



## INFORMATION PACKET MEMORANDUM

To: Mayor and Members of Council

From: Jane S. Brautigam, City Manager  
Jim Robertson, Director, Planning, Housing and Sustainability (PH&S)  
Greg Testa, Police Chief, Police (PD)  
Lesli Ellis, Comprehensive Planning Manager, PH&S  
Valerie Matheson, Urban Wildlife Conservation Coordinator, PH&S  
Kara Mertz, Environmental Manager, PH&S  
Jack Walker, Commander, PD  
Jennifer Riley, Code Enforcement Supervisor, PD  
Janee Boswell, Animal Control Supervisor, PD

Date: April 12, 2018

**Subject: Information Item: Update on the implementation of the Black Bear Protection Ordinance (Ordinance No. 7962) and urban bear activity**

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### EXECUTIVE SUMMARY

The purpose of this memo is to provide City Council with an update on the implementation of the Black Bear Protection Ordinance (Ordinance No. 7962, adopted by City Council on March 18, 2014) completed in 2017, bear activity in the City of Boulder through the implementation process, and potential next steps in increase education and monitoring in areas where trash is currently not required to be secure from bears.

This memo includes a summary of:

- the phased approach to implementing Ordinance No. 7962;
- urban bear sighting reports, and management activity from 2009-2017;
- waste storage violations and disturbances through waste cart monitoring; and
- education and law enforcement efforts.

This memo also includes:

- a review of effectiveness ratings for bear-resistant waste storage strategies and an improved storage option for University Hill; and
- a description of education and monitoring efforts planned for 2018 and considerations for future Secure Trash Regulation Zone expansion.

The Bear Protection Ordinance has been successful in reducing the amount of trash accessible to bears. This reduction was quantified along a 612-house monitoring route west of Broadway where the average number of trash carts strewn was 129 prior to the ordinance (2012-2013) and 16 after ordinance adoption (2014 – 2017) (**Table II**). The average number of bears killed per year has reduced from one per year (2003 – 2013) to 0.5 per year (2014-2017), following adoption of the ordinance (**Attachment C**). While there have been successes, throughout the implementation process there have been concerns expressed by some community members that the increased weight of bear resistant carts and dumpster lids makes them challenging to use, the increased cost is problematic and bear-resistant carts are not always successful in keeping bears out of waste.

Though the overall bear sighting pattern has not changed since 2009, and most of the bear activity continues to be west of Broadway and south of Sumac, there have been more reports of bear activity beyond the Secure Trash Regulation Zone, since the ordinance was adopted in 2014. This difference is particularly notable when considering the proportion of reports east vs. west of Broadway over the past nine years (**Table I**).

In an area east of Broadway that has had repeated bear visits to waste containers, staff will increase education efforts and monitor waste storage practices to better understand obstacles to securing trash from bears. A key educational message will be the city-wide requirement that compost and trash containers put out for collection must be in a bear-resistant container unless they are placed at the curb on the morning of pickup. Staff will return to council in the first quarter of 2019 with options on how to improve waste storage practices beyond the Secure Trash Regulation Zone.

### **FISCAL IMPACT**

- Program budget- \$7,000 has been budgeted for increased bear education efforts in 2018.
- Staff time- Current activities are covered by existing department work plans.

### **COMMUNITY SUSTAINABILITY ASSESSMENTS AND IMPACTS**

- Economic: Proper storage of trash and preventing trash from being strewn by animals supports the aesthetic character and economic vitality of Boulder.
- Environmental: Unsecured trash is harmful to native wildlife. Trash that is easily accessible invites bears to forage in town, as opposed to adjacent natural areas. Trash consumption by

bears results in cellophane, foil, and other non-digestible materials being ingested by bears. Ingesting these materials is harmful to bears. In addition, bears in the urban environment have a higher mortality rate than bears in natural areas.

- **Social:** Though there have been no attacks on humans by black bears in the City of Boulder, the presence of these large predators in the urban area poses a safety threat to the community. Bear activity has been reported near areas where children congregate and along streets and alleys where children walk to school. In addition, bears that access trash often drag and spread household waste on streets, lawns and alleys, compromising basic neighborhood sanitation and aesthetics. Euthanizing bears compromises the civic value of living in harmony with the natural surroundings.

## BACKGROUND

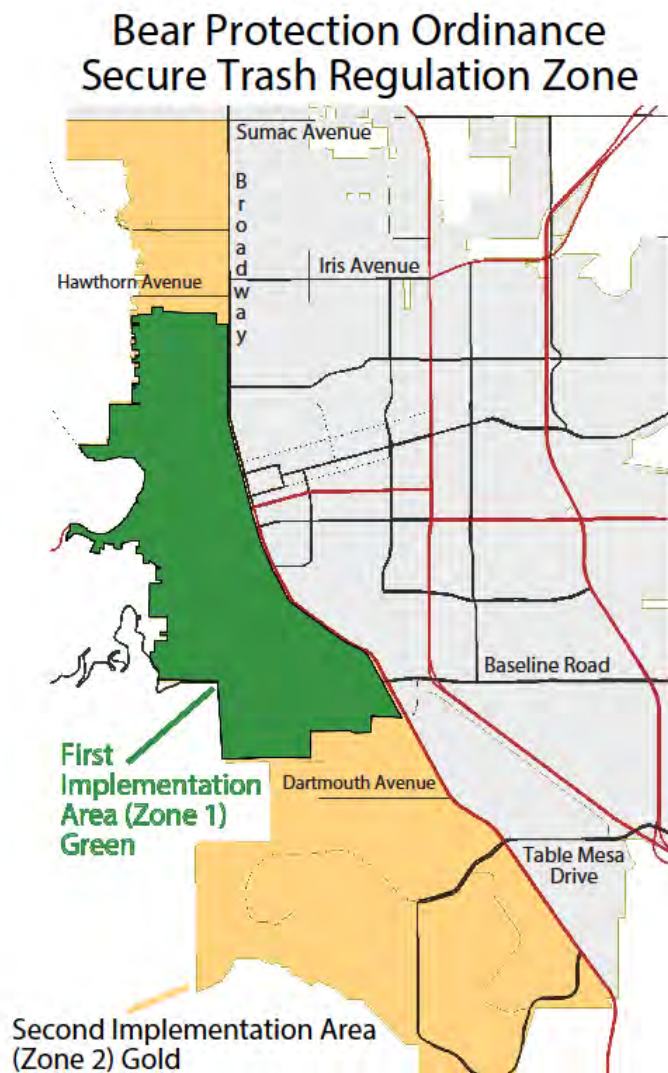
### *Bear Protection Ordinance*

On March 18, 2014 council adopted Ordinance No. 7962 requiring trash and curbside compost containers to be secure from bears at all times in most of the city west of Broadway. (See March 18, 2014 City Council agenda item titled: Consideration of a motion to adopt on third reading Ordinance No. 7962 [www.documents.bouldercolorado.gov/weblink8/0/fol/446/Row1.aspxlink](http://www.documents.bouldercolorado.gov/weblink8/0/fol/446/Row1.aspxlink).)

The goal of securing waste from bears in western Boulder was to protect bears, improve human/wildlife co-existence and increase sanitation and cleanliness of the city.

Implementation of the ordinance included a phased approach, hiring additional enforcement staff, and monitoring the effectiveness of the ordinance and bear behavior. The approach to secure waste requirements included the following three phases:

- **Phase I-** single family residences in Zone 1, affecting approximately 6,000 trash and compost carts: effective Oct. 1, 2014.
- **Phase II-** commercial and multifamily units



comprised of an estimated 580 dumpsters in all of the Secure Trash Regulation Zone, and single-family residences with an additional estimated 8,700 trash and compost carts in Zone 2: effective June 15, 2016.

- **Phase III-** all public waste containers in the entire Secure Trash Regulation Zone. In coordination with the 2017 implementation of the Universal Zero Waste Ordinance, 208 bear-resistant metal waste containers were installed on the Pearl Street Mall, University Hill, and city parks – both inside and outside of the Secure Trash Regulation Zone – to create a cohesive network of compost and recycling options available to the public.

For more information on the education and law enforcement efforts associated with Phase I and Phase II of implementation, see *Attachment A*.

## INTRODUCTION

The boundaries of the Secure Trash Regulation Zone were established in 2014, primarily based on the pattern of urban bear activity from 2009-2013 (*Attachment B: Reported Bear Sightings 2009-2013*). At the time of Ordinance No. 7962 adoption, staff committed to monitoring annual bear activity and evaluating the need to expand the secure trash regulation area. Recognizing the potential need for change, the ordinance was established with the ability to expand the area where secure trash is required by a City Manager rule.

Though the mechanism for expanding the secure trash area was established in 2014, the trigger, or specific criteria warranting expansion was not established. City staff is planning on bringing options for expansion to council in early 2019. The information in this memo is meant to serve as an update on the implementation of the ordinance and the bear activity that has been documented prior to, and through the implementation process. This memo summarizes the success of the ordinance over the past few years, and also highlights the bear activity beyond the current Secure Trash Regulation Zone. Finally, this memo serves as a summary of the information collected to date on bear activity, trash storage practices and proposes additional information for collection in 2018 to assist in future considerations regarding secure trash storage requirements.

Urban bear behavior in Boulder can be highly variable from year to year and is dependent on a variety of dynamic environmental factors. For example, in wet years with no late spring freeze, food production in natural areas is high, and pressure on bears to search for human-based food sources in town is lower. Sometimes individual bears and their offspring have a preference for an area, but these individual preferences can change over time. For these reasons, the city cannot look at bear behavior after initiating a new waste storage program and definitively credit the changes as a result from the program. However, the data is illustrative and used as the foundation for current and future policy development.

## ANALYSIS

This section includes information gathered annually on urban bear activity, and waste cart monitoring, ordinance enforcement, and additional educational and monitoring efforts for 2018.

### Summary of annual urban bear sighting reports and management removals

This section will analyze the pattern of bear sightings from 2009 - 2017 and discuss the data source and how it has been used and changed through those years. There is also information provided about the environmental conditions that may have influenced urban bear activity, and the conditions surrounding the two bears that have been euthanized in the City of Boulder since 2014. The maps referenced in this section will show the baseline data years of 2009-2013 in blue and represent individual years beyond 2013 in pink.

The city has been maintaining a database of urban bear sightings and reports since 2009. The database consists of sighting or activity reports in the City of Boulder that are made to city or Colorado Parks and Wildlife (CPW) staff. The bear report database is helpful in providing information on the pattern of urban bear activity over time. The number of reports varies from year to year and is not considered a representation of actual bear activity, as much of the urban bear activity goes unreported. In addition, the database itself changed in 2015, allowing the police dispatch records to be queried for bear calls. This additional data greatly increased the number of reports (see *Table I*).

