

Conveyance Facility Modifications to Alternative 4

3.1 Background and Description of Facility Modifications

In December 2014, the administration of Governor Edmund G. Brown, Jr., and its federal partners announced several substantial changes to the proposed water conveyance portion of the proposed Bay Delta Conservation Plan (BDCP), including elimination of the need to build three pumping plants, a component of the intake facilities, along the Sacramento River near Hood.

In addition to the changes announced in December 2014, the proposed water conveyance facilities have also been refined based on further engineering analysis and in consideration of feedback received during the 2014 public comment period. Where applicable, the changes have been incorporated into the impact analysis for Alternative 4 in the RDEIR/SDEIS. The changes would achieve the benefits listed below.

- Eliminate three pumping plants associated with the new intake facilities, and the visual effects associated with these facilities, on the east bank of the Sacramento River between Clarksburg and Courtland.
- Minimize construction activities on Staten Island, which provides important sandhill crane habitat, by removing tunnel launch facilities, large reusable tunnel material (RTM) storage areas, a barge landing site, and high-voltage power lines.
- Minimize impacts to private landowners by relocating project features to property already owned by the California Department of Water Resources (DWR) and reducing the acreage of lands needing to be acquired from private and Non-Governmental Organization (NGO) landowners.
- Eliminate the need for additional permanent power lines to the intake locations in the north Delta, including near Stone Lakes National Wildlife Refuge.
- Eliminate impacts on Italian Slough (near Clifton Court Forebay) by removing an underground siphon.
- Reduce electric power requirements for construction and potentially operation of the facilities.
- Allow water to flow from the Sacramento River and through screened intakes, initial tunnels, an intermediate forebay, main tunnels, and into Clifton Court Forebay entirely by gravity at certain river stages (previously, only flows between the intermediate forebay and Clifton Court Forebay would be conveyed by gravity).
- Reduce tunnel operation and maintenance costs.

These changes would eliminate the need to build three separate two-story pumping plants along a 5-mile stretch of the Sacramento River between Clarksburg and Courtland. The original plans to build three intakes screened for fish protection along that stretch of river would not change, but after extensive engineering analysis, DWR has determined that it is not necessary to build pumping plants adjacent to each intake to move the water from the river and into tunnels. Instead, water

1 could be moved from the river into tunnels by two new pumping plants constructed 40 miles away,
2 on DWR property at the southern end of the tunnels near Clifton Court Forebay.

3 The RDEIR/SDEIS does not change the impact disturbance assumptions associated with the roughly
4 87-acre footprint of each intake, but the three 46,000-square-foot buildings would not be needed to
5 house pumping plants; nor would permanent transmission lines, substations, and surge towers be
6 needed at the intake sites. Facilities at the intakes would include fish screens in the river,
7 sedimentation basins, drying lagoons, access roads, and control gate structures. Additional
8 refinements include the adoption of an intake design that features an open sedimentation basin
9 behind the fish screens. This design would reduce the amount of construction activity required at
10 each intake site and would eliminate the temporary relocation of State Route (SR) 160 by realigning
11 the highway over widened levee sections prior to commencing construction of the intake structures.

12 The modifications would help preserve the views from SR 160 between Hood and Walnut Grove, a
13 state-designated scenic highway, as described in Chapter 17, *Aesthetics and Visual Resources*, Section
14 17.3.3.9 in Appendix A.

15 Throughout the development of the BDCP and the associated EIR/EIS, DWR has sought to minimize
16 potential disruption and dislocation of Delta residents. These refinements to the design of the
17 proposed water conveyance facilities also reflect continued efforts on the part of the Lead Agencies
18 to reduce environmental impacts. See Section 3.2 below for a more detailed description of the water
19 conveyance facility components for Alternative 4, accounting for these modifications. An overview
20 of the proposed water conveyance features and characteristics (e.g., lengths, volumes) is presented
21 in Table 3.2-1, below. Each water component is described in further detail in [Chapter 3, Description](#)
22 [of Alternatives](#), Section 3.6.1, in Appendix A.

