that are utilized by parties visiting from out of the Durango area. Visitors from outside of the Durango area also attend special events that are managed by the Parks and Recreation Department. From a purely monetary perspective, the Parks and Recreation Department contributes to more economic activity than it costs. An annual average of \$6.4 million in operations and maintenance expenditures and \$8.1 million in capital improvements expenditures contributes to \$23.7 million in spending by 66,580 visitors, \$33.9 million in total economic impact, 348 jobs and \$900k in sales and lodgers tax revenues for the City of Durango and La Plata County.

The analysis also examines quantifiable environmental effects of the Parks and Recreation Department. Monetary benefits from the Parks and Recreation Department's managed forest include \$110,200 per year for removal of pollutants from the air, \$121,230 in energy saving per year and \$163,286 per year savings for stormwater management. In addition, there is a 300% return on investment from wildfire fuel management due to avoided wildfire damage and suppression costs.

Highest among the non-monetary benefits arising from the Parks and Recreation Department are the hundreds of thousands of instances of local community members using and personally benefiting from Parks and Recreation Department facilities in a given year. The Department's role in public health cannot go unstated and parks and recreation is integral to the quality of life offerings that are so central to the community's economic development strategy.



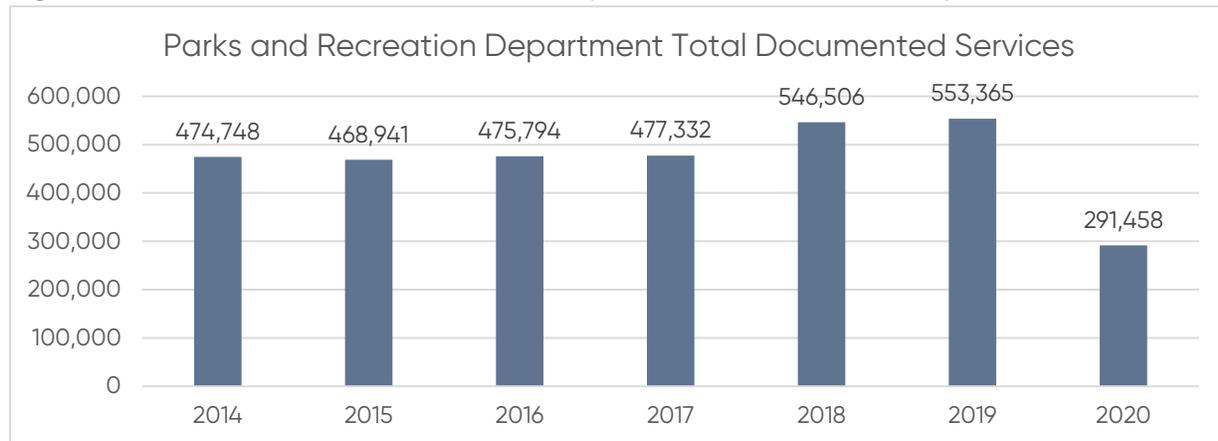
Parks and Recreation Use Study

The primary purpose of the use study is to describe the quantity and type of use of Durango Parks and Recreation Department facilities and services. This includes uses and activities that are typically not counted as part of daily operations, such as trail use, commercial rafting and special events. The use study also identifies Parks and Recreation Department facilities and services that are used by visitors from outside of the area. With the help of intercept surveys conducted as part of this study and other data such as special event permit information, this study provides an estimate of the number of visitors who used City of Durango Parks and Recreation Department facilities and services.

Use Summary

A significant portion of use of Parks and Recreation Department facilities and programs are counted through sales and other admissions and attendance records. During 2018 and 2019 the department provided over a half million documented services. Documented services include tracked attendance and participation such as Community Recreation Center admissions and Chapman Ski Hill ticket sales as well as program participation such as youth soccer participants. COVID-19 related closures, cancelations and attendance reductions greatly affected the total services, especially because a large portion of documented services are for indoor recreational activities.

Figure 1 – Documented Services Provided by Parks and Recreation Department

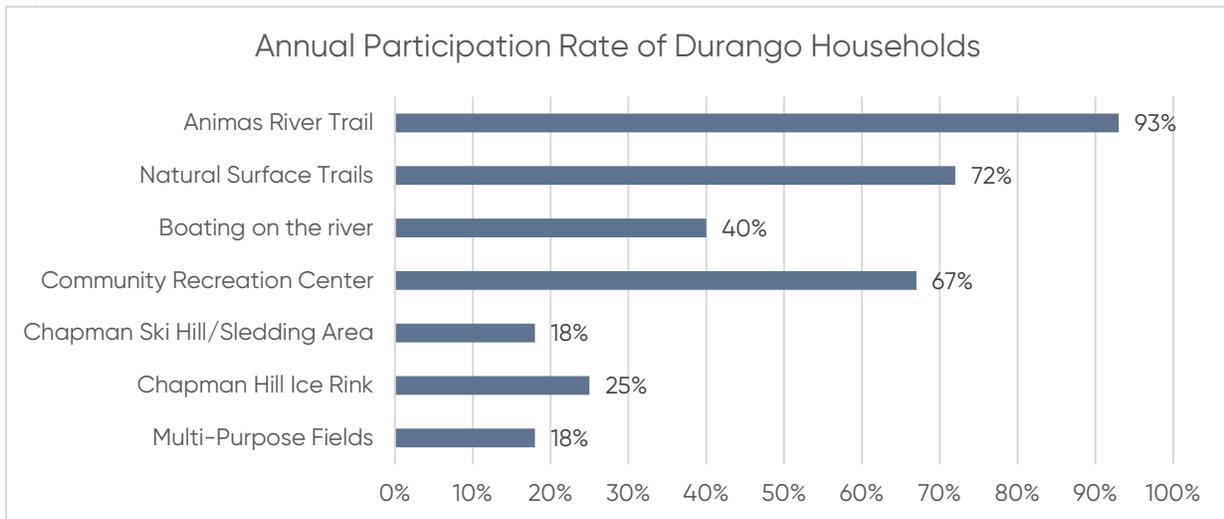


Source: Durango Parks and Recreation Department 2020 Annual Report. Note: Year 2020 was affected by COVID-19.

A recent statistically valid study of city residents showed that most City of Durango residents use Parks and Recreation Department facilities and services. Trails were most commonly used with 92% of respondents indicating that someone in their household used trails within the past 12 months, 88% of households used parks, 78% of households used open spaces, 74% of households used recreation facilities, and 39% of households participated in recreation programs.



Figure 2 –City Parks and Recreation Annual Participation Rates by City Residents



Source: 2019 Parks, Open Space, Trails & Recreation Master Plan, statistically valid city resident survey.

This study also quantifies the amount of use of facilities that are typically not counted as documented services including trails, special event participation and commercial rafting. There are hundreds of thousands of uses of Parks and Recreation Department facilities and programming in a given year.

Figure 3 – Annual Use of City of Durango Parks and Recreation Facilities.

<u>Included in Visitor Study</u>	Annual Use	Units and Data Range
City Trails	159,500	User Days, May-Oct., 2021
Chapman Ski Hill	8,880	Skier Days, 2020-2021 season
Chapman Ice Rink	14,500	Admissions, Average 2015-19
Lake Nighthorse	67,960	User Days, Average 2018-20
Commercial Rafting	24,900	User Days, Average 2019-2021
Special Events	38,200	Attendees, 2019
Athletic Events	7,420	Athletes + Spectators, 2019
<u>Not in Visitors Study</u>		
Community Recreation Center	368,000	Paid Admissions, Average 2015-19
Parks Reserved Use: Private	21,900	Hours Reserved, Average 2015-19
Parks Reserved Use: Teams	13,900	Hours Reserved, Average 2015-19
Youth Program Participation	12,400	Participants, Average 2016-19
Gymnastics Program Participation	3,800	Participants, Average 2016-19
Adult Program Participation	3,400	Participants, Average 2016-19

Source: See each subsection below for sources and details.

The economic impact analysis focusses on impacts generated by the new dollars entering the economy via visitor spending. To estimate visitor spending, the use study specifically identifies Parks and Recreation Department facilities and activities that are used by visitors from outside of the area. With the help of intercept surveys conducted as part of this study and other granular data such as special event permit information, this study provides an estimate of visitor parties who used City of Durango Parks and Recreation Department facilities or services. Not all facilities were included in the visitor analysis, but it does include



the facilities that are most frequently utilized by visitors. The analysis showed over 66,000 parks and recreation visitor users over the course of a typical year.

Figure 4 – Visitor Parties Using City Parks and Recreation

Visitors	
Visitor Parties Using City Parks and Recreation	
City Trails	22,000
Chapman Ski Hill	240
Lake Nighthorse	3,550
Animas River	21,000
Special Events	12,670
Athletic Events	7,120
Total	66,580

Source: See each subsection below for sources

Trails

Parks and recreation staff took trail counts using infrared (IR) TrafX counters and software to capture each pass at five major trailheads and at two locations on the Animas River Trail. The chosen trailheads are the most developed and well-known trailheads that provide access to natural surface trails owned by the city and managed by the Parks and Recreation Department. The counters on the Animas River Trail were placed in the fish hatchery area and in the Animas City Park area.

Trail counts were taken between May 17 and October 8, 2021. These months include the peak trail season and peak tourism season and were the same months during which the Parks and Recreation Department conducted intercept surveys of trail users. This study does not include shoulder-season and winter trail use.

Trail counts do not necessarily represent the number of trail users because most trail outings start and end at the same trailhead, thus the same user will typically register two counts on the same outing. To entirely avoid double counting, analysts assume that all Durango trail users will start and end at the same trailhead meaning that two passes are equal to one trail user. To avoid double counting on the Animas River Trail, analysts used only the counts from the most centrally located counter and assumed two passes equal one user.

Figure 5 – Trail Counts and Estimated User Days May 17 through Oct 8, 2021

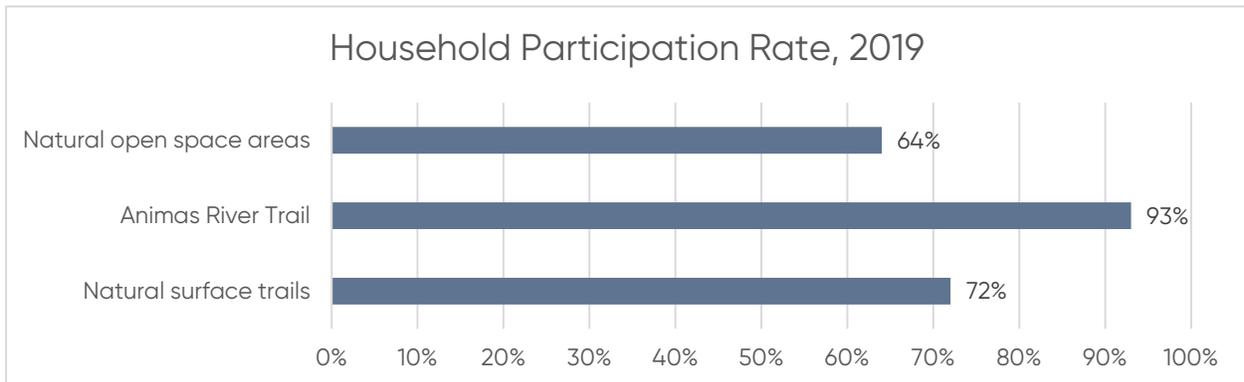
Month	Animas						Total
	Animas Mountain	Dalla	River Trail	Horse Gulch	Overend	Twin Buttes	
May 17th-June 16th	11,358	3,144	32,489	24,280	4,074	2,784	78,129
June 17th-July 16th	11,373	3,525	32,924	13,104	4,954	2,511	68,391
July 17th-August 16th	16,833	3,764	26,767	13,950	4,988	2,682	68,984
Aug 17th-Sept 16th	14,546	3,866	23,764	12,923	5,622	2,985	63,706
Sept 17th-Oct 8th	7,131	2,515	16,657	8,778	2,819	1,900	39,800
Total Passes	61,241	16,814	132,601	73,035	22,457	12,862	319,010
Trail User Days	30,620	8,410	66,300	36,520	11,230	6,430	159,510

Source: City of Durango Parks and Recreation Department TrafX system



According to the 2019 Parks, Open Space, Trails & Recreation Master Plan statistically valid city resident survey, trails are in the top tier of most frequently used facilities by Durango Residents. Given the participation rates among locals, it is not surprising that most of the trail users observed during the 2021 City of Durango Parks and Recreation Department Peak Season Trails Intercept Survey were locals.

Figure 6 – City of Durango Resident Trails and Open Space Activities Participation Rate



Source: 2019 Parks, Open Space, Trails & Recreation Master Plan, statistically valid city resident survey.

Analysis of the 657 responses to City of Durango Parks and Recreation Department Peak Season Trails Intercept Survey show that 14% of Parks and Recreation Department trail users were visitors from outside of the Durango area. Of the remaining 86%, 7% of trail users were part-time residents and 79% live in the Durango area full time. This means that 22,000 of the 159,500 estimated trail user days during peak trail season are visitors from outside of the Durango area.

Figure 7 – Durango Parks and Recreation Department Trails Use Summary



Sources: City of Durango Parks and Recreation Department TrafX system, 2021; City of Durango Parks and Recreation Department Peak Season Trails Intercept Survey, 2021

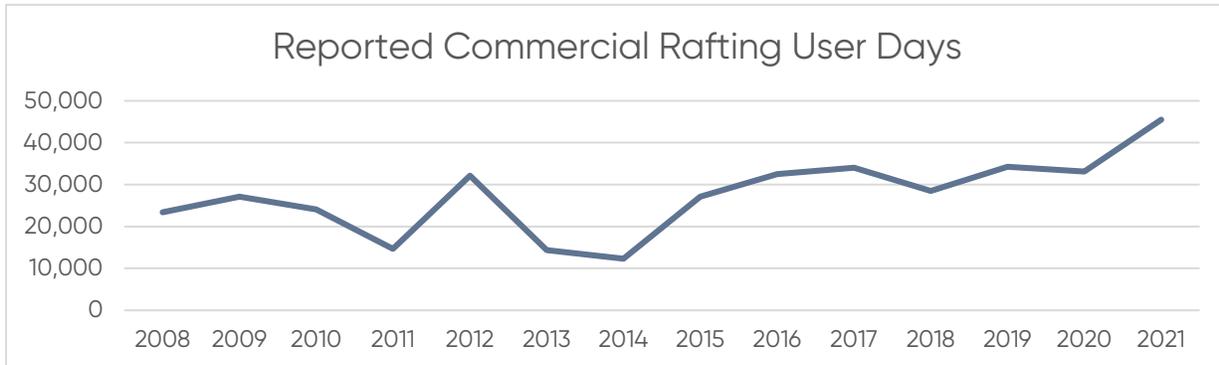
Animas River

Commercial rafting companies are required to have permits for the use of river access and facilities along the river corridor, including the whitewater park. Permittees are asked to report the number of customers taken down the river each season. On average, 85% of companies reported user-days during 2018-2021, and companies reported over 30,000 user



days most years. The lower number of commercial rafting user days in 2018 show the combined effect of wildland fires and low water. From 2008-2021, the average reported commercial rafting user days were 24,900 per year.

