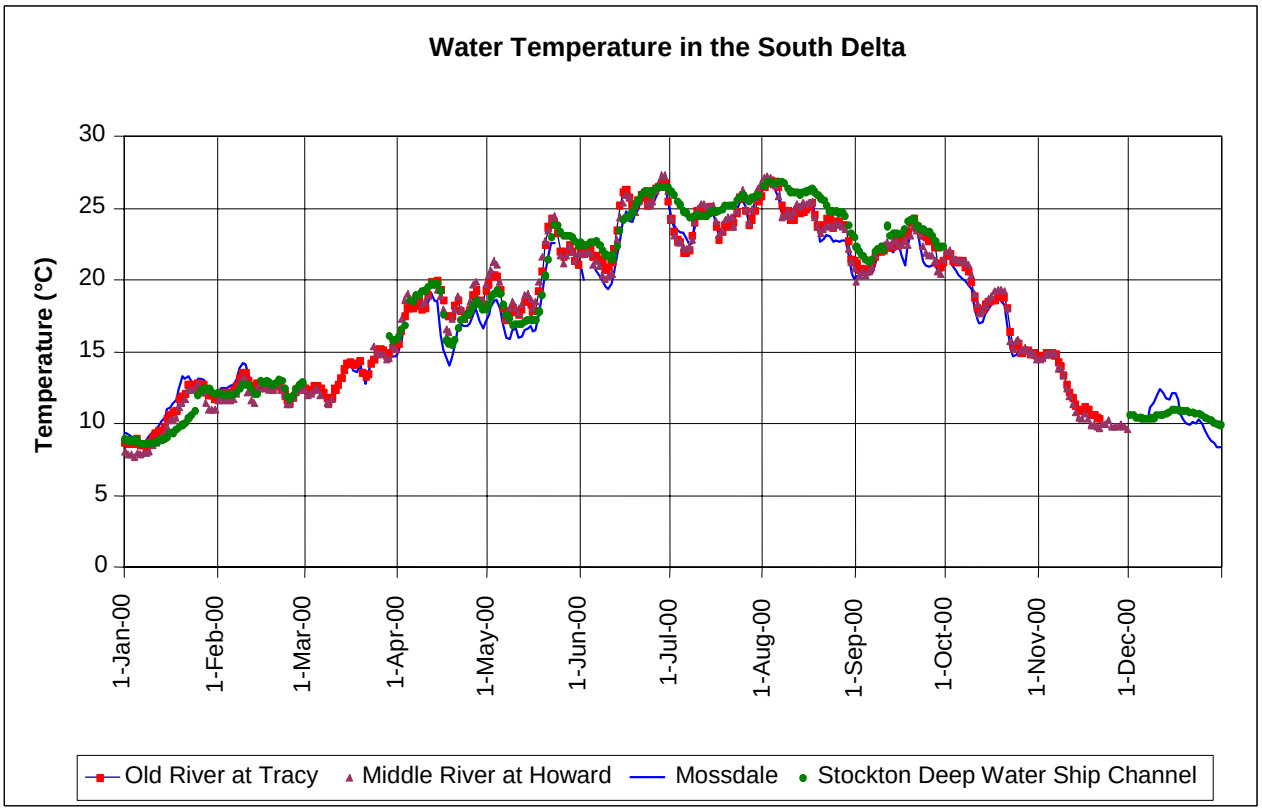

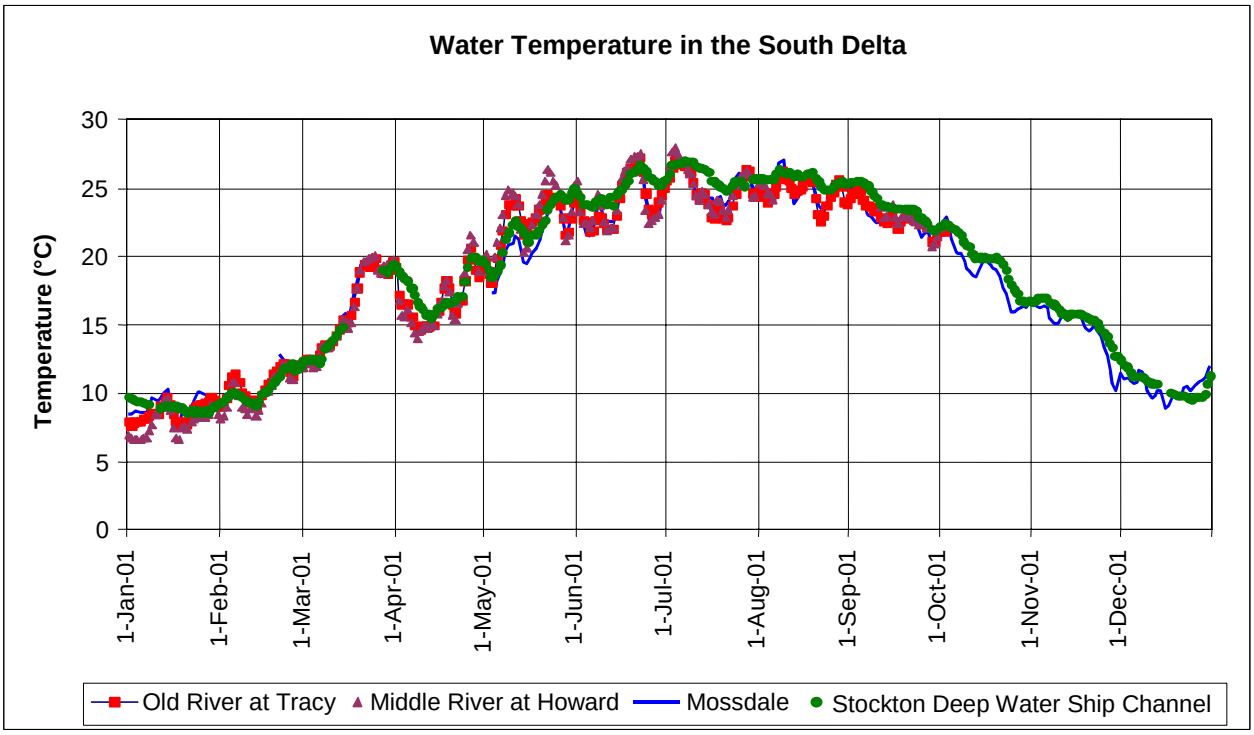

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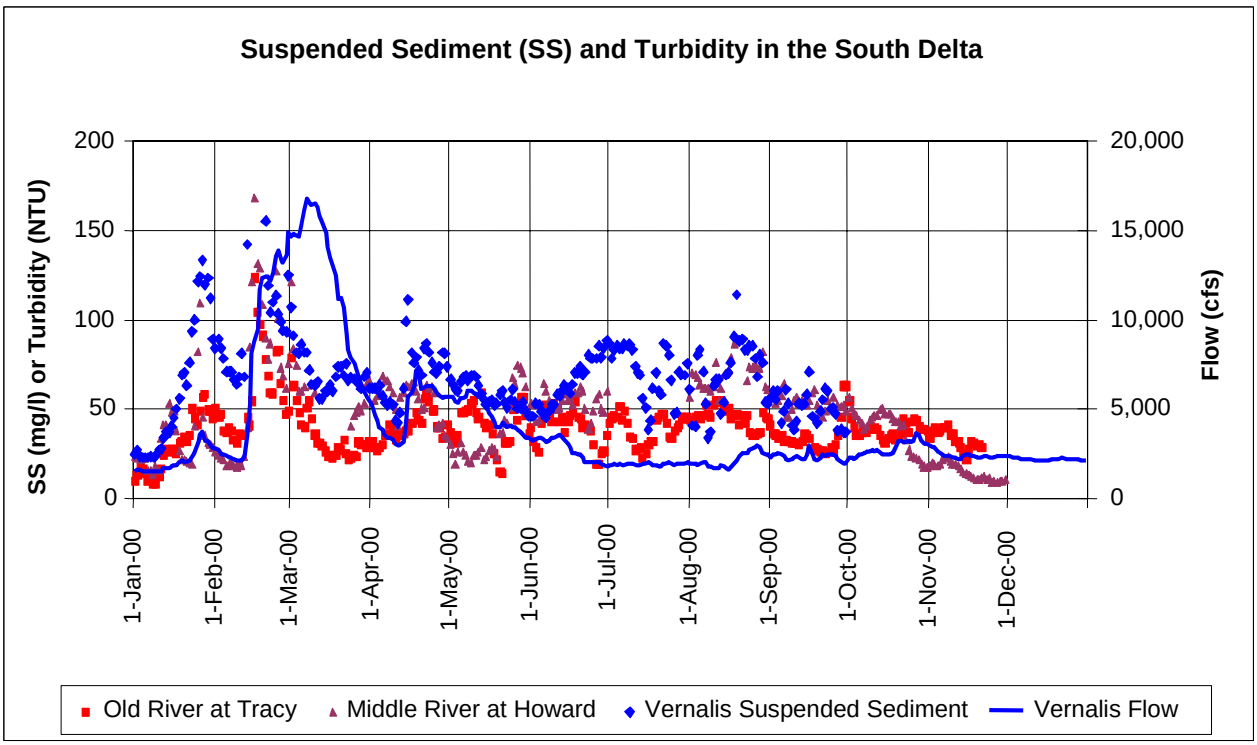
Figure 5.3-1

Historical Water Temperatures in the San Joaquin River and South Delta Channels for 2000 and 2001



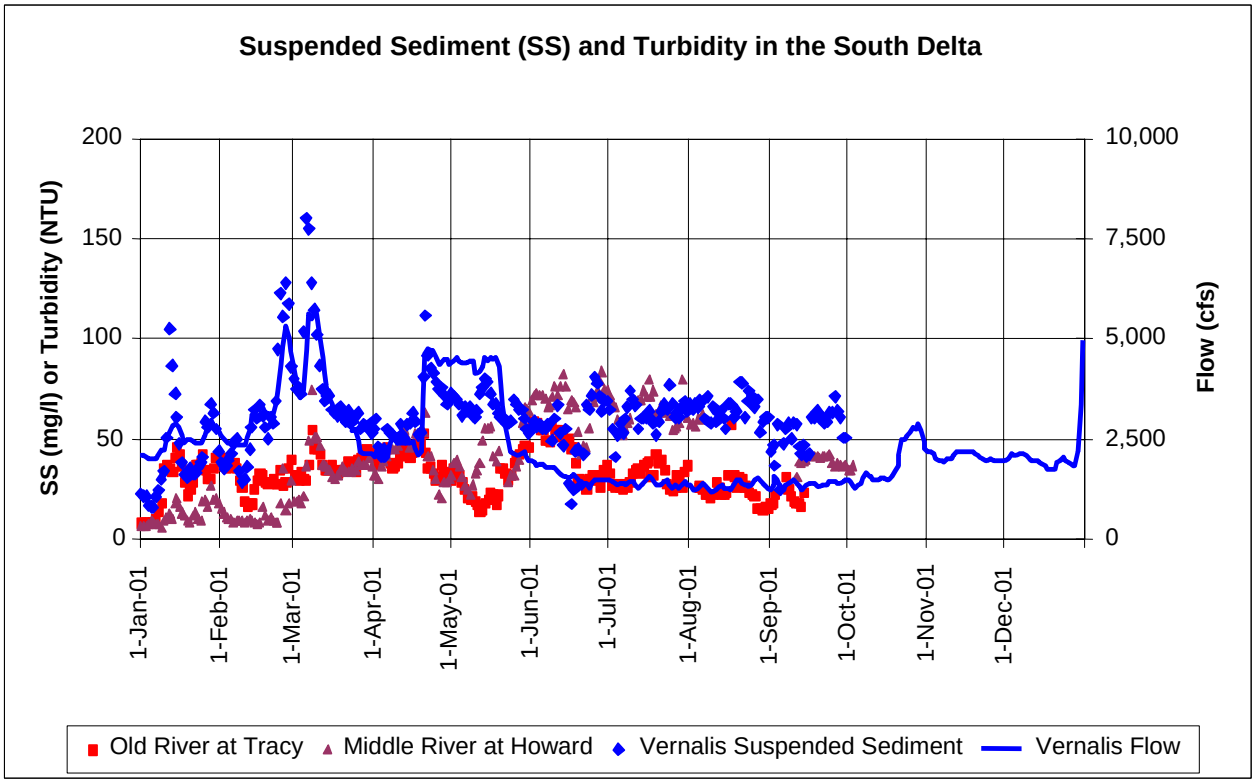


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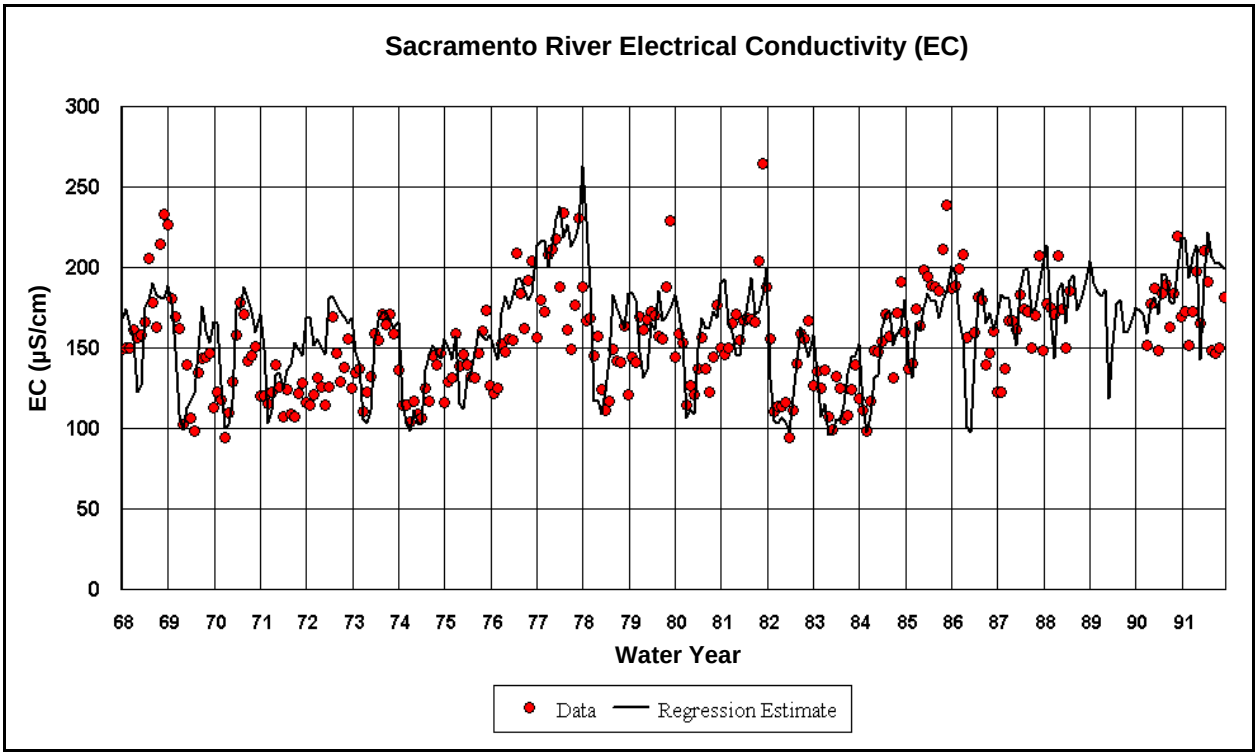
Figure 5.3-2

Historical Suspended Sediment in the San Joaquin River and Turbidity in the South Delta Channels for 2000 and 2001



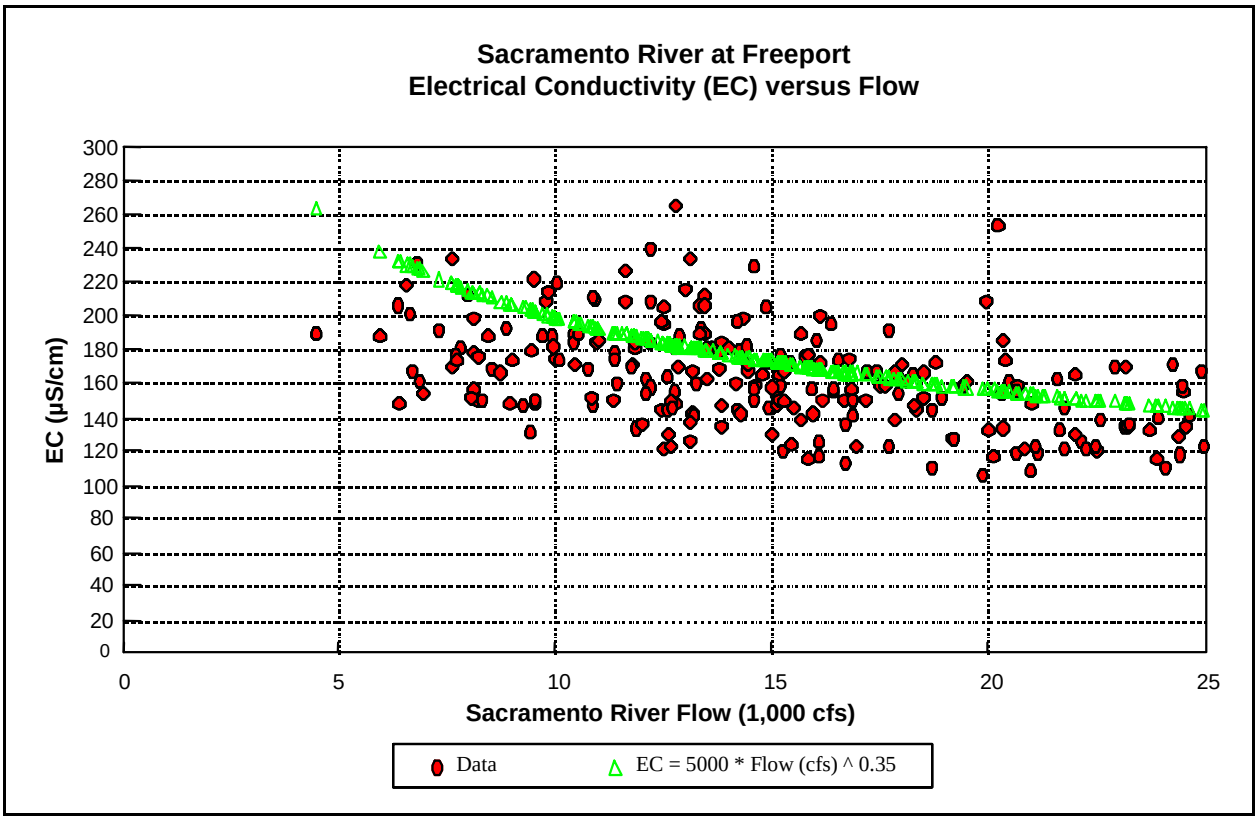


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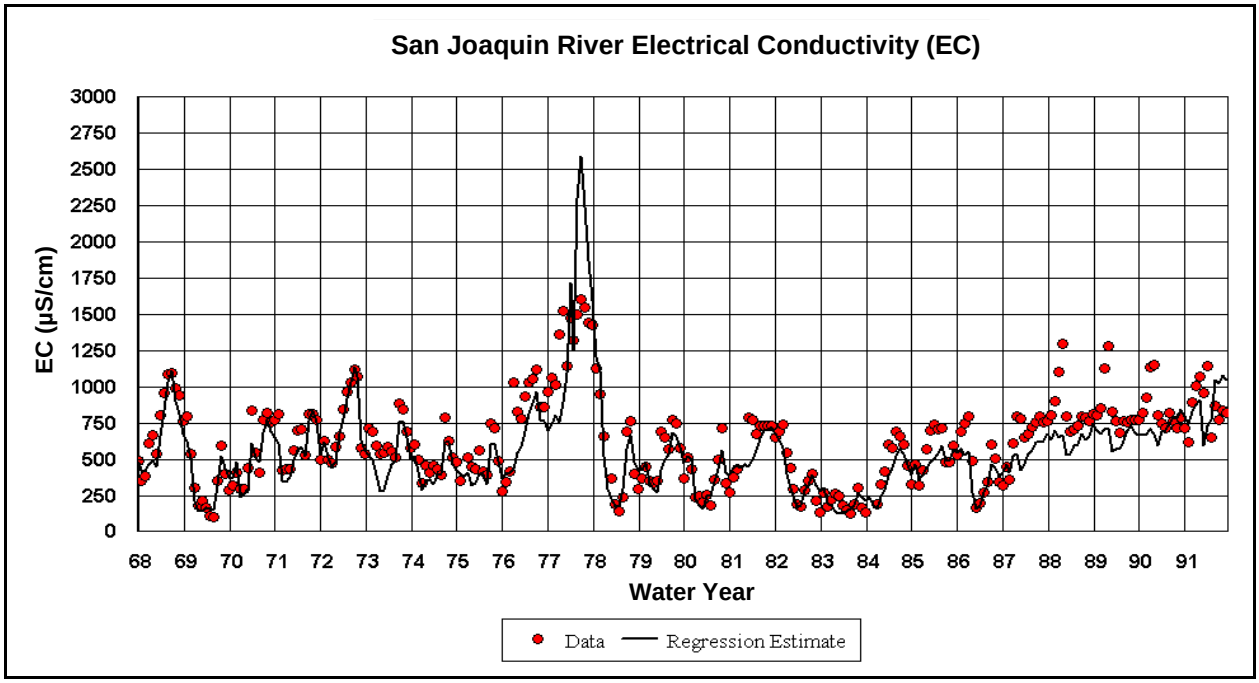
Figure 5.3-3

Historical Monthly Average Electrical Conductivity of Sacramento River at Freeport for 1968–1991



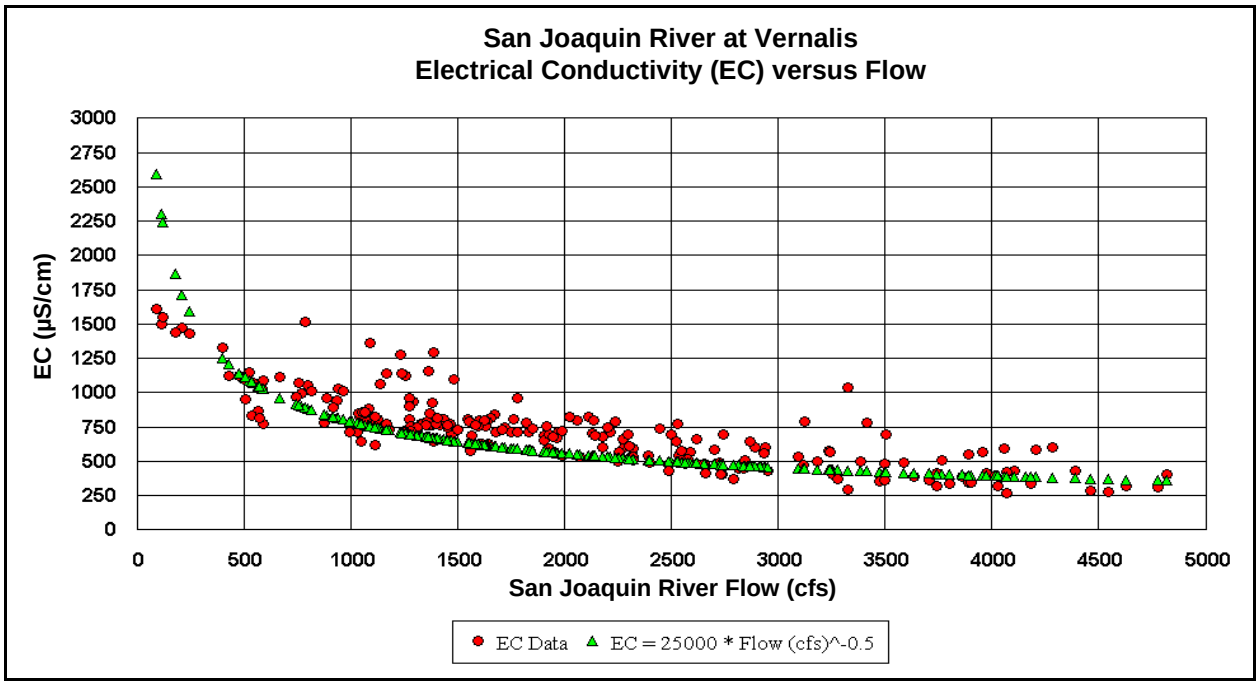


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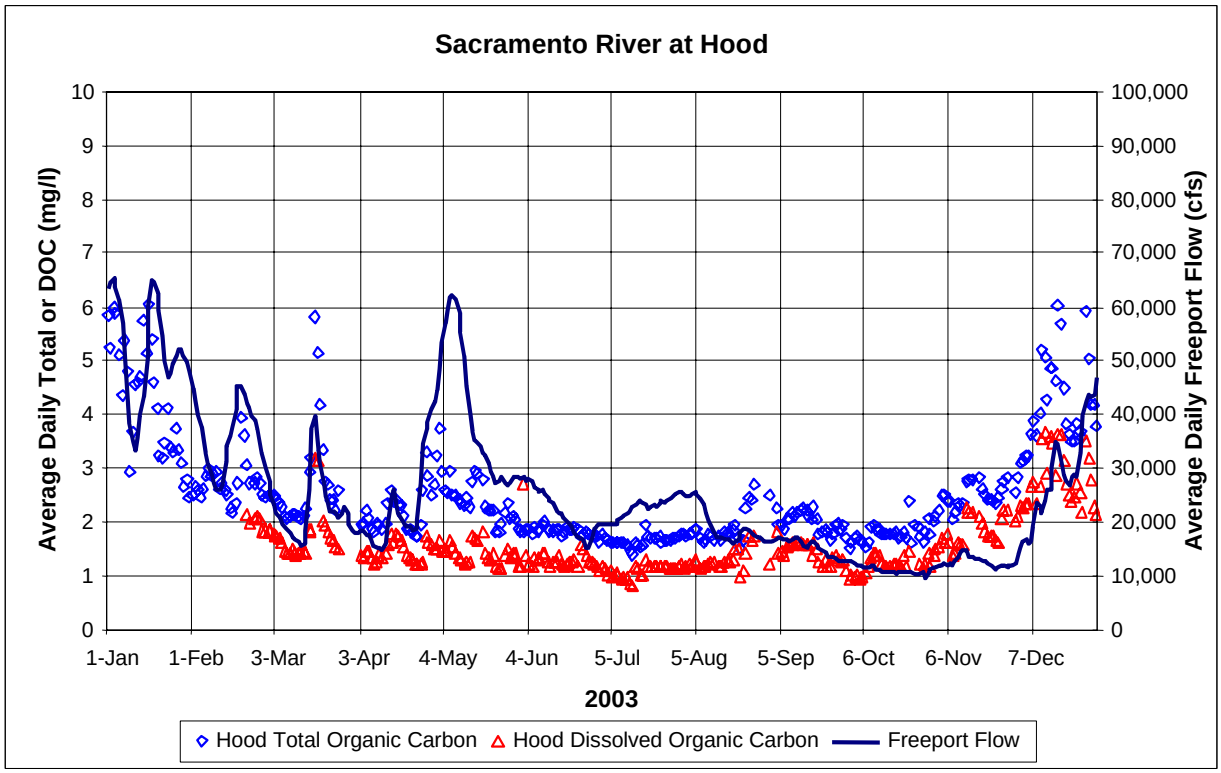
Figure 5.3-4

Historical Monthly Average Electrical Conductivity of San Joaquin River at Vernalis for 1968–1991



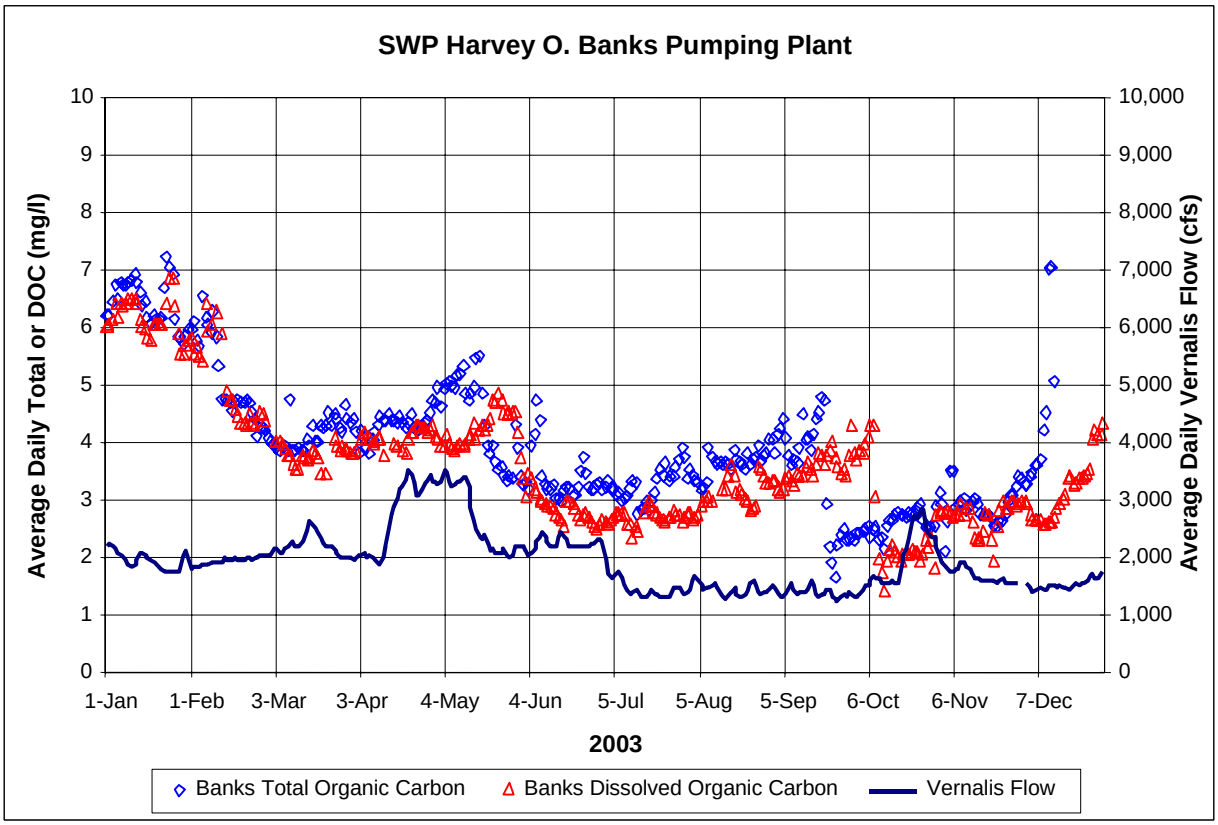


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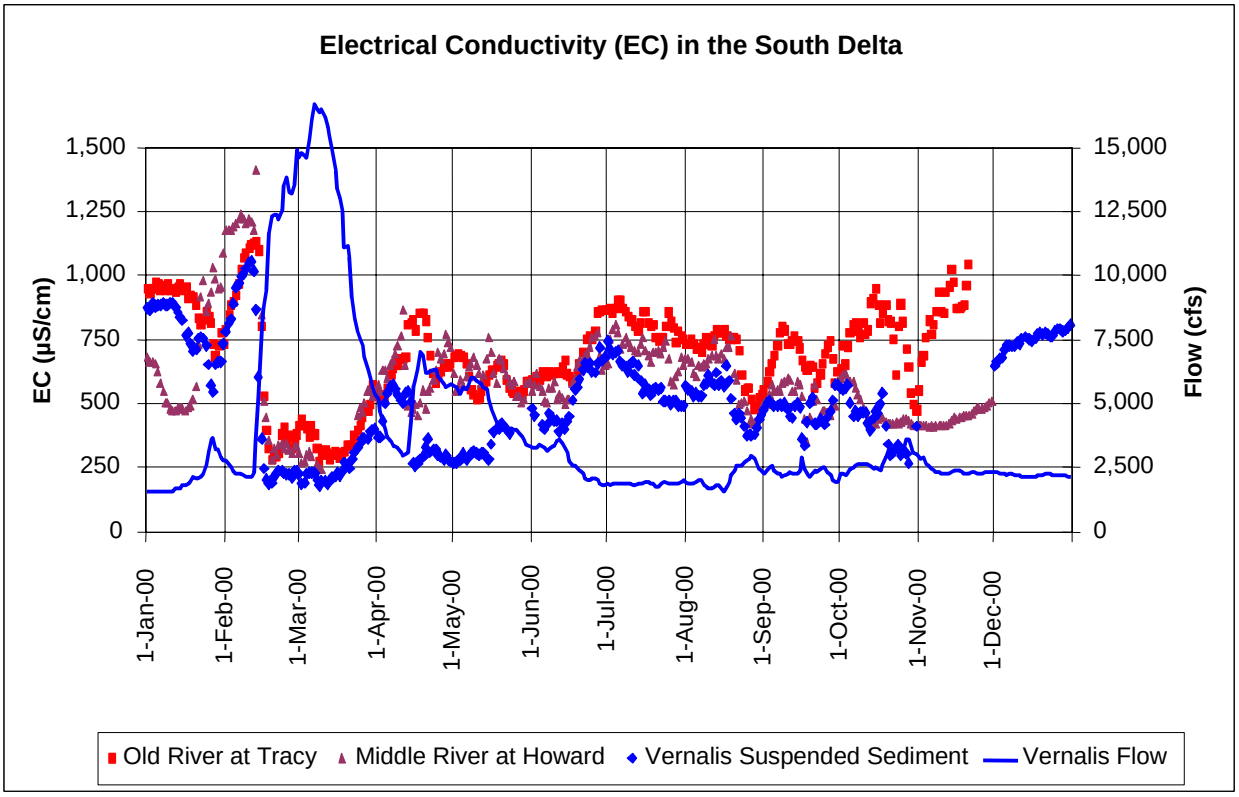
Figure 5.3-5
Historical Total Organic Carbon (TOC) and Dissolved Organic Carbon (DOC) in the Sacramento River at Freeport and at the SWP Banks Pumping Plant for 2003



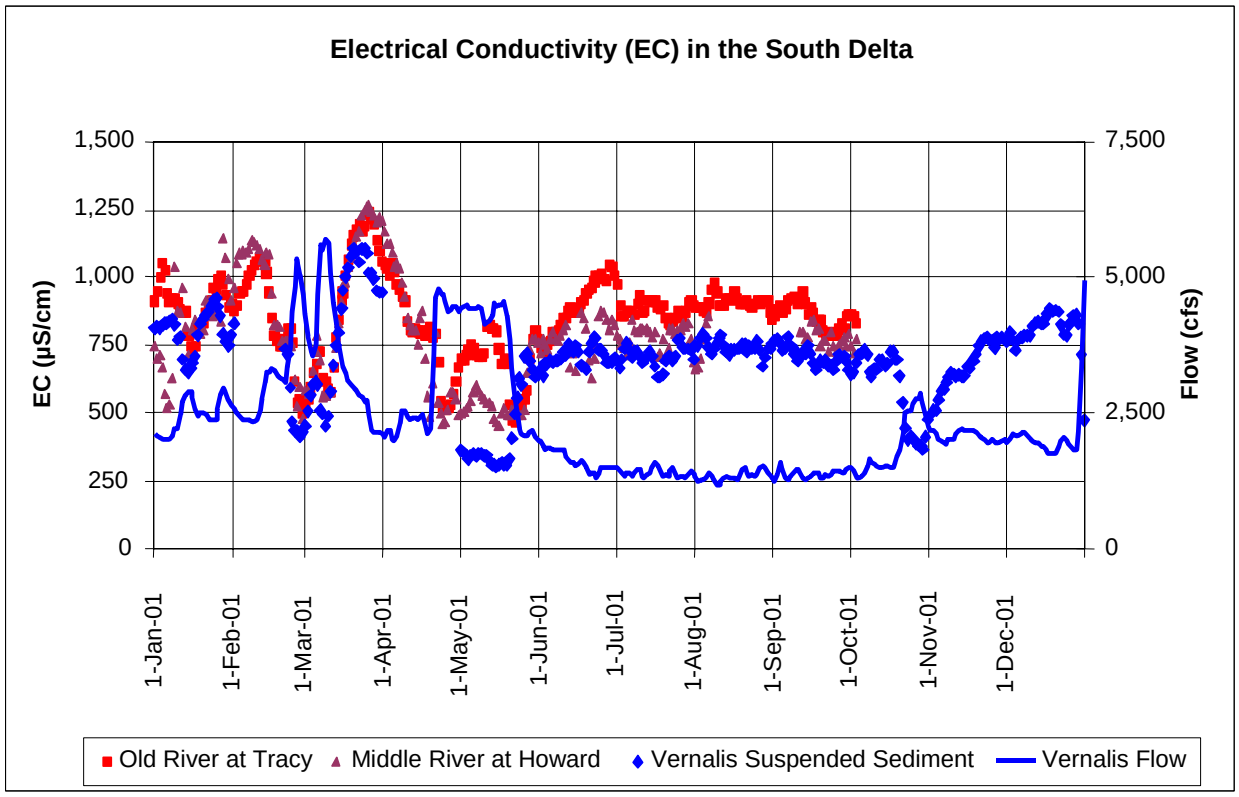


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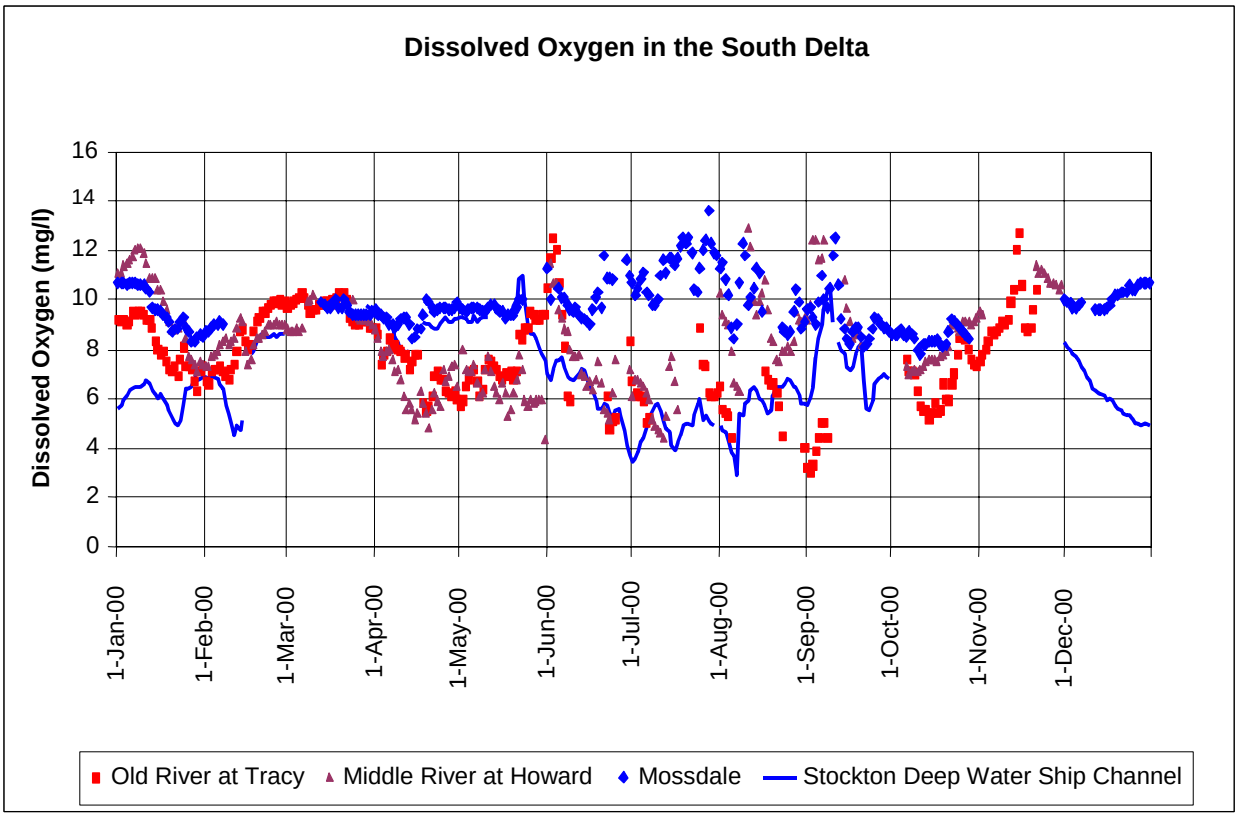
Figure 5.3-6

Historical Electrical Conductivity in the San Joaquin River and South Delta Channels for 2000 and 2001



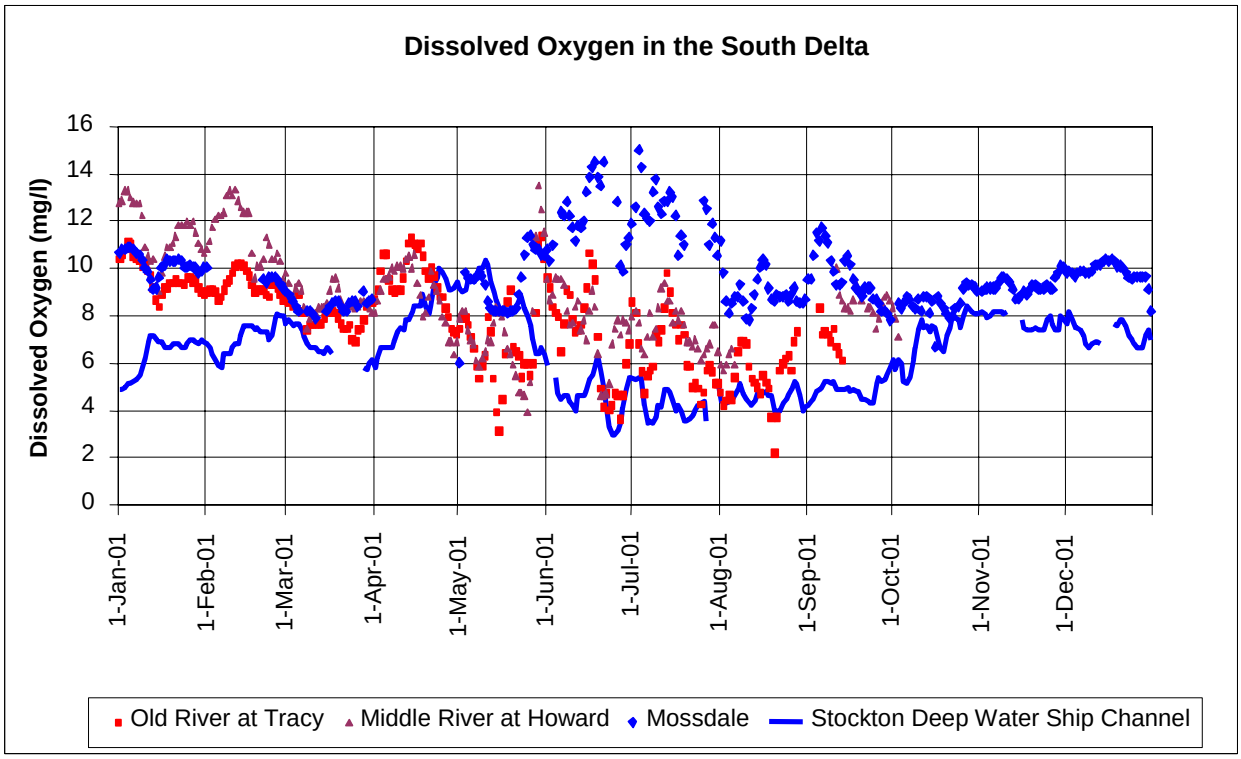


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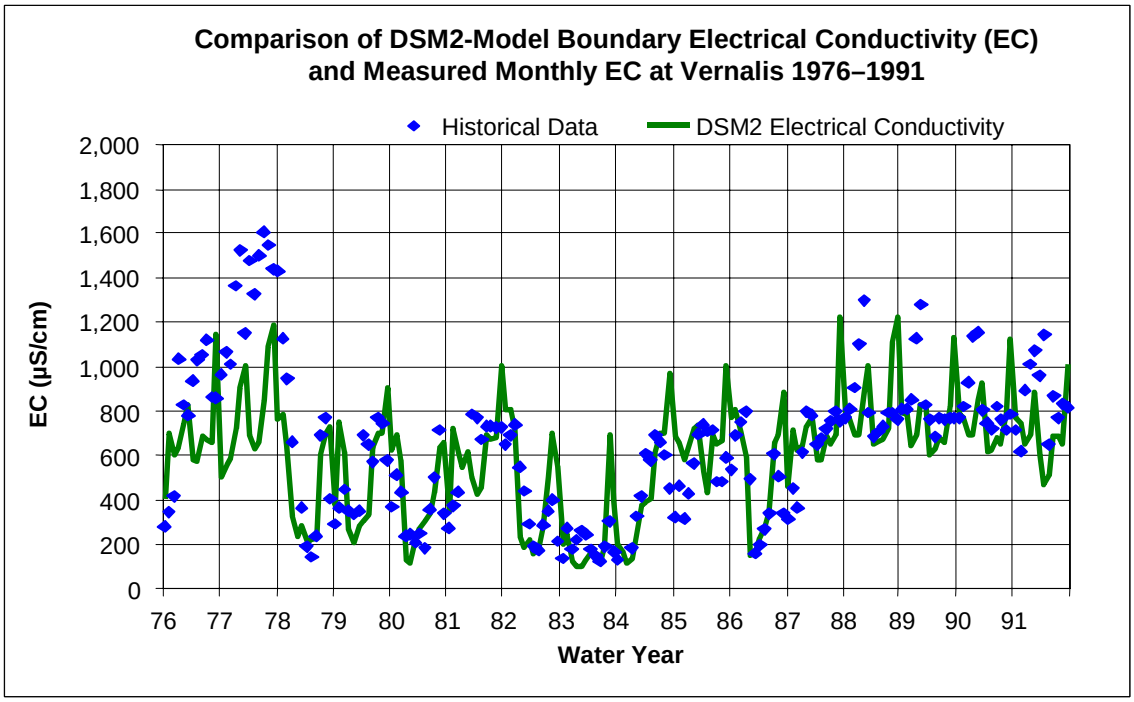
Figure 5.3-7

Historical Dissolved Oxygen in the San Joaquin River and South Delta Channels for 2000 and 2001



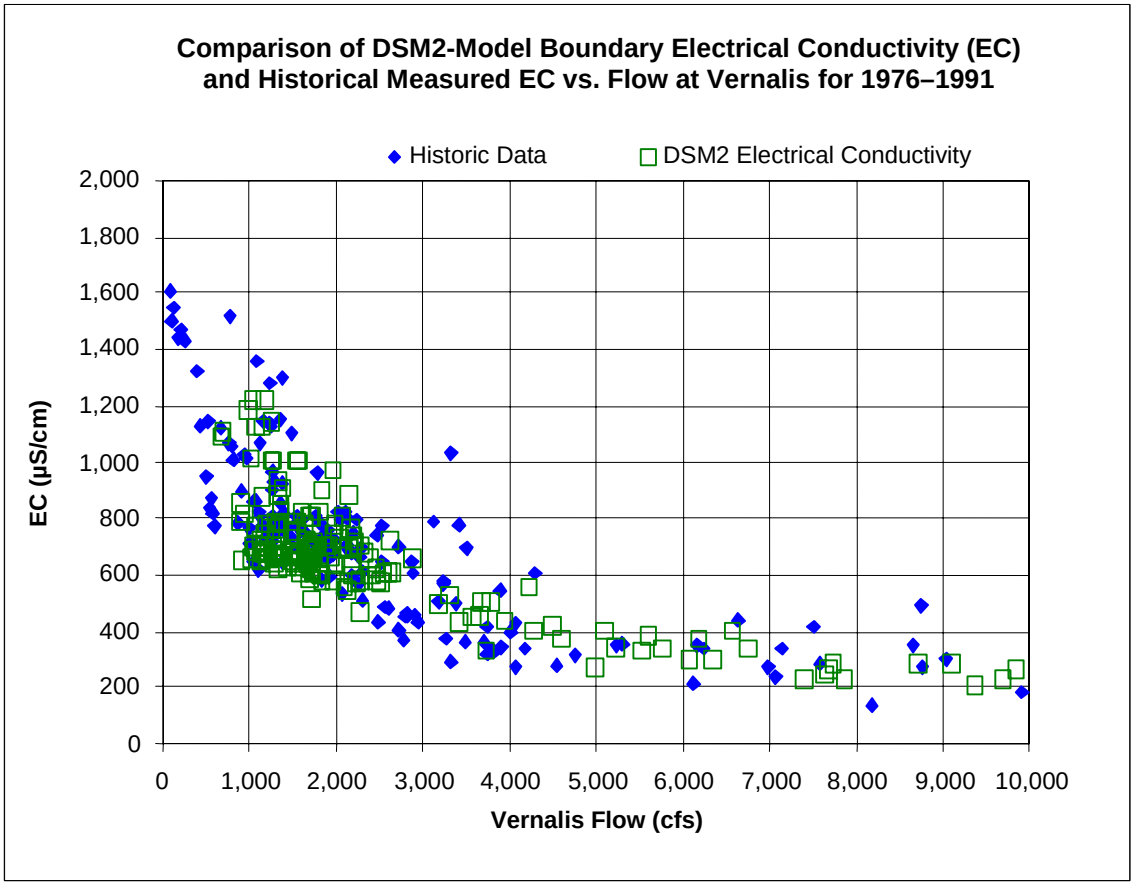


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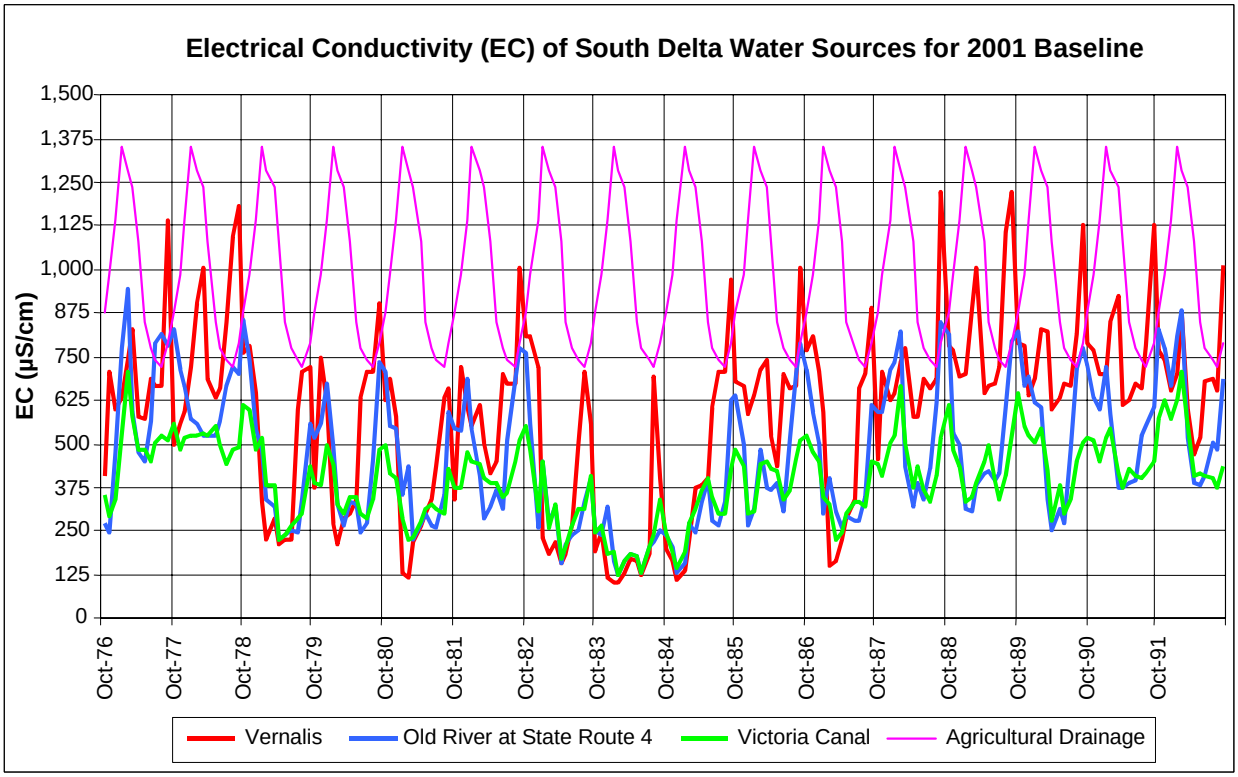
Figure 5.3-8

Comparison of DSM2-Model Boundary Electrical Conductivity at Vernalis with Historical EC data for 1976–1991