23 **3.2 Revised Description of Water Conveyance Facility** 24 **Components under Alternative 4**

25 Under Alternative 4, water would be conveyed from the north Delta to the south Delta through
26 tunnels. Water would be diverted from the Sacramento River through three fish-screened intakes on
27 the east bank of the Sacramento River between Clarksburg and Courtland. Water would travel from
28 the intakes to a sedimentation basin before reaching the tunnels. From the intakes water would flow
29 into an initial single-bore tunnel, which would lead to an intermediate forebay on Glannvale Tract.
30 From the southern end of this forebay, water would pass through an outlet structure into a dual-
31 bore tunnel where it would flow by gravity to the south Delta. Water would then reach pumping
32 plants to the northeast of the Clifton Court Forebay, where water would be pumped into the north
33 cell of the expanded Clifton Court Forebay. The forebay would be dredged and redesigned to provide
34 an area isolating water flowing from the new north Delta facilities. When operating, the expanded
35 Clifton Court Forebay would be designed to provide water to both the Banks and Jones pumping
36 plants.

1 **Table 3.2-1. Summary of Physical Characteristics under Alternative 4**

Feature Description/Surface Acreage ^a	Approximate Characteristics
Overall project/2,000 acres	
Conveyance capacity (cfs)	9,000
Overall length (miles)	45
Intake facilities/approximately 90 acres average per site	
Number of on-bank fish-screened intakes	3
Maximum diversion capacity at each intake (cfs)	3,000
Tunnels/170 acres (permanent subsurface easement = 1,700 acres)	
Tunnel 1a connecting Intakes 2 and 3 to the intermediate forebay	
Tunnel length (mi)	8.73
Number of tunnel bores; number of shafts (total)	1; 4
Tunnel finished inside diameter (ft)	28 (between Intakes 2 and 3); 40 (between Intake 3 and the intermediate forebay)
Tunnel 1b connecting Intake 5 to the intermediate forebay	
Tunnel length (mi)	4.77
Number of tunnel bores; number of shafts (total)	1; 3
Tunnel finished inside diameter (ft)	28
Tunnel 2 connecting intermediate forebay to Clifton Court Forebay	
Tunnel length for each bore (mi)	30.1
Number of tunnel bores; number of shaft sites (total per bore)	2; 9
Tunnel finished inside diameter (ft)	40
Intermediate forebay/243 acres	
Water surface area, at elevation 0 ft (acres)	37
Active storage volume (af)	750
Emergency spillway inundation area (acres)	131
Clifton Court Pumping Plant	
Total Number of Pumps (both pumping plants)	12
8 large pumps, capacity per pump (cfs)	1,125
4 small pumps, capacity per pump (cfs)	563
Total dynamic head (ft)	37
Expanded Clifton Court Forebay/2,600 acres (total water surface area at maximum operation level)	
Forebay dredging area (acres)	2,010
Expanded water surface area (acres)	590
Active storage volume (af)	4,300 to 10,200 (north cell) 14,000 (south cell)
Power requirements	
Estimated pumping electric load (MW)	36

af = acre-feet.

cfs = cubic feet per second.

ft = feet.

MW = megawatt.

^a Acreage estimates represent the permanent surface footprints of selected facilities. Characteristics of other areas including temporary work areas and those designated for borrow, spoils, and reusable tunnel material are reported in Appendix 3C (in Appendix A). Overall project acreage includes some facilities not listed, such as permanent access roads.

1 A map and a schematic diagram depicting the conveyance facilities associated with Alternative 4 are
 2 provided in Figures 3-9 and 3-10 in Appendix A of this REIR/SDEIS. Figure 3-9 shows the major
 3 construction features associated with this proposed water conveyance facility alignment; a detailed
 4 depiction is provided in Figure M3-4 in the Mapbook Volume. Figures 3-19a and 3-20a in Appendix
 5 A of this REIR/SDEIS depict the modified intake design. New siphon and canal connections would be
 6 constructed between the north cell of the expanded Clifton Court Forebay and the Banks and Jones
 7 pumping plants, along with control structures to regulate the relative quantities of water flowing
 8 from the north Delta and the south Delta. Alternative 4 would entail the continued use of the
 9 SWP/CVP south Delta export facilities.

