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METRO REGIONAL ADVANCE MITIGATION NEEDS AND FEASIBILITY ASSESSMENT

Prepared for:
Metro
1 Gateway Plaza,
Los Angeles, CA 90012

Prepared by:
ICF
525 B Street, Suite 1700
San Diego, CA 92101



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Metro
1 Gateway Plaza,
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Contact: Erika Wilder, WilderEr@metro.net

PREPARED BY:

ICF
525 B Street, Suite 1700
San Diego, CA 92101

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1.1 Introduction: Metro Board Motion

The Los Angeles County Metropolitan Transportation Authority (Metro) Board passed a Board Motion on January 26, 2017,¹ directing staff to consider a regional advance mitigation approach for future Metro project impacts on natural resources. The Board Motion recognized that 1) transportation projects in Los Angeles County, including Metro's Capital Program projects, may result in impacts on biological resources such as sensitive species, sensitive habitats, wetlands and waters, and wildlife corridors; 2) some counties and regions have seen the benefits of implementing regional advance mitigation approaches; and 3) it is important to determine the applicability of an advance mitigation approach early to allow time for coordination with other agencies and stakeholders who may also benefit from and support the regional advance mitigation planning and implementation.

Although Metro projects generally occur within the more highly urbanized landscapes and typically have relatively small impacts on natural resources, a regional advance mitigation approach that would provide biological mitigation prior to project development could benefit the efficiency and certainty of project planning and delivery for Metro. Recognizing that partnerships with other agencies and stakeholders is important in making a regional advance mitigation approach feasible for Metro, the Board Motion directed the preliminary discussion of a regional advance mitigation approach between Metro, environmental stakeholders, and representatives of various local planning and transportation agencies, resource agencies, and other stakeholders to discuss potential interest in a regional advance mitigation approach for multi-jurisdictional cooperation and coordination for biological mitigation and explore the development of a conservation *greenprint* to identify and help prioritize areas of high ecological value, including habitat for sensitive species, aquatic resources, and wildlife movement corridors.

The approved Board Motion directed the development of a working group to consider and evaluate the potential of a cooperative multiagency regional advance mitigation program. The motion also included developing an early project screening process for biological resource evaluation, to be applied to projects scheduled for planning and/or construction over the next 30 years. The screening is intended to include the risk of direct and indirect impacts on sensitive species and their habitats, aquatic and terrestrial ecological systems, and wildlife corridors. The project screening process could be applied to all foreseeable Metro projects, as well as other agencies' projects in the region, to determine the potential need for natural resource mitigation and the potential benefit of a regional advance mitigation approach for long-term mitigation planning and implementation. The preliminary description of this screening process is included in Chapter 3 of this report.

¹ Metro. 2017. *Executive Management Committee Board Report*. January, 19, 2017. Available: <https://metro.legistar.com/LegislationDetail.aspx?ID=2938294&GUID=89F8EA51-12DC-4492-8004-2BF7244C5CBA&FullText=1N>.

In addition, it should be noted that the approved Metro Measure M Early Project Delivery Strategy² policy is consistent with and complementary to an advanced mitigation approach. The Measure M Early Project Delivery Strategy establishes policy framework for early and accelerated project delivery of Measure M projects and entails processes for identifying the potential for project acceleration at the individual project level. Implementation of an advanced mitigation approach to Metro project mitigation needs would be consistent with the Measure M Early Project Delivery Strategy and serve as a promising avenue for meeting project acceleration goals.

This Needs and Feasibility Assessment report is the first step in assessing the potential utility of a regional advance mitigation approach to Metro and possibly to other agencies and stakeholders. The purpose of this report is to determine the potential value to Metro in pursuing a programmatic approach for regional advance mitigation of natural resources and how it could benefit a broader multiagency and stakeholder group, including other infrastructure development agencies that also have natural resource mitigation needs in the Los Angeles County region.

1.2 Advance Mitigation Background

Identifying mitigation needs and opportunities in advance of project development, known as advance mitigation planning, is a growing trend in the field of environmental planning in both California and nationally. California recently enacted Assembly Bill (AB) 2087, which took effect on January 1, 2017, and outlines an advance mitigation program for identifying and prioritizing the conservation needs of vulnerable species and resources at a regional scale through the creation of Regional Conservation Investment Strategies (RCISs). Because of the increased interest in regional advance mitigation and its suite of co-benefits, California also enacted Senate Bill (SB) 1 legislation facilitating regional advance mitigation planning and allocating funding supporting its implementation. SB 103 legislation further defines the advance mitigation program and funding in SB 1 specifically as it applies to transportation.

These new programs and laws take a long-term approach to cumulatively consider potential impacts from proposed projects on natural resources and plan for the cumulative mitigation for those impacts in advance of project implementation. The result is a highly efficient project planning process resulting in lower overall project mitigation costs, decreased risk to project delivery, and much higher quality environmental outcomes over the traditional project-by-project mitigation approach that typically result in repetitive and redundant planning efforts resulting in piecemeal conservation outcomes.^{3,4} These increased benefits to both project delivery and natural resources result in a suite of co-benefits that a project-by-project planning and mitigation approach simply cannot achieve. In addition to the streamlined planning and reduction in mitigation costs, advance mitigation efforts can also support streamlined project permitting programs, reducing the time required for permitting during project development, and decreasing risks to project implementation from regulatory complications.

² Metro. 2017. *Executive Management Committee Board Report*. November, 16 2017. Measure M Early Project Delivery Strategy. Available: http://media.metro.net/board/Agendas/2017/11_november/20171116_board_report.pdf.

³ Thorne, J. H., Huber, P. R., O'Donoghue, E., & Santos, M. J. (2014). The use of regional advance mitigation planning (RAMP) to integrate transportation infrastructure impacts with sustainability; a perspective from the USA. *Environmental Research Letters*, 9(6), 065001.

⁴ California Department of Fish and Wildlife. 2017. Regional Conservation Investment Strategies Program Overview. Available from <https://www.wildlife.ca.gov/Conservation/Planning/Regional-Conservation>

Advance mitigation planning can provide assurances that mitigation options will be available and readily accessible. Currently there is a paucity of mitigation credit purchase options in the Los Angeles metropolitan area, which often results in the necessity to develop permittee responsible mitigation to offset project-related natural resource impacts on a project-by-project basis. In comparison to regional advance mitigation approaches, the project-by-project mitigation approach is often planning, labor, and cost intensive, inefficient, and requires long-term staffing for management of resources. Pooling project and agency resources and approaching mitigation cumulatively and regionally through advance mitigation planning addresses these inefficiencies and also results in better overall conservation outcomes.

Beginning in the late 1990s, the California Department of Transportation (Caltrans) developed the first real advance mitigation project of its kind, the Beach Lake Mitigation Bank, which was implemented in southern Sacramento County to provide mitigation credits for impacts on seasonal wetlands under Section 404 of the Clean Water Act. This bank cost approximately \$1 million to implement and provided mitigation for dozens of small transportation projects, saving Caltrans an estimated \$20 million compared with the purchase price of mitigation credits at the time of permitting for the transportation projects (Caltrans unpublished data). Other advance mitigation efforts in California have been initiated through local tax measures, such as TransNet⁵ in San Diego County and Measures M and M2² in Orange County. TransNet was a transportation planning measure, voted on in 1998, that included advance mitigation planning and implementation by the San Diego Association of Governments (SANDAG). Having identified mitigation needs as part of its transportation plan, TransNet was able to capitalize on a downturn in land prices during a lull in housing development to purchase mitigation lands at a low cost, providing a large cost savings to the program. Similarly, Measure M was voted on and approved in 1990 as a transportation funding mechanism in Orange County.⁶ It also included advance mitigation planning and land preservation components. Measure M2 is a second tax measure, continuing and improving upon the original Measure M. Although it continues to plan for transportation projects, the advance mitigation component also includes permitting assurances, further streamlining transportation project implementation. Caltrans and the California Department of Water Resources (DWR) formed a Regional Advance Mitigation Planning (RAMP) Work Group in 2008 and developed draft framework and guidance documents for RAMP programs and efforts. The Central Sacramento Valley Pilot Region RAMP and Bay Area Pilot RAMP, initiated in the late 2000s, have been making steady progress to establish regional advance mitigation programs. More information on regional advanced mitigation efforts in California can be found in Appendices A and B.

Advance mitigation programs have been implemented elsewhere in the United States. States such as North Carolina⁷ and Colorado⁸ have implemented advance mitigation programs in the form of programmatic permitting, mitigation, or in-lieu fee (ILF) programs for long-term planning of

⁵ San Diego Area Association of Governments. n.d. *TransNet Program*. Available: <https://www.codot.gov/programs/environmental/wildlife/guidelines/sgpibo.pdf>.

⁶ Orange County Transportation Agency. 2017. *Measure M and M2*. Available: [http://www.octa.net/Projects-and-Programs/Measure-M/Measure-M2-\(2011-2041\)/Freeway-Mitigation/Environmental-Mitigation-Program-Overview/](http://www.octa.net/Projects-and-Programs/Measure-M/Measure-M2-(2011-2041)/Freeway-Mitigation/Environmental-Mitigation-Program-Overview/).

⁷ North Carolina Department of Environmental Quality. n.d. *Stream, Wetland, and Buffer Program*. Available: <https://deq.nc.gov/about/divisions/mitigation-services/dms-customers/stream-wetland-buffer-process>.

⁸ Colorado Department of Transportation. n.d. *Colorado Shortgrass Prairie Programmatic Biological Opinion*. USFWS File No. ES/LK-6-CO-03-F-041. Available: <https://www.codot.gov/programs/environmental/wildlife/guidelines/sgpibo.pdf>.

transportation projects. These programs have provided the transportation agencies with regulatory assurances and streamlined the permitting process for transportation projects.

The new legislative actions (AB 2087, SB 1, and SB 103) and associated programs have the potential to facilitate, fund, and make possible the development of new regional advance mitigation efforts and partnerships throughout the state by both state and local agencies improving project delivery, efficiency, and conservation outcomes.

1.3 Benefits of a Regional Advance Mitigation Approach

Approaching natural resource mitigation with a regional, long-term planning horizon, and in advance of project impacts has a multitude of advantages and co-benefits to participants and natural resources over a traditional project-by-project mitigation approach. Several of the key advantages are generally described below.

More Cost-Effective: Pooling mitigation needs and securing mitigation for a collection of small (e.g., single-structure improvements, short-distance improvements) and large-scale (e.g., multiple-structure improvements, long linear improvements, new infrastructure) project impacts is more cost-effective than traditional project-by-project approaches that require piecemeal purchase of mitigation credits that often need to be purchased in quantities above and beyond what is required (i.e., due to minimum credit purchases at conservation banks or the size of available parcels). This “one-off” mitigation approach is labor intensive and expensive and may result in project delays if mitigation is not in place or purchased prior to initiation of project construction. Additionally, smaller piecemeal mitigation sites require higher per acre long-term management costs when compared to larger sites, which allow for lower overall management costs and long-term funding when implemented through advance mitigation programs.

Increased Efficiency: Coordinated planning of regional impacts and securing of mitigation prior to project implementation results in expedited project delivery, reduced project costs, streamlined regulatory approvals, and reduced project risk. It also eliminates the common risk of projects being halted due to mitigation not being in place prior to construction commencement. Efficiency is increased for all projects including, small and large-scale projects and maintenance actions. This is especially true for small projects with hard-to-find mitigation needs. Smaller projects tend to have shorter timeframes and fewer staff members assigned, resulting in limited time and resources. In addition, if a small project has unavoidable impacts on natural resources with no readily available mitigation options, the permitting process could require a level of effort and resources similar to those of a large project while still lacking sufficiently allocated resources such as staff, schedule, and funding. Advance mitigation can alleviate these risks to project delivery by identifying likely mitigation needs and securing mitigation in advance of projects.

Improved Partnerships: Regional advance mitigation provides collaboration opportunities for a wide range of project proponents and provides benefits to project proponents, resource agencies, and other stakeholders resulting in improved partnerships, project delivery, and project outcomes. Multiagency participation substantially increases the overall net value and value to any one user by combining planning and mitigation efforts to create a more comprehensive and synergistic advance mitigation portfolio (set of mitigation options) for the region. The larger mitigation portfolio created by multiagency advance mitigation would also allow for increased benefit to natural resources, which would further improve partnerships with resource agencies.

Better Conservation Outcomes: Regional-based conservation approaches result in conservation efforts which are more strategic, completing mitigation on fewer larger properties that are more physically connected to other conservation areas, and are more likely to meet regional conservation goals on a landscape and ecoregional scale. Project-by-project permittee-responsible mitigation is piecemeal and often does not substantially contribute to meeting regional conservation goals, resulting in fragmented and isolated conservation efforts. The larger mitigation projects implemented by advance mitigation programs provide greater ecological functions and improved conservation of wildlife movement corridors, when compared to project-by-project mitigation, by providing larger and more contiguous areas of habitat. Larger areas of habitat tend to be more diverse, provide habitat for a greater number and diversity of species, and are more resilient to external impacts such as species invasion than do smaller habitat areas. Planning mitigation at a regional scale also allows for larger scale conservation priorities to be accounted for such as implementing mitigation nearby or adjacent to existing conservation areas.

Accounting and Planning for Operations and Maintenance: A regional advance mitigation approach provides increased certainty for longer term operations and maintenance planning and enables increased confidence to anticipate longer term funding needs for budgeting and accounting. Currently, operations and maintenance projects are typically funded through yearly budget allocations from local or state funds rather than federal funding measures. They often have less flexibility to increase funding if costs, such as from mitigation, increase later in the project development process. This can cause projects to be delayed until funding can be allocated, which may be in a later fiscal year. By providing for anticipated mitigation needs well in advance of operations and maintenance activities, an advance mitigation program reduces the risk of delay from unanticipated mitigation costs. The additional confidence in operations and maintenance costs from an advance mitigation program would also allow for better planning of operation and maintenance activities by providing more accurate cost estimates and less risk of extended operations and maintenance activity completion times.

Chapter 2 describes the process of determining the mitigation need for Metro and the mitigation planning approaches available. Chapter 3 describes a preliminary screening process for reviewing Metro projects in an advance mitigation planning context and the potential for multiagency partnerships. Chapter 4 provides the recommended approach, based on the needs and feasibility for Metro long-term mitigation planning in the region, and identifies the next steps if the decision is made to pursue and RCIS.

1.4 Potential Perceived Costs and Risks of a Regional Advance Mitigation Approach

Regional advance mitigation approaches have several perceived costs and risks. In most cases, the perceived costs are alleviated by the significant cost savings that such an approach offers and/or are not necessarily unique to regional advance mitigation and faced by traditional mitigation approaches as well.

Regional advance mitigation requires substantial upfront funding and resources to plan and implement. Although the initial costs are higher, they are ameliorated because purchasing mitigation cumulatively is much more cost effective than a piecemeal project-by-project approach. In fact, there is a negative correlation between the quantity of mitigation purchased and the total cost of that mitigation, meaning that the more mitigation purchased, the larger the cost savings.

Another concern with regional advance mitigation is that mitigating so far in advance does not always anticipate future regulatory and resource requirements, with the potential for mitigation for different resources to be required in the future. Although there is no guarantee that all mitigation obligations will be met using a regional advance mitigation approach, the same future mitigation obligations will apply to project-by-project approaches; therefore, there is no net increase in risk with the regional advance mitigation approach. Furthermore, it may be argued that a regional advance mitigation approach, because of its landscape-scale approach to conservation, would be more easily adaptable to new regulatory requirements and, therefore, less likely to experience the consequences of such risks.

Chapter 2

Determining Mitigation Need and Approach

This chapter provides an overview of the existing natural resource considerations in the Metro planning processes, and discusses the available mitigation opportunities in the Metro planning area. Metro projects are generally implemented in highly urbanized areas (see Figure 2-1), although a variety of sensitive natural resources exist in the service area with potential to be affected by Metro projects. Impacts on natural resources such as species' habitats and aquatic resources are typically relatively small for most Metro projects. However, finding sufficient mitigation opportunities to complete the regulatory requirements for a given project may be difficult and in some cases can pose a significant barrier to project delivery.

2.1 Regulatory Requirements and Potential Need for Natural Resource Mitigation

Natural resource mitigation may be required for any project, regardless of project size, that causes unavoidable impacts on sensitive natural resources. The need for mitigation is determined by identification of impacts under various local, state, and federal laws and regulations during project planning with details negotiated during a project's environmental permitting process.

Biological resource (e.g., wildlife, plants, or habitats) mitigation may be required under state or federal laws such as the federal Endangered Species Act (FESA), California Endangered Species Act (CESA), or the California Fish and Game Code (CFGCC). Aquatic resources (e.g., regulated waters and wetland habitats) mitigation may be required by state and federal water regulations such as the federal Clean Water Act and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), which regulate impacts on aquatic resources.

Mitigation may also be required under the California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA) for impacts on sensitive natural communities, significant effects on plant or wildlife populations or their habitats, and impacts on fish and wildlife movement. The determination of significance depends on the context and intensity of the project effects. Regardless of location, larger projects are more likely to require mitigation and are more likely to have larger impacts than small projects solely based on their larger footprint, but many smaller projects such as minor alignment improvements, widenings, culvert maintenance and replacement, and bridge maintenance activities may impact sensitive natural resources which may require natural resource mitigation.

Although Metro projects do not have a history of substantial natural resource mitigation needs, their projects occur throughout the large and ecologically diverse Los Angeles County, and have the potential to impact a wide range of sensitive biological resources. Table 2-1 lists the sensitive biological resources present in Los Angeles County that have the potential to be affected by Metro or other agency infrastructure projects and very likely require compensatory mitigation for unavoidable impacts.

