Section I: Jurisdiction Profile

During the 19th century, explorers Zebulon Pike, Stephan Long, and John Fremont, were commissioned to explore the Boulder area. What was once unfit for settlement soon became a location of interest when William Gilpin, who later became the first governor of the Colorado Territory, reported findings of gold (About Boulder, 2015). The first settlement in Boulder County was established at Red Rocks, now known as Settler's Park, by gold-seekers on October 17, 1858. One of the settlers, A.A. Brookfield, organized the Boulder City Town Company on February 10, 1859. From there, Boulder became a city. Sixty shareholders divided the 1,280 acres along Boulder Creek into 18 lots for each party. The remaining lots were put up for sale for $1000 each. Due to the high price of the lots, Boulder's growth rate remained low at only 324 by 1860. At that time, Boulder City was part of the Nebraska Territory; Boulder did not become the county seat until February of 1861. Then, in 1867, a Federal Bill established the Territory of Colorado.

While mining played an important role in bringing people to Boulder, the development of a strong agricultural industry encouraged people to stay. The town of Boulder was officially incorporated on November 3, 1871. Residential areas appeared in the Downtown, Mapleton Hill and Whittier Districts. Then, when commercial activities expanded in the downtown core, houses began to disappear from the Downtown District. Accompanying mining and agriculture, education has remained prominent for Boulder's identity. Boulder is the home of the first schoolhouse in Colorado, located on the corner of Walnut and 15th Street. Citizens successfully lobbied the state legislature in the 1860s to have the state university located in Boulder, however the actual site was not made available until 1872 when six Boulder citizens donated 44.9 acres for the project. In 1874, the first building was constructed when the state appropriated $15,000 and the funds were matched by community donation; "Old Main" was built on the southern end of town, in an area known as "The Hill", and still stands today. In 1877, the University of Colorado opened to a total of forty-four students, one professor, and a President.

The first private school in Boulder, Mount St. Gertrude Academy, was opened in 1892. The City of Boulder, by then accessible to visitors by railroad, was known as a community with a prosperous economy, a comprehensive educational system, and well-maintained residential neighborhoods. It was no wonder that the railroad recommended Boulder as a site for a Chautauqua in 1897. Residents passed a bond issue to buy the land, and the now familiar Chautauqua Auditorium was built. Additionally, growth of the University of Colorado at the turn of the century led to the development of parts of University Hill. For residents, one mark of elegance was the installation of flagstone sidewalks in the 1880s.

Visitation to Boulder has always been vastly connected to Chautauqua Park. In 1898, a group of Texans searching for a retreat decided on Boulder and ultimately built one of the nation's most beautiful vacation spots. Completed July 4th, 1898, Chautauqua was particularly important for the area as its creation marked the beginning of Boulder's parks and open space land purchasing for preservation. This type of effort became one of Boulder's top priorities, and still is today. The day after Chautauqua's grand opening, the City of Boulder purchased the eastern slope of Flagstaff Mountain from the United States Government.

By 1905, Boulder City Council members wanted to provide visitors “the comfort of a first-class hotel”; The Hotel Boulderado contained the first mechanized elevator west of the Mississippi River. The Hotel Boulderado, along with its original elevator, are still in operation today.

In 1908, Boulder hired landscape architect Fredrick Law Olmstead Jr. to consult with them on how to best plan the city. The son of the creator of New York City’s Central Park had recommendations which included putting wires underground and keeping streetlights beneath tree level. Most importantly, Olmstead Jr. also cautioned them about suburban developers, “dirty industries,” and pandering to tourists. Olmstead Jr. stated that above all, Boulder must be a beautiful, prosperous town where people would spend their lives. Boulder would not be a place to make money before getting out.