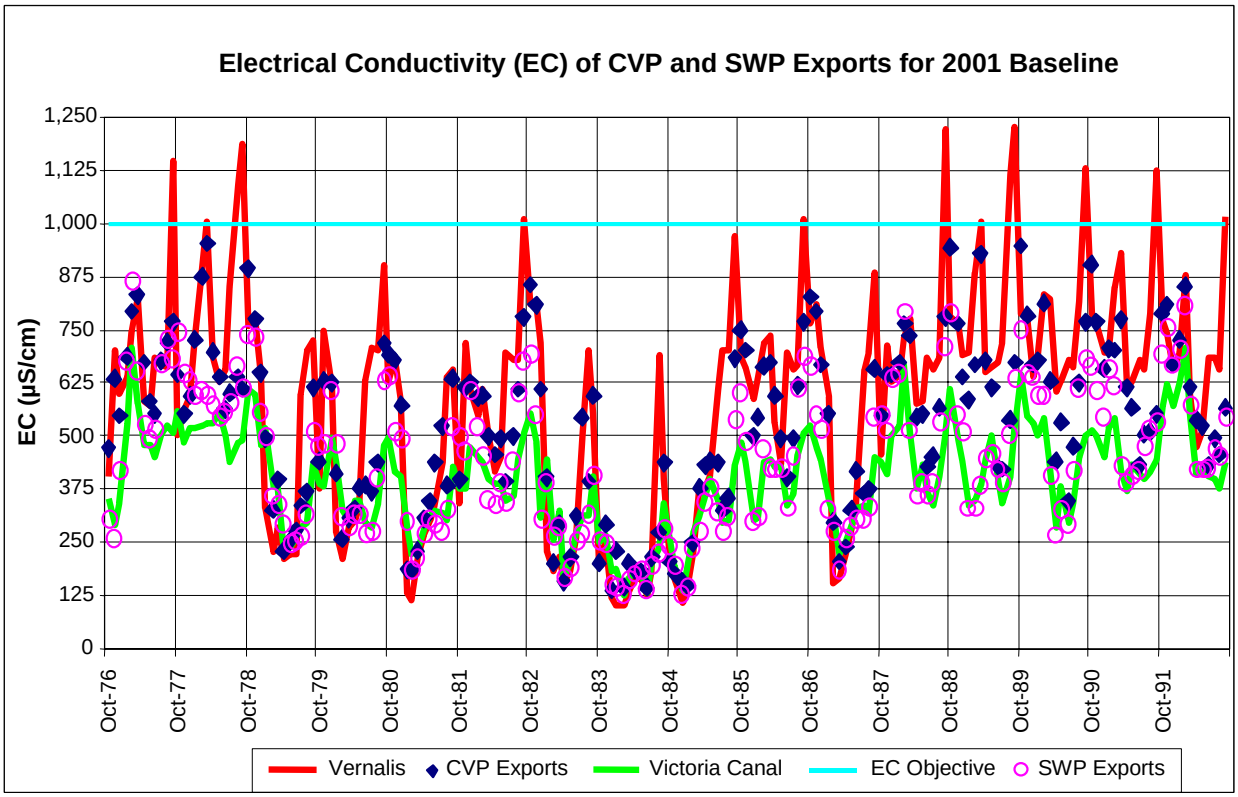


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Figure 5.3-9

DSM2-Simulated Electrical Conductivity of the Sources of Water in the South Delta Channels for the 2001 Baseline Conditions (with Temporary Barriers) with Comparison of Simulated EC in CVP and SWP Exports for 1976–1991

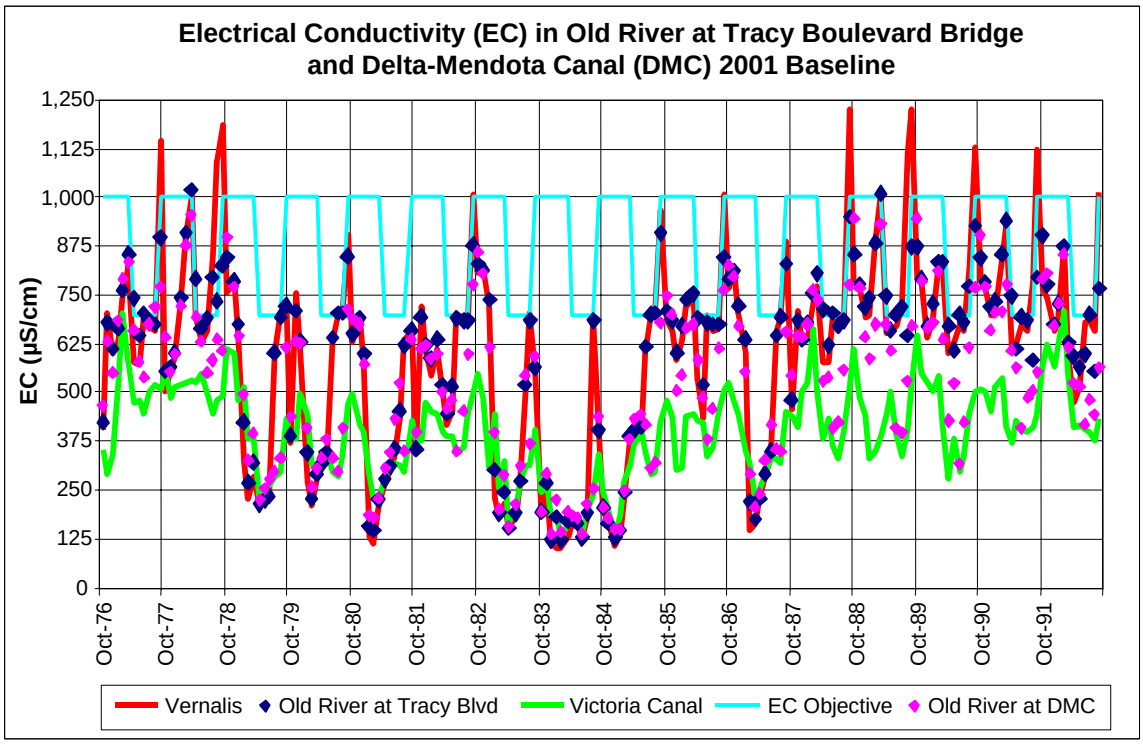

Figure 5.3-10a. DSM2-Simulated Electrical Conductivity in Old River (Both Ends) for the 2001 Baseline Conditions (with Temporary Barriers) for 1976–1991

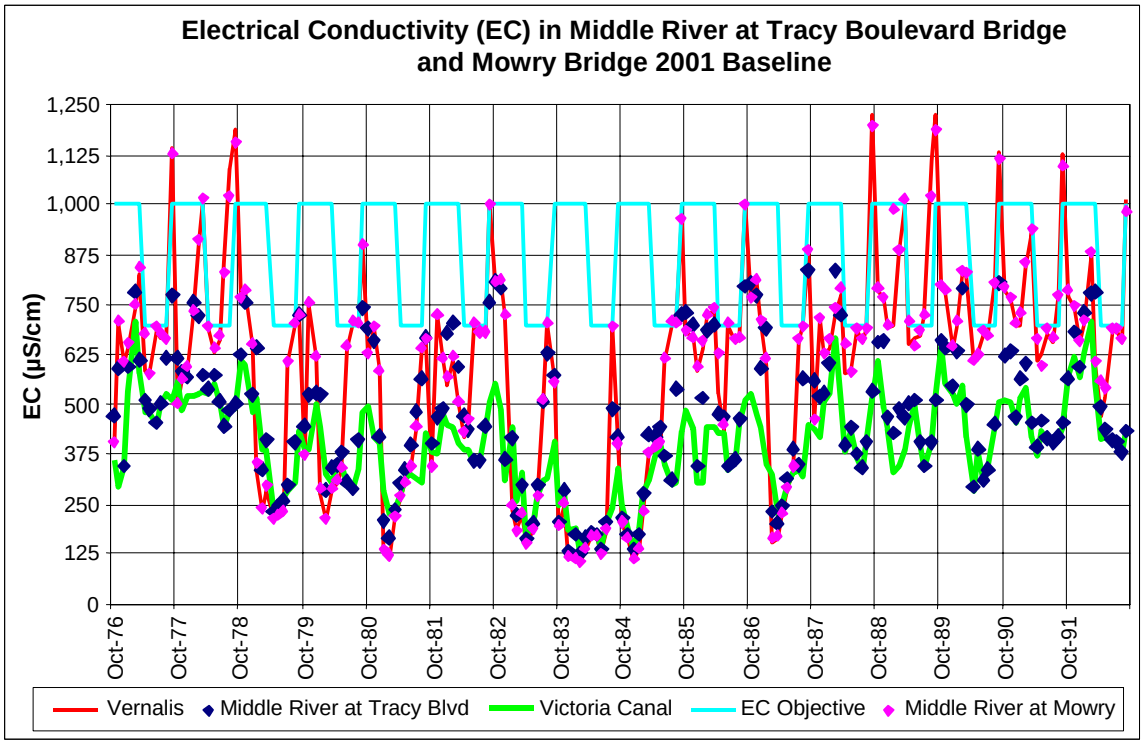

Figure 5.3-10b. DSM2-Simulated Electrical Conductivity in Middle River (Both Ends) for the 2001 Baseline Conditions (with Temporary Barriers) for 1976–1991

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Figures 5.3-10a and 5.3-10b

DSM2-Simulated Electrical Conductivity for the 2001 Baseline Conditions (with Temporary Barriers) for 1976–1991

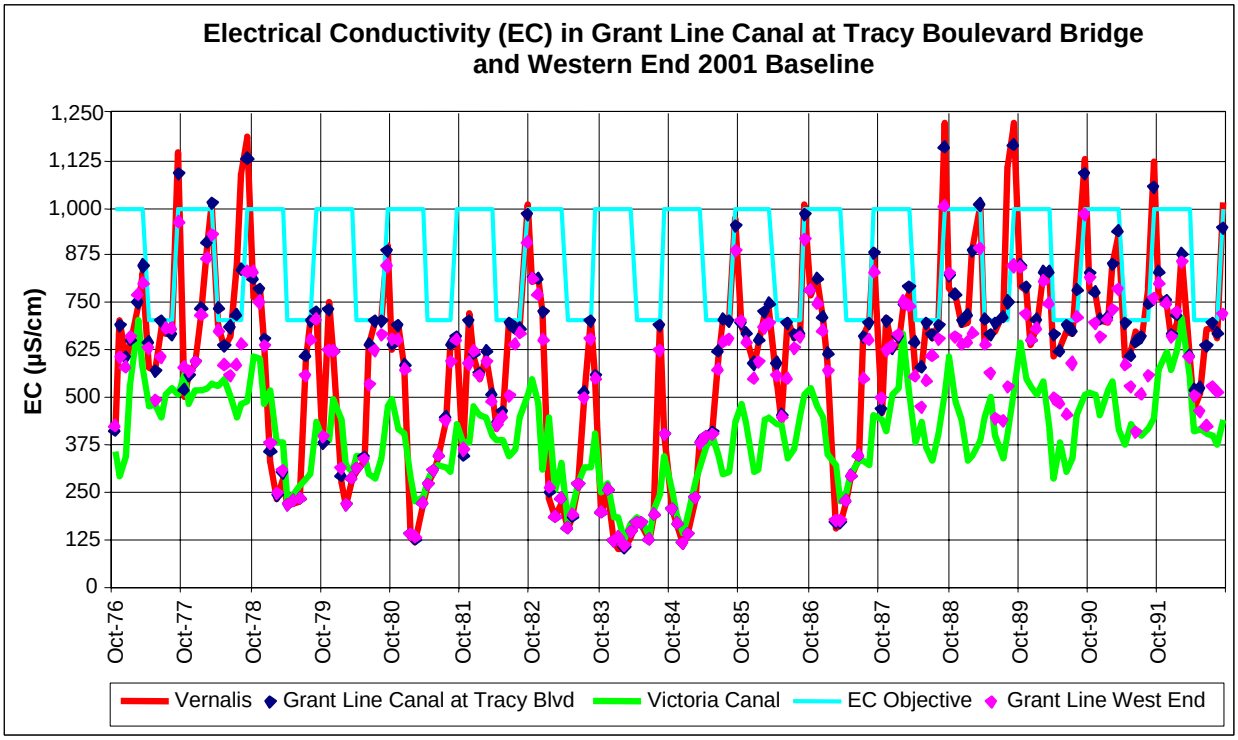

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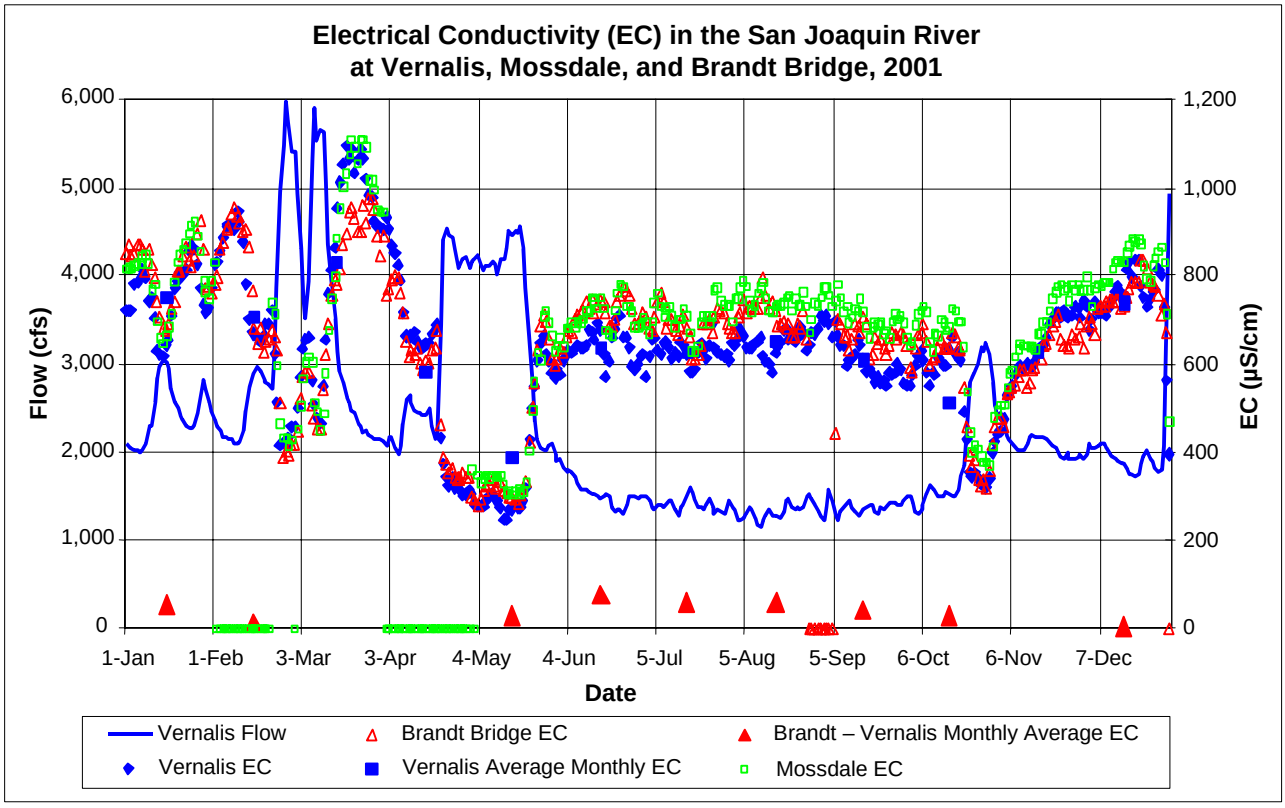
Figure 5.3-10c

DSM2-Simulated Electrical Conductivity in Grant Line Canal (Both Ends) for the 2001 Baseline Conditions (with Temporary Barriers) for 1976–1991



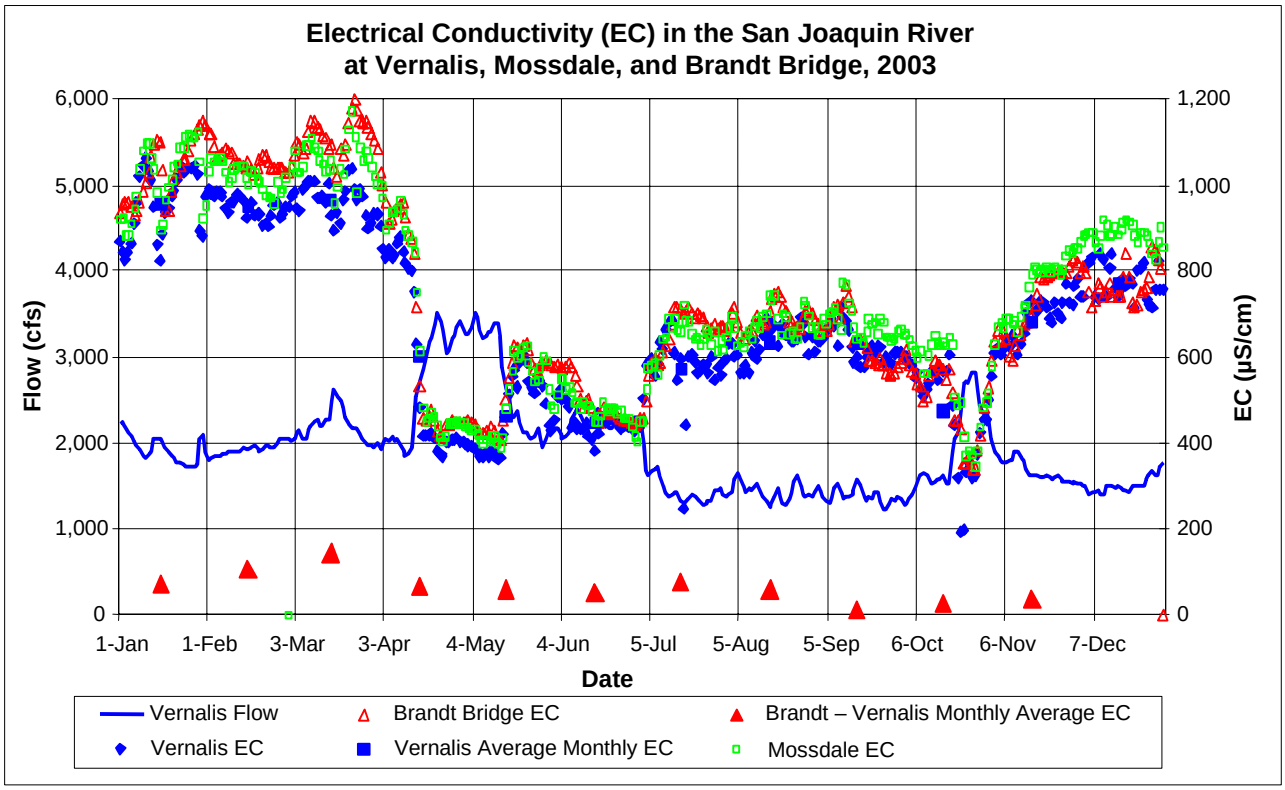


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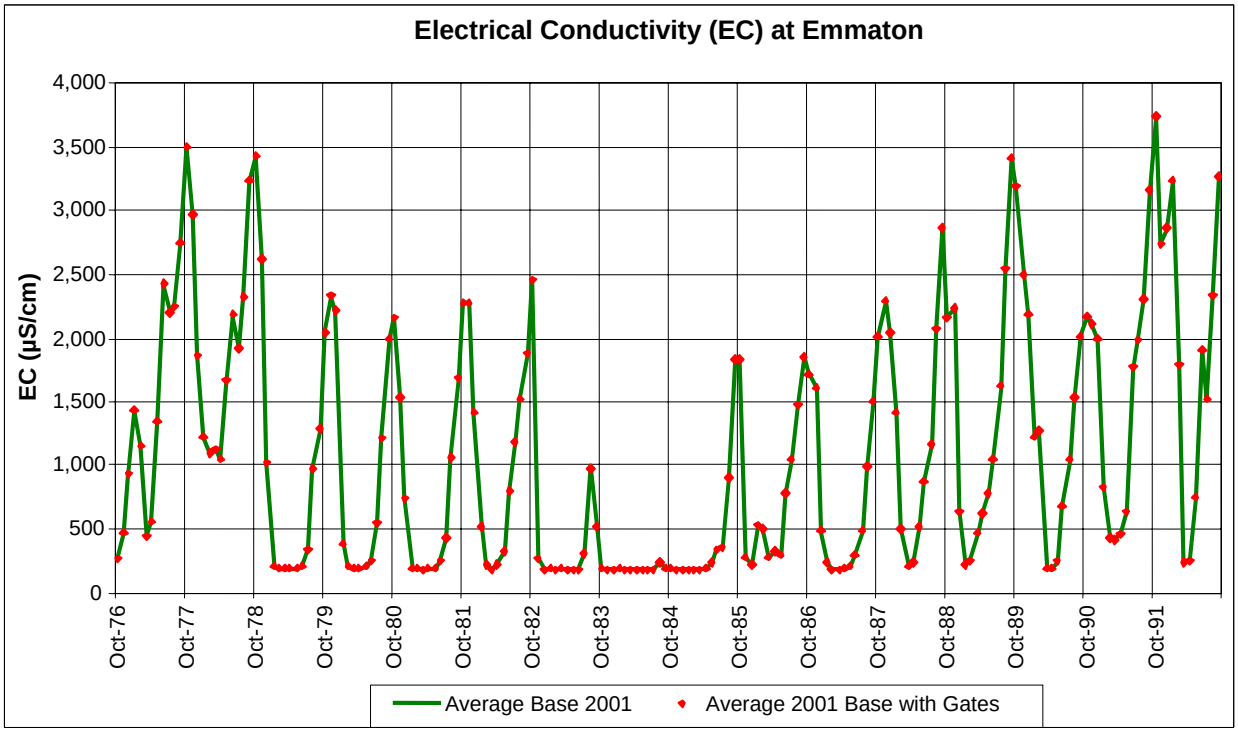
Figure 5.3-11

Measured Daily Average Electrical Conductivity in the San Joaquin River at Vernalis, Mossdale, and Brandt Bridge with Flow at Vernalis for 2001 and 2003 (Low-Flow Years)



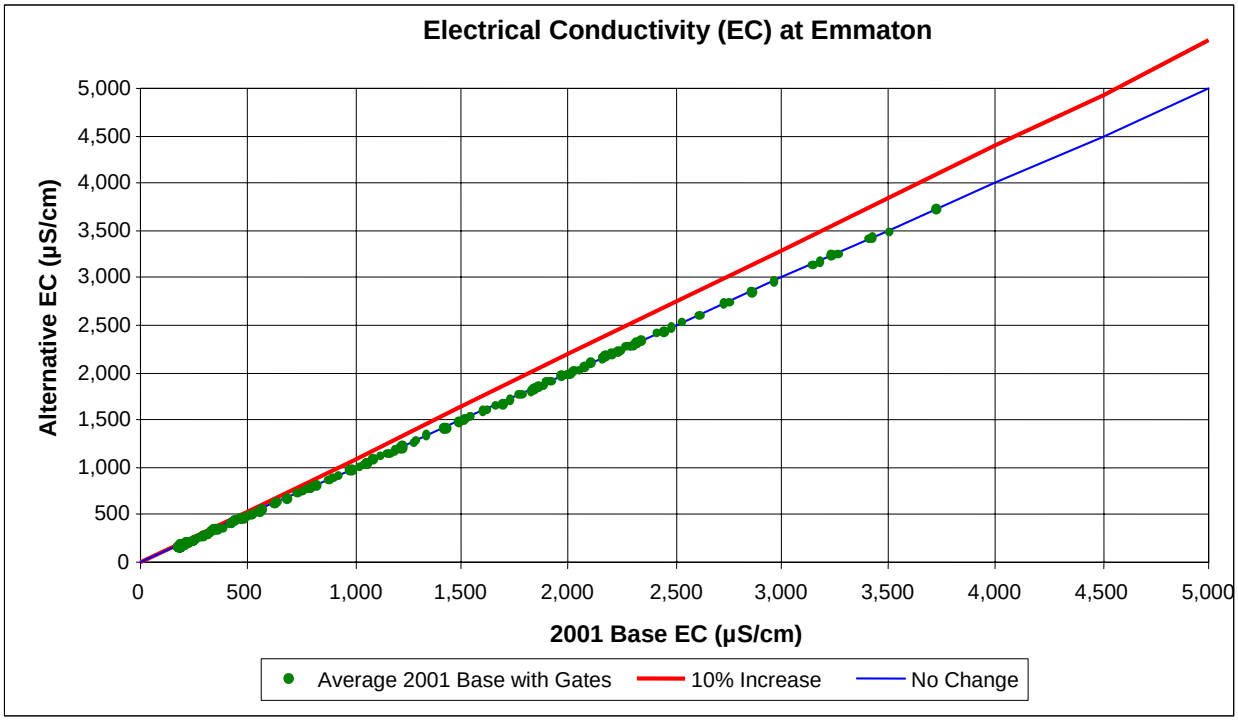


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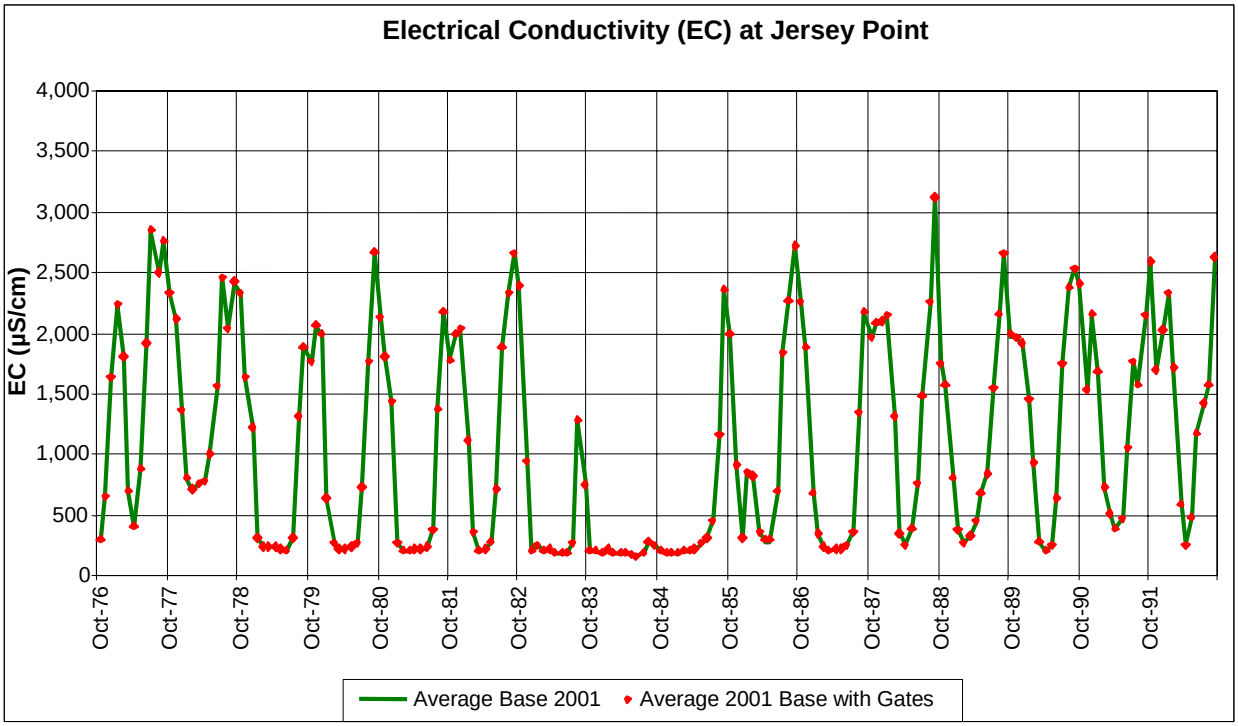
Figure 5.3-12

DSM2-Simulated Monthly Electrical Conductivity at Emmaton for 1976–1991 with Alternative 2A Stage 1 (2001 Base with Gates) Compared with 2001 No Action Baseline



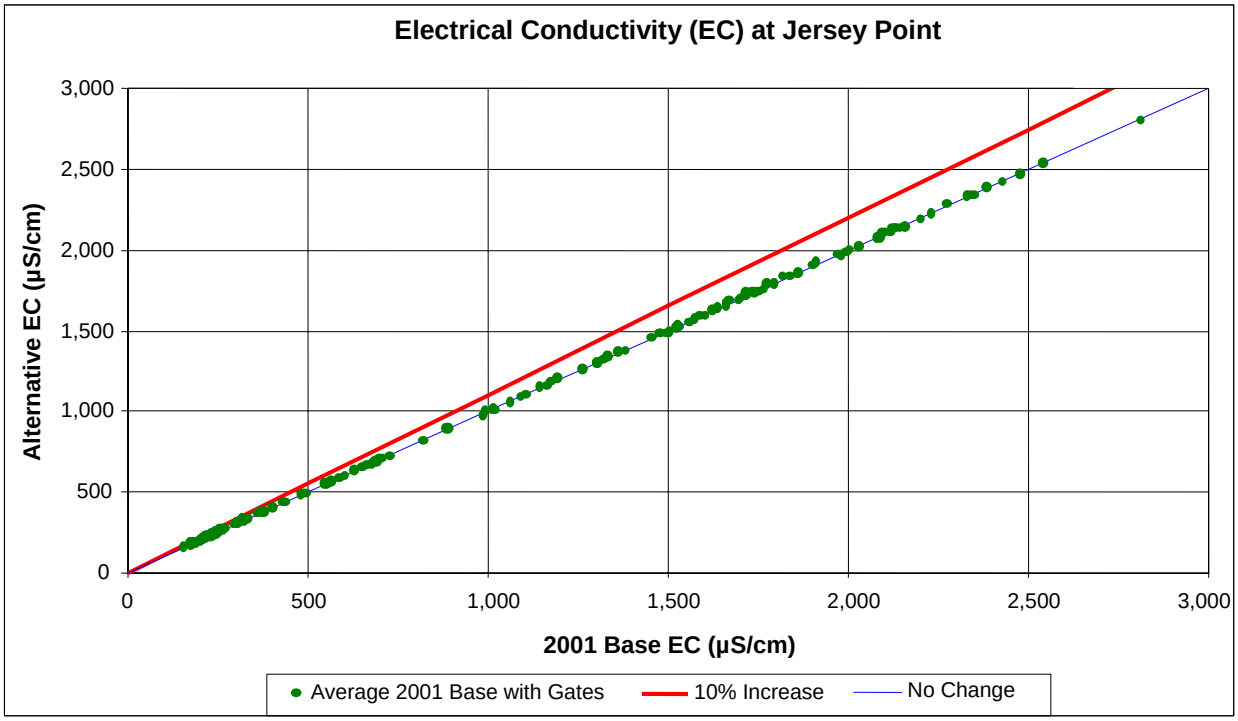


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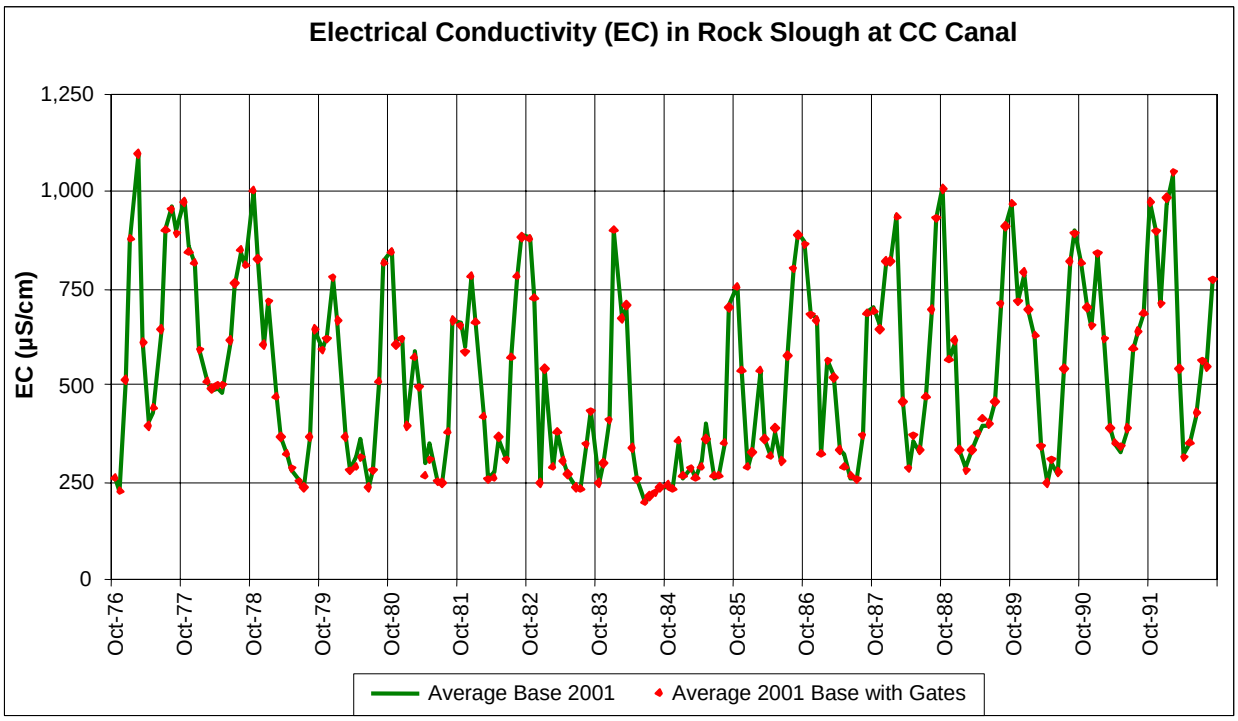
Figure 5.3-13

DSM2-Simulated Monthly Electrical Conductivity at Jersey Point for 1976–1991 with Alternative 2A Stage 1 (2001 Base with Gates) Compared with 2001 No Action Baseline



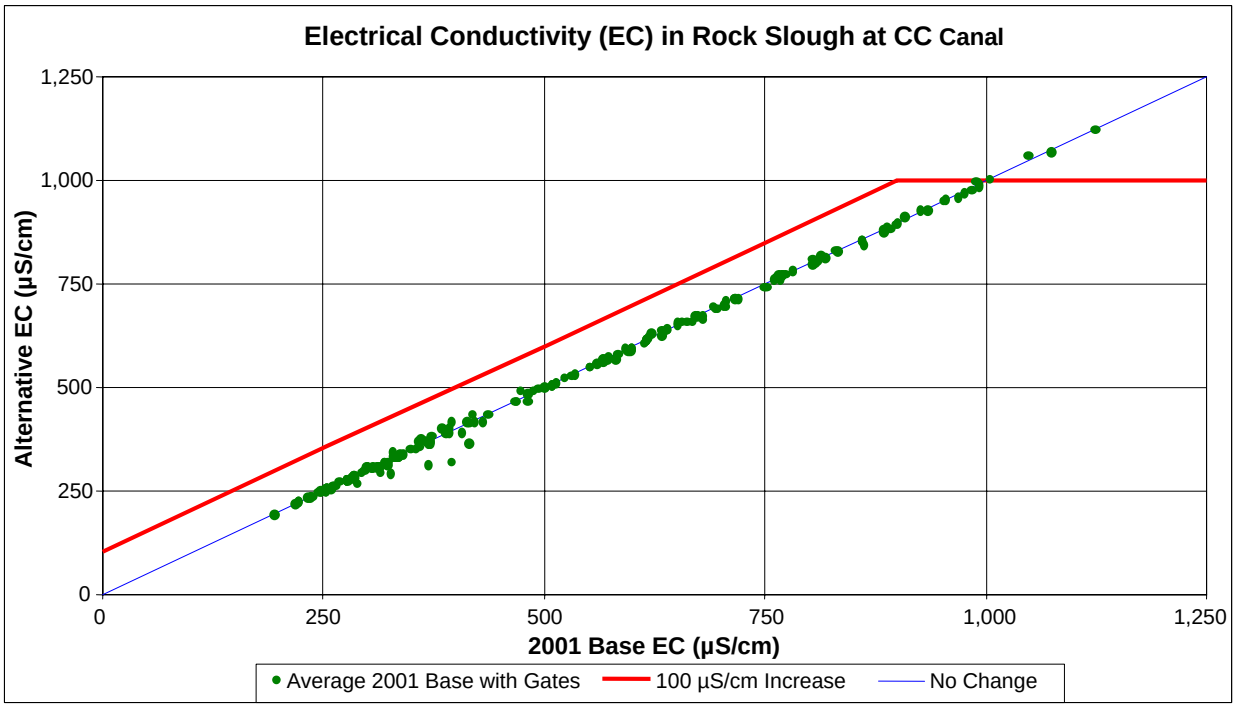


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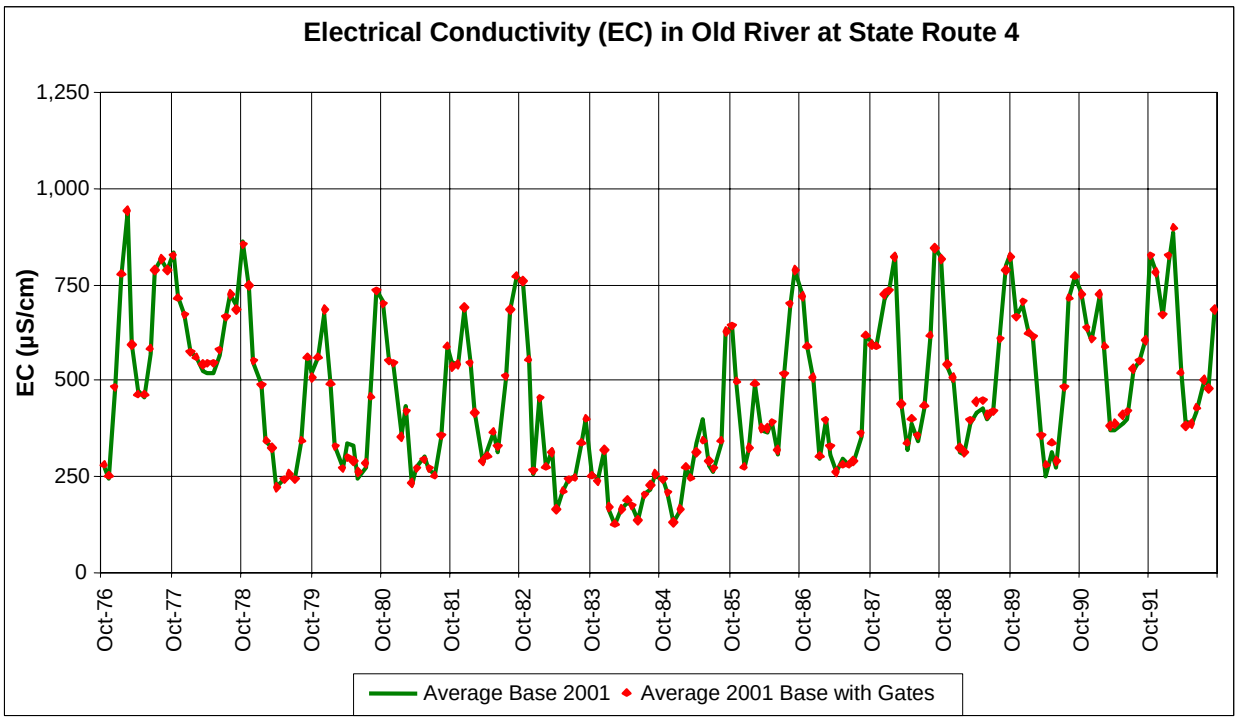
Figure 5.3-14

DSM2-Simulated Monthly Electrical Conductivity in Rock Slough for 1976–1991 with Alternative 2A Stage 1 (2001 Base with Gates) Compared with 2001 No Action Baseline



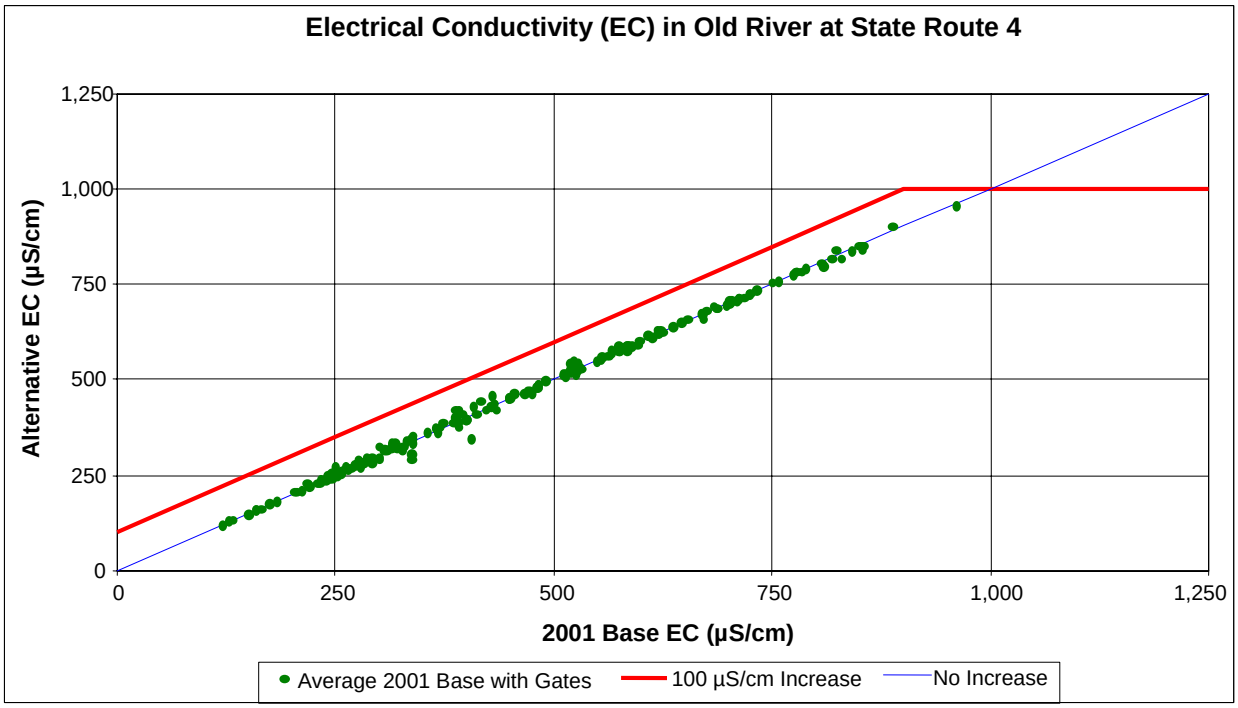


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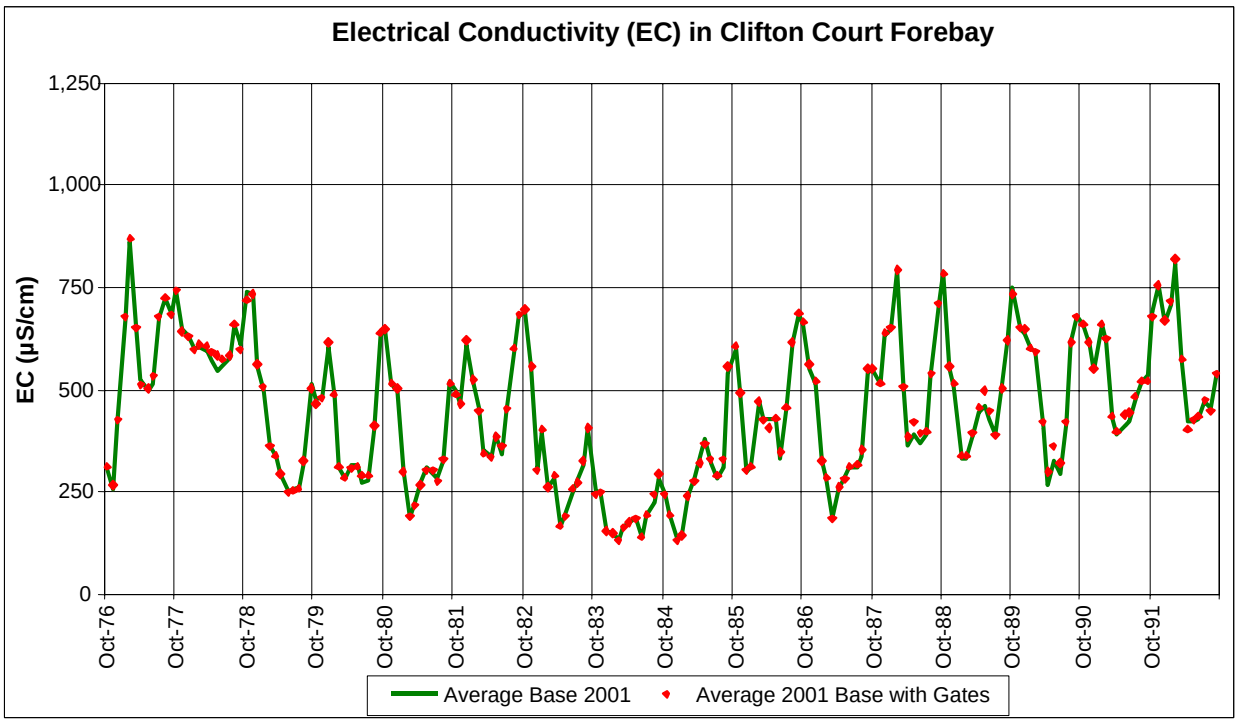
Figure 5.3-15

DSM2-Simulated Monthly Electrical Conductivity in Old River near State Route 4 Bridge for 1976–1991 with Alternative 2A Stage 1 (2001 Base with Gates) Compared with 2001 No Action Baseline



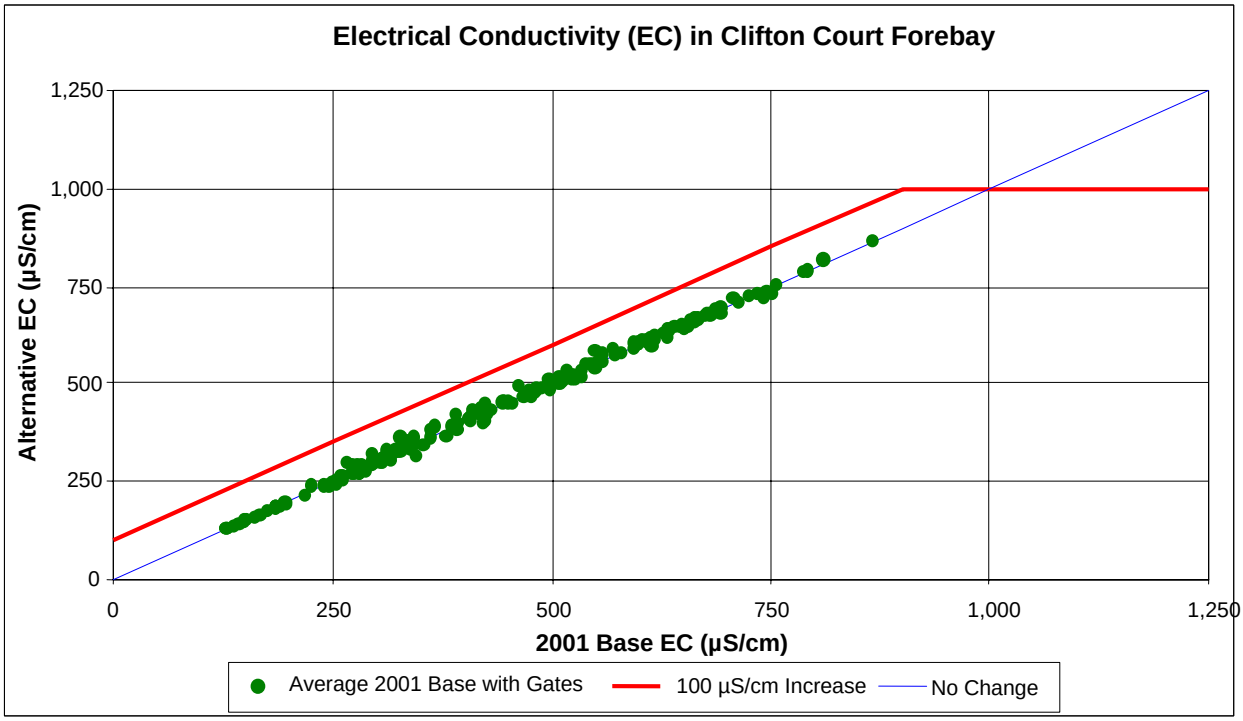


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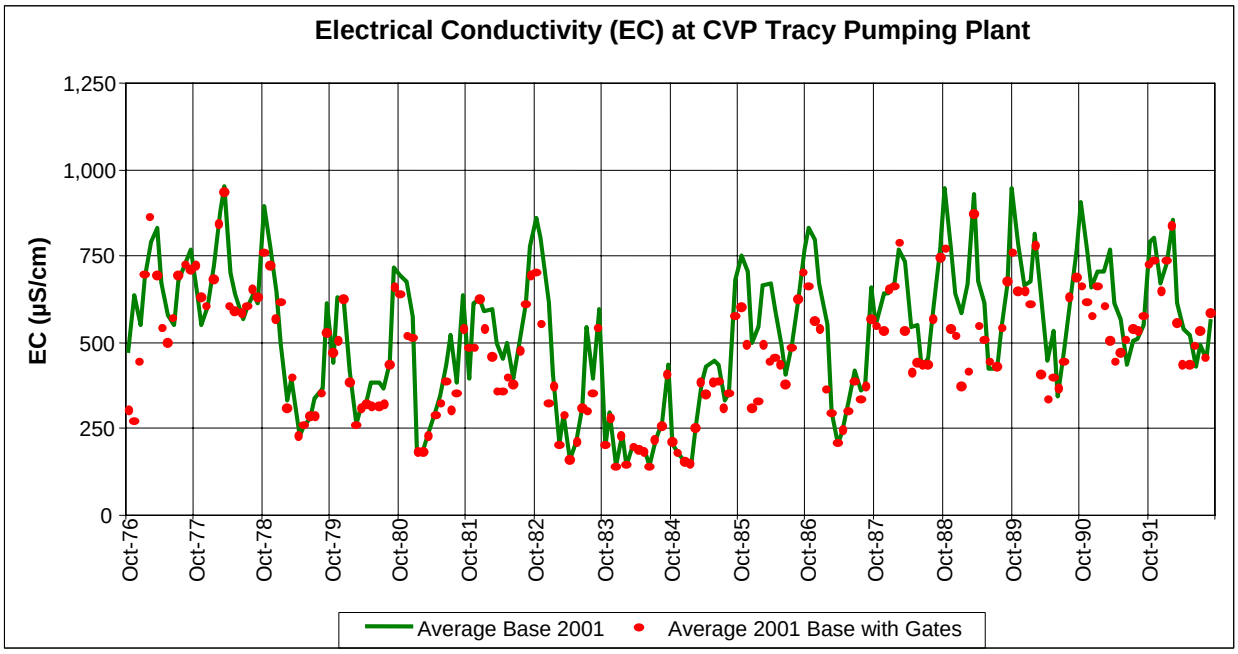
Figure 5.3-16

DSM2-Simulated Monthly Electrical Conductivity in Clifton Court Forebay for 1976–1991 with Alternative 2A Stage 1 (2001 Base with Gates) Compared with 2001 No Action Baseline



