3.19 Cumulative impacts

This Revised/Supplemental Draft EIR/EIS reflects changes identified in Section 3.7, Biological and Aquatic Resources.

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3.19.6 Cumulative Impacts Analysis

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3.19.6.6 Biological and Aquatic Resources

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Cumulative Condition

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Special-Status Species

Past and present development in the cumulative RSA has resulted in the conversion of large areas of freshwater and alkali wetlands (including vernal pool complexes), valley grasslands, alkali scrub, and riparian woodlands (including California sycamore woodland) that provide habitat for native plants and wildlife to residential, commercial, industrial, and agricultural uses. The historical trend of converting as well as degrading these natural land cover types has compromised the ecological integrity of the region[1] and resulted in the listing of multiple plant and wildlife species under the FESA and the California Endangered Species Act (CESA) and the designation of many more as special-status species (e.g., California Department of Fish and Wildlife [CDFW] species of special concern). Most recently, the monarch butterfly became a candidate for listing under the FESA due to significant population declines. Conversion of agricultural lands to residential, commercial, or industrial development also reduces habitat for special-status species that have adapted to and regularly forage in such areas (e.g., Swainson's hawk). Most recently, the continued fragmentation and loss of habitat has caused the California Fish and Game Commission to consider the mountain lion (southern California and Central Coast evolutionarily significant unit) as a candidate for listing under CESA.

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Operations of these cumulative projects, including HSR, could result in additional impacts on special-status species. Operation of transportation projects could result in direct injury or mortality of individuals of special-status species through maintenance and mowing of roadside embankments and through vehicle and train strikes. Indirect habitat degradation near developed sites could result from factors such as nighttime lighting that illuminates adjacent habitat, herbicides applied for vegetation management drifting into adjacent habitat, and trash blown from nearby residential and commercial areas. Train passbys could disturb resident individuals or populations (e.g., breeding, nesting, and foraging waterbirds), driving birds from productive foraging and resting areas and resulting in an impaired energy budget and potentially in reduced reproductive success. Such disturbance could also degrade preferred nesting habitat. Because the loss of individuals from populations of special-status species or the degradation of important habitat would reduce the viability of such populations and potentially lead to their extirpation, these impacts would exacerbate regional population declines and thus would constitute a cumulative impact on special-status species within the cumulative RSA. However, because operations would potentially affect a wide array of wildlife taxa and because such effects are primarily associated with wildlife moving across or through the project footprint (e.g., mountain lion, deer, and other species), these impacts are addressed in the discussion of Wildlife Corridors.

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[1] Ecosystems have ecological integrity when their native components—abiotic components, biodiversity, and ecosystem processes—are intact.

Wildlife Movement

As described in Section 3.7 and the Wildlife Corridor Assessment (Appendix C of the Biological and Aquatic Resources Technical Report [Authority 2019]), the cumulative RSA contains several wildlife corridors of regional importance, including two that have been identified by the CDFW and local stakeholders as particularly important: the Santa Cruz Mountains to Diablo Range linkage across Coyote Valley in Santa Clara County and the GEA IBA in Merced County. Ongoing development and transportation projects have created new barriers to wildlife movement, reducing habitat connectivity for wildlife throughout the region.

Construction of cumulative projects, including the HSR project, would result in temporary and permanent impacts on wildlife corridors. Examples of planned development projects that would affect wildlife corridors include The Villages of Laguna San Luis Community Plan and Fox Hills Community Specific Plan in Merced County, both of which would reduce habitat connectivity for San Joaquin kit fox and other terrestrial wildlife species along the western edge of the San Joaquin Valley. Most of the planned transportation projects consist of improvements to existing roads or railroads that already serve as barriers to wildlife movement. Projects that would introduce new barriers to the landscape include the new SR 152 alignment between SR 25 and SR 152 in the Soap Lake floodplain (Santa Clara County), the Fairview Road/Memorial Drive East-West Arterial north of Hollister (San Benito County), the SR 152 Los Banos Bypass (Merced County), and the HSR Central Valley Wye. Construction impacts on wildlife movement are associated with ground-clearing and other physical work necessary to construct the developments, roads, or road improvements. Construction of cumulative projects and the HSR project would permanently affect regional and local wildlife movement by introducing new infrastructure, buildings, tracks, and track systems to areas through which wildlife can currently move freely (e.g., across an expanse of open grassland or agricultural field) but would have to move around after the introduction of these projects. Barriers to movement and habitat fragmentation reduce resource availability and isolate breeding groups; both conditions ultimately lead to reduced reproductive success and inbreeding depression. These effects remain true for mountain lion; genetic health issues related to fragmentation of habitat and barriers to movement have been cited as a significant threat to mountain lion population persistence (Center for Biological Diversity 2019). As discussed in Section 3.7, the project falls within the central coast north (CC-N) subpopulation (the most northern subpopulation in the ESU), and the project is adjacent to the central coast central (CC-C) subpopulation, as described in the petition for listing (Center for Biological Diversity 2019). The petition describes that most of the populations comprising the ESU have low genetic diversity and effective population sizes[2] and that the divergence of the genetic subpopulations in the ESU is likely the result of habitat fragmentation caused by roads and development in the region. The project would contribute to these gene flow issues, especially between the CC-C and CC-N subpopulations within the ESU. The Authority would implement mitigation that includes avoiding and minimizing temporary impacts on wildlife movement (BIO-MM#76), modifying project design to accommodate wildlife movement (BIO-MM#77a and BIO-MM#78), monitoring the success and providing adaptive management for crossings (BIO-MM#77b), and protecting land in the Santa Cruz to Gabilan Wildlife Linkage or the Soap Lake 10-year floodplain (BIO-MM#79). While mitigation implemented as part of the project would reduce temporary and permanent impacts on wildlife movement corridors during construction, it would not eliminate the impacts. These impacts, in combination with those of planned and future projects, would result in a cumulative impact.

