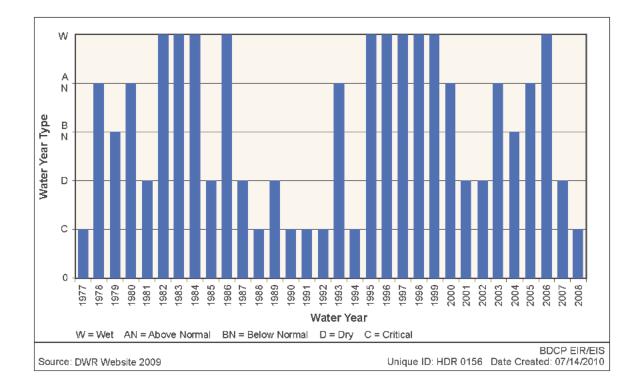
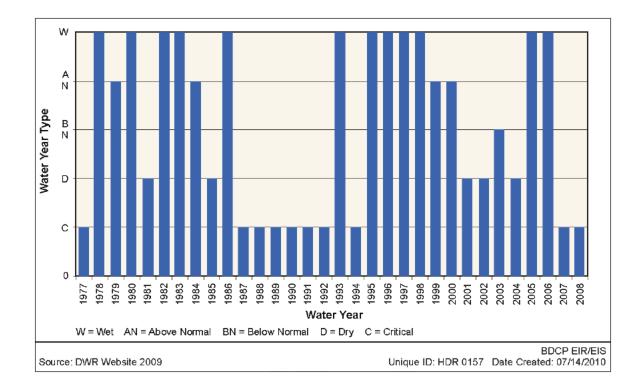


Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; Streets, Watersheds, DHCCP 2007; Landuse, CDF FRAP 2002.
Figure 8-1
Land Cover Types in the Sacramento River and San Joaquin Hydrologic Regions



BDCP Graphics/... BDCP EIR-EIS/(HDR Aug 2010) Rev 02/19/2012 TG

Figure 8-2 Sacramento Valley Water Year Hydrologic Classifications for 1977–2008



BDCP Graphics/... BDCP EIR-EIS/(HDR Aug 2010) Rev 02/19/2012 TG

Figure 8-3 San Joaquin Valley Hydrologic Classifications for 1977–2008

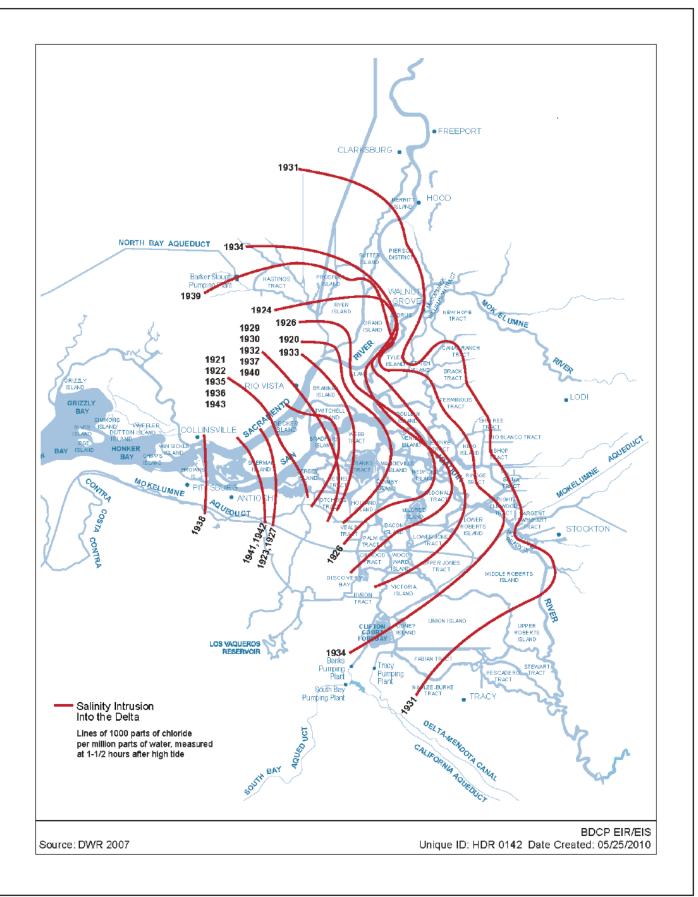
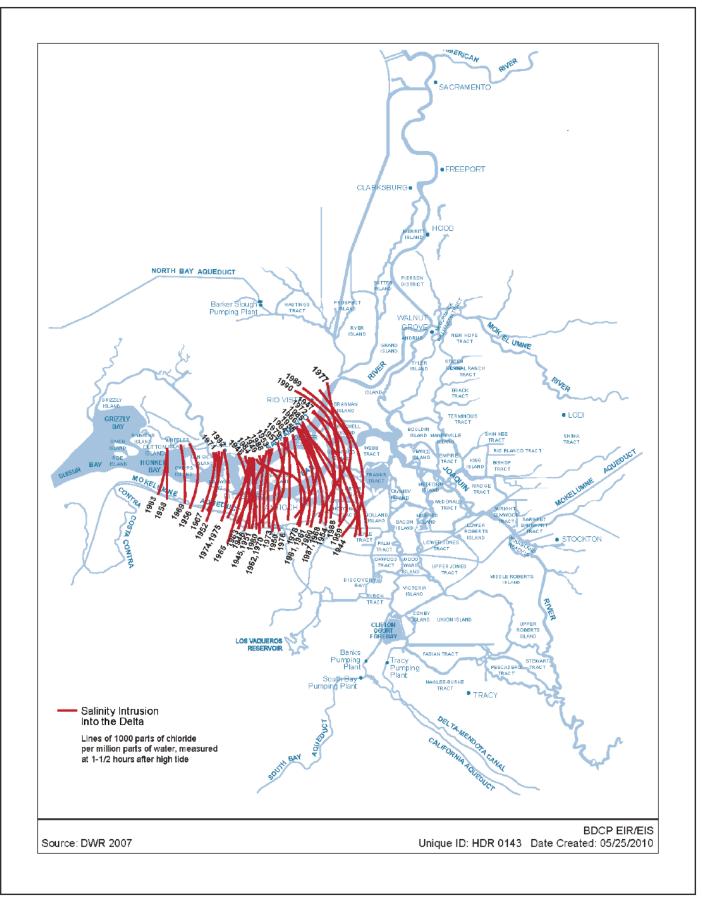
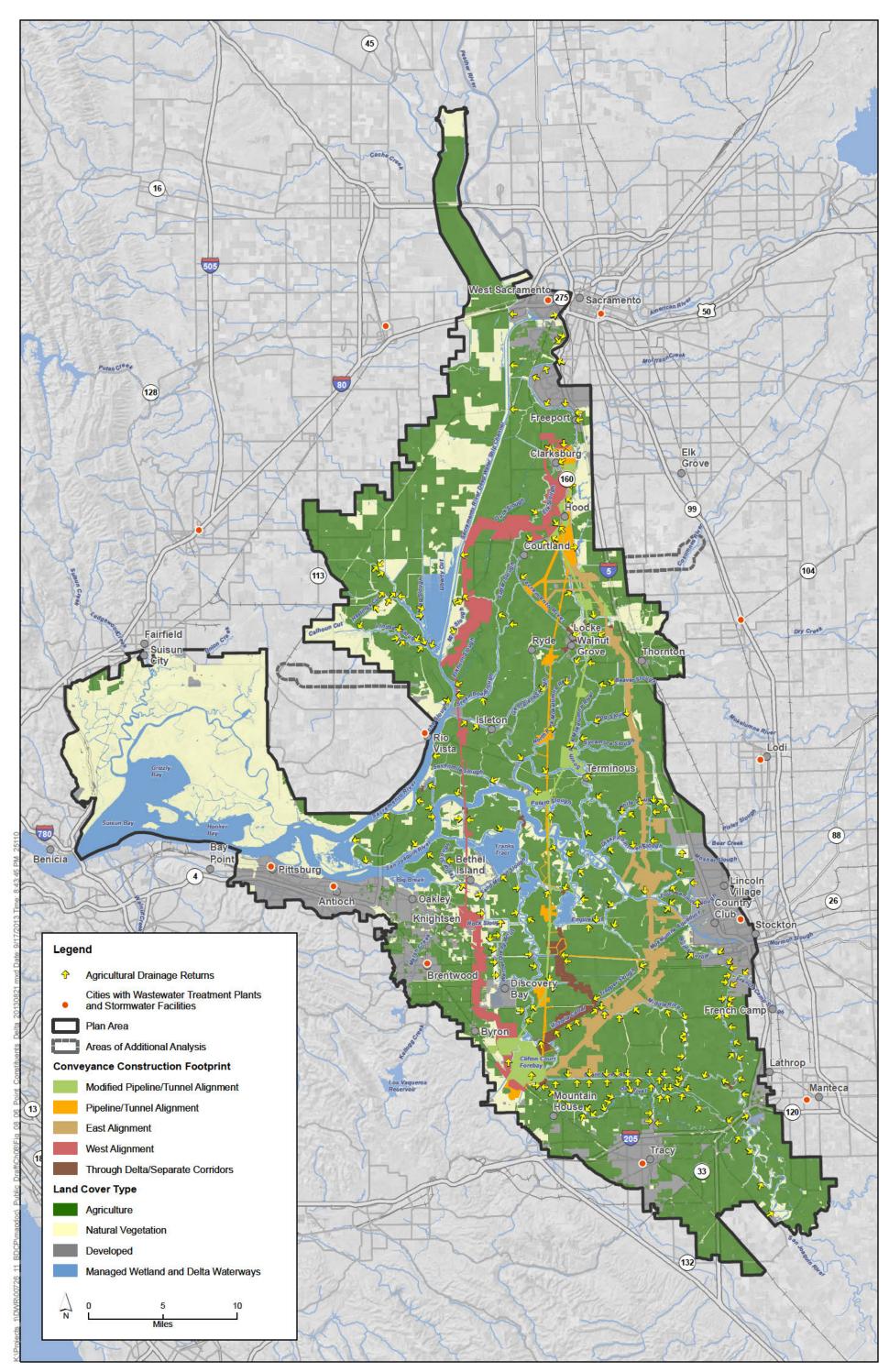


Figure 8-4 Maximum Salinity Intrusion in the Delta, 1921–1943





Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; Constructability (Rev 10), DHCCP DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Streets, ESRI 2010; Aerial Photograph, NA P 2010; Hydrology, HDR 2010, Watersheds - DHCCP 2007; Landuse - DWR 2006; Drainage Returns - URS 2007

Figure 8-6 Land Cover Types with Major Point and Nonpoint Constituent Sources in the Plan Area



Sources: Plan Area, ICF 2012; Water Quality, EMP 1999; Dam Pumps, DWR 1994; SWPCVP Canals and Aqueducts, DWR-HDR 2009.

Figure 8-7 Surface Water Quality Monitoring Locations in the Project Area

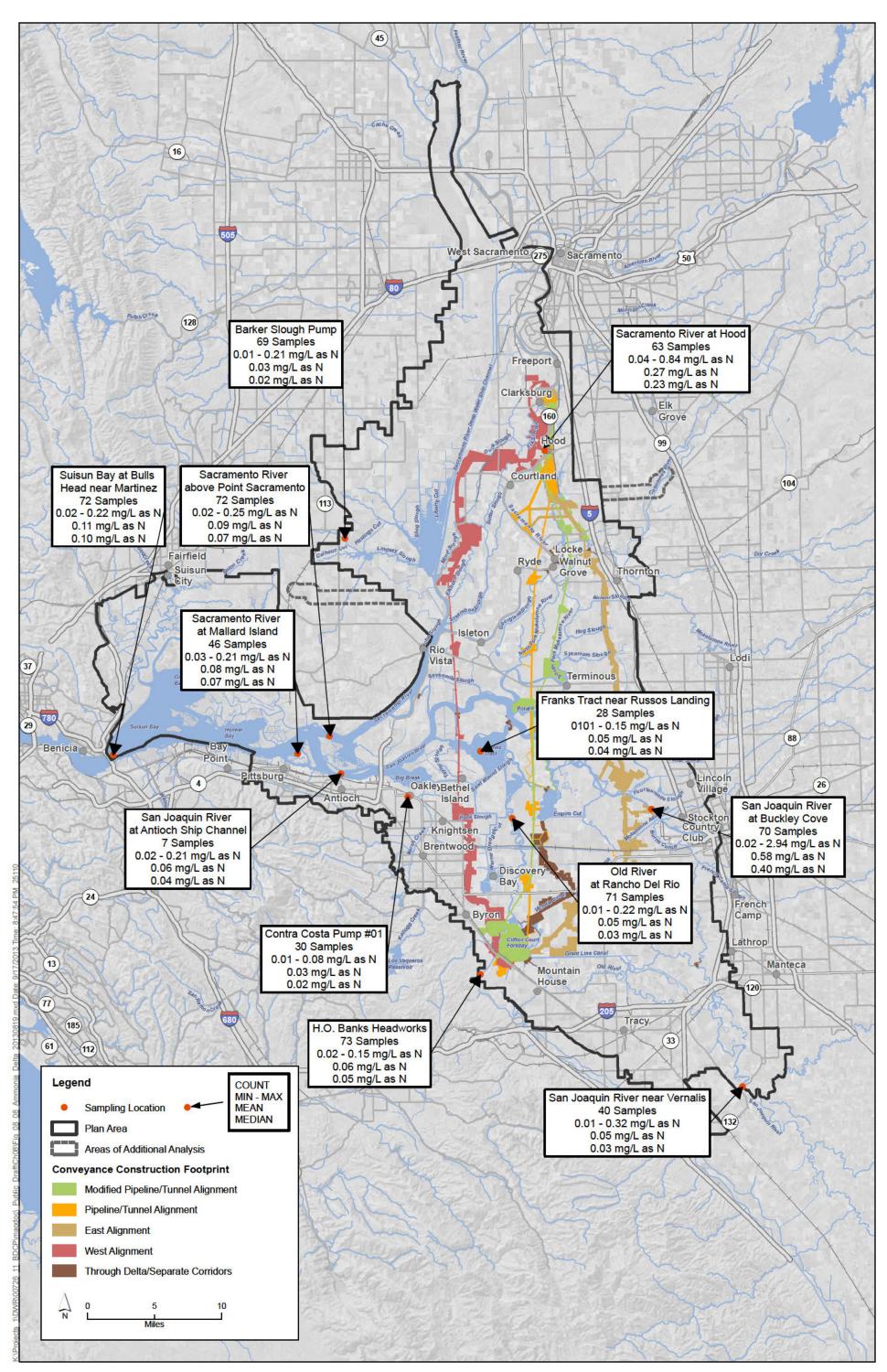
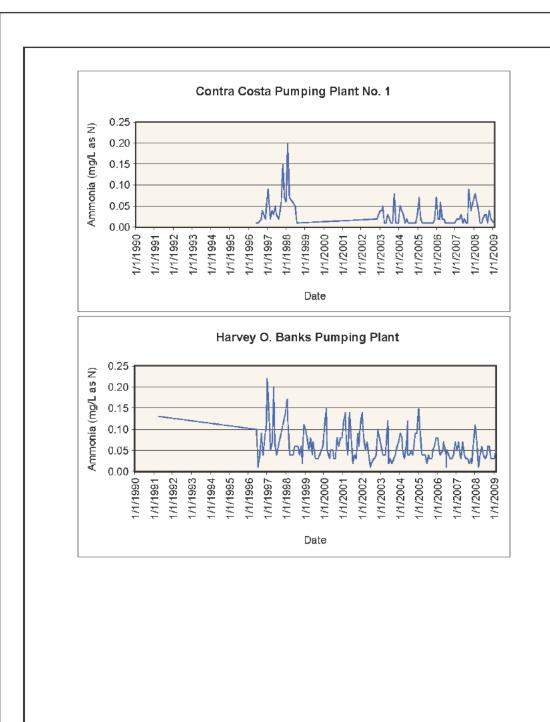


Figure 8-8 Figure 8-8 Spatial Summary of Ammonia Data at Delta Stations (2001 - 2006)



Figure 8-9a Temporal Summary of Ammonia Data at Delta Stations



Notes: mg/L = milligram per liter; N = nitrogen

Source: HDR 2009

Figure 8-9b Temporal Summary of Ammonia Data at Delta Stations

BDCP EIR/EIS Unique ID: HDR 0166b Date Created: 07/14/2010

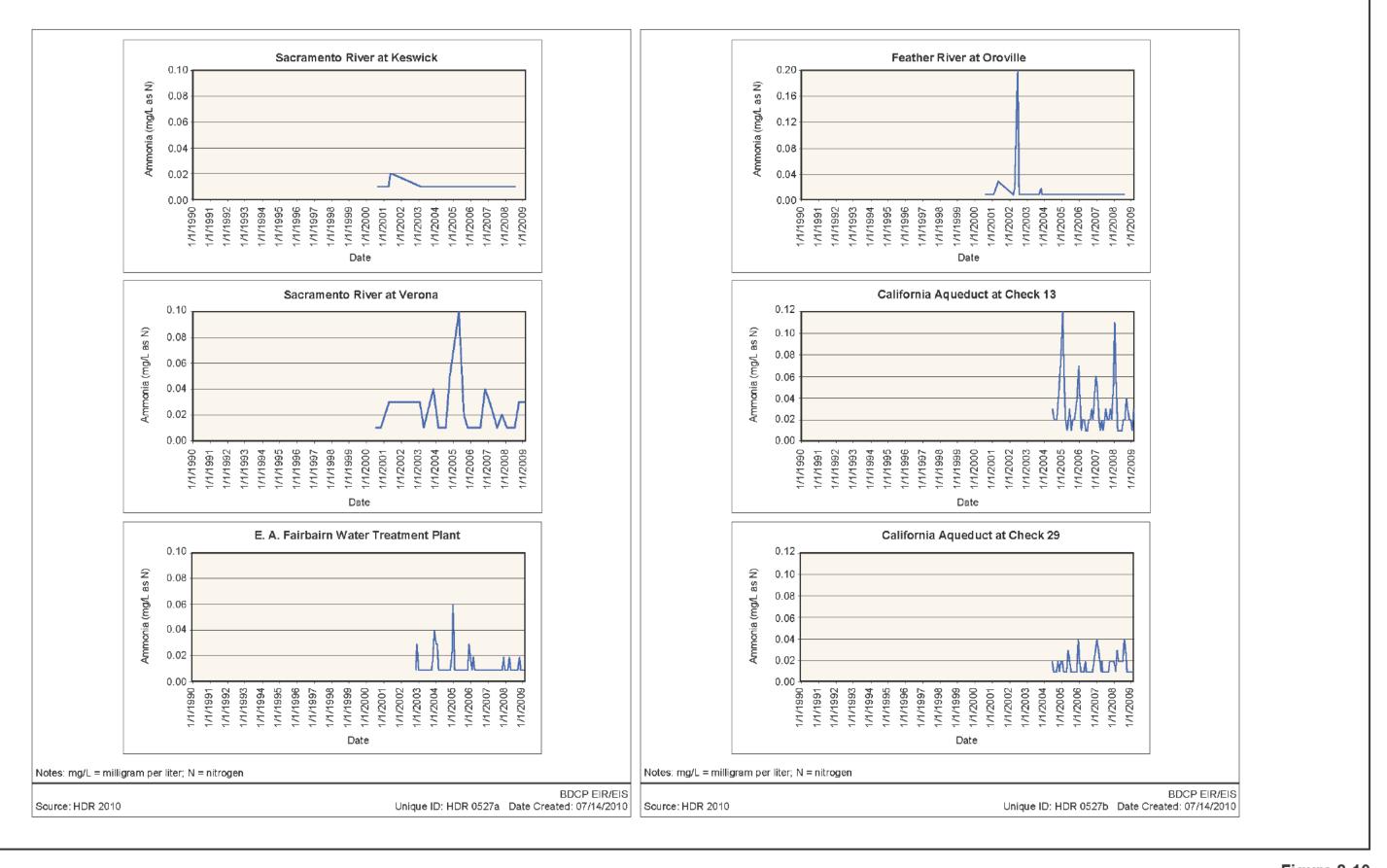


Figure 8-10 Temporal Summary of Ammonia Data at North of Delta and South of Delta Stations

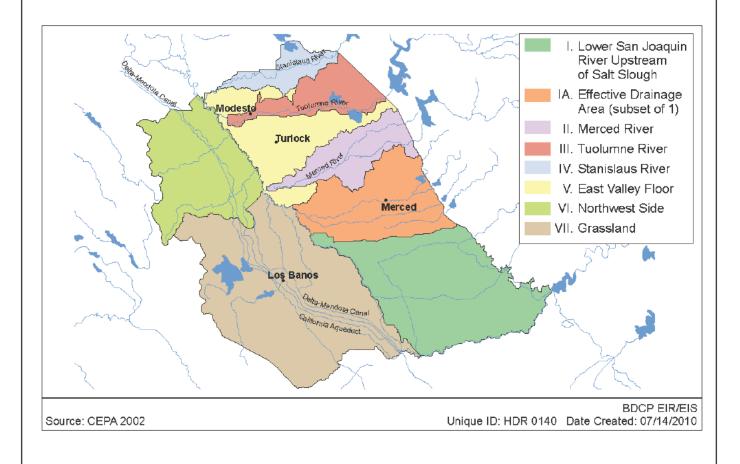
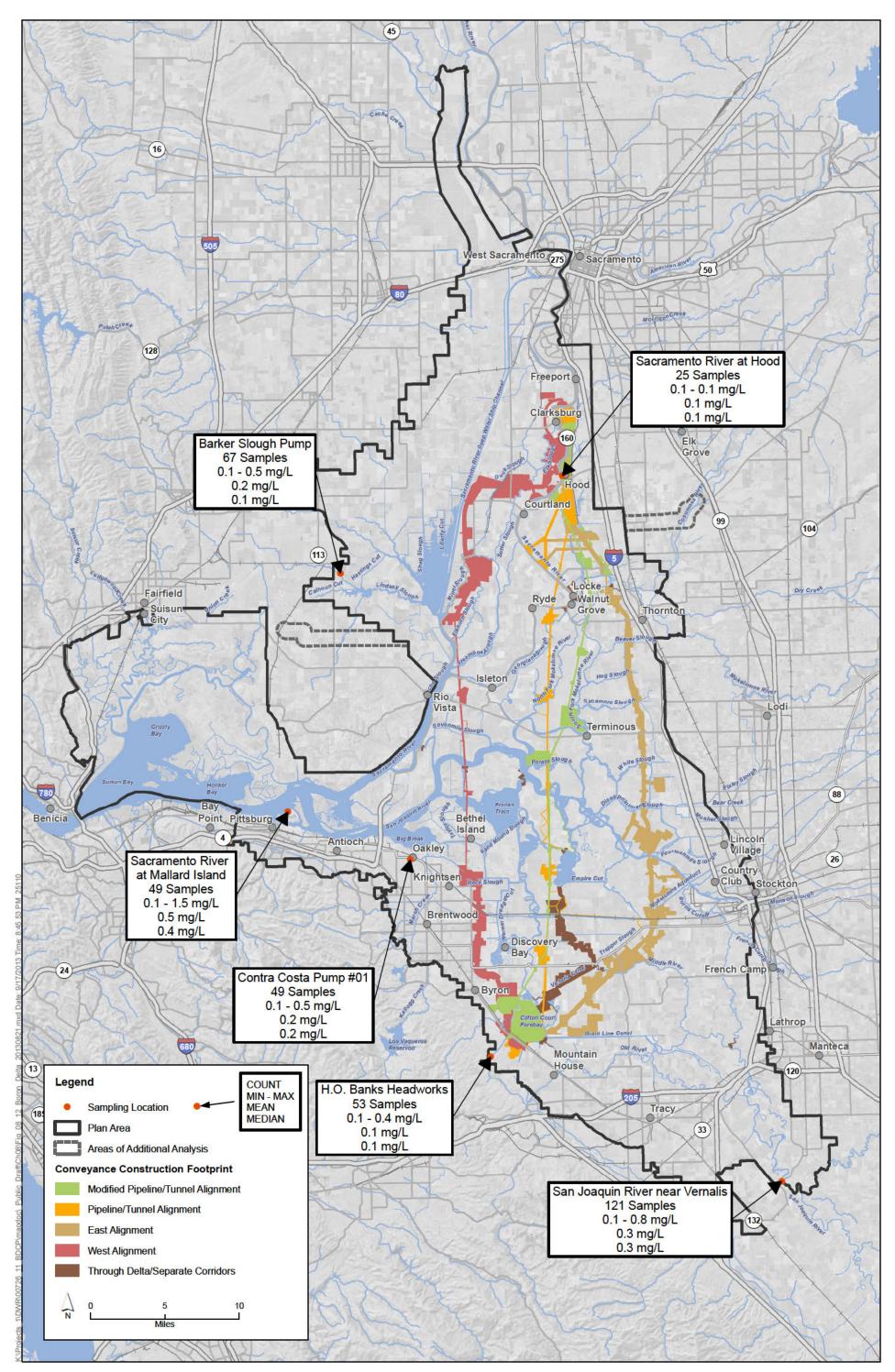


Figure 8-11 Lower San Joaquin River Subareas



DHCCP DWR 2012; Figure 8-12 Spatial Summary of Boron Data at Delta Stations (2001 - 2006)



Figure 8-13 Temporal Summary of Boron Data at Delta Stations

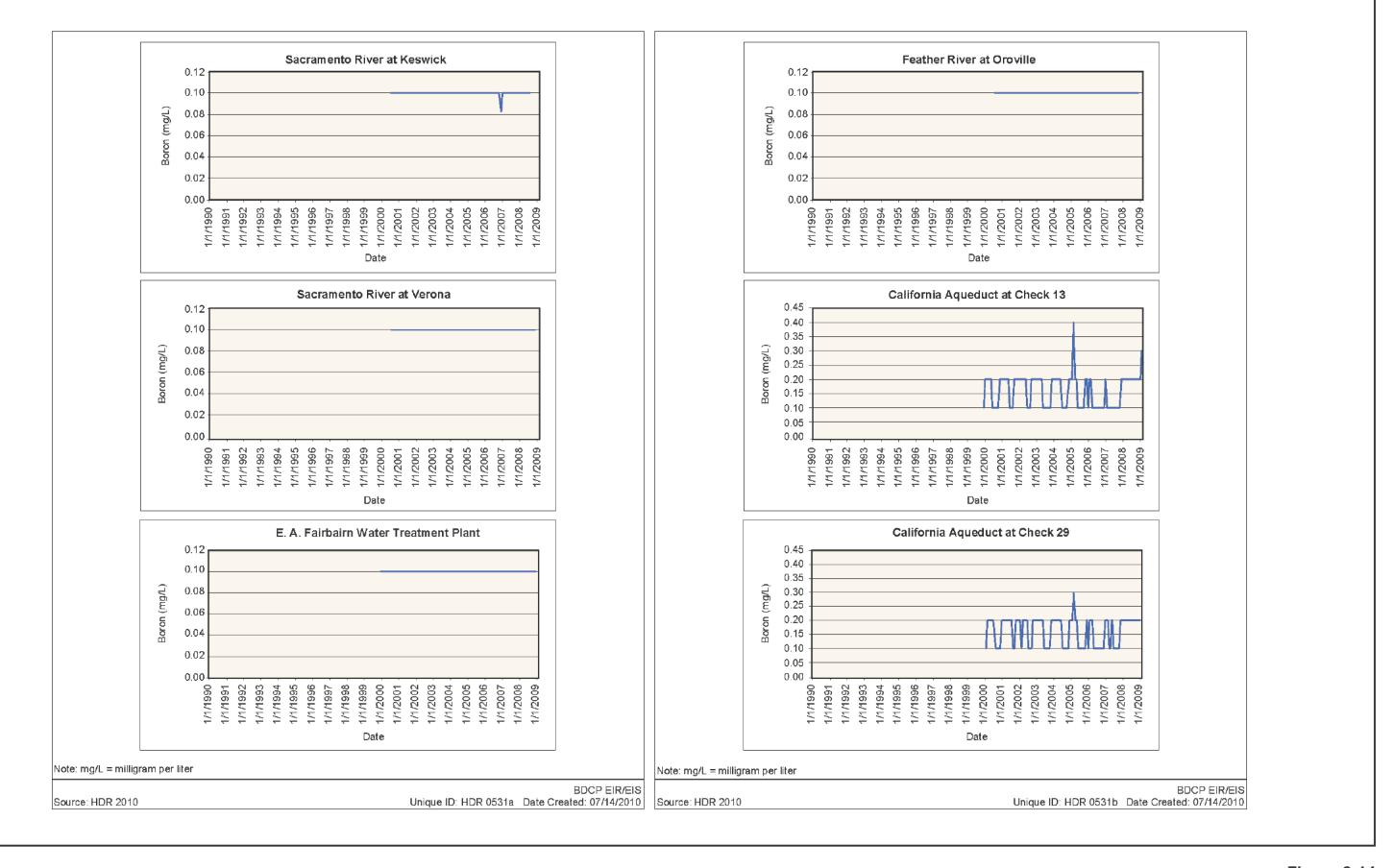
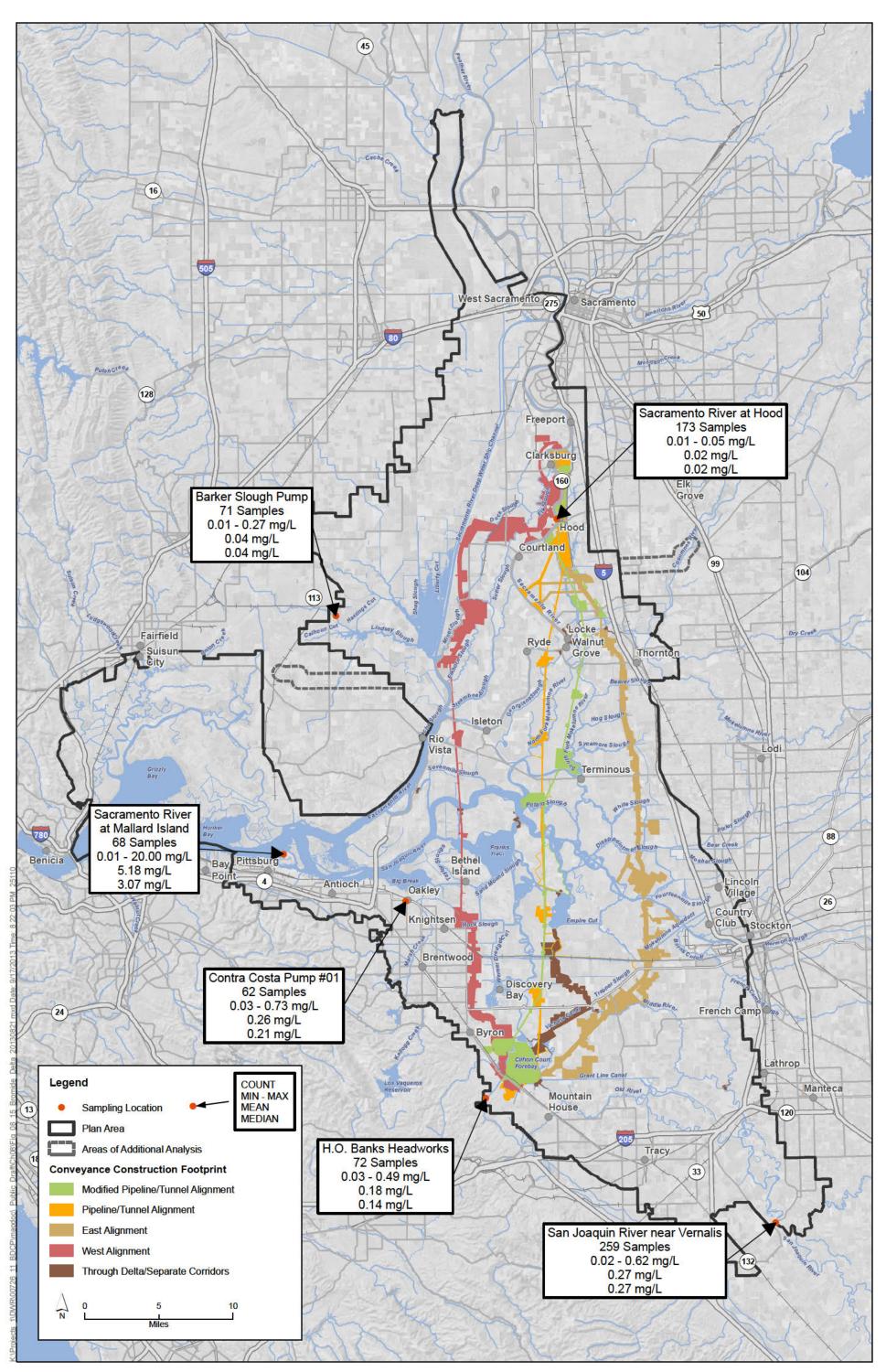