**Table I. City of Boulder\* reported bear sightings from 2009 through 2017, showing reports east and west of Broadway.**

Year	Reports West of Broadway	Reports East of Broadway	Total Reports
2009	63	12 (16 %)	75
2010	106	7 (7 %)	113
2011	53	6 (11%)	59
2012	156	17 (11%)	173
2013	103	16 (16%)	119
2014	115	16 (16%)	131
2015**	311	238 (43%)	550
2016**	110	48 (30%)	162
2017**	237	85 (26%)	330

*\*Data includes sightings within a half mile buffer of City limits to the north, east and south*

*\*\*Police dispatch calls included in data set*

Another important element of the bear sighting database is it does not in any way represent the number of bears in town. A single bear walking down the street can generate multiple reports at various addresses.

### Reported bear activity 2009-2013

Reported bear activity from 2009 through 2013 was the foundation for establishing the city area where trash had to be secured. The map of bear reports during this time serves as a baseline to

which the following four years are compared (**Attachment B: Reported Bear Sightings 2009-2013**).

#### Reported bear activity 2014

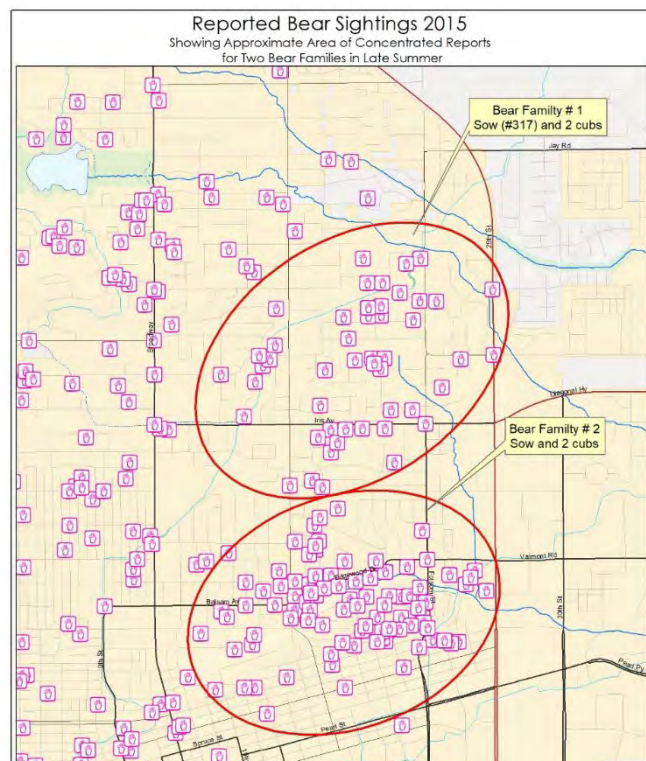
In 2014, the pattern of activity looks slightly different than the previous years with several bear reports north of Sumac (**Attachment B: Map of 2014 Reported Bear Sightings Compared to 2009-2013**). The number of reports north of the Secure Trash Regulation Zone was greater (13 reports) than in previous years (8 reports total 2009 to 2013).

In 2014, there were factors independent of secure trash and compost containers that likely contributed to less overall urban bear activity. These factors included: (1) good natural and domestic fruit tree production (though some of the drainages and fruit producing vegetation west of town were scoured by the flood of 2013); and (2) a lower number of bears in the area, likely the result of four bears that were killed in Boulder in 2013.

#### Reported bear activity 2015

In 2015, a greater proportion of bear reports were east of the Secure Trash Regulation Zone than in previous years, particularly in the area north of Pine St., east of 19<sup>th</sup> St. and west of 28<sup>th</sup> St. In 2015, the police dispatch records for bear calls was included in the database, greatly increasing the number of reports being plotted on the Reported Bear Sightings map (422 reports to dispatch) for that year (**Attachment B: Map of 2015 Reported Bear Sightings Compared to 2009-2013**). For 2015, the additional bear reports from police dispatch creates the appearance of increased bear activity in 2015; however, it is important to note the actual number of reports in 2015 from our historic sources (reports to CPW, Open Space and Mountain Parks staff, and Urban Wildlife Coordinator) was 116 which is in keeping with the number of reports from previous years (75-173 reports).

The environmental conditions, including a lack of natural food sources for bears in 2015 may have been a driving force for bear activity east of Broadway. In addition, there were two families of bears, each consisting a sow with two cubs, that seemed to reside east of the Secure Trash Regulation Zone in late summer. It is unknown why the two bear families resided in town, but it is possible the urban environment can serve as a refugia for sows with cubs. Bear cubs are killed by adult male bears (boars) to send the sow into estrus and mate. It is possible the urban environment offers habitat without large





territorial boars that may jeopardize cub safety.

In August 2015, a sow (CPW ear tag #317) was relocated by CPW with her two cubs due to safety concerns. There had been several reports of the sow “bluff” charging (running toward people than turning away prior to making contact) residents in town. In October, the family returned to Boulder, the sow was euthanized, and the cubs relocated to the Wyoming boarder.

#### Reported bear activity 2016

In 2016 there was a slight concentration of bear reports east of Broadway and south of Balsam/Edgewood west of Folsom and north of Pine St. (***Attachment B: Map of 2016 Reported Bear Sightings Compared to 2009-2013***). The 2016 bear season was the first year in 13 years that there was no CPW management action taken on any bears in the City of Boulder (***Attachment C***).

#### Reported bear activity 2017

The pattern of bear activity on 2017 was similar to the pattern observed in the years between 2009-2013 (***Attachment B: Map of 2017 Reported Bear Sightings Compared to 2009-2013***). Reports were concentrated west of Broadway with some reports throughout the city. There also appears to be a slight concentration of reports east of Broadway and south of Balsam/Edgewood, west of Folsom St. and north of Pine St., similar to 2015 and 2016.

In September 2017, an adult male bear was euthanized after attacking goats, and despite repeated attempts at hazing, continued to return to the property in the middle of north Boulder.

#### Bear protection and management removals

The ordinance continues to be effective in bear protection and improving human-bear coexistence by reducing the accessibility of trash. Perhaps the most relevant statistic to this point is the number of bears killed in the city has decreased since the implementation of the ordinance, however other factors could be attributed to this decrease as mentioned previously (***Attachment C***).

It is important to note that bears that come into town, feed on trash, and become habituated to people and create safety concerns are not the only circumstances that lead to Colorado Parks and Wildlife officers making the challenging decision to euthanize a bear in Boulder. For example, as mentioned in the Analysis section, in 2015, a very protective sow with two cubs returned to Boulder after being relocated and repeatedly charged residents in the urban area. Similarly, in 2017, a bear that had attacked goats in north Boulder repeatedly tried to return to the goats in the presence of people and hazing efforts. In these two instances unsecure trash did not seem to be the primary obstacle to coexisting with these animals. The city will continue to work closely with CPW, and the community to any identifying strategies to improve human-wildlife coexistence beyond our existing efforts.

#### **Waste cart monitoring and cart disturbances by bears**

In 2012 and 2013, the City of Boulder partnered with Colorado Parks and Wildlife (CPW) as part of the Black Bear Education and Enforcement Pilot project (for Bear Education and Enforcement Pilot final report visit: [www.boulderwildlifeplan.net](http://www.boulderwildlifeplan.net) “Background”). The goal of

the partnership was to monitor trash violations, including trash being strewn by bears in three neighborhoods. Though bears were rarely directly observed, there is a style and pattern of strewn trash attributed to bears. Each fall from 2014 to 2017, staff monitored the same route west of Broadway, including 612 single family homes between Sept. 16 and Oct. 20. Staff conducted 12 days of monitoring each year and compared the data to 12 days of fall monitoring in 2012 and 2013. The monitoring showed fewer bear-trash incidents from 2014 to 2017, since the Bear Protection Ordinance had been enforced along the route (see **Table II**). In addition to what is shown on **Table II**, there have likely been numerous unsuccessful attempts by bears to get into trash. In 2017, the monitoring route observations included counting the number of waste carts that had been knocked over but remained latched. In 2017, during the 12 monitoring days, there were 116 trash carts that had been knocked over and the cart remained latched. Staff does recognize that these trash carts could have been knocked over for other various reasons.

**Table II. Number of observed trash violations\* at 612 residences in the Bear Ordinance Secure Trash Regulation Zone during 12 monitoring days between Sept. 16, and Oct. 20, over the past six years.**

Year	Total Trash Violations	Unique Addresses	Trash Strewn by Bears	Percent of Total Caused by Bears
2012	145	113	142	97.9%
2013	120	71	116	96.7%
<b>Adoption of Ordinance 7962</b>				
2014	42	35	4	11.6%
2015	8	7	5	62.5%
2016	47	39	25	53%
2017	36	22	30	83%

*\*violations include B.R.C. 6-3-3, and B.R.C 6-3-5(a)(1) requiring trash to be stored in containers that are not overflowing, and their contents are not scattered by animals*

### **Summary of ordinance education and enforcement efforts**

Ordinance No. 7962 was effective in April 2014, and enforcement began on Oct. 1, of the same year. For additional information about education and enforcement efforts through the implementation of the ordinance, see **Attachment A**. For a summary of annual enforcement warnings and citations, see **Table III** below. Enforcement is both proactive through patrols, and



reactive based on resident complaints. Enforcement activity occurs throughout the Secure Trash Regulation Zone.

**Table III. Number of warnings and citations issued annually for waste storage in the Secure Trash Regulation Zone.**

Year	Warnings	Citations
2014	245	0
2015	925	321
2016	0	1,206
2017	1,376	938

**Review of the effectiveness of waste storage strategies and future options for improved methods of securing waste from bears**

During the development of the bear protection ordinance, an evaluation of bear secure trash storage methods was conducted (**Attachment D**). The evaluation process revealed the most effective way to secure waste from bears (established by the Get Smart Bear Society [www.bearsmart.com](http://www.bearsmart.com)) is in communal enclosures, however, that storage system was not feasible to implement throughout Boulder. The waste storage requirements established for the area west of Broadway allow for trash and compost to be stored in plastic, bear-resistant containers that have been designed and tested to withstand 30 minutes of a Grizzly bear trying to gain access. This system of storage is considered “Good” on the Get Smart Bear Society spectrum of Good to Best.

The University Hill Alley Enhancement Master Plan process is exploring ways to improve waste storage on University Hill (Hill). One improvement option identified in the Plan Waste Storage & Collection Strategy is to remove dumpsters from some commercial alley locations and replace them with communal bear-resistant enclosures (**Attachment E**). This prospect for improving waste storage on the Hill would also improve the effectiveness of securing trash from bears. Success in achieving communal enclosures for waste in the commercial district of the Hill area could serve as a model on how to improve enclosures in other parts of the city.

