

Appendix E Biological Surveys Conducted for the Proposed Valley–Ivyglen and Alberhill Projects

Survey Focus	Date	Method	Location ⁽⁴⁾	Survey Extent
Alberhill Project				
Burrowing Owl (AECOM 2008X)	November 2008	Protocol-level surveys per MSCHP and CDFW	Proposed substation site, 500-kV line routes, and 115-kV line routes	200 feet on either side of centerline where suitable habitat is present; to 300 feet with binoculars.
Special status plants (AECOM 2009a, 2010a, 2011a, 2012b, AMEC 2012)	April and May 2009, March–June 2010, April–June 2011	Reconnaissance-level assessment and protocol-level surveys per CDFW	Proposed substation site, 500-kV line routes, and 115-kV line routes	200 feet on each side of centerline, except in steep terrain and dense vegetation, where survey buffers were 150 feet.
Narrow endemic plant species (AECOM 2010a, AMEC 2012)	March–June 2010	Protocol-level surveys per MSCHP	Intersection of proposed 115-kV Segments ASP5 and ASP6	200 feet on each side of centerline.
Vegetation communities (AECOM 2009d, AMEC 2012)	April and May 2009	Reconnaissance-level assessment	Proposed substation site, 500-kV line routes, and 115-kV line routes	350 feet on each side of centerline.
Oak trees (AECOM 2012a)	November 2011	Reconnaissance-level assessment	Proposed substation site, 500-kV line routes, and 115-kV line routes	30 feet on each side of centerline. ⁽¹⁾
Wetlands, streams, riparian areas (AECOM 2009d, Read 2010, AECOM 2011b)	April and May 2009, April 2010	Reconnaissance-level assessment and formal jurisdictional wetland delineations per USACE	Proposed substation site, 500-kV line routes, and 115-kV line routes	200 feet on each side of centerline.
Feature ASP 1 and stock pond (AECOM 2011f)	November 2011	CRAM (California Rapid Assessment Methods) assessment	Proposed substation site and 500-kV line routes	N/A

Riverside and vernal pool fairy shrimp habitat assessment (AMEC 2009b, 2012, Read & Forde 2010)	March 2009 and April 2010	Reconnaissance-level assessment	Proposed substation site, 500-kV line routes, and 115-kV line routes	200 feet on each side of centerline.
Arroyo toad (AECOM 2010c)	April–June 2010	Reconnaissance-level assessment and protocol-level surveys per USFWS	Proposed 115-kV subtransmission line routes	200 feet on each side of centerline where suitable habitat is present.
Southwestern willow flycatcher (SWFL), least Bell's vireo (LBVI), coastal California gnatcatcher (CAGN) (AMEC 2009a)	April–July 2009	Protocol-level surveys per USFWS	Proposed substation site	For LBVI: substation, including 200 foot buffer in suitable habitat; SWFL and CAGN: 200 feet on either side of 115 kV centerline.
Southwestern willow flycatcher, least Bell's vireo (AECOM 2010b, 2011c, 2012b, AMEC 2012)	April–July 2010, April–September 2011	Protocol-level surveys per USFWS	Proposed substation site, 500-kV line routes, and 115-kV line routes	200 feet on either side of 115 kV centerline.
Western yellow-billed cuckoo (AMEC 2012)	June–September 2012	Protocol-level surveys per CDFW	Proposed 115-kV subtransmission line routes	200 feet on either side of centerline.
Western burrowing owl (AECOM 2009b, 2009c, 2011d, 2012b)	April 2009; April, May, June 2011	Protocol-level surveys per MSCHP and CDFW	Proposed substation site, 500-kV line routes, and 115-kV line routes	200 feet on either side of centerline where suitable habitat is present; to 300 feet with binoculars.
Raptors (Bloom Biological 2011, AECOM 2011g, 2012b, AMEC 2012)	April–June 2011, December 2011	Reconnaissance-level on foot and by helicopter	Proposed substation site, 500-kV line routes, and 115-kV line routes	0.5 miles on either side of centerline.
Quino checkerspot butterfly (Faulkner 2009)	March and April 2009	Protocol-level surveys per USFWS	Proposed substation site	N/A

