Creating Prairie Dog Management Plans

A guide for local governments and stakeholders

Part two: The management plan

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"Plans to protect air and water, wilderness and wildlife, are in fact plans to protect man."

~Stewart L. Udall

Executive summary

- Part 1 provides an overview of prairie dog ecology, discusses the importance of prairie dog conservation, explains why prairie dogs have declined, and clarifies the roles of federal, state and local governments in prairie dog management.

- Part 2 describes the basic elements of a prairie dog management plan and provides direction for policy documents that can be customized to the needs of any community.

- The appendices provide in-depth information on: 1) nonlethal management (including barrier installation and both active and passive relocation); 2) consequences of lethal control; 3) mitigation for habitat destruction; 4) state agency designations of prairie dogs; and 5) model habitat monitoring sheets.

- Local governments often have powerful land use laws that should be utilized to protect wildlife habitats.

- Management plans to conserve prairie dogs should set realistic goals that address best management practices, land uses, financial resources, collaborative land use planning, monitoring of both occupied and unoccupied prairie dog habitat, and the legal authorities for enforcement of such plans.

- Both public and private landowners are important partners in the conservation of prairie dog habitat.

- We recommend management plans contain at least the following:

    - Background explaining the natural history of prairie dogs and their ecosystems, their biology and importance to associated species, and the legal authorities of federal, state, and local governments
    - Management plan goals and objectives
    - Mapping data including current prairie dog populations within and surrounding the plan area, potential links between colonies, areas known to historically contain prairie dogs, and areas that are suitable for reintroduction
    - Population monitoring protocols

- Creation of conservation priority focal areas
- Goals for prairie dogs on public land that include conflict prevention and selection of receiving sites for prairie dogs that must be relocated due to local or regional government actions
- Programs that incentivize prairie dog occupancy on private land
- Mitigation measures for destroyed prairie dog habitat
- Policies pertaining to both lethal and nonlethal control
- Notification requirements for activities impacting prairie dogs
- Education and outreach
- Public health and safety information
- Enforcement through permitting and ordinances, and penalties for noncompliance
- Adaptive management procedures for evaluation and revision of the plan

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1. Purpose of the management plan

By protecting prairie dogs, local communities protect a host of other species and conserve the dwindling grassland ecosystem, one of the most threatened biomes in the United States (Peart, 2008). This goal is especially urgent in the face of the current extinction crisis, which sees species disappearing at a rate much higher than the natural rate of extinction due to human activities (Kolbert, 2014). Aldo Leopold, one of the founders of modern wildlife conservation, said, "To keep every cog and wheel is the first precaution of intelligent tinkering." Prairie dogs are one of the most important cogs in the structure of the Great Plains, and they should be kept and protected for their intrinsic value and their value to the ecosystem as a whole. Two species of prairie dog, the Utah prairie dog and the Mexican prairie dog, are listed under the federal Endangered Species Act and therefore have the benefit of receiving recovery plans from the U.S. Fish and Wildlife Service. For the other three species of prairie dogs, Gunnison's, White-tailed and Black-tailed prairie dogs, conservation will be much more dependent on local efforts.

A note on terminology: We use "management plan" and "conservation plan" interchangeably in this document. We prefer "conservation plan," which prioritizes the preservation of wildlife and wild places *in situ*. However, we know this phrasing is not universally accepted or applicable and thus use "management plan" where appropriate.

Creating a management plan takes patience and persistence. It is a collaborative effort involving many stakeholders, some of whom have a history of conflict (Reading et al., 2002). This guide aims to provide a framework within which diverse stakeholders can find strategies suiting the needs of their communities to improve outcomes for the prairie dog ecosystem.

The first step in creating a management plan is to determine the purpose of the plan and what authorities are granted to each jurisdiction to protect prairie dogs. It benefits the community to be clear about why prairie dog conservation is important and to have direction for effective and realistic conservation strategies. Strategies may include education, conflict prevention, nonlethal control, habitat acquisition, restoration of historically occupied habitats, augmentation of populations, or mitigating continued habitat loss and loss of populations due to disease.

Answers to preliminary questions like those below will help identify what protections prairie dogs will require in the management plan area, how to fill in management plan gaps, and who to engage in the planning process. "Management plan area" is defined as the area under the jurisdiction of the government creating the prairie dog management plan.

1. What are the current federal and state legal designations of prairie dogs, and do these designations provide protections in the management plan area?
    a. Endangered Species Act listing. This federal designation only applies to Utah prairie dogs (listed as a threatened species) and Mexican prairie dogs (listed as endangered, found only in Mexico).
    b. Federal agency designations such as "sensitive species" status by the Bureau of Land Management and Forest Service

c. State status may include "Species of Special Concern," "threatened" or "endangered," or "Species of Greatest Conservation Need" as identified in State Wildlife Action Plans (see Appendix 4).

2. What are the local, state and federal laws that regulate capture, handling, transport and release of prairie dogs? (State wildlife agencies should be able to answer this question.)
3. What management actions, including informal or ad hoc management, have been applied to prairie dogs in the management plan area? (Local governments should be able to answer this question, depending on how they have handled prairie dog issues in the past.)
4. What local, state and federal laws regulate other wildlife associated with prairie dog habitat? (State wildlife agencies should be able to answer this question.)
5. What laws or management plans currently regulate public lands (local, state and federal) in the management plan area? (This depends on the type of land in the management plan area and may mean there are overlapping agencies involved.)
6. What laws have granted powers to local governments to protect or manage prairie dogs? (In most states, the state wildlife department is responsible for the species itself and regulates shooting, permitting and population monitoring, for example. However, local governments generally have primary authority over land uses within their jurisdiction, and this includes the protection or destruction of wildlife habitat on public and private lands. The regulation of lethal chemicals and applicators generally falls to the state department of agriculture but may also pertain to local governments that are responsible for the protection of the health, safety, general welfare and the environment of their community. Many local governments are protecting their communities by requiring landowners to prioritize nonlethal control or less toxic poisons.)
7. What are the trends in prairie dog numbers and distribution in the management plan area? (This information is most likely available in the State Wildlife Action Plan or the state prairie dog management plan, if one exists.)
8. What are barriers to prairie dog conservation in the management plan area (covenants, easements, rights-of-way, neighboring properties, jurisdictional boundaries)? (This is specific to each property under review and should be reviewed during any local government comprehensive land planning process for the entire community.)
9. Who are the stakeholders in favor of and in opposition to prairie dog conservation and why? Who are the formal and informal leaders of these stakeholder groups? Is there anyone else from the general community who may not have a direct stake but may be impacted by activities associated with prairie dog management? (Power-mapping the stakeholder groups can provide answers to these questions.)
10. What attitudes and opinions do different stakeholder groups hold toward prairie dogs, and what are the trends? (This question should be answered by direct input from stakeholders.)
11. How will stakeholders determine the success or failure of the plan? (This question should be answered by direct input from stakeholders.)