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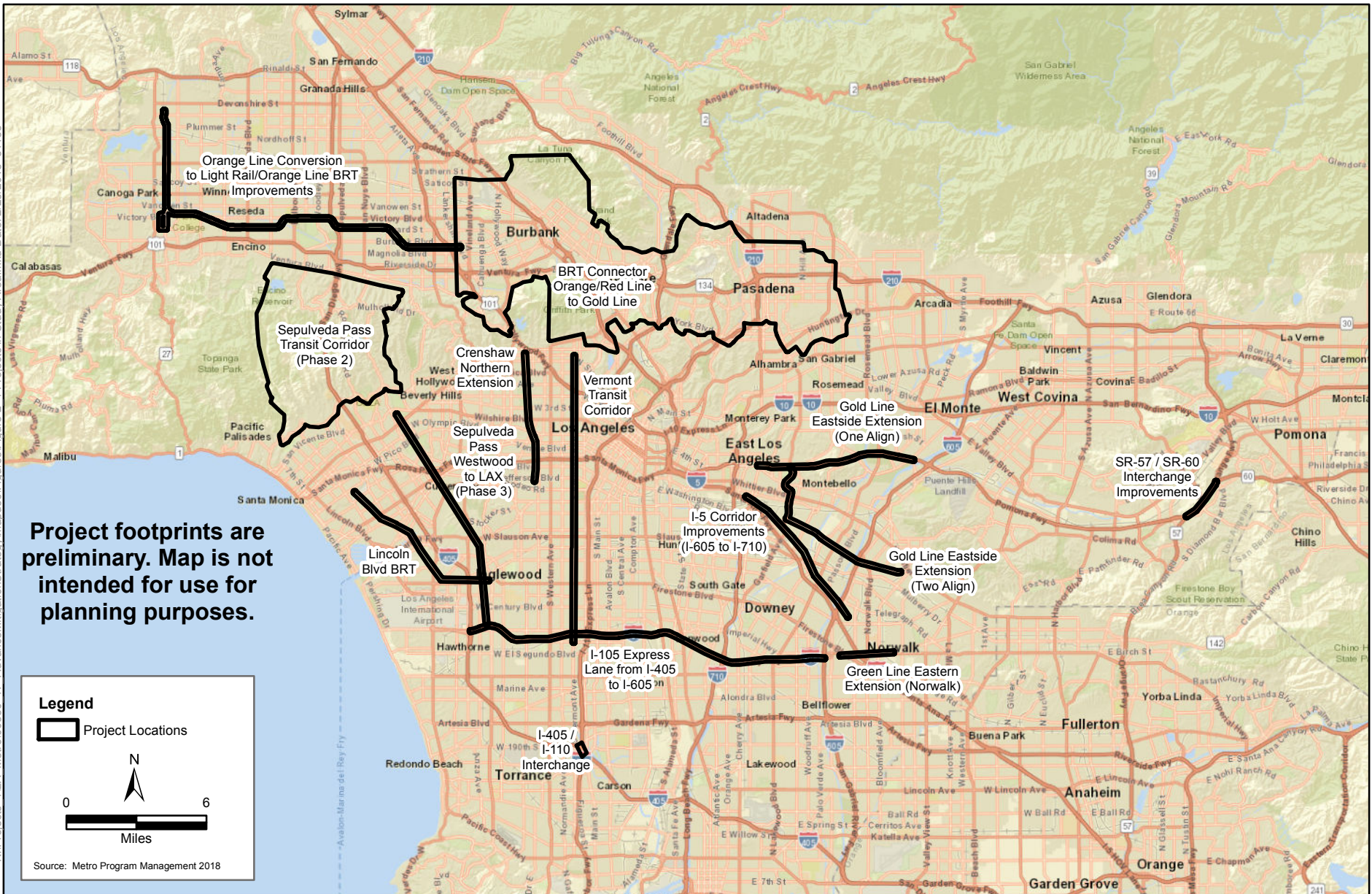


Figure 2-1 Future LA Metro Projects Considered in This Needs and Feasibility Analysis

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Table 2-1. Sensitive Biological Resources Present within Los Angeles County⁹

Biological Resource	Number Occurring in Los Angeles County
Federally listed species ¹⁰	50
Federally designated Critical Habitats	16
State listed species	40
State sensitive species ¹¹	334
Sensitive natural communities ¹²	25

There are approximately 1,700 acres of estuarine and marine resources; nearly 28,000 acres of lakes, reservoirs, ponds, and their associated riparian areas; and nearly 4,700 miles of rivers, streams, and other channels throughout the county. Many of these areas have been affected and channelized, but there are many portions of the county that have remaining intact aquatic resources.

Although most of the natural upland habitats have been developed in the urbanized portions of Los Angeles County, water resources and aquatic habitats are often avoided because they include floodplain development restrictions or other regulatory restrictions. Therefore, wetlands, streams and rivers are often the only remaining natural habitats in the urban landscape. Given the linear nature of many Metro transportation projects, there is higher potential for future Metro projects to pass through areas with these regulated resources, such as when project alignments cross streams and rivers.

2.1.1 Greenhouse Gas and Air Quality Mitigation

Transportation planning agencies are increasingly required to incorporate climate change adaptation planning (i.e., resiliency) and climate change mitigation (i.e., greenhouse gas [GHG] emissions reduction) into their planning processes due to the substantial effects that transportation has on climate change and the effects that climate change may have on transportation infrastructure due to rising sea levels which threatens infrastructure. A range of funding opportunities exists to support development of adaptation and implementation of mitigations. As the requirements to mitigate impacts on GHG and air quality increase, there will be increased opportunities to tie this mitigation to the natural resource mitigation for species, habitats, and aquatic resources through advance mitigation planning as well as through project-by-project mitigation. The following points are worth consideration when contemplating the co-benefits of natural resource and air quality and GHG mitigation.

- GHG mitigation is in its infancy, with a relatively open suite of potential opportunities. Caltrans District 7 has planted trees that may offer carbon sequestration benefits. Other opportunities include creation of wetlands, planting forests, eelgrass beds, etc. The California Department of Fish and Wildlife (CDFW) is still considering a standard way to account for sequestration credits. A benefit to accounting for GHG impacts in advance mitigation planning, and getting approval from CDFW, would be that Metro would be likely to have more flexibility in what they propose as GHG mitigation.

⁹ California Department of Fish and Wildlife. 2017. *California Natural Diversity Database*. Sacramento, CA. Wildlife and Habitat Data Analysis Branch. Element reports for Los Angeles County.

¹⁰ Listed as Threatened or Endangered.

¹¹ State sensitive species includes special animals, species of special concern, watch list, and fully protected species.

¹² As defined and listed by the California Natural Diversity Database.

- Currently, most GHG and air quality mitigation measures have to do with project design, capacity, multi-modal options, etc.; therefore, it is not clear how those could tie into an advance mitigation program. However, some advance mitigation programs including at least one potential RCIS have seriously considered the co-benefits and “stacking” of GHG mitigation credits with other natural resource mitigation.
- GHG mitigation could even include more diverse climate change options such as beach restoration that would mitigate for some sea level rise impacts. For example, living shoreline projects that could include salt marshes, which sequester a lot of GHG or projects that include some offshore elements such as an artificial reef, oyster bed, eelgrass, etc. could provide mitigation for sea-level rise.

2.2 Current Metro Project Planning and Mitigation Options

2.2.1 Business as Usual (Project-by-Project Mitigation)

Currently, Metro uses a traditional project-by-project approach to mitigating impacts on natural resources. This process includes early identification of potential environmental constraints followed by project-level natural resource inventories, impact assessments, and mitigation implementation to offset impacts on a project-by-project basis.

Preliminary environmental constraints analysis are often prepared early in the project planning processes such as during development of Regional or State Transportation Plans (RTPs, STPs) or during program level project concept development (project initiation) phase. During this process, proposed projects are briefly described, evaluated for environmental constraints. Then estimates are prepared for anticipated permitting and mitigation to be included in the project scope, cost, and schedule for each project under review. This process allows for necessary adjustments to schedules and funding early in the planning process, but is not linked to resource-specific mitigation planning and only provides the most basic of information on potential environmental constraints. Therefore, this information may not be suitable for comprehensive mitigation planning efforts due to its lack of detail. Project footprints are often subject to change between the project planning stage and project development, rendering the initial estimates a gross approximation of actual impacts.

Project-level natural resource inventories and impact assessments are conducted and mitigation needs are determined during the project environmental planning phase. Impacts on natural resources are avoided to the maximum extent practicable. Mitigation for unavoidable impacts is proposed at this time and later negotiated with regulatory agencies during project permitting which typically occurs during the project engineering and design.

2.2.2 Current Mitigation Options in the Los Angeles County Region

Established currently available mitigation options in the Los Angeles County regional are sparse. Within Los Angeles County, there is currently one approved mitigation bank with available mitigation credits (Petersen Ranch Mitigation Bank). The Petersen Ranch Mitigation Bank provides credits for aquatic resources under the Clean Water Act and Section 1600 of CFGC as well as a

variety of habitat types that may require mitigation under CEQA. The Petersen Ranch Mitigation Bank only provides species-specific mitigation credits for one species, the Swainson's hawk, which is protected under CESA. The bank can provide credits within its service area, which covers a portion of the northeastern corner of the county. The Santa Paula Creek Preservation Bank, located in Ventura County, services most of the western portion of Los Angeles County and provides mitigation credits for impacts on riparian habitat. The Santa Paula Creek Preservation Bank is approved for use by the U.S. Army Corps of Engineers (USACE) and CDFW.

There are three approved ILF programs in the western portion of Los Angeles County with the potential to provide mitigation for riverine and palustrine aquatic resources, however none of these programs currently have available credits.

There are two banks in the southwestern portion of the county that are pending approval. Both of these banks would provide mitigation credits for shallow marine and estuarine habitats, however, it is unclear if and when they will obtain regulatory agency approval and have mitigation credits available for purchase.

The overall lack of mitigation credits in the majority of the Metro area means that most impacts on natural resources would require the development of permittee responsible mitigation, but even then the heavily developed nature of the region reduces the availability of property for this type of mitigation. Implementing permittee-responsible mitigation for small mitigation requirements on a project-by-project basis is extremely inefficient and requires a substantial amount of staff time to acquire land, develop a restoration plan, obtain agency approval, preserve the property, and provide for long term monitoring and management.

2.3 Regional Advance Mitigation: RAMP and RCIS

There are two currently available methods for conducting regional advance mitigation planning in California: RAMP and RCIS. Both RAMP and RCIS apply a regional advance mitigation approach within a defined region; however, there are important distinctions between the two approaches. RAMP provides a non-formalized conceptual framework for identifying expected future regional mitigation needs and producing regional advance mitigation to meet those needs, however the RAMP framework does not include any formalized method for proving regulatory assurances from either state or federal agencies. RCIS is a formalized regional advance mitigation planning tool and implementation mechanism providing a structured framework and state wildlife agency regulatory assurances.

Benefits of and distinctions between project-by project, RAMP, and RCIS mitigation methods are summarized below in Table 2-2, which provides a comparison of the many benefits regional advance mitigation has to offer over traditional project-by-project mitigation. Detailed descriptions of both RAMP and RCIS, their history, processes, costs, and other considerations are discussed in Appendices A and B, respectively.

Table 2-2. Benefits of Traditional (project-by-project) and Regional Advance Mitigation Approaches

Benefits	Project-by-Project	RAMP	RCIS
Cost			
Lower overall mitigation costs		✓	✓
Better financial predictability		✓	✓
Lower project risk exposure		✓	✓
Formally adopted/approved framework			✓
Ability to partner with other agencies	✓	✓	✓
Scalable – Suitable for small to large groups of projects	✓	✓	✓
Enables Mitigation Credit Agreements (MCAs)			✓
Mitigation credits are sellable/tradable			✓
Schedule			
Potential for streamlined permitting and approvals		✓	✓
Regulatory assurances for advance mitigation from CDFW			✓
More efficient regional planning than NCCP/HCP ^a process		✓	✓
Protected Resources			
Better conservation outcomes		✓	✓
Allows mitigation credit for habitat enhancement actions			✓

^a. Natural Community Conservation Plan/Habitat Conservation Plan

Table 2-3. Estimated Relative Cost, Schedule, and Other Considerations of Project-by-Project and Regional Advance Mitigation Approaches

Mitigation Type	Planning and Implementation Cost	Time to Develop	Planning Effort Intensity	Environmental Co-Benefits	Project Delivery Risk
Project-by-Project	Low–High	0.5 years–> 5 years	Low–High	Low	Low–High
RAMP	Low–High	1–5 years	Moderate–High	High	Low
RCIS	Moderate–High	1.5–2 years	Moderate–High	High	Low

2.4 Other Alternative Mitigation Approaches

2.4.1 Developing a Mitigation/Conservation Bank

Mitigation or Conservation Banks (hereafter referred to as mitigation banks) are areas of land that are acquired for conservation, restoration, establishment, enhancement, and preservation under special circumstances, of natural resources such as wetlands other waters or species habitat areas to serve as compensation for unavoidable impacts on natural resources. Mitigation bank lands are placed under conservation easements and are conserved in perpetuity. Mitigation banks are created under formal agreements with applicable regulatory agencies and may serve as a mechanism for advance mitigation credit and streamlining project permitting and approvals for a variety of activities. Mitigation banks may cover species-specific habitat and resources and/or wetlands and

waters and may satisfy regulatory requirements from both state and federal agencies such as U.S. Fish and Wildlife Service (USFWS), USACE, CDFW, and Regional Water Quality Control Board (RWQCB) through the purchase of compensatory mitigation credits.

Mitigation banks must complete a NEPA and/or CEQA review process, as applicable, including assessment of impacts on other environmental and cultural resources.

Development of a mitigation bank requires a minimum of 1 year and an expected agency review period of approximately 18 months. Development and review timeframes will vary depending on the complexity of the bank and the number of resources proposed for mitigation crediting.

Substantial financial and planning resources are required to develop a mitigation bank because the bank will need to secure land suitable for mitigation, develop and implement a Habitat Mitigation and Monitoring Plan, conduct 5 to 10 years of success monitoring, provide short-term financial assurance to secure implementation, and provide long-term financial assurances, providing for management of the bank in perpetuity.

Although a mitigation bank may not complete implementation and meet all success criteria in 5 to 10 years or more, credits are made available at various points throughout the process, as determined through the Bank Enabling Instrument (BEI), the document developed by the regulatory agencies approving the mitigation bank.¹³ Even with these costs, development of a mitigation bank may be the most cost effective method of implementing advance mitigation depending on regional conditions and mitigation needs.

Additional credits not needed for planned infrastructure, or credits for planned projects that did not materialize, can also be sold to other transportation agencies to recover mitigation bank development costs.¹⁴ Federal agencies and the RWQCBs generally prioritize mitigation through the purchase of credits at an approved bank over other mitigation options, meaning that projects able to complete mitigation in this manner are likely to require lower mitigation ratios.¹⁵

2.4.2 Developing an In-Lieu Fee Program

ILF programs are similar to mitigation banks in that they provide mitigation credits that are pre-approved for a designated service area by federal and state regulatory agencies, however they differ in the timing of implementation of the mitigation. ILF programs also require agency approval of their financial and credit pricing structure, which is not required of mitigation banks. The ILF programs are regulated by the USACE, but other state and federal agencies may participate in the interagency review team, and approve credits in an ILF program. The main difference between a mitigation bank and an ILF program is that a mitigation bank is based on a specific parcel, or suite of parcels of land while an ILF program initially designates a service area, type of credits provided, credit structure, and implementation plan, then implements mitigation within a specified timeframe after credit purchases. Because mitigation is not in the ground prior to a credit purchase, ILF credits are second in preference to most state and federal regulatory agencies. NEPA and or CEQA approval is required for both the approval of the ILF program, as a discretionary agency approval, and for each mitigation project within the program.

¹³ 33 CFR 332.2

¹⁴ California Streets and Highways Code Section 800.6

Similarly to mitigation banks, ILF programs generally require a minimum of 1 year to develop and 18 months for regulatory approval. These timeframes vary, depending on the feasibility of the proposal and complexity of the program. For example, the ILF program managed by the National Fish and Wildlife Foundation has a service area that covers the entire USACE Sacramento District and includes other state and federal regulatory agencies. This ILF program required approximately 3 years to develop and receive agency approval.

ILF programs have lower initial costs than does a mitigation bank because initial costs need only to provide funds for planning and development of the program, not land acquisition, mitigation implementation, or short- or long-term financial assurances. These costs are included in the credit purchase price and therefore are not required initially. The addition of each mitigation site within an ILF requires approval by all applicable regulatory agencies.

ILF programs can be of particular benefit to infrastructure agencies in planning for advance mitigation because they can be used to develop, and get approval for, a mitigation crediting structure within a region. New mitigation sites can be added to an ILF, with agency approval, based on the original program structure. This allows infrastructure agencies regulatory assurances for future projects. Additionally, depending on the funding structure within the infrastructure agency, they can pre-fund mitigation projects within an ILF program, providing true advance mitigation.

2.4.3 Natural Community Conservation Plan Habitat Conservation Plan

Development of joint Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) is a regulatory-based option that can achieve advanced regulatory approvals and advance mitigation in California. The NCCP/HCP combines state (CDFW) and federal (USFWS) regulatory processes for endangered species protection under the state and federal Endangered Species Acts to issue incidental take permits and facilitate advance mitigation, resulting in streamlined regulatory approvals. Under an NCCP/HCP, a project proponent (or proponents) may seek take authorizations for a variety of project activities in exchange for establishing and implementing a number of conservation and mitigation actions, which can function as an advance mitigation program.

Advance regulatory permitting such as CDFW Streambed Alteration Agreements and Section 401/404 permitting is often developed in parallel to the HCP/NCCP process, thus adding additional advance regulatory approvals and mitigation for wetland and water resources.

The timing to develop an HCP/NCCP has ranged from approximately 5 years to more than 10 years. It varies substantially because of program complexity, availability of existing data, number of species and natural communities, funding, and agency availability and staff time. The Orange County Transportation Authority (OCTA) M2 NCCP/HCP took approximately 6 years to complete (completed in 2016, permits issued in 2017). The parallel aquatic resource permitting and advance mitigation program is nearly complete at this time.

Costs to prepare an HCP/NCCP also vary substantially for similar reasons, ranging from approximately \$1 million to more than \$5 million. Preparation of an HCP/NCCP requires NEPA and CEQA environmental review.

