

Bear Smart UM: A Proposal to Address and Avoid Bear - Human Conflict at the University of  
Montana

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## **PREFACE**

The UM Bear Management Plan was written by members of a Global Leadership Initiative capstone group based on work done by the Missoula Bear Smart Working Group, as well as the Montana Student Chapter of the Wildlife Society. The intention of this plan is to provide necessary resources to the University of Montana (UM) in order to take an active stand within the Missoula community in enforcing the Missoula Human-Bear Conflict Management Plan, which was adopted by Missoula City Council. Given that UM falls in the so-called “bear buffer zone,” the authors believe that the university is obligated to reexamine various methods of dealing with bear attractants as outlined here, making campus a safer place for both students and bears. The grizzly bear is the mascot of UM; we should be doing our part in creating a bear-safe community.

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## **INTRODUCTION:**

The University of Montana has been known as one of the campuses in the U.S. lucky enough to be surrounded by public land and to have abundant green/natural spaces intermixed with buildings and infrastructure. We proudly promote in marketing material that campus is “nestled in the heart of Western Montana’s stunning natural landscape” (“About UM” 2022). Of course, with this proximity to conservation lands and open spaces, it is inevitable that UM also experiences human-wildlife interactions. Many universities in the United States must manage human-wildlife interactions with deer, squirrels, or birds. The University of Montana has the additional task of handling human-bear interactions.

This UM Bear Management plan has been written with the intention of addressing any past and current human-bear interactions within the university's boundaries to prevent further issues or escalations in the future. Context for this Management Plan comes from the 2021 actions within Missoula through the Bear Smart Working Group to limit the amount of habituated bears within Greater Missoula’s city limits, specifically in the “bear buffer zone” which can be referenced in *Figure 1* of the appendix. The UM Bear Management plan outlines the background of historical bear activity on campus and within Missoula while offering a set of guidelines for waste management in areas of campus deemed problematic. Our GLI Capstone group advised by Eva Rocke, the Montana Student Chapter of the Wildlife Society, and local bear experts such as Jamie Jonkle and Chris Servheen have highlighted those problematic areas at different times in recent years.

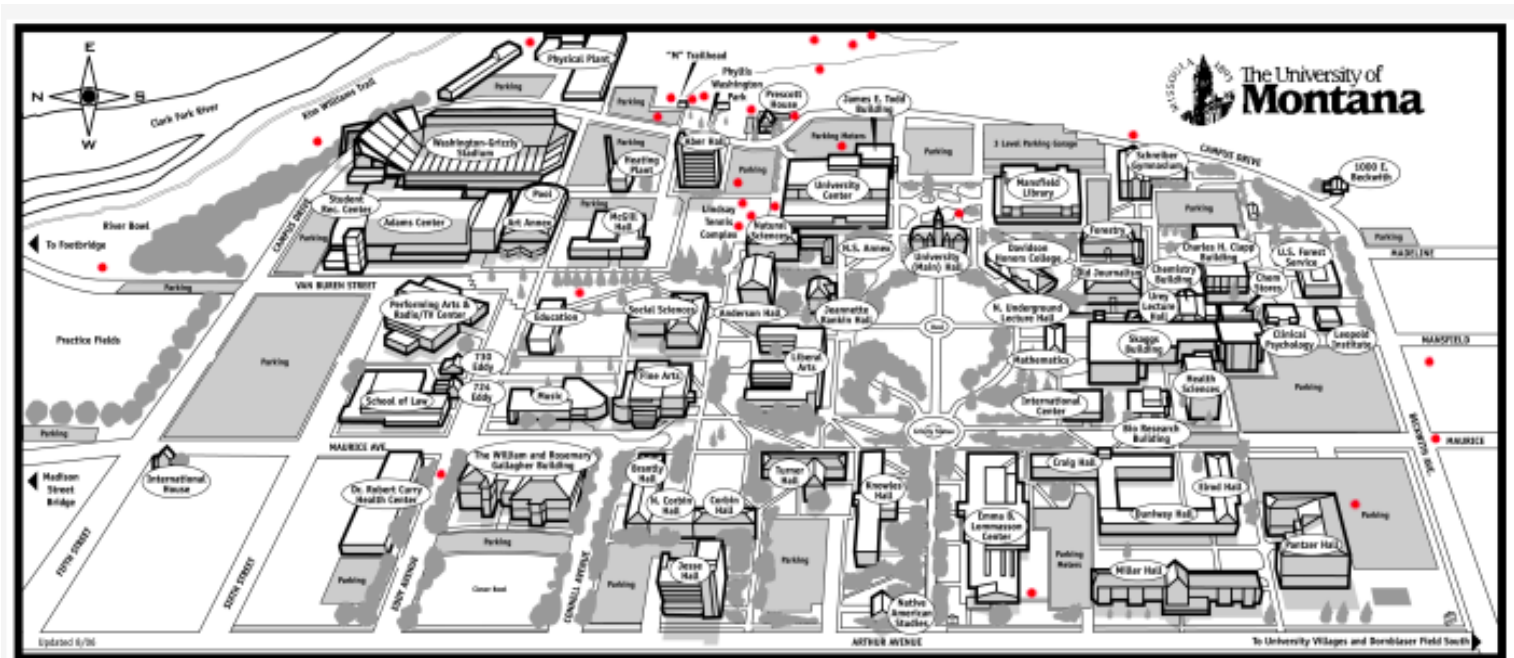
Additional resources available in this document include a cost analysis for the use of facilities, and University of Montana decision makers to estimate the total cost and labor needed to achieve a safer environment for humans and bears alike. Bear Safe education suggestions for current and future students, along with faculty, staff and frequent visitors of the University of Montana campus are included. The educational strategies proposed in this plan aim to increase awareness amongst UM affiliates of bear attractants, bear behavior, and how to safely navigate bear habitat.

