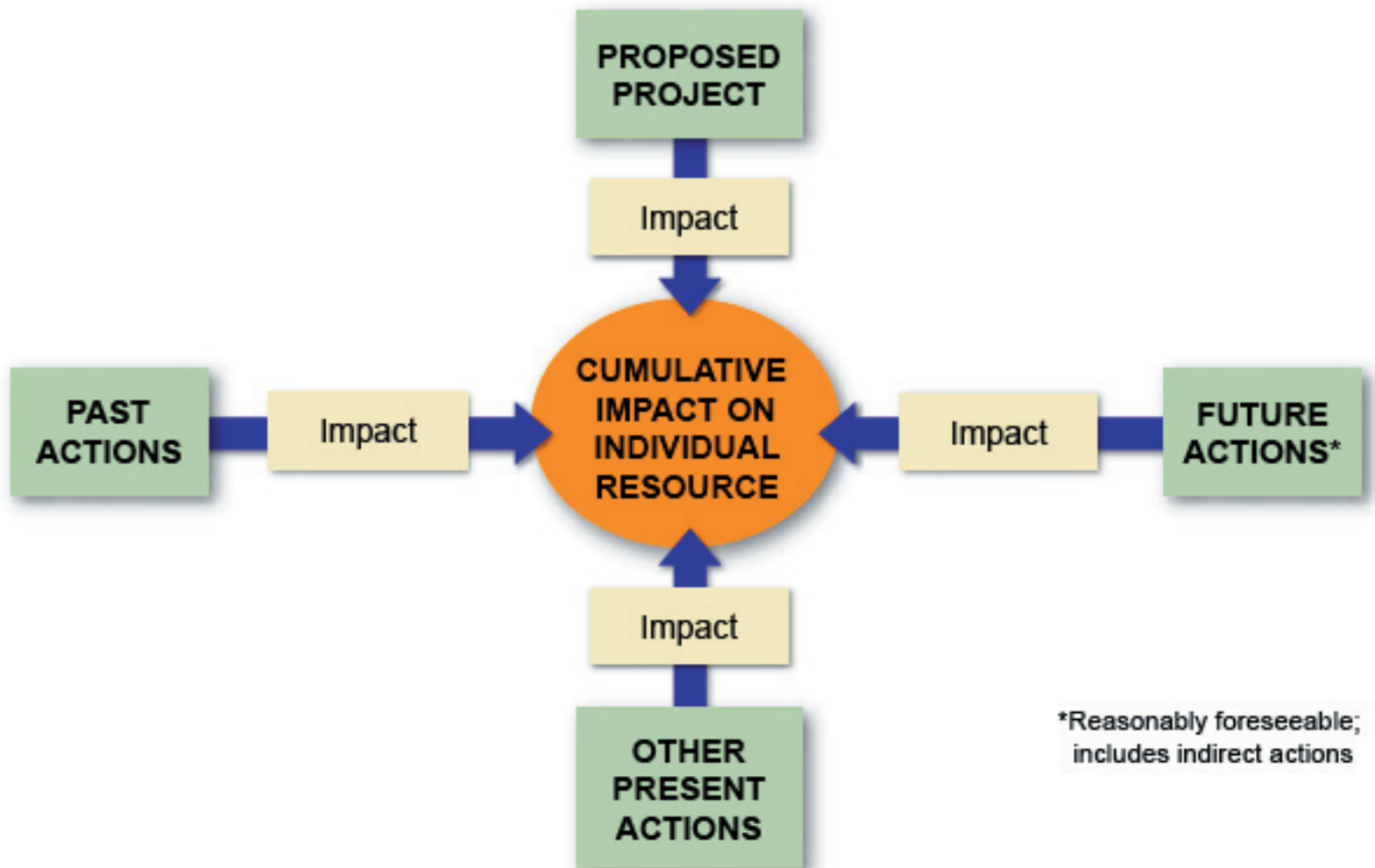


4.0

SUMMARY OF DIRECT, INDIRECT, AND CUMULATIVE IMPACTS & MITIGATION

ENVIRONMENTAL SUMMARY

Chapter 4 summarizes the environmental analysis discussed in Chapter 3.





