

3.18 PLANT SPECIES

The analysis of impacts on plant species is based on the *Natural Environment Study* (NES) (January 2012).

3.18.1 REGULATORY SETTING

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) share regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special-status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species Section 3.20, in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including CDFG fully protected species and species of special concern, USFWS candidate species, and non-listed California Native Plant Society (CNPS) rare and endangered plants.

The statutory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et. seq. See also 50 CFR Part 402. The statutory requirements for CESA can be found at California Fish and Game Code, Section 2050, et. seq. Caltrans projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900–1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100-21177.

3.18.2 AFFECTED ENVIRONMENT

The natural communities in the project Biological Study Area (BSA) include a variety of plant species considered sensitive by USFWS, CDFG, and CNPS. A literature review resulted in a list of 38 sensitive plant species that may occur in or within the vicinity of the Biological Study Area (BSA). Thirteen of these species are listed as Federally and/or State-listed endangered or threatened, or proposed or delisted endangered or threatened, or are considered California Fully Protected (CFP) species by the State and are discussed in more detail in Section 3.20.

All of the special-status plant species that occur within the vicinity of the project do not have suitable habitat within the limits of the BSA. However, the BSA supports suitable habitat for two special-status species: southern tarplant (*Centromadia parryi* ssp. *australis*) and San Bernardino aster (*Symphotrichum defoliatum*). The BSA is highly urbanized and could only support plant species that are tolerant of conditions within or adjacent to an urban environment.

In 2009, species-specific surveys were completed for these two plant species (southern tarplant and San Bernardino aster). Table 3.18-1 shows the special-status plant species that occur within the vicinity of the project.

Southern tarplant was previously known as *Hemizonia parryi* ssp. *australis*. This yellow-orange flowered plant occurs in seasonally wet saline or alkaline soils of the southern California coast and into northern Baja California. This native annual plant is typically found in sunny areas where competition from other plants is limited by alkalinity, seasonal soil saturation, or the effects of human disturbance. Numbers of individuals can vary widely at a given location from year to year, depending on recent disturbance and seasonal precipitation. Populations are expected to be larger in years of average or above average rainfall.

Southern tarplant was observed in three locations within the BSA during 2009 botanical surveys conducted during the blooming period for this species (May through November). The largest population consisted of approximately 9,000 plants just north of the I-710/Rosecrans Ave. interchange on the east side of I-710. Approximately 90 plants were found in sunny areas near the I-710/Atlantic Blvd. interchange, and six plants were found southeast of the I-710/I-405 interchange.

San Bernardino aster is a plant that occurs in vernal wet sites (such as ditches, streams, and springs) in many plant communities below 6,700 feet in elevation. Endemic to California, it is known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties, and it may also occur in San Luis Obispo County. It blooms July–November. San Bernardino aster was not identified within the BSA during focused surveys conducted at the appropriate time of year to correctly identify this species.

3.18.3 ENVIRONMENTAL CONSEQUENCES

3.18.3.1 PERMANENT IMPACTS

BUILD ALTERNATIVES. Alternative 5A is not expected to result in direct or indirect permanent or temporary impacts to any of the populations of southern tarplant because the recorded populations of this plant are not within the project footprint of this alternative. Alternatives 6A/B/C will result in direct permanent impacts to the entire population at the Atlantic Blvd./Bandini Blvd. intersection through the shifting of the I-710 mainline to this location. Table 3.18-2 shows the project impacts to each southern tarplant location by Alternatives 6A/B/C.

