

## **Appendix 7**

# **Surface Water Quality**

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## Appendix 7: Surface Water Quality

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**Appendix 7A  
2010 California State Water Resources  
Control Board 303(d) List of  
Water Quality Limited Segments  
(Region 5: Sacramento River Watershed)**

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**2010 California State Water Resources Control Board 303(d) List of Water Quality Limited Segments\***  
**Region 5: Sacramento River Watershed**

Water Quality Limited Segments Requiring a TMDL(5A), Being Addressed by TMDL(5B), and/or Being Addressed by an Action Other than TMDL(5C)						
Water Body Name	Water Body Type	Estimated Size Affected	Unit	Pollutant	Expected TMDL Completion Date	Potential Sources
Almanor Lake	Lake & Reservoir	25314	Acres	Mercury	2021	Resource Extraction
American River, Lower (Nimbus Dam to confluence with Sacramento River)	River & Stream	27	Miles	Mercury	2010	Resource Extraction
American River, Lower (Nimbus Dam to confluence with Sacramento River)	River & Stream	27	Miles	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
American River, Lower (Nimbus Dam to confluence with Sacramento River)	River & Stream	27	Miles	Unknown Toxicity	2021	Source Unknown
American River, North Fork	River & Stream	71	Miles	Mercury	2019	Resource Extraction
American River, South Fork (downstream of Slab Creek Reservoir to Folsom Lake)	River & Stream	37	Miles	Mercury	2021	Resource Extraction
Anderson Creek (Shasta County)	River & Stream	16	Miles	Escherichia coli (E. coli)	2021	Source Unknown
Arcade Creek	River & Stream	10	Miles	Chlorpyrifos		Urban Runoff/Storm Sewers
Arcade Creek	River & Stream	10	Miles	Copper	2021	Source Unknown
Arcade Creek	River & Stream	10	Miles	Diazinon		Agriculture
Arcade Creek	River & Stream	10	Miles	Diazinon		Urban Runoff/Storm Sewers
Arcade Creek	River & Stream	10	Miles	Malathion	2021	Urban Runoff/Storm Sewers
Arcade Creek	River & Stream	10	Miles	Malathion	2021	Agriculture
Arcade Creek	River & Stream	10	Miles	Pyrethroids	2021	Urban Runoff/Storm Sewers
Arcade Creek	River & Stream	10	Miles	Sediment Toxicity	2021	Source Unknown
Ash Creek, Upper	River & Stream	19	Miles	Escherichia coli (E. coli)	2021	Source Unknown
Ash Creek, Upper	River & Stream	19	Miles	pH	2021	Source Unknown
Bear Creek (Colusa County)	River & Stream	15	Miles	Mercury		Resource Extraction
Bear River, Lower (downstream of Camp Far West Reservoir)	River & Stream	21	Miles	Chlorpyrifos	2021	Agriculture
Bear River, Lower (downstream of Camp Far West Reservoir)	River & Stream	21	Miles	Copper	2021	Source Unknown
Bear River, Lower (downstream of Camp Far West Reservoir)	River & Stream	21	Miles	Diazinon	2010	Agriculture
Bear River, Lower (downstream of Camp Far West Reservoir)	River & Stream	21	Miles	Mercury	2015	Resource Extraction
Bear River, Upper (from Combie Lake to Camp Far West Reservoir, Nevada and Placer Counties)	River & Stream	10	Miles	Mercury	2015	Resource Extraction
Berryessa, Lake	Lake & Reservoir	19083	Acres	Mercury	2017	Resource Extraction
Big Chico Creek (Butte and Tehama Counties)	River & Stream	45	Miles	Mercury	2021	Resource Extraction

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Region 5: Sacramento River Watershed**

Water Quality Limited Segments Requiring a TMDL(5A), Being Addressed by TMDL(5B), and/or Being Addressed by an Action Other than TMDL(5C)						
Water Body Name	Water Body Type	Estimated Size Affected	Unit	Pollutant	Expected TMDL Completion Date	Potential Sources
Black Butte Reservoir	Lake & Reservoir	4507	Acres	Mercury	2020	Resource Extraction
Britton Lake	Lake & Reservoir	1100	Acres	Mercury	2021	Resource Extraction
Burch Creek (Tehama County)	River & Stream	24	Miles	Unknown Toxicity	2021	Source Unknown
Butte Creek (Butte County)	River & Stream	94	Miles	Mercury	2021	Resource Extraction
Butte Creek (Butte County)	River & Stream	94	Miles	pH	2021	Source Unknown
Butte Slough	River & Stream	9	Miles	Diazinon	2010	Agriculture
Butte Slough	River & Stream	9	Miles	Dichlorvos	2021	Agriculture
Butte Slough	River & Stream	9	Miles	Dichlorvos	2021	Vector Control Sprays
Butte Slough	River & Stream	9	Miles	Low Dissolved Oxygen	2021	Source Unknown
Butte Slough	River & Stream	9	Miles	Unknown Toxicity	2021	Source Unknown
Cache Creek, Lower (Clear Lake Dam to Cache Creek Settling Basin near Yolo Bypass)	River & Stream	96	Miles	Boron	2021	Source Unknown
Cache Creek, Lower (Clear Lake Dam to Cache Creek Settling Basin near Yolo Bypass)	River & Stream	96	Miles	Mercury		Resource Extraction
Cache Creek, Lower (Clear Lake Dam to Cache Creek Settling Basin near Yolo Bypass)	River & Stream	96	Miles	Unknown Toxicity	2019	Source Unknown
Cache Creek, North Fork (downstream of Indian Valley Reservoir, Lake County)	River & Stream	14	Miles	Mercury		Resource Extraction
Camp Far West Reservoir	Lake & Reservoir	1945	Acres	Mercury	2015	Resource Extraction
Canyon Creek (Modoc County)	River & Stream	18	Miles	Escherichia coli (E. coli)	2021	Source Unknown
Carson Creek (from WWTP to Deer Creek)	River & Stream	12	Miles	Aluminum	2019	Source Unknown
Carson Creek (from WWTP to Deer Creek)	River & Stream	12	Miles	Manganese	2021	Source Unknown
China Slough (from Leininger Road to Sacramento River, Tehama County)	River & Stream	5	Miles	Unknown Toxicity	2021	Source Unknown
Clear Creek (downstream of Whiskeytown Lake, Shasta County)	River & Stream	18	Miles	Mercury	2021	Resource Extraction
Clear Lake	Lake & Reservoir	40070	Acres	Mercury		Resource Extraction
Clear Lake	Lake & Reservoir	40070	Acres	Nutrients		Erosion/Siltation
Clear Lake	Lake & Reservoir	40070	Acres	Nutrients		Agriculture
Clear Lake	Lake & Reservoir	40070	Acres	Nutrients		Urban Runoff/Storm Sewers
Clear Lake	Lake & Reservoir	40070	Acres	Nutrients		Grazing-Related Sources
Clover Creek	River & Stream	11	Miles	Fecal Coliform	2019	Agriculture-grazing
Clover Creek	River & Stream	11	Miles	Fecal Coliform	2019	Other
Colusa Basin Drain	River & Stream	49	Miles	Azinphos-methyl (Guthion)	2019	Agriculture
Colusa Basin Drain	River & Stream	49	Miles	Carbofuran	2021	Agriculture
Colusa Basin Drain	River & Stream	49	Miles	DDT (Dichlorodiphenyltrichloroethane)	2021	Source Unknown

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Region 5: Sacramento River Watershed**

<b>Water Quality Limited Segments Requiring a TMDL(5A), Being Addressed by TMDL(5B), and/or Being Addressed by an Action Other than TMDL(5C)</b>						
<b>Water Body Name</b>	<b>Water Body Type</b>	<b>Estimated Size Affected</b>	<b>Unit</b>	<b>Pollutant</b>	<b>Expected TMDL Completion Date</b>	<b>Potential Sources</b>
Colusa Basin Drain	River & Stream	49	Miles	Diazinon	2008	Agriculture
Colusa Basin Drain	River & Stream	49	Miles	Dieldrin	2021	Agriculture
Colusa Basin Drain	River & Stream	49	Miles	Escherichia coli (E. coli)	2021	Source Unknown
Colusa Basin Drain	River & Stream	49	Miles	Group A Pesticides	2019	Agriculture
Colusa Basin Drain	River & Stream	49	Miles	Low Dissolved Oxygen	2021	Source Unknown
Colusa Basin Drain	River & Stream	49	Miles	Malathion	2010	Agriculture
Colusa Basin Drain	River & Stream	49	Miles	Mercury	2021	Resource Extraction
Colusa Basin Drain	River & Stream	49	Miles	Unknown Toxicity	2019	Agriculture
Combie, Lake	Lake & Reservoir	362	Acres	Mercury	2015	Resource Extraction
Concow Creek (tributary to West Branch Feather River, Butte County)	River & Stream	10	Miles	Unknown Toxicity	2021	Source Unknown
Coon Creek, Lower (from Pacific Avenue to Main Canal, Sutter County)	River & Stream	6	Miles	Chlorpyrifos	2021	Agriculture
Coon Creek, Lower (from Pacific Avenue to Main Canal, Sutter County)	River & Stream	6	Miles	Escherichia coli (E. coli)	2021	Source Unknown
Coon Creek, Lower (from Pacific Avenue to Main Canal, Sutter County)	River & Stream	6	Miles	Unknown Toxicity	2021	Source Unknown
Curry Creek (Placer and Sutter Counties)	River & Stream	12	Miles	Pyrethroids	2021	Urban Runoff/Storm Sewers
Curry Creek (Placer and Sutter Counties)	River & Stream	12	Miles	Sediment Toxicity	2021	Source Unknown
Curtis Creek (Tuolumne County)	River & Stream	12	Miles	Escherichia coli (E. coli)	2021	Source Unknown
Davis Creek (downstream from Davis Creek Reservoir, Yolo County)	River & Stream	6	Miles	Mercury	2017	Resource Extraction
Davis Creek (upstream from Davis Creek Reservoir, Yolo County)	River & Stream	5	Miles	Mercury	2017	Resource Extraction
Davis Creek Reservoir	Lake & Reservoir	163	Acres	Mercury	2017	Resource Extraction
Deer Creek (Sacramento County)	River & Stream	12	Miles	Iron	2019	Source Unknown
Deer Creek (Yuba County)	River & Stream	4	Miles	pH	2019	Internal Nutrient Cycling (primarily lakes)
Deer Creek (from Deer Creek Reservoir to Lake Wildwood, Nevada County)	River & Stream	16	Miles	Mercury	2016	Resource Extraction
East Park Reservoir	Lake & Reservoir	1698	Acres	Mercury	2021	Resource Extraction
Eastman Lake (Shasta County)	Lake & Reservoir	19	Acres	pH	2021	Source Unknown
Elder Creek	River & Stream	11	Miles	Chlorpyrifos		Storm sewers
Elder Creek	River & Stream	11	Miles	Diazinon		Agriculture
Elder Creek	River & Stream	11	Miles	Diazinon		Urban Runoff/Storm Sewers

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Water Body Name	Water Body Type	Estimated Size Affected	Unit	Pollutant	Expected TMDL Completion Date	Potential Sources
Elder Creek	River & Stream	11	Miles	Pyrethroids	2021	Urban Runoff/Storm Sewers
Elder Creek	River & Stream	11	Miles	Sediment Toxicity	2021	Source Unknown
Englebright Lake	Lake & Reservoir	754	Acres	Mercury	2016	Resource Extraction
Fall River (Pit)	River & Stream	9	Miles	Sedimentation/Siltation	2019	Historic Land Management Activities
Fall River, tributary to Feather River, Middle Fork (Butte and Plumas Counties)	River & Stream	22	Miles	Unknown Toxicity	2021	Source Unknown
Feather River, Lower (Lake Oroville Dam to Confluence with Sacramento River)	River & Stream	42	Miles	Chlorpyrifos	2019	Agriculture
Feather River, Lower (Lake Oroville Dam to Confluence with Sacramento River)	River & Stream	42	Miles	Group A Pesticides	2011	Agriculture
Feather River, Lower (Lake Oroville Dam to Confluence with Sacramento River)	River & Stream	42	Miles	Mercury	2012	Resource Extraction
Feather River, Lower (Lake Oroville Dam to Confluence with Sacramento River)	River & Stream	42	Miles	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
Feather River, Lower (Lake Oroville Dam to Confluence with Sacramento River)	River & Stream	42	Miles	Unknown Toxicity	2019	Source Unknown
Feather River, Middle Fork (Sierra Valley to Lake Oroville, Butte and Plumas Counties)	River & Stream	77	Miles	Unknown Toxicity	2021	Source Unknown
Feather River, North Fork (downstream of Lake Almanor)	River & Stream	54	Miles	Mercury	2021	Resource Extraction
Feather River, North Fork (downstream of Lake Almanor)	River & Stream	54	Miles	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
Feather River, North Fork (downstream of Lake Almanor)	River & Stream	54	Miles	Temperature, water	2019	Flow Regulation/Modification
Feather River, North Fork (downstream of Lake Almanor)	River & Stream	54	Miles	Temperature, water	2019	Hydromodification
Feather River, North Fork (downstream of Lake Almanor)	River & Stream	54	Miles	Unknown Toxicity	2021	Source Unknown
Feather River, South Fork (from Little Grass Valley Reservoir to Lake Oroville, Butte and Plumas Counties)	River & Stream	33	Miles	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
Feather River, South Fork (from Little Grass Valley Reservoir to Lake Oroville, Butte and Plumas Counties)	River & Stream	33	Miles	Unknown Toxicity	2021	Source Unknown
Feather River, West Branch (from Griffin Gulch to Lake Oroville)	River & Stream	37	Miles	Unknown Toxicity	2021	Source Unknown
Hamilton Slough (from south of Thermalito Afterbay to south of Biggs, Butte County)	River & Stream	8	Miles	Unknown Toxicity	2021	Source Unknown
Hell Hole Reservoir	Lake & Reservoir	1370	Acres	Mercury	2021	Source Unknown

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<b>Water Body Name</b>	<b>Water Body Type</b>	<b>Estimated Size Affected</b>	<b>Unit</b>	<b>Pollutant</b>	<b>Expected TMDL Completion Date</b>	<b>Potential Sources</b>
Honcut Creek (Butte and Yuba Counties)	River & Stream	10	Miles	Oxygen, Dissolved	2021	Source Unknown
Horse Creek (Rising Star Mine to Shasta Lake)	River & Stream	1	Miles	Cadmium	2020	Resource Extraction
Horse Creek (Rising Star Mine to Shasta Lake)	River & Stream	1	Miles	Copper	2020	Resource Extraction
Horse Creek (Rising Star Mine to Shasta Lake)	River & Stream	1	Miles	Lead	2020	Resource Extraction
Horse Creek (Rising Star Mine to Shasta Lake)	River & Stream	1	Miles	Zinc	2020	Resource Extraction
Horse Creek (Rising Star Mine to Shasta Lake)	River & Stream	1	Miles	pH	2021	Source Unknown
Indian Valley Reservoir (Lake County)	Lake & Reservoir	3469	Acres	Mercury	2021	Resource Extraction
Kanaka Creek	River & Stream	10	Miles	Arsenic	2020	Resource Extraction
Keswick Reservoir (portion downstream from Spring Creek)	Lake & Reservoir	135	Acres	Cadmium	2020	Resource Extraction
Keswick Reservoir (portion downstream from Spring Creek)	Lake & Reservoir	135	Acres	Copper	2020	Resource Extraction
Keswick Reservoir (portion downstream from Spring Creek)	Lake & Reservoir	135	Acres	Zinc	2020	Resource Extraction
Knights Landing Ridge Cut (Yolo County)	River & Stream	13	Miles	Boron	2021	Source Unknown
Knights Landing Ridge Cut (Yolo County)	River & Stream	13	Miles	Oxygen, Dissolved	2021	Source Unknown
Knights Landing Ridge Cut (Yolo County)	River & Stream	13	Miles	Salinity	2021	Source Unknown
Little Backbone Creek, Lower	River & Stream	1	Miles	Acid Mine Drainage	2020	Resource Extraction
Little Backbone Creek, Lower	River & Stream	1	Miles	Cadmium	2020	Agriculture
Little Backbone Creek, Lower	River & Stream	1	Miles	Copper	2020	Resource Extraction
Little Backbone Creek, Lower	River & Stream	1	Miles	Zinc	2020	Resource Extraction
Little Cow Creek (downstream from Afterthought Mine)	River & Stream	1	Miles	Cadmium	2020	Resource Extraction
Little Cow Creek (downstream from Afterthought Mine)	River & Stream	1	Miles	Copper	2020	Resource Extraction
Little Cow Creek (downstream from Afterthought Mine)	River & Stream	1	Miles	Zinc	2020	Resource Extraction
Mile Long Pond (Butte County)	Lake & Reservoir	84	Acres	Mercury	2021	Resource Extraction
Mile Long Pond (Butte County)	Lake & Reservoir	84	Acres	Unknown Toxicity	2021	Source Unknown
Mud Creek (Butte County)	River & Stream	15	Miles	Unknown Toxicity	2021	Source Unknown
Natoma, Lake	Lake & Reservoir	485	Acres	Mercury	2019	Resource Extraction
Natomas Cross Canal (Sutter County)	River & Stream	6	Miles	Mercury	2021	Resource Extraction
Natomas East Main Drainage Canal (aka Steelhead Creek, downstream of confluence with Arcade Creek)	River & Stream	4	Miles	Diazinon	2008	Agriculture
Natomas East Main Drainage Canal (aka Steelhead Creek, downstream of confluence with Arcade Creek)	River & Stream	4	Miles	Diazinon	2008	Urban Runoff/Storm Sewers
Natomas East Main Drainage Canal (aka Steelhead Creek, downstream of confluence with Arcade Creek)	River & Stream	4	Miles	Mercury	2021	Source Unknown
Natomas East Main Drainage Canal (aka Steelhead Creek, downstream of confluence with Arcade Creek)	River & Stream	4	Miles	PCBs (Polychlorinated biphenyls)	2020	Urban Runoff/Storm Sewers

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Water Quality Limited Segments Requiring a TMDL(5A), Being Addressed by TMDL(5B), and/or Being Addressed by an Action Other than TMDL(5C)						
Water Body Name	Water Body Type	Estimated Size Affected	Unit	Pollutant	Expected TMDL Completion Date	Potential Sources
Natomas East Main Drainage Canal (aka Steelhead Creek, downstream of confluence with Arcade Creek)	River & Stream	4	Miles	PCBs (Polychlorinated biphenyls)	2020	Agriculture
Natomas East Main Drainage Canal (aka Steelhead Creek, downstream of confluence with Arcade Creek)	River & Stream	4	Miles	PCBs (Polychlorinated biphenyls)	2020	Industrial Point Sources
Natomas East Main Drainage Canal (aka Steelhead Creek, upstream of confluence with Arcade Creek)	River & Stream	12	Miles	PCBs (Polychlorinated biphenyls)	2019	Agriculture
Natomas East Main Drainage Canal (aka Steelhead Creek, upstream of confluence with Arcade Creek)	River & Stream	12	Miles	PCBs (Polychlorinated biphenyls)	2019	Industrial Point Sources
Natomas East Main Drainage Canal (aka Steelhead Creek, upstream of confluence with Arcade Creek)	River & Stream	12	Miles	PCBs (Polychlorinated biphenyls)	2019	Urban Runoff/Storm Sewers
New Bullards Bar Reservoir	Lake & Reservoir	3864	Acres	Mercury	2021	Resource Extraction
Oroville Wildlife Area Fishing Pond (Butte County)	Lake & Reservoir	2	Acres	Unknown Toxicity	2021	Source Unknown
Oroville, Lake	Lake & Reservoir	15400	Acres	Mercury	2021	Resource Extraction
Oroville, Lake	Lake & Reservoir	15400	Acres	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
Pacific Heights Pond, Lower (Butte County)	Lake & Reservoir	10	Acres	Unknown Toxicity	2021	Source Unknown
Pine Flat Reservoir	Lake & Reservoir	5770	Acres	Mercury	2021	Source Unknown
Pit River (from confluence of N and S forks to Shasta Lake)	River & Stream	123	Miles	Nutrients	2013	Agriculture
Pit River (from confluence of N and S forks to Shasta Lake)	River & Stream	123	Miles	Nutrients	2013	Agriculture-grazing
Pit River (from confluence of N and S forks to Shasta Lake)	River & Stream	123	Miles	Organic Enrichment/Low Dissolved Oxygen	2013	Agriculture
Pit River (from confluence of N and S forks to Shasta Lake)	River & Stream	123	Miles	Organic Enrichment/Low Dissolved Oxygen	2013	Agriculture-grazing
Pit River (from confluence of N and S forks to Shasta Lake)	River & Stream	123	Miles	Temperature, water	2013	Agriculture-grazing
Pit River (from confluence of N and S forks to Shasta Lake)	River & Stream	123	Miles	Temperature, water	2013	Agriculture
Pit River, North Fork	River & Stream	21	Miles	pH	2021	Source Unknown
Pit River, South Fork	River & Stream	34	Miles	Salinity	2021	Source Unknown
Pit River, South Fork	River & Stream	34	Miles	pH	2021	Source Unknown
Putah Creek (Solano Lake to Putah Creek Sinks; partly in Delta Waterways, northwestern portion)	River & Stream	27	Miles	Boron	2021	Source Unknown
Putah Creek (Solano Lake to Putah Creek Sinks; partly in Delta Waterways, northwestern portion)	River & Stream	27	Miles	Mercury	2017	Source Unknown
Putah Creek (Solano Lake to Putah Creek Sinks; partly in Delta Waterways, northwestern portion)	River & Stream	27	Miles	Mercury	2017	Resource Extraction
Robinsons Riffle Pond (Butte County)	Lake & Reservoir	8	Acres	Mercury	2021	Resource Extraction

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<b>Water Body Name</b>	<b>Water Body Type</b>	<b>Estimated Size Affected</b>	<b>Unit</b>	<b>Pollutant</b>	<b>Expected TMDL Completion Date</b>	<b>Potential Sources</b>
Robinsons Riffle Pond (Butte County)	Lake & Reservoir	8	Acres	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
Rollins Reservoir	Lake & Reservoir	774	Acres	Mercury	2016	Resource Extraction
Sacramento River (Keswick Dam to Cottonwood Creek)	River & Stream	15	Miles	Unknown Toxicity	2019	Source Unknown
Sacramento River (Cottonwood Creek to Red Bluff)	River & Stream	16	Miles	Mercury	2021	Resource Extraction
Sacramento River (Cottonwood Creek to Red Bluff)	River & Stream	16	Miles	Unknown Toxicity	2019	Source Unknown
Sacramento River (Red Bluff to Knights Landing)	River & Stream	82	Miles	DDT (Dichlorodiphenyltrichloroethane)	2021	Agriculture
Sacramento River (Red Bluff to Knights Landing)	River & Stream	82	Miles	Dieldrin	2021	Agriculture
Sacramento River (Red Bluff to Knights Landing)	River & Stream	82	Miles	Mercury	2021	Resource Extraction
Sacramento River (Red Bluff to Knights Landing)	River & Stream	82	Miles	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
Sacramento River (Red Bluff to Knights Landing)	River & Stream	82	Miles	Unknown Toxicity	2019	Source Unknown
Sacramento River (Knights Landing to the Delta)	River & Stream	16	Miles	Chlordane	2021	Agriculture
Sacramento River (Knights Landing to the Delta)	River & Stream	16	Miles	DDT (Dichlorodiphenyltrichloroethane)	2021	Agriculture
Sacramento River (Knights Landing to the Delta)	River & Stream	16	Miles	Dieldrin	2022	Agriculture
Sacramento River (Knights Landing to the Delta)	River & Stream	16	Miles	Mercury	2012	Resource Extraction
Sacramento River (Knights Landing to the Delta)	River & Stream	16	Miles	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
Sacramento River (Knights Landing to the Delta)	River & Stream	16	Miles	Unknown Toxicity	2019	Source Unknown
Sacramento Slough	River & Stream	2	Miles	Chlorpyrifos	2021	Source Unknown
Sacramento Slough	River & Stream	2	Miles	Mercury	2020	Source Unknown
Sacramento Slough	River & Stream	2	Miles	Oxygen, Dissolved	2021	Source Unknown
Sacramento Slough	River & Stream	2	Miles	Unknown Toxicity	2021	Source Unknown
Sacramento Slough	River & Stream	2	Miles	pH (low)	2021	Source Unknown
Scotts Flat Reservoir	Lake & Reservoir	660	Acres	Mercury	2016	Resource Extraction
Shasta Lake	Lake & Reservoir	27335	Acres	Mercury	2021	Resource Extraction
Shasta Lake (area where West Squaw Creek enters)	Lake & Reservoir	20	Acres	Cadmium	2020	Resource Extraction
Shasta Lake (area where West Squaw Creek enters)	Lake & Reservoir	20	Acres	Copper	2020	Resource Extraction
Shasta Lake (area where West Squaw Creek enters)	Lake & Reservoir	20	Acres	Zinc	2020	Resource Extraction
Simmerly Slough (Yuba County)	River & Stream	6	Miles	Unknown Toxicity	2021	Source Unknown
South Cow Creek	River & Stream	8	Miles	Fecal Coliform	2012	Agriculture
South Cow Creek	River & Stream	8	Miles	Fecal Coliform	2012	Grazing-Related Sources
South Cow Creek	River & Stream	8	Miles	Fecal Coliform	2012	Other
Spring Creek (Colusa County)	River & Stream	13	Miles	Aldicarb	2021	Source Unknown
Spring Creek (Colusa County)	River & Stream	13	Miles	Chlorpyrifos	2021	Source Unknown
Spring Creek (Colusa County)	River & Stream	13	Miles	Diazinon	2021	Source Unknown
Spring Creek (Colusa County)	River & Stream	13	Miles	Oxygen, Dissolved	2021	Source Unknown
Spring Creek (Colusa County)	River & Stream	13	Miles	Salinity	2021	Source Unknown
Spring Creek (Colusa County)	River & Stream	13	Miles	Sediment Toxicity	2021	Source Unknown

**2010 California State Water Resources Control Board 303(d) List of Water Quality Limited Segments\*  
Region 5: Sacramento River Watershed**

<b>Water Quality Limited Segments Requiring a TMDL(5A), Being Addressed by TMDL(5B), and/or Being Addressed by an Action Other than TMDL(5C)</b>						
<b>Water Body Name</b>	<b>Water Body Type</b>	<b>Estimated Size Affected</b>	<b>Unit</b>	<b>Pollutant</b>	<b>Expected TMDL Completion Date</b>	<b>Potential Sources</b>
Spring Creek (Colusa County)	River & Stream	13	Miles	Unknown Toxicity	2021	Source Unknown
Spring Creek, Lower (Iron Mountain Mine to Keswick Reservoir)	River & Stream	3	Miles	Acid Mine Drainage	2020	Resource Extraction
Spring Creek, Lower (Iron Mountain Mine to Keswick Reservoir)	River & Stream	3	Miles	Cadmium	2020	Resource Extraction
Spring Creek, Lower (Iron Mountain Mine to Keswick Reservoir)	River & Stream	3	Miles	Copper	2020	Resource Extraction
Spring Creek, Lower (Iron Mountain Mine to Keswick Reservoir)	River & Stream	3	Miles	Zinc	2020	Resource Extraction
Stone Corral Creek	River & Stream	22	Miles	Oxygen, Dissolved	2021	Source Unknown
Stony Creek	River & Stream	42	Miles	Chlorpyrifos	2021	Source Unknown
Stony Creek	River & Stream	42	Miles	Diuron	2021	Source Unknown
Stony Creek	River & Stream	42	Miles	Sediment Toxicity	2021	Source Unknown
Stony Creek	River & Stream	42	Miles	Unknown Toxicity	2021	Source Unknown
Stony Creek	River & Stream	42	Miles	pH	2021	Source Unknown
Stony Gorge Reservoir	Lake & Reservoir	1411	Acres	Mercury	2021	Source Unknown
Sucker Run (Butte County)	River & Stream	11	Miles	Unknown Toxicity	2021	Source Unknown
Sulphur Creek (Colusa County)	River & Stream	14	Miles	Mercury	2009	Resource Extraction
Sutter Bypass	River & Stream	19	Miles	Mercury	2021	Resource Extraction
Sycamore Slough (Yolo County)	River & Stream	17	Miles	Oxygen, Dissolved	2021	Source Unknown
Thermalito Afterbay	Lake & Reservoir	3863	Acres	Mercury	2021	Resource Extraction
Thermalito Afterbay	Lake & Reservoir	3863	Acres	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
Thermalito Forebay	Lake & Reservoir	538	Acres	PCBs (Polychlorinated biphenyls)	2021	Source Unknown
West Squaw Creek (downstream of Balaklala Mine)	River & Stream	2	Miles	Cadmium	2020	Resource Extraction
West Squaw Creek (downstream of Balaklala Mine)	River & Stream	2	Miles	Copper	2020	Resource Extraction
West Squaw Creek (downstream of Balaklala Mine)	River & Stream	2	Miles	Lead	2019	Resource Extraction
West Squaw Creek (downstream of Balaklala Mine)	River & Stream	2	Miles	Zinc	2019	Resource Extraction
Whiskeytown Lake (areas near Oak Bottom, Brandy Creek Campgrounds and Whiskeytown)	Lake & Reservoir	98	Acres	Mercury	2021	Resource Extraction
Wildwood, Lake (Nevada County)	Lake & Reservoir	289	Acres	Mercury	2021	Resource Extraction
Willow Creek (Lassen County, Central Valley)	River & Stream	23	Miles	Escherichia coli (E. coli)	2021	Source Unknown
Willow Creek (Lassen County, Central Valley)	River & Stream	23	Miles	pH	2021	Source Unknown
Willow Creek (Shasta County, downstream of Greenhorn Mine to Clear Creek)	River & Stream	4	Miles	Acid Mine Drainage	2019	Resource Extraction
Willow Creek (Shasta County, downstream of Greenhorn Mine to Clear Creek)	River & Stream	4	Miles	Copper	2019	Resource Extraction