10 Alternative 4 would include the following new water conveyance facilities components.

- 11 • Three north Delta intakes with fish screens along the east bank of the Sacramento River (Intakes
 12 2, 3, and 5) with box conduits, sedimentation basins, gates, a drop structure, and solids drying
 13 lagoons. (*Chapter 3, Description of Alternatives*, Section 3.6.1.1, in Appendix A of this
 14 RDEIR/SDEIS)
- 15 • Associated facilities include an access road, fencing and security gates, an electrical building
 16 with transformers, switching equipment, a backup generator and fuel tank, storage buildings,
 17 communication devices, and an outlet tower.
- 18 • One single-bore tunnel connecting Intake 2 to Intake 3, and the intermediate forebay (Tunnel
 19 1a), with a launch, retrieval, and vent shaft. The segment of this tunnel between Intakes 2 and 3
 20 would have an inside diameter of 28 feet and the segment between Intake 3 and the
 21 intermediate forebay would have an inside diameter of 40 feet. (*Chapter 3, Description of*
 22 *Alternatives*, Section 3.6.1.2, in Appendix A of this RDEIR/SDEIS)
- 23 • One 28-foot-inside-diameter single-bore tunnel between Intake 5 and the intermediate forebay
 24 (Tunnel 1b), with a launch, retrieval, and vent shaft. (*Chapter 3, Description of Alternatives*,
 25 Section 3.6.1.2, in Appendix A of this RDEIR/SDEIS)
- 26 • Gates and flowmeters between intakes and sedimentation basins, junction structures, or tunnel
 27 shafts.
- 28 • Transition structures, such as stop logs and vents, between tunnel shafts and the intermediate
 29 forebay.
- 30 • Inlet structures with roller gates, trashracks, gate hoist gantry, and stop logs.
- 31 • An intermediate forebay, a pass-through facility. (*Chapter 3, Description of Alternatives*, Section
 32 3.6.1.4, in Appendix A of this RDEIR/SDEIS)
- 33 • An outlet structure to convey water from the intermediate forebay into each main tunnel bore
 34 (Tunnel 2) via a vertical shaft. (*Chapter 3, Description of Alternatives*, Section 3.6.1.4, in
 35 Appendix A of this RDEIR/SDEIS)
- 36 • Two 40-foot-inside-diameter tunnels (Tunnel 2) between the intermediate forebay and two
 37 4,500 cfs pumping plants leading to the expanded Clifton Court Forebay, with large-diameter
 38 TBM launch/retrieval shafts, safe haven work areas, and vent shafts at approximately 4-mile
 39 intervals. (*Chapter 3, Description of Alternatives*, Section 3.6.1.2, in Appendix A of this
 40 RDEIR/SDEIS)

- 1 • An expanded Clifton Court Forebay with new embankments and an embankment dividing the
2 forebay into a north cell and a south cell. (Chapter 3, *Description of Alternatives*, Section 3.6.1.4,
3 in Appendix A of this RDEIR/SDEIS)
- 4 • Connections and control structures to the Banks and Jones pumping plants. (Chapter 3,
5 *Description of Alternatives*, Section 3.6.1.5, in Appendix A of this RDEIR/SDEIS)
 - 6 ○ A culvert siphon between the north cell of Clifton Court Forebay and a new canal segment.
 - 7 ○ A canal and set of gates between the siphon leading from the north cell and the approach
8 canal to the Jones Pumping Plant.
 - 9 ○ A culvert siphon, two segments of canal, and a set of gates between the siphon leading from
10 the north cell of Clifton Court Forebay and the approach canal to Banks Pumping Plant,
11 downstream of Skinner Fish Facility.
 - 12 ○ A set of gates in the existing approach canal to the Banks Pumping Plant downstream of the
13 connection to the north cell of Clifton Court Forebay.
 - 14 ○ A set of gates in the existing approach canal to the Jones Pumping Plant downstream of the
15 connection to Old River.
- 16 • Transmission lines running from the existing electrical grid to project substations. Under
17 Alternative 4, the method of delivering power to construct and operate the water conveyance
18 facilities is assumed to be a “split” system that would connect to the existing grid in two
19 different locations—one in the northern section of the alignment, and one in the southern
20 section of the alignment. It is anticipated that only the southern interconnection would remain
21 in place during conveyance facility operations. (Chapter 3, *Description of Alternatives*, Section
22 3.6.1.6, in Appendix A of this RDEIR/SDEIS)
- 23 • Borrow areas and areas identified for the storage and/or disposal of spoil, RTM, and dredged
24 material. (See [Mapbook Figure 3-4](#) for updated locations)

