

## 3.19 Cumulative Impacts

### Introduction

New information on the southern California/Central Coast evolutionarily significant unit (ESU) mountain lion's candidacy status under the California Endangered Species Act (CESA) and the candidate status of monarch butterfly for listing under the Federal Endangered Species Act (FESA) was specifically considered relative to the discussion of cumulative effects in Section 3.19.5.7, Biological and Aquatic Resources in this Revised Draft EIR/Supplemental Draft EIS. The cumulative resource study area (RSA) described in Section 3.19.3.2 of the Draft EIR/EIS for biological and aquatic resources is the same as the regional RSA described in Section 3.7, Biological and Aquatic Resources. As described in Section 3.19.5.7, the cumulative RSA considered a landscape-level analysis of impacts based on ecoregion, watershed, and county boundaries. The cumulative RSA was considered for mountain lion and monarch butterfly and is considered to be appropriate because the landscape-level approach addresses cumulative considerations for both species. Additionally, biologists reviewed the discussion of cumulative impact analysis, specifically considering the mountain lion and monarch butterfly, and found that it is also applicable and appropriate for these species; therefore, minor changes were made to clarify that the cumulative impact analysis is also applicable to mountain lion and monarch butterfly.

Within the discussion of the contribution of the B-P Build Alternatives (including the CCNM and Refined CCNM Design Options) to the loss of suitable habitat for special-status species, Section 3.19.5.7 generally considers effects on all special-status species together (i.e., as one biological resources topic, cumulatively). The discussion of the contribution of the B-P Build Alternatives to the loss of suitable habitat for special-status species, including California annual grassland, oak woodland, and other special-status plant communities would also apply to the monarch butterfly habitats present throughout the cumulative RSA, and the southern California/Central Coast ESU mountain lion within the RSA south of State Route 58 (SR-58), and therefore, no specific changes to the analysis presented in the Draft EIR/EIS in Section 3.19.5.7 are necessary to specifically address mountain lion or monarch butterfly. Section 3.19.5.7 refers back to the mitigation measures in Section 3.7, which now includes mitigation measures to avoid, minimize, and mitigate impacts to mountain lion and monarch butterfly. As noted in Section 3.19.5.7, the mitigation measures ensure that the B-P Build Alternatives would not result in cumulatively considerable contributions to the cumulative impacts on special-status species and habitats. As augmented by the new and revised mitigation measures for mountain lion and monarch butterfly added to Section 3.7, the text and conclusions presented in Section 3.19.5.7 in the Draft EIR/EIS remain accurate. For these reasons, the conclusions related to special-status species in Section 3.19 of the Draft EIR/EIS require no revision to specifically address the mountain lion or monarch butterfly.

Within the discussion of the contribution of the B-P Build Alternatives to the loss of wildlife movement, Section 3.19.5.7 generally considers effects on all affected wildlife together. The discussion of the contribution of the B-P Build Alternatives to the loss of wildlife movement and the magnitude of effects under each of the B-P Build Alternatives remains unchanged with the consideration of mountain lion and monarch butterfly. As noted in Section 3.19.5.7, the mitigation measures ensure that the B-P Build Alternatives would not result in cumulatively considerable contributions to the cumulative impacts to wildlife corridors or wildlife movement. These conclusions are unchanged when considering the addition of mountain lion and monarch butterfly, and therefore the conclusions related to wildlife movement in Section 3.19 of the Draft EIR/EIS require no revision to specifically address the southern California/Central Coast ESU mountain lion or monarch butterfly.

In addition to providing new information about mountain lion and monarch butterfly, the Authority has identified two new mitigation measures to address impacts to wildlife resulting from lighting during construction and during project operation. Section 3.19.5.7 refers back to the mitigation measures in Section 3.7, which now includes these two mitigation measures to avoid or minimize lighting impacts. As augmented by the new mitigation measures for lighting, the text and conclusions presented in Section 3.19.5.7 in the Draft EIR/EIS remain accurate and no revisions to Section 3.19 of the Draft EIR/EIS are required.

### **3.19.5 Environmental Consequences**

#### **3.19.5.7 Biological and Aquatic Resources**

The cumulative impact analysis for biological and aquatic resources evaluates the potential effects of the proposed improvements within the Bakersfield to Palmdale Project Section the specific projects identified in Appendix 3.19-A, and the adjacent HSR project sections (Fresno to Bakersfield and Palmdale to Burbank), which combined constitute the cumulative condition relevant to biological and aquatic resources.