**2010 California State Water Resources Control Board 303(d) List of Water Quality Limited Segments\*  
Region 5: Sacramento River Watershed**

<b>Water Quality Limited Segments Requiring a TMDL(5A), Being Addressed by TMDL(5B), and/or Being Addressed by an Action Other than TMDL(5C)</b>						
<b>Water Body Name</b>	<b>Water Body Type</b>	<b>Estimated Size Affected</b>	<b>Unit</b>	<b>Pollutant</b>	<b>Expected TMDL Completion Date</b>	<b>Potential Sources</b>
Willow Creek (Shasta County, downstream of Greenhorn Mine to Clear Creek)	River & Stream	4	Miles	Zinc	2019	Resource Extraction
Willow Slough (Yolo County)	River & Stream	10	Miles	Boron	2021	Natural Sources
Willow Slough (Yolo County)	River & Stream	10	Miles	Boron	2021	Agriculture
Willow Slough Bypass (Yolo County)	River & Stream	6	Miles	Boron	2021	Natural Sources
Willow Slough Bypass (Yolo County)	River & Stream	6	Miles	Boron	2021	Agriculture
Willow Slough Bypass (Yolo County)	River & Stream	6	Miles	Escherichia coli (E. coli)	2021	Agriculture
Willow Slough Bypass (Yolo County)	River & Stream	6	Miles	Escherichia coli (E. coli)	2021	Source Unknown
Willow Slough Bypass (Yolo County)	River & Stream	6	Miles	Fecal Coliform	2021	Source Unknown
Winters Canal (Yolo County)	River & Stream	15	Miles	Diazinon	2021	Agriculture
Woodward Reservoir	Lake & Reservoir	1775	Acres	Mercury	2021	Source Unknown
Yankee Slough (Placer and Sutter Counties)	River & Stream	13	Miles	Chlorpyrifos	2021	Agriculture
Yankee Slough (Placer and Sutter Counties)	River & Stream	13	Miles	Unknown Toxicity	2021	Agriculture
Yankee Slough (Placer and Sutter Counties)	River & Stream	13	Miles	Unknown Toxicity	2021	Source Unknown
Yuba River, Lower	River & Stream	10	Miles	Mercury	2021	Resource Extraction
Yuba River, Middle Fork	River & Stream	45	Miles	Mercury	2021	Resource Extraction
Yuba River, North Fork	River & Stream	37	Miles	Mercury	2021	Resource Extraction
Yuba River, South Fork (Spaulding Reservoir to Englebright Reservoir)	River & Stream	48	Miles	Mercury	2021	Resource Extraction
Yuba River, South Fork (Spaulding Reservoir to Englebright Reservoir)	River & Stream	48	Miles	Temperature, water	2021	Source Unknown

\*Source: [http://www.swrcb.ca.gov/rwqcb5/water\\_issues/tmdl/impaired\\_waters\\_list/2008\\_2010\\_usepa\\_303dlist/20082010\\_usepa\\_aprvd\\_303dlist.pdf](http://www.swrcb.ca.gov/rwqcb5/water_issues/tmdl/impaired_waters_list/2008_2010_usepa_303dlist/20082010_usepa_aprvd_303dlist.pdf)

**Appendix 7B  
Central Valley  
Regional Water Quality Control Board  
Basin Plan Criteria**

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**Central Valley Regional Water Quality Control Board Basin Plan Criteria <sup>a</sup>**  
**Recommended Numerical Limits to Translate Water Quality Objectives based on a Compilation of Water Quality Goals**

Non-Metals (Numerical Objectives from the applicable Basin Plan also apply)					
Constituent / Parameter (Synonym)	Water Quality Objective or Promulgated Criterion	Recommended Numerical Limit(s)			G = Groundwater IS = Inland Surface Water
		Source / Averaging Period	Limit	Units	
Alkalinity	Toxicity - aquatic life	USEPA National Ambient W Q Criteria / 4-day average	20	mg/L	IS
Ammonia	Tastes and Odors	Odor threshold	1.5	mg/L	G & IS
(Ammonium)	Toxicity - humans	USEPA Draft Health Advisory	30	mg/L	G & IS
	Toxicity - aquatic life	USEPA National Ambient Water Quality Criteria	see Page 17 tab <sup>b</sup>		IS
Boron	Chemical Constituents	Water Quality for Agriculture	0.7	mg/L	G & IS
	Toxicity - humans	California DHS Action Level for drinking water	1	mg/L	G & IS
	Toxicity - humans	USEPA IRIS Reference Dose <sup>c</sup>	0.63	mg/L	G & IS
Chloride	Chemical Constituents	California Secondary MCL	250	mg/L	G & IS
		Water Quality for Agriculture	106	mg/L	G & IS
	Tastes and Odors	California Secondary MCL	250	mg/L	G & IS
	Toxicity - aquatic life	USEPA National Ambient W Q Criteria / 4-day average	230	mg/L	IS
		USEPA National Ambient W Q Criteria / 1-hour average	860	mg/L	IS
Nitrate (expressed as nitrogen)	Chemical Constituents	California Primary MCL	10	mg/L	G & IS
	Toxicity - humans	California Public Health Goal for Drinking Water	10	mg/L	G & IS
pH	Chemical Constituents	USEPA Secondary MCL	6.5 to 8.5	units	G & IS
		Water Quality for Agriculture	6.5 to 8.4	units	G & IS
	Tastes and Odors	USEPA National Ambient W Q Criteria / taste & odor	5 to 9	units	G & IS
	Toxicity - aquatic life	USEPA National Ambient W Q Criteria / Inst Min & Max	6.5 to 9	units	IS
Sodium	Chemical Constituents	Water Quality for Agriculture	69	mg/L	G & IS
	Tastes and Odors	Taste and odor threshold (USEPA Drinking Water Advisory)	30 to 60	mg/L	G & IS
	Toxicity - humans	USEPA draft Drinking Water Advisory	20	mg/L	G & IS
Specific Conductance	Chemical Constituents	California Secondary MCL	900	umhos/cm	G & IS
(Electrical conductivity)		Water Quality for Agriculture	700	umhos/cm	G & IS
(Electrical conductivity)		Basin Plan for Feather River	150	umhos/cm	IS
(EC)	Tastes and Odors	California Secondary MCL	900	umhos/cm	G & IS
Sulfate	Chemical Constituents	California Secondary MCL (Ambient level)	250	mg/L	G & IS
		California Secondary MCL (upper level)	500	mg/L	G & IS
	Tastes and Odors	California Secondary MCL (Ambient level)	250	mg/L	G & IS
	Toxicity - humans	USEPA Proposed MCL Goal	500	mg/L	G & IS
Total Dissolved Solids	Chemical Constituents	California Secondary MCL	500	mg/L	G & IS
(TDS)		Water Quality for Agriculture	450	mg/L	G & IS
	Tastes and Odors	California Secondary MCL	500	mg/L	G & IS
Turbidity	Chemical Constituents	California Primary MCL	1/5 (h)	NTU	G & IS
		California Secondary MCL	5	NTU	G & IS

<sup>a</sup> Source: Central Valley Regional Water Quality Control Board (CVRWQCB), 2011; [http://www.waterboards.ca.gov/water\\_issues/programs/water\\_quality\\_goals/search.shtml](http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/search.shtml)

<sup>b</sup> Criteria is temperature dependent - Reference associated criteria tab available at: [http://www.waterboards.ca.gov/water\\_issues/programs/water\\_quality\\_goals/search.shtml](http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/search.shtml)

<sup>c</sup> Assumes 70 kg body weight, 2 liters per day drinking water consumption, and 20 percent relative source contribution. An additional uncertainty factor of 10 is used for Class C carcinogens.

**Central Valley Regional Water Quality Control Board Basin Plan Criteria <sup>a</sup>**  
**Recommended Numerical Limits to Translate Water Quality Objectives based on a Compilation of Water Quality Goals**

Metals					
(Numerical Objectives from the applicable Basin Plan also apply)					
Constituent / Parameter (Synonym)	Water Quality Objective or Promulgated Criterion	Recommended Numerical Limit(s)			G = Groundwater IS = Inland Surface Water
		Source / Averaging Period	Limit	Units	
Aluminum	Chemical Constituents	California Primary MCL	1000	ug/L	G & IS
		California Secondary MCL	200	ug/L	G & IS
		Water Quality for Agriculture	5000	ug/L	G & IS
	Tastes and Odors	California Secondary MCL	200	ug/L	G & IS
	Toxicity - humans	California Public Health Goal for Drinking Water	600	ug/L	G & IS
	Toxicity - aquatic life	USEPA National Recomm. W Q Criteria / 4-day avg (total)	87	ug/L	IS
		USEPA National Recomm. W Q Criteria / 1-hour avg (total)	750	ug/L	IS
Arsenic	Chemical Constituents	California Primary MCL	10	ug/L	G & IS
		USEPA Primary MCL	10	ug/L	G & IS
		Water Quality for Agriculture	100	ug/L	G & IS
	Toxicity - humans	Cal/EPA Cancer Potency Factor as a drinking water level	0.023	ug/L	G & IS
		USEPA National Ambient Water Quality Criteria	0.018	ug/L	IS
	CTR - aquatic life	California Toxics Rule (USEPA) / 4-day average (dissolved)	150	ug/L	IS
		California Toxics Rule (USEPA) / 1-hour average (dissolved)	340	ug/L	IS
Cadmium	Chemical Constituents	California Primary MCL	5	ug/L	G & IS
			Water Quality for Agriculture	10	ug/L
	Toxicity - humans	California Public Health Goal for Drinking Water	0.07	ug/L	G & IS
	CTR - aquatic life	California Toxics Rule (USEPA)	see Page 19 tab <sup>b</sup>		IS
Chromium (III)	Chemical Constituents	California Primary MCL	see Cr (total)		G & IS
	Toxicity - humans	USEPA IRIS Reference Dose <sup>d</sup>	10,500	ug/L	G & IS
	NTR - aquatic life	National Toxics Rule (USEPA)	see Page 21 tab <sup>b</sup>		IS
Chromium (VI)	Chemical Constituents	California Primary MCL	see Cr (total)		G & IS
			Water Quality for Agriculture	100	ug/L
	Toxicity - humans	USEPA IRIS Reference Dose <sup>e</sup>	21	ug/L	G & IS
	CTR - aquatic life	California Toxics Rule (USEPA) / 4-day average (dissolved)	11	ug/L	IS
		California Toxics Rule (USEPA) / 1-hour average (dissolved)	16	ug/L	IS
Chromium (total)	Chemical Constituents	California Primary MCL	50	ug/L	G & IS

**Central Valley Regional Water Quality Control Board Basin Plan Criteria <sup>a</sup>**  
**Recommended Numerical Limits to Translate Water Quality Objectives based on a Compilation of Water Quality Goals**

Metals					
(Numerical Objectives from the applicable Basin Plan also apply)					
Constituent / Parameter (Synonym)	Water Quality Objective or Promulgated Criterion	Recommended Numerical Limit(s)			G = Groundwater IS = Inland Surface Water
		Source / Averaging Period	Limit	Units	
Copper	Chemical Constituents	California Primary MCL	1300	ug/L	G & IS
		California Secondary MCL	1000	ug/L	G & IS
		Water Quality for Agriculture	200	ug/L	G & IS
	Tastes and Odors	California Secondary MCL	1000	ug/L	G & IS
	Toxicity - humans (a)	California Public Health Goal for Drinking Water	170	ug/L	G
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	1300	ug/L	IS
	CTR - aquatic life	California Toxics Rule (USEPA)	see Page 23 tab <sup>b</sup>		IS
Iron	Chemical Constituents	California Secondary MCL	300	ug/L	G & IS
		Water Quality for Agriculture	5000	ug/L	G & IS
	Tastes and Odors	California Secondary MCL	300	ug/L	G & IS
	Toxicity - aquatic life	USEPA National Ambient W Q Criteria / 4-day average	1000	ug/L	IS
Lead	Chemical Constituents	California Primary MCL	15	ug/L	G & IS
		Water Quality for Agriculture	5000	ug/L	G & IS
	Toxicity - humans	California Public Health Goal for Drinking Water	2	ug/L	G & IS
	CTR - aquatic life	California Toxics Rule (USEPA)	see Page 24 tab <sup>b</sup>		IS
Manganese	Chemical Constituents	California Secondary MCL	50	ug/L	G & IS
		Water Quality for Agriculture	200	ug/L	G & IS
	Tastes and Odors	California Secondary MCL	50	ug/L	G & IS
	Toxicity - humans	California DHS Action Level for drinking water	500	ug/L	G & IS
Mercury  see also Methylmercury	Chemical Constituents	California Primary MCL	2	ug/L	G & IS
		Toxicity - humans (a)	California Public Health Goal for Drinking Water	1.2	ug/L
	Toxicity - aquatic life	USEPA National Ambient W Q Criteria / 4-day average	0.77	ug/L	IS
		USEPA National Ambient W Q Criteria / 1-hour average	1.4	ug/L	IS
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	0.05	ug/L	IS
Methylmercury	Toxicity - humans	USEPA IRIS Reference Dose <sup>e</sup>	0.07	ug/L	G & IS
		USEPA National Ambient W Q Criteria (fish tissue)	0.3	mg/kg	IS
Nickel	Chemical Constituents	California Primary MCL	100	ug/L	G & IS
		Water Quality for Agriculture	200	ug/L	G & IS
	Toxicity - humans (a)	California Public Health Goal for Drinking Water	12	ug/L	G
	CTR - humans	California Toxics Rule (USEPA) for sources of drinking water	610	ug/L	IS
	CTR - aquatic life	California Toxics Rule (USEPA; dissolved)	see Page 25 tab <sup>b</sup>		IS

**Central Valley Regional Water Quality Control Board Basin Plan Criteria <sup>a</sup>**  
**Recommended Numerical Limits to Translate Water Quality Objectives based on a Compilation of Water Quality Goals**

Metals					
(Numerical Objectives from the applicable Basin Plan also apply)					
Constituent / Parameter (Synonym)	Water Quality Objective or Promulgated Criterion	Recommended Numerical Limit(s)			G = Groundwater IS = Inland Surface Water
		Source / Averaging Period	Limit	Units	
Selenium	Chemical Constituents	California Primary MCL	50	ug/L	G & IS
		Water Quality for Agriculture	20	ug/L	G & IS
	Toxicity - humans	USEPA IRIS Reference Dose <sup>e</sup>	35	ug/L	G & IS
	NTR - aquatic life	National Toxics Rule (USEPA) / 4-day average (total)	5	ug/L	IS
		National Toxics Rule (USEPA) / 1-hour average (total)	20	ug/L	IS
Silver	Chemical Constituents	California Secondary MCL	100	ug/L	G & IS
	Tastes and Odors	California Secondary MCL	100	ug/L	G & IS
	Toxicity - humans	USEPA IRIS Reference Dose <sup>e</sup>	35	ug/L	G & IS
	CTR - aquatic life	California Toxics Rule (USEPA)	see Page 28 tab <sup>b</sup>		IS
Zinc	Chemical Constituents	California Secondary MCL	5000	ug/L	G & IS
		Water Quality for Agriculture	2000	ug/L	G & IS
	Tastes and Odors	California Secondary MCL	5000	ug/L	G & IS
	Toxicity - humans	USEPA IRIS Reference Dose <sup>e</sup>	2100	ug/L	G & IS
	CTR - aquatic life	California Toxics Rule (USEPA)	see Page 30 tab <sup>b</sup>		IS

<sup>a</sup> Source: Central Valley Regional Water Quality Control Board (CVRWQCB), 2011; [http://www.waterboards.ca.gov/water\\_issues/programs/water\\_quality\\_goals/search.shtml](http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/search.shtml)

<sup>b</sup> Criteria is hardness dependent - Reference associated criteria tab available at: [http://www.waterboards.ca.gov/water\\_issues/programs/water\\_quality\\_goals/search.shtml](http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/search.shtml)

<sup>c</sup> USEPA, Region 9 has allowed acid soluble to account for suspended clay particles in receiving water.

<sup>d</sup> Assumes 70 kg body weight and 2 liters per day drinking water consumption.

<sup>e</sup> Assumes 70 kg body weight, 2 liters per day drinking water consumption, and 20 percent relative source contribution. An additional uncertainty factor of 10 is used for Class C carcinogens.

CTR = California Toxics Rule

NTR = National Toxics Rule

## References

Central Valley Regional Water Quality Control Board (CVRWQCB). 2011. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley Region, Fourth edition (Revised October 2011). The Sacramento River Basin and the San Joaquin River Basin. Central Valley Regional Water Quality Control Board. Sacramento, California.

## **Appendix 7C**

# **Surface Water Quality Analysis for Electrical Conductivity at Proposed Intakes**

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# APPENDIX 7C

## Surface Water Quality Analysis for Electrical Conductivity at Proposed Intakes

### 7C.1 Overview and Description

#### 7C.1.1 Introduction

This appendix describes the surface water quality analysis for electrical conductivity (EC) at the proposed intakes for North-of-the-Delta Offstream Storage (NODOS) alternatives, also referred to as the EC Mass Balance Approach.

The EC Mass Balance Approach was used for detailed evaluation of alternatives for the NODOS Draft Environmental Impact Report/ Environmental Impact Statement (NODOS DEIR/EIS). This approach was used to evaluate surface water quality conditions, in the Primary Study Area (PSA), specifically EC at the proposed intakes for the alternatives. The analysis was formulated using the limited EC field measurements available for various tributaries (sources) and locations along the Sacramento River. The analysis was formulated to indicate trends in EC changes, due to the alternatives, assuming worst-case EC conditions. The results of the analysis were used as a surrogate indicator of the changes in other conserved water quality constituents.

#### 7C.1.2 Objective

The objective of the water quality analysis described in this appendix is to simulate the worst-case conditions for assessing the maximum potential impact for the alternatives. The analysis includes estimation of the worst-case concentrations for various sources along the Sacramento River, estimation of source water contribution at locations of interest along the Sacramento River, and finally, an estimation of the worst-case concentrations at locations of interest along the Sacramento River. The analysis calculates a simple mass balance using the source concentrations and the percent source volumes. The analysis was limited to the three intake locations along the Sacramento River, namely Tehama-Colusa Canal Intake, Glenn-Colusa Canal Intake, and the proposed Delevan Pipeline Intake.

#### 7C.1.3 Assumptions

Limited EC measurements were available for the key sources of flow along the Sacramento River. The measurements were from grab samples at variable time intervals over a 12 year period between 1998 and 2010. Figures 7C-1 through 7C-14 show the EC observations plotted versus corresponding flows for each observation. The flow data used are based on the daily hydrology inputs developed for the Upper Sacramento River Daily Operations Model (USRDOM) based on the flow gages on the tributaries.

The grey trend lines and equations shown on the plots represent a linear regression between EC and flow for each plot. These regressions were used to judge whether or not there was any meaningful relationship between flow and EC for these locations. Because of limited strength of the regressions, these regressions were not used in the analysis. Instead, combinations of worst-case assumptions, often irrespective of flow conditions, were used to “envelop” most of the EC observations.

The red lines on the scatter plots represent the assumed relationships for each source. Table 7C-1 shows these assumed worst-case assumptions for each source of flow. Using the observed data for each source, background EC values were assumed. In addition, if the flow dependency of the EC was evident, a linear relationship was assumed. Both the assumed background EC and the flow versus EC relationships were formulated such that resulting EC represents the worst-case condition (less than 20 percent exceedance of the limited EC measurements) for a given flow at the source.

#### **7C.1.4 Approach**

The computational approach for analyzing conditions at the three intakes includes determining the source concentrations from the equations listed in Table 7C-1, determining source water contributions at a given location along the Sacramento River, and estimating the concentration at that location by summing the products of each source concentration and the percent volume fraction of the source. This approach assumes that water quality constituent estimated conserves mass.

This approach was used in two steps as shown in the Figure 7C-15.

The first step was to verify the worst-case calibration of the assumed equations in Table 7C-1 using the available observed EC data at various locations along the Sacramento River. The source water contributions at the calibration locations were determined based on the daily flow results from the USRDOM hind-cast simulation, which simulates the daily flow conditions along the Sacramento River with historical flows and demands forced at the boundaries.

In verifying the worst-case calibration of the flow versus EC relationships for the source flows along the Sacramento River, the estimated worst-case EC values were compared to the observed data for various stations along the Sacramento River. Figures 7C-16(a,b) through 7C-25(a,b) show the plots prepared in verifying the calibration for several locations along the Sacramento River. Each set of two figures includes a scatter plot of observed versus the estimated worst-case EC results (a) and a plot of EC residuals (estimated worst-case EC minus observed EC) (b) with respect to the flows at that location. The goal of the calibration was to achieve at least 75 percent of the residuals that are greater than or equal to zero. This ensures that the EC results represent the worst-case condition. Table 7C-2 shows the summary of the number of EC observations and the number of residuals less than and greater than zero at each location.

Once the verification of the worst-case calibration was achieved, the second step involves using the equations listed in Table 7C-1 (result of the verification) along with the source water contributions for the alternatives in estimating the water quality concentrations for impact analysis. For the impact analysis, the EC results are summarized by water year type at each intake location.

#### **7C.1.5 Limitations**

The goal of this analysis is to estimate the worst-case EC conditions in the Sacramento River to determine the maximum potential impact of diverting flows at the proposed intakes. The intent was not to develop a calibrated model capable of predicting EC. Therefore, for the worst-case estimates, several assumptions are made. The analysis assumes that EC is conservative. In estimating the source water contributions at locations along the Sacramento River, any travel time that may take for the source flow to reach the location of the interest is ignored. The in-reservoir sources of EC, such as leaching from soils or local runoff, were not considered and the mass balance calculation did not consider evaporative or other losses.

Due to these limitations, this analysis should be used only for indicating water quality trends due to changes in blending conditions.

**Table 7C-1  
Flow Versus EC Relationship for Various Source Flows Along the Sacramento River**

Flow Source	Base EC	Flow vs EC Relationship	
		Slope	Intercept
Sacramento River downstream of Keswick Dam	100	0	130
Clear Creek	100	0	100
Cow Creek	100	0	175
Cottonwood Creek	225	-0.00896	339.6
Battle Creek	100	-0.0334	169.9
Paynes Creek	165	-0.422	249
Red Bank Creek	100	0	475
Antelope Creek	100	0	300
Mill Creek	150	-0.0627	237.9
Elder Creek	100	0	380
Thomes Creek	150	-0.162	371.6
Deer Creek	100	0	165
Big Chico Creek	125	-0.182	230.5
Stony Creek	325	-0.053	401.5
Ungaged Flows	100	0	250

**Figure 7C-1  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Antelope Creek**

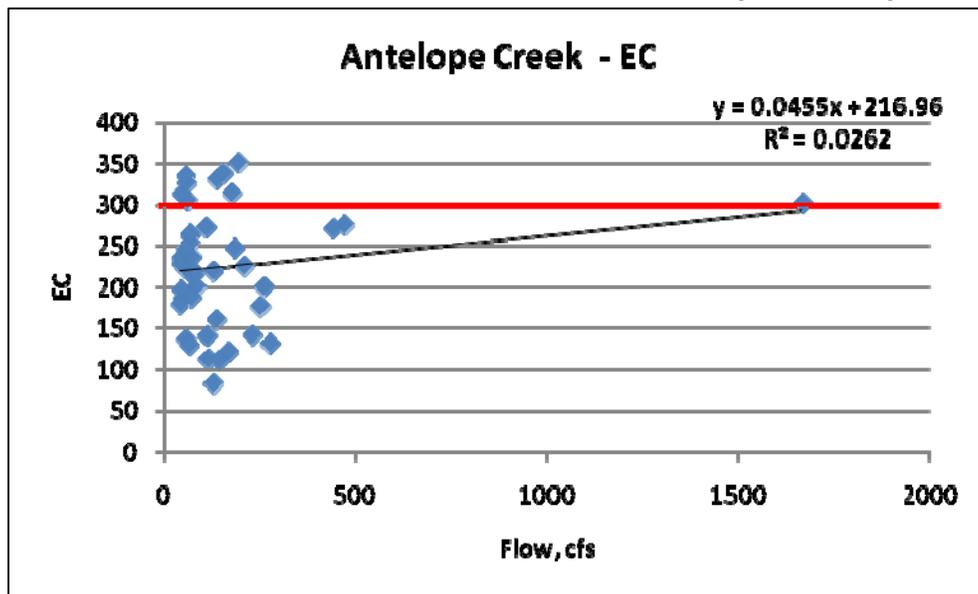


Figure 7C-2  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Battle Creek

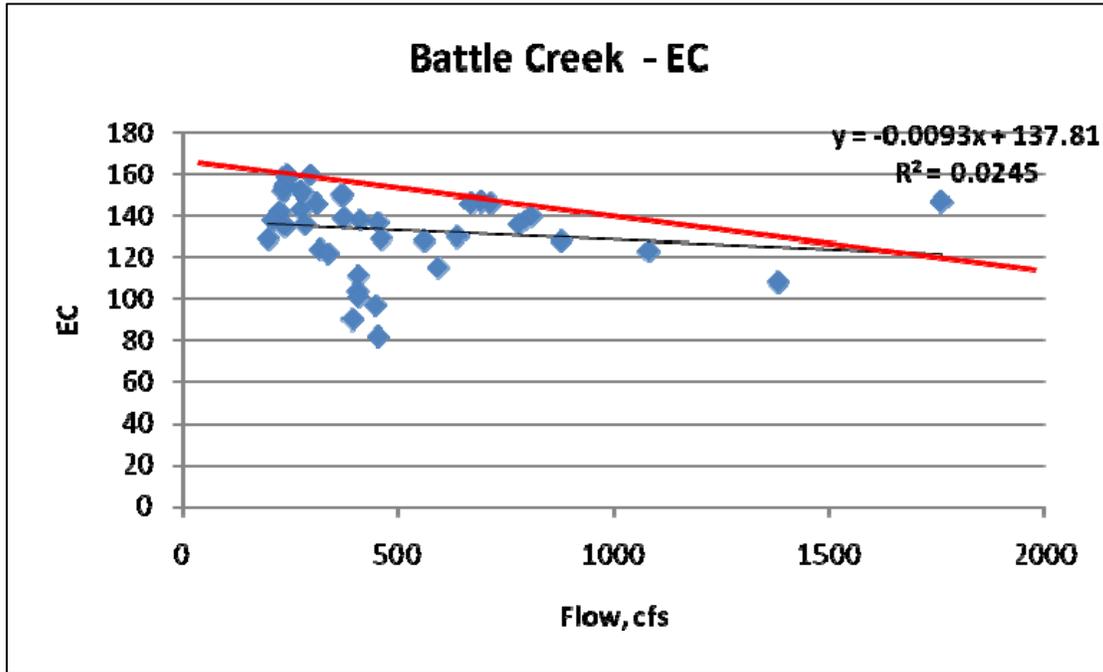


Figure 7C-3  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Big Chico Creek

