

Physical Environment

2.8 Hydrology and Floodplain

2.8.1 Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 CFR 650 Subpart A.

In order to comply, the following must be analyzed:

- The practicability of alternatives to any longitudinal encroachments
- Risks of the action
- Impacts on natural and beneficial floodplain values
- Support of incompatible floodplain development
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values impacted by the project.

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

2.8.2 Affected Environment

The potential for the proposed project to affect hydrology and floodplains is documented in the Summary Floodplain Encroachment Report (June 2010). The findings of this report are discussed in the paragraphs below.

As shown in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Nos. 06059C0509J and 06059C0528J (December 3, 2009), (Figures 2.8-1 and 2.8-2) the study area along I-5 is located within the following 100-year floodplains:

- Zone AE (base flood elevations determined) of the Prima Deshecha Cañada 100-year floodplain and floodway
- Zone AE (base flood elevations determined) of the Segunda Deshecha Cañada 100-year floodway
- Zones A (no base flood elevations determined) and AE (base flood elevations determined) of the Cascadita Creek 100-year floodplain

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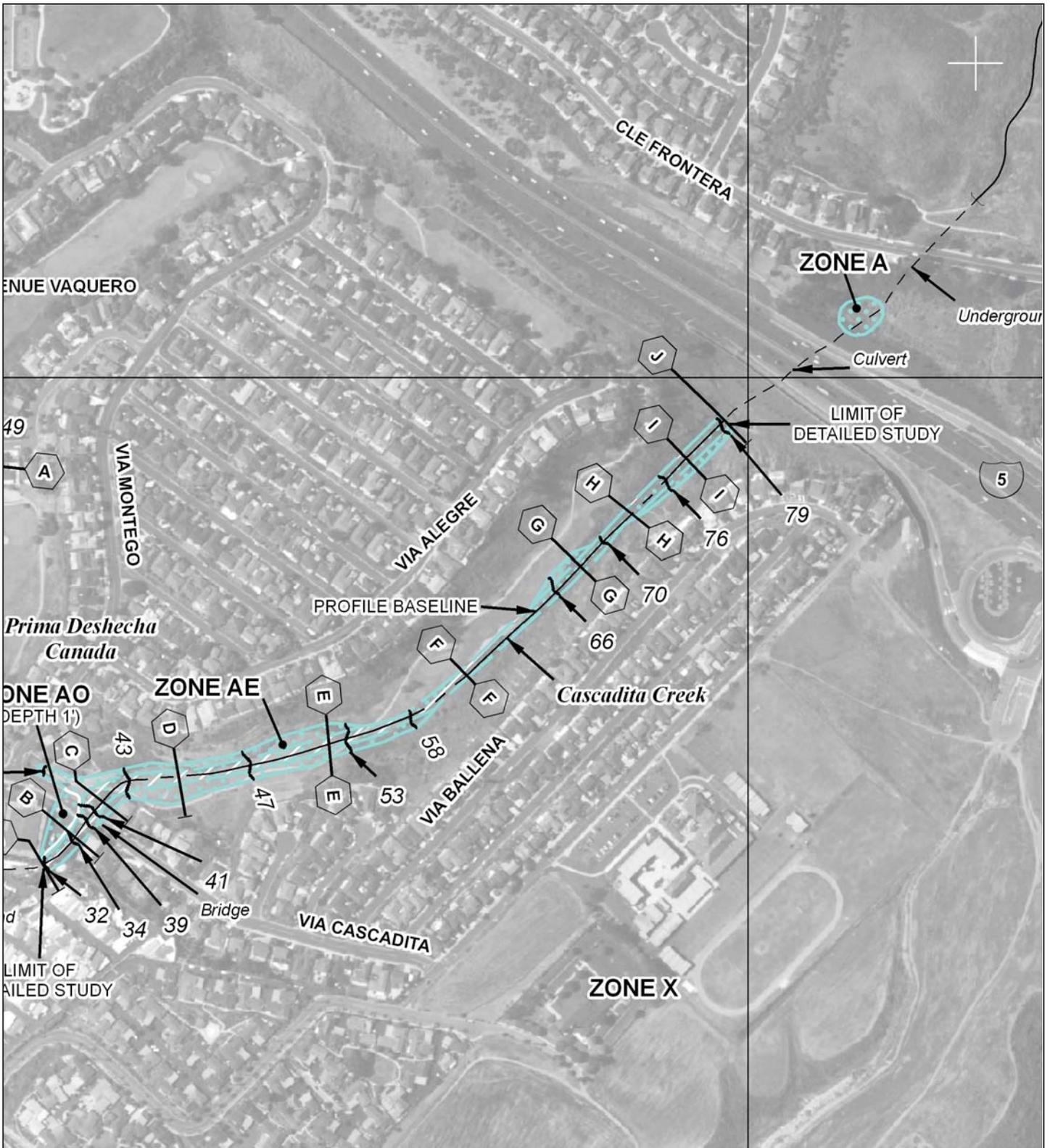
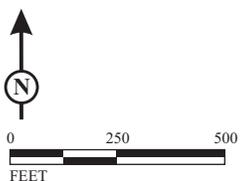