## **BACKGROUND**

### ***A History of Black Bears on Campus***

Human-wildlife interactions are increasing due to development, particularly when it concerns black bears (*Ursus americanus*) encroaching onto urban spaces looking for food (Lewis 2015). With increased interactions between humans and bears comes potential for conflict: “These conflicts [are] caused by competition between bears and humans for food and space. In most cases, the bears [are] present in these places before humans arrived” (“*Bear Hazard*”

*Assessment*” 2022) There is an ongoing issue each summer and fall with bear activity on campus and a need for proactive management. Currently, we are seeing an increased number of bears across the Missoula Valley. These bears are becoming habituated and therefore are increasingly deemed “problem bears.” There is a direct correlation between how food conditioned a bear becomes, habituation level that a bear reaches, and the creation of a conflict bear (Marley 2016). As of October 2022, there are 150 to 200 black bears within the Missoula Valley, and upwards of 80 within Missoula County (Missoula Bear Smart Working Group 2022). In order to address these issues, both the city of Missoula and UM must take precautionary measures to avoid creating conflict bears for the future.



*FIGURE 1. Approximate locational map of bear sightings on the University of Montana Campus from October 2020 through September 2022, as reported by UMPD through the Clery Act. Bear sightings located at red dots.*

On October 4, 2022, the Missoula City Council officially voted to make Missoula a Bear Smart community, a standard coined by the Bear Smart program that comes from Victoria, British Columbia. The Bear Smart Program measures how fit a community is when it comes to managing human-bear cohabitation. Presented by Missoula’s BearSmart working group to the City Council, the plan outlines a buffer zone around Missoula to install bear-safe garbage cans, as well as remove fruit trees, outdoor pet food, and other bear attractants. The University of Montana is included in the proposed bear buffer zone. That proposal also estimated that there are over 200 black bears in Missoula, which means that 200 black bears could be tempted to peruse city streets, neighborhoods, and campus in search of food. Bear attractants on campus could put humans and bears in danger if not properly addressed.