Under the cumulative condition, existing development trends affecting biological and aquatic resources are expected to continue to degrade some natural systems. Development pressure would continue in the RSA, based on adopted general and specific plans (Section 3.13, Station Planning, Land Use, and Development, and Section 3.18, Regional Growth). Low-density development on the urban fringe would likely continue and potentially result in the loss of habitat in these currently undeveloped areas; this would include high-value habitat such as wetlands and riparian areas. Current and future conservation easements on properties near urban boundaries would protect some areas. Impacts on biological and aquatic resources would be avoided, reduced, and, in accordance with permit requirements for the development projects, mitigated through the preservation of compensatory habitat and restoration of disturbed sites. These projects would continue to have some impact on the wildlife, wetlands, native vegetation, oak woodland, and other biological resources in the RSA.

Changes in crop production and rotation would continue to improve or degrade habitat conditions for species that forage or nest on farmland. Widening of existing transportation corridors or new transportation improvements could result in additional impacts on biological and aquatic resources. Each of these improvement projects would be subject to environmental review, including evaluation of the impacts of habitat loss, habitat degradation, and “take” of special-status species. Impacts on biological and aquatic resources would be mitigated as part of those projects, including avoidance of “take” during construction, minimization of impacts during construction and operation, restoration of disturbed sites, and preservation of compensatory habitat.

A cumulative impact on biological resources that would be significant under CEQA would occur if the proposed improvements within the Bakersfield to Palmdale Project Section, in combination with cumulative projects, would substantially impact wildlife movement corridors, aquatic resources, and special-status plant and wildlife species.

#### **Construction**

##### ***Wildlife Movement Corridors***

Construction of the proposed improvements within the Bakersfield to Palmdale Project Section and cumulative projects such as High Desert Corridor (LA-4) and Northwest 138 Corridor Improvement Plan (LA-5) could result in construction activities and placement of wildlife movement barriers in natural lands such that they would interfere with the movement of wildlife species. Opportunities for wildlife movement in the cumulative RSA would be diminished because the HSR project is a linear project, spanning hundreds of miles, which could affect known and modeled wildlife movement corridors. Similarly, the High Desert Corridor and Northwest 138 Corridor Improvement Plan are linear projects that could also restrict wildlife movement corridors.

As discussed in Section 3.7, Biological and Aquatic Resources, the proposed improvements within the Bakersfield to Palmdale Project Section would affect known and modeled wildlife movement corridors during the construction period from placement of temporary barriers (e.g., temporary fencing), construction staging areas, increased vehicular traffic, or construction laydown within natural lands and known linkages. Cumulative projects could have similar effects during their respective construction periods. The proposed improvements within the Bakersfield to Palmdale Project Section include mitigation to reduce impacts in wildlife movement corridors by avoiding construction fencing where the tracks are elevated (e.g., viaducts or bridges), avoiding ground disturbing activities during nighttime hours, and shielding nighttime lighting. Impacts would still occur and would be temporary, lasting from 1 to 2 months, up to 3 years during construction. As transportation and development projects are generally subject to environmental review under CEQA and/or NEPA, cumulative development would similarly

incorporate appropriate mitigation measures to reduce potential impacts on wildlife movement corridors. Impacts from cumulative projects would also be temporary.

The proposed improvements within the Bakersfield to Palmdale Project Section include IAMFs that would require the creation of wildlife-crossing features at frequent intervals and along sensitive areas to facilitate wildlife movement and minimize or avoid impacts on wildlife corridors. The incorporation of these measures would reduce the impacts of interfering with established wildlife movement corridors and other impacts relating to the potential for isolation of populations. By including wildlife-crossing features in the project design, the proposed improvements within the Bakersfield to Palmdale Project Section are expected to maintain existing wildlife movement corridors within the project footprint. Cumulative projects, including the High Desert Corridor and Northwest 138 Corridor Improvement Plan, could restrict wildlife movement. However, these projects would be subject to environmental review and would be required to address impacts on wildlife movement corridors through incorporation of design features and/or mitigation measures. Additionally, while the proposed improvements within the Bakersfield to Palmdale Project Section would impact wildlife movement corridors in the east-west direction, these cumulative projects would impact wildlife movement corridors in the north-south direction. Therefore, these projects would not result in cumulative effects in the same direction of travel. Building structures could also hinder movement depending on their location and size, but these facilities are generally located in previously developed areas, and wildlife would probably avoid such structures by moving around them.

