

**Foothills Area (Open Space & Mountain Parks and Parks & Recreation)**  
**Post-Relocation Site Plan for December 2014-2015**  
**DRAFT 3/18/15**

**Prairie dog management, dispersal pressure and minimizing impacts to other species**

In 2013 & 2014 a total of 647 prairie dogs were relocated from the Foothills Community Park Area. This site plan is intended to fulfill BRC 6-1-37 which states prairie dog relocation projects requires a plan “detailing the steps that will be taken in order to prevent or discourage the re-entry of prairie dogs onto the land”.

This site plan is in compliance with all city ordinances, the City of Boulder’s Urban Wildlife Management Plan Prairie Dog Component, and Open Space and Mountain Park’s (OSMP’s) Grassland Ecosystem Management Plan.

The nearest known active prairie dog colony is approximately .5 miles north of the site, separated by Fourmile Creek, Lee Hill Road, the Dakota Ridge-Northbriar development, as well as steep north- and east-facing slopes. The City of Boulder’s Urban Wildlife Conservation Coordinator (UWC) has recommended that staff monitor the site bi-monthly to look for evidence of re-colonization, and to close burrows that show no evidence of use by associated animals as a way to discourage re-entry by prairie dogs. The following is the agreed upon management plan.

The development to the north of the site is an urban habitat that is unsuitable to prairie dogs and it acts as a deterrent. A single animal dispersing from the nearby Mann colony will have to run a gauntlet of urban predators, unfamiliar habitat, a busy road, and a natural creek. Since the main dispersal season is now over, and animals are now established in their nest burrows for the winter, it is unlikely that there will be animal emigration out of established colonies until the spring. No prairie dog colonies are within line of sight of the ERNI/Moore colony, lessening the temptation for immigration from further afield. It should also be stated that prairie dog behavior has surprised us, and though we expect dispersal pressure to peak in spring and fall, and expect the obstacles described to discourage dispersing prairie dogs, it is feasible that prairie dogs will show up at this site.

It is also recognized that this colony and the prairie dog burrows within it provide habitat for wildlife species other than prairie dogs. As a result, this plan is developed to address the need to discourage and prevent future prairie dog occupation while minimizing the likelihood of unintentional lethal control of other species.

**Closing burrows**

All burrows not showing signs of occupation by other wildlife will be closed as soon as possible, by July 2015 at the latest. An effort will be made to reduce the number of open, occupied burrows over time with a goal of eventually closing at least 99% of the burrows. In an effort to minimize impacts to non-target species which may utilize prairie dog burrows, the following shall occur as quickly as possible within a reasonable timeframe given wildlife constraints after completion of prairie dog removal which in this instance was November 2014. These actions would preferably occur within a month of the end of the removal so as to decrease the

potential for other species to take up residence in the burrows but no longer than 7 months post-removal if the time of year suggests animals could be hibernating in burrows already:

Per the UWC recommendation of “lightly covering burrows initially and covering them more substantially over time” all open prairie dog burrows will have materials placed in the entrance (sticks, grass, light soil) for a period not less than 3 days but not typically more than 7 days to determine activity from rabbits or other similarly sized animals.

- at the end of the 3 or more days, those burrows not showing activity will be hard closed by at least putting rocks down in the burrow, compressing dirt over the entrance and flattening the mound. Seed may be raked into the mound. Temporary tubing not to exceed 3 inches in diameter could be placed in the burrows to allow small animals such as mice to exit.
- at the end of the 3 or more days, those burrows showing activity will be flagged.

Flagged burrows will be monitored monthly, this shall allow for hibernating snakes, small mammals (mice, rabbits, etc) and other species to vacate the burrows.

#### **Monitoring for prairie dog activity and short-term management (through March 2015)**

The entire area will be monitored (via binoculars and walking the site) preferably bi-monthly but no less than monthly through the end of November 2015. It is expected that there may be prairie dogs on the site that were not able to be trapped during the initial trapping effort. For this reason there will be no effort to continue to trap these “untrappables” remaining on site, and lethal control will be conducted by a ground fumigant.