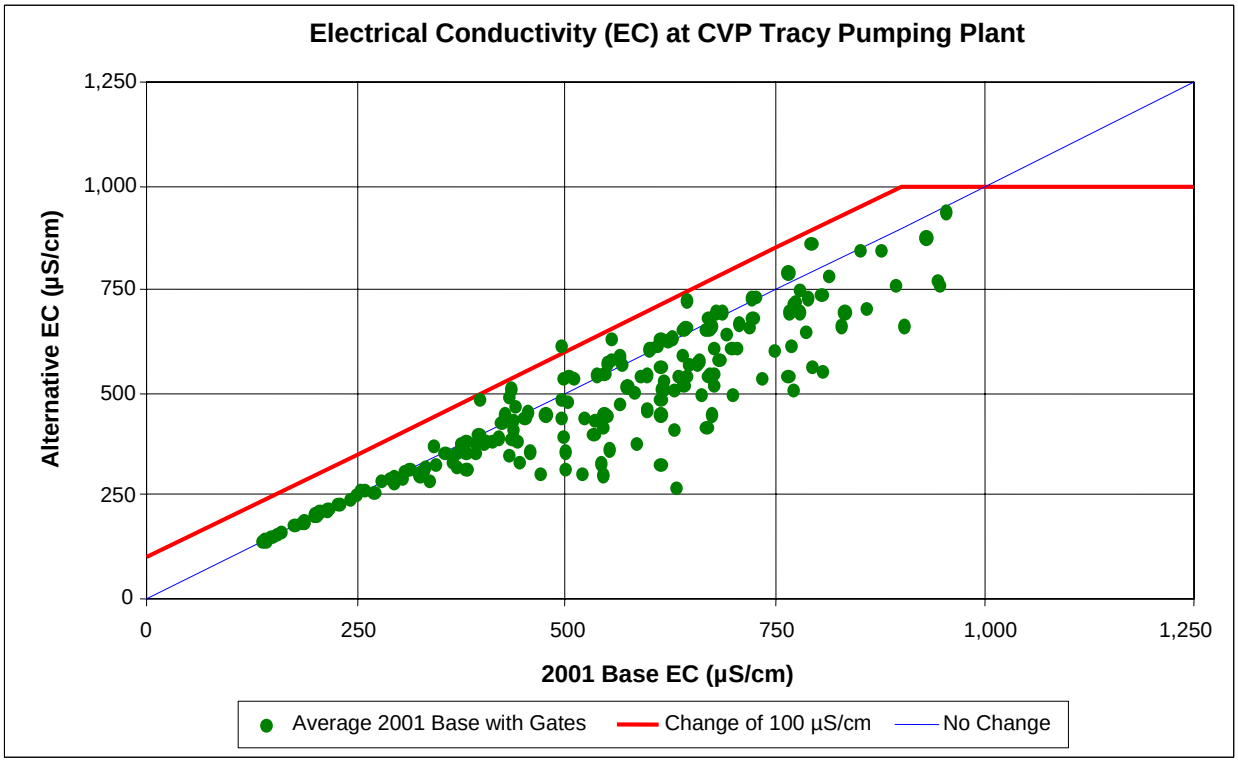


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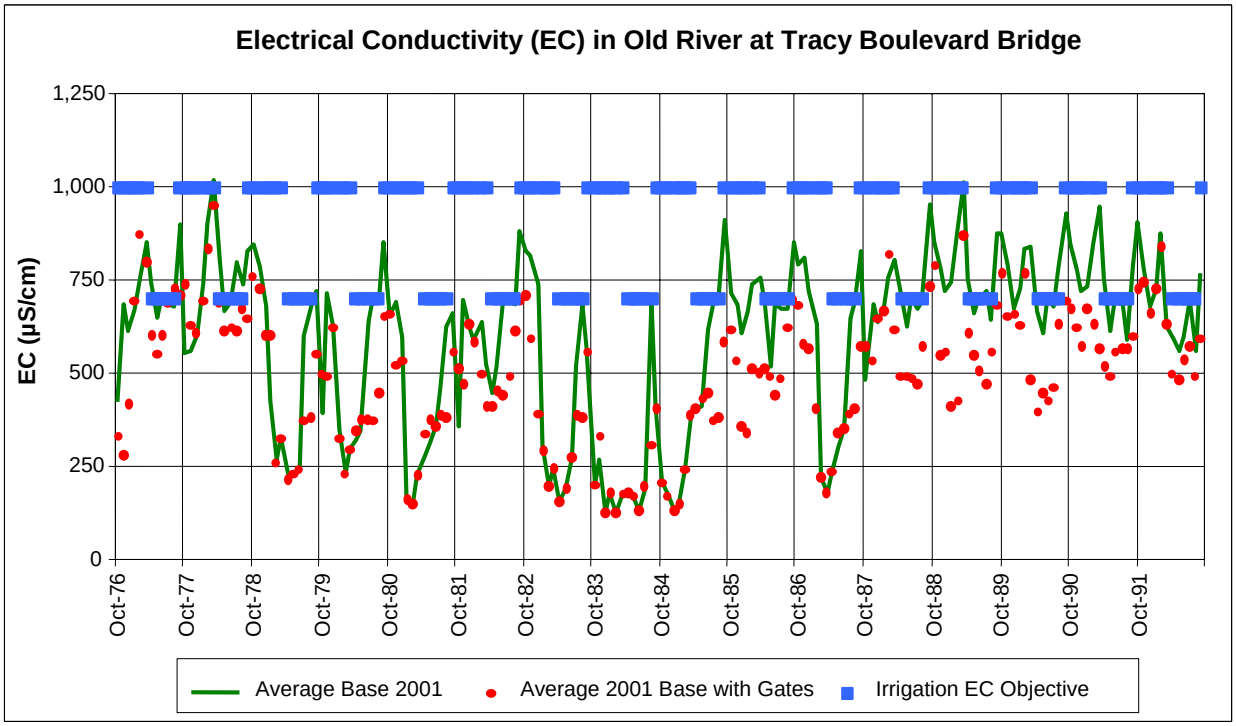
Figure 5.3-17

DSM2-Simulated Monthly Electrical Conductivity at CVP Tracy for 1976–1991 with Alternative 2A Stage 1 (2001 Base with Gates) Compared with 2001 No Action Baseline



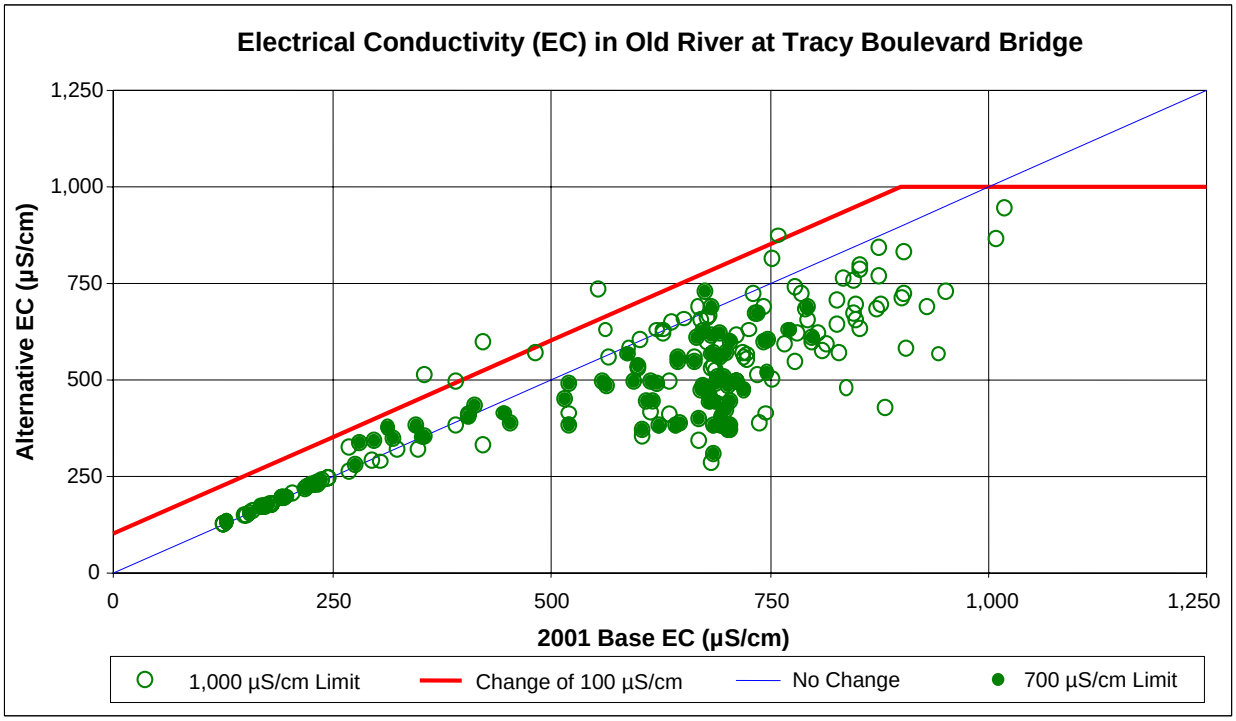


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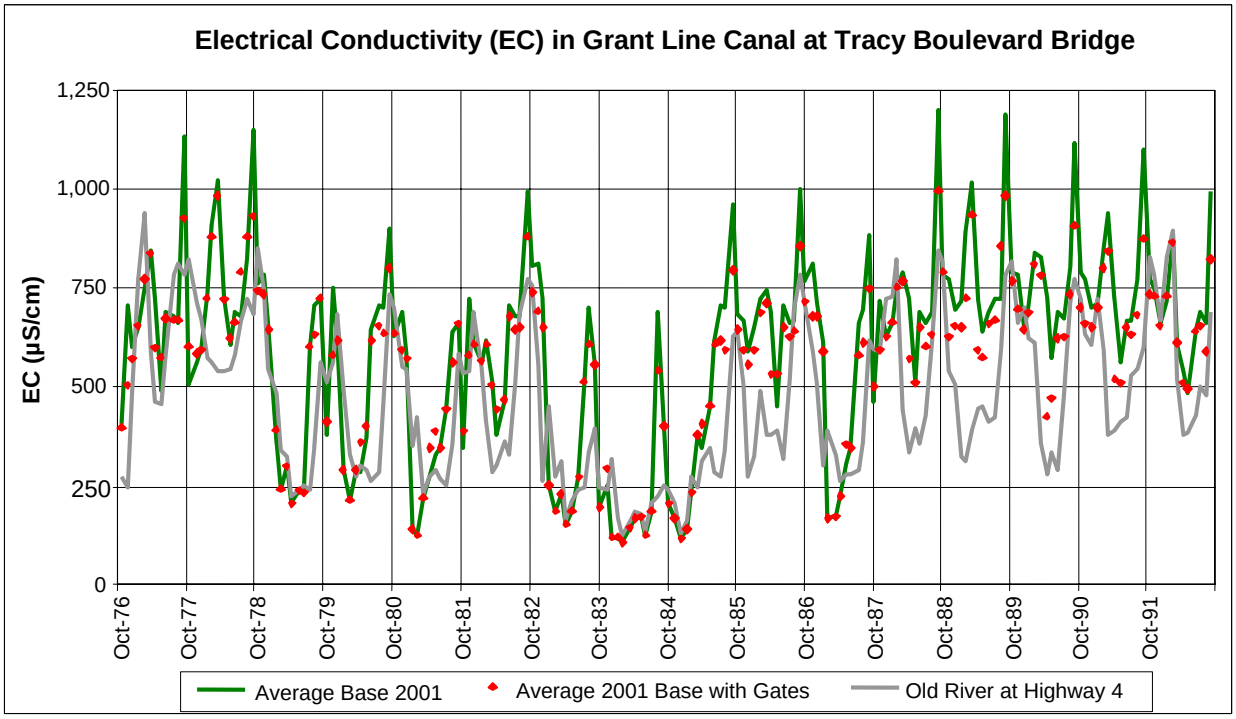
Figure 5.3-18

DSM2-Simulated Monthly Electrical Conductivity in Old River at Tracy Boulevard Bridge for 1976–1991 with Alternative 2A Stage 1 (2001 Base with Gates) Compared with 2001 No Action Baseline



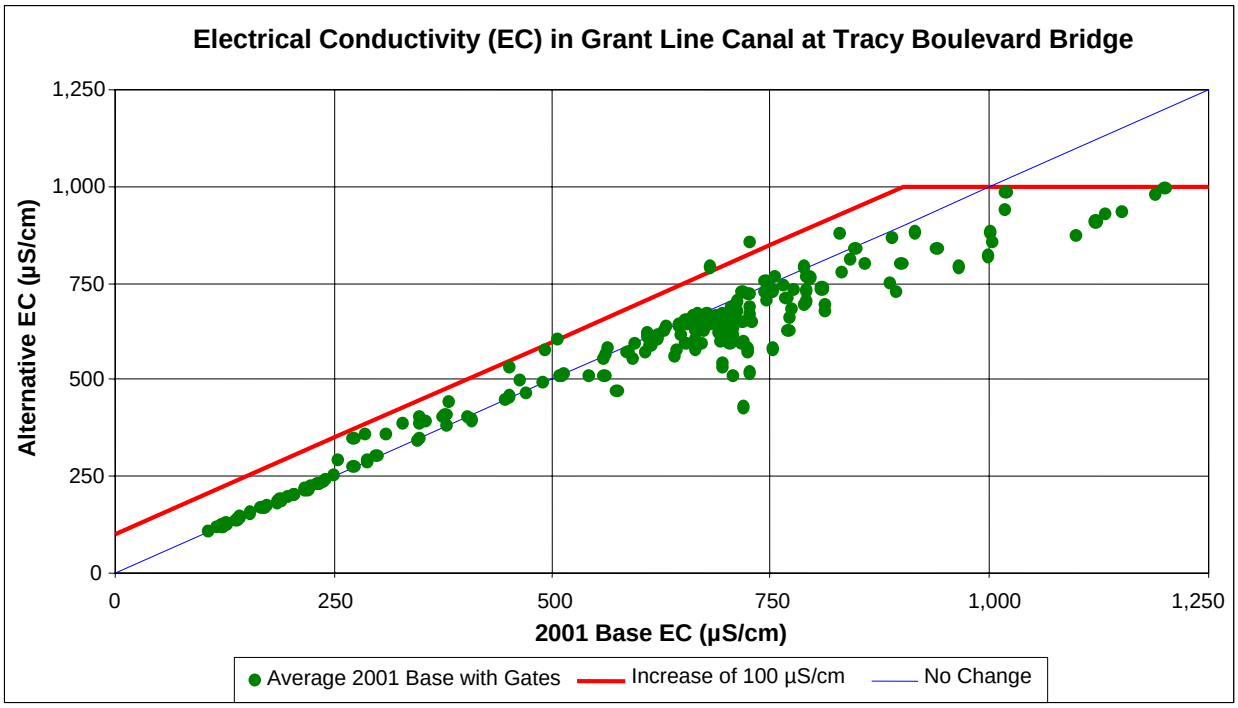


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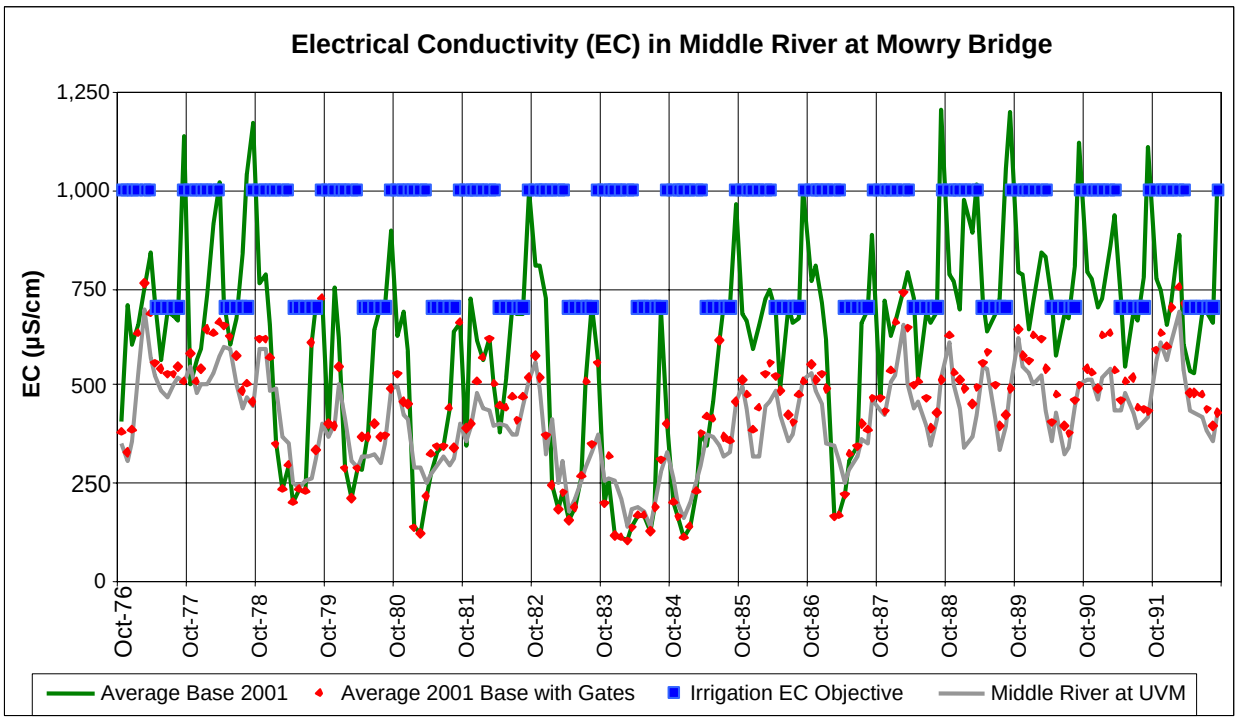
Figure 5.3-19

DSM2-Simulated Monthly Electrical Conductivity in Grant Line Canal at Tracy Boulevard Bridge for 1976–1991 with Alternative 2A Stage 1 (2001 Base with Gates) Compared with 2001 No Action Baseline



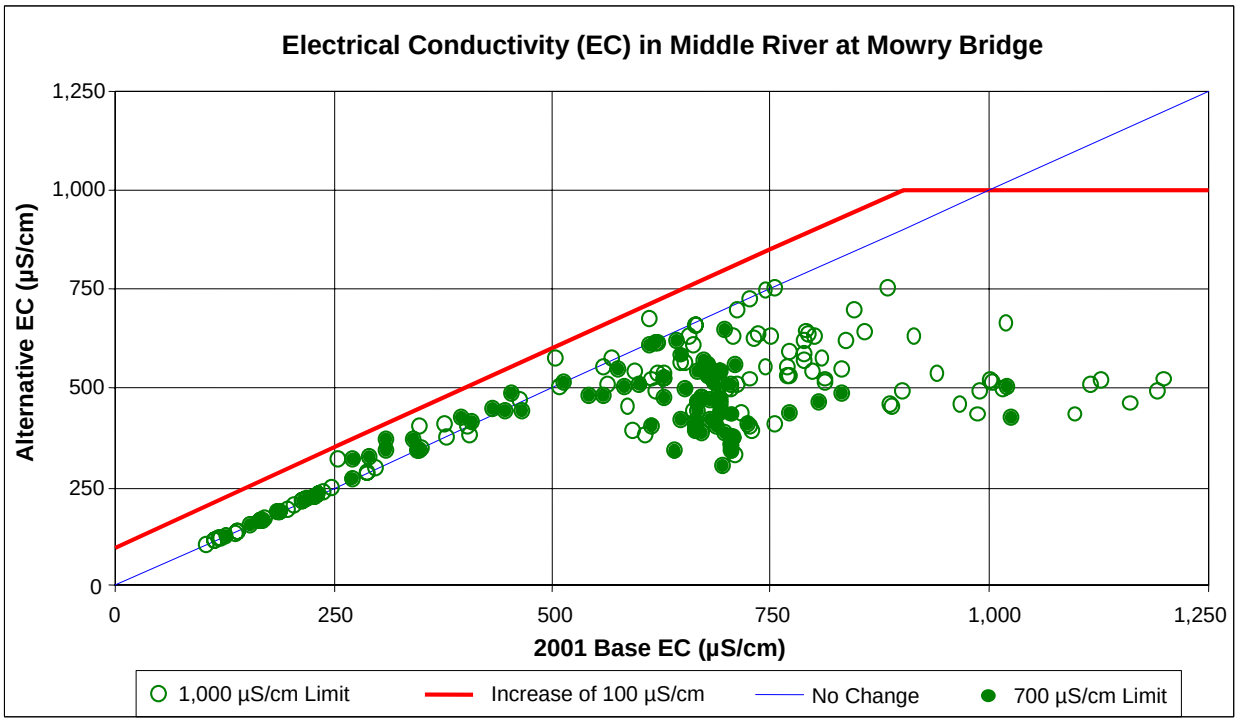


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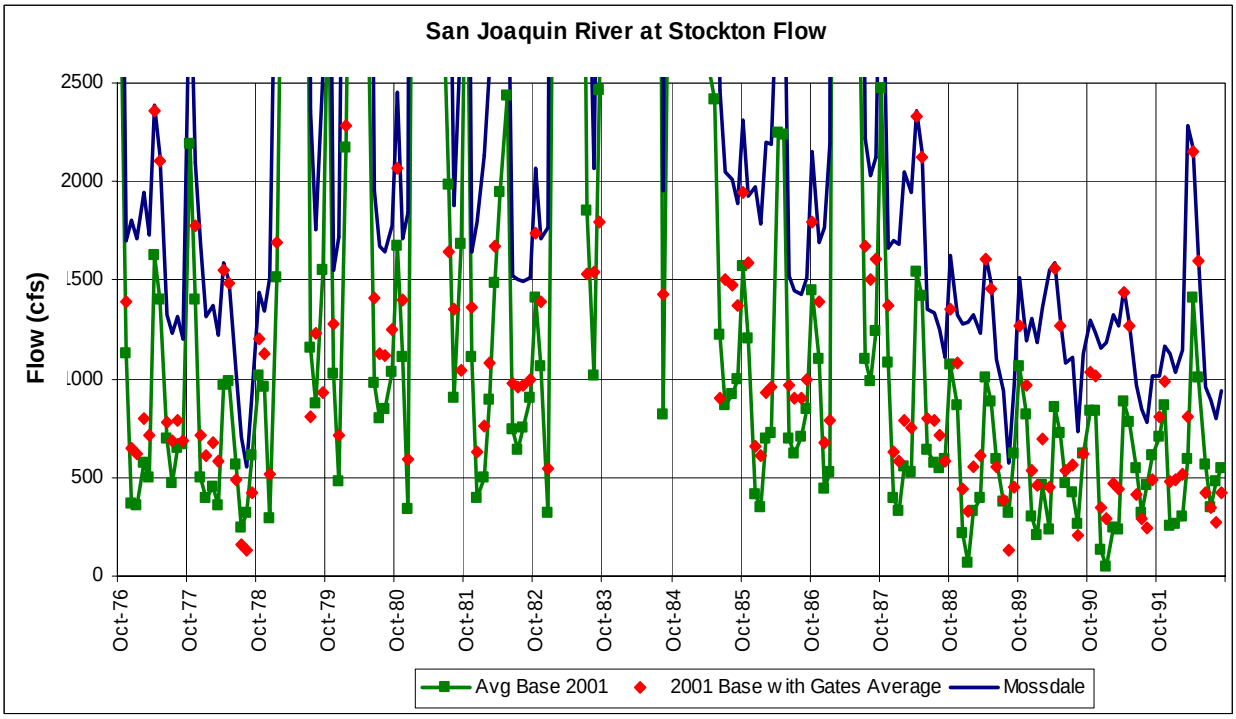
Figure 5.3-20

DSM2-Simulated Monthly Electrical Conductivity in Middle River at Mowry Bridge for 1976–1991 with Alternative 2A Stage 1 (2001 Base with Gates) Compared with 2001 No Action Baseline



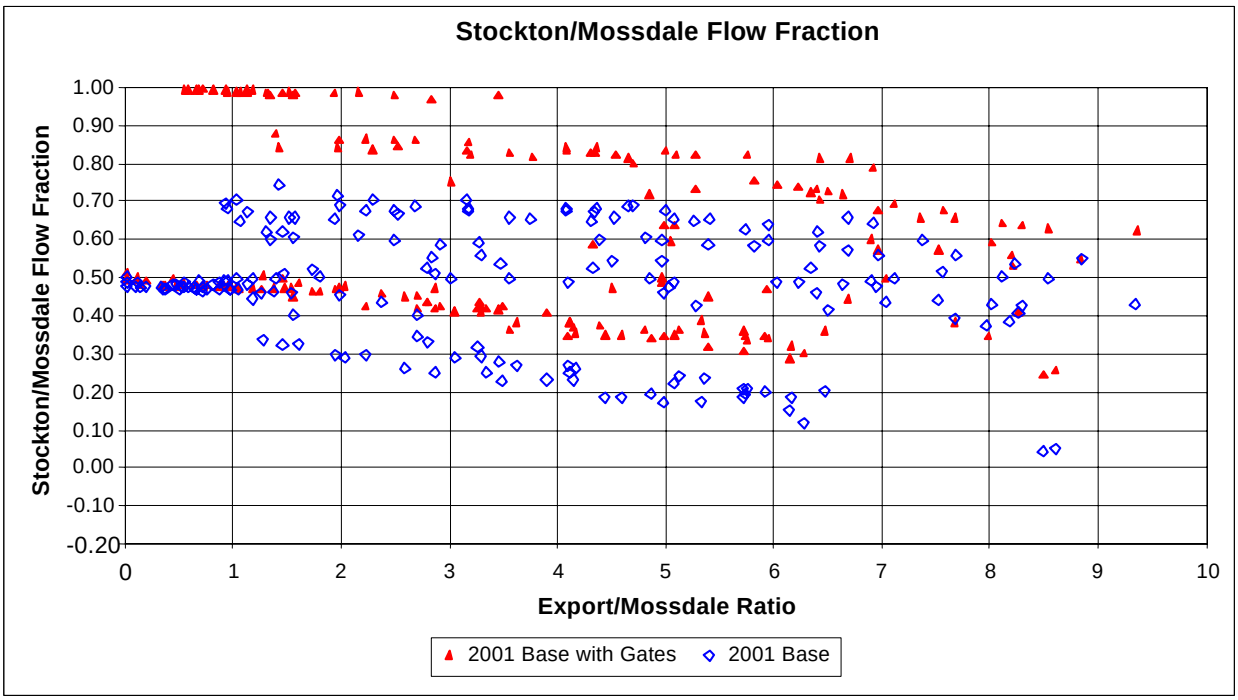


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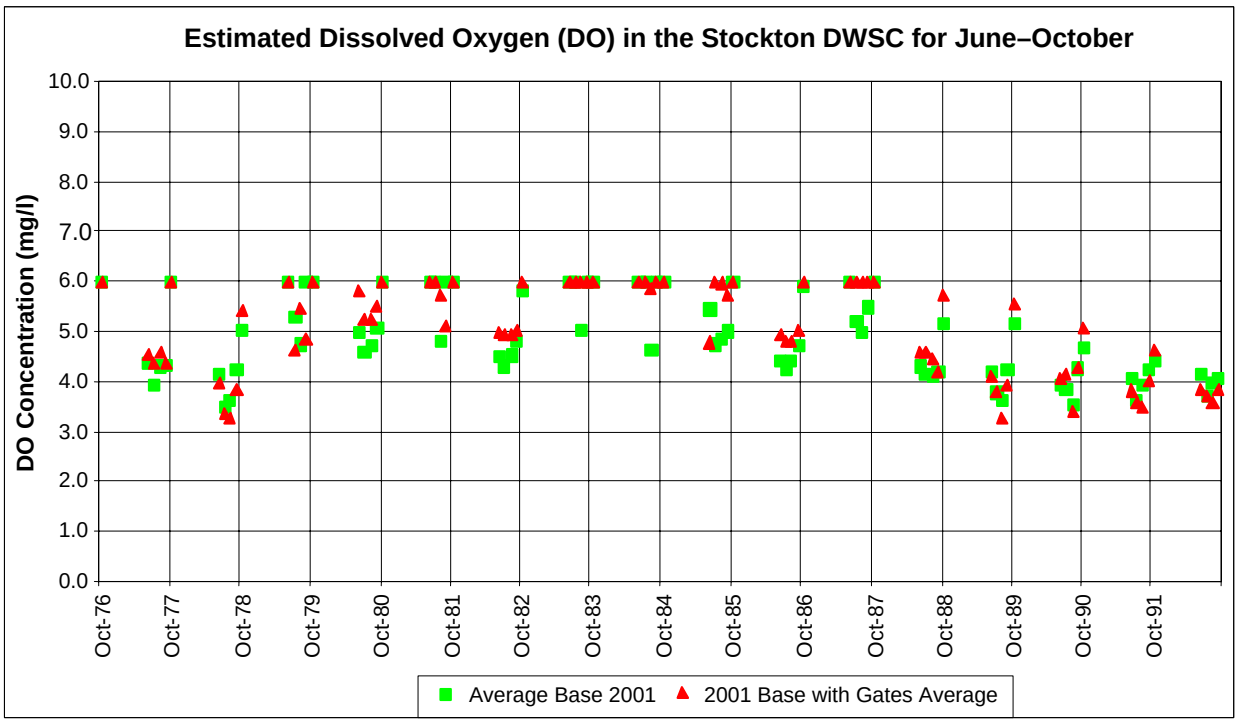
Figure 5.3-21

DSM2-Simulated Monthly San Joaquin River Flow at the Stockton Deep Water Ship Channel for 1976–1991 and the Stockton/Mossdale Flow Fraction as a Function of the Export/Mossdale Ratio for Alternative 2A Stage 1 and the 2001 Baseline



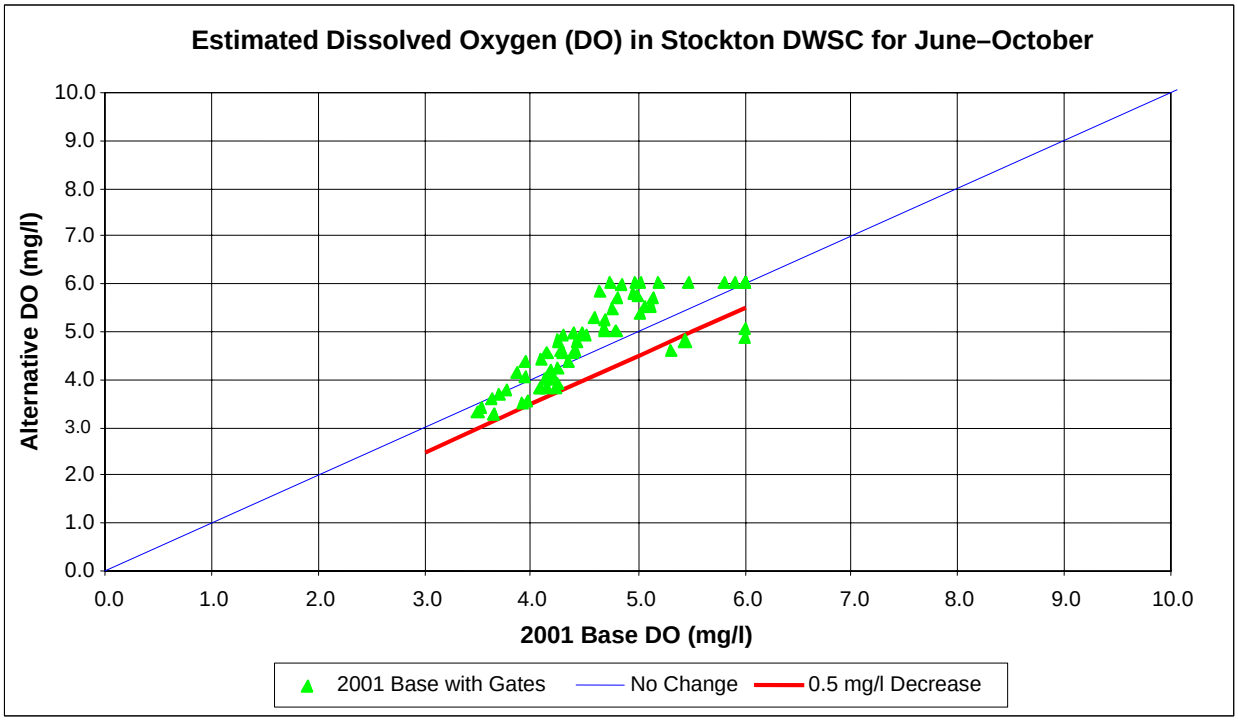


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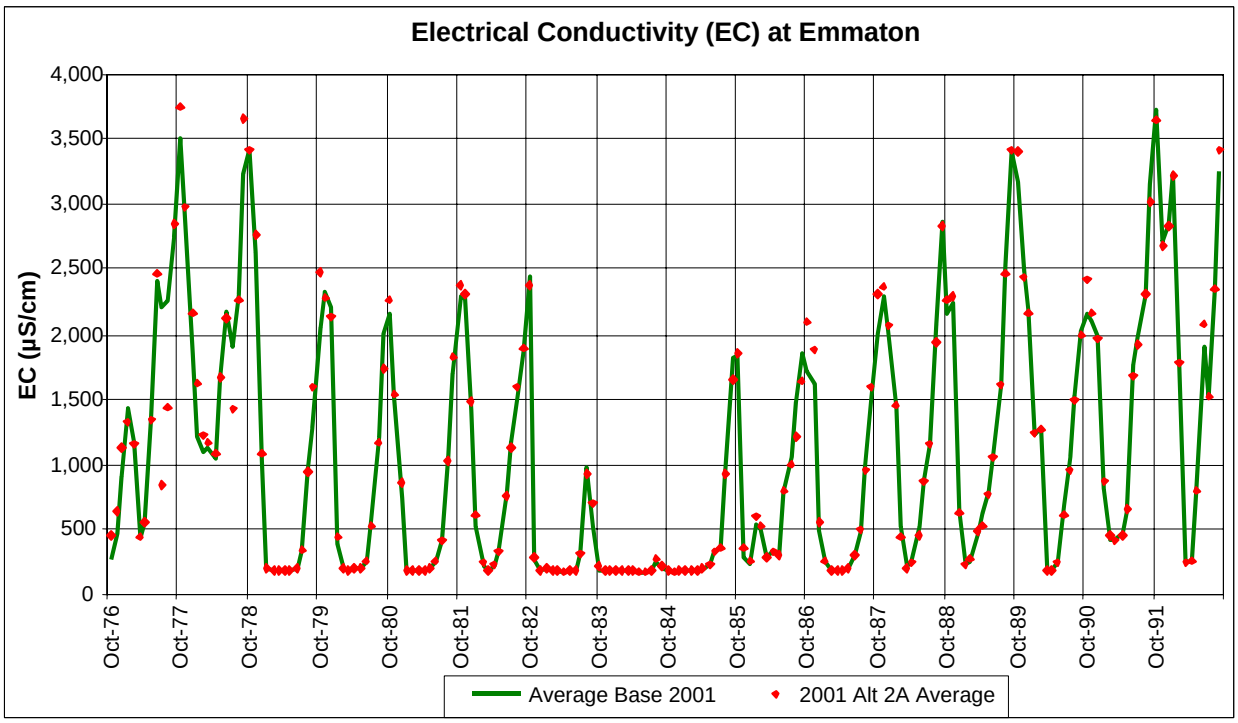
Figure 5.3-22

Estimated Stockton Deep Water Ship Channel (DWSC) Dissolved Oxygen (DO) Concentrations (June–October) for 1976–1991 Alternative 2A Stage 1 Compared with 2001 No Action Baseline



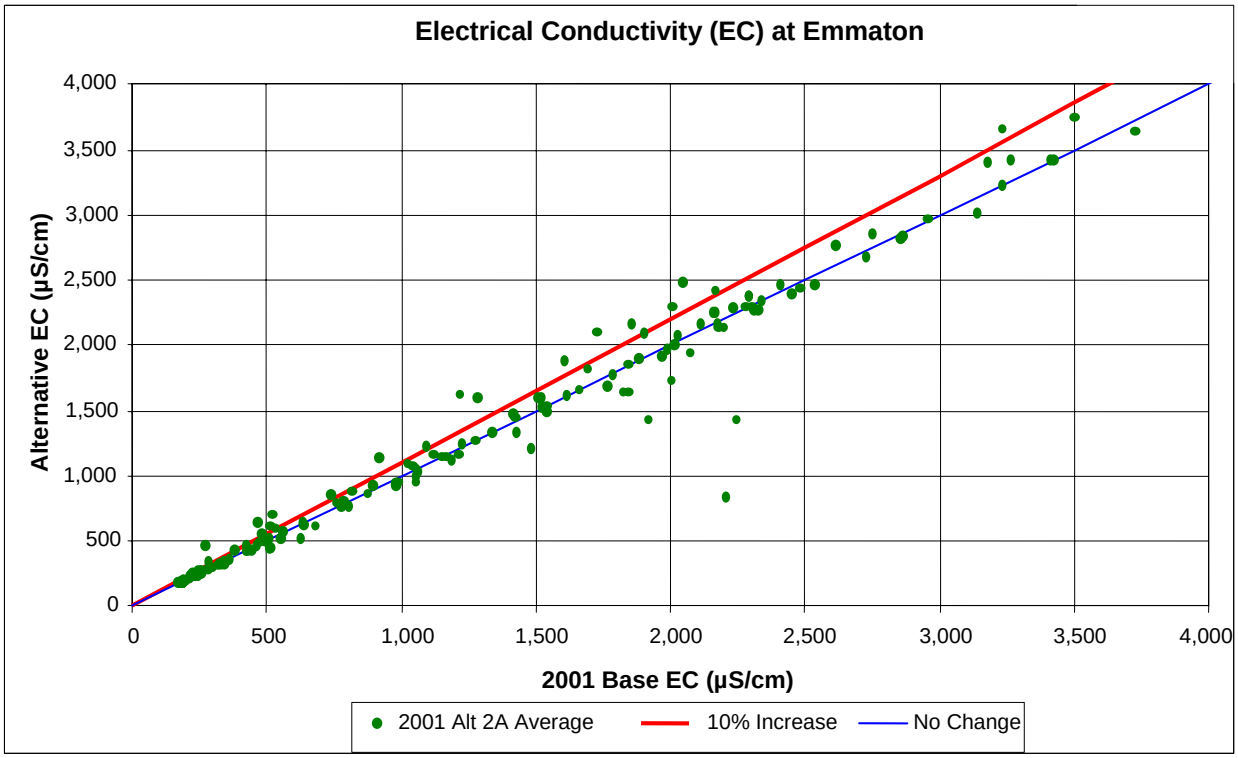


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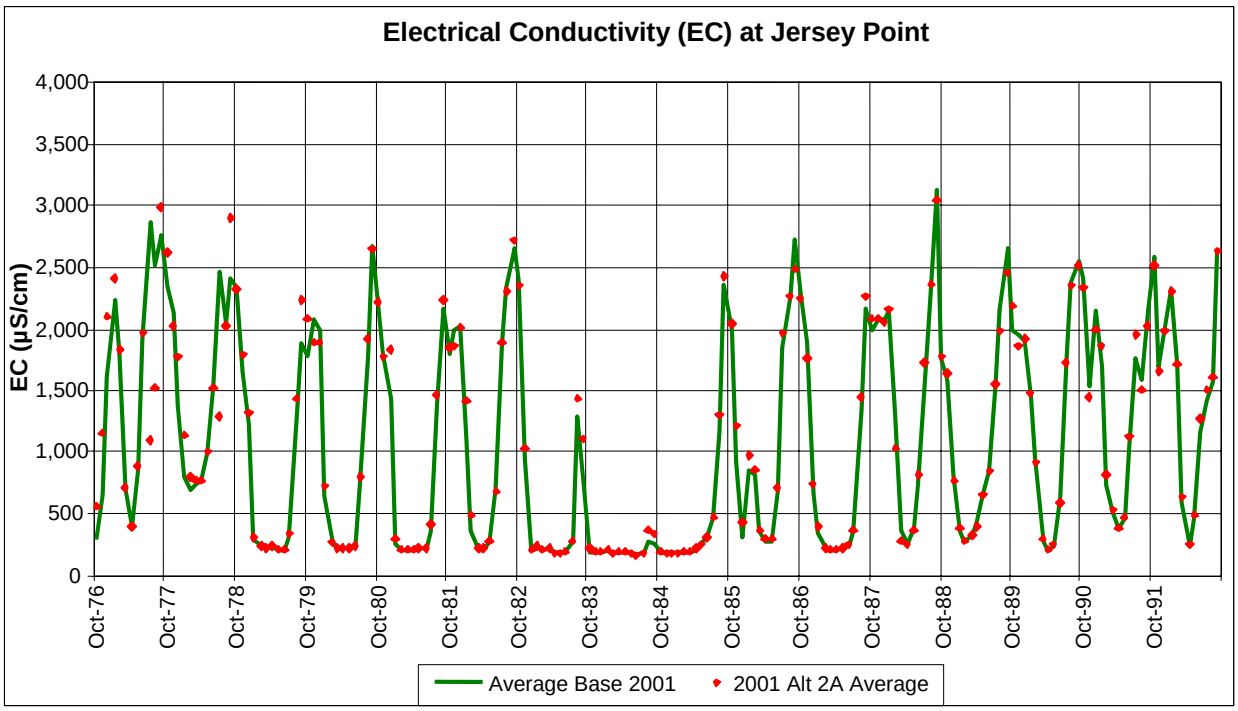
Figure 5.3-23

DSM2-Simulated Monthly Electrical Conductivity at Emmaton for 1976–1991 with Alternative 2A Stage 2 Compared with 2001 No Action Baseline



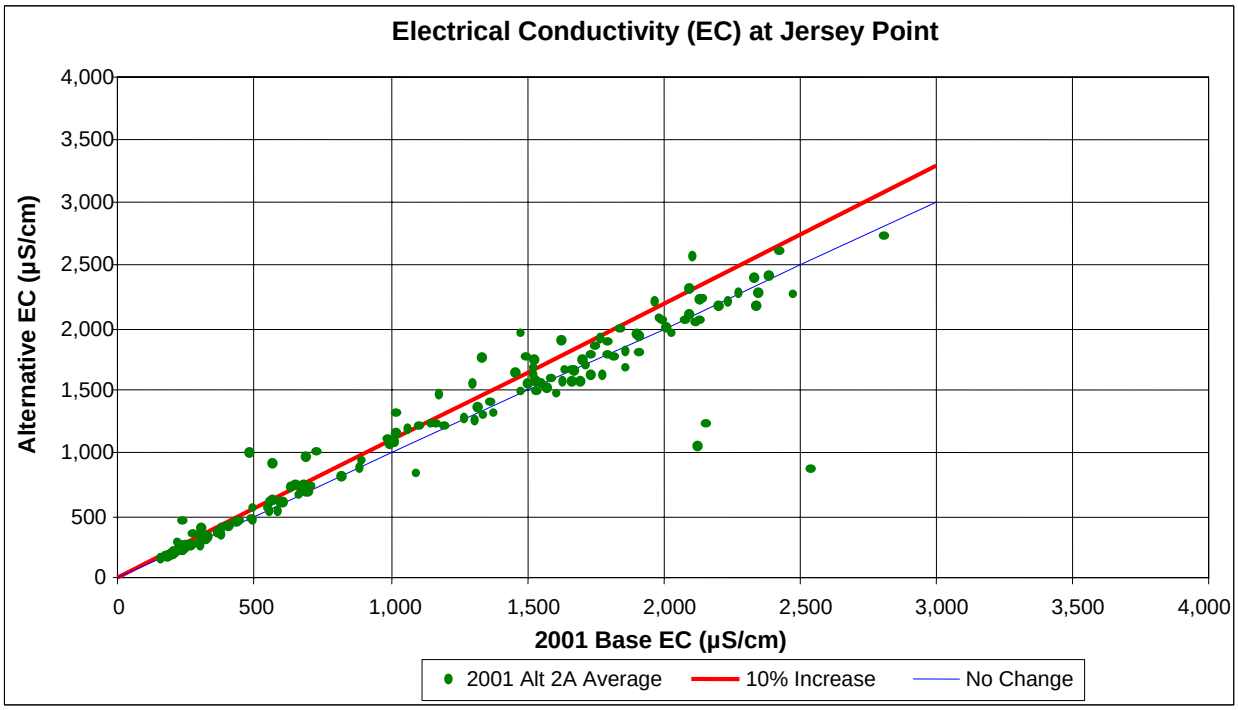


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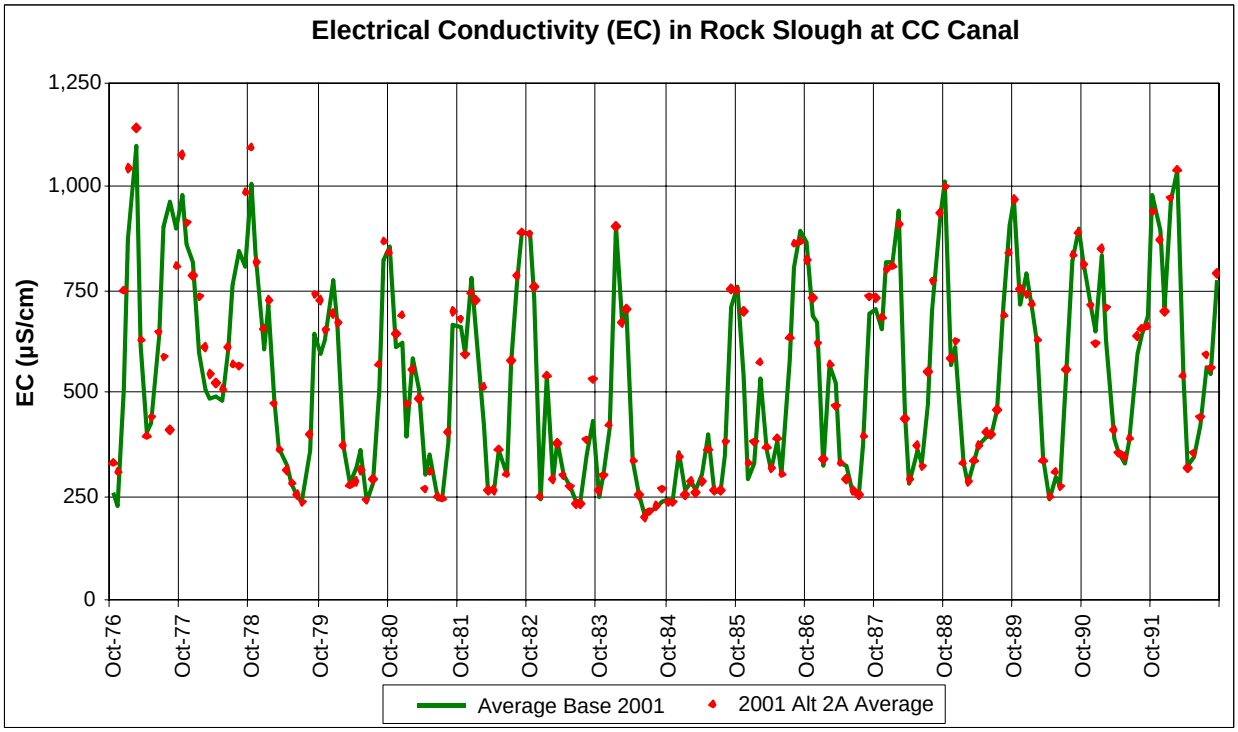
Figure 5.3-24

DSM2-Simulated Monthly Electrical Conductivity at Jersey Point for 1976–1991 with Alternative 2A Stage 2 Compared with 2001 No Action Baseline



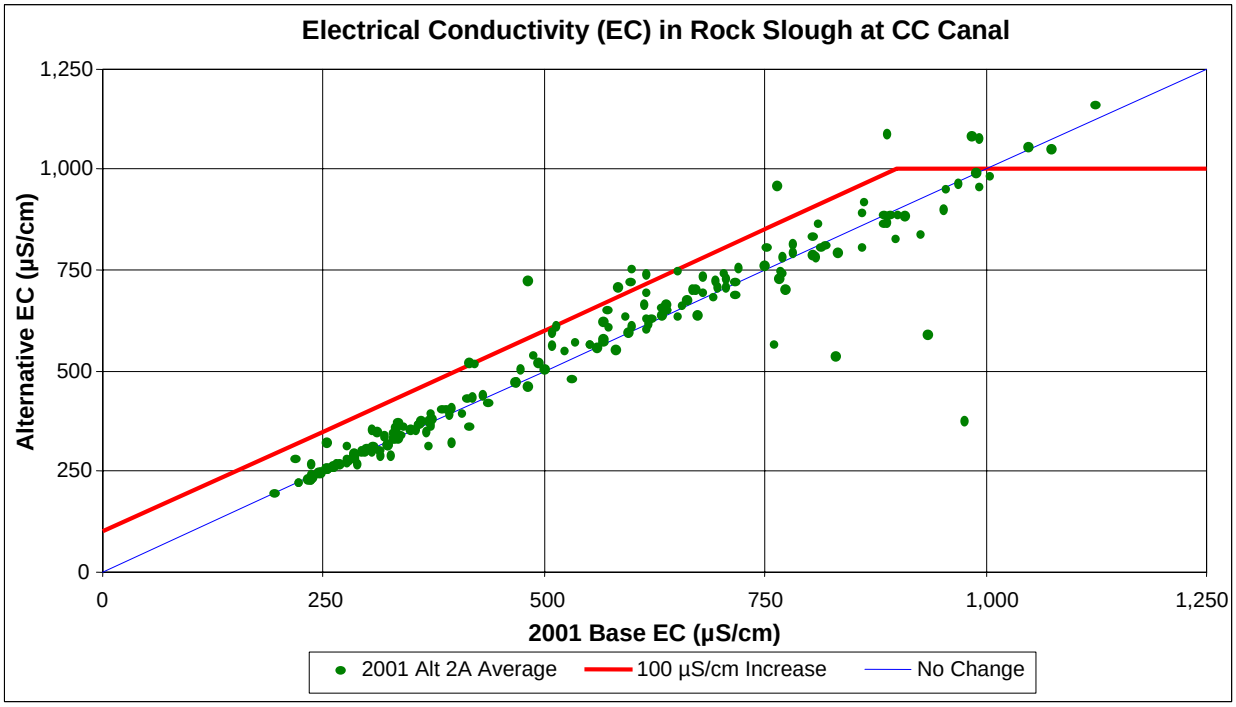


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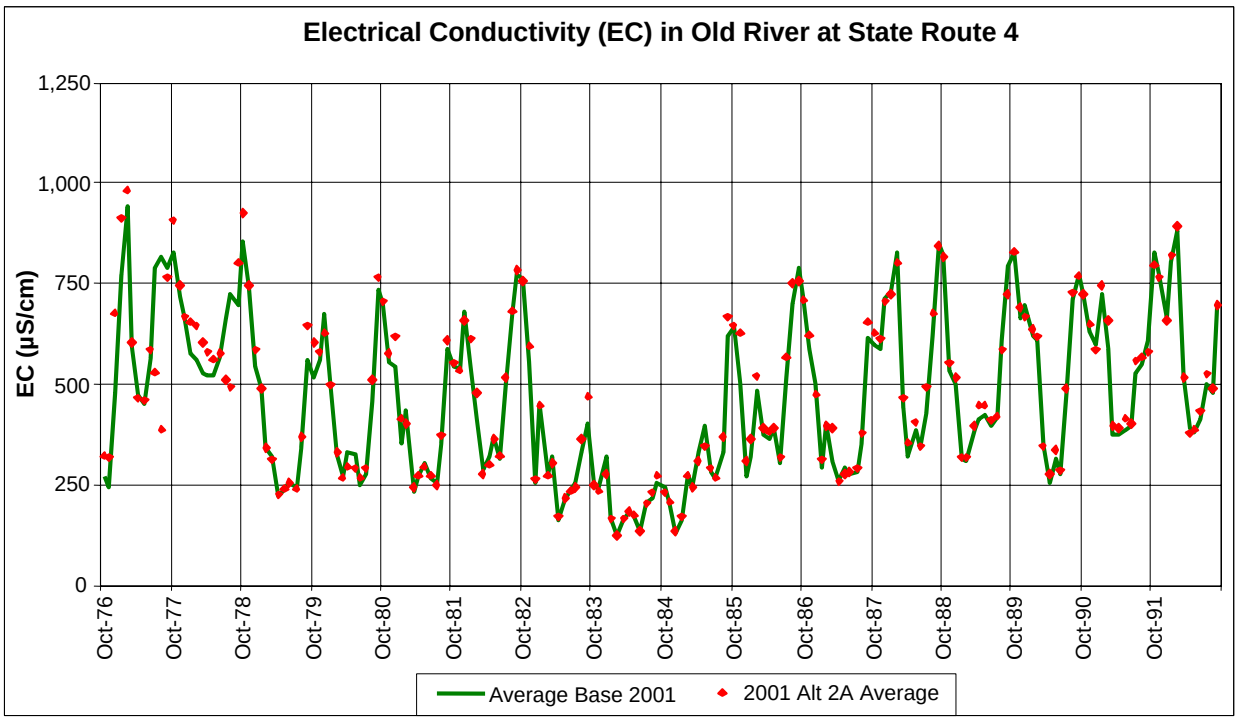
Figure 5.3-25

DSM2-Simulated Monthly Electrical Conductivity in Rock Slough for 1976–1991 with Alternative 2A Stage 2 Compared with 2001 No Action Baseline