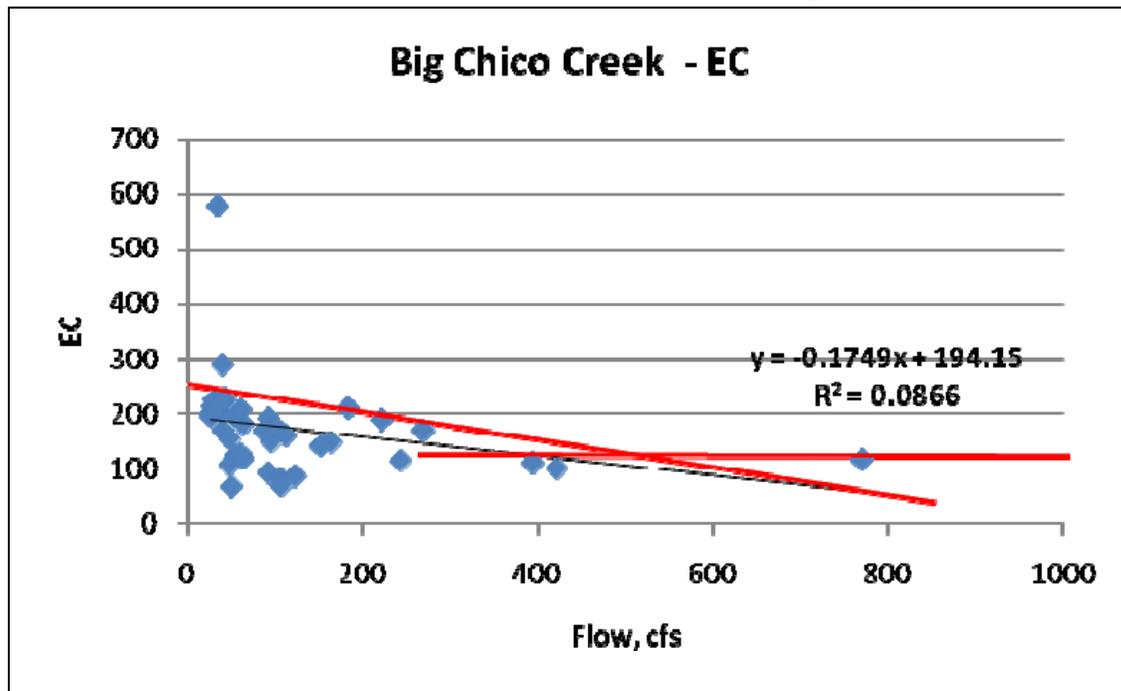


Figure 7C-4  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Clear Creek

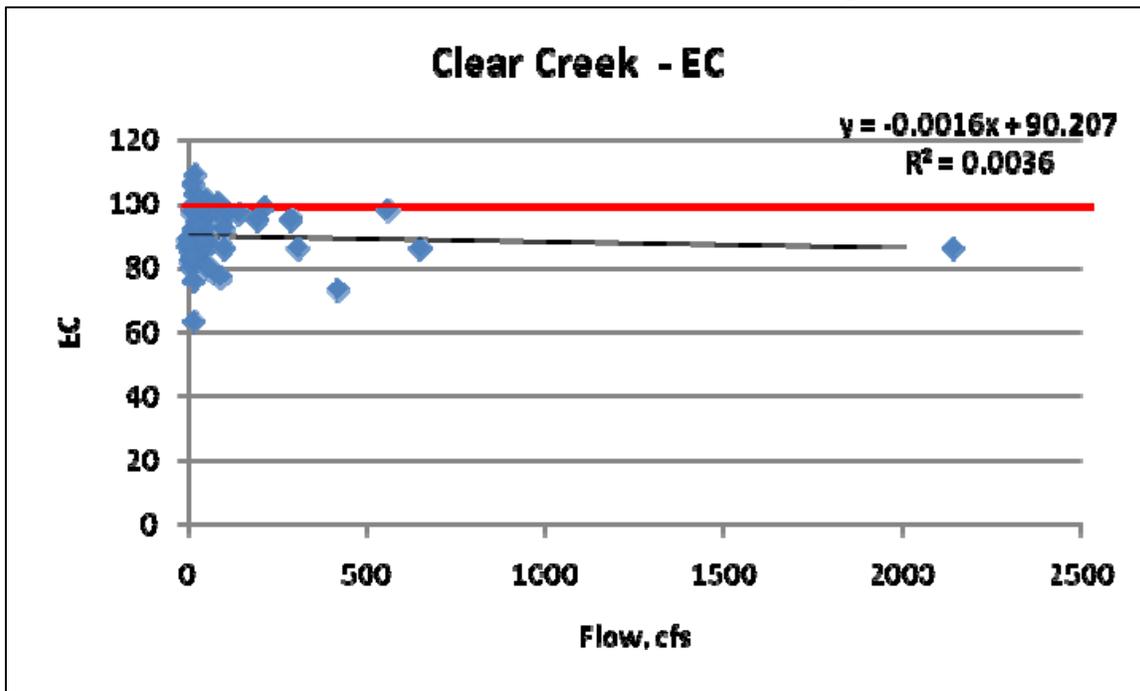


Figure 7C-5  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Cottonwood Creek

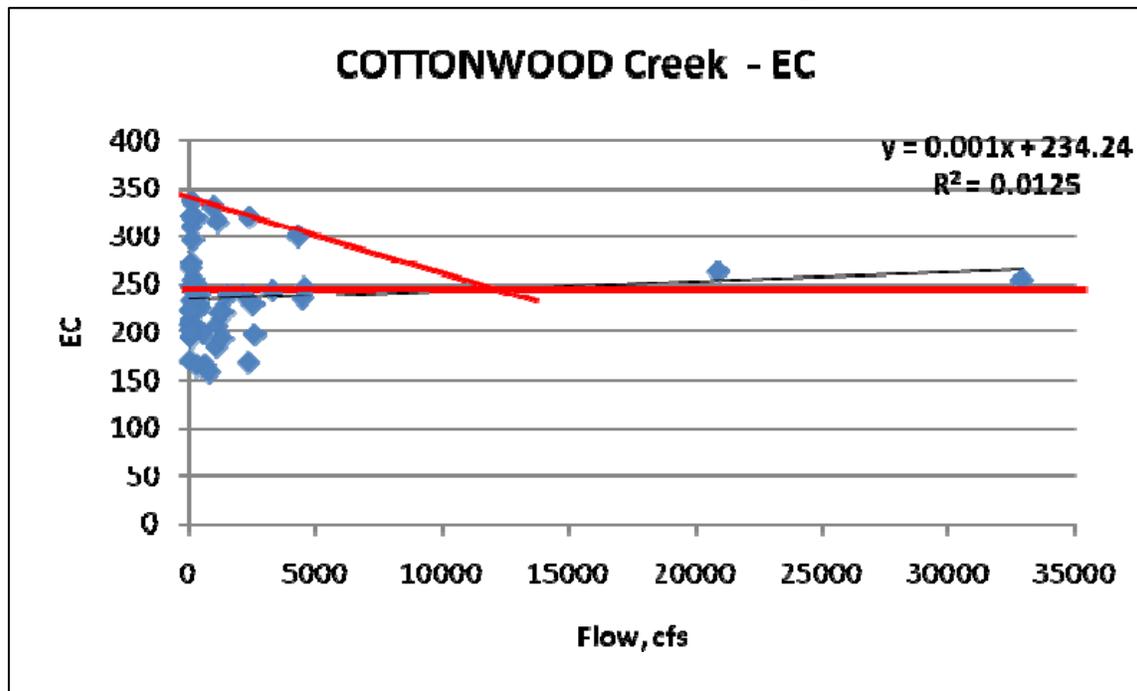


Figure 7C-6  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Cow Creek

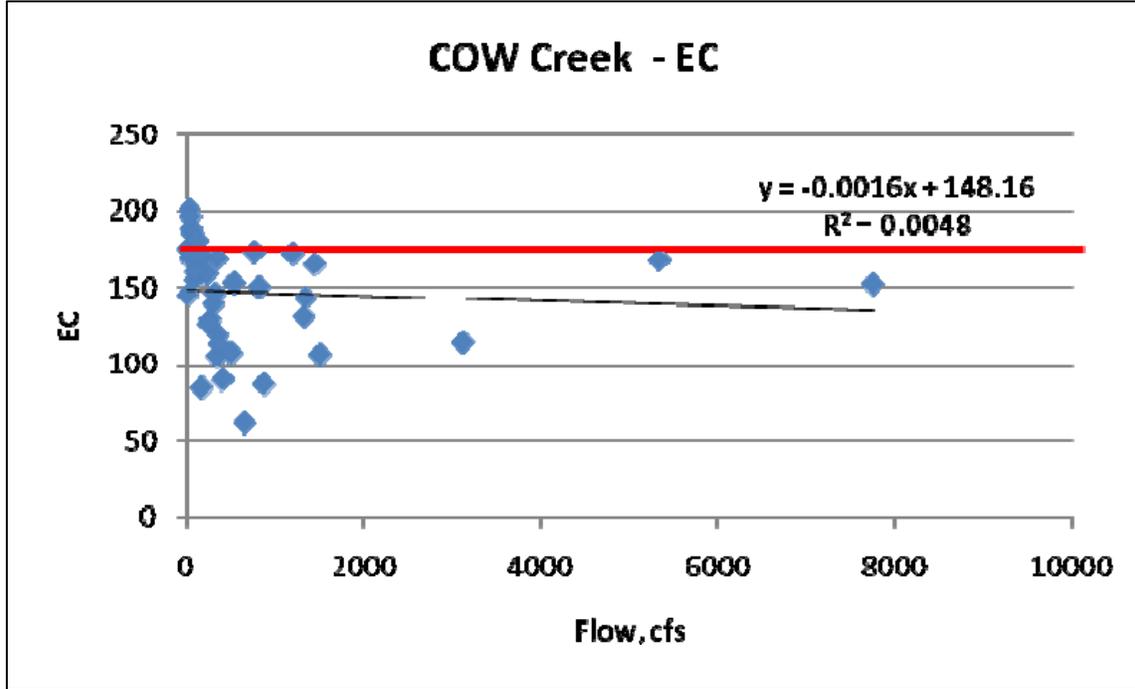


Figure 7C-7  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Deer Creek

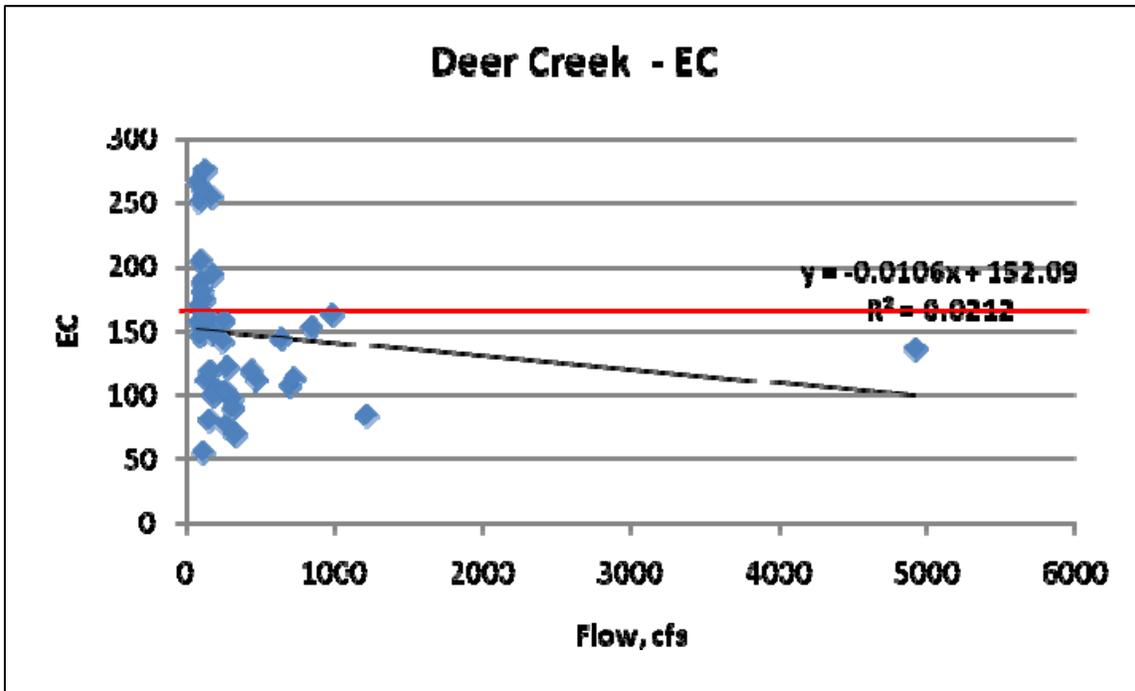


Figure 7C-8  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Elder Creek

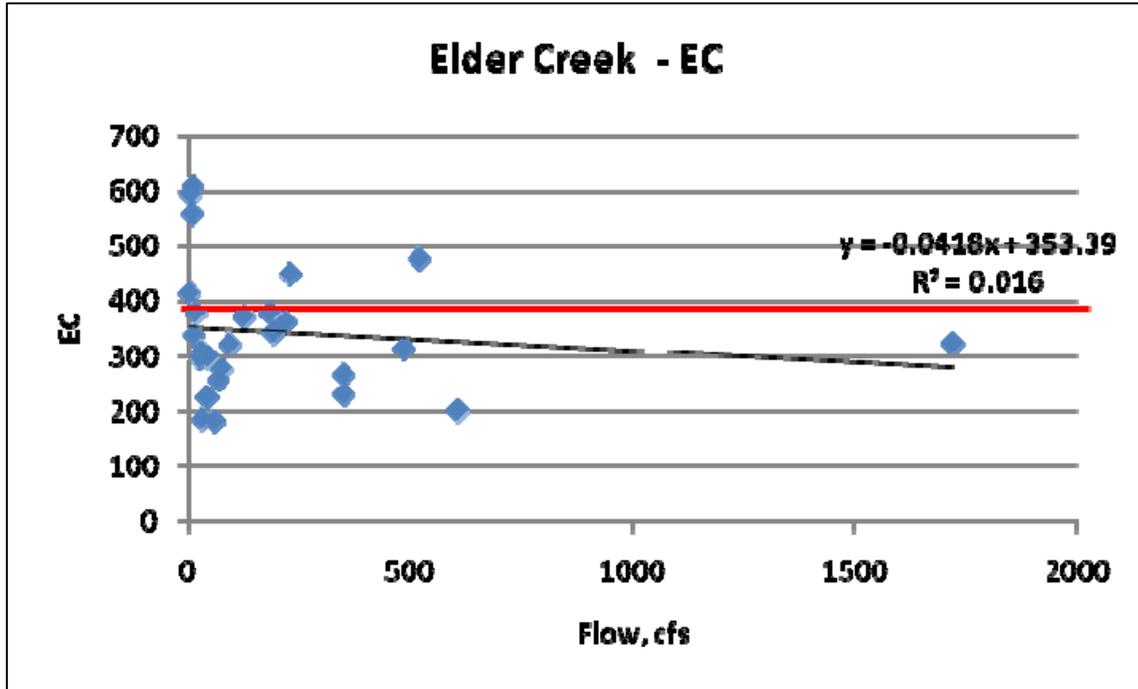


Figure 7C-9  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Mill Creek

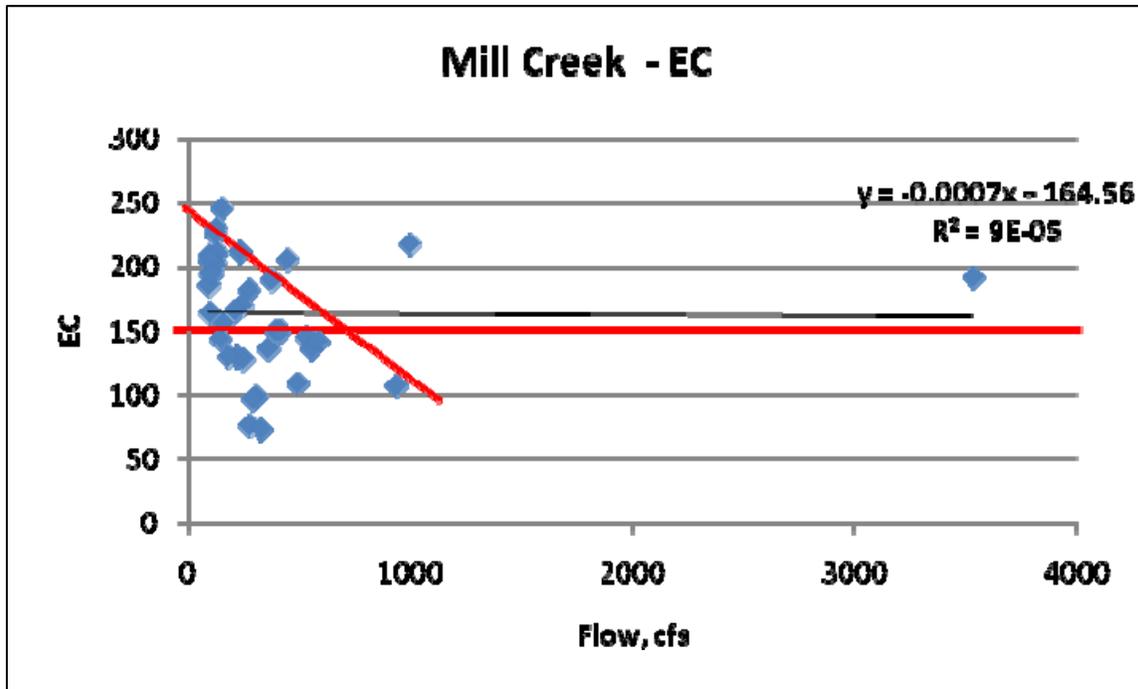


Figure 7C-10  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Paynes Creek

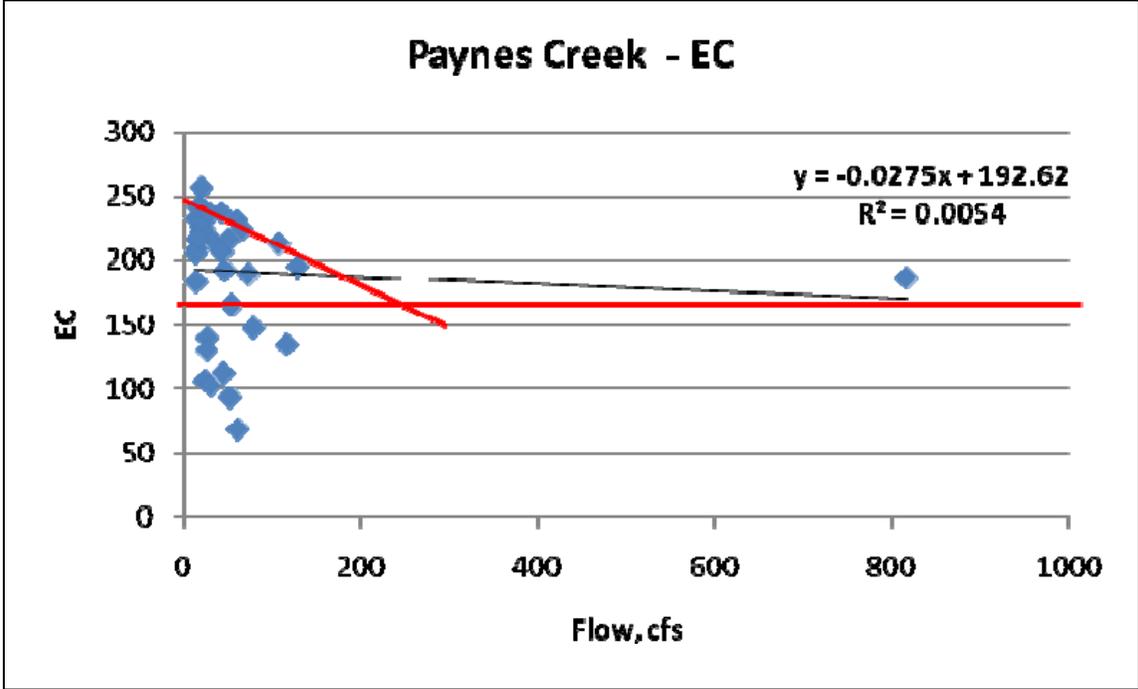


Figure 7C-11  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Red Bank Creek

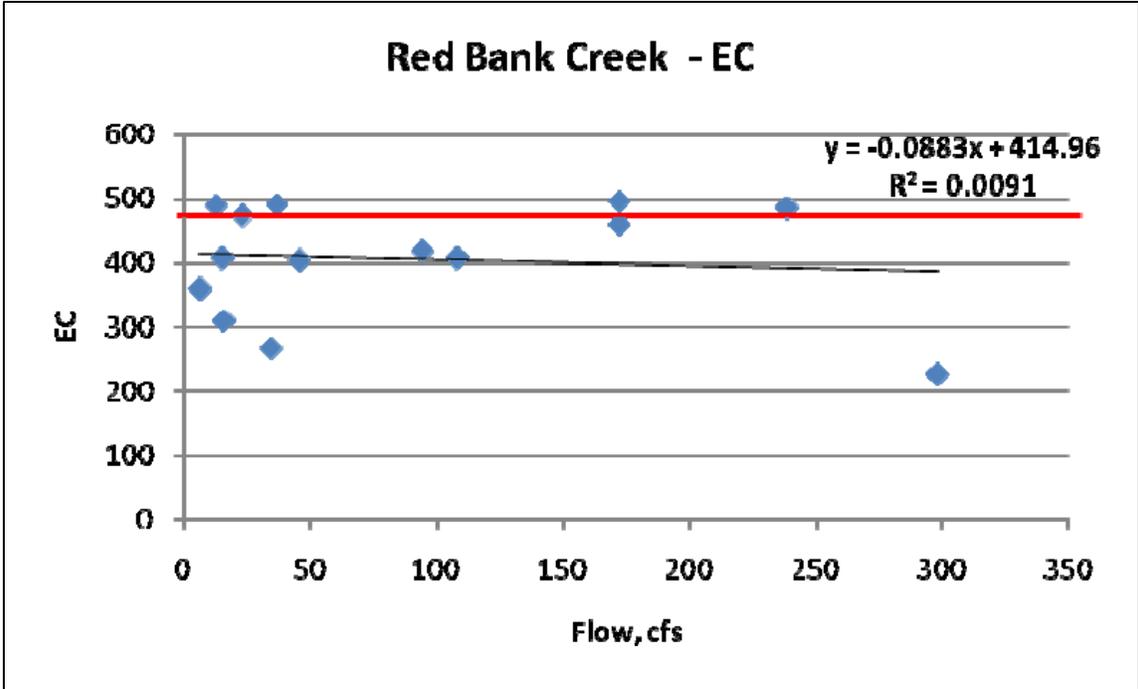


Figure 7C-12  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Sacramento River

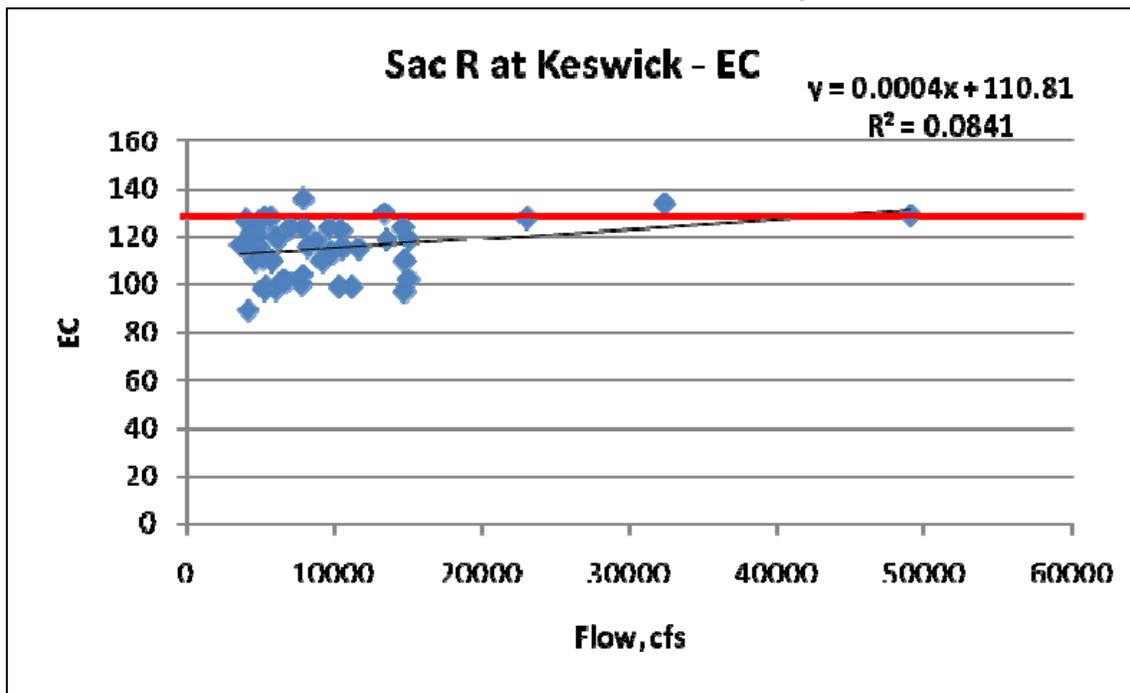
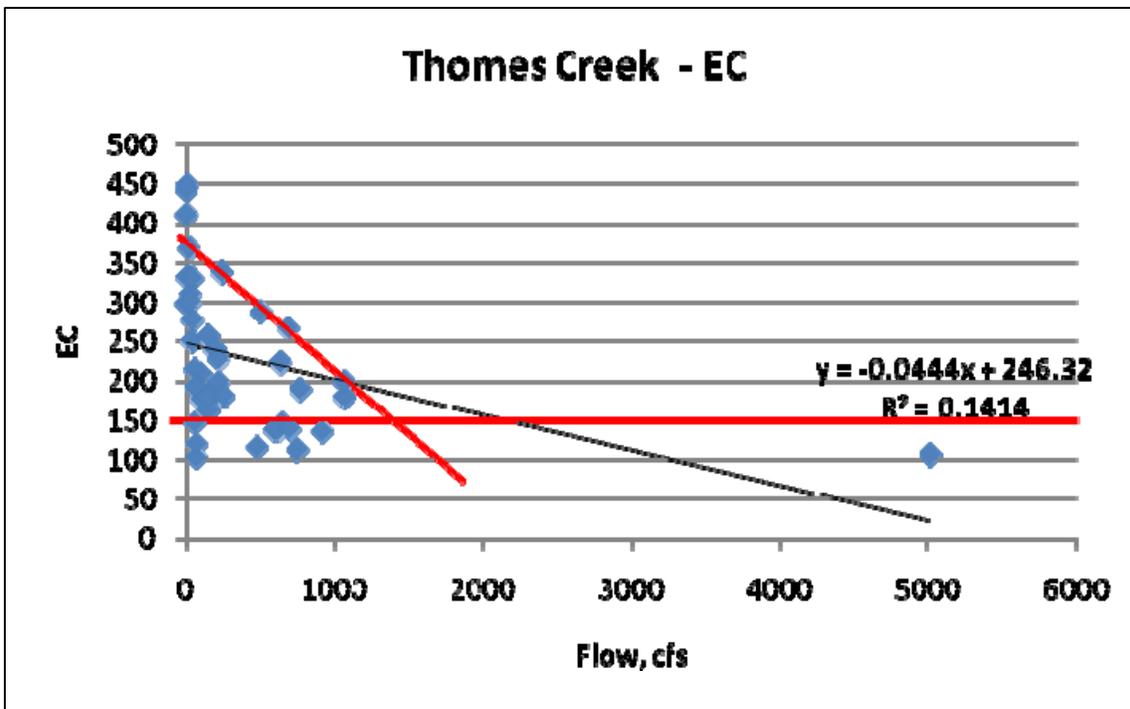
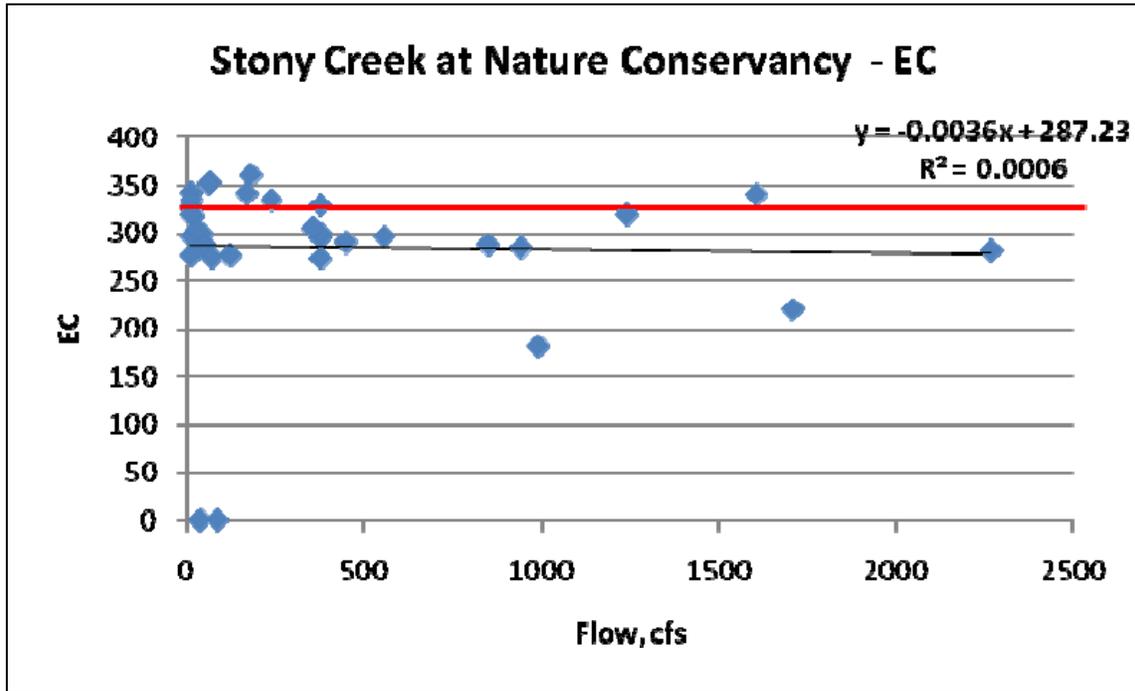


Figure 7C-13  
USRDOM Hind-Cast Flow Versus Observed EC Relationship for Thomes Creek