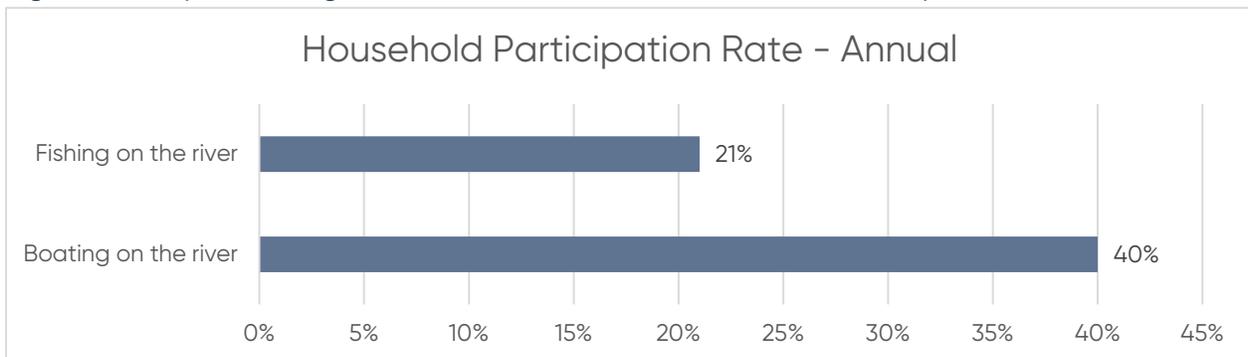
Figure 8 – Commercial Rafting in Durango # of Individual Customers per Season



Source: Commercial River Utilization Reporting Information, City of Durango, Oct. 2021; Note: Years 2020 and 2021 were affected by COVID-19.

Additional use of the Animas River by private parties has not been counted. The 2019 Parks, Open Space, Trails & Recreation Master Plan statistically valid survey showed that 40% of households participate in boating on the river at least once per year. The use of the whitewater park, tubing and town-runs likely amounts to users in the thousands although counting or otherwise observing this use along the entire river corridor poses a challenge.

Figure 9 – City of Durango Resident Household River Activities Participation Rate

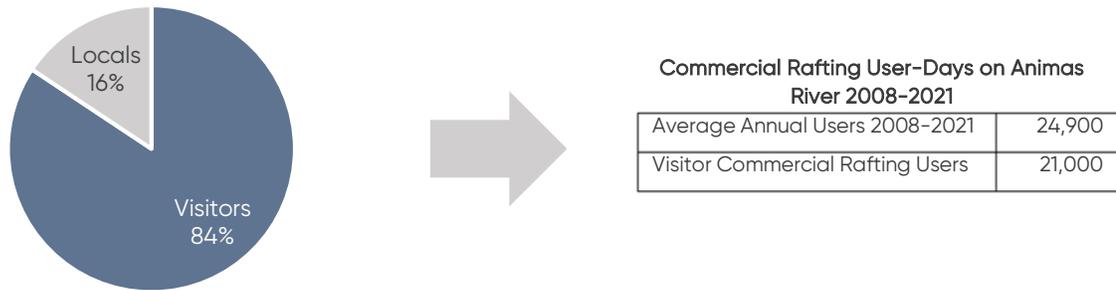


Source: 2019 Parks, Open Space, Trails & Recreation Master Plan, statistically valid city resident survey

Some commercial rafting user days are residents of the Durango area. According to Colorado Tourism Office, 31% of all leisure travel is people visiting family and friends. The Outdoor Foundation found that 55% of participants raft to be with family and friends. Based on these factors, it is estimated that 17% of commercial rafting parties have party members who are full-time or part-time residents of the Durango area. Of the 24,900 average commercial rafting user-days, 21,000 are visitors from outside of the Durango area.



Figure 10 – City of Durango Parks and Recreation Department Commercial Rafting Use

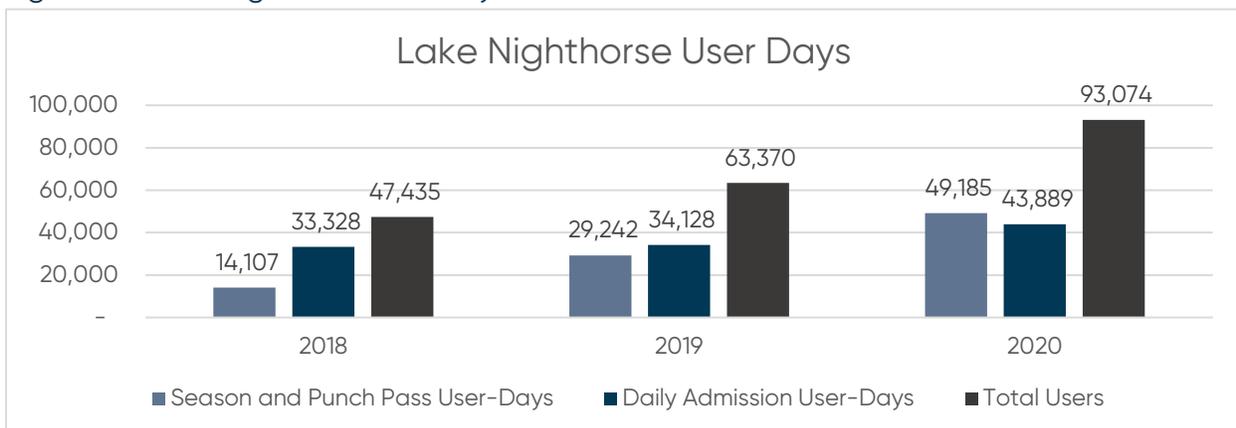


Source: "Commercial River Utilization Reporting Information", City of Durango, Oct. 2021; "Special Report on Paddlesports", Outdoor Foundation, 2015; "Colorado Travel Year 2019", Colorado Tourism Office and Longwoods International

Lake Nighthorse

Use at Lake Nighthorse is tracked because each vehicle must purchase a day pass or show a previously purchased pass to enter the facility. Total use at Lake Nighthorse grew by 34% in 2019, its second year of operations and increased again by 47% during its third year of operations to over 93,000 people utilizing the lake during 2020. The 2018-2020 annual average was 67,960 users of Lake Nighthorse.

Figure 11 – Lake Nighthorse User Days 2018-2020



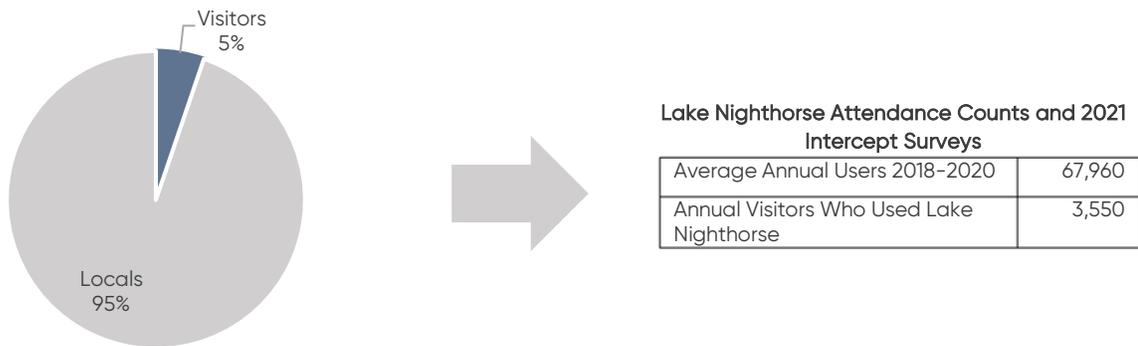
Source: Lake Nighthorse Recreation Area 2020 Season Summary Report. Note –2021 Lake Nighthorse user days became available after the visitor use and economic impact analysis were complete. In 2021, there were 56,218 season and punch pass user days, 50,488 daily admission user-days and 107,415 total user days.

Intercept surveys were taken at the Lake Nighthorse entrance during three stages of the season. The first set of surveys were taken over two early season weekends in April when the lake was open during weekends only, the second set was taken in June with the summer season and full-time operations underway, and the third set was taken in early July during peak tourism season.



Analysis of intercept survey results show that an estimated 5% of users of Lake Nighthorse are visitors from outside of the Durango area. Based on the user day records from 2018–2021 and based on the analysis of intercept survey results, an estimated 3,550 visitors use Lake Nighthorse over the course of an average season.

Figure 12 – Lake Nighthorse Recreation Area Use Summary

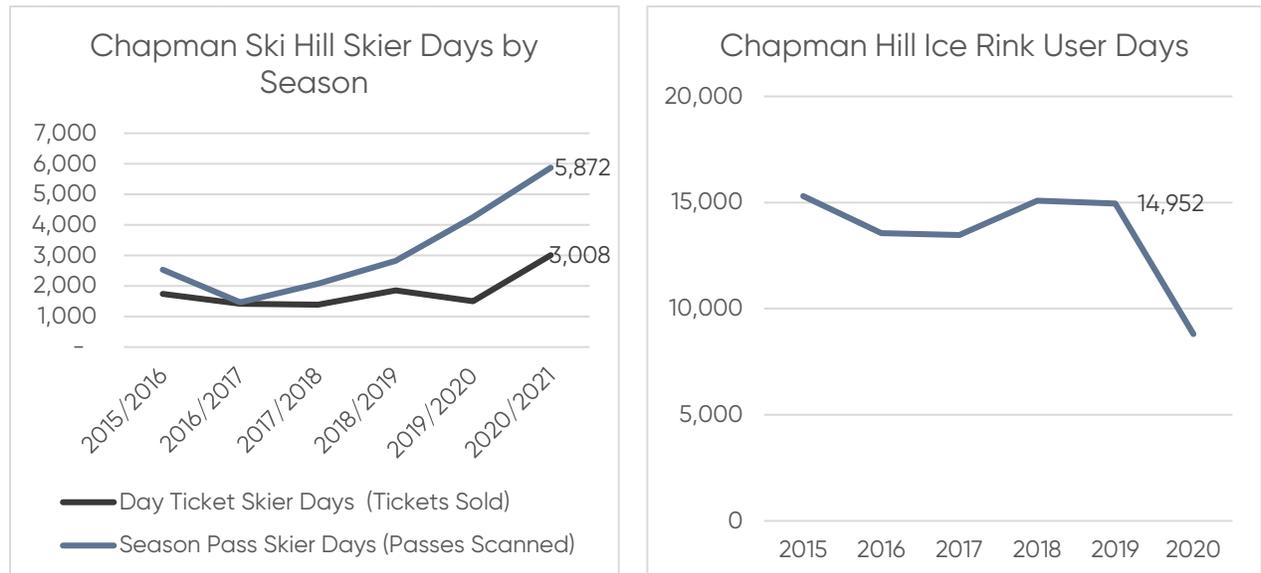


Source: Lake Nighthorse Recreation Area 2020 Season Report; Lake Nighthorse Intercept Survey 2021

Chapman Ski Hill and Ice Rink

Skier days at Chapman Ski Hill have increased since the 2016/17 season, climbing to nearly 9,000 skier-days during the 2020–21 ski season. The ski hill season typically starts in mid-December and runs through early March. Season length varies depending on weather.

Figure 13 – Chapman Hill Use by Season

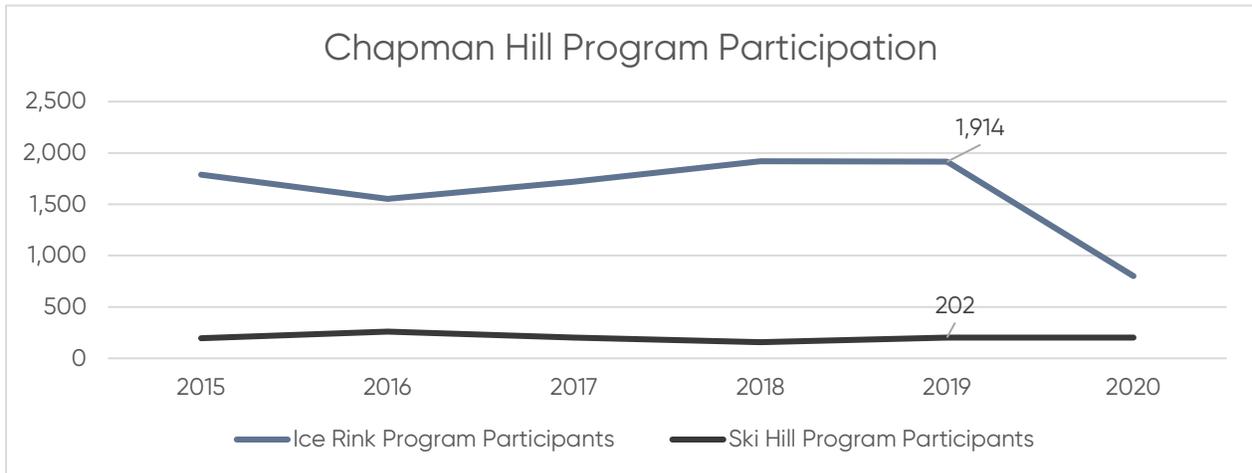


Source: “Chapman Ski Hill User Numbers, Revenues”, Durango Parks and Recreation; Durango Parks and Recreation Department 2020 Annual Report. Note: Years 2020 and 2021 were affected by COVID-19.



Parks and Recreation Department programs at the ice rink typically serve nearly 2,000 participants per year, which includes adult hockey, ice skating school, figure skating, and pick-up hockey. This does not include Durango Area Youth Hockey Association (DAYHA) participation because it is not a city program. Lessons, ski and snowboard camps and other city-run programs on Chapman Ski Hill add up to approximately 200 participants per year. This does not include the Durango Winter Sports Club activities and other club sponsored programs that are not operated by the city.

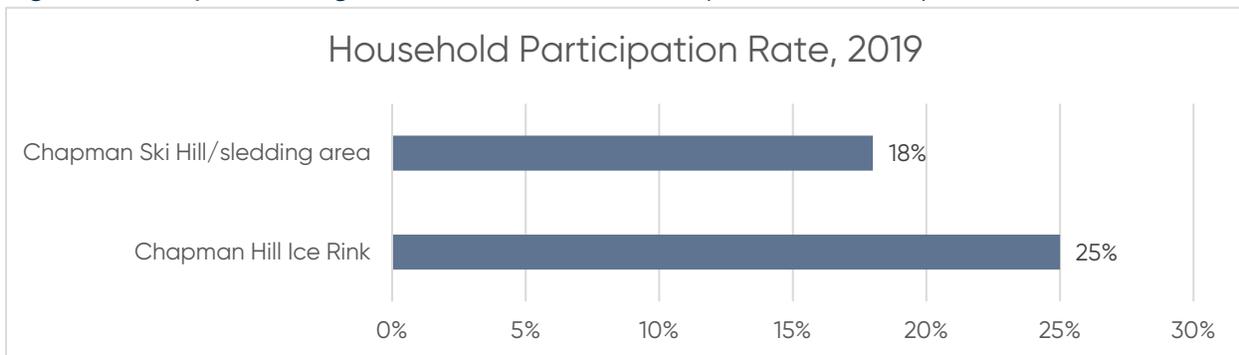
Figure 14 – Chapman Hill Program Participation (Individuals)



Source: Durango Parks and Recreation Department 2020 Annual Report. Note: Year 2020 was affected by COVID-19.