25 Facilities under Alternative 4 would be operated to provide diversions up to a total of 9,000 cfs from
26 the new north Delta intakes. The total diversion capacity of the south Delta export facilities would
27 remain constant at 15,000 cfs. The north Delta facilities would provide flexibility from where water
28 is being diverted from (north vs. south Delta). Operations of the existing SWP/CVP south Delta
29 export facilities would continue as described for the No Action Alternative.

30 As described in Section 2.5, geotechnical exploration would be required to obtain data to support
31 the development of an appropriate geologic model, characterize ground conditions, and reduce the
32 geologic risks associated with the construction of proposed facilities. Exploration methods would
33 include soil borings and conventional piezocones and seismic cones, as well as sampling for gas
34 within soils and groundwater at selected locations.

35 **3.3 Impacts of Alternative 4 Modifications**

36 In many cases, physical modifications made to the water conveyance facilities under Alternative 4
37 would result in reduced effects of construction from that described for Alternative 4 in the Draft
38 EIR/EIS. These design changes were reviewed and assessed for each applicable impact discussion in
39 the document. The sections that follow summarize the individual topics that were considered in

1 light of these changes and provide references to Appendix A, *Revisions to the Draft EIR/EIS*, which
 2 highlights revisions made to the impact analysis presented in “redline-strikeout” format.

3 **3.3.1 Draft EIR/EIS Chapters Not Revised**

4 Physical modifications made to Alternative 4 water conveyance facilities did not require revisions to
 5 the following chapters in the EIR/EIS: Chapter 1, *Introduction*; Chapter 2, *Project Objectives and*
 6 *Purpose and Need*; Chapter 4, *Approach to Environmental Analyses*; Chapter 5, *Water Supply*; Chapter
 7 29, *Climate Change*; Chapter 30, *Growth Inducement and Other Indirect Effects*; Chapter 31, *Other*
 8 *CEQA/NEPA Required Sections*; and Chapter 32, *Public Involvement*, because the facility changes
 9 would not substantively change any of the information or analyses presented in these sections of the
 10 Draft EIR/EIS. In some cases, revisions to these chapters have been made in response to other
 11 considerations; these revisions are described, where appropriate, throughout the RDEIR/SDEIS and
 12 appear in Appendix A.

13 **3.3.2 Description of Alternatives**

14 Chapter 3, *Description of Alternatives*, of the Draft EIR/EIS was revised to reflect the conveyance
 15 facility modifications to Alternative 4 described above. Descriptions of individual features unique to
 16 Alternative 4 have been added and, in cases where existing text no longer applies to Alternative 4,
 17 such text was revised to specify those alternatives to which it refers. Tables with detailed
 18 parameters specific to Alternative 4 have been updated where required to reflect changes in the
 19 design of the alternative (as well as changes in engineering assumptions described in Section 2.3, *Air*
 20 *Quality, Health Risk Assessment, Traffic and Noise Revisions*).

21 Refer to [Chapter 3, *Description of Alternatives*](#), Sections 3.2.3, 3.4.1, 3.5.9, and 3.6.1 in Appendix A
 22 for additional detail regarding the revised description of Alternative 4. Detailed information on the
 23 updated alternative and associated assumptions can be found in Appendix 3C, *Construction*
 24 *Assumptions for Water Conveyance Facilities*, Section 3C.4 in Appendix A.