Chapter 3

Determining Advance Mitigation Feasibility

Chapter 3 outlines a project screening process, potential funding mechanisms, and partnerships. The screening process described in Section 3.1 is intended to aid Metro in considering the benefits to Metro project delivery of a regional advance mitigation program and the potential risks to project delivery that could be reduced or eliminated through implementation of an advance mitigation approach. This screening process could as easily be applied to other infrastructure projects from agencies that may be considering partnering with Metro in a multiagency regional advance mitigation approach.

3.1 Project Screening Process

Having the ability to systematically screen projects for potential risk of impacting environmental resources and subsequent risks to project delivery is an invaluable tool for project planning, design, and delivery and can indicate if a project or group of projects could benefit from the availability of a regional advance mitigation program. A project screening process may be useful for Metro project planners and designers, and could also be used to assess the environmental resources and resource values on Metro parcels and other assets. The screening process could also benefit other infrastructure agencies and conservation organizations throughout the county and contribute to improved project planning and mitigation coordination throughout the region.

3.1.1 Project Screening Overview

Screening all foreseeable Metro projects to determine feasibility and the potential benefit to Metro of a regional advance mitigation approach is a two-step process. The first step involves an assessment of the environmental impact of a project on natural resources and the required mitigation. The second step involves an assessment of a variety of other factors, identified as screening criteria, including, but not limited to, the total number and frequency of projects with impacts, funding and scheduling considerations, and the potential for multiagency partnerships.

The basic process of determining overall environmental risk and potential need for natural resource mitigation is a relatively straightforward process. Natural resource data can be evaluated spatially in relation to proposed project locations and their potential impact areas. Ranking the relative sensitivities of each natural resource data type can be based on resource sensitivity and likelihood of potential need for mitigation (see Environmental Risk Classification, below). Then, it can be determined if future projects have potential impacts on natural resources. Impacts on natural resources can be assessed and quantified within the proposed project footprint. The potential for impacts can be identified in terms of direct and indirect impacts as well as temporary and permanent impacts, according to the level of detail available in the project footprint data. This evaluation process also informs the level of risk to project delivery, such as project costs and schedule constraints, resulting from potential natural resource impacts and environmental risk categories. Once the environmental risk is determined, the additional screening criteria can be applied to determine overall feasibility of a regional advance mitigation approach.

The evaluation of projects through an environmental risk screening process¹⁶ can occur at multiple steps in the project delivery and planning process as described below.

Natural resource data applicable in the screening process could include, but not limited to:

- Distributions of sensitive species (modeled predicted distribution and field collected occurrence data)
- Mapped vegetation communities
- Mapped aquatic resources, including potential for state and federally regulated waters
- Critical Habitat as designated by USFWS
- Wildlife movement and migration corridors
- Existing protected habitat areas and other designated Open Space
- Other infrastructure often located and associated with habitat value areas, such as bridges and culverts (often used as bat and bird roosts and wildlife underpasses) and water quality and storm water control facilities

An evaluation of projects being screened with these natural resource data could be used to estimate the overall relative risk of project alignments as a whole, by alternative, or by segment, along with a determination of the natural resource types being affected (e.g., which species habitat) and projected potential need for mitigation. In addition, the environmental risk evaluation process can be used to identify and inform level of risk to project delivery during the screening process.

The following sections describe the conceptual approach from the perspective of a project planner who would use the screening process during various phases of project planning. The screening process can also be applied to a group of projects to assess the cumulative risk of natural resource impacts and the potential need for a regional advance mitigation approach.

3.1.2 Screening to Determine Environmental Risk

Natural resource data can be evaluated to identify planning-level risk to Metro project development, based on natural resource sensitivities and constraints, as defined by four risk categories described below. The overall potential benefit of an advance mitigation approach is, in part, dependent on the level of risk a group of foreseeable projects may have with respect to requiring mitigation for natural resources; however, the potential benefit also depends on a number of other criteria, such as how frequent the projects will occur, how soon the projects will be implemented, among other things. Evaluation of projects relative to these risk categories, in combination with additional criteria (see Table 3-1 in Section 3.1.1.3, Regional Advance Mitigation Feasibility, below), can help Metro and other agencies determine the need, feasibility, and relative costs, benefits, and risks of mitigation approach alternatives.

¹⁶ Note that the screening process described here is focused primarily on natural resource values but could easily be expanded to include other sensitive resources, such as cultural resources, socioeconomic/environmental justice information, and any other spatially explicit data sources of interest.

3.1.2.1 Category 1 Least Risk of Natural Resource Sensitivities and Constraints

Areas with minimal identified natural resource constraints and/or with existing land uses or designations that are compatible with or encourage transportation development. These areas would present few or minimal natural resource mitigation requirements. Projects in this risk category would present negligible effects on project schedule and cost and are least likely to result in project delays.

Example: None to one non-listed special-status species or habitats present, less than 0.1 acres of impacts on federal non-wetland waters, none to limited impacts on state waters, no impacts on wetlands, less than significant effects species, habitat, wildlife connectivity, and existing conservation efforts.

3.1.2.2 Category 2 Low to Moderate Risk of Natural Resource Sensitivities and Constraints

Areas where development may encounter one or more natural resource sensitive areas or constraints that would require low to moderate permit complexity or mitigation costs. This category also includes areas or projects that have an unknown land use designation or degree of restriction to transportation development. Projects in this risk category would present minimal to moderate effects on project schedule and cost and are less likely to result in project delays.

Example: Up to several non-listed special-status species or habitats present, more than 0.1 acres and less than 0.5 acre of impacts on federal or state non-wetland or wetland waters¹⁷, low potential for significant effects on wildlife, habitats, wildlife connectivity, or existing conservation efforts.

3.1.2.3 Category 3 High Risk of Natural Resource Sensitivities and Constraints

Transportation development is likely to encounter one or more natural resource sensitivities or constraints that would substantially increase permitting complexity and could result in project delays and high mitigation costs. This category would also include projects that may have small impacts on difficult to replace natural resources as this can add complexity to permitting and mitigation. Projects in this risk category would present potentially substantial effects on project schedule and cost and are more likely to result in project delays.

Example: Several non-listed special-status species or listed species and/or habitats present, more than 0.5 acres of impacts on federal and state non-wetland or wetland waters, potential for impacts on wetlands, moderate potential for significant effects on wildlife, habitats, wildlife connectivity, or existing conservation efforts.

3.1.2.4 Category 4 Areas Presently Precluded by Law or Regulation

Areas where transportation development is presently precluded by federal, state, or provincial law, policy, or regulation, as well as areas where development would represent a “fatal flaw” likely to

¹⁷ U.S. Army Corps of Engineers. Summary of Nationwide Permits. 2017. Available form: http://www.usace.army.mil/Portals/2/docs/civilworks/nwp/2017/nwp2017_sumtable_Jan2017.pdf?ver=2017-01-06-091151-173

preclude successful project completion. Projects in this risk category would present substantial effects on project schedule and cost and are most likely to result in project delays.

Example: Anticipated substantial impacts on listed species such as jeopardy biological opinion and/or where insufficient mitigation is available for unavoidable impacts on waters, wetlands, or other sensitive species and natural resources resulting in immitigable impacts.

3.1.3 Criteria to Determine Regional Advance Mitigation Feasibility

Once the environmental risks have been determined for a set of projects, the results can then be used to apply additional criteria to determine if Metro (or other agencies) would benefit from a regional advance mitigation approach. Table 3-1 provides an overview of the criteria and thresholds that may be applied to determine need and feasibility with respect to developing a regional advance mitigation program. Note that projects with an environmental risk of Category 1 are, by definition, unlikely to need natural resource mitigation and, therefore, would not realize significant benefits from an advance mitigation approach. The criteria below should be applied to projects with an environmental risk of Category 2 through Category 4.

Table 3-1. Criteria and Thresholds for Determining Need and Feasibility to Develop Regional Advance Mitigation (thresholds are cumulative across all projects under consideration)

Criteria	Threshold for Likely Benefit from Advance Mitigation Approach
1. Magnitude of project impacts on natural resources (acres per species habitat or aquatic resource).	> 5 ac/year (species) > 0.5 ac/year (aquatic resources)
2. Number of different natural resource types impacted including federal or state listed species, other CEQA sensitive species or biological resources (e.g., wildlife corridors), and/or state and federal regulated aquatic resource type	> 3-5 species and/or resources
3. Frequency of project impacts on natural resource a) Projects with large impacts b) Projects with small impacts	1-2 projects every 5 years 5-10 projects every 5 years
4. Timing of initiation of project that will impact natural resources	> 3 years
5. Currently available mitigation options (including potential to use Metro parcels for mitigation)	Depends on resource type and amount needed (see Section 2.2.2)
6. Relative cost of current project-by-approach vs. cost of developing RAMP/RCIS	RAMP/RCIS efficiency increases as number and frequency of impacts increases
7. Likelihood of multiagency partnership to contribute to the development of a RAMP/RCIS	Two or more partners
8. Opportunities for income generation (Metro parcels as mitigation and/or advance mitigation credits in MCA)	MCA credits have market value, Metro parcel value depends on biological resources (see Section 3.2.3)

The environmental risk classification and the criteria in Table 3-1, below, have been applied to Metro projects under consideration in this Needs and Feasibility report and are summarized in Section 4, Recommended Approach (Tables 4-1 and 4-2).

3.2 Funding Considerations for Advance Mitigation

Innovative funding mechanisms have been created in recent years for advance mitigation approaches. Local sales tax measures have been enacted specifically to fund long-term advance environmental mitigation, and recent state legislation has directed a substantial amount of funding specifically for RAMP and RCIS development and implementation.

3.2.1 New California Legislation Specific to Funding Advance Mitigation

SB 1, the California Road and Repair Accountability Act of 2017, provides significant state transportation funding over a 20-year period. The bill establishes the Advance Mitigation Program in Caltrans to protect natural resources and accelerate project delivery. The bill would require the department to set aside not less than \$30 million annually for 4 years for the program from capital outlay revenues. Funding is accessible to projects programmed under the State Transportation Improvement Program and the State Highway Operation and Protection Program. SB 1 also provides up to \$20 million to local and regional agencies for climate adaptation planning, which may include ecological enhancement and restoration efforts plans.

SB 103 established the Advance Mitigation Account to manage funds in the Advance Mitigation Program established by SB 1 through the State Transportation Fund as a revolving fund. The bill requires expenditures from the account to later be reimbursed from individual project funding available at the time a planned transportation project is constructed. The bill, which would continuously appropriate the moneys in the fund for the purposes of the Advance Mitigation Program, states that the Advance Mitigation Program is intended to become self-sustaining. The process for obtaining funding under SB 103 for implementation of advance mitigation is currently under development.

SB 103 extends the use of funds in the Advance Mitigation Program to allow use for the following:

- Purchasing approved mitigation credits in existing mitigation banks,
- Developing new mitigation banks and ILF programs,
- Completing advance mitigation planning such as developing a RAMP or an RCIS and associated Mitigation Credit Agreements (MCAs), or
- Other appropriate mitigation methods.

3.2.2 Other Potential Funding Mechanisms

Funding for advance mitigation can come from a variety of sources and mechanisms. Other potential funding mechanisms include, but are not limited to:

- Partnerships between various project proponents provide opportunities to pool resources, expertise, and funding to facilitate advance mitigation efforts.
- Innovative revenue generating sources may be sourced to support facilitating advance mitigation efforts (e.g., OCTA Measure M2)
- Traditional project funding mechanisms can be used to implement advance mitigation by creating a project for development and implementation of advance mitigation.

- Advance mitigation projects are potentially federally reimbursable if the mitigation provided is used for federal transportation projects or federally funded transportation projects. Reimbursement can be applied during the normal project programming and funding process.

3.2.3 Potential for Income Generation and Risk Reduction

Under an RCIS, the mitigation credits in an MCA are considered sellable, tradable, and exchangeable goods that have the potential for generating income under the following scenarios:

- Lands currently owned by Metro that have biological value may be placed under an MCA and sold, traded, or exchanged.
- Land may be purchased when cost effective, set aside under an MCA, or sold, traded, or exchanged at a later date, knowing that those lands will have useful mitigation value in the future.

Other opportunities for income generation include excess credits developed under a mitigation bank or ILF program, which may be sold to external parties under the bank enabling instrument; lands owned or purchased by Metro may have conservation easements and mitigation placed on them by other parties for a fee.

Because these underlying mitigation credits have market value, the overall risk of a loss of capital invested to establish the mitigation credits is substantially reduced. Any mitigation credit not needed for Metro projects can be sold to recoup costs and potentially generate a profit.

3.3 Agency Partnerships and Infrastructure Projects Applicable to Recommended Approach

While Metro may gain some benefits from implementing regional advance mitigation as a single agency, greater benefits to the region's infrastructure agencies and natural resources will be possible if additional infrastructure agencies, regulatory agencies, and other stakeholders are involved. The inclusion of additional infrastructure agencies will increase the pool of potential mitigation need, which will make the costs and benefits for a regional advance mitigation approach feasible. The increase in identified mitigation need could allow for the implementation of larger mitigation projects, which in turn would provide greater environmental benefits and greater cost savings to the infrastructure agencies.

Infrastructure agencies and other stakeholders that could provide input to or benefit from a partnership with Metro on development of regional advance mitigation with Metro include transportation and infrastructure agencies and partners, resource agencies, and external stakeholders in the Metro planning area.^{18,19}

¹⁸ Thorne, J. H., Huber, P. R., O'Donoghue, E., and Santos, M. J. 2014. The Use of Regional Advance Mitigation Planning (RAMP) to Integrate Transportation Infrastructure Impacts with Sustainability; A Perspective from the USA. *Environmental Research Letters*, 9(6), 065001.

¹⁹ California Department of Fish and Wildlife. 2017. *Regional Conservation Investment Strategies Program Overview*. Available: <https://www.wildlife.ca.gov/Conservation/Planning/Regional-Conservation>.

While no formal partnership for the development of a regional advance mitigation program in the Metro planning area exist or are currently in development, potential partners could include but are not limited to:

Infrastructure Agencies

- Caltrans
- County of Los Angeles
- City of Los Angeles and the 87 other cities in Los Angeles County
- Investor Owned Utilities (i.e., Southern California Edison, The Gas Company)
- Metropolitan Water District of Southern California
- Local Water Districts

Resource Agencies

- CDFW
- USFWS
- USACE
- USEPA
- RWQCB

External Stakeholders in the Metro Planning Area

- Environmental non-government organizations (ENGOS)
- Mitigation Bank or ILF programs
- Large land owners

4.1 Summary of Metro Projects Environmental Risk and Application of Feasibility Criteria

Fifteen foreseeable Metro projects were screened, using the screening process described in Section 3.1. The individual project results are included in Appendix C, along with summary tables listing the types of natural communities, species, and aquatic resources potentially affected by each project and requiring mitigation. Two of the 15 Metro projects included in this evaluation were determined to have an environmental risk of Category 1. The remaining 13 projects were determined to have an environmental risk of Category 2 or 3.

The results of the environmental risk assessment are summarized in Table 4-1, below, along with the project timing for planning and construction for each of the projects. The criteria to determine if a regional advance mitigation approach is feasible for Metro were then applied, with the results shown in Table 4-2.

4.2 Recommendation: RCIS with Multiagency Partnerships

The recommended regional advance mitigation approach is for Metro to develop an RCIS in partnership with other agencies. This recommendation is based on the outcome of the preliminary screening analysis in Table 4-2 and the other supporting information presented in this report, including:

1. Documentation of the statewide facilitation of regional advance mitigation legislation and funding discussed in Section 1.2,
2. The numerous co-benefits of an applied regional advance mitigation framework presented in Section 1.3,
3. The lack of mitigation options in the Metro region discussed in Section 2.2,
4. The preliminary consideration of the likelihood of impacts on natural resources from foreseeable Metro projects outlined in Chapter 2 and below, and
5. The multitude of benefits that an RCIS would provide to Metro, outlined in Section 2.3,

Full implementation of the screening process outlined in Section 3.1.1 (especially with respect to cost) is likely to reveal that Metro projects alone are unlikely to justify the cost of developing an RCIS; therefore, we recommend that an RCIS be developed with the partnership of additional infrastructure agency partners.

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Table 4-1 Environmental Risk Classification and Project Timing for Metro Projects

	BRT Connector Orange/Red Line to Gold Line	Crenshaw Northern Extension	Gold Line Eastside Extension (One Align)	Gold Line Eastside Extension (Two Align)	Green Line Eastern Extension (Norwalk)	I-105 Express Lane from I-405 to I-605	I-405/I-110 Interchange	I-5 Corridor Improvements (I-605 to I-710)	Lincoln Blvd BRT	Orange Line BRT Improvements	Orange Line Conversion to Light Rail	Sepulveda Pass Transit Corridor (Phase 2)	Sepulveda Pass Westwood to LAX (Phase 3)	SR-57/SR-60 Interchange Improvements	Vermont Transit Corridor	Total Number of Instance s
Environmental Risk Classification																
<i>Risk Category</i>	3	2	2	2	1	2	1	2	2-3	2	2	3	3	2	2	
Number of Instances of Natural Communities Affected	6	0	3	3	1	1	0	2	2	2	2	7	4	2	1	36
Number of Instances of Waters Affected	13	0	2	2	1	5	0	2	2	6	6	1	1	2	0	43
Number of Instances of Species Affected	29	7	2	1	0	3	2	1	3	5	5	7	7	2	6	80
Project Timing																
Planning Phase Start/End Year	18/20	19/25	18/21	36/40	19/25	18/20	36/38	19/24	25/29	18/19	43/46	19/22	40/43	18/20	18/20	
Project Start/End Year	18/29	19/48	18/35	36/58	19/53	18/30	36/47	19/43	25/48	18/22	43/58	19/34	40/58	18/31	18/29	

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Table 4-2. Potential Benefit for Metro of Regional Advance Mitigation Approach

Criteria	Threshold for Likely Benefit from Advance Mitigation Approach	Benefit Determination Based on Cumulative Assessment of Metro Projects
1. Magnitude of project impacts on natural resources (acres per species habitat or aquatic resource).	> 5 ac/year (species) > 0.5 ac/year (aquatic resources)	Benefit: Likely to exceed acreages for several projects.
2. Number of different natural resource types affected, including federal or state listed species, other CEQA sensitive species or biological resources (e.g., wildlife corridors), and/or state and federal regulated aquatic resource types.	> 3–5 species and/or resources	Benefit: More than three natural resources affected on most projects.
3. Frequency of project impacts on natural resource a) Projects with large impacts b) Projects with small impacts	1–2 projects every 5 years 5–10 projects every 5 years	Benefit: Both thresholds exceeded.
4. Timing of initiation of project that will affect natural resources.	> 3 years	Mixed: 10 of 15 projects scheduled for construction in less than 3 years.
5. Currently available mitigation options (including potential to use Metro parcels for mitigation).	Depends on resource type and amount needed (see Section 2.2.2)	Benefit: Unlikely that Metro parcels could provide mitigation for most of the affected natural resources.
6. Relative cost of current project-by-approach vs. cost of developing RAMP/RCIS.	RAMP/RCIS efficiency increases as number and frequency of impacts increases	Likely Benefit: Depends on scale and complexity of advance mitigation approach, number of agencies sharing in cost, and current project-by-project relative costs.
7. Likelihood of multiagency partnership to contribute to the development of a RAMP/RCIS.	Two or more partners	Benefit: Clear benefit to other agencies; therefore, potential for partnership is high.
8. Opportunities for income generation (Metro parcels as mitigation and/or advance mitigation credits in MCA).	MCA credits have market value; Metro parcel value depends on biological resources (see Section 2.5.3)	Unknown: Depends on biological value, restrictions on use of parcels, and investment in future MCAs.