Table 3.18-1 Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Aphanisma	<i>Aphanisma blitoides</i>	--/--/1B	Sandy or clay soils on slopes or bluffs near the ocean, usually in coastal bluff scrub, coastal dunes, or coastal scrub, below 1,000 feet elevation. Known in California from Ventura, Santa Barbara, Los Angeles, Orange, and San Diego Counties. Also occurs in Mexico. Blooms March–June.	A	No sand or clay soils occur within the BSA.
South Coast saltscale	<i>Atriplex pacifica</i>	--/--/1B	Alkali soils in coastal sage scrub, playas, coastal bluff scrub, coastal dunes, and chenopod scrub below 600 feet elevation, and perhaps formerly up to about 1,400 feet in Los Angeles County. In California, known from the Channel Islands and mainland Los Angeles, San Diego and Orange Counties. Also occurs in Mexico. Believed extirpated from Ventura County. Blooms March–October.	A	No alkaline soils or other suitable habitat occurs within the BSA. Not observed during surveys of area nearest to suitable habitat.
Parish's brittlescale	<i>Atriplex parishii</i>	--/--/1B	Alkali meadows, vernal pools, chenopod scrub, and playas. Usually on drying alkali flats with fine soils. In California, known from Riverside, San Diego, and Orange Counties. Also occurs in Mexico. Believed extirpated from Los Angeles and San Bernardino Counties. This species has been documented northeast of the I-710/I-405 interchange. Blooms June–October.	A	No alkaline soils or other suitable habitat occurs within the BSA. Not observed during surveys of area nearest to suitable habitat.
Davidson's saltscale	<i>Atriplex serenana</i> var. <i>davidsonii</i>	--/--/1B	Alkaline soils in scrub and herbaceous communities from 30 to 1,500 feet elevation. In California, known only from Los Angeles(?), Orange, Riverside, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Santa Barbara and perhaps Los Angeles Counties. Also occurs in Mexico. Blooms April–October.	A	No alkaline soils or other suitable habitat occurs within the BSA. Not observed during surveys of area nearest to suitable habitat.

Table 3.18-1 Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Round-leaved filaree	<i>California macrophylla</i>	--/--/1B	Clay soils in woodland, scrub, and grassland communities from 50 to 4,000 feet elevation. Known from central and south coastal areas and the Central Valley in California. Also occurs in Oregon and Mexico. Blooms March–May.	A	No clay soils occur within the BSA.
Slender mariposa lily	<i>Calochortus clavatus</i> var. <i>gracilis</i>	--/--/1B	Shaded foothill canyons in areas of chaparral; typically 1,200 to 3,300 feet elevation; known only from San Gabriel Mountains of Los Angeles and San Bernardino Counties. Blooms March.	A	No chaparral or foothill canyons within BSA. BSA is outside range of species.
Plummer's mariposa-lily	<i>Calochortus plummerae</i>	--/--/1B	Sandy or rocky sites of (usually) granitic or alluvial material in valley and foothill grassland, coastal scrub, chaparral, cismontane woodland, and lower montane coniferous forest at 300 to 5,600 feet elevation. Known from the Santa Monica Mountains to San Jacinto Mountains in Riverside, San Bernardino, Orange, Los Angeles, and Ventura Counties. Blooms May–July	A	No sandy or rocky soils occur within the BSA.
Intermediate mariposa lily	<i>Calochortus weedii</i> var. <i>intermedius</i>	--/--/1B	Generally rocky areas in hills with annual grassland and coastal sage scrub. 600 to 2,800 feet elevation. Los Angeles, Orange, and Riverside Counties. Blooms June through July.	A	No rocky, hilly areas within BSA. BSA is outside elevational and geographic range of species.
Santa Barbara morning-glory	<i>Calystegia sepium</i> ssp. <i>binghamiae</i>	--/--/1A, * (presumed extinct in CA)	Coastal marshes below 80 feet elevation. Probably extinct. Formerly known from Los Angeles, Orange, Ventura, and Santa Barbara Counties. Blooms April–May.	A	Believed extirpated from Los Angeles County. Known only from historical records. Not observed during surveys of marsh habitat within the BSA.

