

Appendix F – Technical Support Data

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Environmental Coordination & Materials

Environmental Distribution List
March Inland Port Airport – Master Plan

Federal Agencies

Martha Guzman
USEPA Regional Administrator
USEPA Region 9
75 Hawthorne Street
San Francisco, CA 94105
Email: guzman.martha@epa.gov

Paul Souza, Regional Director
USFWS Pacific Southwest Region
Headquarters
Federal Building
2800 Cottage Way
Sacramento, CA 95825
Email: paul_souza@fws.gov

US Army Corps of Engineers
Los Angeles Regulatory District
915 Wilshire Blvd. Ste 1101
Los Angeles, CA 90017
Email: hq-publicaffairs@usace.army.mil

Allen Curry
District Conservationist
U.S. Department of Agriculture, Natural
Resources Conservation Services (NRCS)
Indio Service Center
81-077 Indio Blvd.
Indio, CA 92201
Email: allen.curry@usda.gov

March Air Reserve Base
Base Civil Engineer – Maj. David Shaw
2685 Graeber St Ste 395, March Air Reserve
Base, CA 92518
Email: david.shaw.5@us.af.mil

State Agencies

Jared Blumenfeld
Secretary for Environmental Protection
California Environmental Protection Agency
P.O. Box 215
Sacramento, CA
Email: sectyblumenfeld@calepa.ca.gov

Kristine Murray, Chair
Cal/EPA State Water Resources Control
Board
District 8
3737 Main Street Suite 500
Riverside CA 92501-3339
Email: santaana@waterboards.ca.gov

Liane M. Randolph, Chair
California Air Resources Board (CARB)
P.O. Box 2815
Sacramento, CA 95812
Email: liane.randolph@arb.ca.gov

California Department of Fish and Wildlife
Inland Deserts Region, Region 6 Field Office
3602 Inland Empire Blvd, Suite C-220
Ontario, CA 91764
Email: askregion6@wildlife.ca.gov

Colorado River Basin Regional Water Quality
Control Board (Region 7)
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260
Email: info7@waterboards.ca.gov

State of California Santa Ana Regional
Water Quality Control Board (R8)
3737 Main Street, Suite 500
Riverside, CA 92501-3348
Email: FileReview8@waterboards.ca.gov

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Nydia Ibarra
South Coast Air Quality Management
District (SCAQMD)
21865 Copley Dr.
Diamond Bar, CA 91765
Email: nibarra@aqmd.gov

Jenan Saunders, (Interim Supervisor)
Deputy State Historic Preservation Officer
California State Parks
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816
Email: jenan.saunders@parks.ca.gov

Michael McGuirt, Supervisor
Archaeology & Environmental Compliance
Unit
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816
Email: Michael.mcguirt@parks.ca.gov

Public Affairs
Caltrans District 8 – San
Bernardino/Riverside
464 W. 4th Street
San Bernardino, CA 92401
Email: joy.pippin@dot.ca.gov

Caltrans Division of Environmental Analysis
P.O. Box 942874, MS 27
Sacramento, CA 94274-0001
Email: env.webmaster@dot.ca.gov or
ct.public.information.d11@dot.ca.gov

Dara Wheeler, Acting Chief
Caltrans Division of Aeronautics
P.O. Box 942874, MS 40
Sacramento, CA 94274
Email: dara.wheeler@dot.ca.gov

Karen Ross
Secretary of Agriculture
California Department of Food &
Agriculture
1220 N Street
Sacramento, CA 95814
Email: officeofpublicaffairs@cdfa.ca.gov

Local Agencies

Mayor Patricia Lock Dawson
City of Riverside
3900 Main Street
Riverside, CA 92522
Email: 2Mayor@riversideca.gov

Frances Andrade
City of Riverside Planning Division
3900 Main Street - 3rd Floor
Riverside, CA 92522
Email: fandrade@riversideca.gov

Riverside Public Utilities
City Hall
3900 Main St, 3rd Floor
Riverside, CA 92501
Email: CallCenter@RiversideCA.gov

John Hildebrand, Planning Director
Riverside County Administrative Center
4080 Lemon Street, 12th Floor
Riverside, CA 92502-1629
Email: Planning@RivCo.org or
Jehildebrand@cpp.edu

Riverside County, Airport Land Use
Commission
Riverside County Administrative Center
4080 Lemon Street 14th Floor
Riverside, CA 92501
Email: bsantos@rivco.org

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Kim Saruwatari, MPH, Director
Riverside County, Department of Public Health
Health Administration Building
4065 County Circle Drive
Riverside CA 92503
Email: info@thepublichealthalliance.org

Jason E. Uhley
General Manager - Chief Engineer
Riverside County Flood Control and Water Conservation District
1995 Market St.
Riverside, CA 92501
Email: juhley@rivco.org

Riverside County Habitat Conservation Agency
3390 University Avenue
Suite 200
Riverside, CA 92501
Email: bshomo@wrcog.us

Riverside County Department of Waste Resources
14310 Frederick Street
Moreno Valley, CA 92553
Email: Waste-Approval@rivco.org / Waste-CompostingRecycling@rivco.org / Waste-CustomerFeedback@rivco.org

County of Riverside Transportation Department
4080 Lemon Street
Riverside, CA 92501
Email: info@rctc.org

Kenneth Phung
Director of Development Services
City of Perris Planning Division
Perris City Hall
101 N. D Street
Perris, CA 92570
Email: kphung@cityofperris.org

Sean P. Kelleher, Planning Division Manager
City of Moreno Valley Planning Division
Moreno Valley City Hall
14177 Frederick St.
PO Box 88005
Moreno Valley, CA 92552
Email: PlanningEmail@moval.org

City of Moreno Valley
Parks and Community Service Department
14075 Frederick St
Moreno Valley, CA 92553
Email: contactus@moval.org

Center for Biological Diversity
660 S. Figueroa St., Suite 1000
Los Angeles, CA 90017
Email: bsegee@biologicaldiversity.org

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July 27, 2022

Agency address

Re: March Inland Port Airport (RIV), Riverside, California – Airport Master Plan

File: H78.012.003

Dear Agency Contact:

On behalf of the March Joint Powers Authority (MJPA), C&S Engineers, Inc., is preparing a Master Plan for the March Inland Port Airport (RIV) located in Riverside, California. An important task in the Master Plan will be to identify and characterize sensitive environmental areas within the airport property and surrounding community. This effort will assist our planners to make environmentally sound recommendations for the future development of the Airport as well as support the baseline information for subsequent environmental review requirements at the federal and state level for specific proposed airport projects.

Attached please find a vicinity map of the Airport and a project area map showing the Master Plan project boundary. We would like to request your assistance in providing us with information you possess regarding any of the environmental resource impact categories listed in the table below. The categories were derived from the Federal Aviation Administration (FAA) Order 1050.1F Environmental Impacts: Policies and Procedures. If you have data stored in your geographic information system, please guide us on how we may best use your mapping resources for our study. The categories are listed in the following table:

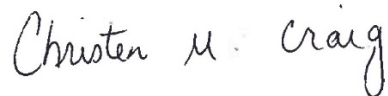
Air Quality	Natural Resources and Energy Supply
Biological Resources (including Fish, Wildlife, and Plants)	Noise and Noise-Compatible Land Use
Climate	Traffic
Coastal Resources	Socioeconomics
Department of Transportation Act, Sec 4(f)	Environmental Justice
Farmlands	Children's Environmental Health and Safety Risks
Hazardous Materials, Solid Waste, and Pollution Prevention	Light Emissions & Visual Effects
Historic, Architectural, Archeological, and Cultural Resources	Water Resources (Wetlands, Floodplains, Surface Waters, Groundwater, Wild & Scenic Rivers)
Land Use	Cumulative Impacts

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In order to maintain the schedule for environmental planning for this project, we would appreciate a response to this inquiry by **August 27, 2022**. The best way to contact me is 315-455-2000 (x-4341) or by e-mail at ccraig@cscos.com. Written correspondence can also be sent to my mailing address included below. Thank you for your assistance and I look forward to hearing from you.

Sincerely,

C&S ENGINEERS, INC.

A handwritten signature in black ink that reads "Christen M. Craig". The signature is written in a cursive, flowing style.

Christen M. Craig
Principal Consultant – Aviation Planning

C&S Companies
Attn: Christen M. Craig
2355 Northside Drive, Suite 350
San Diego, CA 92108

Enclosure: Environmental Distribution List
Airport Vicinity Map
Project Area Map

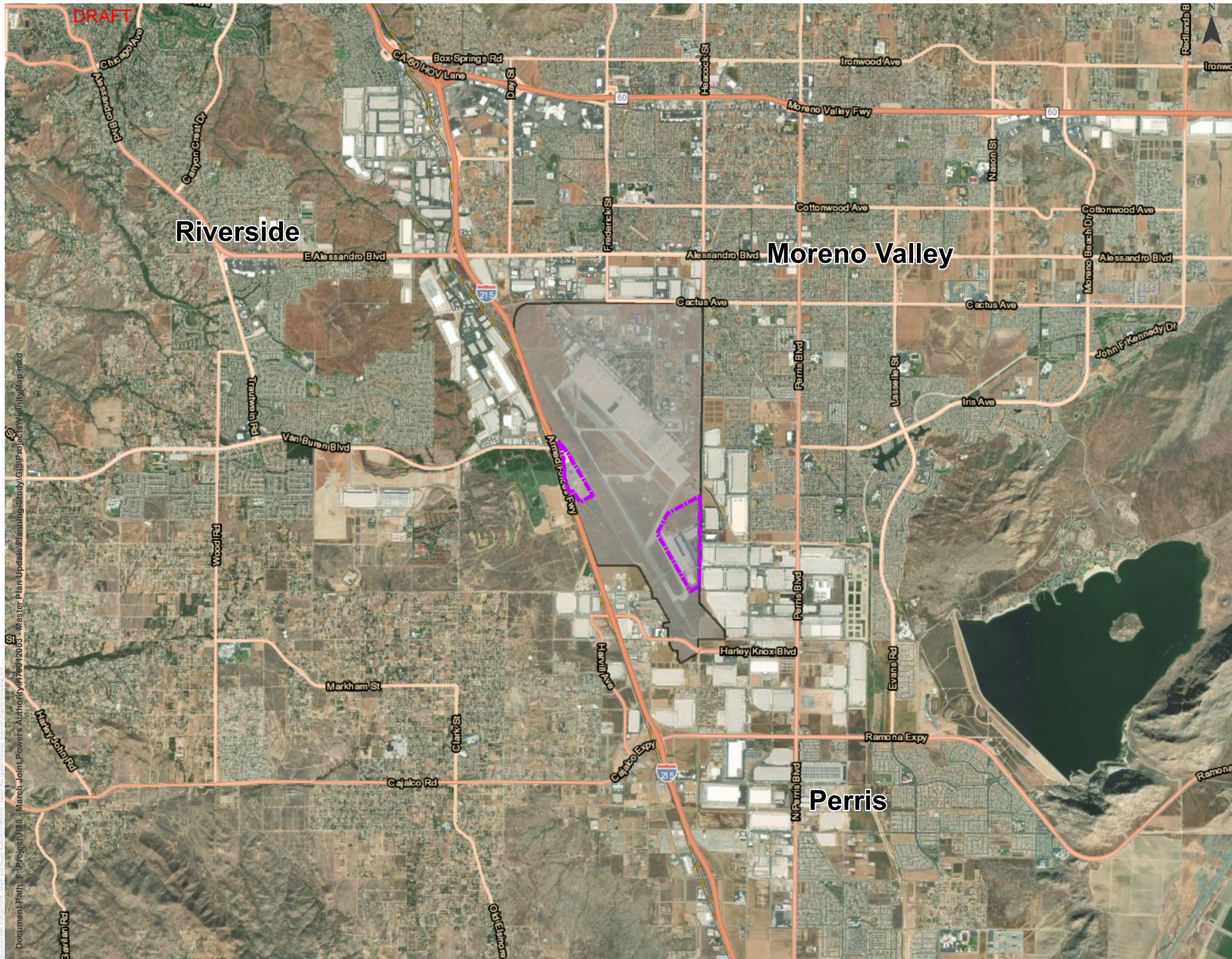




Figure 1

Vicinity Map

-  Master Plan Project Boundary
-  March Air Reserve Base



March Inland Port
Airport Master Plan

Source: C&S Engineers, Inc.

Document Path: F:\Project\118 - March Joint Powers Authority\1760120\05 - Master Plan Update\Planning Study\GIS\Projects\VicinityMap.mxd
 Date: 11/17/18

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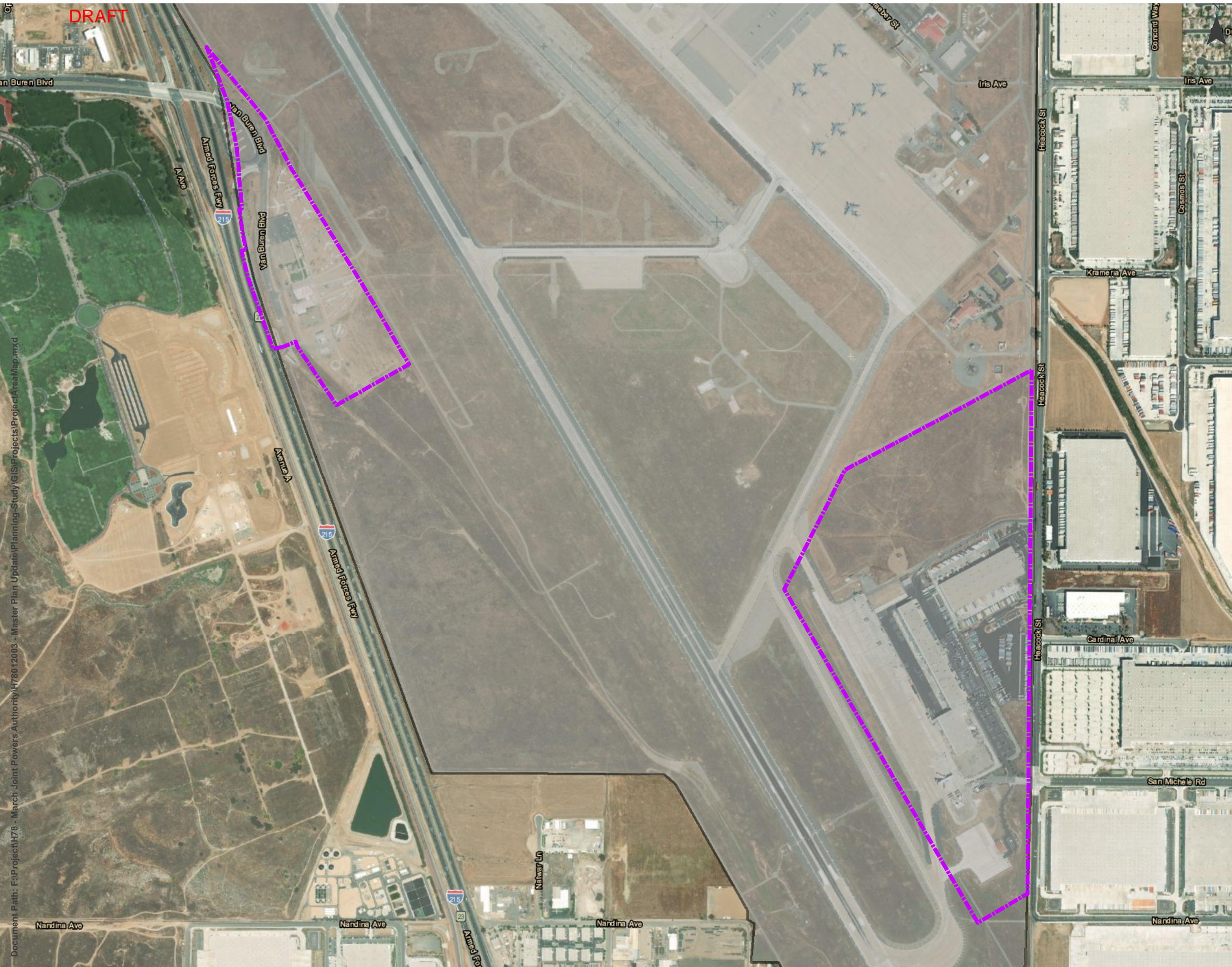




Figure 2

Project Area Map

-  Master Plan Project Boundary
-  March Air Reserve Base



March Inland Port
Airport Master Plan

Source: C&S Engineers, Inc.

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



August 24, 2022
Sent via email

Christen M. Craig, Principal Consultant
C&S Companies
2355 Northside Drive, Suite 350
San Diego, CA 92108
ccraig@cscos.com

Subject: Request for Information
March Inland Port Airport Master Plan
CEQA-2022-0157-R6

Dear Christen Craig:

The California Department of Fish and Wildlife (CDFW) received a Request for Information from the March Joint Powers Authority (MJPA) to aid in the development of the March Inland Port Airport Master Plan (Master Plan; Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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CDFW is also submitting comments in advance as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT LOCATION

The Project is located within March Air Reserve Base (MARB), in northern Riverside County. The Project location is generally bordered by the Cities of Moreno Valley and Riverside to the north and northwest, Perris Dam and San Jacinto Wildlife Area to the east, and unincorporated Riverside County along the remaining borders.

PROJECT DESCRIPTION SUMMARY

The Project will consist of the creation of a Master Plan for the March Inland Port Airport (RIV). Specific details regarding development, grading plans, and site layout are yet to be determined.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The comments and recommendations are also offered to enable the MJPA to adequately incorporate information on the Project's consistency with the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) in the forthcoming Master Plan and CEQA documents.

CDFW recommends that the forthcoming Master Plan and subsequent CEQA documents address the following:

Assessment of Biological Resources

Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts and that special emphasis should be placed on environmental resources that are rare or unique to the region. To enable CDFW staff to adequately review and comment on the Project, the Master Plan and associated CEQA documents should include a complete assessment of the flora and fauna within and adjacent to the Project footprint, with particular emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats.

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CDFW recommends that the Master Plan and forthcoming CEQA documents specifically include:

1. An assessment of the various habitat types located within the Project footprint, and a map that identifies the location of each habitat type. CDFW recommends that floristic, alliance- and/or association-based mapping and assessment be completed following *The Manual of California Vegetation*, second edition (Sawyer et al. 2009²). Adjoining habitat areas should also be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.
2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the Project. CDFW's California Natural Diversity Database (CNDDDB) in Sacramento should be contacted at (916) 322-2493 or CNDDDB@wildlife.ca.gov or <https://wildlife.ca.gov/Data/CNDDDB/Maps-and-Data> to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the proposed Project.

CDFW's CNDDDB is not exhaustive in terms of the data it houses, nor is it an absence database. CDFW recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the Project site.

3. A complete, *recent* inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish & G. Code, § 3511). Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific/MSHCP surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to

² Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California Vegetation, 2nd ed. California Native Plant Society Press, Sacramento, California. <http://vegetation.cnps.org/>

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three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

4. A thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018³).
5. Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines § 15125[c]).
6. A full accounting of all open space and mitigation/conservation lands within and adjacent to the Project.

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

The Master Plan and associated CEQA documents should provide a thorough discussion of the direct, indirect, and cumulative impacts expected to adversely affect biological resources as a result of the Project. To ensure that Project impacts to biological resources are fully analyzed, the following information should be included in the Master Plan and associated CEQA documents:

1. A discussion of potential impacts from lighting, noise, human activity (e.g., recreation), defensible space, and wildlife-human interactions created by zoning of development projects or other Project activities adjacent to natural areas, exotic and/or invasive species, and drainage. The latter subject should address Project-related changes on drainage patterns and water quality within, upstream, and downstream of the Project site, including: volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-Project fate of runoff from the Project site.
2. A discussion of potential indirect Project impacts on biological resources, including resources in areas adjacent to the Project footprint, such as nearby public lands (e.g., National Forests, State Parks, etc.), open space, adjacent natural habitats, riparian ecosystems, wildlife corridors, and any designated and/or proposed reserve or mitigation lands (e.g., preserved lands associated with a Natural Community Conservation Plan, or other conserved lands).

³ CDFW, 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities, State of California, California Natural Resources Agency, Department of Fish and Wildlife: March 20, 2018 (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>)

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3. An evaluation of impacts to on-site and adjacent open space lands from both the construction of the Project and any long-term operational and maintenance needs.
4. A cumulative effects analysis developed as described under CEQA Guidelines section 15130. The Master Plan and associated CEQA document should analyze the cumulative effects of the plan's land use designations, policies, and programs on the environment. Please include all potential direct and indirect Project related impacts to riparian areas, wetlands, vernal pools, alluvial fan habitats, wildlife corridors or wildlife movement areas, aquatic habitats, sensitive species and other sensitive habitats, open lands, open space, and adjacent natural habitats in the cumulative effects analysis. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

Alternatives Analysis

CDFW recommends the Master Plan and associated CEQA document describe and analyze a range of reasonable alternatives to the Project that are potentially feasible, would "feasibly attain most of the basic objectives of the Project," and would avoid or substantially lessen any of the Project's significant effects (CEQA Guidelines § 15126.6[a]). The alternatives analysis should also evaluate a "no project" alternative (CEQA Guidelines § 15126.6[e]).

Mitigation Measures for Project Impacts to Biological Resources

The Master Plan and associated CEQA document should identify mitigation measures and alternatives that are appropriate and adequate to avoid or minimize potential impacts, to the extent feasible. The MJPA should assess all direct, indirect, and cumulative impacts that are expected to occur as a result of the implementation of the Project and its long-term operation and maintenance. When proposing measures to avoid, minimize, or mitigate impacts, CDFW recommends consideration of the following:

1. *Fully Protected Species*: Fully protected species may not be taken or possessed at any time. Project activities described in the Master Plan should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the Project area. CDFW also recommends that the Master Plan and associated CEQA document fully analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends that the Lead Agency include in the analysis how appropriate avoidance, minimization, and mitigation measures will reduce indirect impacts to fully protected species.
2. *Sensitive Plant Communities*: CDFW considers sensitive plant communities to be imperiled habitats having both local and regional significance. Plant communities, alliances, and associations with a statewide ranking of S-1, S-2, S-3, and S-4 should be considered sensitive and declining at the local and regional level. These ranks can

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be obtained by querying the CNDDDB and are included in *The Manual of California Vegetation* (Sawyer et al. 2009). The Master Plan and associated CEQA document should include measures to fully avoid and otherwise protect sensitive plant communities from Project-related direct and indirect impacts.

3. *California Species of Special Concern (CSSC)*: CSSC status applies to animals generally not listed under the federal Endangered Species Act or the CESA, but which nonetheless are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CSSCs should be considered during the environmental review process. CSSC that have the potential or have been documented to occur within or adjacent to the Project area, including, but not limited to: burrowing owl, San Bernardino kangaroo rat, Los Angeles pocket mouse, northern harrier, tricolored blackbird, grasshopper sparrow, Vaux's swift, loggerhead shrike, and yellow warbler.
4. *Mitigation*: CDFW considers adverse Project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the Master Plan and associated CEQA document should include mitigation measures for adverse Project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, onsite habitat restoration and/or enhancement, and preservation should be evaluated and discussed in detail. Where habitat preservation is not available onsite, offsite land acquisition, management, and preservation should be evaluated and discussed in detail.

The Master Plan and subsequent CEQA documents should include measures to perpetually protect the targeted habitat values within mitigation areas from direct and indirect adverse impacts in order to meet mitigation objectives to offset Project-induced qualitative and quantitative losses of biological values. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

If sensitive species and/or their habitat may be impacted from the Project, CDFW recommends the inclusion of specific mitigation in the Master Plan and subsequent CEQA documents. CEQA Guidelines section 15126.4, subdivision (a)(1)(8) states that formulation of feasible mitigation measures should not be deferred until some future date. The Court of Appeal in *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645 struck down mitigation measures which required formulating management plans developed in consultation with State and Federal wildlife agencies after Project approval. Courts have also repeatedly not supported conclusions that impacts are mitigable when essential studies, and therefore impact assessments, are incomplete (*Sundstrom v. County of Mendocino* (1988) 202 Cal. App. 3d. 296; *Gentry v. City of Murrieta* (1995) 36 Cal. App. 4th 1359; *Endangered Habitat League, Inc. v. County of Orange* (2005) 131 Cal. App. 4th 777).

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CDFW recommends that the Master Plan and subsequent CEQA documents specify mitigation that is roughly proportional to the level of impacts, in accordance with the provisions of CEQA (CEQA Guidelines, §§ 15126.4(a)(4)(B), 15064, 15065, and 16355). The mitigation should provide long-term conservation value for the suite of species and habitat being impacted by the Project. Furthermore, in order for mitigation measures to be effective, they need to be specific, enforceable, and feasible actions that will improve environmental conditions.

5. *Habitat Revegetation/Restoration Plans*: Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) a local seed and cuttings and planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought.

CDFW recommends that local onsite propagules from the Project area and nearby vicinity be collected and used for restoration purposes. Onsite seed collection should be initiated in advance of Project impacts in order to accumulate sufficient propagule material for subsequent use in future years. Onsite vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration efforts. Specific restoration plans should be developed for various Project components as appropriate.

Restoration objectives should include protecting special habitat elements or re-creating them in areas affected by the Project; examples could include retention of woody material, logs, snags, rocks, and brush piles.

6. *Nesting Birds and Migratory Bird Treaty Act*: Please note that it is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: Fish and Game Code section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section

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3513 makes it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.

CDFW recommends that the Master Plan and subsequent CEQA documents include the results of avian surveys, as well as specific avoidance and minimization measures to ensure that impacts to nesting birds do not occur. Project-specific avoidance and minimization measures may include, but not be limited to: Project phasing and timing, monitoring of Project-related noise (where applicable), sound walls, and buffers, where appropriate. The Master Plan and associated CEQA documents should also include specific avoidance and minimization measures that will be implemented should a nest be located within the Project site. If pre-construction surveys are proposed in the Master Plan, the CDFW recommends that they be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as instances of nesting could be missed if surveys are conducted sooner.

7. *Moving out of Harm's Way*: To avoid direct mortality, CDFW recommends that the lead agency condition the Master Plan to require that a CDFW-approved qualified biologist be retained to be onsite prior to and during all ground- and habitat-disturbing activities to move out of harm's way special status species or other wildlife of low or limited mobility that would otherwise be injured or killed from Project-related activities. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise be injured or killed, and individuals should be moved only as far as necessary to ensure their safety (i.e., CDFW does not recommend relocation to other areas). Furthermore, it should be noted that the temporary relocation of onsite wildlife does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss.
8. *Translocation of Species*: CDFW generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species as studies have shown that these efforts are experimental in nature and largely unsuccessful.

California Endangered Species Act

CDFW is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to CESA. CDFW recommends that a CESA Incidental Take Permit (ITP) be obtained if the Project has the potential to result in "take" (California Fish and Game Code Section 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of State-listed CESA species, either through construction or over the life of the Project. It is the policy of CESA to conserve, protect, enhance, and restore State-listed CESA species and their habitats.

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CDFW encourages early consultation, as significant modification to the proposed Project and avoidance, minimization, and mitigation measures may be necessary to obtain a CESA ITP. The California Fish and Game Code requires that CDFW comply with CEQA for issuance of a CESA ITP. CDFW therefore recommends that the Master Plan and subsequent CEQA documents address all Project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of CESA.

Western Riverside County Multiple Species Habitat Conservation Plan

CDFW issued Natural Community Conservation Plan Approval and Take Authorization for the Western Riverside County MSHCP per Section 2800, *et seq.*, of the California Fish and Game Code on June 22, 2004. The MSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and provides for the incidental take of covered species in association with activities covered under the permit.

Compliance with approved habitat plans, such as the MSHCP, is discussed in CEQA. Specifically, Section 15125(d) of the CEQA Guidelines requires that the CEQA document discuss any inconsistencies between a proposed Project and applicable general plans and regional plans, including habitat conservation plans and natural community conservation plans. An assessment of the impacts to the MSHCP as a result of this Project is necessary to address CEQA requirements. To obtain additional information regarding the MSHCP please go to: <https://www.wrc-rca.org/>.

For CDFW to evaluate any inconsistencies between the proposed project and the MSHCP, CDFW recommends that the Master Plan and subsequent CEQA documents demonstrates, at a minimum, how the Project complies with:

The policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, set forth in Section 6.1.2 of the MSHCP; the policies for the Protection of Narrow Endemic Plant Species set forth in Section 6.1.3 of the MSHCP; surveys as set forth in Section 6.3.2 of the MSHCP; the Urban/Wildlands Interface Guidelines as set forth in Section 6.1.4 of the MSHCP; the Best Management Practices and the siting, construction, design, operation and maintenance guidelines as set forth in Section 7.0 and Appendix C of the MSHCP.

The MJPA is the lead agency but is not signatory to the MSHCP, therefore, in order to participate in the MSHCP they would need to act as a Participating Special Entity (PSE). If the March Inland Port Airport chooses to act as a PSE and obtain take through the MSHCP, then all of the MSHCP policies and procedures discussed above in this letter will apply to this Project, and the Master Plan and subsequent CEQA documents should discuss how the Project will demonstrate consistency with the MSHCP. If the Project is not processed through the MSHCP for covered species, then the Project may be subject to the Federal Endangered Species Act (FESA) and/or CESA for threatened, endangered, and/or candidate species.

DRAFT

Christen Craig, Principal Planner

C&S Companies

August 24, 2022

Page 10 of 12

Regardless of whether take of threatened and/or endangered species is obtained through the MSHCP or through a CESA ITP, the Master Plan and subsequent CEQA documents need to address how the proposed Project will affect the policies and procedures of the MSHCP. Therefore, all surveys required by the MSHCP policies and procedures listed above to determine consistency with the MSHCP should be conducted and results included in the Master Plan and subsequent CEQA documents so that CDFW can adequately assess whether the Project will impact the MSHCP. More specifically, surveys for MSHCP Section 6.1.2 for Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, and Section 6.3.2 for Additional Survey Needs and Procedures (Burrowing Owl) should be conducted and included in the cumulative impacts analysis. Active Burrowing Owl habitat and riparian/riverine and vernal pool resources have been documented by the MARB along the boundaries and within proposed project.

Stephens' Kangaroo Rat Habitat Conservation Plan

The Project occurs within the Stephens' kangaroo rat (*Dipodomys stephensi*) Habitat Conservation Plan (SKR HCP) fee area boundary. The SKR HCP plan area map is available here: <https://rchca.us/DocumentCenter/View/200/SKR-Plan-Area>. State and federal authorizations associated with the SKR HCP provide take authorization for Stephens' kangaroo rat within its boundaries, and the MSHCP provides Take Authorization for Stephens' kangaroo rat outside of the boundaries of the SKR HCP, but within the MSHCP area boundaries. The Master Plan should identify if any portion of the Project will occur on SKR HCP lands, or on Stephens' kangaroo rat habitat lands outside of the SKR HCP, but within the MSHCP. Note that the SKR HCP allows for encroachment into the Stephens' kangaroo rat Core Reserve for public projects, however, there are no provisions for encroachment into the Core Reserve for privately owned projects. If impacts to Stephens' kangaroo rat habitat will occur from the proposed Project, the Master Plan and associated CEQA documents should specifically identify the total number of permanent impacts to Stephens' kangaroo rat core habitat and the appropriate mitigation to compensate for those impacts.

Lake and Streambed Alteration Program

Based on review of material submitted, drainage features may traverse some of the parcels within the Project's scope. Depending on how the Project is designed and constructed, it is likely that the Project applicant will need to notify CDFW per Fish and Game Code section 1602. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following: substantially divert or obstruct the natural flow of any river, stream, or lake; substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or deposit debris, waste or other materials that could pass into any river, stream, or lake. Please note that "any river, stream or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow.

DRAFT

Christen Craig, Principal Planner

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Upon receipt of a complete notification, CDFW determines if the proposed Project activities may substantially adversely affect existing fish and wildlife resources and whether a Lake and Streambed Alteration (LSA) Agreement is required. An LSA Agreement includes measures necessary to protect existing fish and wildlife resources. CDFW may suggest ways to modify your Project that would eliminate or reduce harmful impacts to fish and wildlife resources.

CDFW's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code § 21065). To facilitate issuance of an LSA Agreement, if necessary, the Master Plan should fully identify the potential impacts to the lake, stream, or riparian resources, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with CDFW is recommended, since modification of the proposed Project may be required to avoid or reduce impacts to fish and wildlife resources. To submit a Lake or Streambed Alteration notification, please go to <https://wildlife.ca.gov/Conservation/Environmental-Review/EPIMS>

ADDITIONAL COMMENTS AND RECOMMENDATIONS

To ameliorate the water demands of this Project, CDFW recommends incorporation of water-wise concepts in Project landscape design plans. In particular, CDFW recommends xeriscaping with locally native California species, and installing water-efficient and targeted irrigation systems (such as drip irrigation). Native plants support butterflies, birds, reptiles, amphibians, small mammals, bees, and other pollinators that evolved with those plants, more information on native plants suitable for the Project location and nearby nurseries is available at CALSCAPE: <https://calscape.org/>. Local water agencies/districts and resource conservation districts in your area may be able to provide information on plant nurseries that carry locally native species, and some facilities display drought-tolerant locally native species demonstration gardens (for example the Riverside-Corona Resource Conservation District in Riverside). Information on drought-tolerant landscaping and water-efficient irrigation systems is available on California's Save our Water website: <https://saveourwater.com/>.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). Information can be submitted online or via completion of the CNDDDB field survey form at the following link: <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The types of information reported to CNDDDB can be found at the following link: <https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

ENVIRONMENTAL DOCUMENT FILING FEES

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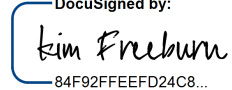
Christen Craig, Principal Planner
C&S Companies
August 24, 2022
Page 12 of 12

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.).

CONCLUSION

CDFW appreciates the opportunity to provide information for the March Inland Port Airport Master Plan and recommends that the MJPA address the CDFW's comments and concerns in the forthcoming Master Plan and CEQA documents. Questions regarding this letter or further coordination should be directed to Katrina Rehrer, Environmental Scientist, at katrina.rehrer@wildlife.ca.gov.

Sincerely,

DocuSigned by:

84F92FFEEFD24C8...

Kim Freeburn
Acting Environmental Program Manager

ec: **California Department of Fish and Wildlife**
Heather Pert, Senior Environmental Scientist Supervisory
Heather.Pert@wildlife.ca.gov

Western Riverside County Regional Conservation Authority
Tricia Campbell
tcampbell@rctc.org

State Clearinghouse
Office of Planning and Research, State Clearinghouse, Sacramento
state.clearinghouse@opr.ca.gov

DRAFT

Hannah Brazil

From: Christen Craig
Sent: Monday, August 29, 2022 12:12 PM
To: Hannah Brazil
Subject: FW: March Inland Port Airport (RIV), Riverside, California-Airport Master Plan/ RUHS-PH Response

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Hannah,

See another response below.

Thanks!

From: Miguel Vazquez <MVazquez@ruhealth.org>
Sent: Monday, August 29, 2022 1:19 PM
To: Christen Craig <ccraig@cscos.com>
Subject: FW: March Inland Port Airport (RIV), Riverside, California-Airport Master Plan/ RUHS-PH Response

FYI

From: Miguel Vazquez
Sent: Friday, August 26, 2022 9:23 AM
To: ccraig@cscoc.com
Cc: Wendy Hetherington <WHetherington@ruhealth.org>; Kevin Meconis <KMeconis@ruhealth.org>
Subject: March Inland Port Airport (RIV), Riverside, California-Airport Master Plan/ RUHS-PH Response

Dear Mr. Craig,

Thank you for the opportunity to assist you with data sources for your proposed March Inland Port Airport Master Plan. Our Epidemiology Branch determined that the best source for the type of GIS information you are looking for can be found in the [Healthy Places Index](#) which is one of main data portal we use for own purposes. Should you have any questions, please contact me or Senior Epidemiologist, Kevin Meconis with any follow up questions you may have.

Kind Regards,

DRAFT

Miguel A. Vazquez, AICP (*He/Him/His/El*)

Health Equity Urban and Regional Planner

Riverside University Health System-Public Health

4210 Riverwalk Pkwy

Riverside, CA 92505

(951) 830-8101 cell/text

mvazquez@ruhealth.org

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From: [Christen Craig](#)
To: [Dunning, Connell](#)
Subject: RE: Clarifying Questions from USEPA Region 9 - Request for Information: March Inland Port Airport Master Plan [Filed 01 Aug 2022 08:57]
Date: Monday, August 1, 2022 8:57:04 AM
Attachments: [image001.png](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.jpg](#)

Good Morning Connell,

I appreciate your interest in the project and I apologize for the delay in getting back to you. Please see the responses to your questions below.