To narrow down the scope of the management plan, below is a list of potential goals followed by a breakdown of each goal and corresponding questions to answer before tackling each goal, and tools that may help to meet each goal.

List of potential goals:

1. Inventory existing prairie dog colonies
2. Promote humane treatment of and coexistence with prairie dogs, including conflict prevention
3. Preserve urban colonies and habitat
4. Preserve rural colonies and habitat

5. Implement relocation effectively

Potential goals, with questions to ask and useful tools:

1) Goal: Inventory existing prairie dog colonies
    a) Questions to answer: Refer to sample monitoring sheets (Appendix 5).
    b) Useful tools:
        i) Inventory of maps (multiple source options, see Section 3.3).
        ii) State Wildlife Action Plan (SWAP) coordinator (Part 1, Section 7.4.5)
        iii) Multi-State Conservation Plan (MSCP) (Part 1, Section 7.2.1)
        iv) Natural Heritage Program (Part 1, Section 7.4.7)
        v) State game and fish agencies (Part 1, Section 7.4.2)
        vi) Google Earth mapping and verification via ground-truthing (Section 3.3)
2) Goal: promote humane treatment of and coexistence with prairie dogs, including conflict prevention
    a) Questions to answer:
        i) Does the local government have an existing wildlife plan, open space plan or wording in its comprehensive plan that considers wildlife habitat and/or fish and wildlife resources? How does local government address open space and recreation (both active, such as an athletic field, and passive, such as a trail or wildlife watching) dedications for new developments?
        ii) How do local government regulations reduce or mitigate potential conflict with new developments that are proposed next to existing prairie dog habitat?
        iii) Are there local ordinances concerning the management of prairie dogs?
        iv) Does the local government require a permitting process to address prairie dog occupied habitat prior to issuing grading permits for development?
        v) Does the local government have ordinances on the use of toxicants that are more restrictive than state and/or federal law?
        vi) Who are the landowners adjacent to areas identified for prairie dog habitat management? What is the level of local support and opposition for management activities? What attitudes and opinions do different stakeholder groups hold toward prairie dogs, and what are the trends?
    b) Useful tools:
        i) Conflict prevention (Appendix 1)
        ii) Barriers and grazing management (Appendix 1)
        iii) Relocation (Appendix 1)
        iv) Poisoning regulations and enforcement (Appendix 2) (Section 3.8)
        v) Educational outreach on unintended consequences of toxic methods (Appendix 2)
        vi) Animal cruelty laws, which can be found for each state at the Animal Law Resource Center website (www.animallaw.com/laws.cfm)
3) Goal: Preserve urban colonies and habitat
    a) Questions to answer:
        i) Where is the colony located, and how large is it?

ii) Are sensitive or protected wildlife species present on the site?

iii) Are there other sensitive habitats present, such as wetlands?

iv) Is the colony connected to other colonies or open space areas with sensitive or protected wildlife species?

v) Who owns the property?

vi) What is the extent of development in the immediate vicinity and surrounding area? What are the current uses of adjacent properties?

vii) What is the current use and planned future use of the properties on which the colony or colonies are located? Are they slated for development, and if so, when?

b) Useful tools:

i) Zoning (Section 3.4.1)

ii) Development review process (Appendix 6)

iii) Grading restrictions (Section 3.6.6)

iv) Mapping (Section 3.3)

v) Barriers (Appendix 1)

vi) Outreach (Section 3.10)

4) Goal: Preserve rural colonies and habitat

a) Questions to answer:

i) What is the future use of the property? Is it slated for development?

ii) How large is the property? Does it connect to existing open space or areas with sensitive or protected wildlife species?

iii) Are there other sensitive habitats present, such as wetlands?

iv) Is the property annexed into a municipality for future development (see the comprehensive land use plan for the municipality)?

v) If lands are slated for development, what is the open space requirement?

vi) Is the property unincorporated county lands (see the comprehensive land use plan for the county)? Does the county have a policy statement concerning the rights of rural landowners?

vii) Is the parcel within a development with a homeowners' association or other entity with restricted use covenants?

viii) Is the land plowed seasonally for annual crop production? Can different crops be rotated that inhibit prairie dog occupancy? What crop is being grown?

ix) Are there private landowners interested in wildlife conservation programs for prairie dogs and associates and/or black-footed ferret recovery?

x) Is the private landowner enrolled in any current conservation programs for wildlife or other conservation reserve programs?

xi) Is the land currently restricted by conservation easements (and, if so, who is the easement holder?), or are private landowners interested in conservation easements?

xii) Is the site managed for livestock production? If so, is there a formal forage management plan or grazing plan developed by a range specialist? Can the plan be amended to consider alternative future uses including prairie dog management?

xiii) Are there nonlethal strategies that can be used to discourage prairie dogs from occupying certain areas (Appendix 1)?

b) Useful tools:
    i) Mapping (Section 3.3)
    ii) Barriers (Appendix 1)
    iii) Outreach (Section 3.10)
    iv) Development review process (Appendix 6)
    v) Review comprehensive land use plans
    vi) Review local jurisdiction requirements for setbacks from sensitive wildlife areas
    vii) Consult with local, state or federal experts about range conservation
    viii) Overlay zoning for wildlife (Section 3.4.1)

5) Goal: Implement relocation effectively
    a) Questions to answer:
        i) What are the existing laws and permitting requirements at the local, state and federal level for prairie dog relocations?
        ii) Who are the specialists that relocate prairie dogs, and who oversees them?
        iii) What is the protocol for humane treatment during capture, transport and release efforts (Appendix 1)?
    b) Useful tools:
        i) International Union for Conservation of Nature guidelines for reintroductions and other conservation translocations (*portals.iucn.org/library/efiles/documents/2013-009.pdf*)
        ii) Incentives for private landowner participation (Section 3.6.3)
        iii) Realistic incentives for relocating prairie dogs off proposed development sites and the development review process (Section 3.6.3, Appendix 6)
        iv) Mitigation (Section 3.6.4, Appendix 3)
        v) Approved release sites, determined well ahead of time (Section 3.7.2)
        vi) Education and outreach program (Section 3.10)
        vii) Informed and diplomatic advocates committed to working through the process (Section 2.2)

2. What to consider while developing a management plan

2.1. Timeline and commitment

A realistic process for implementing a local prairie dog management plan may take several years and go through many stages. Ultimately, a sense of the community ethos toward wildlife and resource protection will play a major role in determining the extent to which a plan will be acceptable to decision-makers. Once adopted, the focus turns to implementation of prairie dog management plans and their refinement through adaptive management. Adaptive management is a systematic approach for improving resource management by implementing management actions, monitoring outcomes, drawing conclusions from monitoring data, and then revising management approaches in light of that assessment. True adaptive management includes monitoring and revision. Revision is only required if the monitoring data suggest that the existing management action is not achieving the desired outcomes or there are more efficient ways to reach the desired outcomes.

