

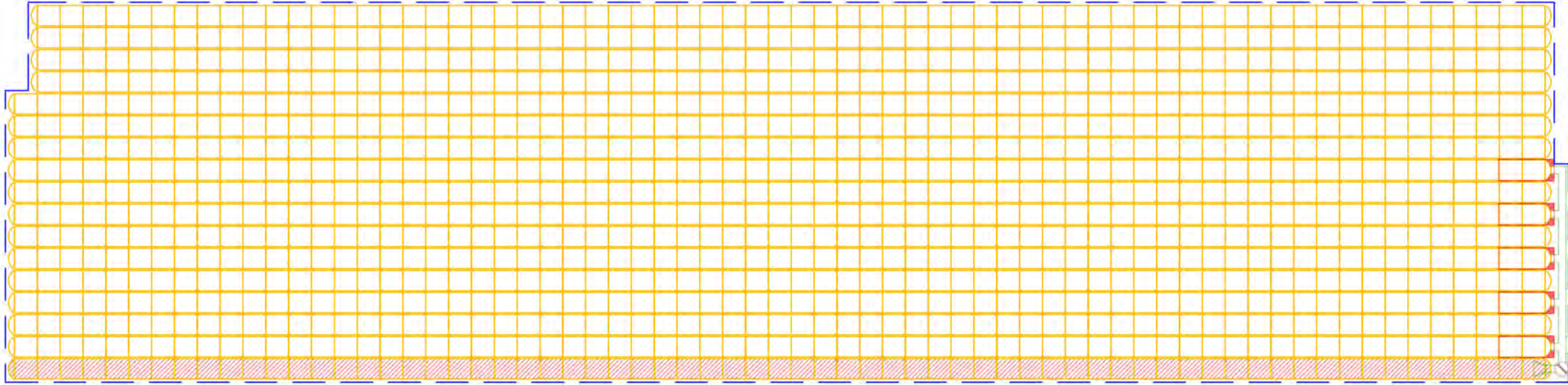
DOCKETED

Docket Number:	25-OPT-02
Project Title:	Prairie Song Reliability Project
TN #:	264384
Document Title:	App 3-15A Water Quality Management Plan Part 3
Description:	N/A
Filer:	Erin Phillips
Organization:	Dudek
Submitter Role:	Applicant Consultant
Submission Date:	6/20/2025 1:49:08 PM
Docketed Date:	6/20/2025

Appendix 3.15A

Water Quality Management Plan

3 of 6



Attachment I: Percolation Test Results



1355 E. Cooley Dr. Suite C
Colton, CA 92324
P (909) 824-7311
Terracon.com

January 22, 2025, revised May 5, 2025

Prairie Song Reliability Project, LLC
[REDACTED]
[REDACTED]

Attn: [REDACTED]

E: [REDACTED]

Re: Geotechnical Percolation Test Letter
Prairie Song Reliability Project
Acton, Los Angeles County, CA
Terracon Project No. LA245085

Dear Mr. Lehman

Per your request, we are providing this letter to outline the percolation testing services conducted for the referenced project in general accordance with Terracon Proposal Number PLA245085. This percolation test letter provides geotechnical considerations for the design and construction of the proposed stormwater basin.

The project site is located near 800 Soledad Canyon Road in Acton, Los Angeles County, California. The coordinates of the approximate center of the site are 34.4858°N, 118.1383°W. A total of four (4) percolation tests (falling head borehole permeability) were conducted at the site on December 18, and 19, 2024. The approximate location of site and the tests are shown in the **Site Location** and **Exploration Plan** attached to this letter.

Two (2) percolation test borings (P-1 and P-2) were advanced to three (3) feet below ground surface (bgs) and two (2) percolation test borings (P-3 and P-4) were advanced to five (5) feet bgs for percolation testing. Based on visual classification and laboratory tests, subsurface conditions at the test locations generally consisted of loose to dense silty sands. The individual **Boring Logs** are attached to this letter.

Percolation Test Results

The percolations tests were completed in accordance with the *Guidelines for Geotechnical Investigation and Reporting Low Impact Development Stormwater Infiltration* published by the Los Angeles County Public Works Geotechnical and Materials Engineering Division Administrative Manual on June 30, 2021. After the test borings were advanced, the augers were removed from the boring and an approximately 2-inch thick, 3/4-inch gravel layer was placed in the bottom of each boring. A three-inch diameter perforated pipe was installed on

Percolation Test Letter

Prairie Song Reliability Project ■ Acton, California
May 5, 2025 ■ Terracon Project No. LA245085

top of the gravel layer and gravel was used to backfill between the perforated pipes and the boring sidewall. The borings were then filled with water for a pre-soak period. At the beginning of each test, the pipes were refilled with water and readings were taken at standardized time intervals.