Thank you,
Christen

From: Dunning, Connell <Dunning.Connell@epa.gov>
Sent: Wednesday, July 27, 2022 6:26 PM
To: Christen Craig <ccraig@cscos.com>
Subject: Clarifying Questions from USEPA Region 9 - Request for Information: March Inland Port Airport Master Plan



Hello Christen,

Thank you for sending the attached request for information for the March Inland Port Airport Master Plan. I understand a prior notice of Determination and EIR process was concluded in August 2012 for the facility (excerpt from CEQAnet below).

- Can you confirm that this Master Plan planning exercise is for the current facility referenced in the 2012 CEQAnet entry below? Is there a proposal to expand operations, number of planes and/or expand the footprint of the existing facility? Is an increase in cargo shipping via planes anticipated and what will the associated anticipated increase in loading goods to trucks be?
 - *The planning effort underway is for the entire civilian portion of the airport. The above referenced project was for a discrete area on the airport. The master planning effort is similar to a County or City's General Plan. This effort is early in its process and there is not yet a recommended action. The overall footprint of the airport is not anticipated to change and the planning effort is being completed under the FAA's process.*
- Do you anticipate initiating CEQA, and if so when?
 - *CEQA is anticipated to begin at the end of the planning process. At this time, we are anticipating 12-14 months for the planning process to wrap up.*
- Do you also anticipate initiated NEPA, and if so will it be synchronized (joint document) with the NEPA process? If not, why not...and when will NEPA be initiated?
 - *Typically, the FAA is the lead agency for NEPA for project at an airport. Under the FAA's guidance, NEPA is done on a project by project basics. While joint documents are occasionally undertaken,*

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typically it is not the case.

Thanks for any information you can provide,
Connell Dunning

<https://ceqanet.opr.ca.gov/2010051046/5>

Plot Plan 10-01: The proposed project is to develop a General Aviation facility on 19.5 acres of vacant property south of San Michele Road, north of Nandina Avenue and west of Heacock Street (see Figure 1). The physical changes to the environment that are proposed as part of the development of General Aviation facilities include: a) Construction of an 150,000 square foot concrete aircraft parking apron; b) Construction of a connecting taxi lane to Taxiway A; c) Realignment and construction of additional service road to existing on-airport emergency/service road; d) Drainage improvements; e) Construction of security fence; f) Construction of 5,000 square foot General Aviation terminal facility; g) Construction of two 10,000 square foot General Aviation aircraft hangars; h) recreation center for military SAC pilots and their families).

Connell Dunning
Environmental Review Branch
Tribal, Intergovernmental & Policy Division
U.S. EPA Region 9
75 Hawthorne Street (mail code TIP-2), San Francisco, CA 94105
dunning.connell@epa.gov
415.947.4161

From: Christen Craig <ccraig@cscos.com>
Sent: Wednesday, July 27, 2022 5:52 AM
To: Guzman, Martha <Guzman.Martha@epa.gov>
Subject: Request for Information: March Inland Port Airport Master Plan

Good Morning,

On behalf of the March Joint Powers Authority (MJPA), C&S Engineers, Inc., is preparing a Master Plan for the March Inland Port Airport (RIV) located in Riverside, California. An important task in the Master Plan will be to identify and characterize sensitive environmental areas within the airport property and surrounding community. This effort will assist our planners to make environmentally sound recommendations for the future development of the Airport as well as support the baseline information for subsequent environmental review requirements at the federal and state level for specific proposed airport projects.

As detailed in the attached correspondence, we would like to request your assistance in providing us with information you may possess regarding various environmental resource categories as they relate to your interest in the Proposed Master Plan Project. The environmental resource categories are listed in the attached correspondence and are derived from the Federal Aviation Administration Order 1050.1F, *Environmental Impacts: Policies and Procedures*. Please note that hard copies of the attached correspondence have also been mailed to you and/or your agency.

In order to maintain the schedule for environmental planning for this project, we would appreciate a response to this inquiry by August 27, 2022. If we do not hear from you by that date, we will assume that you have no comments. The best way to contact me is 315-455-2000 (x-4341) or by e-mail at ccraig@cscos.com. Written correspondence can also be sent to my mailing address included below.

DRAFT

C&S Companies
Attn: Christen M. Craig
2355 Northside Drive, Suite 350
San Diego, CA 92108

Thank you for your assistance and I look forward to hearing from you.

Regards,
Christen



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Christen M. Craig (she/her/hers)
Principal Consultant – Aviation Planning

office: (315) 455-2000
direct: (315) 703-4341
ccraig@cscos.com
499 Col. Eileen Collins Blvd. | Syracuse, NY 13212

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Christen Craig

From: Christen Craig
Sent: Wednesday, August 3, 2022 2:50 PM
To: Mace, James E CIV USARMY CESPL (USA)
Subject: RE: March Inland Airport (RIV) comment request
Attachments: Request for Information_US Army Corps of Engineers.pdf

Hello Jim,

Thank you for reaching out. I have attached the letter and both maps that should have come with the request for information correspondence. I apologize if the maps were missing in our original submission. I appreciate you taking the time to review the enclosed information. One item to note is that the Master Plan project only includes the civilian portion of the airport as noted on the attached figures.

Regards,
Christen

From: Mace, James E CIV USARMY CESPL (USA) <James.E.Mace@usace.army.mil>
Sent: Wednesday, August 3, 2022 2:16 PM
To: Christen Craig <ccraig@cscos.com>
Subject: March Inland Airport (RIV) comment request

Hello Christen,

We received your request for comments regarding the referenced project. An administrative assistant forwarded it to me but it did not include a map or site plan (if one was provided). Someone from my team may provide comments on this one, but a map/site plan would be most helpful. Generally, we regulate the discharge of fill material into jurisdictional surface waters, so as much as is practicable to avoid those features the less potential permitting may be needed.

Thank you,
Jim

James E. Mace
Lead, Orange & Riverside Counties Team

Regulatory Division
U.S. Army Corps of Engineers, Los Angeles District
Phone (951) 276-6624 x263
Gov Cell (951) 258-8121
email: james.e.mace@usace.army.mil
website: www.spl.usace.army.mil/regulatory

Mailing Address:
U.S. Army Corps of Engineers
Riverside Regulatory Field Office
1451 Research Park Drive, Suite 100
Riverside, CA 92507-2154

DRAFT

Christen Craig

From: Christen Craig
Sent: Monday, August 1, 2022 2:48 PM
To: Sean P. Kelleher
Cc: Aldo Schindler
Subject: RE: Request for Information: March Inland Port Airport Master Plan

Hi Sean,

Our client for the Master Plan project is the March Inland Port Airport Authority (MIPAA) and our client contact is Gary Gosliga, Airport Director. Just to re-cap the information we discussed during our meeting today, the planning effort underway is for the entire civilian portion of the airport. This effort is early in its process and there is not yet a recommended action. The overall footprint of the airport is not anticipated to change and the planning effort is being completed under the FAA's process. At this time, we are anticipating 12-14 months for the planning process to wrap up.

Thank you for taking the time to meet today and I appreciate any information you can provide.

Regards,
Christen

From: Sean P. Kelleher <seanke@moval.org>
Sent: Monday, August 1, 2022 2:17 PM
To: Christen Craig <ccraig@cscos.com>
Cc: Aldo Schindler <aldos@moval.org>
Subject: RE: Request for Information: March Inland Port Airport Master Plan

Hi Christen,

Thank you for the meeting today. If you would please confirm who from March Joint Powers Authority is the point of contact it would be greatly appreciated. It is likely that we will want to reach out to them directly to get an understanding of the Scope of Work. In the interim I will coordinate with staff to assemble the GIS Layers.

Sean

Sean P. Kelleher
Planning Division Manager/Planning Official
Community Development
City of Moreno Valley

p: 951.413.3215 | e: seanke@moval.org w: www.moval.org
14177 Frederick St., Moreno Valley, CA, 92553

DRAFT

Dial:

US: +1 669 900 6833 or +1 669 219 2599 or +1 253 215 8782

Meeting ID: 895 3554 7209

International numbers

Skype for Business (Lync)

<https://moval.zoom.us/skype/89535547209>

From: Christen Craig <ccraig@cscos.com>

Sent: Monday, August 1, 2022 5:47 AM

To: Sean P. Kelleher <seanke@moval.org>

Subject: RE: Request for Information: March Inland Port Airport Master Plan

Warning: External Email – Watch for Email Red Flags!

Hi Sean,

I am available today at 2 pm (eastern time), tomorrow (Tuesday) at 2 pm or anytime between 10 am – 3 pm on Thursday that works for you.

Thank you,
Christen

From: Sean P. Kelleher <seanke@moval.org>

Sent: Friday, July 29, 2022 6:30 PM

To: Christen Craig <ccraig@cscos.com>; Planning Email_DG <planningemail@moval.org>

Subject: RE: Request for Information: March Inland Port Airport Master Plan

Hi Christen,

I wanted to reach out to you today to see if there was a time you and I could speak next week regarding the information you are requesting. If you wouldn't mind emailing me a time or two you are available to discuss it would be appreciated.

Thank you,

Sean

Sean P. Kelleher
Planning Division Manager/Planning Official
Community Development
City of Moreno Valley

p: 951.413.3215 | e: seanke@moval.org w: www.moval.org
14177 Frederick St., Moreno Valley, CA, 92553



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From: Christen Craig <ccraig@cscos.com>
Sent: Wednesday, July 27, 2022 8:42 AM
To: Planning Email_DG <planningemail@moval.org>
Subject: Request for Information: March Inland Port Airport Master Plan

Warning: External Email – Watch for Email Red Flags!

Good Morning,

On behalf of the March Joint Powers Authority (MIPA), C&S Engineers, Inc., is preparing a Master Plan for the March Inland Port Airport (RIV) located in Riverside, California. An important task in the Master Plan will be to identify and characterize sensitive environmental areas within the airport property and surrounding community. This effort will assist our planners to make environmentally sound recommendations for the future development of the Airport as well as support the baseline information for subsequent environmental review requirements at the federal and state level for specific proposed airport projects.

As detailed in the attached correspondence, we would like to request your assistance in providing us with information you may possess regarding various environmental resource categories as they relate to your interest in the Proposed Master Plan Project. The environmental resource categories are listed in the attached correspondence and are derived from the Federal Aviation Administration Order 1050.1F, *Environmental Impacts: Policies and Procedures*. Please note that hard copies of the attached correspondence have also been mailed to you and/or your agency.

In order to maintain the schedule for environmental planning for this project, we would appreciate a response to this inquiry by August 27, 2022. If we do not hear from you by that date, we will assume that you have no comments. The best way to contact me is 315-455-2000 (x-4341) or by e-mail at ccraig@cscos.com. Written correspondence can also be sent to my mailing address included below.

C&S Companies
Attn: Christen M. Craig
2355 Northside Drive, Suite 350
San Diego, CA 92108

DRAFT

Thank you for your assistance and I look forward to hearing from you.

Regards,
Christen



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Christen M. Craig (she/her/hers)
Principal Consultant – Aviation Planning

office: (315) 455-2000

direct: (315) 703-4341

ccraig@cscos.com

499 Col. Eileen Collins Blvd. | Syracuse, NY 13212

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Christen Craig

From: Bruckner, Scott <SBruckner@rivco.org>
Sent: Wednesday, August 3, 2022 2:02 PM
To: Christen Craig
Cc: Perez, Juan; Grande, Tina M; Hildebrand, John
Subject: RE: Ex: Request for Information: March Inland Port Airport Master Plan

Good Morning Ms. Craig,

Your message below has migrated to the County's Executive Office. Juan Perez, Tina Grande and myself, all of the Executive Office (copied here), have been working with March JPA on their sunset planning efforts, of which development of MIPAA's master plan and business plan are an important part.

Response to this matter is important to us, and will require coordination with multiple County departments in addition to our Planning Department. Our office has been coordinating County response to all requests for information regarding March JPA matters, and we have relayed this to JPA staff. We were not aware that the below request was being sent out to March JPA members and stakeholders; we therefore kindly request that this information query come from the JPA so we can coordinate our response.

Thank you,

Scott Bruckner | Principal Mgmt Analyst
County of Riverside Executive Office
4080 Lemon Street 4th Floor, Riverside, CA. 92501
(951) 955-1110
sbruckner@rivco.org

From: Christen Craig <ccraig@cscos.com>
Sent: Wednesday, July 27, 2022 8:28 AM
To: Planning@RivCo.org <Planning@RivCo.org>
Cc: John E. Hildebrand <jehildebrand@cpp.edu>
Subject: Ex: Request for Information: March Inland Port Airport Master Plan

Good Morning,

On behalf of the March Joint Powers Authority (MIPA), C&S Engineers, Inc., is preparing a Master Plan for the March Inland Port Airport (RIV) located in Riverside, California. An important task in the Master Plan will be to identify and characterize sensitive environmental areas within the airport property and surrounding community. This effort will assist our planners to make environmentally sound recommendations for the future development of the Airport as well as support the baseline information for subsequent environmental review requirements at the federal and state level for specific proposed airport projects.

As detailed in the attached correspondence, we would like to request your assistance in providing us with information you may possess regarding various environmental resource categories as they relate to your interest in the Proposed Master Plan Project. The environmental resource categories are listed in the attached correspondence and are derived from the Federal Aviation

DRAFT

Administration Order 1050.1F, *Environmental Impacts: Policies and Procedures*. Please note that hard copies of the attached correspondence have also been mailed to you and/or your agency.

In order to maintain the schedule for environmental planning for this project, we would appreciate a response to this inquiry by August 27, 2022. If we do not hear from you by that date, we will assume that you have no comments. The best way to contact me is 315-455-2000 (x-4341) or by e-mail at ccraig@cscos.com. Written correspondence can also be sent to my mailing address included below.

C&S Companies
Attn: Christen M. Craig
2355 Northside Drive, Suite 350
San Diego, CA 92108

Thank you for your assistance and I look forward to hearing from you.

Regards,
Christen

DRAFT

Christen Craig

From: Alexandra Rackerby <arackerby@rctc.org>
Sent: Wednesday, August 3, 2022 11:58 AM
To: Christen Craig
Cc: Alexandra Rackerby
Subject: RE: [EXTERNAL] Request for Information: March Inland Port Airport Master Plan

Good morning,

Here is a link to the documents responsive to your request.

<https://wrcrca.box.com/s/uhd6793q166nj88p8ov4xd0hxq3evwct>

Thank you,
Allie



Allie Rackerby
Records Technician
Riverside County Transportation Commission

951.787.7141 [W](#)
4080 Lemon St. 3rd Fl. | P.O. Box 12008 Riverside, CA 92502

rctc.org



From: Cheryl Donahue <CDonahue@RCTC.org>
Sent: Wednesday, July 27, 2022 9:02 AM
To: Lisa Mobley <LMobley@RCTC.org>; Alexandra Rackerby <arackerby@rctc.org>
Subject: FW: [EXTERNAL] Request for Information: March Inland Port Airport Master Plan

I'm forwarding on the assumption that this should be treated as a Public Records Act request. Please let me know if this is not correct.

Cheryl Donahue
Public Affairs Manager
Riverside County Transportation Commission

From: Christen Craig <ccraig@cscos.com>
Sent: Wednesday, July 27, 2022 8:39 AM
To: Info <info@RCTC.org>
Subject: [EXTERNAL] Request for Information: March Inland Port Airport Master Plan

Good Morning,

DRAFT

On behalf of the March Joint Powers Authority (MJPA), C&S Engineers, Inc., is preparing a Master Plan for the March Inland Port Airport (RIV) located in Riverside, California. An important task in the Master Plan will be to identify and characterize sensitive environmental areas within the airport property and surrounding community. This effort will assist our planners to make environmentally sound recommendations for the future development of the Airport as well as support the baseline information for subsequent environmental review requirements at the federal and state level for specific proposed airport projects.

As detailed in the attached correspondence, we would like to request your assistance in providing us with information you may possess regarding various environmental resource categories as they relate to your interest in the Proposed Master Plan Project. The environmental resource categories are listed in the attached correspondence and are derived from the Federal Aviation Administration Order 1050.1F, *Environmental Impacts: Policies and Procedures*. Please note that hard copies of the attached correspondence have also been mailed to you and/or your agency.

In order to maintain the schedule for environmental planning for this project, we would appreciate a response to this inquiry by August 27, 2022. If we do not hear from you by that date, we will assume that you have no comments. The best way to contact me is 315-455-2000 (x-4341) or by e-mail at ccraig@cscos.com. Written correspondence can also be sent to my mailing address included below.

C&S Companies
Attn: Christen M. Craig
2355 Northside Drive, Suite 350
San Diego, CA 92108

Thank you for your assistance and I look forward to hearing from you.

Regards,
Christen



[Build your career at C&S!](#)

Christen M. Craig (she/her/hers)
Principal Consultant – Aviation Planning

office: (315) 455-2000

direct: (315) 703-4341

ccraig@cscos.com

499 Col. Eileen Collins Blvd. | Syracuse, NY 13212

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DRAFT

From: [Sean P. Kelleher](#)
To: [Christen Craig](#)
Subject: RE: Request for Information: March Inland Port Airport Master Plan
Date: Monday, August 8, 2022 8:14:14 PM
Attachments: [image001.png](#)
[image357763.png](#)
[C_S.zip](#)



Good Afternoon,

Please find the documents the City maintains.

Thank you,

Sean P. Kelleher

**Planning Division Manager/Planning Official
Community Development
City of Moreno Valley**

p: 951.413.3215 | e: seanke@moval.org w: www.moval.org
14177 Frederick St., Moreno Valley, CA, 92553



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THIS MESSAGE IS INTENDED ONLY FOR THE PERSON OR ENTITY TO WHICH IT IS ADDRESSED.

THIS MESSAGE MAY CONTAIN INFORMATION THAT IS PRIVILEGED OR CONFIDENTIAL, AND MAY BE EXEMPT OR PROHIBITED FROM PUBLIC DISCLOSURE.

IF YOU RECEIVE THIS MESSAGE IN ERROR, DO NOT FORWARD OR OTHERWISE SHARE THIS MESSAGE.

INSTEAD, IMMEDIATELY NOTIFY THE SENDER AND OUR OFFICE OF THE ERROR.

From: Christen Craig <ccraig@cscos.com>
Sent: Wednesday, July 27, 2022 8:42 AM
To: Planning Email_DG <planningemail@moval.org>
Subject: Request for Information: March Inland Port Airport Master Plan

Warning: External Email – Watch for Email Red Flags!

Good Morning,

On behalf of the March Joint Powers Authority (MJPA), C&S Engineers, Inc., is preparing a Master Plan for the March Inland Port Airport (RIV) located in Riverside, California. An important task in the Master Plan will be to identify and characterize sensitive environmental areas within the airport property and surrounding community. This effort will assist our planners to make environmentally sound recommendations for the future development of the Airport as well as support the baseline information for subsequent environmental review requirements at the federal and state level for specific proposed airport projects.

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C&S Companies
Attn: Christen M. Craig
2355 Northside Drive, Suite 350
San Diego, CA 92108

Thank you for your assistance and I look forward to hearing from you.

Regards,

DRAFT

From: [Hannon, Patricia@Waterboards](mailto:Hannon,Patricia@Waterboards)
To: [Christen Craig](#)
Cc: [Jackson, Adrian@Waterboards](mailto:Jackson,Adrian@Waterboards)
Subject: RE: Request for Information: March Inland Port Airport Master Plan
Date: Friday, August 5, 2022 6:55:02 PM
Attachments: [Request for Information March Inland Port Airport Master Plan.mso](#)



Christen Craig,

In response to your email and letter, requesting information on properties on east and west of March Air Reserve Base that may fit the Category: Hazardous Materials, Solid Waste, and Pollution Prevention

Information on environmental cleanups can be accessed in our electronic file database GeoTracker follow the link <https://geotracker.waterboards.ca.gov>

For the area on the east of March Air Reserve Base see the following Sites in GeoTracker

- IRP Site 7 Fire Protection Area No. 2, GeoTracker ID: (DOD100277300)
- Site 7a Petroleum GeoTracker ID: T10000004745
- FUTURE TRUCK TERMINAL (T10000013716)
- For information on the groundwater see Site CG049, GeoTracker ID DOD100319400
- Site 403, East of Base, Investigation for Poly and Per-Fluorinated Substances Release (T10000013831)

Regarding the area on the west side. We do not have any Sites at that location, however there is a groundwater monitoring well. For information on the groundwater see Site CG049 GeoTracker ID DOD100319400

Category: Water Resources (Wetlands, Floodplains, Surface Waters, Groundwater, Wild & Scenic Rivers)

See our Website at [Home Page | Santa Ana Regional Water Quality Control Board \(ca.gov\)](#)

. For information on water quality, policies, water quality standards for ground and surface water in this region and beneficial uses of specific water bodies see "1995 Water Quality Control Plan for the Santa Ana River Basin (Region 8)" follow this link [Basin Plan | Santa Ana Regional Water Quality Control Board \(ca.gov\)](#)

Patricia Hannon P.G.
Engineering Geologist
California Regional Water Quality Control Board, Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501
951-782-4498

We are working remotely. Best way to contact me is by email

DRAFT

Christen Craig

From: Rehrer, Katrina@Wildlife <Katrina.Rehrer@Wildlife.ca.gov>
Sent: Friday, July 29, 2022 12:48 PM
To: Christen Craig
Cc: Castaneda, Cindy@Wildlife
Subject: Request for Information: March Inland Port Airport Master Plan

Good morning,

CDFW acknowledges the request for information for the preparation of a Master Plan for the March Inland Port Airport (RIV) located in Riverside, California. We will review our geographic information systems databases and other resources to provide information regarding any of the environmental resource impact categories listed in the attached letter. If necessary, a response will be provided to this inquiry by August 27, 2022. Thank you and have a great day.

Best,
Katrina

Katrina Rehrer

Environmental Scientist
Inland Deserts Region
California Department of Fish and Wildlife
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764
(909) 260-1998 (cell)



DRAFT

Christen Craig

From: Nevin, Gabe@ARB <Gabe.Nevin@arb.ca.gov>
Sent: Thursday, August 4, 2022 1:51 PM
To: Christen Craig
Cc: Fancher, Rebecca@ARB
Subject: FW: Request for Information: March Inland Port Airport Master Plan

Good Morning Christen,

Thank you for reaching out to us. The California Air Resources Board (CARB) does not have specific comments regarding this project at this time, beyond encouraging the project to fully analyze any potential air pollution and climate related impacts as required by CEQA. If in developing your analysis you have particular questions about the potential air quality and climate change related aspects of this project please direct them to Matt O'Donnell and Stanley Armstrong (matthew.odonnell@arb.ca.gov; stanley.armstrong@arb.ca.gov) of CARB's Transportation and Toxics Division, as a starting point. While we may not be able to provide assistance to every project (given the volume of CEQA projects happening around the state), we will do our best to respond to questions you may have.

Thanks,



Gabriel Nevin
Legal Office Analyst
California Air Resources Board
Executive Office - Legal
916.445.0628

From: Christen Craig <ccraig@cscos.com>
Sent: Wednesday, July 27, 2022 6:03 AM
To: Randolph, Liane@ARB <Liane.Randolph@arb.ca.gov>
Subject: Request for Information: March Inland Port Airport Master Plan

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good Morning,

On behalf of the March Joint Powers Authority (MIPA), C&S Engineers, Inc., is preparing a Master Plan for the March Inland Port Airport (RIV) located in Riverside, California. An important task in the Master Plan will be to identify and characterize sensitive environmental areas within the airport property and surrounding community. This effort will assist our planners to make environmentally sound recommendations for the future development of the Airport as well as support the baseline information for subsequent environmental review requirements at the federal and state level for specific proposed airport projects.

DRAFT

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C&S Companies
Attn: Christen M. Craig
2355 Northside Drive, Suite 350
San Diego, CA 92108

Thank you for your assistance and I look forward to hearing from you.

Regards,
Christen



[Build your career at C&S!](#)

Christen M. Craig (she/her/hers)
Principal Consultant – Aviation Planning

office: (315) 455-2000
direct: (315) 703-4341
ccraig@cscos.com
499 Col. Eileen Collins Blvd. | Syracuse, NY 13212

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DRAFT

Christen Craig

From: Rull, Paul <PRull@RIVCO.ORG>
Sent: Tuesday, August 2, 2022 10:36 AM
To: Christen Craig
Subject: March Inland Port Airport Master Plan

Good Morning Christen,

Thank you for transmitting the above reference project to us.

You will find most data available regarding the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan here:

- Riverside County GIS Map My County <https://enterprisejistest.rivco.ca.gov/Html5Viewer/?viewer=MMC>. Layers can be acquired directly from RCGIS <https://rcitgis-countyofriverside.hub.arcgis.com/>
- RCALUC website, specifically the March ALUCP <https://www.rcaluc.org/Plans/New-Compatibility-Plan>

You will notice that the March ALUCP was adopted in 2014, and the date of the underlying airport layout plan dates back to 2012. ALUC has not adopted any newer plans since 2014. However, the ALUC is currently in the process of preparing the March ARB Compatible Use Study - <http://marcharbucus.com/>, which will be the foundation for the update to the March ALUCP.

The proposed update to the airport master plan indicates 2 project areas, which are both located within Airport Compatibility Zone B2 (and outside the base/airport fence line), and therefore would be subject to ALUC review and the ALUCP criteria with regards to future developments.

If you have any questions, please feel free to contact me.

Paul Rull
ALUC Director



Riverside County Airport Land Use Commission
4080 Lemon Street, 14th Floor
Riverside, Ca 92501
(951) 955-8883
PRULL@RIVCO.ORG
www.rcaluc.org

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[County of Riverside California](#)

DRAFT

Christen Craig

From: Ross, Ryan <rmross@RIVCO.ORG>
Sent: Wednesday, July 27, 2022 12:36 PM
To: Christen Craig
Cc: Waste-CustomerFeedback
Subject: Request for Information: March Inland Port Airport Master Plan
Attachments: Request for Information_RiversideCo_DeptofWaste.pdf;
Landfill_Information_(Badlands__Blythe__Lamb_Canyon__and_El_Sobrante__Oasis)_.pdf

Good morning Christen.

In response to your request for information regarding environmental resource impacts within the March Air Reserve Base and the Master Plan Project Boundary, general information for active landfills within in Riverside County is attached.

Thank you,

Ryan Ross
Planning Division Manager
951-486-3280
rmross@rivco.org



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[County of Riverside California](#)

LANDFILL INFORMATION AS OF JANUARY 1, 2022

El Sobrante Landfill:

The El Sobrante Landfill is located east of Interstate 15 and Temescal Canyon Road to the south of the City of Corona and Cajalco Road at 10910 Dawson Canyon Road. The landfill is owned and operated by USA Waste of California, a subsidiary of Waste Management, Inc., and encompasses 1,322 acres, of which 645 acres are permitted for landfill operation. The El Sobrante Landfill has a total disposal capacity of approximately 209.9 million cubic yards and can receive up to 70,000 tons per week (tpw) of refuse. USA Waste must allot at least 28,000 tpw for County refuse. The landfill's permit allows a maximum of 16,054 tons per day (tpd) of waste to be accepted into the landfill, due to the limits on vehicle trips. If needed, 5,000 tpd must be reserved for County waste, leaving the maximum commitment of Non-County waste at 11,054 tpd. Per the 2021 Annual Report, the landfill had a remaining in-County disposal capacity of approximately 50.1 million tons.¹ In 2021, the El Sobrante Landfill accepted a daily average of 10,749 tons with a period total of approximately 3,321,315 tons. The landfill is expected to reach capacity in approximately 2057.

Lamb Canyon Landfill:

The Lamb Canyon Landfill is located between the City of Beaumont and City of San Jacinto at 16411 Lamb Canyon Road (State Route 79), south of Interstate 10 and north of Highway 74. The landfill is owned and operated by Riverside County. The landfill property encompasses approximately 1,189 acres, of which 703.4 acres encompass the current landfill permit area. Of the 703.4-acre landfill permit area, approximately 144.6 acres are permitted for waste disposal. The landfill is currently permitted to receive 5,000 tpd of MSW for disposal and 500 tpd for beneficial reuse. The site has an estimated total disposal capacity of approximately 20.7 million tons.² As of January 1, 2022 (beginning of day), the landfill has a total remaining capacity of approximately 7.5 million tons³. The current landfill remaining disposal capacity is estimated to last, at a minimum, until approximately 2032.⁴ From January 2021 to December 2021, the Lamb Canyon Landfill accepted a daily average of 2,054 tons with a period total of approximately 632,755 tons. Landfill expansion potential exists at the Lamb Canyon Landfill site.

Badlands Landfill:

The Badlands Landfill is located northeast of the City of Moreno Valley at 31125 Ironwood Avenue and accessed from State Highway 60 at Theodore Avenue. The landfill is owned and operated by Riverside County. The existing landfill encompasses 1,168.3 acres, with a total permitted disturbance area of 278 acres, of which 150 acres are permitted for refuse disposal. The landfill is currently permitted to receive 4,500 tpd of MSW for disposal and 300 tpd for beneficial reuse. The site has an estimated

¹ 2021 El Sobrante Landfill Annual Report- Based on 125,193,774 tons remaining capacity (40% for in-county waste).

² GASB 18_2021 – Engineering Estimate for total landfill capacity

³ GASB 18_2021 & SiteInfo

⁴ SWFP # 33-AA-0007

total capacity of approximately 20.5 million tons⁵. As of January 1, 2022 (beginning of day), the landfill had a total remaining disposal capacity of approximately 3.4 million tons.⁶ The current landfill remaining disposal capacity is estimated to last, at a minimum, until approximately 2022.⁷ From January 2021 to December 2021, the Badlands Landfill accepted a daily average of 2,821 tons with a period total of approximately 871,816 tons. Landfill expansion potential exists at the Badlands Landfill site.

Blythe Landfill:

The Blythe Landfill is located at 1000 Midland Road, Blythe CA 92225. The landfill is owned and operated by the RCDWR. The landfill property encompasses approximately 365-acres, of which 78.1 acres are permitted for waste disposal. The site has an estimated total capacity of approximately 2.50 million tons. The landfill is currently permitted to receive a maximum of 400 tons per day of refuse, and as of January 1, 2022, had a remaining capacity of approximately 1.52 million tons. It is estimated that the remaining disposal capacity will last until approximately 2047. During 2021, the Blythe Landfill accepted a daily average volume of 110 tons, for a period total of approximately 29,582 tons.

Oasis Landfill:

The Oasis Landfill is located in an unincorporated area of Riverside County at 84-505 84th Avenue, Oasis, CA. The landfill is owned by Riverside County and operated by the RCDWR. The landfill is open twice a week (Wednesdays and Saturdays) and the landfill property encompasses approximately 165.36 acres, of which 23.3 acres encompass the current landfill disposal area. The landfill is currently permitted to receive 400 tpd of MSW for disposal and 50 tpd for beneficial reuse. The site has an estimated total capacity of approximately 0.32 million tons. As of January 1, 2022, the landfill has an estimated remaining refuse capacity of 48,000 tons. The current landfill remaining disposal capacity is estimated to last, at a minimum, until landfill closure in the year 2045. During 2021, the Oasis Landfill accepted a daily average volume of 15 tons and a period total of approximately 822 tons.⁸

⁵ GASB_18_2021 – Engineering Estimate for total landfill capacity

⁶ GASB_18_2021 & SiteInfo

⁷ SWFP # 33-AA-0006

⁸ SiteInfo 2021 (Jan 1 – December 31) Daily Landfill Total Tonnage and Total Traffic By Site

Hannah Brazil

From: Palafox, Daniel <DPalafox@riversideca.gov>
Sent: Wednesday, August 17, 2022 2:27 PM
To: Christen Craig
Cc: Andrade, Frances; Kopaskie-Brown, Mary; Taylor, Matthew; Watson, Scott
Subject: City of Riverside - March Inland Port Airport Master Plan Data
Attachments: Request for Information_CityofRiverside_Andrade.cleaned.pdf

Good Afternoon Christen:

Thank you for the opportunity to provide data for the March Inland Port Airport Master Plan study. The City of Riverside maintains an Open Data GIS portal which provides publicly accessible GIS datasets in various categories including Planning and Infrastructure to name a few. You may find the data via the [Open Data Portal](#).

For specific GIS datasets related to the topics to be evaluated, there will need to be a more formal request which will entail review from our Innovation and Technology (IT) GIS team to ensure that our data security is preserved. This process may take up to 60 days given current staff workload. If you'd like additional information or have questions about this process feel free to let me know.

Daniel Palafox | Assistant Planner

City of Riverside | Community & Economic Development
3900 Main Street, Third Floor | Riverside, CA 92522
Email: dpalafox@riversideca.gov
Phone: 951-826-5985

Keep Riverside healthy: Maintain healthy diet and exercise, wash your hands, and get vaccinated.

