

## **Boulder City Council “Hotline” questions**

Open Space and Mountain Parks received the following “Hotline” questions regarding prairie dogs from City Council members in mid-April. The Boulder Council Hotline is an email "conversation" among Boulder City Council members and city staff. Council prairie dog questions have been grouped by topic for easier interpretation. OSMP reached across multiple workgroups within OSMP and in several occasions, across city departments, to formulate these answers below, which was delivered through the “Hotline” email on Sunday, April 26.

Community members who would like to receive City Council “Hotline” emails, should visit:

<https://bouldercolorado.gov/city-council/the-boulder-council-hotline>

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### **Topic: Restoration**

#### **What would be involved in converting from ag to natural lands?**

Many of these lands were purchased together with irrigation water rights and have a long history of agricultural irrigation. A comprehensive analysis would need to be performed to understand the potential impacts of this management strategy to the preservation and stewardship of these water rights assets. OSMP’s Charter includes the preservation of agricultural land and agricultural uses, as well as the preservation of water resources in their traditional state. Any conversion of agricultural lands to natural lands would need to consider how this would impact the department’s ability to meet this charter purpose. Restoration activities could be developed on a site specific basis but would generally include a combination of soil preparation and amendment, seeding and invasive species control activities. Estimated costs for restoration are outlined below.

#### **What would be an estimated cost and timeline?**

It generally takes two to five years for a native grass seeding to become successfully established. Hayfields or irrigated pastures may be capable of becoming re-established to meaningful agricultural productivity in one growing season. Restoration and reclamation costs vary depending on the amount of soil preparation or amendment that is necessary and the diversity of the seed mix. Reclamation that included only land leveling and seeding would cost approximately \$90-\$100 per acre. More extensive reclamation that included key line plowing, tillage, compost application and seeding would cost approximately \$185 - \$250 per acre. OSMP has former agricultural land that was seeded to native grasses 20-30 years ago. These grasslands still do not exhibit the resiliency of undisturbed native grasslands. Staff can also identify tilled areas on the landscape by its vegetation composition even though it has not been tilled since the 1960’s. These costs represent estimates for restoration however, this does not account for the unknown costs and implications that need further analysis as previously mentioned.

#### **Would it be possible to relocate or encourage more predators (coyotes, Fox, black-footed ferrets, birds of prey) to the most affected lands?**

The city could take some steps to encourage predators to use restored areas including installing raptor perches near prairie dog colonies if other convenient perches do not exist in the area. For other species,

factors determining abundance and distribution of predators are beyond the control of the city. Fragmentation of the landscape and exurban development influence the use of these areas by some predators. Disease (distemper or mange in coyotes) sometimes reduces populations. Reintroduction of black-footed ferrets is not currently feasible in the north with the size and arrangement of public land interspersed with private land, development, roads, and agricultural lands. So, overall, the city would not have much ability to influence the distribution or density of predators.

**If OSMP tries to restore these lands, cattle could not graze there for some time while under restoration? How much time would it take to restore the balance on the land?**

Seeded grasses on rain fed lands or native grasslands are generally not suitable for grazing for the first two years. Native grass seedings often need more than two years to become successfully established in the Boulder area. Seeded grasses on irrigated lands are usually not grazed in their first year of establishment. Most of the irrigated lands considered “in conflict” are primarily managed as hayfields. Grazing is a secondary use. OSMP has former agricultural land that was seeded to native grasses 20-30 years ago. These grasslands still do not exhibit the resiliency of undisturbed native grasslands.

## **Topic: Reducing prairie dog occupation in north**

### **Overall, how many prairie dogs total would need to be relocated to reach the 26% occupancy goal in the North?**

Currently the northern grassland preserve is occupied at approximately 60%. The 26% occupancy goal is associated with Grassland Preserves, and not irrigated agricultural lands, so would be focused only on the grassland preserve portions of the northern OSMP system. To reduce occupation from the current 60% to 26% would require relocating approximately 1,083 acres of prairie dog colonies. Using densities that seem typical of that portion of our system, that acreage likely supports between 21,000 to 33,000 prairie dogs.

