Table F-1: Special-status Species with Potential to Occur

Species	Listing Status*	Habitat Association	Potential to be impacted
Birds			
California least tern *Sterna antillarum browni*	FE, SE, SFP	Migrant breeder to California arriving middle to late April. Colonial nester, early May – early June. Nests in scrapes on open sand or fine gravel substrate with sparse vegetation cover. Forages for fish in shallow to deep waters, for small invertebrates in shallow tidal areas and South Bay "intake" salt ponds. Out-migrates by late September.	Potential to be impacted. Two to three least tern pairs have been documented nesting at the Pittsburg Power Plant (Goals Project, 2000).
Double-crested cormorant *Phalacrocorax auritus* Colonies	--	Yearlong resident along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. Most common August to May. Feeds mainly on fish; also crustaceans and amphibians. Dives for prey. Utilizes offshore rocks, islands, trees, wharfs, jetties, and transmission towers for perches.	Unlikely to be impacted. Individuals use marine terminal for basking and area for foraging. There are no breeding colonies in the vicinity of the project.
California brown pelican *Pelecanus occidentalis californicus*	SFP	In estuarine, marine subtidal, and marine pelagic waters, fairly common to common June to November, rare the rest of the year. Feeds mainly on fish caught by diving. Rests on water, inaccessible rocks, but may also utilize sandy beaches, mudflats, wharfs, and jetties.	Unlikely to be impacted. Foraging habitat is present at the marine terminal site. However, only one recorded sighting since 1979 (CADC, 2011).

Species	Listing Status*	Habitat Association	Potential to be impacted
Marsh Birds			
Northern harrier Circus cyaneus	SSC-3	Forages on small- to medium-sized vertebrates, generally rodents and passerines, in marshes, wetlands, and annual grasslands. Nests on the ground in undisturbed areas with dense vegetation cover from March through August.	Potential to be impacted. Has been observed in the marshlands along the San Pablo Bay pipeline. Has not been noted to breed in the area, however potential nesting is not precluded.
Tricolored blackbird Agelaius tricolor	SSC-1	Permanent residents of the state, though exhibits seasonal and breeding migratory patterns within the restricted range. Breeds colonially in cattail marshes mid-March through August. Colonies may contain more than 20,000 adults, though are typically smaller. Insectivores, forage in grasslands and wetlands.	Unlikely to be impacted. No breeding colonies are located in the marshlands along the San Pablo Bay pipeline, though tricoloreds migrate through the estuary (Glover, 2007)
Suisun song sparrow Melospiza melodia maxillaris	SSC-3	California endemic, year-round range consists of tidal salt and brackish marshes associated with Carquinez Strait and Suisun Bay west of the City of Antioch. Dense vegetation required for nesting, perching, and cover from predators. Primarily use tidal channels; small territories and limited dispersal of young constrain species distribution. Requires exposed ground for foraging on seeds.	Potential to be impacted. Densest remnant populations occur in the marshlands along the San Pablo Bay pipeline.
Saltmarsh common yellowthroat Geothlypis trichas sinuosa	BCC, SSC	Nests in freshwater marshes March - July, disperses into adjacent saltwater marshes to forage in winter. Insectivore. Small territories, displays high site fidelity.	Potential to be impacted. Small breeding populations occur in coastal salt marsh at and around Point Edith WMA near Martinez.