[RiversideCA.gov/COVID-19](https://www.riversideca.gov/COVID-19)

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Daniel Palafox | Assistant Planner

City of Riverside | Community & Economic Development
3900 Main Street, Third Floor | Riverside, CA 92522
Email: dpalafox@riversideca.gov
Phone: 951-826-5985

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[RiversideCA.gov/COVID-19](https://www.RiversideCA.gov/COVID-19)

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Riverside County, California



Local office

Carlsbad Fish And Wildlife Office

☎ (760) 431-9440

📅 (760) 431-5901

2177 Salk Avenue - Suite 250

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

DRAFT

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
San Bernardino Merriam's Kangaroo Rat <i>Dipodomys merriami parvus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2060	Endangered
Stephens' Kangaroo Rat <i>Dipodomys stephensi</i> (incl. <i>D. cascus</i>) Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3495	Threatened

Birds

NAME	STATUS
Coastal California Gnatcatcher <i>Polioptila californica californica</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo <i>Vireo bellii pusillus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6749	Endangered

DRAFT

Fishes

NAME	STATUS
Santa Ana Sucker <i>Catostomus santaanae</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3785	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Quino Checkerspot Butterfly <i>Euphydryas editha quino</i> (=E. e. wrighti) Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5900	Endangered

Crustaceans

NAME	STATUS
Riverside Fairy Shrimp <i>Streptocephalus woottoni</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8148	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
------	--------

Munz's Onion	Allium munzii	Endangered
Wherever found		
There is final critical habitat for this species. Your location does not overlap the critical habitat.		
https://ecos.fws.gov/ecp/species/2951		
Nevin's Barberry	Berberis nevinii	Endangered
Wherever found		
There is final critical habitat for this species. Your location does not overlap the critical habitat.		
https://ecos.fws.gov/ecp/species/8025		
San Diego Ambrosia	Ambrosia pumila	Endangered
Wherever found		
There is final critical habitat for this species. Your location does not overlap the critical habitat.		
https://ecos.fws.gov/ecp/species/8287		
San Jacinto Valley Crownscale	Atriplex coronata var. notator	Endangered
Wherever found		
There is final critical habitat for this species. However, no <i>actual</i> acres or miles were designated due to exemptions or exclusions. See Federal Register publication for details.		
https://ecos.fws.gov/ecp/species/4353		
Santa Ana River Woolly-star	Eriastrum densifolium ssp. sanctorum	Endangered
Wherever found		
No critical habitat has been designated for this species.		
https://ecos.fws.gov/ecp/species/6575		
Spreading Navarretia	Navarretia fossalis	Threatened
Wherever found		
There is final critical habitat for this species. Your location does not overlap the critical habitat.		
https://ecos.fws.gov/ecp/species/1334		
Thread-leaved Brodiaea	Brodiaea filifolia	Threatened
Wherever found		
There is final critical habitat for this species. Your location does not overlap the critical habitat.		
https://ecos.fws.gov/ecp/species/6087		

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

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For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird <i>Selasphorus sasin</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Belding's Savannah Sparrow <i>Passerculus sandwichensis beldingi</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole <i>Icterus bullockii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull <i>Larus californicus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
California Thrasher <i>Toxostoma redivivum</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Common Yellowthroat <i>Geothlypis trichas sinuosa</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

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Lawrence's Goldfinch *Carduelis lawrencei*

Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9464>

Nuttall's Woodpecker *Picoides nuttallii*

Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9410>

Western Grebe *Aechmophorus occidentalis*

Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/6743>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

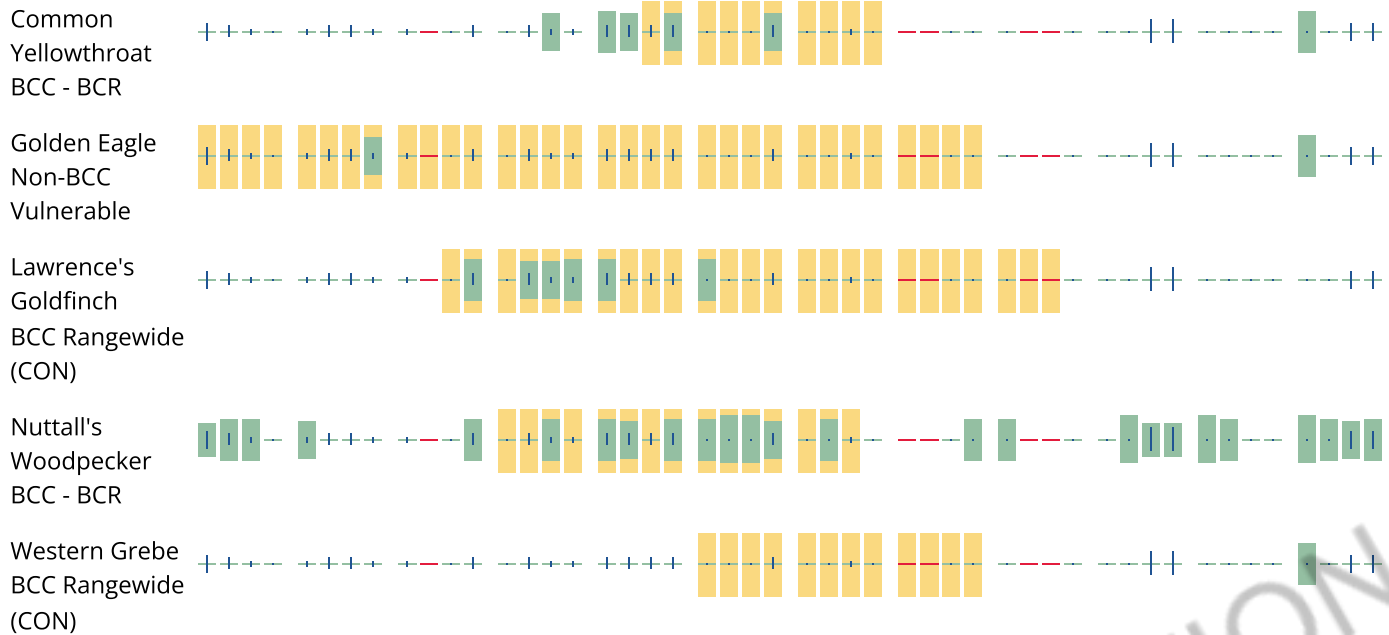
Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

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The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

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If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Coastal Barrier Resources System

Projects within the [John H. Chafee Coastal Barrier Resources System](#) (CBRS) may be subject to the restrictions on Federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local [Ecological Services Field Office](#) or visit the [CBRA Consultations website](#). The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the [official CBRS maps](#). The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: <https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation>

Data exclusions

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CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

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Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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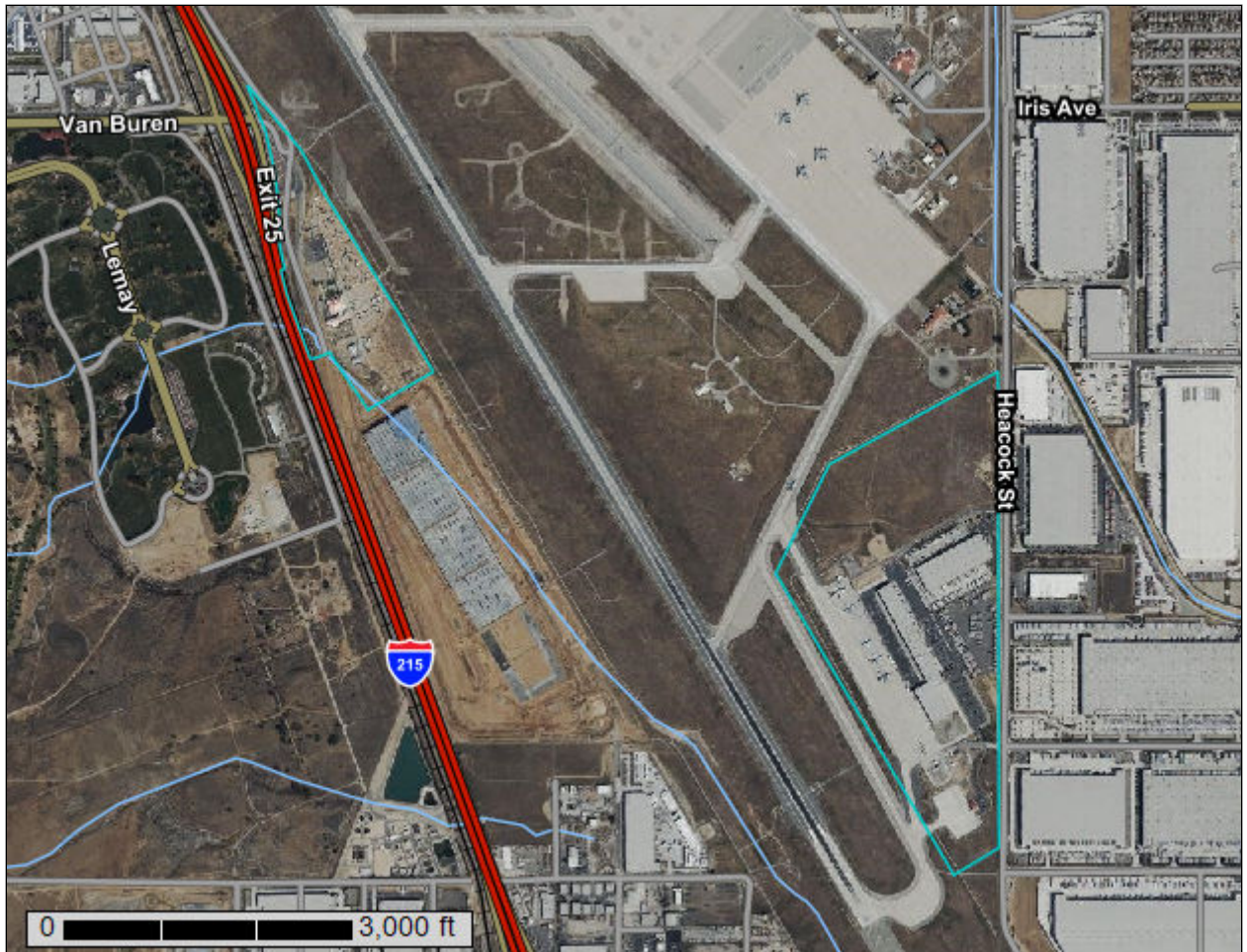
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Western Riverside Area, California



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

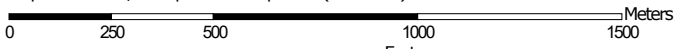
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Custom Soil Resource Report Soil Map




Map Scale: 1:18,500 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
 Survey Area Data: Version 15, Sep 6, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 14, 2022—Mar 17, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EnA	Exeter sandy loam, 0 to 2 percent slopes	74.5	33.7%
EpA	Exeter sandy loam, deep, 0 to 2 percent slopes	1.2	0.5%
GyA	Greenfield sandy loam, 0 to 2 percent slopes	18.5	8.4%
HgA	Hanford fine sandy loam, 0 to 2 percent slopes	8.1	3.6%
MmB	Monserate sandy loam, 0 to 5 percent slopes	96.6	43.7%
MmC2	Monserate sandy loam, 5 to 8 percent slopes, eroded	6.3	2.8%
RaA	Ramona sandy loam, 0 to 2 percent slopes, MLRA 19	16.1	7.3%
Totals for Area of Interest		221.2	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit

descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Western Riverside Area, California

EnA—Exeter sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hctg

Elevation: 20 to 700 feet

Mean annual precipitation: 7 to 20 inches

Mean annual air temperature: 61 to 64 degrees F

Frost-free period: 250 to 300 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Exeter and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exeter

Setting

Landform: Alluvial fans

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 16 inches: sandy loam

H2 - 16 to 37 inches: sandy clay loam

H3 - 37 to 50 inches: indurated

H4 - 50 to 60 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: 20 to 40 inches to duripan

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum content: 1 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: C

Ecological site: R019XD029CA - LOAMY

Hydric soil rating: No

Minor Components**Ramona**

Percent of map unit: 4 percent
Hydric soil rating: No

Monserate

Percent of map unit: 4 percent
Hydric soil rating: No

Greenfield

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 3 percent
Hydric soil rating: No

EpA—Exeter sandy loam, deep, 0 to 2 percent slopes**Map Unit Setting**

National map unit symbol: hctk
Elevation: 300 to 700 feet
Mean annual precipitation: 7 to 15 inches
Mean annual air temperature: 64 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Exeter and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Exeter**Setting**

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 16 inches: sandy loam
H2 - 16 to 37 inches: sandy clay loam
H3 - 37 to 50 inches: indurated
H4 - 50 to 60 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 35 to 60 inches to duripan

Custom Soil Resource Report

Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R019XD029CA - LOAMY
Hydric soil rating: No

Minor Components**Ramona**

Percent of map unit: 5 percent
Hydric soil rating: No

Greenfield

Percent of map unit: 5 percent
Hydric soil rating: No

Monserate

Percent of map unit: 5 percent
Hydric soil rating: No

GyA—Greenfield sandy loam, 0 to 2 percent slopes**Map Unit Setting**

National map unit symbol: hcvv
Elevation: 100 to 3,500 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Greenfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greenfield**Setting**

Landform: Terraces, alluvial fans

Custom Soil Resource Report

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 26 inches: sandy loam

H2 - 26 to 43 inches: fine sandy loam

H3 - 43 to 60 inches: loam

H4 - 60 to 72 inches: stratified loamy sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 3c

Hydrologic Soil Group: A

Ecological site: R019XD029CA - LOAMY

Hydric soil rating: No

Minor Components**Hanford**

Percent of map unit: 10 percent

Hydric soil rating: No

Pachappa

Percent of map unit: 2 percent

Hydric soil rating: No

Arlington

Percent of map unit: 2 percent

Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent

Hydric soil rating: No

HgA—Hanford fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2y8ts
Elevation: 610 to 1,750 feet
Mean annual precipitation: 9 to 15 inches
Mean annual air temperature: 64 to 65 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

A - 0 to 8 inches: fine sandy loam
C1 - 8 to 40 inches: fine sandy loam
C2 - 40 to 60 inches: stratified loamy sand to coarse sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: R019XD029CA - LOAMY
Hydric soil rating: No

Minor Components**Greenfield**

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Tujunga

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ramona

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

MmB—Monserate sandy loam, 0 to 5 percent slopes**Map Unit Setting**

National map unit symbol: hcx4
Elevation: 700 to 2,500 feet
Mean annual precipitation: 10 to 18 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 220 to 280 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Monserate and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Monserate**Setting**

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 10 inches: sandy loam
H2 - 10 to 28 inches: sandy clay loam
H3 - 28 to 45 inches: indurated
H4 - 45 to 57 inches: cemented
H5 - 57 to 70 inches: loamy coarse sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: 20 to 39 inches to duripan
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R019XD029CA - LOAMY
Hydric soil rating: No

Minor Components**Greenfield**

Percent of map unit: 5 percent
Hydric soil rating: No

Tujunga

Percent of map unit: 5 percent
Hydric soil rating: No

Hanford

Percent of map unit: 5 percent
Hydric soil rating: No

MmC2—Monserate sandy loam, 5 to 8 percent slopes, eroded**Map Unit Setting**

National map unit symbol: hcx5
Elevation: 700 to 2,500 feet
Mean annual precipitation: 10 to 18 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 220 to 280 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Monserate and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Monserate**Setting**

Landform: Alluvial fans

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 10 inches: sandy loam

H2 - 10 to 28 inches: sandy clay loam

H3 - 28 to 45 inches: indurated

H4 - 45 to 57 inches: cemented

H5 - 57 to 70 inches: loamy coarse sand

Properties and qualities

Slope: 5 to 8 percent

Depth to restrictive feature: 20 to 39 inches to duripan

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: R019XD029CA - LOAMY

Hydric soil rating: No

Minor Components**Greenfield**

Percent of map unit: 3 percent

Hydric soil rating: No

Tujunga

Percent of map unit: 3 percent

Hydric soil rating: No

Ramona

Percent of map unit: 3 percent

Hydric soil rating: No

Unnamed

Percent of map unit: 3 percent

Hydric soil rating: No

Hanford

Percent of map unit: 3 percent

Hydric soil rating: No

RaA—Ramona sandy loam, 0 to 2 percent slopes, MLRA 19**Map Unit Setting**

National map unit symbol: 2x52z

Elevation: 370 to 2,620 feet

Mean annual precipitation: 9 to 17 inches

Mean annual air temperature: 64 to 65 degrees F

Frost-free period: 260 to 340 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Ramona and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ramona**Setting**

Landform: Alluvial fans, terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from granite

Typical profile

A - 0 to 20 inches: sandy loam

Bt - 20 to 60 inches: sandy clay loam

C - 60 to 74 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): 2s

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: B

Ecological site: R019XD029CA - LOAMY

Hydric soil rating: No

Minor Components

Greenfield

Percent of map unit: 6 percent

Landform: Terraces, alluvial fans

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Tujunga

Percent of map unit: 4 percent

Landform: Flood plains, alluvial fans

Landform position (three-dimensional): Riser

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Hanford

Percent of map unit: 4 percent

Landform: Flood plains, alluvial fans

Landform position (three-dimensional): Riser

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Placentia

Percent of map unit: 1 percent

Landform: Terraces, alluvial fans

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

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EJScreen Report (Version 2.1)



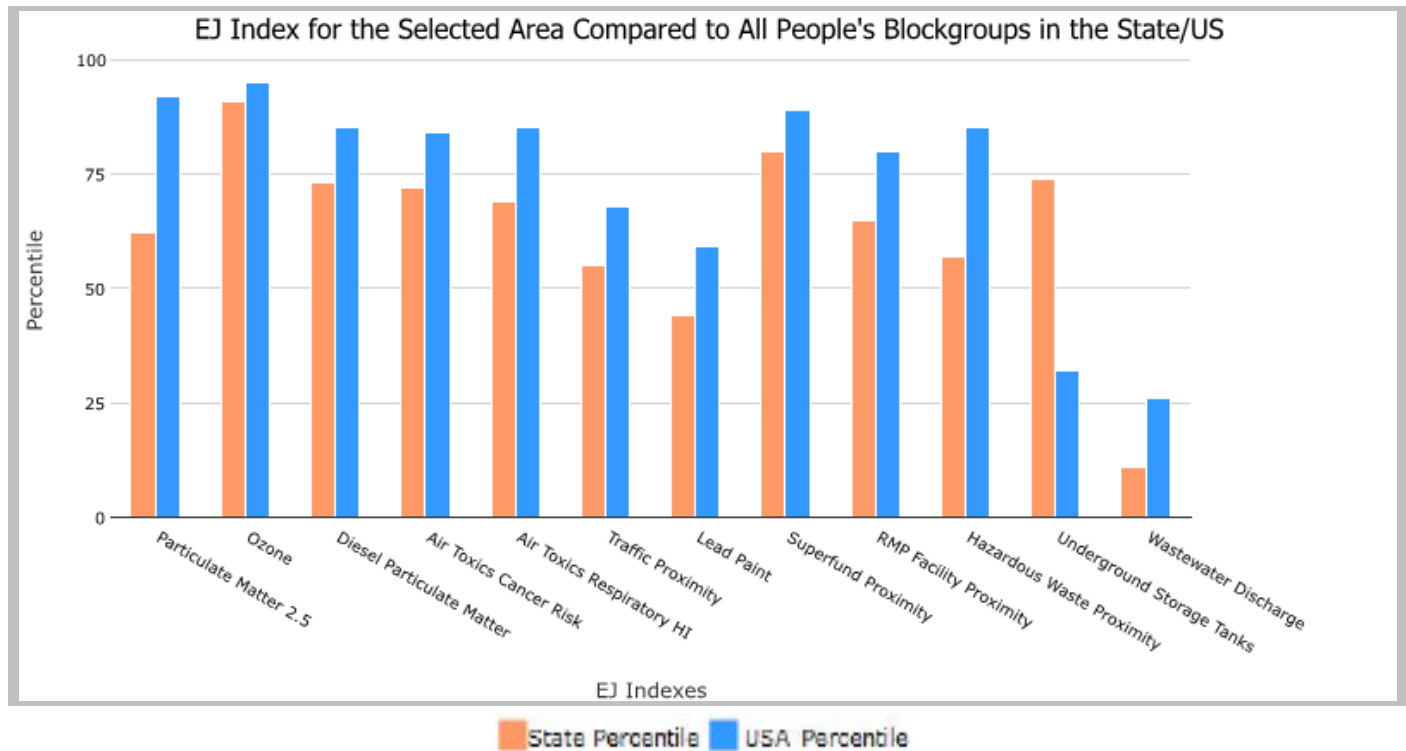
10 miles Ring Centered at 33.890937,-117.259483, CALIFORNIA, EPA Region 9

Approximate Population: 544,239

Input Area (sq. miles): 314.03

(The study area contains 1 blockgroup(s) with zero population.)

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
EJ Index for Particulate Matter 2.5	62	92
EJ Index for Ozone	91	95
EJ Index for Diesel Particulate Matter*	73	85
EJ Index for Air Toxics Cancer Risk*	72	84
EJ Index for Air Toxics Respiratory HI*	69	85
EJ Index for Traffic Proximity	55	68
EJ Index for Lead Paint	44	59
EJ Index for Superfund Proximity	80	89
EJ Index for RMP Facility Proximity	65	80
EJ Index for Hazardous Waste Proximity	57	85
EJ Index for Underground Storage Tanks	74	32
EJ Index for Wastewater Discharge	11	26



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.



EJScreen Report (Version 2.1)

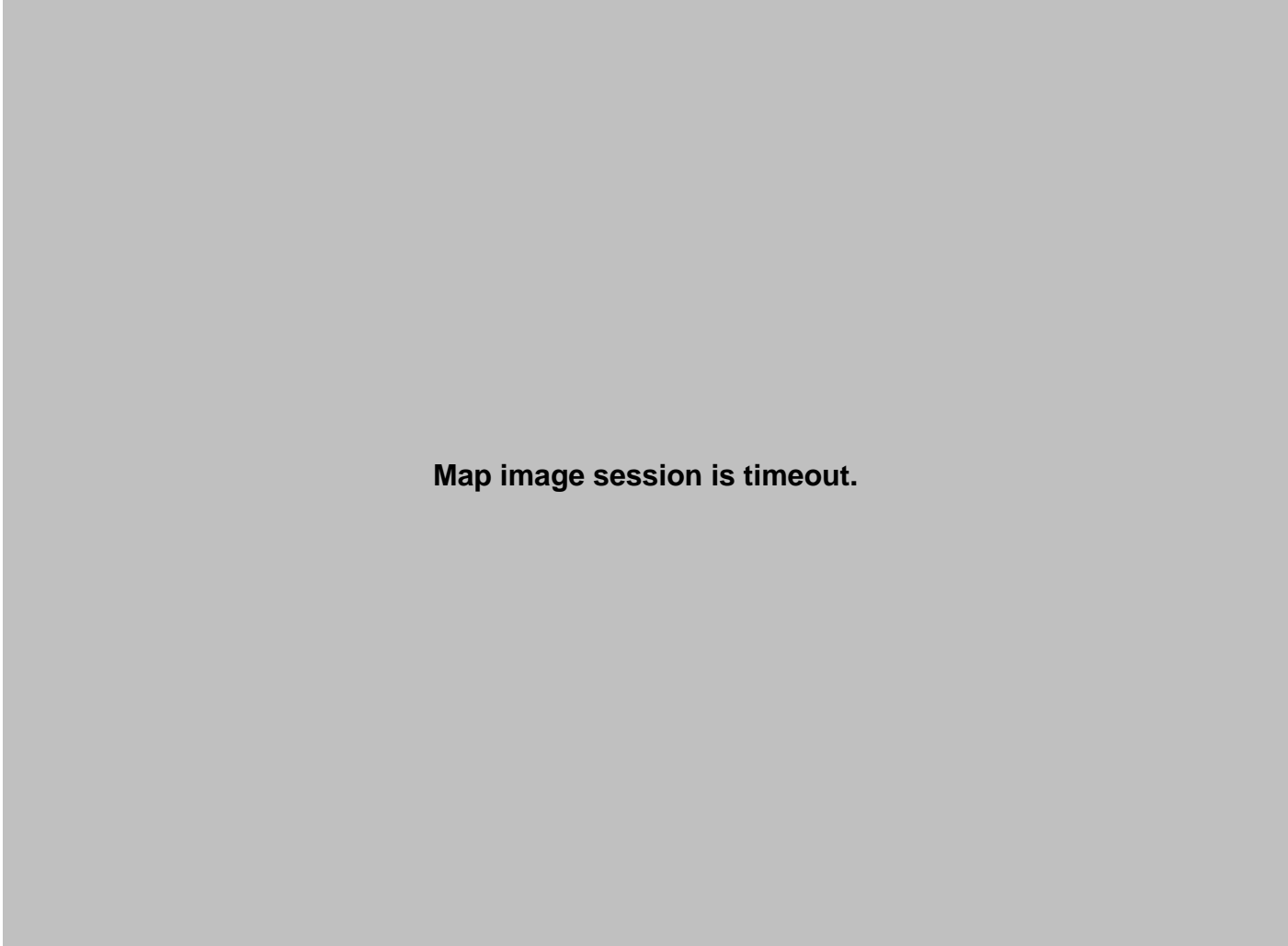


10 miles Ring Centered at 33.890937,-117.259483, CALIFORNIA, EPA Region 9

Approximate Population: 544,239

Input Area (sq. miles): 314.03

(The study area contains 1 blockgroup(s) with zero population.)



Map image session is timeout.

Sites reporting to EPA	
Superfund NPL	2
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	43



EJScreen Report (Version 2.1)



10 miles Ring Centered at 33.890937,-117.259483, CALIFORNIA, EPA Region 9

Approximate Population: 544,239

Input Area (sq. miles): 314.03

(The study area contains 1 blockgroup(s) with zero population.)

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	11.7	11.7	46	8.67	94
Ozone (ppb)	67.3	47.7	95	42.5	99
Diesel Particulate Matter* ($\mu\text{g}/\text{m}^3$)	0.396	0.33	65	0.294	70-80th
Air Toxics Cancer Risk* (lifetime risk per million)	32	31	81	28	80-90th
Air Toxics Respiratory HI*	0.42	0.43	70	0.36	80-90th
Traffic Proximity (daily traffic count/distance to road)	800	1400	66	760	77
Lead Paint (% Pre-1960 Housing)	0.15	0.28	41	0.27	41
Superfund Proximity (site count/km distance)	0.23	0.17	86	0.13	88
RMP Facility Proximity (facility count/km distance)	1	1.1	67	0.77	76
Hazardous Waste Proximity (facility count/km distance)	3.1	5.2	42	2.2	79
Underground Storage Tanks (count/km ²)	0.27	1.5	74	3.9	34
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.095	67	58	12	84
Socioeconomic Indicators					
Demographic Index	57%	44%	69	35%	80
People of Color	78%	63%	65	40%	82
Low Income	35%	29%	66	30%	62
Unemployment Rate	7%	6%	68	5%	72
Limited English Speaking Households	7%	9%	57	5%	79
Less Than High School Education	21%	16%	69	12%	81
Under Age 5	7%	6%	64	6%	66
Over Age 64	10%	14%	33	16%	27

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/haps/air-toxics-data-update>.

For additional information, see: www.epa.gov/environmentaljustice

EJScreen is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJScreen outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

National Flood Hazard Layer FIRMette

DRAFT



117°16'23"W 33°53'17"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
MAP PANELS		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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0 250 500 1,000 1,500 2,000 Feet 1:6,000

117°15'45"W 33°52'47"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

National Flood Hazard Layer FIRMette

DRAFT



117°15'10"W 33°52'50"N



Legend

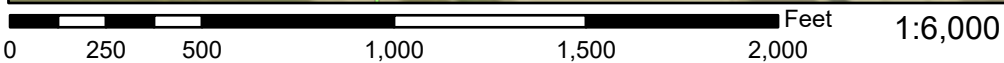
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, A99
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
 - OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee. See Notes. Zone X
 - Area with Flood Risk due to Levee Zone D
 - OTHER AREAS**
 - NO SCREEN Area of Minimal Flood Hazard Zone X
 - Effective LOMRs
 - Area of Undetermined Flood Hazard Zone D
 - GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
 - OTHER FEATURES**
 - B** 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
 - 17.5 Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature
 - MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

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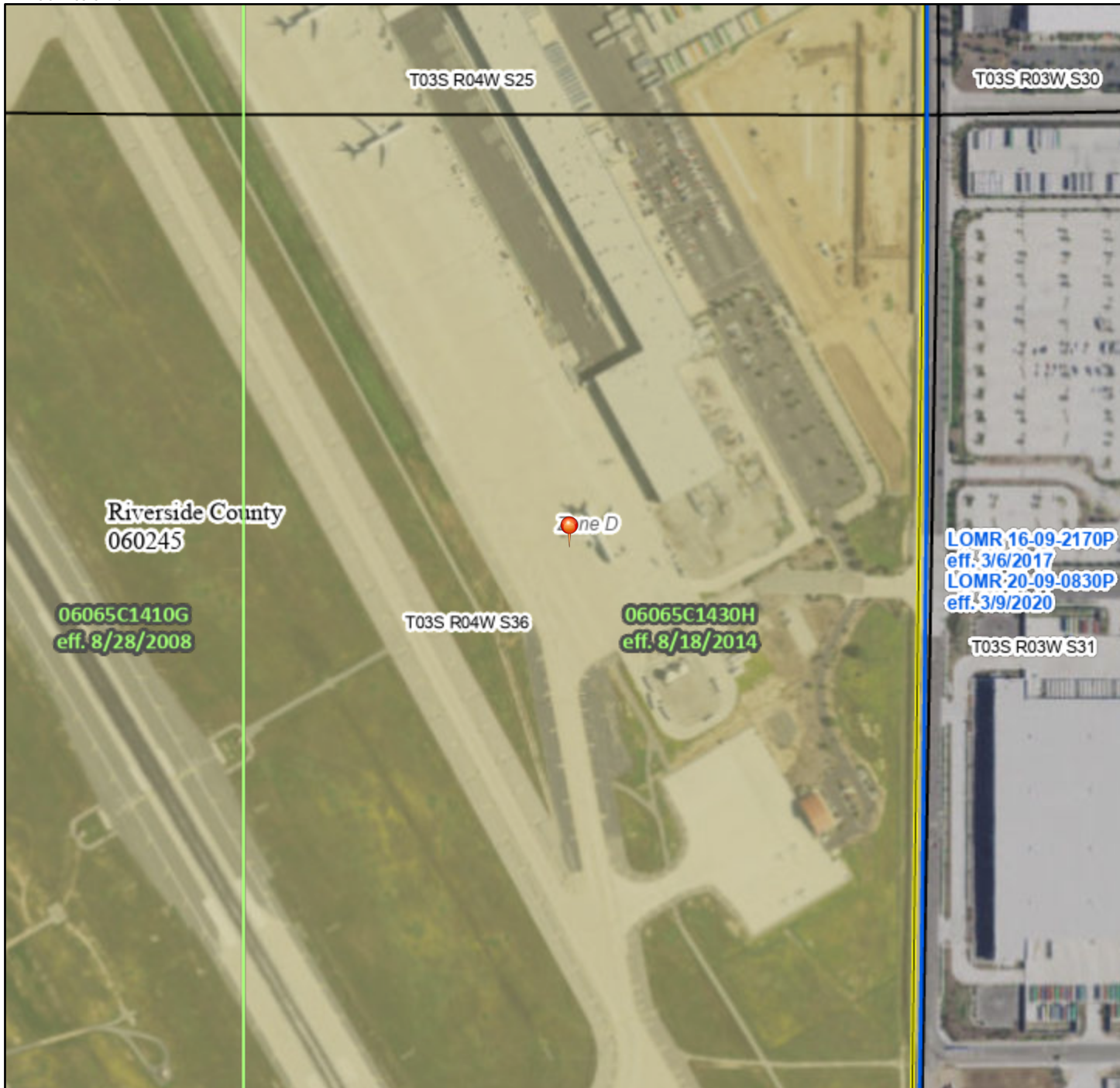
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National Flood Hazard Layer FIRMette

DRAFT



117°15'8"W 33°52'28"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| GENERAL STRUCTURES | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance |
| | | 17.5 Water Surface Elevation |
| | | Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| MAP PANELS | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

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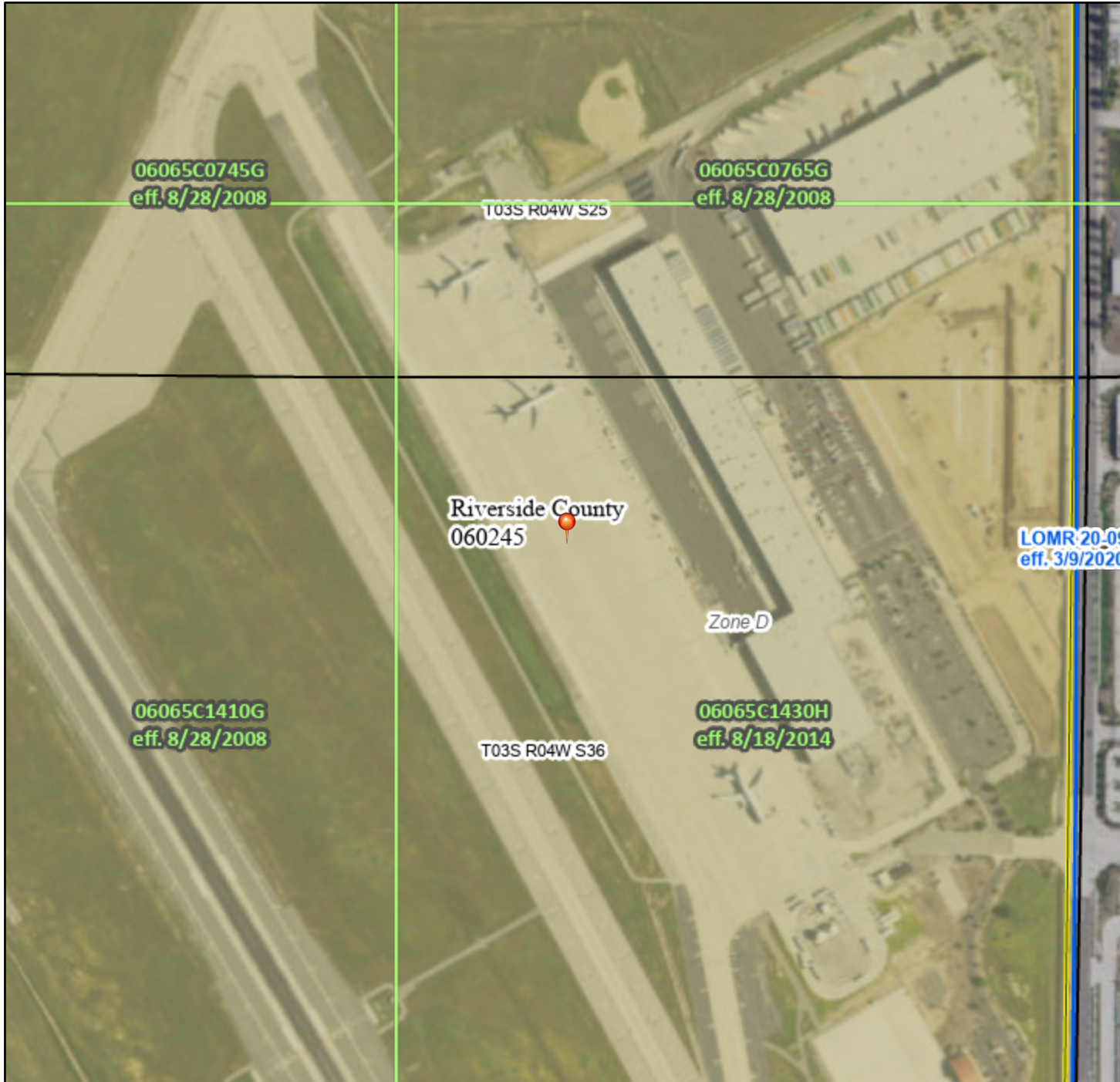
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette

DRAFT



117°15'13"W 33°52'36"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, A99
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway

- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee. See Notes. Zone X
 - Area with Flood Risk due to Levee Zone D

- OTHER AREAS**
 - NO SCREEN Area of Minimal Flood Hazard Zone X
 - Effective LOMRs
 - Area of Undetermined Flood Hazard Zone D

- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall

- OTHER FEATURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature

- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped

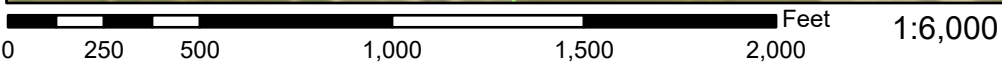


The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **1/31/2023 at 12:31 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



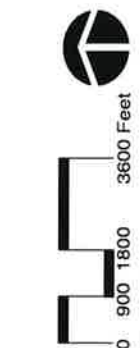
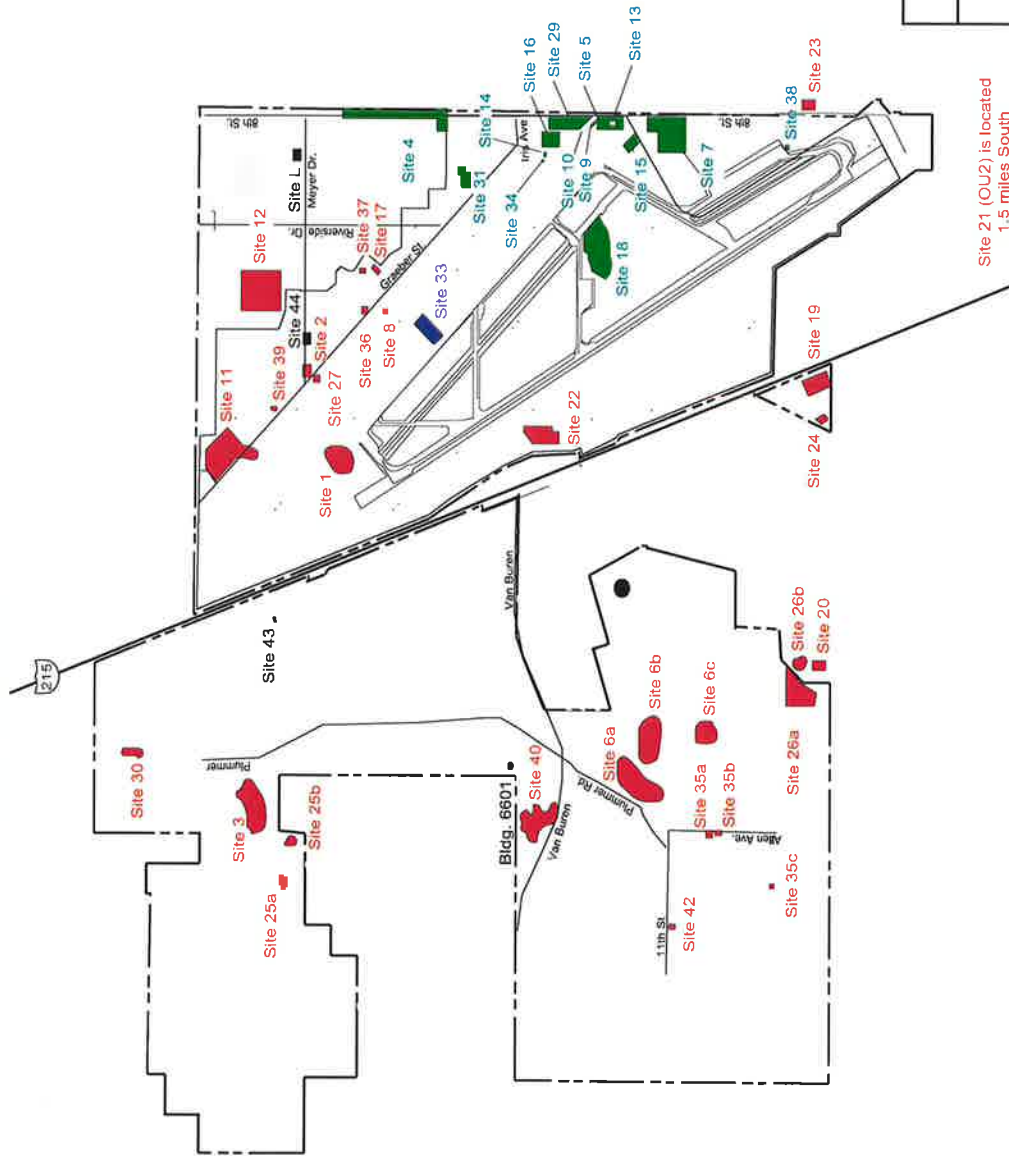
117°14'36"W 33°52'6"N