Stephens' kangaroo rat (SJM 2010b, 2010c, 2011, 2012)	July and November 2009, July–August 2011	Reconnaissance-level assessment, protocol-level, and trapping surveys	Proposed substation site, 500-kV line routes, and 115-kV line routes	200 feet on either side of centerline where suitable habitat is present . ⁽³⁾
Bats (AECOM 2011e)	October 2010, September 2011	Bat emergence survey (acoustical and visual assessment)	Proposed substation site	Man-made structures on substation site.
Los Angeles pocket mouse (SJM 2010a, SJM 2011)	June 2010, July–August 2011	Reconnaissance-level assessment, protocol-level, and trapping surveys	Proposed 115-kV subtransmission line routes	200 feet on either side of centerline where suitable habitat is present.
Dulzura kangaroo rat (SJM 2012)	July–August 2011	Reconnaissance-level assessment and trapping surveys	Proposed 500-kV transmission line routes	N/A
Fairy Shrimp (AECOM 2012b)	February 2012	Habitat assessment	115kV Study area	200 feet on each side of centerline.
Rare Plants (AECOM 2014)	April-June 2012	Protocol-level surveys per CDFW	Proposed Substation and 500/115kV Study Areas	100 feet on either side of the centerline
Burrowing Owl (AECOM 2014)	April-June 2012	Habitat assessment, burrow surveys, protocol-level surveys	Proposed Substation and 500/115kV Study Areas	Not disclosed in methods
Least bell's vireo and southwestern flycatcher (AECOM 2012c)	April-July 2012	Protocol-level surveys per USFWS	Proposed Substation and 500/115kV Study Areas	Not disclosed in methods
Stephen's kangaroo rat (SJM 2012)	May 2012	Trapping surveys	Proposed Substation and 500/115kV Study Areas	Not disclosed in methods
Rare Plants (AECOM 2014)	March-May 2013	Protocol-level surveys per CDFW	Proposed Substation and 500/115kV Study Areas	100 feet on either side of the centerline
Burrowing Owl (AECOM 2014)	March-June 2013	Habitat assessment, burrow surveys, protocol-level surveys	Proposed Substation and 500/115kV Study Areas	Not disclosed in methods

Least bell's vireo and southwestern flycatcher (Kidd Biological, Inc. 2013)	April-July 2013	Protocol-level surveys per USFWS	Proposed Substation and 500/115kV Study Areas	Not disclosed in methods
Wetlands, streams, riparian areas (AECOM 2014)	April-October 2013	Jurisdictional delineation	Proposed Substation and 500/115kV Study Areas	Not disclosed in methods
Rare plants (AECOM 2014)	April-June 2014	Protocol-level surveys per CDFW	Proposed Substation and 500/115kV Study Areas	100 feet on either side of the centerline
Burrowing Owl (AECOM 2014)	April-August 2014	Habitat assessment, burrow surveys, protocol-level surveys	Proposed Substation and 500/115kV Study Areas	Not disclosed in methods
Least bell's vireo and Southwestern flycatcher (Kidd Biological, Inc. 2014)	April-July 2014	Protocol-level surveys per USFWS	Proposed Substation and 500/115kV Study Areas	Not disclosed in methods
Valley-Ivyglen Project				
General biological survey (AMEC 2006b)	April-May 2006	Reconnaissance-level assessment	Preferred and alternative routes	100 feet on either side of centerline
Southwest willow flycatcher, least Bell's vireo, western yellow-billed cuckoo (AMEC 2007)	April-July 2007	Protocol-level surveys per USFWS	Suitable riparian habitat along Segments 4-8	500 feet on either side of centerline
Burrowing owl (AMEC 2014b)	May-August 2007	Protocol-level surveys per CDFW	Segments 4-8	500 feet on either side of centerline
Rare plants (AMEC 2014b)	May-August 2007	Protocol-level surveys per CDFW	Segments 4-8	500 feet on either side of centerline
Burrowing owl (AMEC 2014a)	May-July 2008	Protocol-level surveys per CDFW	Preferred route	500 feet on either side of centerline
Rare plants (AMEC 2014a)	May-July 2008	Protocol-level surveys per CDFW	Preferred route	500 feet on either side of centerline