25 **3.3.3 Surface Water**

26 Chapter 6, *Surface Water*, of the Draft EIR/EIS was revised to update the surface water analyses to
 27 account for modifications in the design of the intake facilities under Alternative 4. Specifically, these
 28 design changes were considered in the context of changes in the levee configuration and the
 29 associated discussion of flood protection. The revised design was also considered for its potential to
 30 create impacts related to drainage patterns, surface runoff volumes, and risks associated with
 31 flooding.

32 Refer to [Chapter 6, *Surface Water*](#), Section 6.3.3.9, Impacts SW-4, SW-7, and SW-9 in Appendix A
 33 for the revised analysis of Alternative 4.

34 **3.3.4 Groundwater**

35 Chapter 7, *Groundwater*, of the Draft EIR/EIS was revised in consideration of the potential for effects
 36 of dewatering activities to occur in different locations or at different magnitudes during
 37 construction of water conveyance facilities under Alternative 4 as revised. In particular, modeling
 38 assumptions were reviewed and groundwater modeling was replicated to account for the revised
 39 design and footprint of the facilities.

1 Refer to [Chapter 7, Groundwater](#), Section 7.3.3.9, Impacts GW-1, GW-3, and GW-4 in Appendix A for
2 the revised analysis of Alternative 4.

3 **3.3.5 Water Quality**

4 Chapter 8, *Water Quality*, of the Draft EIR/EIS was revised to describe the potential for water quality
5 effects associated with construction of water conveyance facilities—such as those related to
6 discharges from work sites or changes to stormwater drainage and runoff patterns—to occur in
7 different locations as a result of the revised facility footprints.

8 Refer to [Chapter 8, Water Quality](#), Section 8.3.3.9, Impact WQ-31 in Appendix A for the
9 revised analysis of Alternative 4.

10 **3.3.6 Geology and Seismicity**

11 Chapter 9, *Geology and Seismicity*, of the Draft EIR/EIS was modified to describe the geologic or
12 seismic risks associated with the revised water conveyance facility footprints. Specifically, text was
13 revised to describe the potential for slope failure in relation to the optimized intake design, which
14 would include an open sedimentation basin surrounded on the landside by a raised pad and new
15 section of levee.

16 Refer to [Chapter 9, Geology and Seismicity](#), Section 9.3.3.9, Impacts GEO-1, GEO-2, GEO-4, and
17 GEO-5 in Appendix A for the revised analysis of Alternative 4.

18 **3.3.7 Soils**

19 Chapter 10, *Soils*, of the Draft EIR/EIS was reviewed and revised to assess potential effects related to
20 erosion, topsoil loss, and soil-related risks associated with the modified design and location of water
21 conveyance facilities.

22 Refer to [Chapter 10, Soils](#), Section 10.3.3.9, Impacts SOILS-1, SOILS-2, SOILS-3, and SOILS-4
23 in Appendix A for the revised analysis of Alternative 4.

24 **3.3.8 Fish and Aquatic Resources**

25 Chapter 11, *Fish and Aquatic Resources*, of the Draft EIR/EIS was revised to assess potential
26 construction-related impacts on fish that could result from new or changed in-water construction
27 sites (e.g., barge unloading facilities) and updated assumptions for pile-driving activities in or
28 adjacent to water bodies.

29 Refer to [Section 4.3.7, Fish and Aquatic Resources](#), Impacts AQUA-1, AQUA-19, AQUA-37, AQUA-55,
30 AQUA-73, AQUA-91, AQUA-109, AQUA-127, AQUA-145, AQUA-163, AQUA-181, and AQUA-199 for
31 the analysis of Alternative 4A. These construction-related impacts would be identical for Alternative
32 4 because the proposed physical water conveyance facilities are the same for both alternatives.