DRAFT

Explanation

- Base Boundary
- Site 28 (OU2) is a group of monitoring wells spread across the main base
- Site 32 (OU2) is composed of several construction material landfills not currently located.
- IRP Site in Operable Unit 1
- IRP Site in Operable Unit 2
- IRP Site in Operable Unit 3
- Additional IRP Site
- Cantonment Area

Site 41 (OU2) is located 19 miles west of Barstow, CA



Source: USAF, 1992



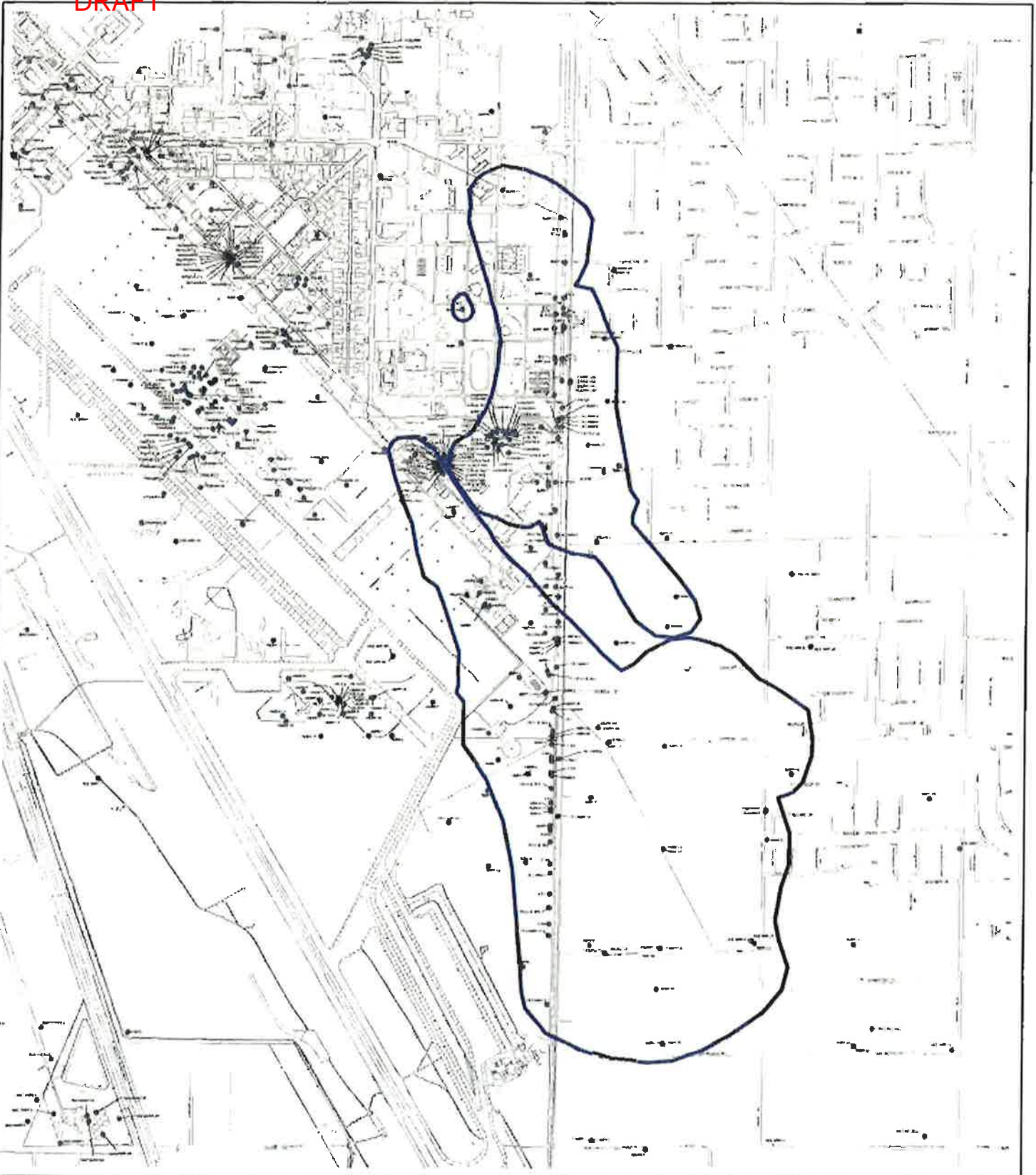
March ARB/AFB Site Locations




Date 09-03
Project No. 39863

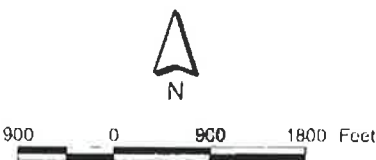
March Air Reserve Base, Basewide RI/FS
Figure 3-2


**Operable Unit 1 5-Year Review
March Air Force Base, California**

DRAFT



LEGEND	
	Wells
	Structures/ Roads
	Consolidated OU-1 Plume



DEPARTMENT OF THE AIR FORCE HQ AIR FORCE RESERVE COMMAND ROBINS AFB, GEORGIA	
MARCH AIR RESERVE BASE	CALIFORNIA
OU-1 Plume Operable Unit 1 5-Year Review March Air Force Base	
 EARTH TECH	Project No. 39663
<small>ALTERNATIVE ENERGY</small>	Date: 09-03
Figure 4.10-1	

Summary Table ES-1. CERCLA Sites at March AFB
Page 1 of 11

IRP Site Sites

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
Site 1	Aircraft Isolation Area/Fuel Drainage Area	2	AFRC	AFRC OU2 ROD	Fuels and solvents	Contaminated soil was removed in December 1995. Closure document was approved. AFRC OU2 ROD site.
Site 2	Waste Oil Pits/Solvent tanks	2	AFRC	AFRC OU2 ROD	Fuels, oils, and solvents	Interim remedial action (SVE) in place. AFRC OU2 ROD site.
Site 3	Landfill No. 5	2	AFRPA	AFRPA OU2 ROD	Household waste, oil, and solvents	Waste was consolidated in the Site 6 landfill. No waste is present. AFRPA OU2 ROD site.
Site 4	Landfill No 6	1	AFRPA	OU1 ROD	Household waste, oil, and solvents	Landfill was capped in 1995. Waste remains on site. Site is evaluated in this 5-year review.
Site 5	Landfill No. 3	1	AFRC	OU1 ROD	Sanitary waste and construction rubble	Approved for no further action in the OU1 ROD. Waste remains in place. Site is evaluated in this 5-year review.
Site 6	Landfill No 4	2	AFRPA	AFRPA OU2 ROD	Household waste and construction rubble	Closed with a newly engineered landfill design. Waste remains in place. AFRPA OU2 ROD site

Summary Table ES-1. CERCLA Sites at March AFB
Page 2 of 11

IRP Site Sites (Continued)

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
Site 7	Fire Protection Training Area No 2	1	AFRPA	OU1 ROD	Fuels, oils, and solvents	Identified as no further action in the OU1 ROD. Contamination remains above unrestricted levels. Evaluated in this 5-year review.
Site 8	Flight Line Shop Area/Operations	2	AFRC	AFRC OU2 ROD	Fuels, oils, and solvents	Some contaminated soils were removed. Contamination remains in place. AFRC OU2 ROD site.
Site 9	Oil/Water Separator	1	AFRC	OU1 ROD	Fuels and solvents	No contaminants identified above unrestricted levels. Approved for no further action in the OU1 ROD. Site is not evaluated in this 5-Year Review.
Site 10	Flightline Drainage Ditch	1	AFRC	OU1 ROD	Fuels, oils, and solvents, with PAHs in surface soils	Contaminated soils were removed in 1995. No Contamination remains at Site. ESD issued to change remedy. Site is evaluated in this 5-Year Review
Site 11	Bulk Fuels Storage Area	2	AFRC	AFRC OU2 ROD	Fuels	OU2 RI determined levels do not pose risk. AFRC OU2 ROD site

Summary Table ES-1. CERCLA Sites at March AFB
Page 3 of 11

IRP Site Sites (Continued)

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
Site 12	Civil Engineering Yard	2	AFRPA	AFRPA OU2 ROD	Oils and solvents	Soil was excavated and placed at the Site 6 landfill. Long-term groundwater monitoring is being done. AFRPA OU2 ROD site.
Site 13	Tank Truck Spill Site (Located within Site 5 Landfill)	1	AFRC	OU1 ROD	Fuels	No contaminants identified above unrestricted levels. Approved for no further action in the OU1 ROD. Site is not evaluated in this 5-Year Review.
Site 14	Liquid Fuel Pump Station Overflow (Near Site 16 Sludge Drying Beds)	1	AFRC	OU1 ROD	Jet fuel	No contaminants identified above unrestricted levels. Approved for no further action in the OU1 ROD. Site is not evaluated in this 5-Year Review.
Site 15	Fire Protection Training Area No. 3	1	AFRC	OU1 ROD	Fuels, BTEX	Contaminated soils were removed in 1995. No contamination remains at Site. ESD issued to change remedy. Site is evaluated in this 5-Year Review
Site 16	East March Sludge Drying Beds	1	AFRC	OU1 ROD	Sludge	No contaminants identified above unrestricted levels. Approved for no further action in the OU1 ROD. Site is not evaluated in this 5-Year Review.

Summary Table ES-1. CERCLA Sites at March AFB
Page 4 of 11

IRP Site Sites (Continued)

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRCA Site	Supporting References	Contaminants	Actions/Current Status
Site 17	Swimming Pool Fill (off Graeber)	2	AFRPA	AFRPA OU2 ROD	Solvents, shop wastes, and demolition debris	Pool structure and contents were removed in 1994. Contamination remains above unrestricted levels. AFRPA OU2 ROD site
Site 18	Engine Test Cell	1	AFRC	OU1 ROD	Fuel and BTEX	Ongoing discussions with regulators to remove Site 18 from the CERCLA process and manage as a fuels only site, regulatory oversight by RWQCB only. Site is evaluated in this 5-year review.
Site 19	West March Sludge Drying Beds	2	AFRPA	AFRPA OU2 ROD	Sludge	No remedial action required. Contamination remains above unrestricted levels. AFRPA OU2 ROD site.
Site 20	Landfill No. 7, West March	2	AFRPA	AFRPA OU2 ROD	Household waste	Soil and waste was excavated and placed at Site 6. No contamination remains above unrestricted levels at the site. AFRPA OU2 ROD site.
Site 21	Effluent Pond (Cordures Property)	BW/OU4	AFRPA	OU4 RI/FS*	Treated waste water	Site is currently being investigated in the Basewide/OU4 RI.

Summary Table ES-1. CERCLA Sites at March AFB
Page 5 of 11

IRP Site Sites (Continued)

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
Site 22	Landfill No. 2, main Base	2	AFRPA	AFRPA OU2 ROD	None	Site could not be found. No evidence of a waste was identified. AFRPA OU2 ROD site.
Site 23	East March Effluent Pond, Nadina and Heacock Street	BW/OU4	AFRPA	AFRPA OU2 ROD	Treated wastewater	No soil contamination was found. No further action recommended. AFRPA OU2 ROD site
Site 24	Landfill No. 1, West March, Incinerator Area	2	AFRPA	AFRPA OU2 ROD	Household waste and incinerator ash	Waste and soil was excavated in 1995 and placed at Site 6. No contamination remains above unrestricted levels at the site. AFRPA OU2 ROD site.
Site 25	Munitions Residue Burial Site, West March	2	AFRPA	AFRPA OU2 ROD	Munitions residue	Nonhazardous waste was removed and placed at Site 6 in 1995. No contamination remains above unrestricted levels. AFRPA OU2 ROD site
Site 26	Water Treatment Sludge, West March	2	AFRPA	AFRPA OU2 ROD	Sludge	Contamination was removed and placed at Site 6. No contamination remains above unrestricted levels. AFRPA OU2 ROD site

Summary Table ES-1. CERCLA Sites at March AFB
Page 6 of 11

IRP Site Sites (Continued)

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
Site 27	Building 422 Underground POL Tanks	2	AFRC	AFRC OU2 ROD	Fuels, oil, and solvent	Tanks were removed. An SVE system will be installed in 2004. AFRC OU2 ROD site.
Site 28	Basewide Groundwater Monitoring Wells	2	AFRC	OU1/OU2 RI/FS	Zone monitoring wells	Well network was part of the basewide groundwater monitoring network. No specific site identified. Not discussed further.
Site 29	Fire Protection Training Area No. 1	1	AFRC	OU1 ROD	Fuels, oils, and solvents	Identified as no further action in the OU1 ROD. Contamination remains above unrestricted levels. Evaluated in this 5-year review.
Site 30	Construction Rubble Site	2	AFRPA	AFRPA OU2 ROD	Construction rubble	Debris was removed in 1996. Cleanup to unrestricted levels reached. AFRPA OU2 ROD site
Site 31	Building 1211 Solvent Spill TCE Source Area	1	AFRC	OU1 ROD	Solvents	A soil and groundwater treatment system installed in 1996. Surface soil contamination remains above unrestricted levels. Site is evaluated in this 5-Year Review.

Summary Table ES-1. CERCLA Sites at March AFB
Page 7 of 11

IRP Site Sites (Continued)

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
Site 32	Building Demolition Areas	2	AFRPA	AFRPA OU2 ROD	Assumed to contain construction rubble	Not currently located. Site was removed from the IRP list because the sites were not considered to present a risk for adverse effects on human health or the environment.
Site 33	Panero Aircraft Refueling Facility	3	AFRC	OU3 Decision Document	Fuels and BTEX	Ongoing discussions with regulators to remove Site 18 from the CERCLA process and manage as a fuels only site. Regulatory oversight by RWQCB only. Site is not evaluated in this 5-year review.
Site 34	Pritchard Refueling System	1	AFRC	OU1 ROD	Fuels and BTEX	A biovent pilot study was used to clean the soil. Surface soil contamination remains above unrestricted levels. Site is evaluated in this 5-Year Review.
Site 35	15th Headquarters Leaking UST	2	AFRPA	AFRPA OU2 ROD	Fuels	The USTs were removed and bioventing was used to clean the site. Contamination remains above unrestricted levels. AFRPA OU2 ROD site

Summary Table ES-1. CERCLA Sites at March AFB
Page 8 of 11

IRP Site Sites (Continued)

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
Site 36	Building 458 Leach Pit	2	AFRC	AFRC OU2 ROD	Solvents	Some contaminated soil removed in 1994. Groundwater and SVE units are in place and operating. AFRC OU2 ROD site.
Site 37	PCB Spill Site at Building 317	2	AFRC	AFRC OU2 ROD	PCBs	Contaminant levels do not represent elevated risk. AFRC OU2 ROD site.
Site 38	PCB Spill Site (former SAC Alert Facility)	1	AFRPA	OU1 ROD	PCBs	The contamination was removed and the OU1 RI did not identify additional contamination. Approved for no further action in the OU1 ROD. Site is not evaluated in this 5-Year Review.
Site 39	Base Gas Station, Building 2406, Main Base	2	AFRC	AFRC OU2 ROD	Fuels	Cleanup is complete. AFRC OU2 ROD site.
Site 40	Landfill No. 8, West March	2	AFRPA	AFRPA OU2 ROD	Household waste	Waste was removed in 1996 and placed at Site 6. No contamination remains above unrestricted levels. AFRPA OU2 ROD site.
Site 41	Hawes Radio Relay Facility, Barstow	BW/OU4	AFRPA	OU4 RI/FS*	Fuels and oil	Four USTs were removed in 1995. The structure is going to be removed. AFRPA OU2 ROD site.

Summary Table ES-1. CERCLA Sites at March AFB
Page 9 of 11

IRP Site Sites (Continued)

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
Site 42	15th Headquarters Building 3404 PCB Spill Site	2	AFRPA	AFRPA OU2 ROD	PCBs	Removal and disposal of contaminated soil is complete. Contamination remains above unrestricted levels. AFRPA OU2 ROD site.
Site 43	Former Automotive Maintenance Area/Cal Trans UST Site	2	AFRPA	AFRPA OU2 ROD	Fuels and BTEX	Removal and disposal of contaminated soil is complete. Groundwater requires LTM. AFRPA OU2 ROD site.
Site 44	Base Water Tower No. 407	BW/OU4	AFRC	OU4 R/FS	Mercury	Contaminated soil was removed in 1997. Site is being evaluated in the Basewide/OU4 RI Basewide/OU4 ROD site.
OU 1 Groundwater Plume	OU1 Groundwater Plume	1	AFRPA/AFRC	OU1 ROD	Solvents	Long-term groundwater monitoring is ongoing. The site is evaluated in this 5-year review.
Site 2/27 Groundwater Plume	Sites 2/27 Groundwater Plume	2	AFRC	AFRC OU2 ROD	Fuels and solvents	The site has a groundwater treatment system installed. AFRC OU2 ROD site.

Summary Table ES-1. CERCLA Sites at March AFB
Page 10 of 11

Non-IRP Site Sites (Continued)

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
Site L	Former NCO Club Swimming Pool/PCB Site	BW/OU4	AFRPA	AFRPA BW/OU4 ROD	PCBs	Contaminated surface soil has been removed. Subsurface contamination remains at depth. The site has been capped. Long-term monitoring is ongoing. AFRPA OU2 ROD site.
Water Tank – Building 6601	Water Tank	BW/OU4	AFRPA	AFRPA BW/OU4 ROD	Mercury	Contaminated soil has been removed. Site is being investigated in the Basewide/OU4 RI Basewide/OU4 ROD site.
Water Tank Building 3410	Water Tank	BW/OU4	AFRPA	AFRPA BW/OU4 ROD	Mercury	Contaminated soil has been removed. Site is being investigated in the Basewide/OU4 RI Basewide/OU4 ROD site.
March Base Hospital/Dental Clinic	Mercury Characterization	BW/OU4	AFRPA	AFRPA BW/OU4 ROD	Mercury	The site was investigated and no contamination was found. Basewide/OU4 ROD site.

Summary Table ES-1. CERCLA Sites at March AFB
Page 11 of 11

IRP Sites/Alphabet Soup Sites	Site Description	OU	AFRPA vs AFRC Site	Supporting References	Contaminants	Actions/Current Status
AFRC	= Air Force Reserve Command					
AFRPA	= Air Force Real Property Agency					
BTEX	= benzene, toluene, ethylbenzene, xylene					
CERCLA	= Comprehensive Environmental Response, Compensation, and Liability Act					
ESD	= explanation of significant difference					
IRP	= Installation Restoration Program					
LTM	= long-term monitoring					
NCO	= Non-Commissioned Officer					
OU	= Operable Unit					
PAH	= polycyclic aromatic hydrocarbon					
PCB	= polychlorinated biphenyl					
POL	= petroleum, oil, and lubricants					
RI	= remedial investigation					
ROD	= Record of Decision					
RWQCB	= Regional Water Quality Control Board					
SVE	= soil vapor extraction					
UST	= underground storage tank					



17205 HEACOCK STREET
MORENO VALLEY, CA 92551
RIVERSIDE COUNTY
[CLEANUP PROGRAM SITE \(INFO\)](#)
[OPEN - SITE ASSESSMENT AS OF 10/21/2019 - DEFINITION](#)
[PRINTABLE CASE SUMMARY](#) / [CSM REPORT](#)

[CLEANUP OVERSIGHT AGENCY](#)
SANTA ANA RWQCB (REGION 1)
CASEWORKER: [PATRICIA](#)

[Summary](#) [Cleanup](#) [Action Report](#) [Regulatory Activities](#) [Environmental Data \(ES\)](#) [Site Maps / Documents](#) [Community Involvement](#) [Related Cases](#)

Regulatory Profile

[PRINTABLE CASE SUMMARY](#)

[CLEANUP STATUS - DEFINITIONS](#)

[OPEN - SITE ASSESSMENT AS OF 10/21/2019](#) - [CLEANUP STATUS HISTORY](#)

[POTENTIAL CONTAMINANTS OF CONCERN](#)

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

[FILE LOCATION](#)

[DWR GROUNDWATER SUB-BASIN NAME](#)

San Jacinto (8-005)

[POTENTIAL MEDIA OF CONCERN](#)

SOIL

[DESIGNATED GROUNDWATER BENEFICIAL USE\(S\) - DEFINITIONS](#)

MUN, AGR, IND, PROC

[CALWATER WATERSHED NAME](#)

San Jacinto Valley - Perris - Perris Valley (802.11)

Site History

No site history available

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 US AIR FORCE, FORMER MARCH AFB - OU-1 - IRP SITE FT007 FIRE PROTECTION TRAINING AREA NO. 2 (DOD10027730
 (MAP)

SIGN UP FOR EMAIL

HEACOCK STREET
 RIVERSIDE, CA 92518
 RIVERSIDE COUNTY
 MILITARY CLEANUP SITE (INFO)
 OPEN - REMEDIATION AS OF 10/27/2010 - DEFINITION
 ASSOCIATED ENVIROSTOR PROJECTS
 PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
 DEPARTMENT OF TOXIC SUBSTANCES CONTROL (LEAD) - CASE #
 SANTA ANA RWQCB (REGION 8) (LEAD) - CASE #: 166-72 -- 25
 CASEWORKER: PATRICIA HANNON
 US ENVIRONMENTAL PROTECTION AGENCY (LEAD) - CASE #: 4001

[Summary](#) [Cleanup Action Report](#) [Regulatory Activities](#) [Environmental Data \(ESI\)](#) [Site Maps / Documents](#) [Community Involvement](#) [Related Cases](#)

Regulatory Profile

[PRINTABLE CASE SUMMARY](#)

MILITARY BASE

[MARCH AIR FORCE BASE](#)
[CLEANUP STATUS - DEFINITIONS](#)
[OPEN - REMEDIATION AS OF 10/27/2010](#) - [CLEANUP STATUS HISTORY](#)

POTENTIAL CONTAMINANTS OF CONCERN

DIESEL, DIOXIN / FURANS, GASOLINE, LEAD, OTHER METAL, OTHER SOLVENT OR
 NON-PETROLEUM HYDROCARBON, PER- AND POLYFLUOROALKYL SUBSTANCES
 (PFAS), STODDARD SOLVENT / MINERAL SPIRITS / DISTILLATES, TOLUENE,
 TRICHLOROETHYLENE (TCE), WASTE OIL / MOTOR / HYDRAULIC / LUBRICATING,
 XYLENE

FILE LOCATION

ARCHIVED

DWR GROUNDWATER SUB-BASIN NAME

San Jacinto (8-005)

POTENTIAL MEDIA OF CONCERN

AQUIFER USED FOR DRINKING WATER SUPPLY, SOIL

DESIGNATED GROUNDWATER BENEFICIAL USE(S) - DEFINITIONS

MUN, AGR, IND, PROC

CALWATER WATERSHED NAME

San Jacinto Valley - Perris - Perris Valley (802.11)

Site History

Installation Restoration Program (IRP) for March Air Force Base began in September of 1983. The initial study identified 30 potential contaminated sites for further investigation. A second study, completed in March 1987, consisted of the collection of soil, water, and soil gas samples. In June 1987, further investigation was conducted. This investigation indicated that further investigation was required to better define the extent of soil and groundwater (GW) contamination and off-base migration of TCE in GW. In November 1991, March was listed on U.S. Environmental National Priorities List (Superfund site) due to the presence of contamination in groundwater beneath the base. Sites were placed into 3 separate Operable Units (OU). Fourteen sites were placed in OU-1. The sites were located along the eastern base boundary and adjacent off base areas.

IRP Site 7 was the location of former firefighting training and disposal/ burn site. The facility was active from 1961 through 1978, although it is possible that fire training activities began at the site in 1954. Before 1972, Site 7 reportedly used a disposal/burn site for up to 100,000 gallons per year of oil, solvent, and jet fuel wastes generated at the base. Site 7 was placed into OU 1. Investigations indicated only lead and manganese were the only contaminants detected above EPA's Industrial preliminary Remediation Goals. The baseline human health risk assessment indicated these compounds did not require remediation. The OU-1 Remedial Investigation/Feasibility Study and Proposed Plan were made available to the public on August 27, 1994. The Operable Unit 1 Record of Decision, December 1995, determined no further action was required for Site 7.

An additional investigation was performed at Site 7 during March, April, and September 2007 to assess the presence of a potential source area after trichloroethene (TCE) concentrations at two groundwater extraction wells of the OU1 enhanced groundwater extraction and treatment system (EGETS), located adjacent and downgradient to Site 7, concentrations increased with rising groundwater levels. A TCE source area centered on a training/disposal pit was delineated with a maximum TCE concentration of 4,300 milligrams per kilogram at a depth of 10 feet below ground surface (bgs). The investigation found that the TCE plume was being contained by EGETS wells EX05A and OU1GEW04.

A focused feasibility study was conducted to evaluate remedial technologies in developing a site remedy. A soil vapor extraction (SVE) pilot study was conducted in November 2010. Following the pilot study a SVE and treatment system was installed in February 2011 and was operated between June 2011 and July 2012 removing approximately 2548 pounds of TC and 3,900 pounds of TPH.

From September 6 to 9, 2011 a soil vapor investigation was conducted utilizing direct push drilling technology. Twenty soil borings were advanced and sampled vapors probes were set at 10 and 20 feet bgs in ten borings and 15 and 25 feet in 10 borings. Concentrations of volatile contaminants of concern detected: benzene ranged from an estimated 0.49 parts per billion volume (ppbv) to 970 ppbv; TCE ranged from 3,400 ppbv to less than 1.2 ppbv; and ethylbenzene ranged from an estimated 1,500 ppbv to 1.2 ppbv.

As of June 2013, the groundwater portion of this Site was transferred to Site CG049.



HEACOCK STREET
RIVERSIDE, CA 92518
RIVERSIDE COUNTY
[MILITARY CLEANUP SITE \(INFO\)](#)
[OPEN - REMEDIATION AS OF 1/11/2012 - DEFINITION](#)
[PRINTABLE CASE SUMMARY](#) / [CSM REPORT](#)

[CLEANUP OVERSIGHT AGENCY](#)
SANTA ANA RWQCB (REGIONAL)
CASEWORKER: [PATRICIA](#)

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Regulatory Profile

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MILITARY BASE

[MARCH AIR FORCE BASE](#)

CLEANUP STATUS - DEFINITIONS

[OPEN - REMEDIATION AS OF 1/11/2012](#) - [CLEANUP STATUS HISTORY](#)

POTENTIAL CONTAMINANTS OF CONCERN

BENZENE

FILE LOCATION

REGIONAL BOARD

DWR GROUNDWATER SUB-BASIN NAME

San Jacinto (8-005)

POTENTIAL MEDIA OF CONCERN

SOIL, SOIL VAPOR

DESIGNATED GROUNDWATER BENEFICIAL USE(S) - DEFINITIONS

MUN, AGR, IND, PROC

CALWATER WATERSHED NAME

San Jacinto Valley - Perris - Perris Valley (802.11)

Site History

See also Site 7

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MARCH AIR FORCE BASE SITE 403, EAST OF BASE, INVESTIGATION FOR POLY AND PER-FLUORINATED SUBSTANCES RELEASE (T10000013831) - ([MAP](#))

[SIGN UP FOR EMAIL](#)

HEACOCK STREET
MORENO VALLEY, CA 92551
RIVERSIDE COUNTY
[MILITARY CLEANUP SITE \(INFO\)](#)
[OPEN - SITE ASSESSMENT AS OF 12/4/2019 - DEFINITION](#)
[PRINTABLE CASE SUMMARY / CSM REPORT](#)

[CLEANUP OVERSIGHT AGENCY](#)
SANTA ANA RWQCB (REGIONAL)
CASEWORKER: [PATRICIA](#)

[Summary](#) [Cleanup Action Report](#) [Regulatory Activities](#) [Environmental Data \(ESI\)](#) [Site Maps / Documents](#) [Community Involvement](#) [Related Cases](#)

Regulatory Profile

[PRINTABLE CASE SUMMARY](#)

MILITARY BASE

[MARCH AIR FORCE BASE](#)

CLEANUP STATUS - DEFINITIONS

[OPEN - SITE ASSESSMENT AS OF 12/4/2019](#) - [CLEANUP STATUS HISTORY](#)

POTENTIAL CONTAMINANTS OF CONCERN

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

FILE LOCATION

ALL FILES ARE ON GEOTRACKER OR IN THE LOCAL AGENCY DATABASE

DWR GROUNDWATER SUB-BASIN NAME

San Jacinto (8-005)

POTENTIAL MEDIA OF CONCERN

AQUIFER USED FOR DRINKING WATER SUPPLY, SOIL

DESIGNATED GROUNDWATER BENEFICIAL USE(S) - DEFINITIONS

MUN, AGR, IND, PROC

CALWATER WATERSHED NAME

San Jacinto Valley - Perris - Perris Valley (802.11)

Site History

Investigation for per- and poly-fluorinated substances east of former March Air Force Base. See also site 7 and March Air Reserve Base site CG049

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US AIR FORCE, MARCH AIR RESERVE BASE - OU-1 SITES GROUNDWATER PLUME SEE ALSO OU-5, CG049 (DOD10031:
(MAP)

SIGN UP FOR EMAIL

RIVERSIDE, CA 92518
RIVERSIDE COUNTY
MILITARY CLEANUP SITE (INFO)
OPEN - REMEDIATION AS OF 12/6/2006 - DEFINITION
[PRINTABLE CASE SUMMARY](#) / [CSM REPORT](#)

CLEANUP OVERSIGHT AGENCIES
SANTA ANA RWQCB (REGION 8) (LEAD) - CASE #: 169-85 -- 8
CASEWORKER: [PATRICIA HANNON](#)
US ENVIRONMENTAL PROTECTION AGENCY (LEAD) - CASE #:
DEPARTMENT OF TOXIC SUBSTANCES CONTROL - CASE #: 401

[Summary](#) [Cleanup Action Report](#) [Regulatory Activities](#) [Environmental Data \(ESI\)](#) [Site Maps / Documents](#) [Community Involvement](#) [Related Cases](#)

Regulatory Profile[PRINTABLE CASE SUMMARY](#)**MILITARY BASE**[MARCH AIR RESERVE BASE](#)**CLEANUP STATUS** - [DEFINITIONS](#)OPEN - REMEDIATION AS OF 12/6/2006 - [CLEANUP STATUS HISTORY](#)**POTENTIAL CONTAMINANTS OF CONCERN**

OTHER CHLORINATED HYDROCARBONS, TRICHLOROETHYLENE (TCE)

FILE LOCATION

LOCAL AGENCY WAREHOUSE

DWR GROUNDWATER SUB-BASIN NAME

San Jacinto (8-005)

POTENTIAL MEDIA OF CONCERN

AQUIFER USED FOR DRINKING WATER SUPPLY

DESIGNATED GROUNDWATER BENEFICIAL USE(S) - [DEFINITIONS](#)

MUN, AGR, IND, PROC

CALWATER WATERSHED NAME

San Jacinto Valley - Perris - Perris Valley (802.11)

Site History

The Installation Restoration Program (IRP) for March Air Force Base began in September of 1983. The initial study identified 30 potential contaminated sites for further investigation. A second study, completed in March 1987, consisted of the collection of soil, water, and soil gas samples. In June 1987, further investigation was conducted. This investigation indicated further investigation was required to better define the extent of soil and groundwater (GW) contamination and off-base migration of trichloroethene (TCE) in GW. In November 1991, MARCH was listed on U.S. EPA National Priorities List (Superfund site) due to the presence of contamination in groundwater beneath the base. Three Operable Units (OU) were created to facilitate the restoration process. Fourteen sites located along the eastern base boundary were placed in OU1. Twenty six sites located west of OU1 were placed into OU2. One site located in the flight line was placed in OU3. Site 18 plume is localized downgradient of the jet engine test cell source area. The contaminants are free-phase jet fuel, total petroleum hydrocarbons, benzene, toluene, ethylbenzene, methylene chloride, total phenols and total xylenes.

In 1992 a groundwater extraction and treatment system (GETS) was installed along the eastern base boundary as an interim removal action. The system extracted groundwater from 9 wells to interdict the Site 4 and OU1 plume. Extracted water was treated utilizing granular activated carbon to remove the volatile organic compound contaminants of concern.

The OU-1 Remedial Investigation/Feasibility Study (RI/FS) and Proposed Plan (PP) were made available to the public on April 27, 1994. Four groundwater plumes were identified: OU-1 groundwater plume, Site 4 groundwater plume, Site 18 groundwater plume, and Site 31 groundwater plume. These plumes cross site boundaries, response actions undertaken were planned to be applied as an entity, without consideration of boundaries. The OU-1 plume extends from Site 31 south and east through the area of Sites 34, 9, 5 and extending east of the base eastern boundary off base. Contaminants detected are: 1,1-dichloroethene, benzene, carbon tetrachloride, cis-1,2-dichloroethene, methylene chloride, tetrachloroethene (PCE), 1,1-dichloroethane and total phenols. The Site 4 plume is localized in the vicinity of the southern end of the landfill. The contaminants are TCE and PCE. The Site 31 plume is a small area of high concentrations and a general area northeast of the original smaller area. The contaminant is primarily TCE.

A record of decision (ROD) was issued on December 1995 which addressed groundwater at Sites 4, 18, and 31 and the combined OU1 groundwater plume. The groundwater remediation selected requires monitoring to ensure on base portion of the plume does not migrate off base and determine if expansion or reduction of the groundwater extraction and treatment system is necessary.

In 1993 March AFB was designated for realignment. In August 1996, this resulted in splitting the base's IRP program between March Air Reserve Base and the Air Force Real Property Agency (AFRPA). Operation of the EGETS system is the responsibility of March Air Reserve Base.

In 1997, the remedial action systems for Site 31 and expansion of the GETS system were completed. A new treatment plant and new extraction and injection wells and piping to connect Sites 4 and Site 18 were constructed. The GETS became the Expanded Groundwater Extraction and Treatment Systems or EGETS.

See March ARB Site CG049

DRAFT

Forecast Coordination & Materials



U.S Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
Airports Division
Los Angeles Airports District Office

777 S. Aviation Blvd., Suite 150
El Segundo, CA 90245

February 6, 2023

Mr. Gary W. Gosliga
Airport Director
March Inland Port Airport Authority
14205 Meridian Parkway, Suite 140
Riverside, CA 92518

**March ARB Airport (RIV)
Aviation Activity Forecast**

Dear Mr. Gosliga,

The Federal Aviation Administration (FAA) has completed the review of the Aviation Activity Forecast – Section 4, Forecasts of Demand for March ARB Airport dated November 2022. The RIV Preferred Operations Forecast, Industry Growth/Cargo High Growth/New Airline Entrant projected activity growth at eight percent, and follows with the 10 to 20 years of the planning period of four percent and fall within the standard TAF tolerance of 10 percent and 15 percent within the 5 and 10-year planning periods.

However, the TAF has not been updated to reflect the current estimated base line operations at the airport and standard TAF procedures is to flat line forecasts at some general aviation airports. Your preferred forecast as submitted is approved for airport planning purposes including Airport Layout Plan (ALP) development.

This forecast was prepared at the same time as the evolving impacts of the COVID-19 public health emergency. Forecast approval is based on the methodology, data, and conclusions at the time the document was prepared. However, consideration of the impacts of the COVID-19 public health emergency on aviation activity is warranted to acknowledge the reduced confidence in growth projections using currently-available data.

Accordingly, FAA approval of this forecast does not constitute justification for future projects. Justification for future projects will be made based on activity levels at the time the project is requested for development. Documentation of actual activity levels meeting planning activity levels will be necessary to justify AIP funding for eligible projects.

DRAFT

If you have any questions in regards to this forecast approval, please give me a call at (424) 405-7279, or darlene.williams@faa.gov.