In 1949, Boulder citizens, sensing an opportunity, bought up 217 acres of land and beat out 11 other cities to make that site the home of the National Bureau of Standard’s new Radio Propagation Laboratory, when President Harry Truman issued an order to stop the clustering of major buildings in Washington, D.C. .The fear of a Soviet nuclear attack sparked the expansion of the nation's basic research labs. Three years later, the government made greater Boulder the site of Rocky Flats, a 27-building nuclear weapons manufacturing facility south of Boulder. Eventually, the government made Boulder the site of the National Center for Atmospheric Research, and IBM moved its tape drive manufacturing division to the city. This later led to the founding of storage start-ups StorageTek, Exabyte, and McData.

With exceptional growth, sprawl seemed inevitable. After the city council scheduled an election for bonds to expand a water treatment plant, citizens asked the Council to create a Blue Line at 5750 ft. elevation beyond which water lines would not be extended. Citizens petitioned requiring the council to put the item on the ballot. On July 21, 1959, the voters approved the Blue Line and defeated the water plant expansion. Above this line, the city would not provide water or sewer services to protect the view.

Additionally, during this decade, new subdivisions were planned, including the Highland Park-Martin Acres neighborhood located on the historic Martin Farm, and the North Boulder developments from Balsam north, originally part of the Tyler Farm. New neighborhoods brought the city's first two shopping centers, North Broadway and Basemar, in the northern and southern parts of the city. Science and tech industries had doubled Boulder's population from 1950 to 1960 and then jumped to 67,000 during the 1970s. In 20 years, from 1950 to 1970, the population grew by roughly 50,000 people[1].

The City of Boulder began a period of infill and re-use of its past architectural development after the purchase of thousands of acres of open space beginning in 1967, adopting the Boulder Valley Comprehensive Plan in 1970, and the passage of the building height restriction ordinance in 1972. Residents instituted a special 0.4 percent sales tax to purchase preserved land or "green space" around the city. With citizen advocacy, City Manager Ted Tedesco and council put a one-cent sales tax on the ballot with 40% going to open space and 60% to transportation. The open space was a green belt to limit overdevelopment and protect the environment. It was approved by 61% of the voters and became the nation’s first voter-approved sales tax for open space[2].

[1] Boulder Economic Council, 2011
[2] Livable Boulder

This type of urban growth boundary hindered developers to preserve nature. Encircling the city with green space had several implications for emergency response. Due in part to the limited space causing real estate prices in Boulder to be as much as 1.5 times higher than the rest of the Denver-Metro area and the city's limited new housing (2 % per year) (Boulder Economic Council, 2011), few emergency responders live within the city limits. This creates a significant staffing delay during emergency situations.

Many Boulder workers commute to the city creating heavy traffic patterns each morning and evening. This ultimately impedes emergency response times. Moreover, the urban growth boundary in the form of green space surrounding Boulder, geographically isolates the city; Most surrounding fire agencies are too far away to provide immediate response support and as a result, most needs for assistance are covered by mutual aid requests rather than automatic aid agreements.

Despite exceptional growth and some of the issues associated with maintaining it, the Boulder community was able to maintain eccentricity and geographic beauty. Boulder is known today for its emphasis on environmental preservation, education, and outdoor quality of life. While great change has ultimately altered the city since the cities beginnings, breathtaking views, higher education, federal research, and entrepreneurial spirit were fostered throughout its transformation. Boulder's charm is unrivaled among American cities and it continues to maintain and promote these characteristics today.

Location

The City of Boulder is located at the base of the foothills of the Rocky Mountains at an elevation of 5,430 feet (1,655 m) above sea level.[9] The city is 25 miles (40 km) northwest of Denver.

The city of Boulder is the county seat of Boulder County which is home to more than 300,000 residents and includes some of the most diverse, natural landscapes and sustainable development along the Northern Front Range of Colorado. The city of Boulder is the 11th most populous municipality in the state of Colorado.

