9. Open Space and Conservation

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Introduction

San Bernardino is known for the diversity of its natural landscape. Framed by the San Bernardino Mountains, the City is known for stunning vistas and viewsheds of the entire region. The Santa Ana River, Lytle Creek, and other waterways serve to replenish aquifers that supply water. The mountains and watercourses provide rich habitat for wildlife. The City's landscape is also rich in mineral deposits that are important to many local and regional industries.

San Bernardino's landscape confers multiple benefits—including ecological, environmental, and economic—to the community. These benefits include clean air, water, and energy resources for the community. However, these benefits can be lost and are not always replaceable. Therefore, to ensure that the City's natural landscape benefits future generations, the City must take careful actions to manage, preserve, protect, and restore these assets.

San Bernardino strives to ensure that demands on natural resources today do not compromise the needs of tomorrow. These resources are valued, and the strategies and policies in this element will preserve and protect them. The City's efforts to conserve, preserve, and steward these natural assets will ensure that these resources benefit future residents who will call San Bernardino home.

Mountains overlooking Belvedere Neighborhood

Regulatory Framework

This element covers two related topics authorized and required by the California Government Codes: **open space** resources, which is authorized by Section 65560 and **conservation**, which is authorized by Section § 65302(d)(1). The Open Space and Conservation Element describes a city's natural resources: land, water, ecosystem, open spaces, and living resources and the benefits of these resources. And, because these resources are not replaceable, this element is intended to protect and preserve them for the public's benefit.

Chapter Organization

Consistent with state law, the Open Space and Conservation Element contains the following five topics:

- Natural environment, including mountains, rivers, hillsides, and features that provide home to wildlife and habitat or have historical, archaeological, or cultural significance.
- Opportunities to preserve, enhance, and expand a network of open space to support habitat, recreation, natural resources, cultural resources, water management, and aesthetics.
- Water resources, including the reclamation of land and waters, prevention and control of water pollution, and the protection of waterways and watersheds.
- Mineral resources, including their location, quantity, and quality (including rock, sand, and gravel) as well as the prevention and correction of the erosion of important soils.
- Air quality protection and stewardship of air resources in the community to promote a healthier future for San Bernardino residents.

Relationship with other Elements and Plans

The Open Space and Conservation Element is related to other elements of the general plan. The Land Use Element sets forth land use designations for open spaces, and the Park, Recreation, and Trails Element establishes the locations for parks. This element is also related to and supports regional conservation plans, such as the San Bernardino Regional Community Investment Strategy, and habitat conservation plans prepared by regional, state, and federal agencies.

Achieving the Vision

The General Plan vision recognizes that San Bernardino has many distinctive qualities that set it aside from other cities in the region. The distinctive qualities are not only its physical buildings, but the City's natural and scenic beauty, its waterways and topography, and its water and mineral resources. The City is also home to habitat and wildlife, some of which are sensitive and protected under state and federal law. San Bernardino's supply of water and mineral resources is also used to meet the needs of residents and business.

All cities are under pressure to develop due to population growth and the regional economy. As San Bernardino continues to develop, the pressure to convert or encroach into natural resources will increase. It is therefore vital to remember that the preservation and careful management of the City's natural resources will enhance the social, physical, environmental, and economic quality of life for residents, reinforcing the City's vision to create opportunities for the future.

The Open Space and Conservation Element is responsive to the General Plan vision because it strives to balance the competing interests of the built and natural environment. Specifically, the element furthers the vision by providing a policy framework that:

- Preserves unique or significant natural features of the city—hillsides, waterways, and other topographical features.
- Minimizes adverse impacts to biological resources from development—e.g., plants, animals, and natural features.
- Protects and supports the reintroduction of native plants and habitat in designated conservation or sensitive areas.
- Manages the City's water resources to provide a reliable supply of water for residents, businesses, and the environment.
- Utilizes mineral resources efficiently while ensuring that adverse current and future impacts are mitigated.
- Enhances quality of life by reducing harmful emissions and maintaining air quality.

The following provides the planning context, goals, and policies to achieve the City's vision for open space and conservation.

Planning Context

San Bernardino's natural setting—its topography, rivers, soils, and other natural features—creates the context for understanding the resources available for open space and conservation planning.

Topography

San Bernardino lies on a gently sloping lowland flanked by the San Bernardino Mountains on the northeast and east, which rise to an elevation exceeding 10,000 feet above mean sea level (amsl). The City is flanked by the Blue Mountains and Box Springs Mountain to the south and San Gabriel Mountains to the northwest. These features provide a stunning visual backdrop to the community, offering panoramic viewsheds as well as habitat for plant and animal species.

Views from Badger Canyon

Distinguishing features of San Bernardino's northern landscape include Badger Hill, north of Cal State San Bernardino, which rises to 1,850 amsl and overlooks the broader valley floor. Similarly, Arrowhead Springs, home to the Arrowhead Springs Hotel, sits at 2,000 to 3,000 feet amsl above central San Bernardino, overlooking the city. On the City's northeastern border is the Yuhaaviatam of San Manuel Nation (formerly named the San Manuel Band of Mission Indians Reservation), sitting at 2,700 feet amsl.

The City is situated on an alluvial fan, underlain with soils that flowed from the mountains to the valley floor by Lytle Creek, Cajon Creek, Warm Creek, East Creek, and West Twin Creeks. Most of the City's developed environment rests on this valley floor at an elevation of 1,000 feet amsl. However, even on the valley floor, notable topographic features include the Shandin Hills, which rise to 1,750 feet amsl, and Perris Hills, which rise to 1,300 feet amsl.

From the valley floor, the canyons, hills, and ridgelines that frame San Bernardino are clearly visible to residents. Prominent hills offering vistas include Badger Hills, Shandin Hills, Kendall Hill, and Perris Hill. While the City does not have designated scenic corridors, several roads offer vistas of the City. Most notably, Waterman Avenue, named after San Bernardino resident and former governor of California, turns into Highway 18 as it enters the national forest.

Waterway Features

San Bernardino's waterways are considered sensitive resources and provide significant opportunities for planning and conserving open space resources in the City. The Santa Ana River, Lytle Creek, City Creek, and East Twin Creek are some of the main waterways that cross San Bernardino. Numerous channels, basins, and small streams stem from the main Santa Ana River tributary.

Though a comprehensive aquatic resources study has not been completed, blue-line streams flow in canyons throughout the mountains and foothills of the San Bernardino Mountains.

Waterways in San Bernardino

- Cable Creek
- East Twin Creek
- Meyers Creek
- Bailey Canyon
- Borea Canyon
- Devil Canyon
- Badger Canyon
- Sand Creek
- Sycamore Canyon
- Cook Canyon
- West Twin Creek
- City Creek

Various canyons and drainages emanate from the San Bernardino Mountains and drain toward the valley. Riparian resources, including wetlands along these drainages, potentially fall under the jurisdiction of the US Army Corps and the California Department of Fish and Wildlife. In addition, the east branch of the State Water Project's California Aqueduct traverses the northwestern portion of the City.

Within the northwest portion of San Bernardino are features that have been modified for flood control purposes, including reservoirs, flood control basins, and percolation basins. Percolation basins include the Devils Canyon, Sweetwater, West Badger, Sycamore, Wiggins, and Waterman basins. In addition, the Santa Ana River feeds conservation projects adjacent to and southeast of the City.

Figure OSC-1 shows the location of major topographical features and watercourses in San Bernardino.