Plastic bear-resistant cart long-term effectiveness

In the past couple of years there have been a handful of concerns voiced from community members about the effectiveness of the bear-resistant carts, particularly after a cart has been in use for years. Though the bear-resistant design and testing requirements meet a very high standard, there has not been a way to evaluate cart performance over time, other than through their use. It is possible that, over time, the metal locking mechanisms attached to plastic containers fatigue making it easier for a bear to access the trash. Even a functioning cart that locks properly may become easier for a bear to access over time. Western Disposal has been

responsive to cart feedback and improvements for retrofitted designs. City staff will continue to evaluate this issue.

### **2018 education and monitoring efforts to evaluate future Secure Trash Zone expansion**

Securing waste in the Secure Trash Regulation Zone has substantially reduced the availability of trash to bears. In the current Secured Trash Regulation area, with its proximity to natural areas, frequency of bear visits, and waste storage practices, council decided the community benefit of secure trash outweighed the challenges and obstacles associated with bear-resistant receptacles such as increased costs and weight (for additional information see Bear Education and Enforcement Pilot final report: [www.boulderwildlifeplan.net](http://www.boulderwildlifeplan.net) “Background”).

In the past four years there have been increased reports of bear sightings beyond the boundaries of the Secure Trash Regulation Zone. For example, there seems to be an increased number of reports of bears in trash in the area east of Broadway, south of Edgewood Dr., and west of Folsom St. (*Attachment B: Map of 2014-2017 Reported Bear Sightings in Trash*). In these areas the scale and ease of access to trash by bears is different than the existing regulation zone, due to current waste storage practices. In some of these areas, bear access to trash seems to peak the night before trash collection when many homes put out their waste for collection.

Due to the increased presence of bears east of the Secure Trash Regulation Zone, and the lack of established criteria for expanding the area where trash is required to be secure from bears, staff is planning to increase education efforts in an area east of Broadway (south of Edgewood Dr., and west of Folsom St.) that has had repeated bear visits in waste carts. Staff will also monitor waste storage practices to better understand obstacles to securing trash from bears. A key educational message will be the city-wide requirement that – aside from alley collection - compost and trash containers put out for collection any time before the morning of pickup must be in a bear-resistant container.

2018 education efforts will also include:

- continue focused education in partnership with CU off campus housing and area property management companies, to ensure student move-in packets and welcome bags include information about secure trash requirements;
- continue educational efforts in partnership with CPW to provide information about secure trash options, and human-bear co-existence to residents within and outside the Secure Trash Regulation Zone; and
- informational mailings about bear activity, trash storage options and human-bear co-existence beyond the Secure Trash Regulation Zone.

2018 monitoring efforts will include:

- continue monitoring of bear-caused trash issues and violations within the Secure Trash Regulation Zone that began in 2012; and

- establishing a trash monitoring route in the area east of Broadway, south of Edgewood Dr., west of Folsom St. and north of Pine St., and monitoring trash storage practices and bear-caused trash issues and violations.

### **Preliminary community survey results**

A University of Colorado (CU) student has shared preliminary results from a community survey on bears. The survey was developed as part of a Master of Arts thesis project. Melanie Hill is working on a degree in media and public engagement at CU's College of Media, Communication and Information. The survey included questions about human-bear conflicts and was completed by 361 people in the Boulder area, including 230 City of Boulder residents (*Attachment F*). Respondents to Hill's survey showed support for expanding the Secure Trash Regulations Zone in areas where there is documented and ongoing bear activity (60% of respondents) or where the City deems appropriate (29% of respondents). Hill's thesis work is expected to be completed and available in its entirety later in 2018.

### **NEXT STEPS**

In 2018 staff will increase educational efforts and establish a trash monitoring route in areas beyond the Secure Trash Regulation Zone in an attempt reduce the availability of waste to bears through education and voluntary changes to trash management practices. Staff will return to council in first quarter 2019 with results of 2018 efforts and options on strategies to reduce trash availability to bears beyond the Secure Trash Regulation Zone.

### **ATTACHMENTS**

- A:** Supplemental Background Section
- B:** Maps
  - *Reported Bear Sightings 2009-2013*
  - *2014 Reported Bear Sightings Compared to 2009-2013*
  - *2015 Reported Bear Sightings Compared to 2009-2013*
  - *2016 Reported Bear Sightings Compared to 2009-2013*
  - *2017 Reported Bear Sightings Compared to 2009-2013*
  - *2014-2017 Reported Bear Sightings in Trash*
- C:** Chart of Annual Black Bear Management Removals
- D:** Evaluation of the Effectiveness and Feasibility of Systems that Secure Trash from Bears
- E:** University Hill Alley Enhancement Master Plan Bear-resistant Enclosure Option
- F:** University of Colorado Student Thesis Community Survey Preliminary Results

## BACKGROUND

### *Bear Protection Ordinance*

On March 18, 2014 council adopted Ordinance No. 7962 requiring trash and curbside compost containers to be secure from bears at all times in most of the city west of Broadway (see March 18, 2014 City Council agenda item titled: Consideration of a motion to adopt on third reading Ordinance No. 7962 [www.documents.bouldercolorado.gov/weblink8/0/fol/446/Row1.aspxlink](http://www.documents.bouldercolorado.gov/weblink8/0/fol/446/Row1.aspxlink)).

Implementation at the time of the ordinance adoption included the following elements:

- a phased approach beginning with alleys where waste containers are stored 24 hours a day, 7 days a week, and experience the most visible trash disturbances by bears;
- hiring two additional Code Enforcement staff to support the new ordinance in addition to enforcing existing quality of life ordinances; and
- monitoring the effectiveness of the ordinance, changes in enforcement, violations, and bear behavior.

### *Phased implementation*

Due to the large area included in the ordinance and thousands of trash and compost containers that need to be changed or modified, the ordinance is being implemented and enforced in a phased approach. The phased approach identifies two sub-areas, or zones within the entire Secure Trash Regulation Zone. The first implementation area was the highest priority for securing waste from bears and includes properties with trash pick-up in alleys (Zone 1). The second implementation area includes the remainder of the properties in the Secure Trash Regulation Zone (Zone 2).

The phased approach includes the following locations, and timeline:

- **Phase I-** single family residences in Zone 1, effective Oct. 1, 2014.
- **Phase II-** commercial and multifamily units (dumpsters) in the entire Secure Trash Regulation Zone, and single-family residences in Zone 2, effective June 15, 2016.
- **Phase III-** all public waste containers in the entire Secure Trash Regulation Zone, effective in the summer of 2017.

### *Phase I ordinance implementation (June – Dec. 2014)*

Phase I of Ordinance No. 7962 implementation began in the spring of 2014 and included single family residences in Zone 1. During the months of June through September 2014, approximately 3,100 trash, and 2,900 curbside compost bear-resistant carts were put in use at single family residences in Zone 1. This phase also involved: notifying landowners, residents, and property managers about the ordinance requirements, working with local trash haulers to establish a feasible cart distribution and compliance timeline, focused education and enforcement, and monitoring the effectiveness of the ordinance, and bear behavior.

*Education and Enforcement*

In June 2014, the city mailed 9,392 informational postcards (**Figure 1.**) to residents, property managers and landowners that were responsible for waste management in the approximate 7,000 residences and business in Zone 1.

In Sept. 2014, staff began monitoring bear-resistant cart use. Staff observed a pattern of bear-resistant cart misuse (i.e., lids not being latched) and developed an educational door hanger to reinforce the importance of latching the carts (**Figure 2.**). These door hangers were distributed by Code Enforcement staff and volunteers at locations where cart misuse was observed. On Oct. 1, ordinance enforcement began. Between Oct. 1 and Dec. 1, 2014, Code Enforcement issued 245 warnings. Most of the warnings were for cart misuse, but some were for not storing waste in a bear-resistant cart or enclosure. All properties where warnings were issued voluntarily complied, and the city issued no summonses.

***Phase II ordinance implementation (Feb. 2015- Dec. 2016)***

Phase II of Ordinance No. 7962 implementation included changing approximately 580 dumpsters in use in the Secure Trash Regulation Zone to bear-resistant dumpsters and changing approximately 4,400 trash carts and 4,300 curbside compost carts with bear-resistant carts at single family residences throughout Zone 2. Residents in Zone 2 began receiving their fully-automated, retrofitted, bear-resistant carts in February 2015. Some residents, particularly older adults, expressed concerns with the weight of the carts when moving them to and from the curb. City staff and Western Disposal explored ways to accommodate all residents and as a result, Western began testing lighter versions of the cart and the city pushed back the enforcement date from June 15, 2015 to June 15, 2016. This change allowed the city and Western Disposal to fully examine options for increasing the usability of bear-resistant carts and dumpsters and allowed residents who were challenged by the weight of the new carts to use their regular, non-bear resistant carts for up to one year without receiving a fine. Western Disposal tested and certified lighter versions of the fully automated 32, 64 and 96 gallon bear-resistant retrofitted carts at the [Grizzly and Wolf Discovery Center](#) in Montana in 2015.

There have been two ordinance exemptions requests from multifamily units (Presbyterian Manor and Juniper Townhomes HOA). The exemptions were requested due to potential challenges for some residents with physical impediments using the heavy lids on bear-resistant dumpsters. Staff has not pursued ordinance exemptions as council specifically considered challenges with the use of bear resistant containers during the ordinance development and allowed for covered enclosures. Council member comments (Sept. 1, 2015 City Council meeting) indicated they would like to see the ordinance strictly enforced. Staff believes allowing opportunities for unsecured trash in the Secure Trash Regulation Zone would lead to reducing the effectiveness of the ordinance. Staff has worked with property managers to explore options for trash enclosures, or other ways to be in compliance with the ordinance.

*Education and Enforcement*

In 2015 the City of Boulder partnered with Colorado Parks and Wildlife to educate residents within the enforcement area about the ordinance and the bear resistant containers. CPW volunteers were provided with educational door hangers by the city (**Figure 2.**) to distribute to households where volunteers observed violations such as bins not being latched or closed properly, overflowing garbage or compost, broken containers, or containers that were not bear resistant. Over 300 residences were provided with these door hangers over the course of more than 20 volunteer days. Additionally, University of Colorado's office of Off Campus Housing distributed postcards about the ordinance and the importance of properly using bear-resistant dumpsters to returning students as part of their move in packets and welcome bags.