33 **3.3.9 Terrestrial Biological Resources**

34 Chapter 12, *Terrestrial Biological Resources*, of the Draft EIR/EIS was revised to account for changes
35 in the magnitude of direct impacts on natural communities and species habitat associated with the
36 footprint of the revised water conveyance facilities, including the revised power line alignment and

1 assumptions. Additionally, indirect impacts associated with the construction of water conveyance
2 facilities were reviewed and revised where applicable.

3 Refer to [Chapter 12, *Terrestrial Biological Resources*](#), Section 12.3.3.9 in Appendix A for the
4 revised analysis of Alternative 4.

5 **3.3.10 Land Use**

6 Chapter 13, *Land Use*, of the Draft EIR/EIS was modified to describe the potential for the revised
7 design of water conveyance facilities to result in incompatibilities with applicable land use plans and
8 policies in the study area. Similarly, the potential for the construction and/or long-term placement
9 of water conveyance facilities to result in direct effects on current land uses was also assessed, along
10 with the potential for such facilities to create a physical division within an existing community.

11 Refer to [Chapter 13, *Land Use*](#), Section 13.3.3.9, Impacts LU-1, LU-2, and LU-3 in Appendix A for
12 the revised analysis of Alternative 4.

13 **3.3.11 Agricultural Resources**

14 Chapter 14, *Agricultural Resources*, of the Draft EIR/EIS was revised to account for changes in the
15 magnitude of direct temporary and permanent effects on Important Farmland and land subject to
16 Williamson Act contracts associated with the footprint of the revised water conveyance facilities.
17 Additionally, indirect impacts associated with the construction of water conveyance facilities, such
18 as effects related to changes in groundwater elevation or disruptions to agricultural infrastructure,
19 were reviewed and revised where applicable.

20 Refer to [Chapter 14, *Agricultural Resources*](#), Section 14.3.3.9, Impacts AG-1 and AG-2 in Appendix
21 A for the revised analysis of Alternative 4.

22 **3.3.12 Recreation**

23 Chapter 15, *Recreation*, of the Draft EIR/EIS was revised to assess the potential for the modified
24 construction footprint, along with a refined set of construction equipment and schedule
25 assumptions developed for Alternative 4, for the water conveyance facilities to create temporary or
26 permanent effects on existing well-established recreation facilities or result in the long-term
27 reduction of recreation opportunities and experiences in the study area for water-based and upland
28 recreational activities.

29 Refer to [Chapter 15, *Recreation*](#), Section 15.3.3.9, Impacts REC-1, REC-2, REC-3, and REC-4
30 in Appendix A for the revised analysis of Alternative 4.

31 **3.3.13 Socioeconomics**

32 Chapter 16, *Socioeconomics*, of the Draft EIR/EIS was revised based on the revised construction
33 footprint for proposed water conveyance facilities, along with a refined set of construction cost and
34 schedule assumptions developed for Alternative 4. This information was used to update the
35 assessment of effects on the regional economy and employment, agricultural and recreational
36 economic effects, changes in population and housing, changes in local government fiscal conditions,
37 and changes in community character associated with construction (and ongoing operation and
38 maintenance) of water conveyance facilities under Alternative 4.

1 Refer to [Chapter 16, *Socioeconomics*](#), Section 16.3.3.9, Impacts ECON-1, ECON-2, ECON-3, ECON-4,
 2 ECON-5, ECON-6, ECON-7, ECON-9, and ECON-10 in Appendix A for the revised analysis of
 3 Alternative 4. Additionally, one table from Draft EIR/EIS Appendix 16A has been incorporated into
 4 Appendix A.

5 **3.3.14 Aesthetics and Visual Resources**

6 Chapter 17, *Aesthetics and Visual Resources*, of the Draft EIR/EIS was modified to assess the potential
 7 of the revised design of water conveyance facilities (and associated architectural guidelines
 8 incorporated in a revised conceptual engineering report) to result in a substantial alteration of the
 9 existing visual quality or character within the study area or create effects on a scenic vista or along a
 10 state scenic highway. This chapter was also revised to consider the potential for construction
 11 activities to create new sources of light or glare that would adversely affect views in the area. In
 12 particular, the updated intake design was assessed through the preparation of several revised visual
 13 simulations.