### ***Aquatic Resources***

Construction activities associated with cumulative commercial and residential development projects, including numerous proposed developments in Bakersfield, Keene, Tehachapi, Rosamond, Lancaster, and Palmdale, are likely to result in construction of culverts in streams, armoring of channels, removal of riparian vegetation, and placement of fill in jurisdictional aquatic resources near similar impacts that result from construction of the proposed improvements within the Bakersfield to Palmdale Project Section. Projects in the Rosamond and Lancaster areas could also alter surface hydrology (sheet flow) and result in filling of claypan features. These projects include the NW 138 corridor improvement plan (LA-5), an automotive recycling yard in Lancaster (L-5), a single-family residence subdivision in Lancaster (L-10), and the Amargosa Creek Specific Plan (L-1), all of which have the potential to influence desert streams and claypans. The Amargosa Creek Specific Plan has already influenced Amargosa Creek based on aerial photographs that show a major wash has been undergrounded at that location. Tables 3.7-8, 3.7-9, and 3.7-10 in Section 3.7, Biological and Aquatic Resources, show the effects of the proposed improvements within the Bakersfield to Palmdale Project Section on aquatic resources in the RSA. Alternatives 1 and 3 would permanently impact the largest areas of aquatic resources (when measured from the ordinary high water mark), with 56.9 and 56.6 impacted acres, respectively. Alternative 2 would follow with 54.7 impacted acres. Alternative 5 would permanently impact the smallest area of aquatic resources, with 53.3 impacted acres. The CCNM Design Option would permanently impact an additional 0.1 acres and the Refined CCNM Design Option would permanently impact an additional 1.81 acres.

The U.S. Army Corps of Engineers (USACE) issued an approved jurisdictional determination for the HSR Bakersfield to Palmdale Project Section, excluding the LGA. The approved jurisdictional determination evaluated waters by the major watersheds they would affect, including the Caliente Creek Watershed, Proctor Lake Watershed, Oak Creek Watershed, and Lake Rosamond Watershed. The USACE determined that although many features in these areas meet federal technical criteria that define wetlands and other waters of the U.S., these features are not jurisdictional under the Clean Water Act. The waterbodies that would be affected by the proposed improvements within the Bakersfield to Palmdale Project Section, excluding the LGA, are all isolated waters, meaning that they lack links to navigable waters or interstate commerce. Because these waters are isolated, the USACE will not assert jurisdiction under Section 404 of the Clean Water Act over any areas that would be delineated as wetlands or waters of the U.S.

The USACE has issued a preliminary jurisdictional determination for the LGA portion of the Bakersfield to Palmdale Project Section. The preliminary jurisdictional determination evaluated waters by the major watersheds they would affect, including the Tulare-Buena Vista Lakes Basin Watershed, Upper Poso Basin Watershed, and Middle Kern-Upper Tehachapi Grapevine Basin Watershed. The USACE concurred in the preliminary jurisdictional determination that approximately 0.37 acres of “other waters”

present in the LGA portion of the Bakersfield to Palmdale Project Section are potential jurisdictional aquatic resources (waters of the U.S.) regulated under Section 404 of the Clean Water Act. No wetlands were identified. Other waters of the U.S. were dominated by man-made features (canals/ditches and retention/detention basins) that are generally used for agricultural purposes. The only natural feature in the LGA area is the Kern River (seasonal riverine). Therefore, the proposed improvements within the Bakersfield to Palmdale Project Section would result in an impact on Section 404 jurisdictional waters in the LGA portion of the Bakersfield to Palmdale Project Section. However, the proposed improvements within the Bakersfield to Palmdale Project Section would comply with all conditions of the approved jurisdictional determination and implement measures to reduce impacts to aquatic resources, including BIO-IAMF#4, which requires maintenance personnel attend Worker Environmental Awareness Program training and certify that they understand the regulatory agency requirements and procedures necessary to protect biological and aquatic resources. Therefore, the proposed improvements within the Bakersfield to Palmdale Project Section would not contribute to a cumulative impact to waters of the U.S. under the jurisdiction of the USACE. Potential impacts on jurisdictional waters governed by other agencies, such as the State Water Resources Control Board and the California Department of Fish and Wildlife, are discussed below.