### **How many prairie dogs could be transferred to the Southern Grasslands/year and at what cost?**

Based on experiences of relocation over several years, it is feasible for staff to relocate between 400-700 prairie dogs per year. Larger relocations stretch staff and contractor resources to a point that it is possible a relocation will not be fully finished in one year. In 2019, approximately 175 acres is ready to receive prairie dogs. Relocation densities are typically 10/acre, so approximately 1750 prairie dogs could be moved to this site. The cost for a relocation of this size (which would span at least 2 years) would be around \$650,000 (based on costs of past year's relocations). It is anticipated that prairie dogs from several agricultural properties will be moved to Southern Grasslands in 2019. In 2020, prairie dogs from Valmont City Park will be moved to the remaining acres of the receiving site. In the future, other sites will likely meet relocation criteria, providing for additional receiving capacity. However, overall occupancy goals for Southern Grasslands (if current populations did not expand) would provide for up to 341 additional acres of prairie dogs (including the 175 above). This area could receive up to a total of approximately 3410 prairie dogs at a cost of approximately \$1.27 million.

### **At what rate would relocation of prairie dogs need to occur in order to stabilize the population in the Northern Grasslands?**

Currently the northern grassland preserve is occupied at approximately 60%. The 26% occupancy goal is associated with Grassland Preserves, and not irrigated agricultural lands, so would be focused only on the grassland preserve portions of the northern OSMP system. To reduce occupation from the current 60% to 26% would require relocating approximately 1,083 acres of prairie dog colonies. Using densities that seem typical of that portion of our system, that acreage likely supports between 21,000 to 33,000 prairie dogs.

In addition to the numbers cited above, there are an additional 764 acres of irrigable agricultural fields that do not fall within the Northern Grassland Preserve. The goal for these properties is for them to be prairie dog free long-term, and thus be at 0% occupancy, although the Grassland Plan sets goals higher than this to recognize the reality of population sizes and management limitations. These support an estimated 15,000- 23,000 prairie dogs.

To reach long-term goals of no more than 26% occupancy in Grassland Preserves, and 0% occupancy in irrigated ag. fields through relocation would require relocating approximately 36,000- 56,000 prairie dogs. Staff experience is that relocations of up to approximately 700 animals are feasible in a single year. As a result, at current population levels, relocation to the point of reaching the 26% goal in Grassland Preserves, and 0% in irrigable agricultural fields is not feasible in a reasonable timeframe, or at feasible cost, although relocation could reduce populations in localized areas. As a result, staff recommendations as presented to OSBT, PRAB and EAB and which will be included in the City Council memo packet for May 7, focus around continued relocations as feasible, use of passive relocation and barriers to address additional acres, and restoration of agricultural lands and grassland preserves following population declines in the future, likely due to sylvatic plague.

**Subsequent to stabilization, what measures would need to be taken to maintain stability?**

If a stable population was reached, actions to restrict spread and recolonization of unoccupied areas would be necessary. These actions could include barriers (either metal, mesh, vinyl or vegetative), restoration of areas to encourage recovery of grassland communities and monitoring of population movements and occupancy rates. In a landscape like the Northern Grassland Preserve, full control of population levels would not be feasible.

## **Topic: Agriculture and Impacts to Agriculture**

### **What damages are being done to irrigated pastureland given the current levels of prairie dog occupancy?**

It is hard to quantify the impacts to irrigated pastureland except by comparing current livestock grazing capacity to the lands current grazing capacity. The agricultural lessee has indicated to OSMP staff that the livestock grazing capacity on the Brewbaker property has decreased to be half of what it was before prairie dog occupation.

The agriculture / prairie dog conflict of most concern is with irrigated hayfields. Average quality OSMP cropland suitable for growing grass hay crops typically leases for \$50-\$75 per acre. There are a few lower quality parcels suitable for only one cutting of grass hay. The proposed lease fee for these parcels is \$25-\$50 per acre. Most of the irrigable areas that are currently occupied by prairie dogs are best suited for one of these two classifications and range of lease rates. A cursory analysis of unleased properties reveals an estimated 300 acres of hayfields are currently not leased because they are occupied by prairie dogs. OSMP is not receiving \$7,500 - \$22,500 of potential lease revenue from these properties.