Species	Listing Status*	Habitat Association	Potential to be impacted
California black rail Laterallus jamaicensis coturniculus	BCC, ST, SFP	Occurs in tidal salt marsh heavily grown to pickleweed; also in fresh-water and brackish marshes, all at low elevation.	Potential to be impacted. Populations occur in the marshlands along the San Pablo Bay pipeline.
California clapper rail	FE, SE, SFP	Perennial inhabitant of tidal salt marshes of San Francisco Bay. Nests in brackish marshes in spring.	Potential to be impacted. Populations occur in the marshlands along the San Pablo Bay pipeline.
Marsh Mammals			
Suisun shrew Sorex ornatus sinuosus	SSC	Salt and brackish marshes with contiguous upland habitats. Diet presumed to consist of invertebrates.	Unlikely to be impacted. Although suitable habitat for this species exists along the San Pablo Bay pipeline, its current distribution is limited to marshes along the northern borders of Suisun and San Pablo bays.
Salt marsh harvest mouse Reithrodontomys raviventris	FE, SE, SFP	Endemic to saline emergent wetlands of San Francisco Bay and its tributaries. Nests are found in pickleweed marshes. Forages for seed in shady slopes and grassy places.	Potential to be impacted. Present within the San Pablo Bay Pipeline study corridor in wetlands designated for protection of existing populations.
San Joaquin pocket mouse Perognathus inornatus inornatus	None	Inhabits arid, annual grassland, savanna, and desert-shrub associations. Nocturnal, hibernates winters, feeds on grass, forb, and shrub seeds.	Unlikely to be impacted. Single CNDDB record in vicinity of pipeline study corridor (EOID 33758, 1991). Species is not commonly known from the area.

Species	Listing Status*	Habitat Association	Potential to be impacted
Marine Mammals			
Harbor seal Phoca vitulina richardii	MMPA	Temperate coastal habitats, where it uses rocks, reefs, and beaches for haulout.	Potential to be impacted. Not common upstream of Suisun Bay. Individuals may forage in the vicinity of the terminal or rest on the marina dock.
California sea lion Zalophus californianus	MMPA	Shallow coastal and estuarine waters. Hauls out on marina docks, jetties, and buoys.	Potential to be impacted. Not common upstream of Suisun Bay. Individuals may forage in the vicinity of the terminal or rest on the marina dock.
Eastern Pacific Gray whale Eschrichtius robustus	MMPA	Baleen feeder, forages for benthic epifauna over soft bottom substrates in SF Bay during stopovers on migrations between Mexico and Alaska.	Unlikely to be impacted. Presence of whales upstream of San Pablo Bay exceedingly rare.
Humpback whale Megoptera noveangliae	MMPA	May forage in SF Bay during migration stopovers.	Unlikely to be impacted. Presence of whales upstream of San Pablo Bay exceedingly rare.
Fish			
Delta smelt Hypomesus transpacificus	SE, FT, CH	Tolerant of a wide range of salinity. Shortly before spawning, adults migrate upstream from the brackish-water habitat associated with the entrapment zone and disperse widely into river channels and tidally influenced backwater sloughs. They spawn in shallow, fresh, or slightly brackish water upstream of the entrapment zone.	Potential to be impacted. Abundance and possibly distribution dependent on location of available brackish water habitat. Potential to rear and forage near marine terminal. Adults migrate past terminal in December. Construction and operation may impact individuals.

Species	Listing Status*	Habitat Association	Potential to be impacted
Longfin smelt Spirinchus thaleichthys	ST, SSC	Anadromous, estuarine fish, tolerates wide range of salinities. Migrates daily, low in water column at day and surface at night. Lives 8 – 10 years. Feeds on shrimp, copepods, and crustaceans. Spawn and die in freshwater.	Potential to be impacted. Most likely to occur near marine terminal October – November as adults migrate upstream to spawn. Construction may interfere with migration corridors.
Sacramento splittail Pogonichthys macrolepidotus	SSC	Sacramento/San Joaquin estuary. Slow-moving sections of rivers and sloughs and have been most abundant in the Suisun Bay and Marsh region. Splittail spawn on submerged vegetation in temporarily flooded upland and riparian habitat.	Potential to be impacted. Marine terminal is adjacent to migratory corridor for this species. Adults migrating downstream past terminal in June-July. Young-of-year migrate downstream June – August. Adult splittail migrate upstream past terminal starting in November. Marine terminal does not have suitable habitat. Construction may interfere with migration corridors.
Sacramento perch Archoplites interruptus	SSC	Sloughs, sluggish rivers and lakes with beds of rooted and emergent vegetation. Tolerant of wide range in water turbity, temperature, and salinity. Often associated with submerged vegetation or other objects in the nearshore area of warmwater lakes/ponds. Young stay close to submerged vegetation or in shallow areas.	Unlikely to be impacted. Extirpated from most of native habitat, small remnant population in Alameda Creek watershed would not be impacted by project (Leidy, 2007).
Tidewater goby Eucyclogobius newberryi	FE, SSC	Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Unlikely to be impacted. Extirpated from SF Bay except streams in Marin County, which would not be impacted by project (Leidy, 2007).