4.0

SUMMARY OF DIRECT, INDIRECT, AND CUMULATIVE IMPACTS & MITIGATION

4.1 Introduction

This chapter presents a summary of the direct and indirect impacts discussed in Chapter 3.0 (see Table 4-1). Additionally, a summary of all relevant and reasonable mitigation commitments associated with the Proposed Action is presented in Table 4-1. Best Management Practices (BMPs) that are intended to minimize impacts associated the Proposed Action are summarized in Table 4-2. More detailed descriptions of the mitigation measures and BMPs are found in Chapter 3.0 in sections entitled *Mitigation for the Proposed Action*.

A discussion of the Regional Cumulative Effects Analysis (RCEA) is incorporated in this chapter. This project has examined the strategies of the RCEA, thus cumulative impacts were analyzed in the context of regional development, including other transportation projects. A summary of cumulative impacts is included at the end of this chapter. More detailed discussions of cumulative impacts is presented for each resource in Chapter 3.0.

Organization of Chapter

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| 4.2 | Regional Cumulative Impacts Analysis <i>page 217</i> |
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**Table 4-1
Summary of Direct and Indirect Impacts and Mitigation Measures**

| Topic | No Action Alternative Impacts | Proposed Action Impacts | Proposed Action Mitigation Measures |
|-------------------------------------|--|--|--|
| Noise | <p>No additional direct impacts to neighborhoods with existing noise walls.</p> <p>Increases in traffic volumes increase noise levels by 2030.</p> <p>92 residences or apartment units would experience noise levels exceeding the applicable NAC, an increase of 5 residences as compared to Existing Conditions.</p> | <p>There would be no additional direct impacts to those neighborhoods with existing noise walls under the Proposed Action.</p> <p>Increases in traffic volumes will increase noise levels by 2030.</p> <p>Under the Proposed Action 116 residences or apartment units would experience noise levels that would exceed the applicable NAC, an increase of 24 residences over the No Action Alternative.</p> | <p>Noise walls are recommended as noise mitigation at 5 locations representing 100 residences or apartment units.</p> <p>Under the Proposed Action, 16 residences or apartment units that were considered for mitigation were found to be not reasonable or feasible for mitigation. The noise levels for these locations range from 70.3 dBA to 71.6 dBA.</p> |
| Residential ROW | 6 partial acquisitions (0.4 acre) | 40 partial acquisitions and 15 residential relocations (35.4 acres) | The owner of real property acquired for ROW will be compensated at reasonable market value in accordance with the Uniform Act, Code of Federal Regulations, state statutes, and CDOT policies and procedures |
| Commercial ROW | 9 partial acquisitions and 1 business displacement (0.5 acre) | 38 partial acquisitions and 5 business displacements (8.5 acres) | See above |
| Vacant/ Other ROW | 2 partial acquisitions (0.2 acre) | 12 partial acquisitions and 1 full acquisition (3.8 acres) | See above |
| Emergency Response | None | Access modifications will result in address changes for some properties which may increase response time | Process address changes for the affected properties |
| Low-income and minority populations | No disproportionately high and adverse impacts | No disproportionately high and adverse impacts | None |