14 Refer to [Chapter 17, *Aesthetics and Visual Resources*](#), Section 17.3.3.9, Impacts AES-1, AES-2,
 15 AES-3, AES-4, and AES-5 in Appendix A for the revised analysis of Alternative 4. Several passages
 16 from supporting appendices to Draft EIR/EIS Chapter 17 have also been incorporated into
 Appendix A.

17 **3.3.15 Cultural Resources**

18 Chapter 18, *Cultural Resources*, and Appendix 18B, of the Draft EIR/EIS were revised to account for
 19 changes in the number of built environment resources potentially directly or indirectly affected by
 20 construction of the water conveyance facilities.

21 Refer to [Chapter 18, *Cultural Resources*](#), Section 18.3.3.9, Impact CUL-5 in Appendix A for the
 22 revised analysis of Alternative 4.

23 **3.3.16 Transportation**

24 Chapter 19, *Transportation*, of the Draft EIR/EIS was revised based on the revised construction
 25 footprint for proposed water conveyance facilities, along with a refined set of construction
 26 equipment and schedule assumptions developed for Alternative 4. This information was used to
 27 update the assessment of effects on roadway level of service and pavement conditions associated
 28 with construction vehicle trips under Alternative 4, including the transport of equipment, materials,
 29 and workers to and from project construction sites. Analyses associated with the potential for
 30 increased safety hazards and disruption of other modes of transportation including marine, rail,
 31 transit, and bicycle traffic were also revised based on the updated construction information.

32 Refer to [Chapter 19, *Transportation*](#), Section 19.3.3.9, Impacts TRANS-1, TRANS-2, TRANS-3, TRANS-
 33 4, TRANS-5, TRANS-6, and TRANS-7 in Appendix A for the revised analysis of Alternative 4.
 34 Additionally, portions of Draft EIR/EIS Appendix 19A have also been incorporated into Appendix A.

35 **3.3.17 Public Services and Utilities**

36 Chapter 20, *Public Services and Utilities*, of the Draft EIR/EIS was revised based on the revised
 37 construction footprint for proposed water conveyance facilities for Alternative 4, including the
 38 revised power line alignment and assumptions. This information was used to update the impacts

1 related to demand and effects on public services such as law enforcement, fire protection, and
 2 emergency response services; public service facilities; public schools; services and facilities related
 3 to water and wastewater treatment, solid waste and landfills, and regional or local utilities, as a
 4 result of constructing the proposed water conveyance facilities.

5 Refer to [Chapter 20, Public Services and Utilities](#), Section 20.3.3.9, Impacts UT-1, UT-2, UT-3,
 6 UT-4, UT-5, and UT-6 in Appendix A for the revised analysis of Alternative 4.

7 **3.3.18 Energy**

8 Chapter 21, *Energy*, of the Draft EIR/EIS was revised based on the revised construction footprint for
 9 proposed water conveyance facilities for Alternative 4. This information was used to update the
 10 assessment of any potentially wasteful or inefficient energy use for temporary construction
 11 activities related to the proposed water conveyance facilities.

12 Refer to [Chapter 21, Energy](#), Section 21.3.3.9, Impact ENG-1 in Appendix A for the revised analysis
 13 of Alternative 4.

14 **3.3.19 Air Quality and Greenhouse Gases**

15 Chapter 22, *Air Quality and Greenhouse Gases*, of the Draft EIR/EIS was revised based on the revised
 16 construction footprint for proposed water conveyance facilities for Alternative 4, along with a
 17 refined set of construction equipment and schedule assumptions developed for Alternative 4. This
 18 information was used to update the assessment of the generation of criteria pollutants in excess of
 19 air quality district regional thresholds, and Federal De Minimis thresholds, during construction of
 20 the proposed water conveyance facilities; exposure of sensitive receptors to health threats from
 21 localized particulate matter and Valley Fever in excess of air quality district regional thresholds;
 22 creation of potential odors affecting people during construction and operation of the proposed
 23 conveyance facilities; and generation of cumulative greenhouse gas emissions during construction
 24 and operation of the proposed water conveyance facilities.