Construction of the proposed improvements within the Bakersfield to Palmdale Project Section, in combination with cumulative projects, may result in increased erosion, siltation, and runoff in other aquatic resources (e.g., seasonal wetlands, riparian areas, and streams). Chemical spills or leaks of fuel, transmission fluid, lubricating oil, or motor oil from construction equipment could also contaminate waters and degrade their quality. Construction activities could result in spread of noxious aquatic and riparian weeds. IAMFs would be implemented, however, to reduce these effects. Measures that mitigate for impacts would be required for the Tehachapi Creek watershed. Mitigation for impacts on claypan areas near Lancaster and Rosamond would also be required in the Antelope Valley watershed to ensure impacts on these systems are reduced appropriately. Mitigation measures identified in Section 3.7.7, Mitigation Measures, of Section 3.7, Biological and Aquatic Resources, would compensate for permanent and temporary impacts on jurisdictional waters through creation, restoration, enhancement, and preservation of wetlands, which would prevent reduction of or degradation of jurisdictional wetlands. These features would also minimize turbidity and siltation and ground-disturbing activities by incorporating a dewatering plan and construction site best management practices.

Construction of the proposed improvements within the Bakersfield to Palmdale Project Section, in combination with cumulative projects, would not impact areas where aquatic resources are constructed features, including canals, ditches, and detention basins. In these areas, the project design incorporates facilities that would continue to convey the appropriate volume of flow in canals. Impacted stormwater ditches and detention basins would be relocated and constructed to appropriately accommodate stormwater. Similarly, agricultural ditches and detention basins would be relocated and sized to serve remaining fields once the project is operational, retaining the functions of these features post-project. Additionally, cumulative projects would be required to comply with similar conditions of approval, thereby reducing their potential impacts. Constructed drainage features would continue to convey the appropriate volume of flow.

### ***Special-Status Plant and Wildlife Species***

Construction of the proposed improvements within the Bakersfield to Palmdale Project Section and cumulative projects would result in cumulative impacts on special-status plant and wildlife species as a result of habitat loss, habitat fragmentation, introduction of invasive species, and harassment from increased noise and human disturbance. This includes the monarch butterfly, which is now a candidate for listing under the Federal Endangered Species Act (FESA) due to significant population declines, and the southern California and Central Coast evolutionary significant unit mountain lion (south of SR-58), which is now a candidate for listing as Threatened under the California Endangered Species Act (CESA) due to the continued fragmentation and loss of habitat. Construction of cumulative development and transportation projects such as the Tehachapi Walmart project (T-11), Lockheed Martin solar facility (P-5), High Desert Corridor (LA-4), and Northwest 138 Corridor Improvement Plan (LA-5), combined with the proposed improvements within the Bakersfield to Palmdale Project Section and adjacent HSR project sections (Fresno to Bakersfield and Palmdale to Burbank), would contribute to the net loss of special-status plant and wildlife species. Additionally, construction of these projects could result in land

disturbance, increased vehicle traffic, and topography alteration, which could lead to disturbance, injury, or mortality of various special-status wildlife species and their respective habitats.

These species are protected by law and any planned development or transportation projects would be required to incorporate measures to minimize disturbance of special-status species. These measures could include conducting protocol-level surveys; salvaging, relocating, and propagating identified species; and restoring potential habitat areas after construction. Additionally, proposed improvements within the Bakersfield to Palmdale Project Section include requirements that would avoid or minimize many of the direct and indirect impacts associated with construction of the HSR system. For example, the IAMFs and mitigation measures identified in Section 3.7, Biological and Aquatic Resources, include measures to delineate environmentally sensitive and restrictive areas to avoid and minimize the potential direct disturbance of special-status species during construction. This would minimize the indirect impact on special-status plants and other native vegetation occurring outside the project footprints by requiring the cleaning of construction equipment and incorporating a weed control plan to minimize the spread of invasive species. Other planned development and transportation projects would have in place similar measures to minimize impacts. While these measures would minimize project-specific impacts, they would not completely avoid destruction of habitat or loss of individual members of the species. These effects would combine in the RSA to result in a cumulative impact that would be significant under CEQA.

As described in Section 3.7, Biological and Aquatic Resources, construction of the proposed improvements within the Bakersfield to Palmdale Project Section would result in the removal of vegetation for the placement of permanent infrastructure during construction, the removal of vegetation in temporary impact areas and from construction vehicles, and the disturbance of vegetation from personnel (i.e., trampling, covering, and crushing individual plants, plant populations, or suitable potential habitat for special-status species). The contribution of the proposed improvements within the Bakersfield to Palmdale Project Section to this cumulative impact would vary depending on the alternative and the type of habitat affected by each alternative. Mitigation measures would require protocol-level surveys to identify individual specimens that could be avoided, relocated, or propagated. They would also involve the preparation and implementation of a habitat mitigation plan to offset impacts on special-status species by creating, restoring, enhancing, and/or preserving habitat that provides the same function and value as that habitat permanently affected by construction. With the implementation of these mitigation measures, the incremental contribution from construction of the proposed improvements within the Bakersfield to Palmdale Project Section would not be cumulatively considerable.