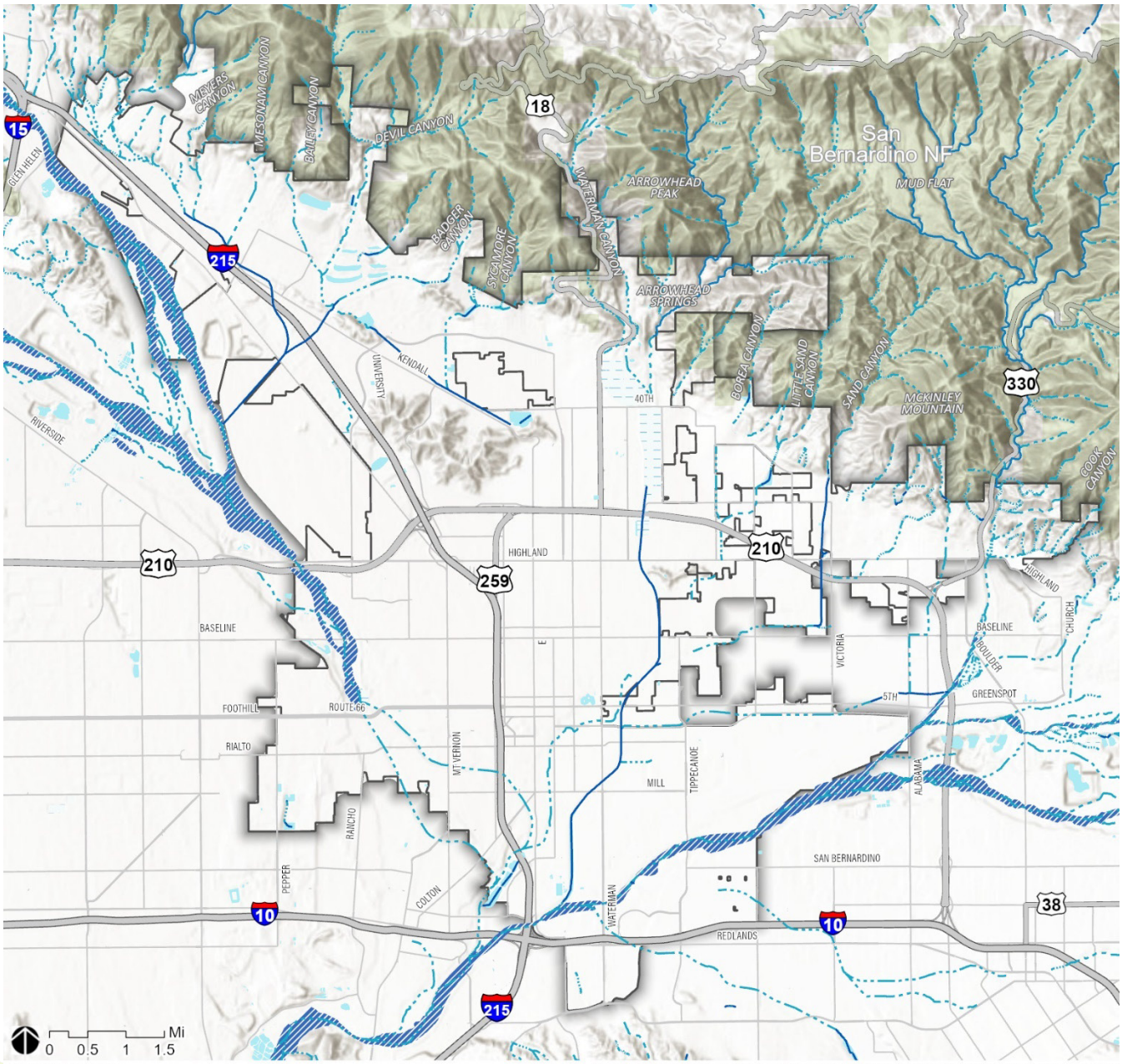
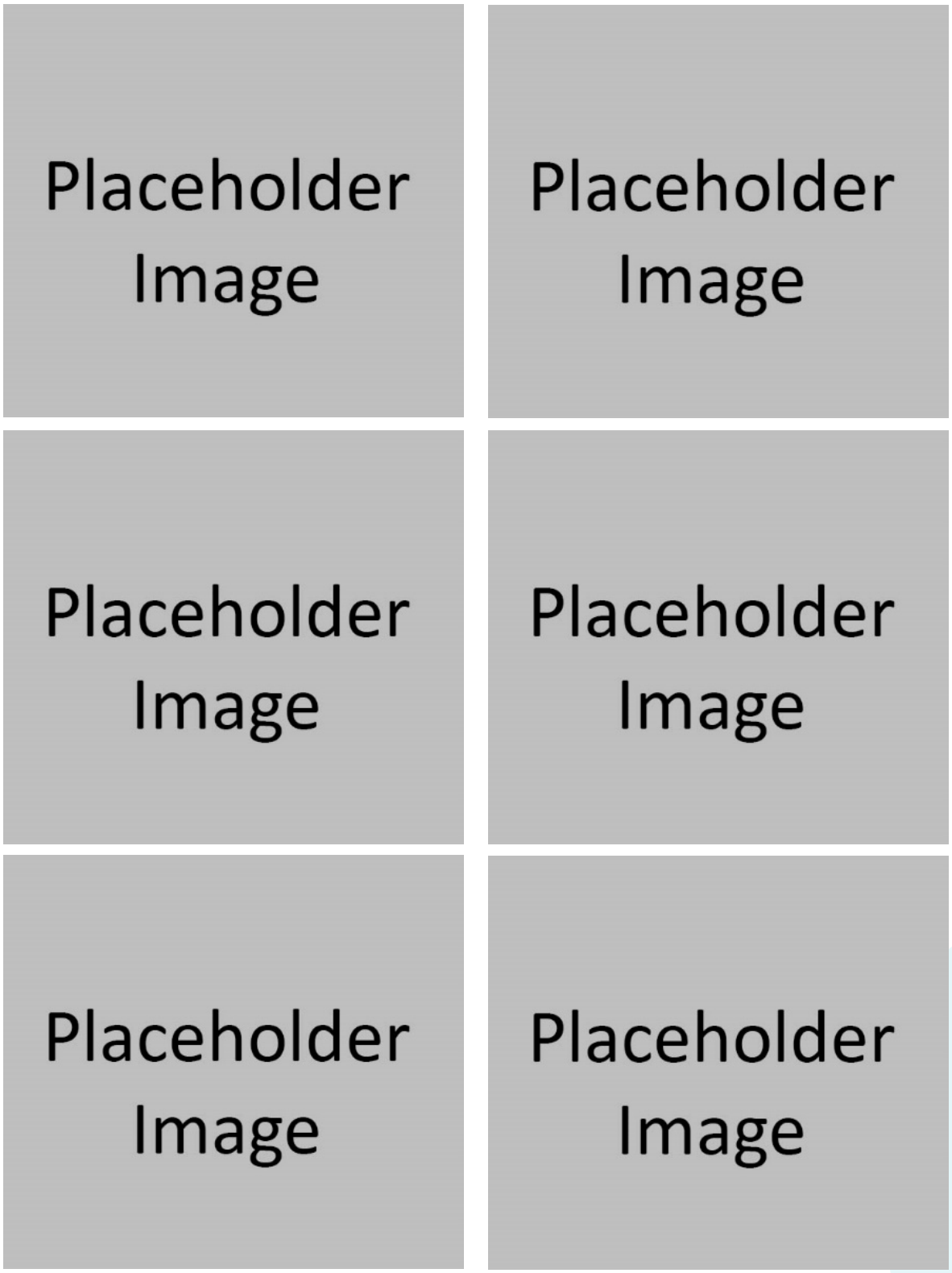


Figure OSC-1 San Bernardino's Natural Setting



Collage of San Bernadino Images-pending

Goals and Policies

San Bernardino's natural setting—its topography, rivers, soils, and other natural features—creates the context for setting for goals and policies to preserve and steward its natural features and resources.

Natural Features

San Bernardino's topography, which rises from the Valley floor to 3,000 feet amsl offers stunning panorama views of the community. From virtually any location in the community, residents can enjoy views of the surrounding canyons, hills, ridgelines, and landscape features. Notable scenic spots include Badger Hills, Shandin Hills, Kendall Hill, and Perris Hill. Though San Bernardino lacks official scenic corridors, roads like Waterman Avenue as it climbs into the national forest offer vistas of the City and its natural surroundings.

Visual resources, such as the hills that establish a dramatic visual backdrop to the City, should be thoughtfully integrated into the ever-developing urban fabric, with particular focus on preserving significant ridgelines and other unique formations to ensure that future generations may enjoy the City's distinctive vistas. Areas that could benefit from sensitive treatment of the land include: Kendall Hills, San Bernardino Mountains, the hillsides adjacent to Arrowhead Springs, Lytle Creek Wash, East Twin Creeks Wash, the Santa Ana River, Badger Canyon, Bailey Canyon, and Waterman Canyon.

Although dominated by the Cajon Creek and Santa Ana River, the City has more than a dozen waterways that emanate from the mountains and flow downward into the community. Preserving the integrity of these streams is critical as many of them are home to common and sensitive plants, birds, and animal species. Both the Cajon Creek and Santa Ana River also provide opportunities for mineral extraction, namely gravel and sand that are used for road construction projects. As result, the General Plan 2050 must balance development and/or economic interests with environmental conservation priorities.

Goal OSC-1 Natural Features

Preserve natural features, hillsides, and waterways that are characteristic of San Bernardino's natural setting and provide opportunities for open space, habitat, and plant and animal species.

Policies

OSC-1.1 **Natural terrain**. Preserve the integrity of natural features of the city, including its hillsides, canyons, and ridgelines that serve to provide viable habitat for the biological resources that inhabit them.

OSC-1.2 **Hillside management.** Regulate proposed projects in the City's hillside areas (areas of 15% or greater slope) to ensure the protection of the hillside's natural features, aesthetic qualities, and environmental concerns.

OSC-1.3 **Ridgelines**. Protect ridgelines from development or other uses that diminish their scenic value, and ensure the proper conservation, preservation, and management to the extent practical.

OSC-1.4 **Waterways.** Preserve the integrity of the City's streams, rivers, playas, washes, channels, water bodies, and other waterways and riparian areas to the greatest extent possible for their intrinsic and habitat value.

OSC-1.5 **Project review.** Review grading, access, and site plans for development projects to ensure they are designed to minimize impacts to the City's topography, playas, washes, and vistas to the greatest extent possible.

OSC-1.6 **Design review.** Carefully review proposals for new, substantially renovated, or expanded projects on or adjacent to properties that:

- Contain sloping topography (areas of 15% natural or greater) that would be impacted or natural vistas.
- Are located within 100 feet from the Santa Ana River, Cajon/Lytle Creek, or other waterway.
- Contain landmark features (visually significant rock outcroppings, native plants, washes, etc.).
- Have local, state, federal, or tribal historical, archeological, or cultural significance.

Biological Resources

Though the City's physical environment is highly modified by urban development, some areas still retain significant resource value. Upland areas support inland coastal sage scrub vegetation with fauna. Alluvial fans and floodplains of the valley support scrub vegetation. Canyons support riparian, chaparral, and oak woodland plant communities. This section describes natural communities and plant and animal species inhabiting San Bernardino.

Natural Communities

San Bernardino is a highly urbanized community with approximately 70 percent of its land area developed and/or highly disturbed. However, nearly one-third of the city's land area has vegetation communities that include, among many others, species of chapparal, nonnative grasslands, alluvial fan sage scrub, and coastal sage scrub (**Figure OSC-2**). A smaller portion of the natural vegetation in San Bernardino is considered sensitive natural communities.

Sensitive natural communities are those that have cumulative losses throughout the region and relatively limited distribution, and they support or potentially support sensitive plant or wildlife species. More than one dozen sensitive natural communities have been identified in the community. Sensitive natural communities, listed below, are mostly confined to outside the urban core, along the major waterways, or in northern San Bernardino adjacent to the forest.