Table 3.18-1 Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Lewis's evening primrose	<i>Camissonia lewisii</i>	--/--/3	Sandy or clay areas in coastal scrub, grassland, and woodland below 1,000 feet elevation. In California known only from Los Angeles and San Diego Counties. Believed extirpated from Orange County. Also occurs in Mexico.	A	No sandy or clay habitat occurs within the BSA.
Southern tarplant	<i>Centromadia parryi</i> ssp. <i>australis</i>	--/--/1B	In vernal wet areas such as edges of marshes and vernal pools, at edges of roads and trails, and in other areas of compacted, poorly drained, or alkaline soils where competition from other plants is limited, often due to disturbance, below 1,400 feet elevation. In California, known only from Santa Barbara, Ventura, Los Angeles, Orange and San Diego Counties. Also occurs in Mexico. Blooms May–November.	P, O	Observed in three locations during 2009 surveys. The largest population was approximately 9,000 plants near the I-710/ Rosecrans interchange.
Parry's spineflower	<i>Chorizanthe parryi</i> var. <i>parryi</i>	--/--/1B	Sandy or rocky soils in chaparral, coastal scrub, or woodlands at 100 to 5,600 feet elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties. Blooms April through June (annual herb).	A	No sandy or rocky soils within BSA. No chaparral, coastal scrub, or woodlands within BSA.
California saw-grass	<i>Cladium californicum</i>	--/--/2	Marshes and seeps below 2,000 feet elevation. In California, known from Inyo, Riverside, Santa Barbara, San Bernardino, and San Luis Obispo Counties. Believed to be extirpated from Los Angeles and perhaps San Bernardino Counties. Also occurs in Arizona, New Mexico, Nevada, Texas, Utah, and Mexico. Blooms June through September.	A	BSA is outside known range of species (believed extirpated from Los Angeles County). Not observed during surveys of most likely habitat.
Catalina crossosoma	<i>Crossosoma californicum</i>	--/--/1B	On rocky sea bluffs, in wooded canyons, and dry, open sunny spots on rocky clay, below 1,600 feet elevation. Known only from the Channel Islands and mainland Los Angeles County. Blooms February–May.	A	No rocky bluffs, canyons, or clay habitats occur within the BSA.

Table 3.18-1 Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Many-stemmed dudleya	<i>Dudleya multicaulis</i>	--/--/1B	Heavy, often clay soils or around granitic outcrops in chaparral, coastal sage scrub, and grassland below 2,600 feet elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. Blooms April–July.	A	No clay, granitic outcrops, or similar habitat occurs within the BSA.
Island green dudleya	<i>Dudleya virens</i> ssp. <i>insularis</i>	--/--/1B	Rocky areas in coastal scrub and coastal bluff scrub below 1,000 feet elevation. Known only from the Channel Islands and mainland Los Angeles and Ventura Counties. Blooms April–June.	A	No rocky habitat occurs within the BSA.
San Gabriel bedstraw	<i>Galium grande</i>	--/--/1B	Rocky slopes in chaparral, woodland, and forest at 1,400 to 4,900 feet elevation. Known only from Los Angeles County. Blooms January through July (deciduous shrub)	A	No rocky slopes, chaparral, woodland, or forest within BSA. BSA is outside range of species.
Los Angeles sunflower	<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	--/--/1A, * (presumed extinct in CA)	Marshes and swamps (coastal salt and freshwater) at 30 to 1,600 feet elevation. This species is historically known from Los Angeles, Orange and San Bernardino Counties, California. Last seen in 1937. Presumed extinct. Plants found in 2002 at Castaic Spring along the Santa Clara River in Los Angeles County were initially reported as possibly this taxon, but instead appear to be hybrids or evolutionary intermediates between <i>H. nuttallii</i> and <i>H. californicus</i> , based on chromosome counts and pollen morphology (<i>A Quantitative Analysis of Pollen Variation in Two Southern California Perennial Helianthus [Heliantheae: Asteraceae]</i> , J.M. Porter and N. Fraga, 2004). Blooms August–October.	A	Believed extirpated from Los Angeles County. Known only from historical records. Not observed during surveys of marsh habitat within the BSA.

Table 3.18-1 Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Vernal barley	<i>Hordeum intercedens</i>	--/CSP/3	Vernal pools and saline flats and depressions below 3,300 feet elevation. Known from many California Counties. Also occurs in Mexico.	A	No vernal pools, saline flats, or depressions occur within the BSA. Not observed in nearest to suitable habitat.
Mesa horkelia	<i>Horkelia cuneata</i> ssp. <i>puberula</i>	--/--/1B	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 200 to 2,700 feet elevation. Occurs in San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Bernardino Counties. Believed extirpated from Riverside and San Diego Counties. Blooms February–July (September).	A	No gravelly or sandy habitat occurs within the BSA.
Coulter's goldfields	<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	--/--/1B	Usually alkaline soils in marshes, playas, vernal pools, and valley and foothill grassland below 4,600 feet elevation. Known from Colusa, Merced, Tulare(?), Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Kern, Los Angeles, and San Bernardino Counties. Also occurs in Mexico. Blooms February–June.	A	Believed extirpated from Los Angeles County. No alkaline soils or other suitable habitat occurs within the BSA. Not observed in habitats that are most nearly suitable.
Robinson's pepper-grass	<i>Lepidium virginicum</i> var. <i>robinsonii</i>	--/--/1B	Dry soils in coastal sage scrub and chaparral, typically below 1,600 feet elevation. In California, known only from Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, and San Diego Counties. Blooms January through July.	A	No coastal scrub or chaparral within BSA.
San Gabriel linanthus	<i>Linanthus concinnus</i>	--/--/1B	Lower and upper montane coniferous forest; found on dry rocky slopes, often in Jeffrey pine/canyon oak forest; 5,500 to 9,200 feet elevation; known only from Los Angeles and San Bernardino Counties. Blooms May through July (annual herb).	A	No coniferous forest within BSA. BSA is outside range of species.

