

DRAFT

Charge to M&T/Llano Seco Project Steering Committee November 12, 2003

INTRODUCTION

Diverse and cumulative impacts are associated with downward trends of all four races of chinook salmon, steelhead trout, splittail and other Sacramento River dependent aquatic species. Poorly screened diversions, seasonal dams installed in rivers, small, unscreened diversions, and a limited number of large diversions (>250cfs) have contributed to a decrease in survival rates of juvenile and adult salmon populations within this riverine system. As part of a major effort to improve the survival rates of these species by eliminating entrainment of juveniles from unscreened diversions, the M&T Chico Ranch and Llano Seco State and Federal Wildlife Refuge moved their large pumping facility from Big Chico Creek, a major tributary to the Sacramento River that provides spawning habitat for anadromous species, to the east bank of the Sacramento River, just downstream of the creek's confluence with the river. This project was completed 1997 as part of the Central Valley Improvement Act Anadromous fish Restoration Program and the Department of Fish and Game's 1993 Restoring Central Valley Streams: A Plan for Action. The 1997 M&T/Llano Seco Project involved the consolidation of the diversion with the Llano Seco Wildlife Refuge, construction of a state-of-the-art fish screen on the pumping facility and dedication of up to 40 cfs of flow to Butte Creek for fish and wildlife in exchange for Sacramento River water.

The M&T/Llano Seco Pumping and Fish Screen Facility operates year-round and at full capacity supplies 150 cfs of water to 15,000 acres of farmland and refuge lands, including over 4,000 acres of wetlands owned and managed by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). This new pumping facility provides key wetland habitat for waterfowl and other wetland species and helps ensure salmon restoration in Big Chico and Butte Creeks by eliminating entrainment and by providing fish transportation flows, respectively.

Since the completion of the project, significant natural geomorphic changes in the Sacramento River channel have occurred in the vicinity of the M&T/Llano Seco diversion pumps. In response to river dynamics, a substantial gravel bar formed that posed a significant risk to the continued pumping and fish screen operations. The encroaching gravel bar appurtenant to Bidwell State Park just upstream of the M&T/Llano Seco pumping plant also threatened the City of Chico's wastewater treatment outfall, just downstream from the pumping plant. Both facilities were in danger of being severed from the Sacramento River because the pumping plant intake was now in an eddy behind the gravel bar. Subsequently, the intake screen on the pumping facility would no longer be able to provide sufficient sweeping flows consistent with National Marine Fisheries Service and CDFG fish screen criteria due to the deposition of sediment. As a result of these changes, anadromous fish species in the Sacramento River and Big Chico Creek would have the potential to be adversely impacted by nonfunctioning fish screens. Should the M&T/Llano Seco pumps become inoperable, evaluate private, state and

federal wetland refuges would be impacted from a loss of water supplied by the facility. In addition, a significant investment made by the CALFED Program would be lost with the damage and destruction of the M&T/Llano Seco Fish Screen Facility. In response to this threat, the gravel bar was excavated in the fall of 2000 to its 1995 size and location to protect the facilities.

It is apparent that the fundamental process of the river meander and sediment deposition will continue to threaten the operations and safety of the pumping facility as well as the Chico Wastewater Treatment outfall at an uncertain rate. This uncertainty creates a dilemma between protecting ecosystem functions by accommodating the natural processes of the river and also protecting the present pumping facility in order to provide fish-friendly water to the beneficiaries. In response to this dilemma, the Bay-Delta Authority has requested that a team of multidisciplinary experts be consulted in order to collaborate the best scientific knowledge available that will assess the problem and provide a proposal that will develop a long-term solution.

FUNDAMENTAL QUESTIONS TO BE ADDRESSED

1. What is the rate and uncertainty associated with river meander and sediment deposition at the project site?
2. What is the realm of possible alternative means to meet the water requirements of the beneficiaries?
3. What is the current fish screen criteria and can that criteria be changed to accommodate innovative solutions?
4. What are the uncertainties associated with the simultaneous interaction between river meander, pumping plant capacity and fish screen protection?

M&T/LLANO SECO PROJECT STEERING COMMITTEE

The Steering Committee is a collaborative group comprised of stakeholders, CALFED representatives, engineers and a team of multi-disciplinary experts in the fields of fluvial geomorphology, hydrologic modeling, and fish screen and pumping plant technology. The scientists selected for this Steering Committee are recognized to have the highest level of expertise and scientific stature, advisory experience, record of technical publications, relevant knowledge, collaboration and interdisciplinary skills.

The overall purpose of this committee is to provide a balanced and unbiased view of the issues, to characterize the status of knowledge about the project and to identify and prioritize key scientific issues associated with the project. The Steering Committee will guide development of the long-term solution to ensure that any further actions will appropriately considers objectives to maintain an effective, fish-friendly diversion for M&T/Llano Seco and to maintain river meander.

Members of the Steering Committee:

Technical Scientific Expertise

Yantao Cui, Research Scientist Hydrology/Geomorphology
Michael Harvey, Principal Geomorphologist, Muesstter Engineering, Inc.
Eric Larsen, Research Scientist-Geology
Robert Muesstter, Principal Engineer, Muesstter Engineering, Inc.