Chapter 3, Section 3.3, identifies some of the agencies that may have infrastructure projects that could benefit from an RCIS. Several of these agencies are already participating in the Resources Management Subcommittee of the Metro Sustainability Council. Based on the results of this analysis, it is recommended that Metro coordinate with interested agencies to facilitate a preliminary project screening process for those agencies to enable evaluation of the potential need for a regional advance mitigation approach for other agencies. As the potential for benefits to other agencies are considered, it is also recommended that Metro initiate conversations regarding formal partnerships with agencies that have established mitigation needs and an interest in partnering on the development of an RCIS.

Other agencies and organizations with an interest in conservation in the region (e.g., ENGOs, mitigation bankers, and large land owners) are important stakeholders in the RCIS process. Therefore, it is recommended that these organizations are included in the RCIS stakeholder process if interested. A few ENGOs are already participating in the Resources Management Subcommittee of the Metro Sustainability Council.

4.3 Information and Data Needed to Develop an RCIS

4.3.1 Future Projects Information and GIS Data

The following project information will need to be compiled to identify the RCIS planning and service area and to identify project footprints and impact areas:

- A list of all foreseeable Metro projects proposed within an identified planning horizon (e.g., 28 by 28, Metro Long Range Transportation Plan, or a 2040 planning horizon)
- A similar list from other partner agencies.
- Project footprint GIS data for all proposed projects.

4.3.2 Species and Natural Communities Distribution Data

Natural resource GIS data within the identified service/planning area needed to develop an RCIS include, but are not limited to:

- Natural vegetation community
- Wetland and waters
- Focal species distribution and potential habitat
- Existing wildlife corridors, linkages, and wildlife crossings
- Climate modeling data showing potential effects on future species distributions and wildlife corridors

4.3.3 Other Land Use Planning/Ownership, and Conservation Planning Data

Other information and data considerations needed to develop an RCIS include the following:

- Existing and planned land use
- Generalized ownership
- Protected areas data
 - Locations of exiting or planned conservation easements and reserve lands
 - Locations of existing conservation and mitigation banks
 - Locations of existing mitigation
 - Existing and proposed conservation plans
 - Other public designated natural open space (local, state, and federal parks, preserves, and other public protected areas)

Appendix A

RAMP Program Detailed Description

History and Description of the RAMP Process

Regional Advance Mitigation Planning (RAMP) is a general non-regulatory conceptual approach to mitigation which integrates compensatory mitigation and conservation into infrastructure project planning very early in the project planning phase (e.g. 10- to 20-year planning horizon) and on a regional scale. Cumulatively assessing impacts on natural resources on a long-term planning horizon and cumulatively mitigating for impacts on natural resources on a regional scale results in co-benefits to projects and natural resources including faster and less expensive project delivery, reduced project risk, improved regulatory agency partnerships, and more effective regional-scale conservation.

The general concept of RAMP has been developing for over 20 years among state and federal transportation and regulatory agencies including Caltrans and the California Department of Fish and Wildlife (CDFW), with a more formalized process and approach being developed in California in the 2000s. The concept of RAMP has taken various forms such as agency partnerships, and coalitions initiated to develop RAMP approaches, or as standalone policies within individual agencies. Caltrans and the California Department of Water Resources (DWR) formed a RAMP Work Group in 2008 and have developed Draft framework and guidance documents for RAMP programs and efforts, however these documents were never finalized and are not currently available because efforts have shifted to implementing the new RCIS program (Assembly Bill [AB] 2087) and related initiatives in Senate Bill (SB) 103. Although the draft state framework and guidance documents are not available right now, developing a RAMP to identify anticipated mitigation needs and options is an important process to understand and consider. It should be noted, however, that over the 20-year development timeframe, there have been a number of hurdles preventing RAMP from being the standard in advance mitigation planning. These hurdles have stemmed from a lack of dedicated funding for planning at agencies and the regional level, differences in agency missions and authorities, and mismatches between identified mitigation needs and mitigation opportunities. Consequently, there are few RAMP programs to reference as successful examples.

Key Elements of a RAMP

In concept, RAMPs are developed and implemented in a multi-step approach including development of a minimum of three key elements, including a Regional Assessment, Action Plan, and Implementation Phase. Additional steps may be included, or steps may be combined, as needed, to meet the needs of individual efforts. A description of these key elements and processes are outlined below.

Regional Assessment

A Regional Assessment is prepared to identify upcoming projects within the chosen planning horizon, identify ecoregional areas and natural resources to be considered, conduct coordination with various regulatory agencies to identify conservation priority locations within the planning area, and perform impact analyses to inform mitigation needs. Projects chosen for consideration for advance mitigation must be planned for far enough in the future to allow mitigation identified in the

RAMP to be secured prior to project permitting, or the mitigation will not be considered in advance of the project by the regulatory agencies. This is generally more than 3 to 5 years, depending on the complexity of the planning area and ability of the infrastructure agency to implement mitigation. Because the intent of a RAMP is to identify mitigation that will meet the needs of planned projects, the natural resources considered in the assessment should include or be a subset of, the natural resources identified as potentially impacted. Through coordination with the agencies and analysis of regional habitats, the RAMP assessment identifies mitigation opportunities including existing mitigation credits and permittee-responsible advanced mitigation options. Items needed to complete this process include project and natural resource GIS data, regulatory agency support and coordination, a RAMP approach framework, and funding to support the planning effort.

Action Plan

The next phase generally includes preparation of an Action Plan, which is the project development phase of RAMP. This phase includes the identification of the RAMP mitigation projects and details how they will be implemented and funded. Mitigation planning and programming should include all land, design, environmental clearance, construction, monitoring, and long-term management costs required from the applicable permitting agency. This phase also includes CEQA/NEPA analyses for the mitigation projects. As with other projects, the CEQA or NEPA lead agency would be the state, local, or federal agency with the most involvement in the project, unless otherwise determined through a cooperative agreement. A local agency such as Metro may be the most appropriate agency to act as CEQA lead while Caltrans, acting as Federal Highways, the USACE, or USFWS may be the most appropriate federal agency to act as NEPA lead. Mitigation projects identified can include a full suite of options from purchase of existing mitigation credits, development of permittee-responsible mitigation projects, development of mitigation banks, conservation banks, or ILF programs, and or development of an RCIS and Mitigation Credit Agreement (MCA, as described in Section 2.3.4). Mitigation projects may also address larger conservation goals such as wildlife movement or being located adjacent to other conservation or preservation areas. Goals may include integrating multiagency project mitigation approvals making RAMP a one-stop-shop for a full suite of mitigation needs. RAMPs that provide a full suite of mitigation for the planned infrastructure projects will provide the most benefit to the resources and provide greater risk reduction to projects. Action plans that include the purchase of approved credits or the development of an MCA, ILF, or bank provide the infrastructure agency with the regulatory assurances provided by these processes. The development of permittee-responsible mitigation prior to project permitting does not include any regulatory assurance that the mitigation will be accepted when the project is permitted. Funding may be provided by pre-payment from the identified projects, identification of the mitigation as a stand-alone project, or advance mitigation funding sources as discussed further in Section 2.5.

Implementation Phase

The implementation of an Action Plan involves completing the mitigation projects identified in the Action Plan through mechanisms including ILF Credit purchases, mitigation bank credit purchases, developing ILF or mitigation banks, permittee-responsible mitigation, or through other available mitigation mechanisms (e.g. Mitigation Credit Agreements via RCIS, which is under consideration for the Bay Area RAMP, which overlaps with the East Bay and Santa Clara County RCISs) as identified.

Implementation of the Action Plan should be organized to ensure that mitigation is in place prior to project permitting to see benefits from advance mitigation planning. If credits are purchased from an ILF program or mitigation bank, special arrangements will need to be made on the purchase

agreement to reserve the credits (through a completed purchase) on the ledger to comply with federal mitigation banking and ILF rules while allowing the credits to be applied to a specific project at a later date.

Key Considerations

Benefits of Adopting a RAMP Framework Include:

- Projected lower overall mitigation costs than project by project approach
- Streamlined permitting and approvals
- Better financial predictability for infrastructure funding
- Lower project risk exposure to delays that occur when waiting to secure mitigation during project delivery
- Better ability to provide large-scale ecologically based conservation
- Ability to bolster and assist ongoing conservation efforts
- Potential ability to partner with regulatory agencies
- Mitigation option when no others are available in region
- Increasingly becoming preferred mitigation framework
- Comprehensive and systematic approach to mitigation
- More efficient regional conservation planning than HCP/NCCP process

Challenges Inherent to the RAMP Framework Include:

- No formally adopted statewide guidance on process or documentation
- Coarse resolution – long time horizon
- The RAMP process does not provide advance mitigation credit or regulatory assurance from agencies
- Planning intensive process – may not be appropriate for projects currently in Project Delivery phase
- May not foresee upcoming or unique mitigation needs in the future i.e., lacks flexibility
- Few proof-of-concepts past implementation phase
- Not practical for small mitigation needs in most situations

Timeline to Develop a RAMP

Generally the timeline to develop an RAMP Regional Assessment and Action Plan is approximately 1 to 3 years. Implementation phase can take 1 to 5 years, depending on the type of mitigation chosen. Development timeframes vary because they depend on the availability of project and resource availability, staffing in both the infrastructure agency and regulatory agencies, complexity of the action plan, and the ability of the infrastructure agency to implement projects. Due to the limited number and implementation of RAMPs, these numbers are estimated based on

the time the time needed to complete two existing RAMPs from RAMP initiation of the Regional Assessment through completion of the Action Plan. This timeline estimate also considers the time required to complete mitigation credit purchases, develop a bank or ILF, and implement permittee-responsible mitigation. Neither existing RAMP has completed the Implementation Phase.

Implementation Requirements

Although RAMP is a non-regulatory-based framework, implementation and provision of regulatory agency mitigation credit does require regulatory agency approval. Because RAMP lacks a specific regulatory framework, RAMP-specific implementation requirements are generally minimal and include the following consideration:

- Agreements with specific agencies on details of planning and implementation will be required on a case-by-case basis. Generally these will require Regional Assessment and Action Plan as outlined above to be approved by regulatory agencies crediting mitigation.
- Regulatory oversight would be completed by agencies with specific authority over the resources being mitigated for and on-going monitoring and reporting will be negotiated with regulatory agencies.
- Will require implementation funding and potential for additional funding if on-going management, monitoring, and reporting are required.

Examples of RAMP Efforts in California

Central Sacramento Valley Pilot Region

The Central Sacramento Valley Pilot Region RAMP effort was led by Caltrans and DWR. All state and federal agencies signatory to the RAMP MOU participated in development of this RAMP. The majority of the transportation planning effort for this RAMP was completed by Caltrans District 3 biologists. Planning for this RAMP pilot began in the mid to late 2000s with the latest information update provided in 2011. It is unclear if the Regional Assessment was approved, if an Action Plan was completed, or if any mitigation identified in this effort was implemented.

Planning began by defining the regional assessment boundary area to include identified infrastructure projects and provide mitigation opportunities to meet project needs. Infrastructure project included 34 Caltrans and nine DWR projects identified within a 20-year planning horizon. A preliminary analysis of the projects was completed to determine an estimate of mitigation needs by resource type. Additionally, a Marxan analysis was completed using the reserve-selection algorithm to identify potential mitigation opportunities. The analysis included land cover, connectivity information, parcel boundaries, existing roads, planned roadway projects, existing conservation lands and threatened and endangered species occurrence location. The analysis provided potential mitigation opportunities as well as a ranking of how likely they were to be of high conservation value. The analysis did not identify whether or not the properties were available or if there were other development plans that may affect their viability for mitigation.

Bay Area Pilot RAMP

The Metropolitan Transportation Commission (MTC) has recommended the adoption of RAMP as the agency's preferred mitigation strategy and is currently testing a pilot project to develop lessons learned in coordination with Caltrans, the Coastal Conservancy, and other partners. The effort's goal is to have RAMP serve as one-stop-shop for multiagency project mitigation approvals rather than RCIS which only provides approval from CDFW.

The Bay Area Pilot RAMP effort is being led by the California Coastal Conservancy, Metropolitan Transportation Commission (MTC), and The Nature Conservancy (TNC). A Technical Advisory Committee (TAC) involved in the development process, developed in 2015, is composed of state, federal, and local agencies with stakeholder advisors from local NGOs. Staff will also examine funding options for a self-sustaining fund to fund reasonable costs associated with implementation. A RAMP status report will be provided to the MTC Planning Committee in 2018 with findings

The Bay Area Pilot RAMP Regional Assessment is composed of a Transportation Assessment (which identifies upcoming projects and mitigation needs using a 2040 planning horizon and performs impacts assessment to obtain estimation of resources that must be avoided and mitigation needs) and a Conservation Assessment (which identifies comprehensive data and resource inventory to inform impacts and conservation priorities) covering a nine-county service area.

The Bay Area Pilot RAMP project has not been fully implemented and is currently developing an Action Plan and working on identifying seed-funding which involves exploring options such as tax measures used by others (e.g., OCTA). The Bay Area RAMP is also awaiting definitive findings of its Regional Assessment to identify what advance mitigation projects will be necessary. Implementation has not been implemented but may entail exploring MCAs (via RCIS) or other mitigation opportunities.

Appendix B

RCIS Program Detailed Description

Regional Conservation Investment Strategies Program

Below is a detailed description and history of the RCIS program, based on the June 2017 version of the Regional Conservation Investment Strategies (RCIS) Guidelines and California Fish and Game Code Sections 1850–1861.

History and Description of the RCIS Process

In 2016, the California Legislature worked with the California Department of Fish and Wildlife (CDFW) and a variety of other entities and stakeholders to find creative ways to guide voluntary conservation actions and mitigation actions for the state’s most vulnerable species and resources, in conjunction with public infrastructure or forest management. This collaboration resulted in Assembly Bill 2087 (AB 2087), which outlines a program for identifying and prioritizing the conservation needs of vulnerable species and resources at a regional scale. The program includes actions to address the impacts of climate change and other stressors and pressures that influence the resiliency of those species and natural resources. AB 2087, signed by the Governor on September 22, 2016, amends the California Fish and Game Code (CFGF) Division 2, Chapter 9, to add Sections 1850–1861, which create a pilot regional conservation investment strategy program through January 1, 2020.

The program allows for CDFW or any public agency²⁰ to develop a regional conservation investment strategy (RCIS) to guide protection of focal plant and wildlife species and other important conservation elements. Once approved by CDFW, an RCIS can be used to identify areas of highest conservation priority for conservation investments by public agencies or conservation organizations. An approved RCIS can also be used voluntarily by public infrastructure agencies or private developers to help with their selection of appropriate mitigation sites or actions. To support and guide development of RCISs, CDFW released the Regional Conservation Investment Strategies Program Guidelines (Program Guidelines) in April 2017 and revised Program Guidelines in June 2017 and again in February 2018.

Once an RCIS is approved by CDFW, an applicant may prepare a Mitigation Credit Agreement (MCA) and request its approval by CDFW. An MCA identifies the type and number of credits a person or entity proposes to create by implementing one or more conservation actions or habitat enhancement actions, as well as the terms and conditions under which those credits may be used. MCAs enable advance mitigation, which is compensatory mitigation for estimated impacts on ecological resources (species and their habitat) and other natural resources that contributes to the fulfillment of regional conservation priorities and that is implemented prior to impacts occurring. The MCA can be designed to satisfy a range of state wildlife laws, including the California Endangered Species Act, California Environmental Quality Act (CEQA), and Lake or Streambed Alteration requirements of the CFGF.

²⁰ Any state agency, board, or commission, any county, city and county, city, regional agency, public district, redevelopment agency, or other political subdivision.

Key Elements and Requirements of an RCIS

As stated in CFGC Section 1852(b), the purpose of an RCIS is to provide voluntary guidance for one or more of the following, in ways that will enhance the long-term viability of native species, habitat, and other natural resources.

- Identification of wildlife and habitat conservation priorities, including actions to address the impacts of climate change and other wildlife stressors.
- Investments in natural resource conservation.
- Infrastructure planning.
- Identification of areas for compensatory mitigation for impacts on species and natural resources.

The RCIS encourages a voluntary, nonbinding, non-regulatory regional planning process intended to result in higher-quality conservation outcomes. An RCIS establishes conservation goals and objectives and describes conservation actions that may be used as a basis to provide advance mitigation or to inform other conservation planning processes and investments. The following are key elements and requirements of an RCIS include:

- RCIS conservation purpose
- Description of RCIS area
- Identification of focal species and other conservation elements²¹
- Conservation and habitat enhancement actions for focal species and other conservation elements
- Summary of existing conservation banks in the RCIS area
- Consistency with existing NCCPs, HCPs, or other land-use plans
- Reliance on best available scientific information
- Climate change vulnerability assessments for focal species
- Consideration of existing and foreseeable major infrastructure and future development
- Fee of \$28,500 to CDFW for review and approval. This fee includes coordination between CDFW and the applicant during document development (including meetings), as well as CDFW review time. Additional fees may be assessed for amendments to the RCIS.