Table 3.18-1 Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Orcutt's linanthus	<i>Linanthus orcuttii</i>	--/--1B	Openings (often gravelly) in chaparral, pinyon, and juniper woodland, and coniferous forest at 3,000 to 7,000 feet elevation. In California, known only from Los Angeles (believed extirpated), Riverside, San Bernardino, and San Diego Counties. Also occurs in Mexico. Blooms May–July.	A	No chaparral or coniferous habitats occur within the BSA.
Santa Catalina Island desert-thorn	<i>Lycium brevipes</i> var. <i>hassei</i>	--/--1B	Deciduous shrub of coastal bluffs and slopes in coastal bluff scrub and coastal scrub at 30 to 1,000 feet elevation. Known only from the Channel Islands (extirpated), one location on the Palos Verdes Peninsula in Los Angeles County, and one location in Orange County. Blooms June.	A	No coastal bluff or coastal sage scrub occur within the BSA.
Davidson's bush-mallow	<i>Malacothanmus davidsonii</i>	--/--1B	Sandy washes in coastal scrub, riparian woodland, and chaparral at 600 to 2,800 feet elevation. Known only from Los Angeles, Monterey, Santa Clara, San Luis Obispo, and San Mateo Counties, California. Blooms June through January (deciduous shrub).	A	No sandy washes, coastal scrub, riparian woodland, or chaparral within BSA. BSA is outside range of species.
Mud nama	<i>Nama stenocarpum</i>	--/--/2	Lake shores, riverbanks, and similar intermittently wet areas at 20 to 1,600 feet elevation. Known in California from San Diego, Orange, and Riverside Counties and from San Clemente Island. Believed extirpated from Los Angeles and Imperial Counties. Known also from Baja California and Arizona. Blooms January–July.	A	Believed extirpated from Los Angeles County. Not observed in wet areas within the BSA during special-status plant surveys.
Prostrate vernal pool navarretia	<i>Navarretia prostrata</i>	--/--1B	Vernal pools, usually alkaline, from 50 to 2,300 feet elevation. Known only from Alameda, Los Angeles, Merced, Los Angeles, Orange, Riverside, San Benito, San Diego San Luis Obispo, and possibly San Bernardino Counties. This species has been	A	No vernal pools or other suitable habitat occurs within the BSA.

Table 3.18-1 Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
			documented from approximately one to two miles east of the proposed right-of-way in Downey, approximately one to two miles west of the right-of-way near Compton, and approximately two miles west of the right-of-way north of the US Naval Station Long Beach. Blooms April–June.		
Coast wooly-heads	<i>Nemacaulis denudata</i> var. <i>denudata</i>	--/--/1B	Sandy places such as coastal dunes below 300 feet elevation. Known in California from Orange, Los Angeles, and San Diego Counties. Believed extirpated from Santa Catalina Island. Also occurs in Mexico. This species has been documented from approximately one to two miles east of the proposed right-of-way north of the Long Beach Harbor. Blooms April–September.	A	No sandy soils occur within the BSA.
White rabbit-tobacco	<i>Pseudognaphalium leucocephalum</i>	--/--/2	Sand and gravel at the edges of washes or mouths of steep canyons at 0 to 7,000 feet elevation. In California, known from Los Angeles, Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Also occurs in Arizona, New Mexico, Texas, and Mexico. Blooms (July) August–November (December).	A	No sandy/gravelly wash habitat occurs within the BSA.
Parish's gooseberry	<i>Ribes divaricatum</i> var. <i>parishii</i>	--/--/1A	Deciduous shrub of willow swales in riparian habitats at 200 to 1,000 feet elevation. Believed to be extinct. Historical collections from Los Angeles and San Bernardino Counties. Blooms February–April.	A	No willow swales within the BSA. Believed to be extinct. Not observed in riparian habitats.