Sensitive Natural Communities

- Southern coast live oak riparian forest
- Southern cottonwood willow riparian forest
- Southern willow scrub
- Southern sycamore alder
- Mixed riparian woodland
- Riversidian alluvial fan sage scrub
- Southern riparian forest and scrub
- Southern California arroyo chub
- Needlegrass grassland
- Wildflower field
- White alder riparian forest
- California walnut woodland

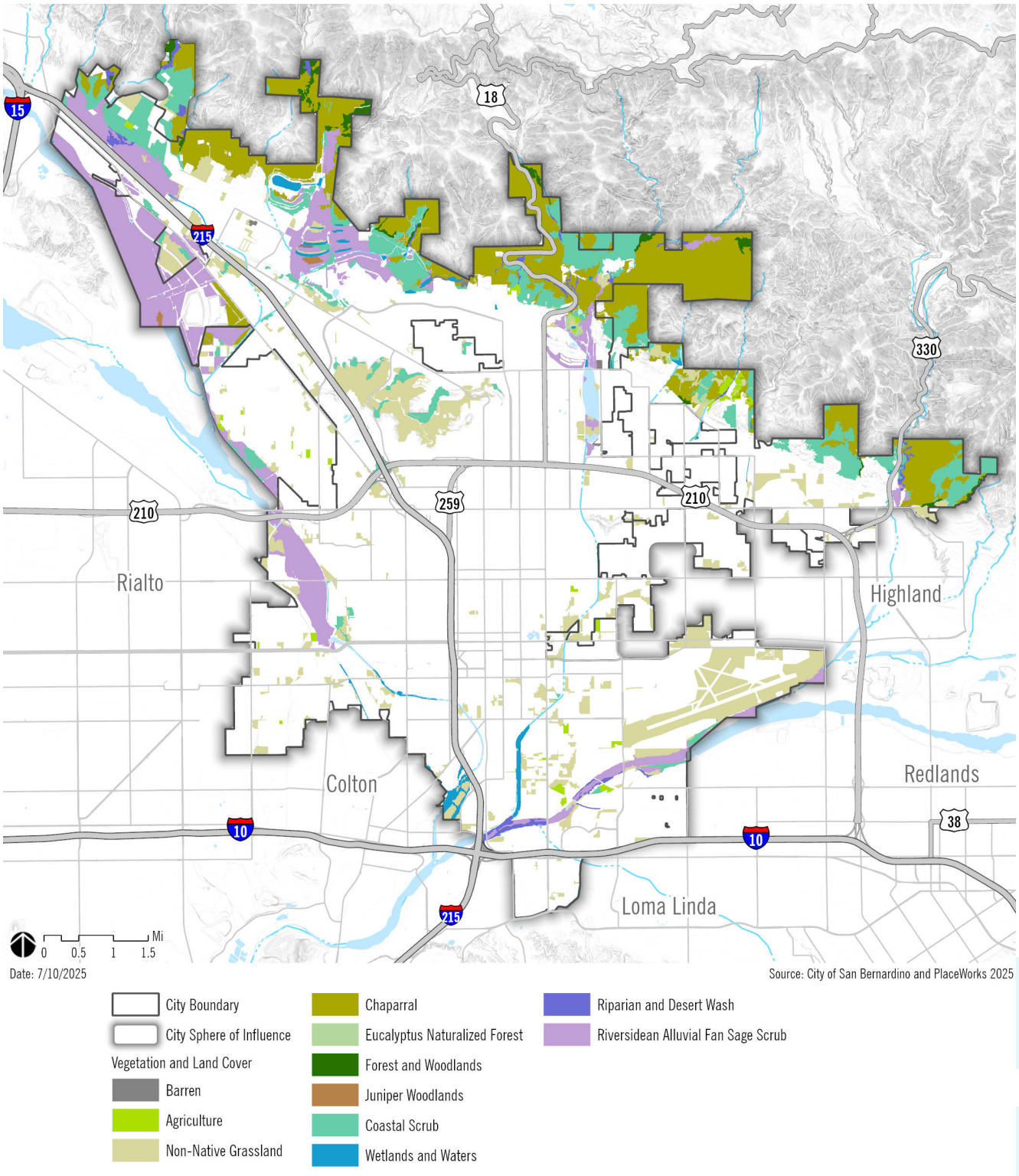


Figure OSC-2 Vegetation and Natural Communities

Special Status Plants and Animals

San Bernardino's uplands, canyons, and drainages provide habitat for a wide range of plant, mammal, and bird species that are generally common to the topography of the area. Common species include invertebrates, amphibians, reptiles, birds, and mammals common to communities abutting the National Forest. The richest areas for wildlife are along the City's northern border near the forest.

Santa Ana Woollystar

The City is also home to plant and animal species that are specifically protected by the Federal and California Endangered Species Acts. These laws were enacted to protect any plant or animal species that are sensitive, threatened, or endangered as well as the habitats they live in. The following terms are defined.

- **Sensitive species**. Those that are naturally rare, have been locally depleted, or are put at risk by human activities and may eventually be listed as threatened or endangered.
- **Threatened species**. Those whose numbers have dropped to such low levels and/or whose populations are so isolated that the continuation of the species could be jeopardized.
- **Endangered species**. Those with such limited numbers or subject to such extreme circumstances that they are considered in imminent danger of extinction.

Southwestern Willow Flycatcher

Several dozen special status plant species inhabit the City and its planning area. Sensitive plant species identified in San Bernardino include but are not limited to the Santa Ana River woollystar, slender-horned spineflower, thread-leaved brodiaea, Plummer's Mariposa lily, and California walnut. Animal species include the kangaroo rat, coastal California gnatcatcher, least Bell's vireo, and others. Additional sensitive species live just outside the City's boundaries.

The Biological Resources Technical Report for the General Plan EIR documents the local plants, animals, and natural communities that are sensitive, threatened, or endangered in the City. The report also makes recommendations to avoid, minimize, and/or mitigate potential impacts to biological resources that may be associated with future development and implementation of the General Plan.

Figures OSC-3 and **OSC-4** show where these plants and animals are known to reside within the San Bernardino planning area.