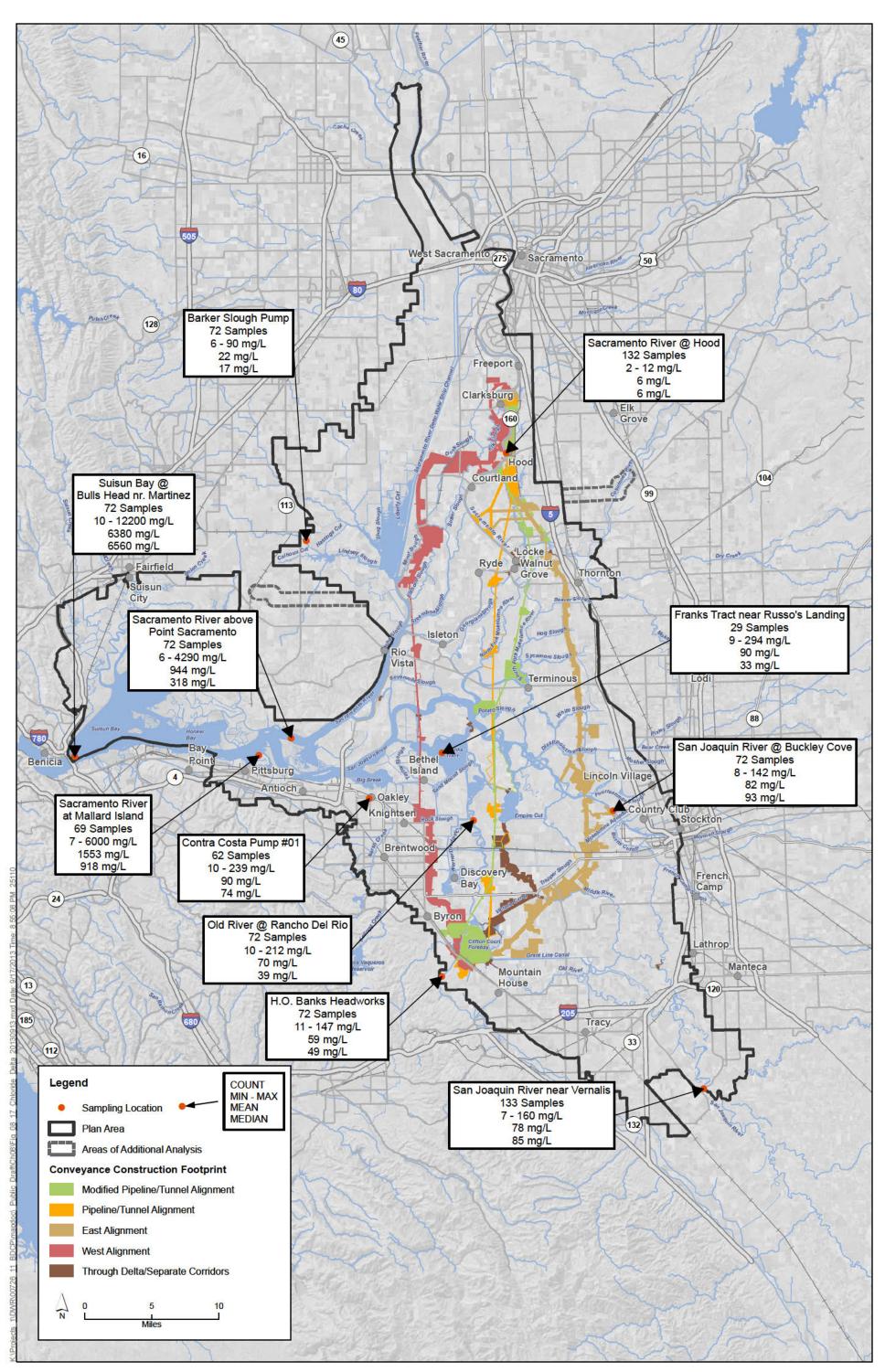
Figure 8-14 Temporal Summary of Boron Data at North of Delta and South of Delta Stations



^{(3b), DHCCP DWR 2012;} Figure 8-15 Spatial Summary of Bromide Data at Delta Stations (2001 - 2006)



Figure 8-16 **Temporal Summary of Bromide Data at Delta Stations**



(3b), DHCCP DWR 2012 Spatial Summary of Chloride Data at Delta Stations (2001 - 2006)

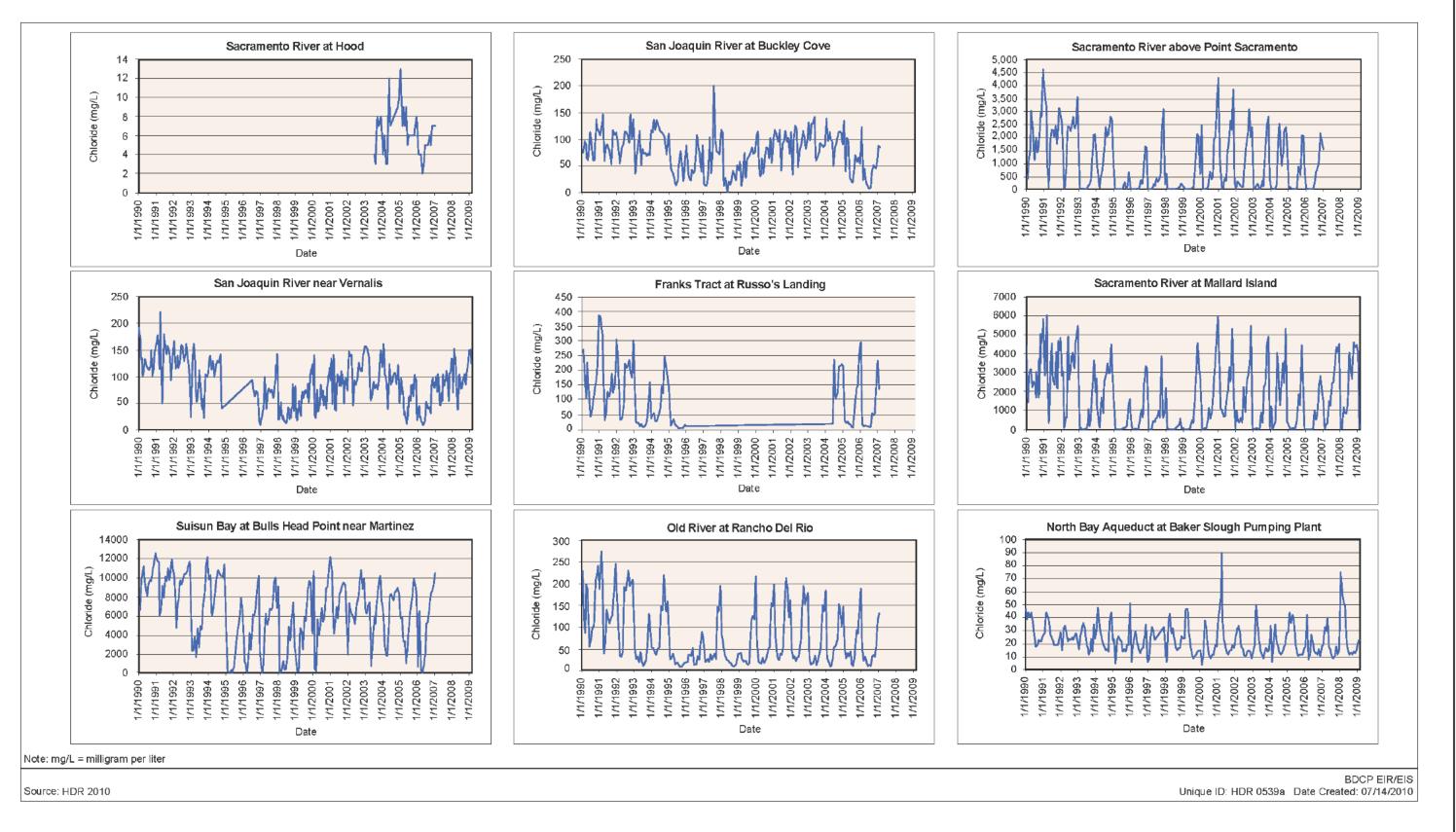
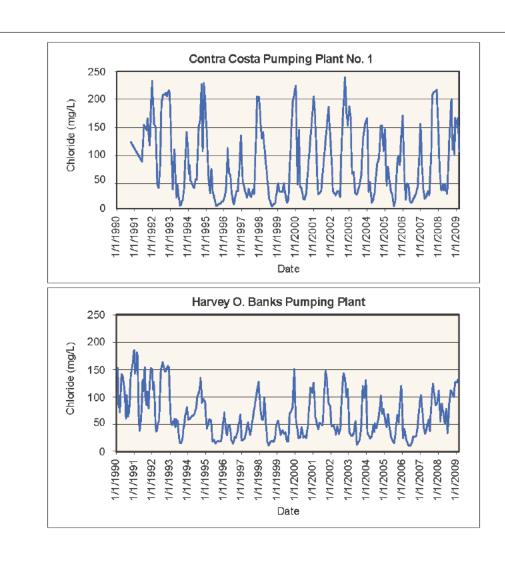


Figure 8-18a **Temporal Summary of Chloride Data at Delta Stations**



Note: mg/L = milligram per liter

Source: HDR 2010

Figure 8-18b Temporal Summary of Chloride Data at Delta Stations

BDCP EIR/EIS Unique ID: HDR 0539b Date Created: 07/14/2010

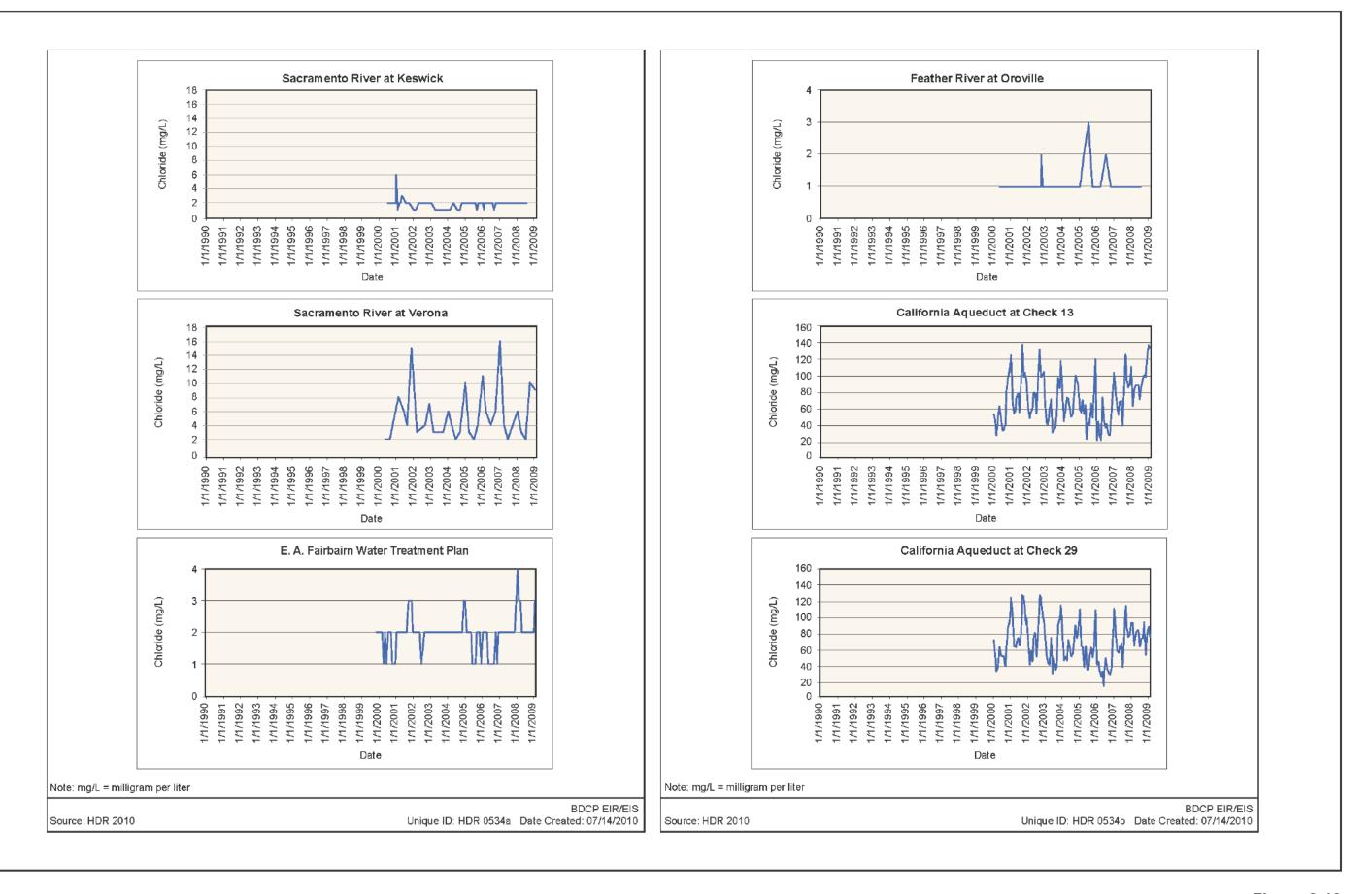
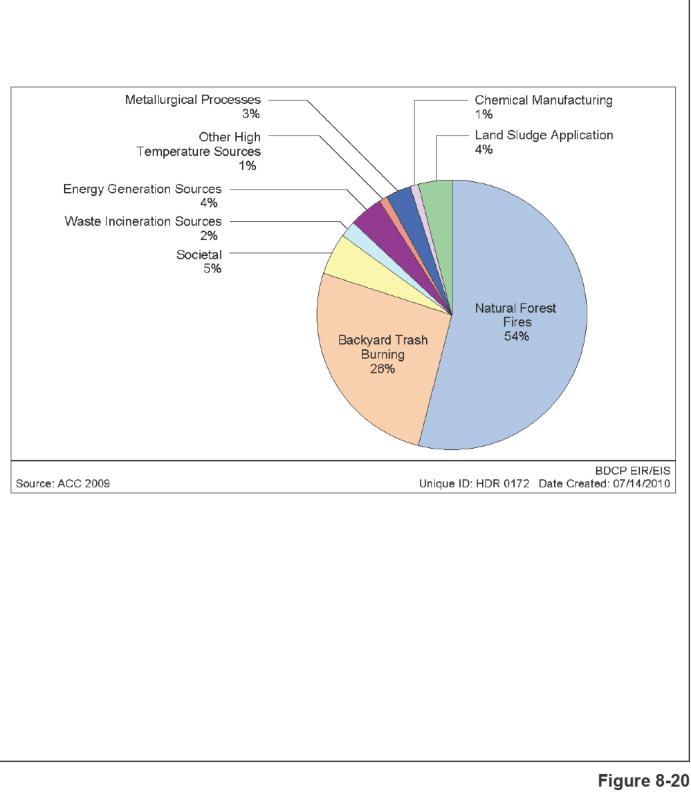
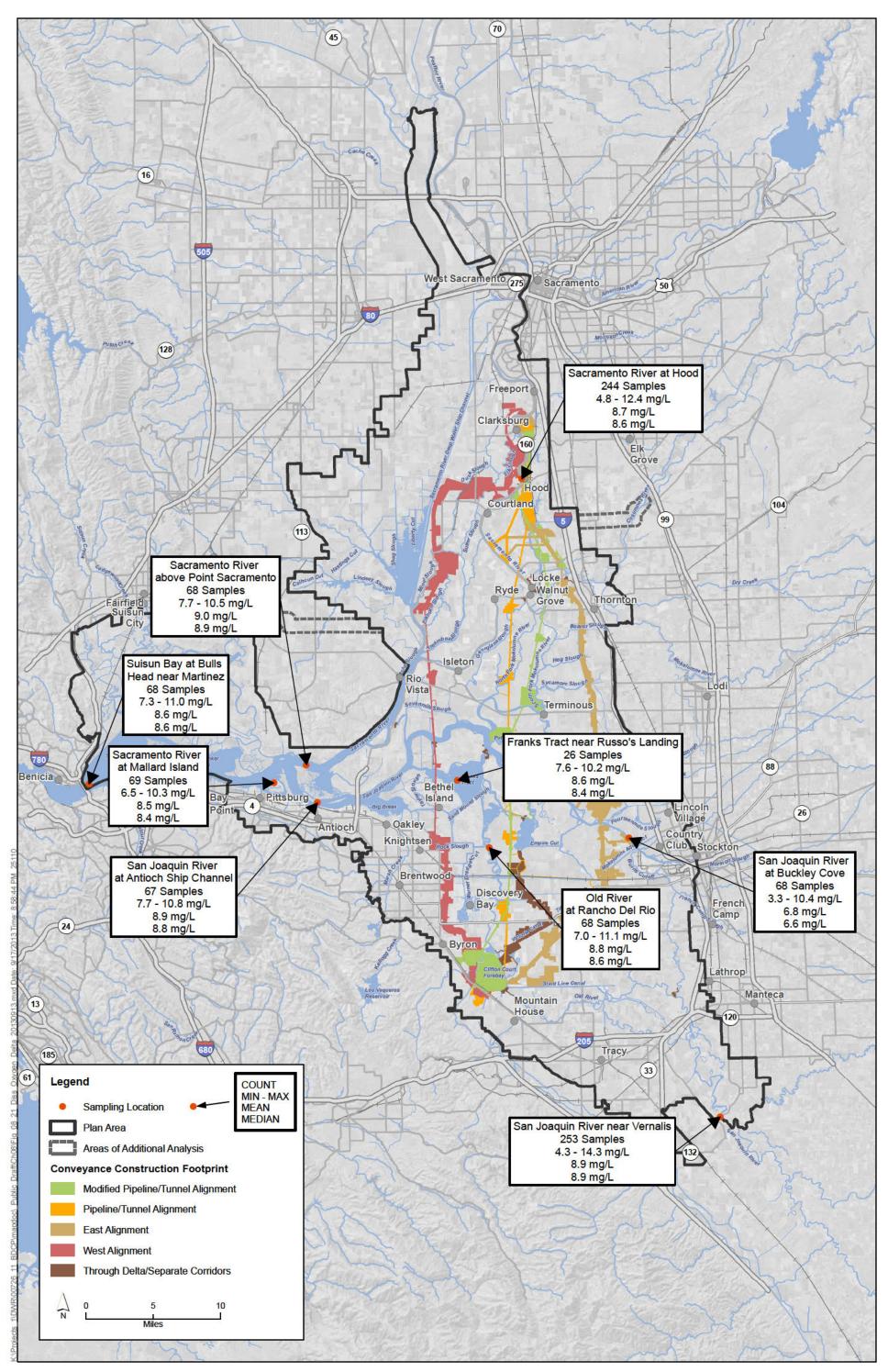


Figure 8-19 Temporal Summary of Chloride Data at North of Delta and South of Delta Stations



United States Dioxin Emissions in 2006



Spatial Summary of Dissolved Oxygen Data at Delta Stations (2001 - 2006)

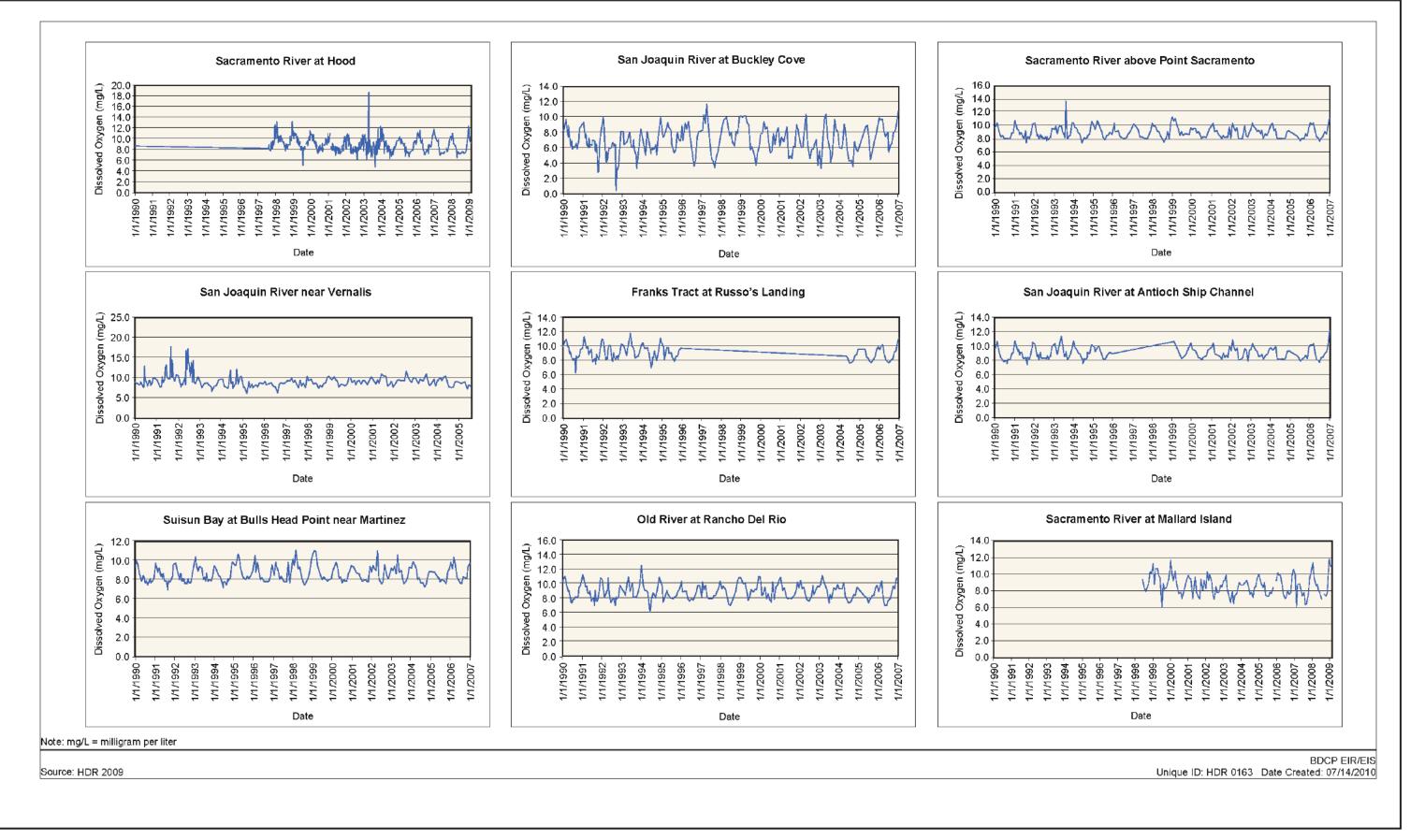


Figure 8-22 Temporal Summary of Dissolved Oxygen Data at Delta Stations

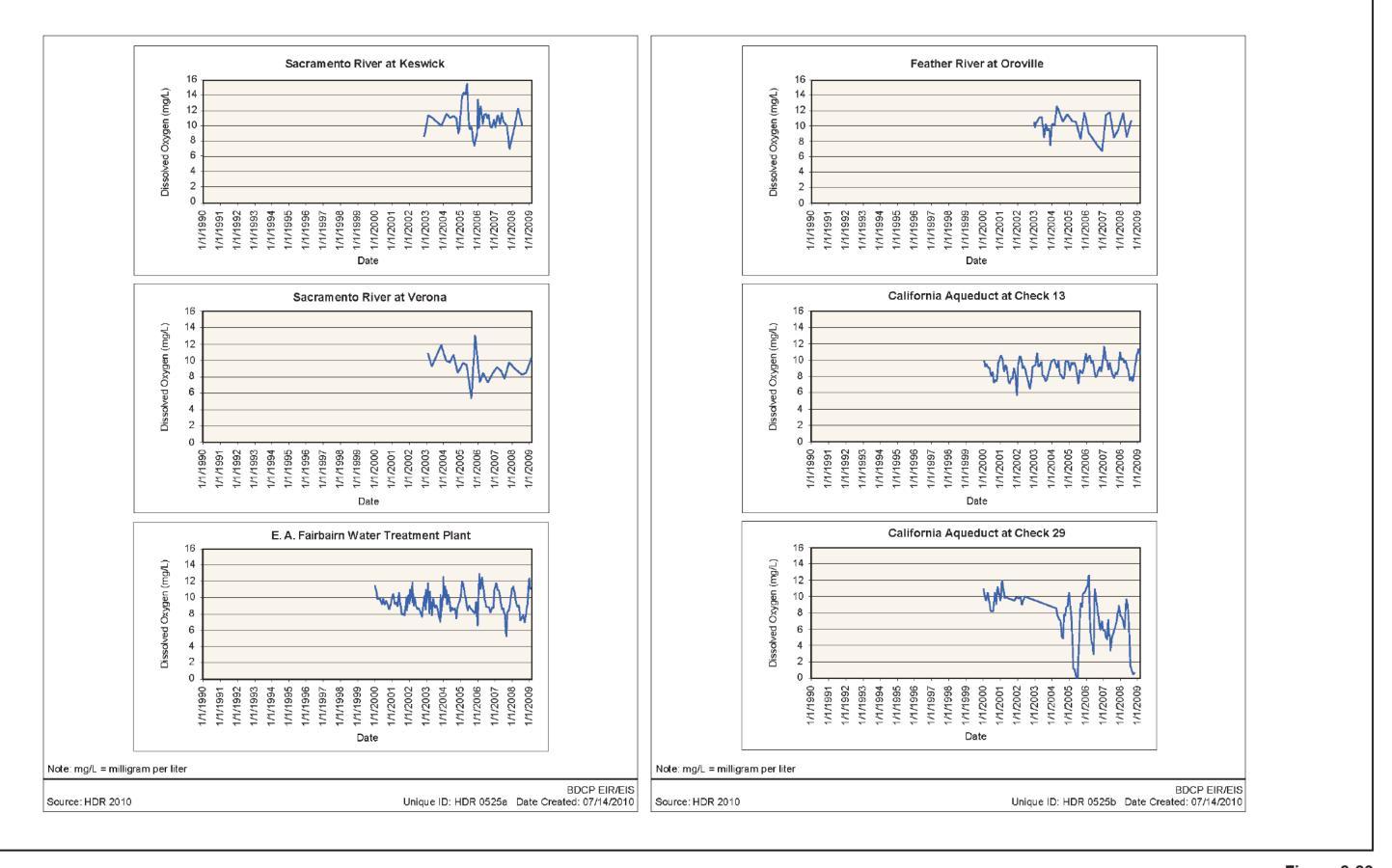
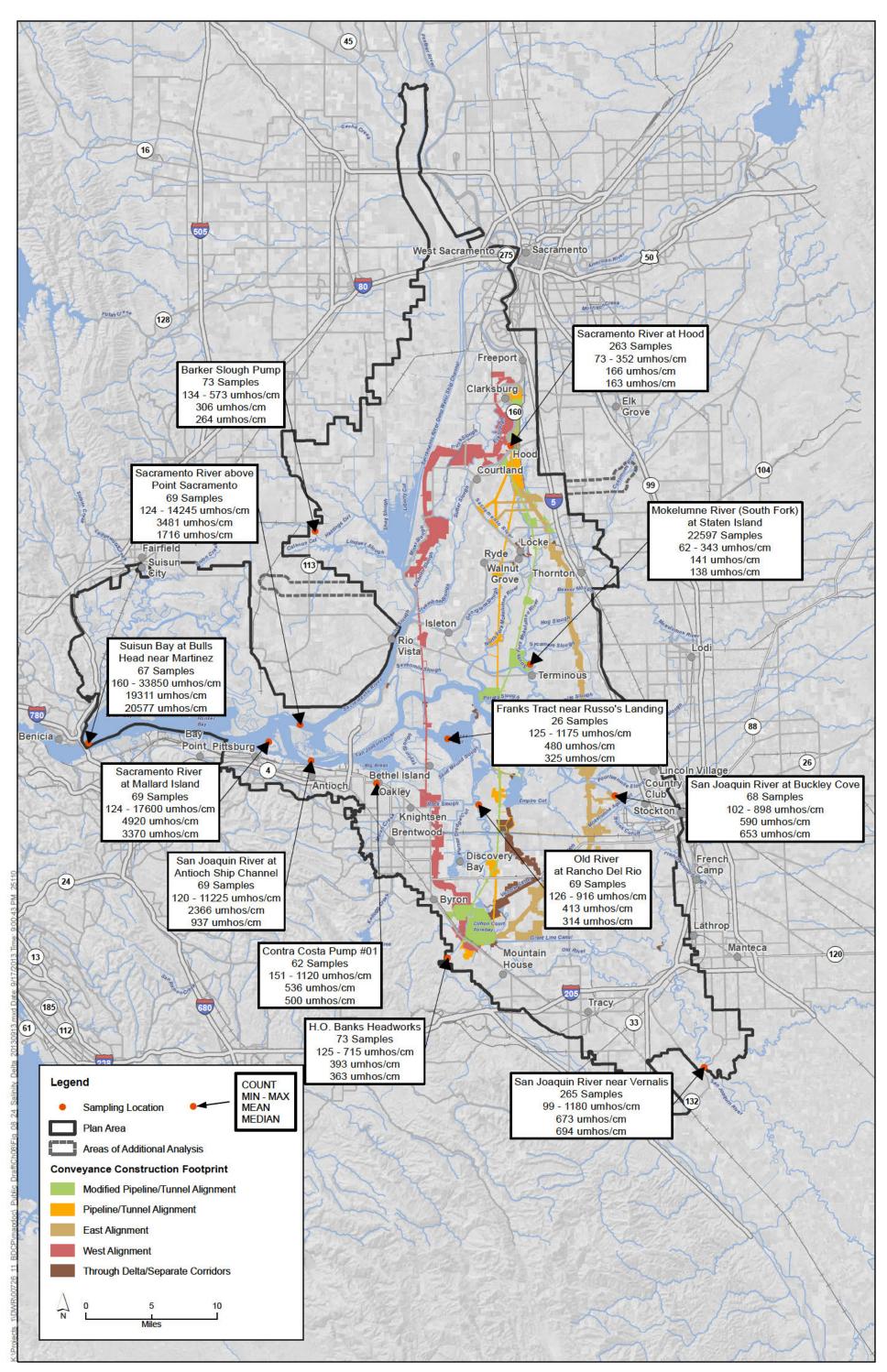