The soil at the percolation test locations was classified in the field using a visual/manual procedure. The infiltration velocity is presented as the infiltration rate and is summarized in the following table. The infiltration rates provided do not include safety factors.

Test Location	Boring Depth (ft.) ¹	Test Depth Range (ft.) ¹	Soil Type	Percolation Rate (in./hr.)	Infiltration Rate (in.hr.) ²
P-1	3	0 to 3	SM	55.3	4.6
P-2	3	0 to 3	SM	21.0	1.3
P-3	5	0 to 5	SM	45.3	1.8
P-4	5	0 to 5	SM	76.7	3.6

1. Below existing ground surface.
2. If proposed infiltration system will mainly rely on vertical downward seepage, the correlated infiltration rates should be used.

The field test results are not intended to be design rates. They represent the result of our tests, at the depths and locations indicated, as described above. The design rate should be determined by the designer by applying an appropriate factor of safety. Based on the County of Los Angeles Department of Public Works GS200.1 document, the following reduction factors are recommended:

LA County Reduction Factor	Value
RF_t	2
RF_v	1
RF_s	2 ¹
RF, Total Reduction Factor $RF=RF_t + RF_v + RF_s$	5

1. This factor may be used if stormwater will be clear and filtered of silts and sediments prior to infiltration. We recommend the designer confirm this Reduction Factor.

Percolation Test Letter

Prairie Song Reliability Project ■ Acton, California
May 5, 2025 ■ Terracon Project No. LA245085

The design civil engineer may elect to modify these reduction factors based on their design.

With time, the bottoms of infiltration systems tend to plug with organics, sediments, and other debris. Long term maintenance will likely be required to remove these deleterious materials to help reduce decreases in actual percolation rates.

The percolation tests were performed with clear water, whereas the storm water will likely not be clear, but may contain organics, fines, and grease/oil. The presence of these deleterious materials will tend to decrease the rate that water percolates from the infiltration systems. Design of the storm water infiltration systems should account for the presence of these materials and should incorporate structures/devices to remove these deleterious materials.

The above infiltration rates determined by the percolation test method are based on field test results utilizing clear water. Infiltration rates can be affected by silt buildup, debris, degree of soil saturation, site variability and other factors. The rate obtained at specific location and depth is representative of the location and depth tested and may not be representative of the entire site.

Based on the soils encountered in our borings, we expect the percolation rates of the soils could be different than measured in the field due to variations in fines and gravel content. The design elevation and size of the proposed infiltration system should account for this expected variability in infiltration rates.

Infiltration testing should be performed after construction of the infiltration system to verify the design infiltration rates. It should be noted that siltation and vegetation growth along with other factors may affect the infiltration rates of the infiltration areas. The actual infiltration rate may vary from the values reported here. Infiltration systems should be located a minimum of 10 feet from any existing or proposed foundation system.

Closure

Our review, analysis, and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer to provide observations during pertinent construction phases. If variations, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention

Percolation Test Letter

Prairie Song Reliability Project ■ Acton, California
May 5, 2025 ■ Terracon Project No. LA245085

of pollutants, hazardous materials, or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly affect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support are the responsibility of others.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this addendum, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.



Janna Valdez, E.I.T.
Senior Staff Engineer



Jay J. Martin, C.E.G.
Principal Geologist

Attachments: Site Location
 Exploration Plan
 Boring Logs

Geotechnical Percolation Test Letter

Prairie Song Reliability Project | Acton, Los Angeles County, CA

Terracon Project No. LA245085



Site Location



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS





Exploration Plan



145 W Walnut St
Carson, CA




<p>See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).</p> <p>See Supporting Information for explanation of symbols and abbreviations.</p>	<p>Water Level Observations</p> <p>Groundwater not encountered</p>	<p>Drill Rig</p> <p>D-50</p>
	<p>Advancement Method</p> <p>Hollow Stem Auger</p>	<p>Hammer Type</p> <p>Automatic</p>
<p>Notes</p>	<p>Abandonment Method</p> <p>Boring backfilled with auger cuttings upon completion.</p>	<p>Driller</p> <p>Terracon</p>
		<p>Logged by</p> <p>OW</p>
		<p>Boring Started</p> <p>12-17-2024</p>
		<p>Boring Completed</p> <p>12-17-2024</p>

Boring Log No. P-2

Graphic Log	Location: See Exploration Plan Latitude: 34.4829° Longitude: -118.1438° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test			Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits	Percent Fines
						Test Type	Compressive Strength (tsf)	Strain (%)			LL-PL-PI	
	SILTY SAND (SM) , trace gravel, brown dense 3.0		 		8-22-40				4.1	98		29
	Boring Terminated at 3 Feet											