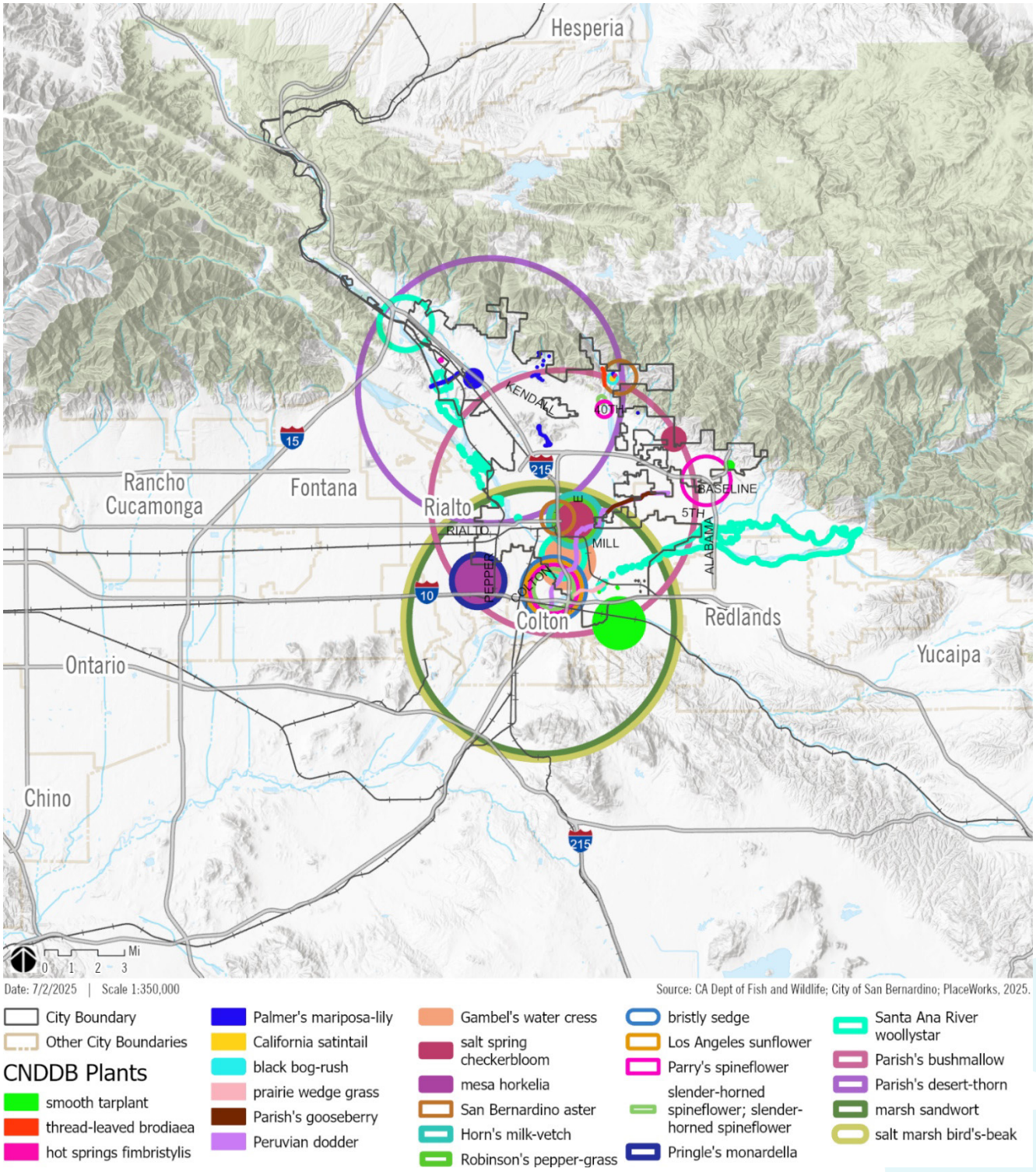


Figure OSC-3 Sensitive Plant Species in San Bernardino

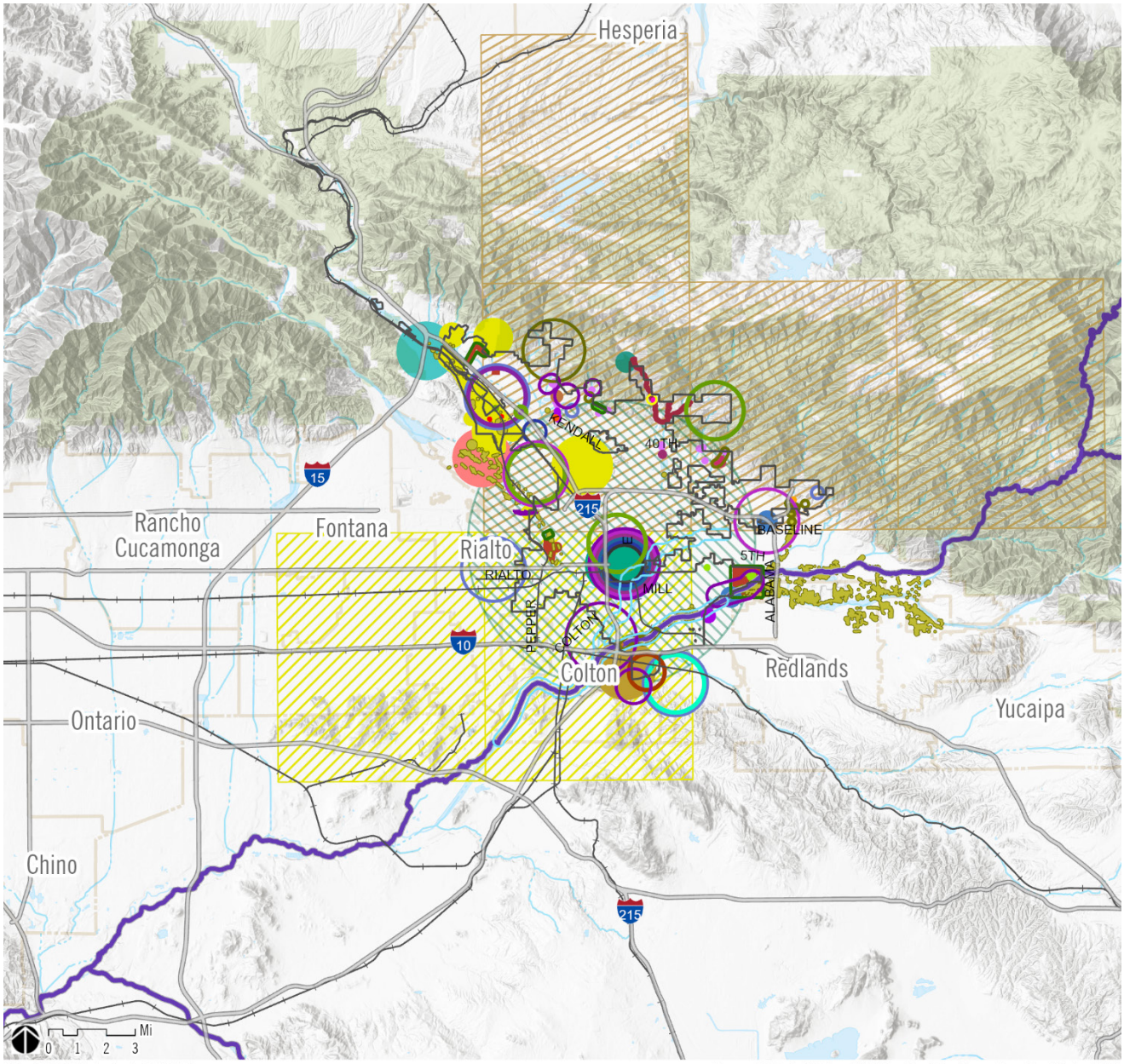


Figure OSC-4 Sensitive Animal Species in San Bernardino

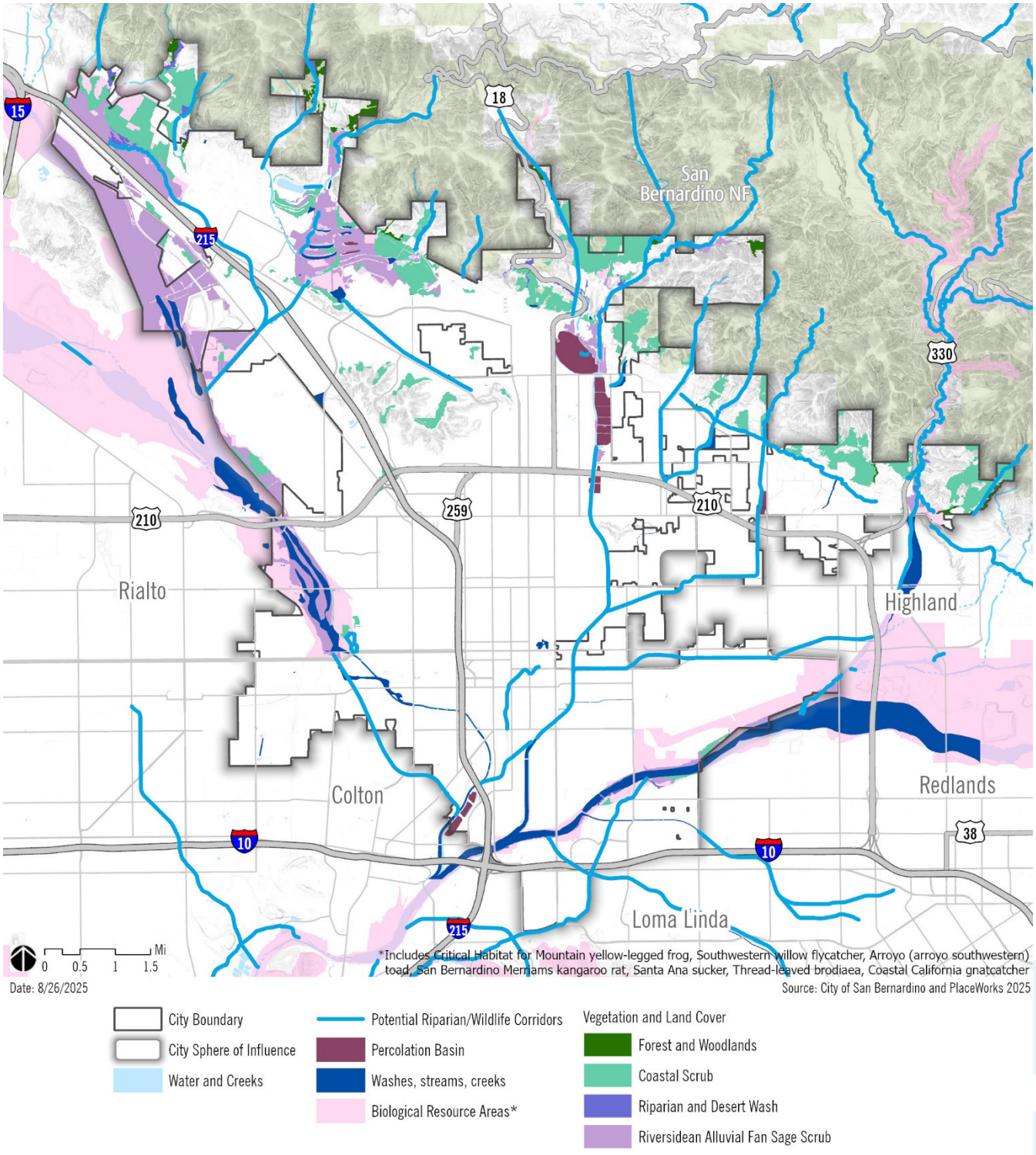


Figure OSC-5 Summary Biological Resources Map

Goal OSC-2 Biological Resources

Conservation, restoration, and enhancement of San Bernardino's biological resources (plant, animal, etc.) to support conservation goals and rewilding opportunities.

Policies

OSC-2.1 **Natural vegetation conservation**. Maintain and conserve mature native trees, natural vegetation, stands of established trees, and other vegetation features for ecosystem, aesthetic, and water conservation purposes.

OSC-2.2 **Project siting**. Site and develop land uses in a manner that is sensitive to the unique characteristics of local biological resources and that minimizes impacts on sensitive, endangered, or threatened species.

OSC-2.3 **Enhanced project review**. Require that all proposed discretionary and government-initiated land uses or projects in **Figure OSC-5** be subject to enhanced environmental review. Applicants shall:

- Submit a report prepared by a qualified professional(s) that addresses the proposed project's impact on sensitive species and habitat.
- Identify mitigation measures necessary to eliminate significant adverse impacts to sensitive biological species and habitats.
- Define a program for monitoring, evaluating the effectiveness of, and ensuring the adequacy of the specified mitigation measures.
- Consider and discuss restoration of local habitats and rewilding opportunities.

OSC-2.4 **Biological resources**. Require new developments to prevent or, if that is not possible, minimize or mitigate harm to biological resources, with a special emphasis on sensitive, threatened, or endangered species.

OSC-2.5 **Public education**. Educate and involve the public in the stewardship of local natural resources and educate property owners on their value within the ecosystem.

Critical Habitat

Critical habitat, under the federal and California Endangered Species Acts, refers to specific geographic areas, both occupied and unoccupied by a species, that are essential for the conservation of endangered or threatened species. These areas contain physical and biological features necessary for the species' survival and recovery. Critical habitat may also include areas that were not occupied by the species at the time of listing but are essential to its conservation.

In urbanized communities or geographic areas that are rapidly developing and where vacant land is being replaced by development, remaining habitat may be adversely affected. In these cases, the long-term availability and viability of critical habitat may require special management and protection considerations. As described in the biological resources technical report for the 2050 General Plan, critical habitat exists in San Bernardino for seven species.

- *Thread-leaved brodiaea*. Critical habitat exists in northeastern San Bernardino, extending into Arrowhead Hot Springs.
- *Arroyo toad*. Critical habitat is found in streams, including Upper Santa Ana wash and Cajon Creek wash.
- *Coastal California gnatcatcher*. Critical habitat is adjacent to the City, near critical habitat for the southwestern willow flycatcher.
- *San Bernardino kangaroo rat*. Critical habitat exists along the Lytle/Cajon Creek wash and Santa Ana wash.
- *Santa Ana sucker*. Critical habitat exists along the Santa Ana wash, though the area is not currently occupied.
- *Southern mountain yellow-legged frog*. Critical habitat is just outside the City, overlapping with Santa Ana sucker habitat.
- *Southwestern willow flycatcher*. Critical habitat exists along the Santa Ana River, Waterman Creek, and other areas.

Figure OSC-6 shows the location of critical habitat in the San Bernardino Study Area. Critical habitat is concentrated along the major watercourses (Lytle Creek, Cajon Creek, Santa Ana River) and select streams that extend southward from the National Forest.