Southwest willow flycatcher, least Bell's vireo, western yellow-billed cuckoo (AMEC 2014a)	May-August 2008	Protocol-level surveys per USFWS	Suitable riparian habitat along preferred route	500 feet on either side of centerline
Riverside fairy shrimp and vernal pool fairy shrimp (AMEC 2014a)	December 2009-May 2010	Protocol-level surveys per USFWS	Suitable riparian habitat along preferred route	Not disclosed in methods
Rare plants (AMEC 2014a)	April and July 2009	Protocol-level surveys per CDFW	Suitable habitat along the preferred route	100 feet on either side of centerline
Southwest willow flycatcher, least Bell's vireo, western yellow-billed cuckoo (AMEC 2014a)	April-July 2009	Protocol-level surveys per USFWS	Preferred route	500 feet on either side of centerline in suitable habitat
Burrowing owls (AMEC 2014a)	July – Aug 2009	Protocol-level surveys per CDFW	Preferred route and alternatives	500 feet on either side of centerline in suitable habitat
Jurisdictional drainages (AMEC 2014a)	June 2009	Jurisdictional delineation per USACE	Preferred and alternative routes	500 feet on either side of centerline
Riverside fairy shrimp and vernal pool fairy shrimp (AMEC 2014a)	December 2009; January-May 2010	Protocol-level surveys per USFWS	Preferred and alternative routes	500 feet on either side of centerline
Jurisdictional delineation of the San Jacinto River (AMEC 2014a)	March 2010	Jurisdictional delineation per USACE	San Jacinto River	500 feet on either side of centerline
Southwest willow flycatcher, least Bell's vireo, western yellow-billed cuckoo (AMEC 2010)	May-Aug 2010	Protocol-level surveys per USFWS	Suitable habitat along the preferred route	500 feet on either side of centerline

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Wetlands, streams, riparian areas (AMEC 2014b)	January 2011	Jurisdictional delineation per USACE	Segments 1-3	500 feet on either side of centerline in suitable habitat
Wetlands, streams, riparian areas (AECOM 2011)	April-June 2011	Jurisdictional delineation per USACE	Segments 4-8	500 feet on either side of centerline in suitable habitat
Burrowing owl (AMEC 2014b)	March-April 2011	Protocol-level surveys per CDFW	Segments 1-8	500 feet on either side of centerline in suitable habitat
Stephens' kangaroo rat (AMEC 2014b)	March-April 2011	Reconnaissance-level assessment	Segments 4-8	500 feet on either side of centerline in suitable habitat
Rare plants (AMEC 2014a, 2014b)	March-July 2011	Protocol-level surveys per CDFW	Segments 1-8	100 feet on either side of the centerline
Southwest willow flycatcher, least Bell's vireo, western yellow-billed cuckoo (AMEC 2011b)	April-July 2011	Protocol-level surveys per USFWS	Segments 1-3	500 feet on either side of centerline in suitable habitat
Stephens' kangaroo rat (AMEC 2011a, AECOM 2012)	September 2011; May 2012	Trapping surveys	Segments 1-8	500 feet on either side of the centerline
Riverside fairy shrimp and vernal pool fairy shrimp (AMEC 2012b)	Nov-Dec 2011, Jan-May 2012	Protocol-level surveys per USFWS	Segments 1-8	500 feet on either side of the centerline
Burrowing owl (AMEC 2014a, 2014b)	April-July 2012	Protocol-level surveys per CDFW	Segments 1-8	500 feet on either side of the centerline
Southwest willow flycatcher, least Bell's vireo, western yellow-billed cuckoo (AMEC 2012a)	April-Aug 2012	Protocol-level surveys per USFWS	Segments 1-8	500 feet on either side of the centerline in suitable habitat

