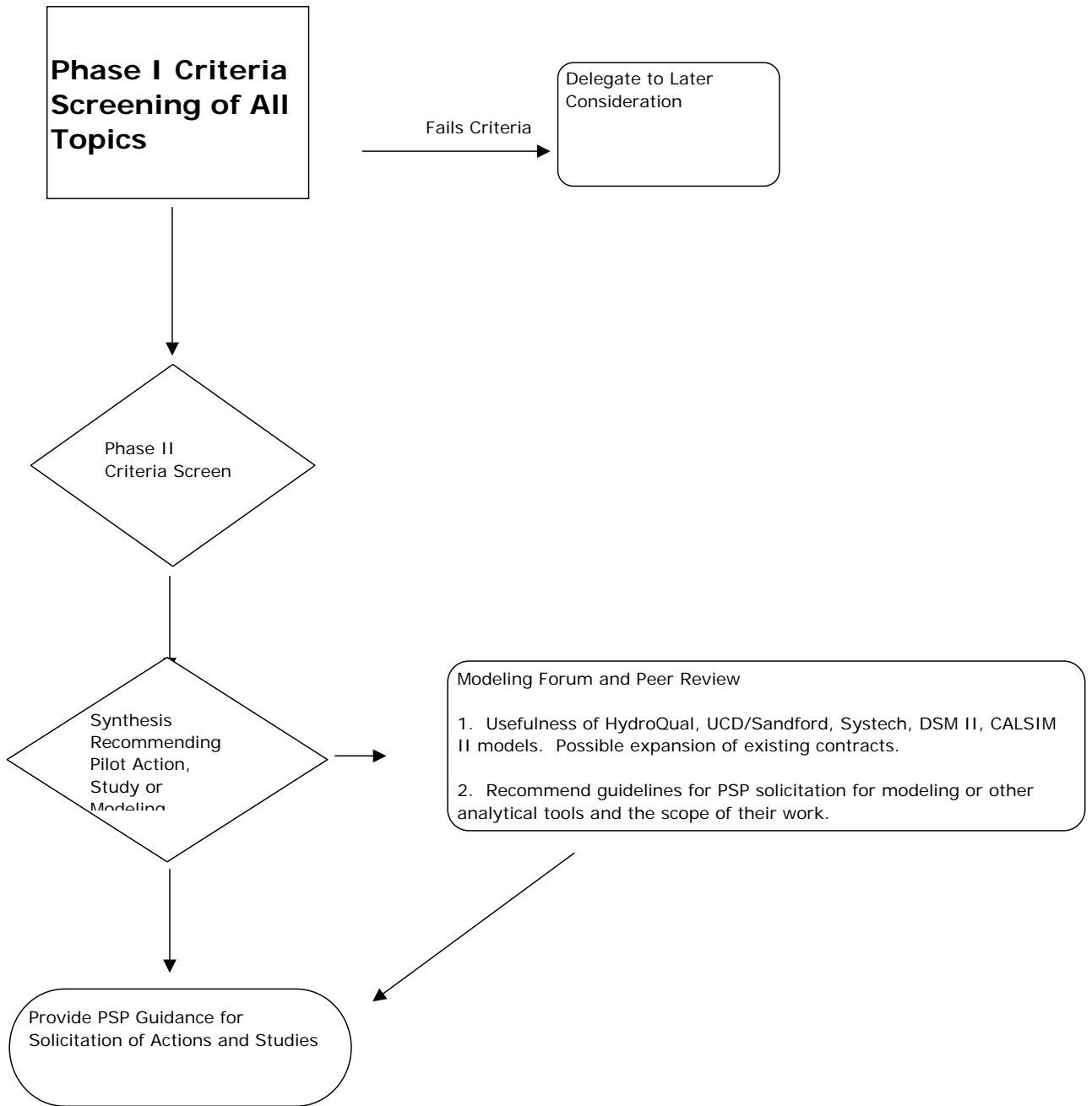


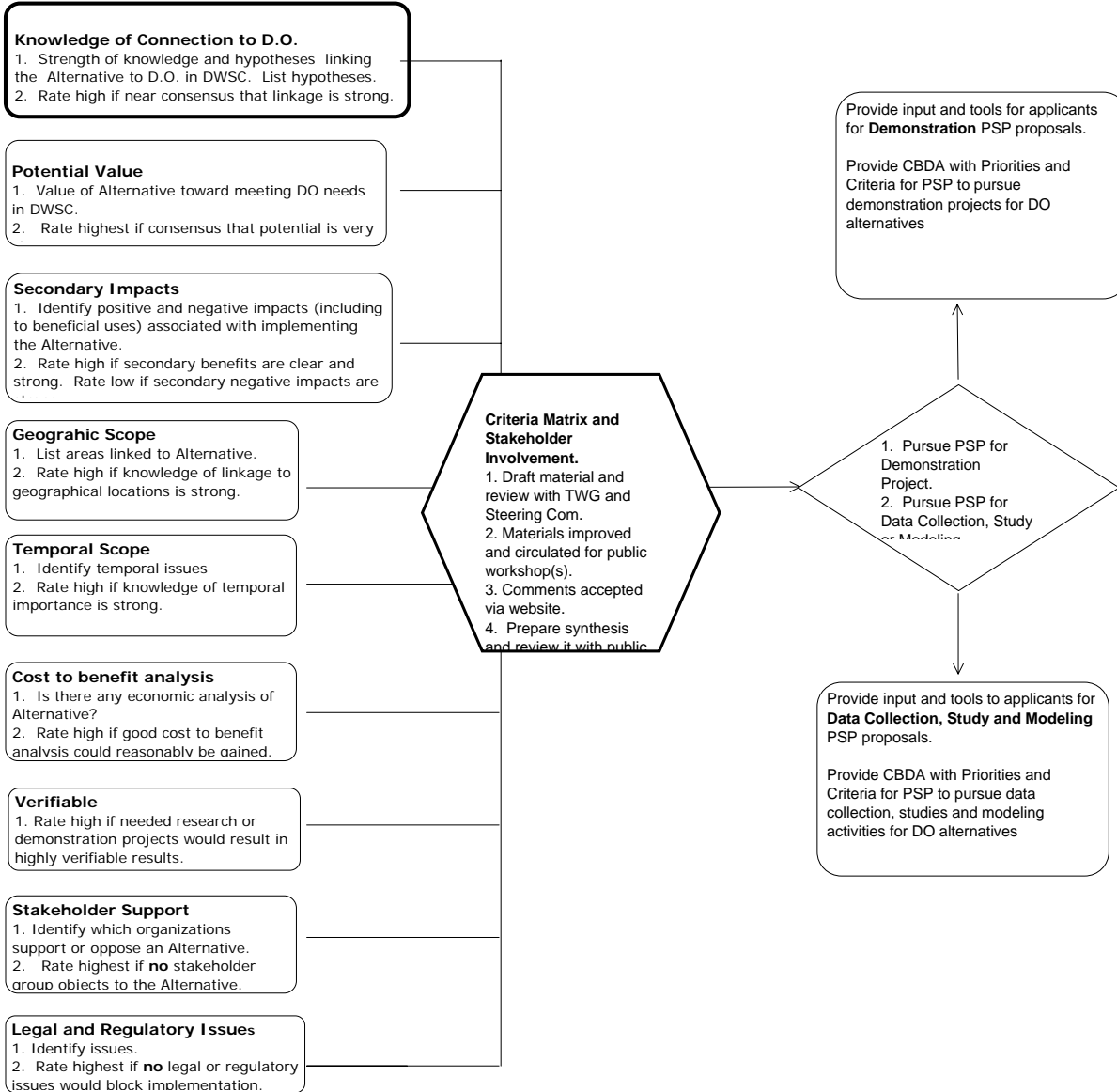
Flow Chart for the Process of Reviewing Hypothesis Associated with Stockton DO Non-Aeration Issues



Criteria Flow Chart for Non-Aeration Implementation Alternatives That Might Improve Dissolved Oxygen Conditions in the DWSC

DRAFT - March 15, 2004
 Mark Roberson and Kevin Wolf

Criteria Flow Chart



Alternative Category and Topic compiled by Kevin Wolf and Mark Roberson March 17, 2004 version	
LOADS	
ALGAL LOAD REDUCTION by LOCATION	
City of Stockton sewage ponds	
DWSC itself	
Eastside tributaries Stanislaus, Tuolumne and Merced Rivers	
French Camp Slough, Calaveras River	
Mud and Salt Sloughs including Grasslands	
Sewage Treatment plants connected to the mainstem SJR (e.g. Lathrop, Manteca, Turlock, and Modesto	
SJR above Lander Ave (including upstream eastside tributaries, Eastside Bypass, mainstem)	
SJR itself downstream of Lander Ave	
South delta from the Tracy Pumps north to the DWSC including City of Tracy	
Stockton sloughs and the Turning Basin	
West side north of Mud and Salt Slough to South Delta	
ALGAL LOAD REDUCTION by PRECURSOR or OTHER	
Airborne - nutrients	
Feedlot - nutrients	
Groundwater - nutrients	
Irrigation runoff - nutrients	
Sediment phosphate	
Sewage treatment facility nutrients	
Wildlife refuges and wetlands drainage	
AMMONIA and NBOD REDUCTION by LOCATION	
DWSC algae	
French Camp Slough	
Harding Drain	
Manteca WTP	
Modesto WTP	
Stockton WTP	
NON-AMMONIA, NON-ALGAL LOAD REDUCTION	