Typical grass hay yields on most OSMP leased land ranges from 1 – 2.5 tons per acre. As you can imagine, operating haying equipment in the presence of prairie dog burrows is difficult, and it is likely that there is little forage to be harvested because of the prairie dog grazing and clipping activities. Occupied areas become unusable for this purpose and the ag tenants must replace this 1 – 2.5 tons of forage for each irrigated acre of their lease area that is occupied. Local grass hay prices vary based on availability and quality so it is hard to put an exact price on its value. Prices have been between \$160 - \$300 per ton in the recent past, making the average price approximately \$230 per ton. Using this average price, impacted tenants incur revenue losses or forage replacement costs of \$230 - \$575 per acre that is taken out of production by prairie dog occupation. There is an estimated 380 acres of hayfields (other properties are irrigated, but not used for hay production) being impacted by prairie dog occupation on leased lands, resulting in an economic impact of between \$87,000 - \$218,000 to agricultural tenants.

### **During the recent prairie dog management tour, it was stated that the city's very copious and senior water rights are primarily used to irrigate leased acreage in the Northern Grasslands. It was also stated that the "use it or lose it" policy of Colorado water law could affect the city's water rights if the water is not used for irrigation. How long does it take for the "lose it" portion of the policy to kick in?**

The prairie dog colonies on irrigable fields have fluctuated in location and extent each year. Water continues to be used on many of the properties although the quantity may differ from year-to-year. In many cases, water is applied by lessees on portions of the occupied lands and the city has irrigated other occupied lands not currently leased. Continued irrigation of these properties also helps to maintain some vegetative cover. OSMP is exploring the re-allocation of water that would be used on prairie dog occupied lands to other OSMP properties located under the same ditch systems and is also exploring a potential leasing program to temporarily lease out excess supplies for agricultural irrigation elsewhere in the basin. For a water right to be abandoned, there must be nonuse and an intent to abandon. The statutory rule in Colorado applies a presumption of intent to abandon after a period of 10 years of nonuse.

### **What is the responsibility of the lessee to steward the land?**

Open Space and Mountain Parks agricultural lessees are responsible for the day-to-day agricultural operations and infrastructure maintenance on leased properties. Day-to-day agricultural operations include but are not limited to tilling, seeding, irrigating, harvesting and managing livestock movements.

Day-to-day infrastructure maintenance includes minor fence, irrigation infrastructure, or agricultural building maintenance. Agricultural lessees are responsible for following OSMP regulations and City of Boulder statutes in fulfilling their responsibilities.

**What is the responsibility of OSMP for its leased lands?**

OSMP is responsible for providing the land, water, and infrastructure necessary to support appropriate agricultural activities. OSMP is also responsible for monitoring and enforcing lease agreement compliance and for balancing various OSMP charter purposes when there are stewardship opportunities or conflicts.

**How is an animal unit month (AUM) defined?**

An AUM is the amount of forage required to support a 1,000 lb. cow and her calf up to six months of age for 30 days. The 1,000 lb. cow and her calf are considered one animal unit (AU) and this standard is used to assign AU's to other grazing animals. For example, a female sheep is 0.2 AU's and a horse is 1.2 AU's.

**What is the reasoning in allowing 2 animals (cow plus calf) as one AUM?**

A calf is dependent upon its mother's milk to supply their nutritional needs until their digestive system develops to fully handle dry forages.

**To what age is a calf considered part of 1 AUM?**

Six months, or when they are weaned from their mothers. Calves are typically weaned at five to seven months of age.

**At what age do calves stop nursing and start eating grass?**

Calves will start modeling their mother's feeding behavior and experimenting with grasses and other forages at about six weeks of age. Calves can be weaned as early as four months of age, although will continue to suckle as long as the mother produces milk or allows them to do so.