Notes See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any). See Supporting Information for explanation of symbols and abbreviations.	Water Level Observations Groundwater not encountered	Drill Rig D-50
	Advancement Method Hollow Stem Auger	Hammer Type Automatic
	Abandonment Method Boring backfilled with auger cuttings upon completion.	Driller Terracon
		Logged by OW
		Boring Started 12-17-2024
		Boring Completed 12-17-2024

Boring Log No. P-3

Graphic Log	Location: See Exploration Plan Latitude: 34.4827° Longitude: -118.1435° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test			Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits	Percent Fines
						Test Type	Compressive Strength (tsf)	Strain (%)			LL-PL-PI	
	SILTY SAND (SM) , brown trace gravel, medium dense	5	 		9-12-17				2.2	112		26
	Boring Terminated at 5 Feet											

Notes See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any). See Supporting Information for explanation of symbols and abbreviations.	Water Level Observations Groundwater not encountered	Drill Rig D-50
	Advancement Method Hollow Stem Auger	Hammer Type Automatic
	Abandonment Method Boring backfilled with auger cuttings upon completion.	Driller Terracon
		Logged by OW
		Boring Started 12-17-2024
		Boring Completed 12-17-2024

Boring Log No. P-4

Graphic Log	Location: See Exploration Plan Latitude: 34.4828° Longitude: -118.1432° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test			Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits	Percent Fines
						Test Type	Compressive Strength (tsf)	Strain (%)			LL-PL-PI	
	POORLY GRADED SAND WITH SILT (SP-SM) , brown trace gravel, loose 5.0	5	 		7-6-5				6.0	99	NP	9
	Boring Terminated at 5 Feet											

Notes	See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any). See Supporting Information for explanation of symbols and abbreviations.	Water Level Observations Groundwater not encountered	Drill Rig D-50
			Hammer Type Automatic
		Advancement Method Hollow Stem Auger	Driller Terracon
		Abandonment Method Boring backfilled with auger cuttings upon completion.	Logged by OW
			Boring Started 12-17-2024
			Boring Completed 12-17-2024

Attachment J: Hydrology Report



HYDROLOGY STUDY

Prairie Song Reliability Project

Los Angeles County, California

MARCH 7, 2025

PREPARED FOR:

Prairie Song Reliability Project LLC

PREPARED BY:

Westwood

Hydrology Study

Prairie Song Reliability Project

Los Angeles County, California

Prepared For:

Prairie Song Reliability Project LLC

[REDACTED]
[REDACTED]

Prepared By:

Westwood
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
(952) 937-5150

Project Number: R0036369.01

Date: March 7, 2025

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Executive Summary

The purpose of this study is to analyze and review the existing and proposed hydrology of the Prairie Song Reliability Project (Project or Site) and any impacts that the hydrology may play in the design of the proposed BESS facility.

The Project Site is proposed on approximately 70 acres and is located within Los Angeles County, California, approximately 3 miles northeast of the city of Acton in Los Angeles County, California. The Site is located on varying terrain that generally slopes to the southwest. The modeled watershed area encompasses approximately 53 square miles and generally slopes west.

The 100-year existing analysis shows low water depths and low velocities (Exhibits 7 through 8A) across the majority of the Site. Higher flood depths and velocities exist to the south of the site surrounding the Santa Clara River and onsite in a channelized area that flows into the Santa Clara River. Minimal velocities and scour are expected on site except within areas of channelization. The proposed conditions 100-year analysis shows similar results to that of the existing conditions except for variations caused by onsite proposed grading.

Based on experience with similar projects, the majority of the Site is suitable for the planned development by avoiding or designing to areas of high flood depths.

1.0 Data Sources

Table 1 – Data Sources

Task	Format	Source	Use
Elevation	1m DEM	National Map	FLO-2D Model Elevations
	PrairieSong.las	Prairie Song Reliability Project LLC	
Proposed Grading	PrairieSong ~1.DWG	Prairie Song Reliability Project LLC	Proposed FLO-2D Model Elevations
	PrairieSong ~2.DWG		
	PrairieSong Pole and Access Roads CIVIL FILE.dwg		
Crop Data	Shapefile	USDA 2013 Crop Data Layer	Landcover
Soils	Shapefile	USGS SSURGO Dataset	Curve Numbers
Precipitation	PDF File	NOAA Atlas 14	Design Storms
HUC-12 Drainage Boundary	Shapefile	USGS	Define Model Extents
Site Boundary	BESS Site.kmz	Prairie Song Reliability Project LLC	Define Model Extents
2014 Aerial Photography	ArcGIS Map Service	USDA FSA	Reference
FEMA Flood Zones	PDF; Shapefile	FEMA	Reference
Culvert Locating and Sizing	Imagery/Field Provided	Prairie Song Reliability Project LLC	Culvert Modeling

2.0 Coordinate System

Table 2 – Coordinate System Used

Projection	State Plane Coordinate System
Zone	California Zone V (FIPS 405)
Datum	NAD83
Planar Units	Feet (U.S. Survey)

3.0 Existing Conditions

3.1 Project Location

3.2 Watershed Hydrology

3.3 Onsite Conditions

3.4 FEMA Flood Zones

4.0 Proposed Conditions

4.1 Proposed Conditions

4.2 Post-Construction Stormwater Management

5.0 FLO-2D Modeling

5.1 FLO-2D Modeling Overview

5.2 Elevation Data

5.3 Watershed Soils and Land Cover

5.4 Precipitation

6.0 Flood Analysis Results

6.1 Existing Conditions Flood Analysis

defined topography data and differences in modeling techniques between the two results.