For 2015, 952 trash violations were issued in the Secure Trash Regulation Zone. There were 321 summonses issued; most were for cart misuse, and some were for not storing waste in a bear-resistant container. Code Enforcement utilized a comprehensive enforcement approach that included enforcement of four different trash regulations that pertain to how waste containers must be stored, and when containers can be put out for collection. Some properties were cited for a combination of violations for not securing trash. Though properties within the Secure Trash Regulation Zone are not required to obtain bear-resistant dumpsters until June 15, 2016, properties that have obtained them are expected to use them correctly (dumpsters left in the open position were subject to a summons). Staff have received concerns from some residents who store waste containers in alleys and experience unauthorized use of their waste containers. In these instances, residents claim unauthorized users are accessing the containers and leaving them unsecured. Examples include: trash carts unlatched by dog walkers to dispose of dog waste; people rummaging through trash, and illegal use of dumpsters. Some properties have unique challenges that need to be addressed in complying with the requirements. In these instances, staff works with the community to better understand the obstacles to compliance with the ordinance. Solutions that have worked for some properties include: storing carts off the alley, locking dumpsters, reporting illegal dumping when it occurs, constructing a trash enclosure or structure on the property (requires exploring zoning requirements for construction), and communicating with the adjacent property and possibly sharing trash costs and responsibility if the placement of the dumpster benefits adjacent residents too.





Figure 1. Front and back of informational postcard mailed in 2014



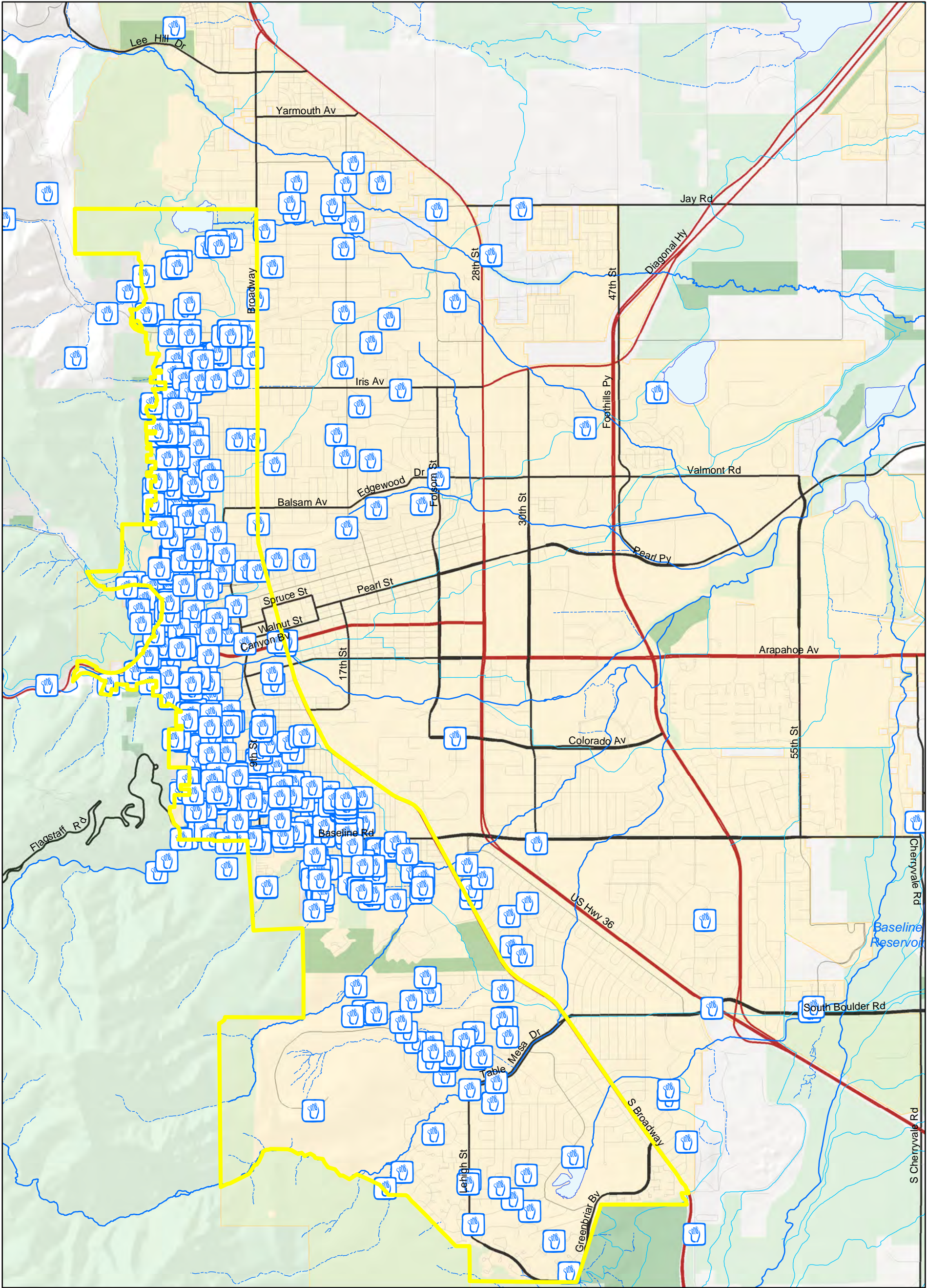


**Figure 2.** Front and back of informational doorhanger



# Reported Bear Sightings 2009 - 2013

## Within City of Boulder Limits



- Bear Sightings 2009-2013
- Bear Protection Zone
- Major Lakes
- City Limits
- Open Space and Mountain Parks Property
- Conservation Easement
- Fee Property
- Miscellaneous Easement



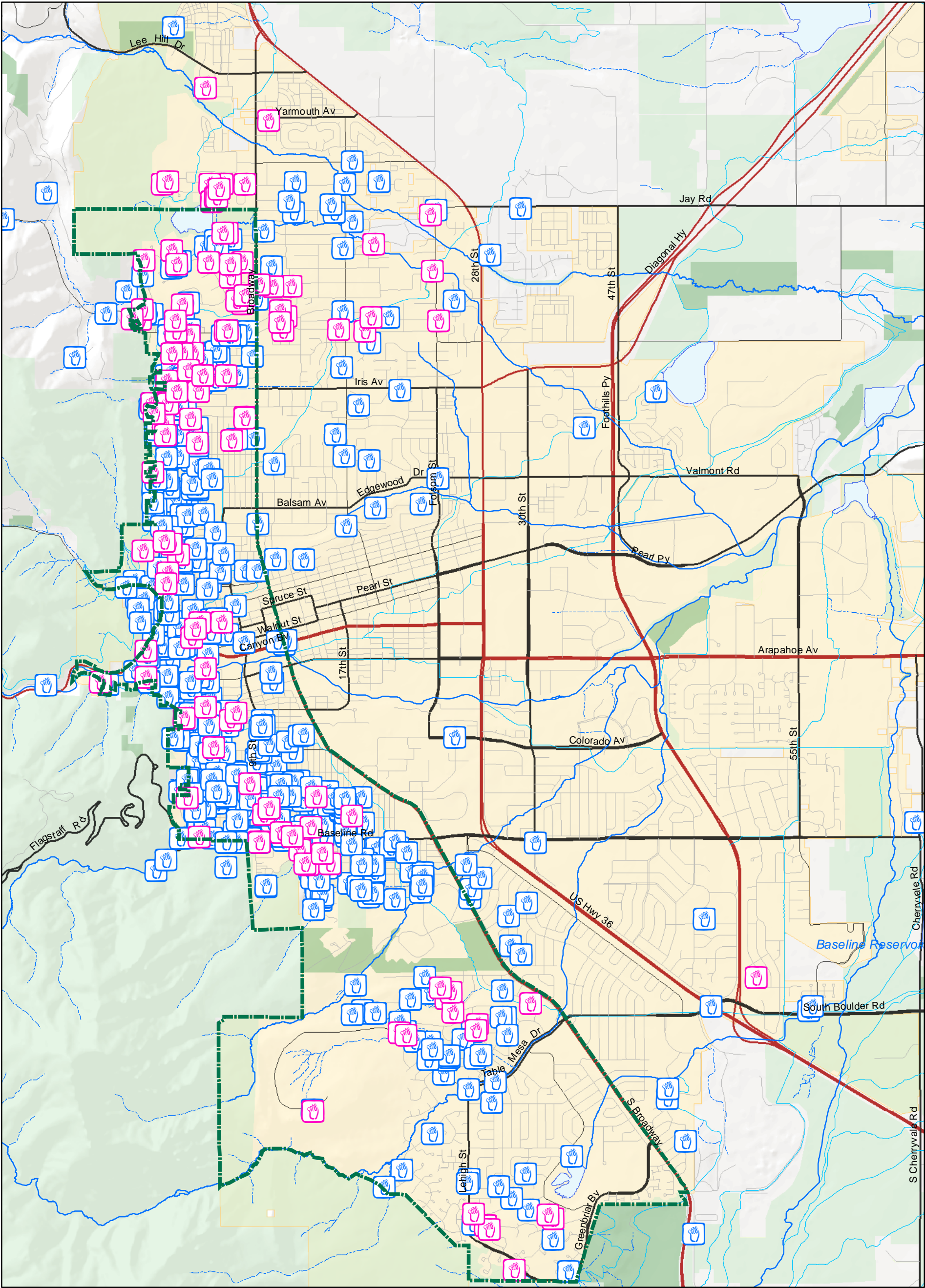
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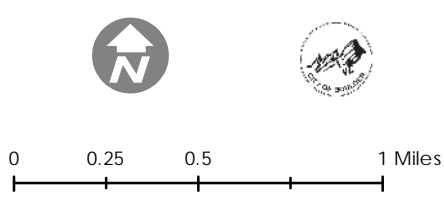