**When is a calf considered a cow?**

A female calf is called a calf or a heifer until she gives birth to her first calf. This usually happens at 2 years of age.

**Do grazing allotments change annually to reflect seasonal changes and drought? (LM).**

Grazing allotments or lease areas generally stay the same throughout the term of the lease, which is typically one to five years. Grazing plans are developed each year to incorporate grassland management priorities and growing conditions. OSMP leases do allow staff to make stocking reductions whenever deemed necessary including when drought conditions exist.

**How much funds does OSMP receive from leasing the two leases (with the highest prairie dog conflict)? (LM).**

Lease revenue from these two leases in 2019 is expected to be \$25,867.

## **Topic: Black-footed ferret Reintroduction**

The topic reintroduction of black footed ferrets (BFF) came up at the first stop. It was presented that only the Southern Grasslands would be eligible and that, of the total acreage at the Southern Grasslands only 1,233 acres may be suitable for prairie dog habitat. The desired prairie dog habitation is 15-26% of that. It was also mentioned that one of the criteria for ferret reintroduction is a requirement for a minimum of 1,500 acres. (MY). One point of clarification – the goals for prairie dog occupancy are 10-26% of the TOTAL grassland preserve area (defined in Grassland Plan). For Southern Grasslands, those goals would mean between 441- 1,146 acres of occupied prairie dog colonies.

### **In order to reintroduce the ferret, what other jurisdictions would the city need to partner with?**

The City would partner with Boulder County Parks and Open Space who own and manage adjacent lands. It is also likely that Rocky Flats National Wildlife Refuge would be a partner in the reintroduction, although they have indicated that they would prefer to not be the lead on the effort.

### **Have BFFs already been reintroduced nearby?**

The closest BFF reintroduction sites are Rocky Mountain Arsenal National Wildlife Refuge in Denver, and Soapstone Prairie in Larimer County.

### **If not, are there imminent plans to do so?**

Staff is not aware of imminent plans for other nearby reintroductions. Boulder County Parks and Open Space has expressed an interest in reintroduction at Rabbit Mountain Open Space in northern Boulder County, but the status of that plan is not known.

### **Is there a requirement that the acreage for BFF reintroduction be untilled?**

No requirement exists for BFF habitat to be untilled.

### **Would it be possible to assemble enough acreage in the Northern Grasslands to meet the acreage criterion for BFF reintroduction?**

Staff have not evaluated potential long-term options for modifying land management, acquiring additional lands, etc for the purpose of creating a suitable Black-footed Ferret reintroduction site in the northern part of the OSMP system. The northern grasslands portion of the OSMP land system presents several challenges to reintroduction of black-footed ferrets. OSMP land in this area occurs in a patchwork with private lands, many of which are used for agricultural purposes and where human habitation and associated disturbance (such as lights, domestic pets, etc) could create challenges to ferret success. In addition, substantial roads would fragment whichever large areas were suitable habitat, making it difficult to establish a core conservation area for the ferrets.

### **Would it be possible to reintroduce BFFs in the Northern Grasslands?**

As they currently exist, OSMP land in the Northern Grasslands do not provide sufficient area for ferret reintroduction.

### **What additional criteria would need to be met for BFF reintroduction in the Northern Grasslands?**

A larger block of open space lands managed in a way conducive to black-footed ferret conservation (not irrigated agriculture) would need to exist as well as sufficient buy-in of surrounding, intervening, and adjacent landowners to allow the necessary agreements to be put in place for ferret reintroduction. In addition, although populations of prairie dogs are currently high, plague management would be necessary to ensure success of any reintroduction that would occur.

### **What are potential downsides/unintended effects of BFF reintroduction?**

As part of staff recommendations related to the Prairie dog working group recommendations, staff intend to spend 2020 and 2021 doing additional information gathering and analysis to be able to answer this

question fully. However, some anticipated effects include potential impacts to non-target species due to the need for consistent and ongoing plague management, possible impacts to agriculture or water management due to consistently high prairie dog occupation, possible impacts to visitor use (either related to off-trail use or dog regulations), and high commitment of staff resources for monitoring and documentation. Staff will put together more comprehensive information and evaluation of these possible effects as part of the effort to better understand black-footed ferret introduction and implications for all city resources.