Local Technical Expertise

Michael Aceituno, Supervisor, Sacramento Area Office, National Marine Fisheries Service
Koll Buer, Chief, Geologic Investigations Section, California Dept. of Water Resources
Stacy Cepello, Environmental Scientist, California Dept. of Water Resources
Jim Gaumer, Engineer, M&T Chico Ranch
Dan McManus, Assoc. Engineering Geologist
Rick Wantuck, Hydraulic Engineer, National Marine Fisheries Service
Paul Ward, Assoc. Fishery Biologist, Region 2, California Dept. of Fish & Game

Engineers

Dennis Dorratcague, Principal Engineer, MWH Americas
Neil Schild, Principal Engineer, MWH Americas
Robert Strand, Engineer, MWH Americas

CALFED Representatives

Dan Castleberry, Program Mgr. Ecosystem Restoration Program, California Bay-Delta Authority
Rebecca Fris, Restoration Coordinator, California Bay-Delta Authority

Stakeholders

Burt Bundy, Manager, Sacramento River Conservation Area
Woody Elliott, District Resource Ecologist, California Dept. of Parks & Recreation
Kevin Foerster, Project Leaders, Sacramento Valley national Wildlife Refuge
Les Heringer, Manager, M&T Chico Ranch
David Sieperda, Manager, Rancho Llano Seco
Marc Sulik, City of Chico Water Pollution Control Plant
Richard Thieriot, Owner, Rancho Llano Seco

Project Management

Olen Zirkle, Manager, Conservation Programs, Ducks Unlimited, Inc.
Chris Leininger, Project Development, Ducks Unlimited, Inc.

PROJECT GOALS AND OBJECTIVES

Primary Project Goal

- To protect the existing M&T/Llano Seco fish-screen facility and its beneficiaries while investigating and identifying a technically and economically feasible long-term solution to adapt the fish-friendly pumping facility to the lateral migration of the Sacramento River.

Study Objectives

- To obtain an authoritative and unbiased description of the state of scientific knowledge related to the Sacramento River meander, fish screen and pumping plant technology by convening a multidisciplinary team of experts in the fields of fluvial geomorphology, hydrologic modeling, fish screen and pumping plant technology.
- To provide an opportunity for stakeholders and scientists to test and refine an understanding and potential for unintended effects between managing the natural riverine system, fisheries requirements and pumping requirements.
- To conduct an exhaustive literature search, fill identified data gaps and conduct modeling to provide important data essential in answering specific questions that support a strong research approach in accomplishing the primary project goal.
- To determine performance measures/indicators that will guide the long-term solution in meeting the primary project goal.
- To fully document the investigative process of determining, identifying and justifying the long-term solution that will meet the primary goal of the project.

Current Working Hypotheses and Investigative Approaches. It is possible to protect threatened and endangered fish populations from entrainment while meeting pumping requirements for adjacent agriculture, managed wetlands - state, federal and private) and the City of Chico Wastewater Treatment Facility, and have no significant impacts on the Sacramento River meander.

Hypothesis Testing. A multidisciplinary team will be convened to conceptually test the hypothesis and address key uncertainties (i.e., sediment deposition, river meander, hydrology, fish screen and water diversion technologies) by collaborating the best available science provided by the scientists, an exhaustive literature review and existing project studies and reports.

Investigative Approach: To convene the best available multidisciplinary team of scientists that will provide expert consensus in guiding the development of a long-term solution of meeting water needs while maintaining the natural river meander process.

PROJECT FORMAT

The project has been structured to develop the long-term solution such that it is likely to result in innovative solutions, informed by experts on innovative diversion techniques, fish protection facilities, and natural riverine processes from outside the Central Valley.

The project will be driven initially by a conceptual model guiding how the project goals will be achieved, a technical memo on existing studies and a comprehensive literature search on the project area, riverine processes and fish screening criteria. This information will be forwarded to the Steering Committee prior to the first meeting.

The first Steering Committee meeting will be convened in mid-November 2003 and will focus on identifying all known information and data collected on the Project and Project site. The Steering committee will spend an afternoon touring the section of river encompassing the site and discussing current on-site conditions. A full day of discussions on past and current conditions will follow with presentations given by steering committee members on project components. A third day of discussions will then be held to discuss steering committee observations and initial thoughts.

At the close of the first Steering Committee meeting, the group will have come together and agreed to a process to move the Project toward developing a list of alternatives and sharing that information in such a way as to promote a host of possible alternatives to meet the Project goals. The outside experts will be charged with preparing discussion papers in their areas of expertise and sharing the papers with other members of the Steering Committee. These papers along with the suggested alternatives will become the basis for a draft Technical Memo.

A second Steering Committee meeting is scheduled for mid-January in which the group will again convene at the Project site to review and discuss the draft technical memorandum and to conduct final discussions on Project alternatives and feasibility. A final Technical Memorandum will be prepared and circulated following this meeting.

A third workshop will be convened to prepare a final conceptual model and Project proposal for review and comment.