Figure 8-23 Temporal Summary of Dissolved Oxygen Data at North of Delta and South of Delta Stations



^{b), DHCCP DWR 2012;} Figure 8-24 Spatial Summary of Salinity Data at Delta Stations (2001 - 2006)

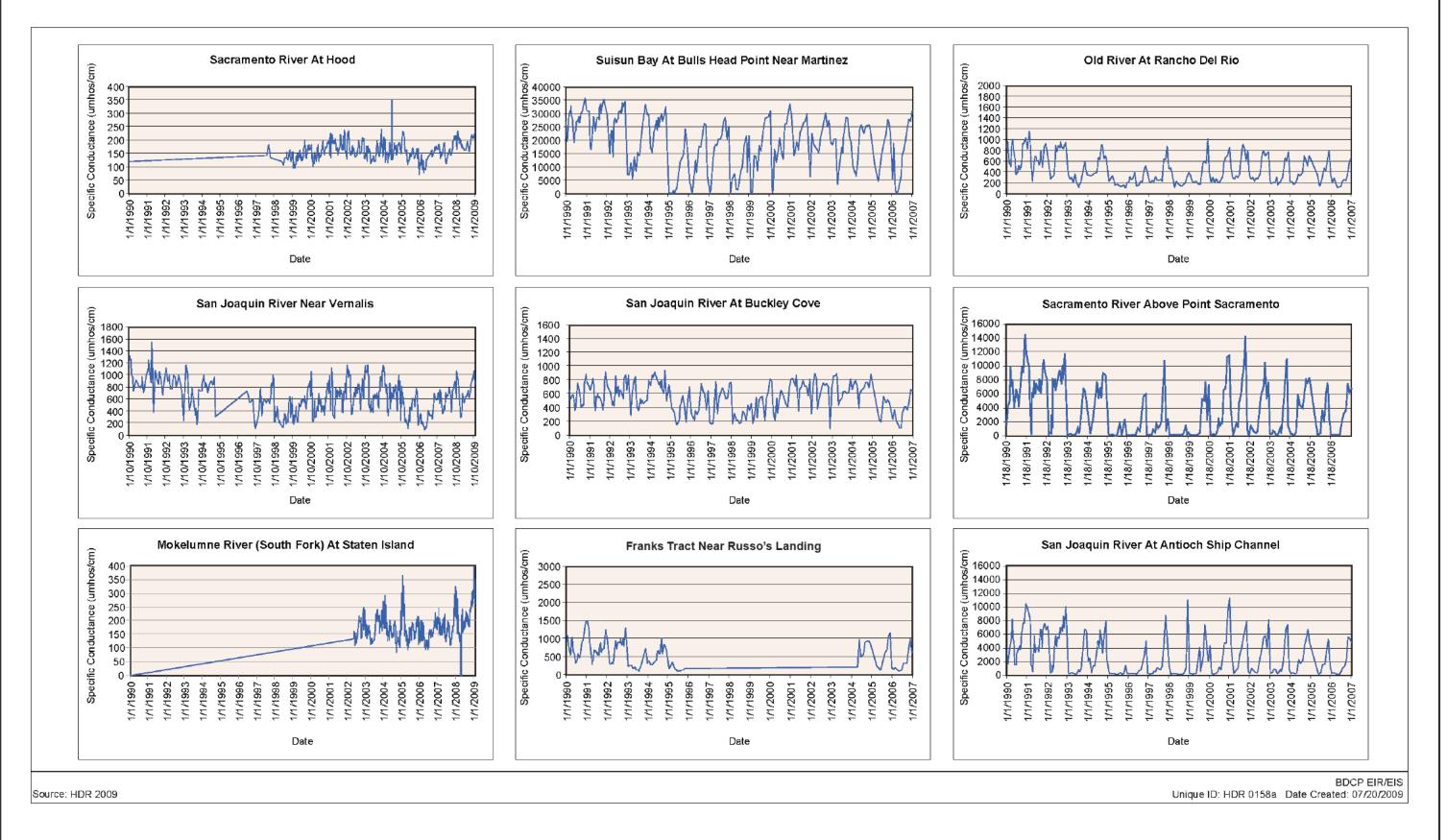


Figure 8-25a Temporal Summary of Electrical Conductivity Data at Delta Stations

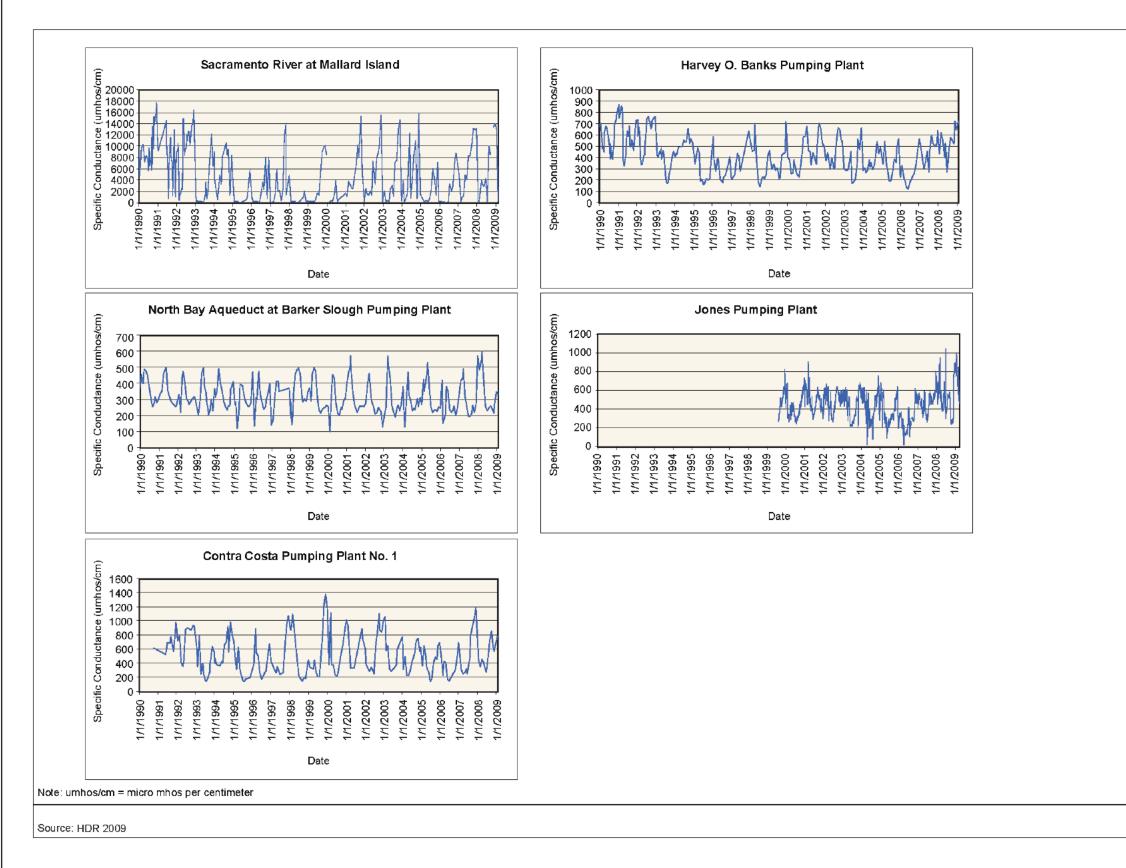


Figure 8-25b **Temporal Summary of Electrical Conductivity Data at Delta Stations**

BDCP EIR/EIS Unique ID: HDR 0158b Date Created: 07/14/2010

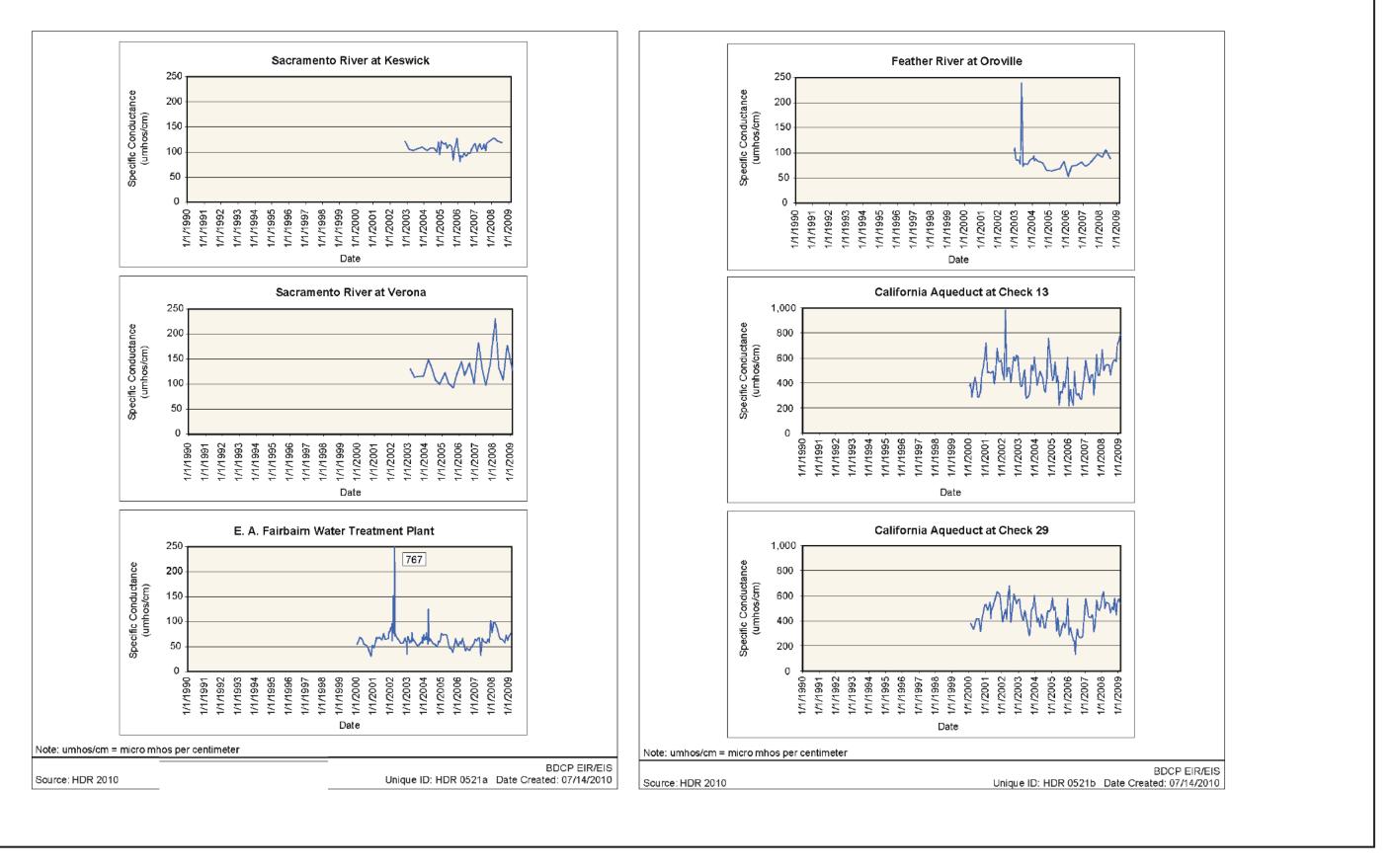


Figure 8-26 at North of Delta and South of Delta Stations

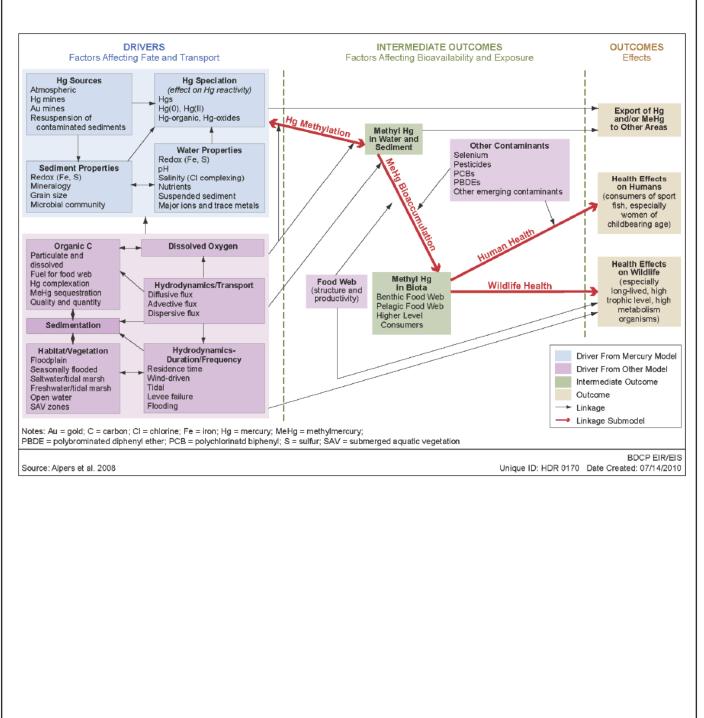
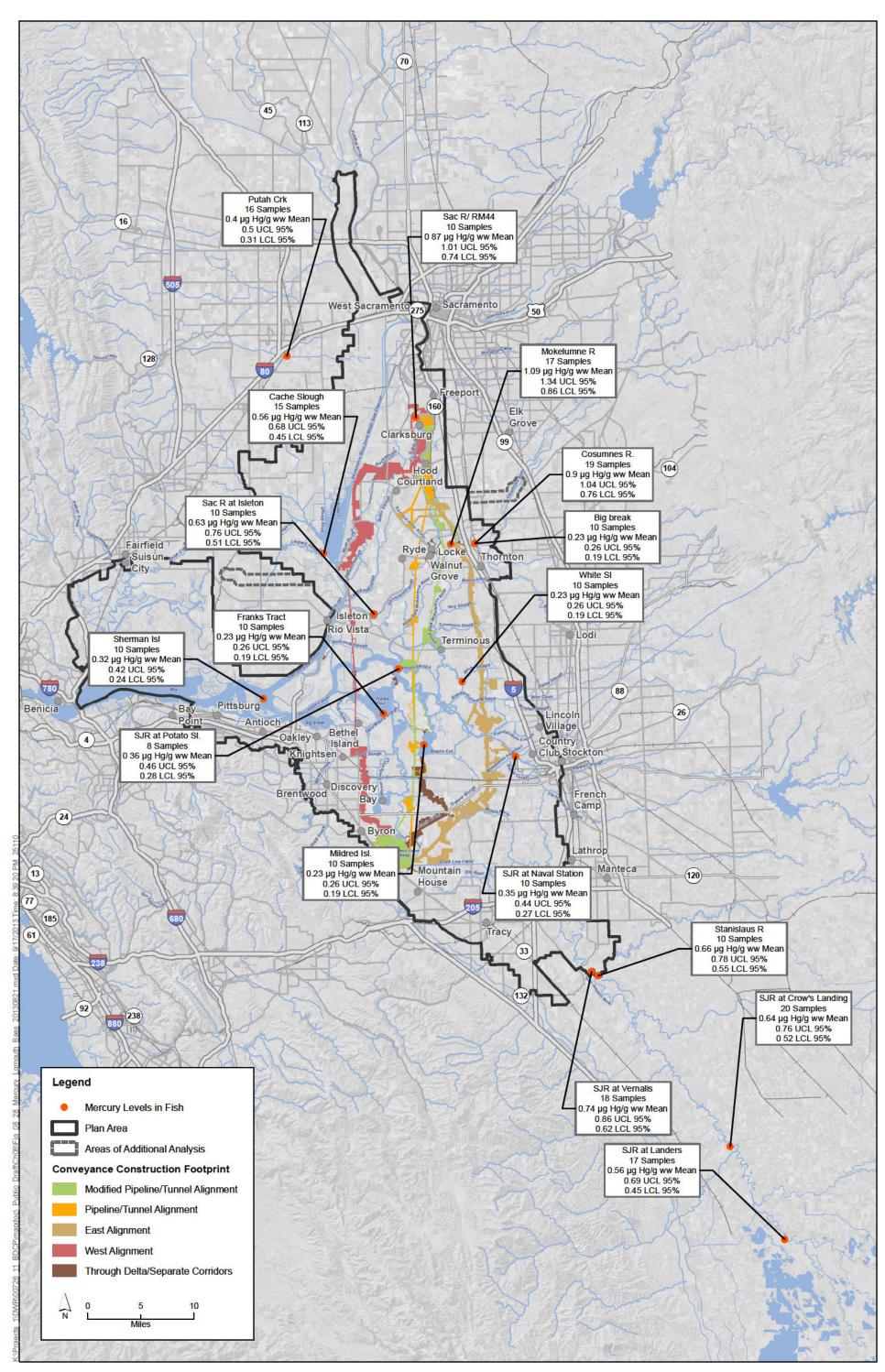
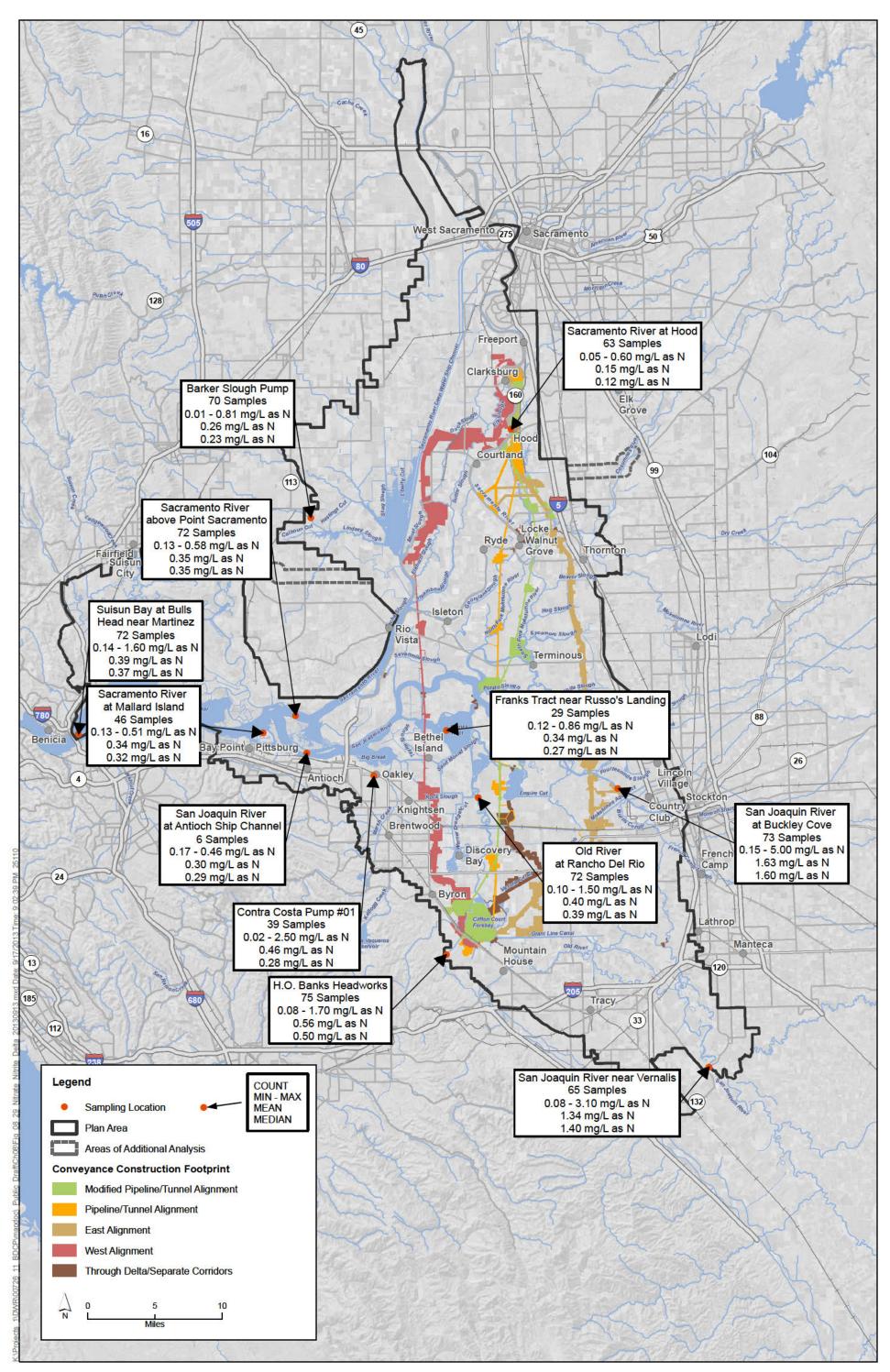


Figure 8-27 Conceptual Model of Mercury and Methylmercury Transport, Fate, and Cycling in the Delta Ecosystem



Y 3b), DHCCP DWR 2012; Mercury Concentrations in Largemouth Bass Fillets (1999 - 2000)



Spatial Summary of Nitrate/Nitrite Data at Delta Stations (2001 - 2006)

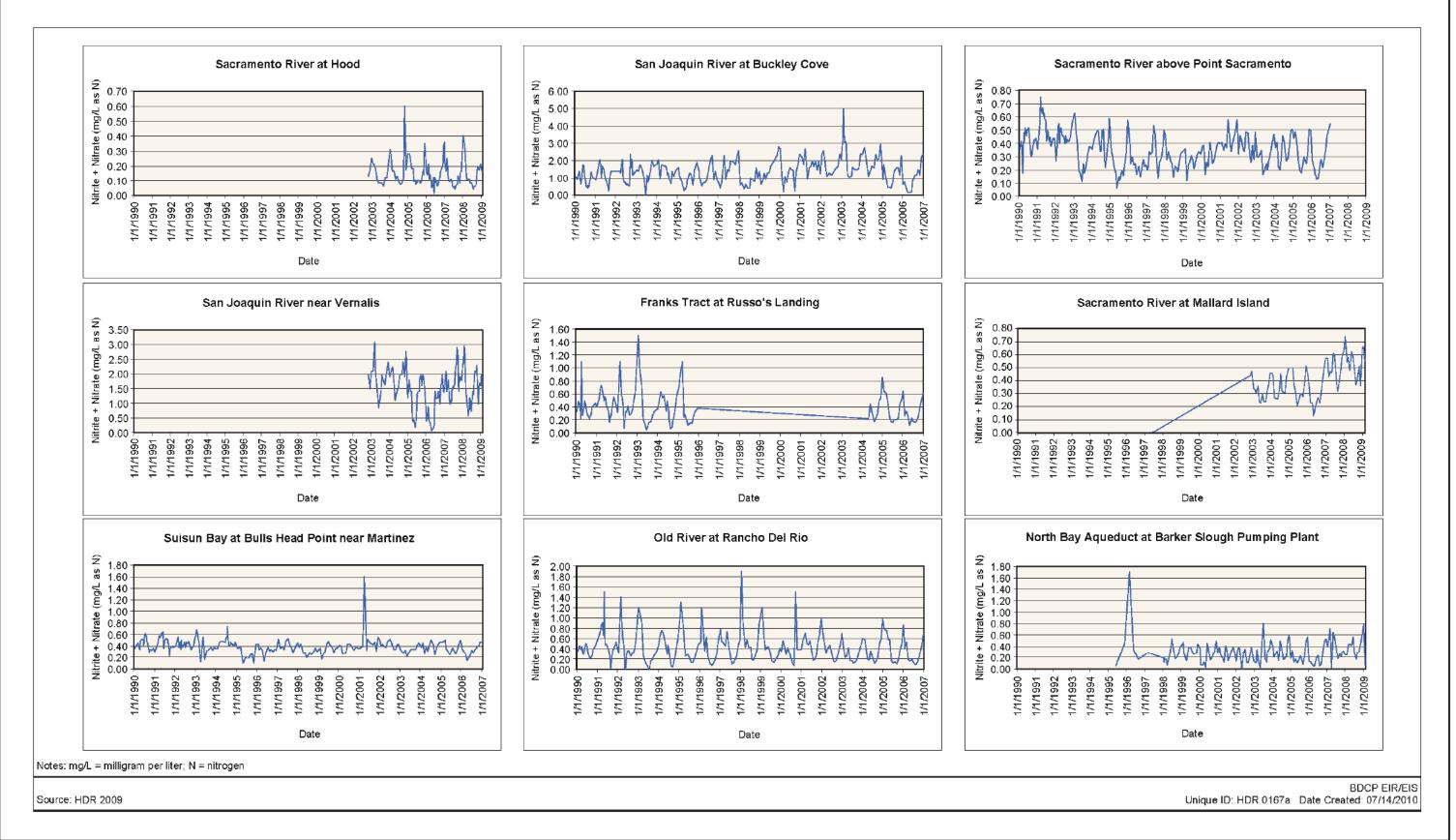
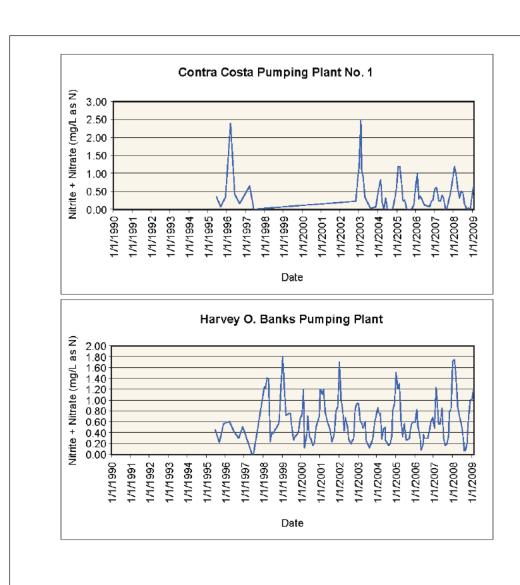