According to the 2019 survey of city residents, over the course of a year, nearly one in five city residents use the ski hill and one in four use the ice rink.

Figure 15 – City of Durango Resident Household Chapman Hill Participation Rate

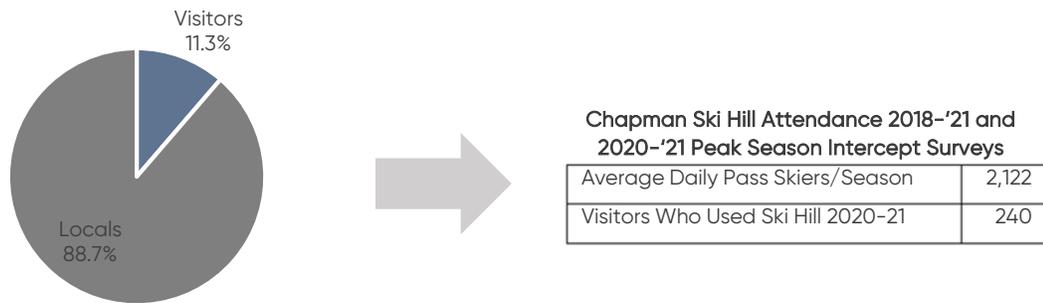


Source: 2019 Parks, Open Space, Trails & Recreation Master Plan, statistically valid city resident survey

Given the ski hill participation rate among city residents, it is not surprising that ski hill intercept survey results showed that locals purchase 88.7% of ski hill daily tickets and 11.3% are visitors from outside of the area. This does not include season passholders, who are most likely residents of the Durango area.



Figure 16 – Chapman Ski Hill Day Pass Skier Days and Visitor Skier Days



Source: "Chapman Ski Hill User Numbers, Revenues", Durango Parks and Recreation, 2021; "Peak Season Intercept Surveys", Durango Parks and Recreation, 2020-2021

Special Events

The City of Durango Parks and Recreation Department manages, permits and oversees special events on city property including all parks and open space as well as other city property. According to department records, there were 49 events in 2018 and 47 in 2019. Special events were drastically reduced by COVID-19 in 2020, therefore this analysis focuses on the year 2019 as an exemplar year.

Most events are intended for and attended mainly by local/regional community members. For example, Apple Days Festival, KSUT Party in the Park, and even some larger events such the La Plata County Fair attract a mostly local crowd. The project team identified thirteen Parks and Recreation Department events that occurred in 2019 that are known to attract visitors from outside of the local area. Based on event permit records, there were an estimated 38,200 attendees to these thirteen events beginning in January with Snowdown and running into early fall months with the Autumn Arts Festival.

Figure 17 –Events Permitted by City Parks and Recreation Known to Attract Visitors, 2019

Event Name	Estimated Attendance
Snowdown Light Parade	8,600
Squawker Classic	200
Taste of Durango	9,000
Iron Horse Bicycle Classic	4,000
Animas River Days	2,600
Race Across America	250
Fourth of July	3,000
San Juan Brewfest	2,600
Four Corners Motorcycle Rally	450
Autumn Arts Festival	6,000

Source: City of Durango Parks and Recreation Department, 2021; Note- Special event participation was affected by COVID-19 in 2020 and 2021 so the analysis uses 2019 data.

Analysts referenced a number of sources to estimate the proportion of event attendees that are visitors from outside of the Durango area. Snowdown 2019 was studied in depth by a



team led by Professor Debra Walker of Fort Lewis College School of Business. An intercept survey conducted as part of this study found that 31% of attendees at the Snowdown Light Parade were visitors from outside of the Durango area. A similar intercept survey run by Taste of Durango organizers found that 16% of attendees to its 2019 event were from outside of the Durango area. According to the Iron Horse Bicycle Classic, 64% of event registrants for the most recent event were from outside of the Durango area. Durango Arts Center staff estimate that 50% of the attendees at this annual event are visitors from outside of the Durango area. The Taste of Durango visitor participation rate was used as an analogue for single day events during the warmer season (San Juan Brewfest, Fourth of July) while Iron Horse Bicycle Classic was an analogue for multi-day specialty events (Four Corners Motorcycle Rally).

Figure 18 – City of Durango Permitted Special Events Attendance and Visitor Summary



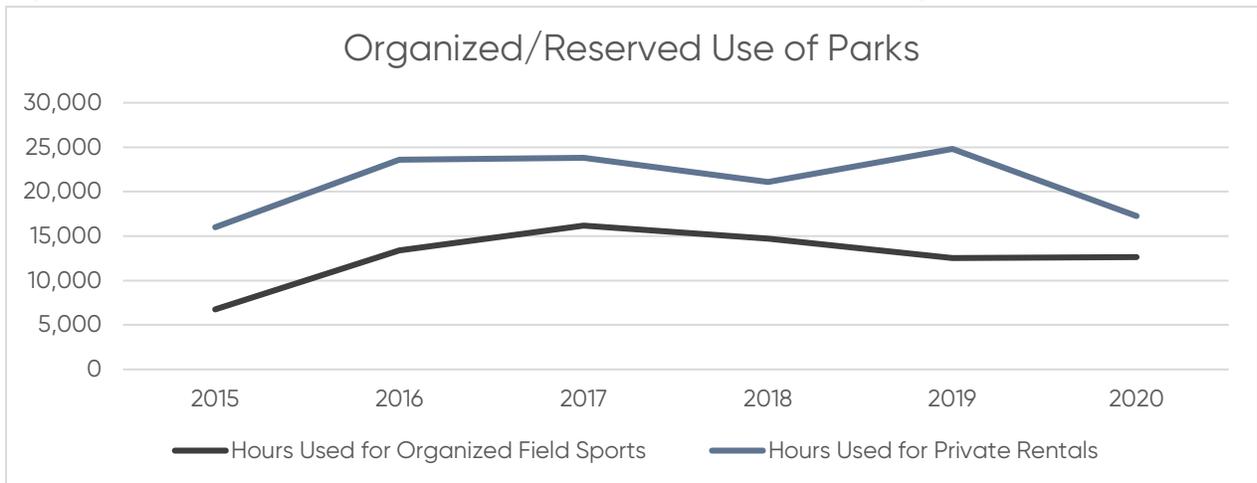
Sources: Parks and Recreation Department special events permitting records, 2019; "2020 Snowdown Economic Impact on the City of Durango, Colorado", Dr. Deborah Walker, Professor of Economics, Fort Lewis College; tasteofdurango.com; event registrations and results from www.ironhorsebicycleclassic.com; Rocky Mountain Collegiate Cycling Conference, collegiatecycling.org/rmccc ; Durango Arts Center.

Athletic Fields, Competition Venues and Parks

Hours of athletic field use by city programs and other clubs and organizations increased steeply in 2016 when Smith Sports Complex Fields were added to the inventory. Athletic fields include Folsom Fields, Riverview Sports Complex, Smith Sports Complex, and Santa Rita Park. The renting of park facilities exceeded 20,000 hours most years leading up to 2020.



Figure 19 – Annual Hours of Parks and Athletic Fields Reserved for Organized/Reserved Use



Source: Durango Parks and Recreation Department 2020 Annual Report. Note: Year 2020 was affected by COVID-19.

Youth athletic clubs and organizations rent field time to practice and compete. Some clubs host tournaments with teams from out of the area. A study by Fort Lewis College School of Business showed that the 2019 Durango Shootout attracted 74 soccer teams and over 6,000 visitors from outside of the Durango area. Lacrosse and baseball tournaments together with the state qualifying BMX race brought in about 1,000 visitors.

Figure 20 – Estimated Visitors Attending Athletic Events at City Athletic Facilities

	Events/Tournaments	Home Games vs. Travel Teams
Durango Rio Rapids Soccer	6,420	210
Durango Area Youth Hockey	0	770
Durango Baseball and Softball	220	
Durango BMX	275	
Durango Lacrosse	500	

Sources: Durango Baseball and Softball staff; "Economic Impact of Durango Shootout", Debora Walker, Professor of Economics, Fort Lewis College; 2019; www.durangohockey.org; "Durango hosts youth BMX cyclists," Durango Herald, June 20,2021; Durango Youth Hockey Association website and social media; Durango BMX website and social media; Durango Lacrosse website and social media.

These athletic events brought in an estimated 7,120 overnight visitors and 300 day-visitors. Most athletic events like these are held annually and continue to bring in visitors.

Figure 21 – Athletic Events Attracting Out of Town Teams

Estimated Overnight Visitors Attending Athletic Events	7,120
Estimated Day Visitors Attending Athletic Events	300

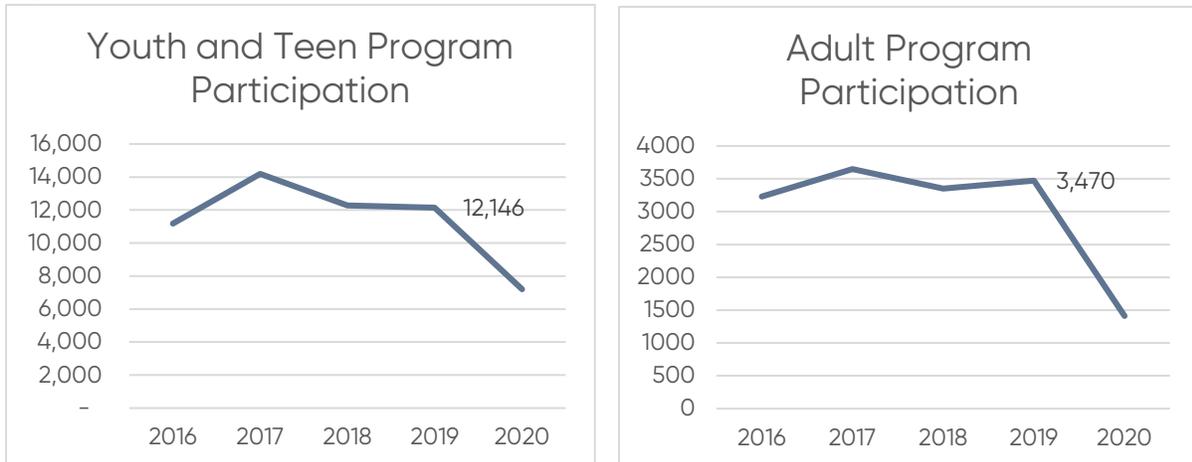
Sources: Durango Baseball and Softball staff; "Economic Impact of Durango Shootout", Debora Walker, Professor of Economics, Fort Lewis College; 2019; www.durangohockey.org; "Durango hosts youth BMX cyclists," Durango Herald, June 20,2021; Durango Hockey website and social media; Durango BMX website and social media; Durango Lacrosse website and social media.



City Programs

There were 23 youth and/or teen programs offered in 2019 and despite the pandemic, 20 programs were offered in 2020. Gymnastics and soccer attract the highest participation.

Figure 22 – Parks and Recreation Department Program Participation



Source: Durango Parks and Recreation Department 2020 Annual Report. Note: Year 2020 was affected by COVID-19.

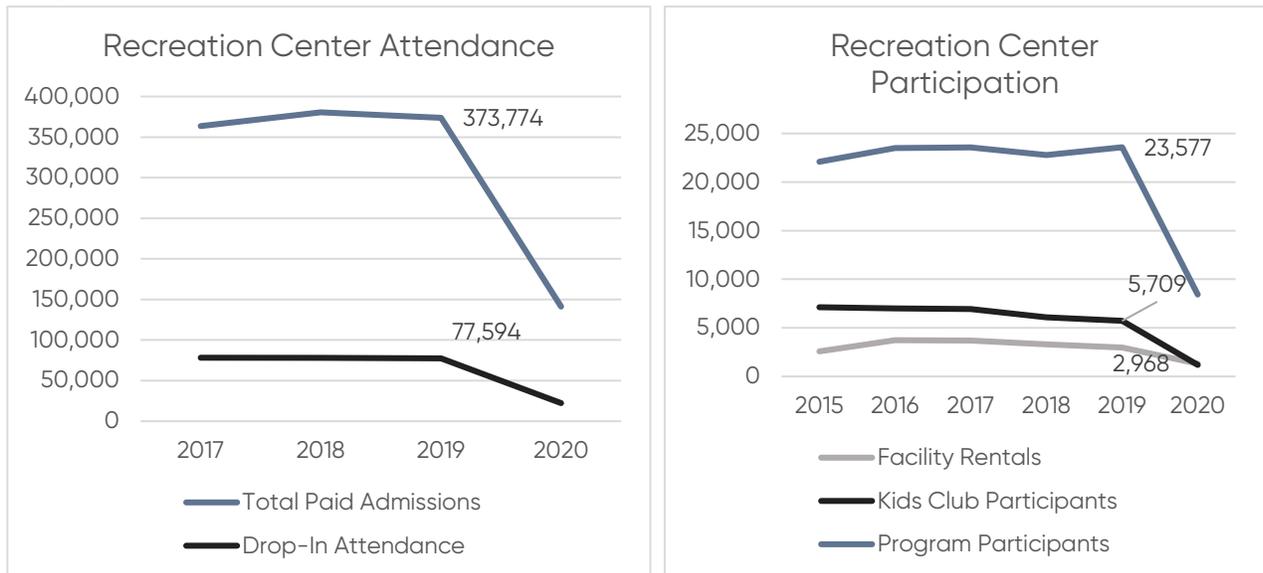
During 2019, 16 adult programs were offered and softball and hockey drew the highest participation. In 2020 during the first and most disruptive year of the pandemic, 12 adult programs were offered.

Indoor Recreation Facilities

Most attendees at the recreation center are pass holders or use punch cards and just over 20% of total attendance are drop in users who pay for a single admission. The recreation center sees visitor use. However, due to COVID-19, intercept surveys were not taken at the recreation center as originally planned and the recreation center was not included in the visitor use analysis used for the economic impact assessment.



Figure 23 – Durango Community Recreation Center Attendance (Each Admission) and Program Participation (Each Individual)

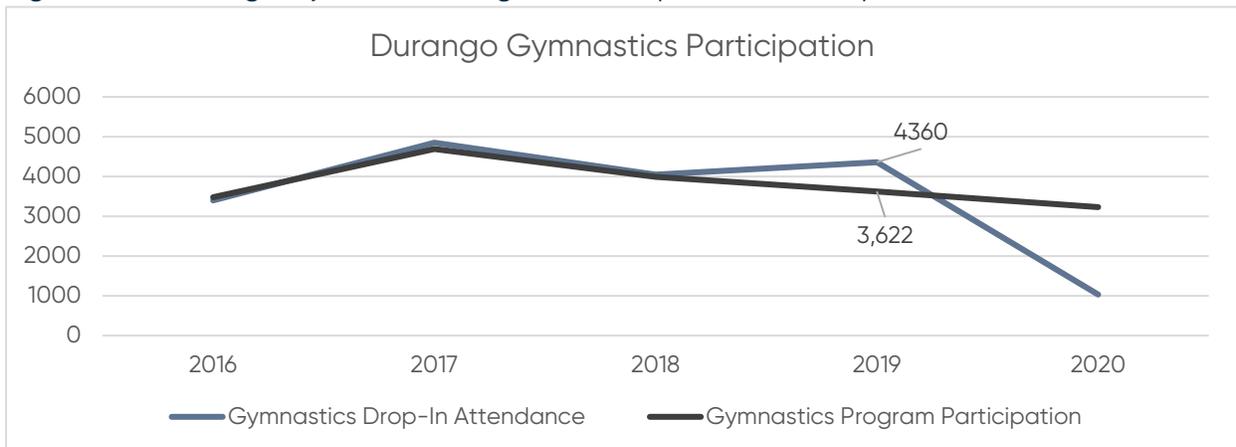


Source: Durango Parks and Recreation Department 2020 Annual Report. Note: Year 2020 was affected by COVID-19.