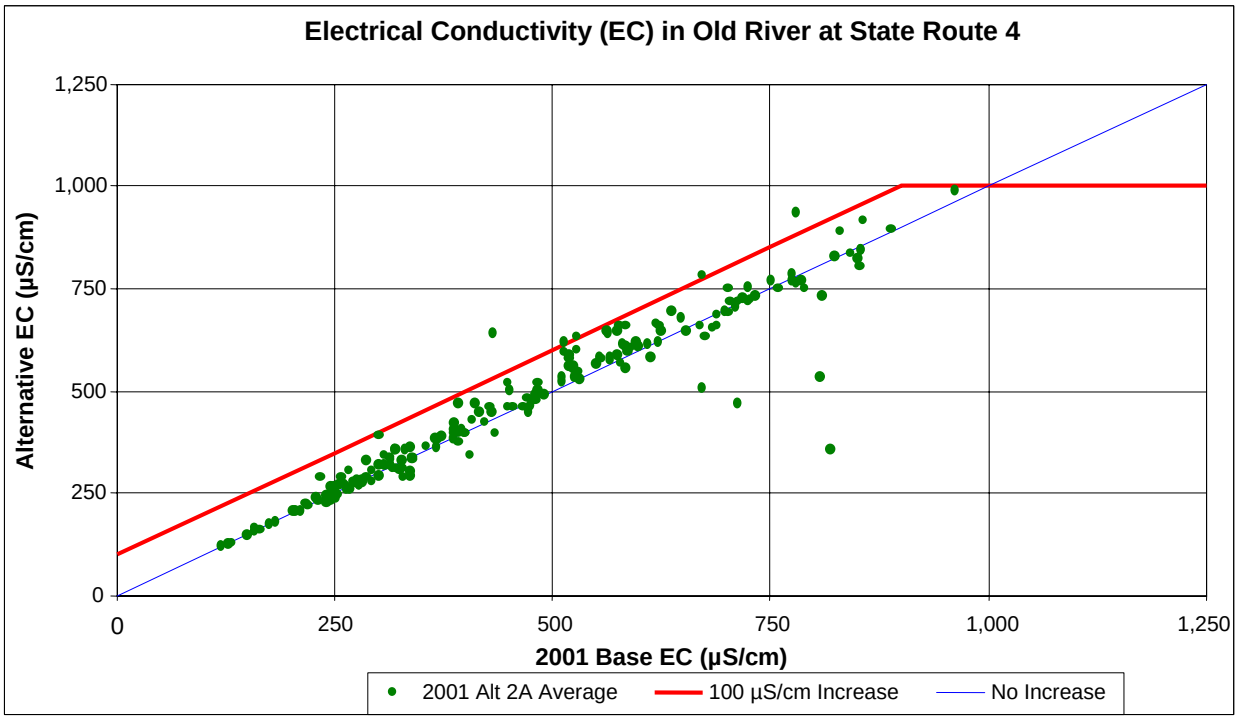


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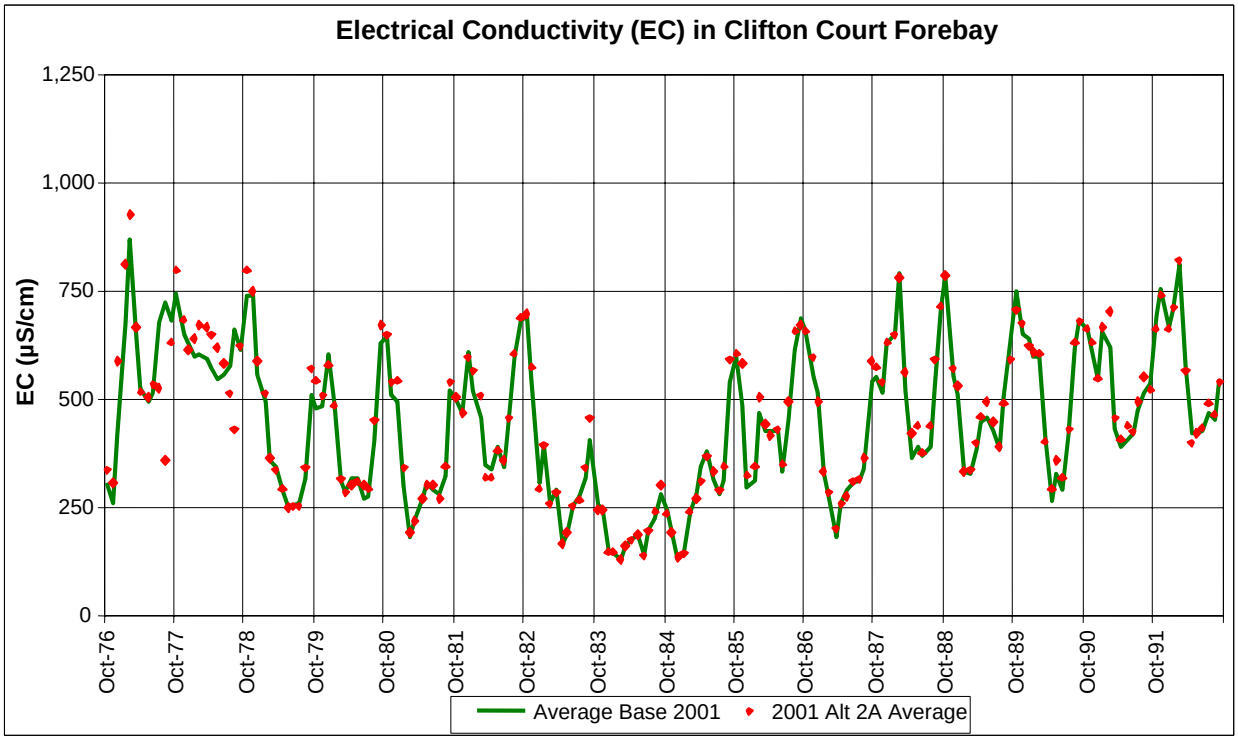
Figure 5.3-26

DSM2-Simulated Monthly Electrical Conductivity in Old River near State Route 4 Bridge for 1976–1991 with Alternative 2A Stage 2 Compared with 2001 No Action Baseline



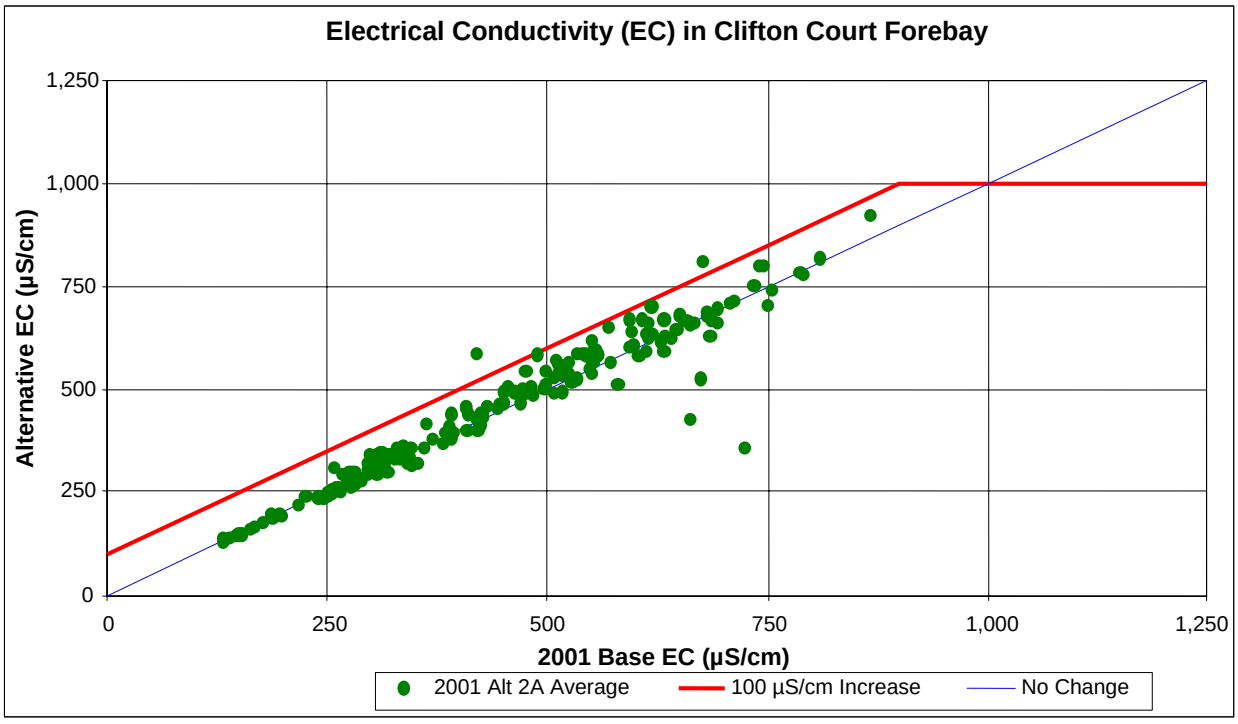


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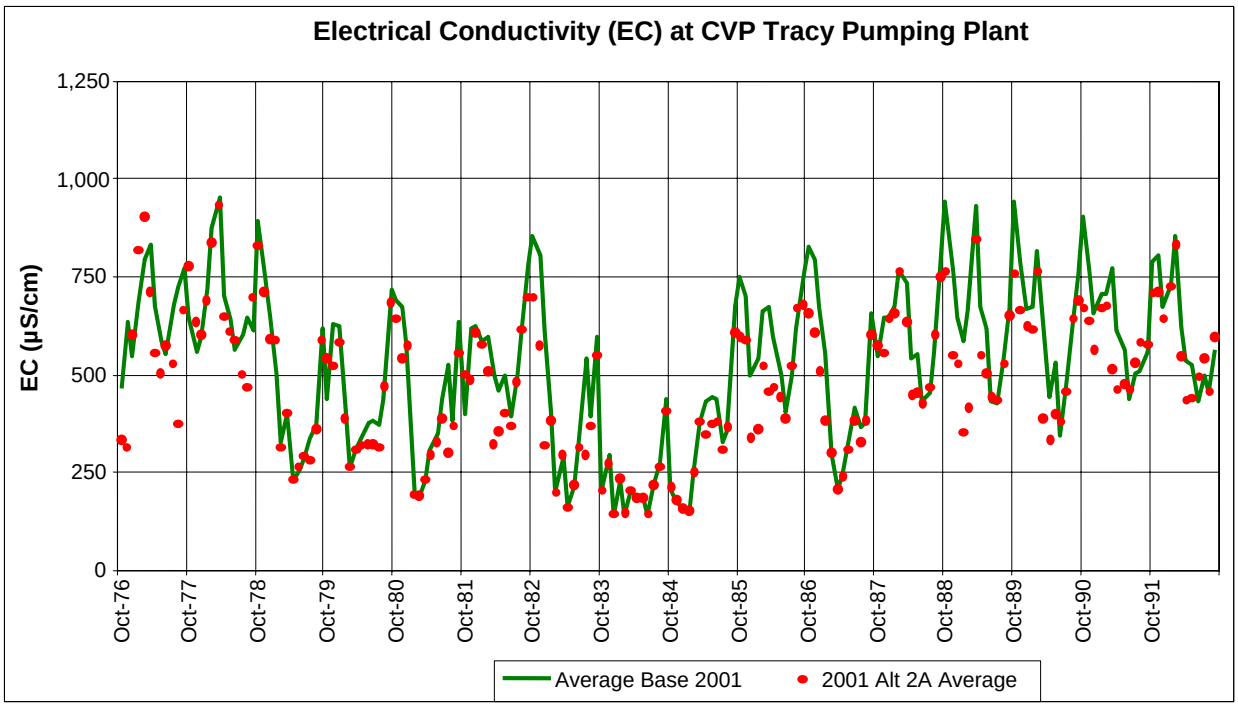
Figure 5.3-27

DSM2-Simulated Monthly Electrical Conductivity in Clifton Court Forebay (SWP Banks) for 1976–1991 with Alternative 2A Stage 2 Compared with 2001 No Action Baseline



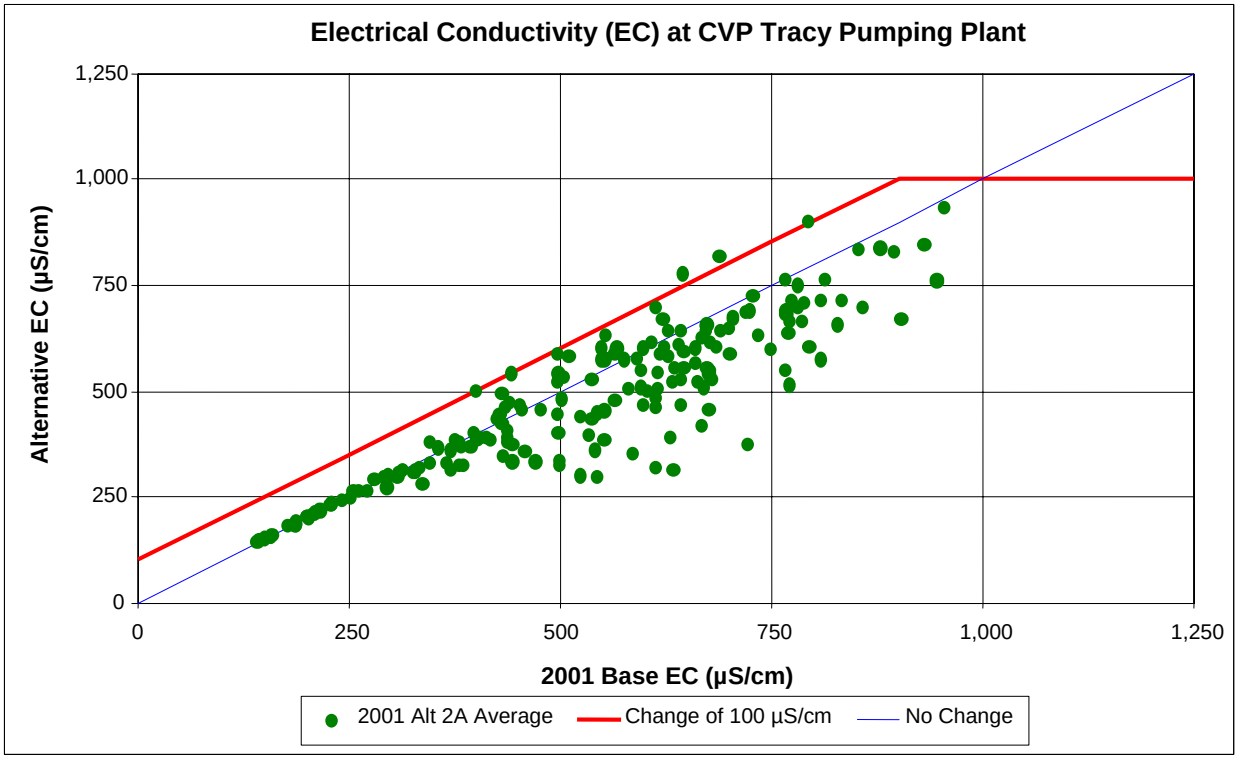


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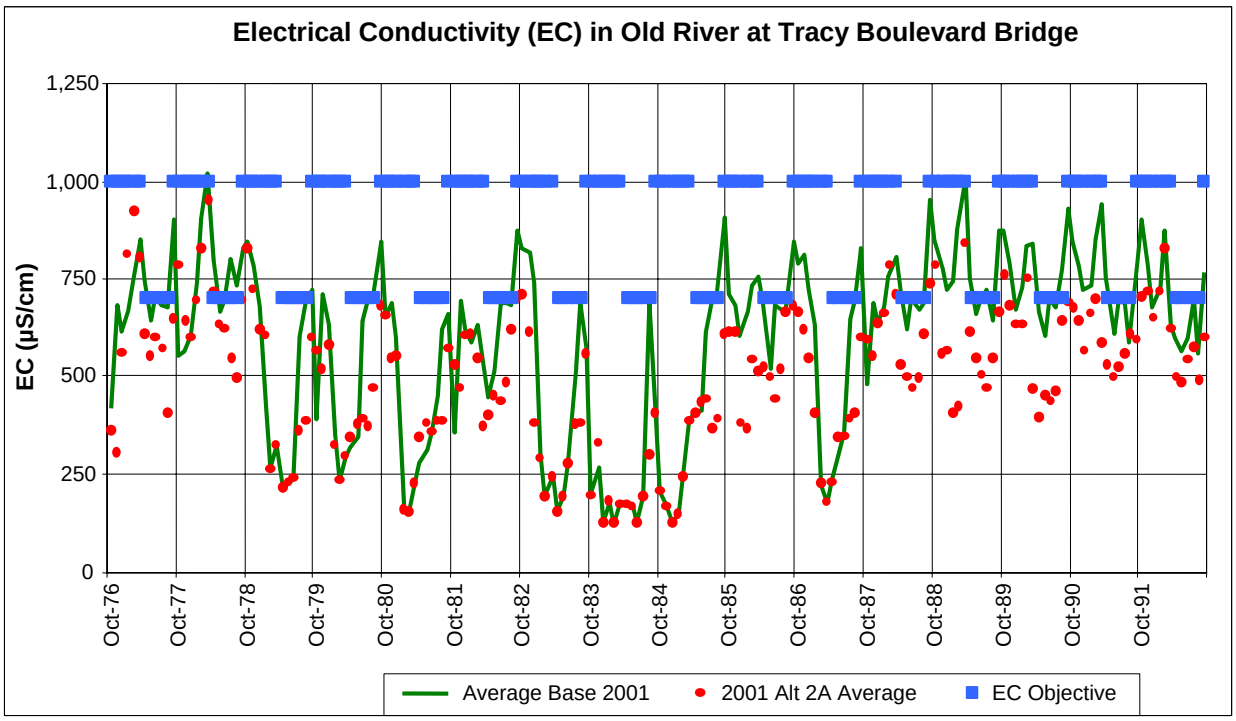
Figure 5.3-28

DSM2-Simulated Monthly Electrical Conductivity at CVP Tracy for 1976–1991 with Alternative 2A Stage 2 Compared with 2001 No Action Baseline



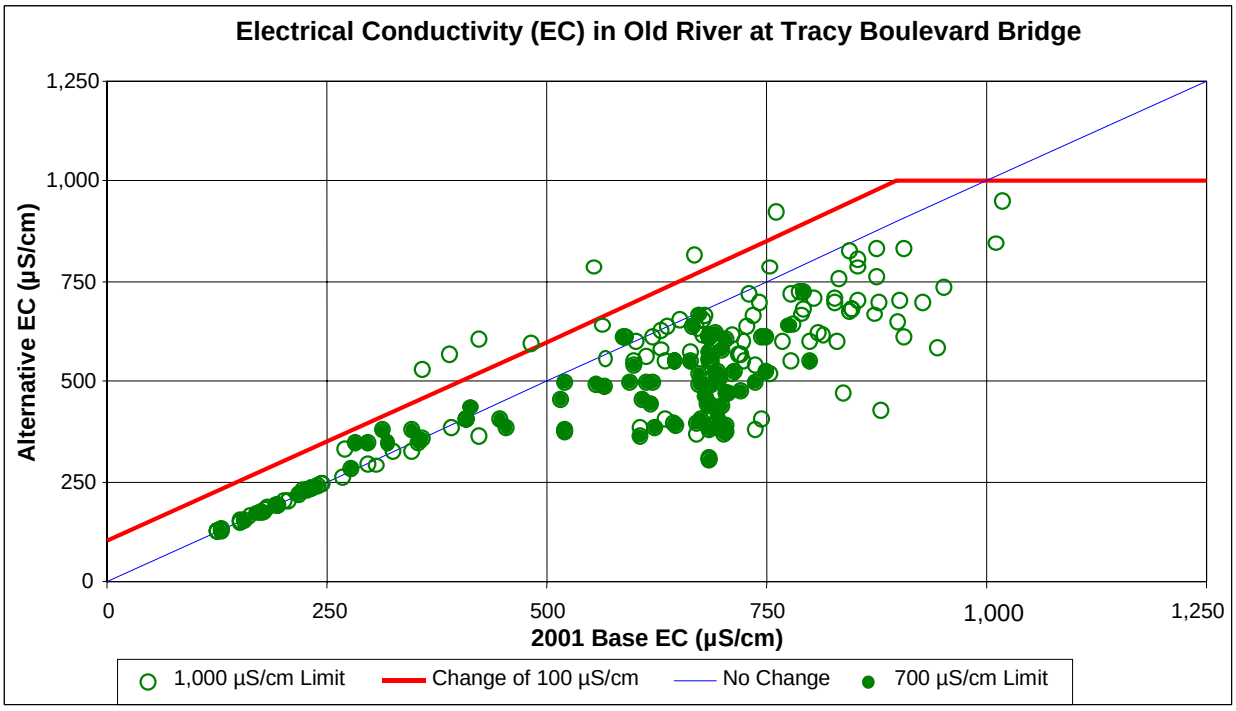


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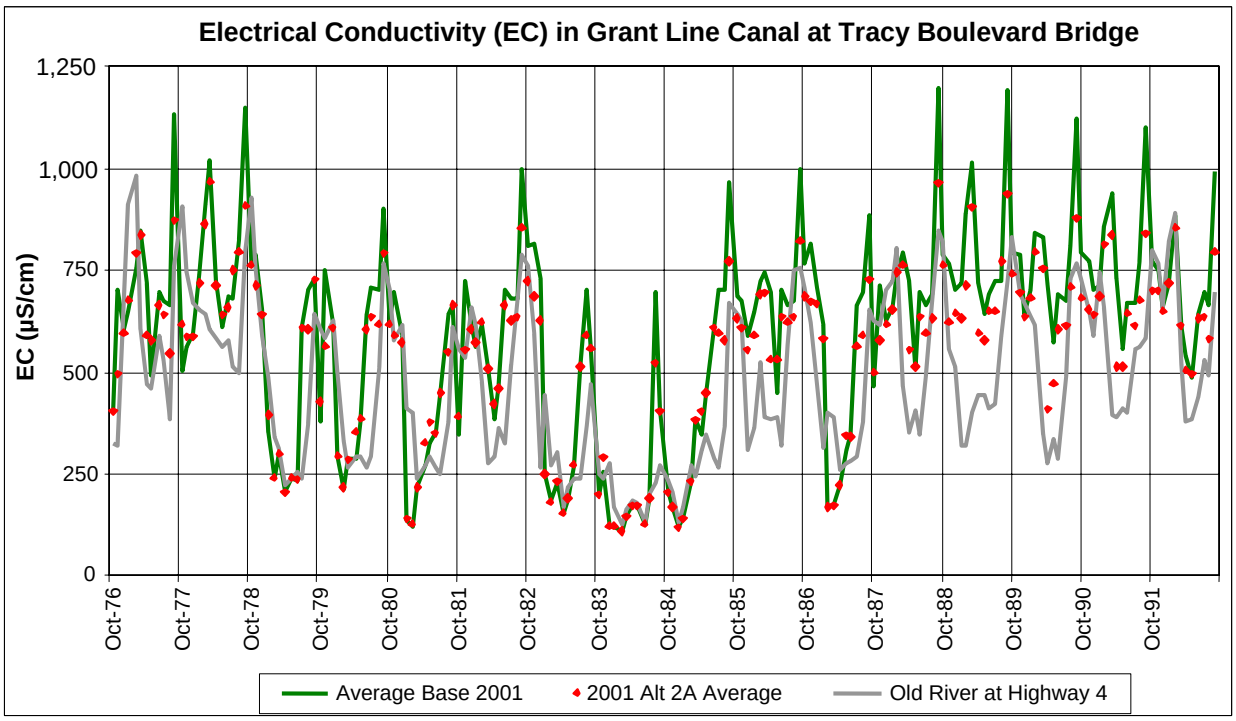
Figure 5.3-29

DSM2-Simulated Monthly Electrical Conductivity in Old River at Tracy Boulevard Bridge for 1976–1991 with Alternative 2A Stage 2 Compared with 2001 No Action Baseline



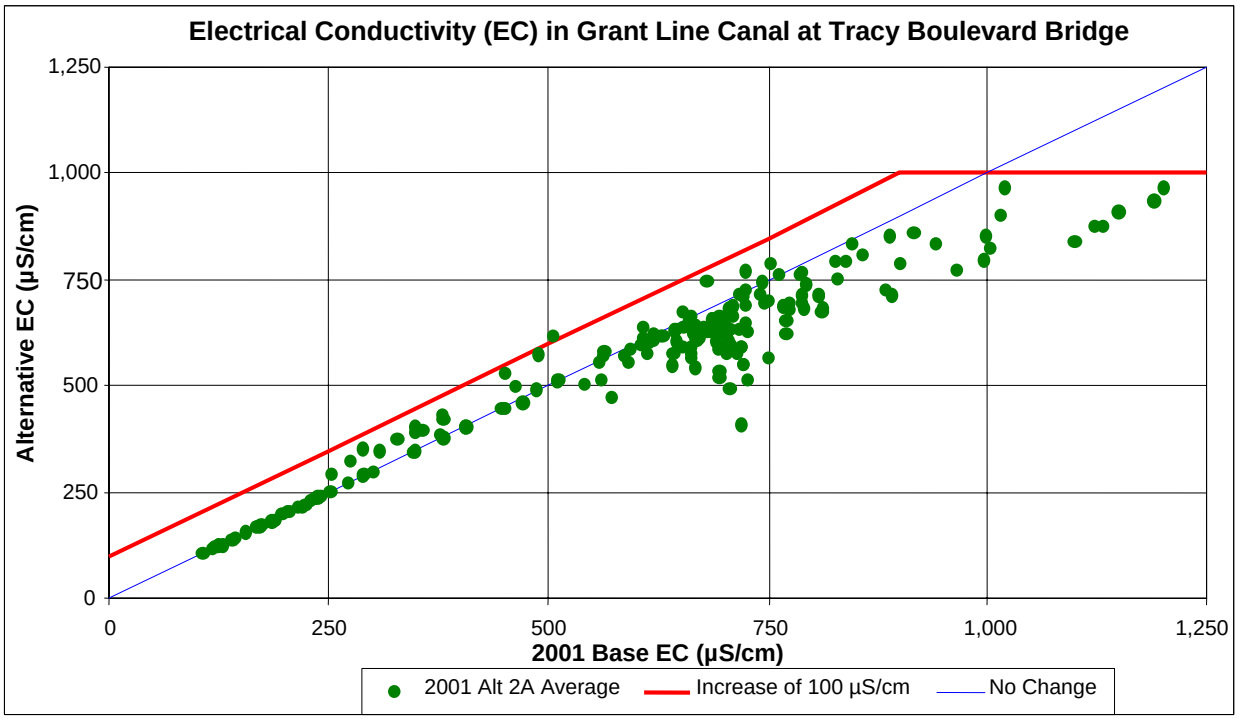


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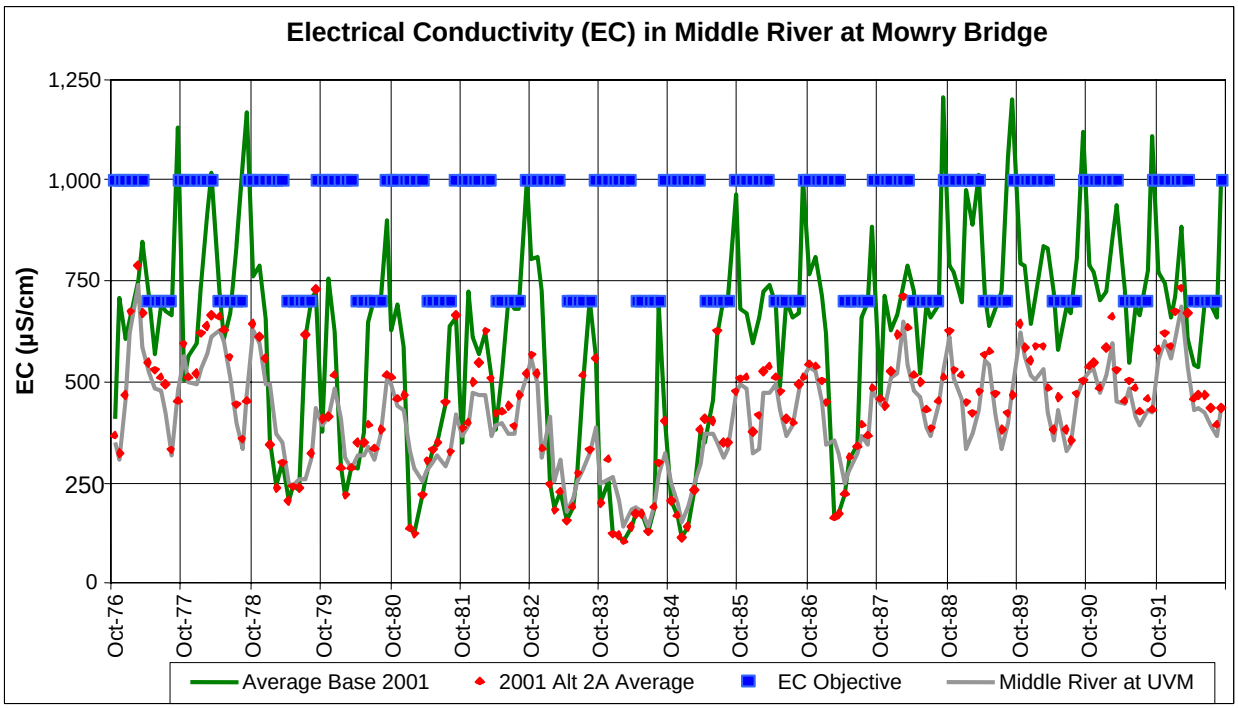
Figure 5.3-30

DSM2-Simulated Monthly Electrical Conductivity in Grant Line Canal at Tracy Boulevard Bridge for 1976–1991 with Alternative 2A Stage 2 Compared with 2001 No Action Baseline



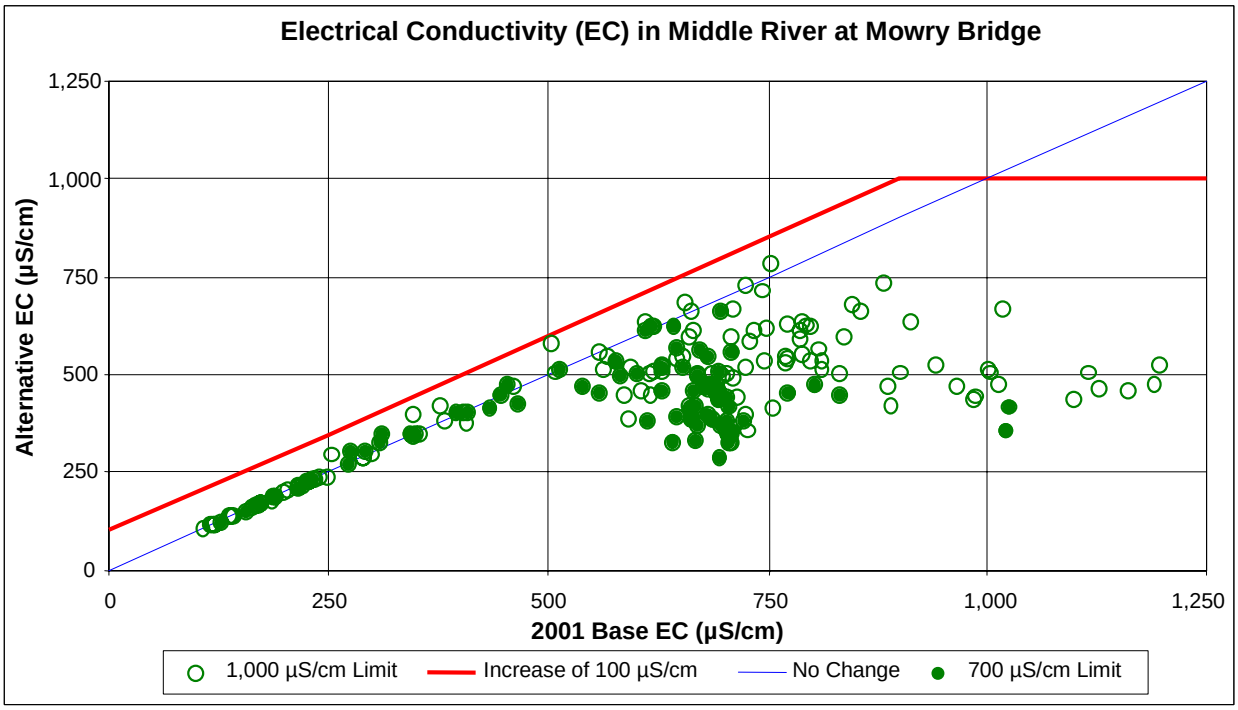


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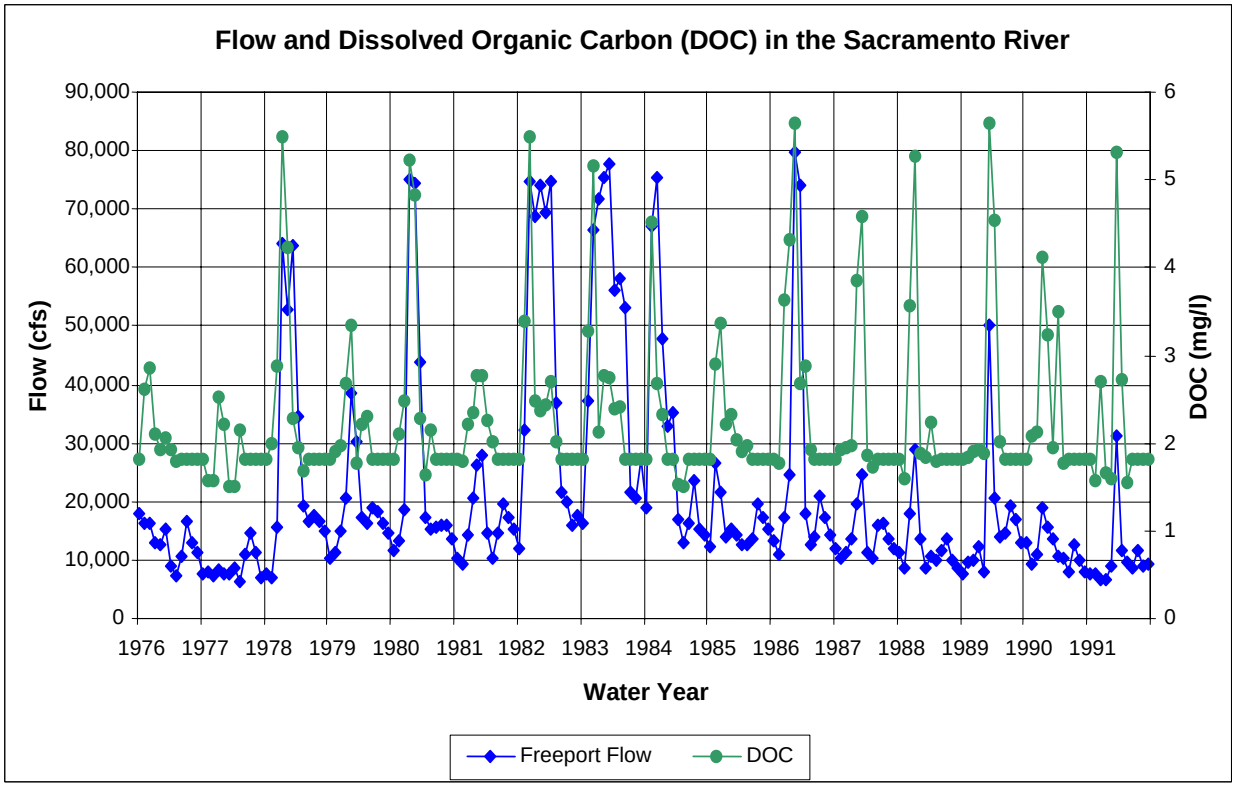
Figure 5.3-31

DSM2-Simulated Monthly Electrical Conductivity in Middle River at Mowry Bridge for 1976–1991 with Alternative 2A Stage 2 Compared with 2001 No Action Baseline



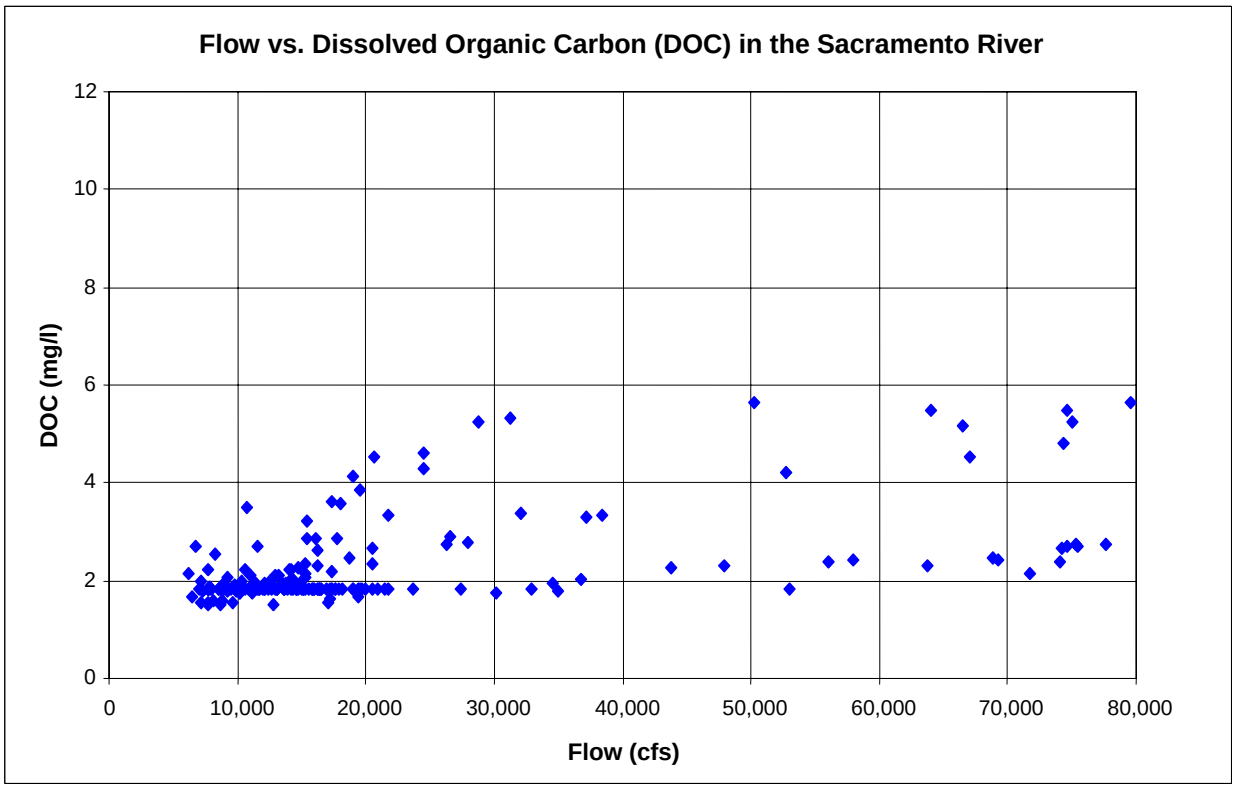


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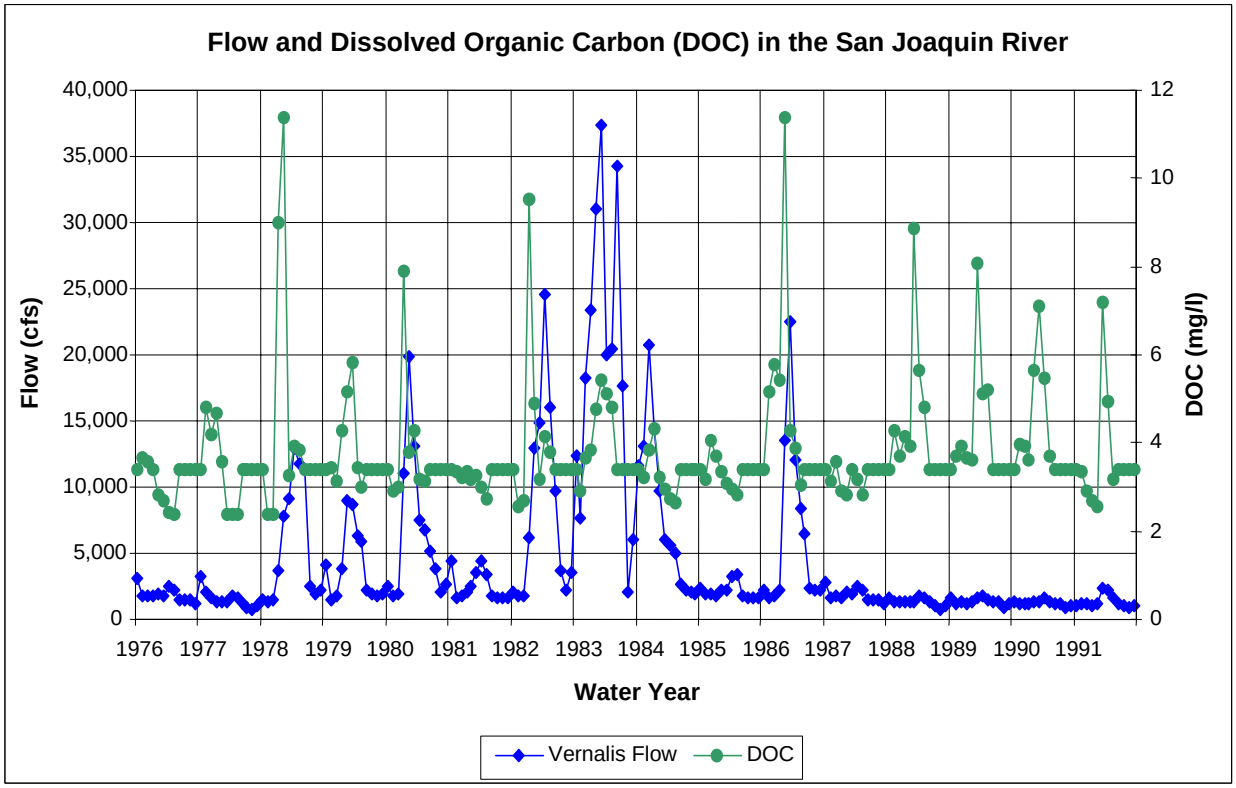
Figure 5.3-32

Flow and Dissolved Organic Carbon in the Sacramento River for Water Years 1976–1991



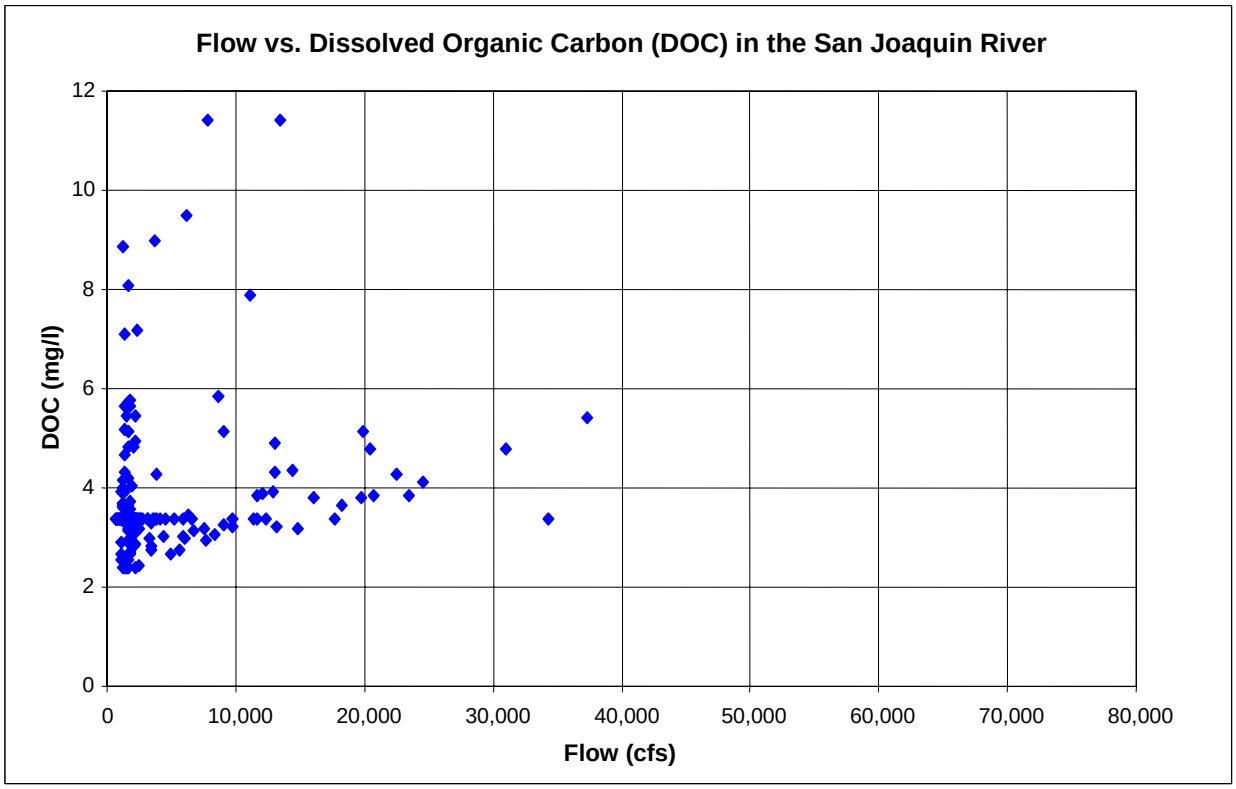


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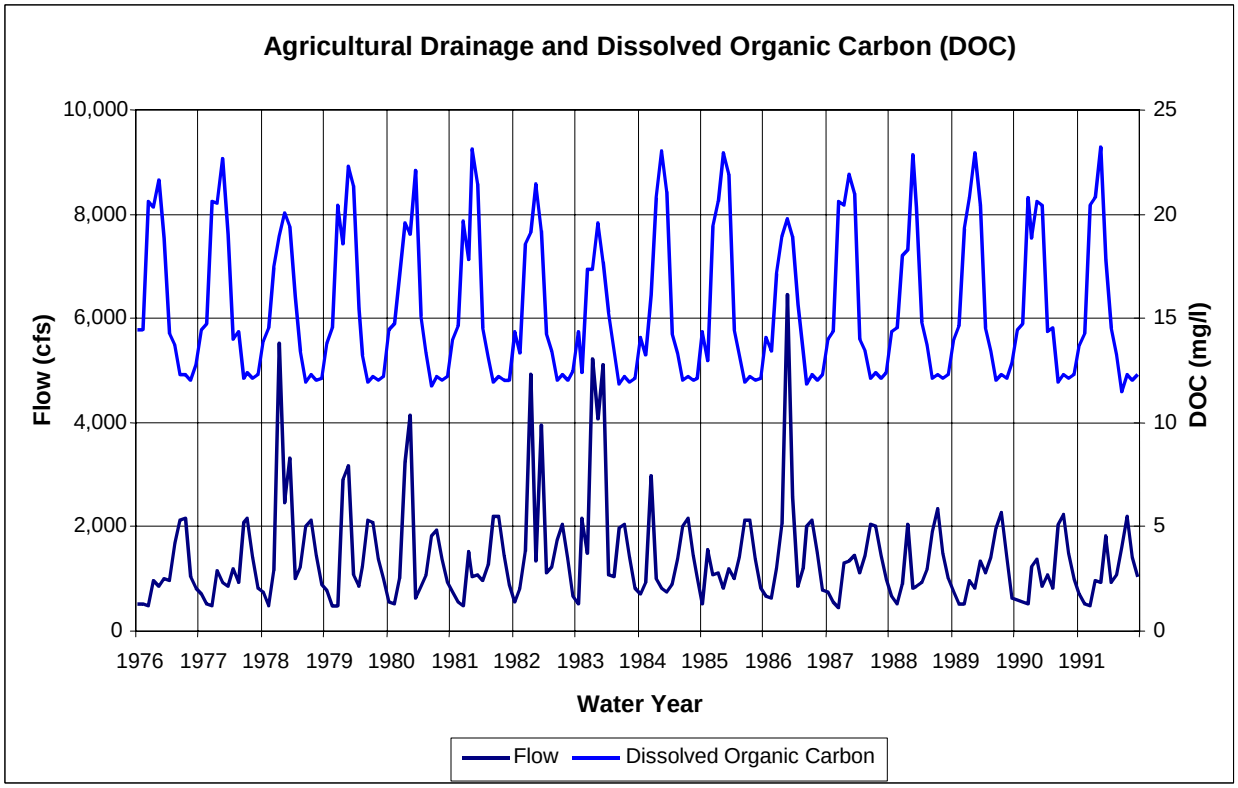
Figure 5.3-33

Flow and Dissolved Organic Carbon in the San Joaquin River for Water Years 1976–1991



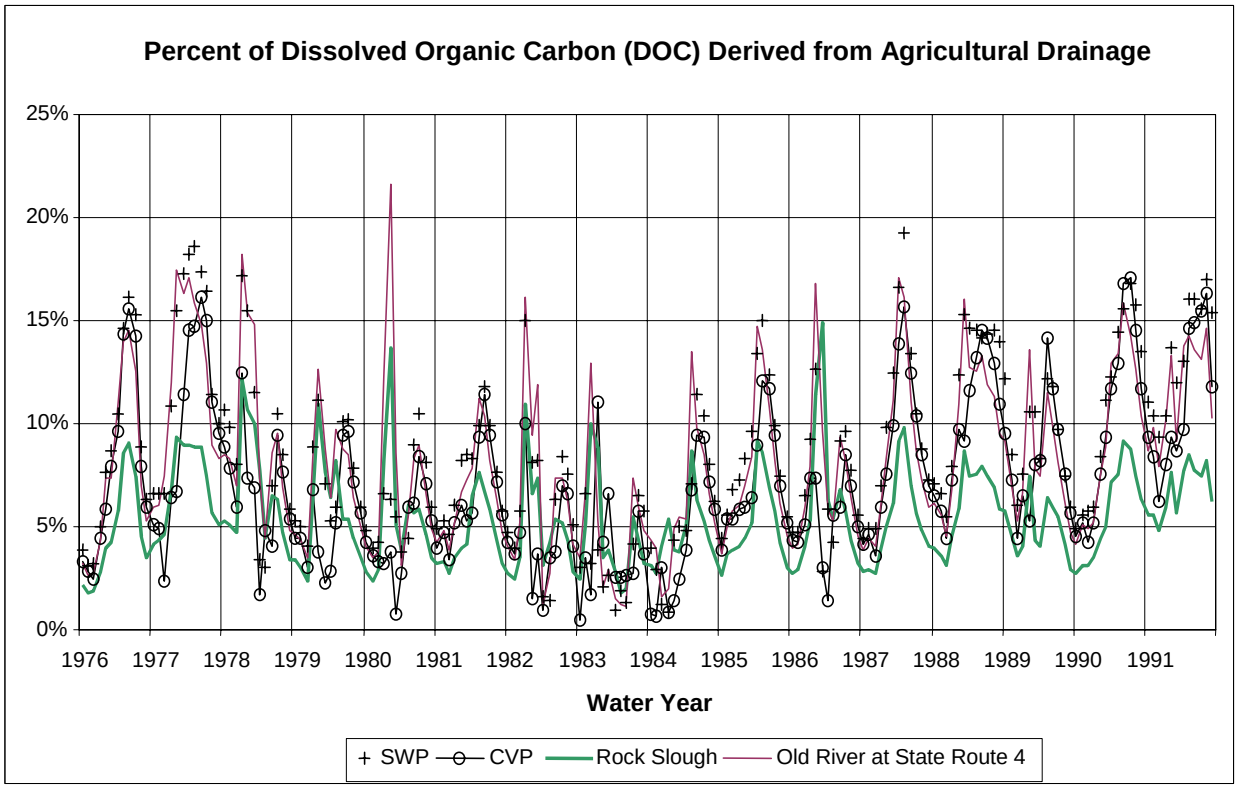


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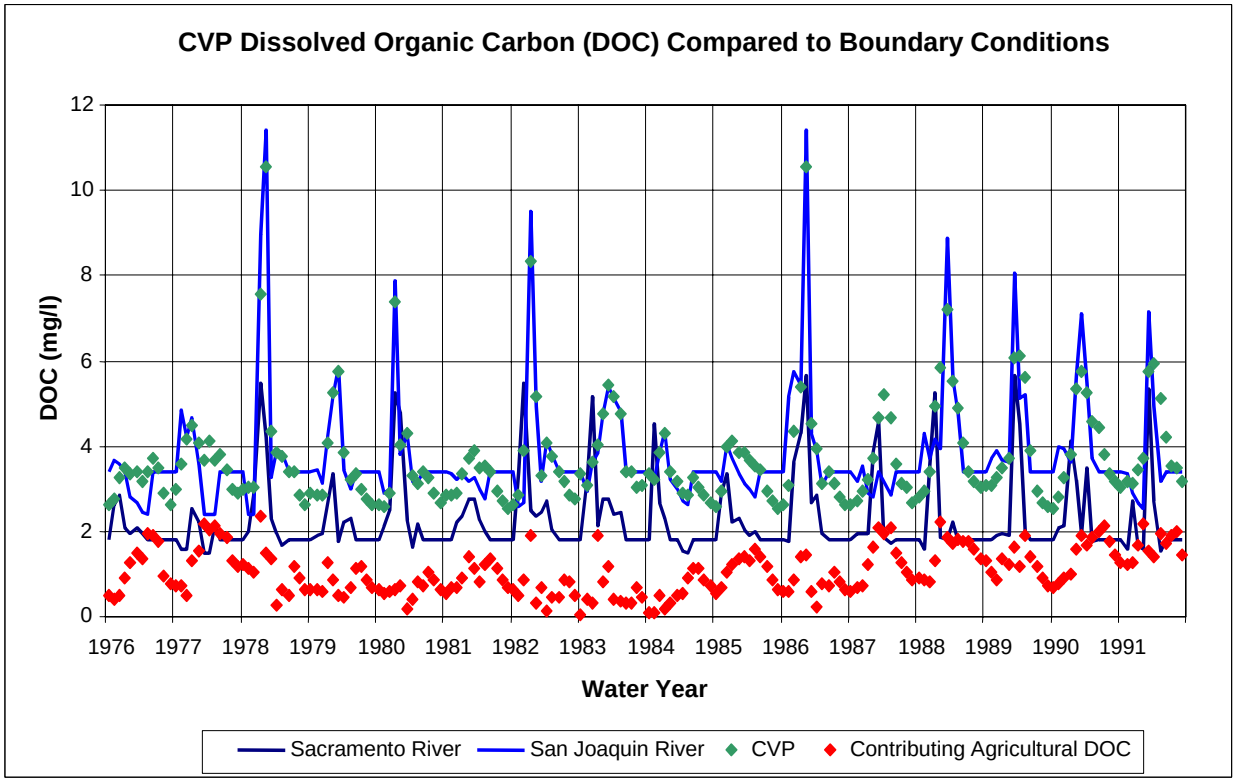
Figure 5.3-34