Steps in the process of creating a management plan might look like this:

1) Identifying the issue, e.g., is there a need to create a plan; what is the problem?
2) Gathering ecological, socioeconomic, political and management background/history, and assessing trends
3) Education and outreach on the benefits of prairie dog presence and the management planning process
4) Recruiting stakeholders interested in solving the issues/creating a plan
5) Sharing, evaluating and discussing background information
6) Developing goals and objectives
7) Writing the draft plan
8) Reviewing drafts and obtaining stakeholder and other public comments
9) Finalizing the plan
10) Promoting the plan to key stakeholder groups and individuals
11) Submitting plan for approval to appropriate individuals, groups and agencies
12) Obtaining funding
13) Implementing the plan
14) Monitoring and evaluating outcomes
15) Terminating or revising the plan as needed using processes agreed upon in the plan itself

2.2. Involving stakeholders

Management plans will be more robust and withstand the test of time and conflict if all stakeholders are sufficiently involved in the process.

The process might look like this:

1) Identify and reach out to other entities with shared goals on prairie dog issues.

2) Contact appropriate government officials.
3) Contact local planning staff to obtain available resources.
4) Contact other appropriate individuals and organizations (including agencies) to obtain data they may have.
5) Engage potential partners and all stakeholders, especially potential opponents, to come to a mutually beneficial agreement.

Diplomacy and managing interpersonal relationships are important skills for including stakeholders who may have differing viewpoints. If faced with difficult negotiations, we recommend the books *Getting to Yes: Negotiating Agreement Without Giving In* by Robert Fisher and William Ury, and *Getting Past No: Negotiating with Difficult People* by William Ury. These two books describe the strategy of "principled" or "breakthrough" negotiation.

2.3. Budget

A sustainable plan needs sufficient resources to support both its creation and implementation. Funding sources will vary from community to community, but there are some common strategies that can provide sustainable sources of funding and other resources to implement prairie dog conservation and management plans:

1) Establish a prairie dog conservation fund that creates a funding source for implementing nonlethal prairie dog management on public lands or in public/private land partnerships. (Strategies for doing this are discussed in more detail in section 3.6.4, "Mitigation," and in Appendix 3.)
2) Utilize these monies to leverage additional funding, including matching funds, and seek funding for grassland species conservation from other sources including state, federal, county, philanthropic or community grants and funds.
3) Create and implement a required fee for private landowners who use public lands for prairie dog relocation.
4) Investigate the possibility of leasing agriculture allotments as conservation allotments in key conservation areas.
5) Capitalize on individuals and organizations that might be able to provide nonmonetary resources, such as equipment and staff time.

3. What to include in a management plan

3.1. Background

Every prairie dog management plan should open with a background section that discusses relevant prairie dog natural history and biology, pertinent local information, and identification of the issues that provided impetus for creating the management plan. For a summary of prairie dog biology and natural history, see Part 1, Section 2.

3.2. Plan goals

To the extent possible, format goals in the SMART format (specific, measurable, achievable, results-focused and time-bound) and coordinate them with federal and state regulations and conservation goals (Part 1, Section 7).

3.2.1. How to set prairie dog management goals

Prairie dog management goals can be qualitative or quantitative. Qualitative goals provide flexibility but can be vague and difficult to analyze for success or failure. Quantitative goals are measurable but can also be limiting if additional opportunities for conservation present themselves after the goal has been met.

Quantitative goals are attractive because "How many prairie dogs are enough?" is a common question raised during the planning process. For quantitative goals, if the goal is a specific amount of prairie dogs or prairie dog-occupied acreage, the community can decide how they wish to measure that amount. There are three ways to measure prairie dogs:

- Population censuses or density estimates
- Occupancy modeling
- Occupied acreage counts with or without density estimates

Population censuses are useful for small populations with limited acreage and are currently used to track population numbers of Utah prairie dogs. Density estimates are more resource-intensive, so most prairie dog plans do not include extensive density mapping. Occupancy modeling is the most cost-effective way to detect trends in Gunnison's and white-tailed prairie dog populations; this method is currently used for statewide surveys of those species (an occupancy modeling component may also be added to Utah prairie dog surveys). Occupied acreage counts were used historically for all prairie dog species and remain the most common way of tracking changes in black-tailed prairie dog populations, though methodologies are not yet standardized across states (McDonald et al., 2011).

To put occupied acreage goals into perspective, a colony or complex of 9,884 acres of black-tailed prairie dogs is probably the minimum needed for a functional grassland ecosystem, depending on the density of prairie dogs in those colonies (Proctor et al., 2006). The Multi-state Conservation Plan for the Black-tailed Prairie Dog (see Part 1, Section 7.2.1) goals include maintaining two existing complexes of that size and creating nine additional complexes greater than 5,000 acres. The plan also sets the goal of maintaining at least 10 percent of occupied acreage in colonies or complexes greater than 1,000 acres (Luce, 2003). Currently, there are few existing prairie dog complexes larger than 5,000 acres, and most of these sites experience regular sylvatic plague epizootics. There are no population reserve guideline models that account for the presence of plague. Federal- and state-recommended occupied acreages are merely estimates of what government agencies consider to be necessary

to maintain populations of prairie dog species that are not listed as "threatened" or "endangered" as defined under the Endangered Species Act. To preserve the ecosystem functions of prairie dogs, target occupied acreages may need to be much higher than current Multi-state Conservation Plan goals because of plague impacts (Miller & Reading, 2006).

3.2.2. Suggested language: Goals

Primary goal:

- The goal of this management plan is to support the conservation of prairie dogs in coordination with state and federal objectives while considering the needs of the local human community.

Potential secondary goals:

- Maintain at least [X number] of prairie dog complexes larger than [X number] acres.
- Promote conservation of [X species of prairie dog] through tangible measures that secure their future along with the future of associated wildlife.
- Maintain viable populations of associated species.
- Identify areas for conservation and areas in conflict.
- Prioritize humane, nonlethal methods of management.
- Provide public education opportunities.
- Manage conflicts between wildlife and human land uses.
- Protect and enhance existing populations and habitats.
- Restore degraded habitats.
- Create new habitats.
- Augment existing populations.
- Restore historic populations.
- Avoid actions that impact or damage habitats or the species directly.
- Identify funding sources to fulfill goals.