By examining past bear management in the United States and beyond, as well as current practices in Missoula, we propose an official bear management plan for the University of Montana to make it the country's first Bear Smart campus. The university is a leader in our community; proactively establishing its own internal working group and adopting a Bear Smart Plan would signal to others in Missoula that this is an issue that must be taken seriously and that UM is willing to do our part. The University of Montana Missoula may be the first American university to develop a campus-specific bear management plan, so there is potential for UM to serve as a leader and model for campuses dealing with similar challenges. If the campus fails to implement bear safe practices, it will set a poor standard for the rest of Missoula in following the Bear Smart guidelines to protect both humans and bears from further conflict. The need to address bear-human conflict will only intensify as grizzly bears expand their distribution into the Missoula Valley. **Grizzly bears will pose additional dangers to humans not presently experienced with black bears.**

### *Missoula Actions to be "Bear Safe"*

The City of Missoula, with advice from Montana Fish, Wildlife and Parks (FWP) have codified a Bear Buffer Zone (BBZ). Missoula Municipal Code Title 8 entitled "Health and Safety", Chapter 8.28.085 "Special provisions for the accumulation and storage of garbage within the Bear Buffer Zone" reads as follows:

#### **8.28.085 Special provisions for the accumulation and storage of garbage within the Bear Buffer Zone (Appendix Figure 1).**

A. It is unlawful to accumulate or store garbage that is attractant to bears within the Bear Buffer Zone in any manner that allows bears access. For the purpose of this chapter, garbage is also defined as any other human generated waste that attracts bears, not to include roadkill or windfall fruit. Except as provided in B. through D. below, bear attractant garbage shall be secured in a bear resistant container or enclosure.

B. Persons may, as an alternative to A. above, place non-bear resistant garbage containers containing bear attractants at the curb, alley, or public right-of-way only after 5:00 am on the morning of waste pickup. After waste pickup, the non-bear resistant garbage container that previously held bear attractants must be re-secured and stored inside an enclosed building or inside a bear resistant enclosure by 9:00 pm on the day of waste pickup.

C. Commercial, governmental, and institutional entities located within the Bear Buffer Zone may as an alternative to A. or B. above, develop a written waste management plan to prevent bears access to attractant waste. The waste management plan and any amendments will be approved in writing by Montana Fish, Wildlife, and Parks (FWP) and appropriate commercial waste hauler.

City-County health department may be petitioned to arbitrate if the event plan agreement cannot be made between FWP and the entity.

D. Outdoor trash compactors may be used within the Bear Buffer Zone provided no waste is exposed and compactor doors are kept closed at all times, except when loading or removing wastes. The area around the compactor must be kept clean of garbage. (Ord. 3419, 2010).

### Missoula Bear Smart

On October 4, 2022, the Missoula City Council adopted the Missoula Bear Smart Working Group’s plan to make the city safer for bears and to reduce bear attractants. The plan outlines areas around Missoula that are of concern and provides recommendations for policies to reduce bear/human interaction and motivate the community to make mindful decisions such as carrying bear spray in certain areas.