**Figure 7C-14**  
**USRDOM Hind-Cast Flow Versus Observed EC Relationship for Stony Creek**

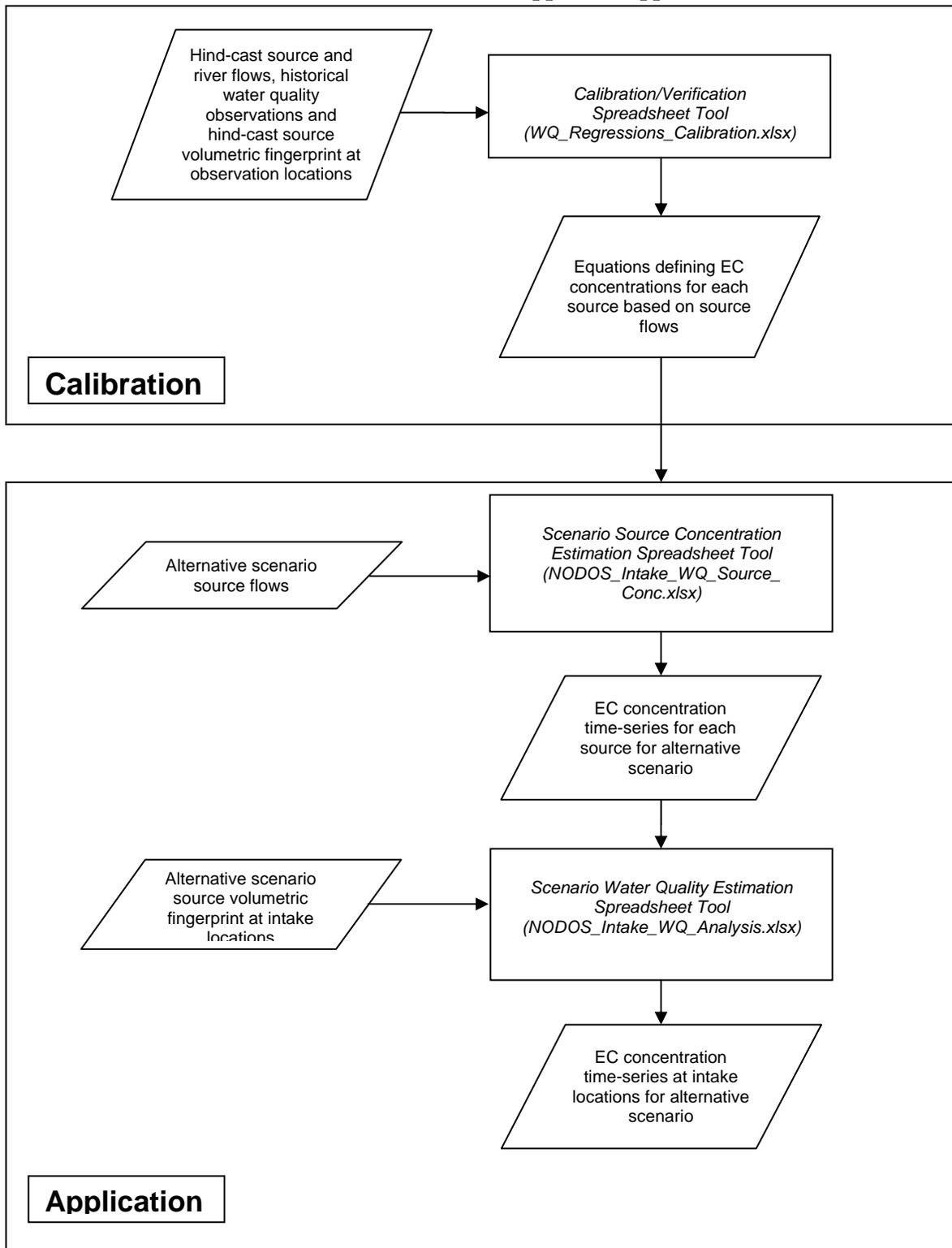


**Table 7C-2**  
**Number of Observations with EC Residuals Greater than or Less than Zero at the Water Quality Measurement Locations**

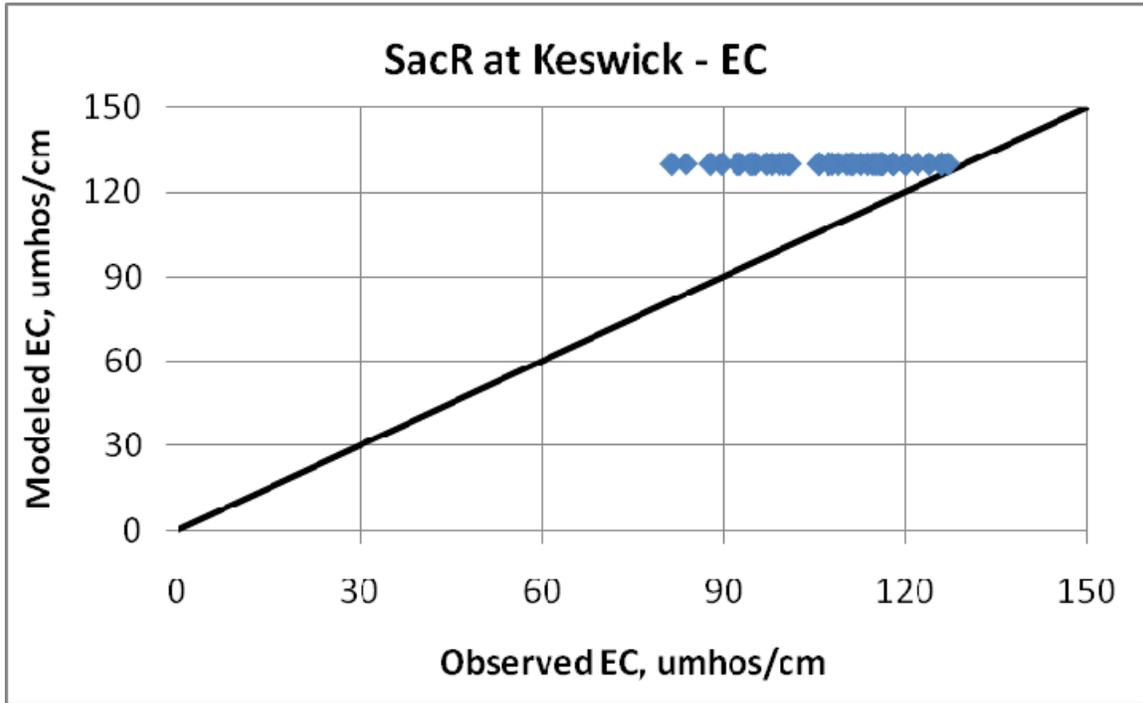
WQ Station		Total Number of Observations (#)	Residual (Mod - Obs) > 0		Residual (Mod - Obs) < 0	
Identifier	Location		#	%	#	%
A2101000	Sacramento River downstream of Keswick Dam	42	42	100	0	0
A281500	Sacramento River at Balls Ferry	43	43	100	0	0
A0278500	Sacramento River at Bend Bridge	42	41	98	1	2
A03112500	Tehama Colusa Canal downstream of Stony Creek*	65	49	75	16	25
A0275890	Sacramento River downstream of Sycamore Launch downstream of Red Bluff	71	69	97	2	3
A0270000	Sacramento River at Vina	43	41	95	2	5
A0311900	Glenn Colusa Canal at Intake	64	60	94	4	6
A0263000	Sacramento River at Hamilton City	53	50	94	3	6
A0245000	Sacramento River opposite Moulton Weir	100	95	95	5	5
A0242000	Sacramento River at Colusa	46	39	85	7	15

\*TC Canal downstream of Stony Creek observed EC data were compared to the simulated EC for Sacramento River T-C intake.

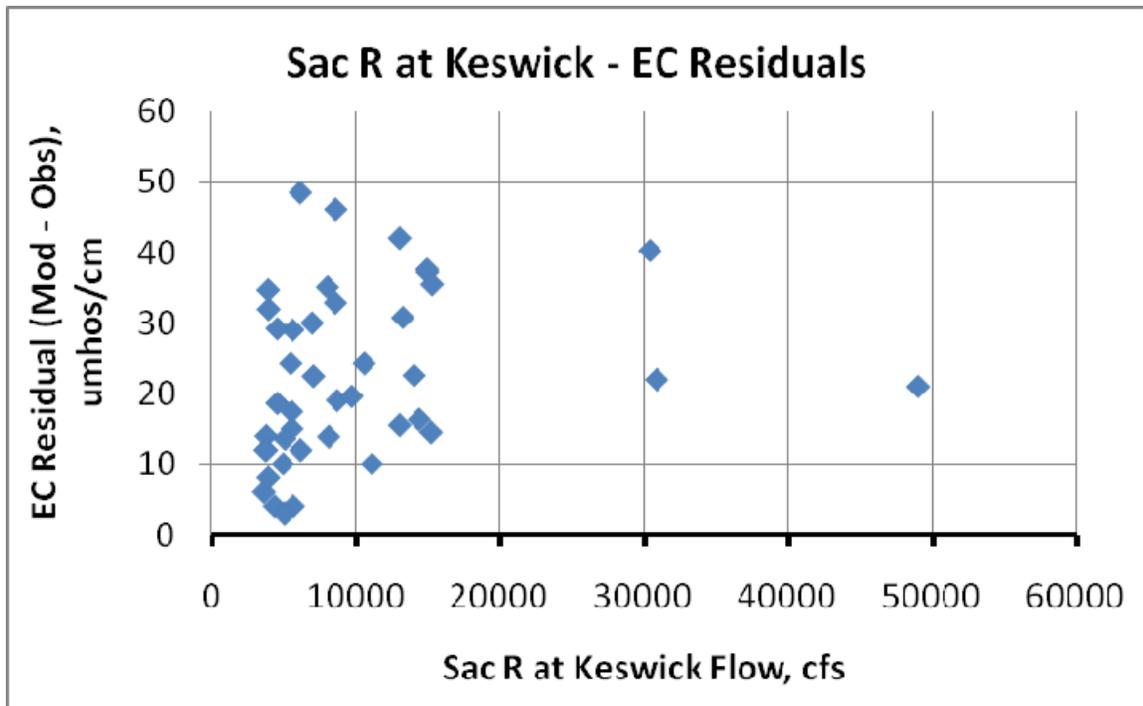
**Figure 7C-15**  
**Information Flow for the EC Mass Balance Approach Applied to the Alternatives**



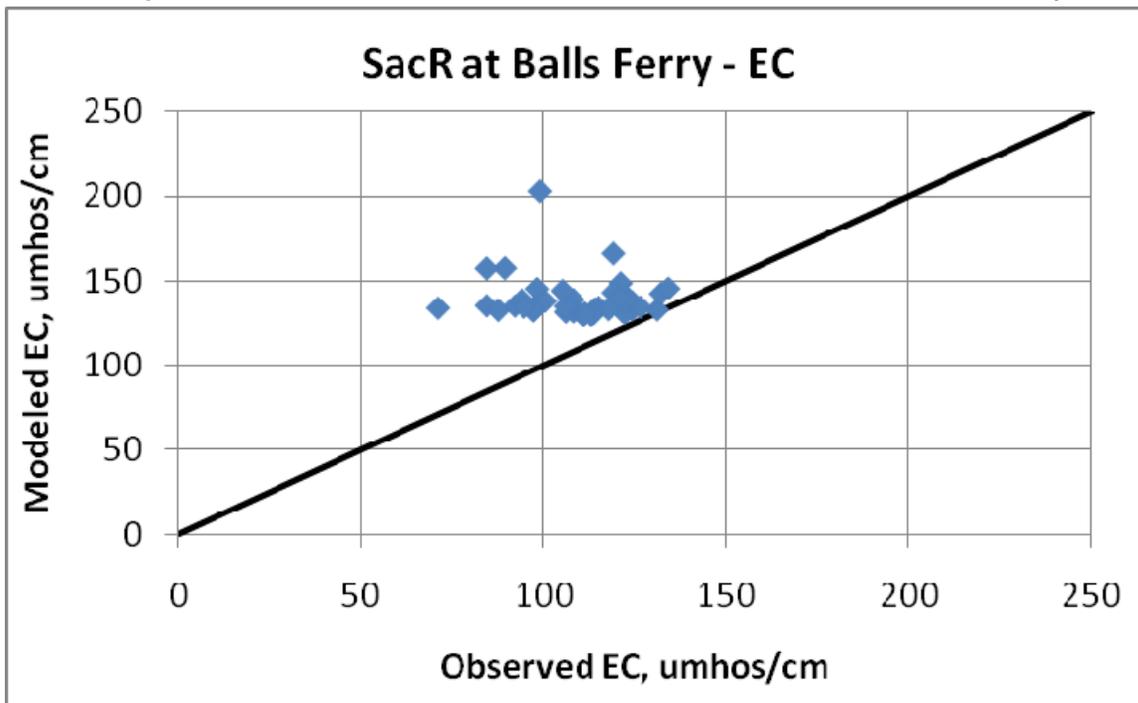
**Figure 7C-16a**  
**Comparison of Observed and Modeled EC for Sacramento River at Keswick**



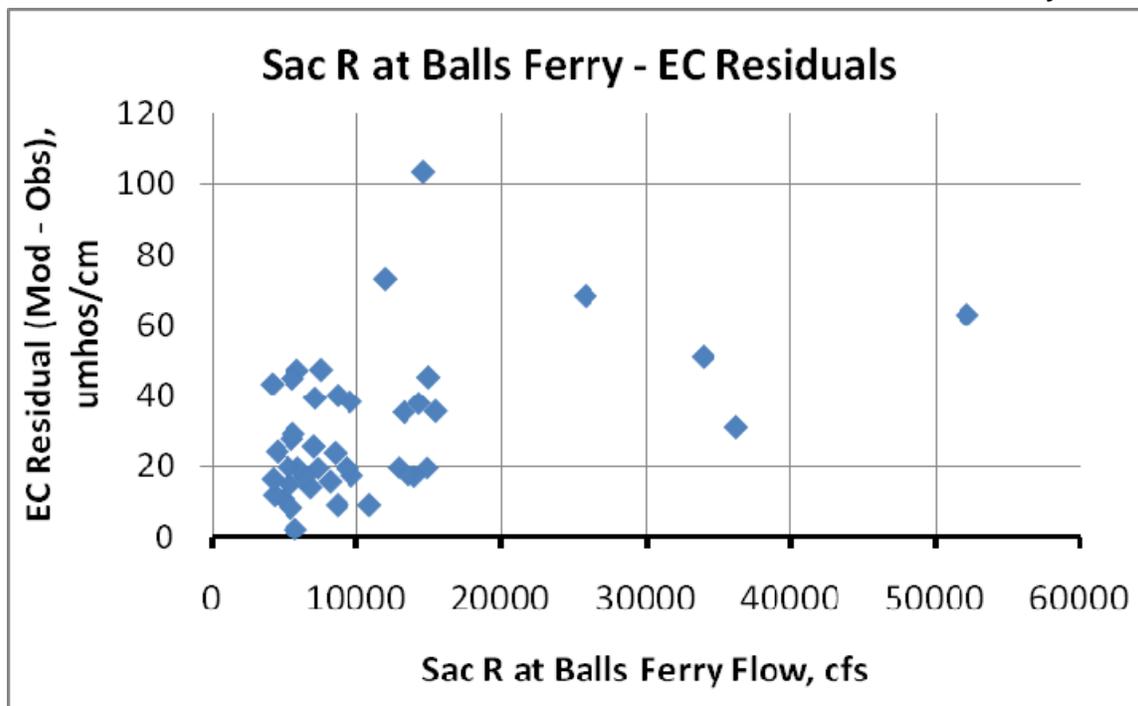
**Figure 7C-16b**  
**Residual of Modeled Minus Observed EC for Sacramento River at Keswick**



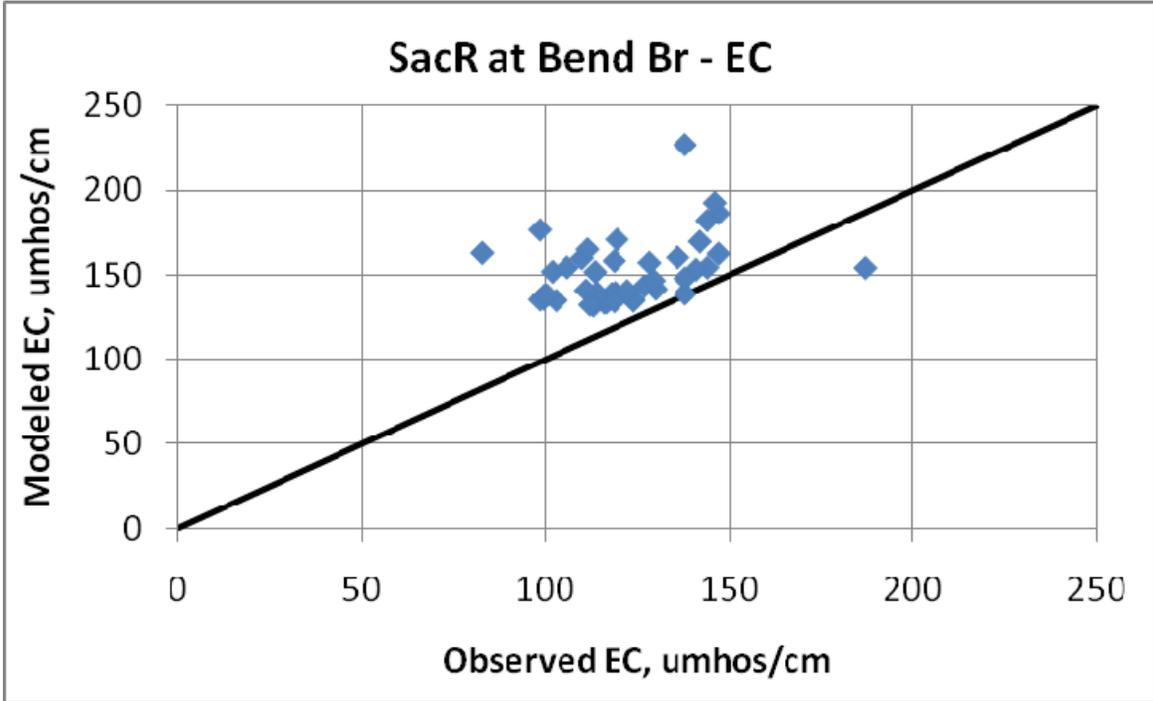
**Figure 7C-17a**  
**Comparison of Observed and Modeled EC for Sacramento River at Balls Ferry**



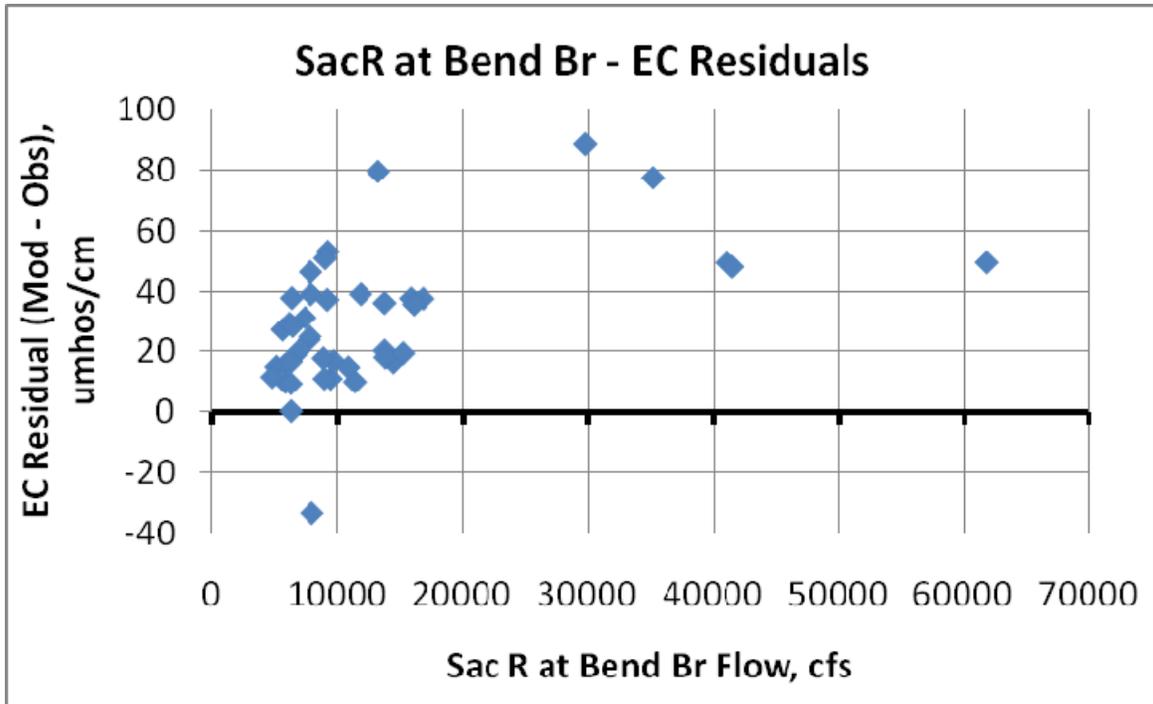
**Figure 7C-17b**  
**Residual of Modeled Minus Observed EC for Sacramento River at Balls Ferry**



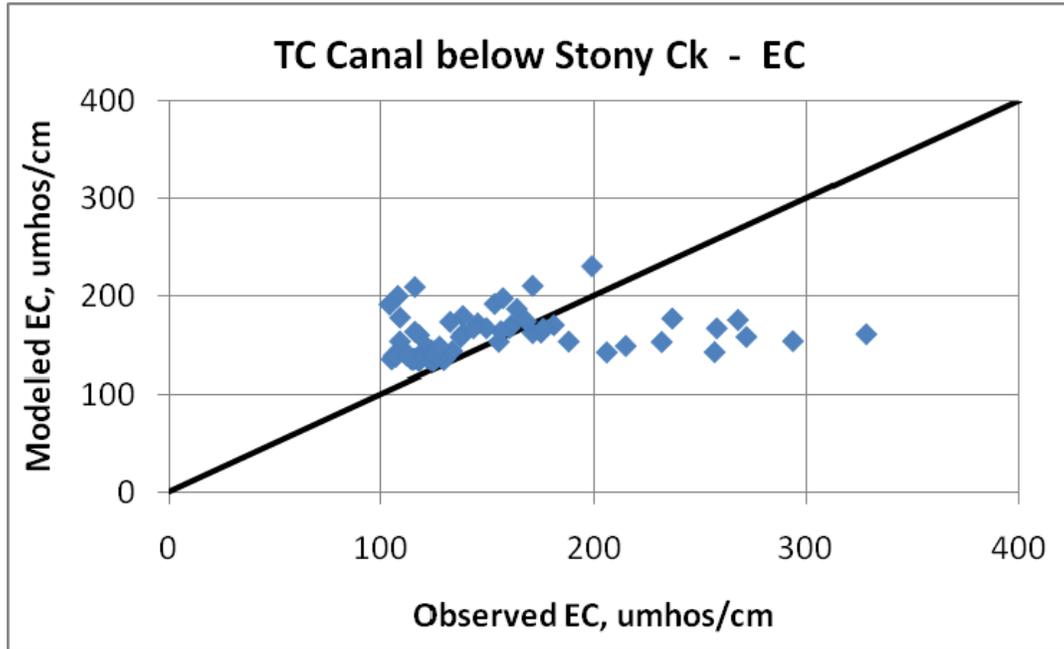
**Figure 7C-18a**  
**Comparison of Observed and Modeled EC for Sacramento River at Bend Bridge**



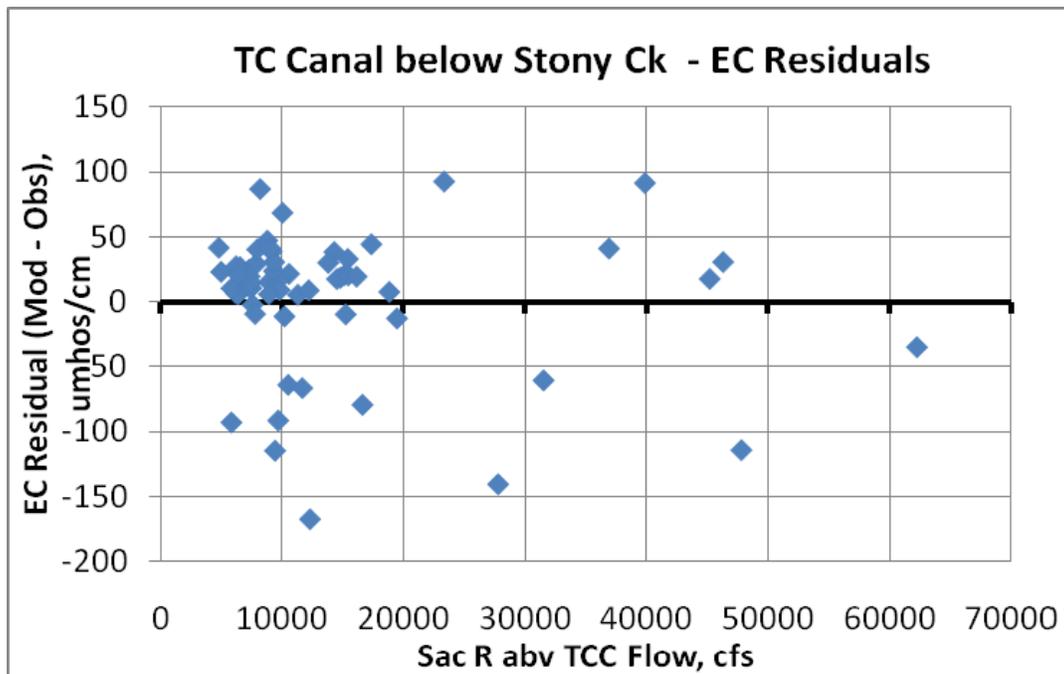
**Figure 7C-18b**  
**Residual of Modeled minus Observed EC for Sacramento River at Bend Bridge**



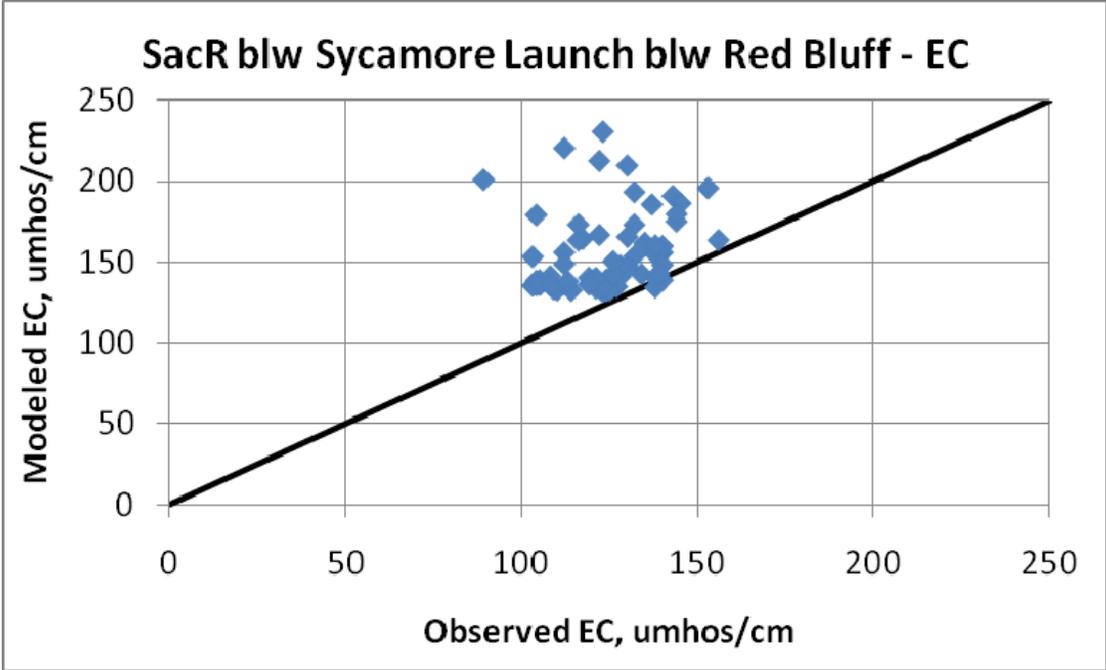
**Figure 7C-19a**  
**Comparison of Observed EC at TC Canal below Stony Creek with Modeled EC for Sacramento River at TC Canal Intake**



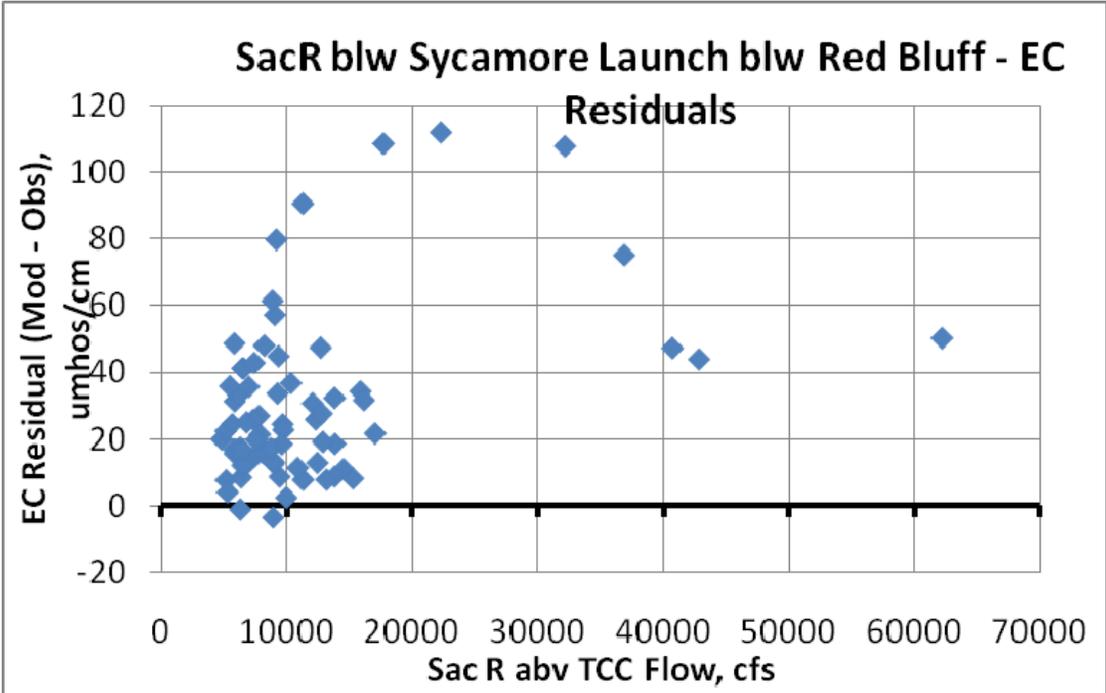
**Figure 7C-19b**  
**Residual of Modeled Minus Observed EC at TC Canal below Stony Creek with Modeled EC for Sacramento River at TC Canal Intake**