3.3. Mapping

Good mapping is key to a transparent land use planning process (Michalak and Lerner, 2007). Mapping can 1) determine how many occupied acres of prairie dogs currently exist in the planning area; 2) reveal change over time; 3) confirm the accuracy of data; and 4) identify focal areas for conservation (Section 3.4).

Conserving prairie dogs where they already exist is the easiest and most cost-effective way to maintain prairie dog populations. Preserving habitat, both occupied and unoccupied, is the heart of every prairie dog management plan. But first, habitat must be identified. The first step is finding maps of current prairie dog occupancy and historic occupancy in the plan area. Records may be available through local governments, state wildlife agencies currently monitoring prairie dogs, the state Natural Heritage Program, the local U.S. Fish and Forest Service office or the State Wildlife Action Plan (SWAP). Google Earth Pro provides relatively current visuals of burrows; a time slider can be used on this program to look at historical occupancy indicators. However,

because the vegetative dynamics of Gunnison's and white-tailed prairie dogs are less understood than black-tailed prairie dogs, it is best to consult with each state's wildlife agency to gain a better understanding of key habitat areas and focal points. In all cases, prairie dog colonies should be field-checked for actual prairie dog occupancy and to confirm burrows are in fact prairie dog burrows (as opposed to other landscape features) and to ascertain whether a colony is active or inactive.

Ideally, the collected maps should be used to determine the cumulative area occupied by prairie dogs in the plan area and the distribution and landownership of parcels where colonies and complexes occur (Luce et al., 2006). If available, a layer showing current and future land uses (agriculture, urban, roads, oil, gas and mineral, etc.) in areas occupied by prairie dogs would aid the planning process immensely. Multiple types of data layers, including soil type and land use cover, are available through the Natural Resources Conservation Service Geospatial Data Gateway (*gdg.sc.egov.usda.gov*). Corridors providing connectivity between colonies and complexes (known as dispersal corridors) can be approximated using riparian corridors (typically seasonal flood plain corridors) identified by the Federal Emergency Management Agency. FEMA's interactive website provides mapping information about corridors specific to individual communities. Parks and open space master plans depicting trails and other linear open space amenities can reveal additional opportunities for wildlife movement. Most of this information can be obtained from comprehensive land use planning documents maintained and updated by local planning departments.

3.4. Creating focal areas

Even very small colonies are important; however, larger colonies and those that connect to other colonies or complexes may be prioritized for conservation because they likely provide a wider array of ecosystem services (Part 1, Sections 3.4. and 3.5).

Focal areas should include and be connected by dispersal corridors if possible. FEMA maps and local parks and open space maps are useful because prairie dogs are known to use low-lying drainages for dispersal to other colonies (Part 1, Section 2.6.). Comparing the prairie dog population inventory with FEMA and open space maps could potentially provide a roadmap to preserving functional corridors that direct wildlife through protected areas unencumbered by anthropogenic influences, thus reducing human/wildlife conflicts. Additionally, dispersal corridors are important for maintaining functional metapopulations (Part 1, Section 2.6.). Because wildlife ignore political boundaries, management plans should include a goal of maintaining contiguity with adjacent jurisdictions or political entities via habitat corridors allowing passage of predators and other wildlife.

3.4.1 Zoning for wildlife conservation

Zoning is one of the most powerful tools used by local governments. Zoning is used to determine where to situate residential (urban and rural) areas, commercial and industrial areas, schools, parks, mineral and oil operations, or agriculture.

Communities can choose to change zoning regulations and maps to rezone certain areas for wildlife habitat protection or can choose to apply "overlay zoning," which adds additional rules or restrictions to certain areas without changing the underlying zoning. Overlay zones can extend across a variety of properties and different land characteristics and are especially useful for habitat protections (Duerkson et al., 1996).

3.4.2. Collaboration with other governments

Intergovernmental agreements and joint land acquisitions give the involved parties more conservation power because they can protect larger areas of contiguous land for a common purpose. They are generally legal agreements among multiple political bodies that have collaboratively agreed to a shared vision and goal that is

more beneficial jointly than singly. Intergovernmental agreements should be developed in consultation with an attorney.

3.5. Planning for prairie dogs on public lands

Public lands are those owned and managed by local, state and federal agencies for the benefit of the public. These properties usually provide the best opportunities for prairie dog habitat conservation, primarily due to larger pooled funding revenues and management plan goals that can be allocated toward land stewardship and conservation.

3.5.1. Habitat protection/enhancement

Prairie dog habitats located on public lands provide some of the best opportunities for restoration of vegetation, reestablishment or augmentation of prairie dogs, public education and ecotourism. Since humans use these areas as well, public lands are instrumental for community outreach to students, tourists and other visitors. Therefore, we highly recommend habitat restoration or minimal habitat disturbance, public education and nonlethal management of prairie dogs on public lands.

Large public land areas can accommodate metapopulations of prairie dogs and support associated species. Some of these areas are still home to heritage grasses and forbs, which are of interest to many botanists and researchers. In areas where the vegetation has been denuded or converted to nonnative plants, consider revegetating active colonies with forbs and grasses that are either resistant or resilient to prairie dog grazing and burrowing activities (Part 1, Section 3.2.).

Also consider installing signs, observation points and/or wildlife viewing blinds on prairie dog colonies on public lands because they are effective outreach tools. Informational and interpretive signs at observation points teach the public about prairie dogs and their ecosystems. Advisory signs, such as those that tell pet owners not to let pets roam at large, prevent people from unintentionally disturbing wildlife. Observation points and blinds allow the public to observe wildlife. Wildlife watching is a favorite pastime for millions in the United States. Over 86 million people 16 years old and older photographed or observed wildlife in 2011. They spent $75.9 billion on these activities (including equipment, lodging and transportation) (USFWS, 2017). Passive relocation and barriers (Appendix 1) can be used where prairie dogs conflict with infrastructure development or other uses such as trails.

Setting aside suitable unoccupied prairie dog habitat as potential receiving sites for relocated prairie dogs displaced by development could save valuable resources and reduce conflict (see Section 3.7.2).

3.5.2. Working with federal and state agencies and special districts

Regional plans for developing public infrastructures such as roads or light rail that address and mitigate for impacted prairie dog habitat can be a good conflict prevention strategy. Multiple federal and state highway commissions have adopted policies to avoid or mitigate construction impacts on prairie dogs; however, local governments with no objectives, plans or policies for prairie dog conservation, no plans to secure protected prairie dog habitat, and no receiving sites for impacted prairie dogs often prevent implementation of those policies. Therefore, it is incumbent upon the state to encourage development of wildlife mitigation plans among local governments before moving ahead with construction plans.