Sincerely,

Darlene Williams
Airport Planner/PFC Specialist

DRAFT

APO TERMINAL AREA FORECAST DETAIL REPORT

Forecast Issued March 2022

RIV

AIRCRAFT OPERATIONS

Fiscal Year	Enplanements			Itinerant Operations				Local Operations			Total Ops	Total Tracon Ops	Based Aircraft	
	Air Carrier	Commuter	Total	Air Carrier	Air Taxi & Commuter	GA	Military	Total	Civil	Military				Total
REGION:AWP STATE:CA LOCID:RIV														
CITY:RIVERSIDE AIRPORT:MARCH ARB														
2011	163	0	163	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	5	5	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	426	0	426	0	0	0	0	0	0	0	0	0	0	6
2018	7,716	24	7,740	0	0	0	0	0	0	0	0	0	0	6
2019	5,969	0	5,969	0	0	0	0	0	0	0	0	0	0	6
2020	3,429	0	3,429	0	0	0	0	0	0	0	0	0	0	8
2021*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2022*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2023*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2024*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2025*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2026*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2027*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2028*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2029*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2030*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2031*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2032*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2033*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2034*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2035*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2036*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2037*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2038*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2039*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8
2040*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	0	8

DRAFT**APO TERMINAL AREA FORECAST DETAIL REPORT****Forecast Issued March 2022**

RIV

AIRCRAFT OPERATIONS

Fiscal Year	Enplanements			Itinerant Operations			Local Operations			Total Ops	Total Tracon Ops	Based Aircraft	
	Air Carrier	Commuter	Total	Air Carrier	Air Taxi & Commuter	GA Military	Total Civil	Military	Total				
2041*	4,438	0	4,438	0	0	0	0	0	0	0	0	0	8

DRAFT



Federal Aviation Administration

National Based Aircraft Inventory Program

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My Airport » Version 5.9.7

You are logged in as **March ARB** . [Logout](#)

MARCH ARB (RIV) RIVERSIDE, CA

[Airport Details](#) | [Users](#) | [Edit Counts](#)

1. Airport Inventory

Single Engine	=	2	
Multi Engine		2 +	
Jet		0 +	
Helicopter		0	
N-Numbers Not Found		0	

Last Edit: 10/19/2021 by March ARB

2. Review to Improve Your Validated Aircraft Count

Review "Commented" N-Numbers	0		Find These How to Resolve Report
Review "Reported by Other Airports (Duplicates)" N-Numbers	0		Find These How to Resolve Report
Review "Not Found in FAA Registration Database" N-Numbers	0		Find These How to Resolve

Total # of Aircraft That Are Not Validated: - 0

3. Validated Inventory

Single Engine	=	2	
Multi Engine		2 +	Report
Jet		0 +	
Helicopter		0	

Last Confirmed: 10/20/2021 by Gary Gosliga

***** Confirm Aircraft Data *****

Further Aircraft Review (Optional) These items Do Not Impact Your Currently Validated Inventory

Review All Out of State Registrations	0		Find These Why is this relevant?
Review all Updated Certs (Certs Updated Since Aircraft Was Entered Into Inventory)	0		Find These Why is this relevant?

[Refresh](#) [?](#)

Aircraft Type	Airport Inventory	Commented Aircraft	Duplicates Other Airports	N-Numbers Not Found	Not Validated Total	Validated Inventory
Single Engine	2	0	0	0	0	2
Multi Engine	0	0	0	0	0	0
Jet	0	0	0	0	0	0
Helicopter	0	0	0	0	0	0
N-Numbers Not Found	0	0	0	0	0	Not Counted
Total Single, Multi, Jet, and Heli	2	0	0	0	0	2
Glider	0					
Military	0					
Ultra-light	0					
Non 5010 aircraft types	0					
Total Found in FAA Acft. Reg. Data	2					

Preferred Contact

Gary Gosliga gosliga@marchjpa.com
 March Inland Port Airport Director 951-656-7000

Comments [Edit](#)

Airport 2019-10-14 RB - Admin Edit: De-registered A/C or A/C reported at other A/D have been deleted from this list, if lis

N-Number Search:

Show: All aircraft Include deleted: No

Based Aircraft at this Airport

Use multiple pages for faster loading?

= Edit = Delete IFR

N-Number	Make / Model	Type	Owner	Added	Type and City St from FAA Aircraft Registration	Reported by Other Apts	Actions	Comment
----------	--------------	------	-------	-------	---	------------------------	---------	---------

DRAFT

N3912N	Mooney M-20G	Single Engine	Joseph Martinez 26834 Wilkes Dr. Menifee, CA 92585	11/19/2019	Single Engine SUN CITY CA	Not found in Other Apts	 
N739PS	Cessna 172N	Single Engine	Joseph Martinez 26834 Wilkes Dr. Menifee, CA 92585	11/19/2019	Single Engine SUN CITY CA	Not found in Other Apts	 

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Paperwork Reduction Act Statement

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 2120-0015. Public reporting for this collection of information is estimated to be approximately 60 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information. All responses to this collection of information are mandatory per 49 USC 329(b) and U.S. Code Title 49 Section 47130. The data is critical to aviation safety and will be published in flight information handbooks and charts for pilot use. The data is also necessary for airspace studies conducted under 49 USC 329(b). The data is public in nature and is the agency's source for the information used in aeronautical charts and flight information publications. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

OMB CONTROL NUMBER: 2120-0015
EXPIRATION DATE: 4/30/2023



DRAFT

> 1 ASSOC CITY: RIVERSIDE 4 STATE: CA LOC ID: RIV FAA SITE NR: 02115.*A
 > 2 AIRPORT NAME: MARCH ARB 5 COUNTY: RIVERSIDE, CA
 3 CBD TO AIRPORT (NM): 6 SE 6 REGION/ADO: AWP /LAX 7 SECT AERO CHT: LOS ANGELES

GENERAL		SERVICES	BASED AIRCRAFT
10 OWNERSHIP:	AIR FORCE	> 70 FUEL:	100LL A A++
> 11 OWNER:	UNITED STATES AIR FORCE	> 71 AIRFRAME RPRS:	MAJOR
> 12 ADDRESS:	2685 GRAEBER STREET, BLDG 395 MARCH ARB, CA 92518	> 72 PWR PLANT RPRS:	MAJOR
> 13 PHONE NR:	951-655-4053	> 73 BOTTLE OXYGEN:	HIGH/LOW
> 14 MANAGER:	BART W. DARNELL	> 74 BULK OXYGEN:	HIGH/LOW
> 15 ADDRESS:	2685 GRAEBER STREET, BLDG 395 MARCH ARB, CA 92518	75 TSNT STORAGE:	
> 16 PHONE NR:	951-655-4053	76 OTHER SERVICES:	CARGO,CHTR
> 17 ATTENDANCE SCHEDULE:			
MONTHS	DAYS	HOURS	
ALL	ALL	0700-2300	
		FACILITIES	OPERATIONS
18 AIRPORT USE:	PUBLIC	> 80 ARPT BCN:	CG
19 ARPT LAT:	33-52-54.996N ESTIMATED	> 81 ARPT LGT SKED:	
20 ARPT LONG:	117-15-32.461W	BCN LGT SKED:	SS-SR
21 ARPT ELEV:	1536.0 ESTIMATED	> 82 UNICOM:	
22 ACREAGE:	2,075	> 83 WIND INDICATOR:	
> 23 RIGHT TRAFFIC:	NO	84 SEGMENTED CIRCLE:	NONE
> 24 NON-COMM LANDING:	NO	85 CONTROL TWR:	YES
25 NPIAS/FED AGREEMENTS:	YES / N	86 FSS:	RIVERSIDE
> 26 FAR 139 INDEX:	/	87 FSS ON ARPT:	NO
		88 FSS PHONE NR:	
		89 TOLL FREE NR:	1-800-WX-BRIEF
			90 SINGLE ENG: 2
			91 MULTI ENG: 0
			92 JET: 0
			93 HELICOPTERS: 0
			TOTAL: 2
			94 GLIDERS: 0
			95 MILITARY: 0
			96 ULTRA-LIGHT: 0
			100 AIR CARRIER: 0
			102 AIR TAXI: 0
			103 G A LOCAL: 0
			104 G A ITRNRT: 0
			105 MILITARY: 0
			TOTAL: 0
			OPERATIONS FOR 12 MONTHS ENDING //

RUNWAY DATA

> 30 RUNWAY IDENT: 14/32 12/30
 > 31 LENGTH: 13,302 3,061
 > 32 WIDTH: 200 100
 > 33 SURF TYPE-COND: CONC-G ASPH-P
 > 34 SURF TREATMENT:
 35 GROSS WT: S
 36 (IN THSDS) D
 37 2D
 38 2D/2DS

> 39 PCN / PCR: 58/R/B/W/T (PCN) 20/F/A/W/T (PCN)

LIGHTING/APCH AIDS

> 40 EDGE INTENSITY: HIGH
 > 42 RWY MARK TYPE-COND: BSC- G / PIR- G - / -
 > 43 VGS: P4L / P4L /
 44 THR CROSSING HGT: 56 / 59 /
 45 VISUAL GLIDE ANGLE: 2.59 / 3.00 /
 > 46 CNTRLN-TDZ: N - N / N - N - / - / -
 > 47 RVR-RVV: TMR - N / TMR - N - / - / -
 > 48 REIL: N / N /
 > 49 APCH LIGHTS: / ALSF1 /

OBSTRUCTION DATA

50 FAR 77 CATEGORY: C / PIR A(V) / A(V)
 > 51 DISPLACED THR: / /
 > 52 CTLG OBSTN: / /
 > 53 OBSTN MARKED/LGTD: / /
 > 54 HGT ABOVE RWY END: / /
 > 55 DIST FROM RWY END: 0 / 0 0 / 0
 > 56 CNTRLN OFFSET: / /
 57 OBSTN CLNC SLOPE: / /
 58 CLOSE-IN OBSTN: N / N N / N

DECLARED DISTANCES

> 60 TAKE OFF RUN AVBL (TORA): / /
 > 61 TAKE OFF DIST AVBL (TODA): / /
 > 62 ACLT STOP DIST AVBL (ASDA): / /
 > 63 LNDG DIST AVBL (LDA): / /

(-) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:

A 017 OPR H24; OPS FM 0700-1500Z++ RQR 452 OG/CC APVL, EXC FOR KRIV BASED ALERT MSN.

A 030 RWY 12/30 RY 12/30 CLSD TO PUBLIC-USE ONLY.

A 033 RWY 12/30 RWY 12/30 IS A SRY RWY, USED FOR MIL OPS AND MNTND BY THE MIL. IT IS IN VERY POOR COND.

A 070 FULL SVC AVBL AT FBO; SELF-SERVE UNAVBL.

A 110-001 CAUTION: NSTD RWY MRK-LANDING ZONE (LZ) MARK (3500X90 PAINTED ON RWY 32 FOR BASE ASGN C17 ACFT ONLY).

A 110-002 CAUTION: EXTV GLIDER, SKYDIVING, BALLOONIST AND ULTRALIGHT ACT AT PERRIS ARPT, 7 NM S OF MARCH.

A 110-003 CAUTION: HEAVY MILITARY FLIGHT TRAINING.

111 INSPECTOR: (N) 112 LAST INSP: 09/09/1976 113 LAST INFO REQ:



DRAFT

> 1 ASSOC CITY: RIVERSIDE 4 STATE: CA LOC ID: RIV FAA SITE NR: 02115.*A
 > 2 AIRPORT NAME: MARCH ARB 5 COUNTY: RIVERSIDE, CA
 3 CBD TO AIRPORT (NM): 6 SE 6 REGION/ADO: AWP /LAX 7 SECT AERO CHT: LOS ANGELES

<u>GENERAL</u>		<u>SERVICES</u>	<u>BASED AIRCRAFT</u>
10 OWNERSHIP:	AIR FORCE	> 70 FUEL:	100LL A A++
> 11 OWNER:	UNITED STATES AIR FORCE	> 71 AIRFRAME RPRS:	MAJOR
> 12 ADDRESS:	2685 GRAEBER STREET, BLDG 395 MARCH ARB, CA 92518	> 72 PWR PLANT RPRS:	MAJOR
> 13 PHONE NR:	951-655-4053	> 73 BOTTLE OXYGEN:	HIGH/LOW
> 14 MANAGER:	BART W. DARNELL	> 74 BULK OXYGEN:	HIGH/LOW
> 15 ADDRESS:	2685 GRAEBER STREET, BLDG 395 MARCH ARB, CA 92518	75 TSNT STORAGE:	
> 16 PHONE NR:	951-655-4053	76 OTHER SERVICES:	CARGO,CHTR
> 17 ATTENDANCE SCHEDULE:			
MONTHS	DAYS		
ALL	ALL		
		HOURS	
		0700-2300	
18 AIRPORT USE:	PUBLIC		
19 ARPT LAT:	33-52-54.996N ESTIMATED		
20 ARPT LONG:	117-15-32.461W		
21 ARPT ELEV:	1536.0 ESTIMATED		
22 ACREAGE:	2,075		
> 23 RIGHT TRAFFIC:	NO		
> 24 NON-COMM LANDING:	NO		
25 NPIAS/FED AGREEMENTS:	YES / N		
> 26 FAR 139 INDEX:	/		

<u>FACILITIES</u>	<u>OPERATIONS</u>
> 80 ARPT BCN:	CG
> 81 ARPT LGT SKED:	
BCN LGT SKED:	SS-SR
> 82 UNICOM:	
> 83 WIND INDICATOR:	
84 SEGMENTED CIRCLE:	NONE
85 CONTROL TWR:	YES
86 FSS:	RIVERSIDE
87 FSS ON ARPT:	NO
88 FSS PHONE NR:	
89 TOLL FREE NR:	1-800-WX-BRIEF
	100 AIR CARRIER:
	102 AIR TAXI:
	103 G A LOCAL:
	104 G A ITNRNT:
	105 MILITARY:
	TOTAL:
	OPERATIONS FOR 12 MONTHS ENDING
	//

RUNWAY DATA

> 30 RUNWAY IDENT:
 > 31 LENGTH:
 > 32 WIDTH:
 > 33 SURF TYPE-COND:
 > 34 SURF TREATMENT:
 35 GROSS WT: S
 36 (IN THSDS) D
 37 2D
 38 2D/2DS
 > 39 PCN / PCR:

LIGHTING/APCH AIDS

> 40 EDGE INTENSITY:
 > 42 RWY MARK TYPE-COND:
 > 43 VGSi:
 44 THR CROSSING HGT:
 45 VISUAL GLIDE ANGLE:
 > 46 CNTRLN-TDZ:
 > 47 RVR-RVV:
 > 48 REIL:
 > 49 APCH LIGHTS:

OBSTRUCTION DATA

50 FAR 77 CATEGORY:
 > 51 DISPLACED THR:
 > 52 CTLG OBSTN:
 > 53 OBSTN MARKED/LGTD:
 > 54 HGT ABOVE RWY END:
 > 55 DIST FROM RWY END:
 > 56 CNTRLN OFFSET:
 57 OBSTN CLNC SLOPE:
 58 CLOSE-IN OBSTN:

DECLARED DISTANCES

> 60 TAKE OFF RUN AVBL (TORA):
 > 61 TAKE OFF DIST AVBL (TODA):
 > 62 ACLT STOP DIST AVBL (ASDA):
 > 63 LNDG DIST AVBL (LDA):

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:

A 110-004 JOINT USE AIRPORT - OWNED AND OPERATED BY US AIR FORCE/ NO CIVIL TOUCH AND GO OPS OR MANEUVERS.

A 110-005 AIRFIELD USE AGREEMENT WITH CIVIL ARPT AUTH (MARCH INLAND PORT ARPT AUTH) MILITARY, CIVIL COMMERCIAL AND GENERAL AVIATION(GA) USES.

A 110-006 GA OPS - PPR AND/OR LANDING PERMIT NOT REQ FOR USE OF CIVIL APRON AND RAMPS/FBO INF. -FREEMAN HOLDINGS 951-247-2111 / FREQS 130.075.

A 110-008 RY 12/30 CLSD TO PUBLIC DUE TO MUNITIONS AND EXPLOSIVES OPS IN CLOSE PROXIMITY OF RY 12/30 PER UFC & DOD REGULATIONS.

A 110-009 TRANSPORTATION LIMITED, PRIOR COORDINATION REQUIRED, CTC DSN 447-7787 WKND.

A 110-011 TSNT ACFT NO PRACTICE APCH 2100-0700.

A 110-012 GEN AVN OPS PMTD DUR FBO BUS HRS. FBO BUS HRS 1400-0600Z++ MON-FRI, OPEN SAT-SUN (IF REQ PRIOR TO CLOSE OF BUS FRI) AND WILL HONOR MEDICAL REQ MADE AT ANY TIME, CALL 951-247-2111.

111 INSPECTOR: (N) 112 LAST INSP: 09/09/1976 113 LAST INFO REQ:



DRAFT

AIRPORT MASTER RECORD

> 1 ASSOC CITY: RIVERSIDE 4 STATE: CA LOC ID: RIV FAA SITE NR: 02115.*A
> 2 AIRPORT NAME: MARCH ARB 5 COUNTY: RIVERSIDE, CA
3 CBD TO AIRPORT (NM): 6 SE 6 REGION/ADO: AWP /LAX 7 SECT AERO CHT: LOS ANGELES

GENERAL		SERVICES	BASED AIRCRAFT
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> 17 ATTENDANCE SCHEDULE:			
MONTHS	DAYS	HOURS	
ALL	ALL	0700-2300	
		FACILITIES	OPERATIONS
18 AIRPORT USE:	PUBLIC	> 80 ARPT BCN:	CG
19 ARPT LAT:	33-52-54.996N ESTIMATED	> 81 ARPT LGT SKED:	
20 ARPT LONG:	117-15-32.461W	BCN LGT SKED:	SS-SR
21 ARPT ELEV:	1536.0 ESTIMATED	> 82 UNICOM:	
22 ACREAGE:	2,075	> 83 WIND INDICATOR:	
> 23 RIGHT TRAFFIC:	NO	84 SEGMENTED CIRCLE:	NONE
> 24 NON-COMM LANDING:	NO	85 CONTROL TWR:	YES
25 NPIAS/FED AGREEMENTS:	YES / N	86 FSS:	RIVERSIDE
> 26 FAR 139 INDEX:	/	87 FSS ON ARPT:	NO
		88 FSS PHONE NR:	
		89 TOLL FREE NR:	1-800-WX-BRIEF
			90 SINGLE ENG: 2
			91 MULTI ENG: 0
			92 JET: 0
			93 HELICOPTERS: 0
			TOTAL: 2
			94 GLIDERS: 0
			95 MILITARY: 0
			96 ULTRA-LIGHT: 0
			100 AIR CARRIER: 0
			102 AIR TAXI: 0
			103 G A LOCAL: 0
			104 G A ITNRNT: 0
			105 MILITARY: 0
			TOTAL: 0
			OPERATIONS FOR 12 MONTHS ENDING //

RUNWAY DATA

> 30 RUNWAY IDENT:

> 31 LENGTH:

> 32 WIDTH:

> 33 SURF TYPE-COND:

> 34 SURF TREATMENT:

35 GROSS WT: S

36 (IN THSDS) D

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LIGHTING/APCH AIDS

> 40 EDGE INTENSITY:

> 42 RWY MARK TYPE-COND:

> 43 VGSi:

44 THR CROSSING HGT:

45 VISUAL GLIDE ANGLE:

> 46 CNTRLN-TDZ:

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> 49 APCH LIGHTS:

OBSTRUCTION DATA

50 FAR 77 CATEGORY:

> 51 DISPLACED THR:

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> 61 TAKE OFF DIST AVBL (TODA):

> 62 ACLT STOP DIST AVBL (ASDA):

> 63 LNDG DIST AVBL (LDA):

(-) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:

A 110-013 USE EXTREME CAUTION FOR EXTV UAS OPS IN VCNTY.

A 110-014 NONSTANDARD TACAN CHECKPOINT SIGNS LCTD AT RWY A AND TWY F.

A 110-016 MIL RMK: 24 HR PN/PPR FOR ALL TRAN ACFT, CTC AFLD MGMT OPS DSN 447-4404/2422, C951-655-4404/2422.

A 110-017 MIL RMK: ALL INBD PAX/CARGO ACFT MUST CTC COMD POST DSN 447-4665 24 HR PRIOR TO ARR WITH TYPE CARGO AND NR OF PAX.

A 110-018 CSTMS/AG/IMG - CTC AFLD MGMT OPS DSN 447-4404/2422, C951-655-4404/2422 AT LEAST 24 HR PN TO ARR RQR. LTD SVC. NO RESIDENT CSTMS AGENT, BUT ON CALL H24, DRIVING FR ONTARIO INTL. NO-NTC ACFT THAT RQR CSTMS EXP MIN 2 HR DELAY. CSTMS RQR FOLLOWING FORMS FOR ARR ACFT - CBP FORM 7507 GENERAL DECLARATION, CBP FORM 6059B CUSTOMS DECLARATION FR ALL PERS ONBOARD LCTD HTTPS://WWW.CBP.GOV/NEWSROOM/PUBLICATIONS/FORMS, PAX/CARGO MANIFEST AS APPLICABLE. AIRCREW, PAX, CARGO RQR TO REMAIN IN ACFT TIL RELEASED BY CSTMS. APV LDG RIGHTS AND OVFT EXM REQ. NOT A PORT OF ENTRY, IMG SVC EXTREMELY LTD, CASE-BY-CASE BASIS. CTC PTD 2 HR PRIOR TO LDG VIA DRCT A/G COM OR FONE PATCH.

A 110-019 SERVICE - OIL: JOAP AVBL ONLY ON RESERVE WKEND. O-148.

111 INSPECTOR: (N) 112 LAST INSP: 09/09/1976 113 LAST INFO REQ:

2021 Year Summary of Remittance To Date

	Over 40,000 lbs.	Quarterly
January	\$ 11,198.55	
February	\$ 10,176.00	
March	\$ 11,039.73	\$ 7,086.00
April	\$ 9,211.08	
May	\$ 9,062.31	
June	\$ 8,818.74	\$ 7,218.00
July	\$ 7,742.90	
August	\$ 9,781.61	
September	\$ 8,158.26	\$ 7,218.00
October	\$ 8,406.06	
November	\$ 7,523.95	
December	\$ 7,382.40	\$ 7,218.00
	\$ 108,501.60	\$ 28,740.00

CY 2021 Total Remittance \$ 137,241.60

Annual Civil Operations	4502		
Annual Military Operations	226		
Annual Federal Operations	240		
Annual Operations	4968	Local	Itinerant
Total	4968	108	4860

1/2 Year Total Civil Operations	2180		
1/2 Year Total Military Operations	110		
1/2 Year Total Federal Operations	96		
1/2 Year Total Operations	2386	1/2 year Local	1/2 year Itinerant
Total	2386	50	2336

	CIVIL	MIL	FED	Total	LOCAL	ITINERANT	Total
Jan	159	4	7	170	6	164	170
Feb	158	4	8	170	4	166	170
Mar	189	9	12	210	2	208	210
Apr	177	14	11	202	2	200	202
May	205	9	5	219	3	216	219
Jun	202	15	5	222	8	214	222
Half Yr	1090	55	48	1193	25	1168	1193
July	180	19	13	212	10	202	212
Aug	212	2	8	222	5	217	222
Sep	199	14	18	231	5	226	231
Oct	199	11	11	221	3	218	221
Nov	196	4	11	211	4	207	211
Dec	175	8	11	194	2	192	194
Full Yr	2251	113	120	2484	54	2430	2484
Operations	4502	226	240	4968	108	4860	4968

DRAFT

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
Total Gallons	2021 Actual	1,126,798.0	1,603,734.8	1,249,375.5	1,394,126.5	1,144,177.7	1,124,825.8	1,377,356.8	1,208,305.2	1,205,322.7	591,437.0	0.0	0.0	12,025,460.0
	2020	849,248.6	949,482.6	1,018,492.0	809,073.2	1,461,231.7	1,079,064.5	1,155,559.9	1,507,494.1	1,302,572.2	1,495,462.5	1,375,328.8	1,721,500.0	14,724,510.1
	2019	754,354.0	1,025,063.6	1,251,229.0	922,871.9	805,906.5	903,613.8	1,520,666.4	994,745.5	457,855.1	836,125.6	1,218,336.0	1,163,316.0	11,854,083.4
	2018	24,437.0	39,015.8	147,688.0	688,341.0	481,629.0	308,794.0	505,785.0	925,243.0	219,044.0	595,827.0	649,042.0	628,506.0	5,213,351.8
	2017	3,754.0	16,883.0	4,752.0	1,879.0	3,954.0	12,141.0	135,261.0	723,885.0	169,514.0	5,374.0	21,577.0	49,345.0	1,148,319.0
Military	2021 Actual	1,602	1,337	1,623	2,087	190	11,592	5,666	9,573	8,221	78,983			120,874
	2020	32,936	1,363	5,925	2,185	2,878	9,040	344	1,610	2,087	2,656	910	586	62,520
	2019	3,427	2,331	1,645	4,157	828	3,604	1,699	23,609	4,185	1,416	25,679	10,014	82,594
	2018	1,989	3,113	1,319	24,721	3,784	19,749	1,769	2,343	4,531	359	25,679	10,014	99,370
	2017	1,646	2,585	2,779	1,315	2,043	10,796	9,534	3,079	1,105	1,915	1,843	558	39,198
Omega	2021 Actual	74,764	595,852	170,834	560,454	320,916	262,640	658,319	341,480	540,904	115,135			3,641,298
	2020	236,049	365,967	247,015	176,995	667,527	307,371	361,880	343,785	200,010	343,422	202,305	434,236	3,886,562
	2019	176,353	394,878	455,985	196,826	131,157	192,536	801,775	367,661	35,783	277,076	286,467	153,760	3,470,257
	2018	0	0	126,249	580,132	427,511	285,197	482,483	798,392	151,666	588,719	286,467	153,760	3,880,576
	2017	0	0	0	0	0	122,266	719,214	166,136	0	0	0	0	1,007,616
Mil Charter	2021 Actual	7,325	0	24,040	29,880	72,479	76,529	28,089	54,374	40,871	0			333,587
	2020	21,571	121,132	44,121	0	0	2,527	78,247	94,996	44,370	46,969	4,238	0	458,171
	2019	91,340	62,300	178,789	111,340	89,681	94,398	143,122	13,379	11,609	57,938	15,542	34,408	903,846
	2018	19,766	35,174	18,369	67,810	47,717	2,247	17,268	116,796	32,073	3,937	15,542	34,408	411,107
	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
Contract	2021 Actual	1,727	3,488	43,449	722	699	2,714	1,707	3,938	10,838	23,165			92,447
	2020	1,025	5,781	360	220	1,116	0	300	992	351	600	35,645	73,489	119,879
	2019	0	1,050	1,107	10,306	4,045	935	963	2,666	265	922	31,034	44,196	97,489
	2018	460	0	762	1,756	614	400	650	5,332	700	300	31,034	44,196	86,204
	2017	1,409	13,809	1,221	199	1,336	300	2,569	51	675	2,773	18,523	47,591	90,456
Amazon	2021 Actual	1,037,181	988,291	974,213	795,800	727,502	765,761	674,637	792,209	599,517	371,167			7,726,278
	2020	554,497	453,762	690,790	627,370	785,692	756,187	709,815	1,060,810	1,052,052	1,089,761	1,120,406	1,205,058	10,106,200
	2019	479,120	560,085	608,563	595,049	575,879	606,458	568,439	582,519	401,350	494,922	520,673	646,502	6,639,559
	2018	0	0	0	0	0	0	0	0	0	0	286,039	381,922	667,961
	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
Jet A	2021 Actual	939	7,158	13,352	1,775	18,762	2,734	4,926	3,591	1,070	784			55,091
	2020	274	3,056	1,571	345	1,145	1,075	2,348	2,260	236	8,303	7,874	4,247	32,734
	2019	666	919	660	569	648	2,493	469	1,443	1,732	686	527	0	10,812
	2018	1,815	170	220	1,308	778	175	2,238	281	627	1,255	527	0	9,394
	2017	520	185	452	78	123	562	211	186	988	100	0	350	3,755
AvGas	2021 Actual	308.7	721.4	518.5	716.1	597.2	513.4	726.9	261.0	624.6	262.6			5,250.4
	2020	373.9	436.8	104.1	172.3	180.8	576.5	253.6	276.2	281.2	240.3	546.4	401.8	3,843.9
	2019	210.0	283.0	457.0	494.0	562.0	291.0	282.0	350.0	294.0	281.0	394.0	460.0	4,358.0
	2018	215.0	318.2	453.0	496.0	384.0	441.0	331.0	532.0	271.0	385.0	394.0	460.0	4,680.2
	2017	95.0	207.0	240.0	196.0	184.0	397.0	315.0	177.0	166.0	239.0	408.0	249.0	2,873.0
Diesel	2021 Actual	2,754.3	2,856.0	3,205.7	2,442.9	2,653.4	2,083.7	3,031.3	2,499.6	2,973.0	1,778.3			26,278.2
	2020	2,297.1	2,404.8	2,220.9	1,613.9	2,406.6	2,085.1	2,066.8	2,543.5	2,939.2	3,165.4	3,108.1	3,206.6	30,058.0
	2019	2,347.1	2,326.1	3,032.3	2,970.3	1,762.4	1,728.8	2,717.2	1,915.4	1,626.9	2,104.0	2,276.7	2,469.0	27,276.2
	2018	92.5	60.1	158.3	799.1	617.8	405.7	903.3	1,294.2	368.4	720.1	2,276.7	2,469.0	10,165.2
	2017	31.0	52.0	0.0	54.0	204.0	35.0	321.0	1,133.0	328.0	91.9	219.7	64.3	2,533.9
MoGas	2021 Actual	197.0	263.4	311.3	249.5	379.1	258.7	254.6	379.6	304.1	162.1			2,759.4
	2020	225.6	325.0	275.5	172.0	286.3	202.9	305.5	221.4	245.8	345.8	296.3	275.6	3,177.7
	2019	890.7	891.5	991.1	1,160.6	1,344.1	1,170.0	1,200.2	1,203.1	1,010.2	780.6	361.6	276.7	11,280.4
	2018	99.2	180.5	157.8	266.7	222.8	179.3	142.6	272.4	238.8	152.4	1,083.3	1,277.4	4,273.2
	2017	53.0	45.0	60.0	37.0	64.0	51.0	45.0	45.0	116.0	254.6	583.4	532.9	1,886.9
Defuel	2021 Actual	0.0	1,884.0	8,912.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			10,796.0
	2020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2019	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14,877.0	0.0	0.0	0.0	14,877.0
	2017	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reservice	2021 Actual	0.0	1,884.0	8,917.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			10,801.0
	2020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2019	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13,692.0	0.0	0.0	0.0	13,692.0
	2017	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All Other	2021 Actual	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
	2020	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2019	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2018	0.0	0.0	0.0	11,052.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11,052.9
	2017	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DRAFT

Backgrounder

Boeing Commercial Airplanes
P.O. Box 3707 MC 03-XW
Seattle, Washington 98124-2207
www.boeing.com

Boeing 767-300F designed to deliver

The 767-300 Freighter is more fuel efficient than competing aircraft in the medium-widebody freighter market. Excellent fuel efficiency, operational flexibility, low-noise levels and an all-digital flight deck allow the 767 Freighter to support time-critical cargo schedules even at airports with stringent noise and emissions standards.

The 767 has evolved through time to meet ever-changing market requirements. The 767-300F is the latest iteration of that evolution. It benefits from the advanced avionics, aerodynamics, materials and propulsion incorporated on the Boeing 767 passenger airplanes. Its proven combination of light, durable aluminum alloy and composite structure helps make the 767-300F lighter than competing freighters.

The 767 Freighter is similar in external appearance to 767 passenger airplanes, except for the lack of passenger windows and doors. The interior of the main-deck fuselage has a smooth fiberglass lining. A fixed, rigid barrier installed in the front end of the main deck serves as a restraint wall between the cargo and the flight deck. A door in the barrier wall permits in-flight access from the flight deck to the cargo area.

In addition, the 767 has a bright future in expanded applications, particularly for military use in tanker and command and control applications.

The 767-300F unrivaled for reliability and profitability

The freighter model is the industry's touchstone for efficiency among medium widebody cargo airplanes and is ideal for developing new long-haul, regional, or feeder markets.

Thanks to its intercontinental range capability and highly efficient payload configuration, the 767-300F is the best fit in the midsized freighter market. Operators around the world agree, in this market segment, the flexibility and economics of the right-sized 767-300F make it one of the best assets in a fleet.

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Schedule reliability—an industry measure of departure from the gate within 15 minutes of scheduled time— is nearly 99 percent for the 767. Fleetwide, daily utilization is more than 10 hours.

The 767-300F proven in efficiency and economics

The 767 Freighter keeps ton-mile costs to a minimum with its two-person flight deck, and its twin high-bypass-ratio engines offer excellent fuel economy. The cargo airplane's operating costs, per available ton-mile, are projected to be 20 percent lower than those of its closest competitors. This contrasts with older cargo airplanes, such as the 707 and DC-8, which have three-crew flight decks and are powered by four engines.

The 767 Freighter also has a common type rating with the 757 Freighter, providing airlines with flexibility in scheduling flight crews. More than 40 airlines have combined 767 and 757 fleets.

Today's efficient 767s are the result of continuous technology enhancements designed to maintain its preference with airlines. A large display system is available for retrofit by Boeing Service Bulletin to incorporate 787 size flight deck displays. Expanded applications particularly for military use in tankers and command and control applications are obtainable. And optional winglets are offered as post-production retrofit from Aviation Partners Boeing (APB) on the 767-300ER and 767-300F. This provides approximately 230 nmi more range and a fuel savings of 4.4% for the 767ER and approximately 100 nmi more range and fuel savings 3.9% for the 767-300ER.

Cargo Capability – loading flexibility

With more than 15,469 feet³ (438 m³) of cargo volume available, and the ability to carry approximately 58 tons (52.7 tonnes) of revenue payload more than 3,255 nautical miles (6,025 km), this airplane is an ideal freighter to meet medium-size requirements and to replace aging 707 and DC-8 freighters.

Up to 24 pallets, each measuring 88 inches by 125 inches (223.5 cm by 317.5 cm) at the base, can be accommodated on the main deck. Total main-deck container volume is 11,884 feet³ (336 m³), and the two lower holds of the airplane provide 3,585 feet³ (102 m³) for seven pallets, two containers and bulk loading.

The freighter's main-deck cargo system offers the flexibility of accepting virtually all types of pallets and containers in the air-cargo industry. The 767 Freighter is well-

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suited to directly accommodate transfer of pallets and containers commonly used in existing widebody freighters, such as the 777 and 747, as well as those from single-aisle freighters, including the 757-200. This allows an operator to interline freight from one airplane to another until it reaches its destination.

The 767 Freighter features a large cargo door on the main deck of the forward fuselage, a single crew-entry door and a freighter interior.

Cargo-handling – made easy

The 767 Freighter is equipped with powered cargo-handling equipment, both on the main deck and in lower holds. The cargo-handling system provides complete automation of the cargo-loading process, with the operator's interface through control panels and joysticks. The freighter's main deck has both interior and exterior master control panels as well as local control panels to provide maximum flexibility.

The cargo-handling system's power-drive units move the cargo containers into and out of the airplane and are equipped with high-tech sensors. The sensor information is fed back to the system's microprocessor-based controllers, which move only the power-drive units necessary to load each container, preventing wear and tear on the equipment and improving reliability. Another advantage is that the power-drive units weigh less than those used on previous airplanes.

A unique feature of the cargo-handling system is the extensive use of built-in test equipment, or BITE, which allows troubleshooting in the event of a system problem. This function not only detects and isolates controller faults, it also provides the maintenance operator with a series of automated tests to isolate other system faults.

Environmental control system changes make the airplane suitable for transporting live animals and perishable goods. Plenty of fresh air is delivered to the cargo areas, and temperatures can be controlled to cool or heat the freight appropriately.

DRAFT**Began in 1993**

Boeing launched the 767 Freighter in January 1993, when Atlanta-based United Parcel Service (UPS) announced an order for up to 60 of the freighters. The purchase was the largest order for all-cargo airplanes ever received by Boeing.

The first UPS freighter entered production in January 1995 at the Boeing factory in Everett, Wash. It rolled out in May 1995, entered flight testing in June 1995 and was delivered to UPS in October 1995.

Boeing has been the world leader in civilian air cargo since the 707 Freighter was introduced more than 30 years ago.