Table 3 – Existing Flood Depths Onsite

Peak Flow Depth (ft)	Percentage of Project Area Covered by Existing Peak Flow Depths
0.00 - 0.49	97.4%
0.50 - 1.00	1.8%
1.01 - 1.50	0.7%
1.51 - 2.00	0.1%
2.01 - 2.50	<0.1%
2.51 - 3.00	<0.1%
3.01 - 4.00	<0.1%
4.01 - 6.00	<0.1%
6.01+	<0.1%

See Exhibits 7 through 8A for areas within the Project with higher flood depths and velocities during the existing conditions 100-year storm event.

6.2 Proposed Conditions Flood Analysis

The 100-year analysis of the proposed conditions shows similar flooding patterns to those of the existing conditions, but with slight variations in flood depths around the unnamed flow path in the central portion of the Site. The grading of this area has altered the flooding within and surrounding the flow path. Please refer to the prepared Stormwater Management Report for construction and post-construction design of this area.

Table 4 – Proposed Flood Depths Onsite

Peak Flow Depth (ft)	Percentage of Project Area Covered by Proposed Peak Flow Depths
0.00 - 0.49	97.7%
0.50 - 1.00	1.9%
1.01 - 1.50	0.3%
1.51 - 2.00	<0.1%
2.01 - 2.50	<0.1%
2.51 - 3.00	<0.1%
3.01 - 4.00	<0.1%
4.01 - 6.00	<0.1%
6.01+	<0.1%

See Exhibits 10 through 11A for areas within the Project with higher flood depths and velocities during the proposed 100-year storm event.

6.3 Scour

Minimal scour is expected onsite except in areas where flow is channelized (Exhibit 9 and 12). The scour depths calculated for this Project are based on HEC-18 Pier Scour Equations of a 6-inch-wide pile perpendicular to flow. Scour calculations consist of local scour only with unarmored soils and pile bases to provide the conservative local scour results. These scour results do not account for general, rill, or gully scour.

7.0 Recommendations

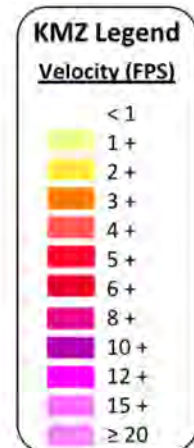
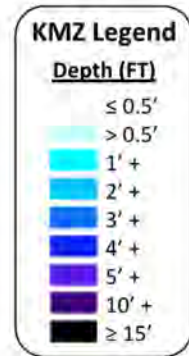
Based on experience on similar projects, the Site is suitable for the planned development and hydrologic concerns can be addressed by either avoiding areas of high flood depths and velocities or through detailed engineering design.

8.0 Next Steps

1. Final engineering design should account for the flood depths and velocities presented in Exhibits 7-8A and 10-11A.
2. Facilities to be elevated 1' above the 100-year, 24-hour peak flood elevations.

9.0 Included Output Files

1. Shapefile of 100-Year Rain Event Flow Depth
2025-03-05_PrairieSong_ExistingFlowDepthatCell_100yr24hr.shp
 Attribute "ID" = Grid Cell Number
 Attribute "VAR" = Max Flow Depth (Feet)
2. Shapefile of 100-Year Rain Event Velocity
2025-03-05_PrairieSong_ExistingVelocityatCell_100yr24hr.shp
 Attribute "ID" = Grid Cell Number
 Attribute "VAR" = Max Velocity (Feet/Second)
3. Shapefile of 100-Year Rain Event Flow Depth
2025-03-05_PrairieSong_ProposedFlowDepthatCell_100yr24hr.shp
 Attribute "ID" = Grid Cell Number
 Attribute "VAR" = Max Flow Depth (Feet)
4. Shapefile of 100-Year Rain Event Velocity
2025-03-05_PrairieSong_ProposedVelocityatCell_100yr24hr.shp
 Attribute "ID" = Grid Cell Number
 Attribute "VAR" = Max Velocity (Feet/Second)
5. KMZ of FLO-2D Results
2025-03-05_PrairieSong_FLO-2DResults.kmz
 Overlay in Google Earth for graphical representation.