Flow and Dissolved Organic Carbon from Agricultural Drainage for Water Years 1976–1991



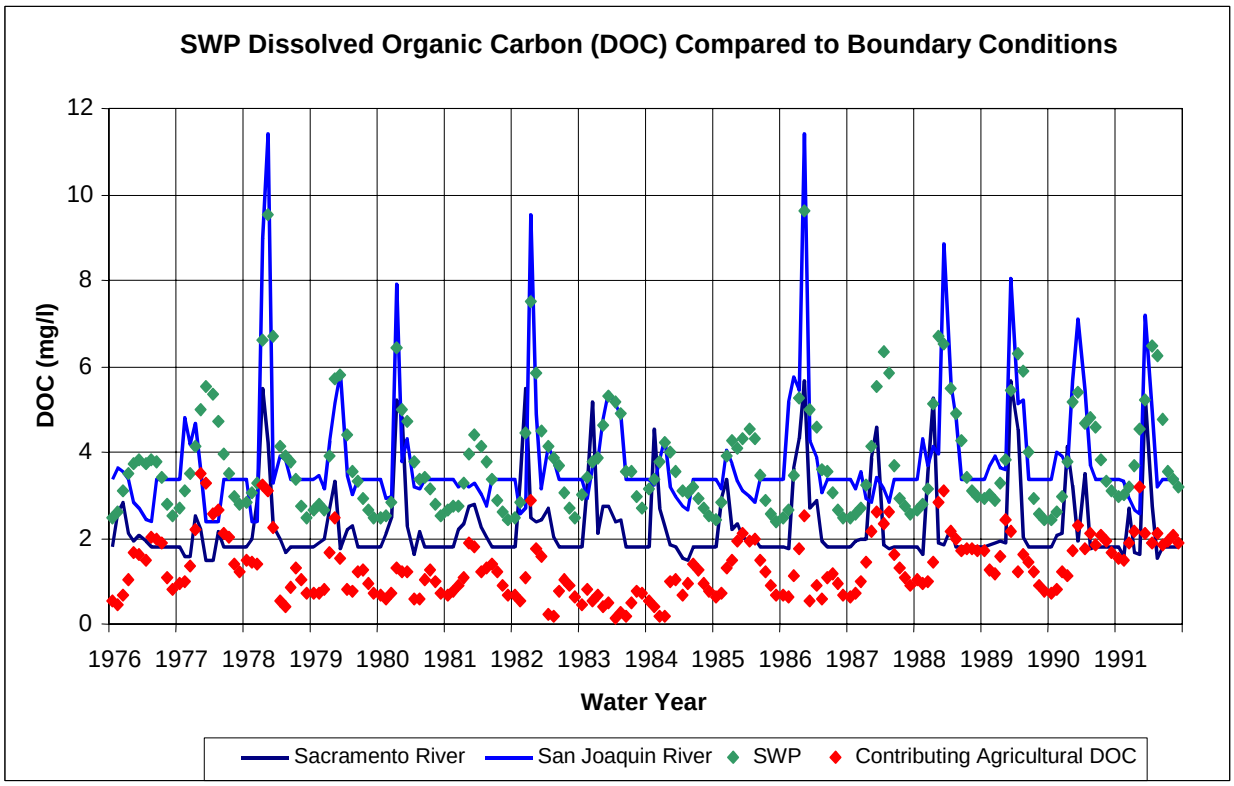


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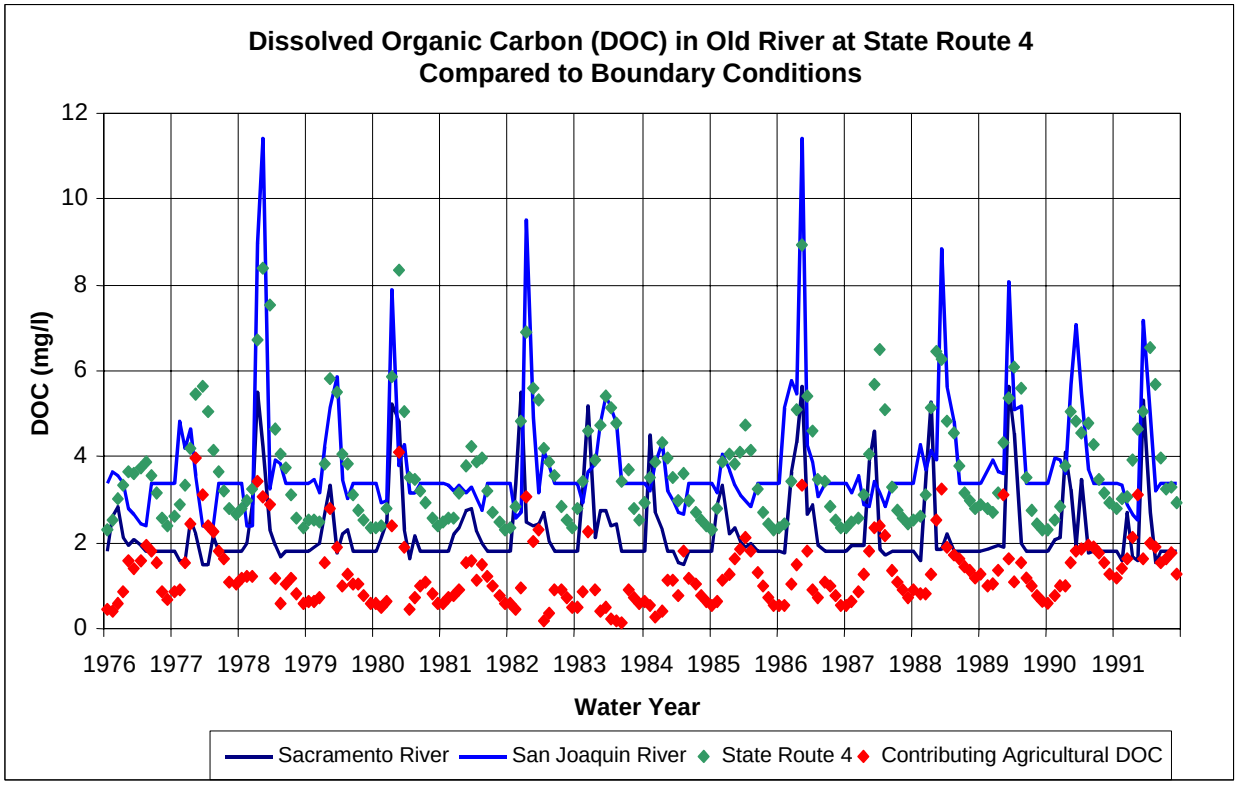
Figure 5.3-35

Dissolved Organic Carbon at CVP and SWP Compared to Boundary Conditions for Water Years 1976–1991



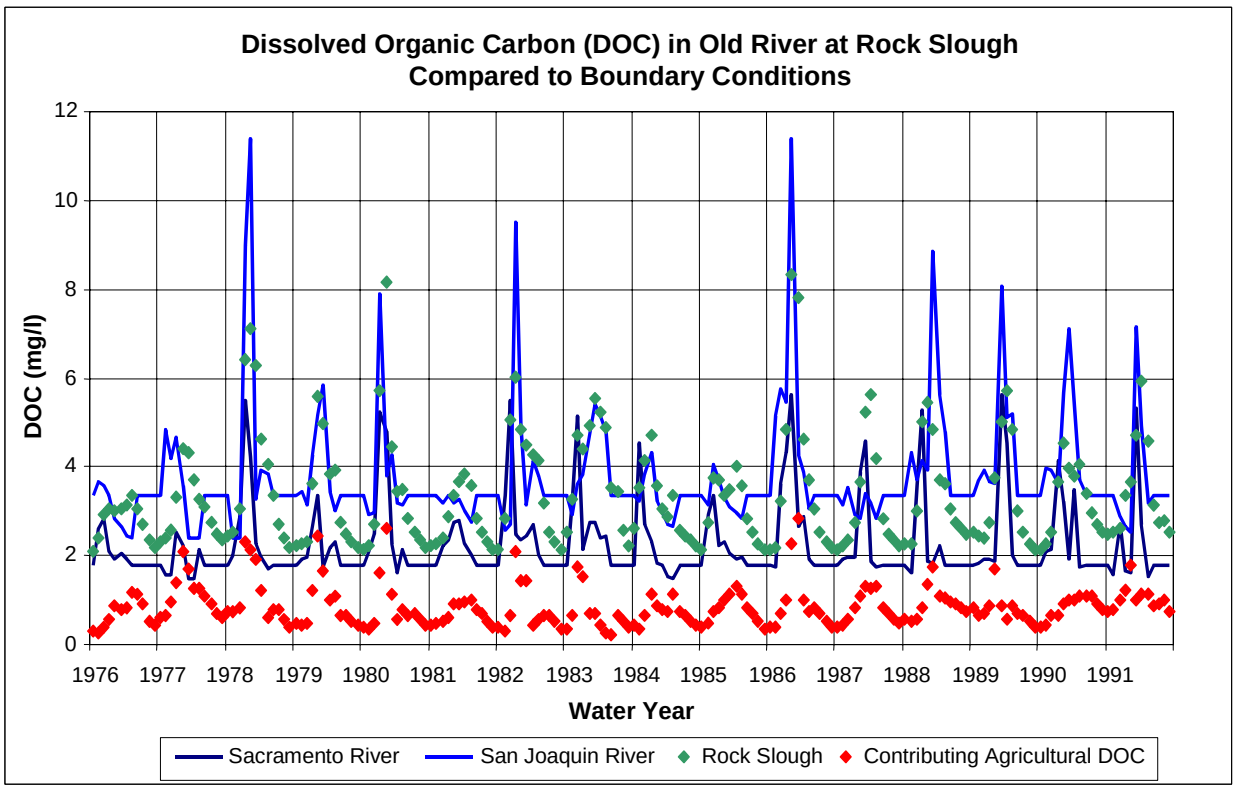


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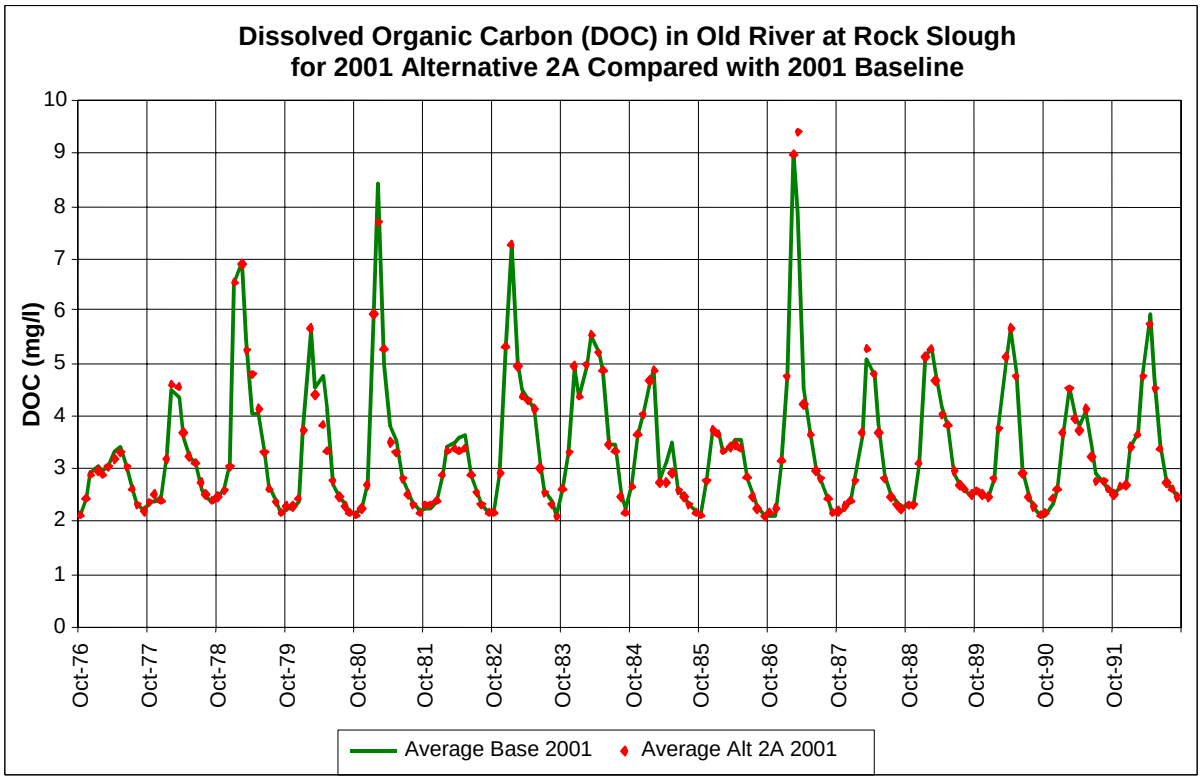
Figure 5.3-36

Dissolved Organic Carbon in Old River at State Route 4 and Rock Slough Compared to Boundary Conditions for Water Years 1976–1991



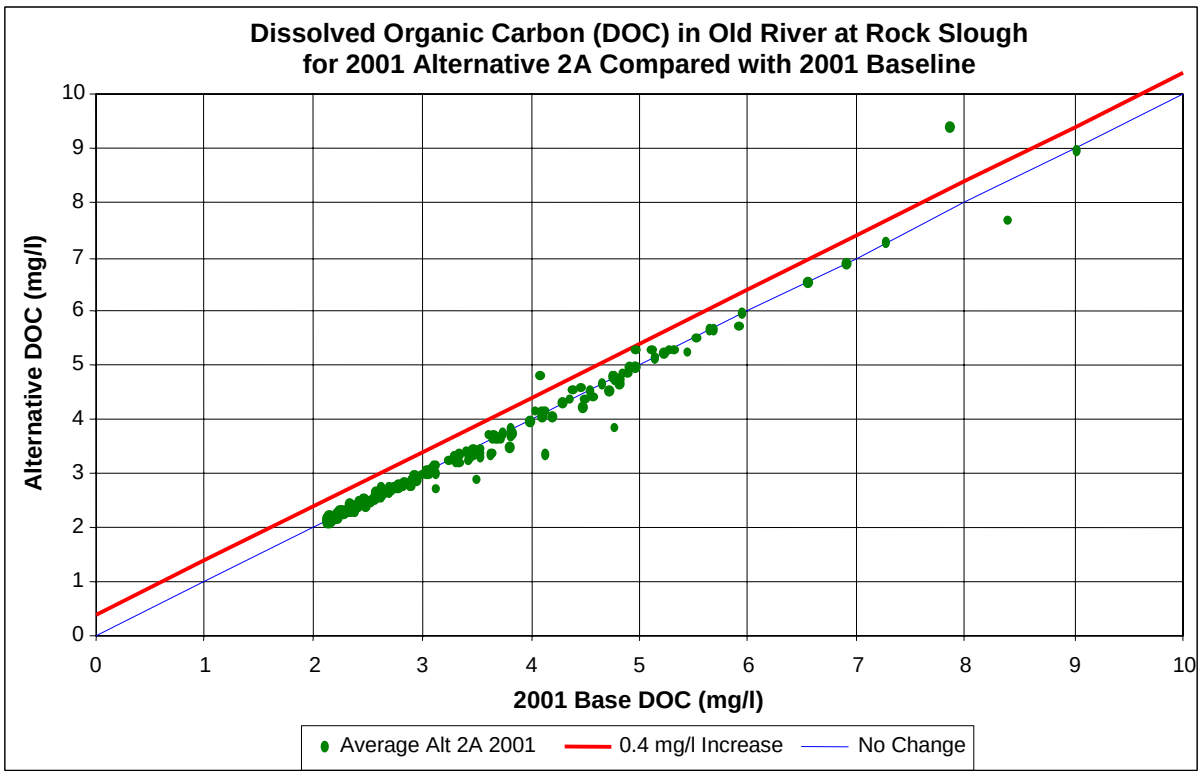


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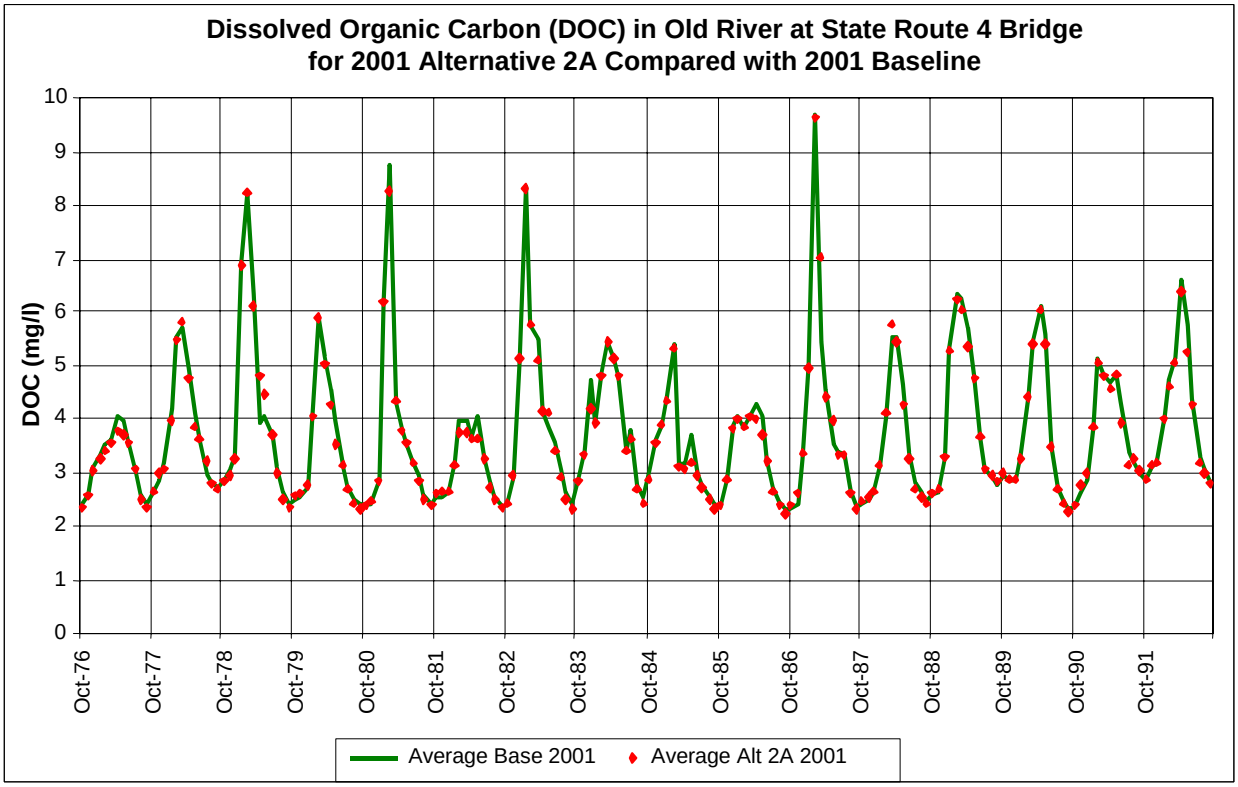
Figure 5.3-37

DSM2-Simulated Dissolved Organic Carbon in Old River at Rock Slough for 2001 Alternative 2A Stage 2 Compared to 2001 Baseline Conditions for Water Years 1976–1991



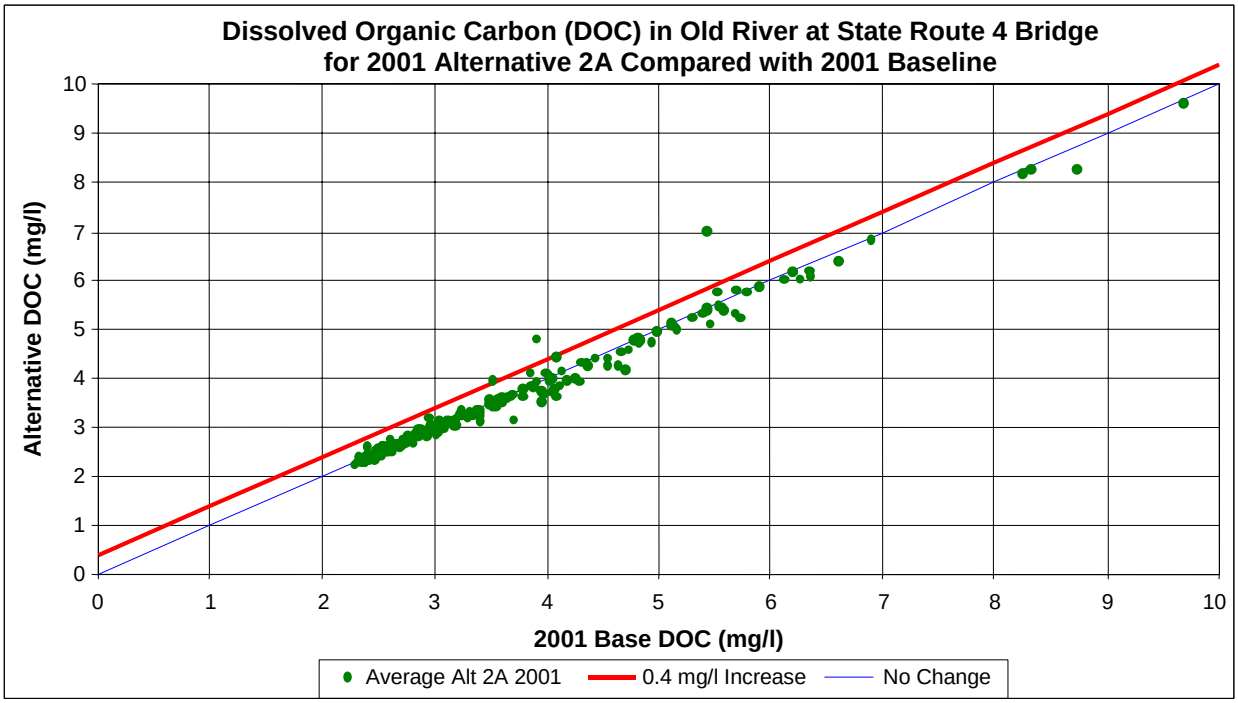


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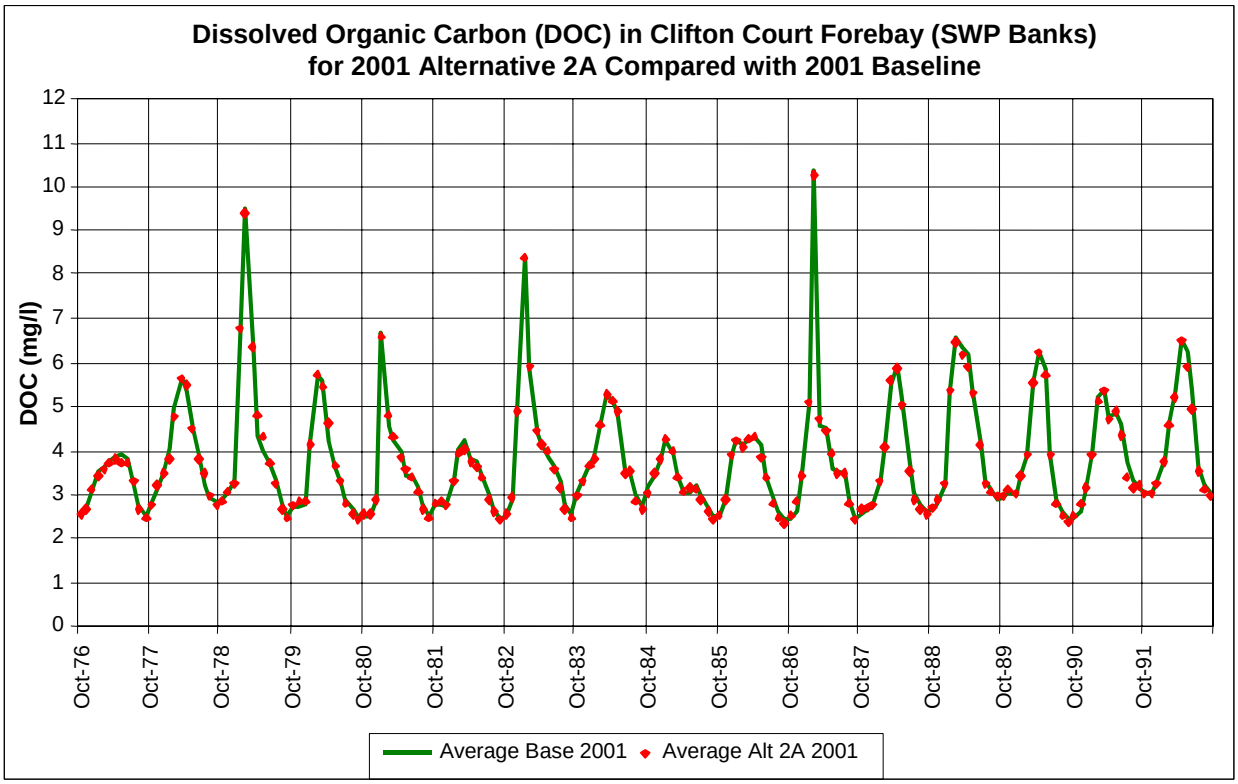
Figure 5.3-38

DSM2-Simulated Dissolved Organic Carbon in Old River at State Route 4 Bridge (Los Vaqueros Intake) for 2001 Alternative 2A Stage 2 Compared to 2001 Baseline Conditions for Water Years 1976–1991



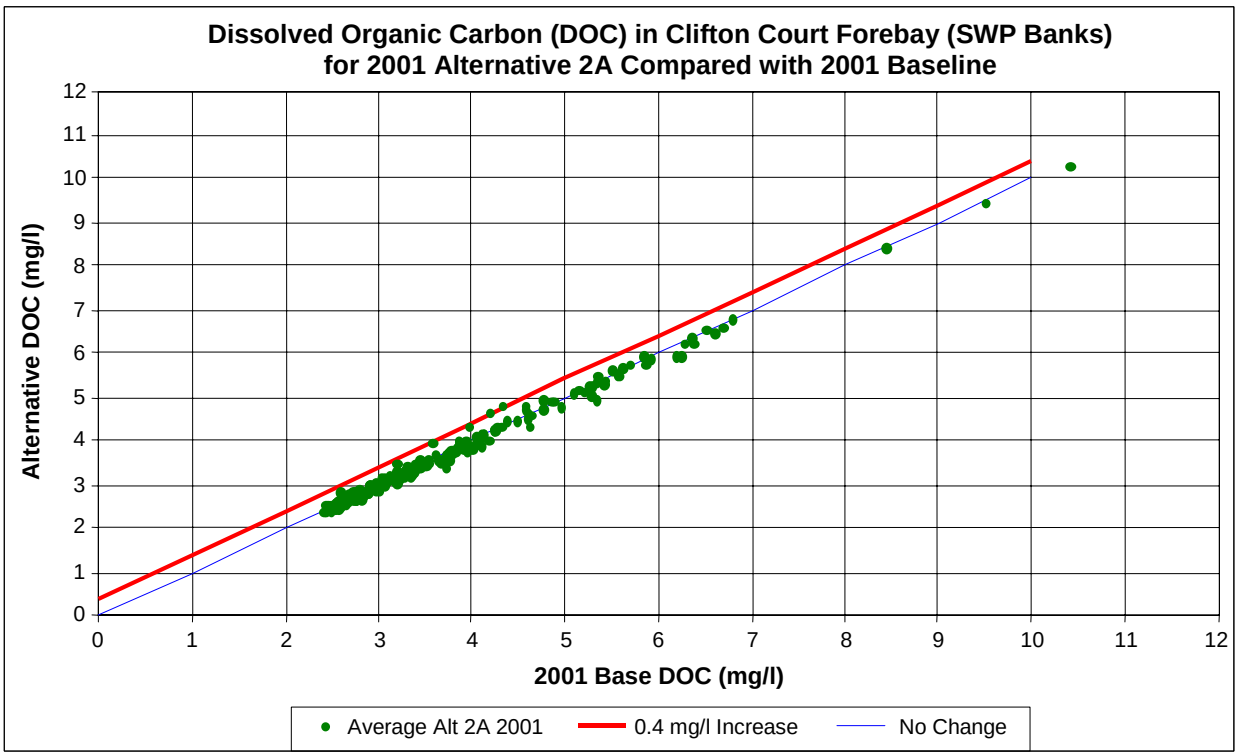


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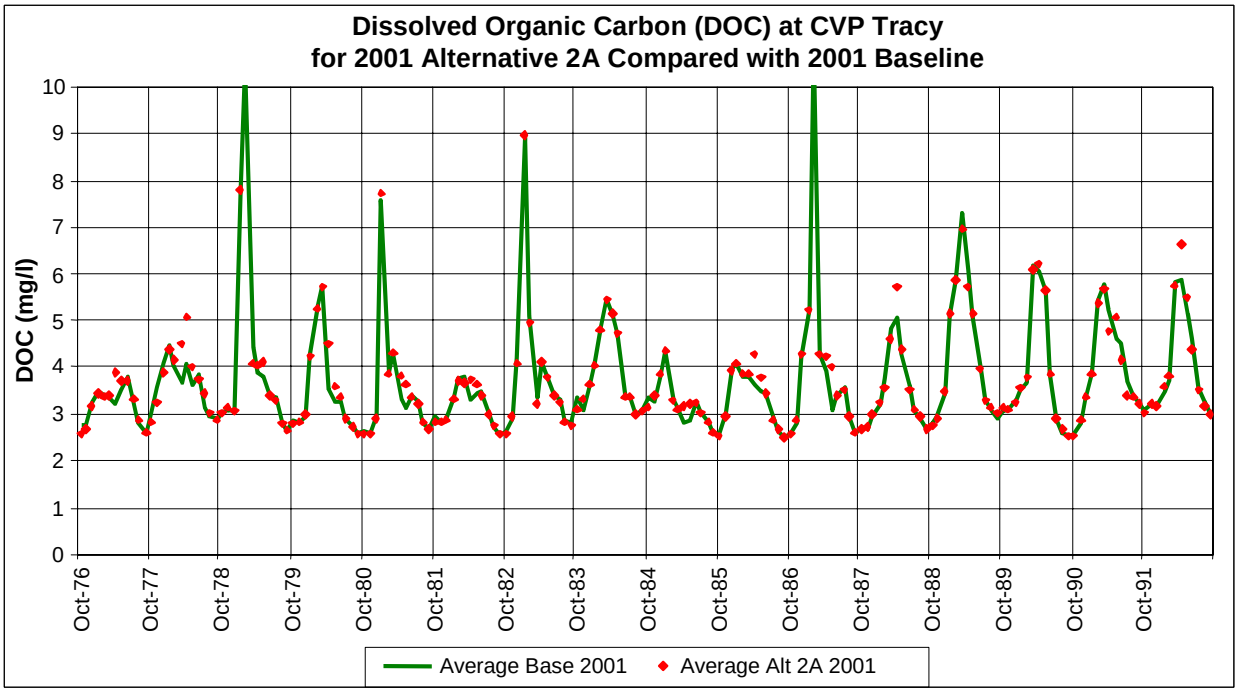
Figure 5.3-39

DSM2-Simulated Dissolved Organic Carbon in Clifton Court Forebay (SWP Banks) for Alternative 2A Stage 2 Compared to 2001 Baseline Conditions for Water Years 1976–1991



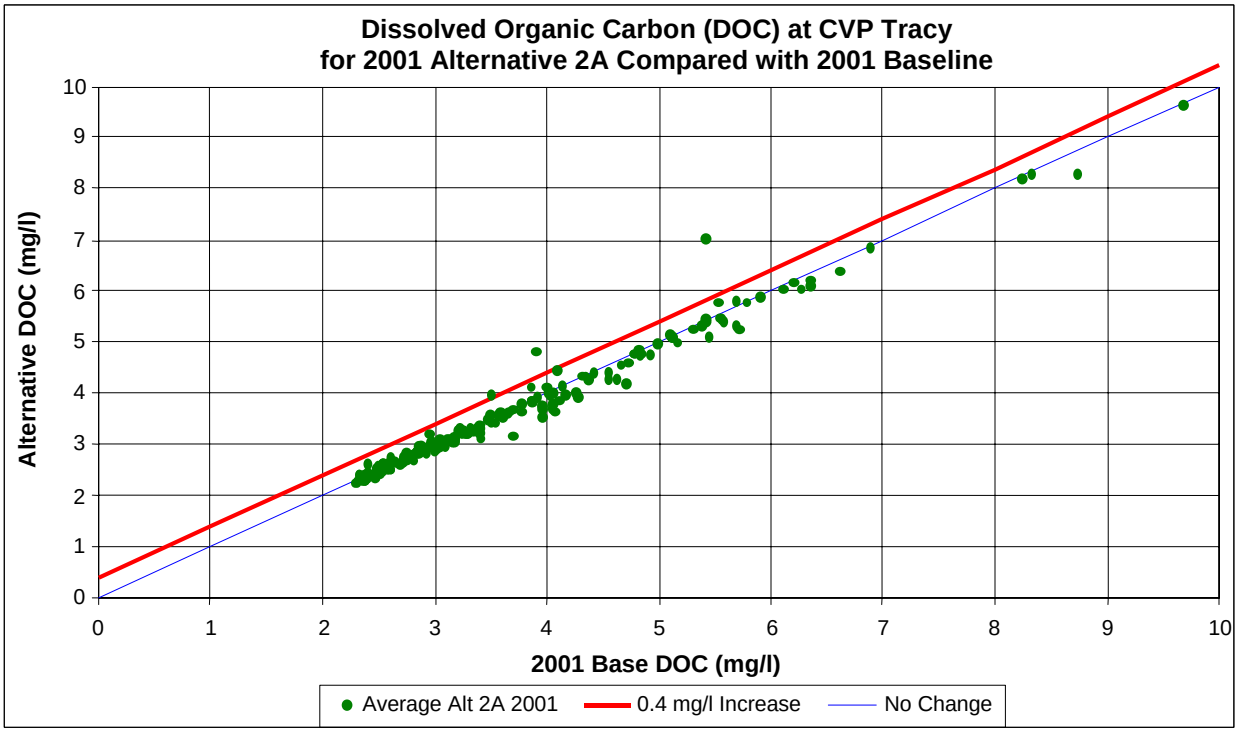


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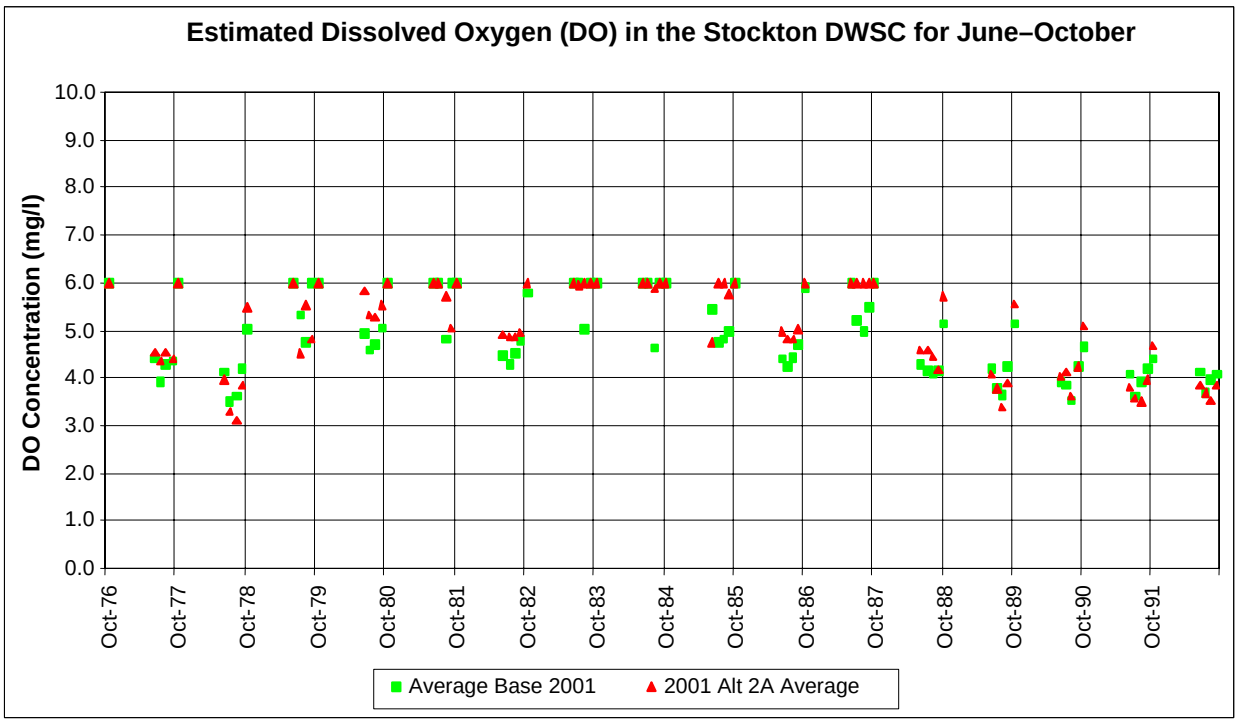
Figure 5.3-40

DSM2-Simulated Dissolved Organic Carbon at CVP Tracy for Alternative 2A Stage 2 Compared to 2001 Baseline Conditions for Water Years 1976–1991



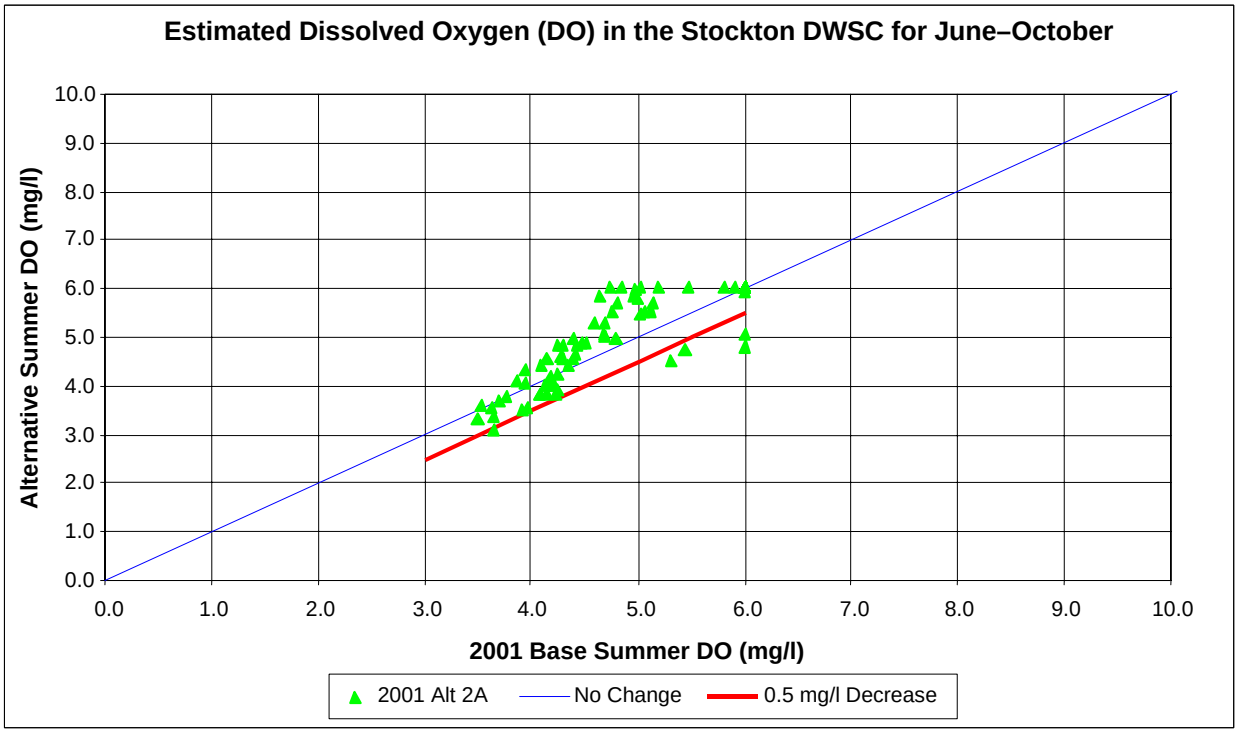


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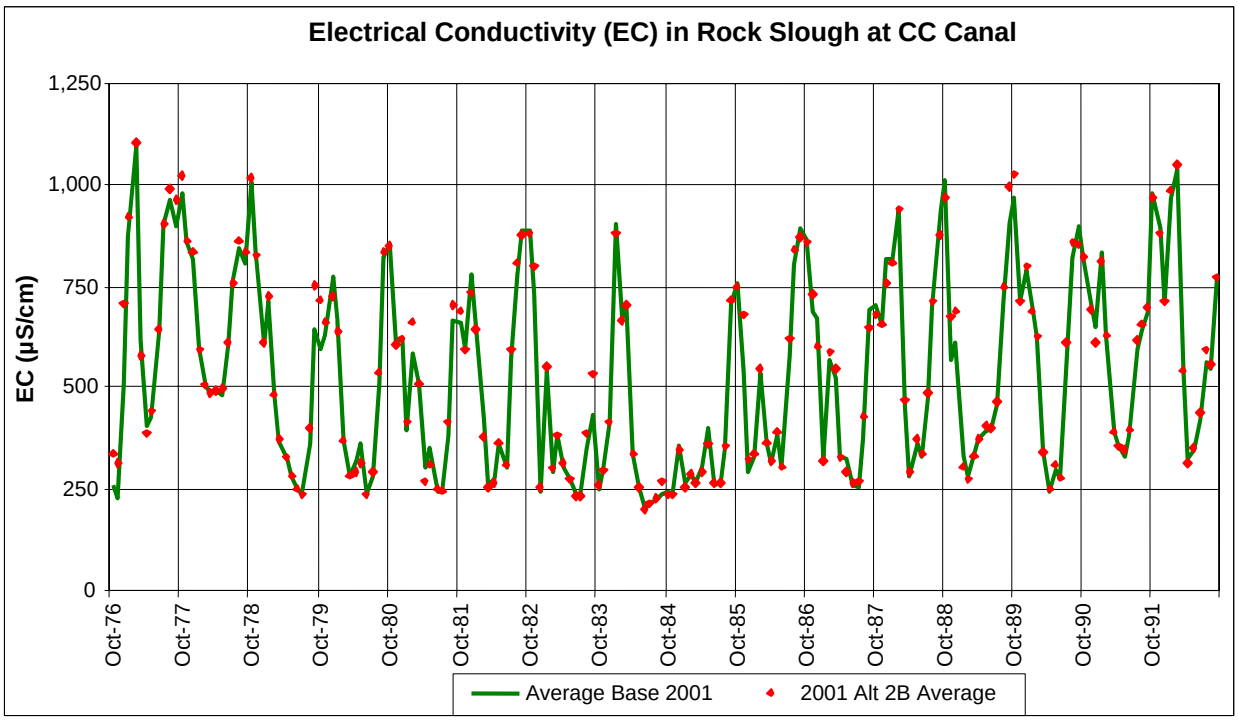
Figure 5.3-41

Estimated Stockton Deep Water Ship Channel (DWSC) Dissolved Oxygen (DO) Concentrations (June–October) for 1976–1991 Alternative 2A Stage 2 Compared with 2001 No Action Baseline



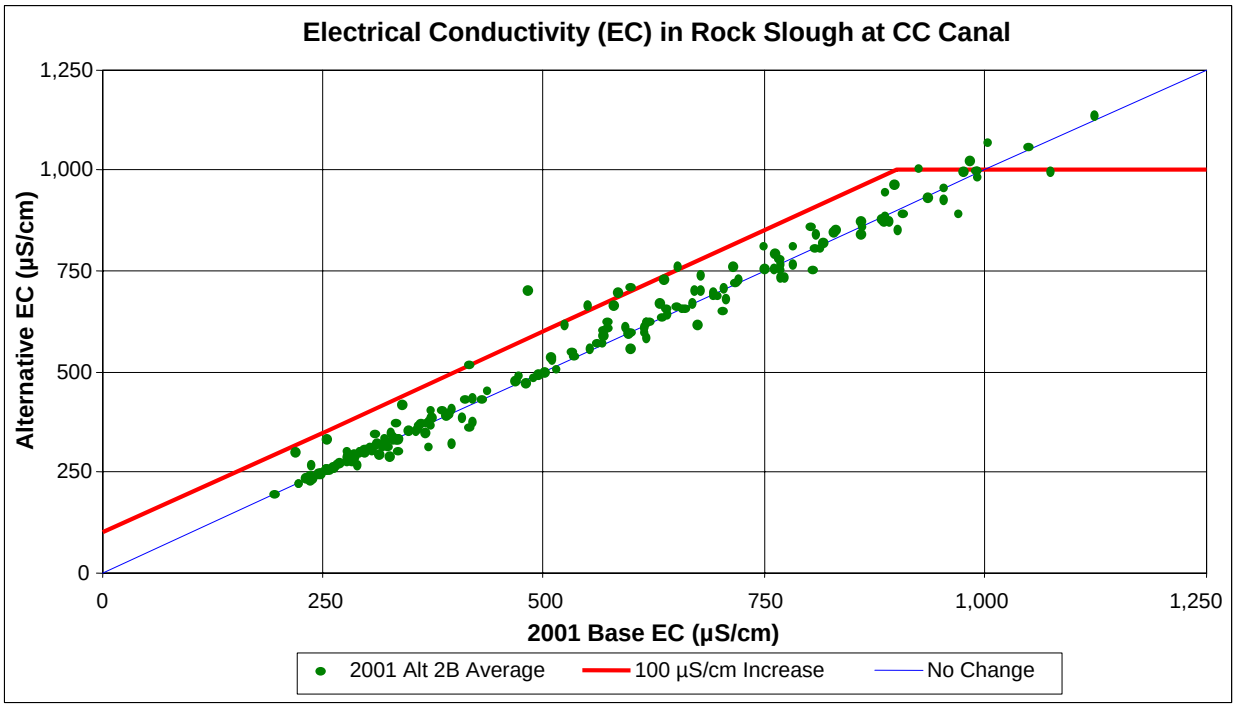


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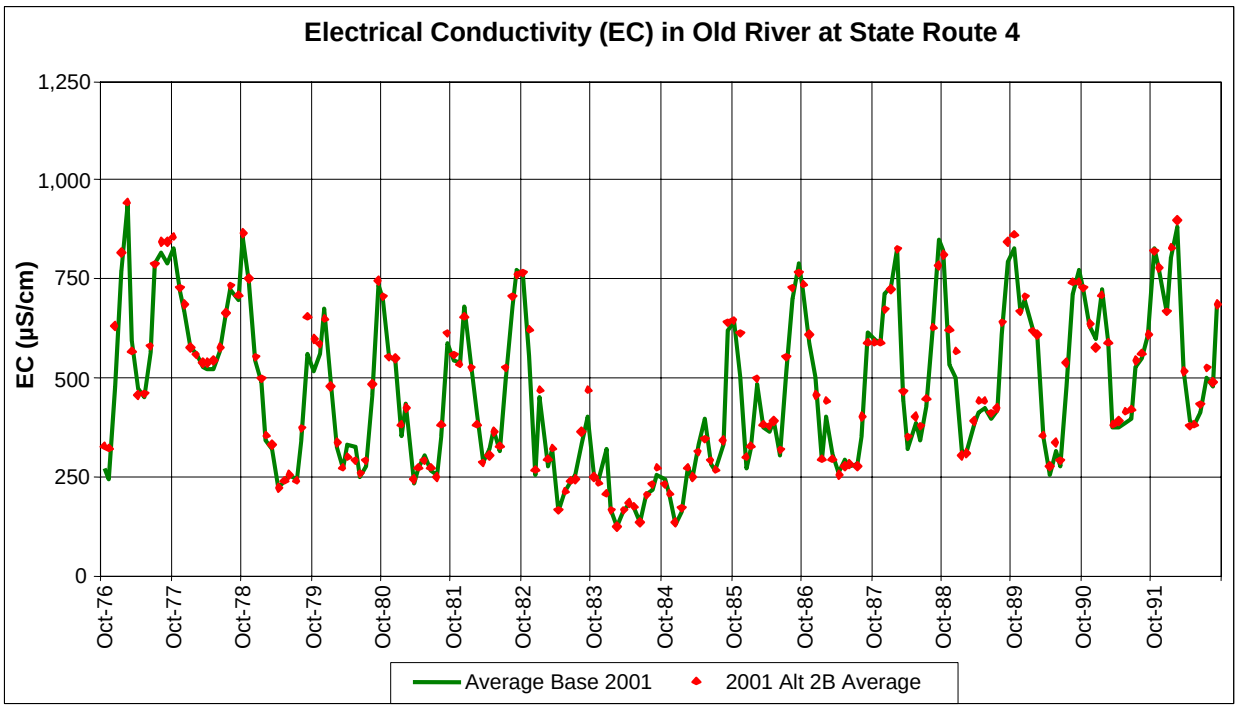
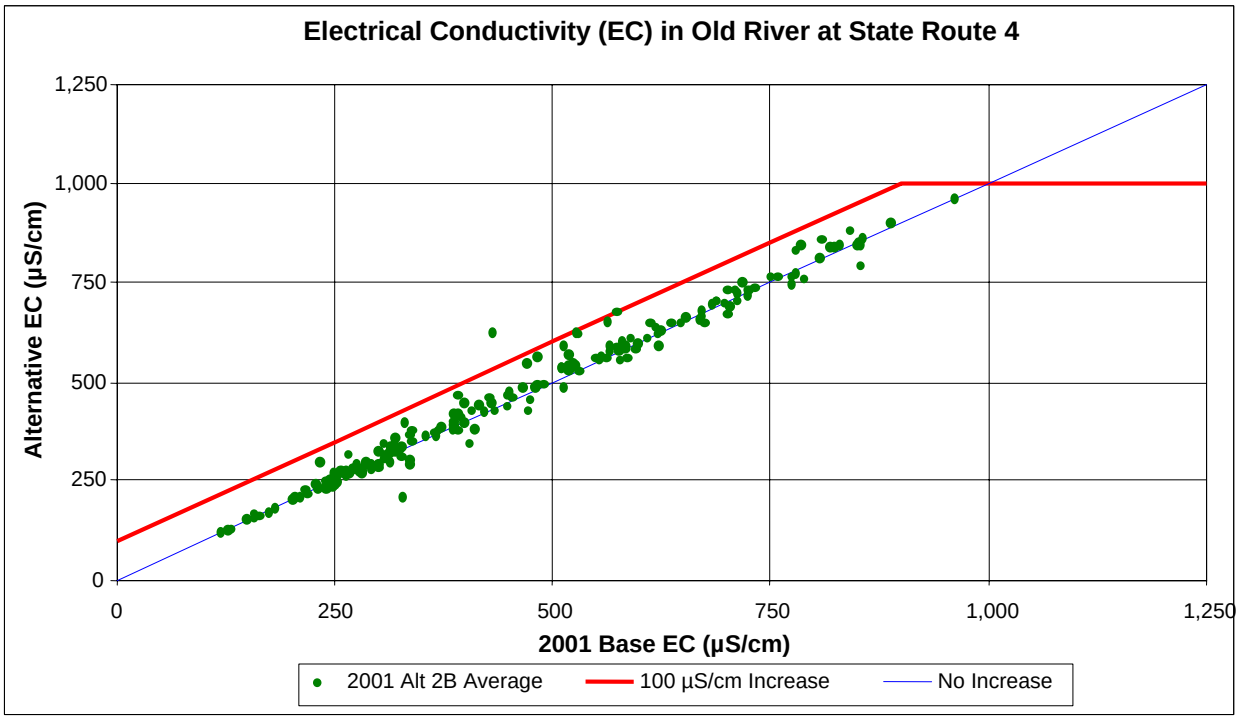
Figure 5.3-42