767-300 Freighter Technical Characteristics	
Cargo	
Maximum payload	116,200 lb (52,700 kg)
Total volume	15,469 ft ³ (438 m ³)*
Main deck	11,884 ft ³ (336 m ³)
Lower deck	3,585 ft ³ (102 m ³)
Engines (maximum thrust)	GE CF6-80C2B7F 62,100 lb
Maximum Fuel Capacity	23,980 U.S. gallons (90,770 L)
Maximum Takeoff Weight	408,000 lb (185,060 kg)
Maximum Range	3,225 nautical miles (6,025 km) with 58-ton (52.7 tonnes) payload
Typical Cruise Speed (at 35,000 feet)	Mach 0.80 530 mph (850 km/h)
Basic Dimensions	
Wing Span	156 ft 1 in (47.6 m)
Overall Length	180 ft 3 in (54.9 m)
Tail Height	52 ft (15.9 m)
Interior Body Width	15 ft 6 in (4.7 m)

*15,469 ft³ = 11,884 ft³ + 3,585 ft³ + bulk = 24 contoured pallets (88 in x 125 in) + 7 pallets (96 in x 125 in) + 2 LD-2 containers + bulk

767-2C a new generation of capability

Boeing is extending a tanker legacy that started more than eight decades ago, when the first aerial refueler took flight.

The 767-2C, a new commercial freighter based on the 767-200ER. The first 767-2Cs will be provisioned commercial baseline airplanes modified into U.S. Air Force KC-46A Tankers.

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The first flight of an EMD test aircraft without its aerial refueling systems is scheduled to take place in 2014, followed by the first flight of a complete KC-46A tanker in early 2015. The first delivery of a production aircraft to the Air Force is planned for early 2016. Boeing expects to build 179 tankers by 2027 if all options under the contract with the Air Force are exercised. For more information, review the [KC-46 webpage](#) or read the KC-46A (PDF)

The Boeing 767 300-ER Efficiency and Economics for the Mid-range Market

The Boeing 767-300ER is sized between the single-aisle 757 and the larger, twin-aisle 777. The 767 passenger airplane has built a reputation among airlines for its profitability and comfort.

The 767 cabin is more than 4 feet (1.2 m) wider than single-aisle jetliners, and the 767's versatile design allows customers to select the seating that best suits their operational requirements: four, five, six, seven or eight abreast.

The extended-range airplanes typically have three-class seating of 181 to 245 passengers, using five-abreast, 747-size first-class seats; six-abreast business class seats; and seven-abreast economy class seats.

The Boeing 767-300ER is offered in a variety of takeoff weights, which allow operators to choose only the amount of design weight needed to satisfy their requirements. These offer corresponding design ranges from just over 5,625 nautical miles (10,415 km) to nearly 6,385 nautical miles (12,195 km). This range versatility gives the 767 family the ability to efficiently serve routes as short as U.S. domestic and pan-European to long-range flights over the North Atlantic and North Pacific. The 767 crosses the Atlantic from the United States to Europe more often than any other jetliner.

Schedule reliability—an industry measure of departure from the gate within 15 minutes of scheduled time—is nearly 99 percent for the 767. Fleet-wide, daily utilization—the actual time the airplane spends in the air—averages more than 10 hours.

Production Design Begins in 1978 With an Order from United Airlines

Production design of the 767-200 began in 1978 when an order for 30 short-to-medium-range 767s was announced by United Airlines. The first 767 was completed and rolled out of the Boeing plant in Everett, Wash., on Aug. 4, 1981. The airplane made its initial flight on Sept. 26, 1981.

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The 767-300 program got under way in September 1983. This model is longer than the 767-200 by 10 feet (3.1 m) and has 20 percent more seating capacity (approximately 40 passengers) and 31 percent greater cargo volume. The first 767-300 was delivered to Japan Airlines in September 1986.

The 767's uniquely low operating costs, are largely responsible for the fragmentation of the North Atlantic markets.

To take advantage of the airplanes' increased ranges and long, over-water flights, several new features were added: an advanced propulsion system and auxiliary power unit with high-altitude start capability, a fourth hydraulic-motor-driven generator, increased cargo compartment fire-suppression capability and cooling sensors for electronic flight instruments.

Continually Improved Features and Capabilities

The 767 wing is thicker, longer and less swept than the wings of earlier Boeing jetliners. This provides excellent takeoff performance and fuel economy. Each 767 is powered by two high-bypass-ratio turbofan engines, which are interchangeable with 747 engines with only minor modifications.

Preferred by Passengers, Now With the Boeing Signature Interior

The 767 300ER offers a new, even more passenger-pleasing cabin interior. The Boeing Signature Interior, based on the award-winning design of the 777, uses state-of-the-art lighting and design concepts to amplify the feeling of spaciousness on an airplane already prized for long-range comfort.

For passengers, the new interior also includes new, deeper stowage bins, which means it is easier to find space in the compartments. For airlines, the new interior offers increased flexibility in positioning and maintaining lavatories. About 70 percent of the lavatory components are the same as those found on the 777, easing maintenance and reducing the number and type of spare parts in airline inventories for operators of both models. The interior also features an improved in-flight entertainment interface.

The 767 has earned high passenger ratings in every class of service. In economy class seating, the 767 offers a seat-width that is surpassed only by the Boeing 777. Independent research has shown the seven-abreast seating concept in economy is

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popular because it places 87 percent of the seats next to a window or aisle. The 767 has the highest percentage of window seats and aisle seats of any jetliner.

The Pioneer of Extended Operations (ETOPS)

In May 1985, the U.S. Federal Aviation Administration (FAA) approved 767s for long-range flights of up to 120 minutes from an alternate airport. In March 1989, the FAA approved the 767 as the first jetliner for 180-minute extended operations (ETOPS). This allows more direct, time-saving trans-Pacific and trans-Atlantic flights from many U.S. gateways. ETOPS has proven successful and is now part of airlines' routine operations. The 767 flies more ETOPS flights than any other airplane.

Continually Improved Features and Capability

The 767 300ER has the lowest operating cost per trip of any twin-aisle airplane currently in service. This low operating cost, variable range capability, almost universal airport compatibility and ETOPS capability, makes the 767 a versatile airplane. This versatility is an extreme competitive advantage to an operator that needs to serve a variety of different missions and passenger demands. Extensive commonality with the Boeing 757, which includes a common pilot-type rating, offers even more operational versatility to 767 operators.

The 767 has a long history of leading the way in technological innovation. Included in its list of "firsts" are:

- First two-crew flight deck on a twin-aisle airplane
- First common pilot type rating, which is shared with the Boeing 757
- First vacuum toilet waste system
- First to use brakes made of carbon fiber
- First airplane to achieve both 120- and 180-minute ETOPS approval
- First twin-aisle airplane to offer a choice of three passenger sizes – the 767-200ER, 767-300ER and 767-400ER
- First large commercial airplane to use efficiency-enhancing "raked" wingtips

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Boeing has delivered more than 1,063 767s that are flown by over 120 operators around the world. The 767 family has accumulated more than 17.8 million flights, and has carried millions of passengers. About 3.6 million of the 14.7 million flights were on extended operations (ETOPS) rules.

	767-300ER
PASSENGERS	
Typical 3-class configuration	218
Typical 2-class configuration	269
Typical 1-class configuration	350
Cargo	4,180 feet ³ (118.4 m ³)
Engines (Maximum thrust)	Pratt & Whitney PW4000 63,300 lb GE CF6-80C2 62,100 lb
Maximum Fuel Capacity	23,980 U.S. gallons (90,770 L)
Maximum Takeoff Weight	412,000 lb (186,880 kg)
Maximum Range	5,990 nautical miles (11,070 km) Typical city pairs: Frankfurt to Los Angeles
Typical Cruise Speed (at 35,000 feet)	Mach 0.80 (530 mph, 851 kph)
Basic Dimensions	
Wing span	156 ft 1 in (47.6 m)
Overall length	180 ft 3 in (54.9 m)
Tail height	52 ft (15.8 m)
Interior cabin width	15 ft 6 in (4.7 m)

February 2014

Contact: Boeing Airplane Programs Communications, +1 425-294-2002

RIVERSIDE, CA [COUNTY, 06065]

[see data note at the bottom of this file]

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TOTAL POPULATION (in thousands)	2234.07	2261.204	2286.755	2316.162	2345.816	2380.081	2414.964	2445.789	2470.546	2507.669	2550.397	2594.082	2637.918	2682.317	2727.223	2772.571
POPULATION AGE UNDER 5 YEARS (in thousands)	161.637	159.068	156.947	157.219	157.504	157.858	158.477	157.861	156.301	154.554	153.748	154.564	156.823	159.824	162.965	166.003
POPULATION AGE 5 to 9 YEARS (in thousands)	167.87	169.88	171.342	171.208	171.27	171.531	170.398	169.475	170.016	170.372	169.633	168.944	166.949	164.877	163.096	162.256
POPULATION AGE 10 to 14 YEARS (in thousands)	177.121	175.727	175.06	174.999	174.242	175.052	178.324	180.397	180.402	181.941	183.814	183.818	183.951	185.148	185.538	184.693
POPULATION AGE 15 to 19 YEARS (in thousands)	183.51	181.393	179.756	178.366	178.036	177.638	177.123	176.946	176.791	180.104	181.881	185.769	189.027	190.326	192.149	194.148
POPULATION AGE 20 to 24 YEARS (in thousands)	165.538	170.399	172.065	172.788	171.536	169.382	168.067	167.365	165.881	167.327	171.214	174.219	177.96	182.09	185.879	187.827
POPULATION AGE 25 to 29 YEARS (in thousands)	148.373	150.464	153.401	158.244	163.821	170.694	175.219	177.256	178.277	179.418	180.314	181.883	183.232	184.072	185.492	189.336
POPULATION AGE 30 to 34 YEARS (in thousands)	144.04	147.887	151.907	155.123	157.097	159.25	161.253	164.392	167.345	172.722	179.231	185.062	189.272	193.414	194.717	195.506
POPULATION AGE 35 to 39 YEARS (in thousands)	142.295	142.418	143.185	145.806	149.335	153.897	158.839	163.931	167.21	168.476	169.341	170.011	172.123	175.852	181.689	188.619
POPULATION AGE 40 to 44 YEARS (in thousands)	151.485	152.152	151.221	149.576	147.873	147.263	148.599	150.871	153.535	157.052	161.183	165.062	169.012	171.55	172.93	173.836
POPULATION AGE 45 to 49 YEARS (in thousands)	152.039	150.788	149.607	149.115	150.408	152.549	153.858	153.765	152.553	151.332	150.497	151.505	153.471	156.129	159.754	163.93
POPULATION AGE 50 to 54 YEARS (in thousands)	145.332	147.536	149.609	151.603	151.913	151.283	151.05	150.605	150.002	151.995	154.397	156.012	155.981	155.271	154.198	153.358
POPULATION AGE 55 to 59 YEARS (in thousands)	121.341	126.987	132.037	135.956	140.092	144.278	146.548	148.496	150.741	151.652	152.001	151.865	151.873	152.075	154.216	156.62
POPULATION AGE 60 to 64 YEARS (in thousands)	105.182	105.572	107.773	111.756	116.417	121.242	127.116	132.008	135.55	141.094	146.094	149.48	152.72	156.14	157.068	157.305
POPULATION AGE 65 to 69 YEARS (in thousands)	82.209	89.046	93.111	97.358	101.703	106.159	106.357	108.88	112.614	118.345	124.801	132.567	139.602	145.682	151.84	157.146
POPULATION AGE 70 to 74 YEARS (in thousands)	64.503	67.072	71.133	74.403	77.789	80.83	87.582	91.225	95.341	99.55	104.683	105.732	109.167	114.203	120.676	127.318
POPULATION AGE 75 to 79 YEARS (in thousands)	50.072	51.323	53.226	55.351	57.345	59.187	61.532	65.331	68.372	70.723	73.57	80.04	84.015	88.206	92.703	97.531
POPULATION AGE 80 to 84 YEARS (in thousands)	37.609	38.491	39.175	39.588	40.336	41.515	42.776	44.153	45.851	46.94	48.359	50.272	53.503	56.189	58.758	61.148
POPULATION AGE 85 YEARS and OVER (in thousands)	33.914	35.001	36.2	37.703	39.099	40.473	41.846	42.832	43.764	44.072	45.636	47.277	49.237	51.269	53.555	55.991
MEDIAN AGE of POPULATION (in years)	33.39	33.64	33.91	34.19	34.48	34.77	35.07	35.38	35.72	35.9	36.14	36.36	36.57	36.76	36.97	37.2
WHITE NON-HISPANIC POPULATION (in thousands)	898.392	897.88	896.755	896.243	893.237	890.058	886.251	880.543	871.281	869.213	869.877	870.435	870.829	871.117	871.215	871.163
BLACK NON-HISPANIC POPULATION (in thousands)	145.951	148.375	150.203	152.51	155.514	159.167	162.173	165.511	168.461	170.832	173.452	176.103	178.774	181.448	184.104	186.727
AMERICAN INDIAN and ALASKA NATIVE NON-HISPANIC POPULATION	13.672	13.795	13.804	13.888	14.068	14.196	14.276	14.315	14.386	14.466	14.569	14.693	14.787	14.891	15.005	15.119
ASIAN AMERICAN and PACIFIC ISLANDER NON-HISPANIC POPULATION	147.291	150.08	153.339	157.454	161.829	166.376	171.758	176.019	180.386	185.851	191.842	197.869	203.908	210.039	216.313	222.657
HISPANIC or LATINO POPULATION of ANY RACE (in thousands)	1028.764	1051.074	1072.654	1096.067	1121.168	1150.284	1180.506	1209.401	1236.032	1267.307	1300.657	1334.982	1369.62	1404.822	1440.586	1476.905
POPULATION AGE 0 to 17 YEARS (in thousands)	618.808	615.24	612.572	612.236	612.179	613.542	615.466	615.402	614.154	615.927	618.22	620.628	622.867	625.086	626.646	628.709
POPULATION AGE 15 to 17 YEARS (in thousands)	112.18	110.565	109.223	108.81	109.163	109.101	108.267	107.669	107.435	109.06	111.025	113.302	115.144	115.237	115.047	115.757
POPULATION AGE 18 to 24 YEARS (in thousands)	236.868	241.227	242.598	242.344	240.409	237.919	236.923	236.642	235.237	238.371	242.07	246.686	251.843	257.179	262.981	266.218
POPULATION AGE 65 YEARS and OVER (in thousands)	268.307	280.933	292.845	304.403	316.272	328.164	340.093	352.421	365.942	379.63	397.049	415.888	435.524	455.549	477.532	499.134
MALE POPULATION (in thousands)	1111.532	1125.284	1137.977	1151.701	1166.571	1184.681	1202.904	1219.025	1232.012	1249.439	1269.827	1290.646	1311.556	1332.744	1354.141	1375.657
FEMALE POPULATION (in thousands)	1122.538	1135.92	1148.778	1164.461	1179.245	1195.4	1212.06	1226.764	1238.534	1258.23	1280.57	1303.436	1326.362	1349.573	1373.082	1396.914
TOTAL EMPLOYMENT (in thousands of jobs)	827.299	853.25	886.616	928.893	968.959	1002.626	1033.477	1070.182	1103.528	1038.689	1149.845	1173.731	1197.541	1221.846	1246.441	1271.456
FARM EMPLOYMENT (in thousands of jobs)	7.361	7.083	7.346	7.55	8.042	8.277	8.071	8.065	8.382	8.281	8.18	8.08	7.981	7.882	7.785	7.688
FORESTRY, FISHING, RELATED ACTIVITIES and OTHER EMPLOYMENT	7.693	7.645	7.146	7.129	7.095	6.727	6.723	6.864	7.594	6.999	7.547	7.524	7.5	7.476	7.452	7.428
MINING EMPLOYMENT (in thousands of jobs)	1.604	2.096	2.139	1.906	1.979	2.092	1.778	1.424	1.364	1.139	1.378	1.385	1.392	1.4	1.407	1.414
UTILITIES EMPLOYMENT (in thousands of jobs)	1.772	1.7	1.73	1.702	1.643	1.903	1.581	1.557	1.596	1.563	1.605	1.609	1.613	1.617	1.621	1.625
CONSTRUCTION EMPLOYMENT (in thousands of jobs)	54.885	58.063	65.341	70.875	76.341	83.272	86.837	92.965	94.073	91.113	96.143	97.185	98.232	99.284	100.342	101.404
MANUFACTURING EMPLOYMENT (in thousands of jobs)	43.236	44.119	44.749	45.834	47.157	48.326	49.097	50.532	50.946	48.153	51.366	51.251	51.242	51.271	51.336	51.353
WHOLESALE TRADE EMPLOYMENT (in thousands of jobs)	26.092	27.08	28.926	32.226	32.971	30.932	30.591	31.613	32.481	31.357	33.487	33.987	34.512	35.055	35.612	36.179
RETAIL TRADE EMPLOYMENT (in thousands of jobs)	102.609	104.701	106.484	110.598	114.559	116.452	118.393	117.964	119.015	112.856	121.084	122.007	122.953	123.915	124.89	125.874
TRANSPORTATION and WAREHOUSING EMPLOYMENT (in thousands)	27.661	29.096	32.401	37.421	46.651	53.544	61.829	68.011	74.809	74.179	80.651	83.67	86.756	89.908	93.128	96.416
INFORMATION EMPLOYMENT (in thousands of jobs)	12.41	8.945	9.052	9.229	9.097	9.005	8.974	9.011	9.422	8.807	9.483	9.513	9.543	9.573	9.602	9.631
FINANCE and INSURANCE EMPLOYMENT (in thousands of jobs)	33.843	33.972	34.194	32.875	33.835	35.687	35.486	37.859	38.185	38.569	40.928	42.224	43.498	44.747	45.972	47.171
REAL ESTATE and RENTAL and LEASE EMPLOYMENT (in thousands of jobs)	45.51	44.524	44.651	46.101	47.37	48.212	49.909	50.612	52.244	49.458	53.611	55.04	55.924	56.907	57.785	58.782
PROFESSIONAL and TECHNICAL SERVICES EMPLOYMENT (in thousands of jobs)	41.469	43.113	44.004	46.112	47.565	46.859	48.315	50.611	52.119	51.144	54.537	55.719	56.884	58.033	59.167	60.285
MANAGEMENT of COMPANIES and ENTERPRISES EMPLOYMENT (in thousands of jobs)	3.21	3.302	3.573	3.875	3.594	3.757	3.077	3.352	3.909	3.703	3.922	3.928	3.933	3.937	3.941	3.944
ADMINISTRATIVE and WASTE SERVICES EMPLOYMENT (in thousands of jobs)	62.784	64.126	69.025	72.251	72.499	75.98	76.579	79.581	82.618	75.78	88.09	90.9	93.761	96.674	99.64	102.66
EDUCATIONAL SERVICES EMPLOYMENT (in thousands of jobs)	10.542	11.258	11.403	12.148	13.343	13.577	13.835	13.93	14.33	13.299	15.451	16.019	16.593	17.174	17.761	18.355

RIVERSIDE, CA [COUNTY, 06065]

[see data note at the bottom of this file]

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
HEALTH CARE and SOCIAL ASSISTANCE EMPLOYMENT (in thousands)	76.38	88.912	95.564	99.082	104.965	109.017	115.762	121.092	125.757	122.818	134.928	139.771	144.791	149.99	155.375	160.944
ARTS, ENTERTAINMENT, and RECREATION EMPLOYMENT (in thousands)	18.947	19.56	20.124	21.47	21.667	22.257	23.126	23.867	25.253	18.447	26.647	27.352	28.061	28.776	29.495	30.22
ACCOMMODATION and FOOD SERVICES EMPLOYMENT (in thousands)	66.213	69.128	70.674	75.896	79.037	83.371	86.733	88.824	92.467	75.825	98.459	101.519	104.623	107.773	110.968	114.209
OTHER SERVICES, EXCEPT PUBLIC ADMINISTRATION EMPLOYMENT (in thousands)	59.967	62.313	63.969	67.633	70.008	69.112	69.714	73.755	76.007	69.666	79.155	80.742	82.337	83.94	85.552	87.171
FEDERAL CIVILIAN GOVERNMENT EMPLOYMENT (in thousands of jobs)	7.078	6.912	6.895	6.845	6.915	7.121	7.198	7.25	7.364	7.608	7.465	7.518	7.571	7.625	7.679	7.735
FEDERAL MILITARY EMPLOYMENT (in thousands of jobs)	3.811	3.918	3.929	3.906	3.902	3.874	3.921	3.923	3.984	3.985	3.986	3.988	3.989	3.99	3.991	3.992
STATE and LOCAL GOVERNMENT EMPLOYMENT (in thousands of jobs)	112.222	111.684	113.297	116.229	118.724	123.272	125.948	127.52	129.609	123.94	131.742	132.8	133.852	134.899	135.94	136.976
TOTAL EARNINGS (in millions of 2012 dollars)	38380.82	38470.04	39996.91	41759.63	45615.81	46968.5	48685.59	50123.55	52493.52	50271.87	55348.83	56853.2	58395.07	59974.15	61591.54	63247.95
FARM EARNINGS (in millions of 2012 dollars)	441.251	421.017	473.122	498.37	539.749	463.307	495.159	429.109	550.575	552.448	545.718	539.045	532.423	525.858	519.347	512.89
FORESTRY, FISHING, RELATED ACTIVITIES and OTHER EARNINGS (in millions of 2012 dollars)	209.508	219.467	201.926	214.246	235.135	219.885	200.75	211.075	230.524	218.043	237.999	240.12	242.224	244.316	246.394	248.456
MINING EARNINGS (in millions of 2012 dollars)	221.951	187.735	200.347	213.392	126.062	108.377	136.009	216.628	218.997	146.856	178.203	179.728	181.279	182.853	184.453	186.081
UTILITIES EARNINGS (in millions of 2012 dollars)	204.025	178.38	189.827	191.026	197.653	198.915	203.924	220.648	257.948	252.468	261.77	265.021	268.282	271.559	274.839	278.135
CONSTRUCTION EARNINGS (in millions of 2012 dollars)	3138.241	3202.783	3692.986	4132.596	4634.874	5034.819	5282.141	5501.686	5646.47	5500.421	5837.57	5934.752	6033.033	6132.429	6232.954	6334.616
MANUFACTURING EARNINGS (in millions of 2012 dollars)	2679.457	2649.346	2666.293	2813.039	2944.235	2950.144	3019.506	3126.838	3147.338	2975.032	3181.531	3199.442	3216.372	3232.977	3249.306	3266.185
WHOLESALE TRADE EARNINGS (in millions of 2012 dollars)	1425.948	1496.522	1725.7	1737.741	2754.665	1930.673	2236.381	2107.65	2329.982	2265.187	2435.742	2489.099	2544.902	2602.605	2661.942	2722.704
RETAIL TRADE EARNINGS (in millions of 2012 dollars)	4256.596	4014.431	3961.334	3711.169	3880.958	3883.244	4065.084	4124.083	4282.332	4078.775	4395.56	4448.625	4502.899	4558.101	4614.132	4670.871
TRANSPORTATION and WAREHOUSING EARNINGS (in millions of 2012 dollars)	1680.476	1634.27	1731.633	1967.079	2331.561	2453.436	2643.806	2852.964	3257.816	3246.834	3562.159	3728.884	3901.173	4079.153	4262.961	4452.728
INFORMATION EARNINGS (in millions of 2012 dollars)	748.713	541.68	560.467	553.09	601.042	581.198	519.496	539.654	576.507	546.231	592.596	598.918	605.233	611.538	617.831	624.11
FINANCE and INSURANCE EARNINGS (in millions of 2012 dollars)	954.105	983.703	1034.954	982.609	1045.084	1152.244	1178.723	1131.199	1046.002	1062.925	1135.249	1178.781	1222.196	1265.422	1308.441	1351.238
REAL ESTATE and RENTAL and LEASE EARNINGS (in millions of 2012 dollars)	1095.728	1083.757	1061.595	955.71	1020.678	1042.841	1094.129	1180.329	1213.019	1151.513	1256.034	1287.266	1319.151	1350.805	1382.6	1414.13
PROFESSIONAL and TECHNICAL SERVICES EARNINGS (in millions of 2012 dollars)	1587.02	1640.85	1652.592	1796.977	1890.497	1906.394	2027.676	2139.793	2212.918	2202.342	2381.598	2467.298	2553.907	2641.437	2729.901	2819.312
MANAGEMENT of COMPANIES and ENTERPRISES EARNINGS (in millions of 2012 dollars)	253.956	266.168	289.275	294.823	287.718	273.855	235.475	237.631	310.107	298.497	320.502	325.321	330.113	334.875	339.602	344.291
ADMINISTRATIVE and WASTE SERVICES EARNINGS (in millions of 2012 dollars)	1975.167	1985.607	1928.553	2018.422	2111.568	2396.299	2482.6	2523.248	2692.361	2500.231	2941.822	3072.435	3207.281	3346.488	3490.172	3638.466
EDUCATIONAL SERVICES EARNINGS (in millions of 2012 dollars)	303.629	321.182	300.108	327.696	357.386	382.276	386.506	396.888	422.063	397.641	469.044	493.708	519.157	545.421	572.524	600.498
HEALTH CARE and SOCIAL ASSISTANCE EARNINGS (in millions of 2012 dollars)	3796.748	4093.299	4305.302	4470.48	4854.034	5156.803	5344.783	5608.795	5899.792	5822.087	6462.529	6763.498	7078.147	7406.886	7750.365	8108.794
ARTS, ENTERTAINMENT, and RECREATION EARNINGS (in millions of 2012 dollars)	420.018	450.555	485.898	541.122	514.587	570.629	593.513	629.651	652.112	479.4	696.829	719.703	742.969	766.635	790.708	815.194
ACCOMMODATION and FOOD SERVICES EARNINGS (in millions of 2012 dollars)	1591.629	1772.954	1737.599	1898.989	2055.87	2267.29	2367.084	2488.481	2624.125	2173.154	2847.746	2963.054	3081.374	3202.776	3327.329	3455.104
OTHER SERVICES, EXCEPT PUBLIC ADMINISTRATION EARNINGS (in millions of 2012 dollars)	1989.405	2102.95	2128.141	2356.131	2485.057	2563.826	2626.929	2728.456	2834.264	2617.833	2997.21	3080.647	3165.404	3251.493	3338.923	3427.703
FEDERAL CIVILIAN GOVERNMENT EARNINGS (in millions of 2012 dollars)	743.48	727.112	716.009	729.64	749.222	767.057	775.652	801.726	811.308	849.335	844.349	861.343	878.662	896.31	914.293	932.618
FEDERAL MILITARY EARNINGS (in millions of 2012 dollars)	153.498	149.781	144.553	137.539	132.745	137.836	136.799	145.254	154.987	157.68	160.375	163.088	165.821	168.574	171.348	174.139
STATE and LOCAL GOVERNMENT EARNINGS (in millions of 2012 dollars)	8510.273	8346.49	8808.697	9217.742	9865.429	10527.15	10633.47	10781.77	11121.98	10776.93	11606.7	11853.42	12103.07	12355.64	12611.18	12869.69
TOTAL PERSONAL INCOME (in millions of 2012 dollars)	73306.73	74050.8	75503.46	78553.1	83651.16	87123.45	89204.12	91710.13	95397.11	100181.7	101462.1	104672.4	107969.7	111356.3	114835.9	118409.9
WAGES and SALARIES (in millions of 2012 dollars)	24254.48	24689.44	25631.36	27126.09	30341.2	31310.11	32677.92	33789.47	35662.42	34186.65	37672.25	38712.71	39768.82	40843.91	41940.91	43061.66
SUPPLEMENTS to WAGES and SALARIES (in millions of 2012 dollars)	7269.99	7054.861	7660.346	8040.067	8675.982	9056.326	9249.814	9435.067	9656.852	9240.046	10180.71	10471.37	10772.58	11082.53	11400.38	11725.68
PROPRIETORS INCOME (in millions of 2012 dollars)	6856.354	6725.735	6705.206	6593.475	6598.626	6602.065	6757.859	6899.011	7174.247	6845.172	7495.877	7669.126	7853.67	8047.713	8250.248	8460.618
DIVIDENDS, INTEREST and RENTAL INCOME (in millions of 2012 dollars)	11504.49	11855.02	12120.81	13168.53	14084.61	14692.37	15264.55	15629.69	15776.33	15592.53	16948.29	17557.59	18180.82	18818.6	19471.16	20138.71
PERSONAL CURRENT TRANSFER RECEIPTS (in millions of 2012 dollars)	14584.15	14491.27	14781.39	15446.24	16558.98	17025.72	16840.5	17336.4	18350.88	26219.65	19938.22	20784.48	21664.64	22579.8	23531.33	24519.13
CONTRIBUTIONS for GOVERNMENT SOCIAL INSURANCE (in millions of 2012 dollars)	3642.289	3623.834	4183.254	4412.189	4816.186	4989.287	5181.971	5440.61	5738.151	5766.343	6039.382	6198.229	6360.381	6525.893	6694.878	6867.442
RESIDENCE ADJUSTMENT (in millions of 2012 dollars)	12479.56	12858.3	12787.61	12590.9	12207.95	13426.15	13595.45	14061.09	14514.52	13863.99	15266.11	15675.34	16089.54	16509.62	16936.74	17371.54
NET EARNINGS (in millions of 2012 dollars)	47218.09	47704.51	48601.26	49938.33	53007.57	55405.36	57099.07	58744.03	61269.89	58369.51	64575.56	66330.31	68124.22	69957.88	71833.41	73752.05
TOTAL PERSONAL INCOME PER CAPITA (in 2012 dollars)	32813	32748	33018	33915	35660	36605	36938	37497	38614	39950	39783	40350	40930	41515	42107	42708
TOTAL PERSONAL INCOME PER CAPITA (in current dollars)	32200	32748	33462	34875	36745	38114	39148	40587	42418	44406	45216	46932	48795	50807	52976	55308
WOODS & POOLE ECONOMICS WEALTH INDEX (U.S. = 100)	77.79	75.73	77.1	76.55	77.09	78.2	77.41	76.48	77.01	77.49	76.69	76.57	76.45	76.33	76.22	76.12
GROSS REGIONAL PRODUCT (in millions of 2012 dollars)	62582.33	63100.54	66494.33	69698.37	75463.07	77816.08	80197.97	82453.2	86966.39	84397.83	91893.63	94450.76	97071.34	99754.84	102503	105317
PERSONS PER HOUSEHOLD (in number of people)	3.09	3.07	3.04	3.04	3.02	3.01	3.03	3.01	2.99	2.97	2.95	2.95	2.94	2.93	2.93	2.93
TOTAL RETAIL SALES PER HOUSEHOLD (in 2012 dollars)	38400	38401	39067	40239	41088	41874	43203	43715	44067	43284	45470	46005	46505	46984	47451	47913
MEAN HOUSEHOLD TOTAL PERSONAL INCOME (in 2012 dollars)	101732	100784	100716	103335	108103	110596	112076	113143	115675	118876	117880	119195	120612	122108	123677	125310
MEAN HOUSEHOLD TOTAL PERSONAL INCOME (in current dollars)	99831	100784	102072	106259	111392	115154	118783	122465	127070	132136	133979	138637	143790	149438	155599	162281

RIVERSIDE, CA [COUNTY, 06065]

[see data note at the bottom of this file]

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
TOTAL NUMBER of HOUSEHOLDS (in thousands)	711.512	725.443	740.655	751.35	765.025	778.796	787.106	801.724	815.922	833.869	851.768	869.087	886.008	902.689	919.174	935.517
NUMBER of HOUSEHOLDS with MONEY INCOME LESS THAN \$10,000	39.469	40.552	41.119	41.713	41.454	41.519	41.274	41.339	41.358	41.631	41.874	42.062	42.204	42.309	42.38	42.419
NUMBER of HOUSEHOLDS with MONEY INCOME \$10,000 to \$19,999	75.578	79.354	80.462	81.624	81.118	81.245	80.766	80.893	80.93	81.464	81.939	82.307	82.584	82.79	82.929	83.005
NUMBER of HOUSEHOLDS with MONEY INCOME \$20,000 to \$29,999	76.519	80.327	81.448	82.624	82.112	82.242	81.755	81.885	81.921	82.462	82.944	83.315	83.597	83.805	83.945	84.023
NUMBER of HOUSEHOLDS with MONEY INCOME \$30,000 to \$44,999	106.035	108.708	110.229	111.821	111.128	111.302	110.645	110.819	110.869	111.601	112.252	112.756	113.137	113.419	113.609	113.714
NUMBER of HOUSEHOLDS with MONEY INCOME \$45,000 to \$59,999	86.729	88.183	89.864	91.162	91.8	92.573	92.463	92.841	92.883	93.495	94.041	94.463	94.783	95.019	95.177	95.264
NUMBER of HOUSEHOLDS with MONEY INCOME \$60,000 to \$74,999	76.524	75.335	77.45	78.568	82.012	84.88	87.241	90.395	93.61	96.96	100.2	103.246	106.101	108.763	111.215	113.442
NUMBER of HOUSEHOLDS with MONEY INCOME \$75,000 to \$99,999	91.729	95.644	98.328	99.747	104.12	107.762	110.758	114.763	118.845	123.346	127.981	132.677	137.465	142.373	147.413	152.606
NUMBER of HOUSEHOLDS with MONEY INCOME \$100,000 to \$124,9	59.19	57.938	59.564	60.424	63.072	65.278	67.094	69.519	71.992	74.719	77.527	80.372	83.272	86.245	89.299	92.444
NUMBER of HOUSEHOLDS with MONEY INCOME \$125,000 to \$149,9	36.755	38.668	39.754	40.328	42.095	43.568	44.78	46.398	48.049	49.869	51.743	53.641	55.577	57.561	59.6	61.698
NUMBER of HOUSEHOLDS with MONEY INCOME \$150,000 to \$199,9	35.951	35.018	36	36.52	38.12	39.454	40.551	42.017	43.512	45.159	46.857	48.576	50.329	52.126	53.972	55.872
NUMBER of HOUSEHOLDS with MONEY INCOME \$200,000 or MORE	27.033	25.716	26.437	26.819	27.994	28.973	29.779	30.855	31.953	33.163	34.41	35.672	36.959	38.279	39.635	41.03
TOTAL RETAIL SALES, INCLUDING EATING and DRINKING PLACES SALE:	27322.15	27857.8	28934.91	30233.37	31433.25	32610.98	34005.21	35047.72	35955.35	36093.09	38729.72	39982.26	41203.81	42411.64	43616.1	44823.89
MOTOR VEHICLES and PARTS DEALERS RETAIL SALES (in millions of 2	4764.467	4857.674	5377.705	5835.405	6436.273	6846.732	7123.039	7125.541	7296.383	7354.546	7933.33	8159.245	8356.518	8536.864	8706.502	8868.663
FURNITURE and HOME FURNISHING STORES RETAIL SALES (in million	462.261	440.546	459.255	480.406	519.19	540.437	552.585	563.242	560.875	529.83	642.163	675.437	704.788	730.855	754.161	775.13
ELECTRONICS and APPLIANCE STORES RETAIL SALES (in millions of 2C	594	599.583	592.592	583.946	571.051	536.933	523.168	524.801	502.855	430.359	519.353	527.303	534.992	542.42	549.581	556.462
BUILDING MATERIALS and GARDEN EQUIPMENT and SUPPLIES DEAL	1379.906	1380.127	1468.184	1536.965	1608.44	1688.254	1754.644	1802.905	1792.848	2036.091	1987.445	2064.624	2132.364	2193.051	2248.379	2299.571
FOOD and BEVERAGE STORES RETAIL SALES (in millions of 2012 dolla	3967.136	3892.673	4028.136	4262.215	4474.46	4646.384	4868.218	4936.939	5003.895	5568.532	5236.91	5365.732	5490.797	5613.291	5733.595	5852.148
HEALTH and PERSONAL CARE RETAIL SALES (in millions of 2012 dolla	1442.046	1431.05	1487.128	1594.269	1715.706	1805.674	1851.368	1904.732	1944.317	1973.555	2075.301	2143.955	2214.486	2287.004	2361.565	2438.217
GASOLINE STATIONS RETAIL SALES (in millions of 2012 dollars)	3265.346	3370.883	3288.559	3175.497	2615.494	2466.907	2622.738	2831.553	2768.935	2321.48	2894.316	2957.763	3020.913	3083.937	3146.863	3209.687
CLOTHING and CLOTHING ACCESSORIES STORES RETAIL SALES (in mil	1625.516	1692.321	1744.438	1800.765	1878.304	1937.904	1959.001	1990.888	1962.786	1443.1	2114.33	2146.781	2179.927	2213.272	2246.855	2280.613
SPORTING GOODS, HOBBY, BOOK, and MUSIC STORES RETAIL SALES	377.945	374.556	374.152	369.96	374.516	371.548	353.25	335.82	326.466	343.794	332.692	335.82	338.901	341.948	344.965	347.953
GENERAL MERCHANDISE STORES RETAIL SALES (in millions of 2012 d	4204.822	4204.328	4223.259	4278.401	4336.974	4321.425	4349.59	4400.362	4377.979	4479.006	4720.544	4879.987	5031.504	5175.976	5314.092	5446.464
MISCELLANEOUS STORE RETAIL SALES (in millions of 2012 dollars)	492.877	466.049	480.222	498.99	524.076	540.721	557.422	575.173	589.093	584.013	621.962	629.752	637.516	645.334	653.221	661.176
NONSTORE RETAILERS RETAIL SALES (in millions of 2012 dollars)	2008.46	2349.065	2486.108	2693.238	2939.547	3245.431	3623.25	4012.906	4640.806	5661.855	5157.779	5441.119	5740.079	6055.027	6386.512	6735.224
EATING and DRINKING PLACES SALES (in millions of 2012 dollars)	2737.368	2798.941	2925.167	3123.316	3439.217	3662.625	3866.938	4042.857	4188.11	3366.924	4493.593	4654.743	4821.024	4992.663	5169.804	5352.579

RIVERSIDE, CA [COUNTY, 06065]

[see data note at the bottom of this file]

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
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DATA NOTES:

Historical employment, earnings, income, population, and state gross regional product data, 1969 to 2019, are based on U.S. Dept. of Commerce (USDoC) historical data estimates.