Image 1. State of Colorado

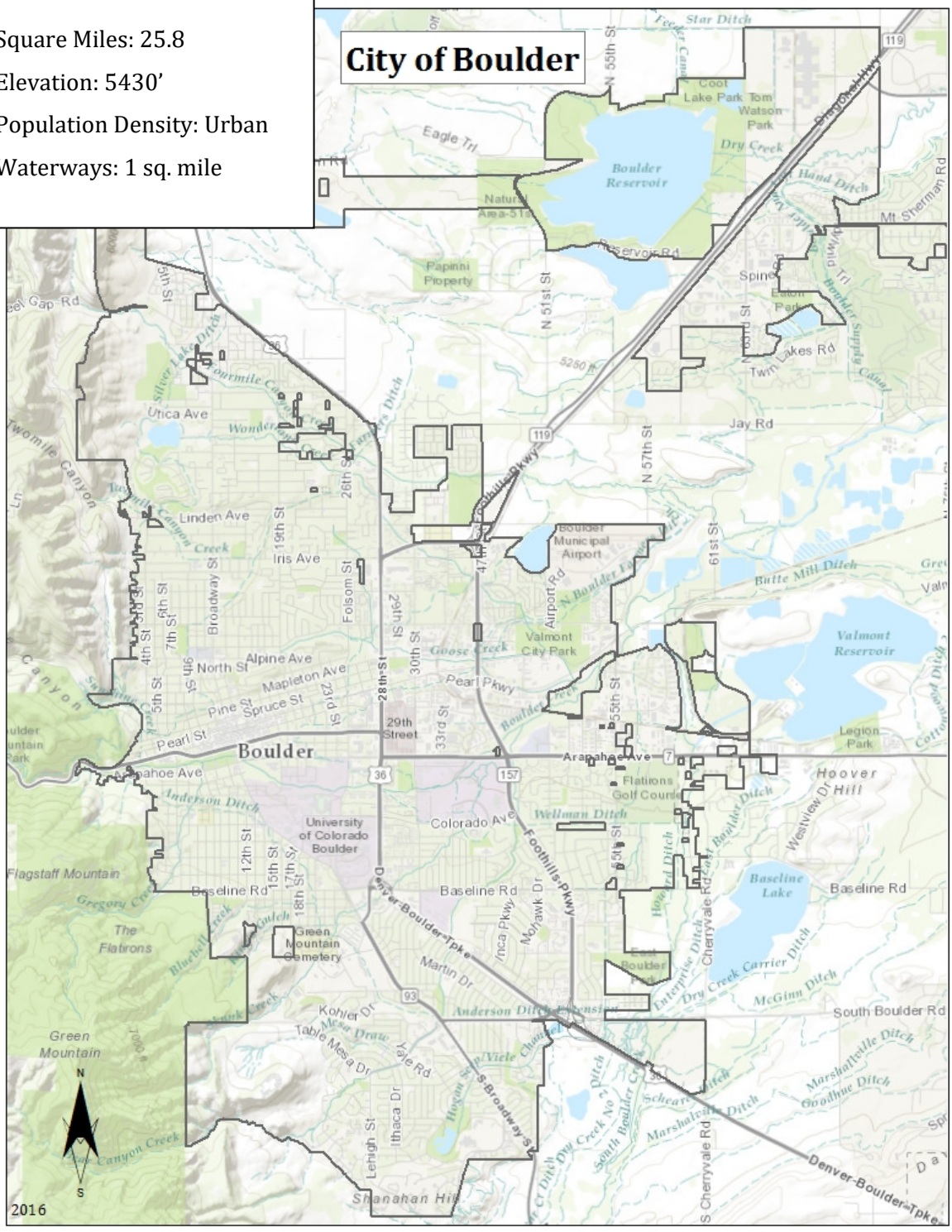
Boulder Quick Facts

Square Miles: 25.8

Elevation: 5430’