DSM2-Simulated Monthly Electrical Conductivity in Rock Slough for 1976–1991 with Alternative 2B Stage 2 Compared with 2001 No Action Baseline





02053.02 101

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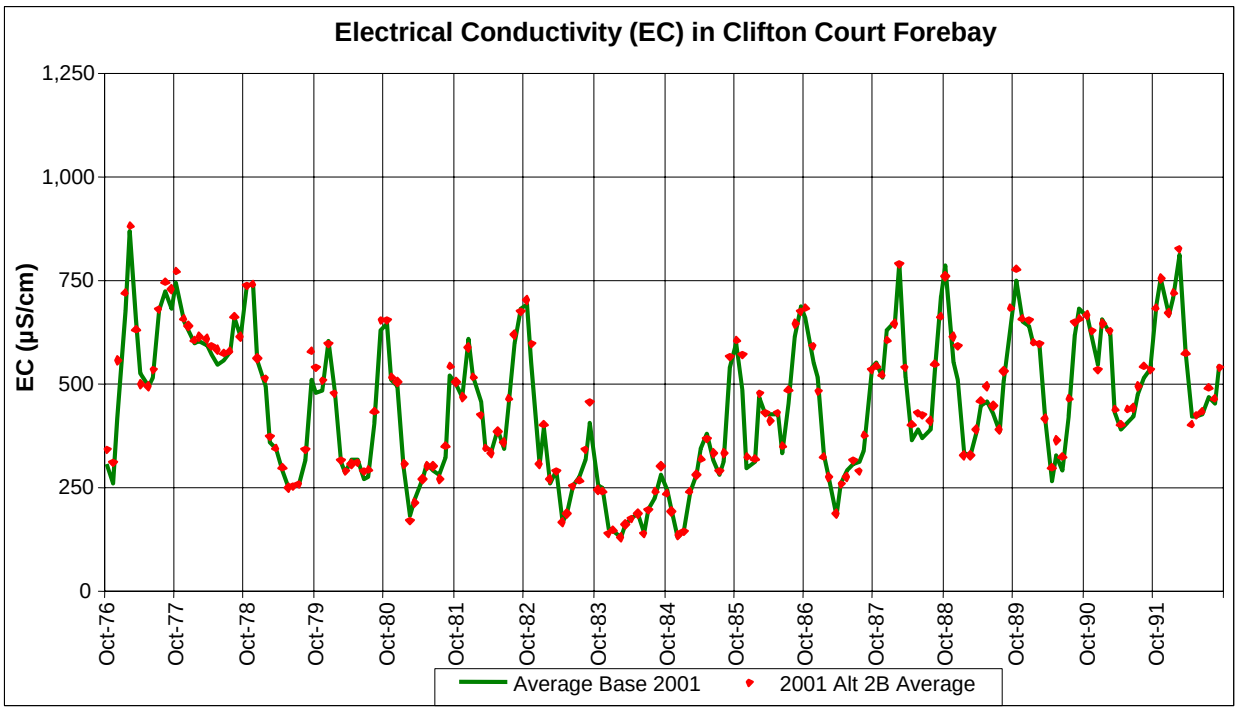
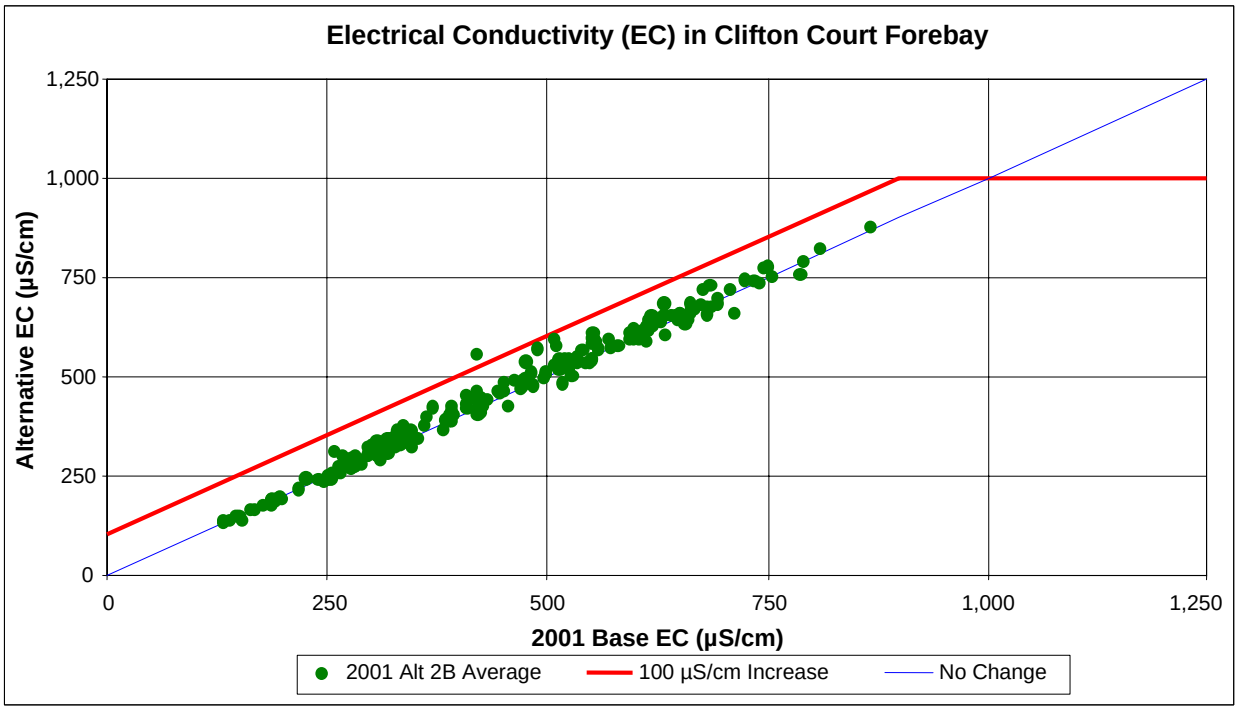
Figure 5.3-43

DSM2-Simulated Monthly Electrical Conductivity in Old River at State Route 4 for 1976–1991 with Alternative 2B Stage 2 Compared with 2001 No Action Baseline





02053.02 101

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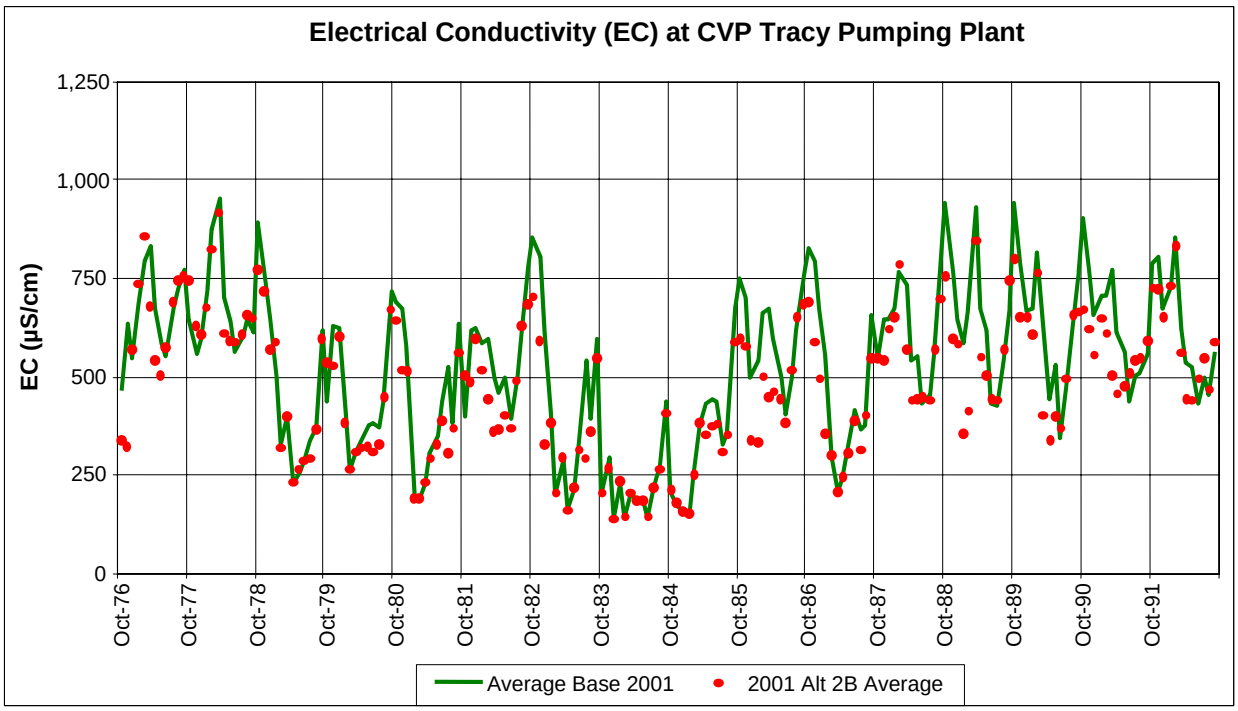
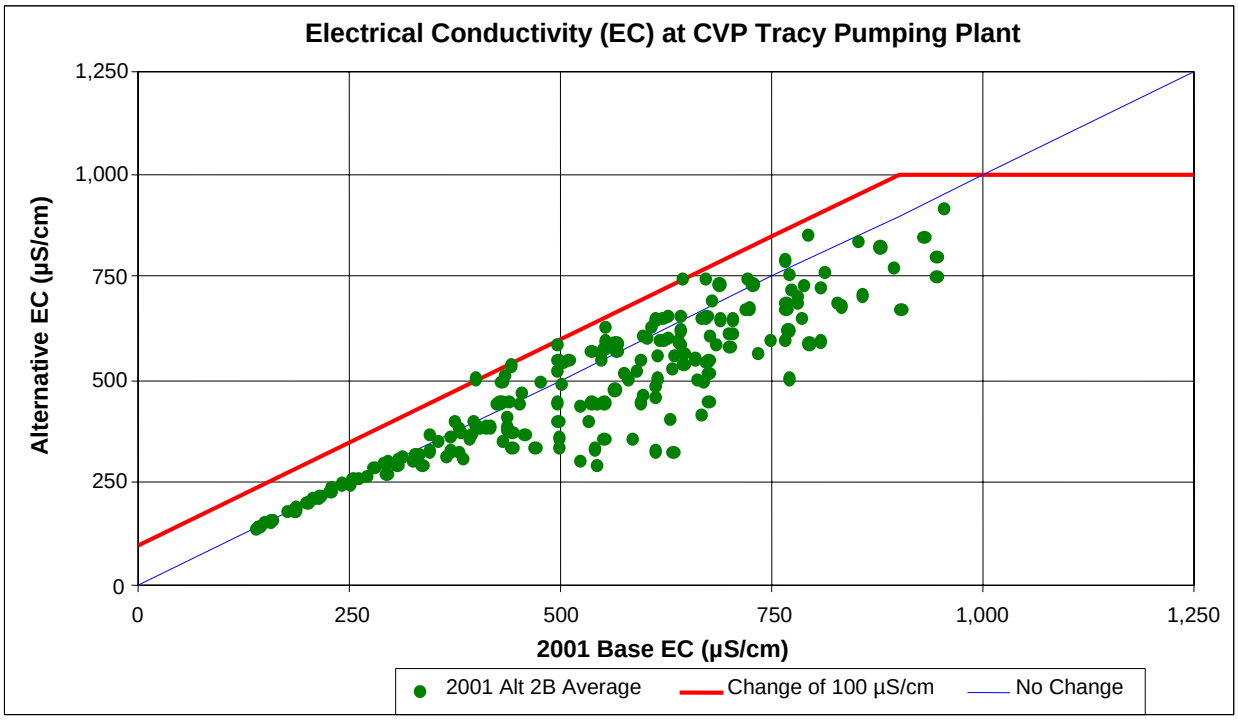
Figure 5.3-44

DSM2-Simulated Monthly Electrical Conductivity in Clifton Court Forebay (SWP Banks) for 1976–1991 with Alternative 2B Stage 2 Compared with 2001 No Action Baseline





02053.02 101

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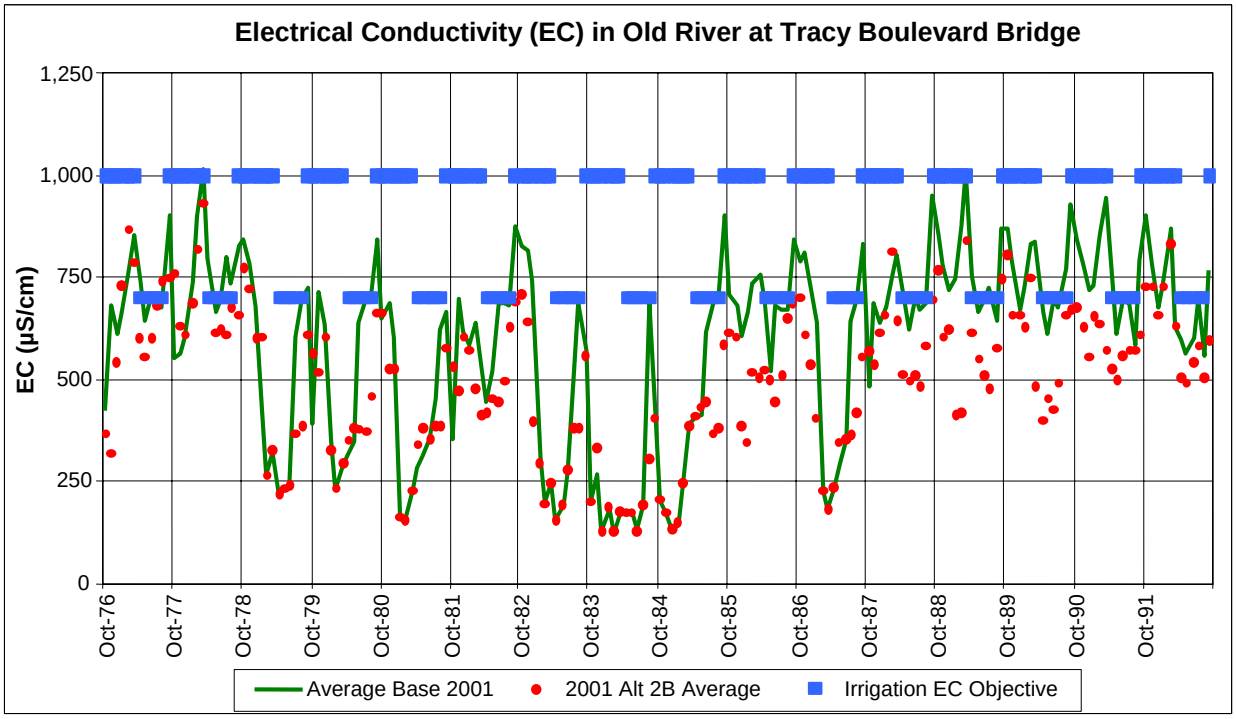
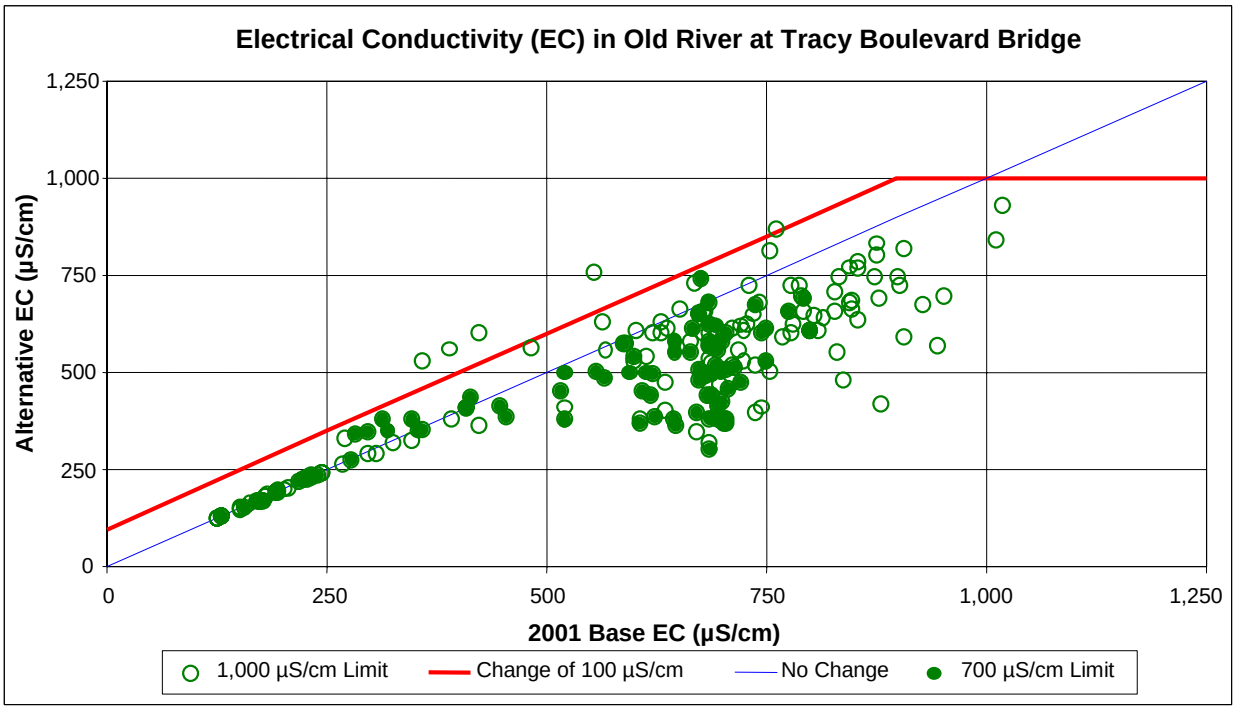
Figure 5.3-45

DSM2-Simulated Monthly Electrical Conductivity at CVP Tracy for 1976–1991 with Alternative 2B Stage 2 Compared with 2001 No Action Baseline





02053.02 101

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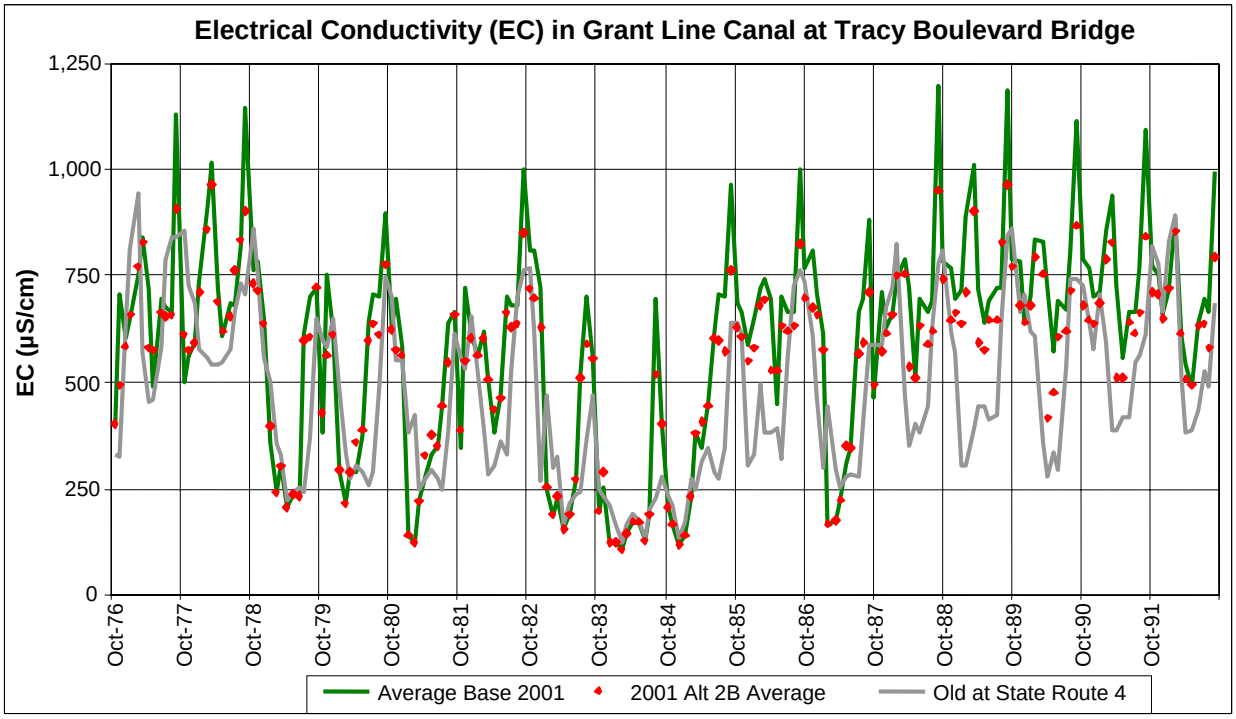
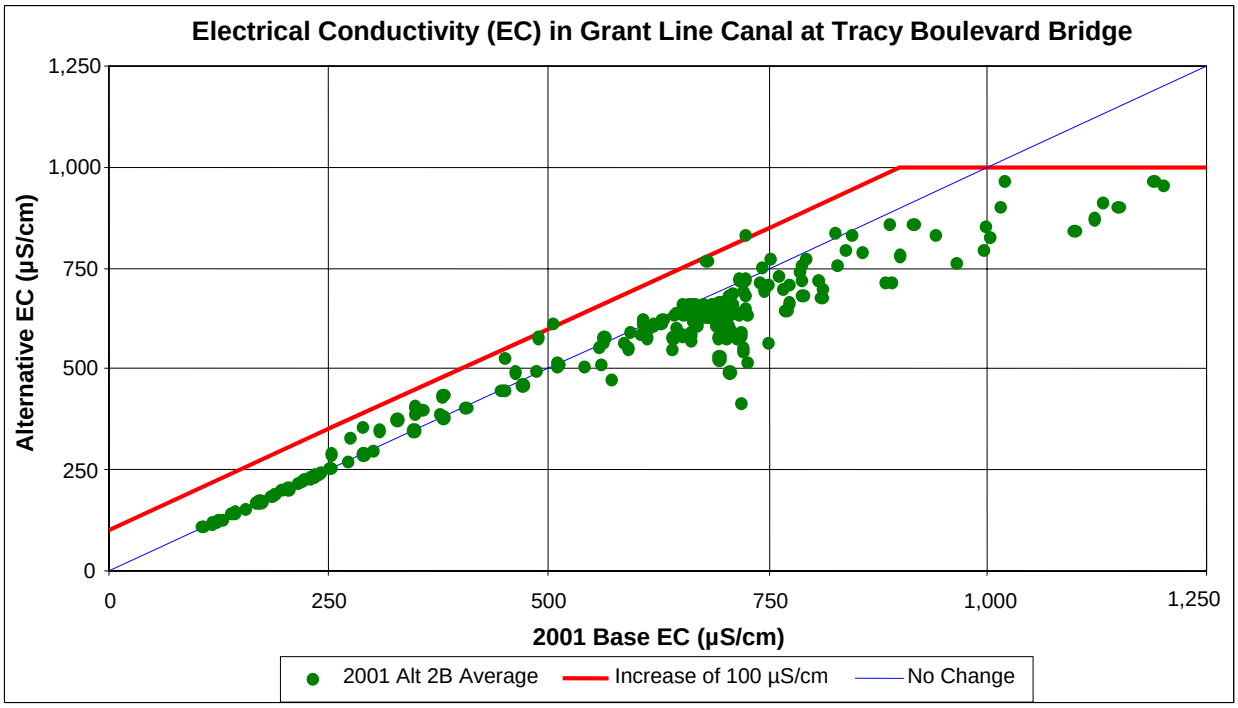
Figure 5.3-46

DSM2-Simulated Monthly Electrical Conductivity in Old River at Tracy Boulevard Bridge for 1976–1991 with Alternative 2B Stage 2 Compared with 2001 No Action Baseline





02053.02 101

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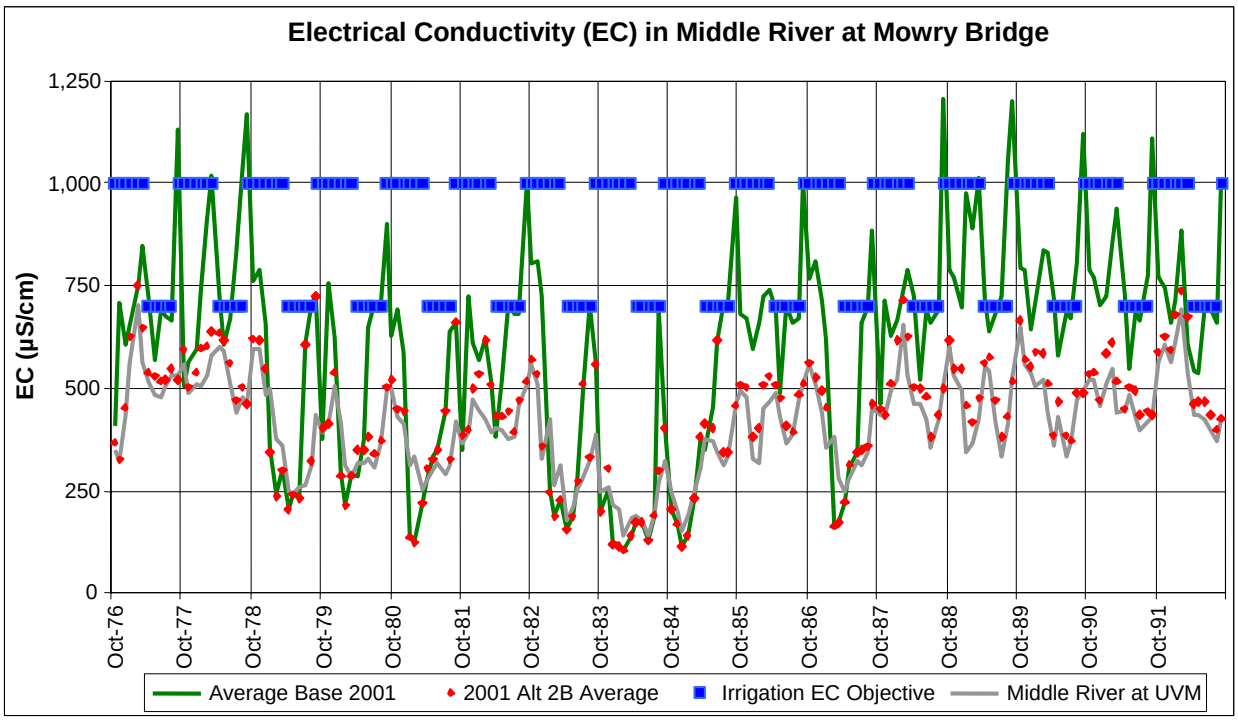
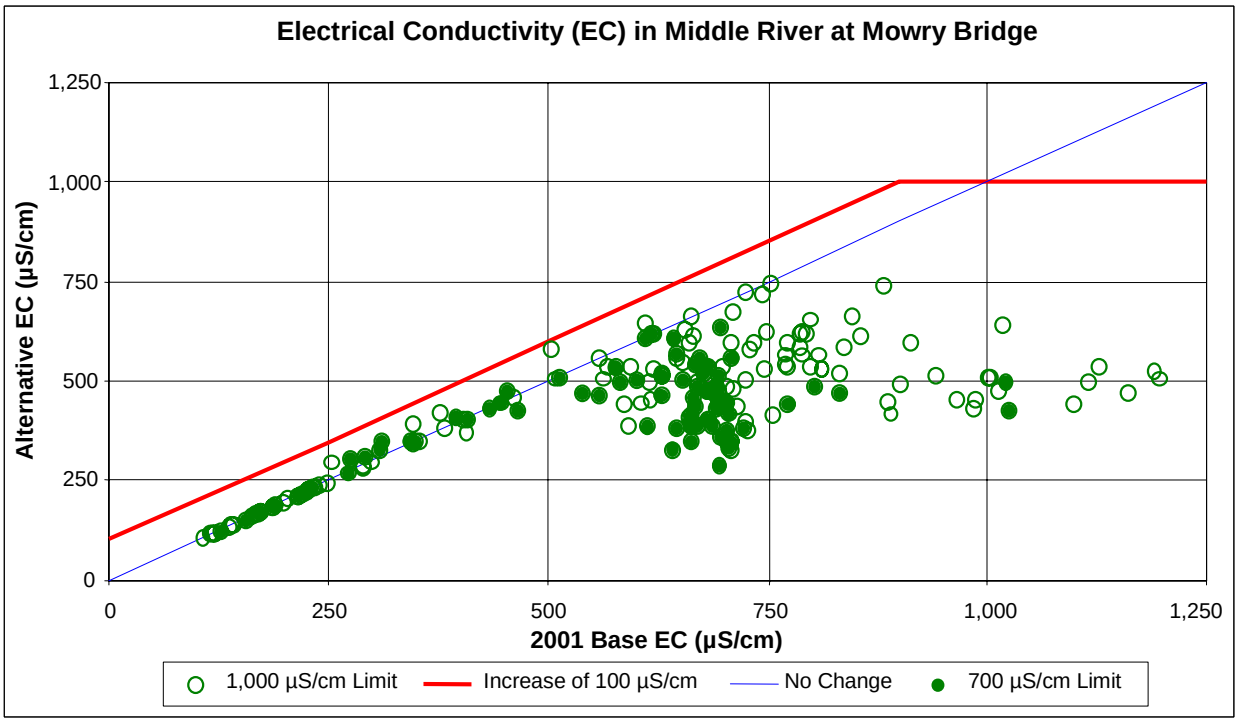
Figure 5.3-47

DSM2-Simulated Monthly Electrical Conductivity in Grant Line Canal at Tracy Boulevard Bridge for 1976–1991 with Alternative 2B Stage 2 Compared with 2001 No Action Baseline





02053.02 101

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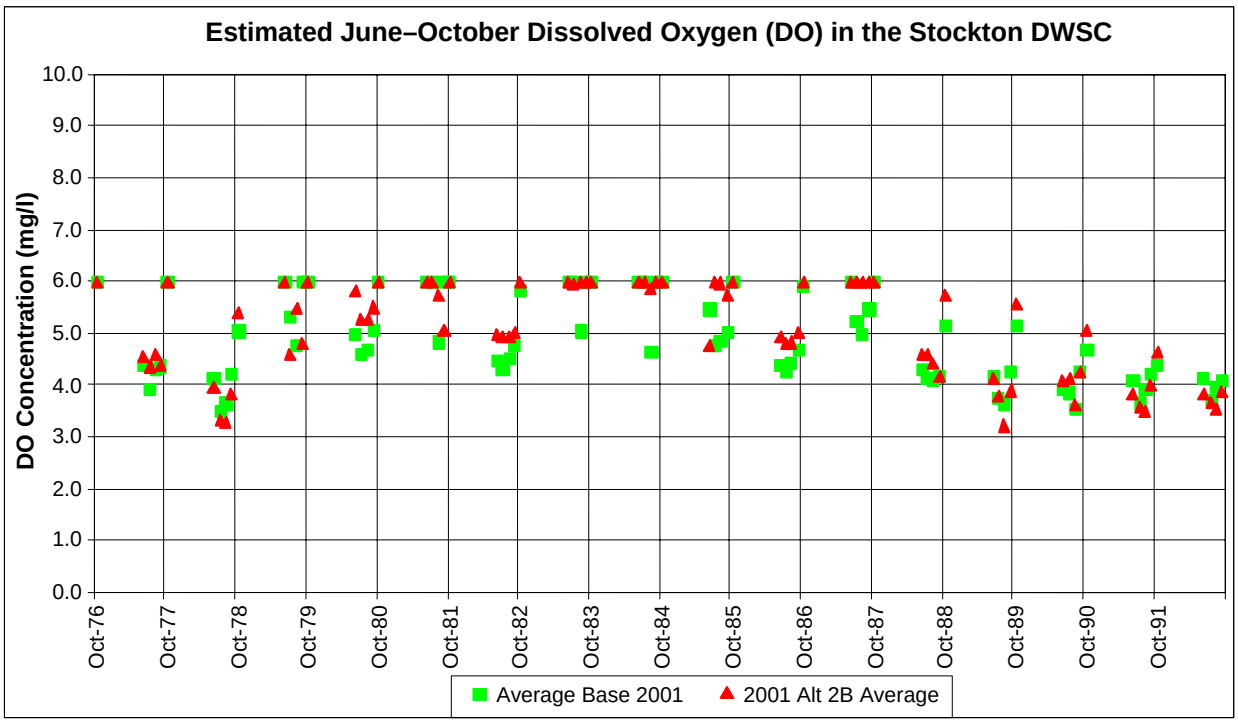
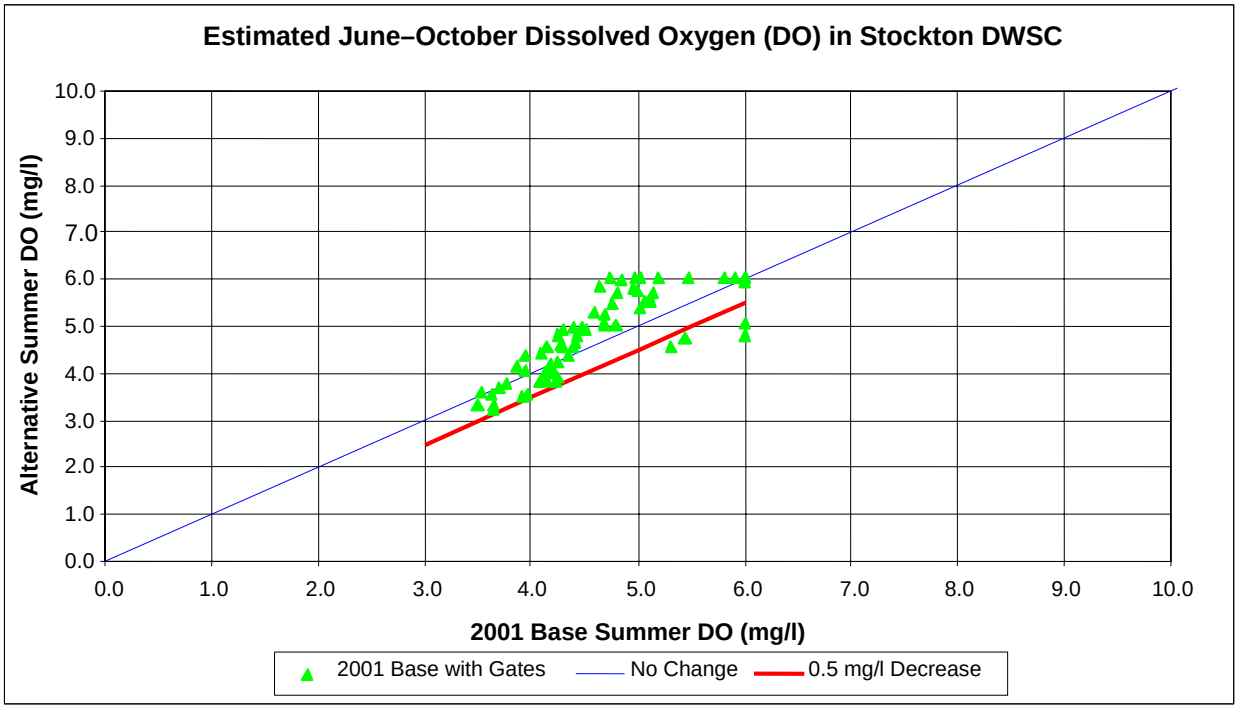
Figure 5.3-48

DSM2-Simulated Monthly Electrical Conductivity in Middle River at Mowry Bridge for 1976–1991 with Alternative 2B Stage 2 Compared with 2001 No Action Baseline





02053.02 101

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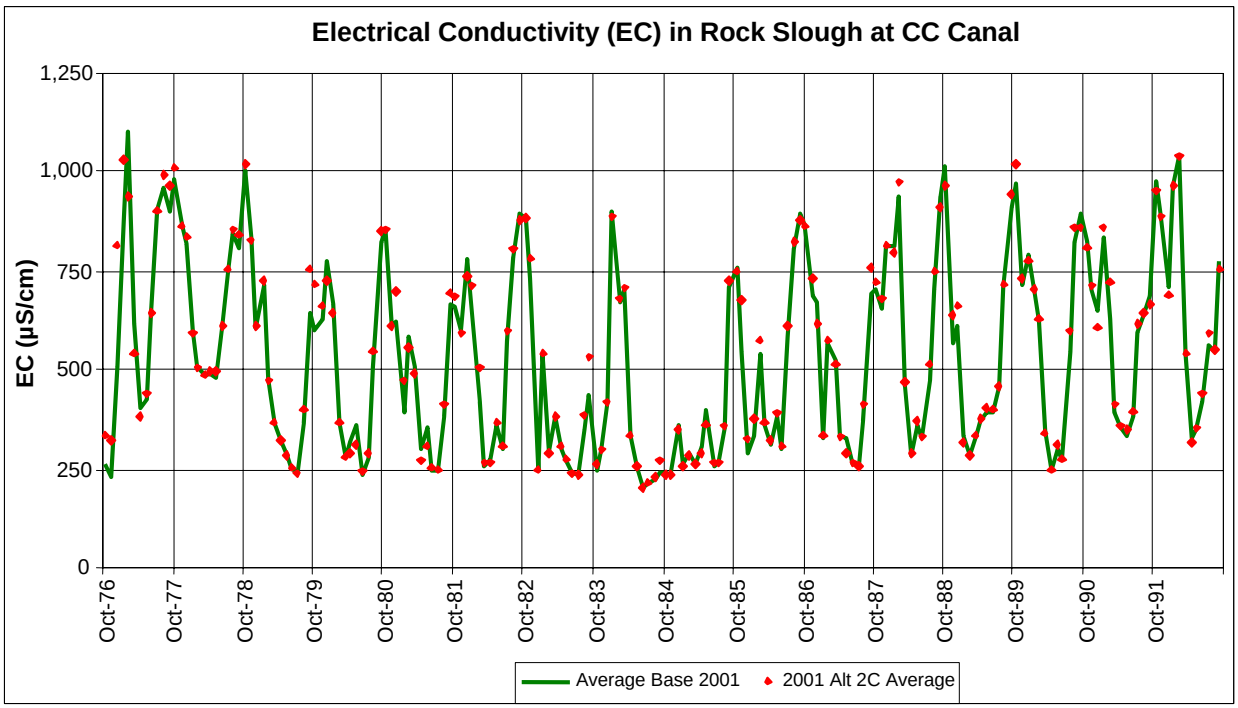
Figure 5.3-49

Estimated Stockton Deep Water Ship Channel Dissolved Oxygen Concentrations (June–October) for 1976–1991 with Alternative 2B Stage 2 Compared with 2001 No Action Baseline



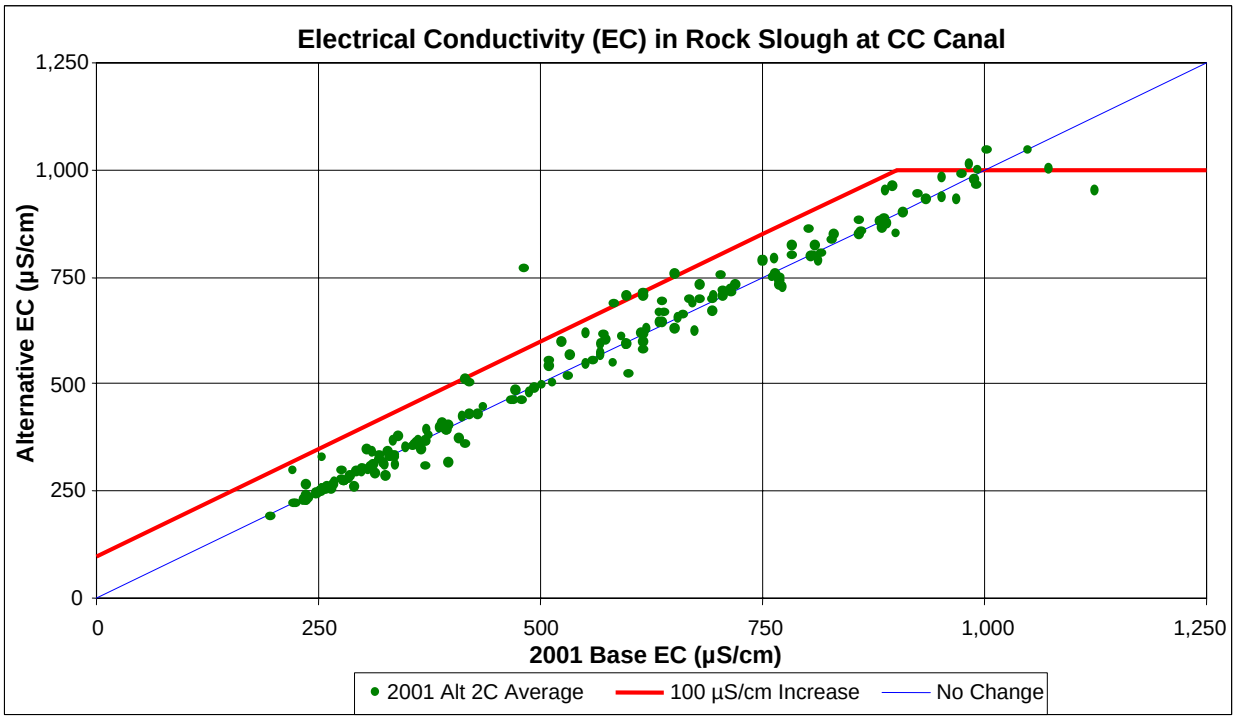


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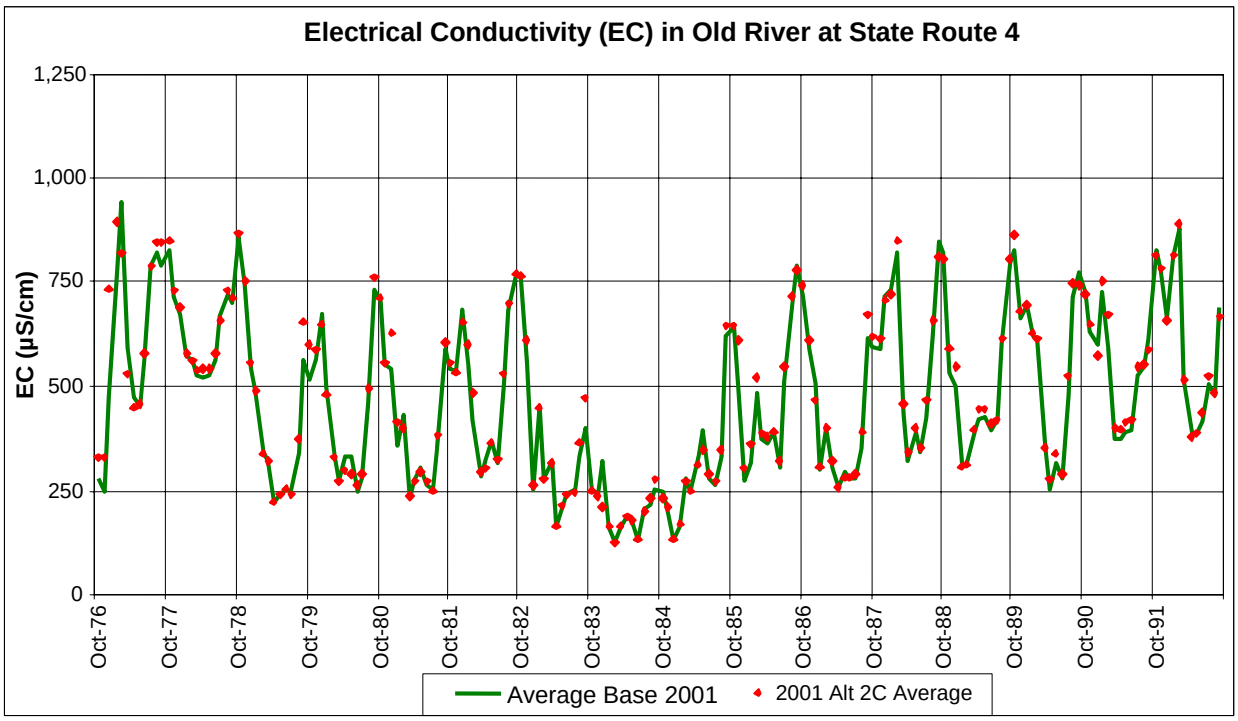
Figure 5.3-50

DSM2-Simulated Monthly Electrical Conductivity in Rock Slough for 1976–1991 with Alternative 2C Stage 2 Compared with 2001 No Action Baseline



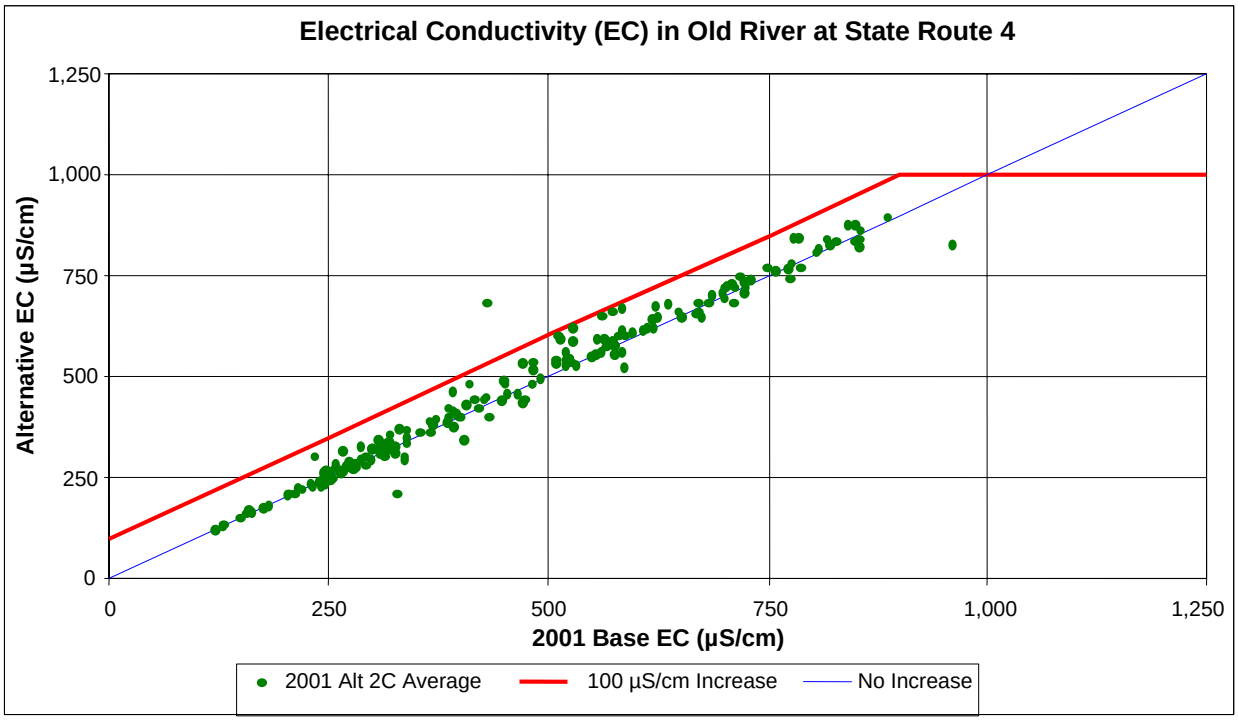


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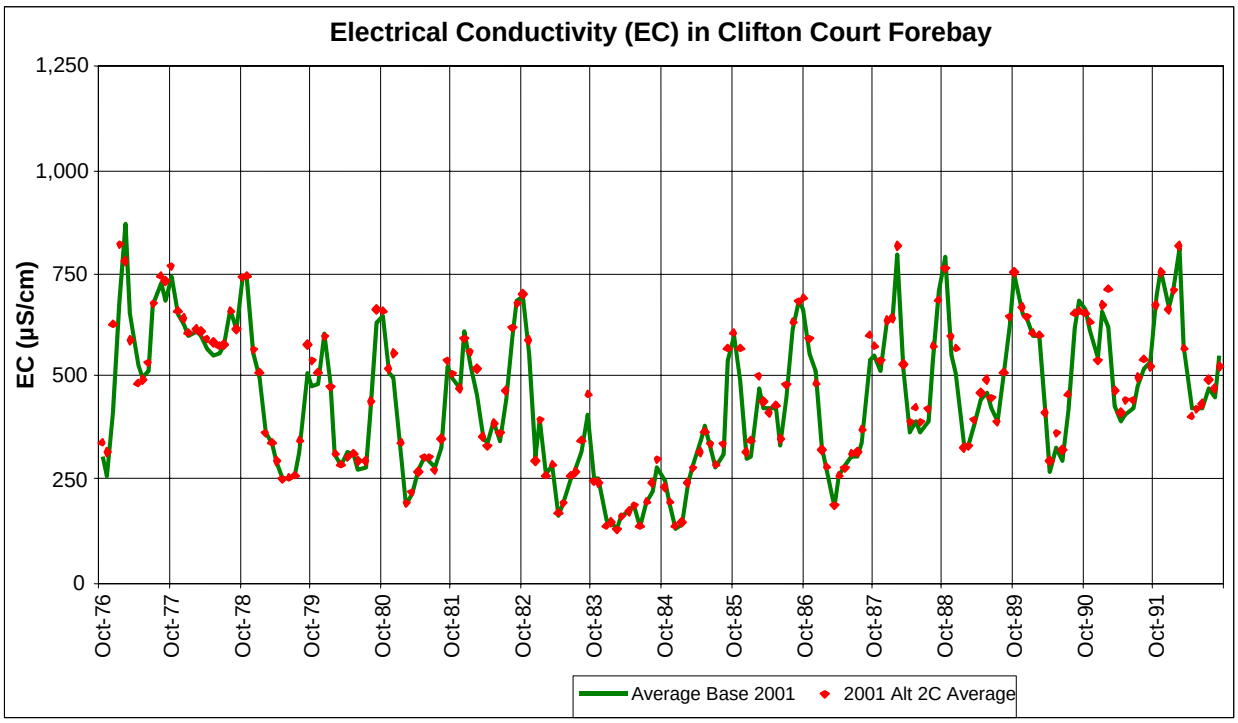
Figure 5.3-51

DSM2-Simulated Monthly Electrical Conductivity in Old River at State Route 4 for 1976–1991 with Alternative 2C Stage 2 Compared with 2001 No Action Baseline