All private non-farm employment and earnings data by NAICS sectors for 1969 to 2000 are estimated from SIC sector data.

Retail sales data by 2002 NAICS sectors are historical for 2002, 2007, 2012, and 2017 and are from USDoC; total retail sales includes eating & drinking places sales.

Household data are historical for 1970, 1980, 1985, 1990, 2000, and 2010 and are from USDoC.

Hispanic, or Latino, population data are historical for 1970, 1980, 1985, 1990 to 2000, and 2010 and are from USDoC.

Gross regional product (GRP) data for 2001 to 2019 are historical for the U.S., states, and counties and are from USDoC; GRP data for counties, 1969 to 2000, are estimated by Woods & Poole Economics, Inc. (W&P).

All other years of data, 1969 to 2019, for retail sales, households, and population by age, race, Spanish origin, and gender are estimated by W&P.

All data, 2020 to 2050, are projected by W&P.

Residential population data are as of July 1 in every year.

Hispanic, or Latino, population are persons of Spanish origin regardless of race; White, Black, American Indian and Alaska Native, and Asian American and Pacific Islander do not include Hispanic; these four races, plus Hispanic, sum to total residential population.

Employment data are in number of jobs include proprietors (self-employed) and part-time jobs.

Earnings by sector are earnings of wage and salary workers and proprietors; total earnings and earnings by sector are the sum of wages and salaries, proprietors income, and supplements to wages and salaries.

Net earnings are total earnings less contributions for government social insurance plus a residence adjustment.

Total personal income is earnings plus dividends, interest income, rental income, personal current transfer receipts, and a residence adjustment less contributions for government social insurance.

Households by money income bracket are historical for 1990, 2000, and 2010 only and are from USDoC and are not consistent with mean household total personal income data; the projections, 2011 to 2050, of households by money income bracket (in 2009 dollars) are based on 2010 data only.

CBSAs (MSAs and Micropolitan Statistical Areas), Combined Statistical Areas, and Metropolitan Divisions defined by Office of Management and Budget (OMB) September 2018.

Please read Technical Description of the 2021 Regional Projections and Database (Chapter 2 of the publication accompanying this data file, or in the TECH.TXT and TECH.PDF or DPTECH.PDF files provided with this data file) for an explanation of data sources, data definitions, and projection methods.

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continued	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
TOTAL POPULATION (in	2818.324	2864.449	2910.975	2957.916	3005.26	3052.931	3100.961	3149.265	3197.801	3246.51	3295.388	3344.536	3393.984	3443.827	3494.115
POPULATION AGE UN	168.652	171.598	174.474	177.375	180.262	183.134	186.015	188.788	191.415	193.842	196.045	198.122	200.212	202.307	204.484
POPULATION AGE 5 to	163.11	165.478	168.649	171.955	175.153	177.926	181.032	184.078	187.123	190.208	193.285	196.398	199.42	202.327	205.025
POPULATION AGE 10 to	183.899	181.684	179.419	177.499	176.618	177.58	180.192	183.682	187.274	190.779	193.851	197.311	200.724	204.188	207.682
POPULATION AGE 15 to	194.138	194.32	195.722	196.108	195.391	194.781	192.611	190.318	188.119	187.196	188.668	191.866	196.118	200.263	204.318
POPULATION AGE 20 to	191.979	195.566	196.863	198.945	201.172	201.118	201.46	203.064	203.845	203.146	202.501	200.238	197.933	196.227	195.821
POPULATION AGE 25 to	192.427	196.689	201.422	205.792	207.998	212.216	215.755	216.977	219.177	221.476	221.335	221.637	223.191	223.983	223.313
POPULATION AGE 30 to	197.085	198.385	199.084	200.403	204.615	208.181	212.691	217.697	222.259	224.555	229.062	232.891	234.407	236.701	239.25
POPULATION AGE 35 to	194.702	199.077	203.386	204.764	205.558	207.142	208.434	209.105	210.497	215.011	218.838	223.694	229.162	234.142	236.718
POPULATION AGE 40 to	174.521	176.732	180.645	186.709	193.881	200.173	204.701	209.115	210.581	211.46	213.126	214.529	215.286	216.89	221.769
POPULATION AGE 45 to	167.823	171.813	174.388	175.804	176.738	177.446	179.762	183.811	190.068	197.469	203.947	208.638	213.266	214.936	216.008
POPULATION AGE 50 to	154.356	156.308	158.967	162.63	166.845	170.778	174.828	177.454	178.911	179.923	180.714	183.224	187.507	194.065	201.807
POPULATION AGE 55 to	158.22	158.169	157.428	156.298	155.401	156.369	158.308	160.958	164.642	168.91	172.933	177.102	179.856	181.488	182.651
POPULATION AGE 60 to	157.031	156.887	156.989	159.088	161.498	163.078	162.98	162.124	160.85	159.866	160.818	162.812	165.542	169.326	173.8
POPULATION AGE 65 to	160.693	164.083	167.707	168.643	168.846	168.554	168.378	168.491	170.75	173.4	175.145	175.127	174.293	172.979	172.001
POPULATION AGE 70 to	135.264	142.454	148.667	155.051	160.515	164.181	167.78	171.583	172.672	173.078	172.976	173.057	173.584	176.352	179.381
POPULATION AGE 75 to	98.757	102.169	107.087	113.38	119.764	127.331	134.223	140.229	146.465	151.806	155.498	159.163	163.064	164.519	165.291
POPULATION AGE 80 to	66.758	70.263	73.861	77.725	81.762	83.133	86.28	90.712	96.342	101.959	108.575	114.613	119.889	125.573	130.364
POPULATION AGE 85 to	58.909	62.774	66.217	69.747	73.243	79.81	85.531	91.079	96.811	102.426	108.071	114.114	120.53	127.561	134.432
MEDIAN AGE of POPUL	37.43	37.69	37.95	38.2	38.42	38.63	38.84	39.05	39.24	39.43	39.6	39.74	39.87	40	40.14
WHITE NON-HISPANIC I	870.91	870.342	869.574	868.451	867.052	865.703	864.103	862.331	860.213	857.839	855.156	852.04	848.585	844.848	840.737
BLACK NON-HISPANIC F	189.383	192.045	194.627	197.278	199.829	202.271	204.659	207.039	209.425	211.769	214.042	216.351	218.594	220.723	222.837
AMERICAN INDIAN and	15.226	15.335	15.452	15.568	15.685	15.808	15.925	16.037	16.159	16.292	16.411	16.545	16.677	16.811	16.952
ASIAN AMERICAN and F	228.96	235.392	241.821	248.396	255.154	261.956	268.957	275.845	282.73	289.602	296.546	303.544	310.568	317.691	324.974
HISPANIC or LATINO PC	1513.845	1551.335	1589.501	1628.223	1667.54	1707.193	1747.317	1788.013	1829.274	1871.008	1913.233	1956.056	1999.56	2043.754	2088.615
POPULATION AGE 0 to	632.689	636.061	639.082	643.719	648.765	654.462	660.568	667.576	675.975	686.3	697.554	708.556	719.465	729.908	740.626
POPULATION AGE 15 to	117.028	117.301	116.54	116.89	116.732	115.822	113.329	111.028	110.163	111.471	114.373	116.725	119.109	121.086	123.435
POPULATION AGE 18 to	269.089	272.585	276.045	278.163	279.831	280.077	280.742	282.354	281.801	278.871	276.796	275.379	274.942	275.404	276.704
POPULATION AGE 65 YI	520.381	541.743	563.539	584.546	604.13	623.009	642.192	662.094	683.04	702.669	720.265	736.074	751.36	766.984	781.469
MALE POPULATION (in	1397.362	1419.28	1441.222	1463.273	1485.468	1507.832	1530.375	1552.858	1575.521	1598.176	1620.766	1643.384	1666.09	1689.003	1711.978
FEMALE POPULATION (1420.962	1445.169	1469.753	1494.643	1519.792	1545.099	1570.586	1596.407	1622.28	1648.334	1674.622	1701.152	1727.894	1754.824	1782.137
TOTAL EMPLOYMENT (i	1296.799	1322.413	1348.391	1374.697	1401.331	1428.282	1455.549	1483.149	1511.094	1539.379	1567.999	1596.944	1626.223	1655.85	1685.826
FARM EMPLOYMENT (7.591	7.496	7.401	7.307	7.214	7.122	7.03	6.939	6.849	6.76	6.672	6.584	6.497	6.411	6.326
FORESTRY, FISHING, R	7.404	7.379	7.354	7.329	7.303	7.277	7.251	7.224	7.198	7.17	7.142	7.114	7.086	7.057	7.027
MINING EMPLOYMEN	1.422	1.429	1.437	1.445	1.452	1.46	1.468	1.476	1.484	1.492	1.501	1.509	1.517	1.526	1.534
UTILITIES EMPLOYMEI	1.629	1.632	1.636	1.639	1.643	1.646	1.649	1.652	1.655	1.657	1.66	1.663	1.665	1.668	1.67
CONSTRUCTION EMPL	102.471	103.544	104.622	105.706	106.795	107.89	108.99	110.096	111.208	112.327	113.451	114.581	115.717	116.86	118.009
MANUFACTURING EM	51.35	51.37	51.395	51.419	51.435	51.45	51.47	51.489	51.507	51.524	51.542	51.559	51.577	51.594	51.61
WHOLESALE TRADE EM	36.754	37.336	37.924	38.517	39.115	39.718	40.325	40.935	41.549	42.165	42.783	43.402	44.024	44.649	45.278
RETAIL TRADE EMPLO	126.864	127.857	128.85	129.842	130.832	131.819	132.801	133.777	134.746	135.705	136.652	137.588	138.512	139.427	140.335
TRANSPORTATION and	99.774	103.201	106.699	110.267	113.908	117.62	121.406	125.265	129.199	133.207	137.29	141.45	145.686	149.999	154.39
INFORMATION EMPLC	9.66	9.688	9.716	9.744	9.771	9.797	9.823	9.849	9.874	9.899	9.923	9.946	9.969	9.992	10.013
FINANCE and INSURAN	48.346	49.495	50.619	51.717	52.789	53.836	54.857	55.853	56.825	57.772	58.697	59.599	60.478	61.336	62.176
REAL ESTATE and REN	59.775	60.674	61.579	62.469	63.363	64.236	65.086	65.928	66.757	67.575	68.378	69.167	69.946	70.712	71.467
PROFESSIONAL and TE	61.388	62.478	63.554	64.617	65.667	66.705	67.732	68.748	69.753	70.747	71.732	72.708	73.675	74.633	75.583
MANAGEMENT of COI	3.946	3.947	3.948	3.948	3.947	3.945	3.943	3.939	3.935	3.93	3.924	3.918	3.91	3.902	3.893
ADMINISTRATIVE and	105.735	108.865	112.053	115.3	118.606	121.972	125.4	128.892	132.447	136.068	139.755	143.51	147.335	151.23	155.196
EDUCATIONAL SERVIC	18.956	19.564	20.18	20.804	21.436	22.077	22.727	23.387	24.056	24.735	25.425	26.125	26.837	27.56	28.296

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continued	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
HEALTH CARE and SOC	166.694	172.627	178.742	185.035	191.495	198.119	204.905	211.858	218.99	226.298	233.771	241.401	249.184	257.128	265.228
ARTS, ENTERTAINMEN	30.95	31.685	32.425	33.171	33.922	34.679	35.442	36.21	36.984	37.764	38.549	39.341	40.14	40.944	41.755
ACCOMMODATION ar	117.498	120.835	124.221	127.658	131.145	134.684	138.276	141.922	145.623	149.379	153.193	157.064	160.994	164.985	169.037
OTHER SERVICES, EXCI	88.799	90.435	92.079	93.731	95.39	97.058	98.733	100.415	102.105	103.803	105.508	107.22	108.939	110.665	112.398
FEDERAL CIVILIAN GO'	7.792	7.849	7.908	7.967	8.027	8.088	8.15	8.213	8.276	8.341	8.406	8.472	8.539	8.607	8.676
FEDERAL MILITARY EM	3.994	3.995	3.996	3.997	3.998	4	4.001	4.002	4.003	4.004	4.006	4.007	4.008	4.009	4.01
STATE and LOCAL GOV	138.007	139.032	140.053	141.068	142.078	143.084	144.084	145.08	146.071	147.057	148.039	149.016	149.988	150.956	151.919
TOTAL EARNINGS (in m	64943.59	66678.84	68454.24	70270.43	72127.51	74025.99	75966.5	77950.05	79977.97	82050.81	84168.73	86332.06	88541.66	90798.94	93104.69
FARM EARNINGS (in r	506.489	500.14	493.846	487.61	481.425	475.296	469.222	463.2	457.234	451.324	445.467	439.663	433.915	428.219	422.579
FORESTRY, FISHING, R	250.5	252.525	254.535	256.524	258.492	260.434	262.357	264.252	266.126	267.971	269.789	271.578	273.341	275.068	276.766
MINING EARNINGS (in	187.733	189.411	191.121	192.854	194.62	196.415	198.242	200.1	201.99	203.915	205.872	207.867	209.896	211.963	214.069
UTILITIES EARNINGS (i	281.44	284.756	288.089	291.427	294.78	298.15	301.528	304.92	308.327	311.748	315.183	318.631	322.092	325.57	329.064
CONSTRUCTION EARN	6437.427	6541.408	6646.574	6752.928	6860.49	6969.277	7079.304	7190.574	7303.114	7416.934	7532.051	7648.471	7766.227	7885.329	8005.779
MANUFACTURING EAI	3283.348	3300.364	3317.395	3334.512	3351.788	3369.146	3386.545	3404.02	3421.583	3439.239	3456.971	3474.779	3492.67	3510.648	3528.705
WHOLESALE TRADE EA	2784.714	2847.905	2912.184	2977.562	3044.008	3111.508	3180.036	3249.581	3320.079	3391.46	3463.706	3536.824	3610.876	3685.959	3762.169
RETAIL TRADE EARNIN	4728.154	4785.928	4844.059	4902.535	4961.284	5020.273	5079.445	5138.77	5198.162	5257.528	5316.821	5376	5435.098	5494.167	5553.294
TRANSPORTATION anc	4648.592	4850.691	5059.163	5274.15	5495.794	5724.241	5959.633	6202.121	6451.851	6708.975	6973.646	7246.015	7526.238	7814.472	8110.874
INFORMATION EARNII	630.374	636.62	642.846	649.05	655.229	661.382	667.506	673.599	679.66	685.685	691.673	697.621	703.528	709.39	715.207
FINANCE and INSURAN	1393.794	1436.108	1478.144	1519.89	1561.335	1602.474	1643.298	1683.818	1724.032	1763.945	1803.572	1842.91	1881.968	1920.773	1959.386
REAL ESTATE and REN'	1445.621	1477.239	1508.805	1540.36	1571.871	1603.386	1634.915	1666.433	1697.949	1729.465	1760.99	1792.526	1824.072	1855.633	1887.211
PROFESSIONAL and TE	2909.682	3001.026	3093.358	3186.691	3281.043	3376.428	3472.862	3570.362	3668.945	3768.63	3869.434	3971.375	4074.475	4178.752	4284.226
MANAGEMENT of COI	348.936	353.535	358.082	362.573	367.005	371.372	375.671	379.896	384.044	388.11	392.09	395.98	399.774	403.469	407.061
ADMINISTRATIVE and	3791.496	3949.395	4112.304	4280.364	4453.71	4632.503	4816.887	5007.029	5203.073	5405.196	5613.562	5828.347	6049.726	6277.89	6513.014
EDUCATIONAL SERVIC	629.372	659.176	689.943	721.706	754.5	788.362	823.328	859.438	896.734	935.257	975.052	1016.165	1058.64	1102.533	1147.892
HEALTH CARE and SOC	8482.351	8871.357	9276.167	9696.88	10133.19	10585.2	11053.17	11537.66	12039.58	12559.14	13096	13650.01	14221.32	14810.62	15417.9
ARTS, ENTERTAINMEN	840.1	865.435	891.206	917.421	944.087	971.212	998.806	1026.876	1055.432	1084.482	1114.035	1144.101	1174.69	1205.811	1237.474
ACCOMMODATION ar	3586.175	3720.618	3858.508	3999.927	4144.954	4293.672	4446.167	4602.526	4762.838	4927.195	5095.691	5268.422	5445.486	5626.986	5813.025
OTHER SERVICES, EXCI	3517.845	3609.356	3702.247	3796.528	3892.207	3989.294	4087.798	4187.727	4289.09	4391.895	4496.152	4601.867	4709.05	4817.707	4927.846
FEDERAL CIVILIAN GO'	951.29	970.316	989.702	1009.453	1029.577	1050.08	1070.968	1092.249	1113.929	1136.014	1158.513	1181.432	1204.779	1228.56	1252.784
FEDERAL MILITARY EA	176.951	179.783	182.64	185.514	188.41	191.329	194.269	197.234	200.22	203.228	206.262	209.317	212.398	215.505	218.636
STATE and LOCAL GOV	13131.21	13395.74	13663.33	13933.97	14207.71	14484.56	14764.54	15047.67	15333.97	15623.48	15916.2	16212.17	16511.4	16813.91	17119.73
TOTAL PERSONAL INCO	122078.8	125843.7	129706	133666.2	137722.9	141876.4	146127.7	150479.1	154934.2	159493.5	164155.6	168919.8	173787.2	178761	183841.7
WAGES and SALARIES	44207.1	45378.02	46575.1	47798.96	49049.77	50327.94	51633.94	52968.54	54332.68	55726.81	57151.03	58605.56	60090.99	61608.33	63158.18
SUPPLEMENTS to WAC	12058.15	12397.72	12744.43	13098.4	13459.7	13828.47	14204.87	14589.14	14981.55	15382.22	15791.25	16208.74	16634.88	17069.96	17514.12
PROPRIETORS INCOMI	8678.339	8903.101	9134.714	9373.073	9618.047	9869.59	10127.69	10392.38	10663.74	10941.78	11226.45	11517.77	11815.79	12120.65	12432.4
DIVIDENDS, INTEREST	20821.49	21519.75	22233.8	22963.95	23710.47	24473.59	25253.64	26050.82	26865.41	27697.64	28547.81	29416.37	30303.66	31210.13	32136.19
PERSONAL CURRENT T	25543.04	26603.3	27700.34	28833.74	30001.81	31203.98	32440.36	33711.75	35020.05	36364.91	37744.49	39157.6	40603.89	42084.68	43599.14
CONTRIBUTIONS for G	7043.647	7223.53	7407.156	7594.606	7785.939	7981.217	8180.499	8383.851	8591.343	8803.037	9018.984	9239.24	9463.868	9692.936	9926.486
RESIDENCE ADJUSTME	17814.34	18265.36	18724.74	19192.66	19669.07	20154.07	20647.74	21150.32	21662.11	22183.2	22713.54	23253.05	23801.85	24360.2	24928.2
NET EARNINGS (in millio	75714.28	77720.66	79771.83	81868.48	84010.64	86198.84	88433.73	90716.52	93048.73	95430.97	97863.28	100345.9	102879.6	105466.2	108106.4
TOTAL PERSONAL INCO	43316	43933	44558	45189	45827	46472	47123	47782	48450	49128	49814	50506	51204	51908	52615
TOTAL PERSONAL INCO	57804	60466	63294	66290	69447	72768	76255	79918	83768	87813	92058	96510	101174	106058	111172
WOODS & POOLE ECON	76.03	75.94	75.85	75.77	75.7	75.63	75.56	75.5	75.44	75.39	75.34	75.29	75.24	75.2	75.16
GROSS REGIONAL PROJ	108197.1	111143.8	114158	117240.7	120391.9	123612.3	126903	130265.5	133701.8	137212.9	140798.7	144459.8	148197.4	152013.6	155909.8
PERSONS PER HOUSEHI	2.92	2.92	2.92	2.92	2.92	2.93	2.93	2.93	2.93	2.94	2.94	2.94	2.95	2.95	2.96
TOTAL RETAIL SALES PE	48374	48837	49308	49789	50278	50779	51292	51816	52352	52899	53459	54033	54622	55223	55831
MEAN HOUSEHOLD TO'	126999	128744	130558	132433	134357	136335	138362	140431	142545	144696	146880	149098	151349	153619	155881
MEAN HOUSEHOLD TO'	169476	177193	185459	194272	203606	213479	223897	234878	246453	258636	271442	284903	299047	313877	329367

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continued	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
TOTAL NUMBER of HOI	951.767	967.91	983.846	999.62	1015.299	1030.83	1046.26	1061.636	1076.952	1092.26	1107.577	1122.873	1138.149	1153.532	1169.228
NUMBER of HOUSEHC	42.429	42.409	42.356	42.272	42.159	42.017	41.847	41.651	41.623	41.576	41.511	41.428	41.327	41.211	41.089
NUMBER of HOUSEHC	83.025	82.986	82.882	82.717	82.498	82.219	81.886	81.503	81.447	81.356	81.23	81.068	80.868	80.643	80.402
NUMBER of HOUSEHC	84.042	84.004	83.898	83.731	83.509	83.227	82.889	82.502	82.446	82.353	82.225	82.061	81.86	81.631	81.387
NUMBER of HOUSEHC	113.74	113.688	113.545	113.319	113.019	112.636	112.18	111.656	111.578	111.453	111.281	111.059	110.786	110.476	110.148
NUMBER of HOUSEHC	95.287	95.243	95.124	94.934	94.682	94.362	93.981	93.541	93.477	93.372	93.227	93.04	92.813	92.553	92.277
NUMBER of HOUSEHC	115.424	117.136	118.538	119.606	120.319	120.637	120.53	119.966	119.884	119.749	119.564	119.325	119.032	118.699	118.346
NUMBER of HOUSEHC	157.962	163.491	169.185	175.06	181.135	187.419	193.926	200.682	206.457	212.149	217.749	223.233	228.584	233.811	238.941
NUMBER of HOUSEHC	95.689	99.038	102.487	106.045	109.726	113.532	117.475	121.568	125.214	128.975	132.856	136.858	140.99	145.272	149.739
NUMBER of HOUSEHC	63.864	66.1	68.401	70.776	73.233	75.773	78.405	81.136	83.571	86.08	88.67	91.342	94.099	96.957	99.938
NUMBER of HOUSEHC	57.834	59.858	61.942	64.093	66.318	68.618	71.001	73.474	75.679	77.952	80.297	82.716	85.213	87.801	90.501
NUMBER of HOUSEHC	42.471	43.957	45.488	47.067	48.701	50.39	52.14	53.957	55.576	57.245	58.967	60.743	62.577	64.478	66.46
TOTAL RETAIL SALES, IN	46040.69	47269.35	48511.63	49769.86	51047.19	52344.52	53664.53	55009.24	56380.08	57779.61	59209.6	60671.78	62167.98	63701.96	65278.9
MOTOR VEHICLES and	9025.878	9178.682	9327.379	9471.963	9613.157	9750.659	9884.946	10016.13	10144.14	10269.48	10392.09	10512.11	10629.56	10745.2	10860.46
FURNITURE and HOMI	794.136	811.458	827.326	841.917	855.408	867.913	879.553	890.42	900.585	910.129	919.104	927.562	935.542	943.109	950.354
ELECTRONICS and APP	563.052	569.34	575.312	580.955	586.256	591.2	595.771	599.954	603.735	607.098	610.029	612.516	614.545	616.105	617.186
BUILDING MATERIALS	2347.613	2393.116	2436.507	2478.08	2518.143	2556.816	2594.278	2630.64	2665.965	2700.371	2733.912	2766.645	2798.598	2829.911	2860.847
FOOD and BEVERAGE	5969.309	6084.957	6198.279	6309.587	6419.403	6527.241	6633.461	6738.368	6841.836	6944.292	7045.807	7146.064	7245.012	7343.6	7443.413
HEALTH and PERSONA	2517.008	2597.983	2681.193	2766.678	2854.478	2944.623	3037.155	3132.101	3229.485	3329.339	3431.691	3536.585	3644.056	3754.152	3866.923
GASOLINE STATIONS F	3272.405	3334.99	3397.427	3459.68	3521.716	3583.476	3644.931	3706.018	3766.681	3826.867	3886.527	3945.633	4004.142	4062.036	4119.301
CLOTHING and CLOTH	2314.48	2348.471	2382.53	2416.705	2450.932	2485.175	2519.406	2553.578	2587.612	2621.442	2655.064	2688.494	2721.764	2754.92	2787.985
SPORTING GOODS, HC	350.912	353.841	356.741	359.61	362.445	365.244	368.006	370.726	373.402	376.032	378.611	381.142	383.62	386.045	388.418
GENERAL MERCHAND	5573.665	5696.207	5814.581	5929.209	6040.487	6148.741	6254.312	6357.475	6458.496	6557.624	6655.088	6751.123	6845.928	6939.723	7032.736
MISCELLANEOUS STOF	669.2	677.293	685.462	693.707	702.023	710.399	718.837	727.325	735.862	744.436	753.043	761.694	770.388	779.145	787.973
NONSTORE RETAILERS	7101.899	7487.418	7892.759	8318.882	8766.76	9237.498	9732.182	10251.95	10798.02	11371.61	11974.04	12606.71	13271.06	13968.49	14700.36
EATING and DRINKING	5541.128	5735.596	5936.137	6142.888	6355.981	6575.536	6801.694	7034.563	7274.257	7520.894	7774.594	8035.506	8303.765	8579.524	8862.94

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Alternatives Technical Memorandum

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Technical Memorandum Potential Airfield Improvements

March Inland Port Airport Authority

Riverside County, California

FAA AIP No.: 3-06-0201-015-2021



October 2023

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1 Introduction

The master plan developed for the civilian operations at March Inland Port Airport explored opportunities to improve the efficiency and uniformity of the RIV airfield outside of the MJPA leasehold. However, through discussions with both JPA and base staff it was recognized that for the areas outside of their leasehold the authority of the MJPA was limited to making recommendations and suggestions. For this reason, the majority of the capital projects identified in the master plan were within the MJPA leasehold and recommendations for projects outside the leasehold were caveated with the note that they would need support from the base in order to proceed. This technical memorandum introduces several additional airfield improvement projects that were discussed internally but were not included in the master plan documents for the reasons listed above.

The following sections explore several alternative projects relating to potential Runway 12/30 improvements and a potential complete parallel taxiway to support operations on Runway 14/32.

2 Potential Runway 12/30 Alternatives

RIV is home to two runways, however only the larger of the two, Runway 14/32, is open to the public. Runway 12/30 is available only for military use, however the pavement is currently in such poor condition that the runway is unused. As discussed in the Facility Requirements section, there would be several benefits to both the military and the civilian operations at the Airport if Runway 12/30 were to be opened to public use. The potential benefits include the following.

- ◆ **Redundancy:** Having two runways would simplify airfield maintenance projects and would allow for continued operations in the event of a runway obstruction or emergency.
- ◆ **Separation:** Using one runway for military operations and one runway for civilian operations would help to separate these two distinctly different types of traffic. For example, if Runway 12/30 were extended to 7,000 FT it would accommodate the majority of military operations leaving less traffic on Runway 14/32 for air cargo operations
- ◆ **Capacity:** The current 21,000 civil operations limit is intended to prevent the civil side of the Airport from interfering with or delaying any aspects of the military operation. The presence of two runways would mitigate this issue and could potentially lead to an increase in the civil operations cap.
- ◆ **Support:** Having a secondary runway open to military and civilian operations, jointly funded by the FAA and Department of Defense, would increase the overall resiliency of the operations of both the Air Reserve Base and the MJPA.

Runway 12/30 is currently in poor condition and would require pavement improvements in order to bring it back to a usable state. The following alternatives explore what the airfield would look like if Runway 12/30 was opened to the public and also looks at the possibility of extending the runway so that it could accommodate an increased fleet mix of both military and civilian aircraft.

2.1.1 Alternative 1 – Reconstruct Existing Dimensions (3,061 FT x 100 FT)

The first alternative proposes to reconstruct Runway 12/30 to its existing dimensions of 3,061 FT by 100 FT. With this runway open to the public it will be able to divert the smallest of the general aviation fleet away from Runway 14/32 and help to separate small and large aircraft operations. However, the relatively short length of the runway would mean that it would not accommodate the majority of the civilian aircraft operating at RIV including most corporate aircraft and cargo aircraft. Therefore, reconstructing the runway in its existing condition has a marginal benefit for the MJPA. This alternative is presented on **Figure 2.1** below.

2.1.2 Alternative 2 - Extension to 7,000 FT (7,000 FT x 150 FT)

The second Runway 12/30 alternative explores the possibility of extending the runway to 7,000 FT. A widening to a width of 150 FT is also recommended due to the anticipated increased use of this runway by large aircraft that have greater requirements. In order to anticipate potential non-compatible land uses adjacent to the potential runway extension the military protected surfaces associated with a Class B runway are shown.

This alternative would keep the Runway 30 end in essentially the same position as it is today and it would relocate the Runway 12 end to the edge of existing pavement at Taxiway F. This would result in an extension of 3,939 FT and would move the Runway 12 end back to its original location as it was in the 1950's. A 7,000 FT runway would accommodate operations by the majority of the military and civilian aircraft fleets.

As seen in **Figure 2.2** below, an extension to this length and an increase in the classification of the runway from a Class A to a Class B would introduce a significant amount of incompatible land uses inside the areas designated to be clear by the military. In the time since Runway 12/30 was previously in a similar configuration, the military standards have changed and there has been a significant amount of development surrounding the Airport.

2.1.3 Alternative 3 – Extension to 5,500 FT (5,500 FT x 150 FT)

The final Runway 12/30 alternative that was analyzed is an extension to 5,500 FT. As in the previous alternative this would also entail widening the runway to 150 FT to meet the requirements of the larger aircraft that anticipated to use the runway after the extension. The reason for the shorter recommended extension relative to Alternative 2 is to minimize impacts

of increasing the dimensions of the protected surfaces surrounding the runway. This scaled back version of the runway extension will keep the most critical and restrictive of the military surfaces, the clear zone, outside of the MIPA leasehold. Additionally, it will limit the extension to the Runway 12 end so that the off-airport portion of the future Runway 12 clear zone will fall entirely within the existing Runway 14 clear zone. The alternative is depicted in **Figure 2.3** below.

2.1.4 Comparison of Runway 12/30 Alternatives

The table below explores some of the advantages and disadvantages of the previously discussed alternatives for Runway 12/30 improvements.

Table 2.1 - Potential Runway 12/30 Improvements Comparison

Criteria	Advantages	Disadvantages
Alternative 1 – Existing Conditions 3,061 FT	<ul style="list-style-type: none"> ◆ No increase in protected airspace and other surfaces ◆ Separation of jet and military traffic from small GA traffic 	<ul style="list-style-type: none"> ◆ Too short for the majority of military and civilian aircraft operations
Alternative 2 – 7,000 FT	<ul style="list-style-type: none"> ◆ Would accommodate the majority of military and civilian aircraft ◆ Increased redundancy ◆ Would allow for greater separation of military and civilian operations ◆ Increases the capacity of the Airport 	<ul style="list-style-type: none"> ◆ Significant impact to MIPA leasehold when protected airspace and other surfaces are expanded
Alternative 3 – 5,500 FT	<ul style="list-style-type: none"> ◆ Accommodates a large portion of the military fleet and smaller (737-size) cargo aircraft ◆ Increased redundancy ◆ Would allow for greater separation of military and civilian operations ◆ Increases the capacity of the Airport ◆ Reduces the impact of the larger safety areas relative to Alternative 2 	<ul style="list-style-type: none"> ◆ Does not accommodate the full military and civilian fleet mix

Source: C&S Engineers, Inc.