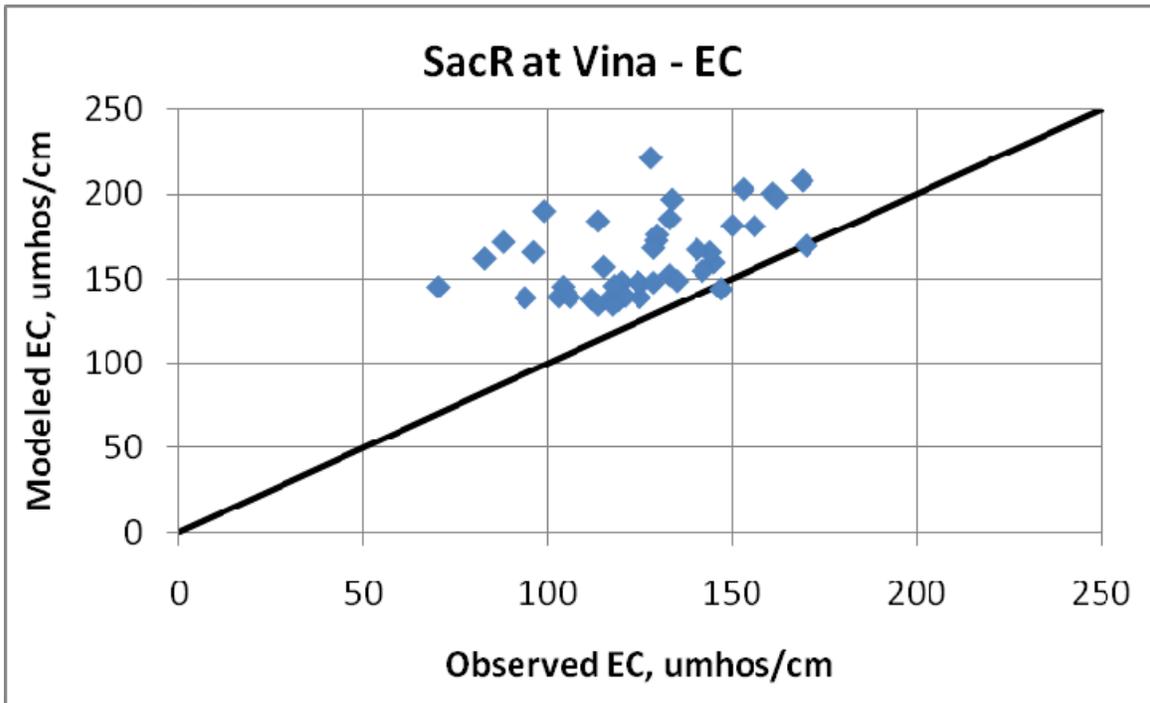
**Figure 7C-20a**  
**Comparison of Observed and Modeled EC for Sacramento River at Sycamore Launch below Red Bluff**



**Figure 7C-20b**  
**Residual of Modeled Minus Observed EC for Sacramento River at Sycamore Launch below Red Bluff**



**Figure 7C-21a**  
**Comparison of Observed and Modeled EC for Sacramento River at Vina**



**Figure 7C-21b**  
**Residual of Modeled Minus Observed EC for Sacramento River at Vina**

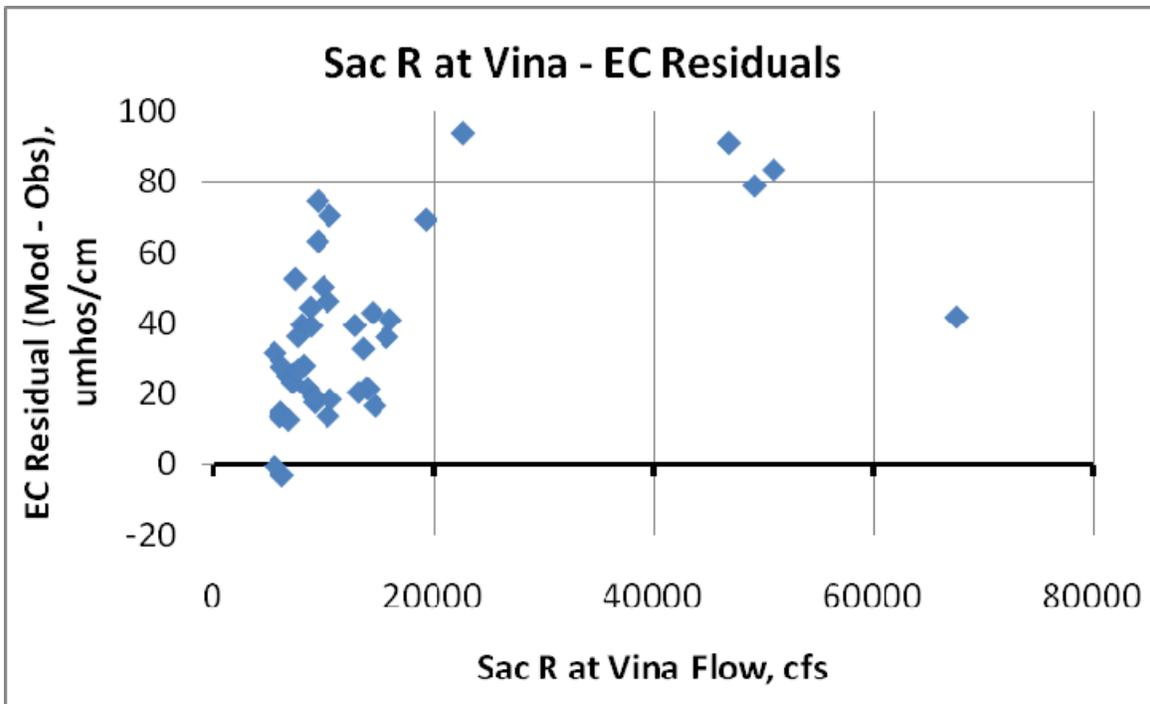


Figure 7C-22a  
Comparison of Observed and Modeled EC at GC Canal Intake

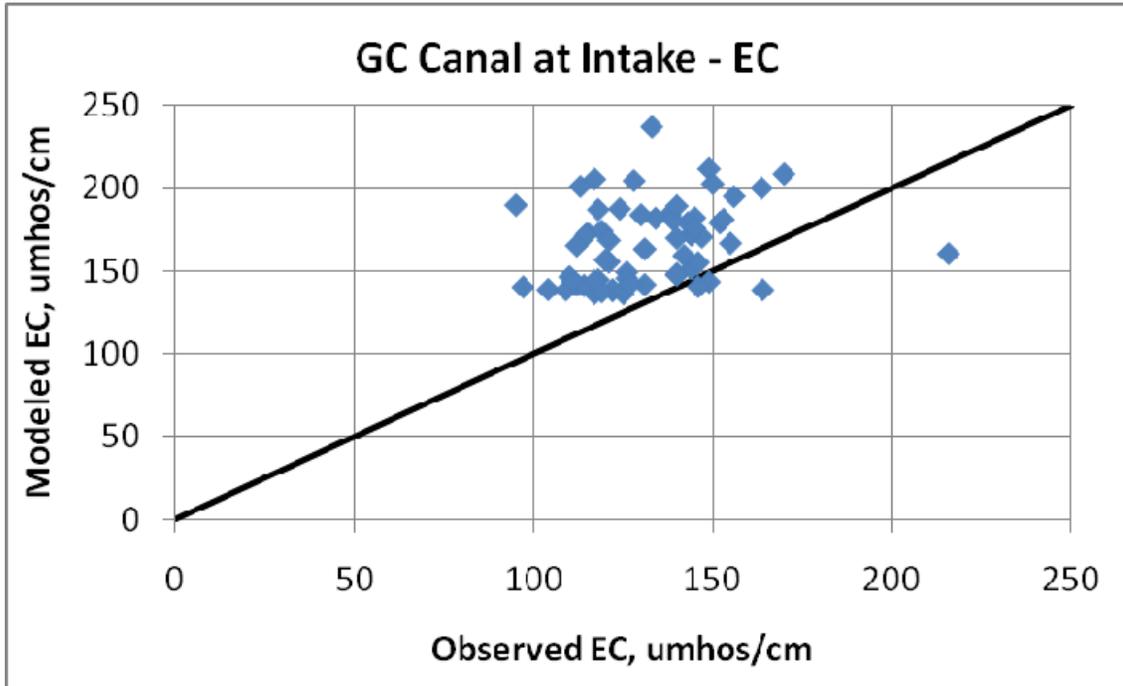
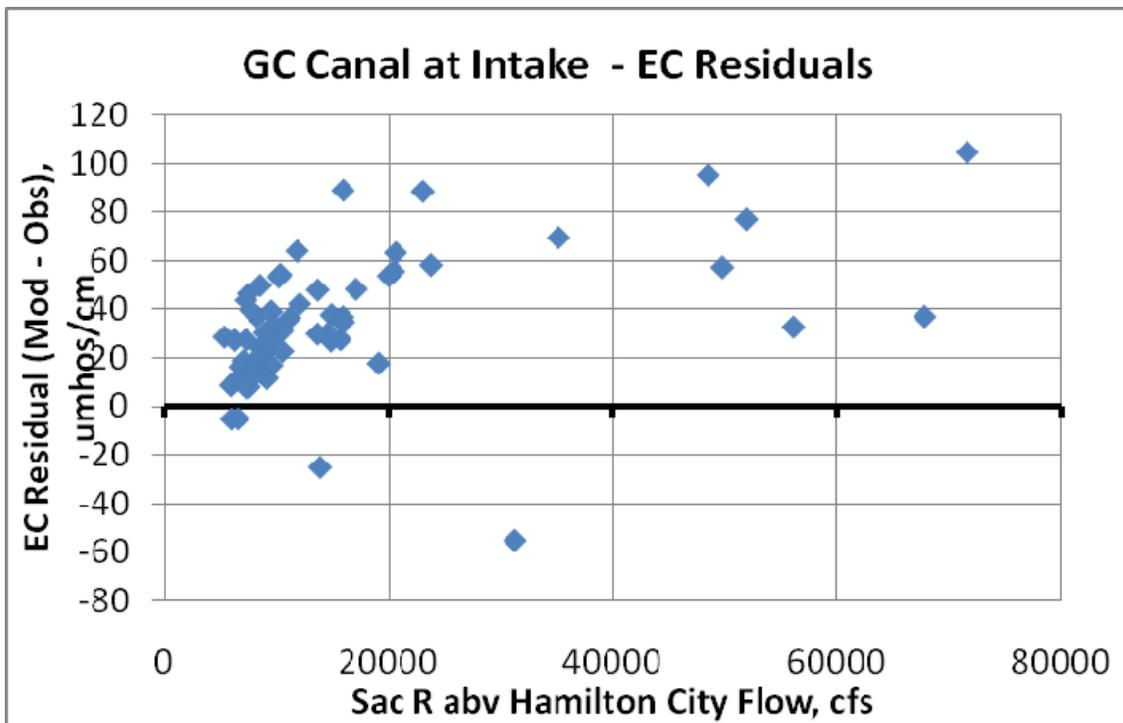
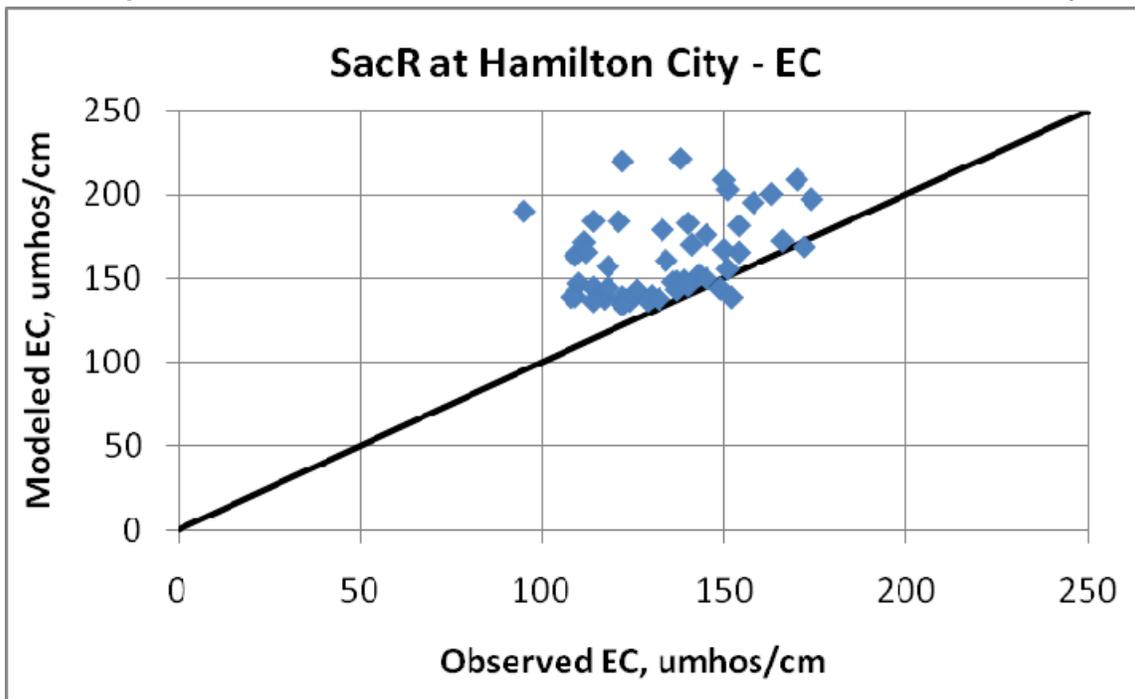


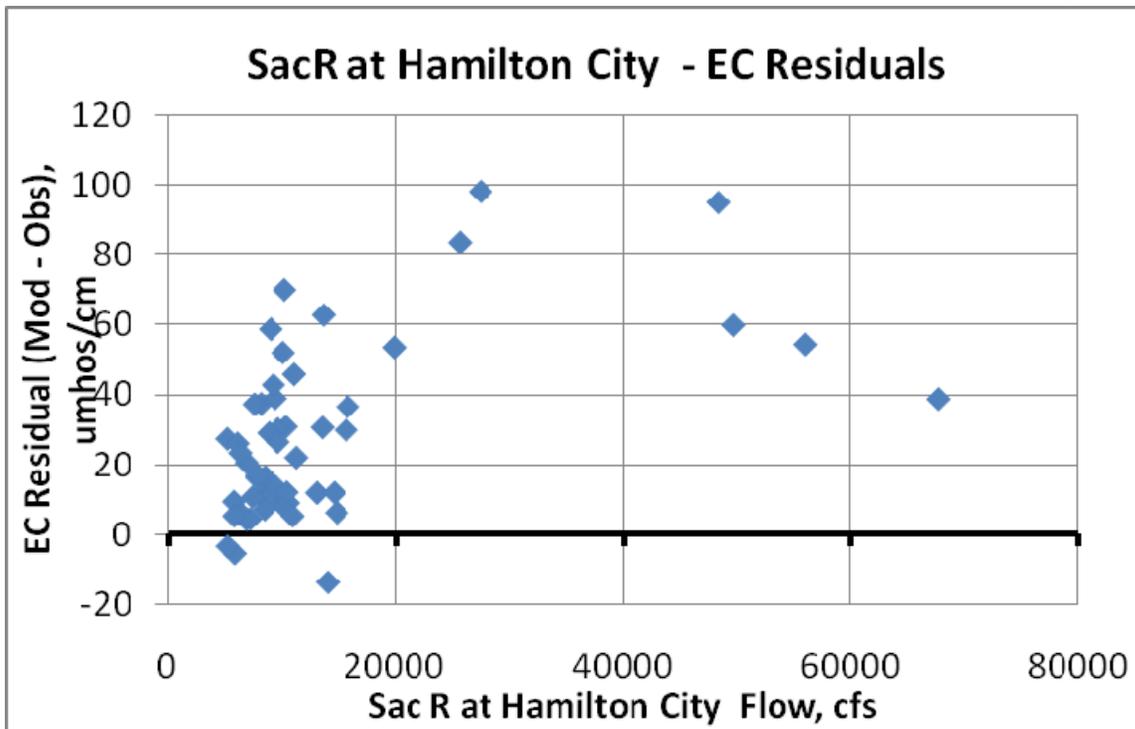
Figure 7C-22b  
Residual of Modeled Minus Observed EC at GC Canal Intake



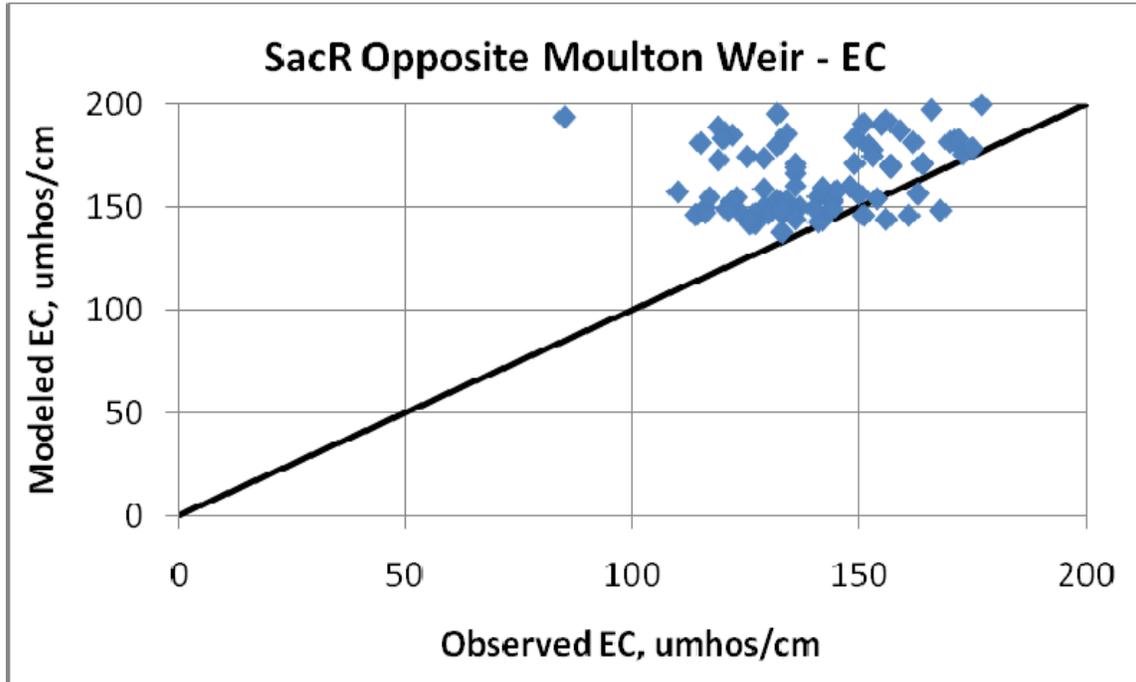
**Figure 7C-23a**  
**Comparison of Observed and Modeled EC for Sacramento River at Hamilton City**



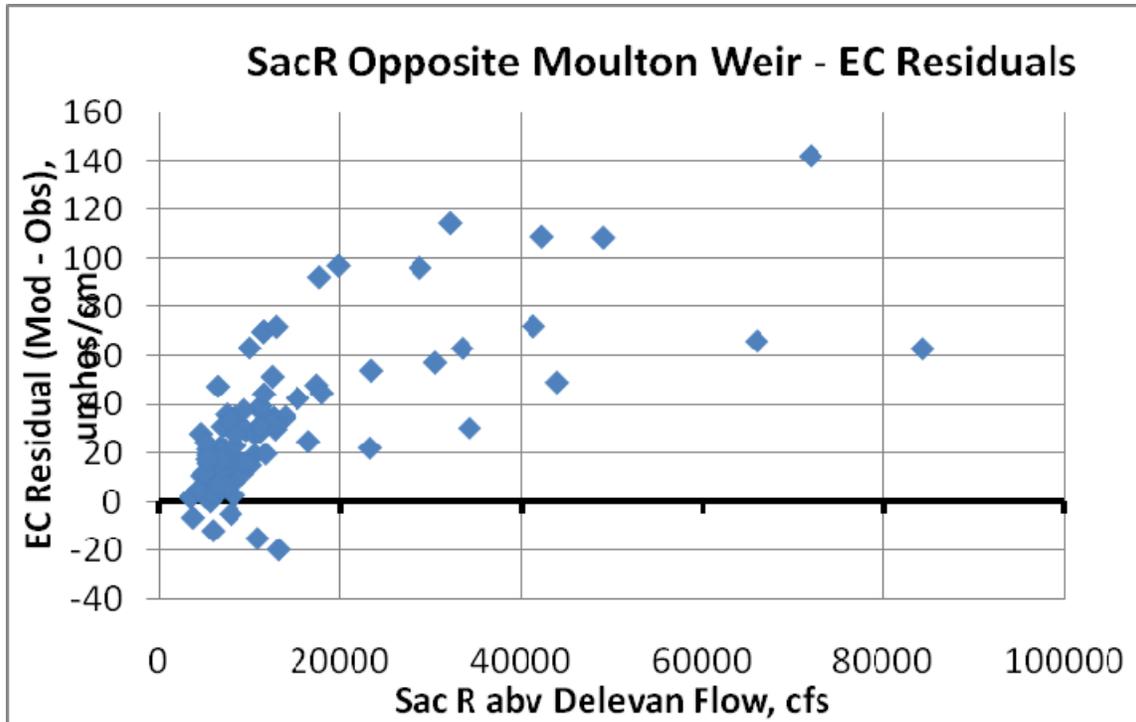
**Figure 7C-23b**  
**Residual of Modeled Minus Observed EC for Sacramento River at Hamilton City**



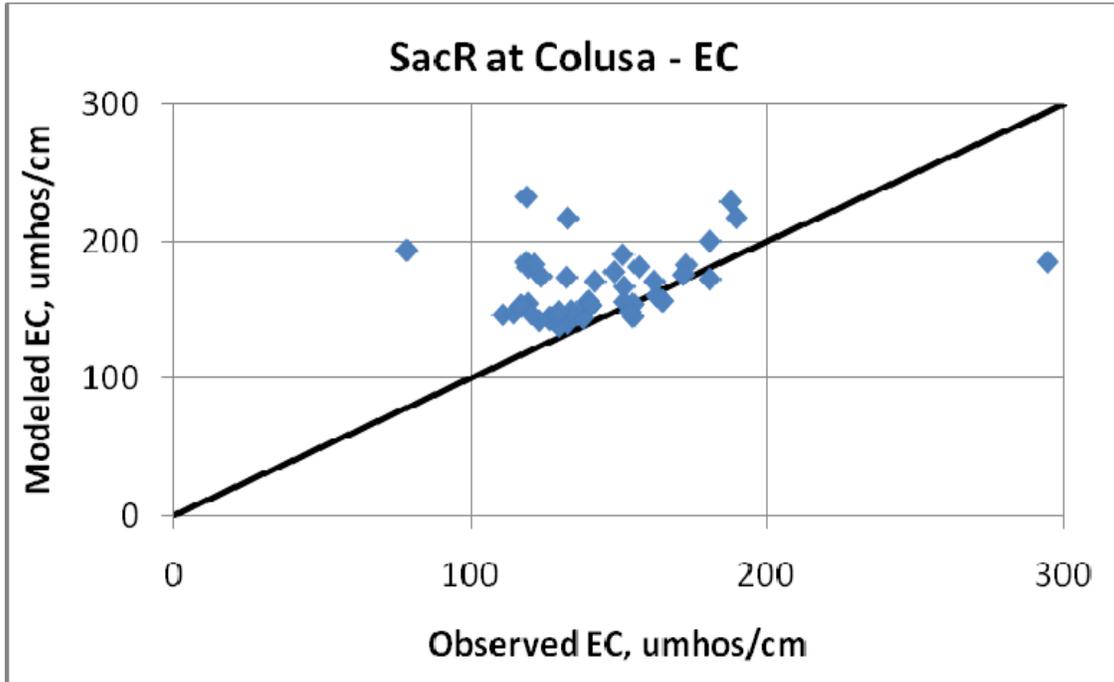
**Figure 7C-24a**  
**Comparison of Observed and Modeled EC for Sacramento River opposite of Moulton Weir**



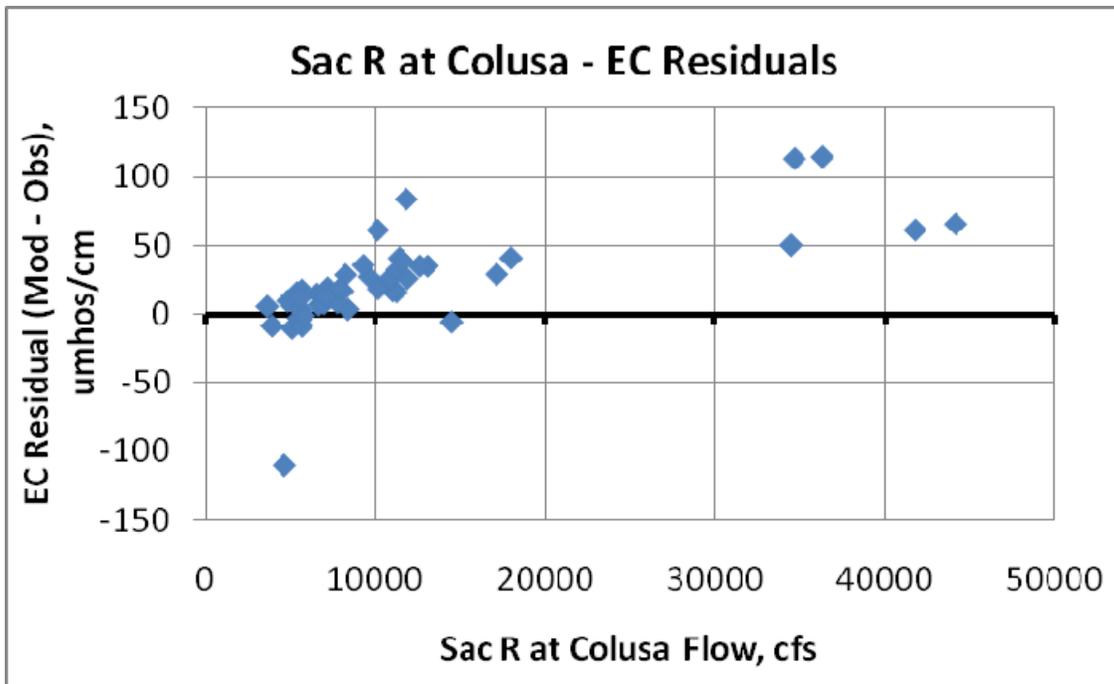
**Figure 7C-24b**  
**Residual of Modeled minus Observed EC for Sacramento River opposite of Moulton Weir**



**Figure 7C-25a**  
**Comparison of Observed and Modeled EC for Sacramento River at Colusa**



**Figure 7C-25b**  
**Residual of Modeled Minus Observed EC for Sacramento River at Colusa**



## 7C.2 Results

This section includes the results from the EC Mass Balance Approach used in the detailed evaluation of the alternatives for the DEIR/EIS.

### 7C.2.1 Introduction

The EC Mass Balance Approach results included in this appendix are used in Chapter 7 Surface Water Quality.

For each parameter and location shown in Table 7C-3, Summary Tables reports are provided. In the Summary Tables reports, for each parameter and location shown below, summary tables of EC Mass Balance Approach results by month are included. The tables include long-term average, and averages by water year type (SWRCB 40-30-30 Index). The tables also include the absolute and relative differences between alternatives.

### 7C.2.2 Locations and Parameters

The locations and the parameters for the results included in this appendix are tabulated below in Table 7C-3. Maps showing these locations are included in Appendix 6B.

Other analyses were used to estimate EC conditions. The Delta Modeling using the DSM2 model, referred to in Chapter 7, for evaluating EC for locations in the Sacramento-San Joaquin Delta is included in Appendix 7D.