### WASTE MANAGEMENT PLAN

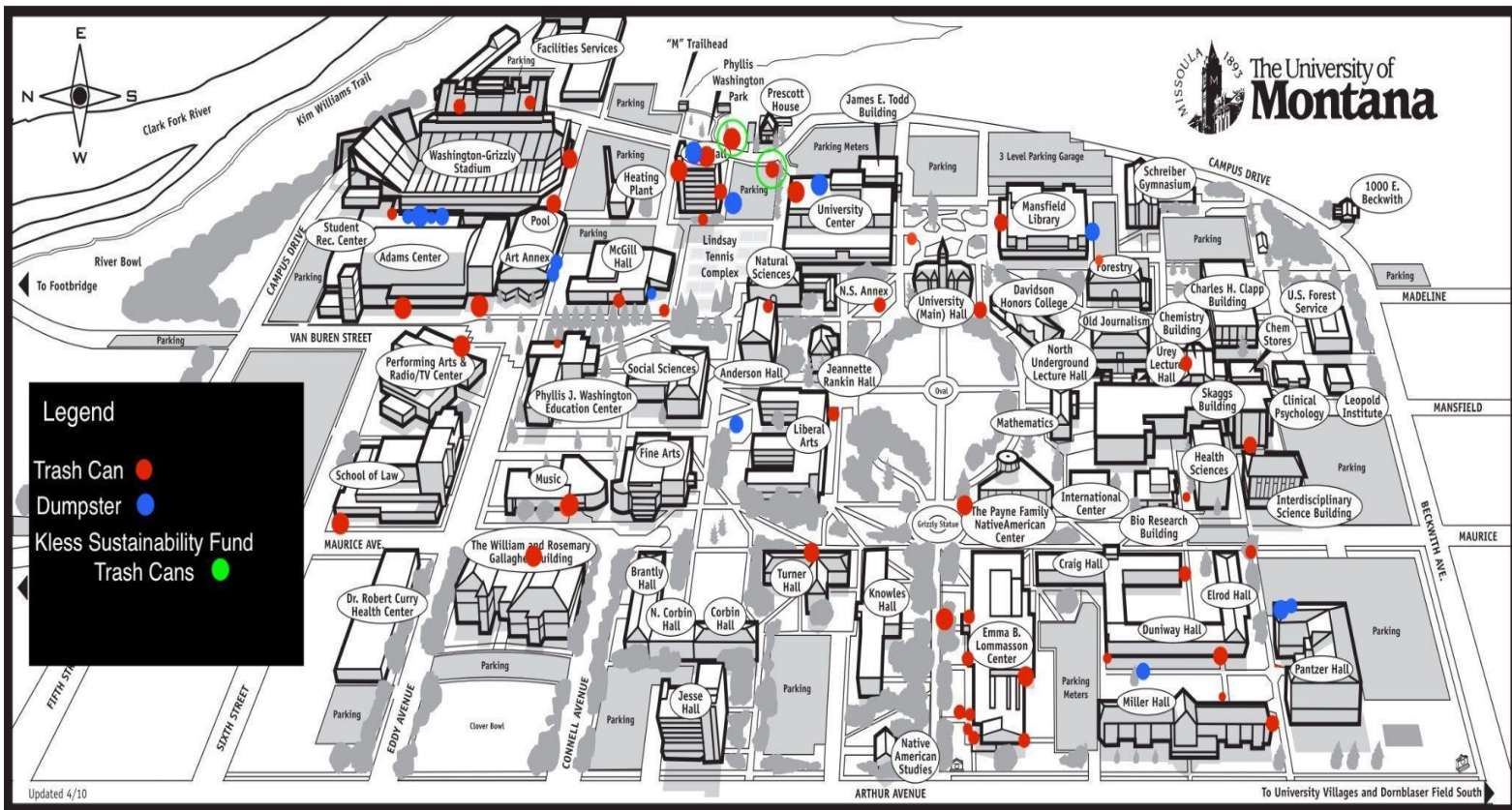


FIGURE 2. Map of trash cans and dumpsters around the University of Montana Campus.

***Location: Washington-Grizzly Stadium***

The Issue

The Washington-Grizzly Stadium is of particular concern on game days and less frequently during concerts. On game days, 26,000+ individuals fill campus for tailgate parties along the area north of the stadium along the Kim Williams Trail and south along Campus Drive.

Tailgaters are required to remove their own trash in a “pack it in, pack it out” fashion and the tailgate area is inspected post-game by employees of Facilities Services with any remaining waste foodstuffs removed after the game.

Proposed Strategy

During football season, a third roll-off dumpster is added to the facilities services compound to accommodate the additional trash from the stadium. This third dumpster contains waste food and a number of empty food containers and is considered an attractant for bears. The fence itself has thus far provided an effective barrier and has kept bears out of the compound. UM, in partnership with Republic Services, should consider installing a 30-yard roll-off for game day waste that has a lockable heavy weight metal lid for all future game day waste. The container will keep bears out, but the scent may still attract them. The issue of trash scents attracting bears can be addressed by running wires along the top of the fence of the compound and running a current through them at night. This will provide a second and generally approved barrier to preclude bear access to garbage stored pending pickup.

While the Kim Williams Trail is a bear corridor that bears use occasionally to enter and forage in more urban parts of Missoula, there have been no documented bear/garbage issues in the tailgate area and it is UM’s intent to continue the existing policy of no garbage left outside of enclosures overnight. The stadium proper is fully enclosed by a chain link fence that provides a reasonable barrier to bear access. In conversation with Jamie Jonkel from FWP, he considered the current enclosure around the stadium adequate. In the event bear/garbage problems do occur within the existing perimeter fence, UM would contact FWP for a further evaluation. Either the bear would be trapped and moved per FWP standard protocol or UM would consider modifications to the existing facility, or more timely removal of the dumpster contents within the enclosure.