Table 3.18-1 Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	--/--/1B	Marshes and swamps below 2,100 feet elevation. Occurs in standing or slow-moving fresh water (ponds, marshes, and ditches). Known only from Butte, Del Norte, El Dorado, Fresno, Merced, Mariposa, Placer, Sacramento, Shasta, San Joaquin, and Tehama Counties. Believed extirpated from Southern California.	A	Not known from Los Angeles County. Believed extirpated from Southern California.
Southern mountains skullcap	<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>	--/--/1B	Gravelly soils of streambanks or in mesic sites in oak or pine woodland at 1,400 to 6,600 feet elevation. Known from Riverside and San Diego Counties. Believed extirpated from San Bernardino County and perhaps Los Angeles County. Blooms June-August.	A	Site is outside species elevation range.
Salt Spring checkerbloom	<i>Sidalcea neomexicana</i>	--/--/2	Alkaline springs and brackish marshes below 5,000 feet elevation. In California, known only from Kern, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. Believed extirpated from Los Angeles County. Also known from Arizona, New Mexico, Nevada, Utah, and Mexico. Blooms March-June.	A	No alkali springs or brackish marsh within the BSA.
Estuary seablite	<i>Suaeda esteroa</i>	--/--/1B	Coastal salt marshes below 15 feet elevation. Occurs along immediate coast from Santa Barbara County to Baja California. This species has been documented from approximately one to two miles east of the right-of-way north of the Long Beach Harbor. Blooms January-October.	A	No salt marsh within the BSA.

Table 3.18-1 Special-Status Plant Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status Federal/ State/ CNPS Status	General Habitat Description	Habitat Present or Absent/ Species Observed	Rationale
San Bernardino aster	<i>Symphotrichum defoliatum</i>	--/--/1B	Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 6,700 feet elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County. Blooms July-November.	P	Not observed during focused surveys of vernal wet sites during the blooming period in 2009.
Greata's aster	<i>Symphotrichum greatae</i>	--/--/1B	Chaparral and woodland habitats in mesic canyons from 1,000 to 6,600 feet elevation. Known only from Los Angeles, San Bernardino, and Ventura Counties. Blooms July-November.	A	No canyons or similar habitats occur within the BSA.
Sonoran maiden fern	<i>Thelypteris puberula</i> var. <i>sonorensis</i>	--/--/2	Seeps along streams in meadows at 170 to 2,000 feet elevation. Known from western Riverside, southwest San Bernardino, Santa Barbara, and Los Angeles Counties. Blooms January through September (perennial herb).	A	No seep or meadow habitat within BSA. BSA is outside known range of species. Not observed during surveys of most likely habitat.
Eelgrass	<i>Zostera marina</i>	HAPC/--	Widespread in Northern Hemisphere estuaries and bays, 0–7 feet below mean low tide. Provides habitat and structure for benthic invertebrates and many other organisms.	A	Currently not known to occur in the Los Angeles River system, although it is present elsewhere along the Long Beach shoreline.

Source: I-710 Corridor Project Natural Environment Study, January 2012.

Habitat Present/Absent: Absent (A) - no habitat present and no further work needed. Habitat Present (P) – habitat is, or may be present. Species observed during surveys (O) – Based on the literature review the species has been observed within the area of the BSA. Critical Habitat (CH) – Project footprint is located within designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC); Federal Habitat Area of Particular Concern (HAPC) United States Fish and Wildlife Service Birds of Conservation Concern (BCC); California Endangered (CE); California Threatened (CT); Fully Protected Species (CFP); California Species of Special Concern (CSC); California Special Plant (CSP), California Special Animal (CSA), California Native Plant Society (CNPS); 1A, Plants presumed extinct in California; 1B, Plants considered by CNPS to be rare, threatened, or endangered in California and elsewhere, 2, Plants considered by CNPS to be rare, threatened, or endangered in California, but more common elsewhere; 3, Plants about which more information is needed – a CNPS review list; CNPS threat categories: 0.1-Seriously threatened in California (high degree/immediacy of threat); 0.2-Fairly threatened in California (moderate degree/immediacy of threat); 0.3-Not very threatened in California (low degree/immediacy of threats or no current threats known)