**Table 7C-3  
EC Mass Balance Approach Results Locations and Parameters**

	Report Title	Time-Step	Parameter
1	Sacramento River at Tehama Colusa Canal Intake	Monthly	EC*
2	Sacramento River at Glenn Colusa Canal Intake	Monthly	EC*
3	Sacramento River at Delevan Pipeline Intake	Monthly	EC*
4	Sacramento River below Delevan Pipeline	Monthly	EC*
5	Funks Reservoir	Monthly	EC*

\*The analysis was formulated to indicate trends, due to the various alternatives, assuming worst-case EC conditions

### 7C.2.3 Comparisons

Summary Tables reports are provided for the following seven comparisons:

- No Project/No Action Alternative compared to Existing Conditions
- Alternative A compared to Existing Conditions
- Alternative A compared to No Project/No Action Alternative
- Alternative B compared to Existing Conditions
- Alternative B compared to No Project/No Action Alternative
- Alternative C compared to Existing Conditions
- Alternative C compared to No Project/No Action Alternative

Sacramento River at Tehama Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Conditions	139	148	163	178	180	178	168	153	139	134	134	137
No Action Alternative	140	150	164	178	180	178	169	154	140	134	134	137
Difference	1	1	1	0	0	0	1	0	0	0	0	0
Percent Difference <sup>3</sup>	0.4%	0.8%	0.6%	0.2%	0.0%	0.1%	0.3%	0.2%	0.1%	0.1%	0.1%	0.2%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Conditions	138	144	159	187	183	179	180	161	144	135	134	135
No Action Alternative	139	145	161	187	183	179	180	161	144	135	134	135
Difference	0	0	1	0	0	0	0	0	0	0	0	0
Percent Difference	0.3%	0.3%	0.7%	0.1%	0.1%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
<b>Above Normal (15%)</b>												
Existing Conditions	139	151	162	182	180	178	171	154	138	133	133	136
No Action Alternative	140	152	163	182	181	178	171	154	138	133	134	136
Difference	1	2	1	0	0	0	1	0	0	0	0	0
Percent Difference	0.5%	1.0%	0.6%	0.1%	0.2%	0.2%	0.5%	0.1%	0.1%	0.1%	0.0%	0.0%
<b>Below Normal (17%)</b>												
Existing Conditions	140	148	159	174	182	181	171	154	140	133	134	136
No Action Alternative	141	149	160	175	181	181	172	155	140	133	134	137
Difference	1	1	1	1	-1	1	1	0	0	0	0	0
Percent Difference	0.6%	0.9%	0.6%	0.3%	-0.8%	0.3%	0.4%	0.1%	0.1%	0.0%	0.0%	0.2%
<b>Dry (22%)</b>												
Existing Conditions	141	152	170	171	180	177	157	145	136	133	134	140
No Action Alternative	142	154	171	172	180	177	158	146	137	133	134	141
Difference	1	2	1	1	0	0	1	1	0	0	0	1
Percent Difference	0.4%	1.2%	0.9%	0.7%	0.2%	-0.1%	0.5%	0.5%	0.2%	0.1%	0.1%	0.4%
<b>Critical (15%)</b>												
Existing Conditions	139	149	165	168	176	176	154	146	137	133	134	139
No Action Alternative	140	151	166	168	176	176	155	146	137	134	134	139
Difference	1	1	1	0	0	0	0	0	0	0	0	1
Percent Difference	0.4%	1.0%	0.4%	0.1%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	0.4%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Glenn Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Conditions	143	154	171	189	194	193	184	168	146	137	136	140
No Action Alternative	143	155	172	189	194	193	185	168	147	137	136	140
Difference	1	1	1	0	0	0	1	0	0	0	0	0
Percent Difference <sup>3</sup>	0.4%	0.8%	0.6%	0.2%	0.0%	0.0%	0.3%	0.1%	0.1%	0.0%	0.1%	0.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Conditions	142	149	169	200	198	194	198	181	155	140	137	138
No Action Alternative	142	150	170	200	198	194	198	181	155	140	137	138
Difference	0	0	1	0	0	0	0	0	0	0	0	0
Percent Difference	0.3%	0.3%	0.6%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
<b>Above Normal (15%)</b>												
Existing Conditions	143	157	170	193	194	192	188	170	145	136	136	138
No Action Alternative	143	158	171	193	195	193	189	170	145	136	136	138
Difference	1	1	1	0	0	0	1	0	0	0	0	0
Percent Difference	0.5%	0.9%	0.6%	0.1%	0.2%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	-0.1%
<b>Below Normal (17%)</b>												
Existing Conditions	144	153	167	184	195	195	188	170	147	136	136	139
No Action Alternative	145	155	168	184	194	195	189	170	147	136	136	139
Difference	1	1	1	0	-2	0	1	0	0	0	0	0
Percent Difference	0.6%	0.9%	0.6%	0.2%	-0.8%	0.2%	0.4%	0.0%	0.1%	-0.1%	0.0%	0.2%
<b>Dry (22%)</b>												
Existing Conditions	145	159	178	181	191	191	171	154	140	135	136	144
No Action Alternative	145	161	180	182	192	191	172	155	141	135	136	144
Difference	0	2	1	1	0	0	1	1	0	0	0	1
Percent Difference	0.3%	1.1%	0.8%	0.6%	0.1%	-0.2%	0.5%	0.5%	0.1%	0.1%	0.1%	0.4%
<b>Critical (15%)</b>												
Existing Conditions	142	155	175	177	189	190	167	154	140	135	136	142
No Action Alternative	143	156	175	177	189	190	167	154	140	135	136	142
Difference	0	1	1	0	0	0	0	0	0	0	0	0
Percent Difference	0.3%	0.9%	0.4%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.3%	0.3%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Delevan Pipeline Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Conditions	147	159	181	204	207	201	195	176	155	142	142	149
No Action Alternative	148	161	182	204	207	201	196	176	155	142	142	149
Difference	1	2	1	0	0	0	0	0	0	0	0	0
Percent Difference <sup>3</sup>	0.5%	0.9%	0.8%	0.2%	-0.1%	0.0%	0.2%	0.1%	0.0%	-0.1%	-0.1%	0.0%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Conditions	148	157	181	223	217	207	209	190	165	147	144	147
No Action Alternative	149	158	182	223	217	206	209	190	165	147	144	147
Difference	1	1	1	0	0	0	0	0	0	0	0	0
Percent Difference	0.6%	0.6%	0.6%	0.0%	0.1%	-0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	-0.1%
<b>Above Normal (15%)</b>												
Existing Conditions	146	159	177	208	210	201	201	179	153	139	140	147
No Action Alternative	146	161	179	209	210	201	201	179	153	139	140	147
Difference	1	2	2	0	0	0	1	0	0	0	0	-1
Percent Difference	0.4%	1.2%	1.0%	0.1%	0.1%	0.1%	0.3%	0.0%	0.0%	-0.1%	-0.2%	-0.6%
<b>Below Normal (17%)</b>												
Existing Conditions	149	159	175	198	207	201	195	181	159	143	141	148
No Action Alternative	150	161	176	199	205	202	196	181	159	143	141	148
Difference	1	2	2	0	-2	0	1	0	0	0	0	0
Percent Difference	0.8%	1.1%	1.0%	0.2%	-0.9%	0.2%	0.4%	-0.1%	0.0%	-0.3%	-0.3%	0.1%
<b>Dry (22%)</b>												
Existing Conditions	149	165	190	193	202	199	184	162	147	139	142	154
No Action Alternative	150	167	192	194	202	198	185	164	147	139	142	155
Difference	0	2	2	2	0	-1	1	1	0	0	0	1
Percent Difference	0.2%	1.2%	0.9%	0.8%	0.1%	-0.3%	0.5%	0.7%	0.1%	-0.2%	-0.1%	0.4%
<b>Critical (15%)</b>												
Existing Conditions	145	157	181	185	195	197	179	160	146	138	140	150
No Action Alternative	145	158	182	185	195	197	179	160	146	138	140	151
Difference	0	1	1	0	0	0	0	0	0	0	0	0
Percent Difference	0.2%	0.9%	0.6%	0.0%	0.0%	0.1%	0.0%	0.0%	-0.1%	0.0%	0.3%	0.1%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River below Delevan Pipeline, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Conditions	147	159	181	204	207	201	195	176	155	142	142	149
No Action Alternative	148	161	182	204	207	201	196	176	155	142	142	149
Difference	1	2	1	0	0	0	0	0	0	0	0	0
Percent Difference <sup>3</sup>	0.5%	0.9%	0.8%	0.2%	-0.1%	0.0%	0.2%	0.1%	0.0%	-0.1%	-0.1%	0.0%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Conditions	148	157	181	223	217	207	209	190	165	147	144	147
No Action Alternative	149	158	182	223	217	206	209	190	165	147	144	147
Difference	1	1	1	0	0	0	0	0	0	0	0	0
Percent Difference	0.6%	0.6%	0.6%	0.0%	0.1%	-0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	-0.1%
<b>Above Normal (15%)</b>												
Existing Conditions	146	159	177	208	210	201	201	179	153	139	140	147
No Action Alternative	146	161	179	209	210	201	201	179	153	139	140	147
Difference	1	2	2	0	0	0	1	0	0	0	0	-1
Percent Difference	0.4%	1.2%	1.0%	0.1%	0.1%	0.1%	0.3%	0.0%	0.0%	-0.1%	-0.2%	-0.6%
<b>Below Normal (17%)</b>												
Existing Conditions	149	159	175	198	207	201	195	181	159	143	141	148
No Action Alternative	150	161	176	199	205	202	196	181	159	143	141	148
Difference	1	2	2	0	-2	0	1	0	0	0	0	0
Percent Difference	0.8%	1.1%	1.0%	0.2%	-0.9%	0.2%	0.4%	-0.1%	0.0%	-0.3%	-0.3%	0.1%
<b>Dry (22%)</b>												
Existing Conditions	149	165	190	193	202	199	184	162	147	139	142	154
No Action Alternative	150	167	192	194	202	198	185	164	147	139	142	155
Difference	0	2	2	2	0	-1	1	1	0	0	0	1
Percent Difference	0.2%	1.2%	0.9%	0.8%	0.1%	-0.3%	0.5%	0.7%	0.1%	-0.2%	-0.1%	0.4%
<b>Critical (15%)</b>												
Existing Conditions	145	157	181	185	195	197	179	160	146	138	140	150
No Action Alternative	145	158	182	185	195	197	179	160	146	138	140	151
Difference	0	1	1	0	0	0	0	0	0	0	0	0
Percent Difference	0.2%	0.9%	0.6%	0.0%	0.0%	0.1%	0.0%	0.0%	-0.1%	0.0%	0.3%	0.1%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Funks Reservoir, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Conditions	139	148	163	178	180	178	168	153	139	134	134	137
No Action Alternative	140	150	164	178	180	178	169	154	140	134	134	137
Difference	1	1	1	0	0	0	1	0	0	0	0	0
Percent Difference <sup>3</sup>	0.4%	0.8%	0.6%	0.2%	0.0%	0.1%	0.3%	0.2%	0.1%	0.1%	0.1%	0.2%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Conditions	138	144	159	187	183	179	180	161	144	135	134	135
No Action Alternative	139	145	161	187	183	179	180	161	144	135	134	135
Difference	0	0	1	0	0	0	0	0	0	0	0	0
Percent Difference	0.3%	0.3%	0.7%	0.1%	0.1%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
<b>Above Normal (15%)</b>												
Existing Conditions	139	151	162	182	180	178	171	154	138	133	133	136
No Action Alternative	140	152	163	182	181	178	171	154	138	133	134	136
Difference	1	2	1	0	0	0	1	0	0	0	0	0
Percent Difference	0.5%	1.0%	0.6%	0.1%	0.2%	0.2%	0.5%	0.1%	0.1%	0.1%	0.0%	0.0%
<b>Below Normal (17%)</b>												
Existing Conditions	140	148	159	174	182	181	171	154	140	133	134	136
No Action Alternative	141	149	160	175	181	181	172	155	140	133	134	137
Difference	1	1	1	1	-1	1	1	0	0	0	0	0
Percent Difference	0.6%	0.9%	0.6%	0.3%	-0.8%	0.3%	0.4%	0.1%	0.1%	0.0%	0.0%	0.2%
<b>Dry (22%)</b>												
Existing Conditions	141	152	170	171	180	177	157	145	136	133	134	140
No Action Alternative	142	154	171	172	180	177	158	146	137	133	134	141
Difference	1	2	1	1	0	0	1	1	0	0	0	1
Percent Difference	0.4%	1.2%	0.9%	0.7%	0.2%	-0.1%	0.5%	0.5%	0.2%	0.1%	0.1%	0.4%
<b>Critical (15%)</b>												
Existing Conditions	139	149	165	168	176	176	154	146	137	133	134	139
No Action Alternative	140	151	166	168	176	176	155	146	137	134	134	139
Difference	1	1	1	0	0	0	0	0	0	0	0	1
Percent Difference	0.4%	1.0%	0.4%	0.1%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	0.4%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Tehama Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	139	148	163	178	180	178	168	153	139	134	134	137
NODOS Alternative A	140	150	162	175	178	179	171	153	139	134	134	137
Difference	1	2	0	-3	-3	0	3	0	0	0	0	0
Percent Difference <sup>3</sup>	0.4%	1.0%	-0.3%	-1.7%	-1.5%	0.2%	1.6%	-0.1%	0.0%	0.1%	0.1%	0.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	138	144	159	187	183	179	180	161	144	135	134	135
NODOS Alternative A	138	146	160	183	182	180	181	159	143	135	134	135
Difference	0	2	0	-4	-1	0	1	-2	-1	0	0	0
Percent Difference	0.2%	1.2%	0.0%	-2.0%	-0.4%	0.1%	0.4%	-1.2%	-0.4%	0.0%	0.1%	0.1%
<b>Above Normal (15%)</b>												
Existing Condition	139	151	162	182	180	178	171	154	138	133	133	136
NODOS Alternative A	140	152	160	179	177	178	173	154	138	133	134	136
Difference	0	1	-2	-3	-3	1	3	-1	0	0	0	0
Percent Difference	0.4%	0.7%	-1.0%	-1.6%	-1.7%	0.4%	1.5%	-0.3%	-0.1%	0.1%	0.0%	0.1%
<b>Below Normal (17%)</b>												
Existing Condition	140	148	159	174	182	181	171	154	140	133	134	136
NODOS Alternative A	140	150	158	171	178	182	174	154	140	133	134	137
Difference	0	2	-1	-3	-4	1	3	0	0	0	0	1
Percent Difference	0.3%	1.3%	-0.9%	-1.6%	-2.2%	0.6%	1.7%	-0.2%	0.0%	0.1%	0.1%	0.4%
<b>Dry (22%)</b>												
Existing Condition	141	152	170	171	180	177	157	145	136	133	134	140
NODOS Alternative A	141	154	171	168	175	177	161	147	137	133	135	140
Difference	0	1	1	-2	-5	0	4	2	0	0	0	0
Percent Difference	0.1%	0.7%	0.7%	-1.3%	-2.9%	-0.2%	2.4%	1.5%	0.3%	0.1%	0.2%	0.0%
<b>Critical (15%)</b>												
Existing Condition	139	149	165	168	176	176	154	146	137	133	134	139
NODOS Alternative A	140	151	165	165	174	176	159	147	137	134	134	139
Difference	1	2	0	-2	-2	0	4	2	0	0	0	0
Percent Difference	1.0%	1.0%	-0.2%	-1.4%	-1.1%	0.0%	2.7%	1.0%	0.2%	0.1%	-0.1%	0.2%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Glenn Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	143	154	171	189	194	193	184	168	146	137	136	140
NODOS Alternative A	143	156	172	187	193	194	188	168	146	137	136	140
Difference	1	2	0	-2	-1	2	4	0	0	0	0	0
Percent Difference <sup>3</sup>	0.4%	1.1%	0.1%	-1.0%	-0.6%	0.8%	2.1%	0.0%	-0.3%	0.0%	0.0%	0.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	142	149	169	200	198	194	198	181	155	140	137	138
NODOS Alternative A	142	151	170	198	198	195	199	179	153	140	137	138
Difference	0	2	1	-2	1	1	1	-2	-1	0	0	0
Percent Difference	0.2%	1.4%	0.5%	-1.2%	0.3%	0.3%	0.6%	-1.2%	-0.8%	-0.2%	0.1%	0.1%
<b>Above Normal (15%)</b>												
Existing Condition	143	157	170	193	194	192	188	170	145	136	136	138
NODOS Alternative A	143	158	169	192	192	195	192	169	144	136	136	138
Difference	1	1	-1	-1	-2	2	4	-1	0	0	0	0
Percent Difference	0.4%	0.8%	-0.7%	-0.7%	-1.1%	1.1%	2.0%	-0.3%	-0.3%	0.1%	0.0%	0.1%
<b>Below Normal (17%)</b>												
Existing Condition	144	153	167	184	195	195	188	170	147	136	136	139
NODOS Alternative A	145	155	166	182	193	198	192	170	147	136	136	140
Difference	0	2	-1	-2	-2	3	4	0	0	0	0	1
Percent Difference	0.3%	1.4%	-0.4%	-1.1%	-1.1%	1.4%	2.2%	0.0%	-0.2%	0.0%	0.1%	0.5%
<b>Dry (22%)</b>												
Existing Condition	145	159	178	181	191	191	171	154	140	135	136	144
NODOS Alternative A	145	160	180	180	187	192	176	157	141	135	136	143
Difference	0	1	2	-1	-4	1	6	3	0	0	0	0
Percent Difference	0.0%	0.7%	1.0%	-0.6%	-2.0%	0.5%	3.3%	1.9%	0.3%	0.0%	0.2%	-0.1%
<b>Critical (15%)</b>												
Existing Condition	142	155	175	177	189	190	167	154	140	135	136	142
NODOS Alternative A	144	156	175	175	188	192	172	156	141	135	136	142
Difference	2	2	0	-2	0	2	6	2	0	0	0	0
Percent Difference	1.1%	1.1%	-0.1%	-1.1%	0.0%	1.0%	3.4%	1.2%	0.2%	0.1%	-0.2%	0.1%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Delevan Pipeline Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	147	159	181	204	207	201	195	176	155	142	142	149
NODOS Alternative A	148	161	183	204	207	204	201	176	154	141	141	149
Difference	1	2	2	0	0	2	6	0	-2	-1	0	0
Percent Difference <sup>3</sup>	0.6%	1.5%	1.3%	-0.2%	-0.1%	1.2%	2.8%	0.0%	-1.0%	-0.6%	-0.3%	0.0%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	148	157	181	223	217	207	209	190	165	147	144	147
NODOS Alternative A	149	160	184	222	218	208	210	188	163	146	144	147
Difference	1	3	3	-1	2	1	2	-2	-2	-1	0	0
Percent Difference	0.6%	2.1%	1.8%	-0.4%	0.8%	0.6%	0.8%	-1.1%	-1.5%	-0.8%	0.0%	0.1%
<b>Above Normal (15%)</b>												
Existing Condition	146	159	177	208	210	201	201	179	153	139	140	147
NODOS Alternative A	146	161	178	209	209	204	206	178	151	138	140	147
Difference	0	2	1	1	-1	3	5	-1	-2	-1	-1	0
Percent Difference	0.3%	1.4%	0.4%	0.5%	-0.6%	1.4%	2.5%	-0.5%	-1.4%	-0.4%	-0.5%	-0.2%
<b>Below Normal (17%)</b>												
Existing Condition	149	159	175	198	207	201	195	181	159	143	141	148
NODOS Alternative A	150	162	177	197	206	205	201	181	157	142	140	149
Difference	1	3	2	-2	-1	4	6	0	-2	-1	-1	1
Percent Difference	0.9%	1.6%	1.2%	-0.8%	-0.4%	1.8%	3.0%	-0.1%	-1.1%	-1.0%	-0.6%	0.5%
<b>Dry (22%)</b>												
Existing Condition	149	165	190	193	202	199	184	162	147	139	142	154
NODOS Alternative A	149	166	195	194	199	200	194	166	146	138	142	154
Difference	0	1	5	1	-3	1	10	3	-1	-1	0	0
Percent Difference	-0.3%	0.6%	2.7%	0.6%	-1.5%	0.7%	5.6%	2.1%	-0.5%	-0.7%	-0.3%	-0.2%
<b>Critical (15%)</b>												
Existing Condition	145	157	181	185	195	197	179	160	146	138	140	150
NODOS Alternative A	147	159	181	183	196	200	186	162	145	138	139	150
Difference	2	2	1	-2	1	3	8	2	0	0	-1	-1
Percent Difference	1.2%	1.2%	0.3%	-1.1%	0.4%	1.7%	4.2%	1.0%	-0.3%	-0.3%	-0.6%	-0.4%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River below Delevan Pipeline, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	147	159	181	204	207	201	195	176	155	142	142	149
NODOS Alternative A	154	165	183	204	207	204	201	178	155	144	145	154
Difference	6	6	3	0	0	2	6	1	0	2	3	5
Percent Difference <sup>3</sup>	4.2%	3.7%	1.6%	-0.2%	0.0%	1.2%	2.9%	0.8%	-0.1%	1.5%	2.4%	3.0%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	148	157	181	223	217	207	209	190	165	147	144	147
NODOS Alternative A	154	165	184	222	218	208	210	188	163	148	146	150
Difference	6	8	4	-1	2	1	2	-2	-2	1	2	4
Percent Difference	4.1%	5.1%	2.1%	-0.4%	0.8%	0.6%	0.8%	-1.1%	-1.4%	0.5%	1.3%	2.4%
<b>Above Normal (15%)</b>												
Existing Condition	146	159	177	208	210	201	201	179	153	139	140	147
NODOS Alternative A	152	165	179	209	209	204	206	178	152	143	145	152
Difference	7	6	2	1	-1	3	5	-1	-1	4	4	5
Percent Difference	4.5%	3.9%	0.9%	0.5%	-0.6%	1.3%	2.5%	-0.5%	-0.6%	2.5%	3.1%	3.4%
<b>Below Normal (17%)</b>												
Existing Condition	149	159	175	198	207	201	195	181	159	143	141	148
NODOS Alternative A	155	164	177	197	206	205	201	181	158	145	144	153
Difference	6	4	2	-2	-1	4	6	0	-1	2	3	5
Percent Difference	4.1%	2.8%	1.4%	-0.8%	-0.3%	1.8%	2.9%	-0.1%	-0.5%	1.2%	2.1%	3.2%
<b>Dry (22%)</b>												
Existing Condition	149	165	190	193	202	199	184	162	147	139	142	154
NODOS Alternative A	152	169	195	194	199	200	194	170	149	141	147	158
Difference	3	3	5	1	-3	2	10	7	2	2	4	4
Percent Difference	2.1%	2.0%	2.7%	0.6%	-1.4%	0.8%	5.3%	4.5%	1.2%	1.7%	3.1%	2.5%
<b>Critical (15%)</b>												
Existing Condition	145	157	181	185	195	197	179	160	146	138	140	150
NODOS Alternative A	154	162	182	183	196	200	187	166	148	141	144	156
Difference	9	5	2	-2	1	4	8	5	3	3	5	6
Percent Difference	5.9%	3.4%	1.0%	-1.0%	0.5%	2.0%	4.7%	3.3%	1.8%	2.0%	3.3%	4.0%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Funks Reservoir, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	139	148	163	178	180	178	168	153	139	134	134	137
NODOS Alternative A	184	184	185	192	192	186	182	172	164	168	173	182
Difference	44	35	22	14	11	8	14	19	25	34	39	45
Percent Difference <sup>3</sup>	31.9%	23.9%	13.6%	7.9%	6.2%	4.5%	8.5%	12.2%	17.6%	25.7%	29.1%	32.6%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	138	144	159	187	183	179	180	161	144	135	134	135
NODOS Alternative A	187	189	187	199	195	184	183	165	160	167	161	180
Difference	49	45	28	12	12	5	3	4	16	31	28	45
Percent Difference	35.2%	31.3%	17.3%	6.6%	6.6%	2.7%	1.6%	2.4%	11.4%	23.1%	20.7%	33.0%
<b>Above Normal (15%)</b>												
Existing Condition	139	151	162	182	180	178	171	154	138	133	133	136
NODOS Alternative A	186	186	184	192	191	182	179	166	166	171	173	184
Difference	46	35	22	9	11	5	8	11	28	38	40	48
Percent Difference	33.2%	23.2%	13.6%	5.1%	6.1%	2.7%	4.6%	7.4%	20.1%	28.8%	30.0%	35.5%
<b>Below Normal (17%)</b>												
Existing Condition	140	148	159	174	182	181	171	154	140	133	134	136
NODOS Alternative A	180	180	174	191	193	187	180	168	165	172	176	183
Difference	40	32	15	17	11	7	9	14	25	39	42	46
Percent Difference	28.3%	21.6%	9.3%	9.6%	5.9%	3.6%	5.4%	8.9%	17.9%	29.0%	31.4%	34.0%
<b>Dry (22%)</b>												
Existing Condition	141	152	170	171	180	177	157	145	136	133	134	140
NODOS Alternative A	178	182	187	184	185	185	181	180	166	167	177	178
Difference	37	30	17	13	5	7	23	35	30	34	42	38
Percent Difference	26.2%	19.5%	10.2%	7.8%	2.7%	4.2%	14.8%	24.0%	22.1%	25.7%	31.6%	27.2%
<b>Critical (15%)</b>												
Existing Condition	139	149	165	168	176	176	154	146	137	133	134	139
NODOS Alternative A	185	178	188	187	191	194	189	185	165	165	183	184
Difference	46	29	23	19	15	18	34	39	29	32	50	45
Percent Difference	32.8%	19.5%	14.1%	11.5%	8.7%	10.0%	22.2%	26.5%	21.0%	24.0%	37.0%	32.5%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Tehama Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	140	150	164	178	180	178	169	154	140	134	134	137
NODOS Alternative A	140	150	162	175	178	179	171	153	139	134	134	137
Difference	0	0	-1	-3	-3	0	2	0	0	0	0	0
Percent Difference <sup>3</sup>	0.0%	0.2%	-0.9%	-1.9%	-1.5%	0.1%	1.2%	-0.3%	-0.1%	0.0%	0.0%	0.0%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	139	145	161	187	183	179	180	161	144	135	134	135
NODOS Alternative A	138	146	160	183	182	180	181	159	143	135	134	135
Difference	0	1	-1	-4	-1	0	1	-2	-1	0	0	0
Percent Difference	-0.1%	0.9%	-0.7%	-2.1%	-0.5%	0.1%	0.3%	-1.4%	-0.4%	0.0%	0.0%	0.1%
<b>Above Normal (15%)</b>												
No Action Alternative	140	152	163	182	181	178	171	154	138	133	134	136
NODOS Alternative A	140	152	160	179	177	178	173	154	138	133	134	136
Difference	0	0	-3	-3	-3	0	2	-1	0	0	0	0
Percent Difference	-0.2%	-0.3%	-1.6%	-1.7%	-1.9%	0.3%	1.1%	-0.5%	-0.1%	0.0%	0.0%	0.1%
<b>Below Normal (17%)</b>												
No Action Alternative	141	149	160	175	181	181	172	155	140	133	134	137
NODOS Alternative A	140	150	158	171	178	182	174	154	140	133	134	137
Difference	0	1	-2	-3	-3	1	2	0	0	0	0	0
Percent Difference	-0.3%	0.4%	-1.5%	-1.9%	-1.4%	0.3%	1.2%	-0.3%	-0.1%	0.1%	0.1%	0.2%
<b>Dry (22%)</b>												
No Action Alternative	142	154	171	172	180	177	158	146	137	133	134	141
NODOS Alternative A	141	154	171	168	175	177	161	147	137	133	135	140
Difference	0	-1	0	-3	-5	0	3	1	0	0	0	-1
Percent Difference	-0.2%	-0.5%	-0.2%	-2.0%	-3.0%	0.0%	1.9%	1.0%	0.1%	0.0%	0.1%	-0.4%
<b>Critical (15%)</b>												
No Action Alternative	140	151	166	168	176	176	155	146	137	134	134	139
NODOS Alternative A	140	151	165	165	174	176	159	147	137	134	134	139
Difference	1	0	-1	-3	-2	0	4	1	0	0	0	0
Percent Difference	0.6%	0.1%	-0.6%	-1.5%	-1.2%	-0.2%	2.5%	0.8%	0.1%	0.0%	-0.3%	-0.2%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Glenn Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	143	155	172	189	194	193	185	168	147	137	136	140
NODOS Alternative A	143	156	172	187	193	194	188	168	146	137	136	140
Difference	0	0	-1	-2	-1	2	3	0	0	0	0	0
Percent Difference <sup>3</sup>	0.0%	0.3%	-0.5%	-1.1%	-0.6%	0.8%	1.8%	-0.1%	-0.3%	0.0%	0.0%	0.0%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	142	150	170	200	198	194	198	181	155	140	137	138
NODOS Alternative A	142	151	170	198	198	195	199	179	153	140	137	138
Difference	0	2	0	-3	0	1	1	-2	-1	0	0	0
Percent Difference	-0.1%	1.1%	-0.1%	-1.3%	0.2%	0.4%	0.5%	-1.3%	-0.8%	-0.2%	0.1%	0.1%
<b>Above Normal (15%)</b>												
No Action Alternative	143	158	171	193	195	193	189	170	145	136	136	138
NODOS Alternative A	143	158	169	192	192	195	192	169	144	136	136	138
Difference	0	0	-2	-1	-2	2	3	-1	0	0	0	0
Percent Difference	-0.1%	-0.2%	-1.3%	-0.7%	-1.2%	1.0%	1.6%	-0.4%	-0.3%	0.0%	0.0%	0.2%
<b>Below Normal (17%)</b>												
No Action Alternative	145	155	168	184	194	195	189	170	147	136	136	139
NODOS Alternative A	145	155	166	182	193	198	192	170	147	136	136	140
Difference	0	1	-2	-3	-1	2	3	0	0	0	0	0
Percent Difference	-0.2%	0.5%	-1.0%	-1.4%	-0.3%	1.2%	1.8%	0.1%	-0.3%	0.1%	0.1%	0.3%
<b>Dry (22%)</b>												
No Action Alternative	145	161	180	182	192	191	172	155	141	135	136	144
NODOS Alternative A	145	160	180	180	187	192	176	157	141	135	136	143
Difference	0	-1	0	-2	-4	1	5	2	0	0	0	-1
Percent Difference	-0.3%	-0.5%	0.2%	-1.2%	-2.2%	0.8%	2.8%	1.4%	0.1%	0.0%	0.1%	-0.4%
<b>Critical (15%)</b>												
No Action Alternative	143	156	175	177	189	190	167	154	140	135	136	142
NODOS Alternative A	144	156	175	175	188	192	172	156	141	135	136	142
Difference	1	0	-1	-2	0	2	5	2	0	0	-1	0
Percent Difference	0.8%	0.1%	-0.5%	-1.0%	-0.1%	0.9%	3.2%	1.1%	0.1%	0.0%	-0.4%	-0.2%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Delevan Pipeline Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	148	161	182	204	207	201	196	176	155	142	142	149
NODOS Alternative A	148	161	183	204	207	204	201	176	154	141	141	149
Difference	0	1	1	-1	0	2	5	0	-2	-1	0	0
Percent Difference <sup>3</sup>	0.1%	0.5%	0.5%	-0.4%	0.0%	1.1%	2.6%	-0.1%	-1.0%	-0.5%	-0.3%	0.0%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	149	158	182	223	217	206	209	190	165	147	144	147
NODOS Alternative A	149	160	184	222	218	208	210	188	163	146	144	147
Difference	0	2	2	-1	2	1	2	-2	-2	-1	0	0
Percent Difference	0.0%	1.6%	1.2%	-0.4%	0.8%	0.7%	0.8%	-1.2%	-1.5%	-0.8%	0.0%	0.2%
<b>Above Normal (15%)</b>												
No Action Alternative	146	161	179	209	210	201	201	179	153	139	140	147
NODOS Alternative A	146	161	178	209	209	204	206	178	151	138	140	147
Difference	0	0	-1	1	-2	3	5	-1	-2	0	0	1
Percent Difference	-0.1%	0.2%	-0.6%	0.3%	-0.8%	1.3%	2.2%	-0.5%	-1.4%	-0.3%	-0.3%	0.4%
<b>Below Normal (17%)</b>												
No Action Alternative	150	161	176	199	205	202	196	181	159	143	141	148
NODOS Alternative A	150	162	177	197	206	205	201	181	157	142	140	149
Difference	0	1	0	-2	1	3	5	0	-2	-1	0	1
Percent Difference	0.1%	0.5%	0.2%	-1.0%	0.6%	1.6%	2.6%	-0.1%	-1.1%	-0.7%	-0.3%	0.4%
<b>Dry (22%)</b>												
No Action Alternative	150	167	192	194	202	198	185	164	147	139	142	155
NODOS Alternative A	149	166	195	194	199	200	194	166	146	138	142	154
Difference	-1	-1	3	0	-3	2	9	2	-1	-1	0	-1
Percent Difference	-0.4%	-0.7%	1.8%	-0.2%	-1.6%	1.0%	5.0%	1.5%	-0.6%	-0.5%	-0.2%	-0.6%
<b>Critical (15%)</b>												
No Action Alternative	145	158	182	185	195	197	179	160	146	138	140	151
NODOS Alternative A	147	159	181	183	196	200	186	162	145	138	139	150
Difference	1	0	-1	-2	1	3	8	2	0	0	-1	-1
Percent Difference	1.0%	0.3%	-0.3%	-1.1%	0.5%	1.6%	4.2%	1.0%	-0.3%	-0.3%	-0.8%	-0.5%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River below Delevan Pipeline, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	148	161	182	204	207	201	196	176	155	142	142	149
NODOS Alternative A	154	165	183	204	207	204	201	178	155	144	145	154
Difference	5	4	2	-1	0	2	5	1	0	2	4	5
Percent Difference <sup>3</sup>	3.7%	2.7%	0.8%	-0.4%	0.0%	1.2%	2.6%	0.7%	-0.1%	1.6%	2.5%	3.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	149	158	182	223	217	206	209	190	165	147	144	147
NODOS Alternative A	154	165	184	222	218	208	210	188	163	148	146	150
Difference	5	7	3	-1	2	1	2	-2	-2	1	2	4
Percent Difference	3.4%	4.5%	1.5%	-0.4%	0.8%	0.7%	0.8%	-1.2%	-1.4%	0.5%	1.3%	2.5%
<b>Above Normal (15%)</b>												
No Action Alternative	146	161	179	209	210	201	201	179	153	139	140	147
NODOS Alternative A	152	165	179	209	209	204	206	178	152	143	145	152
Difference	6	4	0	1	-2	3	5	-1	-1	4	5	6
Percent Difference	4.1%	2.7%	-0.1%	0.3%	-0.8%	1.3%	2.2%	-0.5%	-0.5%	2.6%	3.3%	4.0%
<b>Below Normal (17%)</b>												
No Action Alternative	150	161	176	199	205	202	196	181	159	143	141	148
NODOS Alternative A	155	164	177	197	206	205	201	181	158	145	144	153
Difference	5	3	1	-2	1	3	5	0	-1	2	3	5
Percent Difference	3.3%	1.6%	0.3%	-1.0%	0.6%	1.6%	2.5%	0.0%	-0.5%	1.5%	2.3%	3.1%
<b>Dry (22%)</b>												
No Action Alternative	150	167	192	194	202	198	185	164	147	139	142	155
NODOS Alternative A	152	169	195	194	199	200	194	170	149	141	147	158
Difference	3	1	3	0	-3	2	9	6	2	3	5	3
Percent Difference	1.9%	0.8%	1.8%	-0.2%	-1.5%	1.1%	4.7%	3.8%	1.1%	1.9%	3.2%	2.1%
<b>Critical (15%)</b>												
No Action Alternative	145	158	182	185	195	197	179	160	146	138	140	151
NODOS Alternative A	154	162	182	183	196	200	187	166	148	141	144	156
Difference	8	4	1	-2	1	4	8	5	3	3	4	6
Percent Difference	5.7%	2.5%	0.3%	-1.1%	0.5%	1.9%	4.7%	3.3%	1.8%	1.9%	3.0%	3.9%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Funks Reservoir, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	140	150	164	178	180	178	169	154	140	134	134	137
NODOS Alternative A	184	184	185	192	192	186	182	172	164	168	173	182
Difference	44	34	21	14	11	8	14	18	24	34	39	44
Percent Difference <sup>3</sup>	31.3%	22.9%	12.8%	7.6%	6.2%	4.4%	8.1%	12.0%	17.5%	25.7%	29.0%	32.4%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	139	145	161	187	183	179	180	161	144	135	134	135
NODOS Alternative A	187	189	187	199	195	184	183	165	160	167	161	180
Difference	48	45	26	12	12	5	3	4	16	31	28	45
Percent Difference	34.8%	30.8%	16.5%	6.5%	6.5%	2.7%	1.4%	2.3%	11.4%	23.0%	20.7%	33.0%
<b>Above Normal (15%)</b>												
No Action Alternative	140	152	163	182	181	178	171	154	138	133	134	136
NODOS Alternative A	186	186	184	192	191	182	179	166	166	171	173	184
Difference	46	33	21	9	11	4	7	11	28	38	40	48
Percent Difference	32.6%	22.0%	12.8%	5.1%	5.9%	2.5%	4.2%	7.3%	20.0%	28.7%	29.9%	35.5%
<b>Below Normal (17%)</b>												
No Action Alternative	141	149	160	175	181	181	172	155	140	133	134	137
NODOS Alternative A	180	180	174	191	193	187	180	168	165	172	176	183
Difference	39	31	14	16	12	6	9	14	25	39	42	46
Percent Difference	27.6%	20.4%	8.7%	9.2%	6.7%	3.3%	5.0%	8.8%	17.8%	29.0%	31.4%	33.7%
<b>Dry (22%)</b>												
No Action Alternative	142	154	171	172	180	177	158	146	137	133	134	141
NODOS Alternative A	178	182	187	184	185	185	181	180	166	167	177	178
Difference	36	28	16	12	4	8	22	34	30	34	42	37
Percent Difference	25.7%	18.0%	9.2%	7.1%	2.5%	4.4%	14.2%	23.4%	21.8%	25.6%	31.4%	26.7%
<b>Critical (15%)</b>												
No Action Alternative	140	151	166	168	176	176	155	146	137	134	134	139
NODOS Alternative A	185	178	188	187	191	194	189	185	165	165	183	184
Difference	45	28	22	19	15	17	34	38	29	32	49	45
Percent Difference	32.3%	18.3%	13.6%	11.4%	8.6%	9.8%	21.9%	26.2%	20.9%	23.9%	36.7%	32.0%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Tehama Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	139	148	163	178	180	178	168	153	139	134	134	137
NODOS Alternative B	140	150	163	175	178	179	171	153	139	134	134	137
Difference	1	1	0	-3	-3	1	3	0	0	0	0	0
Percent Difference <sup>3</sup>	0.4%	1.0%	0.0%	-1.5%	-1.4%	0.3%	1.5%	0.0%	0.0%	0.1%	0.1%	0.0%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	138	144	159	187	183	179	180	161	144	135	134	135
NODOS Alternative B	138	146	160	184	182	179	181	159	143	135	134	135
Difference	0	1	0	-3	-1	0	1	-2	0	0	0	0
Percent Difference	0.2%	1.0%	0.3%	-1.4%	-0.3%	0.0%	0.4%	-1.2%	-0.3%	-0.1%	0.0%	0.0%
<b>Above Normal (15%)</b>												
Existing Condition	139	151	162	182	180	178	171	154	138	133	133	136
NODOS Alternative B	140	152	161	179	178	178	173	154	138	133	134	136
Difference	0	1	-1	-3	-3	1	2	0	0	0	0	0
Percent Difference	0.2%	0.6%	-0.5%	-1.6%	-1.6%	0.3%	1.4%	-0.2%	-0.1%	0.1%	0.0%	0.1%
<b>Below Normal (17%)</b>												
Existing Condition	140	148	159	174	182	181	171	154	140	133	134	136
NODOS Alternative B	140	150	158	171	178	183	174	154	140	133	134	137
Difference	0	2	-1	-3	-4	2	3	0	0	0	0	0
Percent Difference	0.3%	1.2%	-0.5%	-1.6%	-2.4%	1.1%	1.8%	-0.3%	0.0%	0.0%	0.1%	0.3%
<b>Dry (22%)</b>												
Existing Condition	141	152	170	171	180	177	157	145	136	133	134	140
NODOS Alternative B	142	154	171	168	175	177	161	147	137	133	134	140
Difference	1	1	1	-3	-5	0	4	2	1	0	0	0
Percent Difference	0.4%	0.9%	0.6%	-1.5%	-2.9%	-0.1%	2.3%	1.6%	0.4%	0.1%	0.1%	-0.1%
<b>Critical (15%)</b>												
Existing Condition	139	149	165	168	176	176	154	146	137	133	134	139
NODOS Alternative B	140	151	165	165	174	177	158	148	137	134	134	138
Difference	1	2	0	-3	-2	1	4	2	0	0	0	0
Percent Difference	1.0%	1.2%	0.0%	-1.6%	-1.1%	0.3%	2.6%	1.3%	0.2%	0.2%	0.1%	-0.4%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Glenn Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	143	154	171	189	194	193	184	168	146	137	136	140
NODOS Alternative B	143	156	172	187	193	195	188	168	146	137	136	140
Difference	1	2	1	-1	-1	3	4	1	0	0	0	0
Percent Difference <sup>3</sup>	0.4%	1.0%	0.4%	-0.8%	-0.5%	1.4%	2.2%	0.4%	-0.1%	0.0%	0.0%	-0.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	142	149	169	200	198	194	198	181	155	140	137	138
NODOS Alternative B	142	151	170	199	199	196	200	180	154	140	137	138
Difference	0	2	1	-1	1	2	2	-1	-1	0	0	0
Percent Difference	0.2%	1.1%	0.8%	-0.5%	0.6%	1.0%	1.0%	-0.8%	-0.5%	-0.1%	0.1%	0.0%
<b>Above Normal (15%)</b>												
Existing Condition	143	157	170	193	194	192	188	170	145	136	136	138
NODOS Alternative B	143	158	170	192	193	195	192	170	144	136	136	138
Difference	0	1	0	-1	-2	3	4	0	0	0	0	0
Percent Difference	0.1%	0.6%	-0.2%	-0.6%	-0.8%	1.4%	2.0%	0.1%	-0.2%	0.0%	0.0%	0.0%
<b>Below Normal (17%)</b>												
Existing Condition	144	153	167	184	195	195	188	170	147	136	136	139
NODOS Alternative B	145	155	167	182	193	200	193	170	147	136	136	139
Difference	0	2	0	-2	-2	5	5	0	0	0	0	0
Percent Difference	0.3%	1.2%	0.0%	-1.1%	-1.1%	2.5%	2.6%	0.1%	-0.1%	-0.1%	0.1%	0.3%
<b>Dry (22%)</b>												
Existing Condition	145	159	178	181	191	191	171	154	140	135	136	144