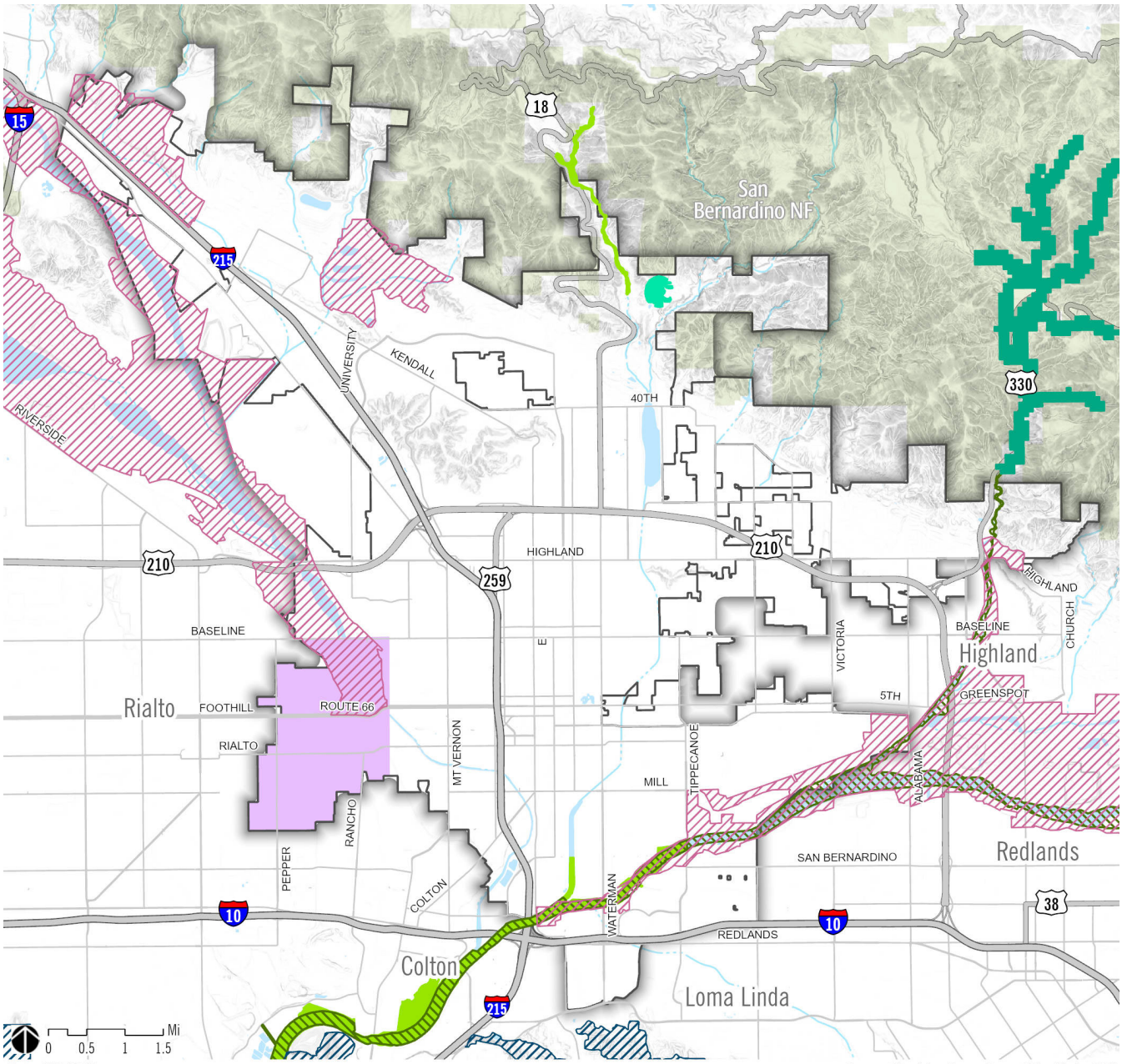


Figure OSC-6 Critical Habitat in San Bernardino

Goal OSC-3 Habitat Protection

Well-preserved waterways, riparian corridors, and other natural landscape features that provide habitat for biological resources.

Policies

OSC-3.1 **Development along riparian corridors**. Prohibit development and grading within 50 feet of natural riparian corridors, as identified by a qualified biologist, unless no feasible alternative exists.

OSC-3.2 **Permitted uses**. Within riparian corridors, permit only those land uses and development activities that are compatible with the protection of sensitive habitats:

- Education/research, excluding structures or buildings
- Passive recreation, trails, and scenic overlooks
- Fish and wildlife management activities
- Water supply or water recharge projects
- Flood control projects, bridges, and pipelines where no other feasible alternatives are available

OSC-3.3 **Development standards**. For development that could impact riparian corridors or other sensitive habitat, according to CDFW, ensure that any such project:

- Minimizes the removal of vegetation
- Minimizes erosion, sedimentation, and runoff by protection of vegetation and landscape
- Provides for sufficient passage of fish
- Minimizes wastewater discharge and entrapment
- Prevents groundwater depletion or substantial interference with surface and subsurface flows

OSC-3.4 **Buffer zones**. Require buffer zones adjacent to sensitive habitats, including areas that directly affect their natural conditions that could experience change due to the development or potential impacts of climate change.

OSC-3.5 **Habitat restoration**. Support restoration of degraded ecosystems to enhance the natural adaptive capacity of biological communities, consistent with established conservation areas and habitat conservation plans.

Wildlife Corridors

Preserving wildlife corridors has become increasingly important in California as urbanization continues to fragment areas, making it harder for wildlife to find food, shelter, or reproduce. Wildlife corridors are linear landscape elements that serve as paths for wildlife to move between two or more habitats. Travel routes are landscape features (e.g., ridgelines, drainages, canyons, or riparian areas) that are used by wildlife to access resources or, in certain instances, manmade, or built corridors. Areas adjoining two habitats are also often referred to as habitat linkages.

The South Coast Missing Linkages Project developed a linkage design that recorded key locations and habitats where it was necessary to maintain linkages among geographic areas for support of wildlife. This project identified the San Gabriel-San Bernardino Connection that includes portions of San Bernardino and the National Forest. This connection contains the northern portion of the City, including the foothills of the San Bernardino Mountains, Lytle Creek, and the Cajon Wash. Other tributaries to the Santa Ana River are directly in contact with an eastern section of the connection.

Northern San Bernardino may also function as a local wildlife dispersal, migration, and foraging area. The creeks and canyons that meander through the foothills include: Badger Canyon, Cable Creek/Canyon, Meyers Canyon, Bailey Canyon, Borea Canyon, Devil Canyon, Little Sand Creek/Canyon, Sand Creek, Sycamore Canyon, Cook Canyon, Waterman Canyon, City Creek, North Fork Canal, etc. Lytle Creek and Cajon Creek are perhaps the two major existing and potential riverine corridors for wildlife travel and connectivity.

Barriers to wildlife connectivity are also present. Potential wildlife corridors and linkages along the Santa Ana River have been modified through flood control and mineral extraction. In northwestern San Bernardino, the I-215 and I-15 both serve as infrastructure barriers along with the noise and light that emanate from this source. The CDFW have identified impacted species, such as the Kangaroo Rat, deer, mountain lions, and other species that may be impacted.

Figure OSC-7 shows wildlife corridors and essential wildlife connectivity areas in and around San Bernardino.

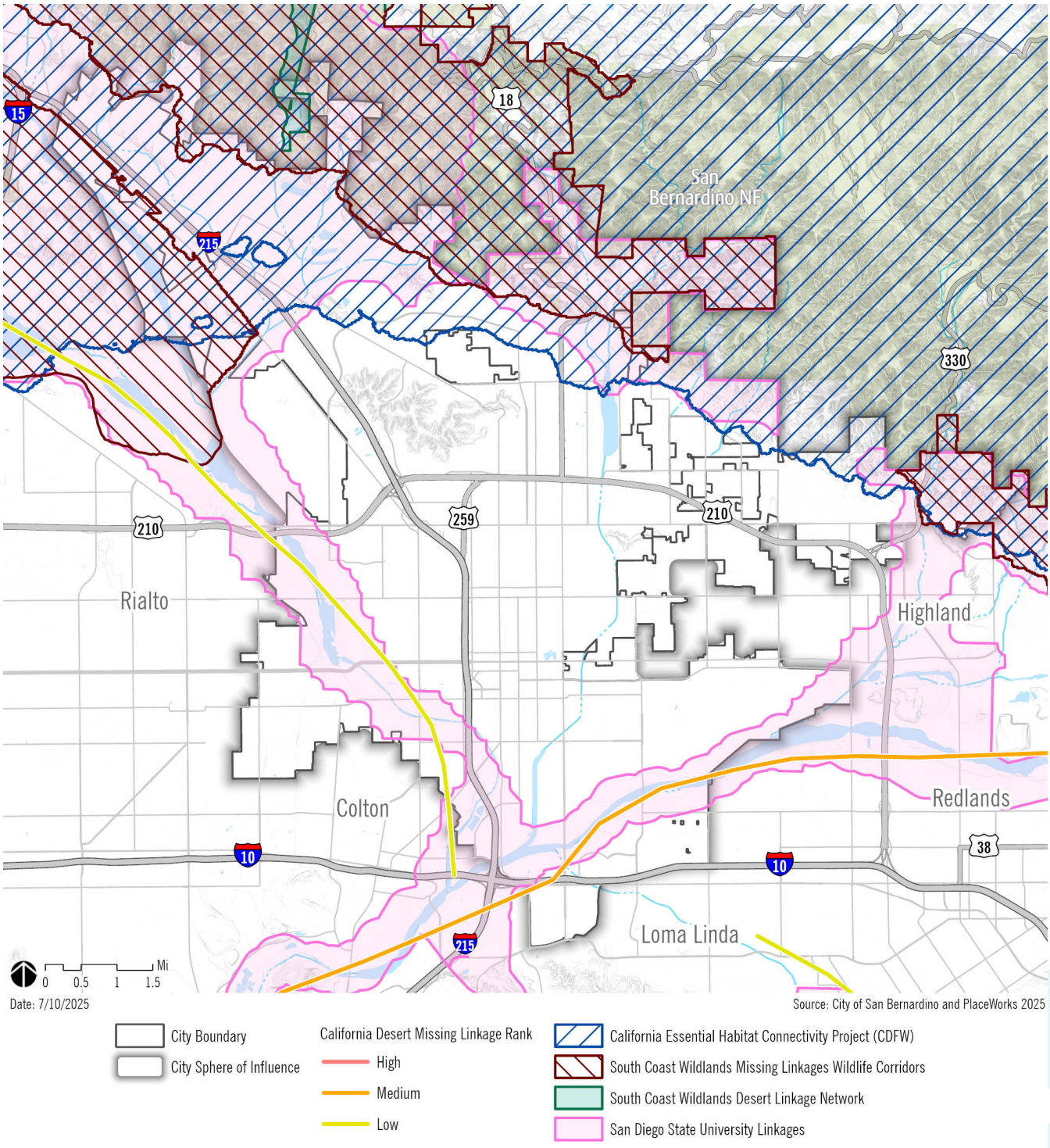


Figure OSC-7 Habitat Linkages and Wildlife Corridors

Conservation and Rewilding Opportunities

Conservation and rewilding of communities have become increasingly important as we understand the importance of habitats, species, and vegetation and attempt to balance the competing needs of human activity. Rewilding refers to the process of restoring and enhancing natural ecosystems, often by introducing native species or allowing natural processes to take over, aiming to create more resilient and biodiverse landscapes. It includes not only rewilding for sensitive species but also for common species as well.