Species	Listing Status*	Habitat Association	Potential to be impacted
Coho salmon – central CA coast Onchoryhchus kisutch	FE, SE, SSC	Large anadromous salmonid, returns to stream of birth after two to three years to spawn and die.	Unlikely to be impacted. Extirpated from SF Bay.
Central Valley steelhead Oncorhynchus mykiss irideus	FT	Anadromous species migrates up Sacramento/San Joaquin rivers and tributaries for spawning in the spring. Most juvenile steelhead spend 1-2 years rearing in their natal stream before outmigrating.	Potential to be impacted. Marine terminal is by migratory channel. Juvenile downstream migration past terminal will begin in October. Adult spawning migrations begin in July and continues in waves through the winter.
Central CA steelhead Oncorhynchus mykiss irideus	FT	Anadromous species migrates into San Francisco and San Pablo basins, but not into the Sacramento-San Joaquin basins.	Unlikely to be impacted. Does not occur in marine terminal vicinity.
Central Valley spring-run Chinook salmon Oncorhynchus tshawytscha	ST, FT	Anadromous species migrates up Sacramento/San Joaquin rivers and tributaries for spawning at 2-4 years. Juveniles stay in freshwater for a few months before outmigrating.	Potential to be impacted. Marine terminal is by migratory channel. Juvenile downstream migration past terminal begins in October with first winter storms. Adult migration would not be impacted.
Winter-run Chinook salmon Oncorhynchus tshawytscha	SE, FE, CH	Anadromous species migrates up Sacramento/San Joaquin rivers and tributaries for spawning at two to seven years. Juveniles stay in freshwater for 5-10 months before outmigrating.	Potential to be impacted, but less likely than the other runs of salmonids. Marine terminal is by migratory channel. Juvenile downstream migration enters the Delta from January to April. Adult spawning migration is from January to May.

Species	Listing Status*	Habitat Association	Potential to be impacted
Central Valley fall/late fall-run Chinook salmon Oncorhynchus tshawytscha	FSC, SSC	Anadromous species migrates up Sacramento/San Joaquin rivers and tributaries for spawning at 2-6 years. Juveniles stay in freshwater for a few days up to a few months, but begin their downstream movement within a few weeks of emergence from the gravels..	Potential to be impacted. Marine terminal is by migratory channel. Juvenile downstream migration past terminal may occur during all months of the year. Adult spawning migration September - December. Juveniles rear in the estuary.
Green sturgeon Acipenser medirostris	FT, SSC	Bay species, long-lived, found in brackish water, benthic feeder. Anadromous, spawns in Sacramento River.	Potential to be impacted. Likely occurs in project area as Suisun Bay/New York Slough contain suitable foraging and holding habitat. Migrates past marine terminal to spawn in winter.
White sturgeon Acipenser transmontanus	Sport fishery	Anadromous bay species, found in brackish water, benthic feeder, spawns in freshwaters of delta.	Potential to be impacted. Common sport species that is common in brackish waters. Juveniles and adults demersal benthic feeders over soft bottom substrate. Migrates past marine terminal to spawn in winter.
River Lamprey Lampetra ayresi	SSC	Native species, life history not well understood. Anadromous, probably predaceous in marine habitats with juvenile filter feeding freshwater stage. Believed to assemble at the mouth of the river before entering the ocean in late spring, then spend only a few months in the ocean before returning to freshwater to spawn and die.	Unlikely to be impacted. Population abundance unknown. Occupies water column in freshwater. Migrates past marine terminal in spring prior to start of construction.