# Reported Bear Sightings 2009 - 2013, 2014

## Within City of Boulder Limits



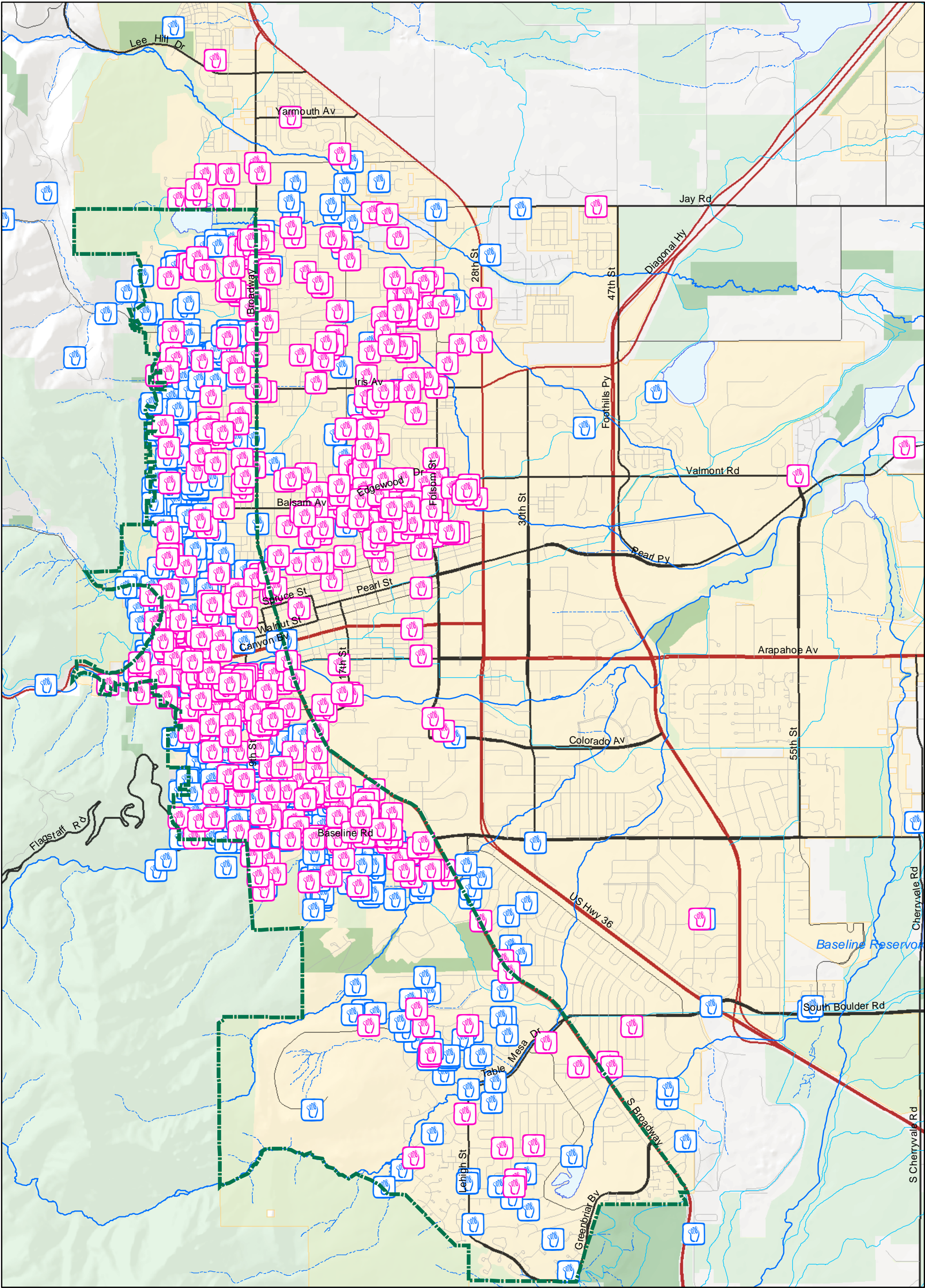
- Bear Sightings 2014
- Bear Sightings 2009-2013
- Bear Protection Zone
- Major Lakes
- City Limits
- Open Space and Mountain Parks Property
- Conservation Easement
- Fee Property
- Miscellaneous Easement



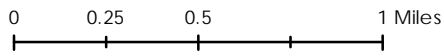


# Reported Bear Sightings 2009 - 2013, 2015

## Within City of Boulder Limits



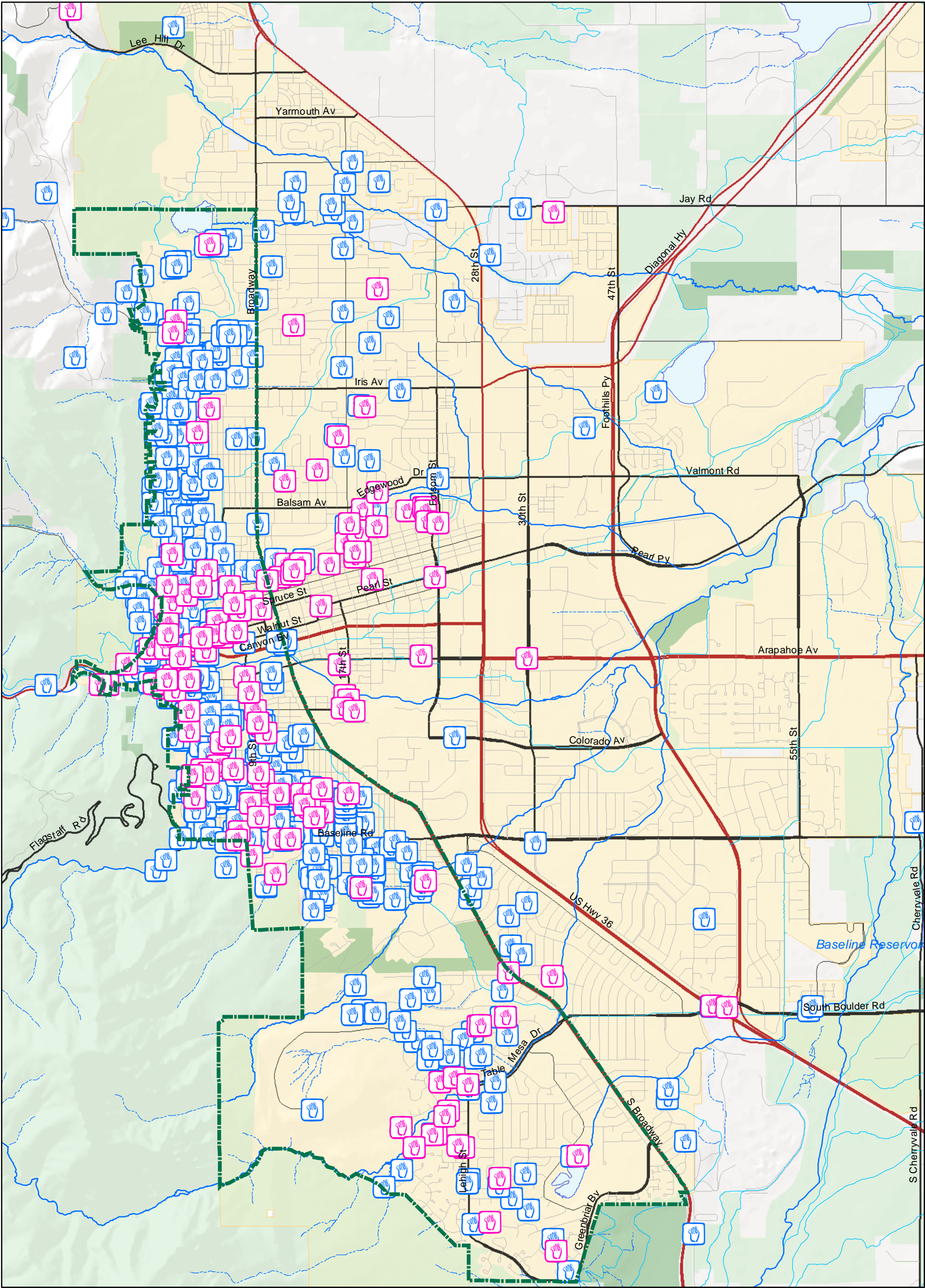
- Bear Sightings 2015
- Bear Sightings 2009-2013
- Bear Protection Zone
- Major Lakes
- City Limits
- Open Space and Mountain Parks Property
- Conservation Easement
- Fee Property
- Miscellaneous Easement








# Reported Bear Sightings 2009 - 2013, 2016


## Within City of Boulder Limits





 Bear Sightings 2016


 Bear Sightings 2009-2013


 Bear Protection Zone


 Major Lakes


 City Limits

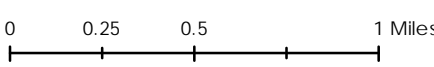
 Open Space and Mountain Parks Property


 Conservation Easement


 Fee Property

 Miscellaneous Easement





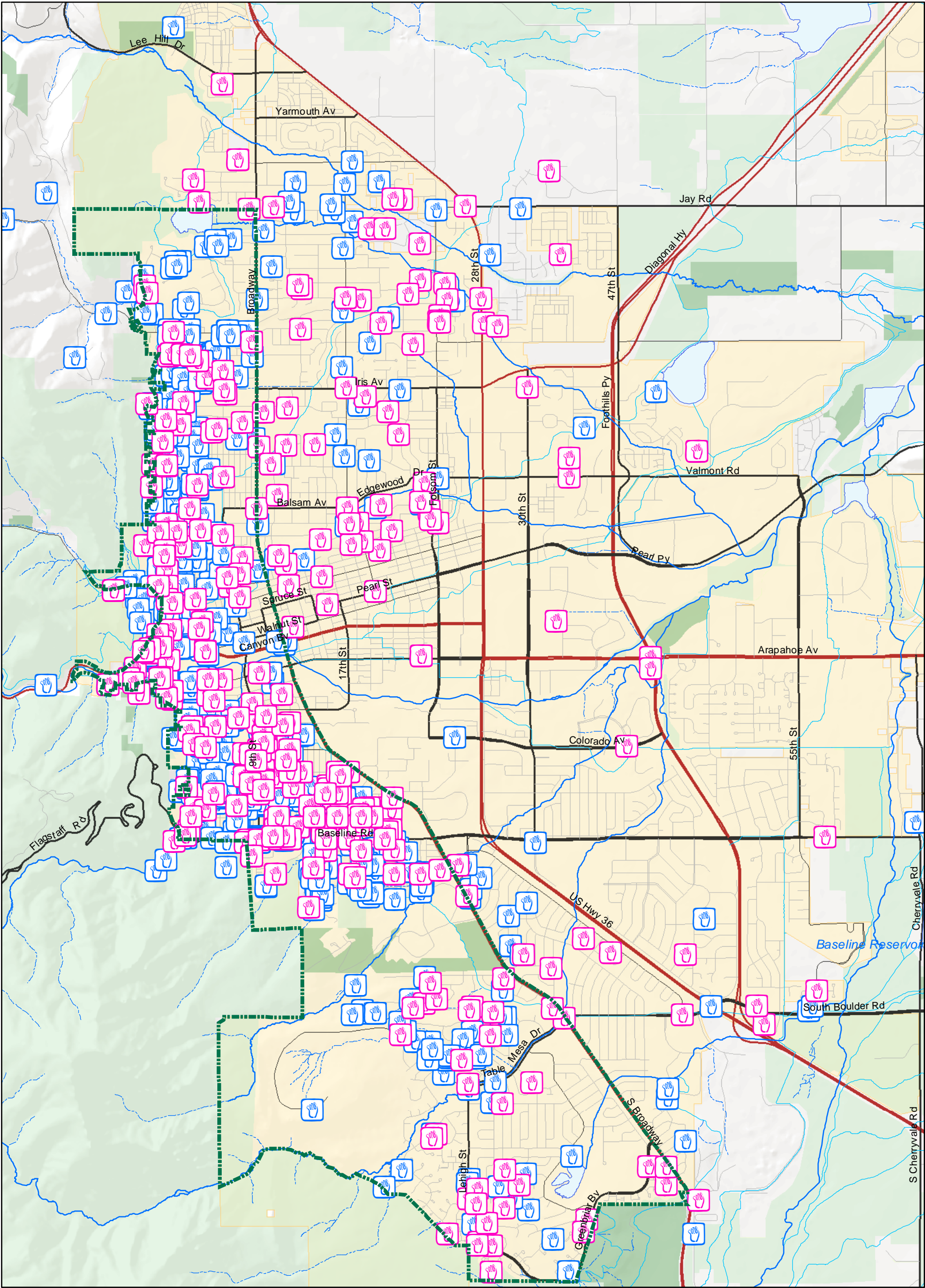






# Reported Bear Sightings 2009 - 2013, 2017

## Within City of Boulder Limits



- Bear Sightings 2017
- Bear Sightings 2009-2013
- Bear Protection Zone
- Major Lakes
- City Limits
- Open Space and Mountain Parks Property
- Conservation Easement
- Fee Property
- Miscellaneous Easement