## **Topic: Parks and Recreation prairie dogs**

**During the prairie dog management tour, staff pointed out acreage experiencing similar impacts that were not accounted for in Open Space presentations because that acreage is under the ownership of Parks and Recreation (adjacency to Boulder Reservoir). Has that acreage been analyzed in terms of prairie dog (% occupation, top soil condition, etc)? If so, adding the P&R acreage, what is the total number of acres impacted in the north? What is the condition of that acreage? Does Parks and Recreation have policies for prairie dogs on its land?**

Parks and Recreation manages two properties in the northern portion of the city that have prairie dog colonies and are adjacent to OSMP property. Within the Boulder Reservoir Natural Areas (excluding the south shore fee area), prairie dog occupancy is at approximately 42% (~253 acres). The Parks and Recreation property known as Area III (near the intersection of 28th Street and 26th Street) has a prairie dog occupancy of approximately 83% (~155 acres). Parks and Recreation also manages approximately 40 acres of prairie dog colony on the site of the future Valmont City Park, currently scheduled for relocation in 2020. Annually, Parks and Recreation maps and counts the population of each colony managed by the department. No additional vegetation or condition data is gathered for these colonies. These colonies are managed in accordance with the Urban Wildlife Management Plan, Prairie Dog component.

## **Adjacent neighbors**

### **Has the city built barriers on boundaries with private property?**

OSMP has built prairie dog barriers on the boundaries with private property before. Several barriers were built in the mid to late 1990s, and were primarily vinyl visual prairie dog barrier. These barriers were found to be only partially effective, very expensive and required ongoing maintenance and upkeep. As a result, by the early 2000s, most of these barriers had fallen into disrepair and have since been removed. The city has not built barriers since then due to the high expense and large spatial extent of requests (approximately 11 miles of barriers would be needed to address issues where neighbors have contacted us recently and requested a barrier). However, OSMP staff do provide technical support to neighbors interested in building a barrier, and in some cases have allowed the adjacent neighbor to attach a barrier to the boundary fence, reducing the cost to the private land owner.

Prairie dog barriers on Parks and Recreation property have been constructed primarily to protect park infrastructure, i.e., ballfields, Boulder Reservoir South Shore fee area, even in the cases of barrier being on or near the property boundary.

### **Why have private property owners not built barriers? Have they?**

Some private property owners have built barriers. Others have not. The reasons for not building barriers likely vary from landowner to landowner, but some neighbors have expressed a reluctance to build a barrier due to the high cost of doing so.

**It is alleged that prairie dogs coming off of Open Space land may be causing damage to an earthen dam belonging to Left Hand Water District. There are other allegations of damage to private property. Could the city be liable for damage to property belonging to other governmental entities? Could the city be liable for damage to private property?**

This question is a request for legal advice. the city attorney will respond confidentially.

## **Forthcoming answers to questions**

The following questions were included in the original hotline postings from last week. However, these require additional staff work before answers will be available. Below, an estimated timeframe for delivery of answers is included for each question:

### **Would it be possible to restore irrigated lands to a state similar to that in the Southern Grasslands and how long would that take? (MY).**

Staff from multiple workgroups are working on an answer to the question, which we anticipate sending prior to the City council meeting scheduled for May 7.

### **How have drought/flood conditions affected our grass lands and Ag lands over the past 10-15 years? (LM).**

Staff from multiple workgroups are working on an answer to the question, which we anticipate sending prior to the City council meeting scheduled for May 7.

### **What are those changes resulting from drought/flood?**

Staff from multiple workgroups are working on an answer to the question, which we anticipate sending prior to the City council meeting scheduled for May 7.

### **How are affects of drought/flood monitored?**

Staff from multiple workgroups are working on an answer to the question, which we anticipate sending prior to the City council meeting scheduled for May 7.

### **Are we overgrazing- how is that measured and monitored?**

Staff from multiple workgroups are working on an answer to the question, which we anticipate sending prior to the City council meeting scheduled for May 7.