Ag irrigation drainage - CBOD	
Ag stormwater runoff - CBOD	
Riparian vegetation - CBOD	
SOD (suspended) in DWSC	
SOD (bedded) in DWSC	
Urban dry season runoff - CBOD	
Urban stormwater runoff - CBOD	
Urban wastewater drainage - CBOD	
Wildlife refuges and wetlands drainage	
SECONDARY FACTORS THAT INFLUENCE ALGAL PRODUCTION	
Herbivore grazing (e.g. clams, zooplankton)	
Light reduction by sediment in DWSC - reduced O2 production	
Light reduction by sediment in SJR upstream of DWSC - reduced algal growth	
Light reduction in the San Luis Drain	
WATER TEMPERATURE REDUCTION OPTIONS	
Ag drainage flows	
Dam releases of colder water	

Sediment reduction and improved water temp	
Shading and riparian forest	
FLOWS	
FLOWS/RESIDENCE TIME IMPROVEMENTS	
Delta Tidal (Ag) Barriers and low head pumping	
Eastside tributary flows (Stanislaus, Tuolumne and Merced)	
Efficiency to load and flow improvements in subwatersheds	
Export pumping rates and timing	
Head of Old River Barrier operations	
Sacramento River flows at the Delta Cross Channel	
SJR - drainages and diversions below Old River--(e.g. French Camp Slough, Calaveras River)	
SJR - drainages and diversions above Old River to Lander Ave.	
SJR - Friant Dam releases	
SJR - Groundwater inflow	
SJR - Recirculation (e.g Newman Wasteway, Mendota Pool)	
SJR - Sewage treatment effluent flows	
DWSC GEOMETRY	
REDUCTION OF VOLUME OPTIONS	
Burns Cut extends to Turner Cut and isolates entire low DO section of DWSC	
Burns Cut only isolates upper DWSC	
DWSC fills in over time	