| Topic | No Action Alternative Impacts | Proposed Action Impacts | Proposed Action Mitigation Measures |
|-------------------------------|--|---|---|
| Transportation Related Issues | <p>Intersection improvements, construction traffic delays, changes in traffic circulation, and congestion.</p> <p>Businesses' and residents' access adjacent to Woodmen Road will be rerouted or restricted during construction activities.</p> <p>Temporary displacements of one bus stop during construction may interfere with transit service.</p> | <p>Reconstruction efforts would result in traffic delays, changes in traffic circulation, and congestion.</p> <p>Businesses' and residents' access would be rerouted or restricted during construction activities.</p> <p>Emergency service providers could experience temporary response time delays due to detours and access changes during construction.</p> <p>Temporary displacements of bus stops during construction may interfere with transit service.</p> <p>Construction activities near local businesses could result in temporary loss of customers for affected businesses due to potential access difficulties.</p> | <p>A Traffic Management Plan and Public Notification Plan will be developed and implemented.</p> <p>Access to residences and businesses will be maintained to the extent possible.</p> <p>Emergency service providers would be notified of construction activities to ensure that emergency services are maintained at all times.</p> <p>Coordination with the transit services staff to ensure that bus service near the construction site is maintained.</p> <p>Construction activities and effects on local businesses would be minimized and mitigated using Best Management Practices.</p> |
| Noise | Noise increases due to construction equipment. | <p>Noise increases due to construction equipment.</p> <p>The duration of elevated noise levels would be longer, and the area affected would be larger than under the No Action Alternative due to the extent of the construction area and the increased magnitude of the effort.</p> | <p>Local noise ordinances will be followed.</p> <p>When appropriate, sound walls will be constructed in the early phases of work.</p> <p>Noise blankets or other muffling devices, as well as quiet-use generators, will be used.</p> |
| Air Quality | Increased particulate matter (dust) in the air raised by demolition of portions of the existing roadway and by hauling, filling, and grading. | Increased particulate matter (dust) in the air raised by demolition of portions of the existing roadway and by hauling, filling, and grading. | Follow requirements of the Fugitive Particulate Emissions Control Plan, developed and implemented during construction, to minimize particulate matter in the air. |



| Topic | No Action Alternative Impacts | Proposed Action Impacts | Proposed Action Mitigation Measures |
|----------------------------------|---|---|--|
| Conservation of Resources | Consumption of natural materials. | Consumption of natural materials. This use of natural materials will be higher than that anticipated in the No Action Alternative. | Conservation of natural materials and recycling of locally-available materials will be implemented to the degree that is possible and practical. |
| Flooding and Floodplain Function | The existing undersized culverts will continue to allow the Woodmen frontage road to be overtopped by water during larger storm events. | Approximately 1.93 acres of existing floodplains will be impacted. Changes to flow characteristics and floodplain impacts due to altered hydraulic conditions. | Design of new stream crossings per design requirements. Compliance with floodplain permits required from the Regional Building Department Floodplain Administrator. Floodplain re-mapping if necessary. |
| Water Quality | Increased sediment in streams crossing Woodmen Road. Minimal increase in sediment transport in runoff during construction. Increased oil and grease due to construction. Increased levels of selenium in the water are anticipated from land use changes and urbanization in the area. | Increased sediment transport in runoff during construction. This would temporarily degrade water quality. | Implementation of Best Management Practices during construction to minimize the temporary water quality degradation. Compliance with the Colorado Discharge Permit System Municipal Separate Storm Sewer System (MS4) permit as held separately by the City and County. <i>(Please note that there are a number of regulations and laws related to water quality. These regulations and laws require the implementation of permanent Best Management Practices. These practices are included as part of the alternative)</i> |



| Topic | No Action Alternative Impacts | Proposed Action Impacts | Proposed Action Mitigation Measures |
|---|---|---|--|
| Wetland Function | No direct impacts. Indirect effects may include increased erosion and increased sedimentation in nearby wetlands and waterways from high intensity precipitation events, as well as contamination from fuel spills. | Direct permanent impacts to wetlands were calculated to be 10.53 acres, which include 1.08 acres of PSS and *PSS/EM wetlands, 9.08 acres of PEM wetlands, and 0.37 acres of wetlands associated with drainage ditches and excavations. Direct temporary disturbance to wetlands in areas for construction access totaled 2.21 acres. Construction activities will cause 0.25 acre of direct permanent impacts to Waters of the U.S., but will not cause any direct temporary impacts. See Table 6-1 in Chapter 6, Wetland Finding, for a summary of the jurisdictional vs. non-jurisdictional impacts to wetlands and other waters of the U.S. Indirect effects may include increased erosion and increased sedimentation in adjacent wetlands. | Permanent wetland losses would be offset by wetland creation and habitat enhancement at Falcon Trailhead area, and the Cottonwood Meadows. Mitigation measures for this project are based on a watershed approach. In addition to offsetting losses to wetlands and other waters of the U.S., mitigation will also replace functions including: 1) flood attenuation and storage; 2) sediment/nutrient/toxicant removal and retention; 3) production export and food chain support; 4) groundwater discharge and recharge; 5) recreation and education potential; 6) general wildlife habitat; and 7) re-establishing the channel of Sand Creek to pre-construction morphology after construction is completed. As required by federal Executive Order and FHWA policy, the City and County will mitigate for all wetland impacts whether they are jurisdictional or not. |
| Mammals (small rodents and possibly raccoons, foxes, and other small predators) | An increased potential for road kill incidents and limited loss of habitat from intersection impacts | Temporary loss of willows along Sand Creek for bridge improvements; an increased potential for road kill incidents. | Replant disturbed areas with a diverse array of native plants to enhance riparian habitats; Riparian planting at Cottonwood Meadows and Falcon Trail Head (See Chapter 6 <i>Wetland Finding</i>); Review wildlife road kill data along Woodmen Road to select mitigation strategies if warranted. |