Various tools are utilized in the San Bernardino study area to accomplish conservation and rewilding goals.

Habitat Conservation Plans

A Habitat Conservation Plan (HCP) is designed to accommodate development to the extent possible while conserving endangered or threatened species and their habitats. HCPs describe the anticipated effects of a proposed project, how those impacts will be minimized and mitigated, and how the conservation measures in the plan will be funded. HCPs allow for an incidental take of listed species while ensuring that the state and federal conservation goals are met.

San Bernardino's planning area is covered by habitat conservation plans that protect approximately three dozen sensitive species in San Bernardino. As mapped in **Figure OSC-8**, the most prominent local and regional HCPs include: the Colton West Valley HCP, Upper Santa Ana River Wash HCP, Upper Santa Ana River Habitat HCP, and San Bernardino County Regional Conservation Investment Strategy. The Biological Resources Technical Report for this General Plan describes the species and habitat protected under these HCPs.

Watershed and Stormwater Planning

The San Bernardino County Flood Control District has developed a Stormwater Resources Plan (SWRP) for a portion of the Santa Ana River Watershed, as required under Senate Bill 985. The SWRP identifies ways to address stormwater while providing environmental benefits. The SWRP stormwater management objectives include wetlands enhancement/creation, riparian area enhancement, streambed restoration, and increased urban green space. The plan also includes multi-benefit projects that address land in the City.

Mitigation and Conservation Banks

Mitigation and conservation banks provide opportunities for permanently protecting lands with high biological value that are home to sensitive species and/or habitats. A mitigation bank is used to compensate for development activities that affect waterways, and a conservation bank protects essential habitat for special-status species. Landowners can sell "credits" to developers to compensate for project impacts. These credits are used to contribute to the conservation or restoration efforts of the bank. San Bernardino is crossed by several conservation banks-Cajon Creek, Colton Dunes, Lytle Creek, Santa Ana River Mitigation, and Soquel Canyon.

Riversidian Alluvial Fan Sage Scrub

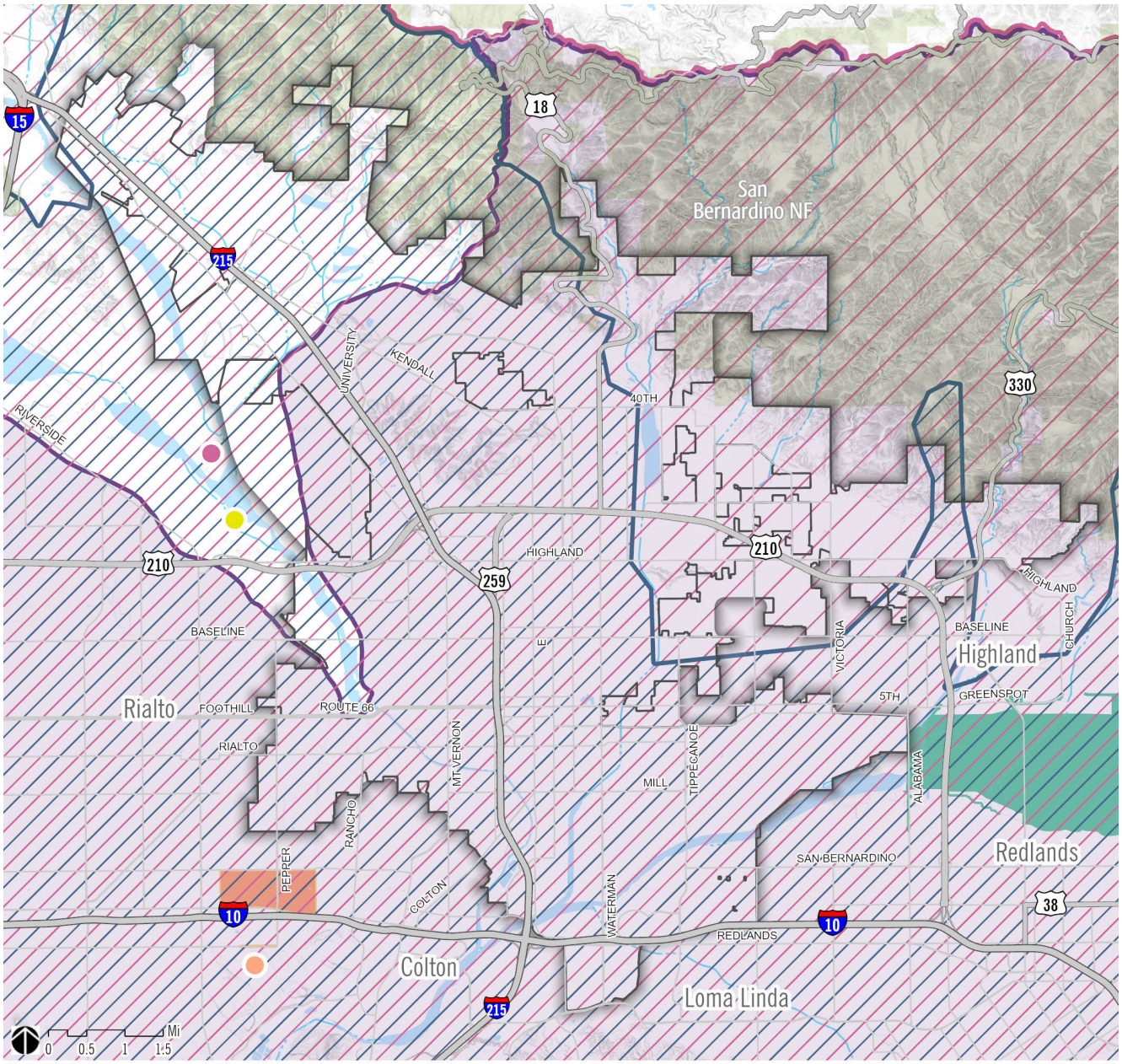
Resource Conservation Districts

San Bernardino is located within the boundaries of the Inland Empire Resource Conservation Districts (IERCD) and San Bernardino Valley Water Conservation District (SBVWCD). The IERCD aims to conserve local resources, provide education, and restore habitat through activities such as habitat restoration, land conservation, and invasive plant species control projects. Projects have included removal of invasive grasses, broad-leafed plants, and fuel load. IERCD is also involved in replanting efforts to restore habitat. The SBVWCD was created to recharge the groundwater basin and is also responsible for managing the Upper Santa Ana River Wash HCP.

Local Code Enforcement Activities

The City of San Bernardino, the San Bernardino County Code Enforcement, and the City Police and County Sheriff's Department, where appropriate, jointly work on projects to facilitate rewilding and conservation efforts. Joint operations have been undertaken to cleanup illegal dumping, remove unauthorized homeless encampments, and prohibit and enforce anti-offroad/off-highway vehicle ordinances–all of which destroy habitats and species. These activities, in coordination with other local efforts, can help encourage the restoration of sensitive habitats to their intended use.

Figure OSC-8 shows the location of conservation and mitigation banks in or adjacent to the City and the coverage areas for adopted habitat conservation plans that apply to the City of San Bernardino.



Date: 7/10/2025

Source: City of San Bernardino and PlaceWorks 2025

City Boundary

City Sphere of Influence

Conservation and Mitigation Banks

- Colton Dunes Conservation Bank
- Lytle Creek Conservation Bank
- Cajon Creek Habitat Conservation Area

Conservation/Mitigation Service Areas (Active)

- Riverpark Mitigation Bank
- Cajon Creek Habitat Conservation Area
- Soquel Canyon Mitigation Bank

Habitat Conservation Plans

- Colton West Valley HCP
- Upper Santa Ana River Wash HCP

Figure OSC-8 Rewilding & Conservation Opportunities

Goal OSC-4 Connected Open Spaces

An interconnected landscape of open spaces and habitat areas that promotes biodiversity, healthy ecosystems, rewilding opportunities, and removal of or mitigation of barriers.

Policies

OSC-4.1 **Support wildlife corridors**. Support the establishment, protection, and continuity of wildlife corridors and missing linkages including, riparian corridors, waterways, ridgelines, canyons, and other features.

OSC-4.2 **Open space corridors**. Identify areas for land acquisition, funding, and strategy to establish an open space corridor contiguous to the National Forest via Cable Creek and/or Devil Canyon, consistent with the San Bernardino National Forest Land Management Plan.

OSC-4.3 **Acquisitions**. Support nongovernmental organizations and private entities who purchase, own, maintain, and expand areas for conservation and preservation. Prioritize habitat and species from the San Bernardino County Regional Conservation Investment Strategy.

OSC-4.4 **Habitat fragmentation**. Seek opportunities to provide adequate linkages for wildlife to move throughout their territories that also reduce habitat fragmentation. Proposed development shall not contribute to habitat fragmentation without appropriate mitigation.

OSC-4.5 **Native vegetation**. Encourage native plantings along waterways to stabilize banks or repopulate open space lands; prohibit and support efforts to remove invasive exotic species in San Bernardino and adjacent areas.