3.6. Planning for prairie dogs on private lands

Approximately 87% of occupied prairie dog habitat is located on private land, making private lands instrumental to habitat protection for prairie dogs and associated species (Luce et al., 2006). Though management plans may not be able to directly impact private-owner actions on their properties, they may include incentives to conserve prairie dogs on private lands via the creation of:

- Habitat banks.
- Conservation easements.
- Mitigation funds.
- Mitigation transactions, which include buying and selling of conservation credits.
- Agro-tourism opportunities.

Many rural counties do not have open space taxes or development impact fees that can be used to manage prairie dog habitats. But it is often within these counties that the largest intact prairies remain, providing the best opportunities to conserve functional grasslands. Private landowners in rural counties typically do not receive open space funding from public sources and will need alternative funding to effectively manage prairie dogs.

A goal of the Multi-state Conservation Plan for the Black-tailed Prairie Dog is to maintain distribution over at least 75% of the counties in the historic range. Counties therefore benefit from private landowners and entities that are willing to proactively manage prairie dog habitat, because it contributes to county goals without using county resources.

3.6.1. Private property rights

There are two types of private landowners discussed here: private landowners who own properties where they wish to retain ownership for long periods of time (as a personal income production or family heritage) and private landowners who sell properties for development.

In Colorado, for example, private landowner rights are protected under multiple statutes. Private landowners generally cannot be forced to conserve prairie dogs on their property, even if public lands management agencies fail to do so. However, via zoning, regulations and ordinances, governments can influence the ways in which landowners may exercise their rights, and local governments with robust comprehensive land use planning and zoning processes decrease the potential for conflict in making land use decisions. In Colorado, for example, local governments have the primary authority to protect wildlife habitats (see Colorado's Local Land Use Control Enabling Act) within their political jurisdiction; the animal, however, is regulated by the state wildlife agency or the state department of agriculture. Many local governments are not aware of or do not take advantage of their existing authority to protect wildlife habitats.

Developers generally purchase lands with the intent to significantly alter the historic use of the property for economic gains. Properties purchased by developers have generally gone through review by local governments establishing appropriate zoning and uses that support a particular type of development (for example, rural/agricultural, residential or commercial).

Developers may have vested development rights. Vesting grants the developer rights to move forward with a proposed development plan in an area zoned for that use within a reasonable amount of time, rather than waiting indefinitely. These rights may preclude any future zoning or land use action by a local government that would negatively affect or delay development of a property; in effect, where vested development rights are in place, it is more difficult for local governments to alter the course of the development plan. Vesting can severely limit a local government's ability to protect wildlife habitats. Local governments that do not proactively protect areas they consider important for the environment and the community may then have to use the community's funds to purchase properties they wish to protect from development impacts.

3.6.2. Development agreements

Statutes in some states allow cities and counties to enter into "development agreements" obligating both the government and the landowner/developer to carry out certain actions. They can give the landowner more certainty that the project will not be denied or delayed, while requiring them to protect or enhance wildlife habitat on the property. They are negotiated on a project-by-project basis (Duerkson, 1997).

In cases where development agreements have been allowed by statute, the following measures have aided local governments and developers to mitigate impacts on wildlife populations:

- Hire a consultant with appropriate expertise to conduct periodic monitoring of the species to detect and report adverse impacts to designated species.
- Avoid construction activities in certain areas.
- Time construction to avoid mating, nesting or other sensitive times for wildlife in the area who may be disturbed.
- Phase the development of the site so that earlier, low-intensity development helps to buffer wildlife from later, more intensive development.
- Limit the number of vehicles or workers on the site at any one time.
- Implement additional dust and noise control measures during construction. Create visual and sound buffers through effective use of topography, vegetation and similar measures to screen structures and activity areas from habitat areas.
- Designate setbacks from disturbance.
- Locate disturbance so that wildlife is not forced to use new migration corridors and is not exposed to significantly increased predation, interaction with vehicles, intense human activity or more severe topography or climate.
- Close access to specific trails or roads during specific times of the year.
- Incorporate vegetation with wildlife food value or cover value into site landscaping.
- When disturbance of wildlife habitat cannot be avoided, require the developer to acquire and permanently protect existing habitat to compensate for habitat that is lost to development (adapted from Seavy and Design, 2008 and Duerkson et al., 1997).

3.6.3. Incentives for conserving prairie dogs

Several types of incentives can be offered to private landowners to conserve prairie dogs. Management plans should allow the use of flexible funding sources by private landowners for management of prairie dogs (plague management, population augmentation or relocation, vegetative restoration, etc.). Local governments may want to approach landowners with tax incentives such as those available through conservation easements. Local government could also be flexible in permitting landowners to remove prairie dogs if the landowners are willing to pay receiving sites to accept prairie dogs. Incentives for developers to protect habitats may include:

- Density bonuses. Local governments offer landowners the opportunity to construct more residential or commercial development (commonly a 25% to 50% bonus) than would otherwise be allowed on their land if they take certain actions to promote wildlife or protect wildlife habitat areas.
- Clustering. Cluster zoning provides the flexibility for developers to construct buildings in dense clusters rather than constructing uniform development throughout an entire lot.
- Transferable development rights. Development densities can be reduced in unsuitable areas (areas more sensitive for wildlife habitat) and increased in other areas, usually through a transferable development rights program, which leaves the price of the development rights up to the market.
- Grants and loans. Local governments make grants or loans to support acquisition or protective management of wildlife habitat.
- Preferential tax treatment. Local governments incentivize developers to protect wildlife via favorable tax treatment for existing low-density uses of land. For example, local governments can assess the "highest and best use" of a property based on current use (for example, agriculture or forestry) rather than potential use (for example, development).

- Tax credits. Local governments offer tax credits for conservation easements or lands that have been donated to nonprofit organizations such as private land trusts (Duerkson, 1997).

Private landowners who do not intend to develop their land may fund prairie dog management through conservation easements. Conservation easements separate the right to develop land from the right to possess and use that land in general, and they can be purchased or donated. Purchasing a conservation easement often costs less than outright purchase of the land (fee simple purchase), and it pays landowners for certain rights on their properties; one can purchase the right to develop land and then leave it undeveloped, holding those rights in trust. Conservation easements can also be donated, which provides landowners with substantial tax benefits on the federal and state levels. If the need is to prevent all use of the land, then a fee simple purchase should be considered instead (Duerkson, 1997).