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Rare plants (AMEC 2014a, 2014b)	March-June 2012	Protocol-level surveys per CDFW	Segments 1-8	100 feet on either side of the centerline
Wetlands, streams, riparian areas in Richland Communities (AMEC 2014b)	July 2012	Jurisdictional delineation per USACE	Richland Communities	500 feet on either side of the centerline in suitable habitat
Rare plants (AMEC 2014a, 2014b)	March-April 2013	Protocol-level surveys per CDFW	Segments 1-8	100 feet on either side of the centerline
Wetlands, streams, riparian areas (AMEC 2014a)	March-May 2013	Jurisdictional delineation per USACE	Segments 1-3	500 feet on either side of the centerline in suitable habitat
Burrowing owl (AMEC 2014a, 2014b)	March-July 2013	Protocol-level surveys per CDFW	Segments 1-8	500 feet on either side of the centerline
Riverside fairy shrimp and vernal pool fairy shrimp (AMEC 2013d)	Dec 2012, Jan-April 2013	Protocol-level surveys per USFWS	New staging yards along Segments 1-3; Segments 4-8	500 feet on either side of the centerline
Rare Plant Survey (AMEC 2014a)	March-April 2013	Protocol-level surveys per CDFW	Segments 1-3	100 feet on either side of the centerline in suitable habitat
Southwest willow flycatcher, least Bell's vireo, western yellow-billed cuckoo (AMEC 2013c)	April-Aug 2013	Protocol-level surveys per USFWS	Segments 1-8	500 feet on either side of the centerline in suitable habitat
Wetlands, streams, riparian areas on Campbell Ranch Road (AMEC 2014b)	May, September 2013	Preliminary jurisdictional delineation	Campbell Ranch Road	500 feet from either side of the centerline
Riverside fairy shrimp and vernal pool fairy shrimp (AMEC 2014c)	November 2013-March 2014	Protocol-level surveys per USFWS	New Staging Yards along Segments 1-3; Segments 4-8	500 feet on either side of the centerline in suitable habitat

Southwest willow flycatcher, least Bell's vireo, western yellow-billed cuckoo (AMEC 2014d)	April 2014-July 2014	Protocol-level surveys per USFWS	Segments 4-8	500 feet on either side of the centerline in suitable habitat
Burrowing Owl (AMEC 2014b)	April-July 2014	Protocol-level surveys per CDFW	Segments 4-8	500 feet on either side of the centerline in suitable habitat
Rare Plant Survey (AMEC 2014b)	April 2014	Protocol-level surveys per CDFW	Segments 4-8	100 feet on either side of the centerline in suitable habitat
Oak Tree Analysis (AMEC 2014b)	October-November 2014		Segments 4-8	40 feet on either side of the centerline in suitable habitat

Sources: AECOM 2008, 2009a, 2009b, 2009c, 2009d, 2010a, 2010b, 2010c, 2010d, 2011a, 2011b, 2011c, 2011d, 2011e, 2011f, 2011g, 2012a, 2012b, 2012c; AMEC 2006a, 2006b, 2007, 2009a, 2009b, 2010, 2011a, 2011b, 2012a, 2012b, 2012c, 2013c, 2014a, 2014b, 2014c, 2014d, Bloom Biological 2011, Faulkner 2009, Read 2010, Read and Forde 2010, SJM 2009, 2010a, 2010b, 2010c, 2011, 2012, 2013a, 2013b, SJM 2010a, 2010b, 2010c, 2011, 2012

Key: CDFW = California Department of Fish and Wildlife, MSCHP = Multiple Species Habitat Conservation Plan, USACE = U.S. Army Corps of Engineers, USFWS = U.S. Fish and Wildlife Service

Notes: ⁽¹⁾ It is assumed that oak trees in addition to those identified in the 2012 AECOM survey are present at distances greater than the 30 feet surveyed from the proposed 115-kV route centerlines. Mitigation is included in the preliminary Administrative Draft EIR to avoid or reduce impacts to oak trees. Permits from Riverside County are required for mature tree and oak woodland removal. ⁽²⁾ Surveys for some wildlife species focused only on habitat identified by prior surveys in proximity to components of the proposed project. ⁽³⁾ Surveys for SKR were not completed along a portion of Segment 1.5 of the 115-kV line because the applicant will become a PSE in the SKR HCP and further surveys are not required. ⁽⁴⁾ For the purpose of this table, Valley-Ivyglen Phase 1 encompasses 115-kV Segments VIG3-VIG8, and Phase 2 encompasses 115-kV Segments VIG1-VIG3.