Timeline to Prepare an RCIS

The timeline to prepare an RCIS is intended to be much shorter than the typical timeline to develop current regional conservation plans. The RCIS can rely on existing information and best available scientific information from publicly available sources. No additional data collection should be necessary, which streamlines the timeline for RCIS development. This timeline will also depend upon the number of focal species and other conservation elements identified and the RCIS, and the

²¹ Conservation needs for focal species and other conservation elements are addressed through the RCIS.

applicant's preference for stakeholder involvement with potential conservation partners, but could be expected to last 12 to 18 months. Once the RCIS is developed, the following are required CDFW and public review periods before the RCIS can be approved, which is illustrated in Figure 1 of the RCIS program guidelines:

- 30 days for CDFW's initial review for completeness
- If complete, within 30 days CDFW will make the RCIS available for public review for at least 30 days
- 60 days prior to submitting a final RCIS to CDFW, the board of supervisors and city councils in each county within the RCIS area must be notified and allowed a period of at least 30 days to submit written comments (this can be concurrent with the public review period)
- After the final RCIS is submitted to CDFW, CDFW has 30 days to approve the RCIS (or notify the applicant if incomplete).

The CDFW and public review and approval process could be anticipated to last anywhere from 6 to 8 months. Therefore, the total RCIS development and approval process would take 18 to 26 months.

Mitigation Credit Agreements

MCAs are the implementation vehicle for RCISs. Once an RCIS is approved by CDFW, any public or private entity may prepare for CDFW approval an MCA for one or more conservation or enhancement actions that measurably advances the conservation goals and objectives of this RCIS. MCAs enable advance mitigation credits, which are transferable by sale, trade, or exchange. An MCA identifies the type and number of credits a person or entity proposes to create by implementing one or more conservation actions, as well as the terms and conditions under which those credits may be used.

In establishing advance mitigation, an MCA can provide a number of significant benefits, particularly for agencies or entities with predictable long-term mitigation needs. An MCA can provide the following benefits.

- The MCA applicant can set aside or purchase lands when doing so is most cost effective, knowing those lands will provide useful mitigation values in the future.
- Mitigation credits can be pooled across large sites or multiple sites, providing economies of scale to deliver mitigation more efficiently across many projects.
- An MCA provides certainty and predictability to the MCA sponsor for the future costs of project mitigation under state laws.
- An MCA gives CDFW and other resources agencies some assurance that proposed mitigation fits within a larger conservation framework (the RCIS) and that investments in resource protection, restoration, and enhancement collectively contribute to meeting regional conservation goals and objectives.

A person or entity, including a state or local agency, with mitigation needs may choose to enter into an MCA with CDFW for a single, large mitigation site with multiple phases, a suite of mitigation sites, or even a specific region (e.g., watershed boundary or municipality) within the RCIS area.

MCAs will facilitate permitting under the California Endangered Species Act for RCIS focal species that are state listed and other species whose conservation need is analyzed or otherwise provided for in the RCIS. The MCA can also be designed to satisfy a range of other state wildlife laws and regulations, including the California Environmental Quality Act (CEQA), and Lake or Streambed Alteration requirements of the CFGC. An MCA can also be used to meet the requirements of other state and federal environmental laws and regulations with the approval of applicable state or federal regulatory agencies.

In addition to identifying the types and amounts of mitigation credits that will be created through implementation of conservation actions, MCAs provide a schedule for the release of the credits based on relevant milestones in project implementation (e.g., land protection, restoration goal achievement). CDFW must approve the release of all credits after the MCA sponsor meets performance-based milestones established by the MCA.

Typically, mitigation credits will be established for the following types of conservation actions.

- Permanent acquisition of land development rights (including placement of a conservation easement).
- Restoration of resources that creates new and/or increases existing habitat function for a focal species or species whose conservation need is analyzed or otherwise provided for in the RCIS.
- Enhancement of focal species or other species whose conservation need is analyzed or otherwise provided for in this RCIS, habitat conditions, or habitat connectivity.

An MCA developed under an RCIS must also be consistent with any previously approved or amended RCIS, state or federal recovery plan, or other state or federal approved conservation strategy that overlaps with the RCIS area. An MCA must also take into account any approved mitigation bank and available mitigation credits at these banks in the RCIS area. The MCA must explain how available mitigation credits at approved banks will be purchased or used in combination with the MCA mitigation credits. If available bank credits will not be purchased or used, an MCA must explain why. More information on the MCA development and approval process can be found on the CDFW website for the RCIS program.

Implementation Requirements

RCIS implementation requirements are minimal, and include:

- Ensuring that this RCIS is updated at least once every 10 years so that it reflects the most up-to-date information about resources in the RCIS area.
- Assessing progress toward meeting this RCIS's goals and objectives, through conservation investments and mitigation actions, at least once every 10 years, or until all mitigation credits are used.

These requirements are the responsibility of the public agency that prepared the RCIS (or amended a previously approved RCIS), or an entity identified by the public agency. CDFW recommends the RCIS applicant work closely with stakeholders and other public agencies early in the RCIS development process to discuss and possibly determine which entity will be responsible for updating the RCIS within 10 years of the initial approval.

CDFW may extend the duration of an approved RCIS for additional periods of up to 10 years after this RCIS is updated with new scientific information and CDFW finds that this RCIS continues to meet the requirements of CFGC 1852. CDFW

Examples of RCISs in California

There are six RCISs currently being developed: Yolo County, East Bay, Santa Clara, Antelope Valley, Mid/Upper Sacramento River, and San Bernardino (Figure B-1). The first four in this list were selected in part because of substantial available scientific data known to be available to support the development of robust RCISs in a relatively short amount of time. These four pilots were also selected in consideration of potential mitigation needs in these areas due to foreseeable infrastructure development. In addition to the six active RCISs there are many other areas have been discussing the potential of developing an RCIS, including the North Coast, Sonoma County, Baylands (north San Francisco Bay), many flood control regions of the Central Valley, Sierra/Tahoe, southern San Joaquin Valley, Orange County, San Diego County, the Salton Sea, and Metro.

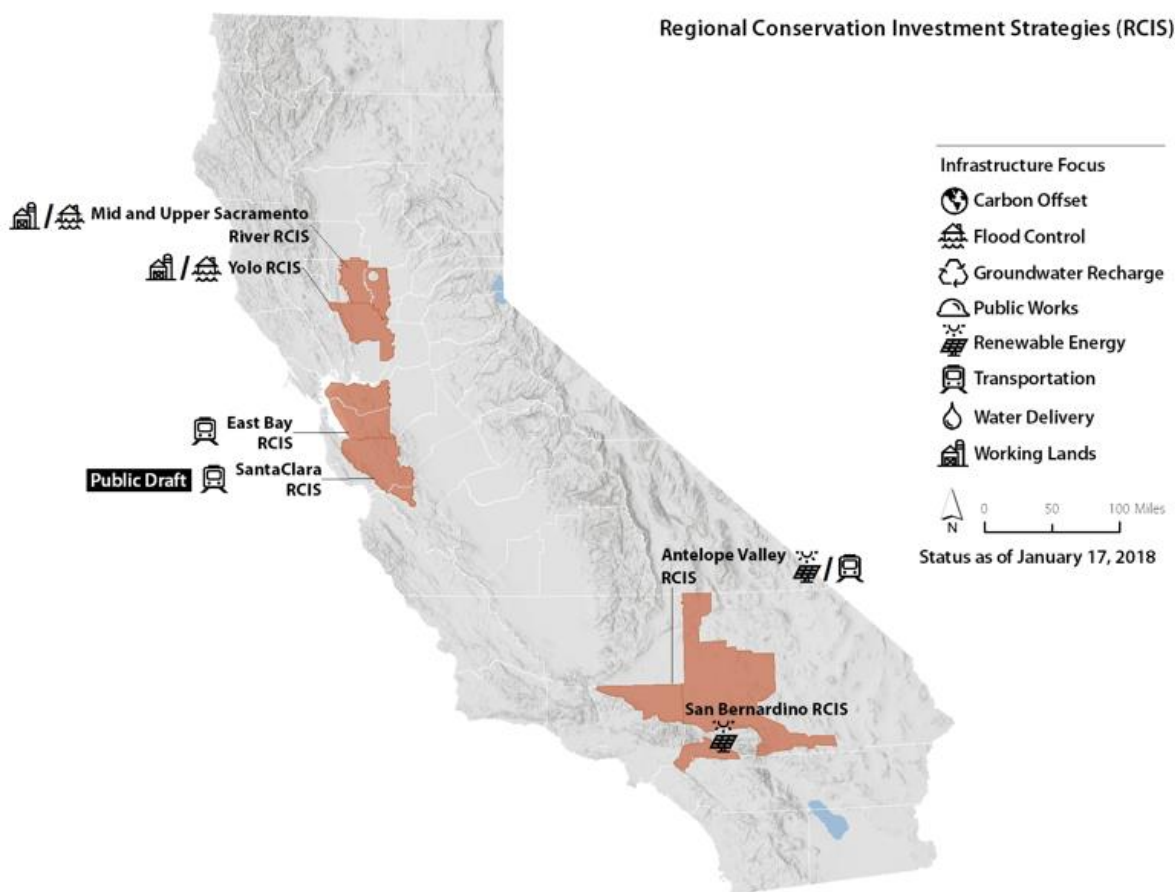


Figure B-1 Statewide RCIS Program Status (January 2018)

The Santa Clara RCIS has already been submitted to CDFW for review was selected to be the first RCIS because a number of transportation projects will be designed and proposed for construction in the next 3 to 10 years and not all of these projects will have their species mitigation needs met by the Santa Clara Valley Habitat Plan (ICF International 2012), a Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP) approved in 2013 by the U.S. Fish and Wildlife Service (USFWS) and CDFW. Many of the transportation projects were not covered by the Santa Clara Valley Habitat Plan because they were initially aligned with ongoing efforts by the Metropolitan Transportation Commission (MTC), the California State Coastal Conservancy (Coastal Conservancy), and The Nature Conservancy to establish the Bay Area RAMP program. Fortunately, the Santa Clara County “subregional assessment” in the Bay Area RAMP includes a detailed assessment to identify a portfolio of high-quality conservation projects that can be implemented through one or more MCAs with CDFW; in doing so, it will demonstrate the benefits of the RCIS.

Table C-1 summarizes the required elements of the RCIS and where these elements appear in the CFGC. In addition to the statutory requirements provided in Table B-1, applicants will be required to comply with the RCIS program guidelines, which provide more specific guidance on the required components of RCIS and recommended or required standards that must be met for CDFW’s approval.

Table B-1. California Fish and Game Code Requirements for an RCIS

California Fish and Game Code Section	Required Element
1852(c)	The department may approve a regional conservation investment strategy pursuant to this chapter. A regional conservation investment strategy may be proposed by the department or any other public agency, and shall be developed in consultation with local agencies that have land use authority within the geographic area of the regional conservation investment strategy. The department may only approve a regional conservation investment strategy if one or more state agencies request approval of the regional conservation investment strategy through a letter sent to the director indicating that the proposed regional conservation investment strategy would contribute to meeting both of the following state goals: (1) Conservation. (2) Public infrastructure or forest management.
1852(c)(2)	An explanation of the conservation purpose of and need for the strategy.
1852(c)(2)	The geographic area of the strategy and rationale for the selection of the area, together with a description of the surrounding ecoregions and any adjacent protected habitat areas or linkages that provide relevant context for the development of the strategy.
1852(c)(3)	The focal species ²² included in, and their current known or estimated status within, the strategy.
1852(c)(4)	Important resource conservation elements within the RCIS area, including, but not limited to: <ul style="list-style-type: none"> • Important ecological resources and processes. • Natural communities. • Habitat. • Habitat connectivity. • Existing protected areas.

California Fish and Game

²² Focal species are species whose conservation needs are addressed through the RCIS.

Code Section	Required Element
1852(c)(5)	<ul style="list-style-type: none"> • An explanation of the criteria and methods used to identify those important conservation elements. <p>A summary of historic, current, and projected future stressors and pressures in the RCIS area, including climate change vulnerability, on the focal species, habitat, and other natural resources, as identified in the best available scientific information, including, but not limited to, the State Wildlife Action Plan.</p>
1852(c)(6)	<p>Consideration of major water, transportation and transmission infrastructure facilities, urban development areas, and city, county, and city and county general plan designations that accounts for reasonably foreseeable development of major infrastructure facilities, including, but not limited to, renewable energy and housing in the RCIS area.</p>
1852(c)(7)	<p>Provisions ensuring that the strategy will comply with all applicable state and local requirements and does not preempt the authority of local agencies to implement infrastructure and urban development in local general plans.</p>
1852(c)(8)	<p>Conservation goals and measurable objectives for the focal species and important conservation elements identified in the strategy that address or respond to the identified stressors and pressures on focal species.</p>
1852(c)(9)	<p>Conservation actions, including a description of the general amounts and types of habitat that, if preserved or restored and permanently protected, could achieve the conservation goals and objectives, and a description of how the conservation actions and habitat enhancement actions were prioritized and selected in relation to the conservation goals and objectives.</p>
1852(c)(10)	<p>Provisions ensuring that the strategy is consistent with and complements any administrative draft natural community conservation plan, approved natural community conservation plan, or federal habitat conservation plan that overlaps with the RCIS area.</p>
1852(c)(11)	<p>An explanation of whether and to what extent the strategy is consistent with any previously approved strategy or amended strategy, state or federal recovery plan, or other state or federal approved conservation strategy that overlaps with the RCIS area.</p>
1852(c)(12)	<p>A summary of mitigation banks and conservation banks approved by the department or USFWS that are located within the RCIS area or whose service area overlaps with the RCIS area.</p>
1852(c)(13)	<p>A description of how the strategy’s conservation goals and objectives provide for adaptation opportunities against the effects of climate change for the strategy’s focal species.</p>
1852(c)(14)	<p>Incorporation and reliance on, and citation of, the best available scientific information regarding the RCIS area and the surrounding ecoregion, including a brief description of gaps in relevant scientific information, and use of standard or prevalent vegetation classifications and standard ecoregional classifications for terrestrial and aquatic data to enable and promote consistency among regional conservation investment strategies throughout California.</p>
1852(d)	<p>A regional conservation investment strategy shall compile input and summary priority data in a consistent format that could be uploaded for interactive use in an Internet Web portal and that would allow stakeholders to generate queries of regional conservation values within the RCIS area.</p>
1852(e)	<p>In addition to considering the potential to advance the conservation of focal species, regional conservation investment strategies shall consider all of the following:</p> <ul style="list-style-type: none"> • The conservation benefits of preserving working lands for agricultural uses. • Reasonably foreseeable development of infrastructure facilities.

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Code Section	Required Element
1854(a)	<ul style="list-style-type: none"> • Reasonably foreseeable projects in the RCIS area, including, but not limited to, housing. • Reasonably foreseeable development for the production of renewable energy. • Draft natural community conservation plans within the area of the applicable regional conservation investment strategy. <p>The department may prepare or approve a regional conservation investment strategy, or approve an amended strategy, for an initial period of up to 10 years after finding that the strategy meets the requirements of Section 1852.</p>
1854(c)(1)	<p>A public agency shall publish notice of its intent to create a regional conservation investment strategy. This notice shall be filed with the Governor’s Office of Planning and Research and the county clerk of each county in which the regional conservation investment strategy is found in part or in whole. If preparation of a regional conservation investment strategy was initiated before January 1, 2017, this notice shall not be required.</p>
1854(c)(3)(A)	<p>A public agency proposing a strategy or amended strategy shall hold a public meeting to allow interested persons and entities to receive information about the draft regional conservation investment strategy or amended strategy early in the process of preparing it and to have an adequate opportunity to provide written and oral comments.</p>
1854(c)(3)(B)	<p>In a draft regional conservation investment strategy or amended strategy submitted to the department for approval, the public agency shall include responses to written public comments submitted during the public comment period.</p>
1854(c)(4)	<p>At least 30 days before holding a public meeting to distribute information about the development of a draft regional conservation investment strategy or amended strategy, a public agency proposing a strategy shall provide notice of a regional conservation investment strategy or amended strategy public meeting as follows:</p> <ul style="list-style-type: none"> (A) On the public agency’s Internet Web site and any relevant LISTSERV. (B) To each city, county, and city and county within or adjacent to the regional conservation investment RCIS area. (C) To the implementing entity for each natural community conservation plan or federal regional habitat conservation plan that overlaps with the RCIS area. (D) To each public agency, organization, or individual who has filed a written request for the notice, including any agency, organization, or individual who has filed a written request to the department for notices of all regional conservation investment strategy public meetings.
1854(c)(5)	<p>At least 60 days before submitting a final regional conservation investment strategy or amended strategy to the department for approval, the public agency proposing the investment strategy or amended strategy shall notify the board of supervisors and the city councils in each county within the geographical scope of the strategy and provide the board of supervisors and the city councils with an opportunity to submit written comments for a period of at least 30 days.</p>
1854(e)	<p>The department shall require the use of consistent metrics that incorporate both the area and quality of habitat and other natural resources in relation to a regional conservation investment strategy’s conservation objectives to measure the net change resulting from the implementation of conservation actions and habitat enhancement actions.</p>
1856(b)	<p>For a conservation action or habitat enhancement action identified in a regional conservation investment strategy to be used to create mitigation credits pursuant to this section, the regional conservation investment strategy shall include, in addition to the requirements of Section 1852, all of the following:</p> <ul style="list-style-type: none"> • An adaptive management and monitoring strategy for conserved habitat and other conserved natural resources.