***Location: Kim Williams***

The current strategy as described above has worked well for management of the Kim Williams since the stadium is the main attractant that would bring bears into Missoula. This capstone group proposes informational signs being placed along the Kim Williams trail, the M-Trail, and the trail system above Lewis and Clark Apartments so that students understand that bears live along the trails. In addition, there is a narrow footpath on the south side of the M trail that connects the Kim Williams Trail and the M trail parking lot. This path is a known bear corridor



and signage could be installed to keep users informed. Normally, there are two 30-yard roll-off dumpsters located in the compound adjacent to this path. One is for building waste (broken furniture, construction waste etc. and the other for recycled paper). Under normal conditions, neither of these dumpsters contain any foodstuffs that would attract bears, so this Plan does not recommend any new actions be taken.

### ***Location: Prescott House***

#### The Issue

Overflowing and unkempt trash cans are located in close proximity to the Kim Williams Trail and the base of Mount Sentinel, both areas of current and potential bear activity. Bear sightings are common around the Prescott house due to non-bear safe garbage containers in close proximity to the house.

#### Proposed Strategy

Recommendations for higher management of trash during events and removal of trash cans when events are not occurring. Any garbage accumulated through the Prescott house should be taken to the containers at the base of the M trail or at the University Center during non-event times.

### ***Facility Services - Individual Outdoor Trash Cans***

There are several standalone trash containers throughout campus in need of full replacement or in need of bear safe lid attachments (Figure 2). While cement containers are sturdy enough to contain garbage without being knocked down, we recommend bear safe lids. Regular maintenance and servicing of trash containers is crucial, as is training for use of new trash cans if needed. We also recommend that UM enclose several of the 3-yard dumpsters around campus with chain-link fence (Figure 3).

We also recommend the replacement of several standalone trash cans along Campus Drive and at the base of Mount Sentinel with bear proof containers. FWP and other Missoula organizations provide financial support for bear proof infrastructure, so once UM decides to move forward with replacing these containers, cost matching will make the purchase more affordable. This will help the public realize that they are in bear habitat and help preclude any future bear/garbage issues with these containers.

***Location: University Center***

We recommend The University Center continue to utilize the fully enclosed compacting dumpster currently in place. Consistent with existing practice and the new Missoula resolution, the area around the compactor should be kept clean of garbage at all times. For compost collection behind the University Center, increased training for proper use of compost enclosures and disposal of overflow compost is suggested.