25 Refer to [Chapter 22, Air Quality and Greenhouse Gases](#), Section 22.3.3.9, Impacts AQ-1 through
 26 AQ-27 in Appendix A for the revised analysis of Alternative 4.

27 **3.3.20 Noise**

28 Chapter 23, *Noise*, of the Draft EIR/EIS was revised based on the revised construction footprint and
 29 updated assumptions for pile-driving activities for proposed water conveyance facilities, along with
 30 a refined set of construction equipment and schedule assumptions developed for Alternative 4. This
 31 information was used to update the assessment of exposure of sensitive receptors and noise-
 32 sensitive land uses to vibration or groundborne noise from construction and operation of the water
 33 conveyance facilities.

34 Refer to [Chapter 23, Noise](#), Section 23.3.3.9, Impacts NOI-1 through NOI-3 in Appendix A for
 35 the revised analysis of Alternative 4.

36 **3.3.21 Hazards and Hazardous Materials**

37 Chapter 24, *Hazards and Hazardous Materials*, of the Draft EIR/EIS was revised based on the revised
 38 construction footprint for proposed water conveyance facilities for Alternative 4. This information

1 was used to update the assessment of the creation or exposure of hazardous materials or known
 2 hazards sites to people or the environment, as a result of constructing and operating the proposed
 3 water conveyance facilities.

4 Refer to [Chapter 24, Hazards and Hazardous Materials](#), Section 24.3.3.9, Impacts HAZ-1
 5 through HAZ-5 in Appendix A for the revised analysis of Alternative 4.

6 **3.3.22 Public Health**

7 Chapter 25, *Public Health*, of the Draft EIR/EIS was revised based on the revised construction
 8 footprint for proposed water conveyance facilities, including the revised power line alignment and
 9 assumptions for Alternative 4. This information was used to update the assessment of increases in
 10 public health risks, including vector-borne diseases, exceedances of water quality criteria, increases
 11 in constituents known to bioaccumulate, and exposure of people to transmission lines generating
 12 EMFs, as a result of constructing and operating the proposed water conveyance facilities.

13 Refer to [Chapter 25, Public Health](#), Section 25.3.3.9, Impacts PH-1 through PH-4 in Appendix A
 14 for the revised analysis of Alternative 4.

15 **3.3.23 Minerals**

16 Chapter 26, *Minerals*, of the Draft EIR/EIS was revised based on the revised construction footprint
 17 for proposed water conveyance facilities for Alternative 4. This information was used to update the
 18 assessment of the loss of availability of locally important natural gas wells, extraction potential from
 19 natural gas fields, and locally important and known aggregate resource sites as a result of
 20 constructing the proposed water conveyance facilities.

21 Refer to [Chapter 26, Minerals](#), Section 26.3.3.9, Impacts MIN-1, MIN-2, MIN-7, and MIN-8 in
 22 Appendix A for the revised analysis of Alternative 4.

23 **3.3.24 Paleontological Resources**

24 Chapter 27, *Paleontological Resources*, of the Draft EIR/EIS was revised based on the revised
 25 construction footprint for proposed water conveyance facilities for Alternative 4. This information
 26 was used to update the assessment of destruction of paleontological resources as a result of
 27 constructing the proposed water conveyance facilities.

28 Refer to [Chapter 27, Paleontological Resources](#), Section 27.3.3.9, Impact PALEO-1 in Appendix A
 29 for the revised analysis of Alternative 4.

30 **3.3.25 Environmental Justice**

31 Chapter 28, *Environmental Justice*, of the Draft EIR/EIS was revised based on the revised
 32 construction footprint for proposed water conveyance facilities for Alternative 4. This information
 33 was used to update the assessment of disproportionately high and adverse human health or
 34 environmental effects on minority and low-income populations as a result of constructing the
 35 proposed water conveyance facilities.

36 Refer to [Chapter 28, Environmental Justice](#), Section 28.3.3.9 in Appendix A for the revised analysis
 37 of Alternative 4.