Appendix C

Review/Screening Example: Metro Projects

Project Environmental Impact Screening

Appendix C provides an example for preliminary screening for 15 foreseeable Metro projects, based on an overlay of rough project location boundaries with mapped natural resources, including natural vegetation communities, in Table C-1; special-status and listed plant and animal species occurrences, in Table C-2; and wetland and other potentially regulated water resources, in Table C-3. The potential effects of these projects on USFWS-designated Critical Habitat was also evaluated; however, none of these projects overlapped any mapped Critical Habitat. This preliminary screening example did not assess potential effects on wildlife movement and migration corridors, existing protected habitat areas, or other designated Open Space. Figure C-1 shows the location of projects relative to natural communities.

Because of the coarse nature of this preliminary screening example, quantitative acreages of potential effect are not provided because they would be a gross overestimate of true potential effects. Instead, each table qualitatively indicates the natural resources potentially affected by indicating which natural resources occur within the rough project location boundaries. Each project is described in the following sections, with a project area map displaying the natural communities in the vicinity of the project. As an example of how the screening information can be used, a preliminary assessment of the potential risk to project delivery was completed and an environmental risk classification was assigned, based on the environmental risk classification categories described in Section 3.1.1.2 of the Needs and Feasibility Assessment report. The environmental risk classification assigned through this example application of the screening process is shown in Figure C-2 for each of the 15 projects. The types of natural communities, species, and wetland features identified as potentially affected by each project in the tables below are an indication of the possible mitigation needs of each project. Having advance mitigation established for these biological resource would limit the potential effect on overall project delivery.

Table C-1. Natural Communities Potentially Affected by Foreseeable Future Metro Projects

Natural Community Type	BRT Connector Orange/Red Line to Gold Line	Crenshaw Northern Extension	Gold Line Eastside Extension (One Align)	Gold Line Eastside Extension (Two Align)	Green Line Eastern Extension (Norwalk)	I-105 Express Lane from I-405 to I-605	I-405/I-110 Interchange	I-5 Corridor Improvements (I-605 to I-710)	Lincoln Blvd BRT	Orange Line BRT Improvements	Orange Line Conversion to Light Rail	Sepulveda Pass Transit Corridor (Phase 2)	Sepulveda Pass Westwood to LAX (Phase 3)	SR-57/SR-60 Interchange Improvements	Vermont Transit Corridor
Coastal Scrub	X		X						X			X	X		
Mixed Chaparral	X											X	X		
Chamise-Redshank Chaparral												X			
Annual Grassland	X		X	X	X	X			X	X	X	X	X	X	X
Coastal Oak Woodland	X											X	X		
Freshwater Emergent Wetland				X				X							
Lacustrine	X			X				X				X			
Valley Foothill Riparian	X		X							X	X	X		X	

K:\Projects_1\LA_Metro\00580_17_Advance\Mitigation\Strategy\mapdoc\Figure C-1_Vegetation in Study Area.mxd Date: 2/23/2018 3:41:53

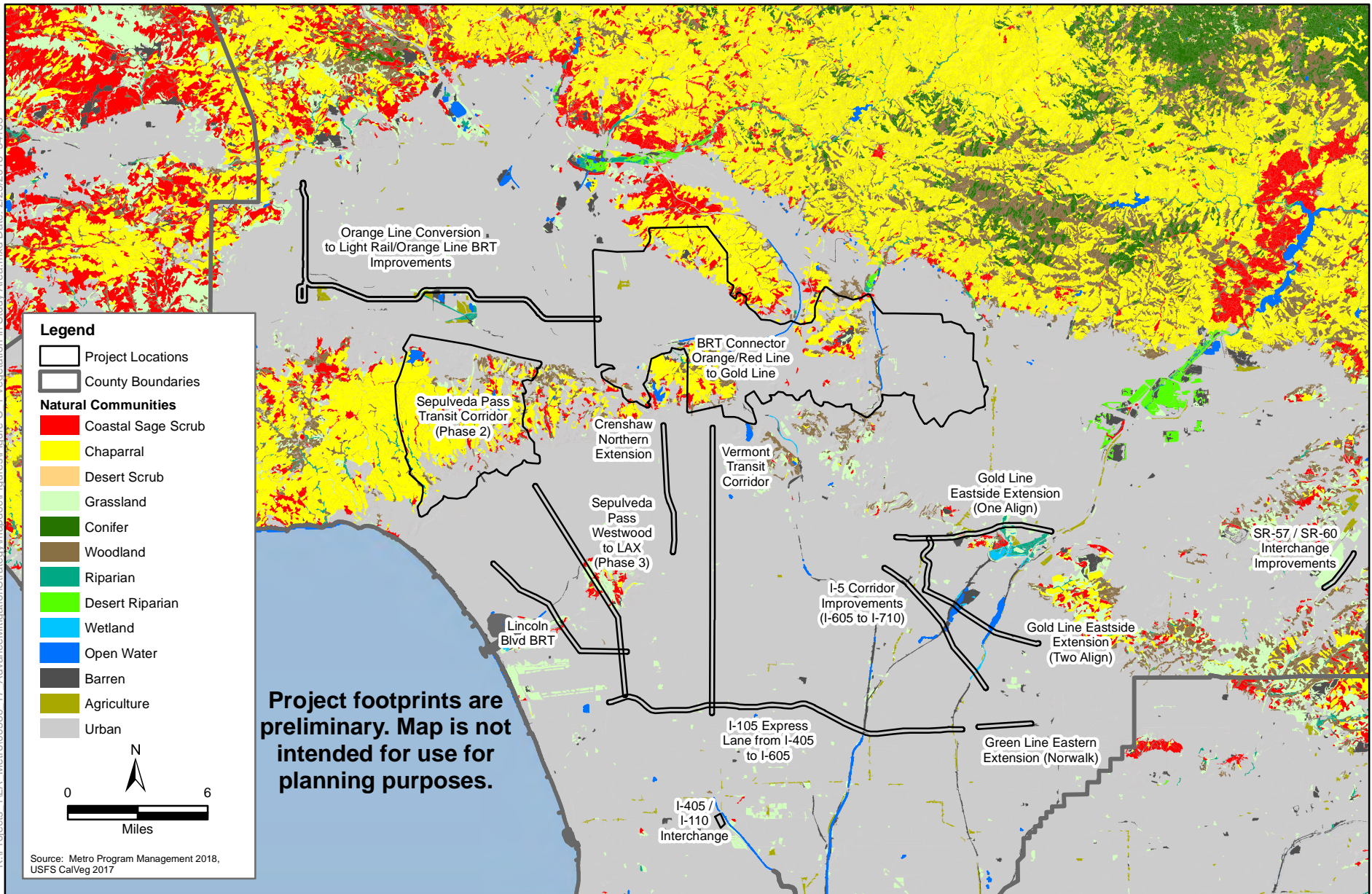


Figure C-1
Natural Communities in the Study Area



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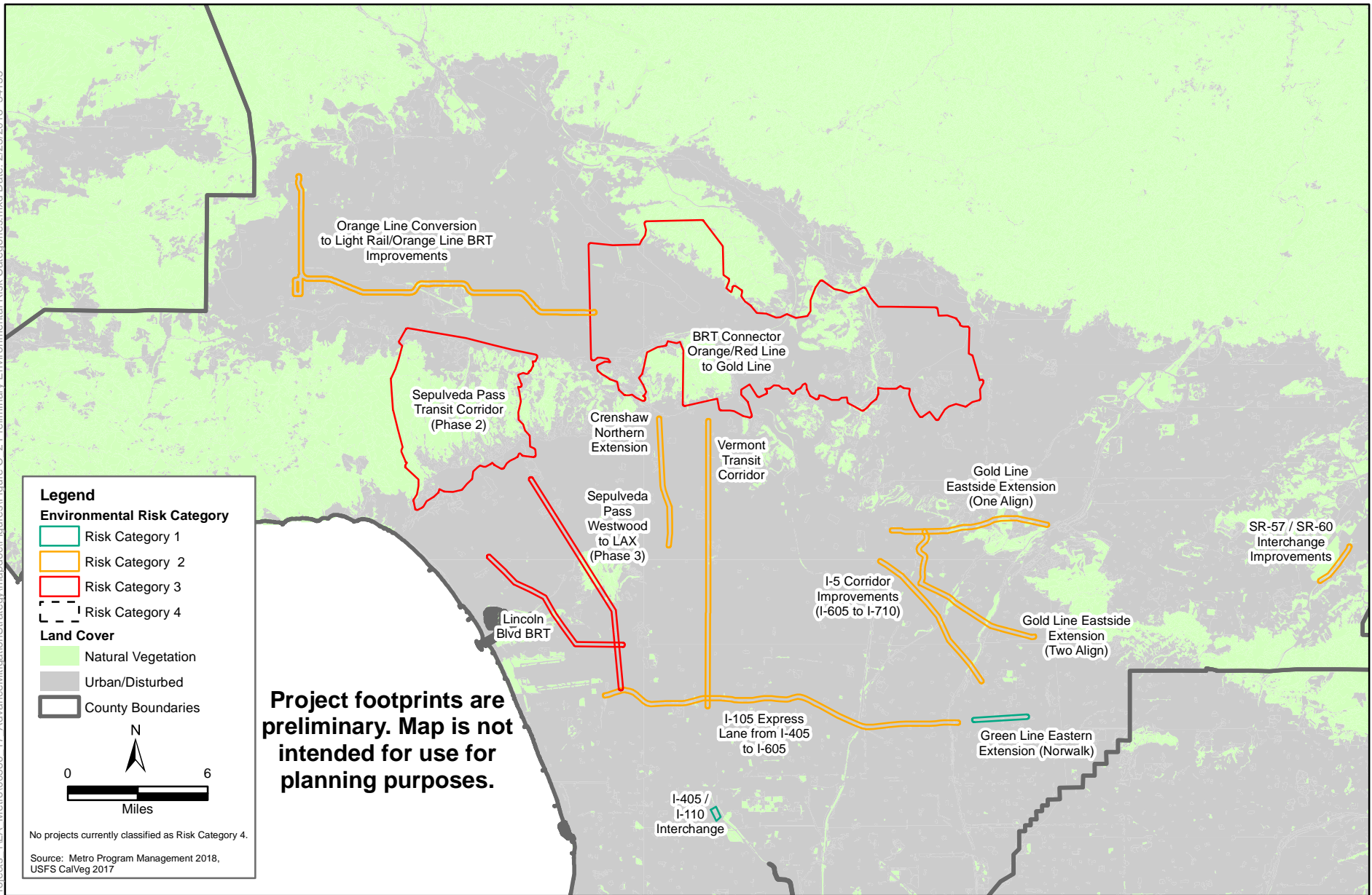


Figure C-2
Preliminary Environmental Risk Category Classification

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Table C-2. Sensitive Species Potentially Affected by Foreseeable Future Metro Projects (overlap of species occurrence with project area)

Common Name	Scientific Name	FESA	CESA	CDFW Status	Rare Plant Rank	BRT Connector Orange/Red Line to Gold	Crenshaw Northern Extension	Gold Line Eastside Extension (One Align)	Gold Line Eastside Extension (Two Align)	Green Line Eastern Extension (Norwalk)	I-105 Express Lane from I-405 to I-605	I-405/I-110 Interchange	I-5 Corridor Improvements (I-605 to I-	Lincoln Blvd BRT	Orange Line BRT Improvements	Orange Line Conversion to Light Rail	Sepulveda Pass Transit Corridor (Phase	Sepulveda Pass Westwood to LAX (Phase	SR-57/SR-60 Interchange Improvements	Vermont Transit Corridor
Plants																				
Brand's star phacelia	<i>Phacelia stellaris</i>	--	--	--	1B.1						X									
Braunton's milk-vetch	<i>Astragalus brauntonii</i>	Endangered	--	--	1B.1												X			
Coulter's goldfields	<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	--	--	--	1B.1	X			X		X				X	X		X		
Davidson's bush-mallow	<i>Malacothamnus davidsonii</i>	--	--	--	1B.2	X														
Davidson's saltscale	<i>Atriplex serenana</i> var. <i>davidsonii</i>	--	--	--	1B.2		X													
Greata's aster	<i>Symphyotrichum greatae</i>	--	--	--	1B.3	X											X			
lucky morning-glory	<i>Calystegia felix</i>	--	--	--	1B.1	X	X	X												X
many-stemmed dudleya	<i>Dudleya multicaulis</i>	--	--	--	1B.2	X														
mesa horkelia	<i>Horkelia cuneata</i> var. <i>puberula</i>	--	--	--	1B.1	X											X			
Nevin's barberry	<i>Berberis nevinii</i>	Endangered	Endangered	--	1B.1	X														
Parish's brittlescale	<i>Atriplex parishii</i>	--	--	--	1B.1	X														
Parry's spineflower	<i>Chorizanthe parryi</i> var. <i>parryi</i>	--	--	--	1B.1	X														
round-leaved filaree	<i>California macrophylla</i>	--	--	--	1B.2	X														
salt marsh bird's-beak	<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	Endangered	Endangered	--	1B.2									X						
San Fernando Valley spineflower	<i>Chorizanthe parryi</i> var. <i>fernandina</i>	--	Endangered	--	1B.1	X									X	X				
slender mariposa-lily	<i>Calochortus clavatus</i> var. <i>gracilis</i>	--	--	--	1B.2	X														
slender-horned spineflower	<i>Dodecahema leptoceras</i>	Endangered	Endangered	--	1B.1	X														
southern tarplant	<i>Centromadia parryi</i> ssp. <i>australis</i>	--	--	--	1B.1	X				X		X	X				X	X		

Common Name	Scientific Name	FESA	CESA	CDFW Status	Rare Plant Rank	BRT Connector Orange/Red Line to Gold	Crenshaw Northern Extension	Gold Line Eastside Extension (One Align)	Gold Line Eastside Extension (Two Align)	Green Line Eastern Extension (Norwalk)	I-105 Express Lane from I-405 to I-605	I-405/I-110 Interchange	I-5 Corridor Improvements (I-605 to I-	Lincoln Blvd BRT	Orange Line BRT Improvements	Orange Line Conversion to Light Rail	Sepulveda Pass Transit Corridor (Phase	Sepulveda Pass Westwood to LAX (Phase	SR-57/SR-60 Interchange Improvements	Vermont Transit Corridor
<u>Invertebrates</u>																				
Palos Verdes blue butterfly	<i>Glaucopsyche lygdamus palosverdesensis</i>	Endangered	--	--	--							X								
<u>Reptiles</u>																				
California glossy snake	<i>Arizona elegans occidentalis</i>	--	--	SSC	--	X														
California legless lizard	<i>Anniella sp. 1</i>	--	--	SSC	--	X														
coast horned lizard	<i>Phrynosoma blainvillii</i>	--	--	SSC	--	X														
coastal whiptail	<i>Aspidoscelis tigris stejnegeri</i>	--	--	SSC	--													X		
two-striped garter snake	<i>Thamnophis hammondi</i>	--	--	SSC	--													X		
western pond turtle	<i>Emys marmorata</i>	--	--	SSC	--	X	X													
<u>Birds</u>																				
American peregrine falcon	<i>Falco peregrinus anatum</i>	--	--	FP	--	X														
burrowing owl	<i>Athene cunicularia</i>	--	--	SSC	--	X	X													X
coastal California gnatcatcher	<i>Polioptila californica</i>	Threatened	--	SSC	--	X												X		
least Bell's vireo	<i>Vireo bellii pusillus</i>	Endangered	Endangered	--	--	X	X												X	
southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	Endangered	--	--	X	X													X
Swainson's hawk	<i>Buteo swainsoni</i>	--	Threatened	--	--										X	X	X			
western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	Threatened	Endangered	--	--			X												
yellow rail	<i>Coturnicops noveboracensis</i>	--	--	SSC	--															X
yellow warbler	<i>Setophaga petechia</i>	--	--	SSC	--														X	
<u>Mammals</u>																				
American badger	<i>Taxidea taxus</i>	--	--	SSC	--	X	X													X

Common Name	Scientific Name	FESA	CESA	CDFW Status	Rare Plant Rank	BRT Connector Orange/Red Line to Gold	Crenshaw Northern Extension	Gold Line Eastside Extension (One Align)	Gold Line Eastside Extension (Two Align)	Green Line Eastern Extension (Norwalk)	I-105 Express Lane from I-405 to I-605	I-405/I-110 Interchange	I-5 Corridor Improvements (I-605 to I-	Lincoln Blvd BRT	Orange Line BRT Improvements	Orange Line Conversion to Light Rail	Sepulveda Pass Transit Corridor (Phase	Sepulveda Pass Westwood to LAX (Phase	SR-57/SR-60 Interchange Improvements	Vermont Transit Corridor
big free-tailed bat	<i>Nyctinomops macrotis</i>	--	--	SSC	--	X														
Los Angeles pocket mouse	<i>Perognathus longimembris brevinasus</i>	--	--	SSC	--										X	X				
pallid bat	<i>Antrozous pallidus</i>	--	--	SSC	--	X									X	X	X	X		
pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	--	--	SSC	--									X				X		
south coast marsh vole	<i>Microtus californicus stephensi</i>	--	--	SSC	--													X		
southern grasshopper mouse	<i>Onychomys torridus ramona</i>	--	--	SSC	--	X														
western mastiff bat	<i>Eumops perotis californicus</i>	--	--	SSC	--	X	X			X								X		X
western yellow bat	<i>Lasiurus xanthinus</i>	--	--	SSC	--	X														

Table C-3. Wetlands and Regulated Waters Potentially Affected by Foreseeable Future Metro Projects

National Hydrography Database Feature Name	BRT Connector Orange/Red Line to Gold Line	Crenshaw Northern Extension	Gold Line Eastside Extension (One Align)	Gold Line Eastside Extension (Two Align)	Green Line Eastern Extension (Norwalk)	I-105 Express Lane from I-405 to I-605	I-405/I-110 Interchange	I-5 Corridor Improvements (I-605 to I-710)	Lincoln Blvd BRT	Orange Line BRT Improvements	Orange Line Conversion to Light Rail	Sepulveda Pass Transit Corridor (Phase 2)	Sepulveda Pass Westwood to LAX (Phase 3)	SR-57/SR-60 Interchange Improvements	Vermont Transit Corridor
<u>Ephemeral Stream</u>															
Unnamed streams	X		X			X				X	X	X		X	
<u>Intermittent Stream</u>															
Alhambra Wash	X														
Arroyo Seco	X														
Bull Creek										X	X				
Diamond Bar Creek														X	
Encino Creek												X			
Rio Hondo			X												
Rubio Wash	X														
Santa Susana Pass Wash										X	X				
<u>Perennial Stream</u>															
Caballero Creek										X	X				
Rubio Wash	X														
Unnamed streams	X											X			
<u>Canal/Ditch</u>															
Central Branch Tujunga Wash	X									X	X				
<u>Artificial Drainages</u>															
Arroyo Seco	X														
Ballona Creek									X				X		
Browns Canyon Wash										X	X				
Burbank Western Channel	X														
Centinela Creek Channel									X						
Central Branch Tujunga Wash	X														
Compton Creek						X									
Dominguez Channel						X									
Los Angeles River	X					X				X	X				
Rio Hondo				X			X								
San Gabriel River				X		X	X								
Tujunga Wash										X	X				
Verdugo Wash	X														
Unnamed streams	X											X			

National Hydrography Database Feature Name	BRT Connector Orange/Red Line to Gold Line	Crenshaw Northern Extension	Gold Line Eastside Extension (One Align)	Gold Line Eastside Extension (Two Align)	Green Line Eastern Extension (Norwalk)	I-105 Express Lane from I-405 to I-605	I-405/I-110 Interchange	I-5 Corridor Improvements (I-605 to I-710)	Lincoln Blvd BRT	Orange Line BRT Improvements	Orange Line Conversion to Light Rail	Sepulveda Pass Transit Corridor (Phase 2)	Sepulveda Pass Westwood to LAX (Phase 3)	SR-57/SR-60 Interchange Improvements	Vermont Transit Corridor
National Wetlands Inventory Type															
Freshwater Emergent Wetland	X											X		X	
Freshwater Forested/Shrub Wetland	X		X							X	X	X	X	X	
Freshwater Pond	X		X	X		X		X	X	X	X	X	X	X	
Lake			X	X				X				X			
Riverine	X	X	X	X		X		X	X	X	X	X	X	X	

Project Descriptions, Locations, and Timelines

Orange Line BRT Improvements and Orange Line Conversion to Light Rail

Project Description (Orange Line BRT Improvements)

The Orange Line BRT Improvements project enables the Orange Line rapid transit buses to bypass several key intersections to improve bus speeds and passenger travel times.