The background of the slide is a dark red topographic map with intricate, lighter red contour lines. A dashed red line runs diagonally from the top left towards the bottom center. An 'x' mark is located on this dashed line in the middle section. A solid red dot is positioned further down the dashed line, closer to the bottom left. The word "Exhibits" is written in a white, sans-serif font in the upper left quadrant of the slide.

Exhibits



Data Source(s): Westwood (2025); Esri WMS
Basemap Imagery (Accessed: 2025); USGS
(2025); FEMA (2025); USDA (2025)

Westwood
Toll Free (888) 937-5150 westwoodps.com

Legend

- FLO-2D Model Boundary
- Project Boundary
- Proposed Gen-Tie Routes
- County Boundary

Prairie Song Reliability Project

Los Angeles County, California

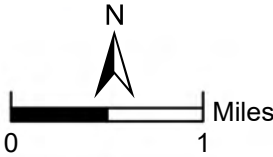



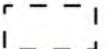




Exhibit 1: Location Map
March 7, 2025



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed: 2025); USGS (2025); FEMA (2025); USDA (2025)

Westwood
Toll Free (888) 937-5150 westwoodps.com

Legend

- | | | | |
|---|-------------------------|---|-----------------|
|  | FLO-2D Model Boundary |  | County Boundary |
|  | Project Boundary |  | HUC-12 Boundary |
|  | Proposed Gen-Tie Routes |  | NHD Flowlines |

Prairie Song Reliability Project

Los Angeles County, California

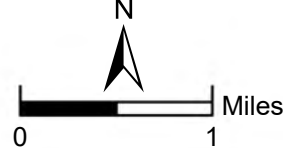
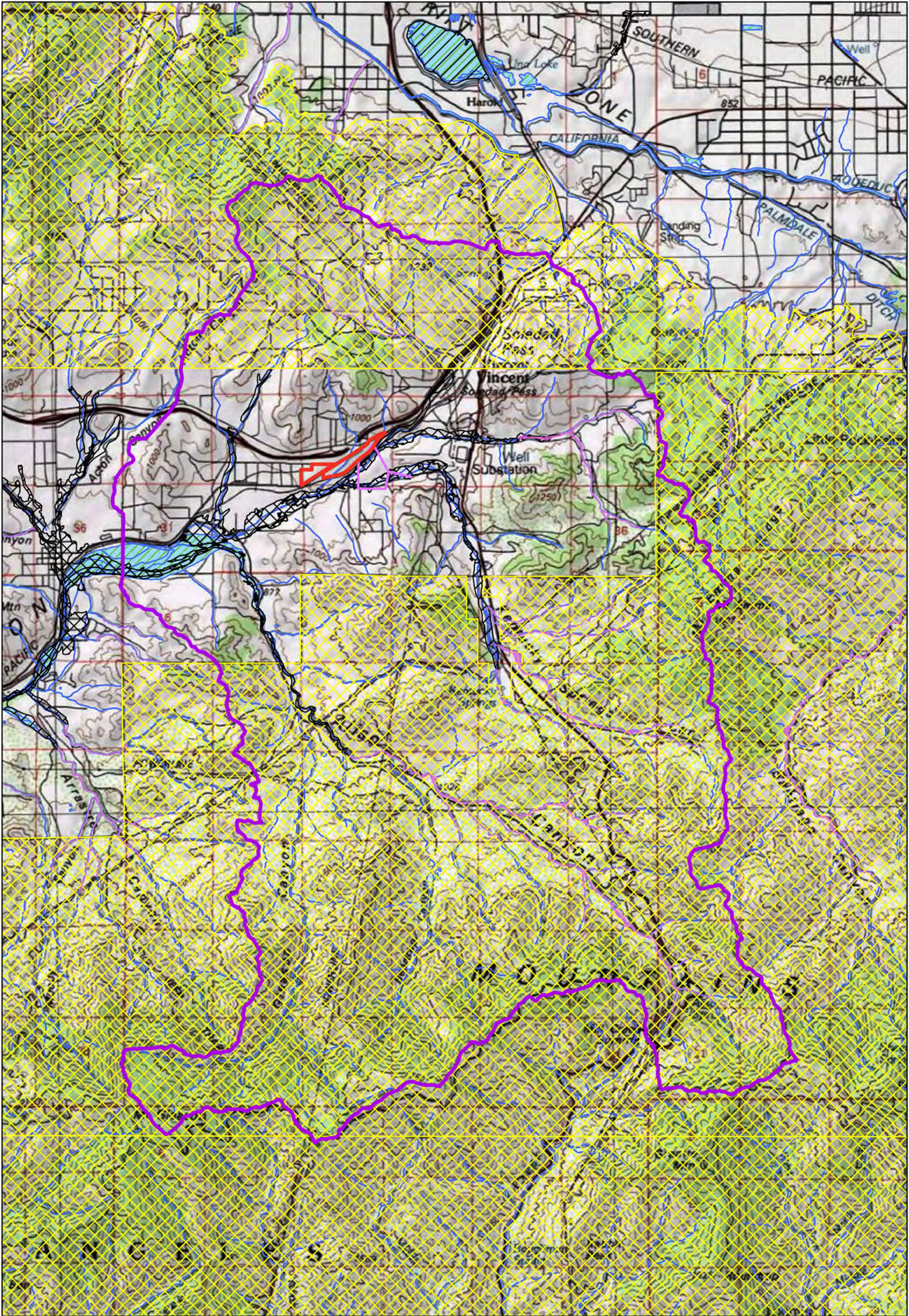