Classes such as swimming, dance, martial arts and other fitness and recreational classes or sessions that are led by independent instructors are counted as recreation program participants. Program use at the recreation center held steady for five years and then declined during the first year of the pandemic.

Gymnastics program participation held remarkably well in 2020 despite COVID-19. Drop-in attendance declined steeply reflecting the reduced capacity and closures. Although Durango Gymnastics programming draws participation from surrounding communities, it is not known to attract use by visitors from outside of the area.

Figure 24 – Durango Gymnastics Program Participation and Drop-In Attendance



Source: Durango Parks and Recreation Department 2020 Annual Report. Note: Year 2020 was affected by COVID-19.



Economic Impact

Economic impacts occur as a result of new money being injected into the local economy. The Durango Parks and Recreation Department contributes because visitors from outside of the Durango area who use the Department's facilities and services spend money in the local economy. The facilities, activities and services provided by the Parks and Recreation Department contribute to visitors' experiences and are motivators for trips to the Durango area. Therefore, the Department contributes to the influx of visitor dollars into the local economy. The impact analysis first requires summation of the expenditures of the 66,580 visitor users. The nearly \$23.7 million in estimated annual visitor spending by these visitors occurs in several sectors including food and drinks, retail shopping, recreation, entertainment, and overnight accommodations. Economic model multipliers were then employed to estimate \$33.9 million in total annual economic output and 348 jobs resulting from the spending of new dollars by visitors who used Durango Parks and Recreation Department facilities and services.

Visitor Spending Summary

The Parks and Recreation Use Study identified several Parks and Recreation Department facilities and activities that are utilized by parties visiting from out of the Durango area. Over the course of a year, tens of thousands of visitor parties use the city's outdoor recreation facilities including city trails, Lake Nighthorse, Chapman Ski Hill and the Animas River. Visitors from outside of the Durango area also attend special events that are managed by the Parks and Recreation Department. Athletic fields, Chapman Hill Ice Rink and the BMX track are also utilized by visitors from outside of the Durango area for games, tournaments, and races. The Parks and Recreation Use Study estimates conservatively that over sixty-six thousand visitors will use these city facilities or attend these events during a typical year. Note that due to COVID-19, visitor use of the Durango Community Recreation Center was not included because it was not feasible to take onsite intercept surveys.

Figure 25 – Summary of Visitors Using City Parks and Recreation and Estimated Spending

	<u>Visitors</u> City Parks and Recreation Visitor Users	<u>Spending per Visitor</u> Visitors Using City Parks and Recreation	<u>Total Spending</u> <u>Including Taxes</u> (rounded)
City Trails	22,000	\$397	\$8,744,100
Chapman Ski Hill	240	\$465	\$111,600
Lake Nighthorse	3,550	\$465	\$1,651,700
Animas River	21,000	\$465	\$9,770,800
Special Events	12,670	\$142	\$1,794,100
Athletic Events	7,120	\$228	\$1,623,600
Total	66,580	\$356	\$23,695,700

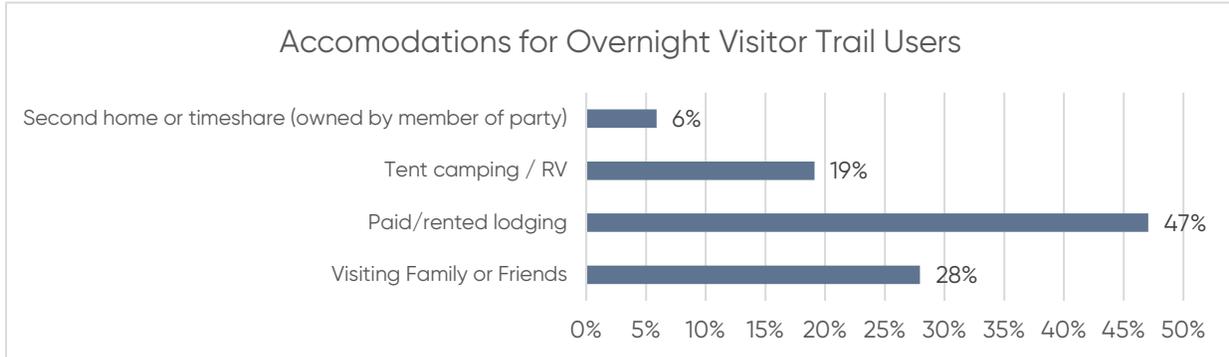
Sources: City of Durango Parks and Recreation Department Peak Season Trails Intercept Survey, 2021

Visitors from outside of the Durango area spend money on food and beverage service, lodging, entertainment/recreation and shopping. The longer visitors stay in the Durango area, the more money they spend. The City of Durango 2021 Parks and Recreation Department Peak Season Trails Intercept Survey found that 91% of trail users visiting from



outside the Durango area are staying at least one night and 47% stay in paid accommodations. According to results from Chapman Ski Hill 2020–2021 Peak Season Intercept Surveys, 95% of Ski Hill users who were visiting from outside the Durango area stayed overnight and the Lake Nighthorse 2021 Intercept Survey also showed that most visitors stay overnight.

Figure 26 – Overnight Visitor Trail User Type of Accommodations



Source: City of Durango Parks and Recreation Department Peak Season Trails Intercept Survey, 2021;

Visitor spending was determined using the best sources available for each type of activity. Spending by visitors using city trails was estimated using intercept survey results. Trail users visiting from outside of the Durango area were asked to list the spending by their travel party during their stay in the Durango area. Survey respondents also stated the number of people in their travel party. Average spending per visitor was determined by dividing the total spending by the total number in the travel party (\$397 per visitor).

The \$142 per visitor spending by special event attendees is a weighted average of spending estimates for each of the events included in this study. For example, Snowdown spending is based on intercept surveys included in “2020 Snowdown Economic Impact on the City of Durango, Colorado” by Dr. Deborah Walker, Professor of Economics, Fort Lewis College. Similarly, spending by attendees at athletic events is a weighted average of spending at each athletic event. The three-day Durango Shootout soccer tournament spending is based on intercept surveys included in “Economic Impact of Durango Shootout”, Debora Walker, Professor of Economics, Fort Lewis College; 2019. Visitor spending at other events was based on spending per visitor estimates from “Colorado Travel Impacts” by Colorado Tourism Office/Dean Runyan Associates, 2019, and average trip length information from “Colorado Travel Year” by Colorado Tourism Office/Longwoods International, 2020. Total spending was based on the number of days over which the event occurred.

Per visitor spending for Chapman Ski Hill, Lake Nighthorse and Animas River Commercial Rafting was based on spending per visitor estimates from “Colorado Travel Impacts” by Colorado Tourism Office/Dean Runyan Associates, 2019.

Visitor spending by category for Colorado Visitors (Colorado Tourism Office/Dean Runyan Associates) is close to the spending pattern of visitor respondents to the City of Durango



2021 Parks and Recreation Department Peak Season Trails Intercept Survey. The most money is spent on food, drinks and accommodations.

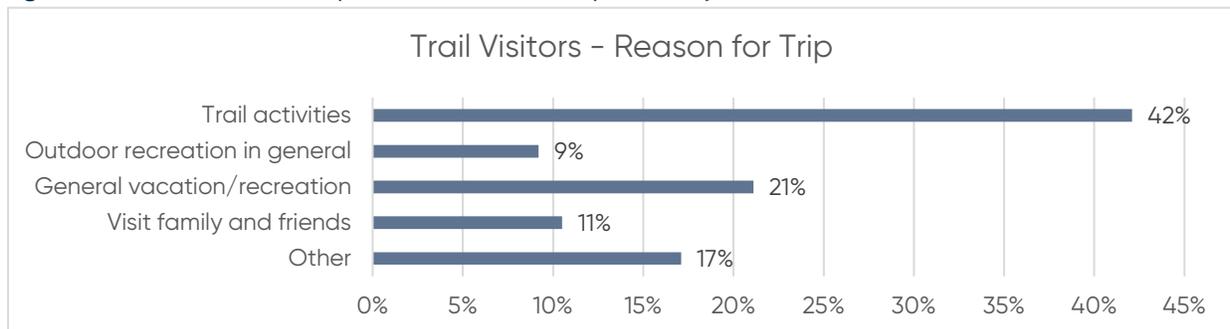
Figure 27 – Visitor Spending by Category

	Colorado Visitor Spending	City Trail-Users Visitor Spending
Food and drinks	28%	24%
Shopping, gifts and souvenirs	13%	12%
Recreation, entertainment	12%	7%
Accommodations	24%	29%
Other	23%	28%

Source: "Colorado Travel Impacts" by Colorado Tourism Office/Dean Runyan Associates, 2019; City of Durango Parks and Recreation Department Peak Season Trails Intercept Survey, 2021;

Most visitors responding to the intercept surveys were in Durango specifically to recreate, and many were in Durango specifically for outdoor recreation. Forty-two percent (42%) of 2021 Parks and Recreation Department Peak Season Trails Intercept Survey visitor respondents registered "trail activities" as a primary reason for their trip, 9% were in Durango for outdoor recreation in general and 21% were in town for general vacation and recreation. Similarly, 36% of Lake Nighthorse Intercept Survey visitor respondents were in the area for outdoor recreation and 43% were on vacation in general. Eighty percent (80%) of Chapman Ski Hill Intercept Survey visitor respondents stated that they were in the Durango area for vacation or recreation. City of Durango Parks and Recreation Department facilities and activities are central to the purpose and experience of visitors who use them because most visitors are here to recreate.

Figure 28 – Reason for Trip, Trail User Intercept Survey



Source: City of Durango Parks and Recreation Department Peak Season Trails Intercept Survey, 2021

Economic Impact Analysis

This economic impact analysis describes the impact on the local economy (La Plata County) of a typical year of spending by visitors who used city parks and recreation facilities. Sales to visitors from outside of the area bring new dollars into the local economy. RIMS II Multipliers (Regional Input-Output Modeling System) by Bureau of Economic Analysis require that visitor spending is organized by industry classification because each industry interacts uniquely other industries in the economy. The visitor spending by category percentages for



trail users listed above were multiplied by city trail user visitor spending. Visitor spending for other city parks and recreation users was multiplied by the state average spending by category.

Figure 29 – Typical Year Annual Spending, Parks and Recreation Facility/Activity User Visitors

	Food and drinks	Shopping, gifts and souvenirs	Recreation, entertainment	Lodging	Other	Total (rounded)
City Trails	\$2,098,600	\$1,049,300	\$612,100	\$2,535,800	\$2,448,300	\$8,744,100
Chapman						
Ski Hill	\$26,800	\$13,400	\$7,800	\$32,400	\$31,200	\$111,600
Lake						
Nighthorse	\$396,400	\$198,200	\$115,600	\$479,000	\$462,500	\$1,651,700
Animas						
River	\$2,345,000	\$1,172,500	\$684,000	\$2,833,500	\$2,735,800	\$9,770,800
Special						
Events	\$430,600	\$215,300	\$125,600	\$520,300	\$502,300	\$1,794,100
Athletic						
Events	\$389,700	\$194,800	\$113,700	\$470,800	\$454,600	\$1,623,600
Total	\$5,687,100	\$2,843,500	\$1,658,800	\$6,871,800	\$6,634,700	\$23,695,900

Source: "Colorado Travel Impacts" by Colorado Tourism Office/Dean Runyan Associates, 2019; City of Durango Parks and Recreation Department Peak Season Trails Intercept Survey, 2021; See Figures 25 and 27.

RIMS II multipliers help estimate the total effect that visitor spending has on the local economy (La Plata County). Multipliers are constructed from a detailed set of industry accounts that measure the goods and services produced by each industry and the use of these goods and services by other industries and consumers. RIMS II Total Output Multipliers also include household spending by the employees generated by city parks visitor user spending.

Figure 30 – RIMS II Multipliers for the Local Economy

	Total Output Multiplier	Jobs Per \$Million of Spending
Food and drinks	1.5359	16.3563
Shopping, gifts and souvenirs	1.5169	16.1921
Recreation, entertainment	1.6155	16.0721
Lodging	1.4663	10.9379
Other	1.5169	16.1921

Source: RIMS II Multipliers for La Plata County, Bureau of Economic Analysis, 2021

The total impact of \$22.4 million in city parks and recreation visitor user spending on the local economy in terms of output is \$33.9 million. For example, \$5,246,400 in annual spending (less sales tax) on food and drinks multiplied by the 1.5359 total output multiplier for this sector yields a total output of \$8,058,000. When the total impact is valued in terms of jobs, the total impact of \$22.4 million in visitor spending is 348 jobs. For example, \$5.2464 million in annual spending (less sales tax) on food and drinks multiplied by the 16.3563 jobs per \$million multiplier for this sector yields 93 jobs.



Figure 31 – Economic Impact of Visitor City Parks and Recreation User Spending

	Spending (Less Sales Tax)	Total Output	Jobs
Food and drinks	\$5,246,400	\$8,058,000	93
Shopping, gifts, souvenirs	\$2,623,200	\$3,979,000	46
Recreation, entertainment	\$1,658,800	\$2,680,000	27
Lodging	\$6,224,500	\$9,127,000	75
Other	\$6,634,700	\$10,064,000	107
Total	\$22,387,600	\$33,908,000	348

Source: RIMS II Multipliers for La Plata County, Bureau of Economic Analysis, 2021

Sales Tax Revenue Generation

Of the \$22.4 million in total spending (less sales tax) by visitors who used city parks and recreation, \$14,094,100 are taxable sales. Taxable sales include the spending on food and drinks; shopping, gifts, souvenirs; and lodging in Figure 31 above. Assuming the sales occurred in the City of Durango, they would generate \$775k in sales tax and \$125k in lodgers' tax. This represents a maximum for City of Durango sales tax because it is likely that visitors make some purchases outside of the city during their stay.

Figure 32 – Estimated Sales Tax Collections from Visitor Spending

Spending	Annual Dollars	Tax Rate
Visitor total taxable sales	\$14,094,100	
Lodging spending	\$6,224,500	
<u>Sales tax revenue</u>		
City 1/4 cent sales tax	\$35,200	0.25%
City 1/2 cent sales tax	\$70,500	0.50%
Other City Sales Tax	\$387,600	2.75%
County Sales Tax	\$281,900	2.00%
Lodgers Tax	\$124,500	2.00%
Total revenue	\$899,700	

Impacts not Quantified

Construction projects using Great Outdoors Colorado (GOCO) funding inject new money into the economy. Over the past 27 years, the city has been awarded \$12.2 million in funding from a number of GOCO grant programs for land acquisition, planning/design and construction. About \$3 million Of the \$12.2 million in funding was awarded to complete projects that included a construction component. The City of Durango has local preference procurement policies and generally works with local companies, so a good deal of this grant revenue found its way into the local economy via local planning, design and construction firms.