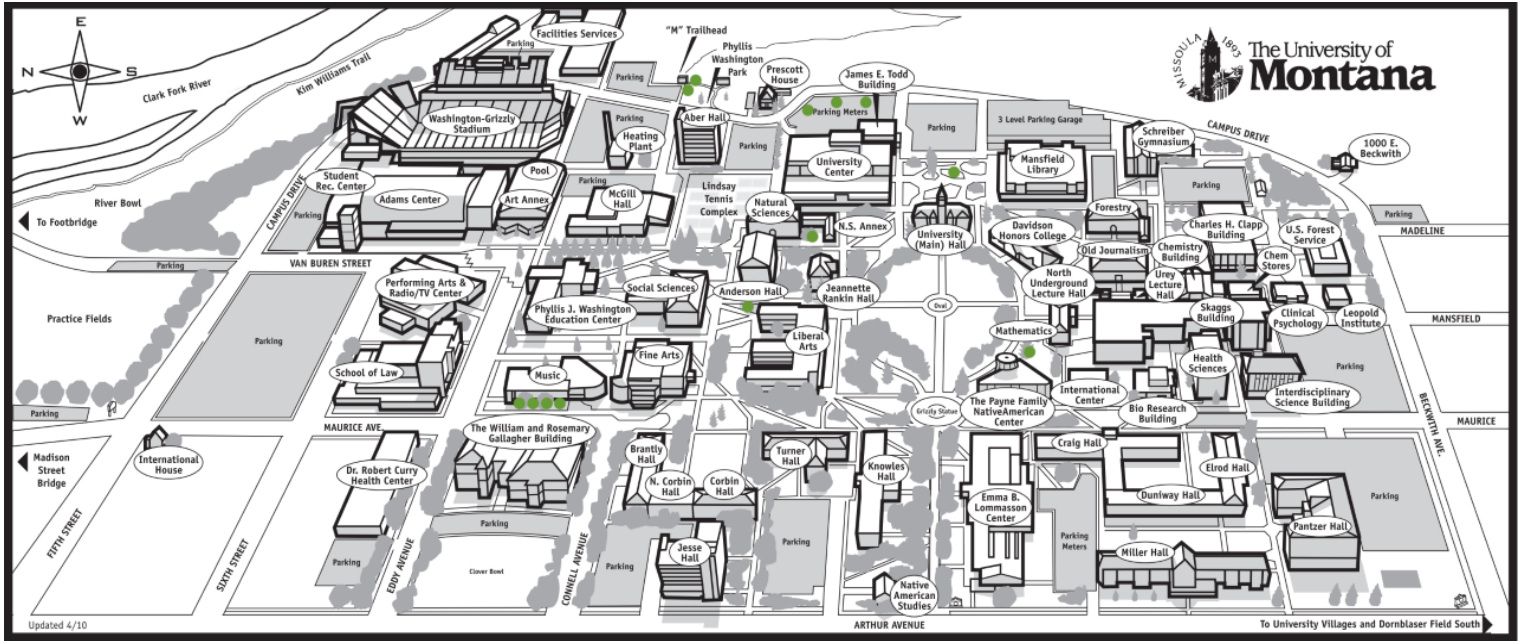
***Location: Off Campus Housing***

UM Housing has a number of dumpsters installed at Lewis and Clark and University Villages that serve the many residents living off campus. These dumpsters are not currently enclosed or secured from bear access. There have been instances in the past where bears have accessed several of these dumpsters. Acting on advice from FWP, UM Housing made arrangements with Republic Services to have all of these dumpsters emptied more frequently. The increased pickup frequency has proven effective in reducing the bear/garbage interaction associated with these dumpsters but does not fully comply with the requirements of the new resolution, as the resolution requires bear proof containers or fences around the trash cans. UM should, in conjunction with FWP and Republic Services, design and construct chain link bear resistant enclosures for all UM Housing dumpsters within the Bear Buffer Zone (BBZ) . The design should be approved by both FWP and Republic Services prior to construction. Enclosures for compost drop off and pick up, a popular service utilized by residents should be implemented as well. UM should apply to FWP for cost share monies to assist with replacement of existing dumpsters and construction of enclosures.

***Location: Missoula College River Campus***

Similar to the mountain campus, the five garbage cans in the Missoula College parking lot will have to be replaced with bear-safe containers or fully enclosed. There is a single dumpster on the grounds that is currently surrounded by a fence. Electrification may be necessary, and removal of unnecessary cans should be considered. Only one can in the parking would be ideal.

**Location: Fruit Trees**



**FIGURE 3.** Map of campus fruit trees and bushes (known to this GLI Group at time of creation).

The fruit from trees attracts bears. We recommend that new fruit trees planted on UM property within the BBZ will, insofar as possible, be flowering fruit trees that do not bear fruit. This reduces maintenance and eliminates the attractant for bears. In the case of a few large plants like apple trees and grapevines that the campus is reluctant to completely remove, an electric fence could be installed seasonally. The implementation of an annual event hosted by the UM Student Chapter of the Wildlife Society in the fall where University of Montana students and community members pick and clean up bear attractant fruit on campus is underway. Species of trees/shrubs that attract bears include serviceberries (*Amelanchier*), chokecherries (*Prunus virginiana*), apple trees (*Malus*), mountain ash (*Sorbus*), crabapples, huckleberry, or any other fruit-bearing shrub. An alternative to gleaning fruit is to use one of several hormone sprays (“*Monterey Florel Brand Growth Regulator*”) that are available. These hormone sprays can be purchased through <https://www.montereylawngarden.com/product/floral-brand-growth-regulator/>. Professional services available locally are referenced here: <https://www.abletreeservice.com/tree-services>.