FIGURE 2.8-1



SOURCE: Federal Emergency Management Agency, Flood Insurance Rate Maps

I:\ARMN0901\GFEMA Map-1.cdr (11/22/10)

I-5 HOV Lane Extension
 FEMA Map No. 06059C0529J
 12-ORA-5 PM 3.0/8.7
 EA# 0F9600

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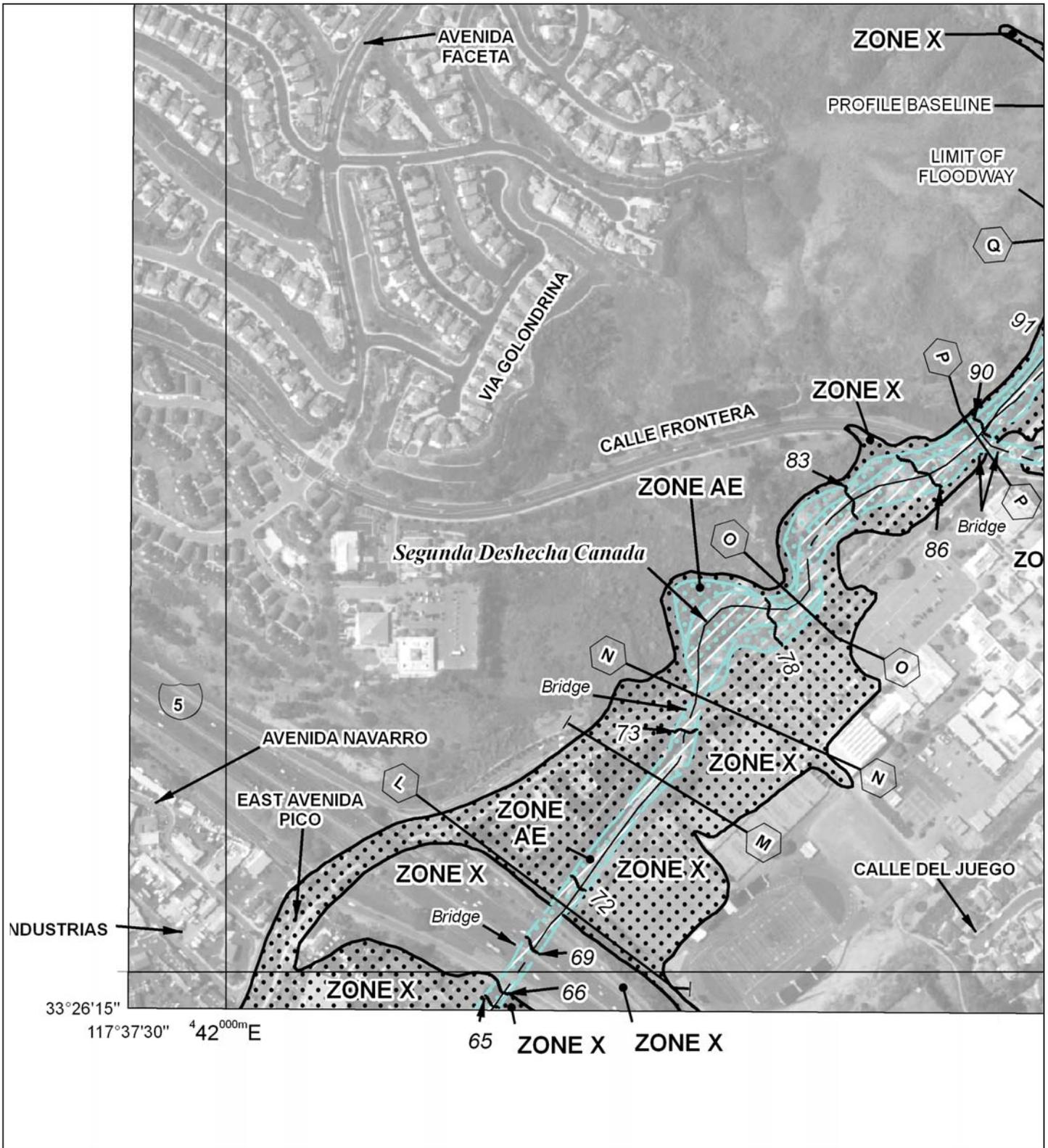
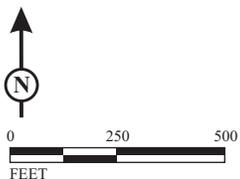