| Topic | No Action Alternative Impacts | Proposed Action Impacts | Proposed Action Mitigation Measures |
|--|---|--|--|
| Birds (mostly small birds associated with willows and narrow bands of cottonwood) | Limited loss of habitat from intersection impacts | Impacts to riparian plant species near Sand Creek bridge crossings. Potential impacts to nesting birds from land-clearing activities. | Replant disturbed areas with a diverse array of native plants to enhance riparian habitats; Riparian planting at Cottonwood Meadows and Falcon Trail Head (See Section 6 <i>Wetland Finding</i>). In accordance with the Migratory Bird Treaty Act, surveys of nest locations prior to construction activities, timing of land-clearing activities, and protection measures for active nests. |
| Reptiles and amphibians (frogs, toads, snakes, including state sensitive species in Cottonwood and Sand Creek) | None | Temporary disturbance of riparian area near bridge crossings. | Replant disturbed areas with a diverse array of native plants to enhance riparian habitats; Riparian Planting at Cottonwood Meadows and Falcon Trail Head (See Chapter 6 <i>Wetland Finding</i>). |
| Fisheries/Aquatic Resources (limited potential during periods of permanent water in Sand and Cottonwood Creek) | None | Increased turbidity and sedimentation of Sand and Cottonwood Creeks from soil erosion during road construction; however, no fish habitat currently occurs in either creek due to temporary drought conditions. | Replant disturbed areas with a diverse array of native plants to enhance riparian habitats: Riparian planting at Cottonwood Meadows and Falcon Trail Head (See Chapter 6 <i>Wetland Finding</i>). Implementation of Best Management Practices for water quality. |
| Pronghorn antelope and other wildlife | An increased potential for wildlife and pronghorn road kill | An increased potential for wildlife and pronghorn road kill | Review wildlife road kill data along Woodmen Road to select mitigation strategies if warranted |
| Grassland raptors (ferruginous hawk, northern harrier, etc.) | No impact | Very small contribution to inevitable extirpation of some raptor species from the corridor. Potential impacts to nesting birds from land-clearing activities. | In accordance with the Migration Bird Treaty Act, appropriate avoidance, timing of land-clearing activities, and protection measures for active nests. |
| Noxious Weeds | Construction activities associated with intersection improvements may spread noxious weeds. | Construction activities associated with improvements to Woodmen Road may spread noxious weeds. | Implement erosion control measures to decrease weed propagation from wind. Revegetate all areas per the Revegetation Plan and Weed Management Plan. All salvaged topsoil used for revegetation must be weed free. |



| Topic | No Action Alternative Impacts | Proposed Action Impacts | Proposed Action Mitigation Measures |
|--|--|---|--|
| Bicycle, Pedestrian, and Recreational Facilities | Increased potential for dangerous conflicts between vehicles and pedestrians or bicyclists. Construction will temporarily reroute a number of trails and bicycle routes. | Improvements include an on-street bicycle route along Woodmen Road, sidewalks west of Powers Boulevard, and accommodation of all planned bicycle and pedestrian facilities. Construction will temporarily reroute a number of trails and bicycle routes. | Public notice of temporary detours, and routes; safe multiuse crossings and connections will be provided. Temporary crossings, detours and access will be provided in cooperation with the City and County trail planners. |
| Noise | Noise will increase with traffic growth on Woodmen Road. | Noise will increase with traffic growth on Woodmen Road. | No feasible or reasonable mitigation available for trails and bicycle routes. |
| Conformity with CO and PM ₁₀ standards | Attainment for CO and PM ₁₀ | Attainment for CO and PM ₁₀ | None needed |
| CO | 15 intersections along Woodmen Road will degrade to a LOS F by 2030, and 19 will degrade to LOS D | Three intersections along Woodmen Road will operate at LOS D by 2030 | None needed |
| Regional haze (O ₃ and PM ₁₀) | No impact on visibility or regional haze to nearby national parks and wilderness (Class I) areas | No impact on visibility or regional haze to nearby national parks and wilderness (Class I) areas | None needed |
| Air toxics | Not applicable | Not applicable | Not applicable |