The impact of trail users only includes peak season trail use from May through October. Trail use continues through the shoulder seasons and in winter. It is likely that some of these off-season trail users are visitors from outside of the Durango Area. Trail counters were only placed at the trailheads most commonly used by locals and visitors alike. There are several access points not included in the trail counts such as Chapman Hill and the Hidden Valley



access to Overend Mountain Park. While trail counters were placed to capture most of the trail use, there is additional use and some of the users are likely visitors from outside of the area.

Visitors use the recreation center. However due to the complexities and staffing shortages accompanying the pandemic, intercept surveys were not feasible. Although the percentage of recreation center visitor users would be low, there are likely thousands of visitors who use the recreation center during a typical year.

The degree to which visitors use the 35 neighborhood and community parks maintained by the Parks and Recreation Department and how much that use compares to local use is difficult to measure because of the dispersed and informal use patterns. It is most likely that the parks nearest Downtown Durango and to the Animas River Trail are the most frequently used by visitors. This informal, dispersed use of parks by visitors is not included in the economic impact analysis.



Economic Value of Parks and Recreation to the Local Community

Parks and recreation assets are a cornerstone of quality of life in Durango and provide benefits that extend well beyond the boost they provide for the tourism industry. This overview of community benefits begins by examining the value that Durango Parks and Recreation Department contributes to economic development and diversification. Economic development advocates promote recreation and the quality of life in Durango to attract prospective businesses and workers. Parks and recreation assets lend to quality of life because they provide tangible benefits each time a resident uses them. Recognizing the importance of these benefits, economists have established scientific methods to quantify the dollar value of the benefits public recreation assets provide.

The health benefits of ready access to recreation opportunities also contribute significantly to quality of life. Public health researchers have mounted clear evidence that regular exercise improves health and reduces hospital visits and healthcare costs. The benefits of parks and recreation assets are further manifested in the real estate market, which exhibits a price premium for properties located adjacent to City of Durango Parks, Open Space and Trails.

Parks and Recreation as a Value Proposition for Economic Development

Parks and recreation asset development is a key component of regional and local economic development. The La Plata County Comprehensive Economic Development Strategy (CEDS) by Region 9 Economic Development District culminates in the “Community Development Action Plan” which lists tangible measures for implementing its goals. A few of these priority actions are Durango Parks and Recreation projects upon which significant progress has been made since the 2016 adoption of the current CEDS:



- Completion of the Animas River Trail
- Completion of the SMART 160 Trail
- Open and develop Lake Nighthorse recreation

The role that parks and recreation assets plays in economic development extends well beyond the immediate benefit of attracting and providing quality experiences for visitors. Quality recreation assets are a competitive advantage and are a centerpiece of Durango’s value proposition.

The same is true at the state level. The Colorado Office of Economic Development and International Trade (OEDIT) features the state’s recreation assets in its value proposition asserting that Colorado’s recreation assets give it a competitive advantage over coastal states: “That old adage about living to work or working to live doesn’t apply in Colorado. Here, we’re simply living out our lives to the fullest, all at a lower cost than our coastal counterparts. Sure, our inviting business climate is hard to beat, but everything else we have to offer for arts and culture, recreation and wellness takes living and working in Colorado to a whole other level. Explore the



incredible amenities that come with Colorado's unparalleled lifestyle. Once you experience it for yourself, you may be hard-pressed to leave."

Parks and recreation provide a platform for economic development because high quality recreational opportunities create a sense of place and support a high quality of life. A high quality of life plays a supportive role in recruiting businesses and attracting talented employees. Seventy-two percent (72%) of 133 communities of various sizes across the country use images of parks and public spaces, outdoor recreation, or recreational facilities in their economic development marketing materials (George Mason University Center for Regional Analysis, "Promoting parks and recreation's role in regional economic development", 2018).

Local economic and business development groups showcase Durango's outdoor recreation



assets as a key component of the core infrastructure that makes Durango especially suitable and attractive for startups and businesses seeking to relocate or expand their operations. The La Plata County Economic Development Alliance website homepage contains a prominent dropdown header titled "Move Your Business." The first option on the menu is "Quality of Life/Best Places to Live" which leads to narrative and videos that promote the area's recreation opportunities right alongside other core infrastructure such as broadband, the airport and business support services. The Alliance's website challenges prospective businesses to "Invest in your family, your employees and yourself through the offerings of Durango, Colorado and its surrounding communities."

Technology driven firms, professional and educational services often recruit their employees regionally, nationally, or even internationally. These companies want their offices and facilities in locales where their future employees want to live.

- Soundtraxx, who makes model railroad sound systems, uses outdoor recreation as a center piece in their pitch to prospective employees "We are located in the beautiful town of Durango, Colorado. Here you can wake to the sound of a real train whistle; hike, ski, kayak, or just enjoy some of the most spectacular scenery in the country."
- SEH Engineering in Durango (Formerly Russell Planning and Engineering) promotes recreational opportunities at the top of its landing page "When you visit this Southwest Colorado city, it's easy to see why people choose to live here. With everything from endless mountain biking miles, wildflower laden hiking trails, rushing whitewater adventure, epic skiing and snowboarding action, and much more – it's the state's year-round outdoor playground."
- StoneAge, Inc. which designs and manufactures high-pressure water-blasting tools was ranked in the top 100 places to work by Outside Magazine in 2014 and the article says "the company is staffed with athletes who hit the Durango trails hard on wheels, skis, kayaks, horses, and their own two feet."
- The top line of Fort Lewis College's employment landing page features a tagline that references outdoor recreation: "For more than a century, Fort Lewis College has been serving the Four Corners region as Colorado's crossroads of education and adventure."



Some industries want to be located in a community that embodies their company's values and mission. Companies that emphasize outdoor recreation tend to prefer places with extensive outdoor recreational opportunities. For example, because Durango has so many opportunities for mountain and road bicycling, a number of cycling manufacturing companies are located here.

- Boure Bicycle Clothing
- Myth Cycles custom and semi-custom bike frames
- Diaz Suspension Design
- King Cage water bottle cages
- 3D Racing custom bicycle manufacturing
- Bedrock Bags bike gear

From the Regional 9 Economic Development District covering all of southwest Colorado down to individual companies operating in Durango, recreational assets play a starring role in bringing new businesses, fostering start-ups and attracting and retaining a talented workforce.

The Parks and Recreation Department supports local business and economic development directly through its procurement practices. Parks and Recreation Department capital projects are commonly awarded to local companies based in La Plata County because the department solicits bids from local firms and the Durango area has qualified design and construction companies that respond with highly competitive bids. The City of Durango Purchasing Policy offers additional support for local companies by including a 5% local preference advantage for La Plata County based companies and it is a stated City of Durango policy to solicit bids from qualified local firms. The details and full economic impact of the Parks and Recreation Department's capital projects are included in the section entitled "Parks and Recreation Department Operations and Capital Expenditures Economic Impact Analysis."

Non-Market Value of Parks and Recreation

Parks and recreation assets are important for economic development because they are a key component of quality of life. When residents visit a city park or view open space scenery, they receive a benefit without directly paying for the value, compared to the price if it were a private business. The lack of entry fee does not mean the park provides no value. In order to measure the value of these benefits, economists dating back to the 1980s have commonly employed two methodologies:

1. Contingent value methodology is a survey-based methodology focused on gauging consumer "willingness to pay" for a public asset as if it were a private enterprise.
2. Travel cost methodology analyzes travel expenses to generate demand curve that economists utilize to estimate price, or willingness to pay.

John Loomis of Colorado State University is an economist who has forged several innovations in the field of non-market valuation for over three decades. Most recently, Oregon State University has continued to aggregate non-market valuation data for outdoor recreation. These two reputable sources exhibit a range of values for each activity,



demonstrating a significant value of activities that would not otherwise be measured in dollars.

Figure 33 – Willingness to Pay for Recreation per User Day, in 2020 Dollars

	John Loomis, Colorado State University	Recreation Use Values Database, Oregon State University
Hiking	\$53	\$84
Leisure Bicycling	No Data	\$52
Mountain Biking	\$101	\$190
Freshwater Fishing	\$65	\$77
Swimming	\$59	\$31
Non-Motorized Boating	\$138	\$126
Motorized Boating	\$63	\$48
Picnicking	\$57	\$35
General Recreation	\$48	\$63

Sources: Randall S. Rosenberger, "Recreation use values database", Oregon State University, 2016; John Loomis, "Updated recreation use values on National Forests and other public lands", USDA, 2003

The experience that residents have while using Durango Parks and Recreation assets make the broader benefits for community economic development possible. Loomis and other economists have quantified the dollar value of recreational experiences from an individual perspective. Given that single mountain bike ride or a boating session are worth over \$100, it is not surprising that the recreational offerings in Durango attract businesses and inspire people to move to Durango.

Effect of Parks and Recreation on Property Value

The benefits of City of Durango parks and open space are also manifested in the real estate market. Economists have examined the effect of parks, recreation, trails, and greenways on property values for several decades throughout the United States. Most studies analyze the effect that proximity to parks and/or trails has on property value as measured by the price premium. The effect of parks and open space on aggregate or community-wide property values has not been covered by academic research. Most studies use hedonic pricing models, which statistically isolate the effect of proximity to public parks from other pricing variables such as house size, number of bedrooms and other factors that lend toward the price.

A recently updated academic literature review summarizes thirty-three academic studies which measured the impact of distance from parks on sales prices of residences (John C. Crompton, "How much impact do parks have on property values?" Parks and Recreation, April 2020). Thirty of the thirty-three studies that were reviewed found a positive price premium associated with nearness to public parks and open space. There was a reasonable consensus among the studies that parks affected property values of up to a distance of 500 to 600 feet. The literature review concludes that as a general guideline,



property values or price premiums were 8 to 10 percent higher for residences close to parks compared with those not close to parks.

Headwaters Economics compiled a Library of Trails Benefits which includes several studies that analyze the impact of proximity to public trails on property values. A few studies found a positive price premium associated with nearness to public trails using hedonic pricing models while others came to similar conclusions using a survey of residents living along trails. "Economic and health benefits of bicycling in Northwest Arkansas" found a \$6,300 price premium for properties within a quarter mile of a paved pathway (BBC Research, for The Walton Family Foundation and PeopleForBikes, 2018). "The relative impacts of trails and greenbelts on home price" found a 5 percent house price premium for homes in neighborhoods along greenways near San Antonio, Texas (Asabere, P. and F. Huffman, *Journal of Real Estate Finance and Economics* 38-4, 2009). Proximity to Barton Creek Greenbelt in Austin, Texas is associated with a 20% price premium for one neighborhood and 6% price premium in another (Nicholls, S., and J. Crompton. "The impact of greenways on property values: evidence from Austin, Texas." *Journal of Leisure Research*, 2005)

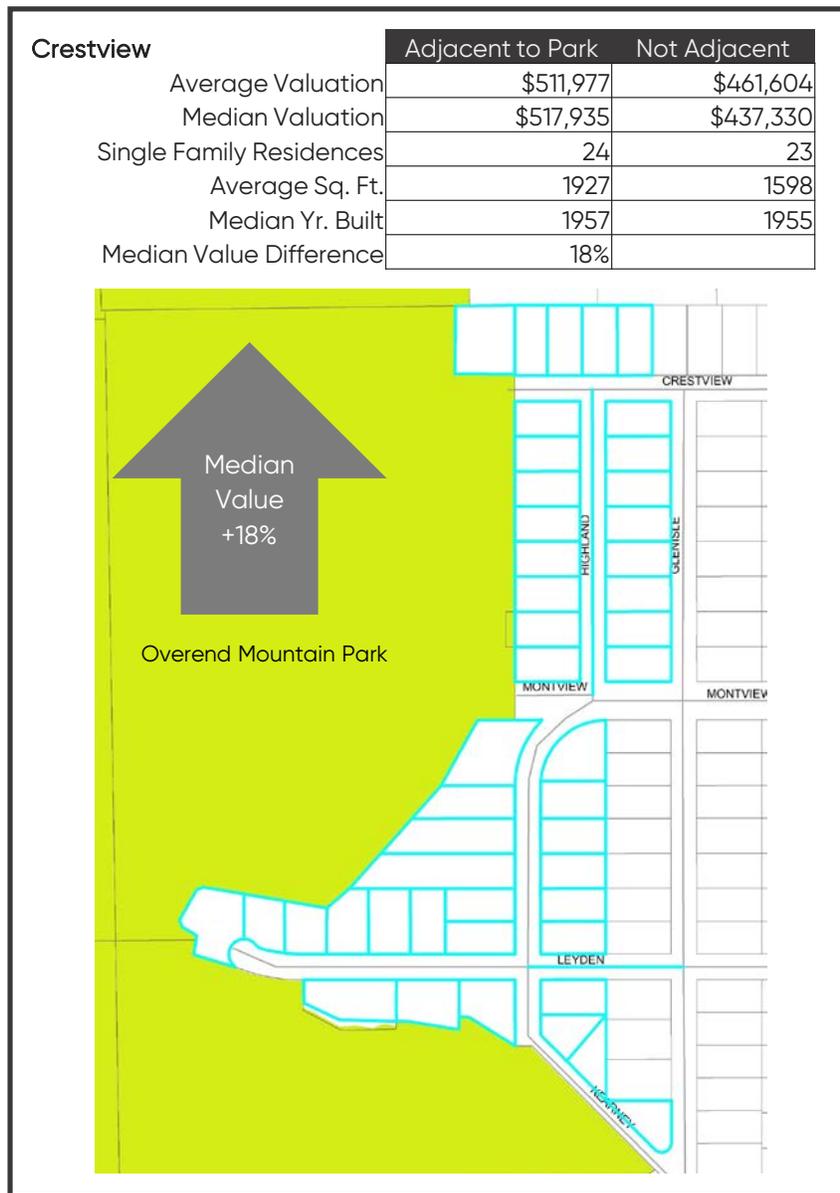
The volume of academic literature and consistency of findings demonstrate a strong case that close proximity to parks, open space and trails is associated with higher property values. Many of these studies were conducted in urbanized areas and it is not as clear how these findings would apply in a small-town context. In Durango, parks, trails and open space are located throughout the city and most neighborhoods have access to parks, trails and/or public open space relatively nearby. Some neighborhoods contain residences that are directly adjacent to parks and open space.

Using La Plata County GIS and Assessor data, RPI determined that homes directly adjacent to City of Durango parks or open space properties in three residential neighborhoods have a higher median appraised value than homes along the same streets or blocks that are not directly adjacent to city parks or open space. This descriptive analysis demonstrates the relationship between adjacency to parks and open space and the median appraised value in three neighborhoods. The model does not claim an impact or purport to demonstrate a causal relationship between the two variables due to data limitations and the effect of other variables, such as floor area, physical condition of the residences and lot size.