Species	Listing Status*	Habitat Association	Potential to be impacted
Pacific Lamprey Lampetra tridentata	SSC	Anadromous. Filter feeders in freshwater for 5 – 7 years, then morph into predator stage, migrate to marine environment, and attach and feed on fish up to 4 years. Returns to freshwater to spawn and die.	Unlikely to be impacted. Population abundance moderate to high. Occupies water column in freshwater. Populations reported in San Pablo Bay and Carquinez Strait, but not near marine terminal.
Starry Flounder Platichthys stellatu	EFH	Estuarine fish, benthic feeder on macrophytes, including shrimp, crabs, polychaete worms. Mature at age 2, spawn Sep – Mar along marine shores or estuary mouth. Eggs settle to bottom of water column. Rears in warm, nearly fresh, water.	Potential to be impacted. Common species that is common in brackish waters. Juveniles and adults demersal benthic feeders over soft bottom substrate.
Plants			
Soft bird's-beak Cordylanthus mollis ssp. mollis	FE, SR, 1B.2	Blooms Jul – Nov. Associated with coastal salt marshes and swamps.	Potential to be impacted. Known occurrences within the San Pablo Bay Pipeline study corridor. Would not be impacted by construction or operation of the marine and storage terminals.
Bolander's water-hemock Cicuta maculate var. bolanderi	2.1	Blooms Jul – Sep. Associated with marshes, swamps, coastal fresh or brackish water.	Potential to be impacted. Known occurrences within the San Pablo Bay Pipeline study corridor. Would not be impacted by construction or operation of the marine and storage terminals.
Delta tule pea Lathyrus jepsonii var. jepsonii	1B.2	Blooms May – Jul(Sep). associated with marshes and swamps (freshwater and brackish).	Potential to be impacted. Known occurrences within the San Pablo Bay Pipeline study corridor. Would not be impacted by construction or operation of the marine and storage terminals.

Species	Listing Status*	Habitat Association	Potential to be impacted
Mason's lilaeopsis Lilaeopsis masonii	1B.1	Blooms Apr – Nov. Associated with marshes and swamps (Freshwater and brackish) and riparian scrub.	Potential to be impacted. Known occurrences within the San Pablo Bay Pipeline study corridor. Would not be impacted by construction or operation of the marine and storage terminals.
Suisun marsh aster Symphyotrichum lentum	1B.2	Blooms May – Nov. Associated with marshes and swamps (Freshwater and brackish).	Potential to be impacted. Known occurrences within the San Pablo Bay Pipeline study corridor. Would not be impacted by construction or operation of the marine and storage terminals.
Saline clover Trifolium hydrophilum	1B.2	Blooms Apr – Jun. Associated with marshes and swamps, valley and foothill grasslands, and vernal pools.	Potential to be impacted. Known occurrences within the San Pablo Bay Pipeline study corridor. Would not be impacted by construction or operation of the marine and storage terminals.

***Federal Listing** Status FE: Federally listed endangered; FPD: Federally proposed for delisting; FT: Federally listed threatened; FSC: NMFS Federal species of concern; PCH: Proposed critical habitat; BCC: Federally Listed Birds of Conservation Concern; CH: Critical habitat designated; EFH: NOAA-Fisheries Essential Fish Habitat species. **State Listing Status** SFP: State fully protected; SE: State-listed endangered; ST: State-listed threatened; SSC: California species of special concern. The SSCs may be further ranked by priority: SSC-1: priority one, etc.

Sources: CALFISH, 2011; CNDDB, 2011; CNPS, 2011; USFWS, 2011