Figure 8-30a Temporal Summary of Nitrate/Nitrite Data at Delta Stations



Notes: mg/L = milligram per liter; N = nitrogen

Source: HDR 2009

Figure 8-30b Temporal Summary of Nitrate/Nitrite Data at Delta Stations

BDCP EIR/EIS Unique ID: HDR 0167b Date Created: 07/14/2010

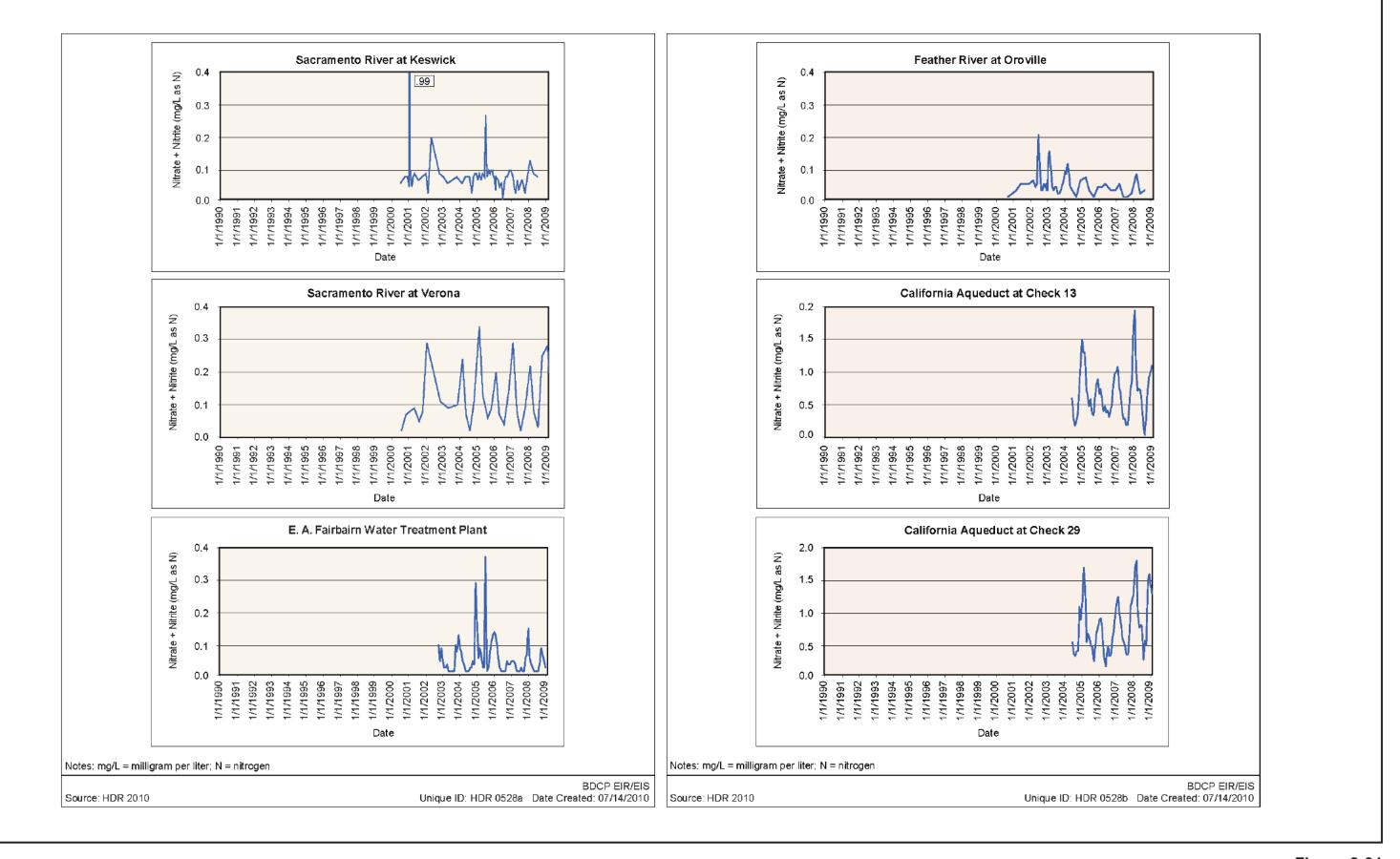
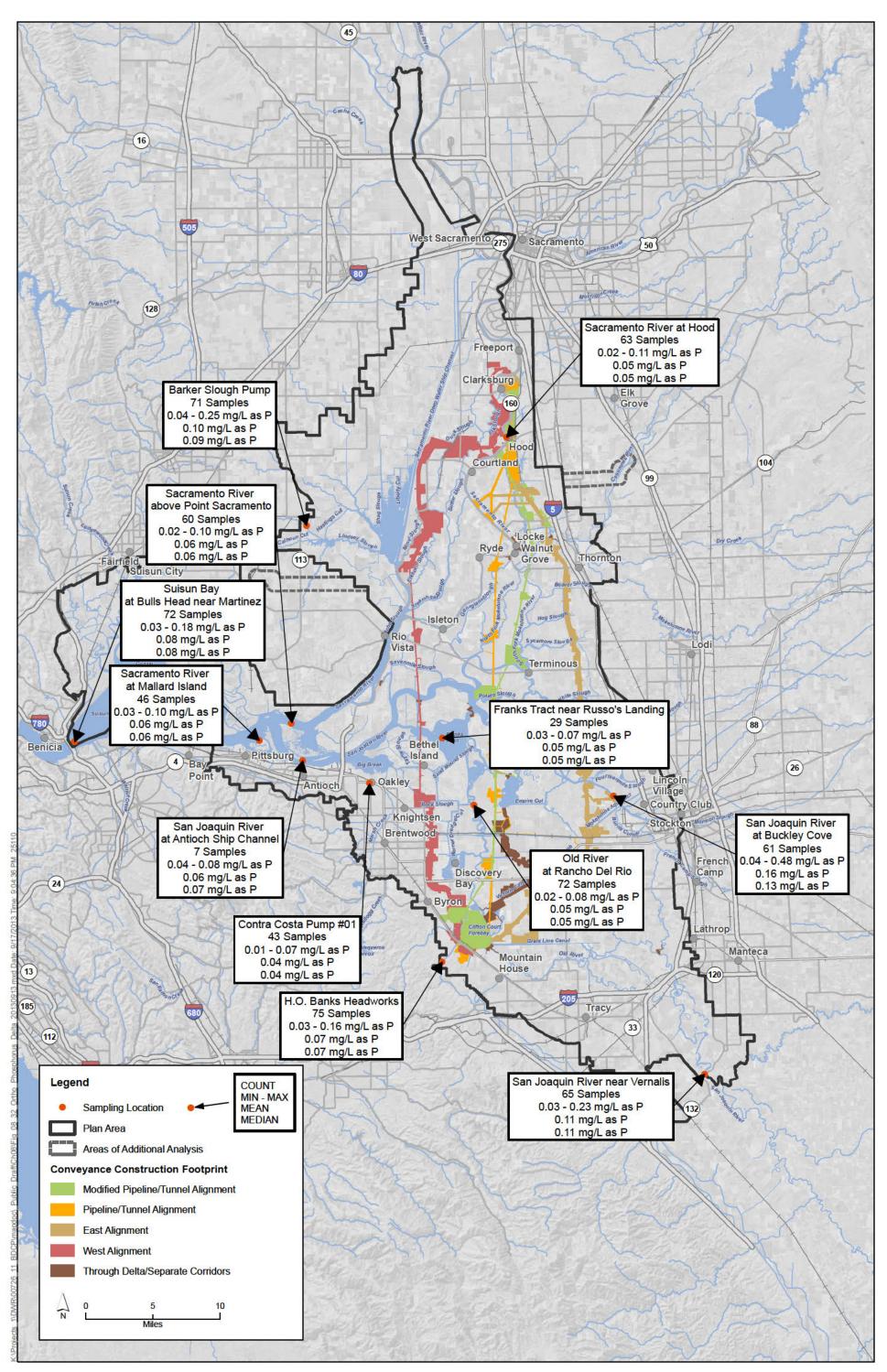


Figure 8-31 Temporal Summary of Nitrate/Nitrite Data at North of Delta and South of Delta Stations



Constructability (Rev 3b), DHCCP DWR 2012; Figure 8-32 Spatial Summary of Ortho-Phosphorus Data at Delta Stations (2001 - 2006)

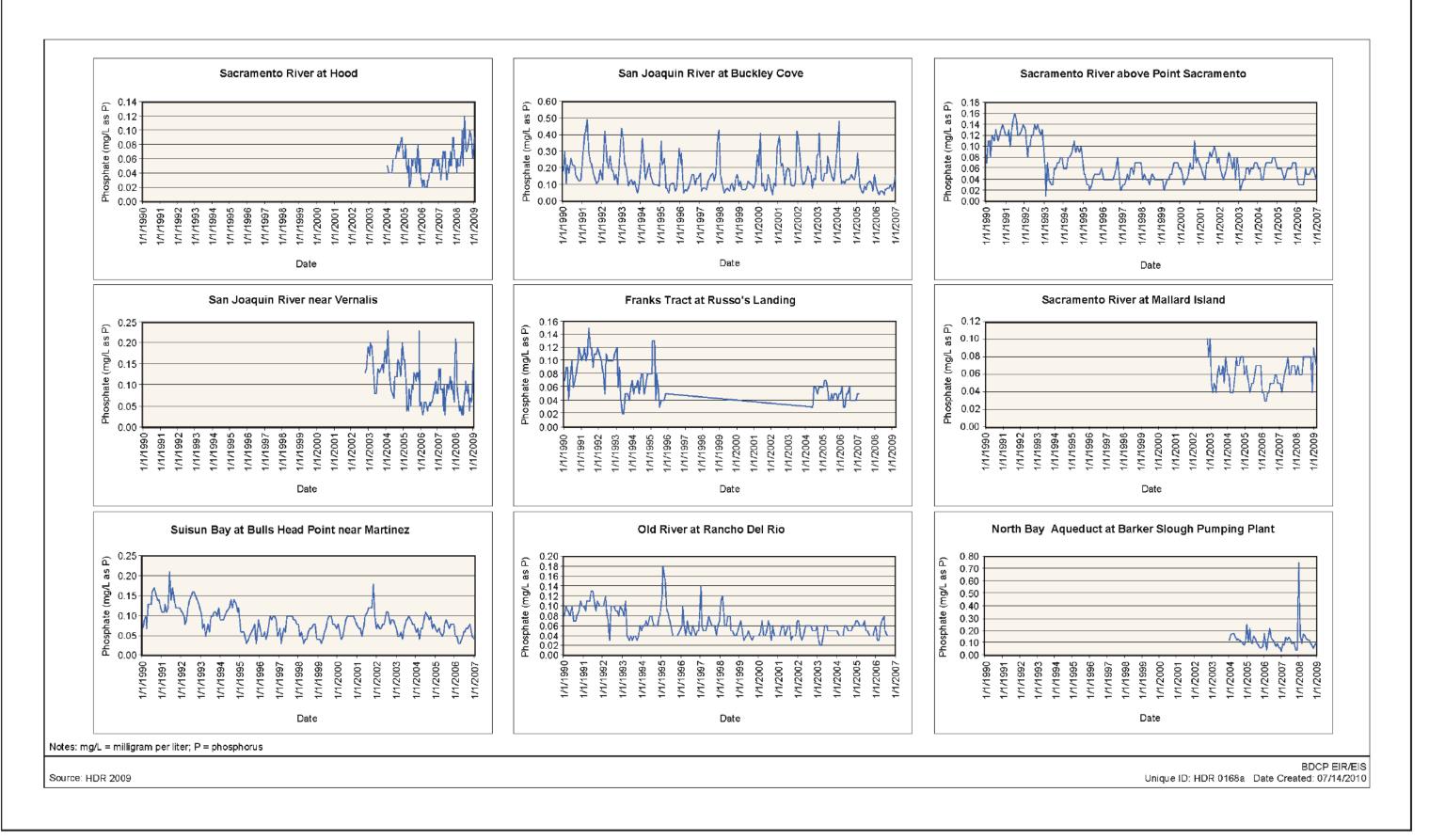
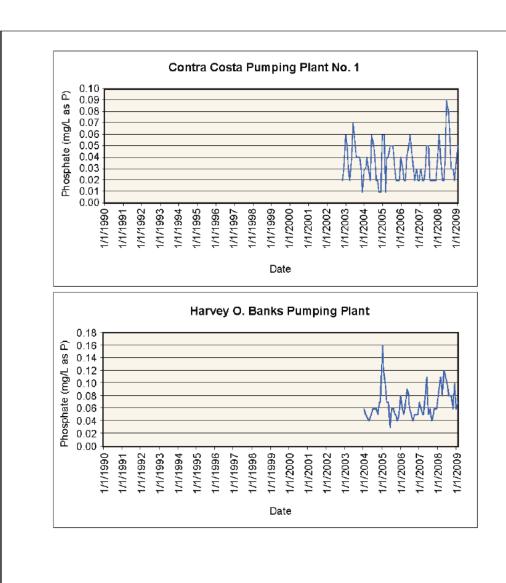


Figure 8-33a **Temporal Summary of Ortho-Phosphorus Data at Delta Stations**



Notes: mg/L = milligram per liter; P = phosphorus

Source: HDR 2009

Temporal Summary of Ortho-Phosphorus Data at Delta Stations

BDCP EIR/EIS Unique ID: HDR 0168b Date Created: 07/14/2010

Figure 8-33b

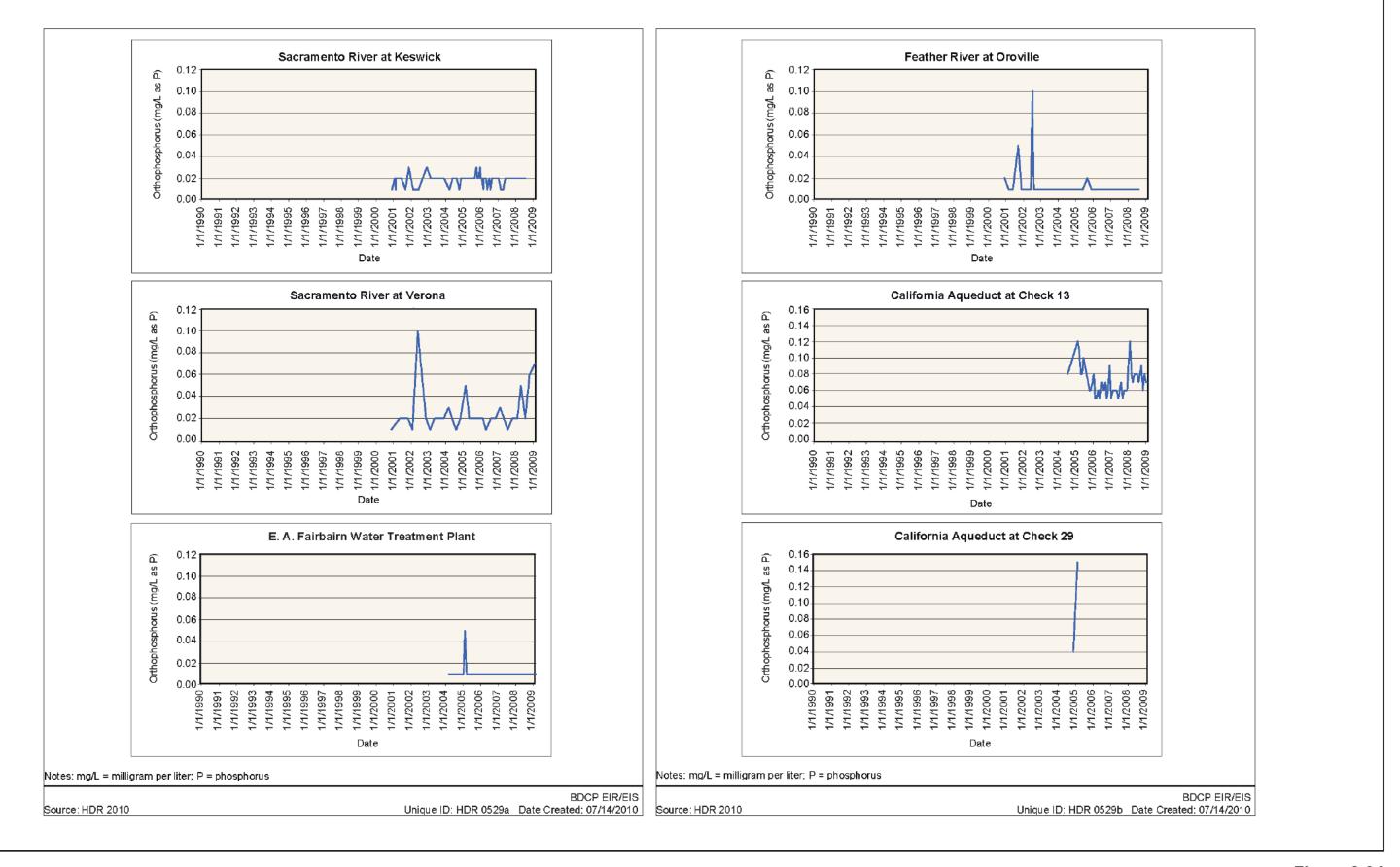
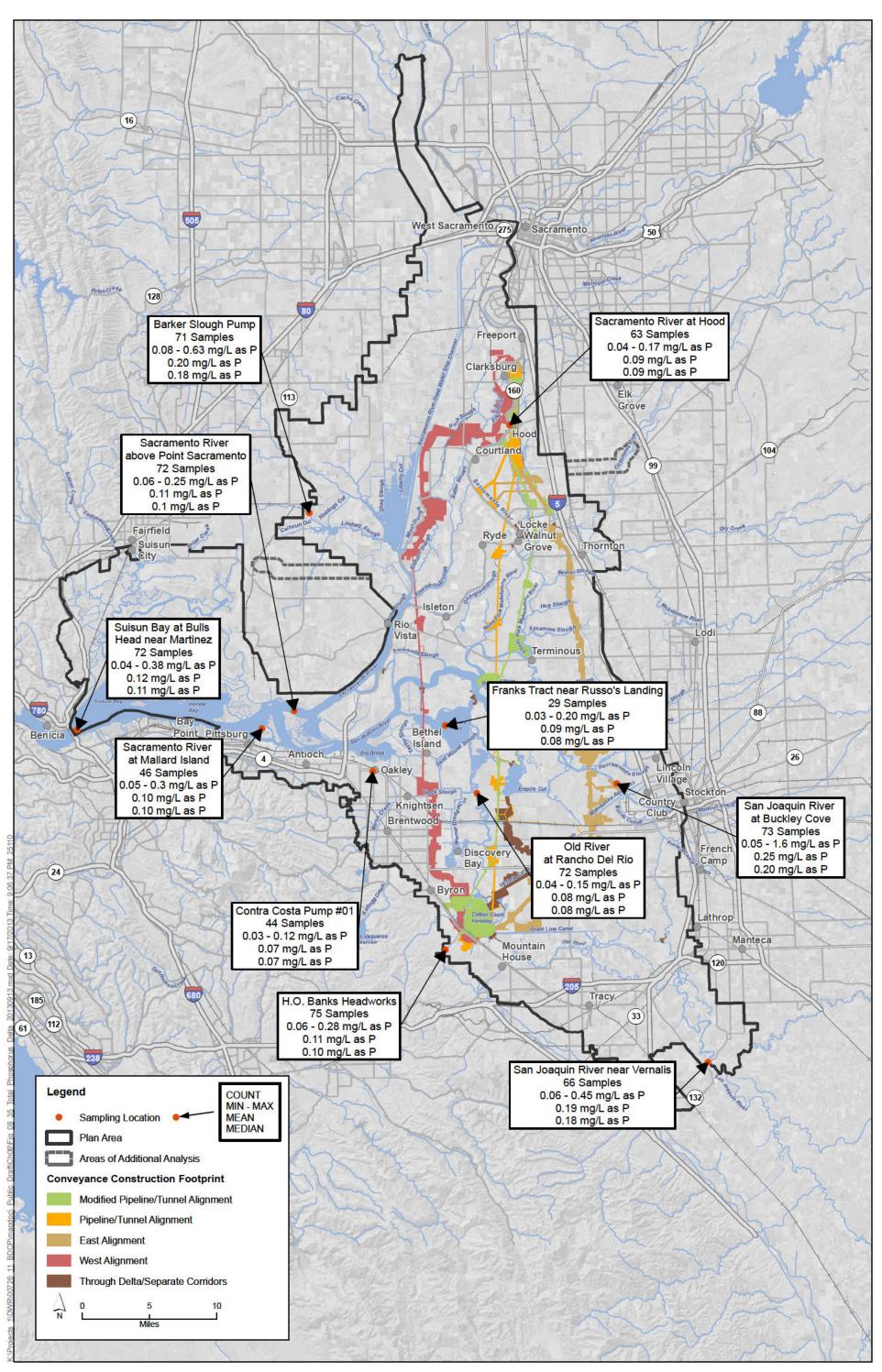


Figure 8-34 Temporal Summary of Ortho-Phosphorus Data at North of Delta and South of Delta Stations



Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; Constructability (Rev 10), DHCCP DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Streets, ESRI 2010; Aerial Photograph, NA P 2010; Hydrology, HDR 2010; Water Quality, EMP 1999.

Spatial Summary of Total Phosphorus Data at Delta Stations (2001 - 2006)

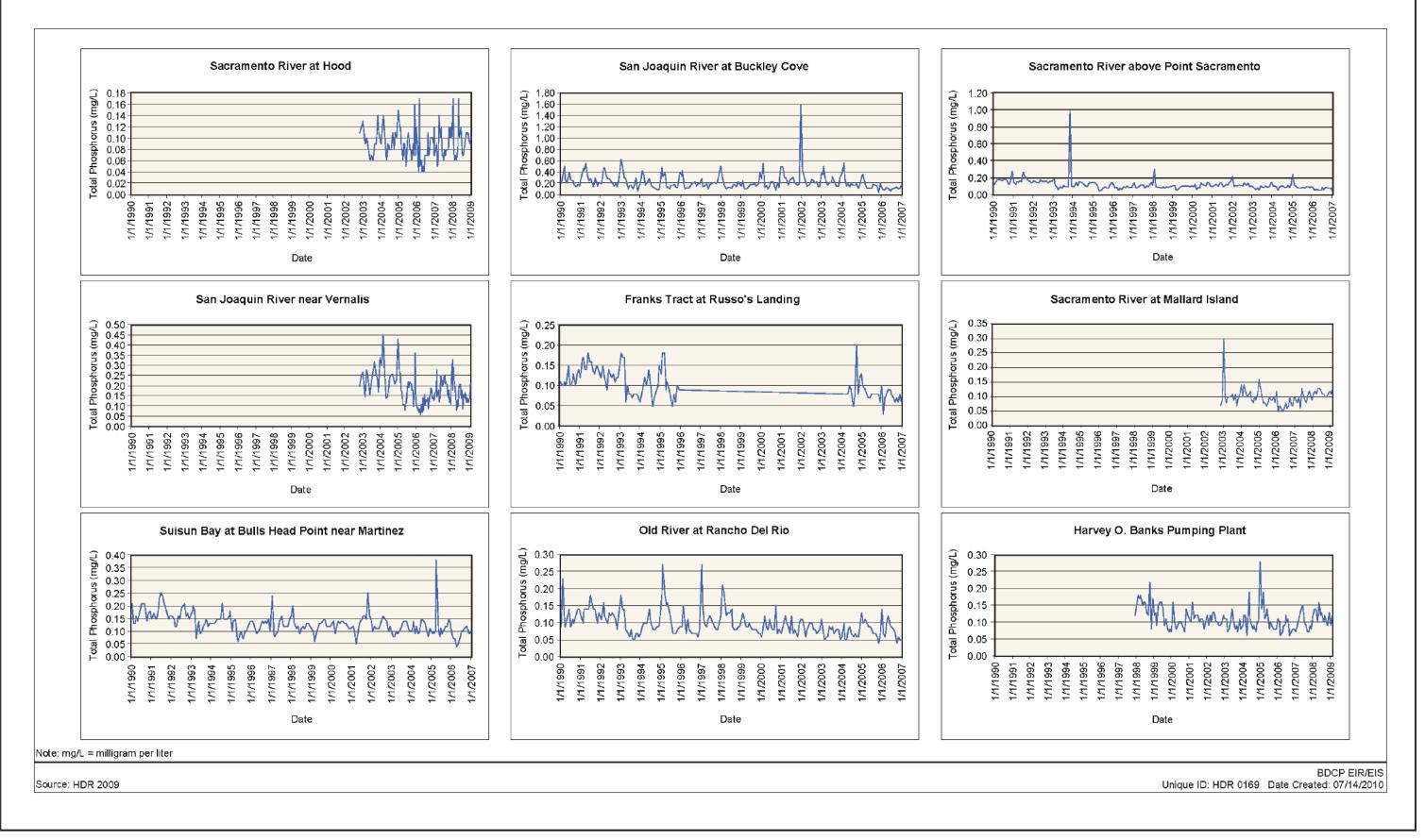
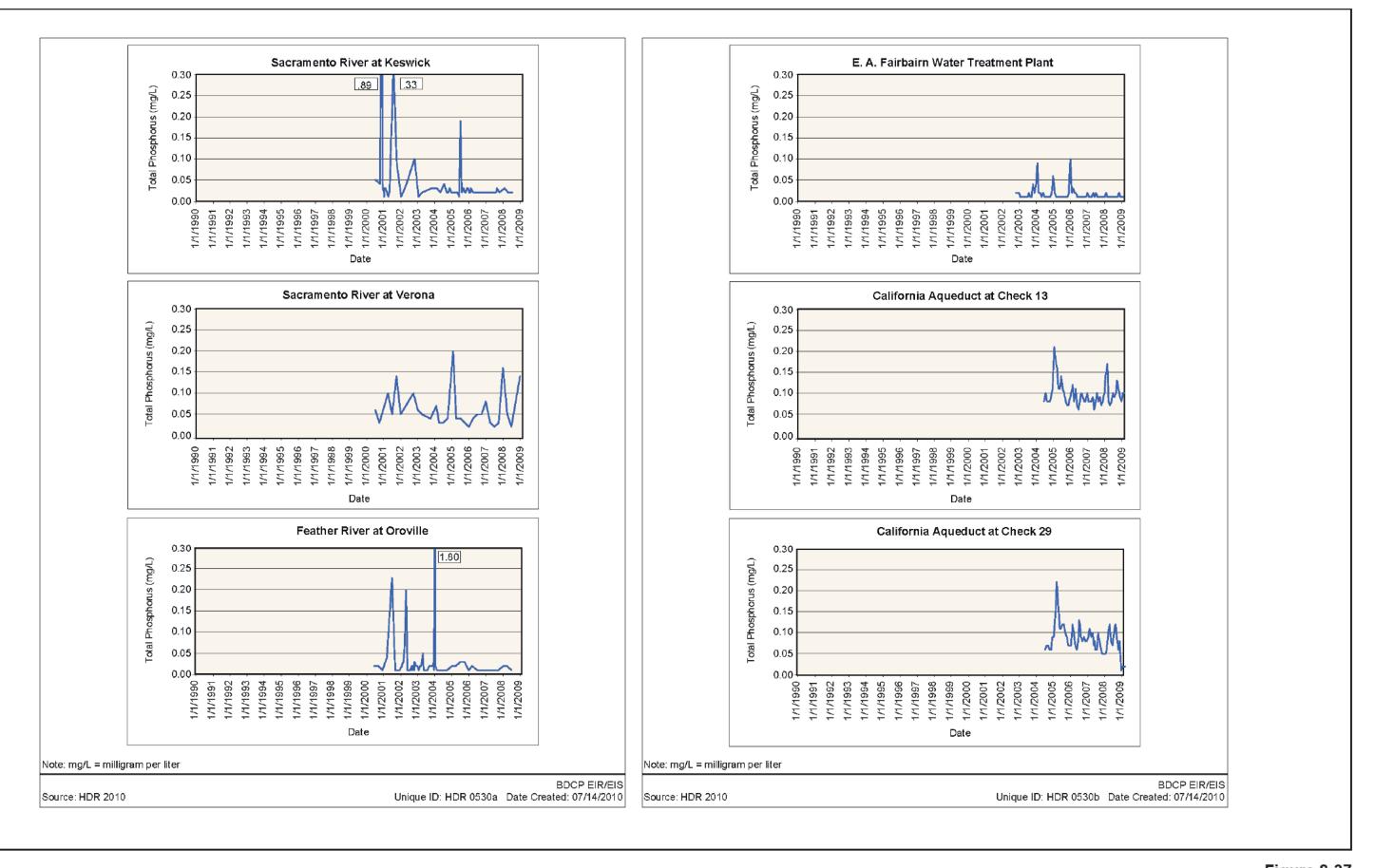
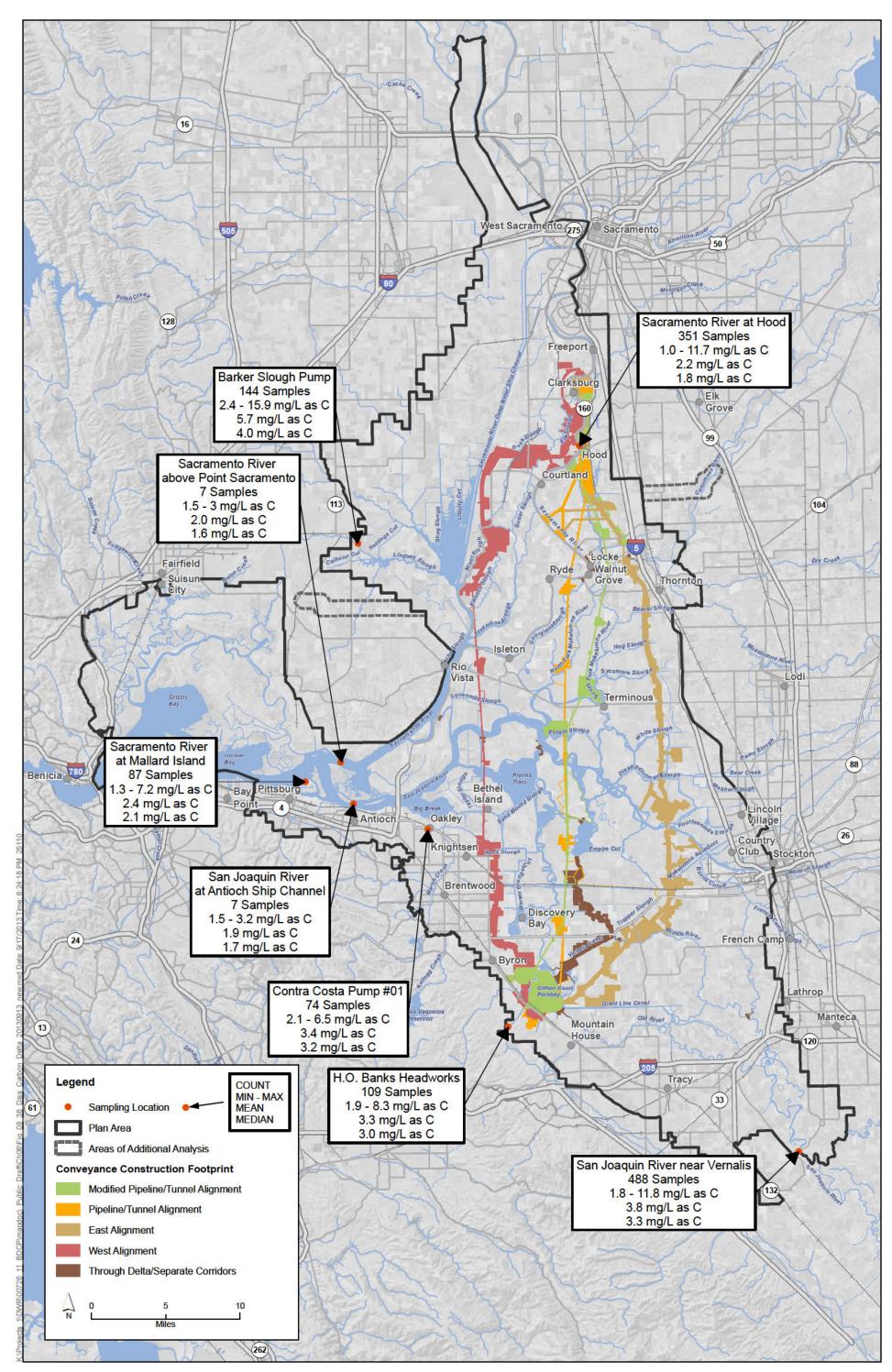


Figure 8-36 **Temporal Summary of Total Phosphorus Data at Delta Stations**



"P Graphics/... BDCP EIR-EIS/(HDR Aug 2010) Rev 07/16/201

Figure 8-37 at North of Delta and South of Delta Stations



Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; Constructability (Rev 10), DHCCP DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Streets, ESRI 2010; Aerial Photograph, NA P 2010; Hydrology, HDR 2010; Water Quality, EMP 1999.

P DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Figure 8-38 Spatial Summary of Dissolved Organic Carbon Data at Delta Stations (2001 - 2006)

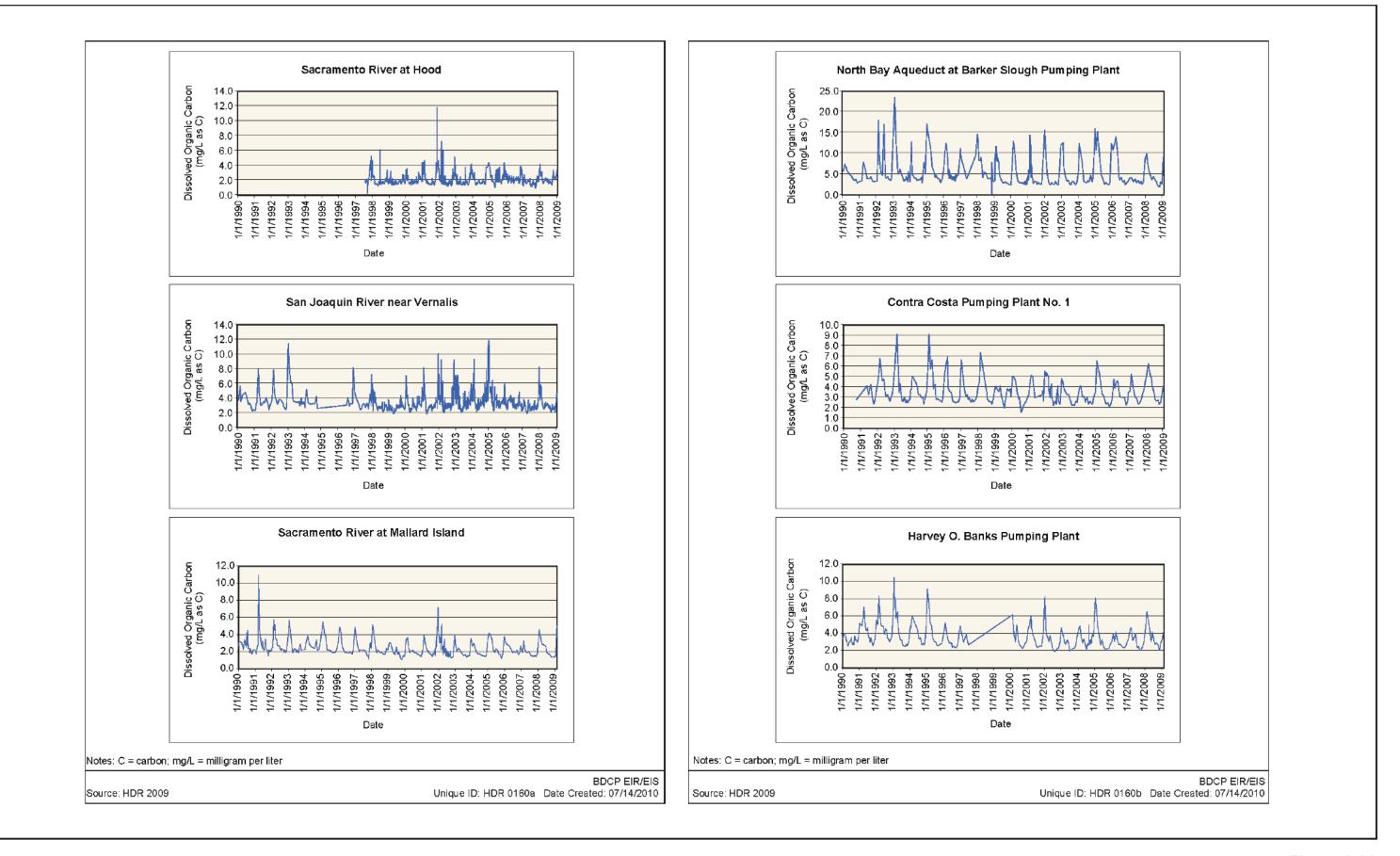
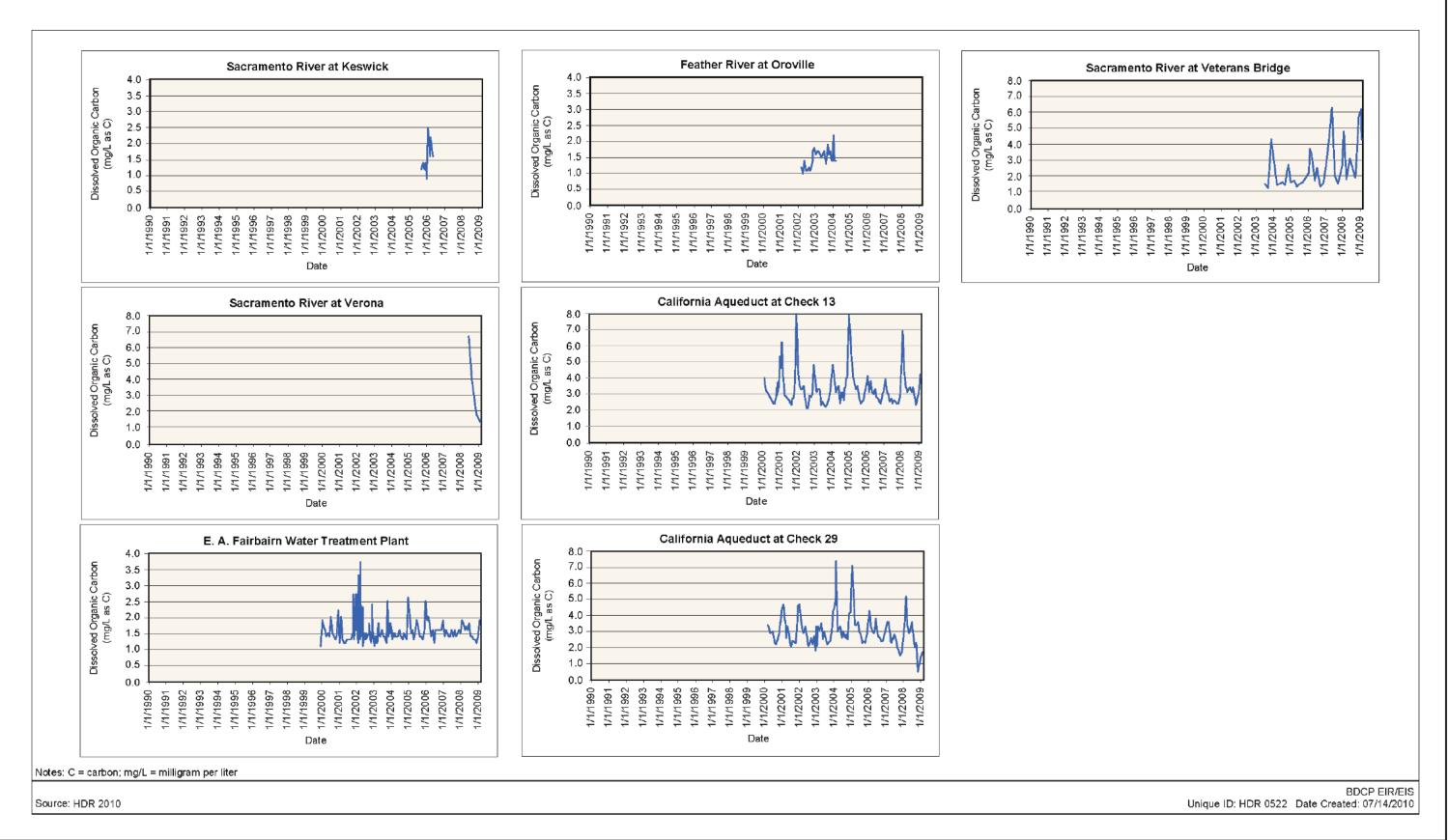
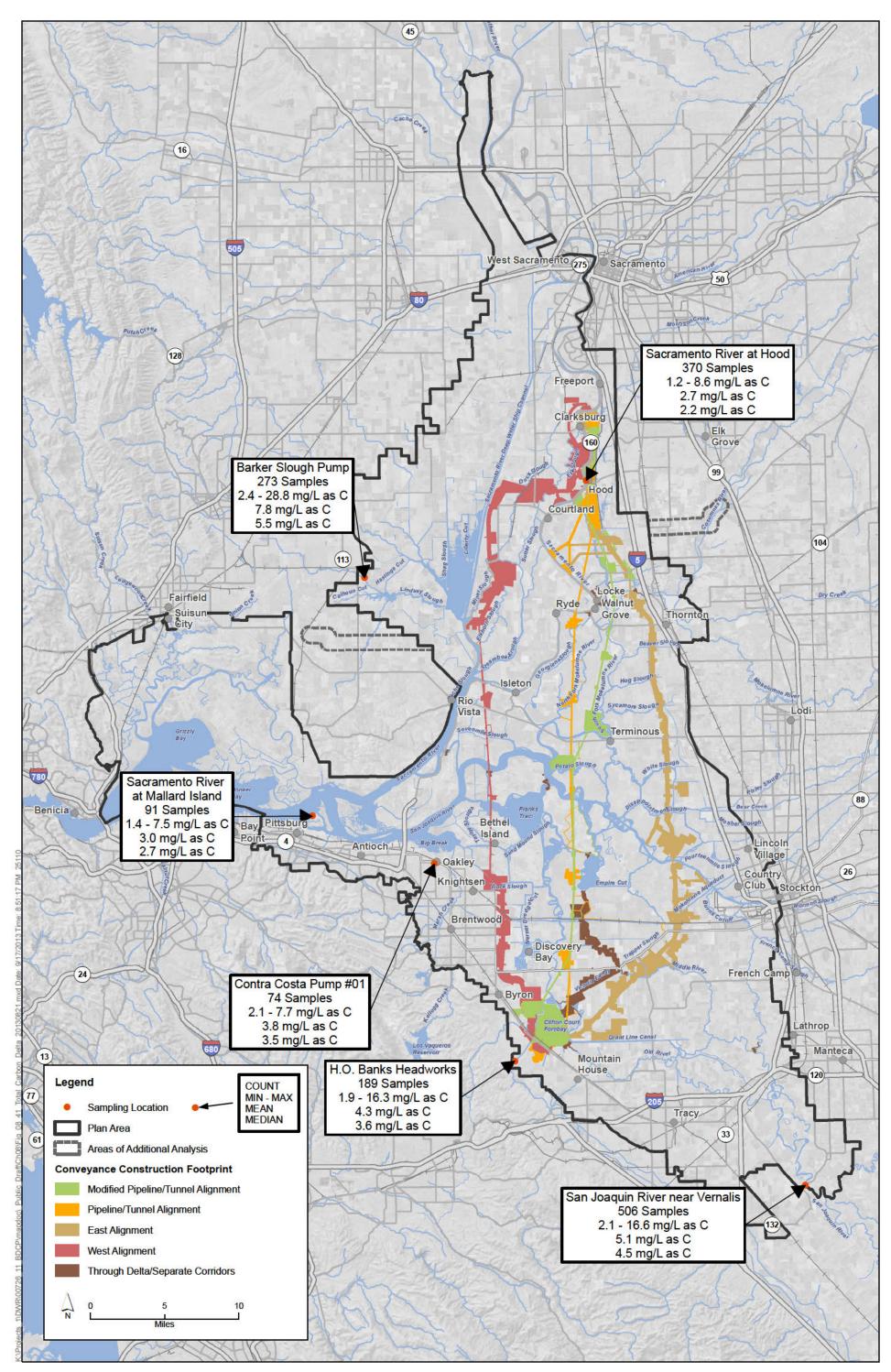


Figure 8-39 Temporal Summary of Dissolved Organic Carbon Data at Delta Stations



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Figure 8-40 at North of Delta and South of Delta Stations



Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; Constructability (Rev 10), DHCCP DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Streets, ESRI 2010; Aerial Photograph, NA P 2010; Hydrology, HDR 2010; Water Quality, EMP 1999.

^{D12; Constructability (Rev 3b), DHCCP DWR 2012;} Figure 8-41 Spatial Summary of Total Organic Carbon Data at Delta Stations (2001 - 2006)

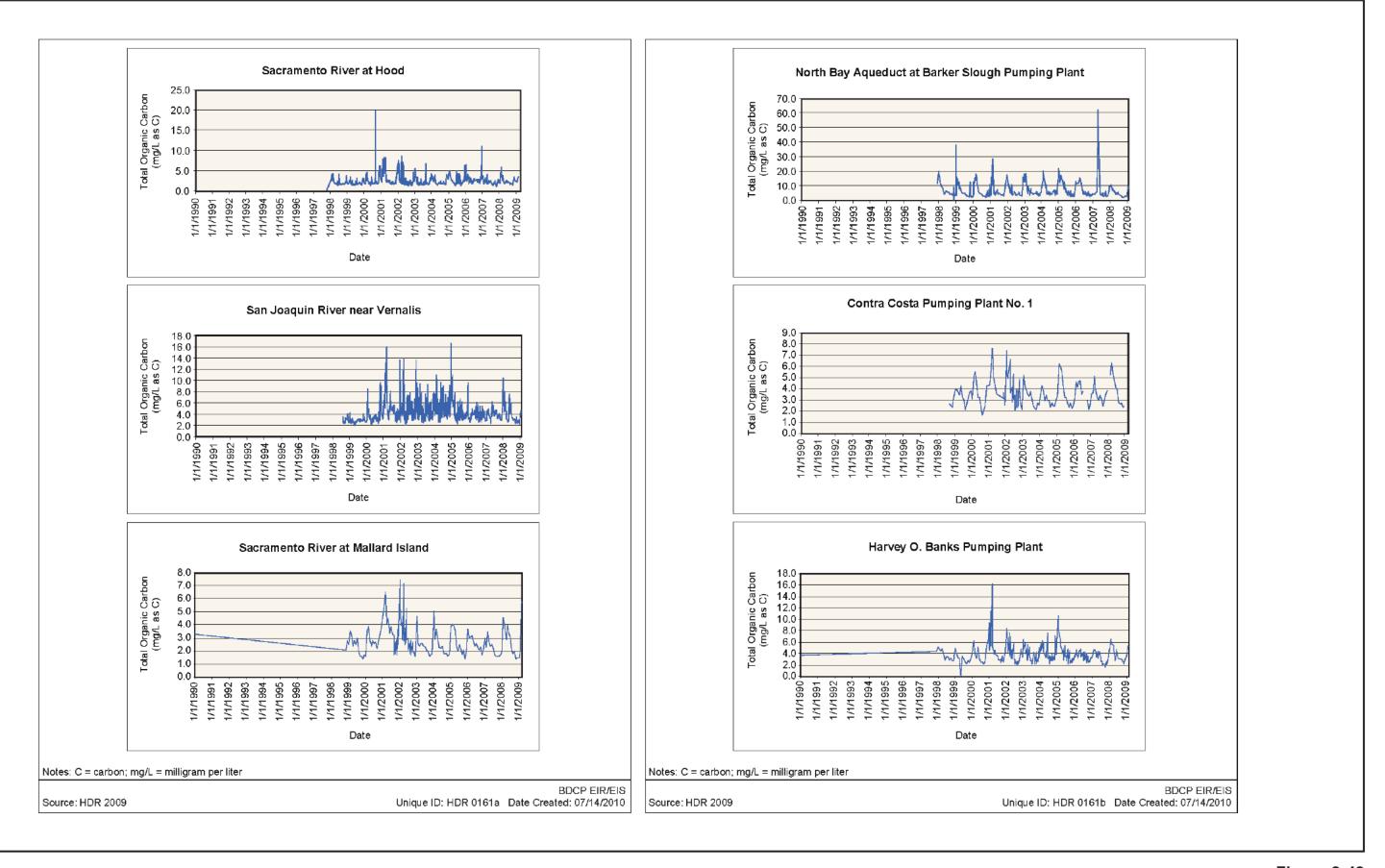
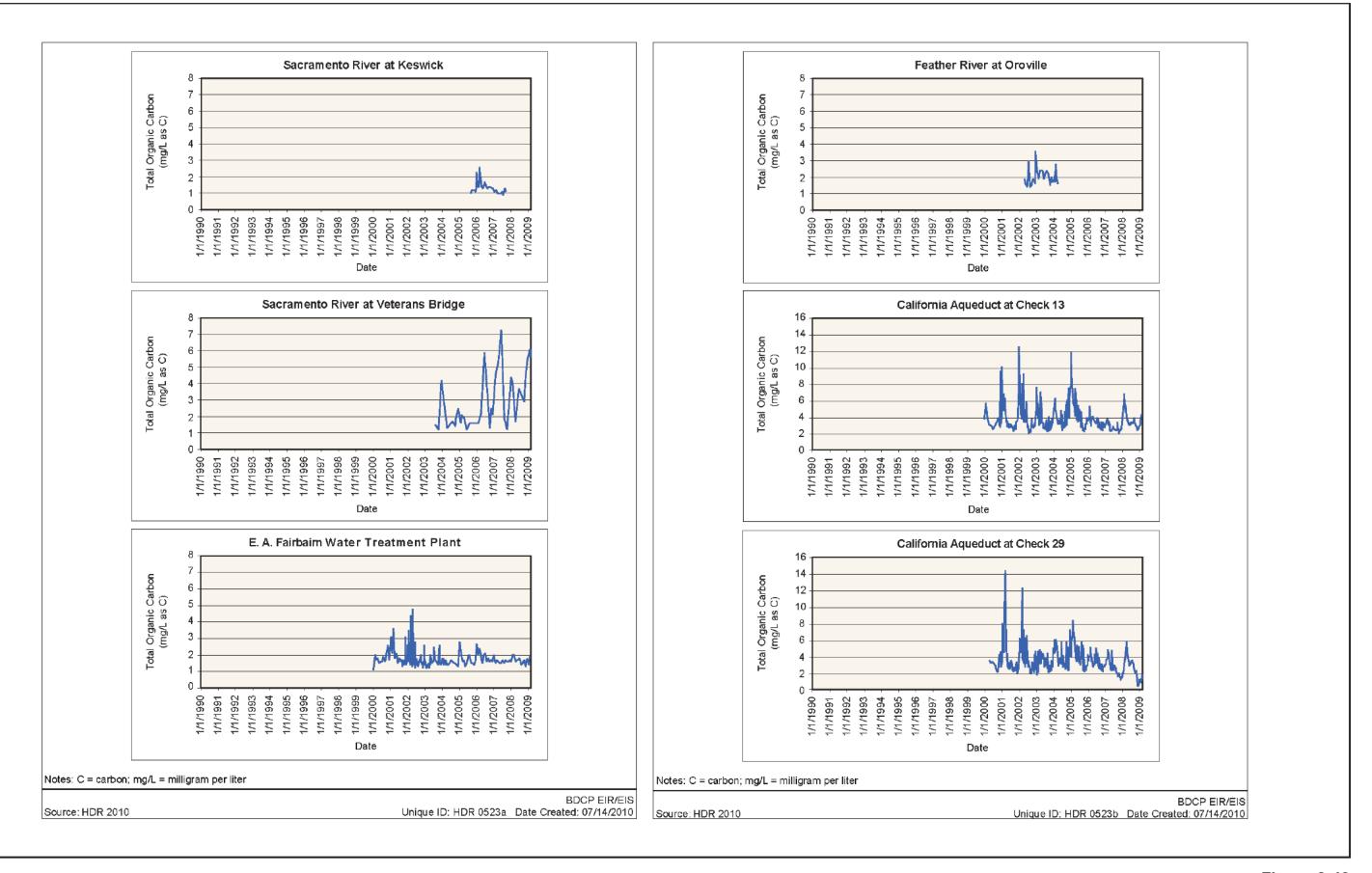
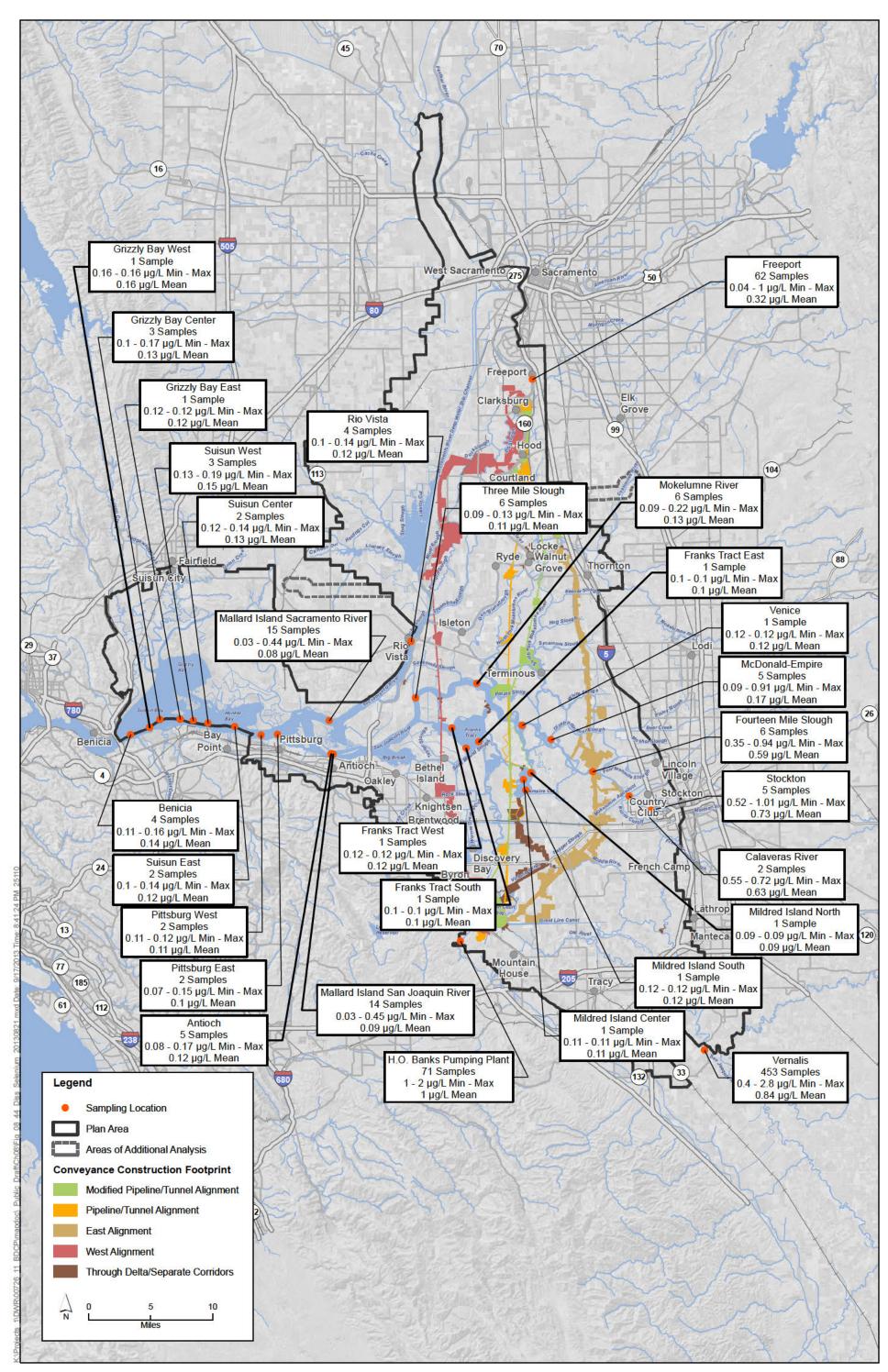


Figure 8-42 Temporal Summary of Total Organic Carbon Data at Delta Stations



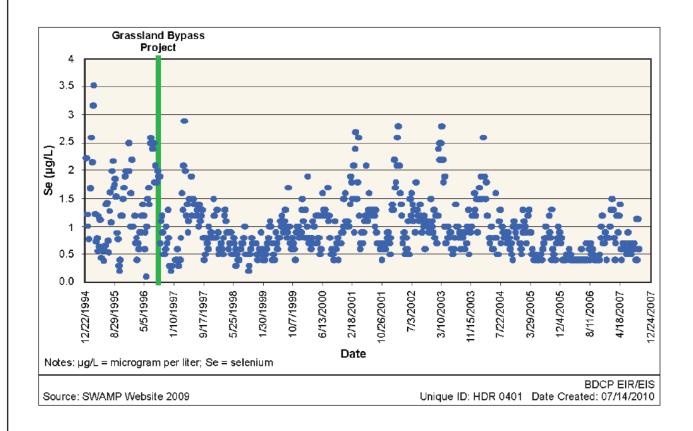
CP Graphics/... BDCP EIR-EIS/(HDR Aug 2010) Rev 08/26/2013T

Figure 8-43 at North of Delta and South of Delta Stations

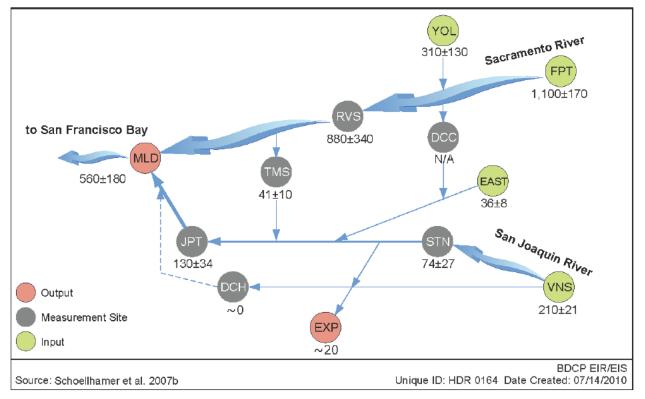


Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; Constructability (Rev 10), DHCCP DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Streets, ESRI 2010; Aerial Photograph, NA P 2010; Hydrology, HDR 2010, Cities; DWR 2010; Selenium, Lucas and Stewart 2007; MWQI, 2003, 2005, 2006; SEEI 2010; SWAMP 2009; USGS 2010.

Figure 8-44 Spatial Summary of Dissolved Selenium Data (1999 - 2008)

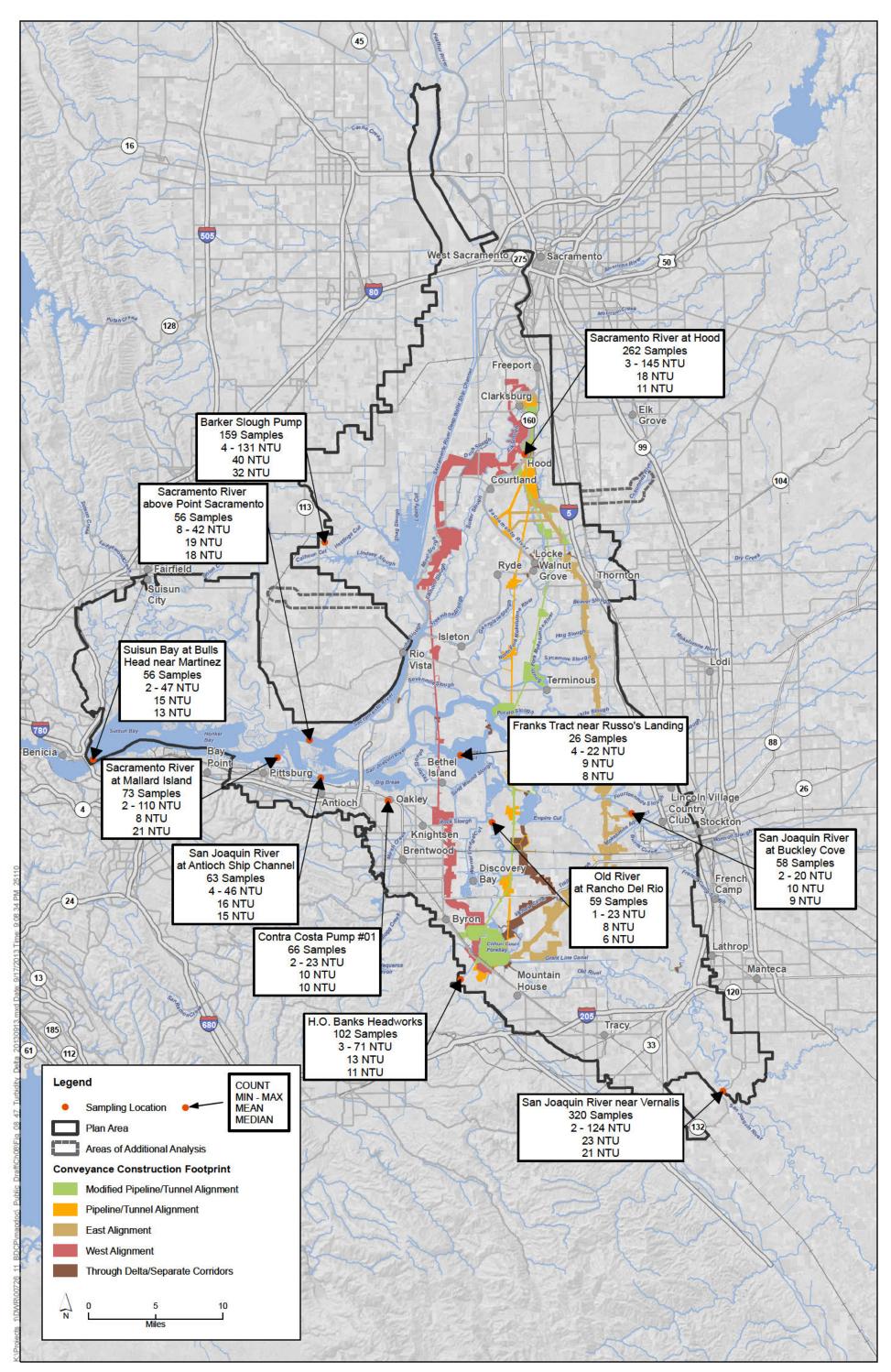


BDCP Graphics/... BDCP EIR-EIS/(HDR Aug 2010) Rev 02/19/2012 TG



Note: Average annual Delta sediment budget based on water years 1999 – 2002, except for Three Mile Slough (TMS), which is based on water years 2001 and 2002 only (Wright and Schoellhamer 2005). Numbers are the annual suspended sediment flux and the estimated error in thousand metric tons. Arrow thickness indicates relative magnitude of the suspended sediment flux. Sediment deposition accounts for the decreased sediment fluxes from east to west. Additional sites are Sacramento River at Freeport (FPT), Yolo Bypass (YOL), Delta Cross Channel (DCC), Sacramento River at Rio Vista (RVS), Mallard Island (MAL), Eastside tributaries (EAST), San Joaquin River at Stockton (STN), exports from the State Water Project and Central Valley Project (EXP), Dutch Slough (DCH), and San Joaquin River at Jersey Point (JPT).