Exhibit 2: Base Hydrologic Map

March 7, 2025



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed: 2025); USGS (2025); FEMA (2025); USDA (2025)

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Legend

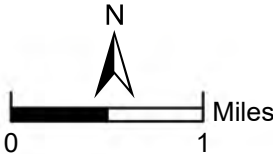
- | | |
|-------------------------|-----------------------------------|
| FLO-2D Model Boundary | CA DWR 100yr Flood Awareness Zone |
| Project Boundary | FEMA Flood Zone |
| Proposed Gen-Tie Routes | FEMA Zone A |
| County Boundary | FEMA Zone AE |
| NWI Wetlands | FEMA Zone D |

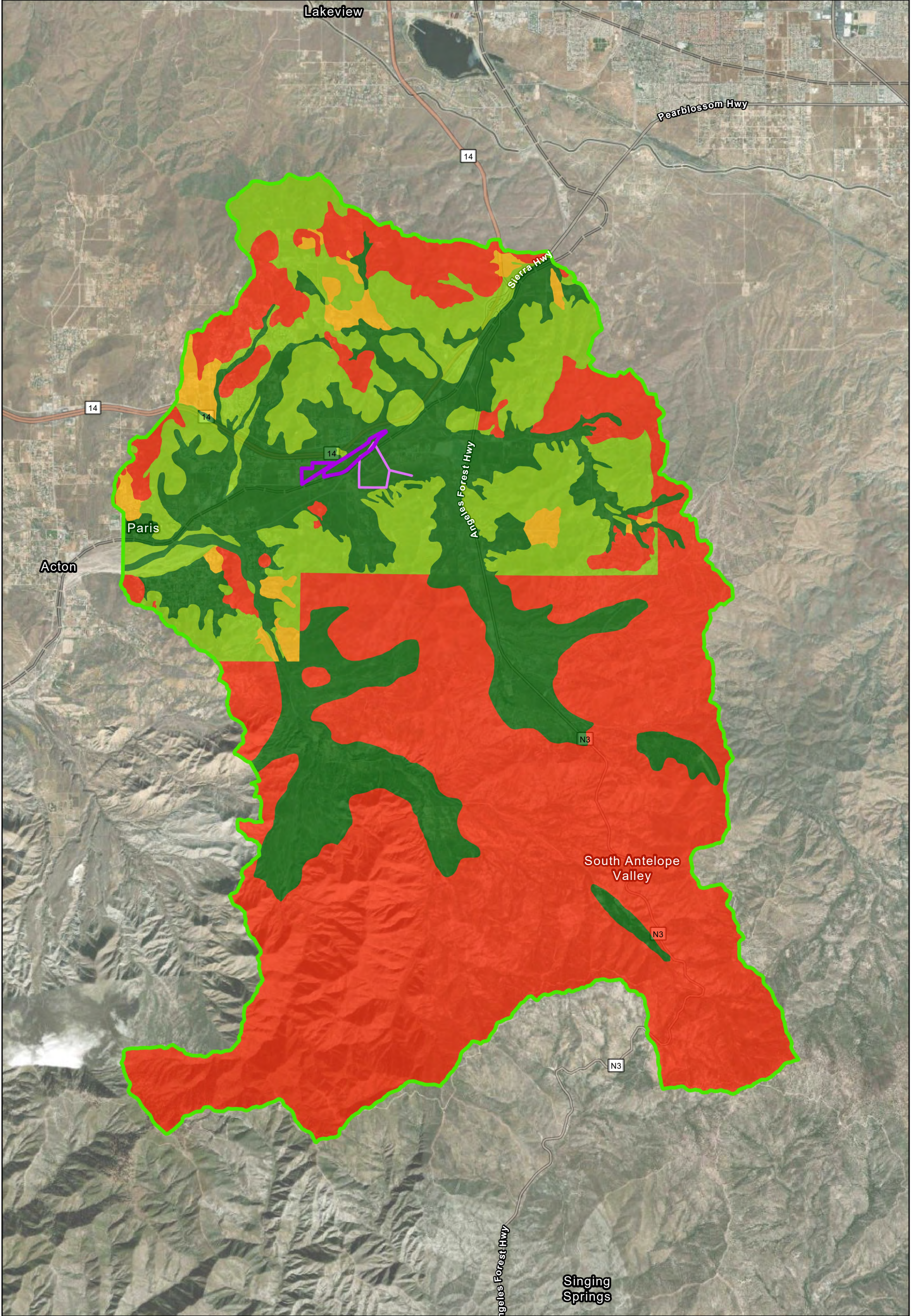
Prairie Song Reliability Project

Los Angeles County, California

Exhibit 3: USGS, FEMA, and NWI Wetlands Map

March 7, 2025









Data Source(s): Westwood (2025); Esri WMS
Basemap Imagery (Accessed: 2025); USGS
(2025); FEMA (2025); USDA (2025)

Westwood

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Legend

-  FLO-2D Model Boundary
-  Project Boundary
-  Proposed Gen-Tie Routes
-  County Boundary