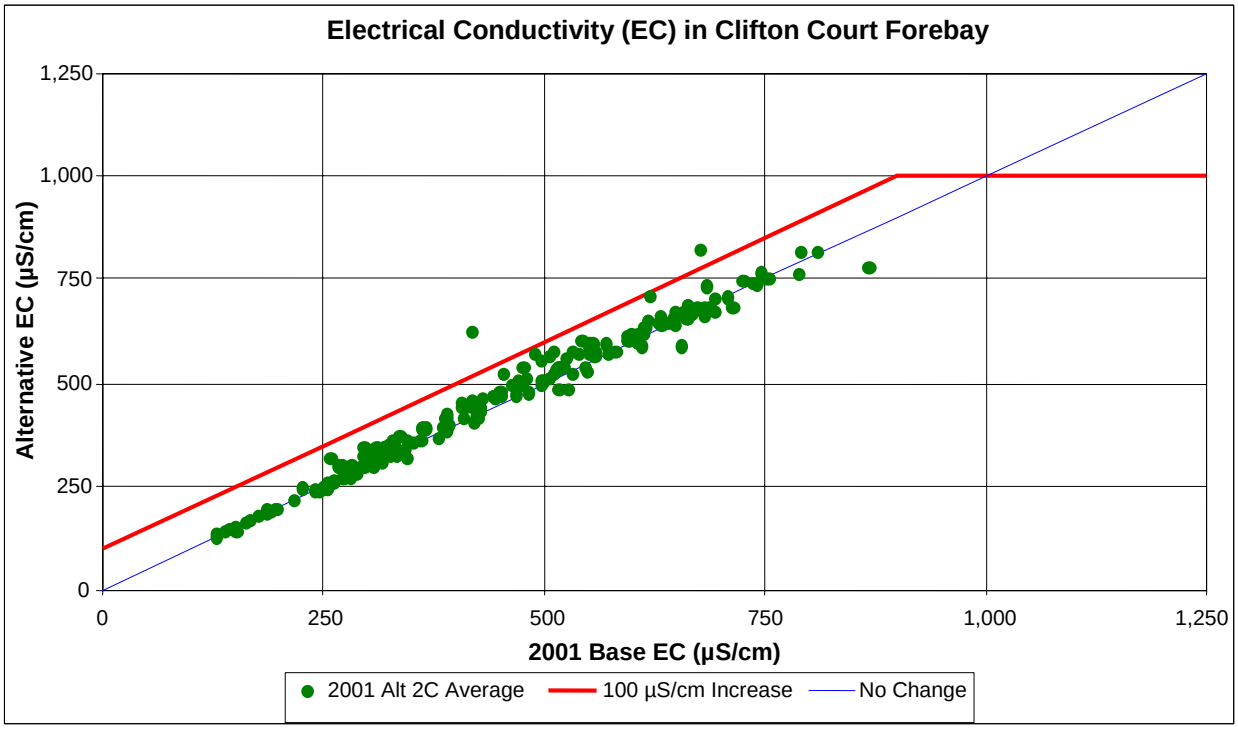


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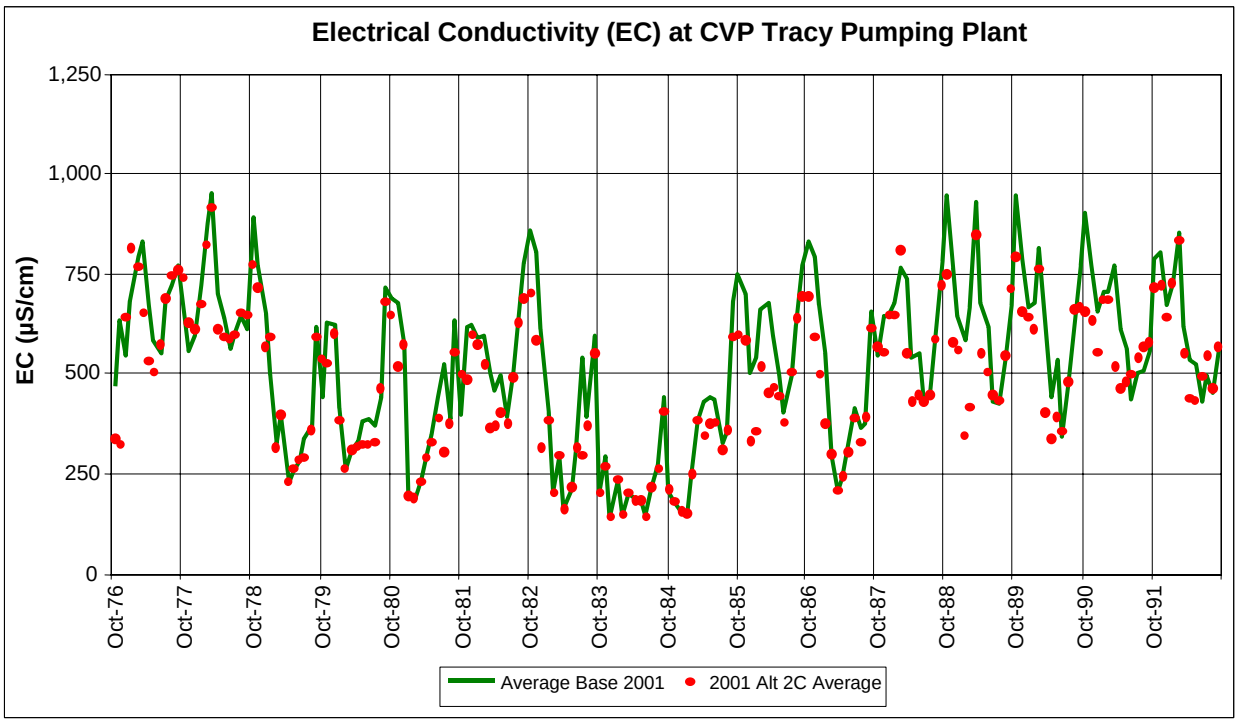
Figure 5.3-52

DSM2-Simulated Monthly Electrical Conductivity in Clifton Court Forebay (SWP Banks) for 1976–1991 with Alternative 2C Stage 2 Compared with 2001 No Action Baseline



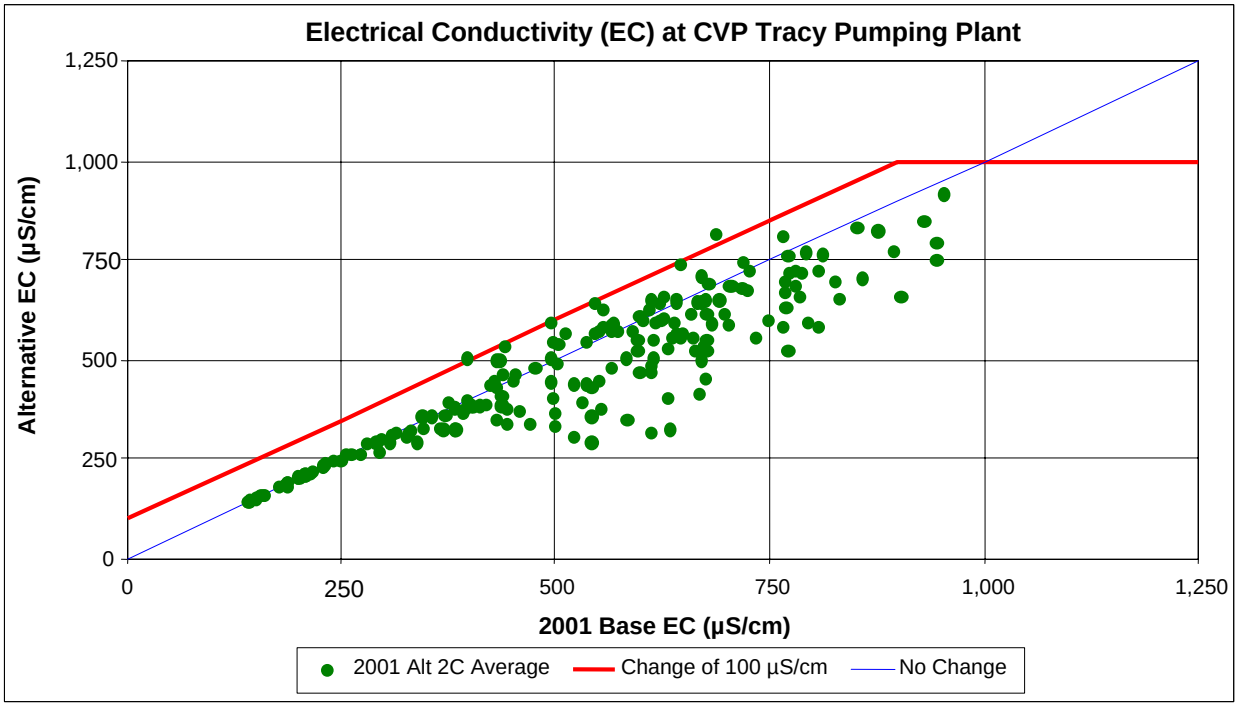


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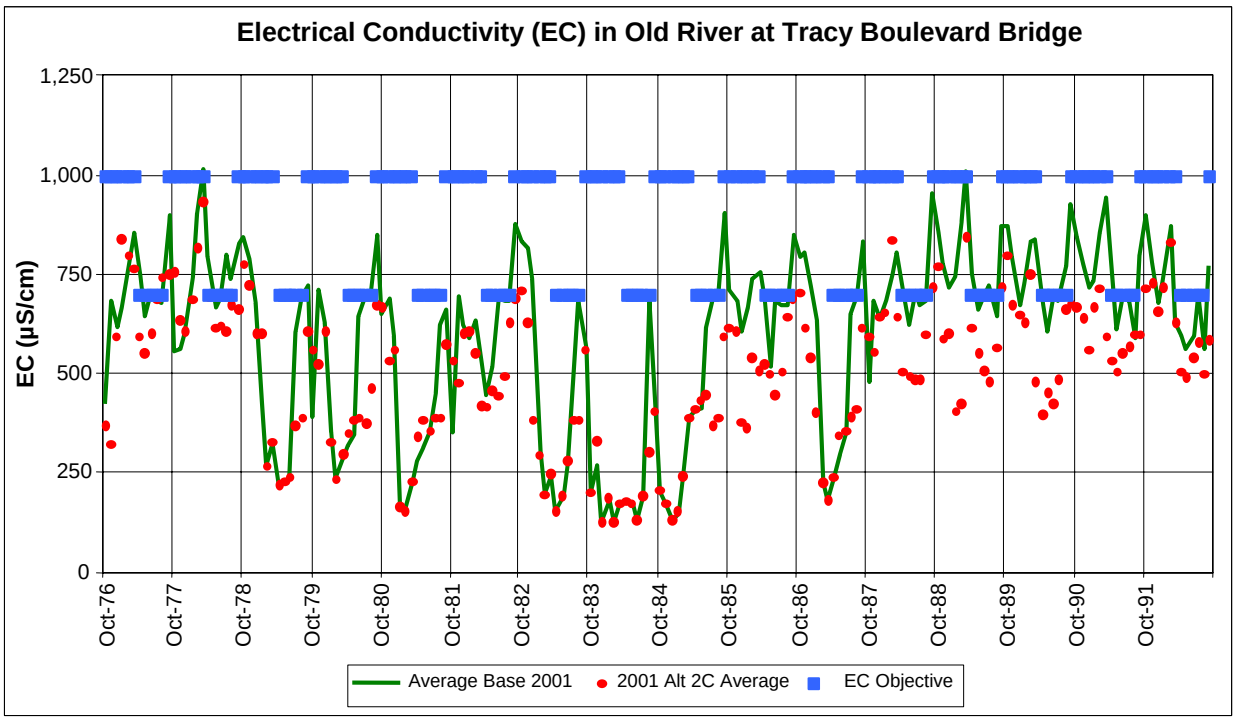
Figure 5.3-53

DSM2-Simulated Monthly Electrical Conductivity at CVP Tracy for 1976–1991 with Alternative 2C Stage 2 Compared with 2001 No Action Baseline



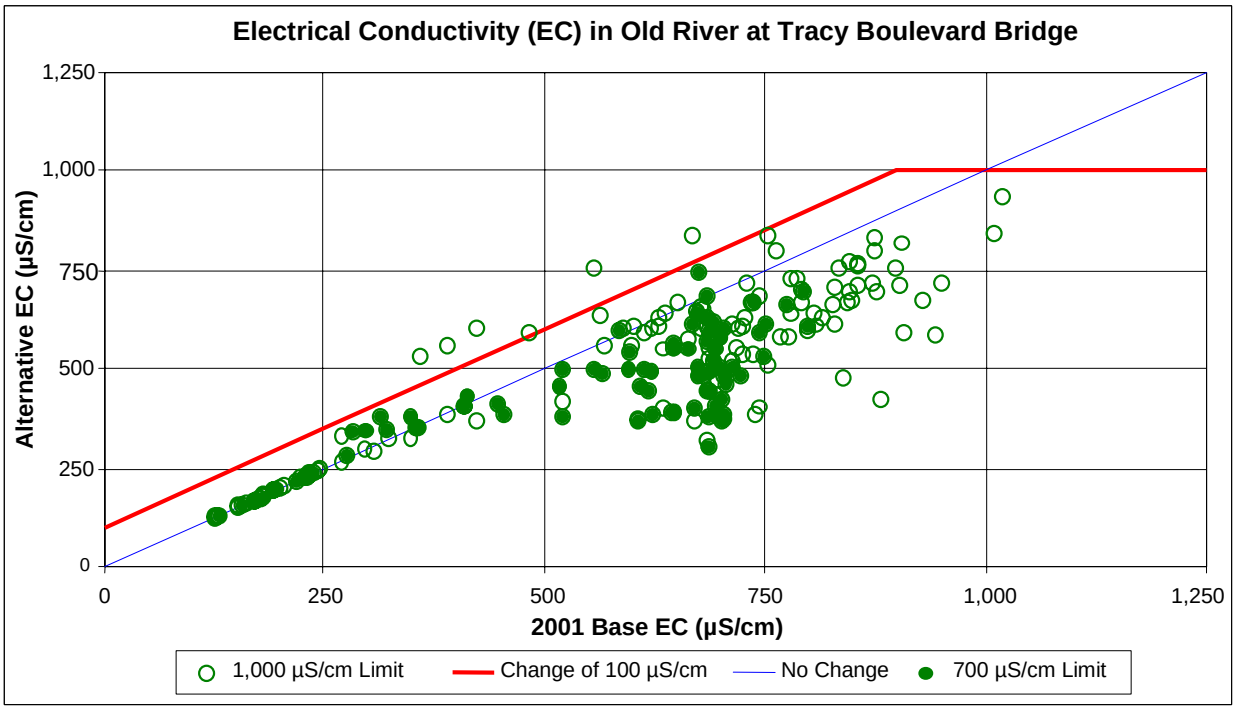


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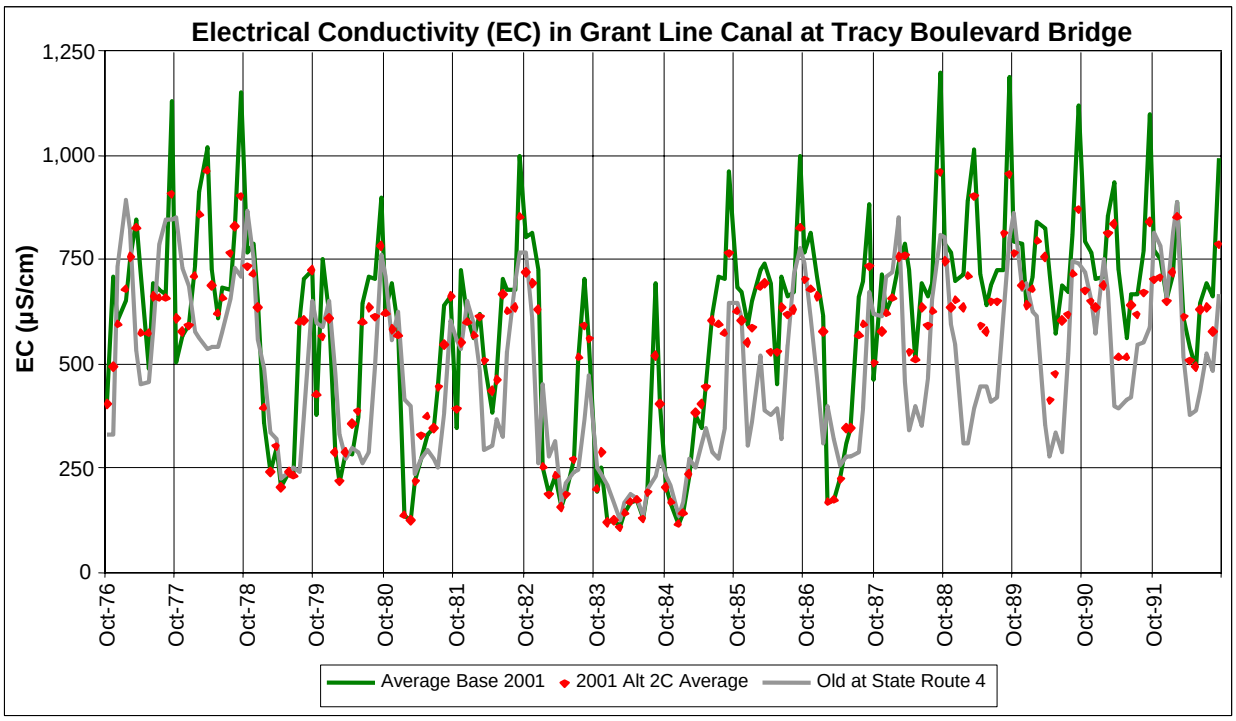
Figure 5.3-54

DSM2-Simulated Monthly Electrical Conductivity in Old River at Tracy Boulevard Bridge for 1976–1991 with Alternative 2C Stage 2 Compared with 2001 No Action Baseline



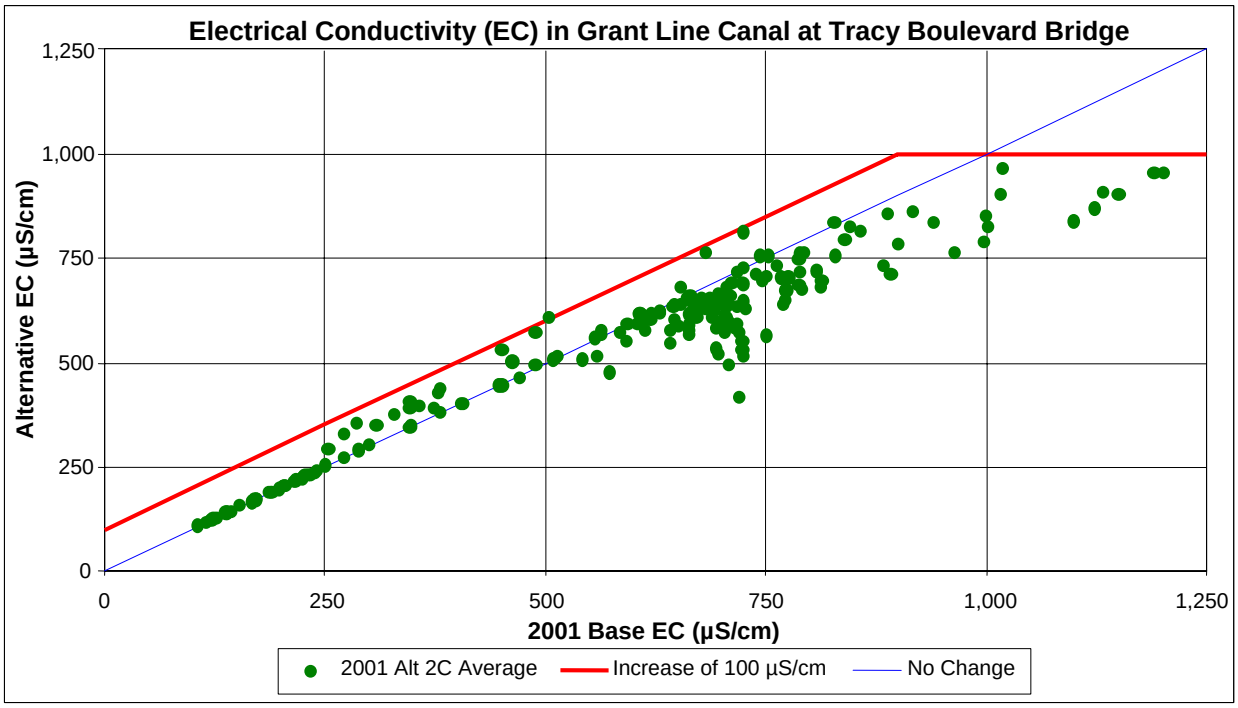


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Figure 5.3-55

DSM2-Simulated Monthly Electrical Conductivity in Grant Line Canal at Tracy Boulevard Bridge for 1976–1991 with Alternative 2C Stage 2 Compared with 2001 No Action Baseline

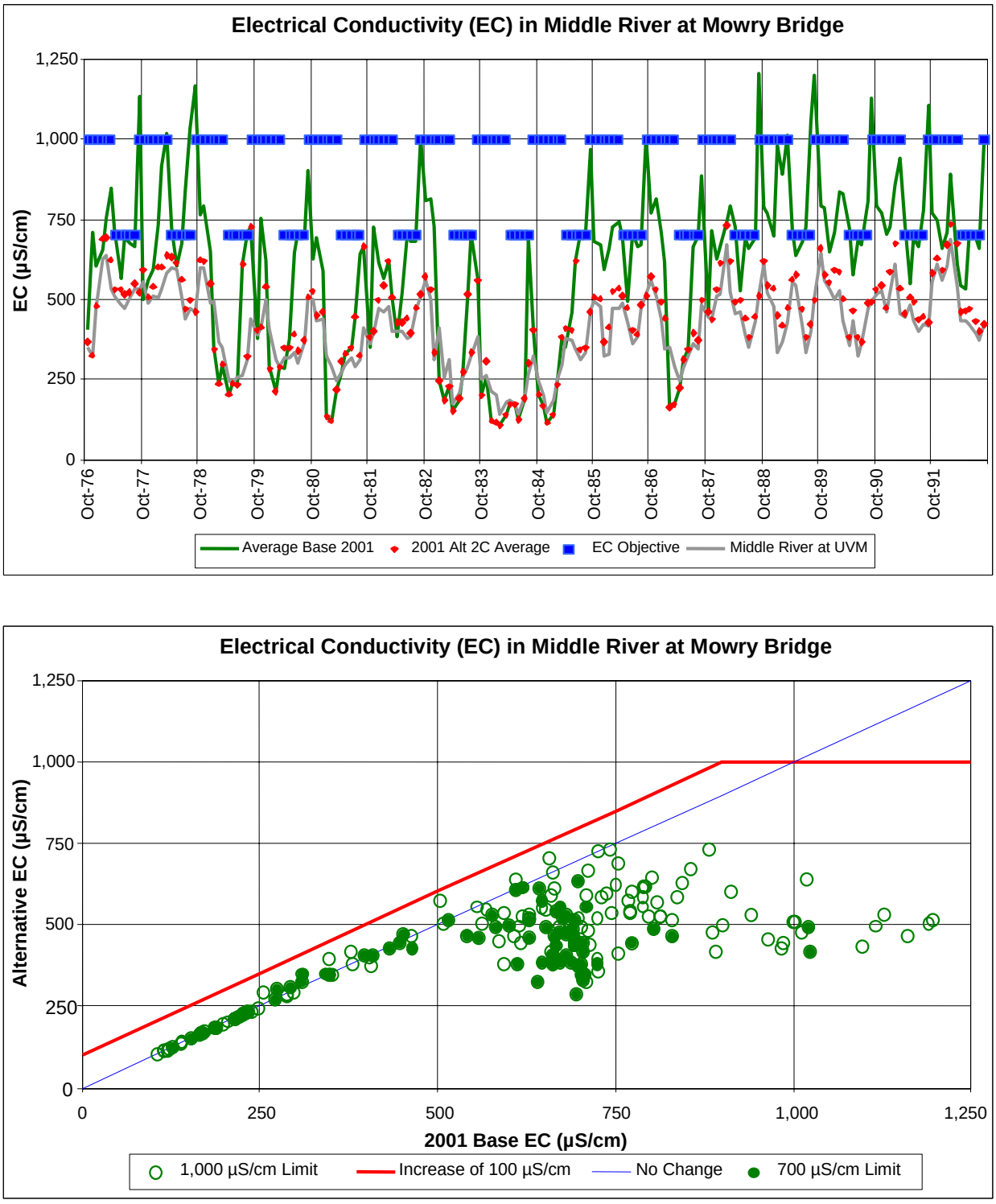

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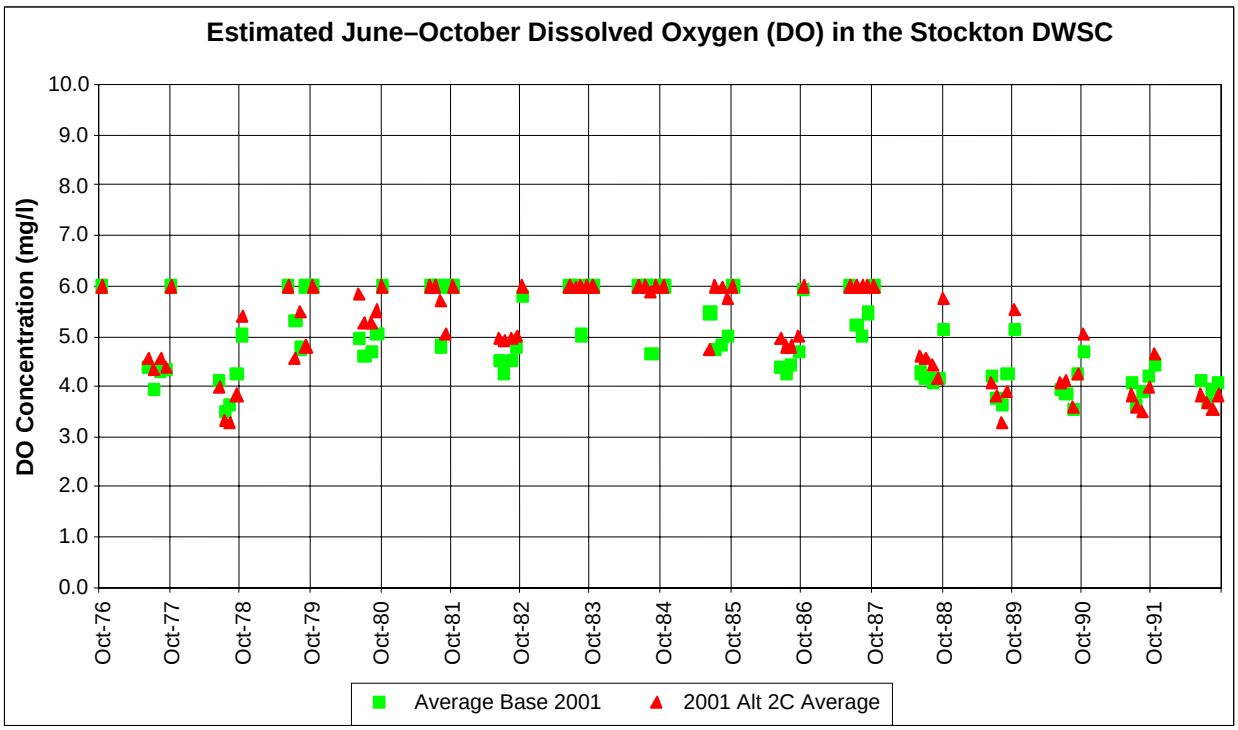
Figure 5.3-56

DSM2-Simulated Monthly Electrical Conductivity in Middle River at Mowry Bridge for 1976–1991 with Alternative 2C Stage 2 Compared with 2001 No Action Baseline



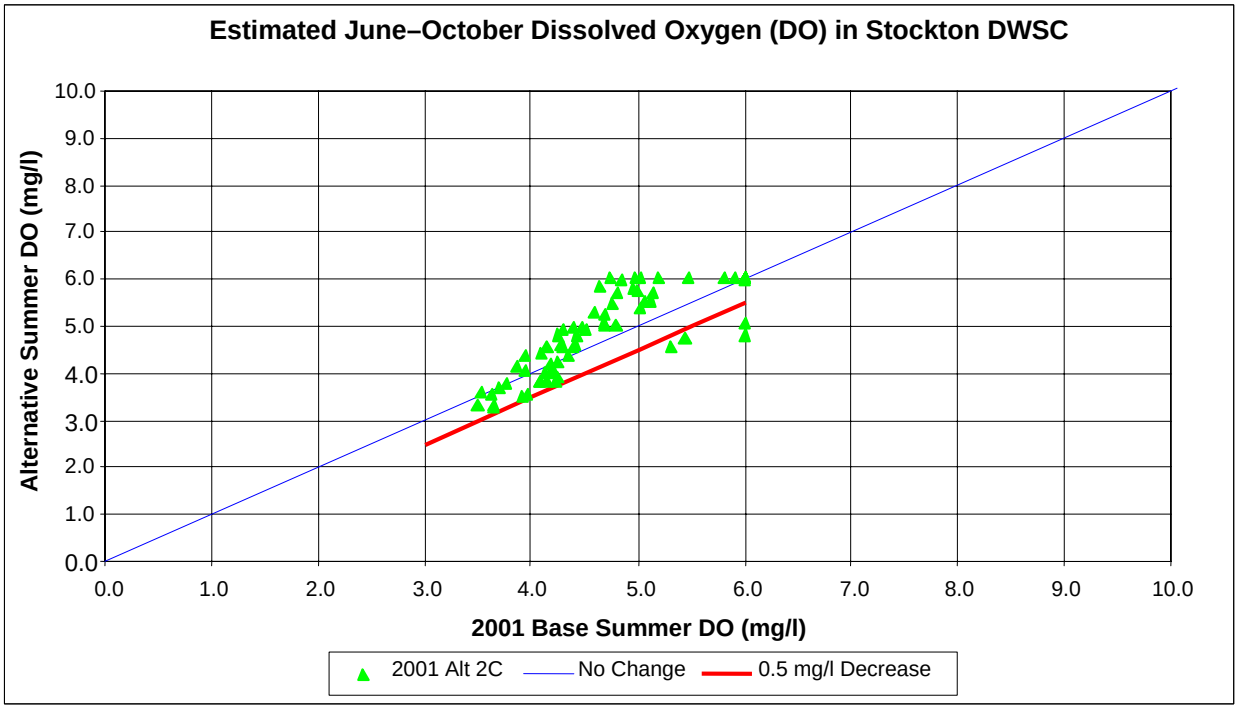


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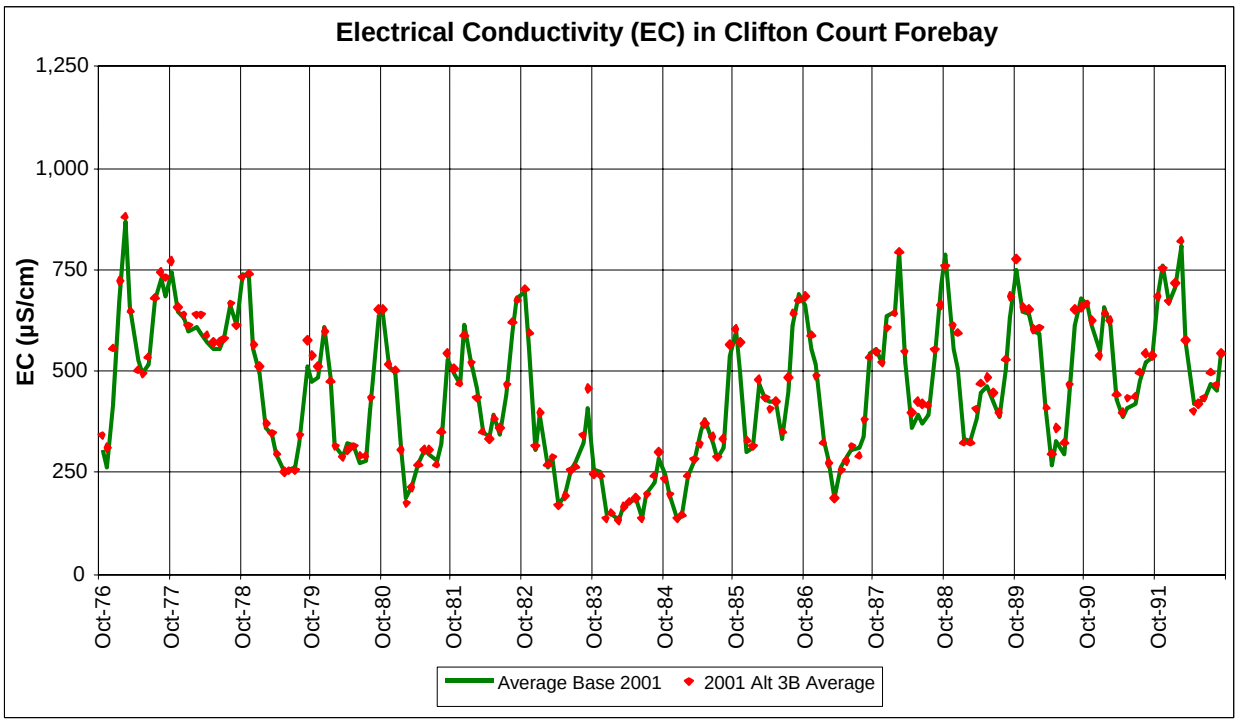
Figure 5.3-57

Estimated Stockton Deep Water Ship Channel (DWSC) Dissolved Oxygen Concentrations (June–October) for 1976–1991 with Alternative 2C Stage 2 Compared with 2001 No Action Baseline



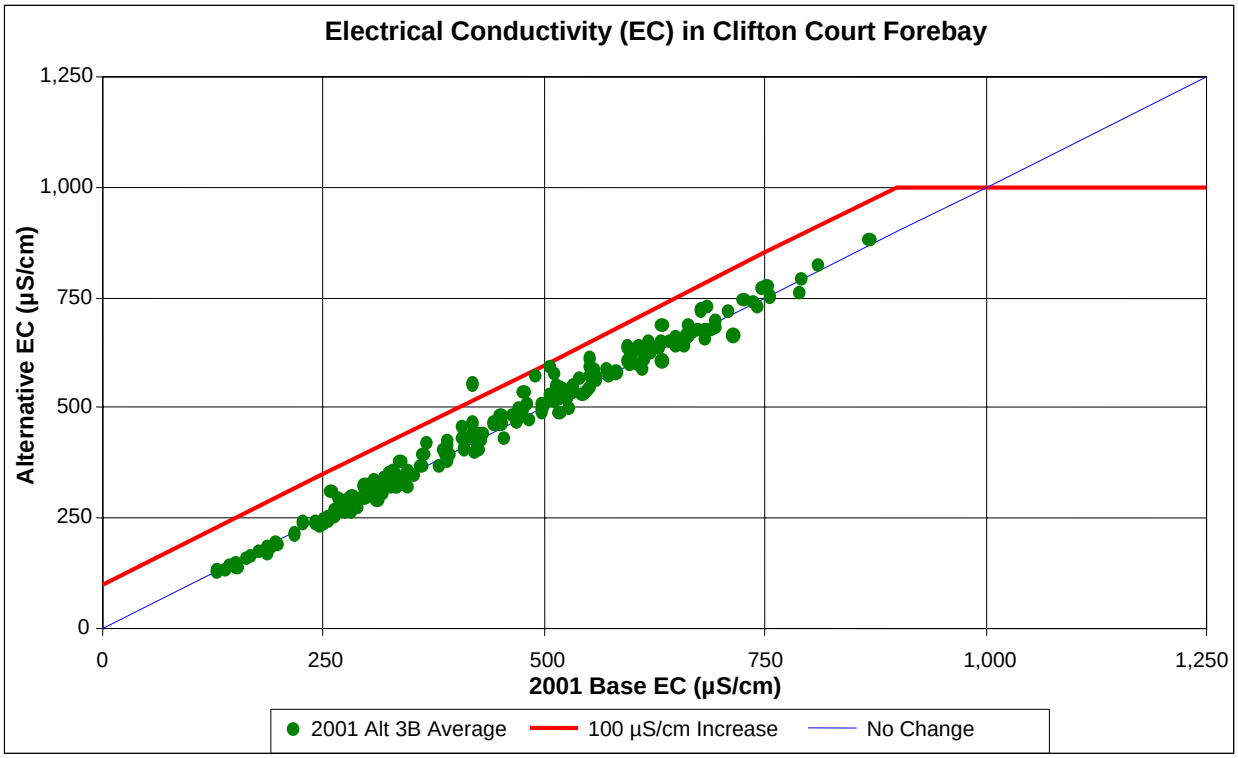


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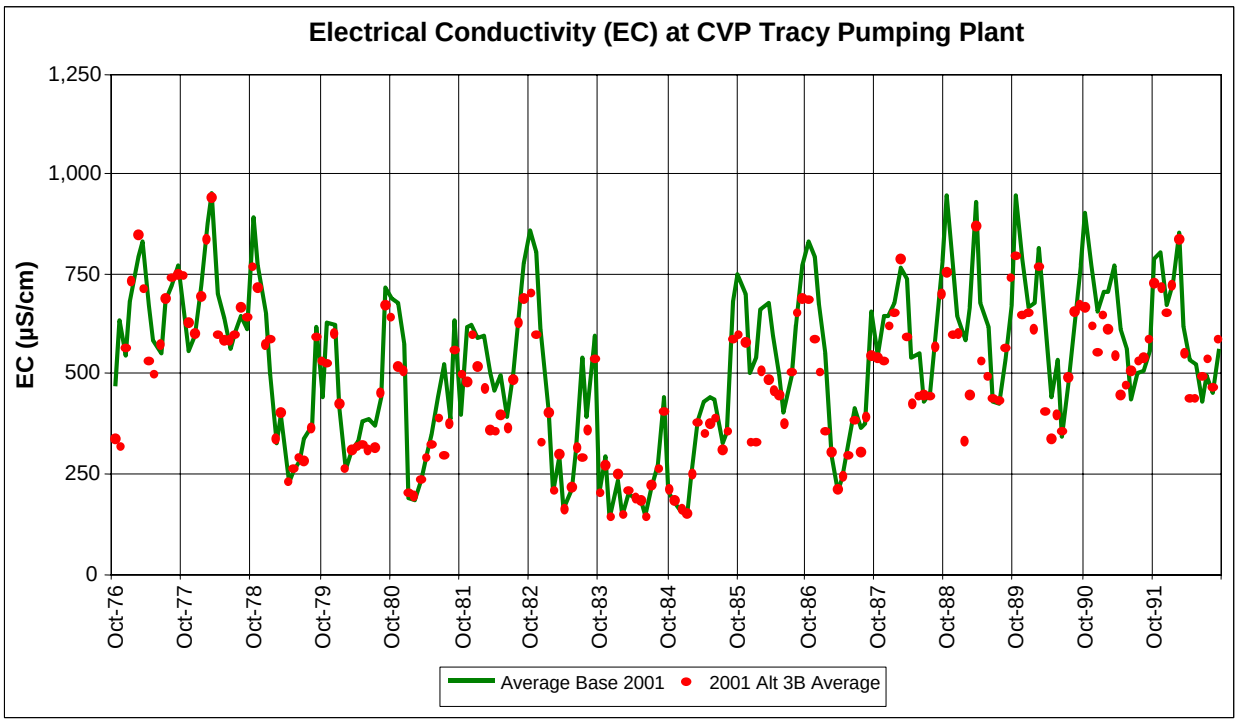
Figure 5.3-58

DSM2-Simulated Monthly Electrical Conductivity in Clifton Court Forebay (SWP Banks) for 1976–1991 with Alternative 3B Stage 2 Compared with 2001 No Action Baseline



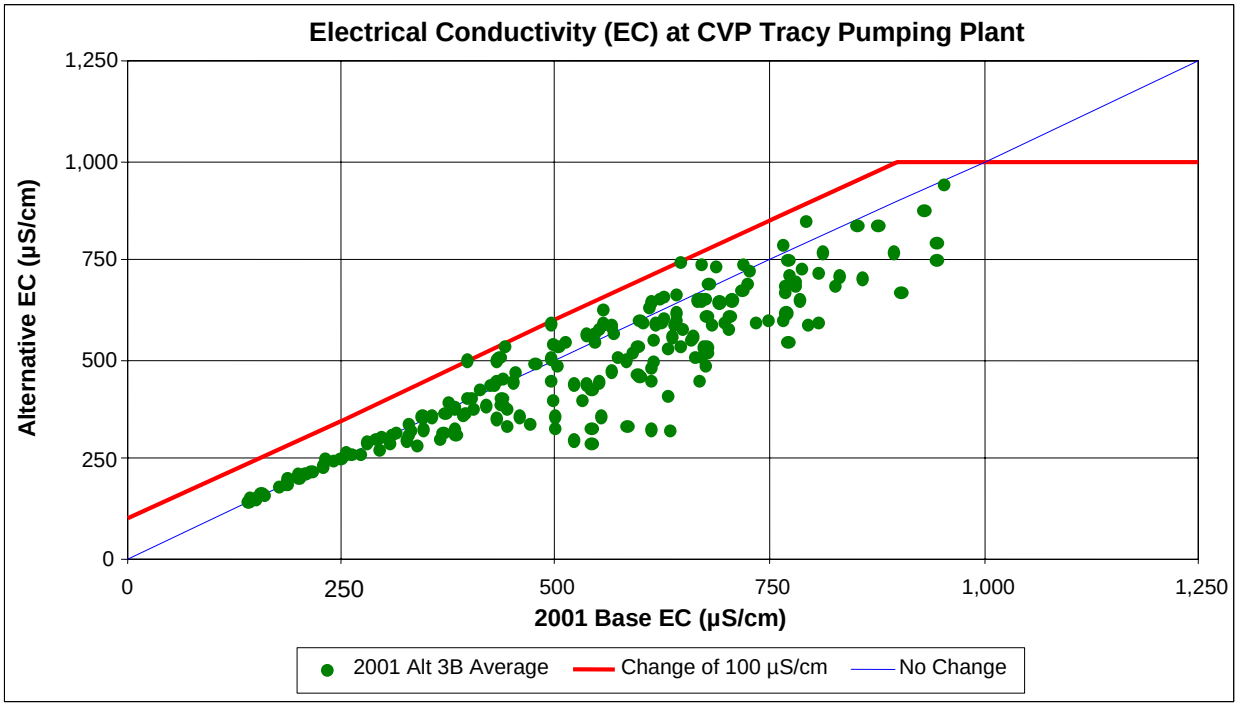


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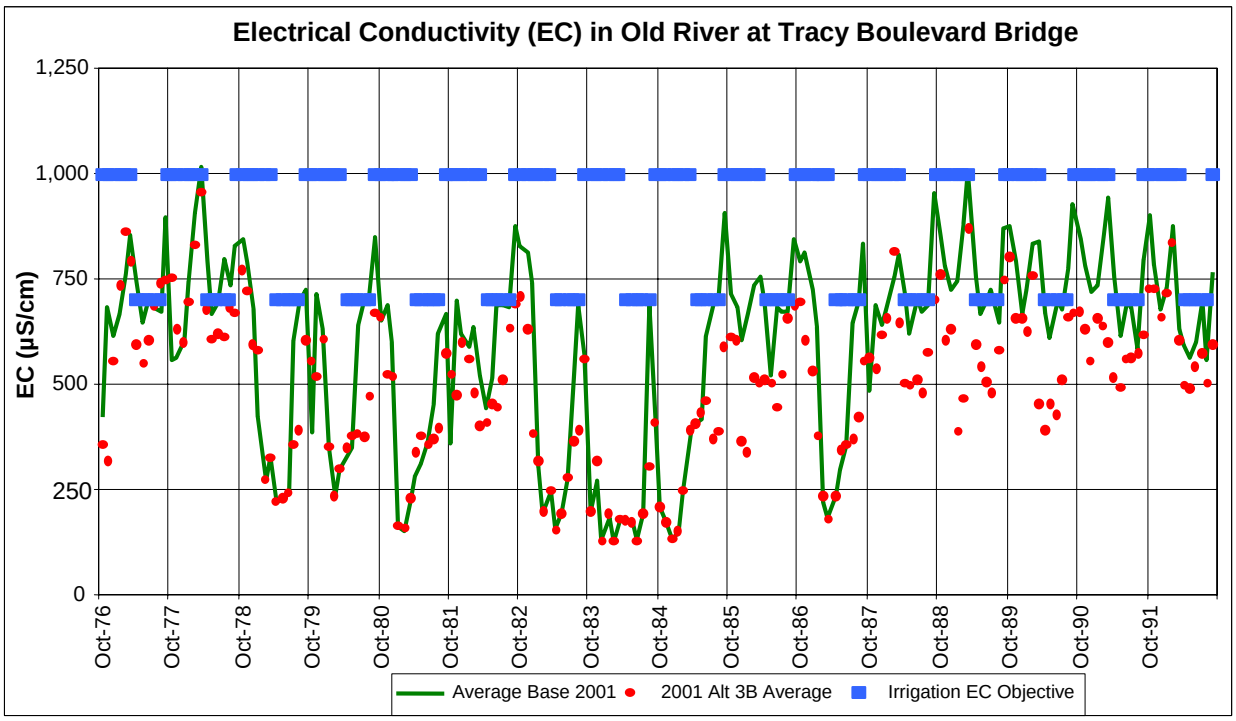
Figure 5.3-59

DSM2-Simulated Monthly Electrical Conductivity at CVP Tracy for 1976–1991 with Alternative 3B Stage 2 Compared with 2001 No Action Baseline



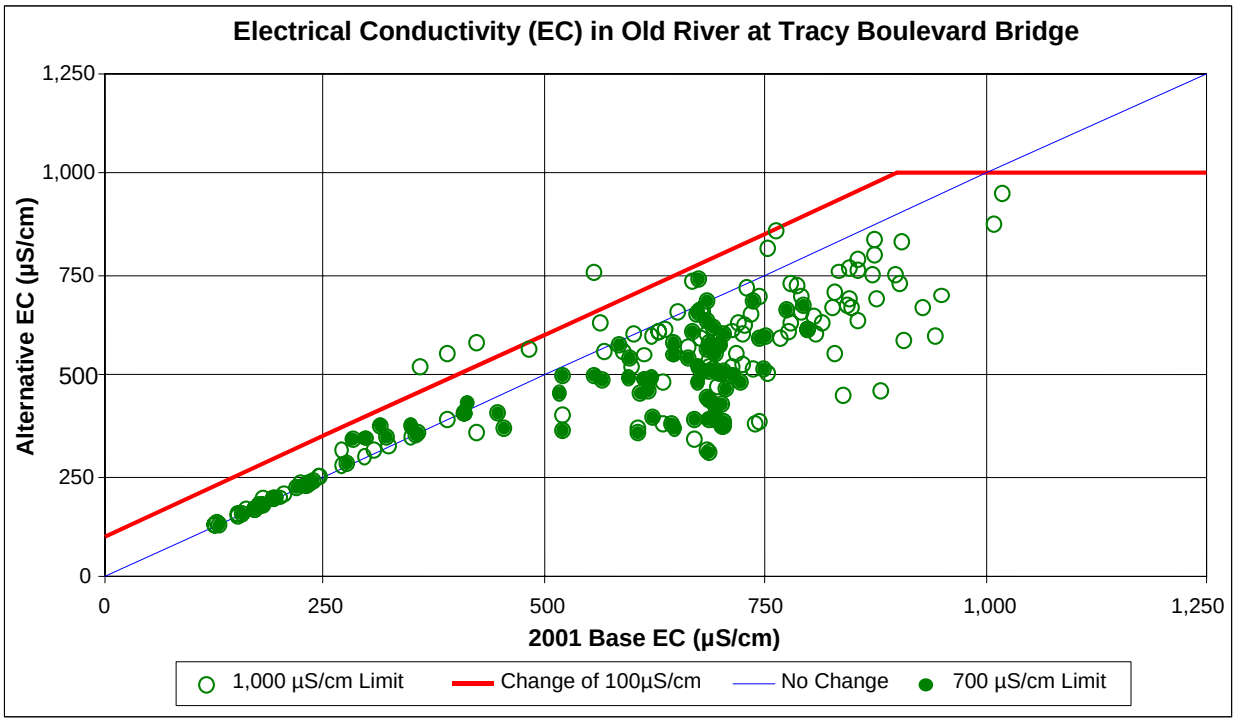


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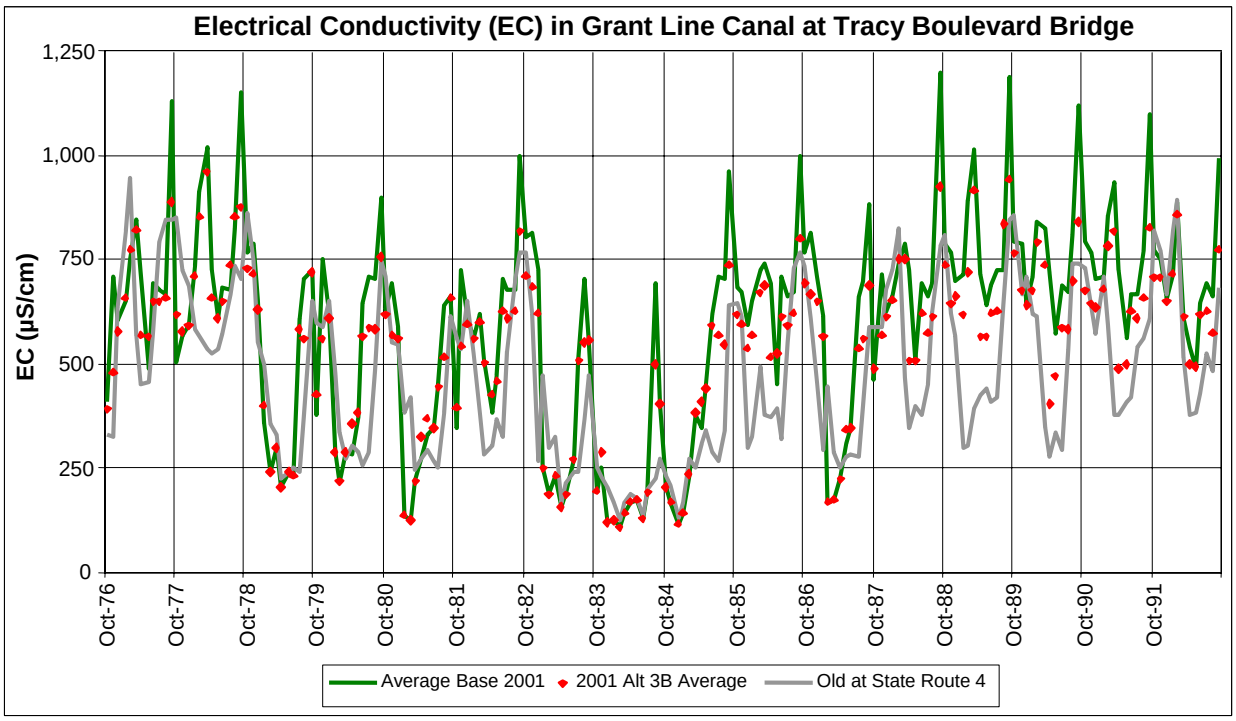
Figure 5.3-60

DSM2-Simulated Monthly Electrical Conductivity in Old River at Tracy Boulevard Bridge for 1976–1991 with Alternative 3B Stage 2 Compared with 2001 No Action Baseline



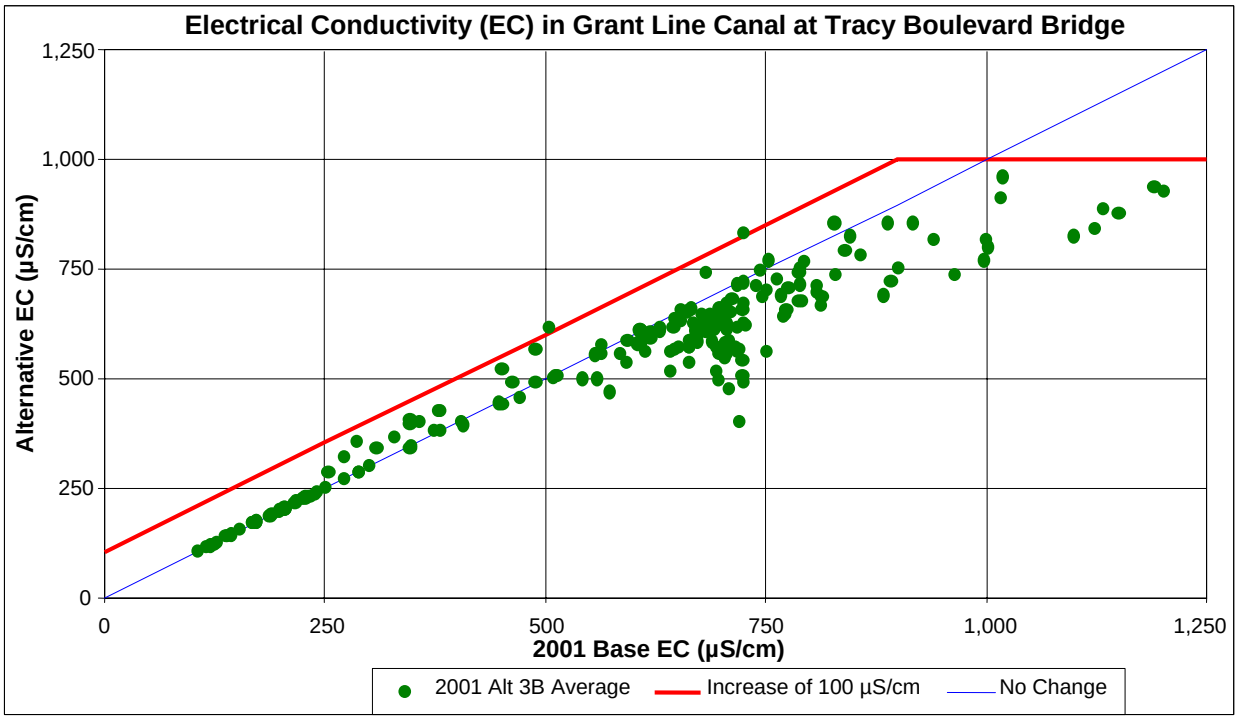


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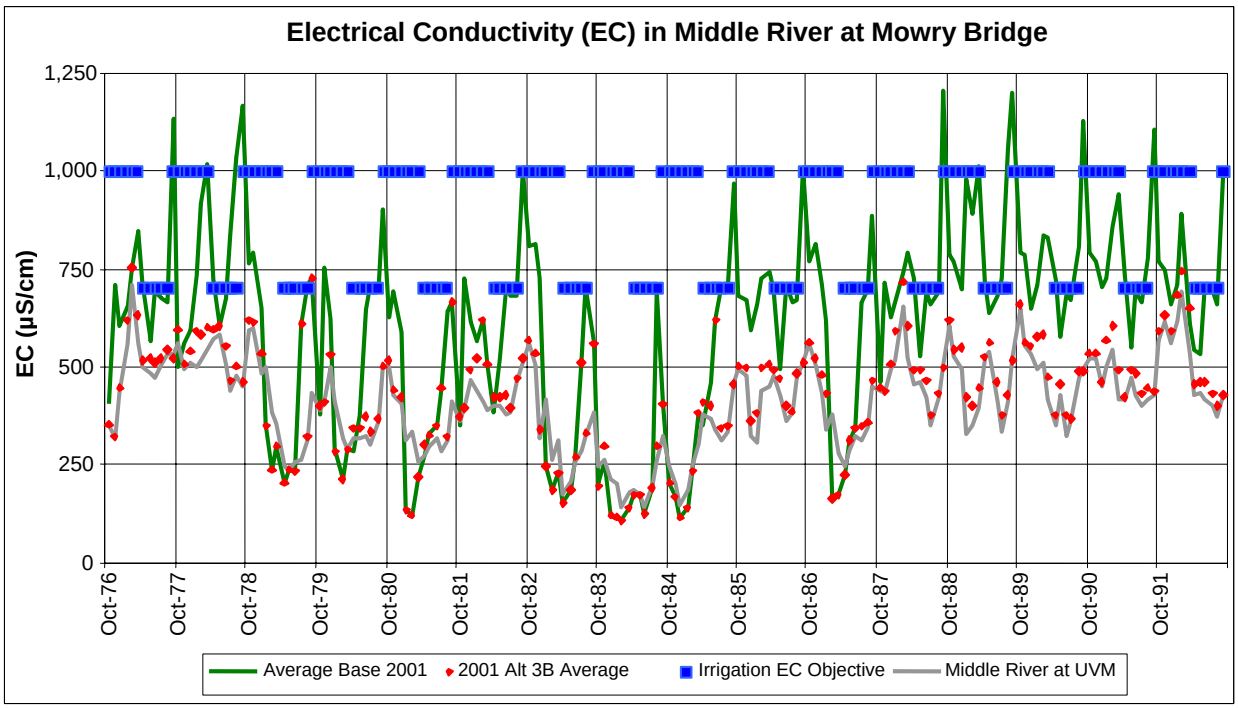
Figure 5.3-61