**Table 4-2
Summary of Standard Operating Procedures and Best Management Practices**

| Resource / Topic | Standard Operating Procedures and Best Management Practices |
|-----------------------------|--|
| Traffic Noise | None |
| Relocation and Acquisitions | <ul style="list-style-type: none"> ▪ The owner of real property acquired for ROW will be compensated at fair market value in accordance with the Uniform Act, CFRs, state statutes, and CDOT policies and procedures. ▪ Re-address the residential property affected by the Proposed Action to ensure uncompromised emergency services access. ▪ The City of Colorado Springs and El Paso County will coordinate with property owners that have outbuildings that will need to be moved or reconstructed as a result of the Proposed Action. |
| Environmental Justice | None |
| Construction Impacts | <ul style="list-style-type: none"> ▪ Follow local (city and county), CDOT, and Federal SOPs and BMPs for construction, traffic and access, air quality and noise impacts as well as coordinating with local neighborhoods and businesses. ▪ Develop a Traffic Management Plan to maintain safe traffic flow and access. ▪ Develop a Public Notification Plan to inform residents, businesses, and roadway users of construction activities that will affect traffic flow and other transportation issues. ▪ Maintain adequate travel routes to minimize delay for emergency service providers and notify emergency service providers of temporary detours and access changes. ▪ Maintain bus service. ▪ Construct noise wall, as appropriate, during the first phase of work. ▪ Use noise blankets or other muffling devices on equipment. ▪ Develop a Fugitive Particulate Emissions Control Plan. ▪ Contractors will use dust suppression techniques, such as wetting haul roads and revegetating disturbed areas. ▪ Minimize off-site tracking by washing construction equipment. |



| Resource / Topic | Standard Operating Procedures and Best Management Practices |
|-------------------------------------|---|
| Water Resources | <ul style="list-style-type: none"> ▪ Flooding and floodplain function: compliance with floodplain permits required from the Regional Building Department Floodplain Administrator. ▪ Sediment flow and heavy metal contamination: adhere to the requirements of the City of Colorado Springs Drainage Criteria Manual, Volume 2 (MS4 req's); comply with all programs required by the State of Colorado for coverage under the CDPS General Permit for Stormwater Discharges; develop and implement a Stormwater Management Plan with appropriate BMPs. ▪ Servicing and refueling of construction equipment will be within designated contained areas, away from wetlands and other waters of the US. ▪ Where practicable, work will be performed during low flows or dry periods, and if flowing water is present, it will be diverted around active construction areas. ▪ Temporary fill material will not be stored within wetlands or other waters of the US. ▪ Any wetland areas used for construction access will be covered with a layer of geotextile, straw and soil before use. |
| Riparian Habitat Dependent Wildlife | <ul style="list-style-type: none"> ▪ All wildlife: reclamation of disturbed areas by reseeding with native plants, especially willows. ▪ Fisheries/aquatic resources: implement standard BMPs during road construction and operation to control erosion and sedimentation. Maintain flows within drainages to allow for movement of aquatic life, mostly invertebrates. ▪ Surveys for nesting birds will be conducted prior to construction; active nests will be protected. |
| Prairie Habitat Dependent Wildlife | Surveys for nesting birds will be conducted prior to construction; active nests will be protected. |