Figure 8-46 Average Annual Delta Sediment Budget Based on Water Years 1999–2002



Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012; Constructability (Rev 10), DHCCP DWR 2012; Constructability (Rev 3b), DHCCP DWR 2012; Streets, ESRI 2010; Aerial Photograph, NA P 2010; Hydrology, HDR 2010; Water Quality, EMP 1999.

^{v 3b), DHCCP DWR 2012;} Figure 8-47 Spatial Summary of Turbidity Data at Delta Stations (2001 - 2006)

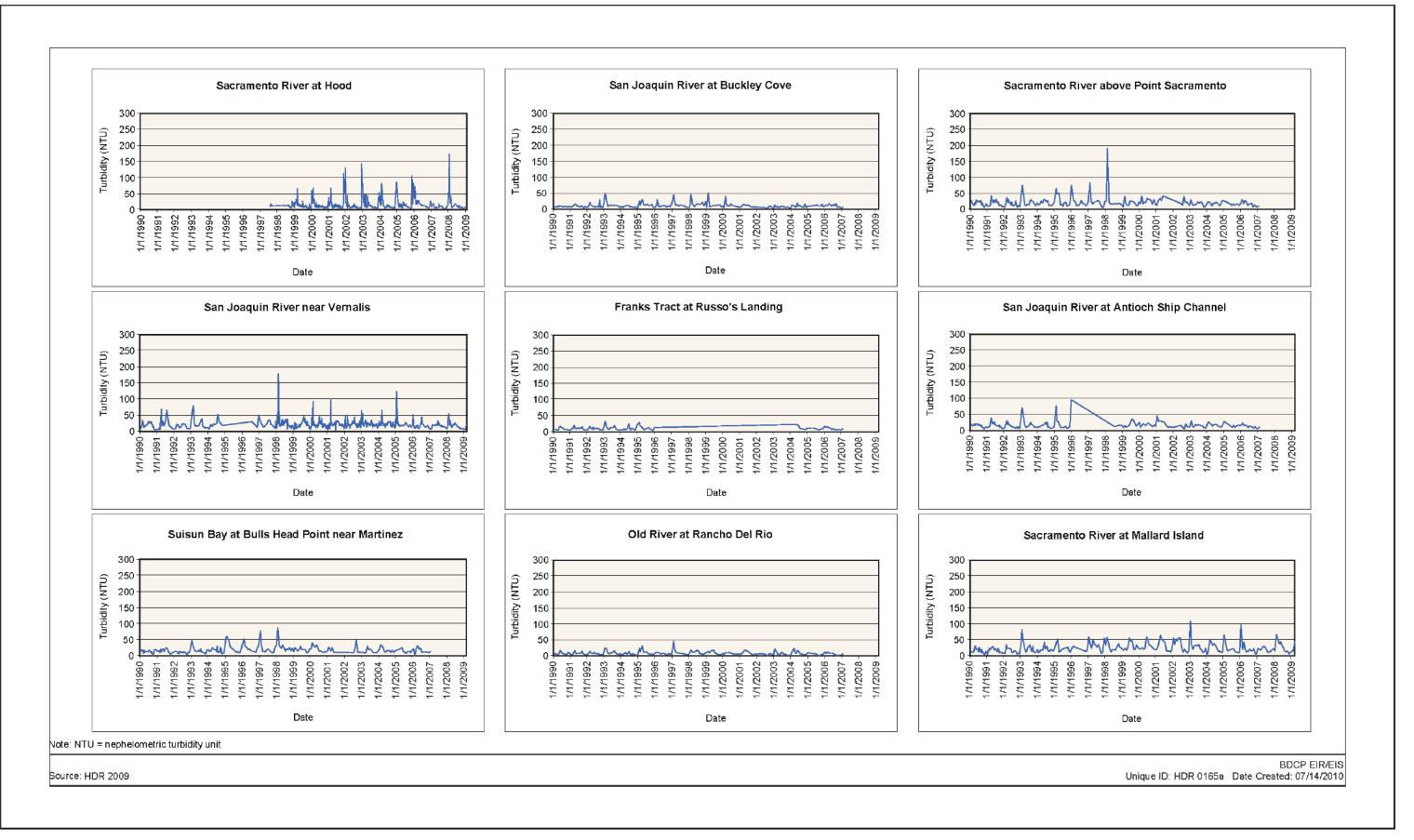
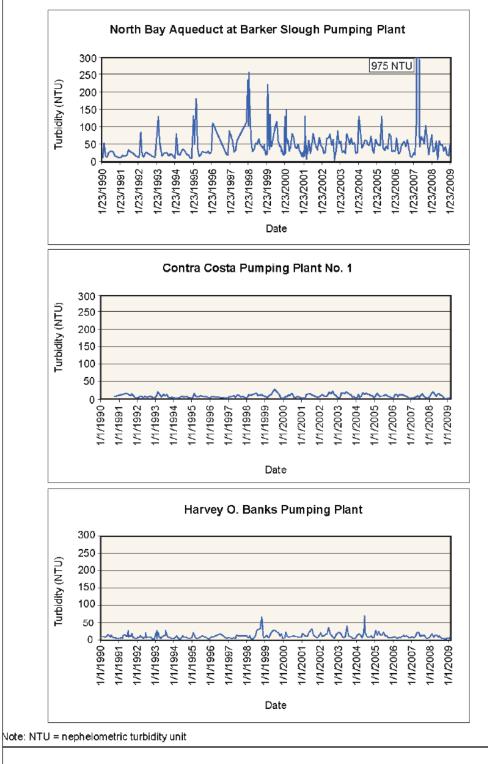


Figure 8-48a Temporal Summary of Turbidity Data at Delta Stations



Source: HDR 2009

Figure 8 48b Temporal Summary of Turbidity Data at Delta Stations

BDCP EIR/EIS Unique ID: HDR 0165b Date Created: 07/14/2010

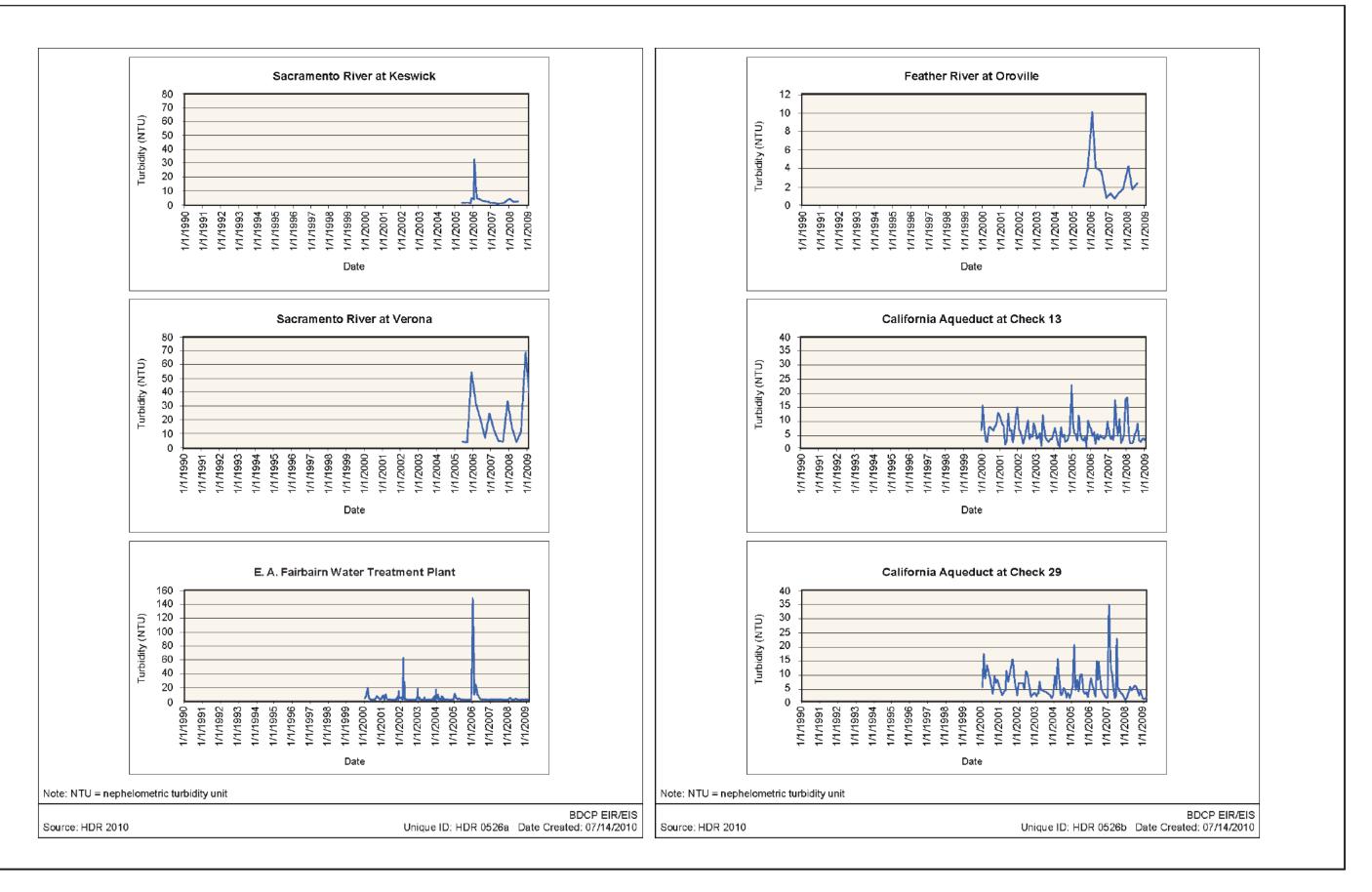


Figure 8-49 Temporal Summary of Turbidity Data at North of Delta and South of Delta Stations

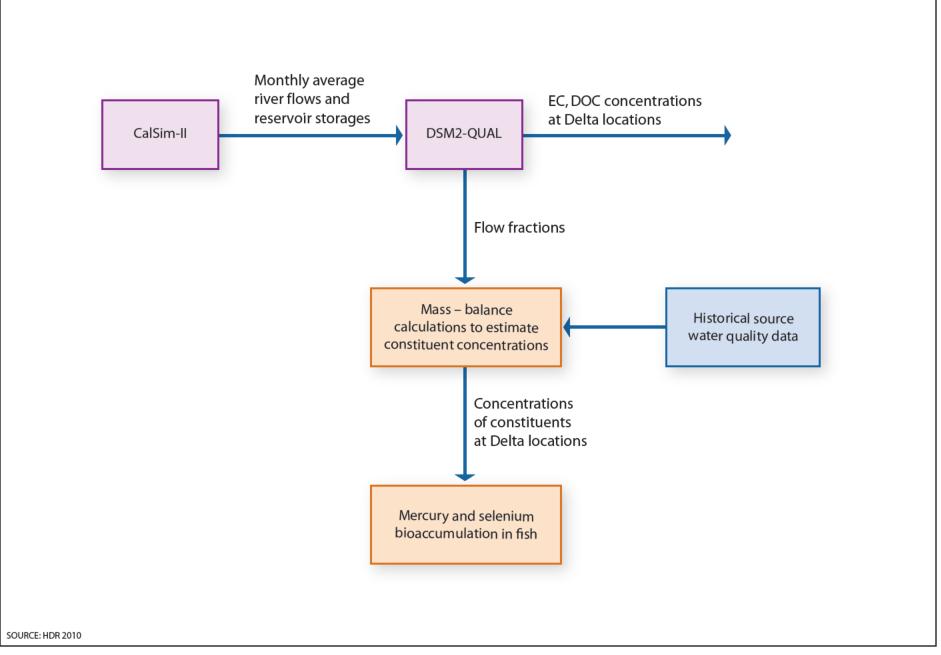
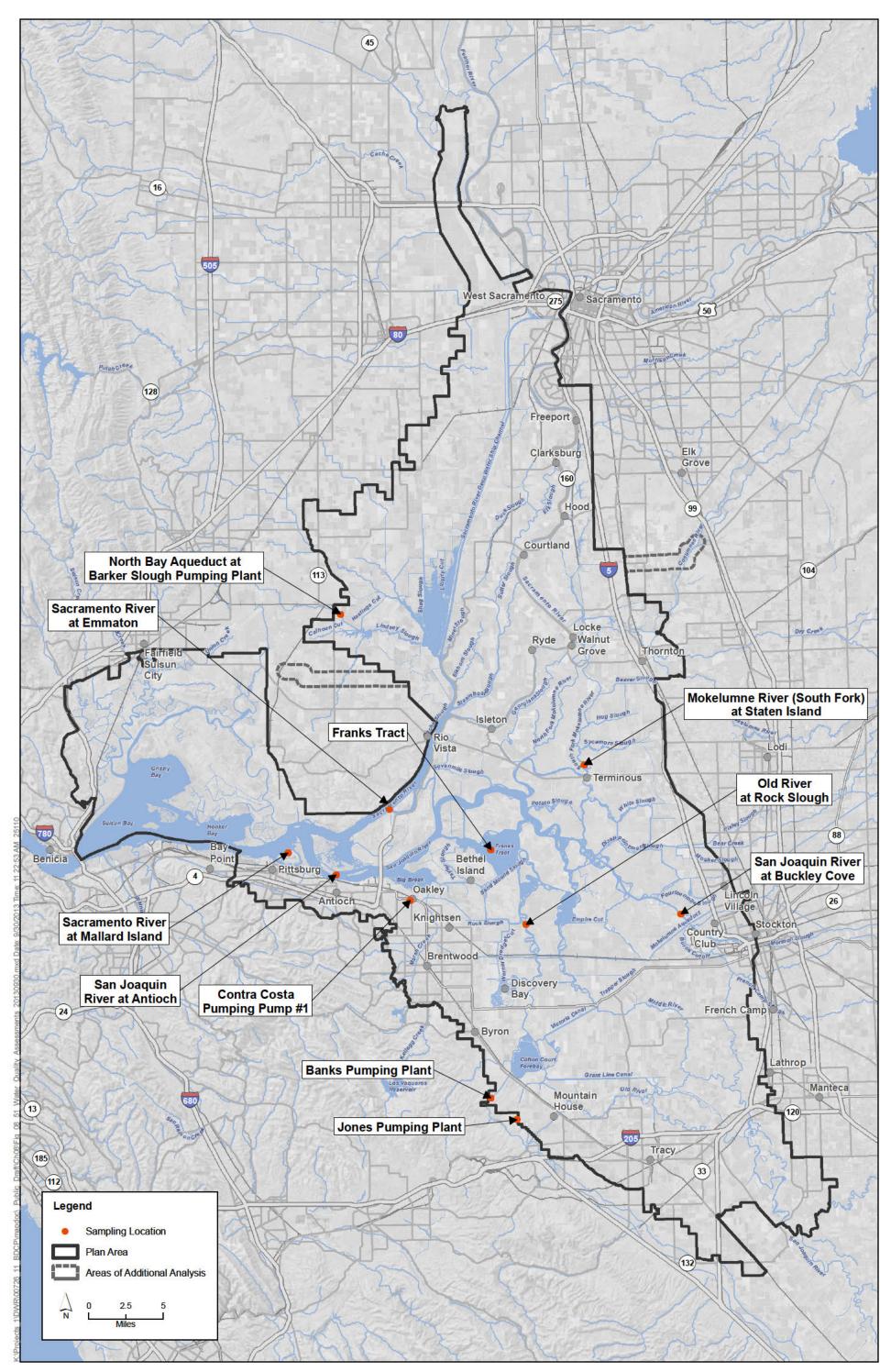
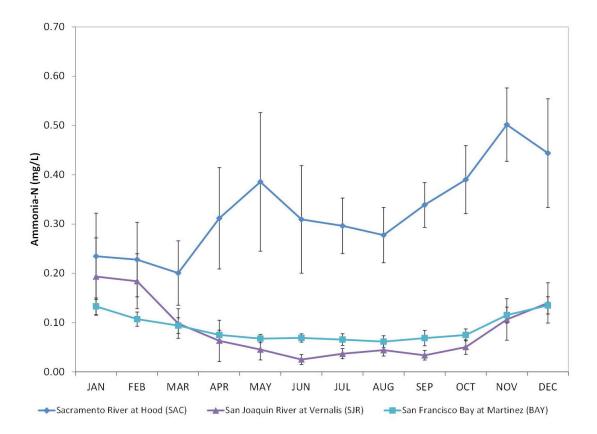


Figure 8-50 Linkages between the Hydrologic and Water Quality Models

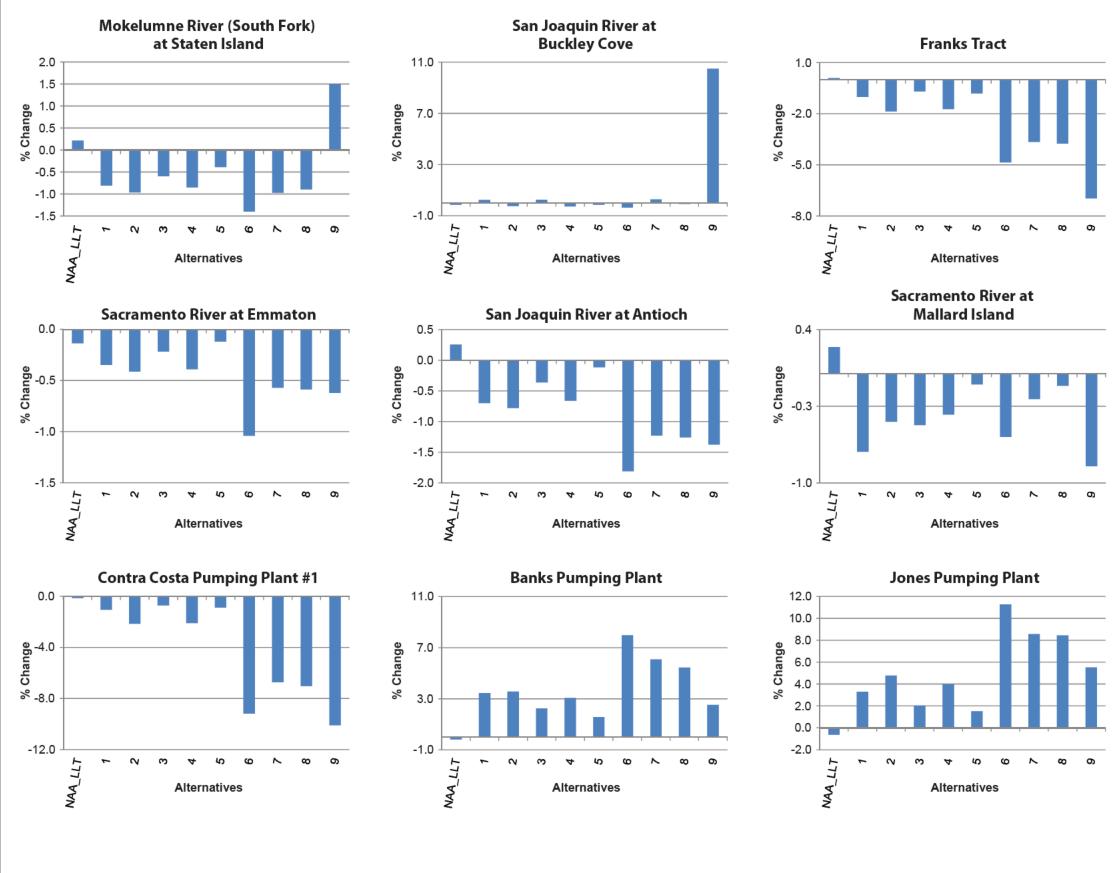


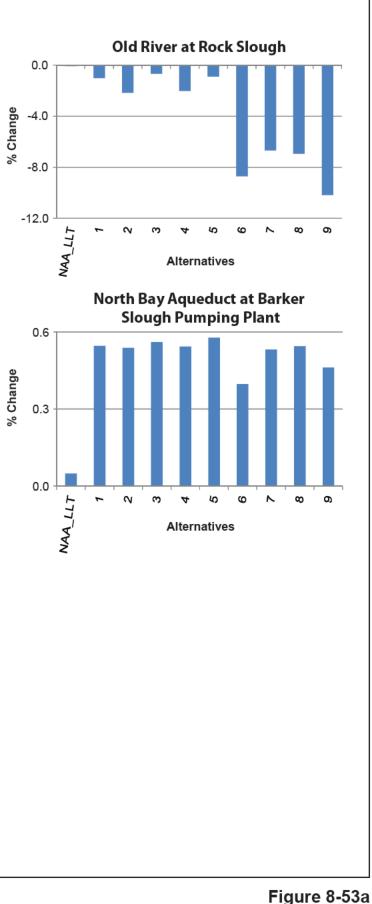
Sources: Plan Area, ICF 2012; Area of Additional Analysis, ICF 2012;

Figure 8-51 Surface Water Quality Assessment Locations in the Delta

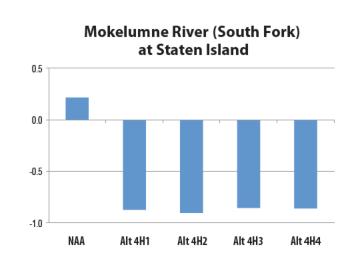


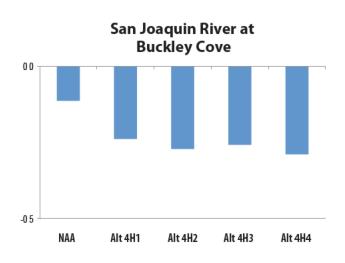
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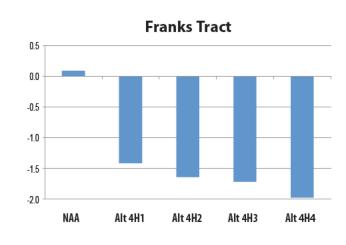


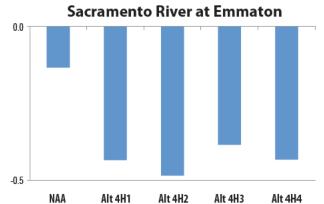


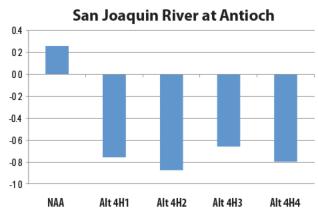
Percent Change in Available Assimilative Capacity for Mercury

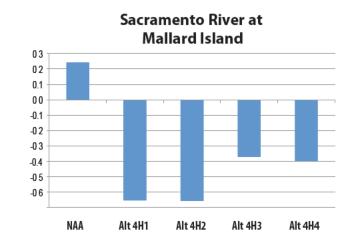


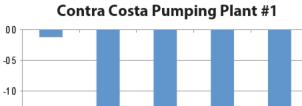


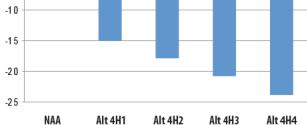


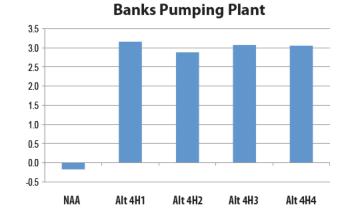




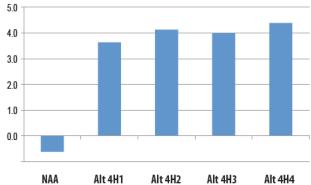














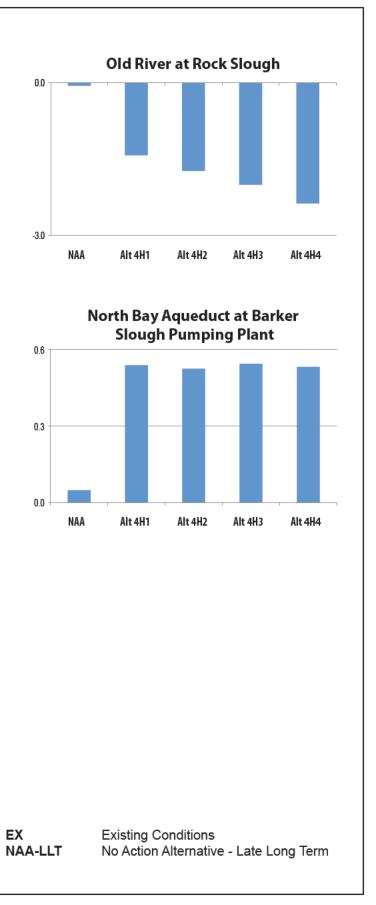
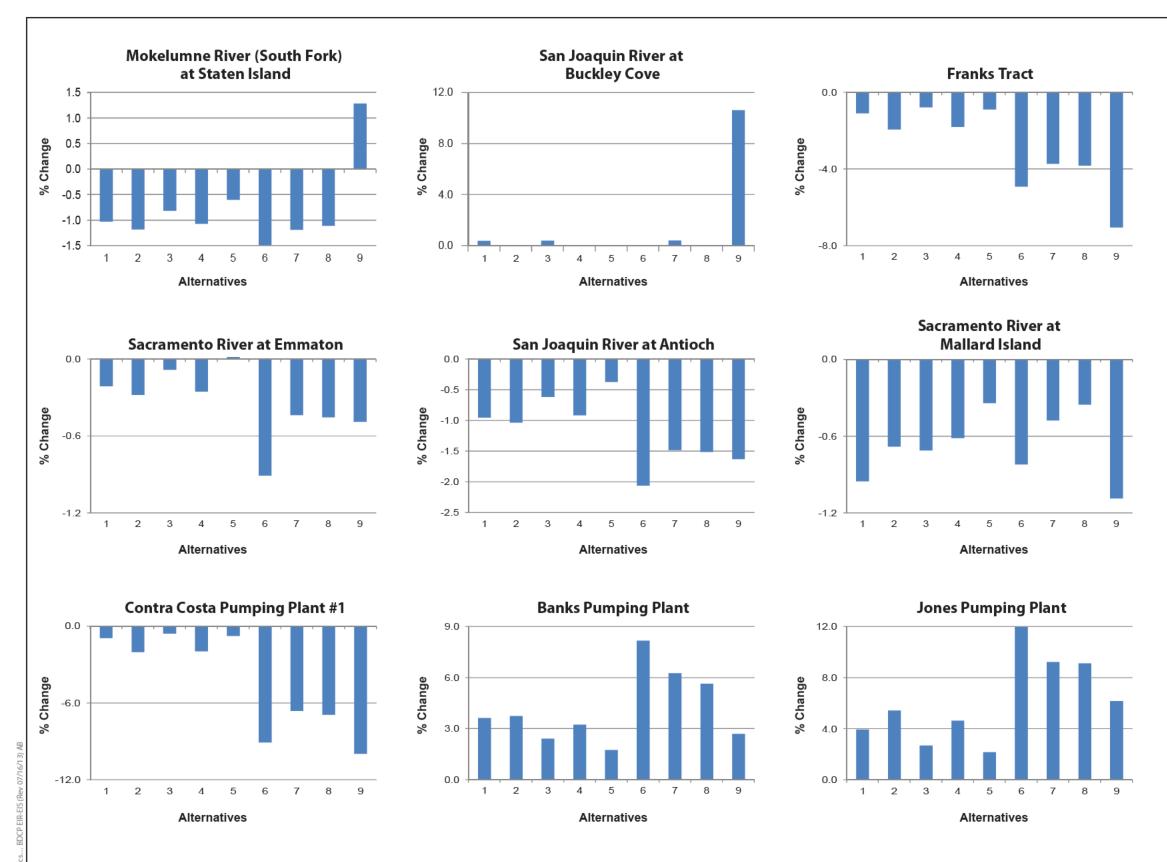
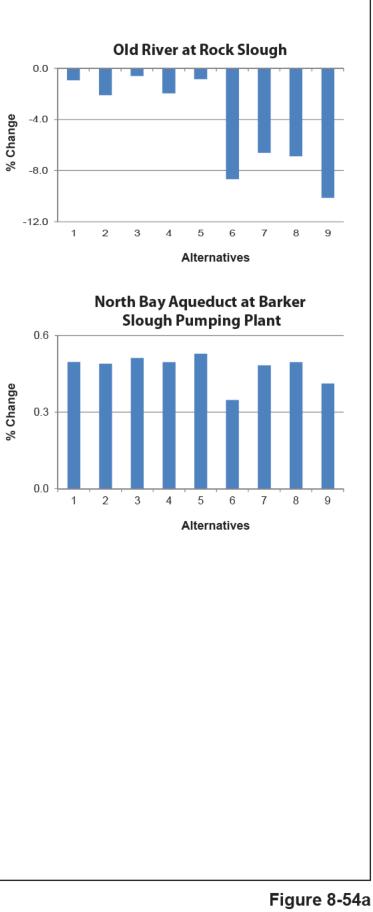
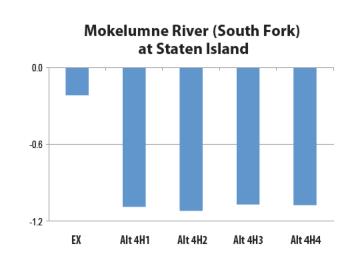