Population Density: Urban

Waterways: 1 sq. mile



Map 1. Map of Boulder

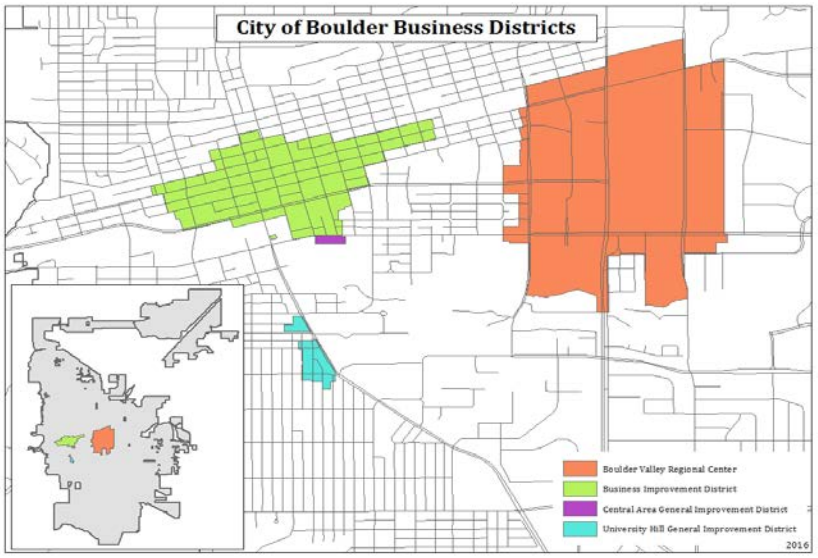
Geology

Two geologic provinces come together in the Boulder area. The eastern province is the Great Plains, ranging from flatlands to rolling hills, and the western province is the Rocky Mountains. The north-south front where the two meet is called the Front Range. There were several active glaciers in the mountains west of Boulder. Glacial deposits and erosional features can be seen in the mountains west of the city[3].

There are no active fault lines near Boulder, there are however, a few recorded earthquakes in the region. Several small quakes, and one 5.3 magnitude earthquake occurred in the late 1960's just north east of Denver. These quakes were attributed to deep injection of liquid waste at Rocky Mountain arsenal, just south east of Boulder[4].

Physiography

The varying fuels change within the elevation zones throughout the area and do so depending on the diverse aspects of the slopes. The difference in exposure produces marked variations in short horizontal distances, creating micro climates. A south facing slope will support dryland plant forms such as juniper, mountain mahogany, bunchgrass, yucca, and cactus. Whereas, a nearby north-facing slope might harbor boreal forms such as Douglas-fir, spruce, aspen, wild rose, and even mosses. The extreme terrain variations work to create many saddles, chimneys, and canyons. These features contribute to funnel wildfire events through the varied fuels; combined with urban development, there is an extremely complicated wildland/urban interface situation compounded by weather extremes and wind events. The inverse of the wildfire scenario is severe flooding, particularly in burn scar areas. The City of Boulder has been identified as having one of the largest potentials for flash flooding within Colorado. The historic flooding of 2013 provided an extreme example of that potential. The vulnerability to flash flooding is due to the city's geographical location at the base of the Rocky Mountains. It is perhaps the municipality's most probable community risk. Within the City of Boulder's 100-year floodplain there are thousands of people and approximately 3,600 structures which have an assessed valuation of almost $1 billion.



Map 2. Boulder Business Districts

[3] US EPA EMPACT Program, 2016
[4] Colorado Earthquake Hazards Mitigation Council, 2013

Climate

Due to altitude and distance from any significant body of water, Boulder County is very dry. However, the climate is as varied as the topography. Summer temperatures frequently reach the upper 90 degrees with low humidity. Boulder receives an annual average of 18.17 inches of moisture, which means that sunshine is enjoyed most days. An average year will bring 245 days of sunshine to the region.

Spring is typically windy with highly variable weather - an occasional blizzard, large temperature changes and an occasional gentle rain are all possibilities. Winters are usually dry with some periods of heavy or windblown snow, some very cold temperatures, and some surprisingly warm days. With wind and abundant sunshine, even a heavy snow will melt within days, if not hours. Either a warm sunny day following a storm will produce rapid melting, or the wind in the area will simply sublimate the snow all together[5].