Conservation easements are typically conferred to nonprofit land trusts and government agencies qualified to hold and enforce those easements, usually in perpetuity. Properly written conservation easements stipulate permitted uses of the parcel and specify limitations on its use. Overall, conservation easements are one of the best, most cost-effective ways to protect wildlife habitat for the long term, particularly when the easements contain specific provisions to safeguard wildlife and their habitat.

3.6.4. Mitigation

Environmental mitigation projects are intended to provide ways to offset known impacts to existing natural resources. When damage to a natural resource cannot be avoided, the entity responsible provides funding for conservation in other areas or contributes to a "mitigation bank." Local communities that develop mitigation plans for prairie dogs typically also adopt a mitigation bank. Mitigation banks accept funds and use them specifically for prairie dog conservation needs such as maintaining existing colonies, or purchasing verified conservation credits create a net gain for prairie dog ecosystems in targeted conservation areas. Funds should be clearly designated and placed in an account separate from the general fund. While mitigation is a useful tool, mitigation sites rarely equal the conservation value of leaving the original property undeveloped.

The valuation of mitigation fees is a complicated issue because it is difficult to determine the biological value of prairie dogs in any given environment. The Prairie Dog Coalition is currently developing a Habitat Quantification Tool (for more information, contact the PDC at *pdc@humanesociety.org* or 720-938-0788). Using the tool, buyers and sellers can sell and purchase conservation credits to offset conservation debits. For a more detailed description of mitigation strategies and suggestions, see Appendix 3.

3.6.5. Suggested language: Mitigation

- The purpose of mitigating is to conserve "occupied acreage" of prairie dogs and discourage their continued net loss within the management plan area. Any action that reduces "occupied acreage" may be subject to mitigation fees.
- Humane relocation from one area to another area within the management plan area shall not incur mitigation fees.
- Private landowners seeking lethal control permits shall be required to pay a fee. Higher fees may be charged for use of more dangerous or less humane lethal methods to encourage use of less toxic chemicals and avoid inhumane practices (see Appendix 2).
- Fees may be decreased for the following reasons: diligent efforts to avoid the use of lethal control; conversion of land development plan for inclusion of prairie dogs; acquiring lands to be publicly dedicated for use as prairie dog habitat; constructing and maintaining areas for prairie dogs that may include erecting manmade or natural barriers; funding prairie dog-related research.
- [The city/county] shall assess onsite colonies in order to offset development impacts via conservation credits or other mitigation.
- [The city/county] shall establish a prairie dog conservation fund that creates a funding source for implementing nonlethal prairie dog management on public lands or in public/private land partnerships.

- [The city/county] shall be permitted to utilize the monies in the prairie dog conservation fund to match funds with other state, federal, county, philanthropic or community grants and funds specifically for the conservation of prairie dogs.

Authors' note: "Occupied acreage" is the unit of measure generally used by state and federal agencies. Additionally, local governments have control over habitat and a goal of occupied or unoccupied habitat, and this places valuation on those habitat differences.

3.6.6. Grading restrictions

The management plan could set timing restrictions, limits or requirements for grading or excavation activities prior to commencement of construction on any parcel of land that is inhabited by prairie dogs. Under the Colorado Local Land Use Control Enabling Act, local governments have the authority to protect wildlife habitats; however, local governments can choose to enforce these provisions or not. If local governments choose to forgo this opportunity, then there are no current statutes that protect the occupants of that habitat. Plans that include the requirement for developers to relocate prairie dogs or take other steps to ensure that wildlife is not buried alive would be considered more humane. These requirements would likely need to be coordinated with development permitting processes and enforcement. Grading restrictions should account for the needs of associated species such as nesting raptors, burrowing owls and other species protected by state or federal guidelines.

3.7. Policies pertaining to relocation

Policies pertaining to relocation, coordinated with existing policies at the state level, are important for ensuring that relocation is implemented reasonably and humanely. For example, Colorado Parks and Wildlife requires an extensive permitting process prior to the relocation of prairie dogs. For more information, see *cpw.state.co.us/learn/Pages/SOC-Black-tailedPrairieDogPermits.aspx*. The permitting process evaluates receiving site habitat quality, management of the species and potential conflicts with neighbors. (Note that rules and procedures for relocation will be different for ESA-listed species. If the species at issue is ESA-listed, consult with the U.S. Fish and Wildlife Service.)

The activities of relocators come under the jurisdiction of state wildlife officers. The Prairie Dog Coalition website offers information on finding relocators in states throughout the prairie dog range. In some cases you can call state wildlife departments to find relocators. For more information on best practices pertaining to relocation, see Appendix 1.

3.7.1. Acceptable methods of relocation

Most relocators use two methods: live-trapping and flushing (pumping soap suds into burrows to flush out prairie dogs). Only live-trapping and flushing are acceptable; the use of vacuums and fishing with snares are unacceptable because these methods will likely harm the prairie dogs. Relocations should be timed to avoid the season when prairie dog females have dependent young, if possible. Relocation plans should address potential occupancy of the removal site by burrowing owls and other protected species. State wildlife agencies can provide guidance on monitoring protocols for associated species. Every state and local government has different regulations for relocations; contact your local state game and fish agency for more information. For more information on what to expect from relocators, see Appendix 1.

3.7.2. Release sites

The best release sites have historical prairie dog presence. Areas where prairie dogs have been absent for decades may be more difficult to reestablish and may require modifications for releases. For more details about release site requirements, see Appendix 1.

3.7.3. Suggested language: relocation

This language is applicable to non-listed species only. For species listed under the Endangered Species Act, consult with the U.S. Fish and Wildlife Service.

- *with the U.S. Fish and Wildlife Service.*To the extent practicable, the landowner from whose land any prairie dogs will be relocated shall provide the [city/county] manager with at least 20 days advance written notice of the initiation of relocation of prairie dogs. This notice shall include: the name, address and contact numbers of the applicant; contact information of the owner of property that will receive prairie dogs; the name, address and contact information for any consultants retained or consulted with regard to the proposed relocation measures; a description of the reasons why relocation measures are required; the date and time on which the physical relocation measures will be initiated; a plan detailing steps that will be taken in order to prevent or discourage the reentry of prairie dogs onto the land from which relocation is to take place; copies of all required state and federal permits
- Signage at the removal area shall clearly state that trap tampering is a punishable offense, subject to fines by both the local government and state wildlife department.
- Relocation for [X species of prairie dog] shall be avoided during the birthing, nursing and early rearing period of [appropriate time period for species], unless there is an unusual circumstance that requires immediate removal of the prairie dogs
- No person shall trap or relocate prairie dogs in a way that results in unnecessary suffering to the animals.
- No person engaged in relocation shall hold prairie dogs in their possession for more than 48 hours, unless animals are sick or injured (in which case the animals shall be turned over to a state-permitted animal rehabilitator), or the state wildlife agency issuing the relocation permit specifically approves the holding facility for a longer period.