**COST:**

Item :	Cost:	Suggested Quantity
Individual Stand Alone Bear Proof Containers (34 gal)	\$996.00-\$1,800.00 each (Home Depot Quote)	14 Total: \$32,382 Two Requested from Kless

Bear enclosure for 3-yard dumpster (Installation/Material)	\$3,150.00 each (Estimated by Shawn Monson @ Facility Services)	11 Total: \$34,650 Two Requested from People and Carnivores
Hormone Spray Fruit Trees	\$80.00/gal (Monterey Lawn Garden)	Recurring cost every fall
Tree Removal	\$114/tree (Lawn Love)	14 Total: \$1,596.00
Trail Signs	\$880 each (ULINE quote)	3 Total: \$2,640 Requested from People and Carnivores
		<b>Total cost:</b> <b>~ \$64,072</b>

### *Timeline*

<i>Item</i>	<i>Description</i>	<i>Approximate Date of Completion (Recommendations)</i>
Facilities Services Dumpsters	<i>Dumpsters requiring bear proof enclosures along Campus Drive</i>	<i>Summer 2023</i>
Campus Trash Cans	<i>Trashcans along Campus Drive and bordering Mount Sentinel as well as the Prescott House, will be covered and bear proofed or removed.</i>	<i>Summer/fall 2023</i>
University Center (UC)	<i>Installation of bear proof trash cans around the perimeter of the UC</i>	<i>Summer 2023</i>
Fruit Trees	<i>Removing fruit from current fruit-bearing trees or installing electric fences. New trees planted will not be fruit</i>	<i>Fall each recurring year. All fruit trees planted after spring 2023 must be non-fruit bearing.</i>

	<i>bearing, only flowering.</i>	
Missoula College	<i>Electrification of enclosures and addition of bear proof cans for containment on the Clark Fork River.</i>	<i>Fall 2024</i>
Kim Williams	<i>Signs on the trail detailing bear habits and bear attractants.</i>	<i>Fall 2025</i>
Off Campus Housing	<i>Includes Lewis and Clark and the University Villages. Both areas have large open dumpsters and open trash cans that need to be bear proof or covered. Small enclosure for community compost pick-up as well.</i>	<i>Fall 2025</i>

**STUDENT AND FACULTY EDUCATION**

During the time of this capstone, nine class presentations regarding bear safety and a Take a Break Tuesday event on April 4, 2023 contributed to campus education on bear safety. Ideally starting in the fall of 2023, there will be an added part of freshman and new student orientation that details what to do if you see a bear. This would likely be in the form of an online interactive course freshman are required to take. We suggest the use of local organization Be Bear Aware to help in continued education of campus community members who offer bear spray demonstrations and educational activities regarding how to safely live around bears.

**FUTURE REVIEW**

In order to stay current and relevant, this plan should be reviewed and modified as necessary to accommodate new information and future bear/garbage interaction within the bear buffer zone, and with continuing changes to the Bear Smart recommendations in the city of Missoula.

## ACKNOWLEDGMENTS

We would like to thank the Director of the Wildlife Biology Program, Chad Bishop, for starting the original bear draft plan with former wildlife student Wyatt Nielsen in 2022. We used a lot of their wording in this document. We would also like to thank the UM Student Chapter of the Wildlife Society for their help on formulating this new plan, and for their future commitment to keeping our campus bear safe. Republic Services and Facilities Services both worked with us to come up with a workable timeline and cost-effective solutions that will keep their operations running smoothly while having bear proof additions.

We would like to extend a huge thank you to the Missoula Bear Smart working group for getting together a plan to help the entire community of Missoula. Their plan provided an extensive framework for this University of Montana plan, and we could not have completed this project without their guidance and hard work.

We would like to extend additional thanks to the Director of Facility Services for attending meetings with our student group and for working with us to implement bear safe practices on our campus.