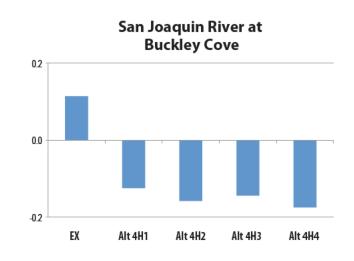
Figure 8-53b Percent Change in Available Assimilative Capacity for Mercury

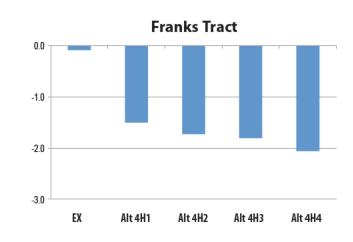


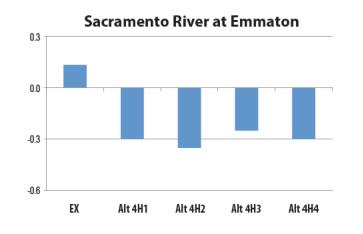


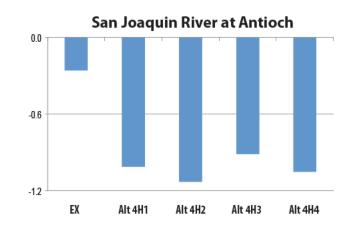
Benchmark) with Respect to No Action Alternative for All Years

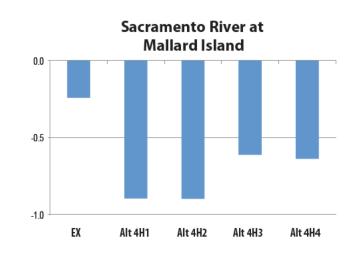


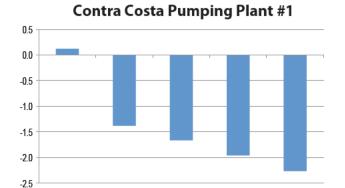












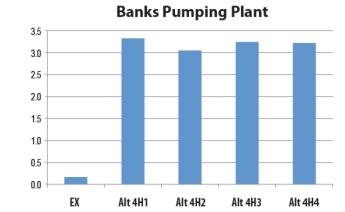
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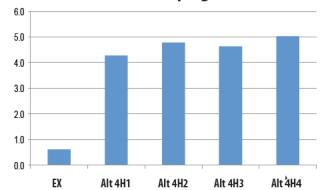
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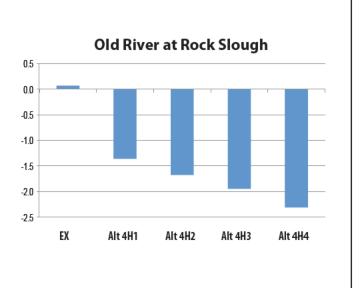
EX



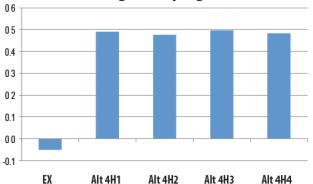




Percent Change in Available Assimilative Capacity for Mercury(Based on 25ng/L Ecological Risk

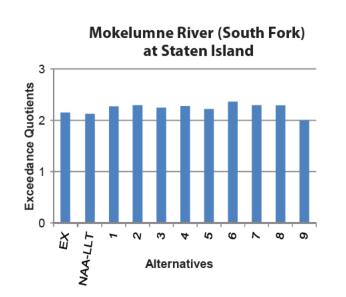


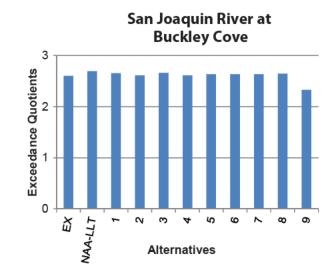
North Bay Aqueduct at Barker **Slough Pumping Plant**

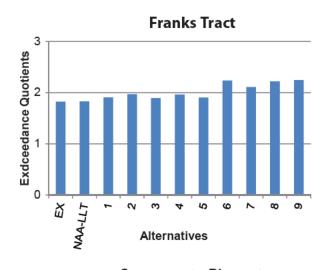


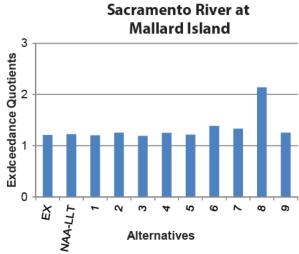
EX **Existing Conditions**

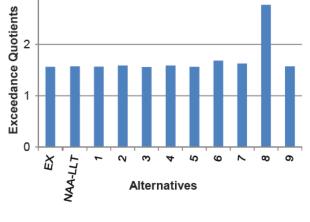
Figure 8-54b Benchmark) with Respect to No Action Alternative for All Years



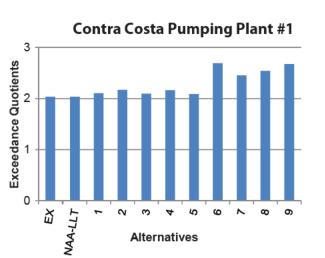


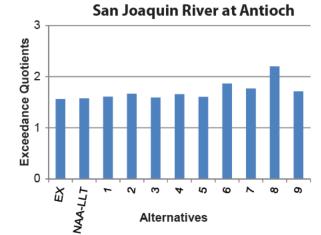


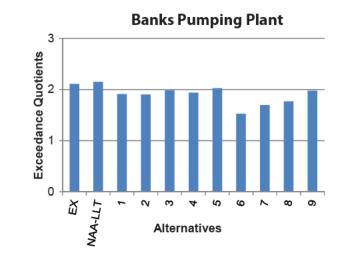


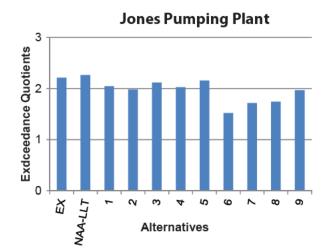


Sacramento River at Emmaton









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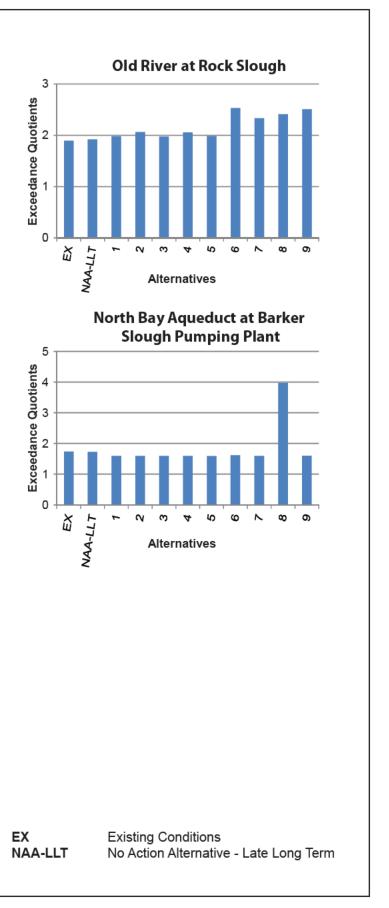
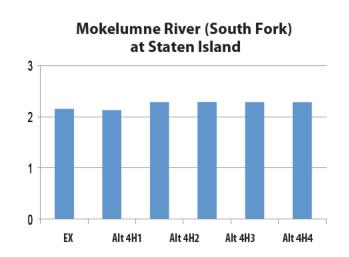
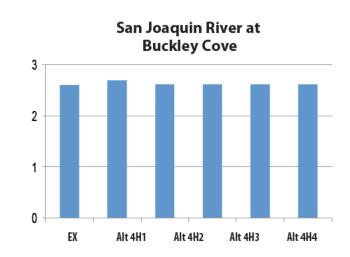


Figure 8-55a Level of Concern Exceedance Quotients for Methyl Mercury Concentrations in 350 mm Largemouth Bass Fillets for All Years







Alt 4H2

Alt 4H3

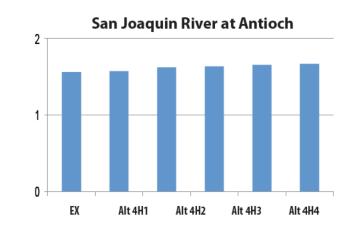
Alt 4H4

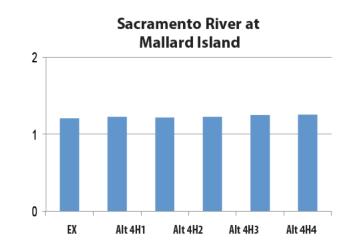
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Alt 4H1

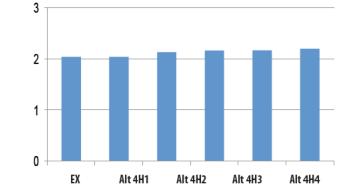
Franks Tract

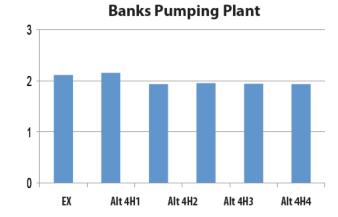
Sacramento River at Emmaton 2 Alt 4H1 Alt 4H2 Alt 4H3 Alt 4H4 EX

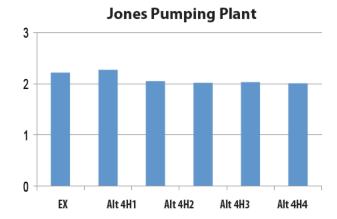




Contra Costa Pumping Plant #1







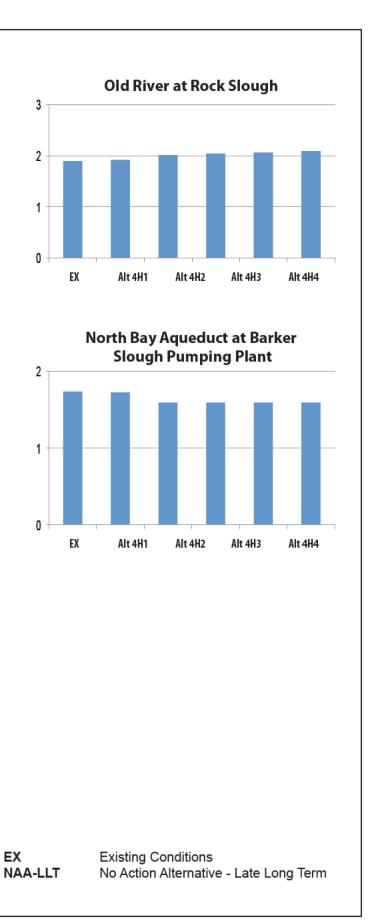
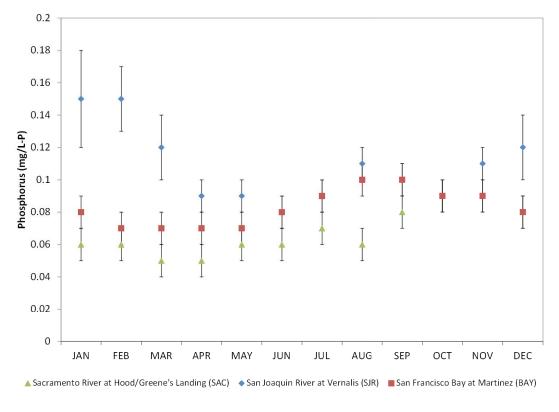
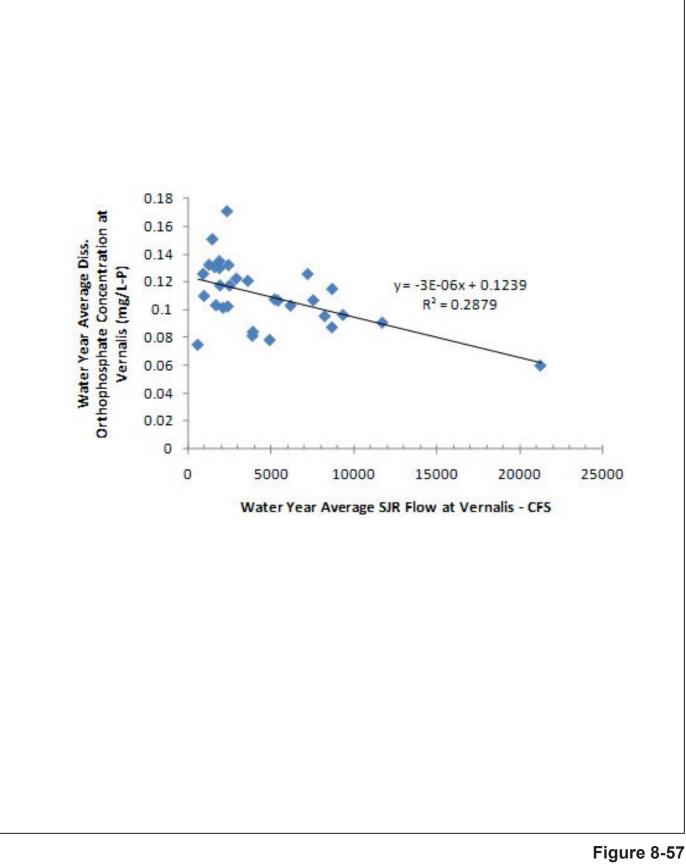


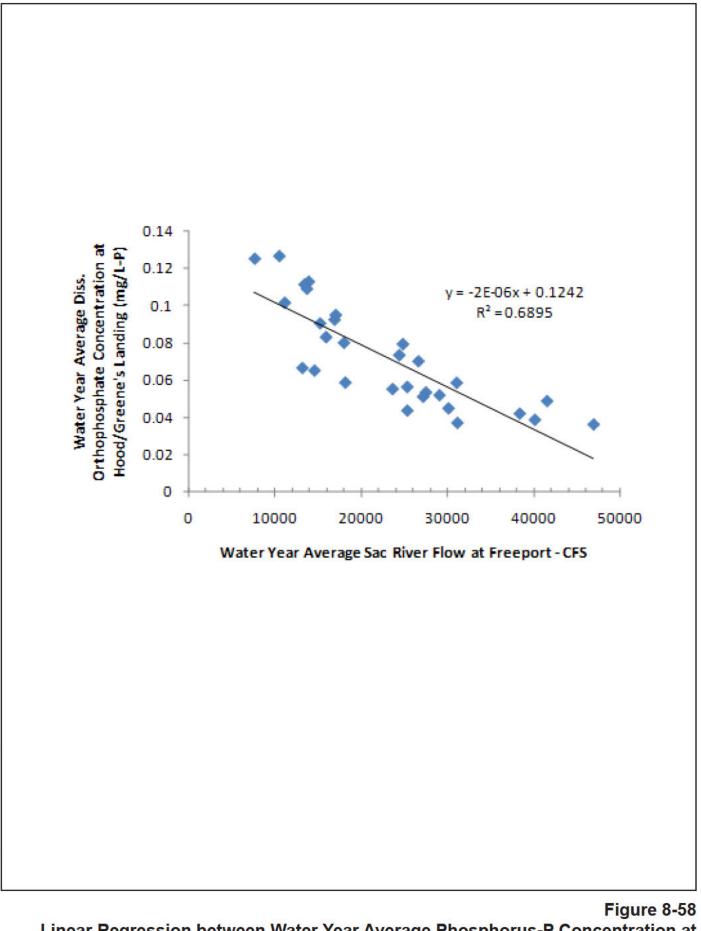
Figure 8-55b Level of Concern Exceedance Quotients for Methyl Mercury Concentrations in 350 mm Largemouth Bass Fillets for All Years



Period of record is 1975–2009. Error bars represent 95% confidence interval.



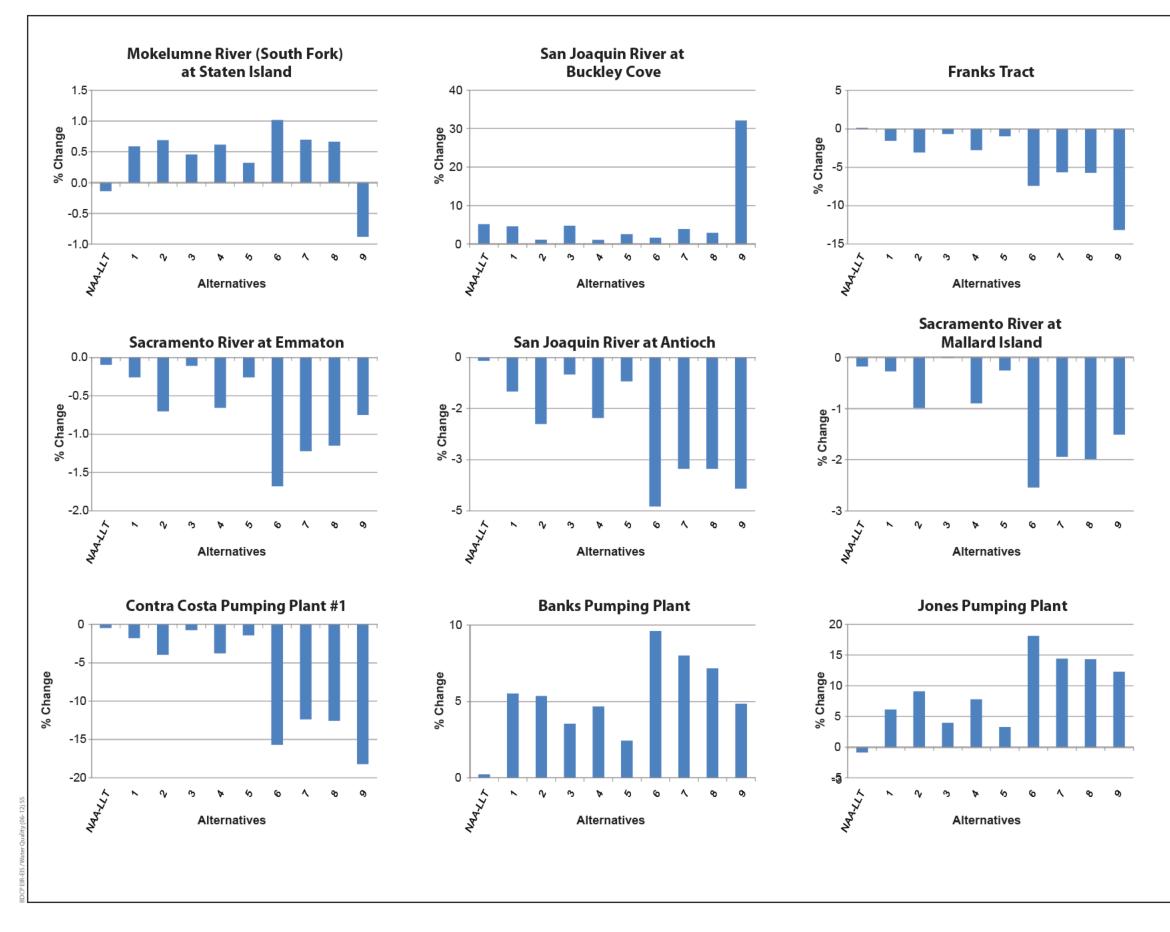
Linear Regression between Water Year Average Phosphorus-P Concentration and Water Year Average Flow in the San Joaquin River at Vernalis (1975–2005)

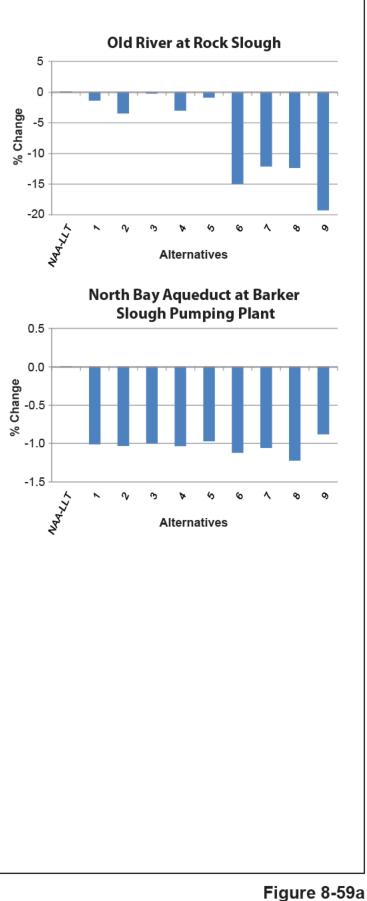


Linear Regression between Water Year Average Phosphorus-P Concentration at Sacramento River at Greene's Landing or Sacramento River at Hood and Water Year Average Flow in the Sacramento River at Freeport (1975–2004)

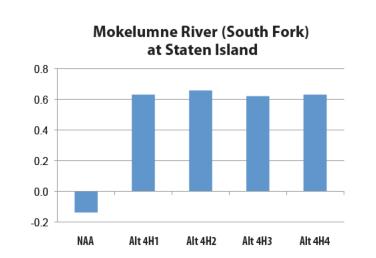
BDCP BR-EIS/(HDR Aug 2010) Rev 07/16/2013 AB

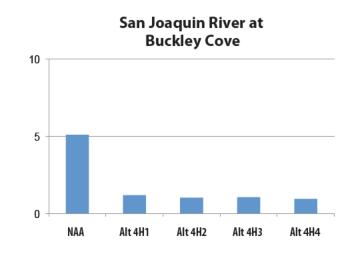
BDCP Graphics/.

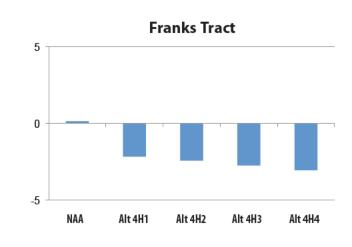


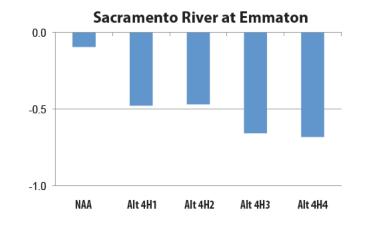


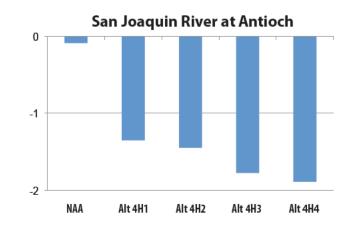
Benchmark) with Respect to Existing Conditions for All Years

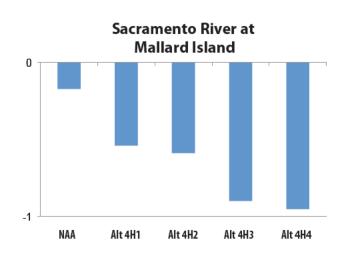




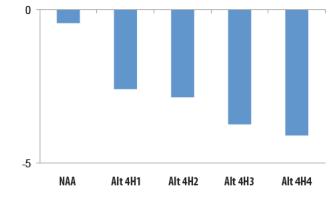


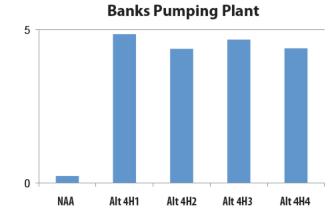


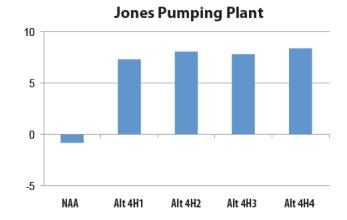




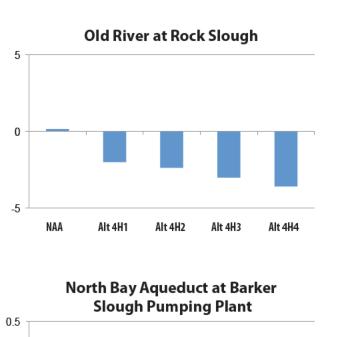








Percent Change in Available Assimilative Capacity for Selenium (Based on 2 µg/L Ecological Risk



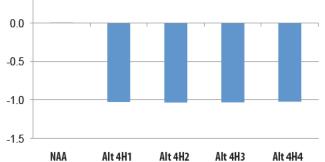
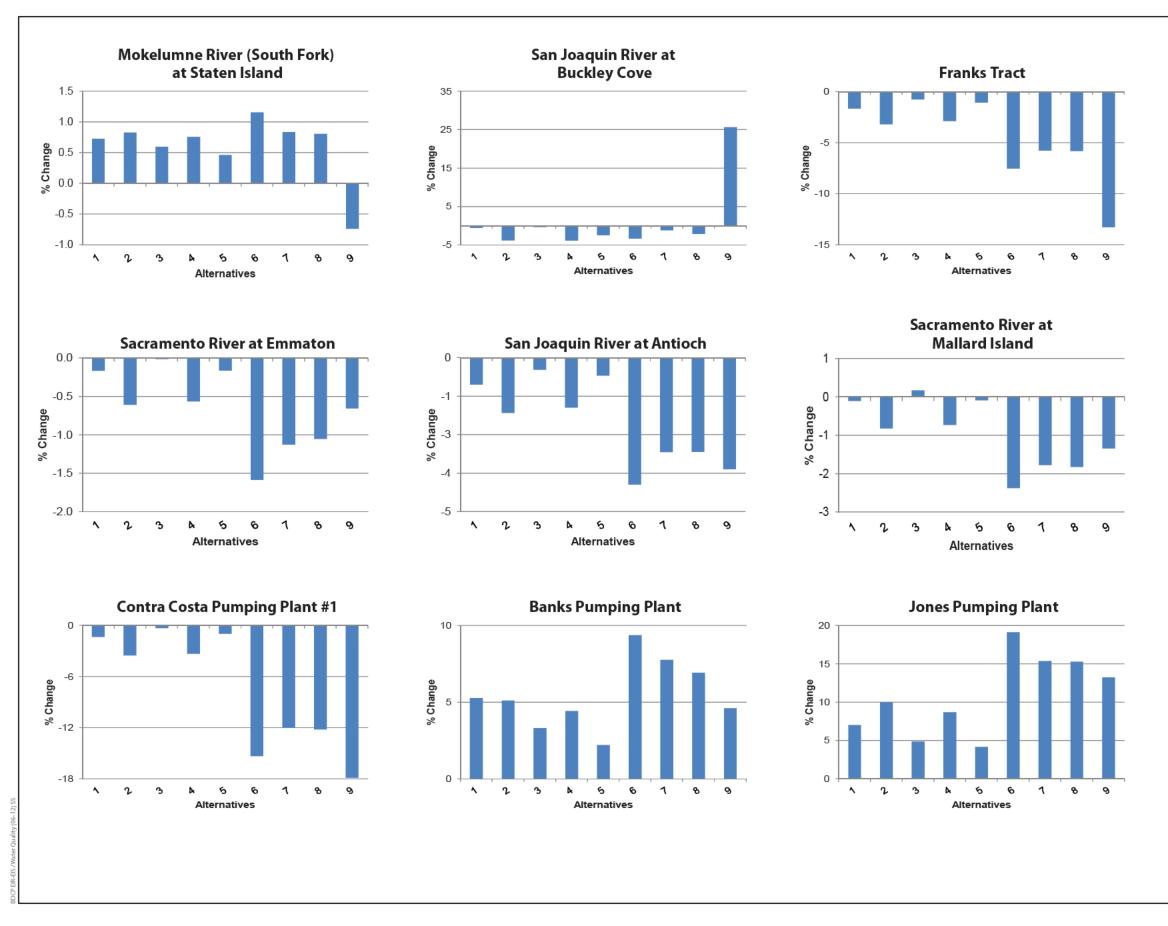
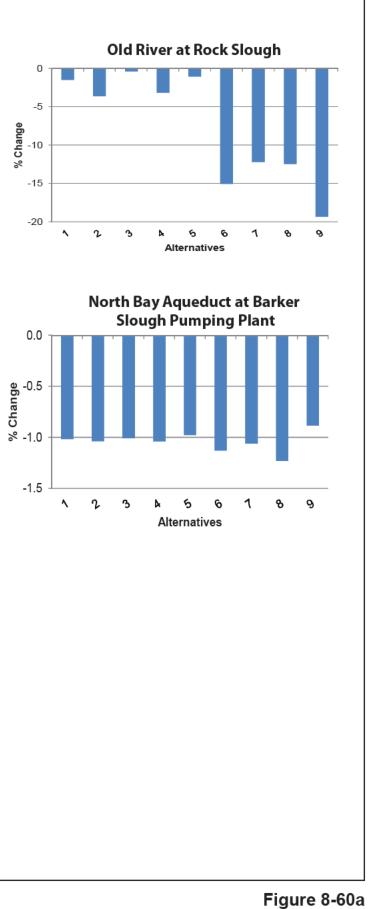
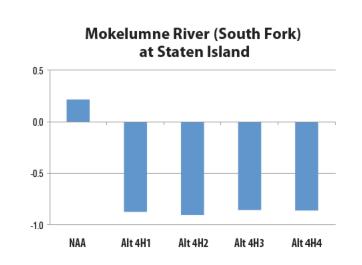


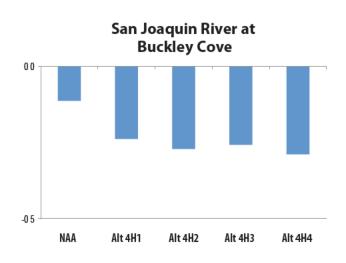
Figure 8-59b Benchmark) with Respect to Existing Conditions for All Years

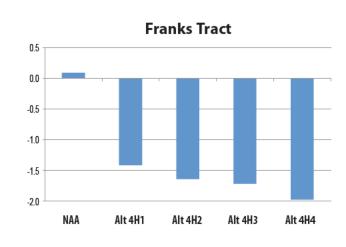


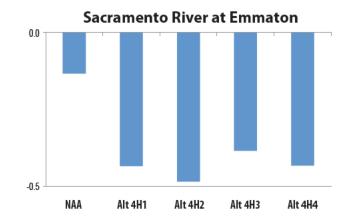


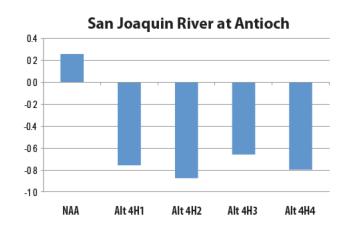
Benchmark) with Respect to No Action Alternative for All Years