As it is an affirmative defense of 6-1-11 to use lethal control for prairie dogs if it is part of an ongoing and continuous program approved and permitted by the city manager that was designed to prevent re-colonization of lands from which prairie dogs had been lawfully removed if such program has been initiated immediately following the lawful removal and as this plan is in compliance with those terms, lethal control will be allowable at this site.

Lethal control of the prairie dog(s) will be performed by a licensed company as soon as possible (preferably no more than 2 weeks after a lethal control permit is obtained by the UWC from the city manager). All applicable Boulder Revised Code requirements shall be followed prior to and during use of pesticides, including but not limited to, B.R.C., Title 6, Chapter 10, “Pesticide Use”. In keeping with current collaboration on the project, P&R will pay for lethal control on both P&R and OSMP property until the end of November 2015 (i.e. for one year from the end of the initial removal/relocation).

If prairie dog activity is found during this period:

- the burrows surrounding the area where the prairie dog was found will be evaluated immediately and active burrows will be flagged with yellow.
- no more than 3 days post-sighting, an evaluation of the activity (including number of prairie dogs present) shall be reported to the UWC and a map of the general area provided.
- the UWC will notify appropriate staff of both departments and actions will be agreed upon.

### **Monitoring for prairie dog activity and long-term management (April 2015 and beyond)**

The entire area will be monitored (via binoculars and walking the site) preferably bi-monthly but no less than monthly through the end of November 2015. If no prairie dog activity is observed on the site until April 2015, the assumption will be that the prairie dogs dispersed from another site. This is significant because prairie dogs will not be considered “untrappable” and lethal control efforts will be initiated with individual trapping as opposed to a ground fumigant. Initial response to activity detected during this period will be the same as the three bulleted items in the section above. Actions taken on will include evaluating the following:

- prairie dogs being hazed and encouraged to leave the site;
- passive relocation;
- evaluation of barrier options
- burrow disturbance/destruction

If all of the above-listed activities have been documented as being ineffective or not feasible and such documentation has been provided to the UWC, the following prairie dog management actions may be employed in the following order with the proper permits:

- a. trapping and either live donation or destroying new prairie dogs with CO<sub>2</sub>;
- b. if the above is not successful, fumigation of burrows (CO, PERC or Aluminum Phosphide)
- c. continuation of the monitoring and
- d. burrow destruction.

Any actions taken March 1 – June 1 when pups may be in burrows need to be approved by the UWC.

A report documenting all activities conducted as part of this plan shall be provided by each department to the UWC by December 31, 2015

The site would be monitored quarterly 2016-2019, and at least biannually thereafter. Annual monitoring should occur in the first few weeks of the year to determine activity prior to pups being born and again in the late summer or early fall when dispersal is most likely and appropriate action should be taken prior to March 1 when feasible to remove prairie dogs from the site so that more pups aren't born on site.

### **Restoration:**

The goals of restoration include: implementing relevant management plans (City of Boulder Urban Wildlife Management Plan Prairie Dog Component and Open Space and Mountain Park Grassland Ecosystem Management Plan) which designate the Foothills area as a prairie dog removal site; remaining in compliance with all city ordinances; decreasing invasive plant species; discouraging re-occupation of the area by prairie dogs by keeping vegetation tall or

employing ground disturbance techniques. To reach these goals, the following plan is proposed:

Each department will be responsible for monitoring and managing their own land in compliance with the above and with this plan. Wherever possible, staff will coordinate and collaborate to increase efficiencies and effectiveness of restoration. The city's Integrated Pest Management (IPM) processes shall be followed.

Per state regulations all "A-list" and "B exemption" list species should be controlled annually. Reasonable effort shall be made to control other "B list", "C list" and invasive species as the plan is implemented and resources allow.

It is understood that in order to restore the site, vegetation removal will be necessary. Where and when possible, making vegetation shorter or more sparse shall occur as soon as possible (within the first year) post prairie dog removal so that native vegetation may begin to establish and grow in an effort to maintain tall vegetation which may assist in deterring future re-establishment of prairie dogs in the area.