Table 3.18-2 Impacts to Southern Tarplant from Alternatives 6A/B/C

Location of population (from south to north)	Number of Individual Plants in Population	Square Footage of Population	Direct Permanent Impacts		Indirect Permanent Impacts		Approximate Percent of Population Impacted
			Number of Individuals	Square Footage of Population	Number of Individuals	Square Footage of Population	
Southeast of I-405/I-710 Interchange	6	1,029	0	0	0	0	0.0
I-710/Rosecrans Interchange	9,000	5,063	0	0	4,500	2,576	50.9
Atlantic Blvd./ Bandini Blvd. Intersection	90	21,640	90	21,640	0	0	100.0
Total	9,096	27,731	90	21,640	4,500	2,576	50.5

Source: *I-710 Corridor Project Natural Environment Study*, January 2012.

I-405 = Interstate 405

I-710 = Interstate 710

As proposed, the elevated freight corridor structure will span over the populations, creating some degree of permanent shade where sunny conditions currently exist. Since the southern tarplant is a sun-loving species, shading is anticipated to result in an adverse impact to the portions of the populations lying below the proposed elevated structures. Alternative 5A would not result in indirect permanent impacts to southern tarplant from shading. Alternatives 6A/B/C would result in indirect permanent impacts from shading to one of the three populations of southern tarplant. Anticipated impacts to the populations of southern tarplant from Alternatives 6A/B/C are shown in Figures 3.18-1 and 3.18-2.

As shown in Table 3.18-2, with Alternatives 6A/B/C, approximately 50.5 percent (approximately 4,590 individuals) of the populations would be permanently affected by direct removal or indirectly by shading, assuming that populations are evenly distributed throughout the limits of the population. The overall quality of the disturbed habitat is fair, given the fact that I-710 freeway and other urban development borders the population boundaries.

With Alternatives 6A/B/C, approximately 49.5 percent of the population within the BSA would not be affected once the I-710 Corridor Project is completed, providing ample seed source for continued existence of the overall populations.

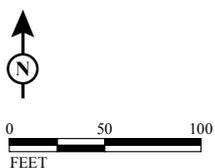
Although some impact to southern tarplant is unavoidable from any of the alternatives, the listing status of the southern tarplant (CNPS 1B) does not offer it legal protection under CESA.