MONTHLY AVERAGES[16]	High (F)	Low (F)	Rainfall (in.)	Snowfall (in.)
January	46	21	0.69	10.7
February	48	24	0.77	10.9
March	54	28	1.76	17.8
April	63	36	2.45	11.7
May	72	45	3.04	1.5
June	82	53	2.17	0
July	88	59	1.82	0
August	86	57	1.65	0
September	78	49	1.61	1.5
October	67	40	1.30	5.0
November	53	29	1.21	13.3
December	47	23	0.67	10.2
TOTALS			**19.14”**	**82.7”**

Table 1. Boulder’s monthly average temperatures, rainfall, and snowfall

The proximity to the continental divide allows Boulder to experience some of the strongest winds in the continental United States with gusts of 140 miles per hour or more. The wind associated with weather systems pushing up and over the western side of the divide encounter relatively little terrain to disrupt their flow before reaching Boulder. Boulder’s windiest months are January and December, but large wind events have occurred in every month of the year. Historically large wildland fires reveal that most are wind-driven, fall or wintertime events[6]

Both Chinook and Bora winds have an impact on the climate in Boulder. Chinook winds form around Boulder when a high-pressure system is sitting west of the continental divide and a low to the east. The greater the difference in pressure between the low on the lee side and the high on the windward side, the more forceful and rapid the high pressure will flow to the low pressure. In Boulder, Chinook winds occur down the eastern

[5] Office of Emergency Management (OEM), 2014
[6] OEM

slope of the Front Range. Chinook winds have been known to reach up to 140 miles per hour and regularly reach 70 miles per hour. Chinook winds are warm drying winds typically driving relative humidity to single digits[7]. Bora winds are cold, dry winds originating in the northwest. They are usually associated with a passing cold front and are abundant in the fall and spring. Bora winds will affect a larger area than a Chinook wind but are not quite as strong. Typical gusts range from 50-60 mph[8].

Because of dry climate and winds associated with fall weather, wildfire activity in autumn is a concern. Still, Boulder treats its fire season as a year-round threat. This is especially important for Boulder Fire-Rescue Department as wildland efforts are not limited to a season.

Government

The City of Boulder has a council-manager form of government where the 9-seat, at-large elected City Council sets policies and the council-appointed city manager administers them. The City Manager's Office consists of the city manager, two deputy city managers, a policy advisor and support staff. The office ensures the proper management of city operations and public representation and participation. Boulder Fire-Rescue (BFR) is one of the city's 19 departments that fall under the operational purview of the City Manager's Office. The fire chief reports directly to the City Manager.

The mission of the City Manager's Office is to:

- Champion an engaged, collaborative, and innovative organizational culture;
- Provide professional leadership in the administration and execution of city policy as established by council;
- Establish relationships and partnerships to implement community priorities

Department Funding

As of 2018, Boulder Fire-Rescue Department (BFR) receives 99.5 percent of its $20.65 million in funding from the General Fund. The General Fund supports 35 percent of the city's $389.2 million budgeted expenditures. Additionally, BFR receives .5 percent of its funding from the Open Space and Mountain Parks Department's' Open Space Fund to support wildfire response management (see Table 1, 2018 Fire Budget Summary). In 2018, the General Fund is set to receive 42 percent of its $143.5 million in revenue from Sales and Use Tax, 25 percent from property tax, and the remaining 33 percent from a combination of fees, cost allocation transfers, and other miscellaneous taxes. As a General Fund department, BFR is largely dependent upon the city's sales and use tax and property tax proceeds to fund its operations.

When considering BFR expenditures by category, personnel expenses account for 84 percent of the total budget and operating expenses account for 11 percent. The remaining 5 percent of funds are reserved for interdepartmental charges. With most of its annual appropriation allocated to personnel and interdepartmental charges, there is little opportunity to enhance existing programs through re-allocation. Specific new appropriation from either the general fund or other city revenue sources are required for new programs or capital needs.