OSC-4.6 **Rewilding opportunities**. Support rewilding opportunities consistent with local and regional conservation areas and habitat conservation plans in cooperation with local, state, and federal partners.

OSC-4.7 **Barrier removal**. Seek opportunities for the removal or mitigation of barriers (infrastructure, light, and noise, etc.) that detract from wildlife connectivity; participate in efforts as feasible in concert with lead agencies.

Watershed Management

San Bernardino faces the challenge of balancing water supply needs with environmental protections. As the county seat, the City is the largest city in the county and requires a reliable supply of potable water. The City is also home to commercial and industrial enterprises, which require regulations to control urban runoff and, in limited cases, cleanup of legacy plumes to avoid further degradation of the aquifer. The City is also home to sensitive biological resources that depend on a steady supply of clean, potable water.

The City and various water and resource conservation agencies are cooperating to address the challenge of watershed management.

Water Infrastructure Projects

The San Bernardino Valley Municipal Water District (SBVMWD) has taken a lead in watershed management planning in the San Bernardino basin. The Utilities and Infrastructure Element of the General Plan addressed how SBVMWD implements its Watershed Connect project, a regional infrastructure project that consists of an interconnected system of water capture, recharge, storage, treatment, and conveyance projects. San Bernardino's water treatment plant plays a critical role in these efforts by recycling water and providing surplus capacity to divert reclaimed water for recharge into new spreading grounds. These projects, individually and collectively, address the long-term supply of groundwater.

Stormwater Management

Maintaining a healthy watershed requires a program to reduce and control urban runoff from businesses, the City, and residential areas. For instance, business facilities may be contaminated with pollutants from outdoor activities, storage of raw materials, and so forth. When discharges flow off-site, they can carry harmful pollutants into drainage systems, local rivers, and the aquifer. Similarly, runoff from roadways can carry oil and chemicals that enter drainage systems and pollute local waters. Even common pesticides for landscaping can leach into the aquifer. Along with compliance with the National Pollutant Discharge Elimination System (NPDES), controlling runoff requires a comprehensive program that targets the sources of runoff, land use planning and development, and municipal practices.

Groundwater Contaminant Remediation

San Bernardino works to address underground water contamination due to business activities, leaking underground storage tanks, residential septic tanks, and various other activities. San Bernardino also has "Superfund sites," which refer to abandoned hazardous waste sites or contaminated sites that are of high priority because they pose a significant risk to public health or the environment. San Bernardino has three active superfund sites—the Newmark-Muscoy site, former Norton Air Force Base site, and the Rockets, Fireworks, and Flares site. The federal EPA is working with responsible parties to ensure that these sites are cleaned up.

Surface Water Impairment

Under the Clean Water Act (CWA), the California State Water Resources Control Board (SWRCB) is required to identify and list impaired water bodies, including rivers, which do not meet mandated water quality standards. States develop and implement total maximum daily loads (TMDL) to reduce pollutants and restore water quality. Dischargers of pollutants into impaired waters must comply with TMDLs and other measures to restore the beneficial uses of the waters. The City, the County, and other agencies are implementing a variety of measures through a stormwater runoff management program to reduce TMDLs and comply with State law.

Conservation Area Planning

The San Bernardino Municipal Water Department is working with SBVMWD and other regional water agencies to preserve conservation areas along Lytle Creek, Cajon Creek, and the Santa Ana River. Activities include collectively recharging recycled water treated at the Sterling Natural Resource Center into the aquifer to maintain a healthy, functional river ecosystem and support 22 federal- and state-protected species in the designated conservation areas. Other activities include removing trash and debris from these areas, patrolling the sites for illegal encampments and off-road vehicles, and removing invasive species.

The following goal and policies establish a framework for addressing local and regional watershed management activities.

Goal OSC-5 Watershed Management

Manage and protect the City's surface waters and groundwater basins from contamination and promote the restoration and sustainability of groundwater resources

Policies

OSC-5.1 **Waterway protection**. Require all public and private activities to take appropriate measures to protect the integrity of waterways and comply with antidegradation rules of the State Water Resources Control Board.

OSC-5.2 **Groundwater pollution.** Work with businesses and appropriate governmental agencies to pursue and ensure full remediation of groundwater or soil contamination from hazardous materials and use.

OSC-5.3 **Septic system replacement**. Require the replacement of existing septic systems with connections to a sanitation collection and treatment system as a condition of reconstruction or reuse.

OSC-5.4 **NPDES compliance**. Ensure compliance with the National Pollutant Discharge Elimination System permits, including requiring Storm Water Pollution Prevention Plans for new projects and redevelopment.

OSC-5.5 **Urban runoff**. Require new projects to incorporate best management practices to control discharge of pollutants during construction and for the project life. Require:

- Source controls to minimize pollutants, such as oil and grease, industrial discharges, pesticides, etc.
- Structural controls such as green roofs, permeable pavement, infiltration basins, and biofiltration.
- Non-structural controls to reduce impervious surfaces, plant trees/landscaping, and so forth.
- Construction site controls that are aimed at reducing erosion and sediment drainage.

OSC-5.6 **Impaired waterways**. Continue to partner with regional agencies, industry, and the community on projects and enforcement of regulations that aim to restore impaired waterways in the City to their full beneficial uses.

Natural Resources

Geological processes like sedimentation, heat, pressure, and plate tectonics have led to the formation of gas, oil, and mineral resources. San Bernardino's location has made it an important source for the extraction of some of these natural resources.

Natural Gas, Oil, and Geothermal

The County of San Bernardino has long held significant oil and natural gas reserves, but they are limited within the City of San Bernardino. There are no known large oil resources or active oil production directly within the city limits of San Bernardino. There are also no known active natural gas fields within San Bernardino. Several inactive wells exist near the National Forest and the I-10 and I-215 interchange. There are no known plans for fracking operations either.

Due to its location near several earthquake faults, San Bernardino has naturally occurring geothermal resources; approximately 100 geothermal wells and springs have been identified within the area. SBMWD operates two geothermal wells that can pump 4.3 million gallons per day of hot water, which surpasses the geothermal energy currently used. This renewable source of energy is utilized for space heating in over 35 businesses and offices, including the Civic Center and National Orange Show, generating substantial savings.

Mineral Resources

San Bernardino's local economy, the economy of the Inland Empire, and the future growth and development of the broader region are dependent on a steady supply of mineral resources. Mineral deposits are used in many industries and varied applications. These include building construction materials (such as cement production), transportation (road construction), and industrial applications (such as the manufacturing of glass, insulation, and other products).

The City of San Bernardino has long had mineral extraction activities. The drainage courses that emanate from the San Bernardino Mountains have, over millennia, transported significant alluvium deposits into the valley, and much of the City is on an alluvial plain. Construction aggregate is found locally in regionally significant deposits of sand and gravel within the riverbeds of the Cajon Wash, Lytle Creek, Warm Creek, City Creek, and the Santa Ana River.

In accordance with the Surface Mining and Reclamation Act (SMARA) of 1975, the State of California Department of Conservation has designated Mineral Resources Zones (MRZ) of statewide or regional importance throughout California, including the county of San Bernardino. The classifications used by the State are:

- MRZ-1: Areas where the available data indicates no significant or a minimal likelihood of significant mineral deposits.
- MRZ-2: Areas where available data indicates that there are or are likely significant mineral deposits present.
- MRZ-3a: Areas where available data indicate that mineral deposits are likely to exist, but the significance is undetermined.
- MRZ-4: Areas where there is not enough information available to determine the presence or absence of mineral deposits.

Though San Bernardino has mineral resources, many areas are no longer suitable for mineral extraction because urban development is built on potential mineral resource areas. Still, as illustrated in **Figure OSC-9**, the City has regionally significant sources of aggregate mineral resources on the west and northwest edges of the community.