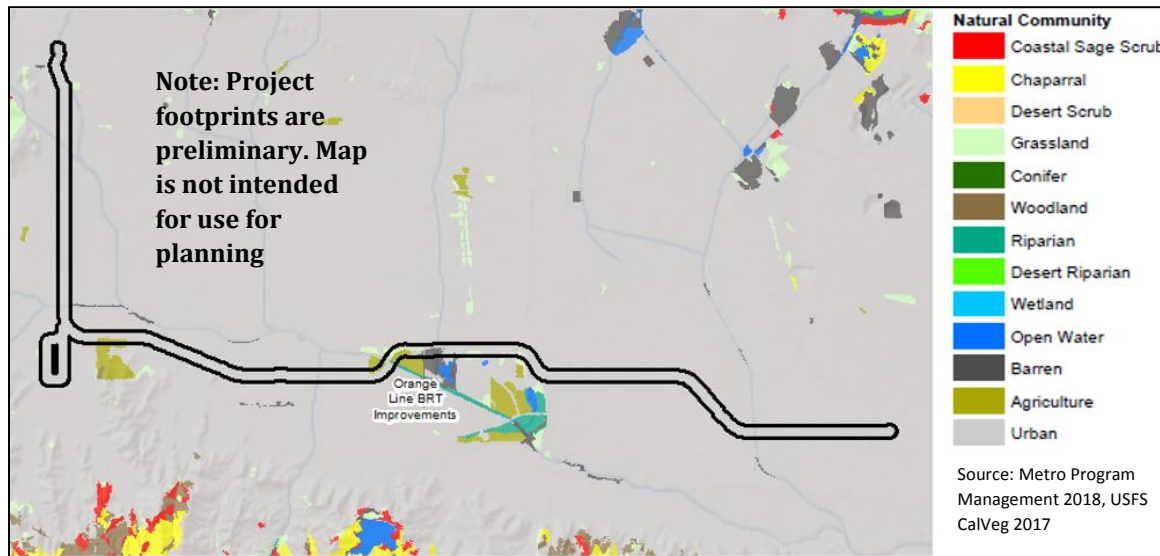
This project has the potential to affect and possibly require mitigation for a minimum of two natural communities, five special-status species, and six hydrologic features, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects may be categorized as an environmental risk of Category 2.

Project Description (Orange Line Conversion to Light Rail)

The Orange Line Conversion to Light Rail project converts 14.5 miles of existing Orange Line busway to light-rail transit, with 14 stations, from Warner Center to North Hollywood.

This project has the potential to affect and possibly require mitigation for a minimum of two natural communities, five special-status species, and six hydrologic features, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects may be categorized as an environmental risk of Category 2.

Project Location



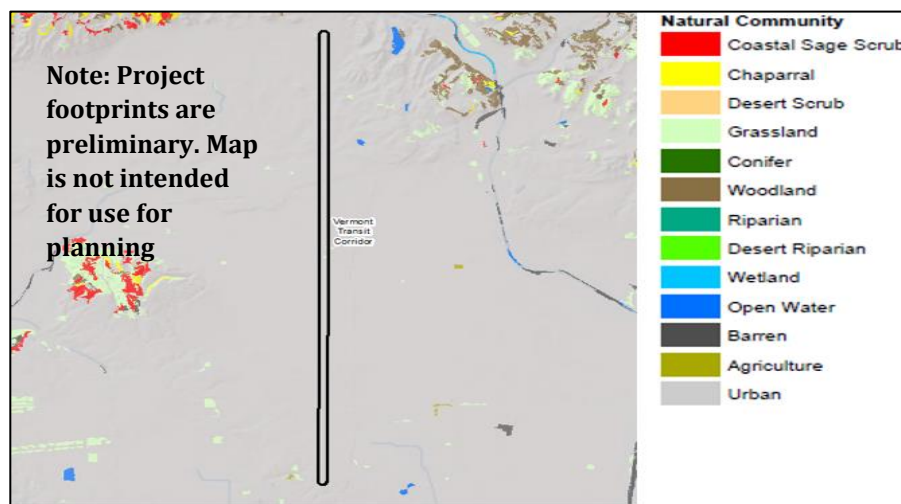
Vermont Transit Corridor

Project Description

The Vermont Bus Rapid Transit (BRT) Corridor adds a 12.5-mile high capacity bus rapid transit corridor from Hollywood Blvd. to 120th St. The Vermont BRT Corridor is the second busiest bus corridor in Los Angeles County. The majority of the corridor falls within the City of Los Angeles with approximately 2.5 miles on the south end in the County of Los Angeles.

This project has potential to affect and possibly require mitigation for a minimum of one natural community, six special-status species. The project has low potential to impact state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 2.

Project Location



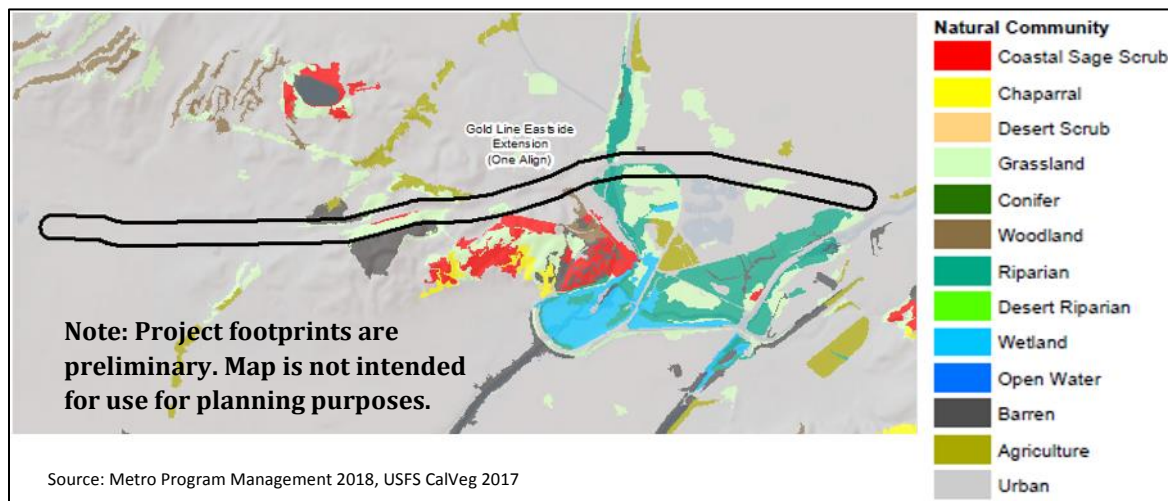
Gold Line Eastside Extension (One Alignment)

Project Description

The Gold Line Eastside Extension project extends the Gold Line east from Atlantic Station. Two alignments are planned for construction, one along SR-60 to South El Monte and the other along Washington Boulevard to Whittier.

This project has the potential to affect and possibly require mitigation for a minimum of three natural communities, two special-status species, and two hydrologic features, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 2.

Project Location



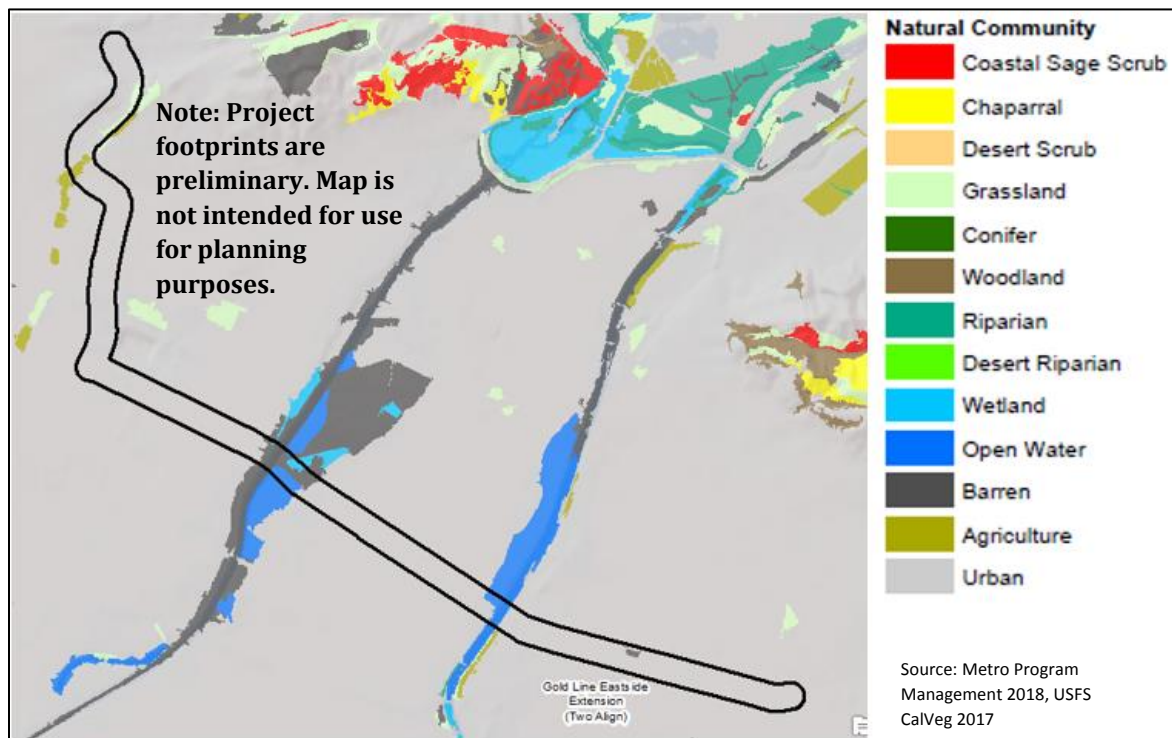
Gold Line Eastside Extension Second Alignment

Project Description

The Gold Line Eastside Extension (Second Alignment) extends the Gold Line Rail east from Atlantic Station. Two alignments are planned for construction, one along SR-60 to South El Monte and the other along Washington Boulevard to Whittier.

This project has the potential to affect and possibly require mitigation for a minimum of three natural communities, one special-status species, and two hydrologic features, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 2.

Project Location



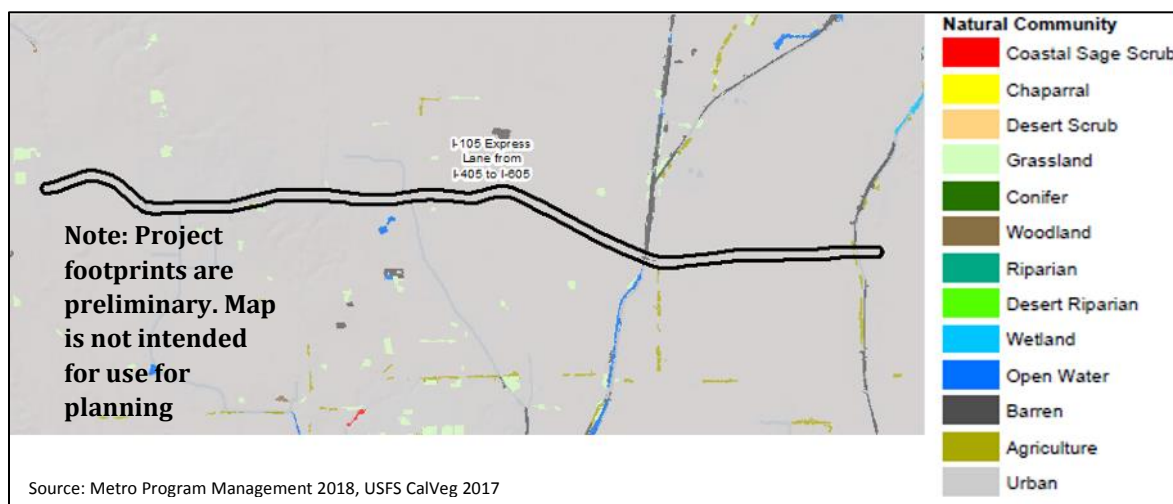
I-105 Express Lane from I-405 to I-605

Project Description

The I-105 Express Lane from I-405 to I-605 project creates two additional express lanes, totaling 16 miles, while maintaining current general purpose lanes in each direction.

This project has the potential to affect and possibly require mitigation for a minimum of one natural communities, three special-status species, and five hydrologic features, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 2.

Project Location



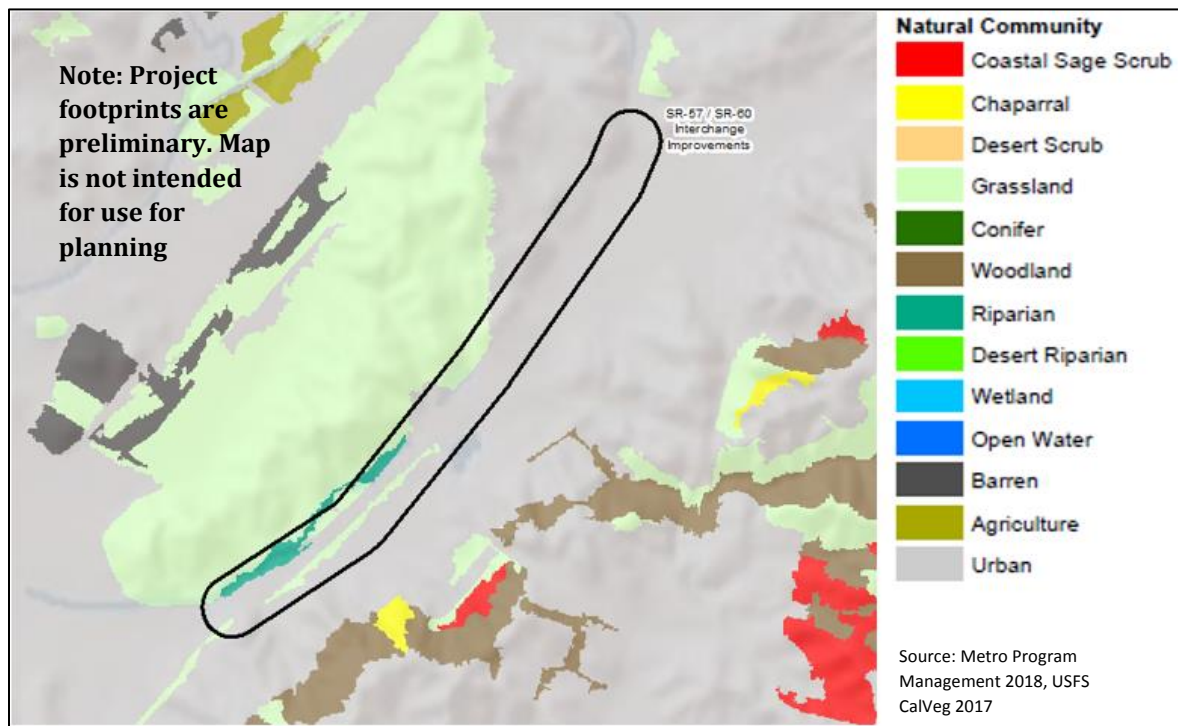
SR-57/SR-60 Interchange Improvements

Project Description

The SR-57/SR-60 Interchange Improvements project provides 2 miles of freeway, on-ramp, auxiliary lane and street widening improvements in the vicinity of Grand Avenue and Golden Springs Drive.

This project has the potential to affect and possibly require mitigation for a minimum of two natural communities, two special-status species, and two hydrologic features, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 2.