FIGURE 3.18-1

LEGEND

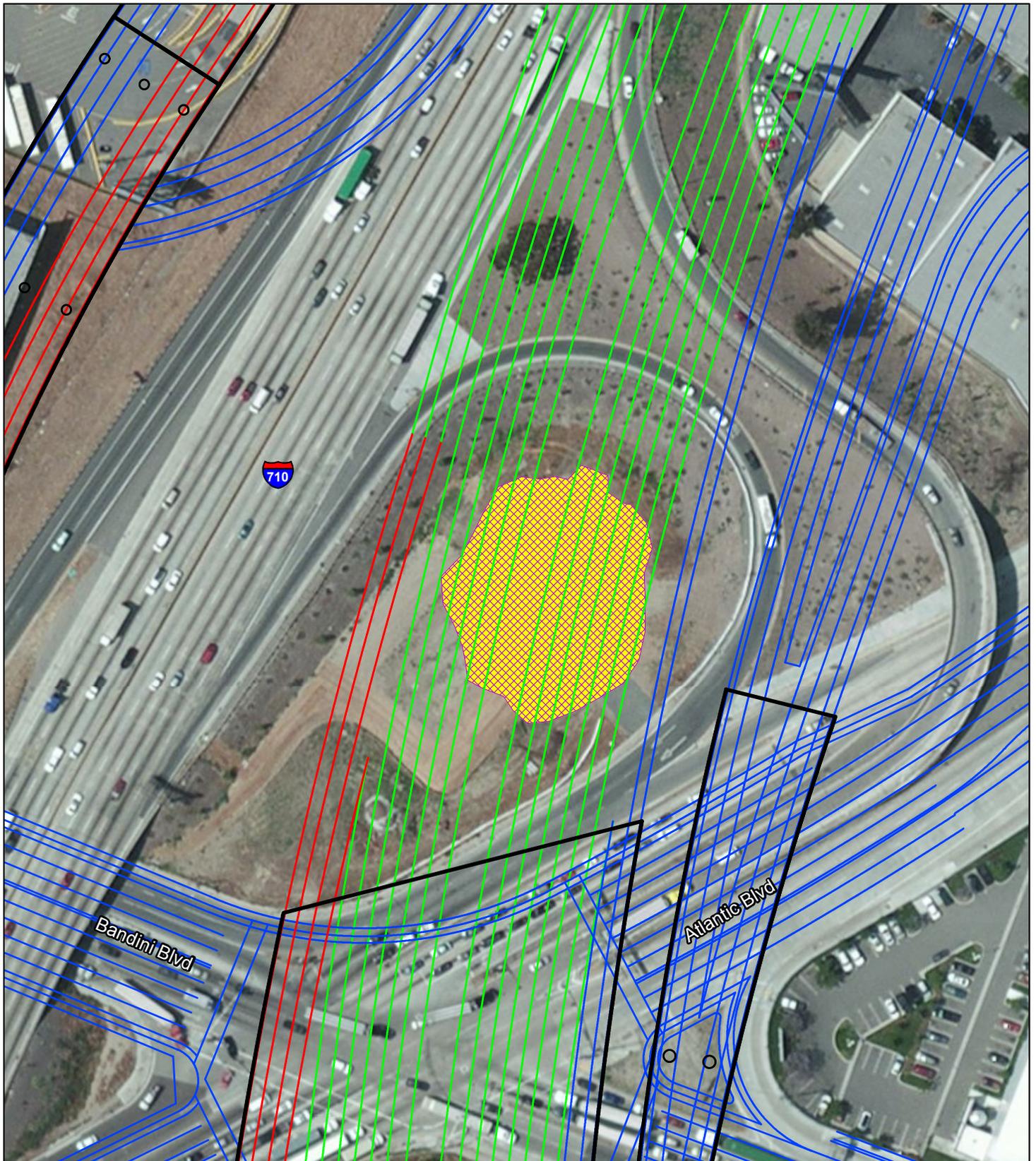
- Alternative 6A/6B/6C Geometrics
- Collector/Distributor and Ramp
- Freight Corridor
- Mainline
- Proposed Elevated Structure
- Specific Occurrences of Southern Tarplant (LSA, 2010)
- Area of Indirect Impact (2,576 Sq Ft)
estimated 4,500 plants impacted



SOURCE: Bing (2008); URS (5/2011)
 F:\URS0801A\GIS\EIR_EIS\Tarplant_Impact_Rosecrans.mxd (6/13/12)

I-710 Corridor Project EIR/EIS
**Impacts to Rosecrans Subpopulation
 of Southern Tarplant**
 07-LA-710- PM 4.9/24.9
 EA 249900

This page intentionally left blank



LEGEND

Alternative 6A/6B/6C Geometries

Collector/Distributor and Ramp

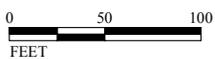
Freight Corridor

Mainline

Proposed Elevated Structure

Specific Occurrences of Southern Tarplant (LSA, 2010)

Area of Direct Impact (21,640 Sq Ft)
estimated 90 plants impacted



SOURCE: Bing (2008); URS (5/2011)

F:\URS0801A\GIS\EIR_EIS\Tarplant_Impact_Atlantic.mxd (6/13/12)

FIGURE 3.18-2

I-710 Corridor Project EIR/EIS
Impacts to Atlantic/Bandini Subpopulation
of Southern Tarplant

07-LA-710- PM 4.9/24.9
EA 249900

This page intentionally left blank

NO BUILD ALTERNATIVE. Under Alternative 1, the I-710 Corridor Project would not be constructed. Therefore, there would be no permanent impacts to special-status plant species from Alternative 1.

3.18.3.2 PUBLIC HEALTH CONSIDERATIONS

No public health considerations were noted in regard to project impacts on plants.

3.18.4 AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

Minimization efforts are warranted to minimize disturbance to larger portions of the populations than is necessary to improve the I-710 Corridor. The measures described in Section 3.16, Natural Communities, and Section 3.24, Construction Impacts, will be implemented to avoid and minimize impacts to southern tarplant.

This page intentionally left blank