Linkages to Dissolved Oxygen Conditions in the DWSC by Loads, Flow and Geometry - Summary of Ratings including Average and Range - Phase I of a Criteria Rating Process

Rate 1 to 5 with 5 very high and 1 very low. Leave blank if you do not feel you know enough to provide a rating.

11-May-04

Linkages to DO Impairment in DWSC	Knowledge of Connection to DO in DWSC	Potential Value to D.O. Conditions		Controllable	Verifiable	
	strength of knowledge to connection	*theoretical*	*existing knowledge*	*can an action be easily controlled or completed*	*Can action be measured locally?*	*Can a local actiion be tracked or modeled to or in the DWSC?*
LOADS						
ALGAL LOAD REDUCTION by LOCATION						
City of Stockton sewage ponds						
Average Score	4.11	4.14	4.17	4.86	4.75	4.25
Responding	9					
Range	2-5	2-5	3-5	4-5	4-5	3-5
DWSC itself						
Average Score	4.33	4.17	4.40	2.40	3.33	4.17
Responding	6					
Range	3-5	2-5	3-5	1-5	1-5	3-5
Eastside tributaries Stanislaus, Tuolumne and Merced Rivers						
Average Score	3.67	2.67	3.40	2.80	3.67	3.50
Responding	6					
Range	2-5	2-4	2-5	2-3	2-5	3-4
French Camp Slough						
Average Score	2.86	2.29	2.33	2.20	3.00	3.29
Responding	7					
Range	2-5	1-5	2-4	1-3	1-5	2-4
Mud and Salt Sloughs including Grasslands						
Average Score	4.00	4.14	3.67	3.17	4.43	3.57
Responding	7					
Range	3-5	3-5	2-5	3-4	4-5	3-4
Sewage Treatment plants connected to the mainstem SJR (e.g. Lathrop, Manteca, Turlock, and Modesto						
Average Score	3.25	3.38	2.43	4.43	4.25	3.50

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Responding	8					
Range	2-5	1-5	1-4	4-5	3-5	3-4
SJR above Lander Ave (including upstream eastside tributaries, Eastside Bypass, mainstem)						
Average Score	3.33	2.67	2.60	2.50	3.17	3.00
Responding	6					
Range	2-5	1-5	1-5	1-3	1-5	2-4
SJR itself downstream of Lander Ave						
Average Score	3.83	4.17	3.80	3.00	3.83	3.83
Responding	6					
Range	3-5	3-5	3-4	3	3-5	3-5
South delta from the Tracy Pumps north to the DWSC including City of Tracy						
Average Score	2.50	2.25	2.67	3.50	3.50	3.25
Responding	4					
Range	1-3	1-3	1-4	2-5	3-4	3-4
Stockton sloughs including Calaveras River and the Turning Basin						
Average Score	3.29	3.57	2.83	2.67	3.29	3.57
Responding	7					
Range	1-5	3-5	1-4	2-4	2-4	3-4
West side north of Mud and Salt Slough to South Delta						
Average Score	3.40	2.40	2.75	3.25	3.60	3.20
Responding	5					
Range	1-5	1-5	2-4	3-4	3-5	3-4
Wildlife refuges and wetlands.						
Average Score	3.00	2.20	3.00	3.25	3.80	3.40
Responding	5					
Range	1-5	1-3	3	3-4	2-5	3-4
LOADS						

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AMMONIA and NBOD REDUCTION by LOCATION							
DWSC algae							
Average Score	3.67	3.33	3.40	2.60	3.00	3.60	
Responding	6						
Range	2-4	2-4	3-4	2-4	2-4	2-5	
French Camp Slough							
Average Score	2.83	2.83	2.80	2.25	3.60	3.20	
Responding	6						
Range	1-4	1-5	2-3	1-3	2-5	3-4	
Harding Drain (including City of Turlock)							
Average Score	2.00	2.60	2.50	3.50	3.75	3.00	
Responding	5						
Range	1-3	1-5	2-3	2-4	2-5	2-4	
Manteca Wastewater Treatment Plant (WTP)							
Average Score	2.25	2.75	3.00	4.67	4.67	3.33	
Responding	4						
Range	1-4	1-5	1-5	4-5	4-5	3-4	
Modesto WTP							
Average Score	2.25	3.00	2.00	4.00	4.00	3.00	
Responding	4						
Range	1-3	1-5	1-3	3-5	3-5	2-4	
Stockton WTP							
Average Score	4.38	4.75	4.57	4.43	5.00	4.57	
Responding	8						
Range	3-5	4-5	4-5	2-5	5	3-5	
NON-AMMONIA, NON-ALGAL LOAD REDUCTION							