NODOS Alternative B	145	161	180	180	187	193	176	157	141	135	136	143
Difference	0	1	2	-1	-4	2	5	3	1	0	0	0
Percent Difference	0.3%	0.9%	1.0%	-0.8%	-2.0%	0.8%	3.2%	2.1%	0.4%	0.1%	0.0%	-0.2%
<b>Critical (15%)</b>												
Existing Condition	142	155	175	177	189	190	167	154	140	135	136	142
NODOS Alternative B	144	156	175	174	188	193	172	157	141	135	136	141
Difference	2	2	0	-2	0	3	5	2	0	0	0	-1
Percent Difference	1.2%	1.3%	0.3%	-1.3%	0.0%	1.4%	3.2%	1.5%	0.2%	0.2%	0.0%	-0.6%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Delevan Pipeline Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	147	159	181	204	207	201	195	176	155	142	142	149
NODOS Alternative B	148	161	184	204	208	205	202	177	154	141	141	149
Difference	1	2	3	0	0	4	6	1	-1	-1	0	0
Percent Difference <sup>3</sup>	0.5%	1.4%	1.7%	0.0%	0.2%	2.0%	3.2%	0.6%	-0.4%	-0.5%	-0.3%	-0.2%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	148	157	181	223	217	207	209	190	165	147	144	147
NODOS Alternative B	149	160	185	224	219	210	212	189	164	146	145	147
Difference	1	3	4	1	3	4	3	-1	-1	-1	0	0
Percent Difference	0.6%	1.7%	2.3%	0.4%	1.3%	1.8%	1.4%	-0.4%	-0.8%	-0.6%	0.2%	-0.1%
<b>Above Normal (15%)</b>												
Existing Condition	146	159	177	208	210	201	201	179	153	139	140	147
NODOS Alternative B	146	161	179	209	210	205	207	179	152	139	140	147
Difference	0	2	2	1	0	4	6	1	-1	0	-1	0
Percent Difference	0.0%	1.1%	1.0%	0.5%	-0.2%	2.1%	2.8%	0.3%	-0.6%	-0.3%	-0.5%	-0.3%
<b>Below Normal (17%)</b>												
Existing Condition	149	159	175	198	207	201	195	181	159	143	141	148
NODOS Alternative B	150	162	178	197	207	208	202	181	158	142	140	148
Difference	1	3	3	-1	0	6	7	0	-1	-1	-1	0
Percent Difference	0.8%	1.8%	1.7%	-0.4%	-0.1%	3.2%	3.6%	0.1%	-0.5%	-0.8%	-0.6%	0.2%
<b>Dry (22%)</b>												
Existing Condition	149	165	190	193	202	199	184	162	147	139	142	154
NODOS Alternative B	149	167	196	194	199	201	195	167	147	138	141	153
Difference	0	1	5	1	-3	2	11	4	0	-1	-1	-1
Percent Difference	0.0%	0.9%	2.8%	0.6%	-1.5%	1.2%	5.8%	2.7%	0.0%	-0.5%	-0.5%	-0.4%
<b>Critical (15%)</b>												
Existing Condition	145	157	181	185	195	197	179	160	146	138	140	150
NODOS Alternative B	147	159	182	183	195	200	187	163	146	138	139	150
Difference	2	2	1	-2	1	4	8	3	0	0	0	-1
Percent Difference	1.2%	1.4%	0.6%	-1.1%	0.4%	2.0%	4.5%	1.6%	0.1%	0.0%	-0.2%	-0.5%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River below Delevan Pipeline, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	147	159	181	204	207	201	195	176	155	142	142	149
NODOS Alternative B	152	164	184	204	208	205	200	178	156	144	145	152
Difference	4	5	3	0	0	4	5	2	1	2	3	3
Percent Difference <sup>3</sup>	3.0%	3.0%	1.9%	0.1%	0.2%	2.0%	2.6%	1.2%	0.9%	1.7%	1.9%	1.8%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	148	157	181	223	217	207	209	190	165	147	144	147
NODOS Alternative B	153	163	185	224	219	210	211	189	164	147	146	149
Difference	5	6	4	1	3	4	2	-1	-1	0	2	2
Percent Difference	3.1%	3.8%	2.4%	0.4%	1.3%	1.8%	1.1%	-0.5%	-0.7%	0.1%	1.1%	1.6%
<b>Above Normal (15%)</b>												
Existing Condition	146	159	177	208	210	201	201	179	153	139	140	147
NODOS Alternative B	150	164	179	209	209	205	205	179	153	142	144	150
Difference	4	4	2	1	0	4	4	0	0	3	3	3
Percent Difference	2.6%	2.8%	1.1%	0.5%	-0.2%	2.0%	2.2%	0.0%	0.0%	2.4%	2.4%	1.9%
<b>Below Normal (17%)</b>												
Existing Condition	149	159	175	198	207	201	195	181	159	143	141	148
NODOS Alternative B	154	164	178	197	207	208	201	181	159	145	144	152
Difference	5	4	3	-1	0	6	6	0	0	2	3	4
Percent Difference	3.4%	2.8%	1.8%	-0.4%	-0.1%	3.1%	2.9%	0.1%	0.1%	1.3%	1.8%	2.6%
<b>Dry (22%)</b>												
Existing Condition	149	165	190	193	202	199	184	162	147	139	142	154
NODOS Alternative B	152	169	196	194	199	201	192	169	151	142	145	156
Difference	3	4	6	1	-3	2	7	7	4	3	3	2
Percent Difference	2.0%	2.2%	3.0%	0.6%	-1.5%	1.2%	4.1%	4.2%	2.6%	2.3%	2.1%	1.5%
<b>Critical (15%)</b>												
Existing Condition	145	157	181	185	195	197	179	160	146	138	140	150
NODOS Alternative B	150	161	183	183	196	201	186	166	151	143	143	153
Difference	5	5	2	-2	1	4	8	6	5	5	3	2
Percent Difference	3.8%	3.0%	1.1%	-1.1%	0.5%	2.1%	4.2%	3.7%	3.7%	3.6%	2.5%	1.4%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Funks Reservoir, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	139	148	163	178	180	178	168	153	139	134	134	137
NODOS Alternative B	168	174	177	180	181	185	181	170	166	168	163	170
Difference	29	26	14	2	1	7	13	17	27	34	29	33
Percent Difference <sup>3</sup>	20.8%	17.5%	8.6%	1.3%	0.4%	3.9%	7.6%	11.1%	19.1%	25.5%	22.0%	24.3%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	138	144	159	187	183	179	180	161	144	135	134	135
NODOS Alternative B	173	178	178	188	184	185	184	166	158	159	153	170
Difference	35	34	19	1	1	5	4	5	14	23	19	35
Percent Difference	25.2%	23.8%	11.7%	0.5%	0.8%	3.1%	2.1%	2.8%	10.0%	17.1%	14.5%	25.8%
<b>Above Normal (15%)</b>												
Existing Condition	139	151	162	182	180	178	171	154	138	133	133	136
NODOS Alternative B	168	173	174	183	181	183	182	165	163	169	167	173
Difference	29	23	12	0	0	5	11	11	25	36	34	37
Percent Difference	20.7%	14.9%	7.7%	0.2%	0.2%	2.9%	6.7%	7.0%	18.5%	27.0%	25.1%	27.6%
<b>Below Normal (17%)</b>												
Existing Condition	140	148	159	174	182	181	171	154	140	133	134	136
NODOS Alternative B	170	173	173	175	180	189	181	168	163	169	166	174
Difference	30	25	14	1	-2	9	10	13	23	35	32	37
Percent Difference	21.3%	17.1%	8.9%	0.6%	-1.1%	4.8%	6.1%	8.5%	16.1%	26.4%	23.7%	27.2%
<b>Dry (22%)</b>												
Existing Condition	141	152	170	171	180	177	157	145	136	133	134	140
NODOS Alternative B	164	174	179	172	176	182	176	174	174	170	167	171
Difference	23	22	9	2	-4	5	19	29	37	37	33	31
Percent Difference	16.5%	14.3%	5.5%	1.1%	-2.2%	2.7%	11.8%	19.9%	27.4%	27.8%	24.3%	22.0%
<b>Critical (15%)</b>												
Existing Condition	139	149	165	168	176	176	154	146	137	133	134	139
NODOS Alternative B	164	171	177	176	182	187	179	182	177	179	170	164
Difference	25	21	12	8	6	11	25	36	41	46	36	26
Percent Difference	17.7%	14.4%	7.4%	4.7%	3.4%	6.1%	15.9%	24.4%	29.7%	34.3%	27.1%	18.6%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Tehama Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	140	150	164	178	180	178	169	154	140	134	134	137
NODOS Alternative B	140	150	163	175	178	179	171	153	139	134	134	137
Difference	0	0	-1	-3	-3	0	2	0	0	0	0	0
Percent Difference <sup>3</sup>	0.0%	0.1%	-0.6%	-1.8%	-1.4%	0.2%	1.2%	-0.2%	-0.1%	0.0%	0.0%	-0.2%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	139	145	161	187	183	179	180	161	144	135	134	135
NODOS Alternative B	138	146	160	184	182	179	181	159	143	135	134	135
Difference	0	1	-1	-3	-1	0	0	-2	-1	0	0	0
Percent Difference	-0.1%	0.7%	-0.4%	-1.5%	-0.4%	0.1%	0.2%	-1.4%	-0.4%	-0.1%	0.0%	0.0%
<b>Above Normal (15%)</b>												
No Action Alternative	140	152	163	182	181	178	171	154	138	133	134	136
NODOS Alternative B	140	152	161	179	178	178	173	154	138	133	134	136
Difference	0	-1	-2	-3	-3	0	2	-1	0	0	0	0
Percent Difference	-0.3%	-0.4%	-1.1%	-1.7%	-1.8%	0.1%	0.9%	-0.3%	-0.2%	0.0%	0.0%	0.1%
<b>Below Normal (17%)</b>												
No Action Alternative	141	149	160	175	181	181	172	155	140	133	134	137
NODOS Alternative B	140	150	158	171	178	183	174	154	140	133	134	137
Difference	0	0	-2	-3	-3	1	2	-1	0	0	0	0
Percent Difference	-0.3%	0.3%	-1.1%	-1.9%	-1.6%	0.8%	1.4%	-0.4%	-0.1%	0.0%	0.0%	0.1%
<b>Dry (22%)</b>												
No Action Alternative	142	154	171	172	180	177	158	146	137	133	134	141
NODOS Alternative B	142	154	171	168	175	177	161	147	137	133	134	140
Difference	0	-1	0	-4	-6	0	3	2	0	0	0	-1
Percent Difference	0.0%	-0.3%	-0.3%	-2.2%	-3.1%	0.0%	1.8%	1.1%	0.2%	0.0%	-0.1%	-0.5%
<b>Critical (15%)</b>												
No Action Alternative	140	151	166	168	176	176	155	146	137	134	134	139
NODOS Alternative B	140	151	165	165	174	177	158	148	137	134	134	138
Difference	1	0	-1	-3	-2	0	4	2	0	0	0	-1
Percent Difference	0.7%	0.3%	-0.4%	-1.7%	-1.2%	0.2%	2.4%	1.1%	0.1%	0.0%	-0.2%	-0.7%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Glenn Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	143	155	172	189	194	193	185	168	147	137	136	140
NODOS Alternative B	143	156	172	187	193	195	188	168	146	137	136	140
Difference	0	0	0	-2	-1	3	4	0	0	0	0	0
Percent Difference <sup>3</sup>	0.0%	0.2%	-0.2%	-1.0%	-0.4%	1.3%	1.9%	0.2%	-0.2%	0.0%	0.0%	-0.2%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	142	150	170	200	198	194	198	181	155	140	137	138
NODOS Alternative B	142	151	170	199	199	196	200	180	154	140	137	138
Difference	0	1	0	-1	1	2	2	-2	-1	0	0	0
Percent Difference	-0.1%	0.8%	0.2%	-0.6%	0.5%	1.1%	0.9%	-0.9%	-0.5%	-0.1%	0.1%	0.0%
<b>Above Normal (15%)</b>												
No Action Alternative	143	158	171	193	195	193	189	170	145	136	136	138
NODOS Alternative B	143	158	170	192	193	195	192	170	144	136	136	138
Difference	-1	-1	-1	-1	-2	3	3	0	0	0	0	0
Percent Difference	-0.4%	-0.4%	-0.8%	-0.7%	-0.9%	1.3%	1.6%	0.1%	-0.3%	0.0%	0.0%	0.2%
<b>Below Normal (17%)</b>												
No Action Alternative	145	155	168	184	194	195	189	170	147	136	136	139
NODOS Alternative B	145	155	167	182	193	200	193	170	147	136	136	139
Difference	0	1	-1	-2	-1	4	4	0	0	0	0	0
Percent Difference	-0.2%	0.4%	-0.6%	-1.3%	-0.3%	2.2%	2.2%	0.1%	-0.2%	0.0%	0.1%	0.1%
<b>Dry (22%)</b>												
No Action Alternative	145	161	180	182	192	191	172	155	141	135	136	144
NODOS Alternative B	145	161	180	180	187	193	176	157	141	135	136	143
Difference	0	0	0	-2	-4	2	5	2	0	0	0	-1
Percent Difference	0.0%	-0.3%	0.2%	-1.4%	-2.2%	1.1%	2.7%	1.6%	0.3%	0.0%	-0.1%	-0.5%
<b>Critical (15%)</b>												
No Action Alternative	143	156	175	177	189	190	167	154	140	135	136	142
NODOS Alternative B	144	156	175	174	188	193	172	157	141	135	136	141
Difference	1	1	0	-2	0	2	5	2	0	0	0	-1
Percent Difference	0.8%	0.3%	-0.1%	-1.3%	-0.1%	1.2%	3.1%	1.4%	0.2%	0.1%	-0.3%	-0.9%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Delevan Pipeline Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	148	161	182	204	207	201	196	176	155	142	142	149
NODOS Alternative B	148	161	184	204	208	205	202	177	154	141	141	149
Difference	0	1	2	0	1	4	6	1	-1	-1	0	0
Percent Difference <sup>3</sup>	0.1%	0.4%	0.9%	-0.1%	0.3%	2.0%	3.0%	0.5%	-0.4%	-0.4%	-0.2%	-0.2%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	149	158	182	223	217	206	209	190	165	147	144	147
NODOS Alternative B	149	160	185	224	219	210	212	189	164	146	145	147
Difference	0	2	3	1	3	4	3	-1	-1	-1	0	0
Percent Difference	0.0%	1.1%	1.7%	0.4%	1.2%	1.9%	1.3%	-0.6%	-0.8%	-0.6%	0.2%	-0.1%
<b>Above Normal (15%)</b>												
No Action Alternative	146	161	179	209	210	201	201	179	153	139	140	147
NODOS Alternative B	146	161	179	209	210	205	207	179	152	139	140	147
Difference	-1	0	0	1	-1	4	5	1	-1	0	0	0
Percent Difference	-0.4%	-0.1%	0.0%	0.4%	-0.3%	2.0%	2.5%	0.3%	-0.6%	-0.3%	-0.3%	0.3%
<b>Below Normal (17%)</b>												
No Action Alternative	150	161	176	199	205	202	196	181	159	143	141	148
NODOS Alternative B	150	162	178	197	207	208	202	181	158	142	140	148
Difference	0	1	1	-1	2	6	6	0	-1	-1	0	0
Percent Difference	0.0%	0.7%	0.7%	-0.7%	0.8%	2.9%	3.2%	0.2%	-0.5%	-0.5%	-0.3%	0.1%
<b>Dry (22%)</b>												
No Action Alternative	150	167	192	194	202	198	185	164	147	139	142	155
NODOS Alternative B	149	167	196	194	199	201	195	167	147	138	141	153
Difference	0	-1	4	-1	-3	3	10	3	0	0	-1	-1
Percent Difference	-0.1%	-0.3%	1.9%	-0.3%	-1.5%	1.5%	5.2%	2.0%	-0.1%	-0.3%	-0.4%	-0.8%
<b>Critical (15%)</b>												
No Action Alternative	145	158	182	185	195	197	179	160	146	138	140	151
NODOS Alternative B	147	159	182	183	195	200	187	163	146	138	139	150
Difference	1	1	0	-2	1	4	8	3	0	0	-1	-1
Percent Difference	1.0%	0.5%	0.0%	-1.2%	0.4%	1.9%	4.5%	1.7%	0.2%	-0.1%	-0.5%	-0.6%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River below Delevan Pipeline, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	148	161	182	204	207	201	196	176	155	142	142	149
NODOS Alternative B	152	164	184	204	208	205	200	178	156	144	145	152
Difference	4	3	2	0	1	4	5	2	1	3	3	3
Percent Difference <sup>3</sup>	2.5%	2.0%	1.1%	-0.1%	0.3%	2.0%	2.4%	1.0%	0.8%	1.8%	1.9%	1.8%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	149	158	182	223	217	206	209	190	165	147	144	147
NODOS Alternative B	153	163	185	224	219	210	211	189	164	147	146	149
Difference	4	5	3	1	3	4	2	-1	-1	0	2	2
Percent Difference	2.4%	3.2%	1.8%	0.4%	1.2%	1.9%	1.0%	-0.6%	-0.7%	0.1%	1.1%	1.7%
<b>Above Normal (15%)</b>												
No Action Alternative	146	161	179	209	210	201	201	179	153	139	140	147
NODOS Alternative B	150	164	179	209	209	205	205	179	153	142	144	150
Difference	3	3	0	1	-1	4	4	0	0	3	4	4
Percent Difference	2.2%	1.6%	0.1%	0.4%	-0.3%	2.0%	1.9%	0.0%	0.1%	2.4%	2.6%	2.5%
<b>Below Normal (17%)</b>												
No Action Alternative	150	161	176	199	205	202	196	181	159	143	141	148
NODOS Alternative B	154	164	178	197	207	208	201	181	159	145	144	152
Difference	4	3	1	-1	2	6	5	0	0	2	3	4
Percent Difference	2.6%	1.6%	0.7%	-0.7%	0.8%	2.9%	2.6%	0.2%	0.1%	1.6%	2.1%	2.5%
<b>Dry (22%)</b>												
No Action Alternative	150	167	192	194	202	198	185	164	147	139	142	155
NODOS Alternative B	152	169	196	194	199	201	192	169	151	142	145	156
Difference	3	2	4	-1	-3	3	7	6	4	4	3	2
Percent Difference	1.8%	0.9%	2.0%	-0.3%	-1.5%	1.5%	3.5%	3.5%	2.5%	2.5%	2.2%	1.2%
<b>Critical (15%)</b>												
No Action Alternative	145	158	182	185	195	197	179	160	146	138	140	151
NODOS Alternative B	150	161	183	183	196	201	186	166	151	143	143	153
Difference	5	3	1	-2	1	4	7	6	5	5	3	2
Percent Difference	3.6%	2.0%	0.5%	-1.1%	0.5%	2.0%	4.2%	3.8%	3.8%	3.6%	2.2%	1.3%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Funks Reservoir, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	140	150	164	178	180	178	169	154	140	134	134	137
NODOS Alternative B	168	174	177	180	181	185	181	170	166	168	163	170
Difference	28	25	13	2	1	7	12	17	26	34	29	33
Percent Difference <sup>3</sup>	20.4%	16.6%	7.9%	1.1%	0.4%	3.8%	7.2%	10.9%	19.0%	25.5%	21.9%	24.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	139	145	161	187	183	179	180	161	144	135	134	135
NODOS Alternative B	173	178	178	188	184	185	184	166	158	159	153	170
Difference	34	34	18	1	1	6	3	4	14	23	19	35
Percent Difference	24.9%	23.4%	10.9%	0.4%	0.7%	3.1%	1.9%	2.7%	10.0%	17.1%	14.4%	25.7%
<b>Above Normal (15%)</b>												
No Action Alternative	140	152	163	182	181	178	171	154	138	133	134	136
NODOS Alternative B	168	173	174	183	181	183	182	165	163	169	167	173
Difference	28	21	11	0	0	5	11	11	25	36	34	37
Percent Difference	20.0%	13.8%	7.0%	0.1%	0.0%	2.8%	6.2%	6.8%	18.4%	26.9%	25.1%	27.6%
<b>Below Normal (17%)</b>												
No Action Alternative	141	149	160	175	181	181	172	155	140	133	134	137
NODOS Alternative B	170	173	173	175	180	189	181	168	163	169	166	174
Difference	29	24	13	0	-1	8	10	13	22	35	32	37
Percent Difference	20.6%	16.0%	8.3%	0.3%	-0.3%	4.5%	5.6%	8.4%	16.0%	26.4%	23.7%	26.9%
<b>Dry (22%)</b>												
No Action Alternative	142	154	171	172	180	177	158	146	137	133	134	141
NODOS Alternative B	164	174	179	172	176	182	176	174	174	170	167	171
Difference	23	20	8	1	-4	5	18	28	37	37	32	30
Percent Difference	16.1%	12.9%	4.6%	0.4%	-2.3%	2.8%	11.2%	19.3%	27.2%	27.7%	24.2%	21.5%
<b>Critical (15%)</b>												
No Action Alternative	140	151	166	168	176	176	155	146	137	134	134	139
NODOS Alternative B	164	171	177	176	182	187	179	182	177	179	170	164
Difference	24	20	11	8	6	11	24	35	40	46	36	25
Percent Difference	17.2%	13.3%	6.9%	4.6%	3.2%	6.0%	15.7%	24.1%	29.5%	34.1%	26.8%	18.2%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Tehama Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	139	148	163	178	180	178	168	153	139	134	134	137
NODOS Alternative C	140	150	162	175	178	179	171	153	139	134	134	137
Difference	1	2	0	-3	-3	0	3	0	0	0	0	0
Percent Difference <sup>3</sup>	0.5%	1.0%	-0.2%	-1.5%	-1.4%	0.2%	1.5%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	138	144	159	187	183	179	180	161	144	135	134	135
NODOS Alternative C	139	145	160	183	182	179	181	159	143	135	134	135
Difference	0	1	0	-3	0	0	1	-2	-1	0	0	0
Percent Difference	0.2%	0.7%	0.1%	-1.8%	-0.3%	0.0%	0.4%	-1.2%	-0.4%	0.0%	0.1%	0.1%
<b>Above Normal (15%)</b>												
Existing Condition	139	151	162	182	180	178	171	154	138	133	133	136
NODOS Alternative C	140	152	160	179	177	178	173	154	138	133	134	136
Difference	0	1	-1	-3	-3	1	2	-1	0	0	0	0
Percent Difference	0.3%	0.7%	-0.9%	-1.6%	-1.7%	0.4%	1.5%	-0.3%	-0.1%	0.1%	0.0%	0.1%
<b>Below Normal (17%)</b>												
Existing Condition	140	148	159	174	182	181	171	154	140	133	134	136
NODOS Alternative C	140	150	158	172	178	182	174	154	140	133	134	137
Difference	0	2	-1	-2	-4	1	3	0	0	0	0	0
Percent Difference	0.3%	1.4%	-0.8%	-1.3%	-2.3%	0.8%	1.7%	-0.3%	-0.1%	0.0%	0.1%	0.4%
<b>Dry (22%)</b>												
Existing Condition	141	152	170	171	180	177	157	145	136	133	134	140
NODOS Alternative C	142	154	171	169	175	177	161	147	137	133	134	140
Difference	1	1	1	-2	-5	0	4	2	0	0	0	0
Percent Difference	0.4%	0.9%	0.7%	-1.2%	-2.8%	-0.1%	2.3%	1.4%	0.3%	0.1%	0.1%	-0.2%
<b>Critical (15%)</b>												
Existing Condition	139	149	165	168	176	176	154	146	137	133	134	139
NODOS Alternative C	141	152	165	166	174	176	159	148	137	134	134	139
Difference	2	2	0	-2	-2	0	4	2	0	0	0	0
Percent Difference	1.5%	1.6%	-0.1%	-1.4%	-1.1%	-0.2%	2.7%	1.4%	0.2%	0.1%	-0.1%	0.2%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Glenn Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	143	154	171	189	194	193	184	168	146	137	136	140
NODOS Alternative C	144	156	172	187	193	195	188	168	146	137	136	140
Difference	1	2	0	-2	-1	2	4	0	0	0	0	0
Percent Difference <sup>3</sup>	0.6%	1.0%	0.2%	-0.8%	-0.5%	1.0%	2.1%	0.1%	-0.3%	0.0%	0.0%	0.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	142	149	169	200	198	194	198	181	155	140	137	138
NODOS Alternative C	142	150	170	198	199	195	199	179	153	140	137	138
Difference	0	1	1	-2	1	1	1	-2	-1	0	0	0
Percent Difference	0.2%	0.7%	0.5%	-1.0%	0.5%	0.5%	0.7%	-1.0%	-0.8%	-0.2%	0.1%	0.0%
<b>Above Normal (15%)</b>												
Existing Condition	143	157	170	193	194	192	188	170	145	136	136	138
NODOS Alternative C	143	158	169	192	192	195	192	170	144	136	136	138
Difference	0	1	-1	-1	-2	3	4	0	0	0	0	0
Percent Difference	0.2%	0.7%	-0.6%	-0.6%	-1.0%	1.4%	2.0%	-0.3%	-0.3%	0.0%	0.0%	0.1%
<b>Below Normal (17%)</b>												
Existing Condition	144	153	167	184	195	195	188	170	147	136	136	139
NODOS Alternative C	145	156	166	182	193	198	193	170	147	136	136	139
Difference	1	2	-1	-2	-2	3	4	0	0	0	0	1
Percent Difference	0.4%	1.5%	-0.3%	-0.9%	-1.1%	1.7%	2.4%	-0.1%	-0.3%	-0.1%	0.1%	0.4%
<b>Dry (22%)</b>												
Existing Condition	145	159	178	181	191	191	171	154	140	135	136	144
NODOS Alternative C	145	161	180	180	188	192	176	157	141	135	136	143
Difference	0	1	2	-1	-4	1	6	3	0	0	0	0
Percent Difference	0.3%	0.9%	1.0%	-0.4%	-1.9%	0.7%	3.2%	1.8%	0.3%	0.1%	0.1%	-0.3%
<b>Critical (15%)</b>												
Existing Condition	142	155	175	177	189	190	167	154	140	135	136	142
NODOS Alternative C	145	157	175	175	189	192	172	157	141	135	136	142
Difference	2	3	0	-2	0	2	6	2	0	0	0	0
Percent Difference	1.7%	1.7%	0.0%	-1.0%	0.0%	0.9%	3.3%	1.6%	0.2%	0.1%	-0.2%	0.1%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Delevan Pipeline Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	147	159	181	204	207	201	195	176	155	142	142	149
NODOS Alternative C	148	161	183	204	207	204	201	177	154	141	141	149
Difference	1	2	2	0	0	3	6	0	-2	-1	-1	0
Percent Difference <sup>3</sup>	0.8%	1.4%	1.3%	-0.1%	0.1%	1.4%	2.9%	0.2%	-1.0%	-0.7%	-0.4%	-0.3%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	148	157	181	223	217	207	209	190	165	147	144	147
NODOS Alternative C	149	159	184	223	219	208	211	188	163	146	145	147
Difference	1	2	3	0	2	2	2	-2	-2	-1	0	0
Percent Difference	0.6%	1.1%	1.8%	-0.2%	1.1%	0.9%	1.0%	-0.9%	-1.5%	-0.8%	0.1%	0.0%
<b>Above Normal (15%)</b>												
Existing Condition	146	159	177	208	210	201	201	179	153	139	140	147
NODOS Alternative C	146	161	178	209	209	204	206	178	151	138	140	147
Difference	0	2	0	1	-1	3	5	-1	-2	-1	-1	0
Percent Difference	0.2%	1.2%	0.2%	0.5%	-0.5%	1.7%	2.6%	-0.4%	-1.3%	-0.6%	-0.6%	-0.3%
<b>Below Normal (17%)</b>												
Existing Condition	149	159	175	198	207	201	195	181	159	143	141	148
NODOS Alternative C	150	163	177	197	207	205	201	180	157	142	140	148
Difference	1	3	2	-1	0	4	6	-1	-2	-2	-1	0
Percent Difference	1.0%	2.1%	1.4%	-0.5%	0.0%	2.1%	3.2%	-0.4%	-1.2%	-1.2%	-0.7%	0.1%
<b>Dry (22%)</b>												
Existing Condition	149	165	190	193	202	199	184	162	147	139	142	154
NODOS Alternative C	149	167	195	194	199	201	194	166	146	138	141	153
Difference	0	1	5	1	-3	2	10	3	-1	-1	-1	-1
Percent Difference	0.1%	0.9%	2.7%	0.7%	-1.3%	0.9%	5.6%	2.1%	-0.5%	-0.6%	-0.8%	-0.9%
<b>Critical (15%)</b>												
Existing Condition	145	157	181	185	195	197	179	160	146	138	140	150
NODOS Alternative C	148	160	181	183	196	200	186	163	145	138	139	150
Difference	3	3	1	-2	1	3	8	3	0	0	-1	-1
Percent Difference	2.0%	2.0%	0.4%	-1.0%	0.5%	1.5%	4.2%	1.6%	-0.2%	-0.2%	-0.5%	-0.4%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River below Delevan Pipeline, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	147	159	181	204	207	201	195	176	155	142	142	149
NODOS Alternative C	155	166	184	204	208	204	201	178	155	144	146	154
Difference	7	6	3	0	0	3	6	2	0	2	4	5
Percent Difference <sup>3</sup>	5.0%	4.1%	1.8%	-0.1%	0.2%	1.4%	3.0%	1.0%	0.1%	1.4%	2.7%	3.0%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	148	157	181	223	217	207	209	190	165	147	144	147
NODOS Alternative C	154	163	184	223	219	208	211	188	163	147	146	150
Difference	6	6	4	0	2	2	2	-2	-2	0	2	3
Percent Difference	4.2%	4.0%	2.1%	-0.2%	1.1%	0.9%	1.0%	-0.8%	-1.4%	0.2%	1.4%	2.3%
<b>Above Normal (15%)</b>												
Existing Condition	146	159	177	208	210	201	201	179	153	139	140	147
NODOS Alternative C	152	166	179	209	209	204	206	178	152	142	145	153
Difference	7	7	2	1	-1	3	5	-1	-1	3	5	5
Percent Difference	4.5%	4.2%	0.9%	0.5%	-0.5%	1.7%	2.6%	-0.4%	-0.6%	2.1%	3.2%	3.5%
<b>Below Normal (17%)</b>												
Existing Condition	149	159	175	198	207	201	195	181	159	143	141	148
NODOS Alternative C	156	166	177	197	207	205	201	180	158	145	144	153
Difference	7	6	3	-1	0	4	6	-1	-1	1	3	5
Percent Difference	4.7%	4.1%	1.6%	-0.4%	0.1%	2.1%	3.2%	-0.3%	-0.7%	0.9%	2.4%	3.3%
<b>Dry (22%)</b>												
Existing Condition	149	165	190	193	202	199	184	162	147	139	142	154
NODOS Alternative C	154	170	196	194	199	201	194	170	150	142	147	157
Difference	5	4	6	1	-3	2	10	8	3	3	5	3
Percent Difference	3.4%	2.7%	2.9%	0.7%	-1.3%	1.0%	5.4%	4.7%	2.3%	2.0%	3.3%	2.2%
<b>Critical (15%)</b>												
Existing Condition	145	157	181	185	195	197	179	160	146	138	140	150
NODOS Alternative C	157	165	183	183	196	200	187	167	149	141	146	157
Difference	12	8	2	-2	2	4	8	6	3	3	6	6
Percent Difference	8.2%	5.3%	1.3%	-0.9%	0.9%	1.9%	4.7%	4.0%	2.1%	2.5%	4.1%	4.2%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Funks Reservoir, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
Existing Condition	139	148	163	178	180	178	168	153	139	134	134	137
NODOS Alternative C	185	187	185	193	192	187	183	172	166	168	175	183
Difference	46	39	23	15	12	9	15	19	26	34	41	46
Percent Difference <sup>3</sup>	33.1%	26.2%	13.9%	8.4%	6.6%	5.1%	8.9%	12.5%	18.8%	25.5%	30.9%	33.7%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
Existing Condition	138	144	159	187	183	179	180	161	144	135	134	135
NODOS Alternative C	188	189	186	201	197	185	183	166	160	163	161	180
Difference	49	45	27	14	14	6	3	4	17	27	27	45
Percent Difference	35.7%	31.4%	16.8%	7.5%	7.5%	3.1%	1.8%	2.6%	11.6%	20.2%	20.2%	33.3%
<b>Above Normal (15%)</b>												
Existing Condition	139	151	162	182	180	178	171	154	138	133	133	136
NODOS Alternative C	186	186	182	194	193	184	180	167	165	169	176	185
Difference	47	35	20	12	13	6	9	13	27	36	43	49
Percent Difference	33.8%	23.4%	12.4%	6.6%	6.9%	3.6%	5.6%	8.3%	19.7%	26.8%	32.0%	36.3%
<b>Below Normal (17%)</b>												
Existing Condition	140	148	159	174	182	181	171	154	140	133	134	136
NODOS Alternative C	180	186	182	191	192	188	181	169	166	170	177	184
Difference	40	38	22	17	10	8	10	14	26	37	43	47
Percent Difference	28.5%	25.7%	14.1%	9.9%	5.7%	4.2%	6.1%	9.3%	18.8%	27.6%	32.3%	34.5%
<b>Dry (22%)</b>												
Existing Condition	141	152	170	171	180	177	157	145	136	133	134	140
NODOS Alternative C	183	187	189	184	184	187	181	181	173	169	185	183
Difference	42	34	19	14	4	9	24	36	37	36	50	43
Percent Difference	29.5%	22.6%	11.3%	8.1%	2.4%	5.2%	15.3%	24.7%	27.0%	26.8%	37.5%	30.5%
<b>Critical (15%)</b>												
Existing Condition	139	149	165	168	176	176	154	146	137	133	134	139
NODOS Alternative C	187	187	187	186	192	194	189	184	168	173	187	186
Difference	48	38	22	18	16	18	34	38	31	39	53	47
Percent Difference	34.7%	25.1%	13.1%	10.7%	9.1%	10.2%	22.2%	26.3%	22.8%	29.5%	39.5%	34.0%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Tehama Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	140	150	164	178	180	178	169	154	140	134	134	137
NODOS Alternative C	140	150	162	175	178	179	171	153	139	134	134	137
Difference	0	0	-1	-3	-3	0	2	0	0	0	0	0
Percent Difference <sup>3</sup>	0.1%	0.2%	-0.8%	-1.7%	-1.4%	0.1%	1.2%	-0.2%	-0.1%	0.0%	0.0%	-0.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	139	145	161	187	183	179	180	161	144	135	134	135
NODOS Alternative C	139	145	160	183	182	179	181	159	143	135	134	135
Difference	0	1	-1	-4	-1	0	0	-2	-1	0	0	0
Percent Difference	-0.1%	0.3%	-0.6%	-1.9%	-0.4%	0.0%	0.3%	-1.3%	-0.4%	-0.1%	0.0%	0.0%
<b>Above Normal (15%)</b>												
No Action Alternative	140	152	163	182	181	178	171	154	138	133	134	136
NODOS Alternative C	140	152	160	179	177	178	173	154	138	133	134	136
Difference	0	0	-2	-3	-3	0	2	-1	0	0	0	0
Percent Difference	-0.2%	-0.3%	-1.5%	-1.7%	-1.9%	0.2%	1.0%	-0.5%	-0.2%	0.0%	0.0%	0.1%
<b>Below Normal (17%)</b>												
No Action Alternative	141	149	160	175	181	181	172	155	140	133	134	137
NODOS Alternative C	140	150	158	172	178	182	174	154	140	133	134	137
Difference	0	1	-2	-3	-3	1	2	-1	0	0	0	0
Percent Difference	-0.2%	0.5%	-1.4%	-1.6%	-1.5%	0.5%	1.3%	-0.3%	-0.2%	0.0%	0.1%	0.1%
<b>Dry (22%)</b>												
No Action Alternative	142	154	171	172	180	177	158	146	137	133	134	141
NODOS Alternative C	142	154	171	169	175	177	161	147	137	133	134	140
Difference	0	0	0	-3	-5	0	3	1	0	0	0	-1
Percent Difference	0.1%	-0.3%	-0.2%	-1.9%	-2.9%	0.0%	1.8%	0.9%	0.1%	0.0%	0.0%	-0.6%
<b>Critical (15%)</b>												
No Action Alternative	140	151	166	168	176	176	155	146	137	134	134	139
NODOS Alternative C	141	152	165	166	174	176	159	148	137	134	134	139
Difference	2	1	-1	-2	-2	-1	4	2	0	0	0	0
Percent Difference	1.1%	0.6%	-0.5%	-1.5%	-1.2%	-0.3%	2.5%	1.2%	0.1%	0.0%	-0.3%	-0.2%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Glenn Colusa Canal Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	143	155	172	189	194	193	185	168	147	137	136	140
NODOS Alternative C	144	156	172	187	193	195	188	168	146	137	136	140
Difference	0	0	-1	-2	-1	2	3	0	0	0	0	0
Percent Difference <sup>3</sup>	0.2%	0.3%	-0.4%	-1.0%	-0.5%	0.9%	1.8%	0.0%	-0.3%	-0.1%	-0.1%	-0.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	142	150	170	200	198	194	198	181	155	140	137	138
NODOS Alternative C	142	150	170	198	199	195	199	179	153	140	137	138
Difference	0	1	0	-2	1	1	1	-2	-1	0	0	0
Percent Difference	0.0%	0.4%	-0.1%	-1.0%	0.4%	0.6%	0.6%	-1.1%	-0.8%	-0.2%	0.1%	0.0%
<b>Above Normal (15%)</b>												
No Action Alternative	143	158	171	193	195	193	189	170	145	136	136	138
NODOS Alternative C	143	158	169	192	192	195	192	170	144	136	136	138
Difference	0	0	-2	-1	-2	2	3	0	-1	0	0	0
Percent Difference	-0.2%	-0.2%	-1.2%	-0.7%	-1.1%	1.2%	1.6%	-0.3%	-0.4%	0.0%	0.0%	0.2%
<b>Below Normal (17%)</b>												
No Action Alternative	145	155	168	184	194	195	189	170	147	136	136	139
NODOS Alternative C	145	156	166	182	193	198	193	170	147	136	136	139
Difference	0	1	-2	-2	-1	3	4	0	-1	0	0	0
Percent Difference	-0.1%	0.6%	-0.9%	-1.1%	-0.3%	1.4%	2.0%	-0.1%	-0.4%	0.0%	0.1%	0.2%
<b>Dry (22%)</b>												
No Action Alternative	145	161	180	182	192	191	172	155	141	135	136	144
NODOS Alternative C	145	161	180	180	188	192	176	157	141	135	136	143
Difference	0	0	0	-2	-4	2	5	2	0	0	0	-1
Percent Difference	0.0%	-0.2%	0.2%	-1.0%	-2.0%	0.9%	2.7%	1.3%	0.2%	0.1%	0.0%	-0.7%
<b>Critical (15%)</b>												
No Action Alternative	143	156	175	177	189	190	167	154	140	135	136	142
NODOS Alternative C	145	157	175	175	189	192	172	157	141	135	136	142
Difference	2	1	-1	-2	0	1	5	2	0	0	-1	0
Percent Difference	1.4%	0.8%	-0.4%	-1.0%	0.0%	0.7%	3.2%	1.5%	0.2%	0.0%	-0.5%	-0.2%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River at Delevan Pipeline Intake, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	148	161	182	204	207	201	196	176	155	142	142	149
NODOS Alternative C	148	161	183	204	207	204	201	177	154	141	141	149
Difference	0	1	1	-1	0	3	5	0	-2	-1	-1	0
Percent Difference <sup>3</sup>	0.3%	0.5%	0.5%	-0.3%	0.2%	1.4%	2.7%	0.1%	-1.0%	-0.6%	-0.4%	-0.2%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	149	158	182	223	217	206	209	190	165	147	144	147
NODOS Alternative C	149	159	184	223	219	208	211	188	163	146	145	147
Difference	0	1	2	0	2	2	2	-2	-2	-1	0	0
Percent Difference	0.0%	0.6%	1.2%	-0.1%	1.0%	0.9%	0.9%	-1.0%	-1.5%	-0.8%	0.1%	0.0%
<b>Above Normal (15%)</b>												
No Action Alternative	146	161	179	209	210	201	201	179	153	139	140	147
NODOS Alternative C	146	161	178	209	209	204	206	178	151	138	140	147
Difference	0	0	-1	1	-1	3	5	-1	-2	-1	-1	0
Percent Difference	-0.2%	0.0%	-0.8%	0.4%	-0.6%	1.7%	2.3%	-0.4%	-1.3%	-0.5%	-0.4%	0.3%
<b>Below Normal (17%)</b>												
No Action Alternative	150	161	176	199	205	202	196	181	159	143	141	148
NODOS Alternative C	150	163	177	197	207	205	201	180	157	142	140	148
Difference	0	2	1	-1	2	4	6	-1	-2	-1	-1	0
Percent Difference	0.2%	1.0%	0.3%	-0.7%	0.9%	1.9%	2.8%	-0.3%	-1.2%	-0.9%	-0.4%	0.1%
<b>Dry (22%)</b>												
No Action Alternative	150	167	192	194	202	198	185	164	147	139	142	155
NODOS Alternative C	149	167	195	194	199	201	194	166	146	138	141	153
Difference	0	-1	3	0	-3	2	9	2	-1	-1	-1	-2
Percent Difference	-0.1%	-0.3%	1.8%	-0.1%	-1.4%	1.2%	5.0%	1.4%	-0.6%	-0.4%	-0.7%	-1.3%
<b>Critical (15%)</b>												
No Action Alternative	145	158	182	185	195	197	179	160	146	138	140	151
NODOS Alternative C	148	160	181	183	196	200	186	163	145	138	139	150
Difference	3	2	0	-2	1	3	7	3	0	0	-1	-1
Percent Difference	1.7%	1.1%	-0.2%	-1.0%	0.6%	1.4%	4.2%	1.6%	-0.2%	-0.3%	-0.8%	-0.5%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Sacramento River below Delevan Pipeline, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	148	161	182	204	207	201	196	176	155	142	142	149
NODOS Alternative C	155	166	184	204	208	204	201	178	155	144	146	154
Difference	7	5	2	-1	1	3	5	2	0	2	4	5
Percent Difference <sup>3</sup>	4.5%	3.1%	1.0%	-0.3%	0.3%	1.4%	2.8%	0.9%	0.1%	1.5%	2.8%	3.1%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	149	158	182	223	217	206	209	190	165	147	144	147
NODOS Alternative C	154	163	184	223	219	208	211	188	163	147	146	150
Difference	5	5	3	0	2	2	2	-2	-2	0	2	3
Percent Difference	3.5%	3.4%	1.5%	-0.1%	1.0%	0.9%	0.9%	-1.0%	-1.4%	0.2%	1.4%	2.4%
<b>Above Normal (15%)</b>												
No Action Alternative	146	161	179	209	210	201	201	179	153	139	140	147
NODOS Alternative C	152	166	179	209	209	204	206	178	152	142	145	153
Difference	6	5	0	1	-1	3	5	-1	-1	3	5	6
Percent Difference	4.1%	3.0%	-0.1%	0.4%	-0.6%	1.7%	2.3%	-0.4%	-0.6%	2.2%	3.4%	4.1%
<b>Below Normal (17%)</b>												
No Action Alternative	150	161	176	199	205	202	196	181	159	143	141	148
NODOS Alternative C	156	166	177	197	207	205	201	180	157	142	140	153
Difference	6	5	1	-1	2	4	5	0	-1	2	4	5
Percent Difference	3.9%	2.9%	0.5%	-0.7%	1.0%	1.8%	2.8%	-0.2%	-0.7%	1.2%	2.7%	3.2%
<b>Dry (22%)</b>												
No Action Alternative	150	167	192	194	202	198	185	164	147	139	142	155
NODOS Alternative C	154	170	196	194	199	201	194	170	150	142	147	157
Difference	5	2	4	0	-3	3	9	7	3	3	5	3
Percent Difference	3.2%	1.4%	2.0%	-0.1%	-1.4%	1.3%	4.8%	4.0%	2.2%	2.2%	3.4%	1.8%
<b>Critical (15%)</b>												
No Action Alternative	145	158	182	185	195	197	179	160	146	138	140	151
NODOS Alternative C	157	165	183	183	196	200	187	167	149	141	146	157
Difference	12	7	1	-2	2	3	8	6	3	3	5	6
Percent Difference	8.0%	4.3%	0.7%	-0.9%	0.9%	1.8%	4.7%	4.0%	2.2%	2.4%	3.8%	4.1%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