FIGURE 2.8-2



SOURCE: Federal Emergency Management Agency, Flood Insurance Rate Maps

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I-5 HOV Lane Extension
 FEMA Map No. 06059C0528J
 12-ORA-5 PM 3.0/8.7
 EA# 0F9600

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Prima Deshecha Cañada and Cascadita Creek would not be affected by the proposed project, and therefore, no further discussion is provided.

Floodplains and wetlands in their natural or relatively undisturbed state provide natural and beneficial water resource values (e.g., natural moderation of floods, water quality maintenance, groundwater recharge), living resource values (e.g., fish, wildlife, plant species), and cultural resource values (e.g., open space, archaeological and historical resources, natural beauty, scientific study, outdoor education, recreation). Within the study area, the Segunda Deshecha Cañada is concrete-lined, with disturbed vegetation on the banks and with a few cracks in the culvert. However, the majority of the vegetation is above the floodplain. In addition, the existing channel is not in a natural or relatively undisturbed state. Therefore, the channel does not provide natural or beneficial living resource or cultural resource values.

Beneficial water resource values are identified in the Water Quality Control Plan for the San Diego Basin (Basin Plan, September 8, 1994). The following beneficial uses are identified in the Basin Plan for the Segunda Deshecha Cañada:

- **MUN:** Municipal and Domestic Supply
- **AGR:** Agricultural Supply
- **REC1:** Contact Water Recreation (swimming/wading)
- **REC2:** Noncontact Water Recreation (boating/fishing)
- **WARM:** Warm Freshwater Habitat
- **WILD:** Wildlife Habitat

2.8.3 Environmental Consequences

2.8.3.1 Temporary Impacts

Build Alternative 4 with Design Option A (Preferred Alternative)

Construction activities have the potential to impact the intermittent beneficial water resource values of the Segunda Deshecha Cañada Creek discussed above by impacting water quality. As discussed in detail later in Section 2.9, Water Quality and Storm Water Runoff, potential impacts to water quality could occur during construction of the proposed project due to increased erosion or accidental spills. However, Best Management Practices (BMPs), including erosion control measures, would be implemented during construction of the proposed project to reduce impacts to water quality and beneficial water resource values. Therefore, construction of the

proposed project would not result in short-term direct or indirect adverse impacts to natural and beneficial floodplain values.

2.8.3.2 Permanent Impacts

Build Alternative 4 with Design Option A (Preferred Alternative)

Build Alternative 4 with Design Option A would not result in any 100-year floodplain or floodway encroachments; therefore, no impacts would result from implementation of Build Alternative 4 with Design Option A.

2.8.4 Avoidance, Minimization, and/or Mitigation Measures

No measures are required for Build Alternative 4 with Design Option A because this alternative would not impact a 100-year floodplain or floodway.