| Resource / Topic | Standard Operating Procedures and Best Management Practices |
|------------------|--|
| Noxious Weeds | <ul style="list-style-type: none"> ▪ Erosion control measures will be implemented during clearing and earthmoving activities to decrease the potential for soil losses from wind. BMPs will be used during all phases of construction to reduce impacts from sedimentation and erosion, including the use of berms, brush barriers, check dams, erosion control blankets, filter strips, construction site dewatering, sandbag barriers, sediment basins, mulch and mulch tackifier, silt fences, straw-bale barriers, surface roughening, and/or diversion channels. ▪ A revegetation plan that follows BMPs will be developed for construction areas that will be temporarily disturbed. The plan will address the selection of appropriate species, including shrubs and trees where appropriate (using only native species adapted to the local environment), soil preparation, seeding rates and methods, planting protocols (including mulching and soil amendments), watering frequency and duration (if needed), and success monitoring. The revegetation plan will be approved by a CDOT Landscape Architect or designee. ▪ All revegetation areas will be seeded and/or planted as soon as possible per the revegetation plan. Seeding will be phased to occur throughout construction. Temporary seeding with sterile species or mulching may also be required to protect soil piles or bare areas from erosion and weed invasion. ▪ A Weed Management Plan will be developed in coordination with the El Paso County weed coordinator during final design and control measures implemented on existing infestations before construction begins. ▪ All equipment used for construction must be free of noxious weed seed and reproductive plant parts. The contractor will be required to wash all equipment prior to mobilization onto the construction site and when moving equipment from areas with existing populations of noxious weeds to areas relatively free of these species. ▪ Topsoil from the areas of permanent and temporary disturbance will be salvaged whenever practicable and reused as part of the revegetation effort. All salvaged topsoil will be free of noxious weeds (as determined by a visual inspection) or treated for noxious weeds prior to use, and protected from erosion and weed seed invasion. ▪ Mulch, fill soil, sod, hay, seed, bedding, and other construction materials used for the project will be inspected and certified as defined by the Weed Free Forage Crop Certification Act, Title 35, Article 27.5, Colorado Revised Statutes. ▪ CDOT, the City of Colorado Springs and El Paso County, or their designees, will oversee all revegetation operations and subsequent monitoring. |



| Resource / Topic | Standard Operating Procedures and Best Management Practices |
|---------------------------------------|--|
| Recreational Trails and Natural Areas | Bicycle and pedestrian facilities: public notification of temporary detours, and routes; safe multiuse crossings and connections will be provided; and temporary crossings, detours and access will be provided in cooperation with the City of Colorado Springs trail planners. |
| Air Quality | Air Quality Impacts Related to Level of Service (LOS): Proceed with Woodmen Road improvement projects. Dust control practices will be implemented in accordance with Colorado Air Quality Control Commission Regulations No 1 regarding fugitive dust emissions. |
| Paleontological Resources | As a result of the field survey and construction monitoring findings, paleontological monitoring during construction along Woodmen Road will be part of the paleontological mitigation plan for this project. If final design plans indicate there will be significant impacts to the Dawson Arkose outcrop, the CDOT Staff Paleontologist will write a revision of Subsection 107.23 of the Standard Specifications (Archaeological and Paleontological Discoveries) identifying the paleontological monitoring corridors for attachment to the construction project specifications |
| Archeological and Historic Resources | If buried cultural remains are exposed during any phase of construction, work will cease in the vicinity of the find and the CDOT Senior Staff Archaeologist will be notified immediately. The discovery will be evaluated for eligibility to the National Register of Historic Places, and coordination with the State Historic Preservation Officer, consulting Indian tribes, and other agencies or entities, as appropriate, will ensue. |
| Urban-adapted Wildlife | Same precautions, BMPs, and SOPs that will be applied to other wildlife. |
| State-listed Species of Concern | Same precautions, BMPs, and SOPs that will be applied to other wildlife. |
| Potential Conservation Areas (PCAs) | None |
| Farmlands | None |
| Soils and Geology | None |