Vulcan Mining, San Bernardino

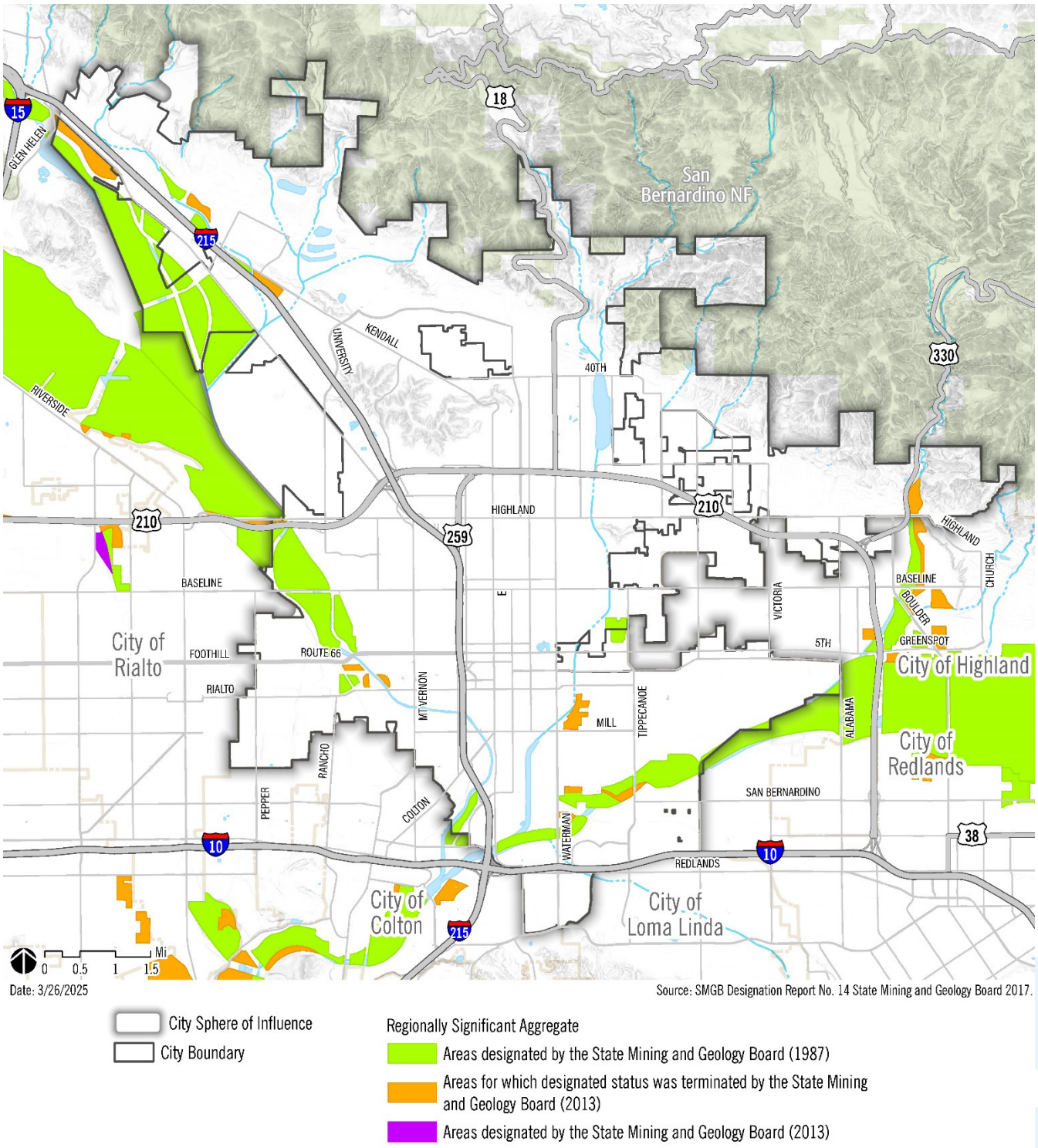


Figure OSC-9 Regionally Significant Aggregate Deposits

Goal OSC-6 Mineral Resources

Mineral extraction projects that are properly managed, that minimize land use conflicts and environmental impacts to adjacent land uses, and that comply with all applicable local, state, and federal law.

Policies

OSC-6.1 **Mineral resources protection.** Protect valuable mineral resources by prohibiting or restricting incompatible projects and land uses (i.e., those that interfere with extraction, processing, or transportation of minerals) within resource areas in **Figure OSC-9**.

OSC-6.2 **Site design**. Encourage compact design and layout for mineral resource processing areas, preserving as much land as possible for buffering between these areas and adjacent land uses.

OSC-6.3 **Mining oversight**. In cooperation with San Bernardino County, provide oversight of extraction sites, including sand and gravel quarries, and monitor the status and duration of existing permits and approvals.

OSC-6.4 **Mineral extraction operations**. Impose conditions and enforce mitigation measures to reduce the dust, noise, and safety hazards due to the mining, processing, and removal of aggregate and to minimize impacts on adjacent properties and environmental resources.

OSC-6.5 **Access routes**. Determine and designate approved access routes to and from quarries, mining operations, and processing and transporting locations to minimize the impacts on City streets and neighborhoods.

OSC-6.6 **SMARA requirements**. Require that the operation and reclamation of surface mines be compliant with the SMARA, applicable City and County codes, and environmental regulations from resource agencies.

OSC-6.7 **Reclamation procedures**. Designate post-aggregate extraction reclamation procedures to mitigate potential environmental impacts and safety hazards. Long-term monitoring of the effectiveness of reclamation procedures should be an integral part of the program.

Air Quality

The quality of air we breathe affects our health and quality of life. Air pollution causes mild to severe health effects and respiratory illnesses and affects the ability to be active. Plants and animals also absorb contaminants that damage their growth or poison them. In an older industrialized city such as San Bernardino, air quality takes on heightened importance.

Ambient Air Quality

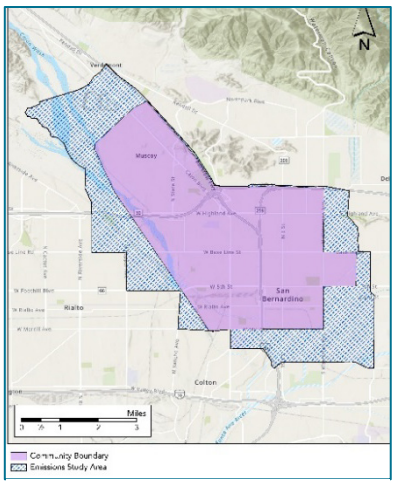
The State of California and federal governments have long played an important role in enacting clean air legislation. Under the Clean Air Acts, ambient air quality standards (aka "AAQS") have been developed to protect individuals who are most susceptible to respiratory distress (based on age, disability, or other vulnerability). Healthy adults can tolerate occasional exposure to air pollutant concentrations well above these minimum standards before adverse effects to one's health are observed.

AAQS have been established for seven air pollutants—ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). The South Coast Air Quality Management District SCAQMD) is authorized to monitor ambient air quality in the region and adopt and enforce regulations to achieve air quality standards. The region has achieved all AAQS, except for PM_{10} and ozone, which are exceeded 25 percent of the days in San Bernardino County.

Toxic Air Contaminants

With the industrialization of southern California, the California Air Resources Board (CARB) is responsible for monitoring the level of toxic air contaminants (TAC), which are pollutants that may cause serious, long-term effects, such as cancer, even at low levels. CARB is responsible for mapping these facilities, requiring reporting of TACs, assessing exposure levels and health risks, and promulgating and enforcing regulations to control and reduce the level of TACs. The vast majority of TACs in San Bernardino are due to particulate matter ($PM_{2.5}$, PM_{10}, and diesel particulate matter) that is a by-product of the region's logistics industry (e.g., trucking, railroad, and airplanes).

San Bernardino–Muscoy Area



San Bernardino–Muscoy Area

As authorized by state law, the California Air Resources Board has established the Community Air Protection Program (CAPP) to identify and reduce exposure within disadvantaged communities most impacted by air pollution. The San Bernardino–Muscoy Area (SBM) includes Muscoy, Westside, and central San Bernardino and was formed to develop local community air quality protection measures due to the local hazards in the area. This area is bordered by four major freeways and contains logistics, mining, transportation, rail, and other heavy industrial land uses.

As noted by the SCAQMD, the SBM area is affected by elevated levels of particulate matter, black carbon, nitrogen dioxide, and carbon dioxide. While some of the air pollution comes from direct sources (e.g., a specific manufacturer or facility), the majority is from indirect sources. These include trucking to and from the larger warehouse facilities, rail traffic at the BNSF yard, and airplanes using the San Bernardino International Airport. Local freeways also contribute heavily to local air pollution.

Significant new legislation and regulations have been adopted, which will reduce air pollutants from indirect sources, the primary source in San Bernardino. These include Rules 2305 and 2306 and Assembly Bill 98 promulgated by the CARB, the SCAQMD, and California Air Resources Board, the South Coast Air Quality Management District, the CalEPA, and other regulatory bodies. These incremental regulatory changes, individually and cumulatively, help to improve air quality for residents of the community.

In the meantime, the City will continue to make efforts to improve local air quality by implementing strategies aimed at land use policy, transit improvements, and energy generation alternatives. These policies will promote compact development, encourage alternative fuel use, promote public transit infrastructure, improve the urban forest, and diversify energy resources to reduce fossil fuel emissions.

This element, when implemented, will assist in achieving objectives for improving the health and well-being of the community.

Goal OSC-7 Air Quality

Improved health and sustainability of the community through local efforts to improve local and regional air quality, reduce emissions, and reduce community exposure to health risks from air pollution.

Policies

OSC-7.1 **Agency collaboration**. Collaborate with the SCAQMD to reduce pollution levels and improve air quality in accordance with regional, state, and federal standards in the Air Quality Management Plans.

OSC-7.2 **Environmental review**. As a condition of project approval, require applications for proposed projects to include an evaluation of potential air quality impacts consistent with the AQMD's "Air Quality Analysis Guidance Handbook." This includes:

- Identification of criteria and toxic pollutants
- Analysis of construction and operational impacts
- Analysis of cumulative impacts
- Feasible mitigation measures to reduce impacts

OSC-7.3 **Industrial uses**. Support the implementation and enforcement of SCAQMD rules requiring existing warehouse projects and railroads comply with applicable rules and laws, including but not limited to:

- Support Rule 2305 to reduce emissions of particulate and nitrogen oxides from qualified warehouses.
- Ensure that qualified projects meet operational and design standards for 21st-century warehouses.
- Support Rule 2306 to reduce diesel particulate and nitrogen oxide emissions from railyards.

OSC-7.4 **Sensitive receptors**. Require development projects to minimize exposure of new sensitive receptors (e.g., hospitals, schools, daycare facilities, elderly housing) to odors, criteria pollutants, and toxic contaminants. Consider and, where feasible, pursue opportunities to separate, buffer, and protect existing sensitive receptors from sources of pollution to the greatest extent possible.

OSC-7.5 **Disadvantaged areas**. Support clean air strategies that reduce the level of air pollution within the San Bernardino–Muscoy area or other areas of the community near major pollution sources.

OSC-7.6 **Community involvement**. Actively participate with residents, industry, regulatory agencies, and other stakeholder groups, including the AB 617 organization, to reduce air pollution and odors.

OSC-7.7 **Indirect sources**. Support California and federal regulations that aim to reduce and control air pollution from indirect sources. This includes support for:

- Reducing emissions from warehouse operations.
- Reducing emissions from railyard operations.
- Reducing GHG emissions from power plants.
- Reducing emission levels from local airports.

OSC-7.8 **Green infrastructure.** Support the expansion of and require, where feasible, the planting of green infrastructure, including but not limited to street trees, roadside vegetation, vegetated buffers, green roofs, and other proven strategies to help filter air pollutants.

OSC-7.9 **Alternative transportation.** Support the expansion of alternatives to single-occupancy vehicle use, including but not limited to:

- Expanding the number and frequency of bus routes.
- Extending commuter rail infrastructure and trains.
- Building out the full pedestrian and bicycle network.
- Working with Omnitrans to support rider incentives.

OSC-7.10 **Trucking emissions.** Enforce regulations to reduce the level of pollution and particulate matter emitted in San Bernardino. This includes:

- Restricting idling for heavy duty trucks.
- Siting fuel stations for low emission trucks.
- Enforcing compliance with adopted truck routes.
- Exploring incentives for zero emission vehicles.