The homes on Highland Avenue that are located directly adjacent to Overend Mountain Park have 18 percent higher median appraised value than homes on the east side of the same street that are not directly adjacent to the open space property. Some of the variation may be due to slightly larger homes directly along the open space compared with homes on the east side of Highlands Avenue, although the larger home sizes also reflect a willingness of property owners to expand and improve homes directly adjacent to the open space.

Figure 34 – Appraised Value of Properties Adjacent/Not Adjacent to Overend Mountain Park

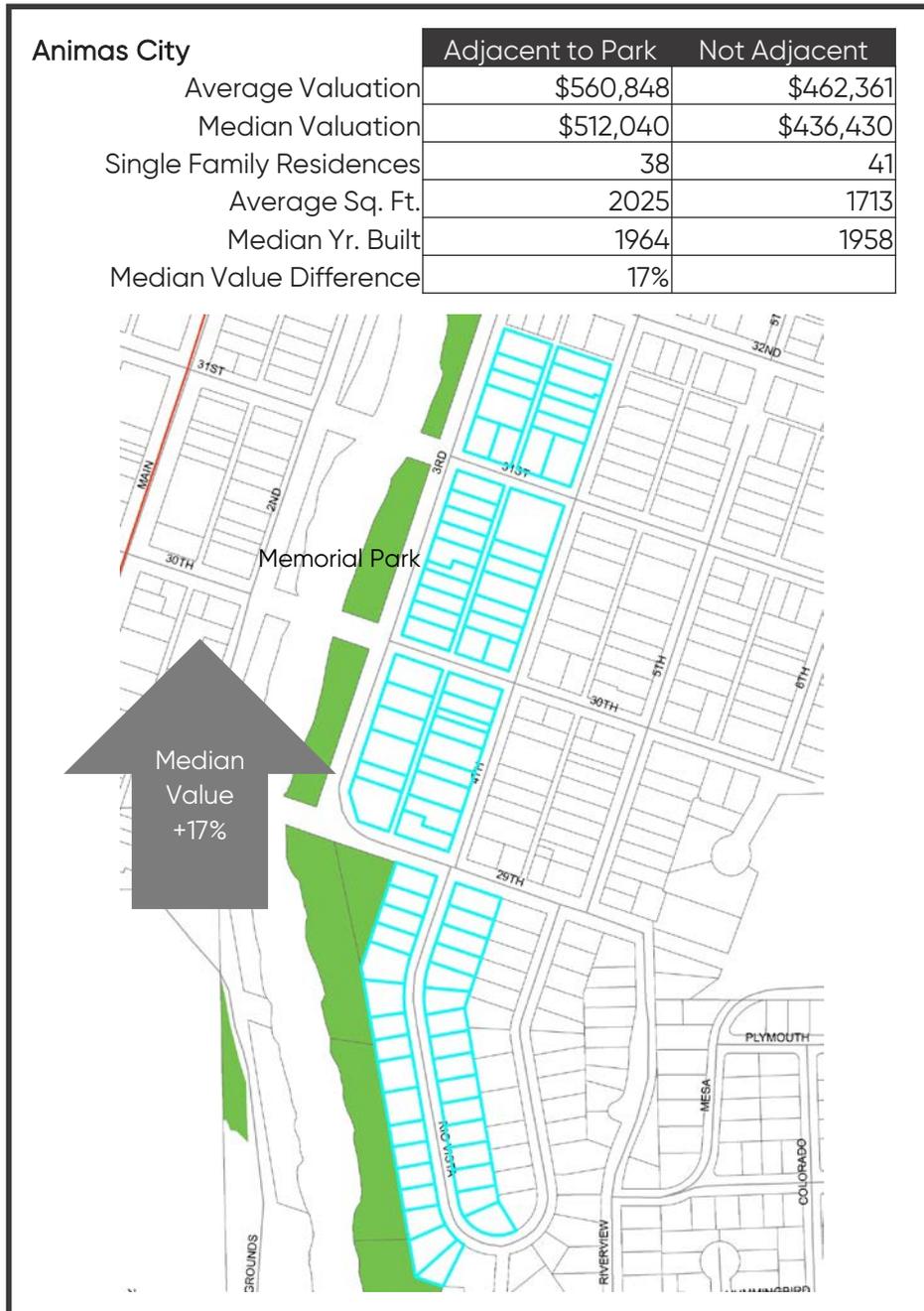


Source: La Plata County GIS and Assessor Databases



The homes on East 3rd Avenue that are located directly across the street from Memorial Park and the homes on Rio Vista Circle that are adjacent to the open space along the Animas River have 17 percent higher median appraised value than homes on the east side of Rio Vista Circle and along E. 4th Avenue that are not adjacent to parks and open space property. The difference in valuation likely reflects a number of factors in addition to nearness to park and open space property, including views of the river for some properties.

Figure 35 –Appraised Value of Properties Adjacent/Not Adjacent to Memorial Park

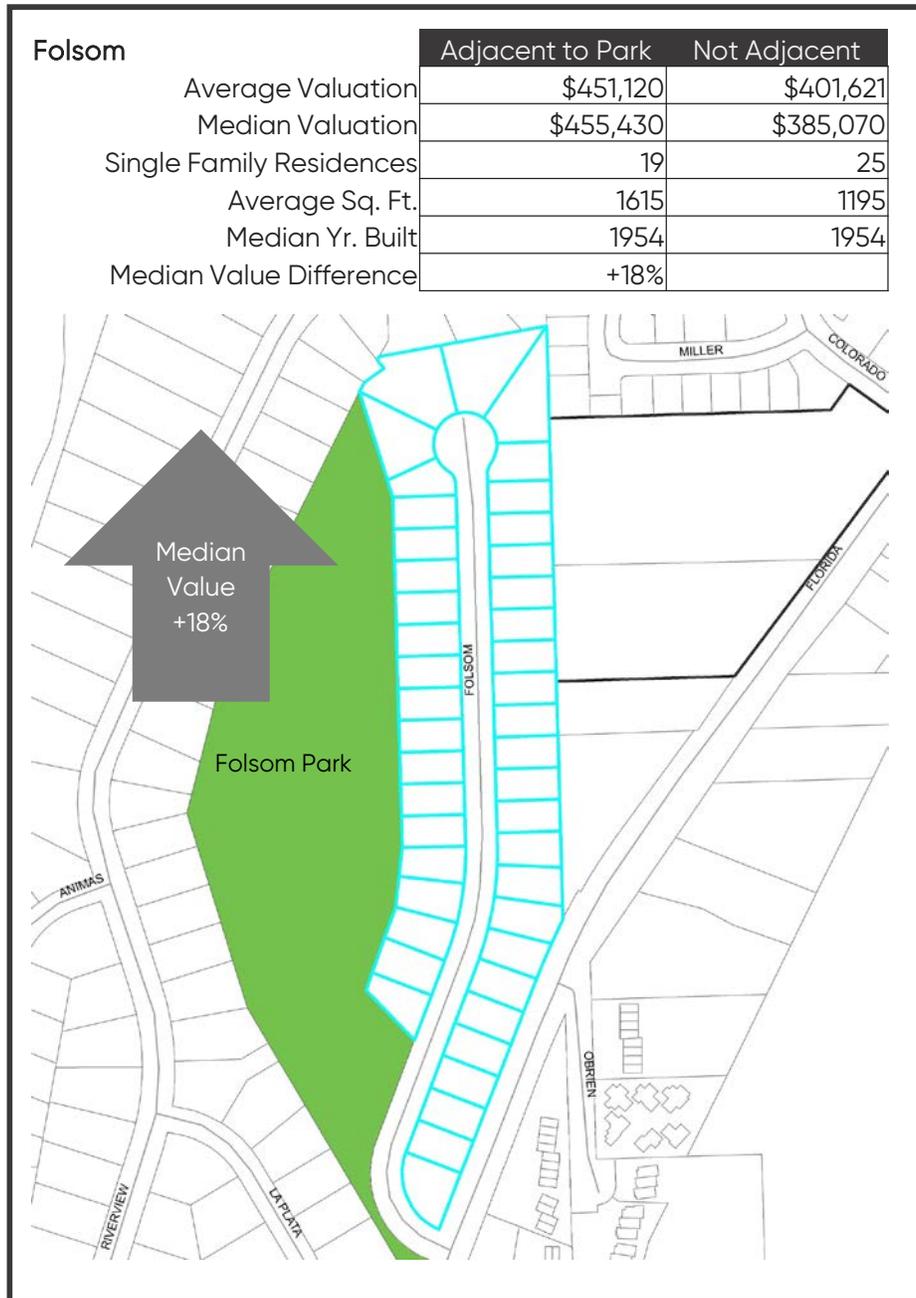


Source: La Plata County GIS and Assessor Databases



While the previous examples include significant natural features (the Animas River and the foothills terrain of Overend Mountain Park), Folsom Park is a traditional neighborhood park. The homes along Folsom Place that are adjacent to the park register a median appraised actual value 18% higher than homes directly across the street that are not directly adjacent to the park. Home sizes along the park are larger than those across the street, which likely also contributes to the higher values, but also reflects a willingness to invest more substantially in the homes adjacent to the park.

Figure 36 –Appraised Value of Properties Adjacent/Not Adjacent to Folsom Park



Source: La Plata County GIS and Assessor Databases



Effects of Parks and Open Space on Property Value Conclusions

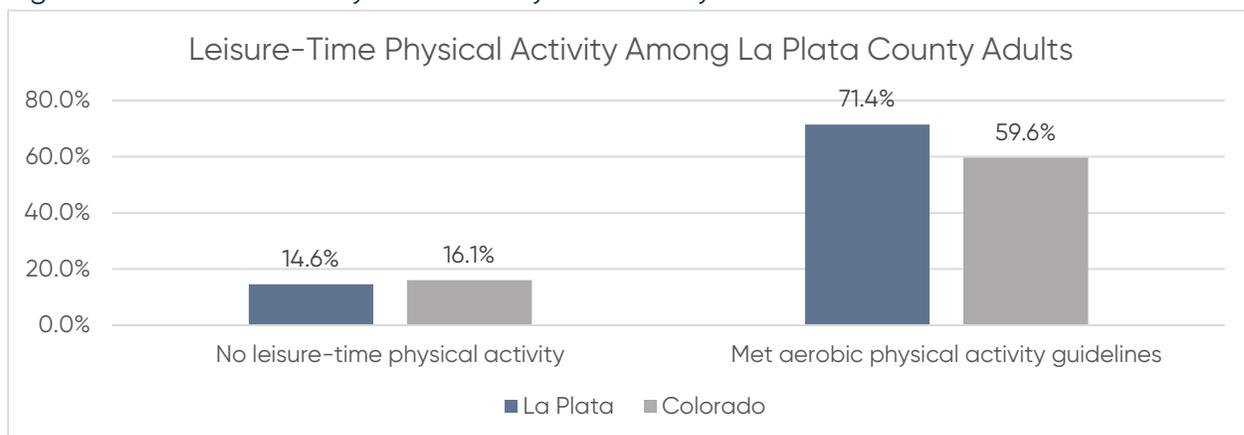
Academics have long established that proximity to parks, trails, and open space fetches a price premium for residential properties. Academic research indicates that measurable effects are within 500-600 feet of parks (less than 2 blocks), so RPI’s approach looks at the relationship between direct adjacency to parks and the appraised value of properties in three Durango neighborhoods. Appraised values of single-family residences directly adjacent to parks and open space were 17 percent or 18 percent higher than not adjacent residences on the same street or block. This shows that the same dynamics long-established by academic studies are also very likely at play here in Durango.

Effects of Parks and Recreation on Public Health and Fitness

San Juan Basin Public Health’s Public Health Improvement Plan (2018) strives for positive health behaviors: “Health behavior is an action to maintain, attain, or regain good health and to prevent illness. Some common health behaviors are exercising regularly, eating a balanced diet, and obtaining necessary inoculations. Health behaviors are influenced by the social, cultural and physical environments in which we live and work.” In Durango and surrounding La Plata County, readily available recreation assets appear to be positively influencing the health behavior of residents. As part of the 2019 City of Durango Parks Open Space Trails and Recreation Master Plan, a professional survey research company conducted a statistically valid survey of Durango Residents. When asked to indicate recreation activities their household has participated in or visited during the past year inside the City of Durango, 93% of respondents indicated that someone in their household has used the Animas River Trail or other trails during the past 12 months, 83% used city parks, 67% used the Durango Community Recreation Center, and 40% boated on the Animas River through the city.

According to Colorado Department of Public Health and Environment (CDPHE) Colorado Behavioral Risk Factor Surveillance System, 71.4% of La Plata County adults met aerobic physical activity guidelines (at least 150 minutes per week), compared with 59.6% statewide. Less than 15% of La Plata County adults surveyed reported no leisure-time physical activity.

Figure 37- La Plata County Resident Physical Activity Levels



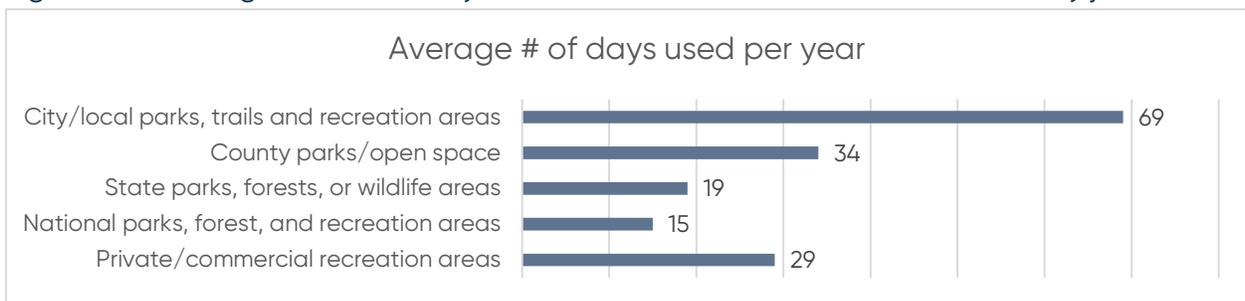
Source: Colorado Department of Public Health and Environment, “VISION: Visual Information System for Identifying Opportunities and Needs,” retrieved September, 2020



Numerous medical field studies have documented the effect of physical activity on overall health and healthcare cost savings. Moderate to vigorous physical activity for 30 minutes, 5 days/week is associated with significantly lower health care spending and resource utilization among individuals (Javier Valero-Elizondo, Journal of the American Heart Association, “Economic Impact of Moderate-Vigorous Physical Activity Among Those With and Without Established Cardiovascular Disease: 2012 Medical Expenditure Panel Survey”). The results of this 26,000+ participant study showed that those with an optimal physical activity history had a mean annual expenditure of \$4,476 and a 5.7% mean annual hospitalization rate while those with a non-optimal physical activity history had a mean annual expenditure of \$5,191 and an 8% mean annual hospitalization rate. On average, those with an optimal physical activity history saved \$715/year and were hospitalized at about two-thirds the rate of those with a non-optimal physical activity history.