[7] Tweit,1990
[8] Waddell, 2016

	2016 Actual		2017 Approved Budget		2018 Recommended Budget		Variance 2017 to 2018	
	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount
STAFFING AND EXPENDITURE BY PROGRAM								
Emergency Services								
Fire & Emergency Medical Response, Rescue, Service Calls	95.00	$ 14,514,254	96.00	$ 14,687,607	97.00	$ 15,750,609	1.00	$ 1,063,002
Subtotal	95.00	$ 14,514,254	96.00	$ 14,687,607	97.00	$ 15,750,609	1.00	$ 1,063,002
Community Risk Reduction								
Inspection, Code Enforcement, Education	7.50	$ 762,448	5.50	$ 803,362	6.00	$ 835,380	0.50	$ 32,018
Public Safety Education	1.00	196,958	2.00	201,021	1.00	131,312	(1.00)	(69,709)
Subtotal	8.50	$ 959,406	7.50	$ 1,004,383	7.00	$ 966,692	(0.50)	$ (37,691)
Wildland Coordination								
Mitigation and Response	9.33	$ 1,354,906	9.00	$ 1,312,123	8.00	$ 1,146,823	(1.00)	$ (165,300)
Subtotal	9.33	$ 1,354,906	9.00	$ 1,312,123	8.00	$ 1,146,823	(1.00)	$ (165,300)
Administration								
Operations Planning & Management	8.00	$ 1,337,157	7.00	$ 1,178,797	8.00	$ 1,875,439	1.00	$ 696,642
Training	3.50	897,933	4.50	909,382	4.00	911,007	(0.50)	1,625
Subtotal	11.50	$ 2,235,090	11.50	$ 2,088,179	12.00	$ 2,786,446	0.50	$ 698,267
Total	**124.33**	**$ 19,063,653**	**124.00**	**$ 19,092,293**	**124.00**	**$ 20,650,570**	**-**	**$ 1,558,277**
EXPENDITURE BY CATEGORY								
Personnel		$ 16,045,569		$ 16,055,017		$ 16,664,505		$ 609,488
Operating		1,177,296		1,128,602		1,827,053		698,451
Interdepartmental Charges		1,840,788		1,908,674		2,159,012		250,338
Total		**$ 19,063,653**		**$ 19,092,293**		**$ 20,650,570**		**$ 1,558,277**
STAFFING AND EXPENDITURE BY FUND								
General	123.33	$ 18,942,152	123.33	$ 18,965,134	123.22	$ 20,522,237	(0.11)	$ 1,557,103
Open Space and Mountain Parks	0.67	121,501	0.67	127,159	0.78	128,333	0.11	1,174
Total	**124.00**	**$ 19,063,653**	**124.00**	**$ 19,092,293**	**124.00**	**$ 20,650,570**	**0.00**	**$ 1,558,277**

Note: Variance 2017 to 2018 due to significant changes listed above, as well as General Fund increase of $535K for EMS provider subsidy for Living Wage and $275K for Equipment replacement contribution.

Table 2. 2018 Fire Summary Budget

BFR works through the city's annual budget development process to secure expanded funding for new programs or initiatives as well as maintain funding for existing services. This process is a 9-month collaborative effort that begins with Council established work plan items that are set against the backdrop of economic conditions and the accepted prioritization of city programs and services (see Priority Based Budgeting section). Council and community budget priorities filter down to the organization through the City's budget making committee called the Executive Budget Team (EBT). The EBT is a city manager selected subset of department directors that helps the city manager establish budget policies and provide the strategic budget vision for all city departments. BFR develops its annual budget independently at first and then engages with the EBT in a formalized manner throughout the budget process. This results in an EBT-approved departmental budget that is aligned with citywide strategy. It ultimately gets included in the annual budget that the City Manager submits to City Council for adoption.

In 2018, BFR changed its internal budgeting method to program-based budgeting that provides programs with funding that's tied to performance measures. These measures are intended to support performance measures supported with specific funding streams. Departmental master planning is focused on aligning the design of departmental operations, programs, and annual spending plans with stated community priorities under the Sustainability Framework.

The Sustainability Framework serves as the first checkpoint in planning departmental investments. By designing new initiatives to serve the categories within the framework, BFR can ensure that planned activities are supporting community priorities and are funded in accordance with those priorities. The second checkpoint in planning departmental investments is the annual Priority Based Budgeting (PBB) score analysis.