Hydrologic Soil Group

-  A
-  B
-  C
-  D

Prairie Song Reliability Project

Los Angeles County, California

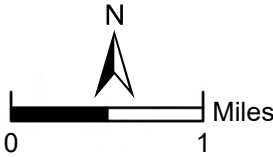
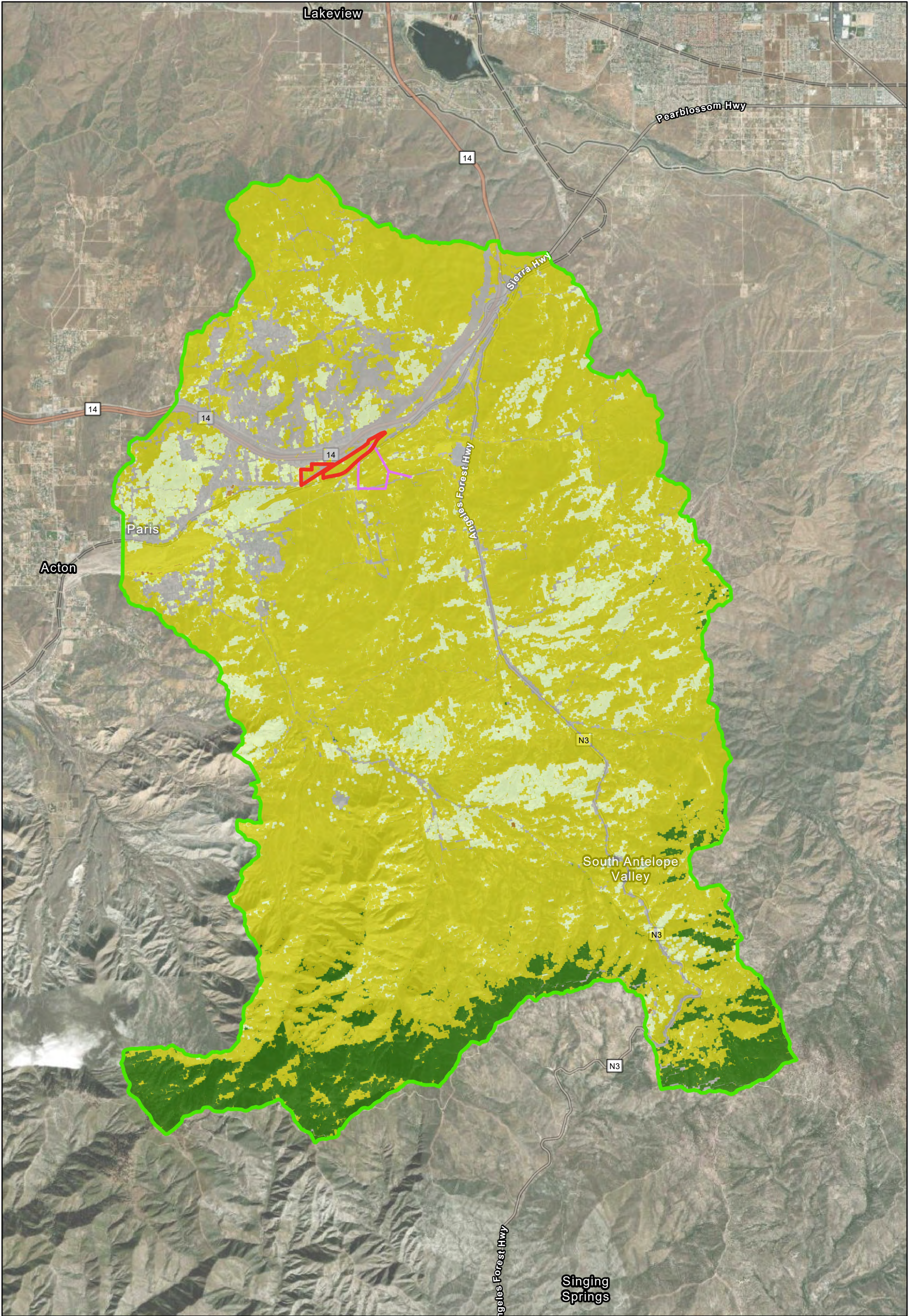
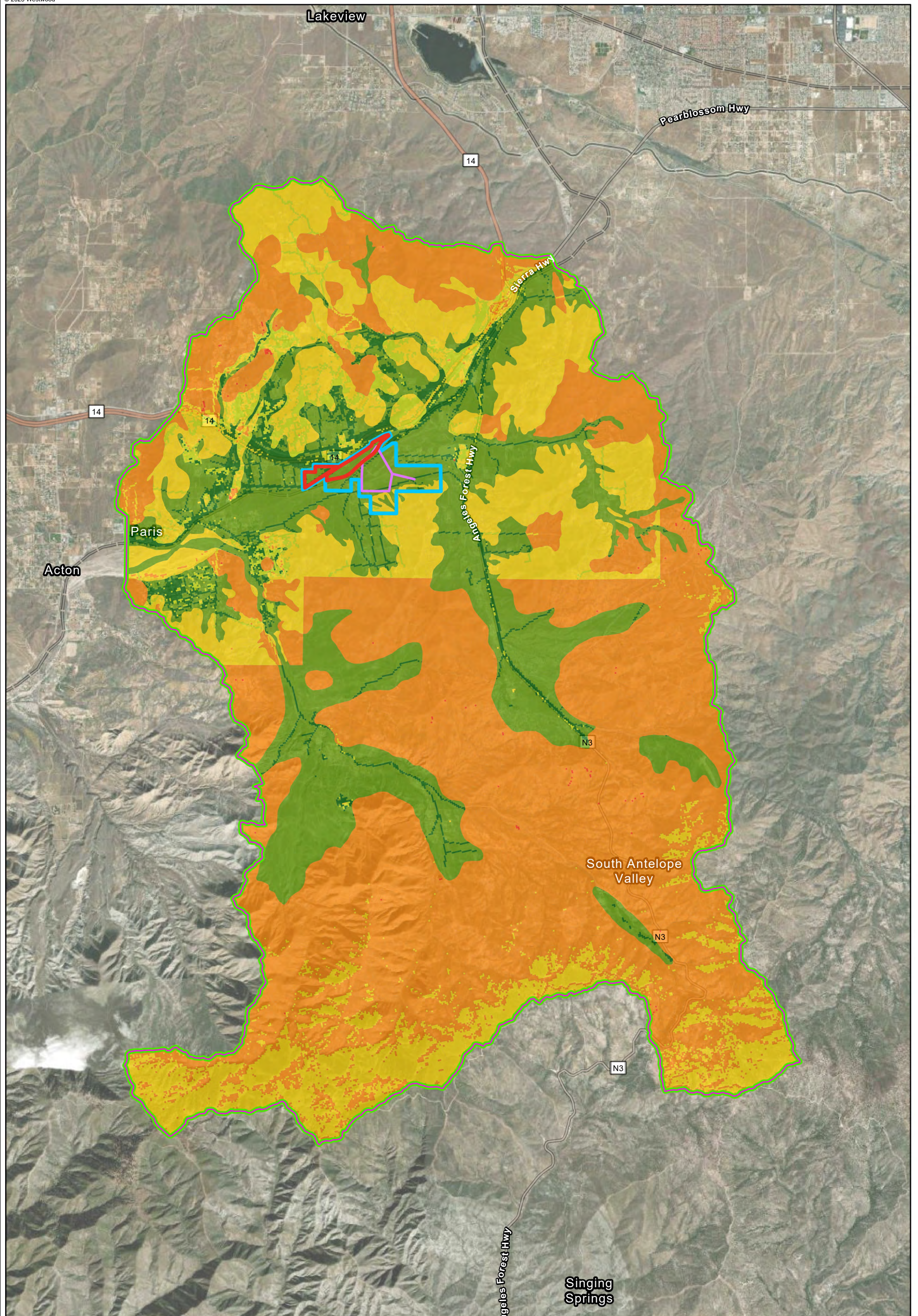


Exhibit 4: Soils Map

March 7, 2025





Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Westwood

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Legend

-
- Legend:**
- FLO-2D Model Boundary
 - Project Boundary
 - Proposed Gen-Tie Routes
 - County Boundary
 - 1-meter DEM Extents
 - Client Topography Data Extents
- Curve Number**
- | | | | |
|--|---------|--|---------|
| | 40 - 49 | | 70 - 79 |
| | 50 - 59 | | 80 - 89 |
| | 60 - 69 | | 90 - 99 |

Prairie Song Reliability Project

Los Angeles County, California

Exhibit 6: Curve Number and Topographic Source Map

