

2.21 Invasive Species

2.21.1 Regulatory Setting

On February 3, 1999, President William J. Clinton signed EO 13112, requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” FHWA guidance issued on August 10, 1999, directs the use of the State’s invasive species list, maintained by the California Invasive Species Council (<http://www.iscc.ca.gov/>) to define the invasive species that must be considered as part of NEPA analysis for a proposed project.

2.21.2 Affected Environment

This section is based on the *Natural Environment Study Report* prepared for the project (ICF International 2014). The report is available on the project website at <http://8065interchange.org/>.

Invasive plant species include species designated as federal noxious weeds by the U.S. Department of Agriculture, species listed by the California Department of Food and Agriculture (CDFA), and invasive plants identified by the California Invasive Plant Council (Cal-IPC). Invasive plants displace native species, change ecosystem processes, alter plant community structure, and lower wildlife habitat quality. Road, highway, and related construction projects are some of the principal dispersal pathways for invasive plants and their propagules. Table 2.21-1 lists the invasive plant species identified by CDFA and Cal-IPC that are known to occur in the BSA. No plant species designated as federal noxious weeds have been identified in the BSA. Most of the invasive plant species occur in annual grassland, along roadways, and in disturbed/graded areas.

Table 2.21-1. Invasive Plant Species Identified in the Biological Study Area

Species	CDFA	Cal-IPC
Barbed goat grass (<i>Aegilops triuncialis</i>)	B	High
Tree of heaven (<i>Ailanthus altissima</i>)	C	Moderate
Giant reed (<i>Arundo donax</i>)	B	High
Slender wild oat (<i>Avena barbata</i>)	–	Moderate
Wild oat (<i>Avena fatua</i>)	–	Moderate
Ripgut brome (<i>Bromus diandrus</i>)	–	Moderate
Soft chess (<i>Bromus hordeaceus</i>)	–	Limited
Red brome (<i>Bromus madritensis</i> ssp. <i>Rubens</i>)	–	High
Italian thistle (<i>Carduus pycnocephalus</i>)	C	Moderate
Yellow star-thistle (<i>Centaurea solstitialis</i>)	C	High
Bull thistle (<i>Cirsium vulgare</i>)	C	Moderate
Bermuda grass (<i>Cynodon dactylon</i>)	C	Moderate

Species	CDFA	Cal-IPC
Hedgehog dogtail grass (<i>Cynosurus echinatus</i>)	–	Moderate
Fuller’s teasel (<i>Dipsacus fullonum</i>)	–	Moderate
Stinkwort (<i>Dittrichia graveolens</i>)	–	Moderate
Medusahead (<i>Elymus caput-medusae</i>)	C	High
Red-stemmed filaree (<i>Erodium cicutarium</i>)	–	Limited
Rattail fescue (<i>Festuca myuros</i>)	–	Moderate
Italian ryegrass (<i>Festuca perennis</i>)	–	Moderate
Edible fig (<i>Ficus carica</i>)	–	Moderate
Fennel (<i>Foeniculum vulgare</i>)	–	High
Cutleaf geranium (<i>Geranium dissectum</i>)	–	Limited
Bristly ox-tongue (<i>Helminthotheca echioides</i>)	–	Limited
Field mustard (<i>Hirschfeldia incana</i>)	–	Moderate
Mediterranean barley (<i>Hordeum marinum</i> var. <i>Gussoneanum</i>)	–	Moderate
Foxtail barley (<i>Hordeum murinum</i> ssp. <i>Leporinum</i>)	–	Moderate
Klamathweed (<i>Hypericum perforatum</i>)	C	Moderate
Smooth cat’s ear (<i>Hypochaeris glabra</i>)	–	Limited
Rough cat’s-ear (<i>Hypochaeris radicata</i>)	–	Moderate
Hyssop loosestrife (<i>Lythrum hyssopifolia</i>)	–	Moderate
Pennyroyal (<i>Mentha pulegium</i>)	–	Moderate
Olive (<i>Olea europaea</i>)	–	Limited
Harding grass (<i>Phalaris aquatica</i>)	–	Moderate
Pokeweed (<i>Phytolacca americana</i>)	–	Limited
English plantain (<i>Plantago lanceolata</i>)	–	Limited
Rabbitsfoot grass (<i>Polypogon monspeliensis</i>)	–	Limited
Himalayan blackberry (<i>Rubus armeniacus</i>)	–	High
Sheep sorrel (<i>Rumex acetosella</i>)	–	Moderate
Curly dock (<i>Rumex crispus</i>)	–	Limited
Russian thistle (<i>Salsola tragus</i>)	C	Limited
Red sesbania (<i>Sesbania punicea</i>)	B	High
Johnson grass (<i>Sorghum halepense</i>)	C	–
Hedge parsley (<i>Torilis arvensis</i>)	–	Moderate
Rose clover (<i>Trifolium hirtum</i>)	–	Moderate

Note: The California Department of Agriculture (CDFA) and California Invasive Plant Council (Cal-IPC) lists assign ratings that reflect the CDFA and Cal-IPC views of the statewide importance of the pest, likelihood that eradication or control efforts would be successful, and present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances. The Cal-IPC species list is more inclusive than the CDFA list.

The **CDFA categories** indicated in the table are defined as follows:

B: Eradication, containment, control or other holding action at the discretion of the county agricultural commissioner.

C: State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the county agricultural commissioner.

The **Cal-IPC categories** indicated in the table are defined as follows:

High: Species with severe ecological impacts, high rates of dispersal and establishment, and usually widely distributed.

Moderate: Species with substantial and apparent ecological impacts, moderate to high rates of dispersal, establishment dependent on disturbance, and limited to widespread distribution.

Limited: Species with minor ecological impacts, low to moderate rates of invasion, limited distribution, and locally persistent and problematic.

Sources: California Department of Food and Agriculture 2014; California Invasive Plant Council 2014.

2.21.3 Environmental Consequences

2.21.3.1 Build Alternatives

At similar levels under all build alternatives, the proposed project would temporarily create additional disturbed areas and could result in the introduction and spread of invasive plant species. Areas where temporary disturbance occurs would be more susceptible to colonization or spread by invasive plants.

2.21.3.2 No Build Alternative

Under the No Build Alternative, ground disturbance would not occur and the project area would not be more susceptible to the introduction and spread of invasive plant species.

2.21.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of the following measure will avoid or minimize the potential introduction and spread of invasive plant species.

Avoid and Minimize the Spread of Invasive Plant Species during Project Construction

Two or more of the BMPs listed below will be written into the construction specifications and implemented during project construction.

- Retain all fill material onsite to prevent the spread of invasive plants to uninfested areas.
- Use a weed-free source for project materials (e.g., straw wattles for erosion control that are weed-free or contain less than 1 percent weed seed).
- Prevent invasive plant contamination of project materials during transport and when stockpiling (e.g., by covering soil stockpiles with a heavy-duty, contractor-grade tarpaulin).
- Use sterile wheatgrass seed and native plant stock during revegetation.
- Revegetate and/or mulch disturbed soils within 30 days of completion of ground-disturbing activities to reduce the likelihood of invasive plant establishment.

The goal for implementation of two or more of these BMPs is to minimize the disturbance and transport of soil and vegetation to the greatest extent feasible to complete the work. Detailed information about implementing these BMPs can be found in *Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors* (California Invasive Plant Council 2012).

2.21.5 References Cited

California Department of Food and Agriculture. 2014. *Encyclopedica: Data Sheets*. Division of Plant Health and Pest Prevention Services, Pest Exclusion Branch, Sacramento, CA.

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