| Resource / Topic | Standard Operating Procedures and Best Management Practices |
|---------------------|---|
| Hazardous Materials | <ul style="list-style-type: none"> ▪ Contractors will be required to store fuel and other hazardous material at locations away from streams and wetlands and take appropriate precautions to avoid spilling hazardous materials or fuels during construction. ▪ Contractors will be required to monitor for hazardous conditions and have appropriate Occupational Safety and Health Contractors will be required to store fuel and other hazardous material at locations away from streams and wetlands and take appropriate precautions to avoid spilling hazardous materials or fuels during construction. ▪ Contractors will be required to monitor for hazardous conditions and have appropriate Occupational Safety and Health Administration training (per 28 CFR 1910) for hazardous waste site operations. ▪ Contractors will be required to use sealed forms to prevent concrete wash water or other contaminants from entering creeks, storm sewers, and wetland areas. ▪ Soils and groundwater suspected to contain contamination that would be disturbed by the Proposed Action construction activities will be sampled and analyzed for contaminants of concern. ▪ All paint on buildings or structures constructed before 1979 that will be disturbed by construction activities will be tested for total lead content. ▪ A comprehensive asbestos survey will be completed for all buildings or structures constructed prior to 1980 that will be disturbed by construction activities. ▪ Any excavation or other sub-surface work near Powers Boulevard should be performed with a methane monitor to track potentially explosive conditions. ▪ Excavated groundwater should be tested for VOCs and treated prior to discharge if VOCs are present. |



4.2 Regional Cumulative Impacts Analysis

The Council on Environmental Quality (CEQ) defines cumulative impacts as, “The impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7).

Cumulative impact analysis is resource specific and is generally performed for the environmental resources directly impacted by a Federal action under study, such as a transportation project. However, not all of the resources directly impacted by a project will require a cumulative impact analysis. Cumulative impacts include the total of all impacts to a particular resource that have occurred, are occurring, and will likely occur as a result of any action or influence, including the direct and reasonably foreseeable indirect impacts of a Federal activity. Accordingly, there may be different cumulative impacts on different environmental resources.

The community where this project is located is growing. As a result, it is necessary to evaluate the cumulative effects of a number of anticipated transportation improvement projects. To accomplish this goal CDOT, with the cooperation of various community groups, resource experts, and citizens, prepared a cumulative effects resource document entitled *Sustaining Nature and Community in the Pikes Peak Region (A Sourcebook for Analyzing Regional Cumulative Effects)*. This document (also referred to as the Regional Cumulative Effects Analysis [RCEA]) examines environmental trends in the region, based on the assumed implementation of current land use and transportation plans, including the projects listed above.

The goals of the RCEA were to provide a regional framework for evaluating the cumulative effects of the transportation projects combined with all other types of development in the region, and to develop comprehensive strategies to reduce, mitigate or reverse negative environmental trends, and support sustainability and quality of life in the Pikes Peak region.



The study uses the concept of sustainability as an approach for addressing cumulative effects in the region, and identifies the following topics, or “indicators,” to frame sustainability issues:

- Landscape patterns, including land use, parks and trails, historic and cultural resources, threatened and endangered species, wetlands, and floodplains
- Water Quality and Quantity
- Air Quality
- Transportation Patterns
- Noise Levels
- Visual Character

The RCEA covers a period of time from the mid-1950s to the year 2025, which was the planning horizon year for the PPACG *Destination 2025 Regional Long-Range Transportation Plan*. Community resources were examined within the framework of political boundaries (the planning region covered by PPACG), while natural resource issues were studied in terms of watersheds.

This EA presents a comprehensive analysis of cumulative effects to resources, as well as an analysis of direct and indirect effects. The RCEA was used as a guide for the Woodmen Road Corridor Improvement Project cumulative effects analysis. Cumulative effects discussions are included in Chapter 3, *Affected Environment, Impacts, and Mitigation* and are summarized in the next section.



4.3 Summary of Cumulative Impacts

This section presents a summary of cumulative effects to each resource studied in Chapter 3, *Affected Environment, Impacts, and Mitigation*.

As discussed in the RCEA and shown in Figure 3.0-1, Colorado Springs and its surrounding communities have been growing rapidly and transforming semi-arid prairie into an urban ecosystem, displacing native species of plants and animals. At the same time, the change from a small city to a medium-sized metropolitan area has come with growing pains including traffic congestion and impacts to the region's water, air, and visual character. Many of the impacts are inevitable cumulative impacts – those that cannot be reversed. Only avoidance can prevent cumulative impacts to these resources because mitigation cannot replace them.