Funks Reservoir, Monthly Average EC  
Long-term Average and Average by Water Year Type

Analysis Period	Monthly Average EC (µmhos/cm)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Long-term</b>												
<b>Full Simulation Period<sup>1</sup></b>												
No Action Alternative	140	150	164	178	180	178	169	154	140	134	134	137
NODOS Alternative C	185	187	185	193	192	187	183	172	166	168	175	183
Difference	45	38	22	14	12	9	14	19	26	34	41	46
Percent Difference <sup>3</sup>	32.5%	25.2%	13.1%	8.1%	6.6%	5.0%	8.5%	12.3%	18.7%	25.4%	30.8%	33.5%
<b>Water Year Types<sup>2</sup></b>												
<b>Wet (32%)</b>												
No Action Alternative	139	145	161	187	183	179	180	161	144	135	134	135
NODOS Alternative C	188	189	186	201	197	185	183	166	160	163	161	180
Difference	49	45	26	14	14	6	3	4	17	27	27	45
Percent Difference	35.3%	31.0%	16.0%	7.4%	7.4%	3.1%	1.6%	2.5%	11.6%	20.2%	20.2%	33.2%
<b>Above Normal (15%)</b>												
No Action Alternative	140	152	163	182	181	178	171	154	138	133	134	136
NODOS Alternative C	186	186	182	194	193	184	180	167	165	169	176	185
Difference	46	34	19	12	12	6	9	13	27	36	43	49
Percent Difference	33.1%	22.2%	11.7%	6.5%	6.7%	3.4%	5.1%	8.2%	19.6%	26.8%	31.9%	36.3%
<b>Below Normal (17%)</b>												
No Action Alternative	141	149	160	175	181	181	172	155	140	133	134	137
NODOS Alternative C	180	186	182	191	192	188	181	169	166	170	177	184
Difference	39	37	21	17	12	7	10	14	26	37	43	47
Percent Difference	27.8%	24.6%	13.4%	9.6%	6.5%	3.9%	5.7%	9.2%	18.7%	27.6%	32.3%	34.2%
<b>Dry (22%)</b>												
No Action Alternative	142	154	171	172	180	177	158	146	137	133	134	141
NODOS Alternative C	183	187	189	184	184	187	181	181	173	169	185	183
Difference	41	33	18	13	4	9	23	35	37	36	50	42
Percent Difference	29.0%	21.1%	10.4%	7.4%	2.2%	5.4%	14.7%	24.1%	26.7%	26.7%	37.3%	29.9%
<b>Critical (15%)</b>												
No Action Alternative	140	151	166	168	176	176	155	146	137	134	134	139
NODOS Alternative C	187	187	187	186	192	194	189	184	168	173	187	186
Difference	48	36	21	18	16	18	34	38	31	39	53	47
Percent Difference	34.2%	23.9%	12.6%	10.6%	9.0%	10.1%	21.9%	26.0%	22.6%	29.3%	39.1%	33.5%

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average