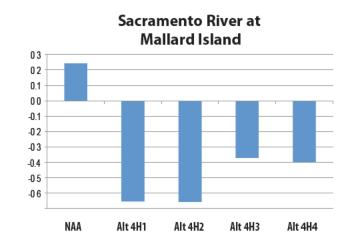




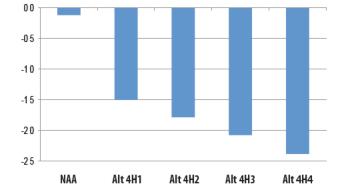


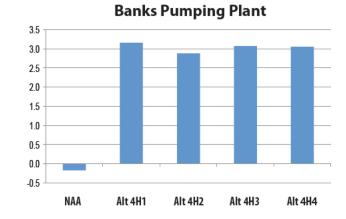






Contra Costa Pumping Plant #1





Jones Pumping Plant

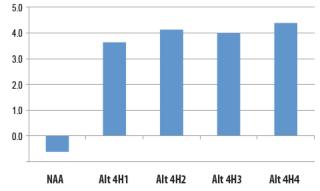
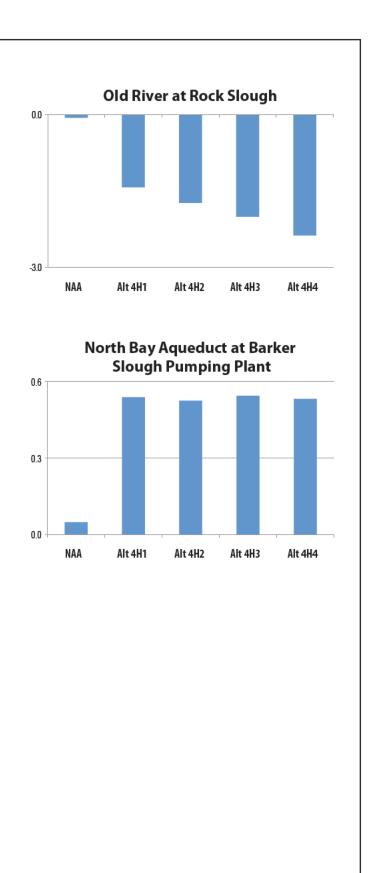
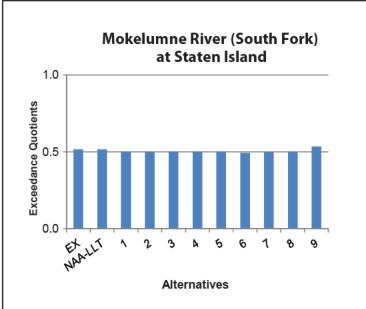
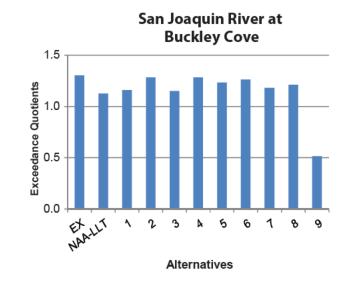
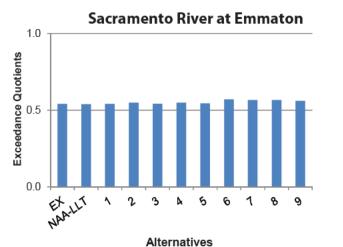


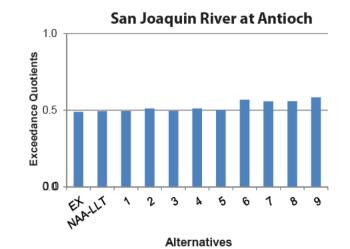
Figure 8-60b Percent Change in Available Assimilative Capacity for Selenium (Based on 2 µg/L Ecological Risk Benchmark) with Respect to No Action Alternative for All Years

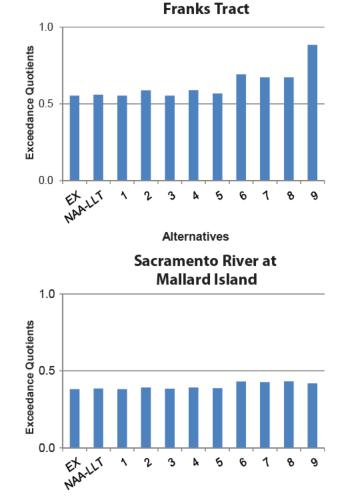




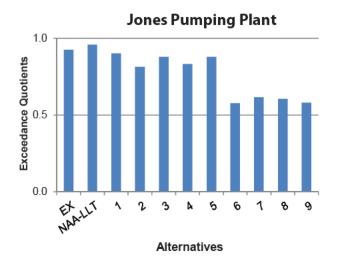




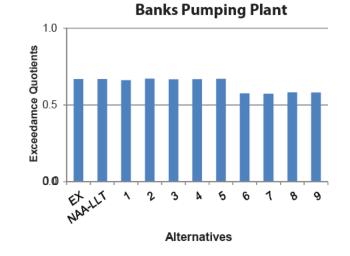




Alternatives



Contra Costa Pumping Plant #1 1.5 Quotients S 0.5 Exce 0.0 EXILIT 1 2 <u>k 5 6 1 8 9</u> З Alternatives





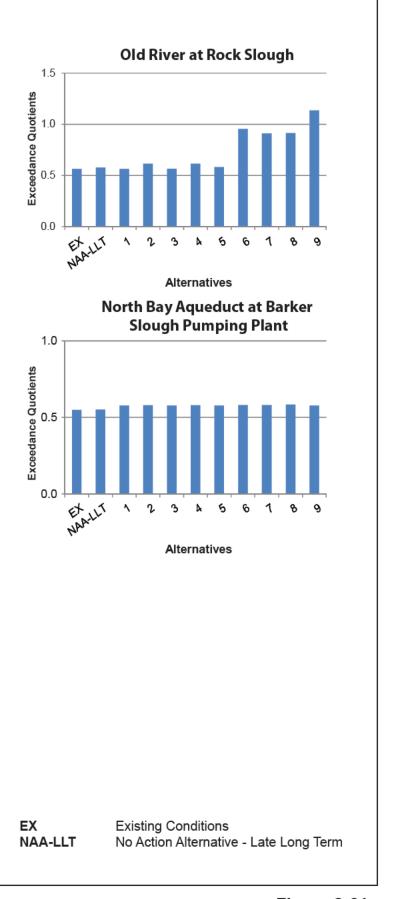
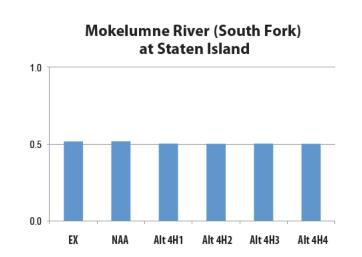
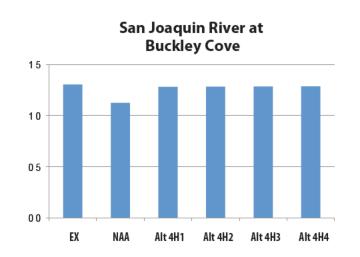
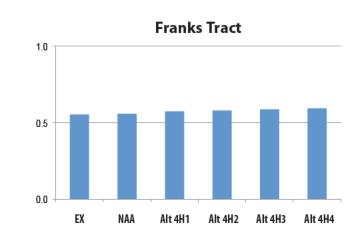
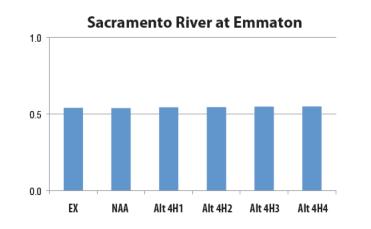


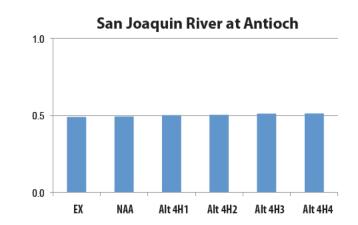
Figure 8-61a Level of Concern Exceedance Quotients for Selenium Concentrations in Whole-Body Fish for Drought Years

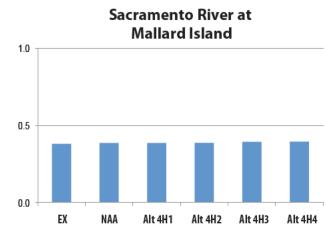


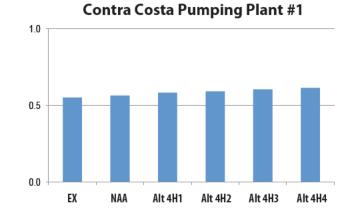


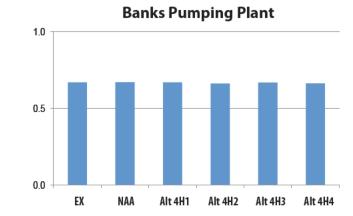




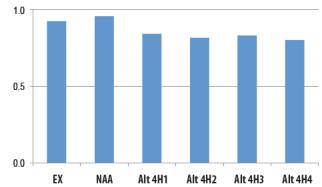


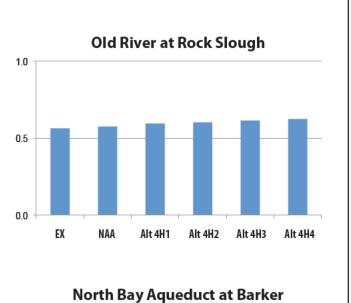














Alt 4H1

Alt 4H2 Alt 4H3 Alt 4H4

NAA

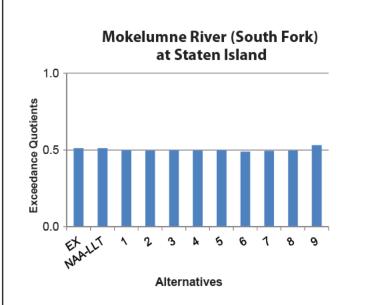
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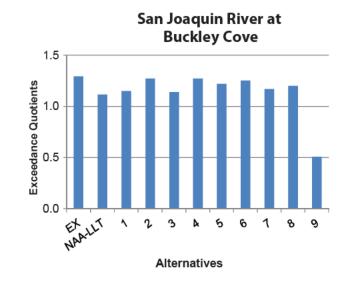
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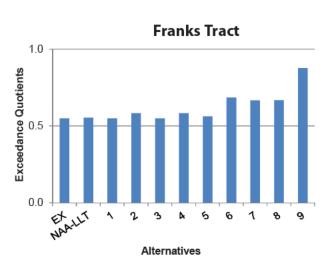
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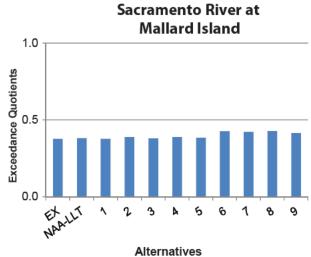


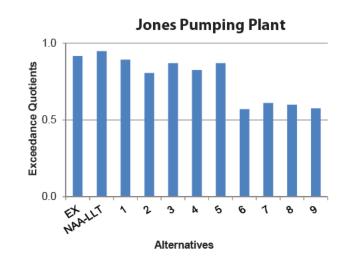
Figure 8-61b Level of Concern Exceedance Quotients for Selenium Concentrations in Whole-Body Fish for Drought Years

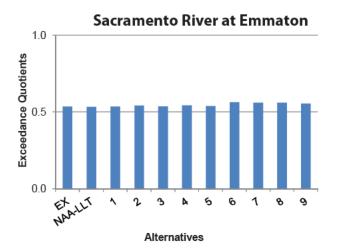












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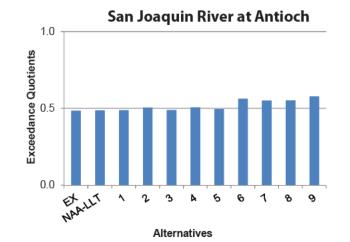
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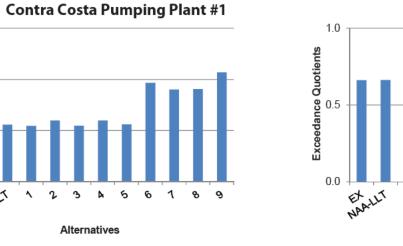
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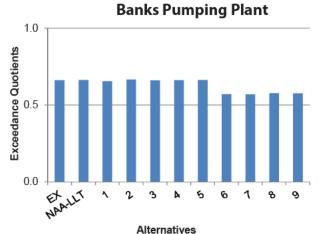
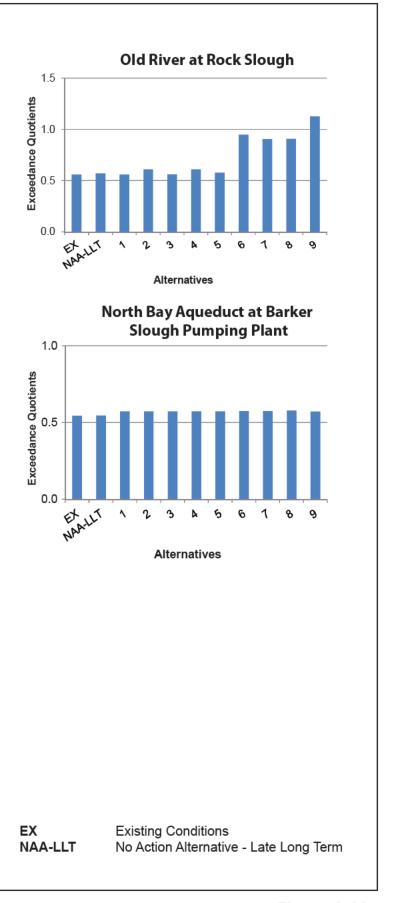
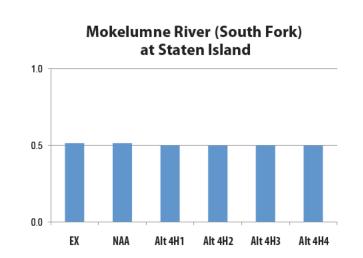
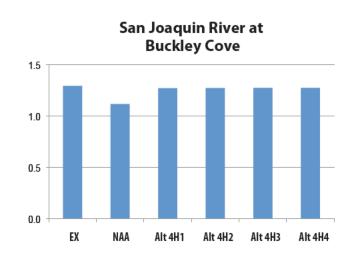
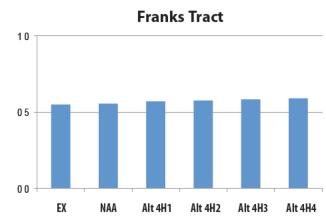


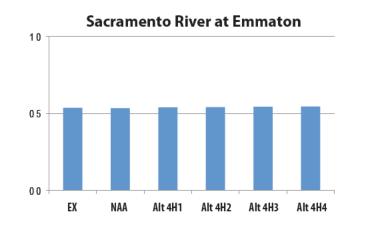
Figure 8-62a Level of Concern Exceedance Quotients for Selenium Concentrations in Bird Eggs (Invertebrate Diet) for Drought Years

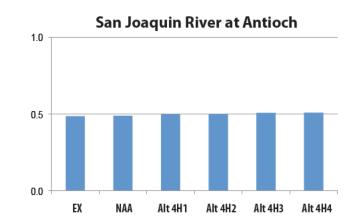


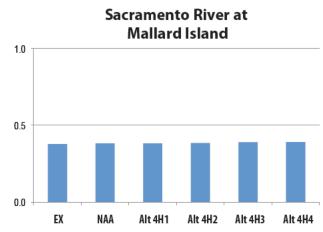


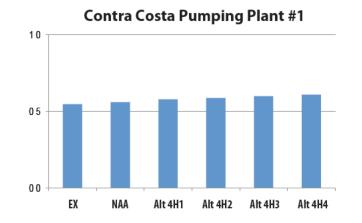


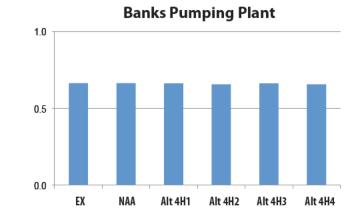




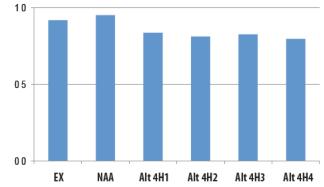


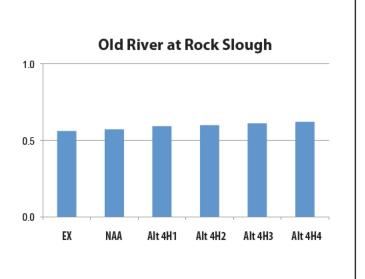














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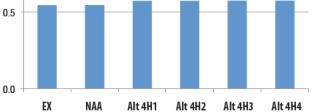
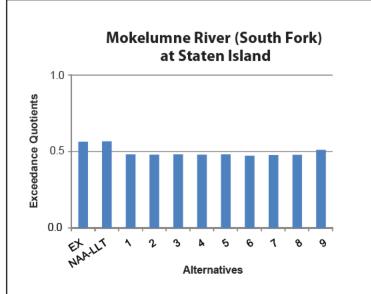




Figure 8-62b Level of Concern Exceedance Quotients for Selenium Concentrations in Bird Eggs (Invertebrate Diet) for Drought Years



Sacramento River at Emmaton

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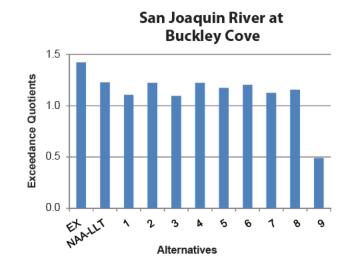
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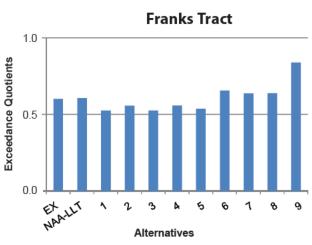
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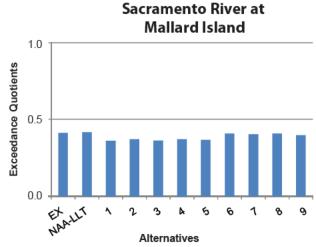
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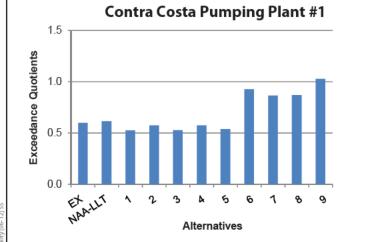
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San Joaquin River at Antioch

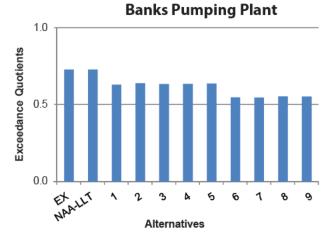
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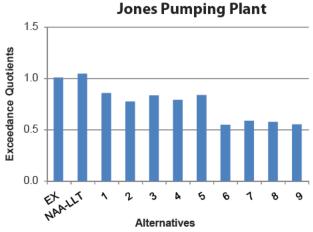




Alternatives



Alternatives



Sacramento River at

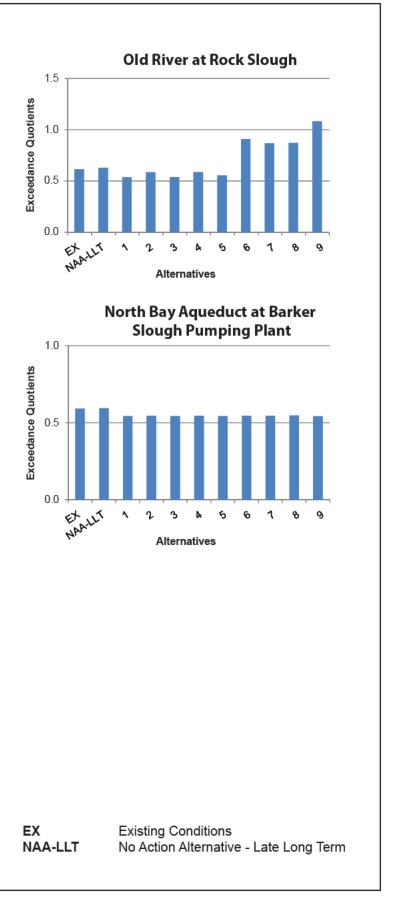
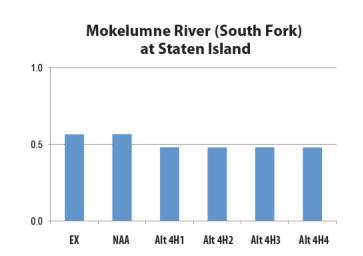
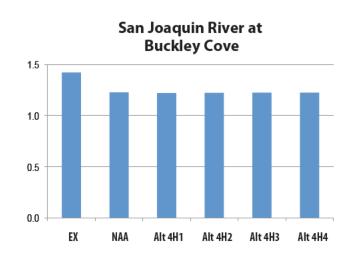
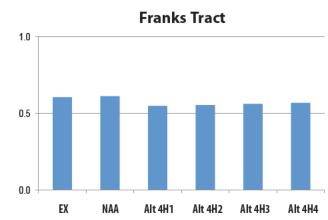
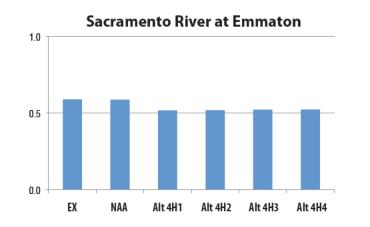


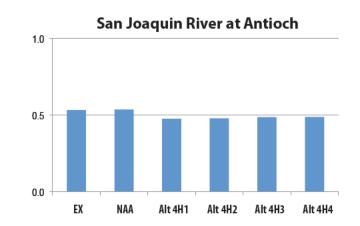
Figure 8-63a Level of Concern Exceedance Quotients for Selenium Concentrations in Bird Eggs (Fish Diet) for Drought Years

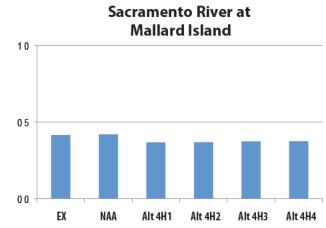


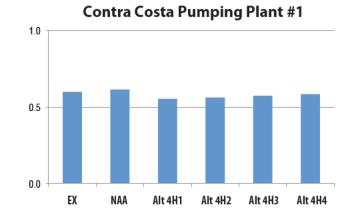


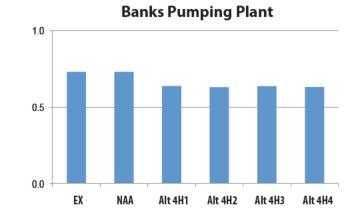












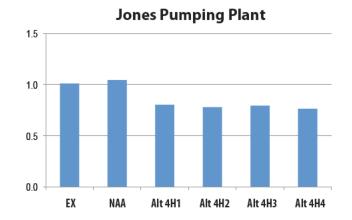
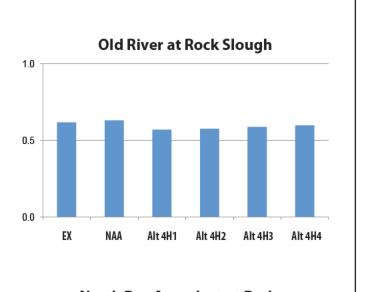
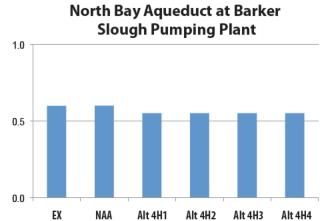
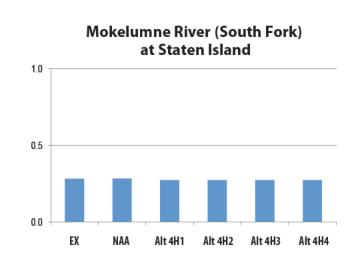


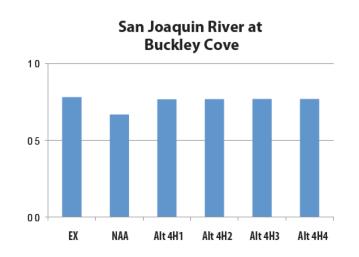
Figure 8-63b Level of Concern Exceedance Quotients for Selenium Concentrations in Bird Eggs (Fish Diet) for Drought Years

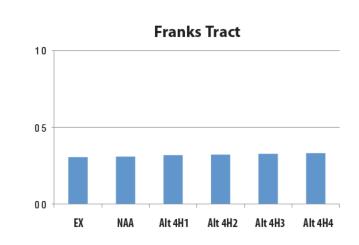


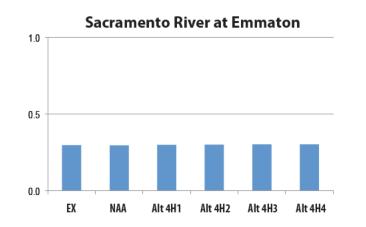


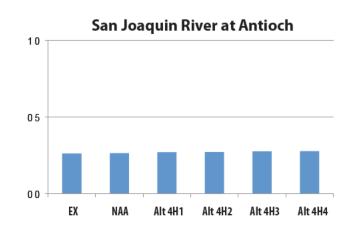


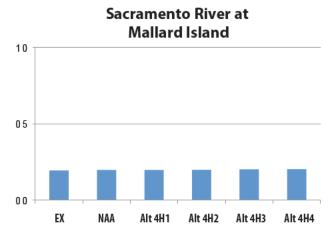


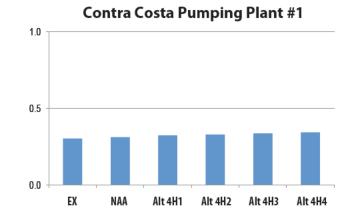


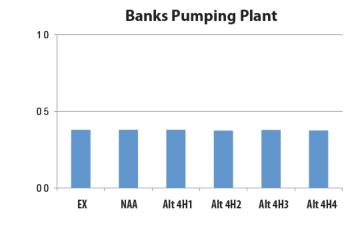


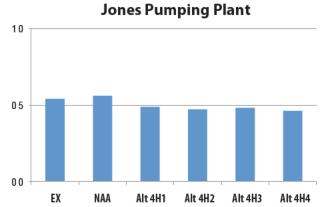












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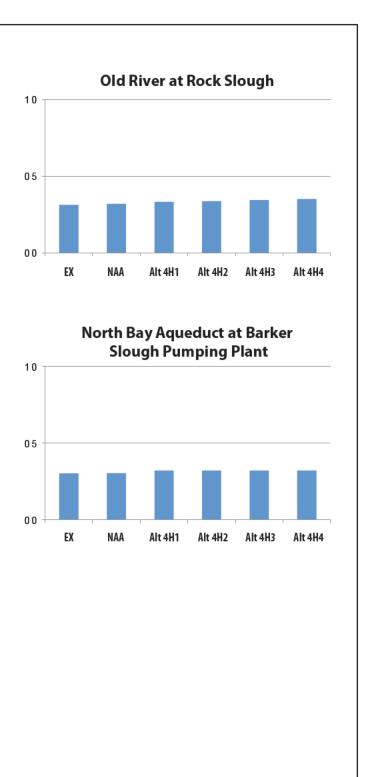
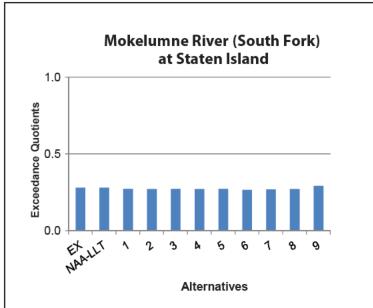
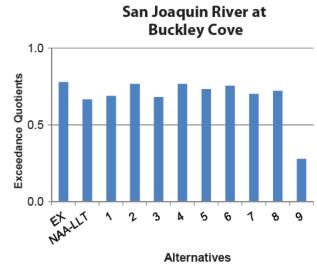


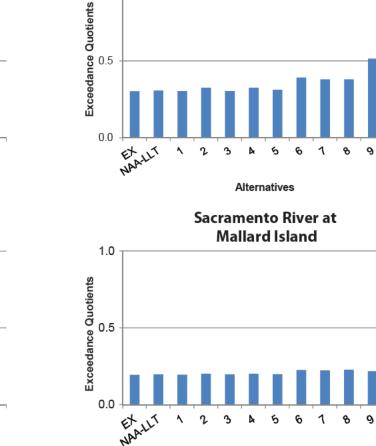
Figure 8-64a Tissue Advisory Level Exceedance Quotients for Selenium Concentrations in Fish Fillets for Drought Years

No Action Alternative - Late Long Term

Existing Conditions



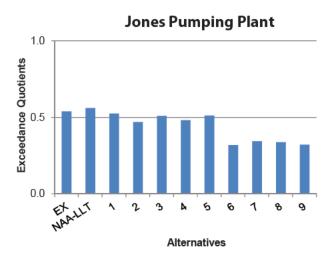


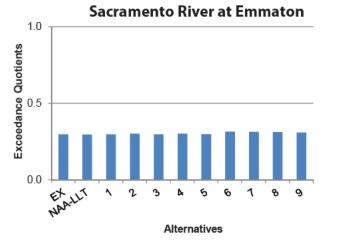


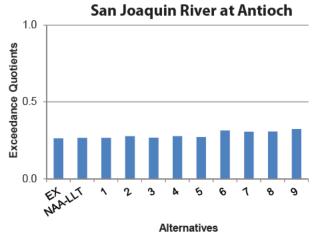
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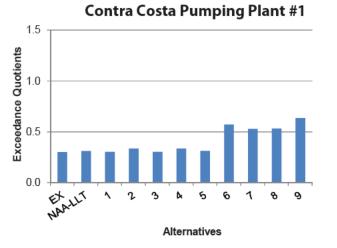
Alternatives

Franks Tract









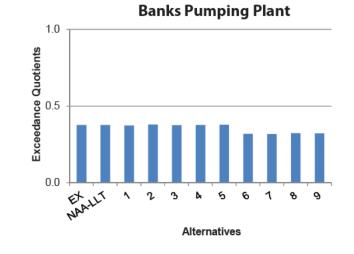


Figure 8-64b Tissue Advisory Level Exceedance Quotients for Selenium Concentrations in Fish Fillets for Drought Years