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	strength of knowledge to connection	*theoretical*	*existing knowledge*	*can an action be easily controlled or completed*	*Can action be measured locally?*	*Can a local actiion be tracked or modeled to or in the DWSC?*	
Ag irrigation drainage - CBOD							
Average Score	2.71	2.57	2.60	2.50	3.00	2.40	
Responding	7						
Range	1-5	1-4	1-4	1-3	1-5	1-3	
Ag stormwater runoff - CBOD							
Average Score	2.57	2.29	1.80	2.50	2.80	2.40	
Responding	7						
Range	1-4	1-3	1-2	1-4	1-5	1-3	
Riparian vegetation - CBOD							
Average Score	2.00	1.80	1.33	2.50	2.25	2.25	
Responding	5						
Range	1-3	1-2	1-2	1-4	1-3	1-3	
SOD (suspended) in DWSC							
Average Score	3.25	3.25	3.83	2.00	2.86	3.14	
Responding	8						
Range	2-5	2-5	2-5	1-4	2-4	2-4	
SOD (bedded) in DWSC							
Average Score	3.29	2.86	4.00	1.83	2.83	3.33	
Responding	7						
Range	1-5	1-5	4	1-4	2-4	2-4	
Urban dry season runoff - CBOD							
Average Score	1.80	2.40	2.00	2.50	2.75	2.25	
Responding	5						
Range	1-3	1-5	1-4	1-4	1-5	1-3	
Urban stormwater runoff - CBOD							
Average Score	2.17	2.83	2.00	2.80	2.80	2.40	

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Responding	6						
Range	1-3	2-5	1-3	1-4	1-5	1-3	
Urban wastewater drainage - CBOD							
Average Score	3.40	3.40	3.00	3.00	3.50	3.00	
Responding	5						
Range	2-5	2-5	1-4	1-5	1-5	1-5	
Wildlife refuges and wetlands drainage							
Average Score	2.60	3.40	2.00	2.75	3.50	3.00	
Responding	5						
Range	1-4	2-4	2	2-4	2-5	2-5	
SECONDARY FACTORS THAT INFLUENCE ALGAL PRODUCTION							
Herbivore grazing by clams							
Average Score	2.00	2.75	2.00	1.86	2.50	2.40	
Responding	8						
Range	1-4	2-4	1-4	1-3	1-4	1-4	
Herbivore grazing by zooplankton							
Average Score	2.00	2.86	1.80	1.67	2.50	2.40	
Responding	7						
Range	1-4	2-4	1-4	1-3	1-4	1-4	
Sediment reduction and improved light penetration in the DWSC resulting in increased 2 production and decreased algal decay in DWSC							
Average Score	2.43	3.57	2.20	2.83	3.33	3.40	
Responding	7						
Range	1-3	2-5	1-3	2-5	2-5	3-4	
Sediment increase and reduced light penetration in the SJR upstream of DWSC resulting in reduced algal growth and loads							
Average Score	2.67	3.56	2.43	2.63	3.43	3.50	

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Responding	9						
Range	1-4	1-5	1-4	1-5	2-5	2-4	
Light reduction in the San Luis Drain							
Average Score	2.00	3.17	2.25	2.80	3.80	2.75	
Responding	6						
Range	1-3	2-5	1-3	2-4	2-5	2-4	
Shading along upstream streams and drainages and reduced light for algal growth.							
Average Score	2.33	3.17	2.50	2.80	3.40	3.25	
Responding	6						
Range	1-4	2-5	2-3	2-4	2-5	2-4	
WATER TEMPERATURE (Effects on dissolved oxygen in water)							
Ag drainage flows (subsurface drainage)							
Average Score	2.20	1.60	2.33	2.00	3.33	3.00	
Responding	5						
Range	1-5	1-2	1-3	2	2-4	2-4	
Dam releases of colder water							
Average Score	1.80	2.80	3.33	3.00	3.67	4.00	
Responding	5						
Range	1-3	1-5	1-5	1-4	2-5	4	
Sediment reduction and reduced heat absorption in streams							
Average Score	1.75	2.25	4.00	2.67	3.33	2.67	
Responding	4						
Range	1-3	1-4	4	1-4	2-4	2-3	
Shading and riparian forest restoration							
Average Score	1.75	2.00	3.00	2.33	3.33	2.67	
Responding	4						