According to the 2019 Statewide Comprehensive Recreation Plan (SCORP) Public Survey Results, on average, Coloradoans use city/local parks, trails and recreation areas 69 days per year, more than twice the days spent recreating in any other jurisdiction. This taken together with the very high level of usage of city parks and recreation facilities exhibited by Durango households demonstrates that Durango Parks and Recreation Department plays a central role in keeping the community healthy and saves many thousands of dollars on health care per year and prevents hundreds of hospitalizations.

Figure 38 – Average number of days Colorado individuals recreated outdoors by jurisdiction



Source: 2019 Statewide Comprehensive Recreation Plan (SCORP) Public Survey Results



Environmental Effects of Parks, Open Space and Community Forest

City of Durango parks and open space are woven between the developed areas of the city and are the scenic ridgelines forming the skyline of Durango. Parks and open space have capacity to offset and buffer the environmental impacts of the developed areas in the city. The environmental effects of city parks, open space and the community forest managed by the Parks and Recreation Department are addressed in this section. This section is organized into five areas of focus: air quality, stormwater management, wildfire fuels management, urban heat island, and land conservation.

Air Quality

The benefits of Durango Parks and Recreation Department on air quality is related to trees and the benefits they provide in offsetting pollution. The Department maintained 11,328 trees in the urban forest in 2020. On average, 82% of the managed trees inventoried in the twenty study areas in the 2004 City of Durango Urban Forest Tree Inventory were deciduous trees. A study by the U.S. Forest Service demonstrates the financial value of deciduous trees arising from the capacity of trees to mitigate air pollutants (McPherson et al., 2006). Not enough is known about the air pollution reduction properties of coniferous trees to quantify their capacity to remove pollutants. Criteria air contaminants (CACs) are air pollutants that pose health risks. CACs include carbon monoxide (CO), sulphur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), particulate matter of varying sizes (PM_x) and volatile organic compounds (VOC). Trees uptake CACs from the air thereby improve air quality. By age 20, the median age for a deciduous tree, a large tree will uptake about 2.3 pounds of airborne CACs on average each year.

Figure 39 – Annual Uptake of Criteria Air Contaminants (CAC) by a Large Deciduous Tree (47 ft tall, 37 ft spread)

Pollutant	Average Annual Uptake (20 Years After Planting)
NO ₂	1.16 lbs
SO ₂	0.73 lbs
PM ₁₀	0.25 lbs
O ₃	0.18lbs

Source: McPherson, E. G., et al "Midwest community tree guide: benefits, costs, and strategic planting." U.S. Forest Service (2006)

Although Volatile Organic Compounds (VOC) are not classified as a CAC, they react with other elements to produce Ozone, which is a CAC. A large twenty year old tree uptakes about .16 of a pound of VOC per year. Trees also act as carbon 'sinks', absorbing carbon dioxide from the air into their vegetation and into the soil. A large twenty year old tree absorbs about 758 pounds of carbon in a year.

The U.S. Forest Service study converts pollutant uptake into dollar value. Including VOCs, a large twenty year old tree (median age trees) will uptake about 2.5 pounds of pollutants each year, valued at \$7.29/year. Each large tree also absorbs 758 pounds of carbon dioxide



each year, valued at \$5.68. The typical tree's capacity to uptake air pollution is worth about \$13/year.

Figure 40 – Annual Benefits of Air Pollution Reduction per Large Deciduous Tree (20-years After Planting)

Pollutant	Cost/Pound	Annual Uptake	Total Value
CO ₂	\$0.0075/lb	758 lb	\$5.68
O ₃	\$3.34/lb	0.18 lb	\$0.60
NO ₂	\$3.34/lb	1.16 lb	\$3.88
SO ₂	\$2.06/lb	0.73 lb	\$1.51
PM ₁₀	\$2.84/lb	0.25 lb	\$0.71
VOC	\$3.75/lb	0.16 lb	\$0.59

Source: McPherson, E. G., et al "Midwest community tree guide: benefits, costs, and strategic planting." U.S. Forest Service (2006)

Given that about 82% of trees are deciduous and assuming that these trees are the median age for deciduous trees (20 years since planting), the city's managed deciduous trees uptake of about 21,000 pounds of pollutants and absorb 3,220 tons of carbon dioxide. The value of the removal of these pollutants from the air by managed deciduous trees is \$110,200 per year.

Stormwater Management

Stormwater management involves protecting receiving water bodies and groundwater from impacts caused by development. Stormwater management systems aim to slow down and filter runoff generated by compacted soils, pavements and buildings. Without stormwater management systems, runoff can cause erosion, flooding, and pollutants in water systems.

Low Impact Development (LID) strategies are increasingly incorporated into the design of new development to filter/treat water and reduce in flood volumes caused by impervious surfaces. The City of Durango manages stormwater features that also provide parks and open space value at the Durango Library, at Three Springs open space, Twin Buttes, Jenkins Ranch Park, Overend Mountain Park, SkyRidge open space, Smith Sports Complex and other locations.

Water quality treatment focuses on the removal of contaminants that are contained in the "first flush" of rain/snow events, and consists of a combination of particulates, nutrients, hydrocarbons, and organic material. Pollutants wash off roads, pavement and buildings and flow into storm drains and harm aquatic life in the receiving streams. Water quality treatment includes several methods to slow run-off and collect pollutants before runoff reaches the receiving waterbody.

One strategy to reduce the negative impacts of stormwater runoff is to reduce impervious surfaces in the design of new development. Nonetheless, all development includes some amount of roofing, concrete and other impervious surfaces. Bioswales, sediment basins, and shallow ponds are common structures used to achieve water quality goals. Installing these water quality features in parks and open space reduces capital cost for trenching and pipes compared to conventional methods. Detention ponds reduce flooding impacts by storing



volumes of runoff generated by impervious surfaces and releasing that water over several days.

The Southern Open Space at Three Springs is a city park that functions to treat water quality and provides flood detention. The park also includes a neighborhood walking loop trail and creates habitat. The stormwater features were designed using bioengineering techniques to reduce conventional infrastructure needs and cut capital and maintenance costs. These contribute to the value of the living and working environment while protecting the integrity of the downstream waterbodies.

Figure 41 – Southern Open Space, Three Springs, Durango



Financial cost/benefit research has focused on comparing Low Impact Development (LID) stormwater strategies to conventional infrastructure. The results show capital cost savings for infrastructure and detention as well as avoided operations, maintenance and replacement costs by utilizing LID strategies in comparison to conventional stormwater infrastructure.

A recent Phoenix, Arizona study compares the triple bottom line costs of different development strategies and materials. The summary in Figure 4.4 highlights the costs of concrete and porous asphalt, compared to the value-added benefit of swales and bioretention basins. This calculation demonstrates the relative value of stormwater management features for offsetting impacts associated with impervious surfaces associated with the built environment. This table notes the relative monetary value of concrete, porous asphalt, swales, and bioretention ponds per 1,000 Square feet of land area.

Figure 42 – Triple Bottom Line Cost Benefit Per 1000 Sq. Ft.

	Concrete	Asphalt	Swale	Bio retention basin
Financial	\$(-7,426)	\$(-9,563)	\$(-9,856)	\$(-7,627)
Social	\$ 1,809	\$ 1,019	\$ 11,775	\$ 11,655
Environmental	\$ 3,176	\$ 1,912	\$ 4,313	\$ 4,300
Triple Bottom Line NPV \$/1,000 SF	\$ -8,793	\$ -6,632	\$ 6,233	\$ 8,328

Source: Autocase Report. "Triple bottom line cost benefit analysis of green infrastructure/low impact development in Phoenix, Arizona" 2018



The city's managed trees reduce stormwater runoff by intercepting precipitation, retaining and storing water and improving soil conditions. The city's i-Tree software (by USDA Forest Service) estimates that the contribution of managed trees toward stormwater management is \$163,286 per year for the entire community forest and \$16.28 per tree, including both deciduous and coniferous trees (Durango Parks and Recreation Department, "Community Forest Management Plan" 2019).

Wildfire Fuel Management

City of Durango has, on average, greater wildfire risk than 73% of communities in the state and 33% of homes in Durango are exposed to wildfire hazard from direct sources, such as adjacent flammable vegetation (Headwaters Economics, "A profile of wildfire risk in Durango, CO" 2021). Headwaters Economics cites several wildfire risk factors that are on the rise in the western U.S.:

Fire season is 84 days longer than it was in the 1970s,
 Acres burned by high severity wildfires increased 700% between 1985 and 2017,
 Insurance losses averaged \$3.5 billion/year between 2000-2018, significantly up from \$640 million/year between 1980 and 1999
 Average firefighter fatalities rose from 9 per year in the 1970s to 19 per year in the 2000s.

Across the United States, the annual economic burden of wildfires ranges between \$71.1 billion and \$347.8 billion (Thomas et al., National Institute of Standards and Technology, "The costs and losses of wildfires: a literature review." 2017). Accounting for a broad range of wildfire costs such as loss of property and property value, decreased tax revenue, infrastructure repair, human casualties, and evacuation/aid, recent research shows that local communities, not federal or state government, paid for 46% of the costs of wildfires (Barrett, K., "The wildland-urban interface: the problem, trends and solutions" Headwaters Economics, 2021) Former Fort Lewis College professor Dr. Robert Sonora measured the economic impacts of wildfires in La Plata County (Sonora, R. J. "The economic effects of wildfires on Colorado county level personal income" 2018). This study found that past wildfires in the La Plata County disrupted income from the tourism industry, and the community needed five years to return to similar levels of personal income before the wildfire. These impacts could have been more severe if wildfires had affected infrastructure.

The City of Durango Parks and Recreation Department strengthens resiliency with proactive management of city parks and open spaces in the wildland urban interface. City of Durango and its partners are working on and/or planning for wildfire hazard mitigation and fuels reduction projects in the wildland/urban interface areas of city-owned open space adjacent high-density residential areas throughout city limits.

Wildfire fuel management results in clear economic benefits. The Southwest Colorado Wildfire Mitigation Environmental Impact Fund (EIF) is a revolving fund connecting bond investors, grants, appropriations and other credit enhancements with individuals and government agencies. The EIF feasibility study estimates a 300% return on investment for wildfire fuel management due to avoided property damage, fire suppression costs, reduced insurance costs, avoided public health impacts due to wildfire smoke, and avoided



business/economic losses (Appel, T. et al "The SW Colorado Wildfire Mitigation Environmental Impact Fund: An outcomes-based financing approach to scale forest treatments in Southwestern Colorado. Report" 2019).

In addition to reducing wildfire risk on city-owned property, Durango Parks and Recreation Department also provides leadership by demonstrating to the public these effective strategies for wildfire hazard mitigation and by providing education and resources to private landowners. When Durango Parks and Recreation Department implements wildfire fuel mitigation projects that are effective, local property owners are more likely to adopt wildfire mitigation strategies on their own properties. The highest predictor of intention to mitigate wildfire among homeowners, according to a recent study, is the perceived effectiveness of mitigation as demonstrated by public agencies (Ghasemi, B. et al, "An examination of socio-psychological drivers of homeowner wildfire mitigation" Journal of Environmental Psychology, 2020).

Reducing wildfire risk requires a broad-based strategy that includes land use regulations, building codes, and property owner incentives. The City of Durango Parks and Recreation Department wildfire fuel management projects in the wildland-urban interface are a significant component of the wildfire mitigation strategy.

Urban Heat Island

The increase in temperature caused by pavement and buildings that absorb and release heat is called Urban Heat Island. Heat produced by mechanical systems such as air conditioning further increases the temperature. Studies have shown that, on average, daytime temperatures in urban areas are about 1-7°F higher than its surrounding areas and 2-5°F higher at nighttime. Trees and all types of living materials provide a cooling effect through the evapotranspiration process that offers a natural cooling effect, and shading of the surfaces that act as heat sinks. Street trees and parking lot shade trees play an important role in reducing heat island effects. Breaking up larger built areas with vegetated parks, trees, open space and trails also helps offset temperature impacts.

Thermal impacts change the environment for wildlife. One problem is that absorbed heat in pavement transfers to stormwater runoff, that then raises the temperature of streams. This changes the biological conditions and causes stress to aquatic species accustomed to cooler temperatures. To offset the heating of streams and riparian areas, programs administered by the US Fish and Wildlife and USDA seek to restore cottonwoods along river and stream corridors. Many of Durango open space and trail corridors follow river and stream corridors, offering protection and vegetation enhancement for these important riparian zones. Oxbow Park is an example of a river bank landscape that has been improved to enhance cottonwood trees and willows that will help shade the Animas River and offer restored habitat to migrating birds.

The city's i-Tree software (by USDA Forest Service) estimates that the cooling effect of city managed trees during warm months and the windbreak effect of managed trees during colder months saves an average of \$12.09 per tree per year in energy costs including electricity and natural gas savings (Durango Parks and Recreation Department, "Community



Forest Management Plan" 2019). According to i-Tree, the city's managed community forest as whole saves \$121,230 in energy costs per year.

Land Conservation

"Sustainability" is one of the key principles the City of Durango 2017 Comprehensive Plan is founded upon – a principle that encompasses actions to enhance economic, social, and environmental conditions in ways that preserve or enhance opportunities for future generations. In concert with the city's Sustainability Action Plan, these plans set out the city's intention to protect rivers and streams and preserve wildlife habitat and corridors. From 1994 to 2021, the city's parks and open space program preserved 3,283.69 acres of open space, 365.15 acres of Animas River Greenway, and 65.13 acres of park land for a total of 3,348.82 acres preserved.

Much of the land preserved by the city has been accomplished in partnership with Great Outdoors Colorado (GOCO), which requires permanent conservation of the land through conservation easements. This measure ensures the protection of specific conservation values of a property for generations to come, including outdoor education and recreation, fish and wildlife habitat, and scenic views. City-preserved acreage currently under eight separate GOCO-funded conservation easements totals 1,158.86 acres and an investment of nearly \$8.47M by the State of Colorado via GOCO in land conservation here in Durango. A study conducted by Colorado State University focused on the return on investments in conservation easements in Colorado. According to that study, residents of Colorado have received an estimated \$5.5-\$13.7 billion (US\$2017) of economic benefits from land conserved by conservation easements while the State has invested roughly \$1.1 billion (US\$2017) through approximately \$280 million from GOCO and \$772 million from the Conservation Easement Tax Credit program on these efforts since 1995. This represents roughly \$4-\$12 of public benefits provided by conserved land for each \$1 invested by the State and a benefit per acre of about \$2,700-\$6,600 against an investment of about \$500 in real 2017 dollars.

The annual economic contributions of outdoor recreation in Colorado, which land conservation makes possible, is analyzed at a regional and county level as part of the Statewide Comprehensive Outdoor Recreation Plan (SCORP) in partnership with Colorado Parks and Wildlife. Land conservation that supports robust wildlife populations are sustainable sources of revenue, taxes and jobs as evidenced in the 2019 Statewide Comprehensive Outdoor Recreation Plan (SCORP). Outdoor recreation includes a diverse set of activities that participants pursue in Colorado. Of particular interest for this study are the contributions of fishing, hunting, and wildlife watching. These three activities together produce over \$5 billion dollars of economic output, which supports nearly 40,000 jobs within the state. Fishing alone contributes \$2.4 billion dollars in economic output per year, supporting over 17,000 jobs in Colorado. According to the 2017 data included in the SCORP, La Plata County hunting generates an output of \$8,877,000 and 121 jobs. City-owned open space and river greenway contributes to wildlife habitat protection as well as fishing access to the Animas River, a gold medal fishery and at Lake Nighthorse where Colorado Parks and Wildlife has stocked fish since 2011 in support of fishing recreation.