Operation of the planned projects, including the HSR project, would intermittently but permanently affect wildlife movement through noise, vibration, visual stimuli, lighting, train strike, electrocution, entrapment in OCS poles, and collision with power lines or the OCS. Some of the nonphysical impact mechanisms that can interfere with movement (e.g., noise, visual disturbance) pertain equally to disturbance of resident individuals or populations (e.g., breeding, nesting, and foraging waterbirds). For example, noise, visual stimuli, and vibration from moving trains may startle

[2] Effective population size generally refers to the breeding adults in a population, recognizing that not all adult animals in a population may breed.

individuals moving near the rail alignment, potentially causing abrupt changes in movement patterns and avoidance of areas near the alignment. Because mapped corridors and other undeveloped areas are more hospitable to wildlife, such areas are likelier than more developed areas to support wildlife movement as well as resident individuals and species. Train passbys could disturb resident individuals or populations (e.g., breeding, nesting, and foraging waterbirds), driving birds from productive foraging and resting areas and resulting in an impaired energy budget and potentially in reduced reproductive success. Such disturbance could also degrade preferred nesting habitat. Train strikes, electrocution, and entrapment could cause injury and mortality to individuals foraging near or resting on HSR infrastructure, including the Mud Slough area of the GEA in San Joaquin Valley (an important migratory and wintering habitat for waterfowl and shorebirds in western North America). Introduction of noise, artificial lighting, and new visual stimuli can also reduce the habitat suitability and affect movement of terrestrial wildlife species, primarily mammals, near the HSR project. Mitigation would be implemented to minimize permanent intermittent impacts on wildlife movement through incorporation of exclusion features for terrestrial species and deterrent and diversion features for avian species (BIO-MM#80, BIO-MM#81, BIO-MM#82, BIO-MM#83), as well as measures to avoid and minimize lighting impacts (BIO-MM#89). While mitigation would reduce intermittent operations impacts on wildlife corridors, it would not eliminate such impacts. These impacts, in combination with those of other cumulative projects, would result in a cumulative impact on wildlife movement.

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CEQA Conclusion

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Wildlife Movement

Construction of any of the project alternatives, in combination with planned projects in the cumulative RSA, would result in a significant cumulative impact under CEQA with respect to wildlife movement because such activities would interfere with wildlife movement across several known wildlife corridors as well as other portions of the alignment. This conclusion would apply to the mountain lion, recently listed as a candidate under CESA. The project's contribution to this cumulative impact would be considerable because it would increase the impermeability of wildlife movement in the RSA as a result of cumulative projects as well as the level of disturbance to resident wildlife near the project alignment. While mitigation measures are proposed to reduce these impacts, there would still be substantial interference with wildlife movement. The project-specific impacts would combine with those related to construction of other planned projects such that there would be a new cumulative impact on wildlife movement. There is no additional feasible mitigation.

Project operations, in combination with planned projects in the cumulative RSA, would result in a significant cumulative impact under CEQA with respect to wildlife movement because the project would cause intermittent but permanent disturbance of migratory waterfowl and shorebirds in the GEA and would interfere with the movement and dispersal of mountain lions from noise, artificial light, and other factors, including considerations of gene flow between subpopulations. The HSR project is the sole contributor to this impact, which would therefore be considerable. While mitigation measures are proposed to reduce this impact, they would not entirely eliminate the impact in some of the most important migratory and wintering habitat for waterfowl and shorebirds in western North America and within important genetic dispersal areas for mountain lion. There is no additional feasible mitigation.

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