The general pattern of development in the Colorado Springs region has been strongly influenced by the expansion of the city since 1960. Much of the Woodmen Road corridor has become developed, and the roadway has become an important east-west travel corridor. The Proposed Action would relieve congestion in a maturing corridor, while simultaneously supporting the region's adopted land use plans. For the Woodmen Road improvements, cumulative impacts were evaluated for the following resources:

- Riparian and Prairie Ecosystems
- Water Quality and Quantity
- Wetlands
- Noise
- Noxious Weeds
- Construction
- Relocations and Acquisitions
- Recreational Trails and Natural Areas



Riparian and Prairie Ecosystems

On-going growth and development in the Pikes Peak Region is consuming prairie and riparian habitats. Transportation projects, including the Proposed Action, are contributing to the loss of these habitats. In order to preserve the value and function of the remaining prairie and riparian habitats, the City of Colorado Springs and El Paso County have incorporated preservation of these areas (i.e. open space areas and wildlife corridors) into their master planning documents.

Water Quality and Quantity

Past and on-going actions have increased the quantity of water into the Pikes Peak Region. More specifically, water supplies have increased via trans-basin delivery systems, which were subsequently controlled by dams and channels. Additionally, continuing growth and development in the Region has created more impervious surfaces that lead to increased stormwater runoff, erosion, and sedimentation in parts of the watershed. In general, transportation facilities comprise less than 2 percent of impervious surfaces in the Region. Therefore transportation facilities, including the Proposed Action, are a very small contributor to the regional water quality and quantity issues. In addition, all transportation projects must abide by strict permits as well as policy and project-level water quality rules in order to further minimize adverse cumulative impacts to regional water resources.

Wetlands

Wetlands in Colorado have decreased by more than half in the last two centuries due to growth and development, and the Pikes Peak Region is no exception to this trend. Impacted wetlands in the Region may contribute to statewide loss; however most of the direct impacts to wetlands are mitigated for during the 404 permitting process. There is no net loss of wetlands from the Proposed Action.



Noise

Traffic combined with other noise impacts has created cumulative noise impacts in the Region. Noise is expected to increase as growth and development in the Region continue. Noise mitigation, however, is typically established in areas where NAC thresholds are exceeded, including 5 noise wall locations that are associated with the Proposed Action.

Noxious Weeds

The spread of noxious weeds is a recognized threat in Colorado, as indicated by the various regulations to control them. Conversion of habitats containing native vegetation to urban landscapes increases the spread of noxious weeds from disturbance and exposed soil. Thus, noxious weeds will be managed by implementing regional policies as well as on a project level in order to minimize their infestation in the Project Area.

Construction

Growth and development in the Pikes Peak Region continue to consume natural resources, some of which are non-renewable. The Proposed Action will contribute to the regional cumulative depletion of non-renewable natural resources during construction activities.

Relocations and Acquisitions

Growth and development in an area sometimes results in the loss of homes and businesses from the establishment of public facilities, such as roads. The displacement of homes and businesses from transportation projects, including the Proposed Action, is extremely small when compared to the number of existing dwellings and businesses in adjacent neighborhoods and to the increasing supplies of new homes being built in the Pikes Peak Region.



Recreational Trails and Natural Areas

The Pikes Peak Region has a long history of creating and maintaining recreational development and open space. Despite the on-going growth and development in the Region, recreational areas continue to be established and maintained, as indicated by the incorporation of open and recreational spaces in City and County master planning documents. The Proposed Action is contributing to this regional positive cumulative effect by accommodating and integrating trails and bicycle lanes.

Conclusion

The improvements to Woodmen Road will contribute to a noisier city with an increasingly big-city look. The addition of 200,000 new residents in the region will result in continued consumption of prairie land and displacement of wildlife. The amount of impervious surface area will increase, and improved storm water management practices will be implemented to slow further degradation of the water quality and health of riparian habitats in the region. The Proposed Action is part of much larger development trend in the region, but has been designed to avoid, minimize, and mitigate adverse impacts to the extent practicable.