Return on Investment

The return on investment analysis compares Durango Parks and Recreation Department expenditures to the benefits conveyed to the community by the facilities, assets and services. This analysis first requires an analysis of department expenditures including \$6.4 million in ongoing operations and maintenance paid through the City of Durango General Fund and \$8.1 million in annual capital improvements expenditures funded via the 2005 and 2015 voter approved sales tax funds. These expenditures can be compared to the nearly \$23.7 million in estimated annual spending by visitors who use Durango Parks and Recreation Department facilities and services and the \$33.9 million in total economic output and 348 jobs resulting from this spending. Other monetary and non-monetary benefits include impacts on property values, public health and fitness, air quality, stormwater management, wildfire fuels management, mitigation of urban heat island effects, land conservation and benefits for economic development. The hundreds of thousands of instances of local community members using and personally benefiting from Parks and Recreation Department facilities in a given year perhaps outweighs all other benefits.

Expenditures

Parks and Recreation Department General Fund expenditures range between \$6-7 million mostly for operations and maintenance. Capital improvements are budgeted in separate funds as described below. There are thirteen divisions in the department but the Cemetery division was excluded from this economic impact analysis. The Durango Community Recreation Center and the Parks, Development and Maintenance division have the highest operations costs of the divisions.

Figure 43 – Parks and Recreation Department General Fund Expenditures by Division

	2017	2018	2019	2020	Average 2017-2019
Administration	\$421,695	\$451,645	\$460,770	\$439,442	\$443,000
Parks Development & Maintenance	\$2,038,021	\$2,072,311	\$2,299,792	\$2,118,182	\$2,132,000
Community Special Events	\$179,133	\$145,860	\$145,837	\$121,360	\$148,000
Lake Nighthorse	\$0	\$405,937	\$362,740	\$390,648	\$290,000
Recreation Administration	\$233,158	\$222,218	\$197,947	\$166,043	\$205,000
Gametime	\$230,791	\$233,201	\$214,158	\$123,521	\$200,000
Gymnastics	\$260,978	\$306,085	\$352,097	\$293,621	\$303,000
Adult Programs	\$45,877	\$46,241	\$52,308	\$23,576	\$42,000
Youth Programs	\$91,562	\$108,410	\$114,992	\$109,365	\$106,000
Chapman Hill Ice Rink	\$349,437	\$347,276	\$362,813	\$364,384	\$356,000
Chapman Hill Ski Area	\$68,870	\$57,354	\$69,444	\$73,140	\$67,000
Recreation Center Operations	\$2,189,235	\$2,319,972	\$2,398,574	\$1,658,497	\$2,142,000
Total General Fund Expenditures	\$6,109,000	\$6,717,000	\$7,031,000	\$5,882,000	\$6,435,000

Source: City of Durango Adopted Budgets, Actual Expenditures 2017-2019, Estimated Actual Expenditures 2020 and Adopted Budget 2021. Cemetery Division Excluded



A good portion of the General Fund expenditures go toward the thirty-nine employees who run the facilities and programs offered by the department and maintain thousands of acres of parks and public open space.

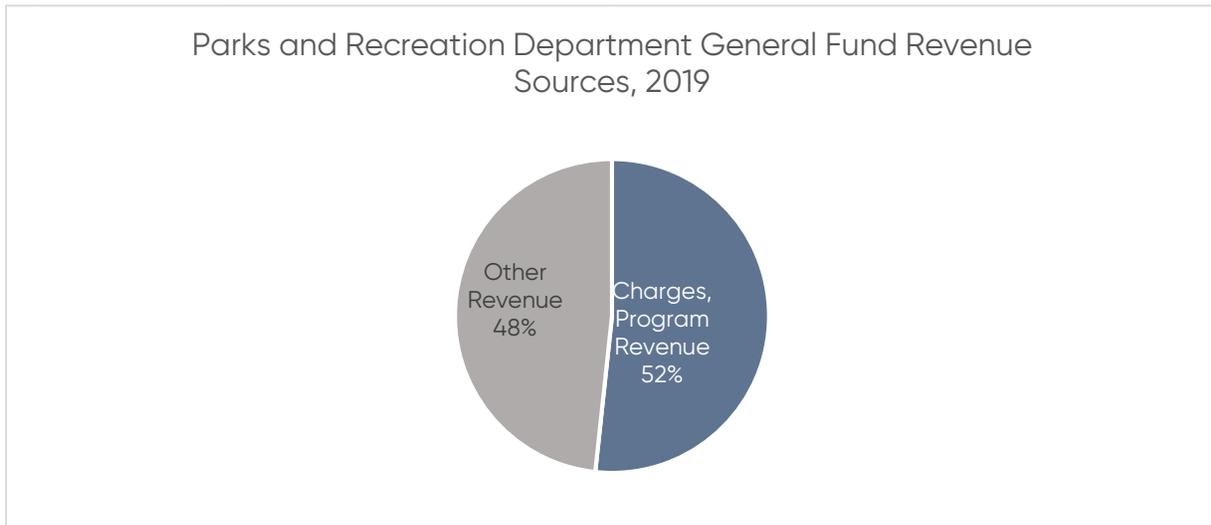
Figure 45 – Parks and Recreation Department Employment and Payroll

	Parks and Recreation Department Employees	Salaries Wages/Benefits
2018	38	\$5,088,960
2019	38	\$4,876,362
2020	39	\$4,029,211
2021	39	\$5,287,707

Source: City of Durango 2020 and 2021 Adopted Budgets

A detailed budget analysis of 2019 actual revenues and expenditures showed that revenues generated by Parks and Recreation Department programs from paid admissions, rentals and other charges covered more than half of the General Fund expenditures.

Figure 46 –Charges, User Fees and other Program-Generated Revenues

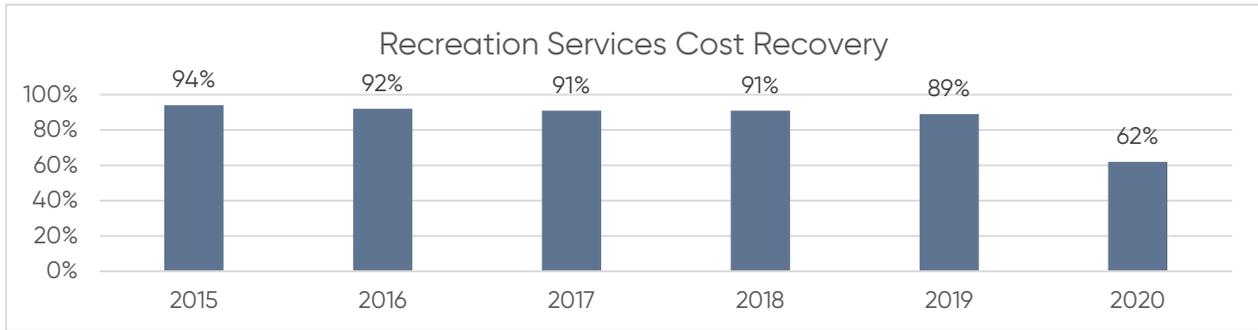


Source: 2021 City of Durango Adopted Budget, Actual 2019 Revenues

Recreation Services which include adult, teen and youth recreation programs, activities, facilities including the Recreation Center and special events typically covers at least 90% of its costs through paid admissions and other charges. The lower cost recovery in 2020 reflects the pandemic driven decrease in paid admissions revenue and reduced programming.



Figure 47- Recreation Services Cost Recovery by Program/Facility Generated Revenue



Source: Durango Parks and Recreation Department 2020 Annual Report. Note: Year 2020 was affected by COVID-19.

Two sales taxes approved by City of Durango voters in 2005 and in 2015 provided funding for an annual average of \$8.1 million in expenditures for parks, open space, trails and recreation capital improvements. The 2015 half cent sales tax also funds multimodal improvements not related to parks and recreation. Multimodal expenditures were not included in this analysis.

Figure 48- Parks, Recreation, Trails, Open Space Capital Improvement Program Expenditures

	2005 1/4 Cent Open Space, Parks & Trails Fund	2015 Half Cent Fund	Total Capital Expenditures
2017	\$6,177,834	\$5,928,540	\$12,106,374
2018	\$295,120	\$2,916,285	\$3,211,405
2019	\$1,787,281	\$5,854,344	\$7,641,625
2020	\$2,690,330	\$6,360,583	\$9,050,913
2021	\$2,522,898	\$5,951,166	\$8,474,064
<u>Average Annual Expenditures</u>	<u>\$2,695,000</u>	<u>\$5,402,000</u>	<u>\$8,097,000</u>

Source: City of Durango Adopted Budgets, 2017-2018 from Sales Tax Funds transfers out, 2019-2021 from line item Sales Tax Fund expenditures.

Most of the sales tax revenue used to fund capital improvements is generated by retail sales generated by consumers who do not live in the City of Durango, including regional residents and visitors. According to ESRI Business Analyst, City of Durango residents spend over \$273 million per year on retail, including restaurants, food and drink. Were 100% of Durango household sales to occur in the City of Durango, residents would generate about \$2.7 million per year in parks and recreation capital improvements sales tax revenue. It is very likely that some household spending occurs in other communities, so while \$2.7 million represents the maximum, it makes up just one-third of the total expenditures. The other two thirds of Parks and Recreation CIP costs are paid for by tax generated from sales to regional residents and visitors who live outside of the City of Durango.



Figure 49 – Sales Tax by City of Durango Household Sales.

City of Durango resident household retail spending	\$273,003,000
1/4 cent sales tax	\$683,000
1/2 cent sales tax	\$2,048,000
Maximum possible sales tax paid by Durango residents	\$2,731,000
Average annual capital improvements funded by sales tax	\$8,097,000

Source: Retail Marketplace Report, City of Durango, ESRI Business Online, 2021

Return on Investment Summary

From a purely monetary perspective, the Parks and Recreation Department contributes more economic activity than it costs. An annual average of \$6.4 million in operations and maintenance expenditures and \$8.1 million in capital improvements expenditures generates \$23.7 million in spending by visitors, \$33.9 million in total economic impact, 348 jobs and \$900k in combined sales and lodgers tax revenues for the City of Durango and La Plata County. Monetary benefits from the Parks and Recreation Department's managed forest include \$110,200 per year for removal of pollutants from the air, \$121,230 in energy saving per year and \$163,286 per year savings for stormwater management. In addition, there is a 300% return on investment from wildfire fuel management due to avoided wildfire damage and suppression costs. Adding to the monetary benefits, a geospatial analysis of property values showed 17-18% higher value for homes directly adjacent to city parks and open space.

Highest among the non-monetary value arising from the Parks and Recreation Department are the hundreds of thousands of instances of local community members using and personally benefiting from Parks and Recreation Department facilities in a given year. The Department's role in public health cannot go unstated and recreation is integral to the quality of life offerings that are so central to the community's economic development strategy. Add to this the myriad of benefits arising from land conservation. The city's sales tax funded parks and open space program preserved 3,284 acres of open space, 365 acres of Animas River greenway, and 65 acres of park land from 1994 to 2021.



Figure 50 – Quantified Expenditures and Benefits of Parks and Recreation Department

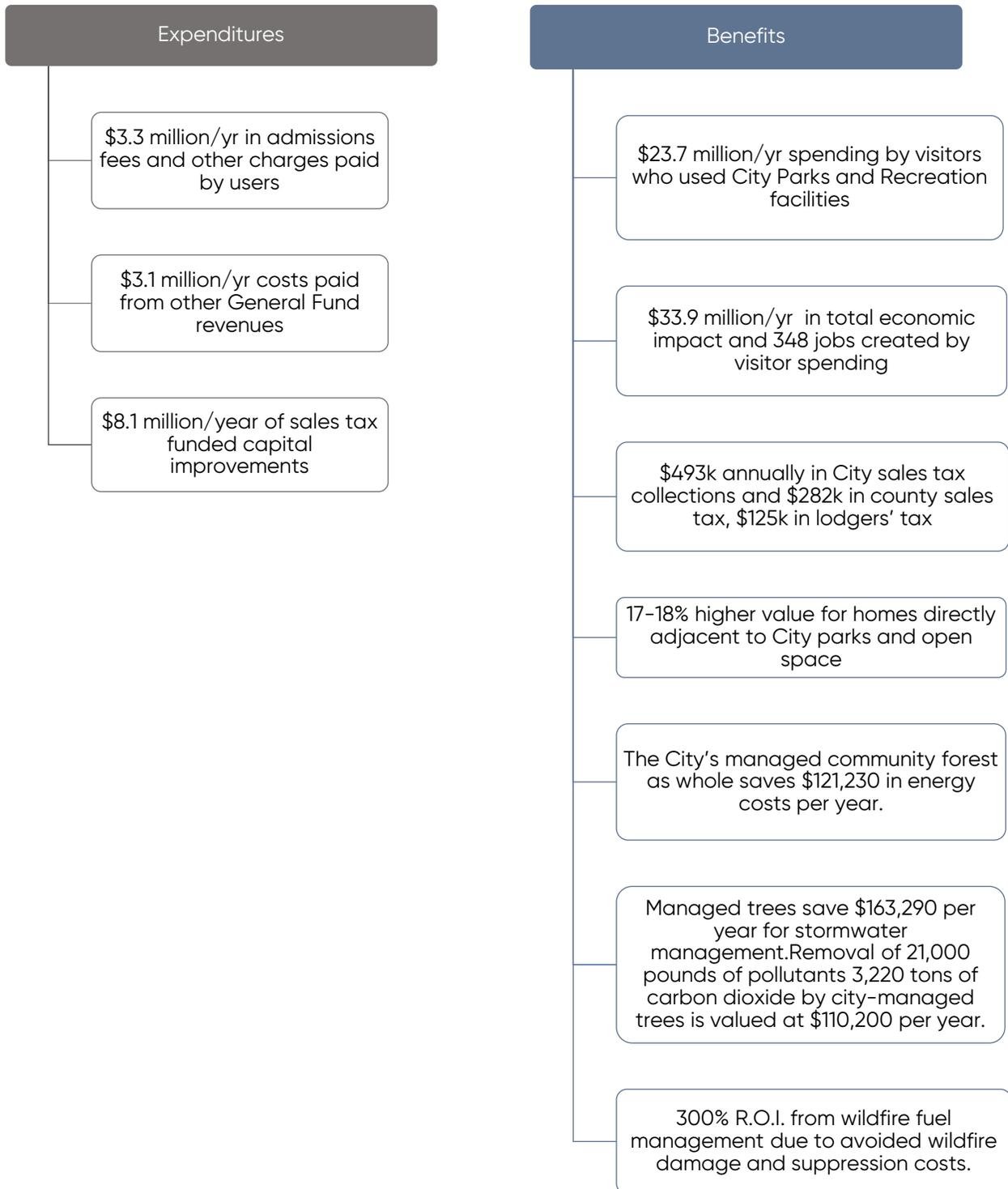


Figure 51 –Non-Monetary Benefits of Parks and Recreation Department