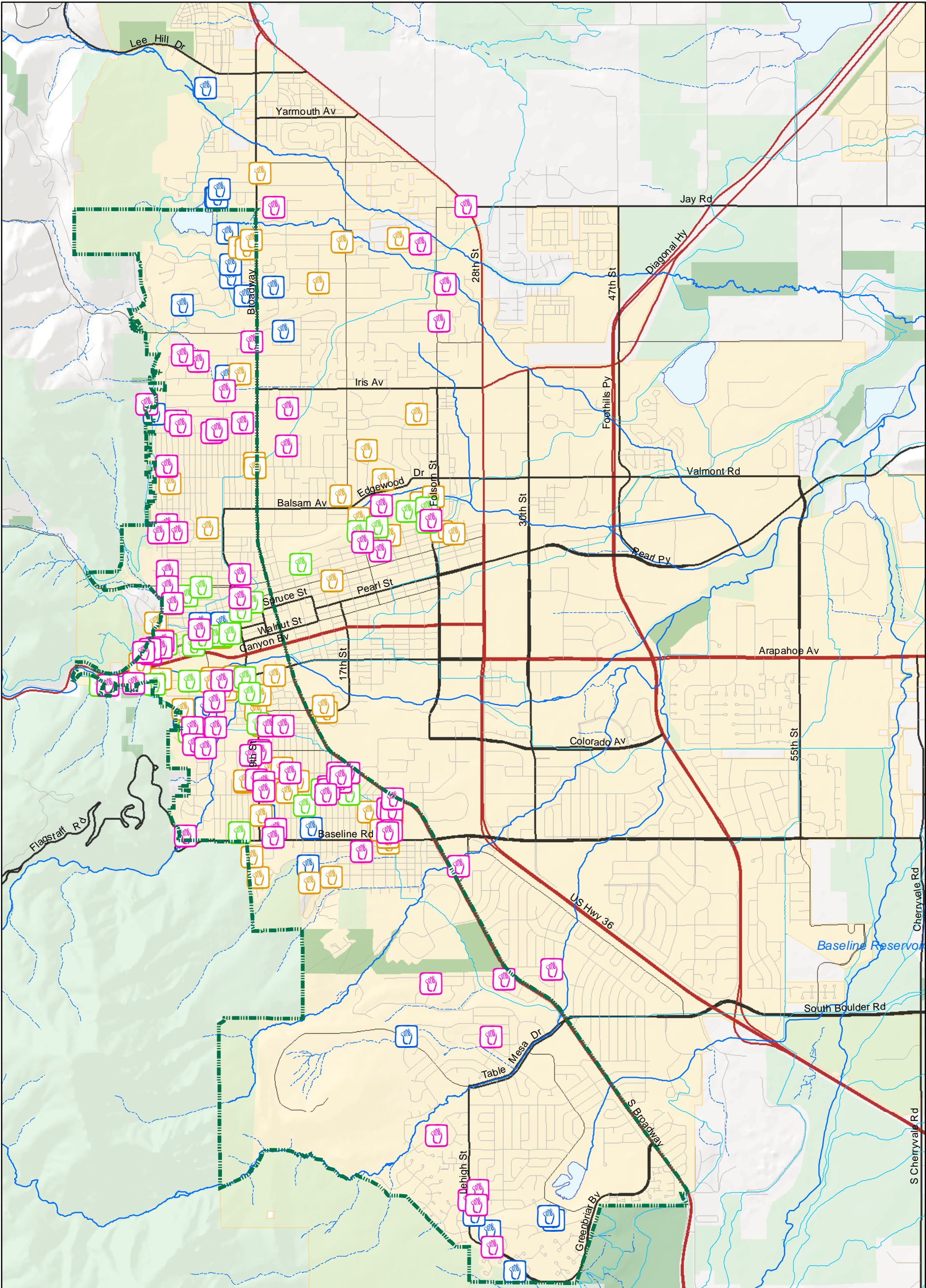
0 0.25 0.5 1 Miles



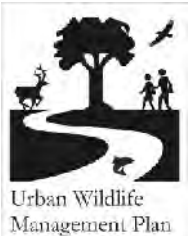
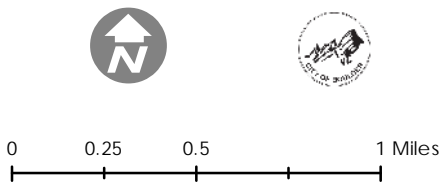


# Reports of Bear In Trash 2014 - 2017

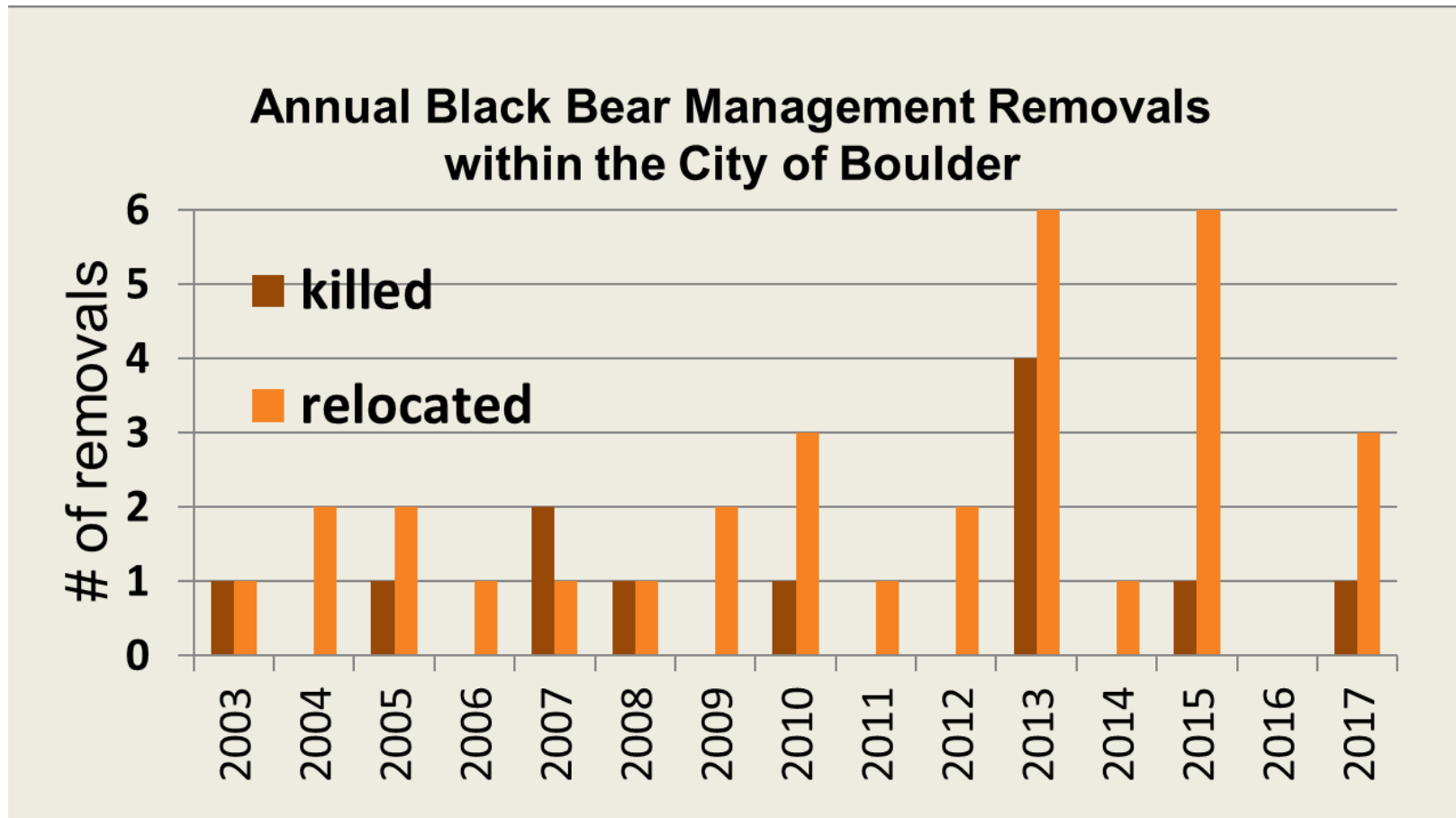
## Within City of Boulder Limits



- 2017 (84 reports)
- 2016 (30 reports)
- 2015 (67 reports)
- 2014 (26 reports)
- Bear Protection Zone
- Open Space and Mountain Parks Property
- Conservation Easement
- Fee Property
- Miscellaneous Easement
- Major Lakes
- City Limits







**Figure 3.** Number of Black Bears that have been removed annually from the City of Boulder by Colorado Parks and Wildlife between 2003 and 2017.

## **Evaluation of the Effectiveness and Feasibility of Systems that Secure Trash from Bears**

The following is a description of systems designed to secure trash from bears. The systems are described from most effective to least effective. It is important to note these systems are shown as a gradient of deterring bears from accessing waste. Few municipalities have established a “bear-proof” waste storage system which involves metal communal receptacles, and none have been implemented in the US. (Canmore, Alberta population 12,000, and Whistler, British Columbia population 9,500 are examples of communities with “bear-proof waste storage systems). Municipalities in the US have addressed bear-trash conflicts by trying to deter bears by making it harder to access trash. Bear-deterrent systems do not ensure a bear will not break the securing system but aim to make it harder to access food in town than in natural areas so that bears don’t rely on human generated foods. Some systems are more effective than others. This section describes systems used in the US from most effective to least effective. It also includes an evaluation of how feasible the particular system would be in Boulder.

### *Communal enclosures*

The most effective long-term solution to securing trash from bears is to establish communal trash enclosures that serve approximately 20 residences per enclosure. (For more information on evaluating the effectiveness of waste management collection systems visit: [www.bearsmart.com](http://www.bearsmart.com).) The town of Snowmass Village has instituted a system of communal enclosures and, based on reports from Area CPW officer Kevin Wright, and Snowmass Village Animal Services Officer Laurie Smith, the system is working for their community. Identifying space for communal dumpsters in areas where bears most commonly access trash is challenging in Boulder, but will continued to be explored as a long term solution.