3.8. Policies pertaining to lethal control

Some chemicals used for lethal control of prairie dogs are more toxic than others and can seriously injure or kill nontarget wildlife, domestic pets and even people (Appendix 2). State and federal agencies are primarily responsible for how restricted-use pesticides (those requiring special Environmental Protection Agency permitting) and general-use pesticides (those that can be readily purchased by any consumer) are applied; the agencies can adopt additional restrictions if either restricted- or general-use pesticide are applied commercially. Both federal and state agencies recognize that toxicant use is a serious matter and that alternatives should be explored first. Local prairie dog management plans should prioritize nonlethal control, not only as a more humane approach to native wildlife, but as a matter of protecting environmental health. Studies in Fort Collins, Colorado, showed higher approval ratings for nonlethal management options in comparison to lethal control (Nelson et al., unpublished data).

The obligation of local governments to protect the health, safety, general welfare and the environment of their community provides them some authority to govern the use of pesticides by both private and public landowners. Local governments can adopt ordinances specific to pesticide use on certain species or plants or may develop integrated pesticide management plans that list certain activities that should occur before any pesticides can be applied, including exercise of due diligence in seeking nonchemical alternatives. In addition, lethal control of ESA-listed species must be done in consultation with the U.S. Fish and Wildlife Service to ensure compliance with incidental take restrictions. The organizations authoring this document do not support lethal control.

3.8.1. Suggested language: Conflict management to reduce lethal control

Human/wildlife conflict priorities:

- Minimize conflict through avoidance of activities that may harm wildlife.
- If avoidance is not entirely possible, retain portions of wildlife habitat that can be maintained.

- Attempt nonlethal control (e.g., barriers, relocation, vegetation management, hardscaping) prior to exploring relocation or lethal control.
- Where wildlife habitat cannot be maintained, relocation alternatives should be explored.
- If lethal control measures are utilized, action should be taken to mitigate the negative communitywide impacts associated with the loss of local wildlife and wildlife habitat.
- If lethal control measures are utilized, they should be those considered most humane to wildlife and the least toxic to the environment (general-use pesticides) instead of restricted-use chemicals (see Appendix 2).
- Local governments shall be provided with a lethal control management plan that details how the public will be notified, whether nontarget species may be affected, and how environmental impacts will be monitored.
- All activities that harm or could potentially harm prairie dog habitat or prairie dogs will require a permit issued by the [city/county]. The [city/county] can implement a wide array of requirements that the applicant (property owner) must follow to prevent or reduce lethal control and make humane choices.

On both public and private property, the [city/county] manager:

- Shall require a permit prior to the destruction of any active burrow.
- Shall require applicants for lethal control to apply for a permit requiring information including but not limited to:
    - Property involved.
    - Proof that alternative methods other than lethal control have been exhausted, including active or passive relocations, barriers or vegetation and grazing management.
    - Information about species that may be directly or indirectly exposed to the toxicants; this includes threatened or endangered species, species of concern or species of greatest conservation need and species of local concern.
    - Distance to residential, commercial or any place of large public gathering (schools, churches, hospitals), public open space, parks or animal facilities, including areas that contain livestock (cows, horses, goats, chickens, etc.).
    - Distance to other active prairie dog colonies, particularly if the subject property is contiguous to adjacent colonies.
- Retains the right to delay issuing a lethal control permit for an additional 12 months to allow for relocation.
- Retains the right to specify the term of each permit.
- Retains the right to revoke a previously approved permit.
- Retains the right to suspend activities that threaten the health, safety, general welfare or the environment of the inhabitants of the city, county or planning area.
- Retains the right to assess the landowner additional fees or requirements to offset the use of poisons for prairie dog control.
- Retains the right to assess mitigation fees to offset the loss of wildlife habitat because of lethal control.

The [city/county] recognizes that the use of poisons to control prairie dogs may have adverse and cumulative effect upon the local environment, and upon the health and safety of human beings and local wildlife. Therefore:

- [City/county] reserves the right to ensure that property owners that require lethal control shall abide by the permitting procedure; that may include additional public posting requirements by the landowner of such properties that are beyond what the state requires of the certified applicator.

- Unless permitted, no person shall utilize lethal means of control for prairie dogs or remove prairie dogs from the ground with the intent to kill them.

3.9. Notification requirements

It may be prudent to include public notification requirements in the plan for activities that impact prairie dog populations, including relocation, removal or lethal control.

3.9.1. Suggested language: Notification

- Notifications for prairie dog removal or extermination shall be initiated X months prior to the proposed activity, and [the city/county] reserves the right to extend such notification for up to X months in special cases. Additionally, notifications shall be posted at least 30 days to local stakeholders and in the local newspaper, in print or online .
- All public notification signs shall be posted within 500 feet of the subject property and posted every 300 feet along the perimeter of the property. Signs shall be a minimum of 2 feet wide by 18 inches high where the title "PUBLIC NOTICE" is a minimum font size of 28, and the body of the notice is a font size of 18 and provides a brief description of the proposal and contact information.

3.10. Education and outreach

Because education and outreach are among the most important elements of prairie dog conservation, the plan should include a public education and outreach component. Inclusion of prairie dog ecology in local school curriculums, installation of interpretive displays at selected prairie dog colonies, or community forums and events may be part of the education and outreach component.

Key areas to focus on:

1) Explanation of why prairie dogs are important (Part 1, Section 3)
2) Discussions of disease and human health (Part 1, Section 4.2 and 5.1)
3) How prairie dog conservation benefits the health, safety, general welfare and the environment of the human community (Part 1, Section 6)
4) Pet management (for example, keeping pets on leash or off prairie dog colonies)
5) How to appropriately engage in wildlife observation (use of binoculars, etc.)

Positive personal experiences are among the most important factors engendering positive values and attitudes toward wildlife. As such, conservation plans should ideally include enjoyable public events that celebrate the importance of native habitats and species, including prairie dogs and their associated species.

3.10.1. Suggested language: Education and outreach

- Ensure that [city/county] citizens appreciate the role of prairie dogs in the native grasslands of [city/county], the current status of prairie dogs, the complex nature of their management, the importance of open space investments, and matters involving disease awareness and prevention via:
  - Creating an outreach campaign that reaches new and existing homeowners living adjacent to or near prairie dog colonies. The outreach campaign may include online and in-print sources of information.
  - Presentations at local libraries, senior centers, etc., on prairie dogs and the ecosystem.
  - Creating a process that acknowledges landowner complaints in a respectful and meaningful way, presents information on the importance of prairie dogs to anyone applying for a lethal control permit, and prioritizes addressing conflicts in advance and in areas adjacent to key conservation areas using nonlethal solutions or conflict prevention (see Appendix 1).