DSM2-Simulated Monthly Electrical Conductivity in Grant Line Canal at Tracy Boulevard Bridge for 1976–1991 with Alternative 3B Stage 2 Compared with 2001 No Action Baseline



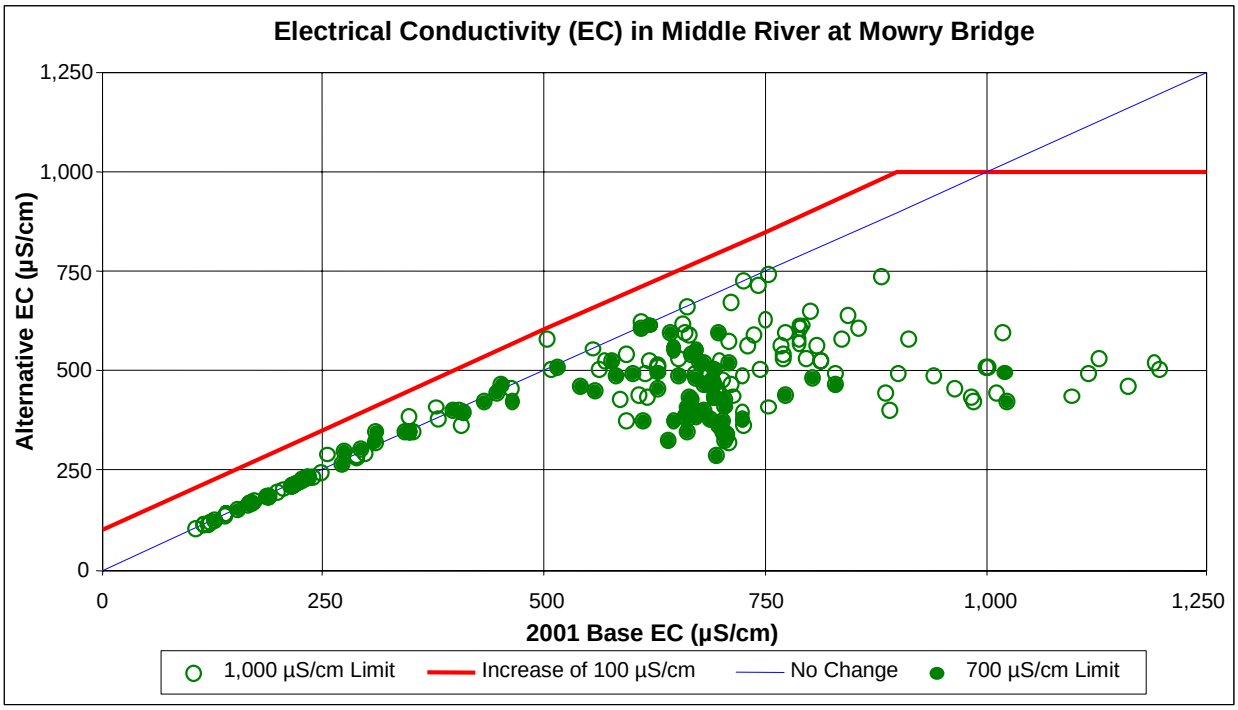


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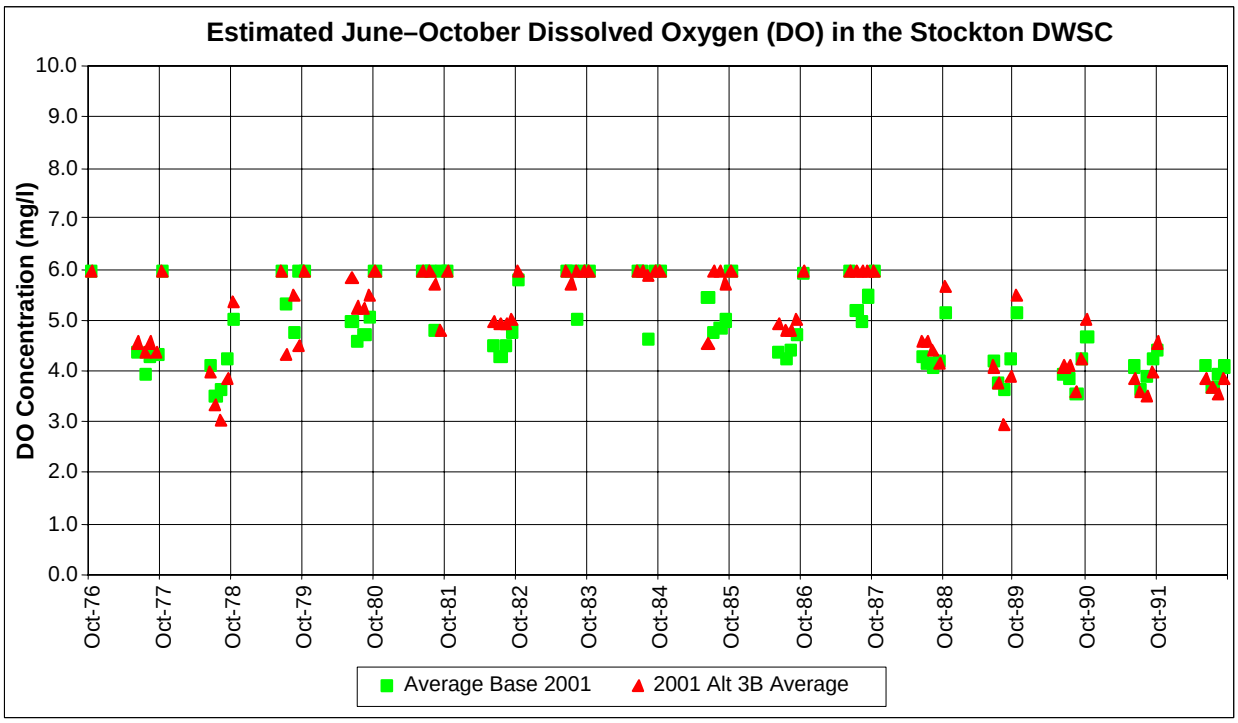
Figure 5.3-62

DSM2-Simulated Monthly Electrical Conductivity in Middle River at Mowry Bridge for 1976–1991 with Alternative 3B Stage 2 Compared with 2001 No Action Baseline



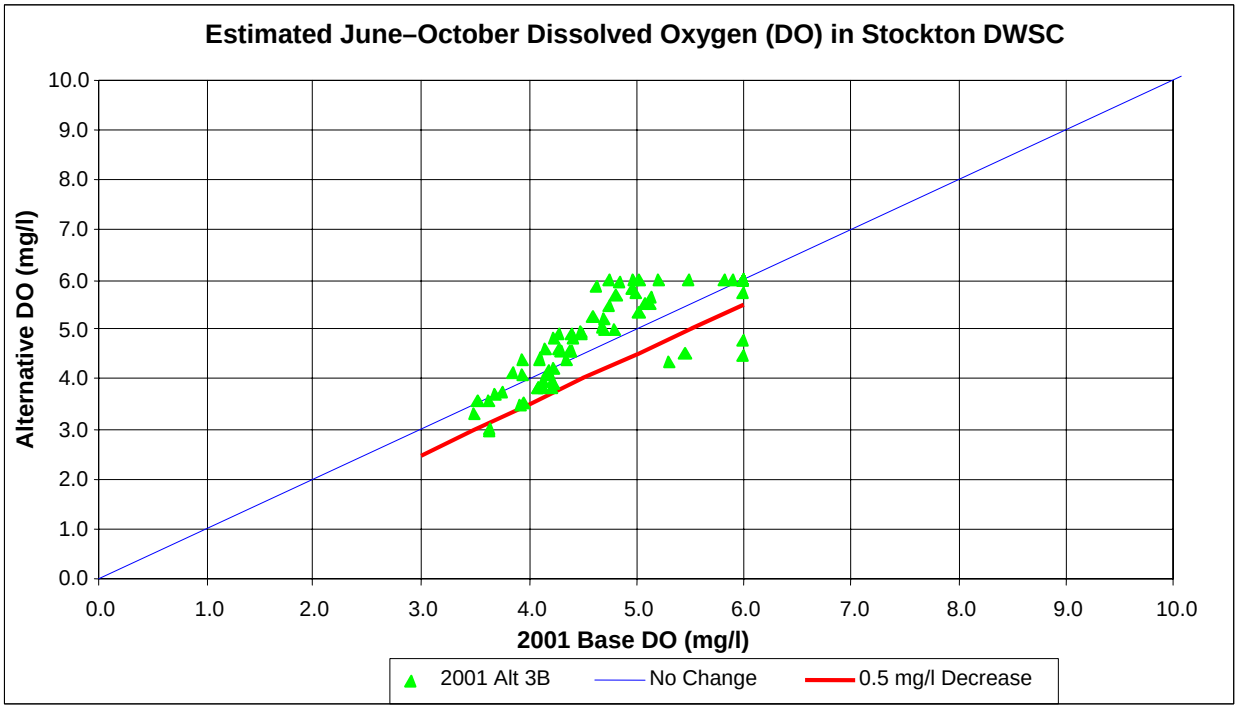


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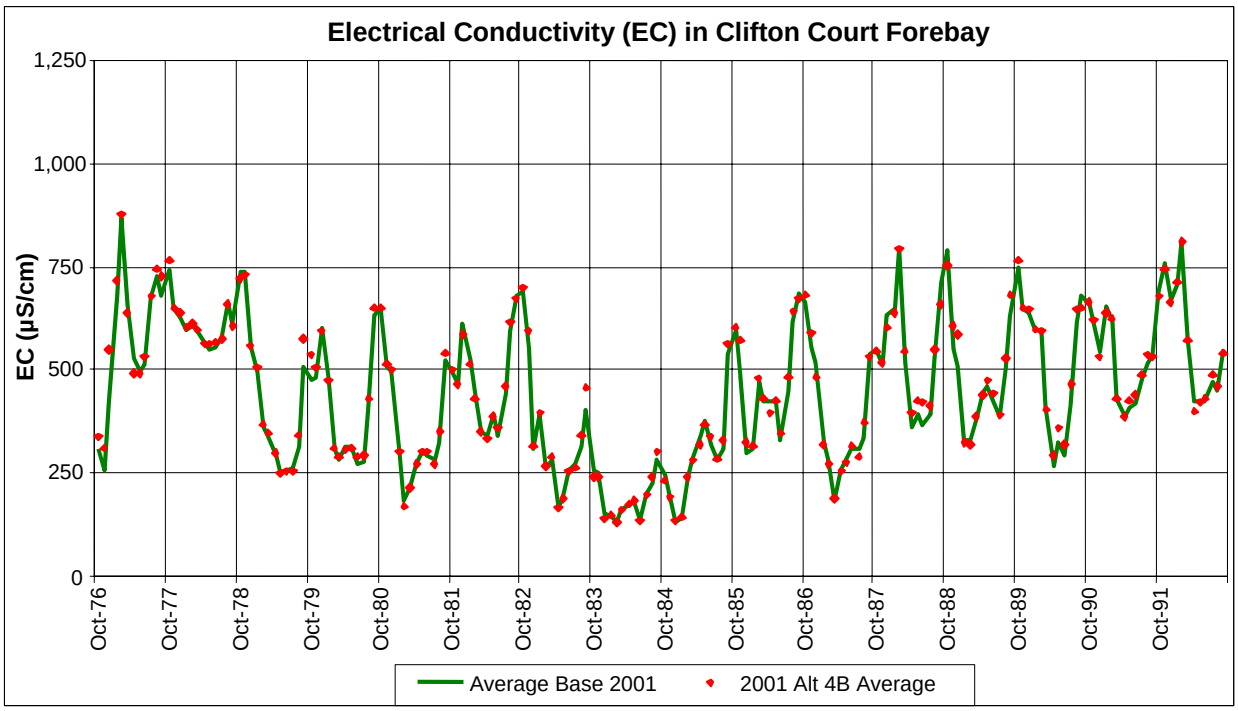
Figure 5.3-63

Estimated Stockton Deep Water Ship Channel (DWSC) Dissolved Oxygen Concentrations (June–October) for 1976–1991 with Alternative 3B Stage 2 Compared with 2001 No Action Baseline



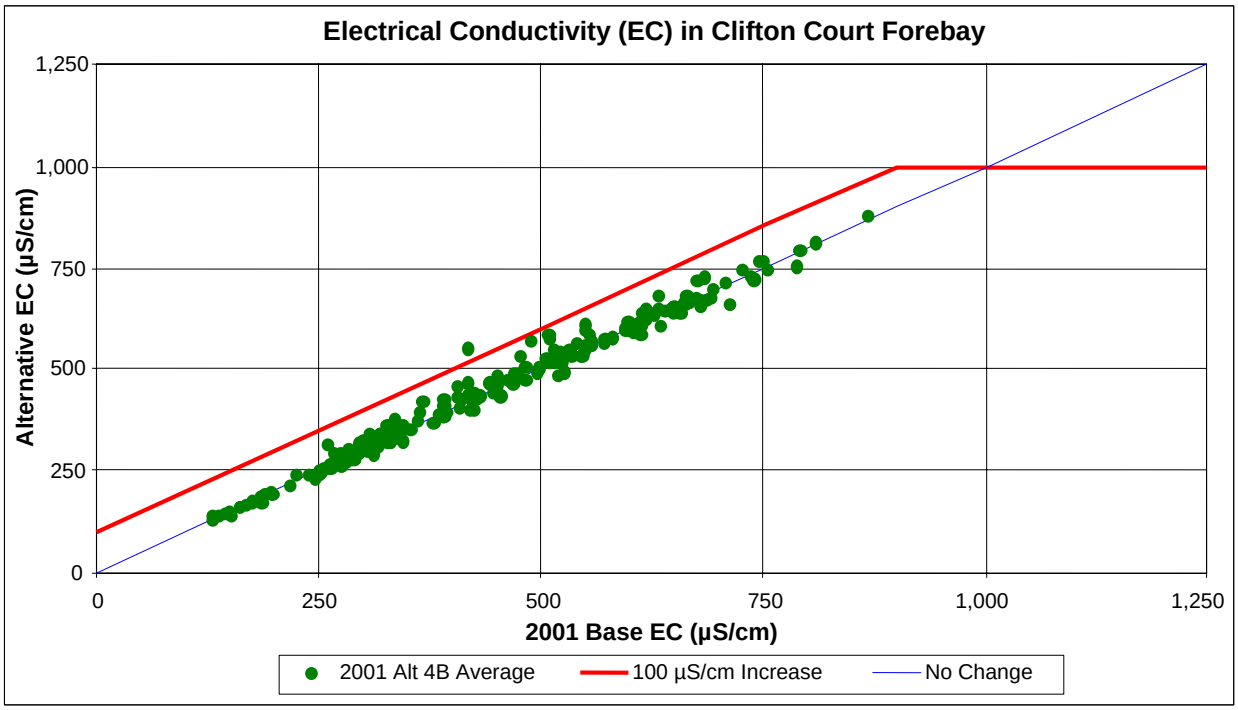


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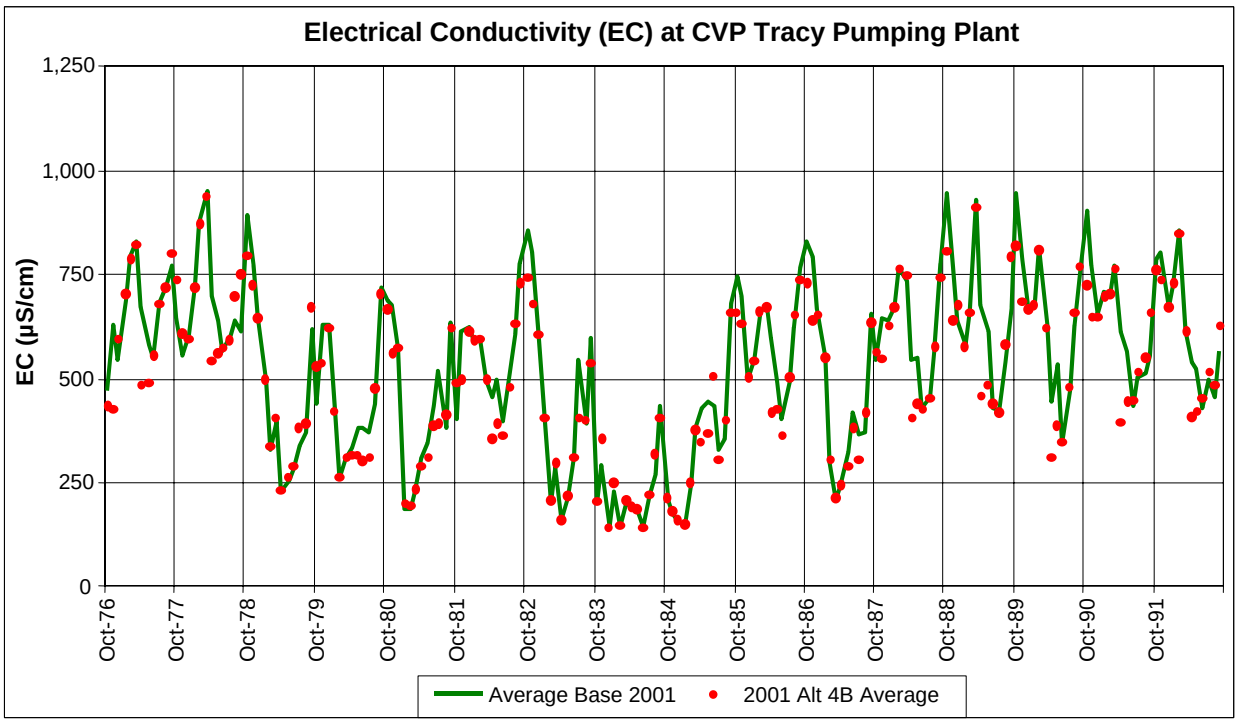
Figure 5.3-64

DSM2–Simulated Monthly Electrical Conductivity in Clifton Court Forebay (SWP Banks) for 1976–1991 with Alternative 4B Stage 2 Compared with 2001 No Action Baseline



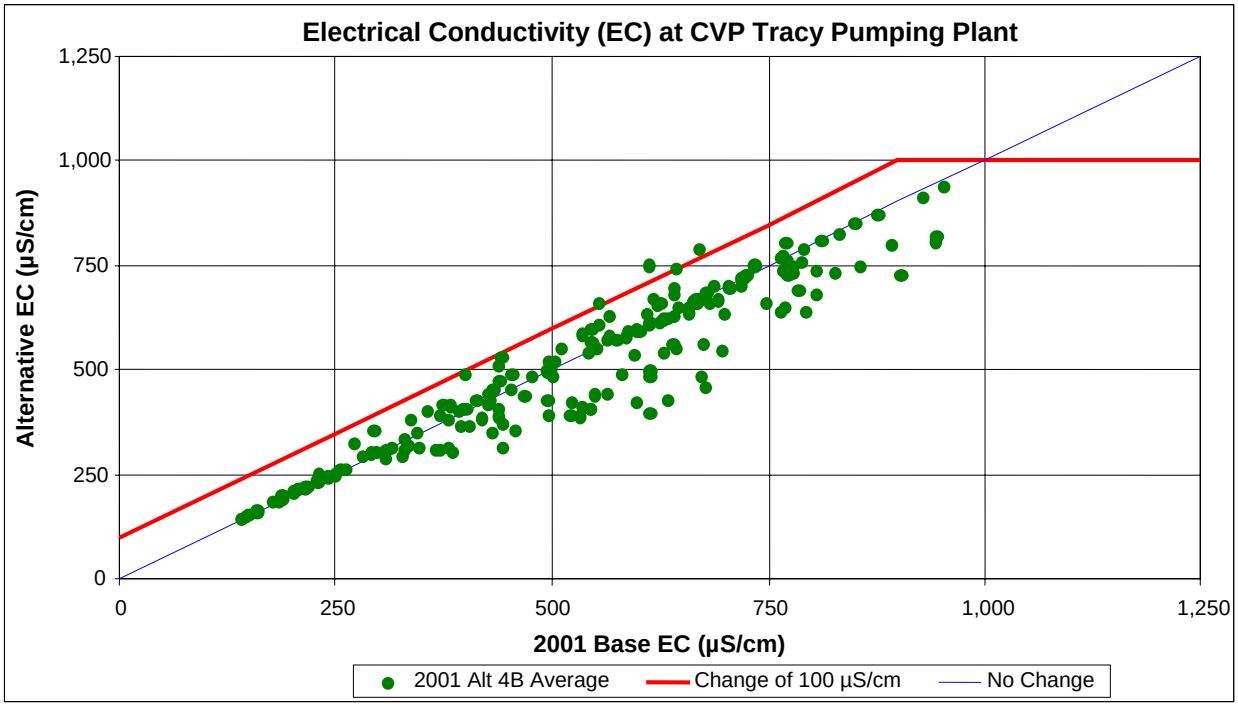


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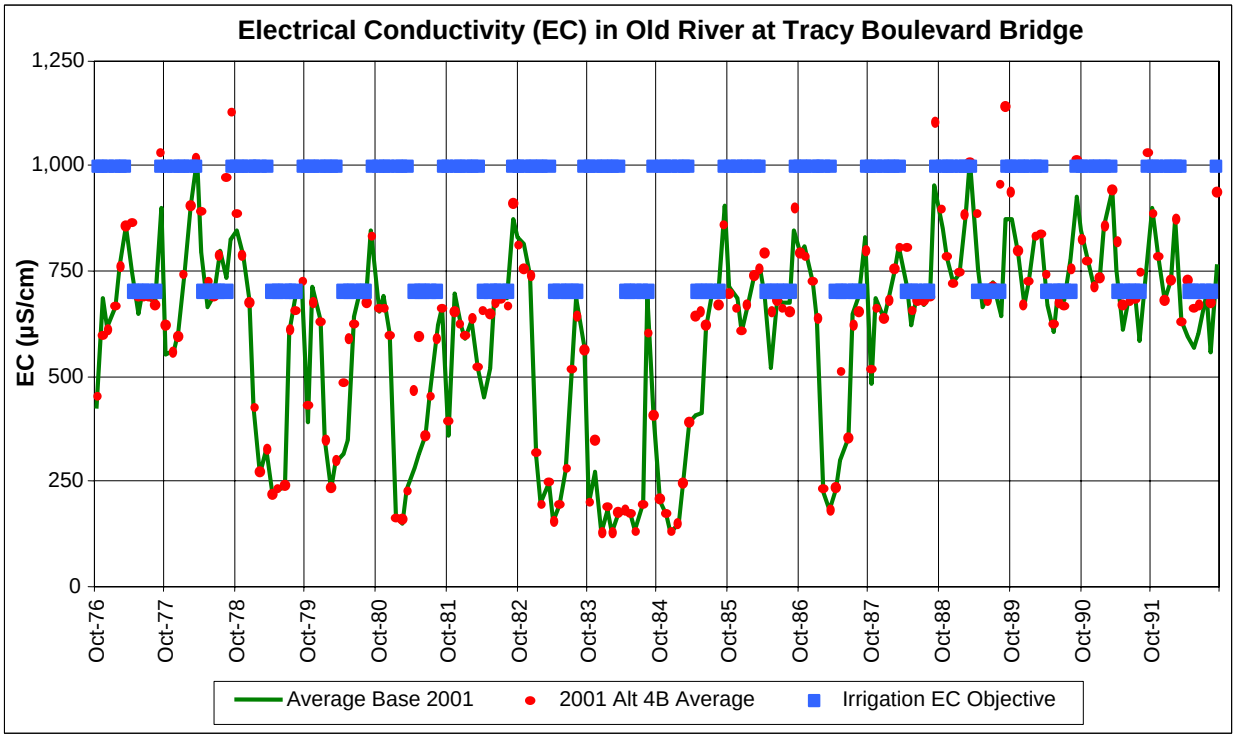
Figure 5.3-65

DSM2-Simulated Monthly Electrical Conductivity at CVP Tracy for 1976–1991 with Alternative 4B Stage 2 Compared with 2001 No Action Baseline



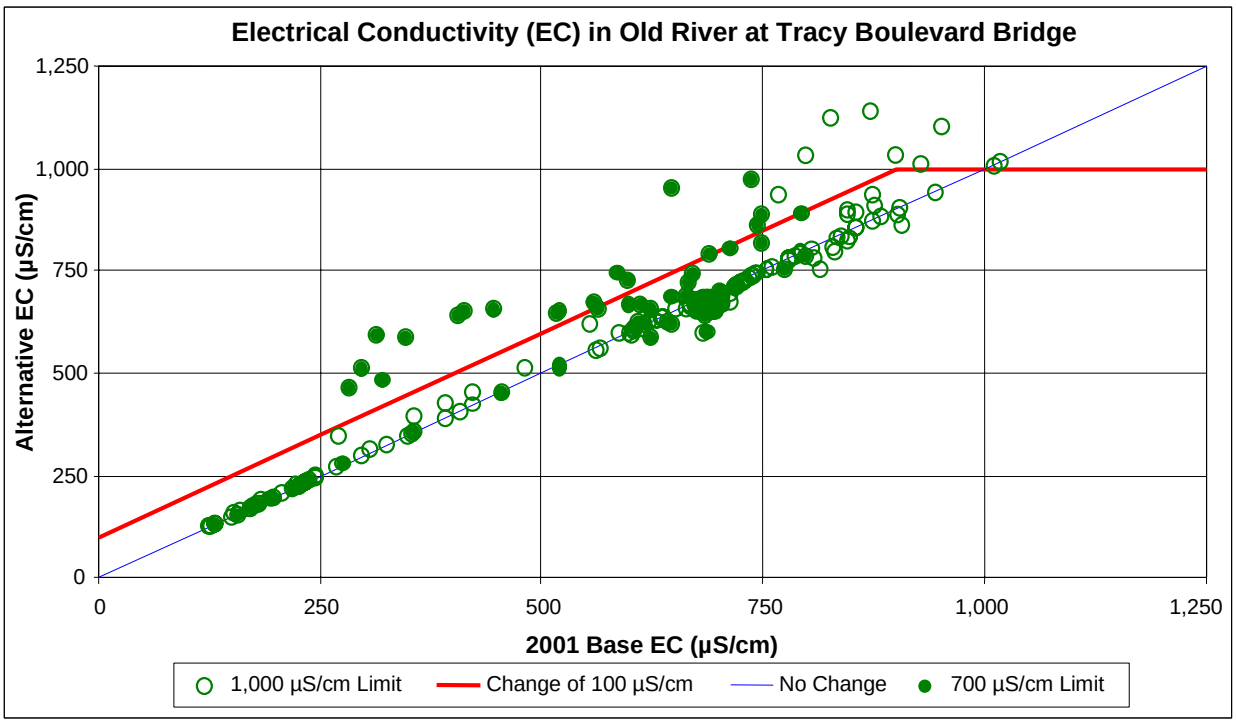


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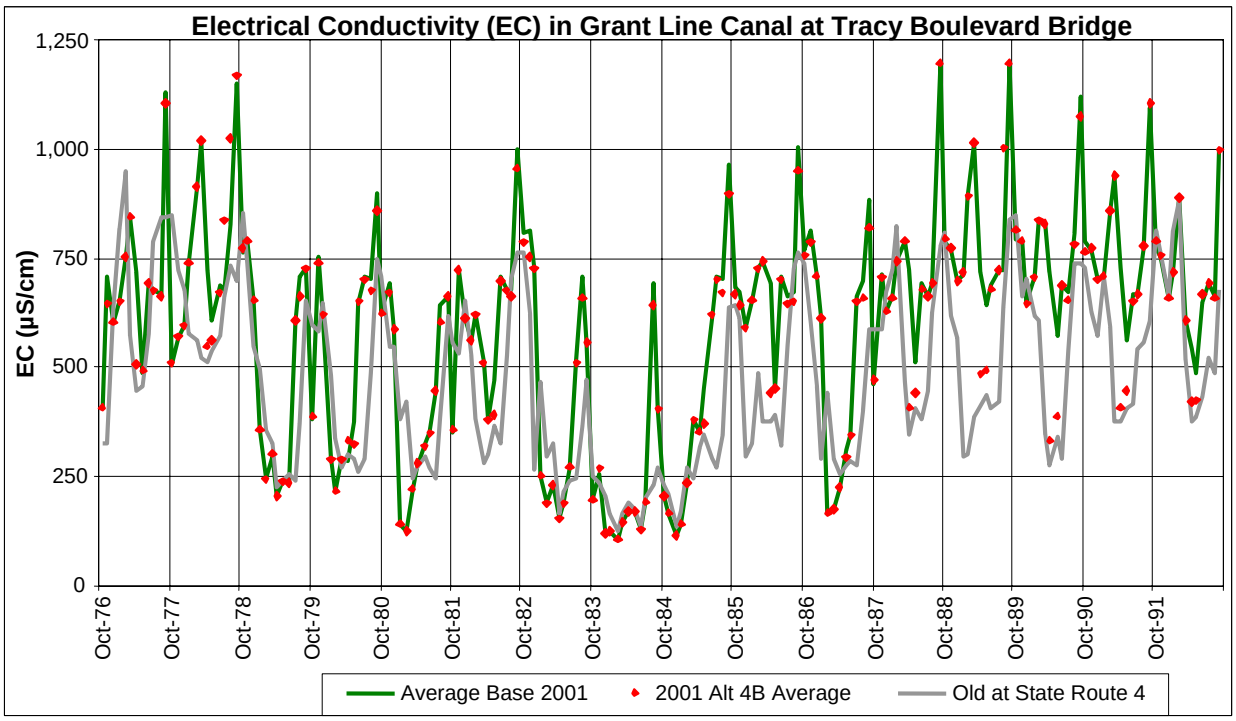
Figure 5.3-66

DSM2-Simulated Monthly Electrical Conductivity in Old River at Tracy Boulevard Bridge for 1976–1991 with Alternative 4B Stage 2 Compared with 2001 No Action Baseline



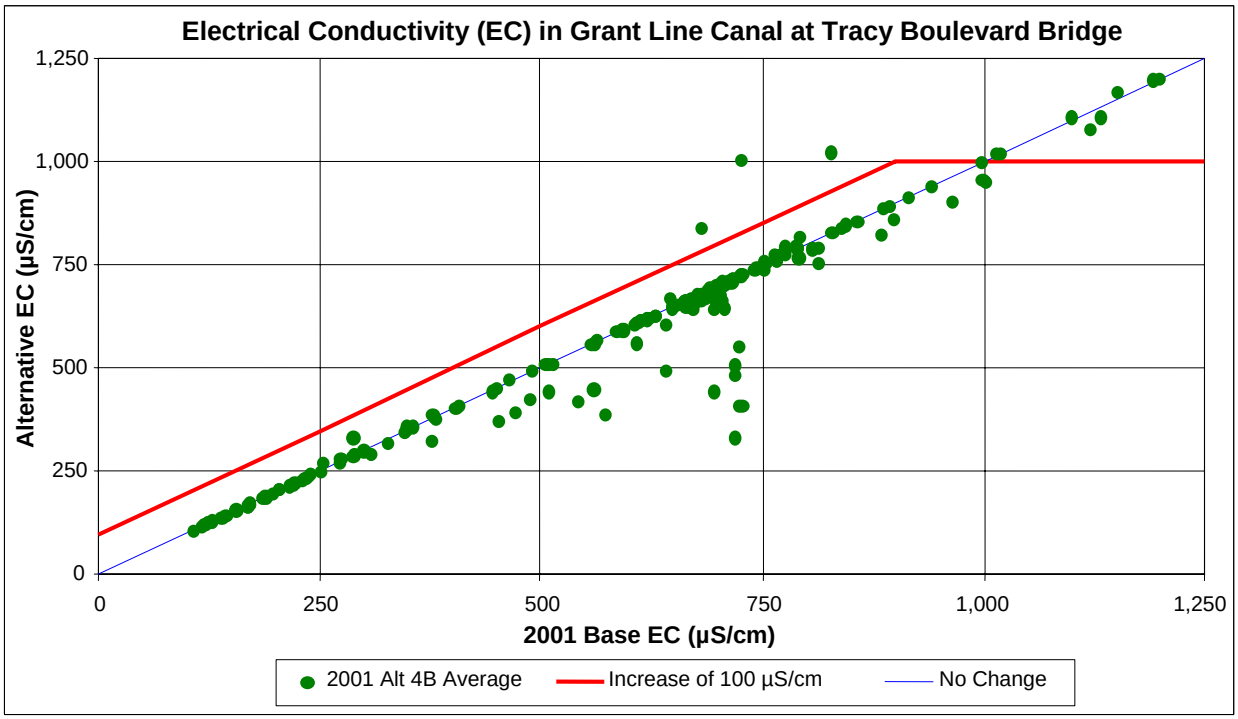


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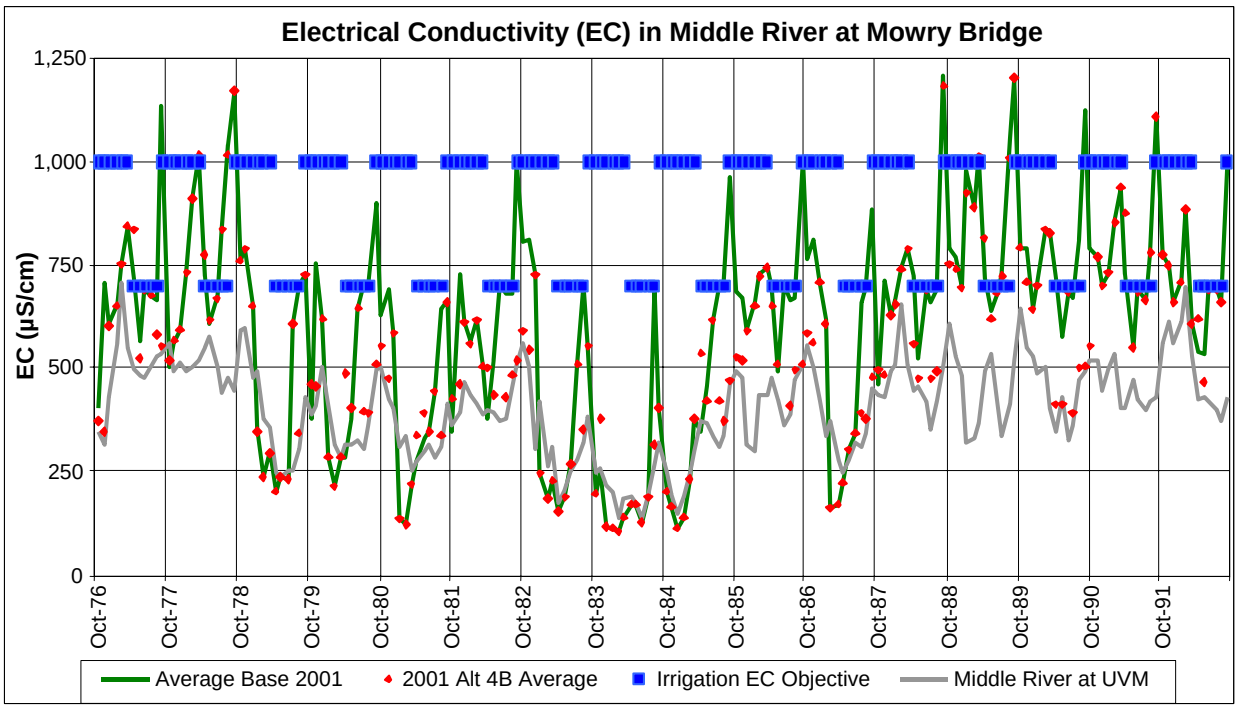
Figure 5.3-67

DSM2-Simulated Monthly Electrical Conductivity in Grant Line Canal at Tracy Boulevard Bridge for 1976–1991 with Alternative 4B Stage 2 Compared with 2001 No Action Baseline



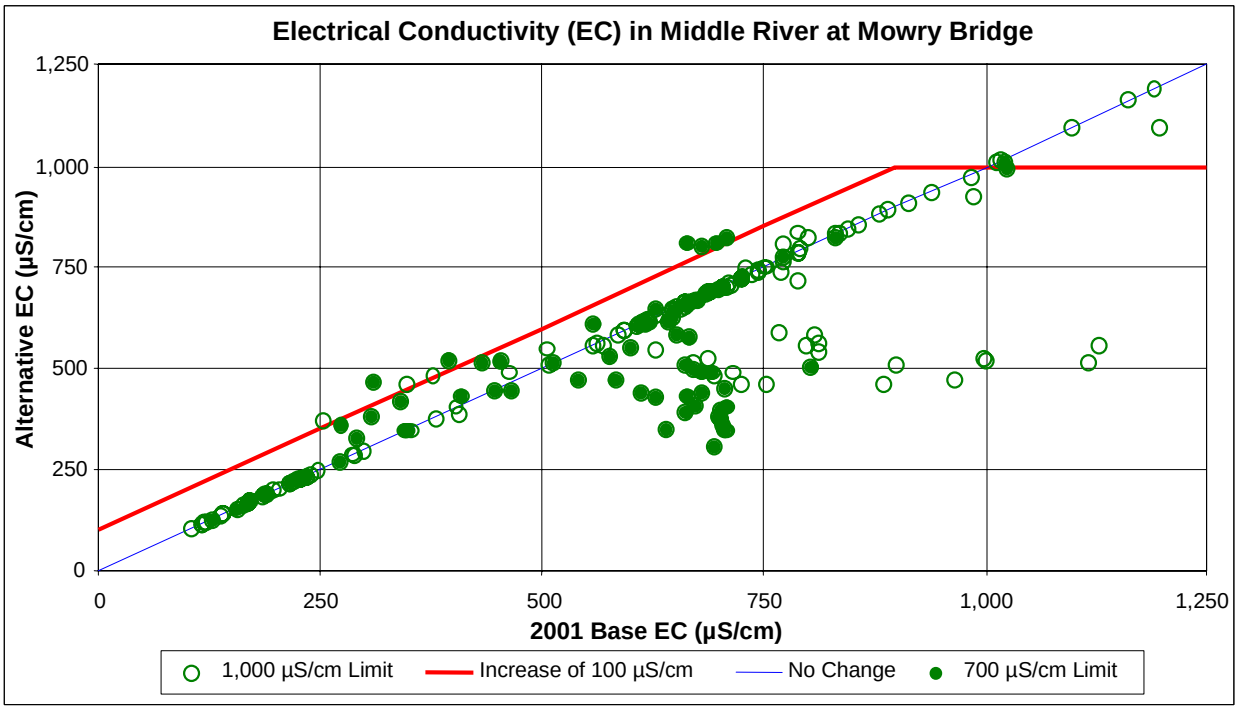


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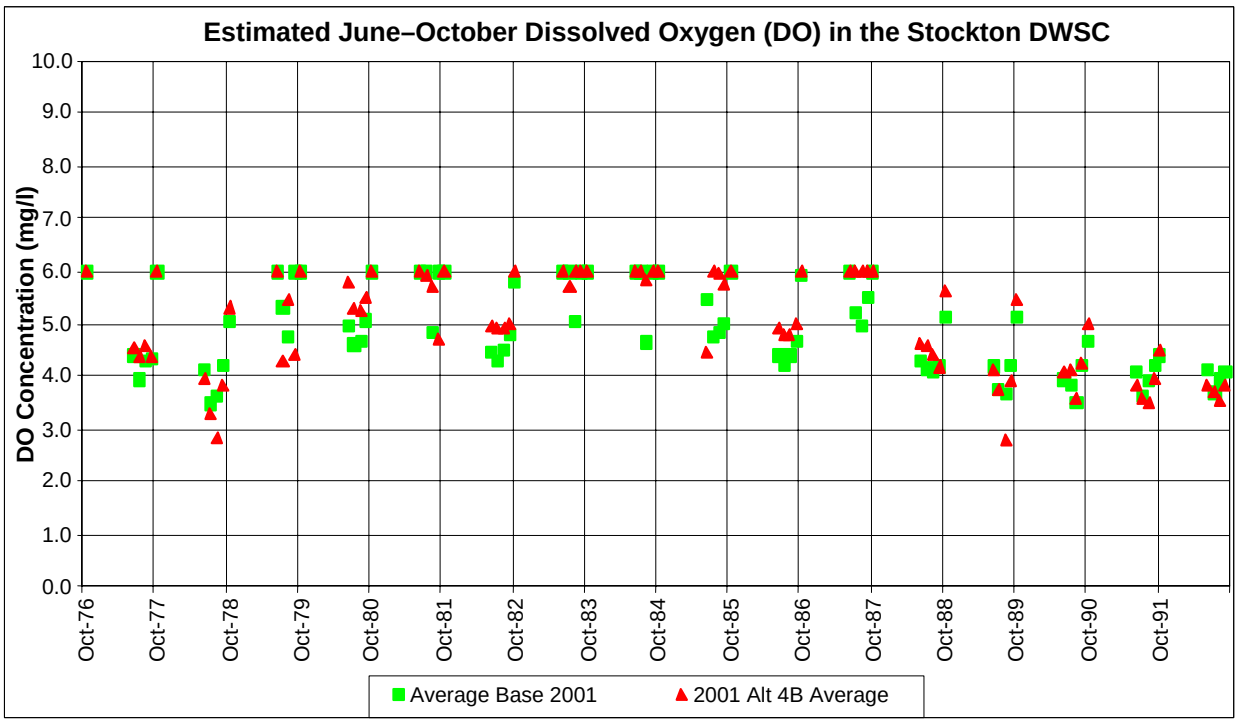
Figure 5.3-68

DSM2-Simulated Monthly Electrical Conductivity in Middle River at Mowry Bridge for 1976–1991 with Alternative 4B Stage 2 Compared with 2001 No Action Baseline



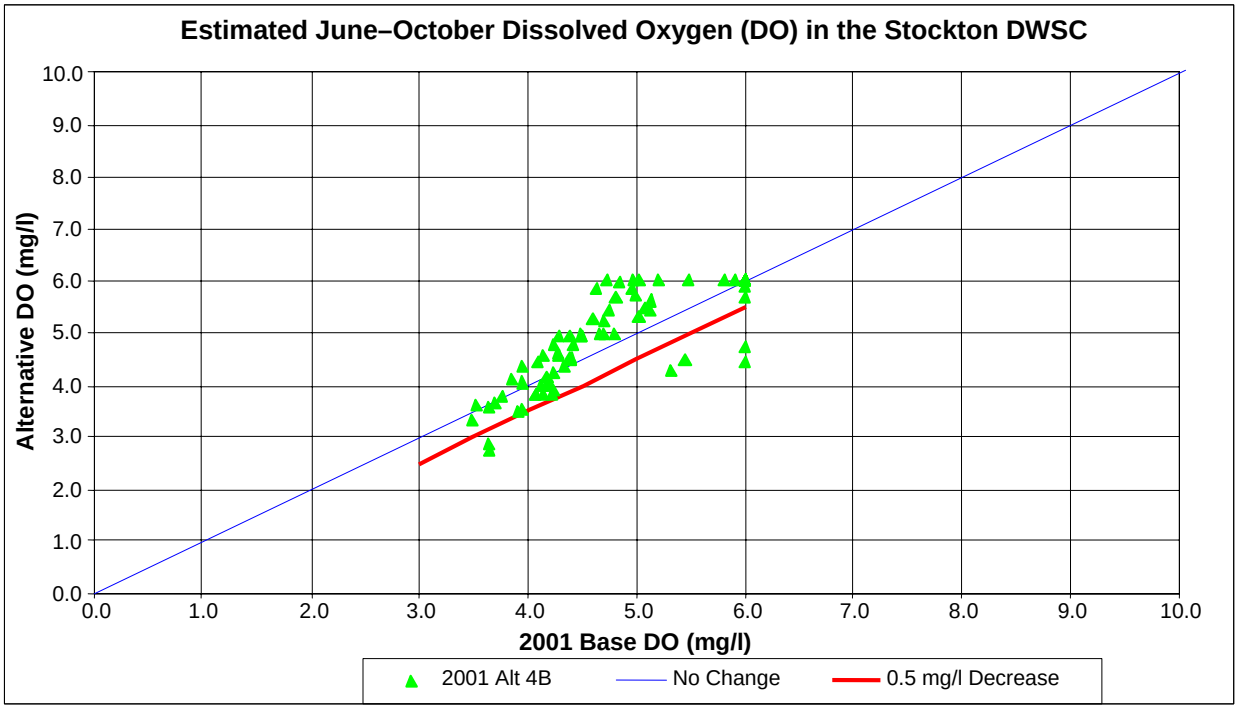


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Figure 5.3-69

Estimated Stockton Deep Water Ship Channel (DWSC) Dissolved Oxygen Concentrations (June–October) for 1976–1991 with Alternative 4B Stage 2 Compared with 2001 No Action Baseline

Photograph 5.3-1. Collinsville Salinity (EC) Monitoring Station
Looking south across the Sacramento River toward the confluence of the San Joaquin River, with Mt. Diablo in background. (Source: California Department of Water Resources.)

Photograph 5.3-2. Water Quality Monitoring Station on Old River at the Head of Middle River (on right)
This tidal stage and salinity (EC) measurement station is called Union Island by the Bureau of Reclamation (Source: California Department of Water Resources.)

Photograph 5.3-3. Mouth of Rock Slough at Old River across from Bacon Island
Holland Tract is located north of Rock Slough; Palm Tract is located south of the mouth of Rock Slough; Werner Dredger Cut jags to southwest and connects to Indian Slough; Veale Tract is located west of Palm Tract and south of Rock Slough.
(Source: University of California, Berkeley.)

Photograph 5.3-4. Mouth of Rock Slough Looking across Old River from above Bacon Island
(Source: California Department of Water Resources.)

Photograph 5.3-5. Western End of Rock Slough with Contra Costa Canal Heading to the Northwest
(Photograph 5.2-9 shows the next section of the canal with pumping plant #1 just south of Big Break at Oakley.) Sand Mound Slough connects to the north, with flap gates to prevent seawater intrusion into Rock Slough. (Source: University of California, Berkeley.)

Photograph 5.3-6. Head of Sand Mound Slough
This shows the dam with flap gates that prevent water from Sand Mound Slough from entering Rock Slough. (Source: California Department of Water Resources.)

Photograph 5.3-7. Contra Costa Water District Pumping Plant #1 Near Oakley
Capacity of 350 cubic feet per second, completed in 1940 with deliveries to Pittsburg.
(Source: Bureau of Reclamation.)

Photograph 5.3-8. Contra Costa Water District Bollman Water Treatment Plant Sedimentation Basins and Mallard Reservoir
Contra Costa Canal supplies the raw water to Mallard Reservoir, where it is stored until treatment.
(Source: Contra Costa Water District.)

Photograph 5.3-9. Agricultural Diversion Siphon That Supplies Irrigation Water from the Delta Channels
(Source: California Department of Water Resources.)

Photograph 5.3-10. Drainage Pumps on Twitchell Island That Returns Stormwater Runoff and Agricultural Drainage Flows to the Delta Channels
(Source: California Department of Water Resources.)

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Photograph 5.3-11. Los Vaqueros Intake Located on the Western Bank of Old River Just Upstream (South) of the State Route 4 Bridge
(Source: California Department of Water Resources.)

Photograph 5.3-12. Los Vaqueros Reservoir, Located Southwest of the Los Vaqueros Intake Provides water quality and emergency water supply for the Contra Costa Water District.
(Source: Contra Costa Water District.)

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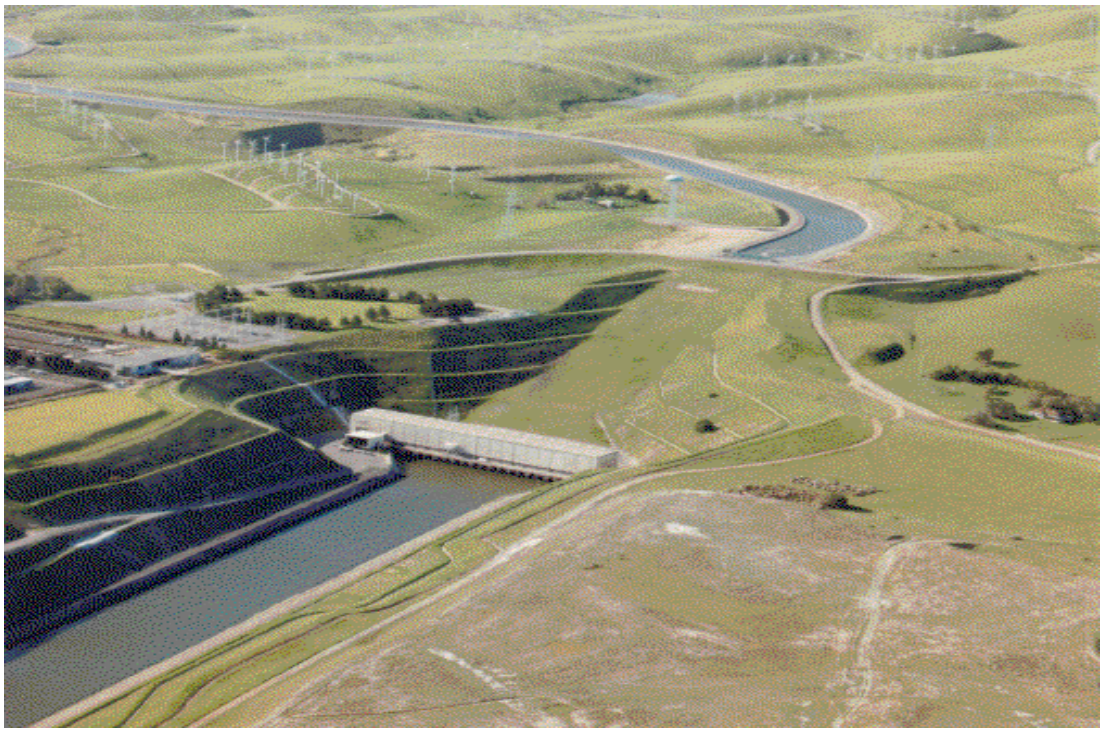

Photograph 5.3-13. SWP Harvey O. Banks Pumping Plant
Supplies water from the Clifton Court Forebay to the SWP South Bay Aqueduct and California Aqueduct.
(Source: California Department of Water Resources.)

Photograph 5.3-14. Intake to the Central Valley Project Delta-Mendota Canal Located just Upstream (South) of Grant Line Canal
(Source: California Department of Water Resources.)

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