### *Individual enclosures*

On the spectrum of effectiveness in securing trash from bears, individual enclosures for storing waste containers fall below communal enclosures but are more effective than bear-resistant carts that are stored outside. Bears are less likely to break into a shed or trash enclosure than a bear-resistant container. However, not all residences in are able to build storage structures due to building restrictions.

### *“Bear-resistant” carts and dumpsters*

The term “bear-resistant” in this context refers to containers that have been through testing with captive bears, and were approved as “bear-resistant” through the Interagency Grizzly Bear Committee's (IGBC) Bear-Resistant Products Testing Program, or the Living With Wildlife Foundation. Certification through this process currently means the container, which contained an attractant, remained closed for 60 minutes with a bear and was still usable after that 60 minute period. The polycarts are usually made of strong plastic and have metal latches. Dumpsters are usually metal with metal lids. It is important to note that these carts





are not “bear-proof” but are designed to deter bears by making it harder for them to get to waste. This system involves container similar to most trash and compost carts, and dumpsters used in Boulder today, except the containers are heavier and dumpsters have heavier lids. The City of Durango partnered with Colorado Parks and Wildlife (CWP) to conduct a multiyear study on effective methods for reducing bear-human conflicts. As part of the study, approximately 900 city residents received wildlife-resistant polycart garbage containers in 2013. The study, which commenced in 2011, continued through of 2017. Preliminary study results show bear-resistant containers reduce bear-human conflicts.

*Retrofit for carts currently in use*

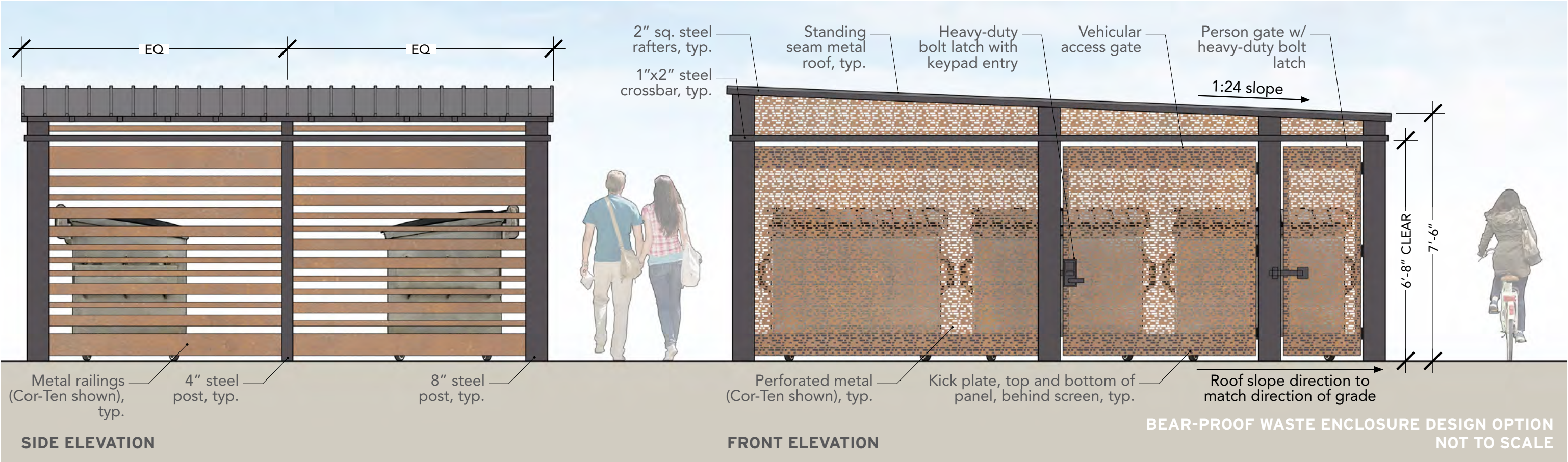
Retrofitting existing carts to address bear issues has been appealing to many municipalities, because making use of existing carts is much more cost effective than buying new carts. Until companies started designing and manufacturing bear-resistant carts, all of the available bear-resistant carts were regular “off-the-shelf” carts that were modified by adding hardware. These retrofits that were not bear tested had issues with metal banding rusting, bending, or being pulled off by bears or damaged after repeated hauling. Rivets popped off after the plastic around the rivets begins to crack, etc. So the lifespan has shown to be a lot shorter with retrofitted carts.



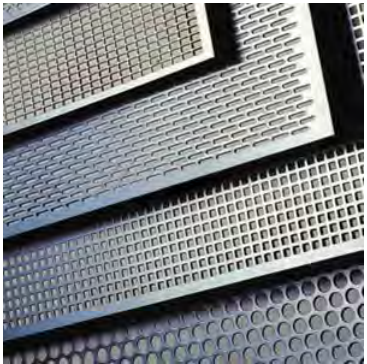
# Analysis of Trash Storage Approaches to Deter Bears

Approach	Effectiveness	Feasibility
<div>1. Communal Enclosure</div> <div><div>(Snowmass)</div></div>	Best	Low
<div>2. Pick up at individual residences</div> <div>Stored “inside” (i.e. garage, shed, bear resistant trash enclosure)</div> <div>Until morning of pick up</div> <div><div>(Aspen)</div></div>	Better	Medium
<div>3. Pick up at individual residences</div> <div>Stored outside in bear-resistant container</div> <div><div>(Boulder)</div></div>	Good	High
<div>4. Pick up at individual residences</div> <div>Stored outside in retro fitted bear-resistant container</div> <div><div>(Virginia)</div></div>	Less than Good	High