Project Location



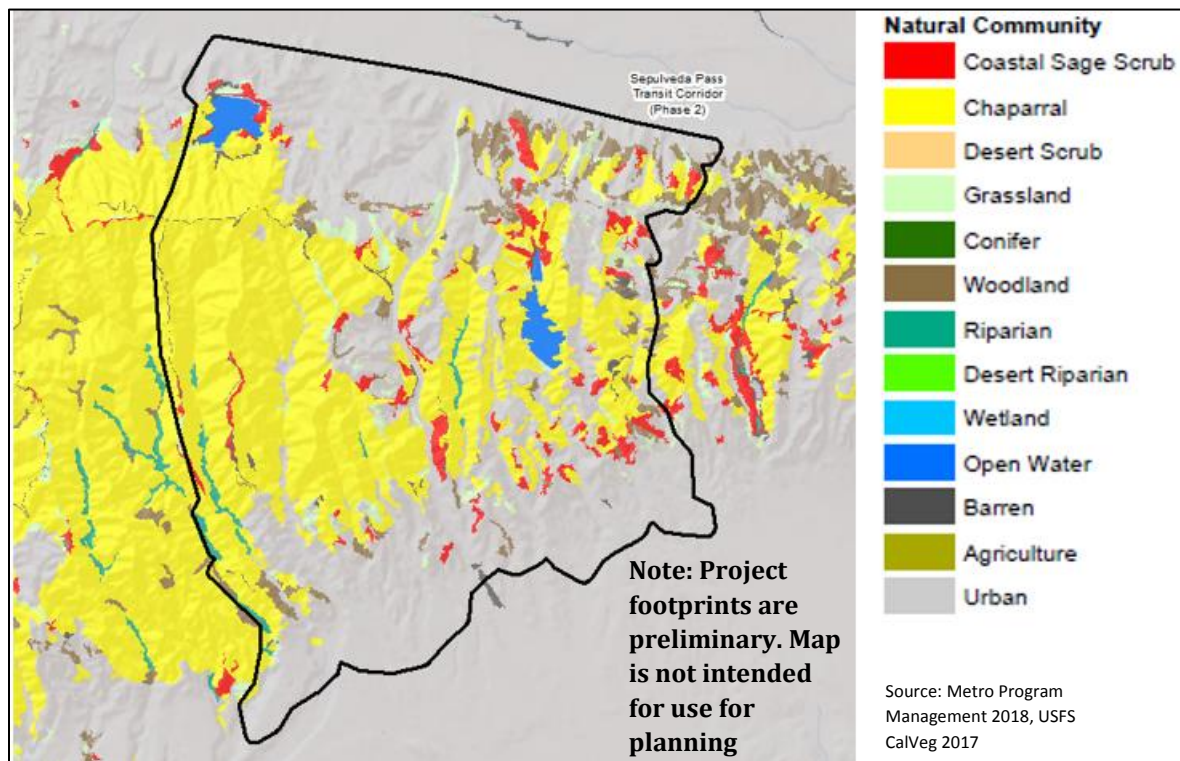
Sepulveda Pass Transit Corridor (Phase 2)

Project Description

The Sepulveda Pass Transit Corridor project creates a 10-mile high-capacity transit corridor underneath the Sepulveda Pass. The project connects the San Fernando Valley to UCLA and the Westside by providing a link between the Orange Line in Van Nuys and the future planned Purple Line rail stop.

This project has the potential to affect and possibly require mitigation for a minimum of seven natural communities, seven special-status species, and one hydrologic feature, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 3.

Project Location



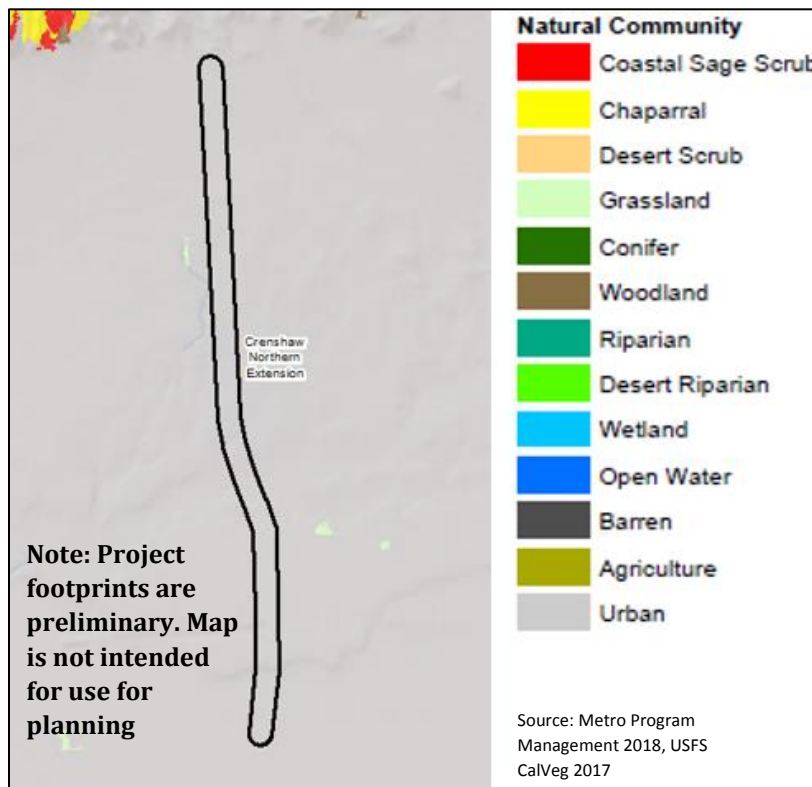
Crenshaw Northern Extension

Project Description

The Crenshaw Northern Extension extends Crenshaw Line Rail north from Expo/Crenshaw Station to Hollywood at the Red Line Hollywood/Highland Station.

This project has the potential to affect and possibly require mitigation for a minimum of seven special-status species. The project has low potential to affect natural communities or state or federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 2.

Project Location



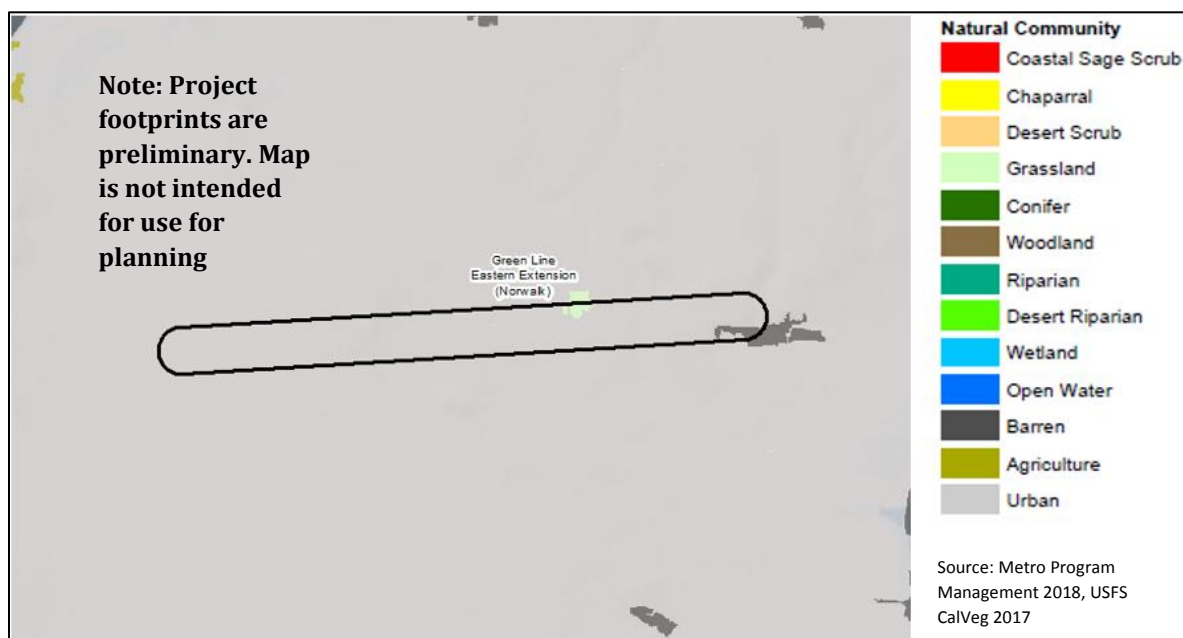
Green Line Eastern Extension (Norwalk)

Project Description

The Green Line Eastern Extension (Norwalk) extends Metro Green Line Rail 2.8 miles, from Norwalk to the Norwalk/Santa Fe Springs Metrolink station.

This project has the potential to affect and possibly require mitigation for a minimum of one natural communities and one special-status species; it has low potential to affect state or federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 1.

Project Location



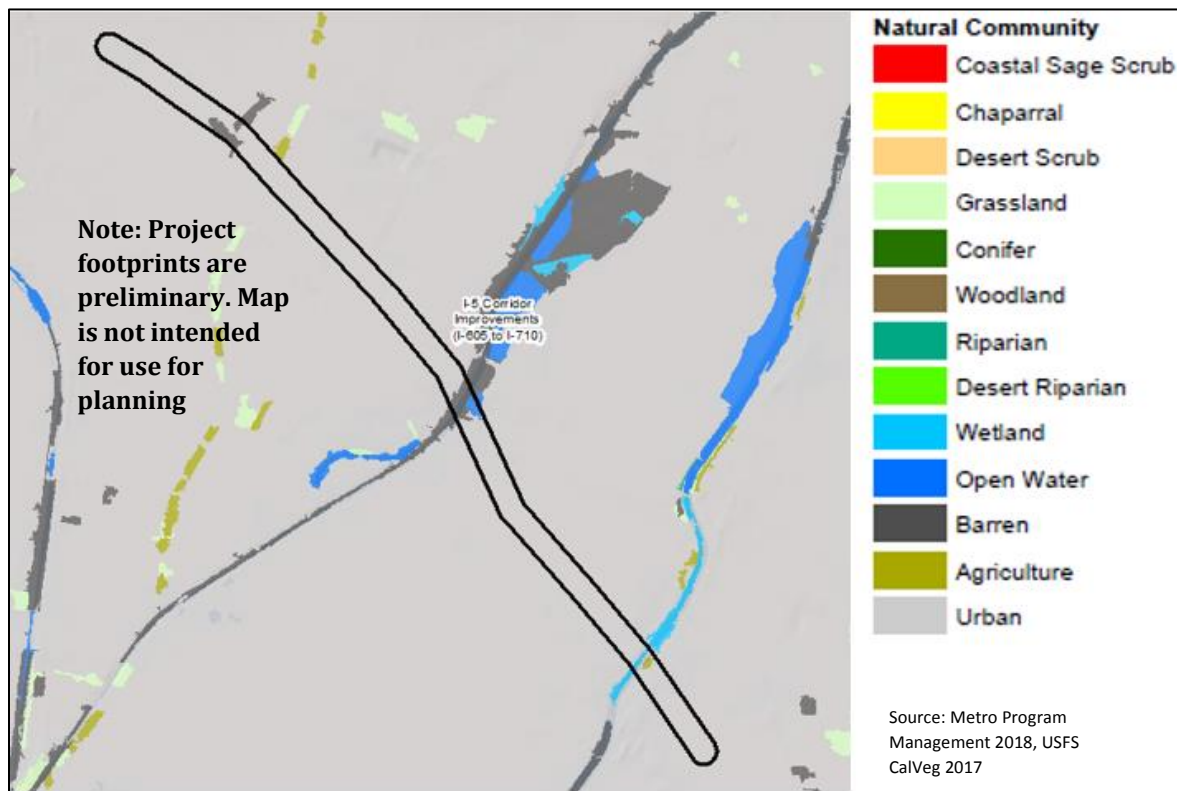
I-5 Corridor Improvements (I-605 to I-710)

Project Description

The I-5 Corridor Improvements project adds one general purpose lane and one carpool lane in each direction, for a total of 7 miles. When complete, there will be a total of five general purpose lanes and one carpool lane in each direction.

This project has the potential to affect and possibly require mitigation for a minimum of two natural communities, one special-status species, and two hydrologic features, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 2.

Project Location



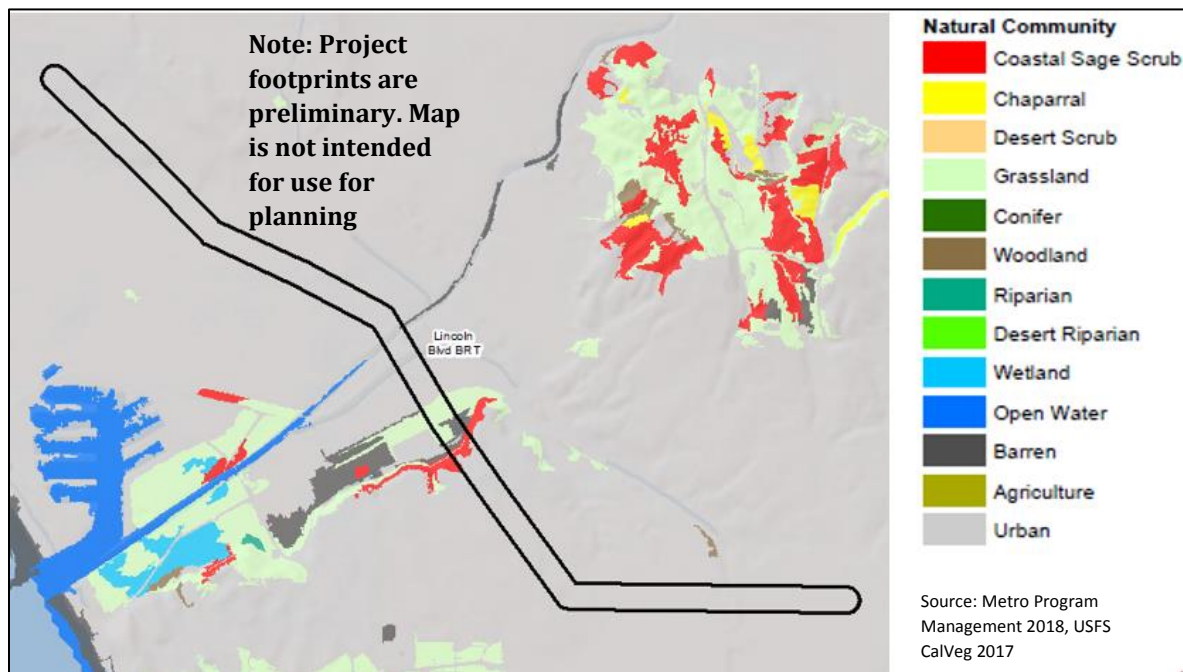
Lincoln Boulevard BRT

Project Description

The Lincoln Boulevard BRT links the Airport Metro Connector to the Expo Line via a bus rapid transit corridor along Lincoln Boulevard. The project could be converted to a rail service at a later date if ridership demand outgrows the capacity of the bus rapid service.

This project has the potential to affect and possibly require mitigation for a minimum of two natural communities, three special-status species, and two hydrologic features, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 2 or 3.

Project Location

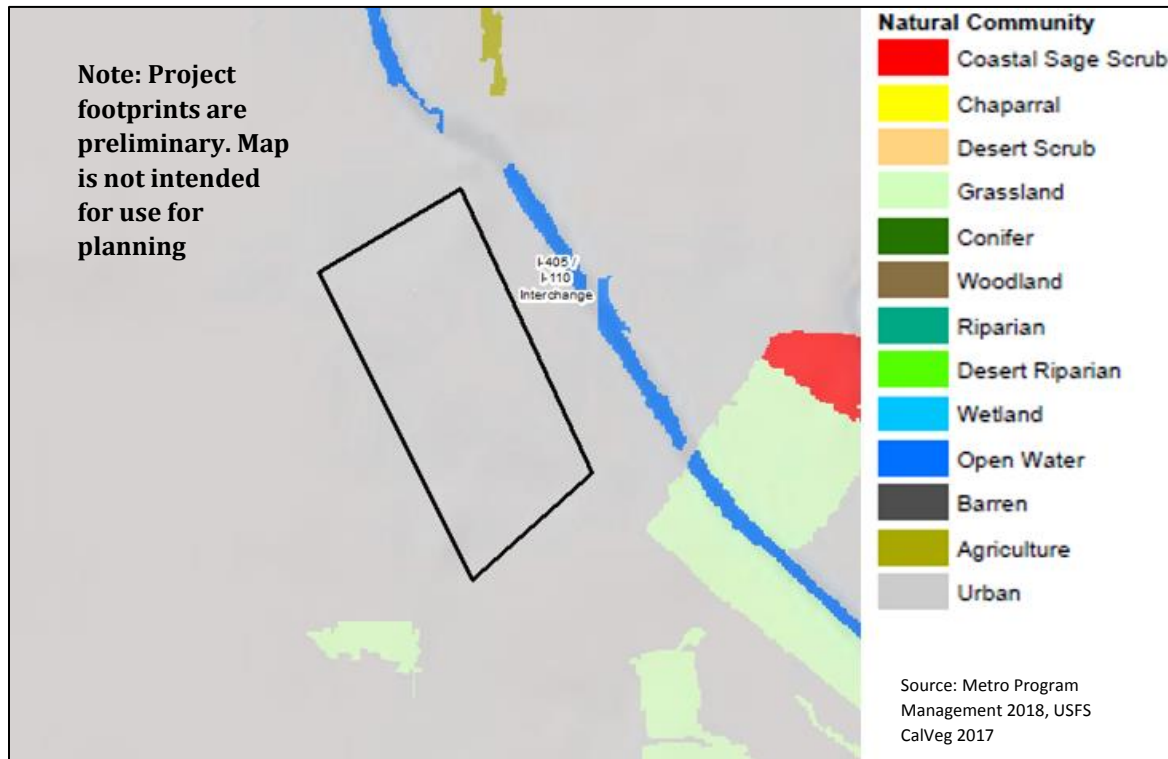


I-405/I-110 Interchange

Project Description

The I-405/I-110 Interchange project provides ramps that directly connect the express lanes on the I-110 and I-405. This project has the potential to affect and possibly require mitigation for a minimum of two special-status species; it has low potential for impacts on natural communities and state or federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 1.

Project Location



Sepulveda Pass Westwood to LAX (Phase 3)

Project Description

The Sepulveda Pass Westwood to LAX project provides a 10-mile high-capacity transit and rail extension, from Wilshire/Westwood Station to the Airport Metro Connector. The project could also add express lanes along I-405 to provide express bus service, connecting Westwood to LAX.

This project has the potential to affect and possibly require mitigation for a minimum of four natural communities, seven special-status species, and one hydrologic features, potentially including state and federally regulated waters and wetlands. Based on this preliminary project screening example, these potential effects would be categorized as an environmental risk of Category 3.

Project Location