### **During the prairie dog management tour, we looked out at a relocation site where temporary tubing was laid down as temporary shelter for prairie dogs. This relocation occurred at that particular site because the soil had, in the past, seen disturbance. I understood that the same sorts of temporary shelters would be used in the Southern Grasslands. What measures would be taken, after soil disturbance, to minimize the incursion of invasive non-native plant species onto the Southern Grasslands?**

Staff from multiple workgroups are working on an answer to the question, which we anticipate sending prior to the City council meeting scheduled for May 7.

### **Brett talked about the experimental treatments to improve soil health and carbon sequestration on degraded lands, its success thus far, and that this effort is not now budgeted. How much will the city need to budget over what period of time to achieve the desired improvements? What fraction of the 1,000 acres do you expect to treat this way vs. the prairie dog relocation, seeding and irrigation treatment that staff described?**

Staff from multiple departments are working on analysis for the question. An answer to the question, or estimated timeframe for providing an answer will be sent prior to the May 7 meeting.

### **What will be the approximate costs of restoring the 1000 acres of degraded lands using standard/traditional means? And how long will it take to bring them back to being productive?**

Staff from multiple departments are working on analysis for the question. An answer to the question, or estimated timeframe for providing an answer will be sent prior to the May 7 meeting.

**I understand that the native prairies in the Southern Grasslands naturally sequester carbon – can we have an idea of how much carbon sequestration they are responsible for in comparison to irrigated ag pastures and OSMP forests?**

Staff from multiple departments are working on analysis for the question. An answer to the question, or estimated timeframe for providing an answer will be sent prior to the May 7 meeting.

**How many years of relocation and lethal control would it take to reach the goal of 26% occupancy in the north if a plague event did not occur? (CC).**

Determining answers to this question would require substantial work from staff to research lethal control and analyze what would be required for its use on city lands. Collecting this information is not feasible prior to the City Council meeting. Staff will undertake this information gathering in the event that City Council gives direction to pursue additional evaluation of lethal control.

**How many prairie dogs could be removed using the kinds of removal strategies that the County is using and transfer the prairie dogs to the Raptor Center or the Black-footed ferret Center in Ft Collins and at what cost? (i.e., staff and equipment/materials costs):**

Determining answers to this question would require substantial work from staff to research lethal control and analyze what would be required for its use on city lands. Collecting this information is not feasible prior to the City Council meeting. Staff will undertake this information gathering in the event that City Council gives direction to pursue additional evaluation of lethal control.

**It was mentioned at stop #3, that the National Black Footed Ferret Conservation Center in Carr, CO cannot meet its demand for prairie dogs as a food source for its captive and breeding ferrets. The county is currently contributing prairie dogs to the center. The process, it was said, requires a period of prairie dog quarantine (to ensure absence of sylvatic plague) prior to the center accepting them. What is the quarantine period? What is the cost/prairie dog for this process? If council were to direct this approach, would partnering with the county be an option?**

Determining answers to this question would require substantial work from staff to research lethal control and analyze what would be required for its use on city lands. Collecting this information is not feasible prior to the City Council meeting. Staff will undertake this information gathering in the event that City Council gives direction to pursue additional evaluation of lethal control.

**Describe the process involved in donating prairie dogs to either the raptor or BFF recovery programs.** Staff are reaching out to the BFF recovery program and other land mgmt. agencies that have undertaken this. If responses can be obtained prior to the May 7 council meeting, they will be provided at that time.

**Finally, while I have no interest in lethal control of prairie dogs, I am curious what the cost would be for lethal control, staffing, and restoring those particular Ag lands most affected by prairie dogs back to a “productive “ state and how long would that take? I again am assuming cattle could not graze during the restoration so the current cow population on those lands would need to move. Is that correct?**

To determine answers to this question would require substantial work from staff to research lethal control and analyze what would be required for its use on city lands. Collecting this information is not feasible prior to the City Council meeting. Staff will undertake this information gathering in the event that City Council gives direction to pursue additional evaluation of lethal control.