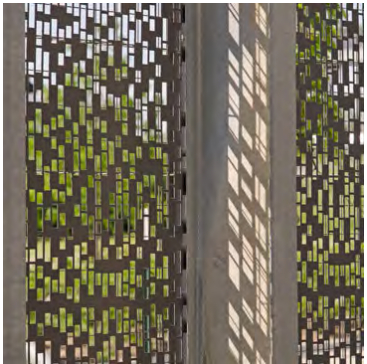




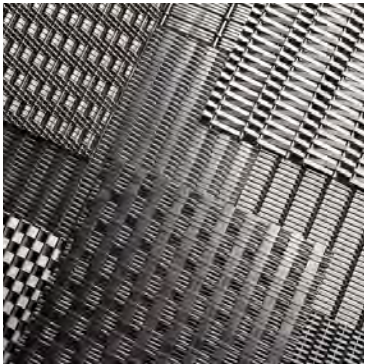
Keypad enclosure for gates



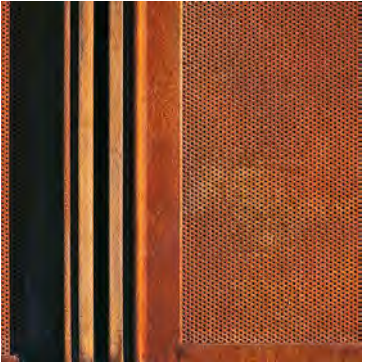
Perforated metal panels, grid pattern



Perforated metal panels, custom pattern



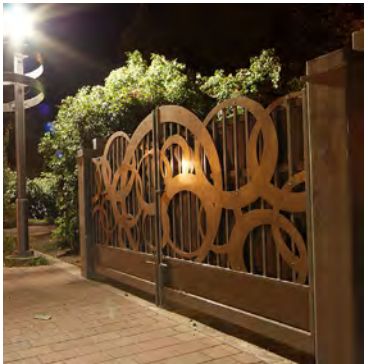
Woven metal panels



Cor-Ten steel



Powder coated metal



Art opportunities on gates

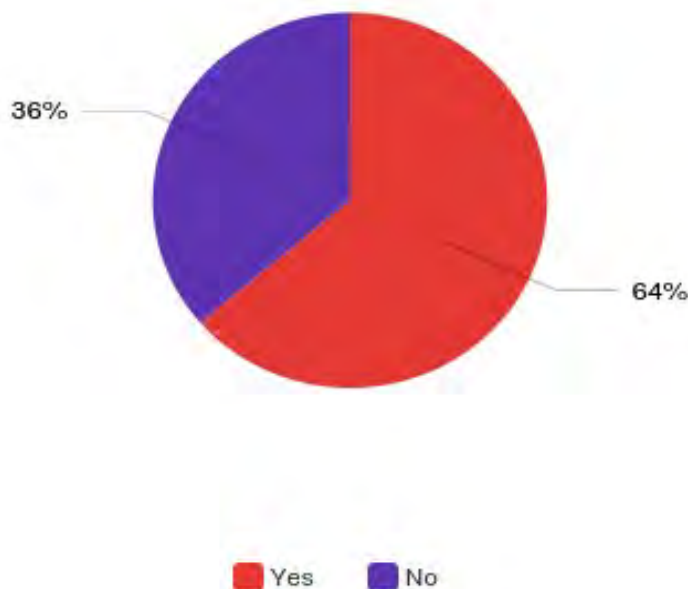


# Default Report

*Bears & People*

March 13th 2018, 10:25 am MDT

## Q4 - Do you reside in the City of Boulder?



#	Answer	%	Count
1	Yes	63.71%	230
2	No	36.29%	131
	Total	100%	361

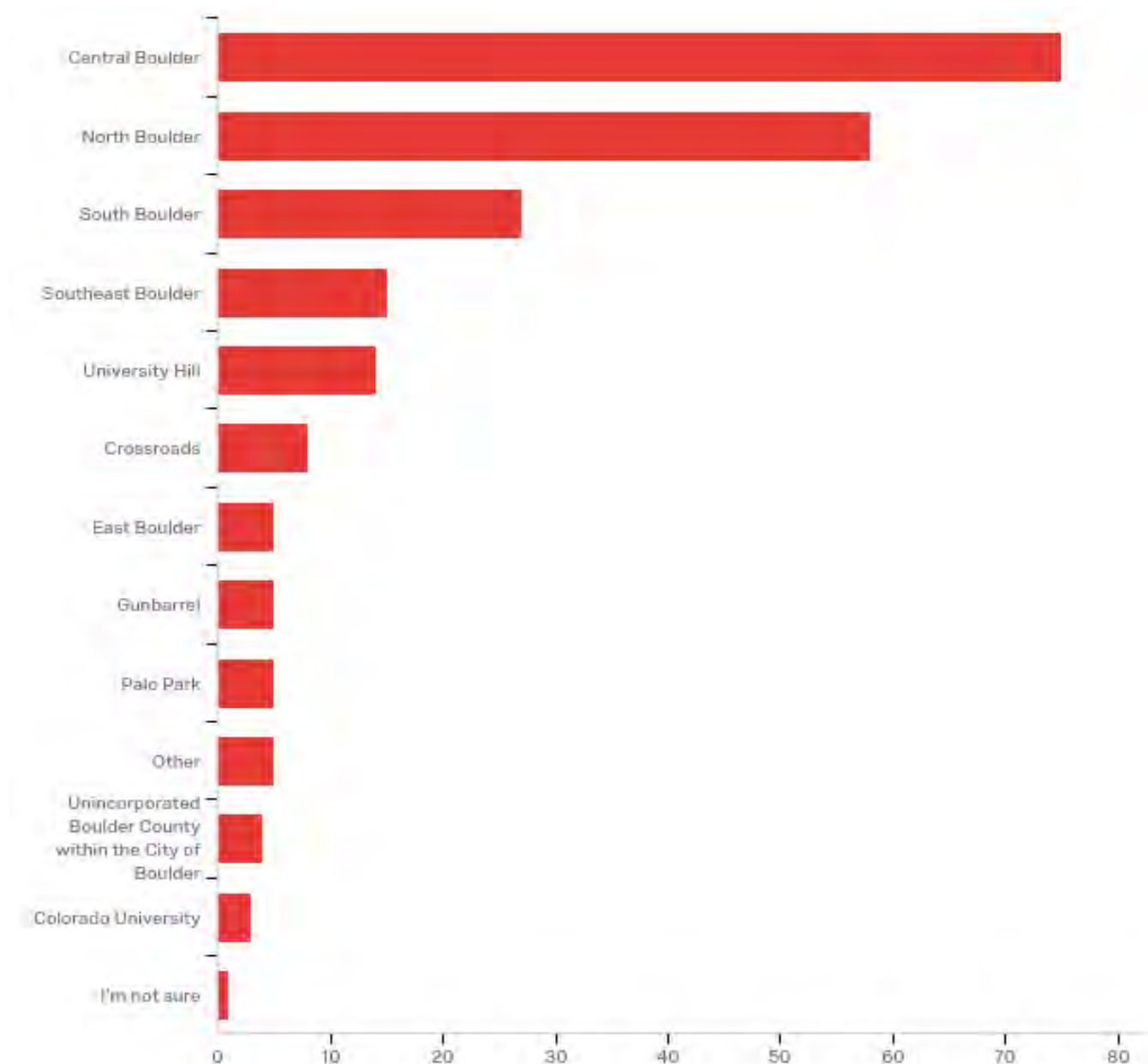
# Default Report

*Bears & People*

March 13th 2018, 10:25 am MDT

## Q5 - Which City of Boulder subcommunity do you reside in?

Not sure? Click this link, check "subcommunities" on the left-hand sidebar, and type in your address.





#	Answer	%	Count
1	Central Boulder	33.33%	75
2	Colorado University	1.33%	3
3	Crossroads	3.56%	8
4	East Boulder	2.22%	5
5	Gunbarrel	2.22%	5
6	North Boulder	25.78%	58
7	Palo Park	2.22%	5
8	South Boulder	12.00%	27
9	Southeast Boulder	6.67%	15
10	University Hill	6.22%	14
11	Unincorporated Boulder County within the City of Boulder	1.78%	4
12	I'm not sure	0.44%	1
13	Other	2.22%	5
	Total	100%	225

## Other

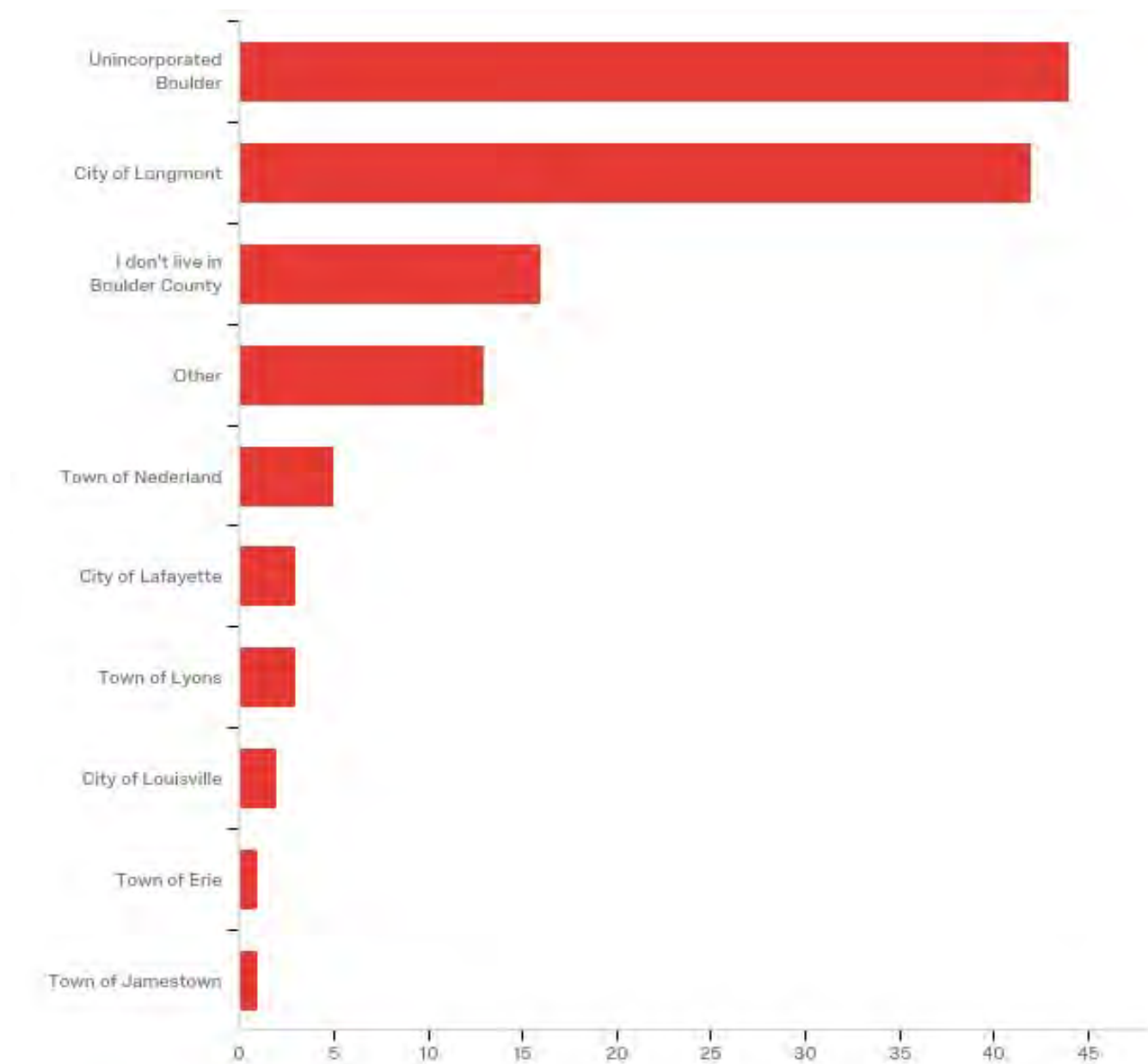
Other - Text
Chautauqua
Chautauqua
Newlands
old north boulder
Newlands

# Default Report

*Bears & People*

March 13th 2018, 10:26 am MDT

## Q6 - Which city or township do you reside in?



#	Answer	%	Count
1	Town of Erie	0.77%	1
2	Town of Jamestown	0.77%	1

3	City of Lafayette	2.31%	3
4	City of Longmont	32.31%	42
5	City of Louisville	1.54%	2
6	Town of Lyons	2.31%	3
7	Town of Nederland	3.85%	5
8	Town of Superior	0.00%	0
9	Town of Ward	0.00%	0
10	Unincorporated Boulder	33.85%	44
11	I don't live in Boulder County	12.31%	16
12	Other	10.00%	13
	Total	100%	130

## Other

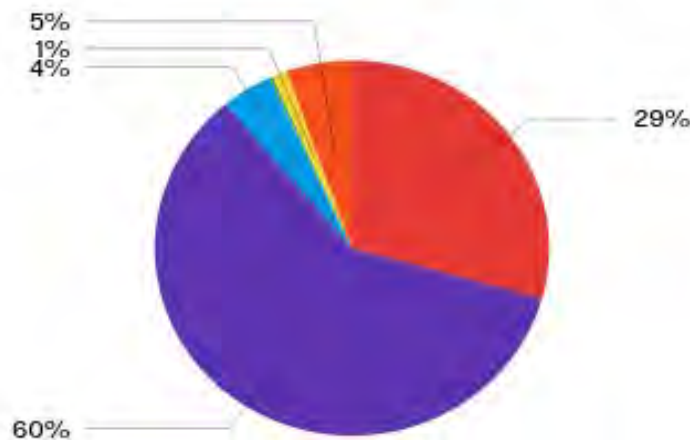
Other - Text
Denver
Town of Niwot
Portland
Sugar Loaf Rd-west foothills
LaSalle
Arvada
Golden
Niwot
Denver
Vail. Townhome in Boulder
Living overseas this year

# Default Report

*Bears & People*

March 12th 2018, 10:15 am MDT

**Q19 - Which of the following statements about the Bear Protection Ordinance (BPO) do you agree with?**



■ The BPO should be expanded to wherever the City of Boulder deems appropriate.

■ The BPO should be expanded to everywhere there is documented and ongoing bear activity.

■ The BPO should remain as it is.

■ The BPO should be reduced in size.

■ The BPO should be removed.

■ Other

#	Answer	%	Count
4	The BPO should be expanded to wherever the City of Boulder deems appropriate.	29.34%	98
2	The BPO should be expanded to everywhere there is documented and ongoing bear activity.	59.58%	199

1	The BPO should remain as it is.	4.19%	14
3	The BPO should be reduced in size.	0.30%	1
5	The BPO should be removed.	1.20%	4
6	Other	5.39%	18
	Total	100%	334

## Q19\_6\_TEXT - Other

Other - Text
FYI, I do not live in the BPO zone. I live ON Sumac Ave, It would be fine to expand it to everywhere there is documented bear activity.
Expanded to unincorporated Boulder
It should not be mandatory
I'm not sure
BPO should be removed until bear proof bins actually work
BPO should exist as needed but more education needed and less ticket writing (
BPO should be expanded everywhere but aren't doing such a good job schooling folks bc most of them don't listen and want to complain. Ammonia is the key answer and to clean up their trash and not leave any
I don't feel qualified enough to answer.
I don't know--I just want to make sure newcomers realize they are moving into bear country and don't pressure the City to remove bear protections
I don't know
The BPO should be expanded to the entire city. When Vail instituted bear resistant containers, we stopped having a problem. It's a strategy that seem to work very effectively. Since we took away the potential food supply, the only bears I've seen are just passing through.
don't know
unsure
I'd be interested to know how effective the BPO is before deciding whether to expand or shrink it.
no opinion
I favor protecting bears as much as possible