3.11. Public health and safety

Public health and safety should be addressed in the plan. This may involve coordination with and recommendations from local health departments. Generally, the biggest public health concern regarding prairie dogs is human exposure to plague; fortunately, prairie dog-to-human transmission of plague is extremely rare (Part 1, Section 5.1). This section of the plan should detail actions the local government may take to mitigate plague, such as signage or application of flea control powder to prairie dog burrows.

3.11.1. Suggested language: Plague protocol

In the event of any prairie dog die-off potentially associated with sylvatic plague:

- The [city/county] shall notify the [state public health department] and shall cooperate with the agency in obtaining samples for epidemiologic evaluation.
- If plague is confirmed, the [local public health department], in cooperation with the [state public health department] shall apply flea-killing insecticide to the affected area to eliminate or control the outbreak and shall provide public notice according to state guidelines. Affected trails and trailheads will have informational signs, and trails and portions of the affected property may be closed in the event of an outbreak.
- If plague is suspected but not yet confirmed, the [city/county] shall implement a public awareness program to educate constituents about plague and combat misinformation, place signs at affected trails and trailheads, and potentially close trails and portions of the property.
- In the case of a prairie dog die-off due to plague or other causes, the [city/county] shall survey the site to assess ecological conditions and develop a weed control and revegetation program in anticipation of recolonization.

3.12. Penalties for noncompliance

Enforcement of the policy might include withholding building permits, withholding land use changes, cease and desist orders, injunctions, requiring specific performance goals be met, or judicial actions (civil and criminal) (Seavy and Design, 2008). Enforcement must be consistent with local ordinances and state and federal law.

3.12.1. Suggested language: Enforcement

To protect the health, safety, general welfare and the environment of the community, the [city/county] has the right to enforce provisions adopted to protect occupied prairie dog habitats. The [city/county] retains the rights to withhold building permits, withhold land use changes, file cease and desist orders or injunctions, require specific performance goals be met, require payment of fines, and/or initiate judicial actions (civil and criminal).

3.13. Plan evaluation and revision

The plan should include a process by which to evaluate results and remove or revise portions of the plan if needed. The county or city should choose an appropriate timeframe for evaluation and a process by which to decide if revisions or adjustments to the plan are needed. (A typical timeframe is every five to 10 years.)

4. Ordinances

Ordinances or codes are laws instituted by cities, counties or towns. Many governments have ordinances addressing domestic animals, wildlife and the environment. Ordinances that enforce the prairie dog management plan are generally developed once the plan is complete, but interim ordinances can be adopted for matters that require immediate attention. Some communities have adopted short-term ordinances that are useful when more time is needed to evaluate sections of a proposed plan. Ordinances are introduced by municipal council members or county commissioners.

The council member will need support via citizen input, lobbying and publicity. Generally, proposed ordinances then go through a public hearing process, where both supporters and opponents of the ordinance can testify. The council then votes on whether to adopt, amend, redirect or reject the ordinance. Any local ordinance should be drafted in consultation with an attorney to ensure that it is within the jurisdiction of the locality and not preempted by state or federal law.

Below are ideas to consider in drafting ordinance language based on prairie dog management plans:

1) Require developers to design their projects in a way that will preserve/buffer prairie dog colonies on their land and incorporate prairie dog habitat into development designs. This is particularly important in areas where developments abut riparian corridors.
2) If lethal control is allowed, require a mandatory waiting period during which a developer must make a good-faith effort to relocate prairie dogs. The waiting period should be no less than 12 months to ensure time to secure a receiving site and to allow for relocation to take place during the optimal time for the prairie dogs (i.e., outside of the breeding or birthing season or when seasonal conditions limit effective capture).
3) Require developers to pay a mitigation fee if prairie dog habitat is negatively impacted by development, particularly if lethal control was used. Developers bear the responsibility for mitigating their impact on wildlife habitat, including replacing lost habitat. The fees could go toward the purchase of open space for the purpose of prairie dog relocations and habitat conservation or the purchase of conservation credits to offset losses.
4) Create incentives for developers and landowners to preserve prairie dog habitat on their land.
5) When a landowner negotiates annexation, the city will require a dedication or protection of prairie dog habitat because of the annexation.
6) Provide city- or county-owned land to serve as a release site or sanctuary for prairie dogs who are displaced because of private or city projects.
7) Allow private developers to purchase lands that are contiguous to public open space to offset losses of occupied prairie dog acres.
8) Draft language in the grading permit to ensure that the sites are free of prairie dogs prior to soil disturbance.

In proposing or drafting ordinance language for consideration, it is essential to work with planning and legal staff for the local government so that the final draft ordinance is consistent with comprehensive land use plans, development codes, zoning guidelines and other documents or processes that direct land use planning decisions. Working with staff and counsel will minimize the risk of drafting a proposal that violates law or obligates parties to unachievable goals. Finally, working with staff will allow for an ordinance proposal that is clear, concise and understandable.

For examples of ordinances regarding prairie dogs, see Boulder Revised Code Title 6, Chapter 1, Sections 11, 12, 36, 37, and 38. The code is available online at *bouldercolorado.gov/plandevelop/codes-and-regulations* under "Boulder Revised Code."

5. Statutes and regulations

Statutes and regulations are laws enacted by state legislatures, state commissions or boards, or the federal government. Cities and counties adopt ordinances and codes that enforce local laws. Just as each state has different mechanisms for the adoption of statutes and regulations, so do local governments. The process for adoption of state laws is outside the scope of this guide. However, in general, we recommend that states embrace statutes that require local governments to include wildlife habitat within local comprehensive land use plans. States must create uniform responsibility amongst local governments so they can work together to temper economic growth with environmental protection. While the comprehensive land use plan is considered advisory rather than regulatory, it can be instrumental as a first step toward the adoption of zoning and codes, which are the enforcement tools for local governments.

6. Conclusion

Creating a management plan takes patience, persistence and resilience; it will be worth the hard work for the many benefits a plan provides to both human and animal communities. The aim of this guide is to provide the tools needed to successfully create humane management plans. To provide feedback on the guide, for more information or for copies of any cited reference, please contact the Prairie Dog Coalition at coordinator@prairiedogcoalition.org; Lindsey Sterling Krank of the Humane Society of the United States at *lsterlingkrank@humanesociety.org*; or WildEarth Guardian's wildlife program director, Lindsay Larris *llarris@wildearthguardians.org*.

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