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APPENDIX

Bear Buffer Zone Recommendation

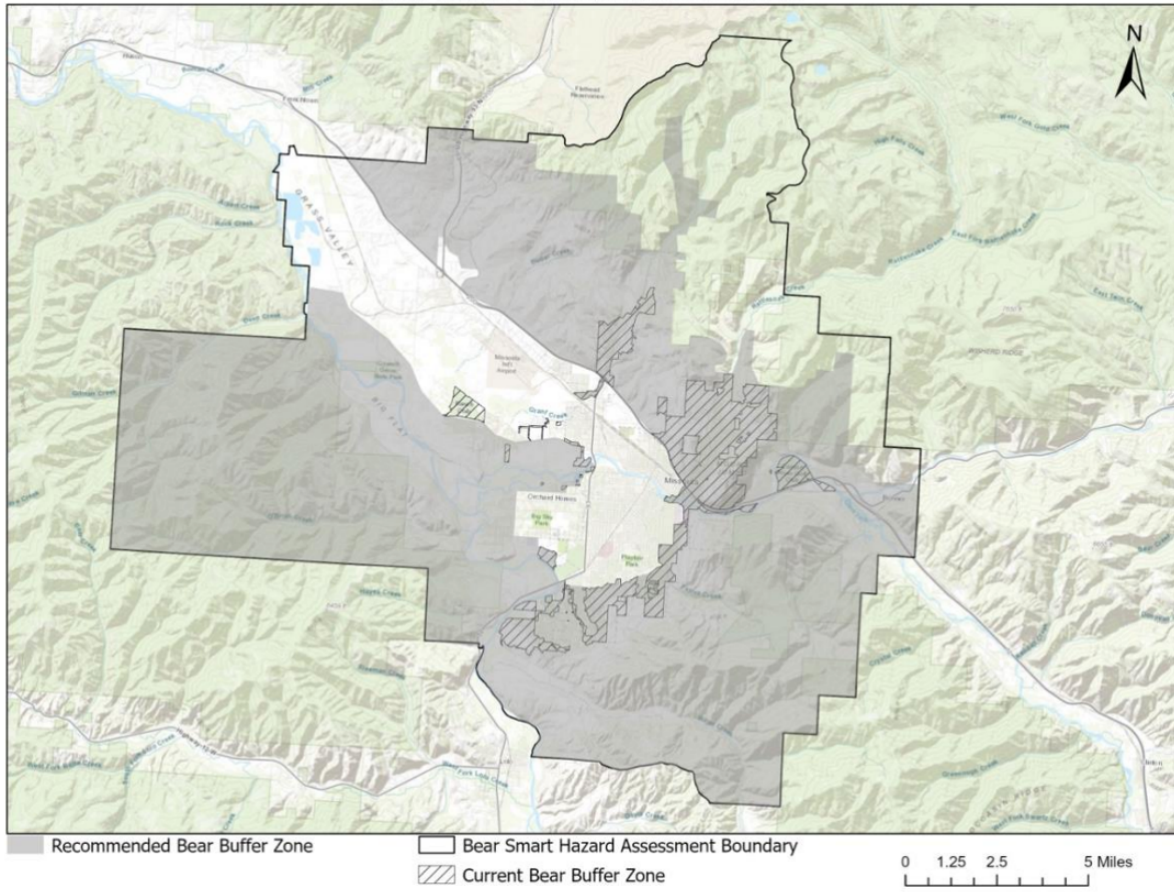


FIGURE 4. The Bear Buffer Zone (BBZ) as outlined in the Missoula Bear Smart plan passed October 4, 2022.



*FIGURE 5. A photo of bear proof cages around dumpsters in Missoula. These cages could be added around the dumpsters highlighted in this plan.*  
<https://nbcmontana.com/news/local/missoula-resident-bear-expert-raising-money-to-secure-bear-attractions>



*FIGURE 6. Taken from Missoula Bear Smart Working Group Management Plan: bear cages for smaller residential trash cans.*



[https://www.uline.com/Product/Detail/H-2857CEDAR/Outdoor-Furniture-and-Equipment/Message-Center-Sign-with-Posts-Cedar?pricode=WA9472&gadtype=pla&id=H-2857CEDAR&gclid=CjwKCAiAjPyfBhBMEiwAB2CCIsqQPC-AKX\\_m96HuXc\\_1zmPuhw12PC8YAlJZzQfj3K63crsk0hwF9hoCI\\_oQAvD\\_BwE](https://www.uline.com/Product/Detail/H-2857CEDAR/Outdoor-Furniture-and-Equipment/Message-Center-Sign-with-Posts-Cedar?pricode=WA9472&gadtype=pla&id=H-2857CEDAR&gclid=CjwKCAiAjPyfBhBMEiwAB2CCIsqQPC-AKX_m96HuXc_1zmPuhw12PC8YAlJZzQfj3K63crsk0hwF9hoCI_oQAvD_BwE)