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Range	1-3	1-3	3	2-3	2-4	2-3	

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FLOWS							
FLOWS and RESIDENCE TIME IMPROVEMENTS							
Delta Tidal (Ag) Barriers (permanent and operable)							
Average Score	3.40	3.86	4.00	3.75	3.75	3.75	
Responding	5						
Range	2-4	1-4	4	2-4	2-5	3-4	
Delta Tidal (Ag) Barriers with low head pumping at the Head of Old River							
Average Score	3.40	3.20	3.67	4.25	4.25	3.75	
Responding	5						
Range	2-4	1-4	2-4	4-5	4-5	3-4	
Eastside tributary flows (Stanislaus, Tuolumne and Merced)							
Average Score	4.00	3.86	3.80	3.67	4.40	4.00	
Responding	3-5	2-5	3-5	3-5	3-5	3-5	
Range							
Eastside tributary Fall Pulse flows							
Average Score	3.25	3.75	4.00	3.50	4.25	4.00	
Responding	4						
Range	3-4	3-5	3-5	3-5	3-5	3-5	
Efficiency water use in subwatersheds (e.g. Could water conservation lead to less residence time in streams and drainages that lead to the SJR)							
Average Score	2.40	3.20	2.50	3.20	3.60	3.00	
Responding	5						
Range	1-4	2-5	1-3	2-5	2-5	3	
Export pumping rates and timing							
Average Score	3.00	3.83	3.25	4.00	4.40	3.60	
Responding	6						
Range	1-4	3-5	2-4	3-5	4-5	3-4	

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Head of Old River Barrier (permanent and operable)						
Average Score	4.20	4.40	4.33	4.25	4.50	4.25
Responding						
Range	3-5	3-5	4-5	3-5	4-5	4-5
Sacramento River flows at the Delta Cross Channel						
Average Score	3.33	3.00	4.50	2.67	4.67	3.33
Responding	4					
Range	1-5	1-5	4-5	1-4	4-5	3-4
SJR - drainages and diversions that affect flow downstream of Old River						
Average Score	2.57	3.00	2.80	2.67	3.40	3.20
Responding	7					
Range	1-4	1-5	2-3	1-3	1-5	3-4
SJR - drainages and diversions above Old River to Lander Ave.						
Average Score	2.75	3.50	3.50	3.00	4.33	3.33
Responding	4					
Range	1-5	2-5	3-4	3	4-5	3-4
SJR - Friant Dam releases (with flows reaching DWSC)						
Average Score	2.50	2.50	3.00	2.67	2.67	3.33
Responding	4					
Range	1-3	1-3	3	1-4	1-4	3-4
SJR - Groundwater inflow to the San Joaquin						
Average Score	2.63	2.75	2.33	2.00	2.33	2.83
Responding	8					
Range	2-3	1-5	2-3	1-4	1-3	2-4
SJR - Recirculation at Newman Wasteway						
Average Score	3.20	3.00	3.00	3.33	3.67	3.25

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Responding	5					
Range	3-4	3	3	3-4	3-4	3-4
SJR - Recirculation at Mendota Pool						
Average Score	3.00	3.00	3.00	3.33	3.67	3.25
Responding	4					
Range	3	3	3	3-4	3-4	3-4
SJR - Sewage treatment effluent flows						
Average Score	2.71	2.71	2.80	3.67	4.00	3.40
Responding	7					
Range	1-3	2-3		3-5	3-5	3-4
DWSC GEOMETRY						
REDUCTION OF VOLUME OPTIONS						
Burns Cut becomes the SJR river channel and the upper 2-3 miles of the DWSC is isolated from loads and flows						
Average Score	3.33	4.00	3.20	4.20	4.40	4.00
Responding	6					
Range	1-5	2-5	1-4	4-5	4-5	4
Burns Cut becomes SJR channel and extends to Turner Cut. Entire low DO section of DWSC is isolated from river.						
Average Score	3.17	4.17	3.20	4.20	4.40	4.00
Responding	6					
Range	1-5	2-5	1-4	4-5	4-5	4
DWSC fills in over time						
Average Score	4.17	3.67	4.00	4.00	4.20	4.00
Responding	6					
Range	4-5	3-4	4	3-5	4-5	4