Restoration staff will work with wildlife staff to establish timing and procedures. As none of the burrows should be active with prairie dogs, there are no ordinances preventing burrow disturbance; however, areas that have active under-ground dwelling wildlife (rabbits, snakes, etc) will be flagged as part of the above prairie dog management plan (PDMP) and restoration staff will make efforts to minimize disturbances there. Per the above PDMP all burrows should be closed by the end of July 2015; however, restoration does not need to wait until then.

Restoration areas will be designated into categories based upon factors such as current species, current and future designation/use and feasibility.

The current tentative plan includes:

- areas with a fair amount of native species present, such as the majority of those west of the Foothills Trail (per the map below), having state listed species removed but otherwise being left to recover on their own or with minimal hand seeding of native, weed free species.
- areas with high ground disturbance and/or mainly non-native species present that shall remain natural, such as lands managed by OSMP south of the Four Mile corridor but north of the metal barrier and the P&R managed detention pond (per the map below), shall be restored using best management practices and the methods listed below.
- areas for future development will have state listed species removed and potentially minimal restoration where practical.



Foothills Area - Restoration

Legend		
	Former Colony	 Metal Barrier
	Hydrology Concerned Area	 Chain Link Fence
		 Slat Fence Barrier
		 Ground Wire
		 Park Boundary
		 OSMP Boundary

Restoration may include biological, cultural, chemical or mechanical methods such as but not limited to:

- Fire
- Mowing , string trimming, hand cutting, digging
- Grazing
- Herbicides
- Soil tilling
- Hand seeding or drill seeding (drill seeding - likely to require large rock removal)
- Aeration

Specific restoration methods are being planned and coordinated by staff. Restoration is a multi-year process.

### **Department responsibility**

Each department will be responsible for monitoring and managing their own land in compliance with the above and with this plan. Each department should keep a log of the activities performed as part of this plan. Coordination and cooperation among departments will be imperative.

### **References**

Research on prairie dog dispersal between colonies by Knowles (1985), Cincotta et al. (1897 a, b), Garrett and Franklin (1988), Roach et al. (2001), and Milne (2004) has gained valuable insights which are useful when planning for the discouragement of prairie dog re-colonization. For instance, dispersing prairie dogs depart natal colonies shortly after the emergence of pups in the spring, with older males dispersing later in the summer and into the fall. Dispersing prairie dogs prefer to move in to an established colony rather than starting their own. Since prairie dogs disperse singly, not in groups, the City's strategy to remove small numbers of immigrants, should they occur, should be effective.

### **Literature Cited**

Cincotta, R.P., D.W. Uresk, and R.M. Hansen. 1987a. Demography of black-tailed prairie dog populations reoccupying sites treated with rodenticide. *Great Basin Naturalist* 47:339-343.

Cincotta, R.P., D.W. Uresk, and R.M. Hansen. 1987b. A statistical model of expansion in a colony of black-tailed prairie dogs. Pages 30-33 in D.W. Uresk, G.L. Schenbeck, and R. Cefkin, editors. *Proceeding: eighth Great Plains wildlife damage control workshop. General Technical Report RM-154. USDA Forest Service, Fort Collins, Colorado.*

Garret, M.G. and W.L. Franklin. 1988. Behavioral ecology of dispersal in the black-tailed prairie dog. *Journal of Mammalogy* 69(2):236-250.

Knowles, C.J. 1985. Observations on prairie dog dispersal in Montana. *Prairie Naturalist* 17:33-40.

Milne, S. 2004. Population ecology and expansion dynamics of black-tailed prairie dogs in western North Dakota. M.S. thesis, University of North Dakota, Grand Forks.

Roach, J.L., P. Staff, B. Van Horne, and M.F. Antolin. 2001. Genetic structure of a metapopulation of black-tailed prairie dogs. *Journal of Mammalogy* 82:946-959.