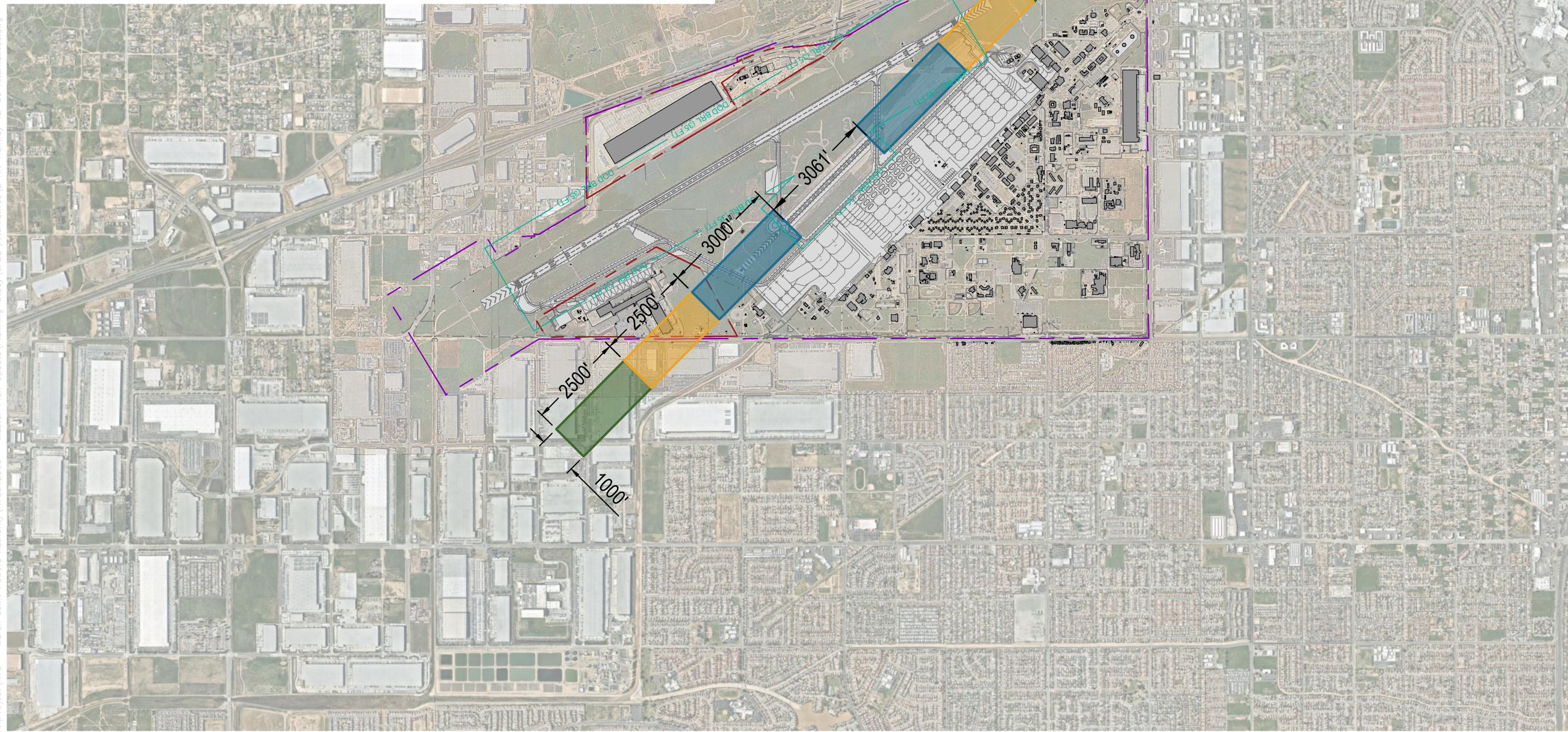
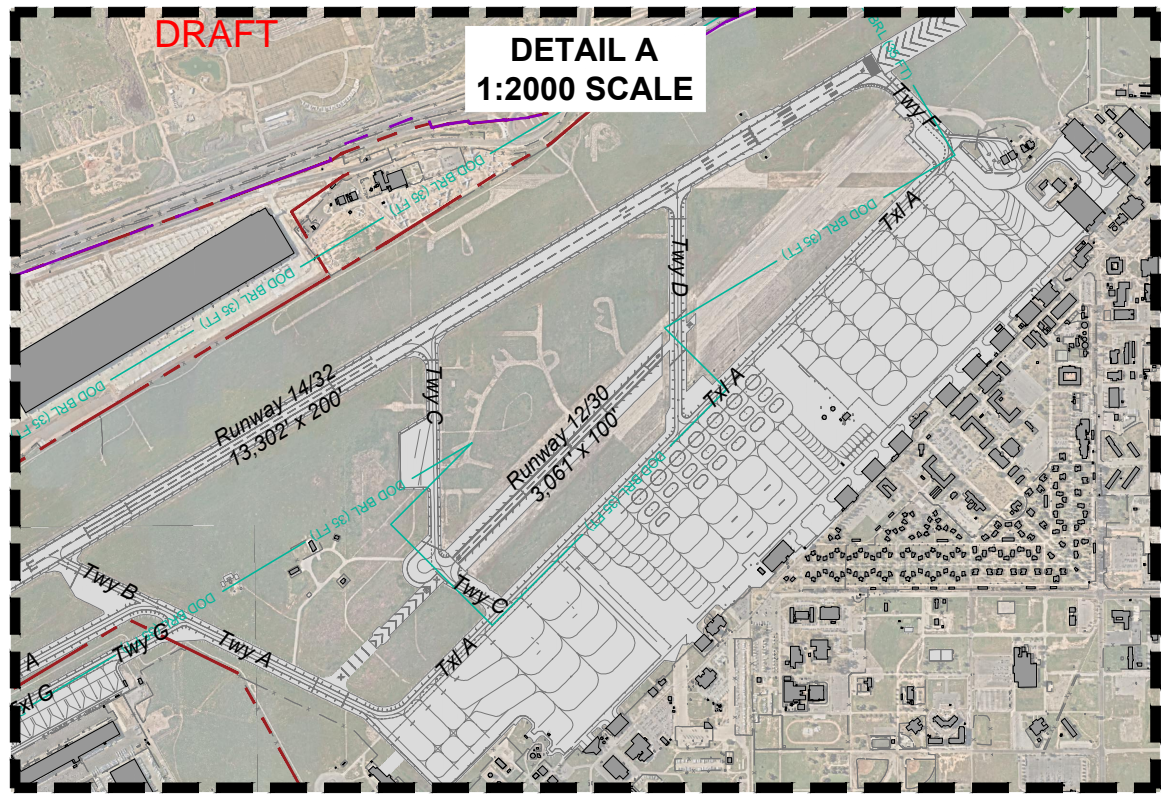
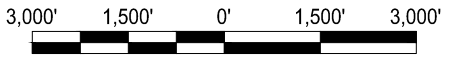


Figure 2.1
Runway 12/30
Existing Conditions

- Airport Property Line
- Civilian Aviation Area Conveyances
- Existing Buildings
- Existing Pavement
- Clear Zone - Class A
- Accident Potential Zone I - Class A
- Accident Potential Zone II - Class A
- Clear Zone - Class B
- Accident Potential Zone I - Class B
- Accident Potential Zone II - Class B



March Inland Port Airport
Master Plan

Source: C&S Engineers, Inc., Aerial imagery provided by NearMap

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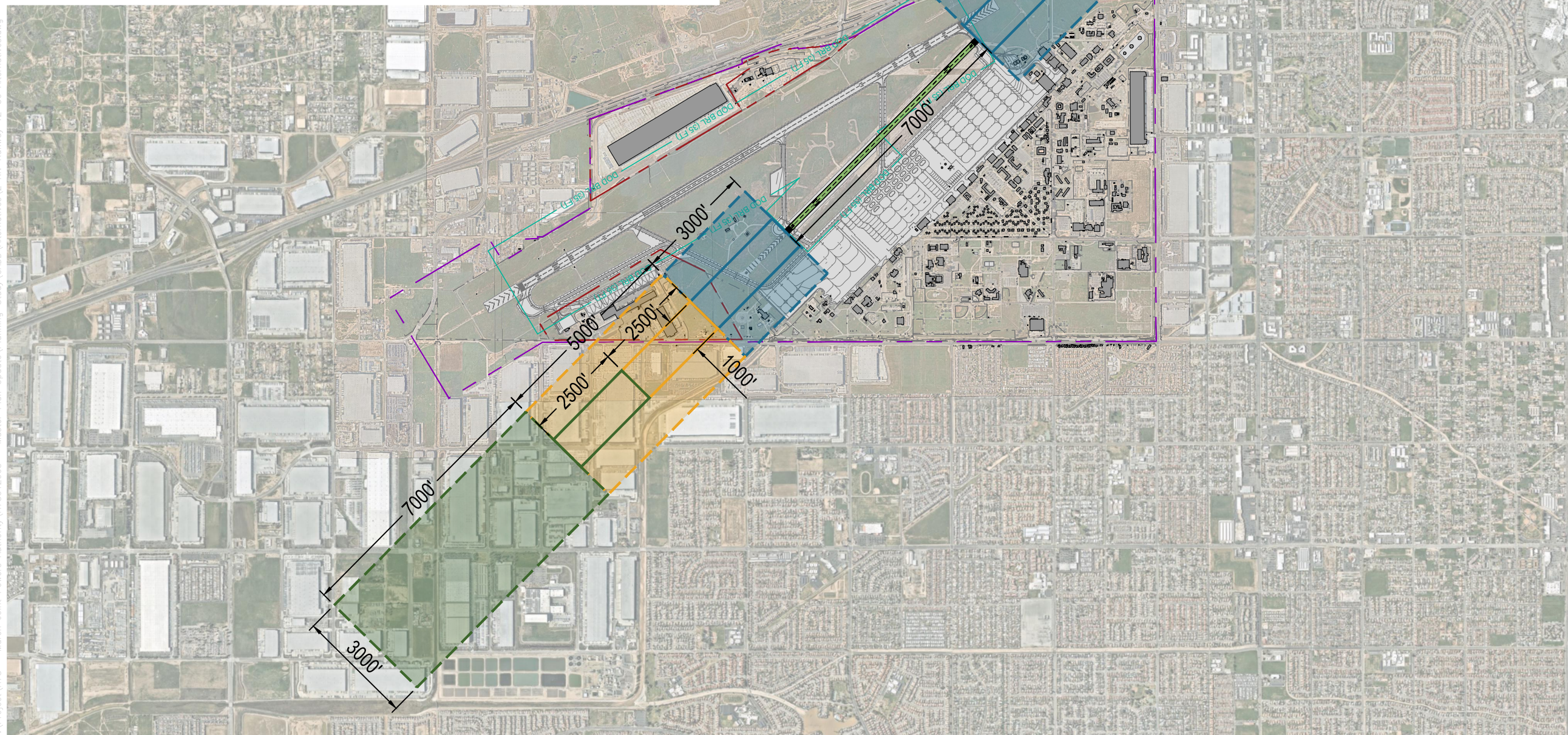
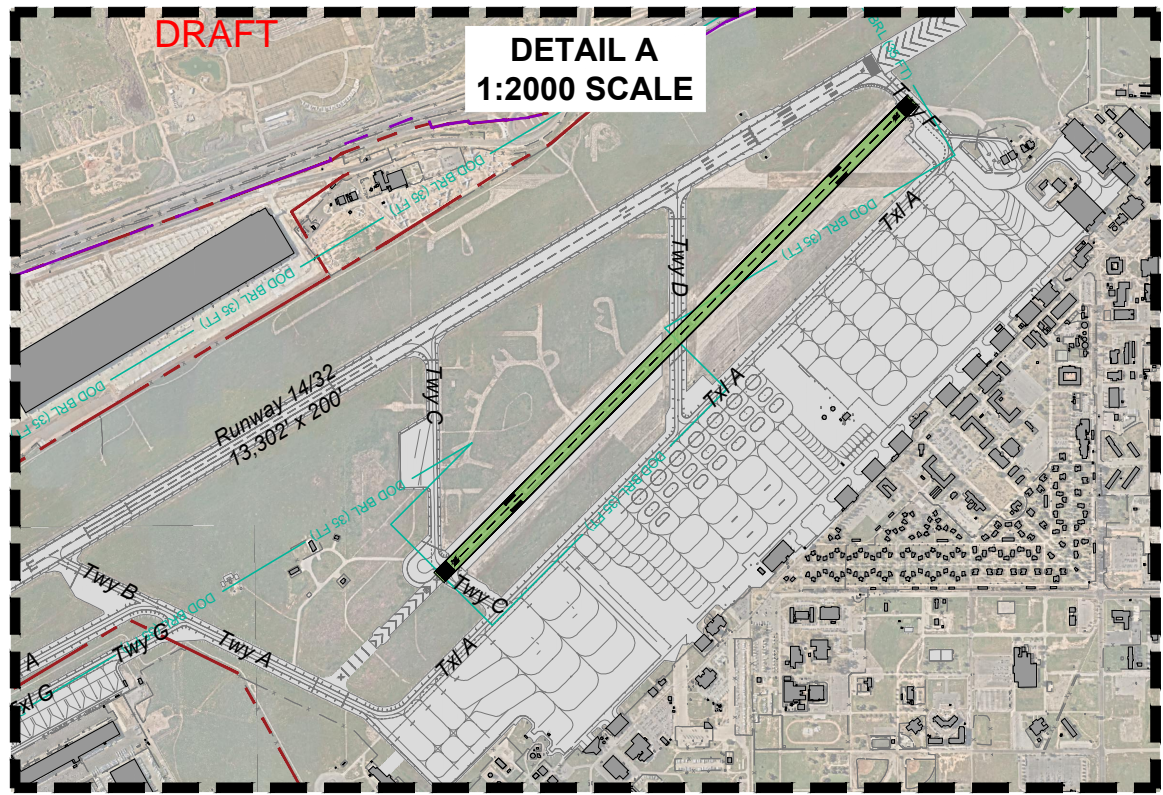
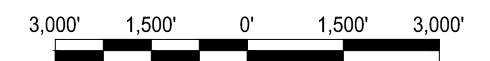


Figure 2.2
Runway 12/30
Extension to
7,000 FT

- Airport Property Line
- Civilian Aviation Area Conveyances
- Existing Buildings
- Existing Pavement
- Clear Zone - Class A
- Accident Potential Zone I - Class A
- Accident Potential Zone II - Class A
- Clear Zone - Class B
- Accident Potential Zone I - Class B
- Accident Potential Zone II - Class B



March Inland Port Airport
Master Plan

Source: C&S Engineers, Inc., Aerial imagery provided by NearMap

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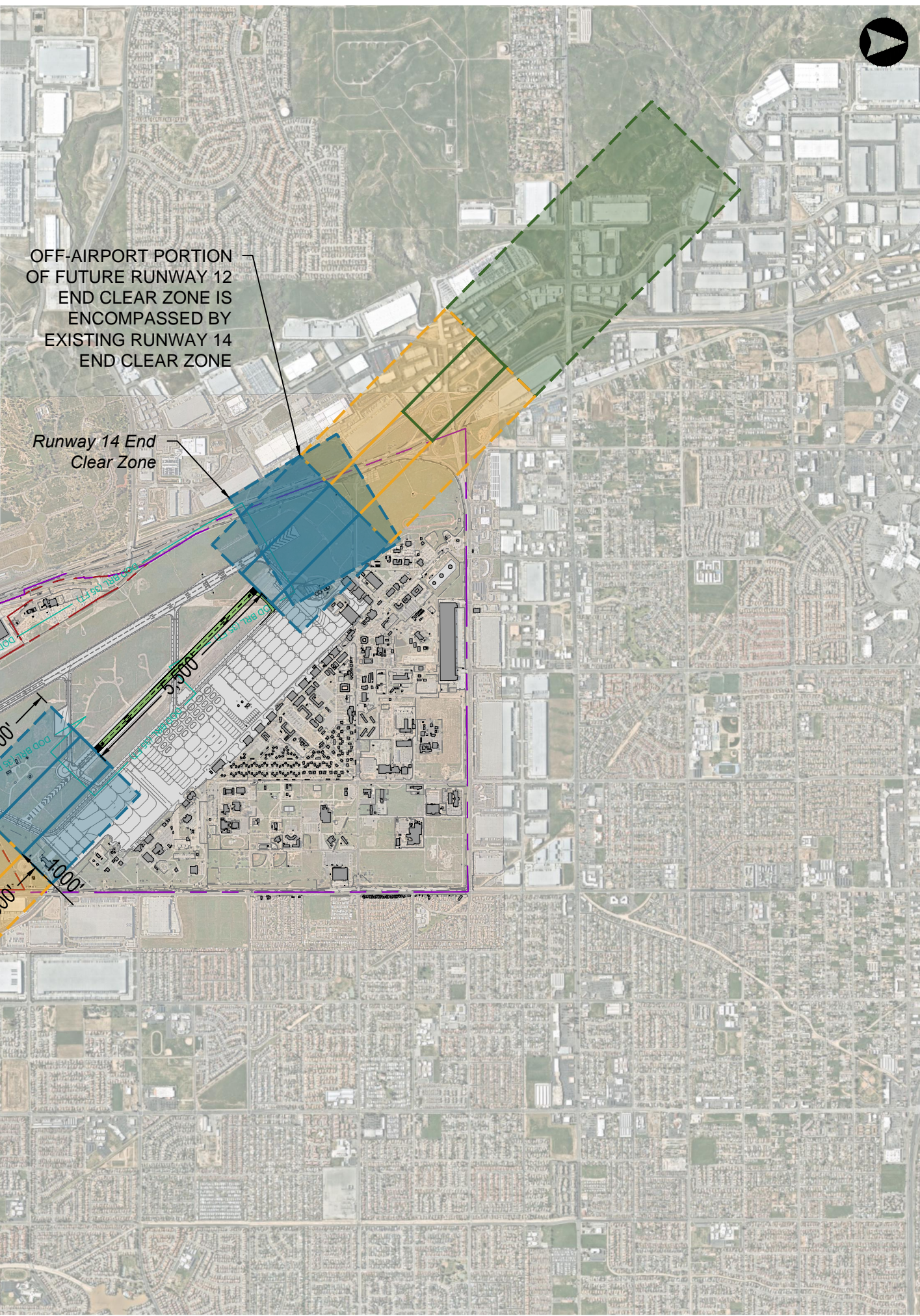
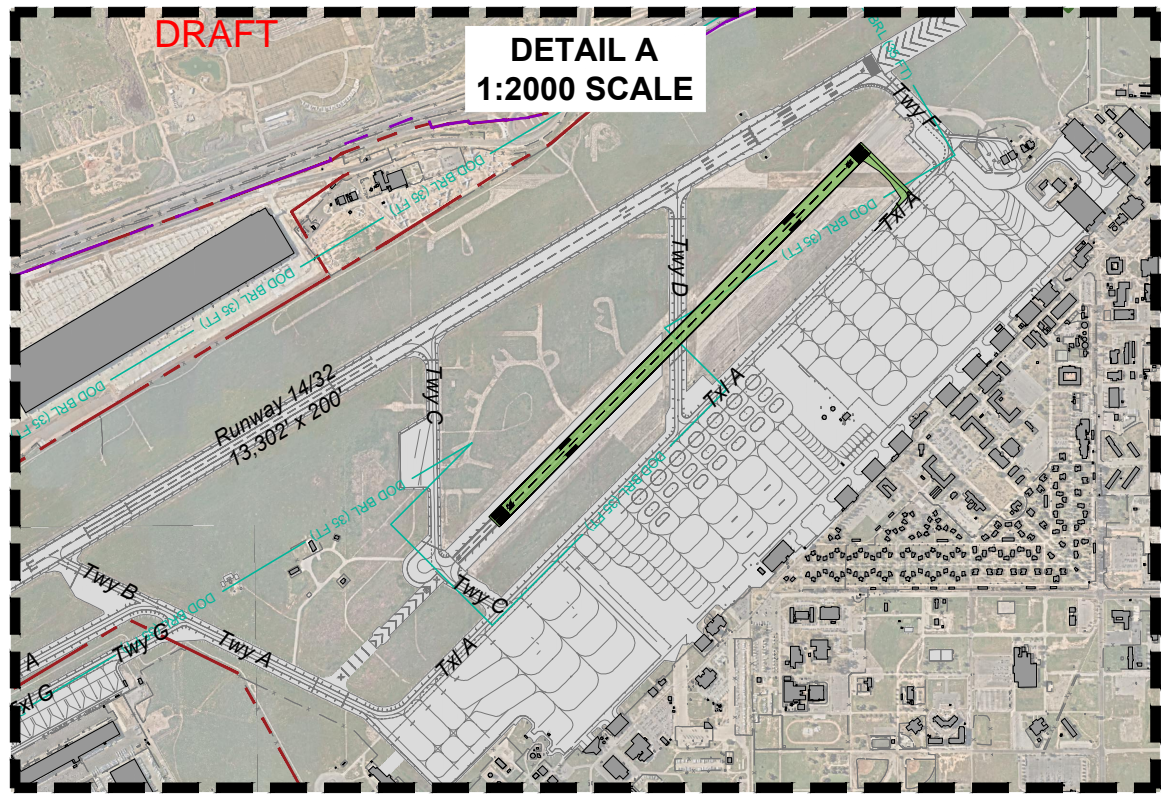
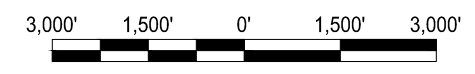


Figure 2.3
Runway 12/30
Extension to
5,500 FT

- Airport Property Line
- Civilian Aviation Area Conveyances
- Existing Buildings
- Existing Pavement
- Clear Zone - Class A
- Accident Potential Zone I - Class A
- Accident Potential Zone II - Class A
- Clear Zone - Class B
- Accident Potential Zone I - Class B
- Accident Potential Zone II - Class B



March Inland Port Airport
Master Plan

Source: C&S Engineers, Inc., Aerial imagery provided by NearMap

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3 Potential Taxiway Improvements

The analysis of the taxiway system at RIV identified several areas for improvement. The main deficiencies noted were lack of compliance with best practices for taxiway geometry design, and the absence of a full-length uninterrupted parallel taxiway. Potential projects to address these deficiencies are depicted below.

3.1 Overall Taxiway Geometry Improvements

Taxiway design should keep basic concepts in mind to reduce the probability of runway incursions through proper design. Several locations at the Airport do not meet the latest FAA guidance on best practices for taxiway design. The areas identified for improvements are listed below.

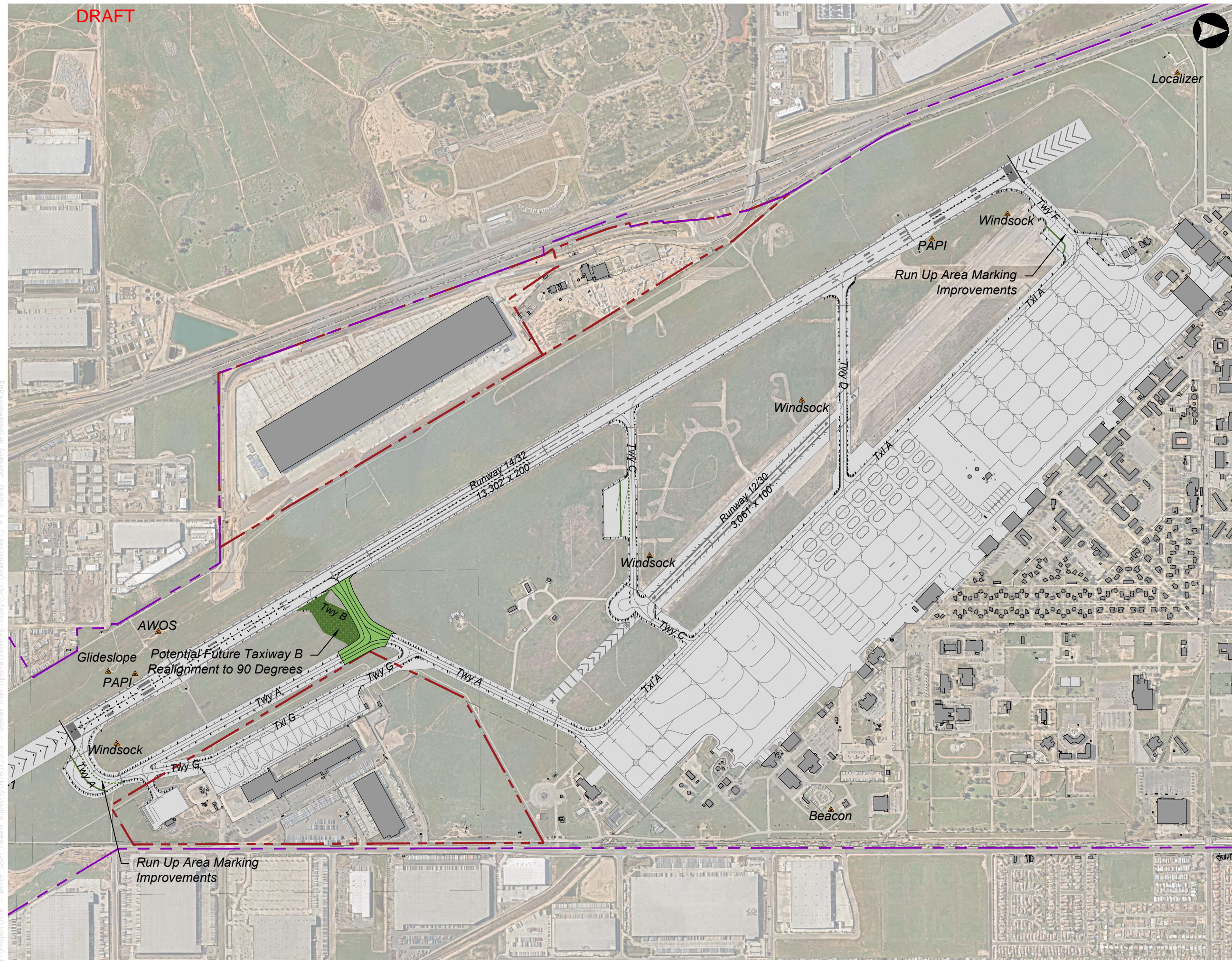
- ◆ Wide expanse of pavement at Runway 32 end
 - ◆ Recommended Improvement: Improve markings in this area so that there is a clear distinction between the taxiway and the holding bay
- ◆ Wide expanse of pavement at Taxiway B and runway
 - ◆ Recommended Improvement: Realign Taxiway B and Runway 14/32 intersection to be 90-degrees and remove excess pavement
- ◆ Runway 14 and 32 end taxiways are not at 90 degrees
 - ◆ Recommended Improvement: Improve markings at the Runway 32 end holding bay so that there is a clear distinction between the taxiway and the holding bay. A re-alignment of the Taxiway F entrance to the Runway 14 end would require a significant amount of construction for a marginal improvement in the entrance angle. Modifications could be considered at the time of the next taxiway reconstruction, but no project is recommended in the meantime.
- ◆ Poor guidance for holding bay markings
 - ◆ Recommended Improvement: Improve markings at the Runway 32 holding bay, Taxiway C holding bay, and Taxiway F holding bay to clearly delineate the active taxiway from the holding bay
- ◆ Taxiway A designation is used for a parallel taxiway and an entrance/exit taxiway
 - ◆ Recommended Improvement: Coordinate with March ARB air traffic controllers to rename Taxiway A at the Runway 32 end.
- ◆ Taxiway A makes multiple turns and still retains the same designation. Standard practice is to use a different taxiway designation if a significant change in direction is made.
 - ◆ Recommended Improvement: Coordinate with March ARB air traffic controllers to rename Taxiway A at each significant change in direction







Each of these improvements are presented on **Figure 3.1** below.

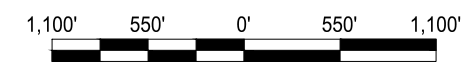
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Figure 3.1 Taxiway Geometry Improvements



-  Airport Property Line
-  Civilian Aviation Area Conveyances
-  Existing Buildings
-  Existing Pavement
-  Proposed Pavement
-  Proposed Demolition



March Inland Port Airport Master Plan

Source: C&S Engineers, Inc., Aerial imagery provided by NearMap

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3.2 Parallel Taxiway Alternatives

As discussed in the Facility Requirements section, Runway 14/32 does not have the benefit of a full-length uninterrupted parallel taxiway. A civil aircraft arriving on Runway 32 and using the full length of the runway is required to taxi on the military apron and around Runway 12/30 in order to return to the civilian apron. This route is approximately one third of a mile longer than if a direct route was available. Additionally, any civil aircraft arriving on Runway 32 without using the full length can utilize Taxiway C or Taxiway D, but will then be required to cross Runway 12/30 in order to return to the civilian apron. For these reasons the construction of a full-length parallel taxiway was evaluated on either the east or west side of Runway 14/32.

3.2.1 Parallel Taxiway Alternative 1 – Full Westside

The first alternative for constructing a full-length parallel taxiway proposes to build on the west side of Runway 14/32. This alternative is similar to what is currently shown on the approved Airport Layout Plan (ALP). However, since the development of the previous ALP, it is now understood that the military requires a runway centerline to taxiway centerline separation of 1,000 FT. The previous ALP showed the parallel taxiway at 600 FT from the Runway 14/32 centerline. Due to the existing development on the west side of the airfield achieving the full requirement of a 1,000 FT separation is not feasible. The maximum achievable separation is 800 FT for approximately 75% of the proposed taxiway, dropping down to 600 FT near the Runway 32 end. While this separation meets the FAA standards it does not satisfy the military standards which take precedent. It is understood that this development will not happen unless a waiver is able to be obtained for constructing a parallel taxiway with less than the required runway separation.

The construction of this project would only provide a significant benefit to the Airport in the event that either the current Target facility or Air Museum were to be converted to aeronautical use businesses that required airfield access. Currently the Target facility does not require airfield access and while the Air Museum does occasionally bring in new aircraft they have an established route that allows this operation without requiring the construction of a full taxiway.

This alternative is depicted in **Figure 3.2**.

3.2.2 Parallel Taxiway Alternative 2 – Full Eastside

The second full-length parallel taxiway alternative proposes to construct a taxiway on the east side of Runway 14/32. This taxiway would extend the existing Taxiway A alignment from the intersection of Taxiway B all the way to Taxiway F. Unlike the previous alternative, the east side of Runway 14/32 has sufficient space to meet the military requirement of 1,000 FT runway centerline to taxiway centerline separation. However, this placement would require relocation of

the ordinance disposal area and the munitions storage area. This location for a parallel taxiway would also eliminate the possibility of any extension of Runway 12/30 to the north.

This alternative is depicted in **Figure 3.3**.

3.2.3 Comparison of Parallel Taxiway Alternatives

The table below explores some of the advantages and disadvantages of the previously discussed alternatives for a full parallel taxiway to Runway 14/32.

Table 3.1 - Potential Runway 14/32 Parallel Taxiway Comparison

Criteria	Advantages	Disadvantages
Alternative 1 – West Side	<ul style="list-style-type: none"> ◆ Provides airfield access to the west side of Runway 14/32 ◆ Eliminates the need for civilian aircraft to taxi on the military apron ◆ Shortens civilian aircraft taxi time 	<ul style="list-style-type: none"> ◆ Would require a waiver from the military for non-standard runway centerline to taxiway centerline separation ◆ Provides a marginal benefit unless properties to the west of Runway 14/32 are aeronautical use requiring airfield access ◆ Requires relocation of military weather reporting station
Alternative 2 – East Side	<ul style="list-style-type: none"> ◆ Meets military runway centerline to taxiway centerline separation requirement of 1,000 FT ◆ Eliminates the need for civilian aircraft to taxi on the military apron ◆ Shortens civilian aircraft taxi time 	<ul style="list-style-type: none"> ◆ Requires relocation of the military ordinance disposal area and munitions storage area ◆ Prevents future extension or Runway 12/30 to the north

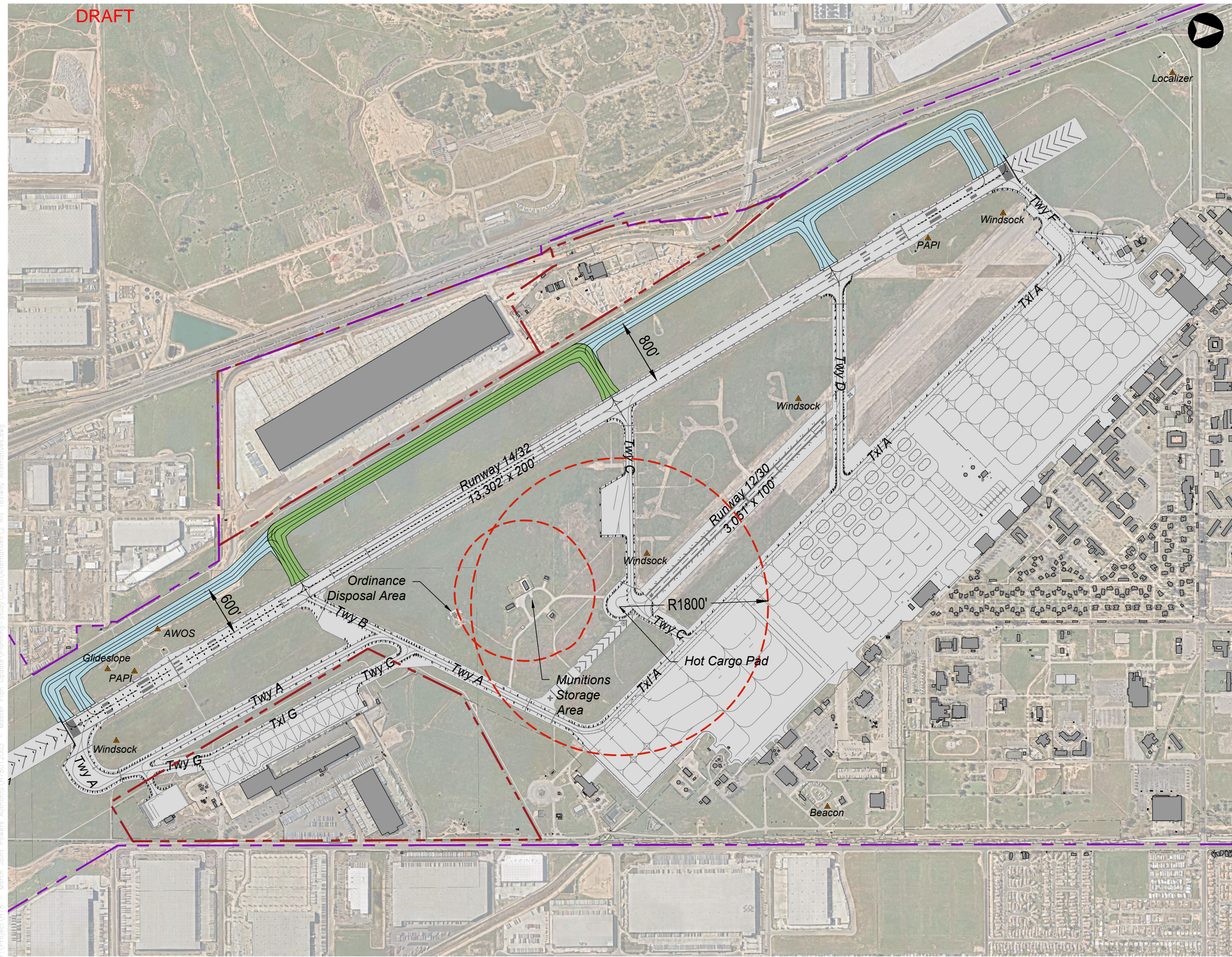
Source: C&S Engineers, Inc.

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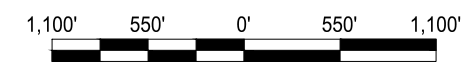


Figure 3.2

Proposed West Side Parallel Taxiway



- Airport Property Line
- Civilian Aviation Area Conveyances
- Existing Buildings
- Existing Pavement
- Proposed Pavement - Phase 1
- Proposed Pavement - Phase 2
- Hazardous Cargo and Explosive Safety Clearances



March Inland Port Airport Master Plan

Source: C&S Engineers, Inc., Aerial imagery provided by NearMap

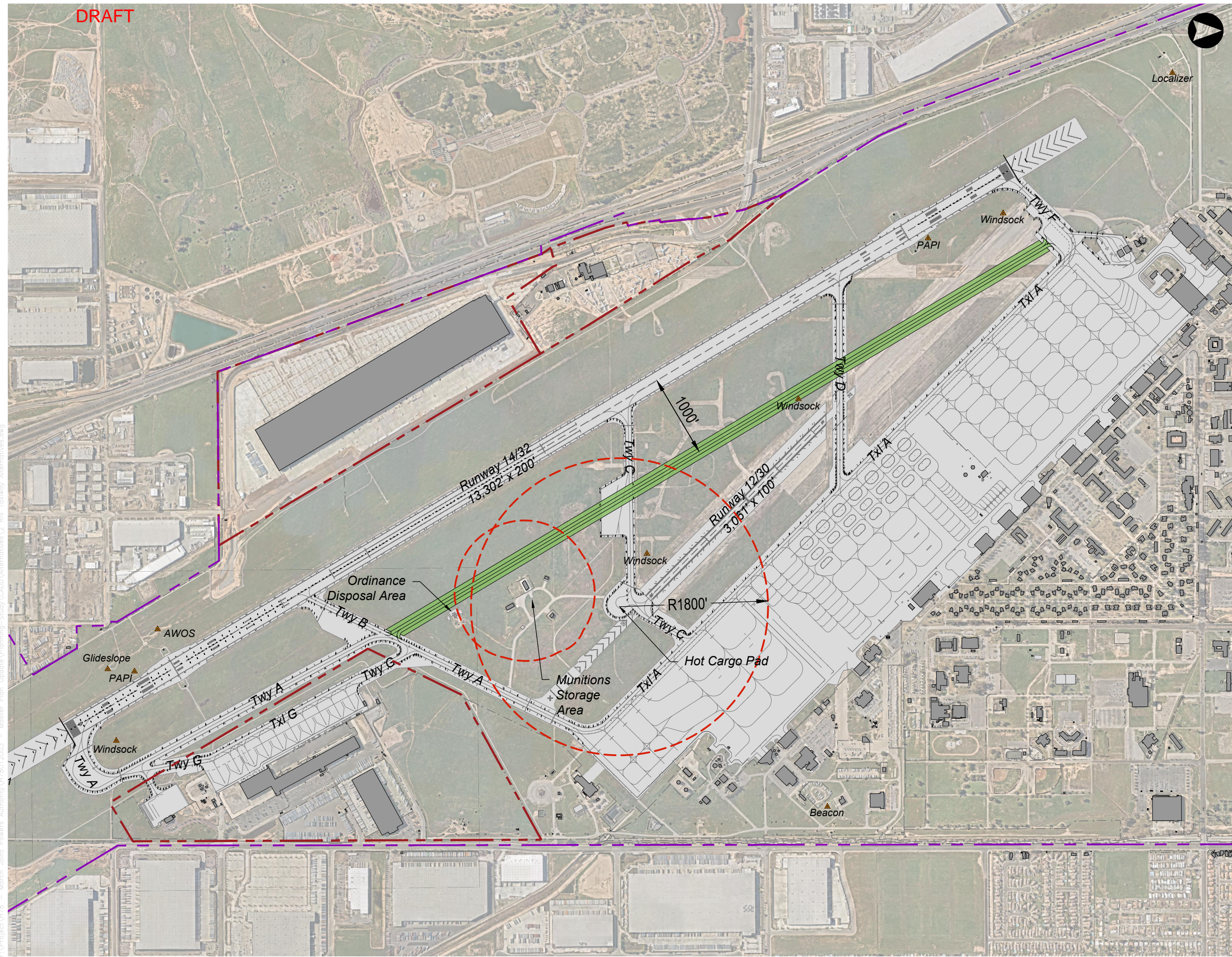
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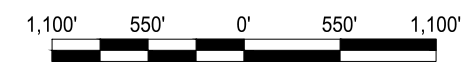


Figure 3.3

Proposed East Side Parallel Taxiway



-  Airport Property Line
-  Civilian Aviation Area Conveyances
-  Existing Buildings
-  Existing Pavement
-  Proposed Pavement
-  Hazardous Cargo and Explosive Safety Clearances



March Inland Port Airport Master Plan

Source: C&S Engineers, Inc., Aerial imagery provided by NearMap

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