Priority Based Budgeting

PBB is the iterative process of prioritizing city programs in terms of their influence on achieving defined "results" which are the high level, overarching objectives that represent the priorities of city council and the community.

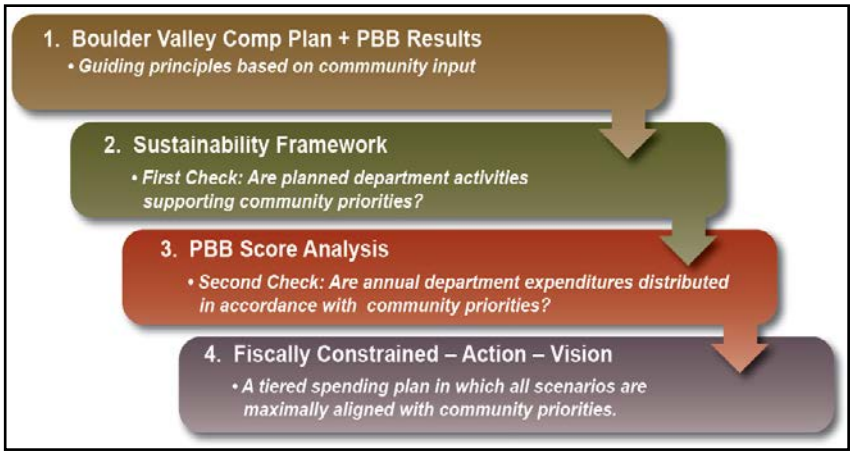


Image 2. Priority Based Budgeting score analysis

PBB results were originally defined as a part of the 2011 budget process and continue to receive annual updates as needed. One of PBB's primary objectives is to ensure that, through sound fiscal planning, the city achieves an ongoing financial balance between the amount of funding available and the cost of providing services and programs. PBB contributes to the city's long-term financial sustainability and allows the City of Boulder to serve its residents in the most effective, efficient, and fiscally responsible manner possible. All programs are scored on multiple criteria that determine how valuable they are in meeting community priorities. For the purposes of analysis, all program

Image 3. City of Boulder Sustainability Framework

scores are divided into quartiles that represent four levels of value. The first quartile (Q1) includes programs that scored in the top 25 percent. The second quartile (Q2) includes the next 25 percent of program scores, and so on.

According to a community survey conducted by the city in 2016, emergency response is generally a high priority for citizens. The bulk of BFR spending scores in the top 25 percent of all community programs (Q1) administered by the city (Chart 1). Quartile 1 includes fire response and emergency medical response along with hazardous material releases response and training. Quartile 2 then focuses on inspections and code enforcement, fire investigation, fire code permits, and the office of emergency management. Quartile 3 maintains spending for departmental vehicle and equipment maintenance and replacement, public fire and safety education, juvenile fire setter intervention, and wildland operations, planning, mitigation, and coordination.

These high scores are largely a result of very strong alignment with the SAFE COMMUNITY result within the sustainability framework. Additionally, priorities in Quartile 4 include contracts with Rocky Mountain Rescue Group, ambulance contracts, SWAT support for the police department, and water search and rescue, recovery, and training.

Checking future initiatives against current budget priorities is important because it ensures that the city allocates funding to areas that have been broadly embraced as community priorities. More specifically, it ensures that the largest amounts of funding will be matched to the highest priorities.

Table 3. 2011-2017 PBB Spending

TOTAL EXPENDITURES & SPENDING BY PBB QUARTILE 2011-2017

		Percent of Total Spending by Quartile			
Year	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4
2011	$ 199,134,694	52%	23%	19%	7%
2012	$ 202,344,534	53%	21%	18%	7%
2013	$ 216,502,593	45%	24%	25%	5%
2014	$ 225,907,978	45%	25%	25%	5%
2015	$ 246,067,948	47%	25%	24%	4%
2016	$ 255,420,307	45%	25%	25%	4%
2017	$ 269,091,593	45%	27%	24%	4%