### ***CEQA Conclusion***

Construction of the proposed improvements within the Bakersfield to Palmdale Project Section and cumulative projects would result in a less than significant cumulative impact on wildlife movement corridors because construction activities would be short-term and mitigated as required based on environmental review. Additionally, incorporation of project design features and mitigation measures such as wildlife-crossing features would facilitate wildlife movement and minimize or avoid impacts on wildlife movement corridors over the long term. The proposed improvements within the Bakersfield to Palmdale Project Section's incremental contribution to this impact would not be cumulatively considerable, and no additional mitigation is required.

Implementation of the proposed improvements within the Bakersfield to Palmdale Project Section under any of the B-P Build Alternatives would result in impacts on jurisdictional aquatic resources and special-status plant and wildlife. With implementation of the project-level mitigation measures identified in Section 3.7.7, Mitigation Measures, of Section 3.7, Biological and Aquatic Resources, the proposed improvements in the Bakersfield to Palmdale Project Section would result in less than significant impacts to jurisdictional aquatic resources and special-status plants and wildlife. Therefore, a cumulatively considerable contribution to significant cumulative impacts would not occur during construction.

### **Operation**

#### ***Wildlife Movement Corridors***

During operations, maintenance activities of the proposed improvements within the Bakersfield to Palmdale Project Section are not expected to affect wildlife movement corridors because activities would be dispersed over time and location, diluting potential impacts. Impacts on wildlife movement corridors



from operations would include disturbance from the passage of trains (noise, motion, and startle effects). As discussed in Section 3.7.6.5, Operation-Period Impacts, of Section 3.7, Biological and Aquatic Resources, the level of impact caused by a particular alternative would be dependent on the number, type, and length of wildlife corridor crossed by the alternative, as well as the frequency of passing trains. In general, for the proposed improvements within the Bakersfield to Palmdale Project Section, these potential effects would be limited as a result of the short duration of train passes and the infrequent use of the wildlife crossings by wildlife. Therefore, while disturbance to wildlife corridors from operations could combine with other regional projects' impacts on disrupt normal movement within wildlife corridors, the proposed improvements within the Bakersfield to Palmdale Project Section's contributions to these cumulative impacts would not be cumulatively considerable.

### ***Aquatic Resources***

Operation of the proposed improvements within the Bakersfield to Palmdale Project Section would require maintenance and vehicular activity near jurisdictional aquatic resources. The IAMFs identified in Section 3.7, Biological and Aquatic Resources, require maintenance personnel to attend worker environmental awareness program training to understand and identify sensitive biological resources and associated regulatory requirements. With these measures in place, the likelihood of accidental spills, introduction of contaminants/pollutants, and degradation of jurisdictional waters would be minimized. Therefore, it is not anticipated that the Bakersfield to Palmdale Project Section would contribute to a cumulative impact during operations.

### ***Special-Status Plant and Wildlife Species***

Operation of the proposed improvements within the Bakersfield to Palmdale Project Section would avoid or minimize the potential for impacts from maintenance activities with the potential to trample or crush plant communities and wildlife. These impacts would be avoided through the IAMFs identified in Section 3.7, Biological and Aquatic Resources, which would require that maintenance personnel attend worker environmental awareness program training to understand and identify sensitive biological resources and associated regulatory requirements. Additionally, the proposed improvements within the Bakersfield to Palmdale Project Section would provide wildlife crossings and would not include nighttime lighting. These measures would avoid and/or minimize the potential for trampling or inflicting other destruction of special-status plant species or habitat. They would also minimize the potential for impacts on special-status wildlife species (e.g., mountain lion, deer, and other species) by training maintenance personnel to understand environmental compliance issues. Therefore, it is not anticipated that the proposed improvements within the Bakersfield to Palmdale Project Section would contribute to a cumulative impact.

### ***CEQA Conclusion***

Operation of the proposed improvements within the Bakersfield to Palmdale Project Section would not contribute to cumulative impacts on wildlife movement corridors because activities would be dispersed over time and location, diluting potential impacts. Additionally, operations of the proposed improvements within the Bakersfield to Palmdale Project Section would avoid or minimize the potential for impacts from maintenance activities to jurisdictional aquatic resources, special-status plant species, and special-status wildlife species through implementation of IAMFs that require maintenance personnel to attend worker environmental awareness program training, and therefore would not contribute to cumulative impacts on these resources.