Kirk Diversion Dam Replacement
and
Fish Screen Project

Engineer's Report

April 2011

Watersheds Capital Division

Santa Clara Valley Water District

SANTA CLARA VALLEY WATER DISTRICT

Kirk Diversion Dam Replacement and Fish Screen Project
Project No. 92534003

ENGINEER'S REPORT

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This Report has been prepared by the undersigned, who hereby certifies she is a Registered Civil Engineer in the State of California

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Kirk Diversion Dam Replacement and Fish Screen Project Engineer's Report

1. PROJECT DESCRIPTION

The existing Kirk Diversion Dam is located on Los Gatos Creek approximately 650 feet downstream of West Mozart Avenue and adjacent to the intersection of Knowles Drive and Dell Avenue, in the Town of Los Gatos (Figure 1). The existing steel-flashboard dam is used by the Santa Clara Valley Water District (District) to exercise its water rights to impound water into the channel and maximize percolation into the groundwater basin. Water from the Kirk Diversion Dam is diverted to the Kirk and Page recharge facilities year-round except during periods when Lexington Reservoir is expected to spill. When Lexington Reservoir is expected to spill, the diversion dam is removed to facilitate conveyance of high flow through the dam site.

There are three main problems associated with the operations of the existing Kirk Diversion Dam:

1. Due to a demand of District field crews during the winter period, advanced scheduling for prompt removal or reinstallation of the diversion dam is difficult to accomplish.

2. Removal or reinstallation of the dam requires personnel and construction equipment in the creek. Extra efforts and best management practices (BMPs) are required to ensure that these activities do not impact water quality, water resources, and habitat in the vicinity of Kirk Diversion Dam.

3. The current diversion turnout does not have a screen to prevent aquatic species in Los Gatos Creek from entering and being entrained in the Kirk and Page recharge systems. Additional efforts and BMPs are required to ensure that these aquatic species are relocated from the recharge systems before they can be drained for annual routine maintenance.

The Kirk Diversion Dam Replacement and Fish Screen Project proposes to replace the existing steel-paneled flashboard dam with a more efficient inflatable dam system to maintain operational capabilities and to install two fish screens at the Kirk-Page turnout to protect the aquatic species (e.g., fish, frogs, turtles) from being entrained at the Kirk and Page recharge systems. The proposed site layout is shown in Figure 2. The staff-recommended project would include the following key elements:

- An inflatable rubber dam would replace the current steel-flashboard dam. The inflatable dam would be anchored to the existing concrete foundation and abutment walls. The inflatable dam would be operated without requiring construction equipment or staff in the creek. The inflatable dam would be fully automatic and is controlled by a through a control panel. Figure 3 is a picture of a typical inflatable rubber dam.

- Two cone-shaped fish screens with cleaning brushes would be installed in front of the Kirk-Page turnout upstream of the new inflatable dam. The fish screens would be attached to the top of a new concrete base. A series of metal bollards would be placed around the concrete base to prevent large debris from hitting the fish screens. The fish

screens are fully automatic. The cleaning brush assembly would be operated by an electrical motor that is controlled by a preset program through a control panel. Figure 4 is a picture of a typical conical fish screen.

- An equipment-control housing unit would be constructed adjacent to the existing valve control house to accommodate the blowers and control system of the inflatable dam. Electrical power for the dam and fish screen equipment would be supplied from the existing electrical power pole on site.

2. ZONE BENEFITS

This project would benefit customers in Zone W-2 (North County).

3. PROJECT RIGHT OF WAY

The project site is within the District's right of way. No additional right of way would be required to implement the proposed project.

4. MAPS

See attached Figures for project location, proposed site layout, typical rubber dam and typical cone-shape fish screen.

5. PROJECT COST

The estimated cost to complete the staff-recommended project is $2.7 million of which $462,000 for design and $2,275,000 for construction.

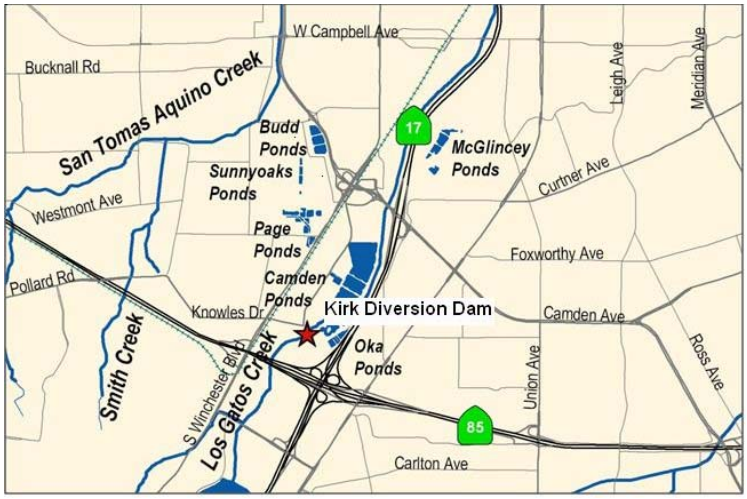

Figure 1. Project Location Map

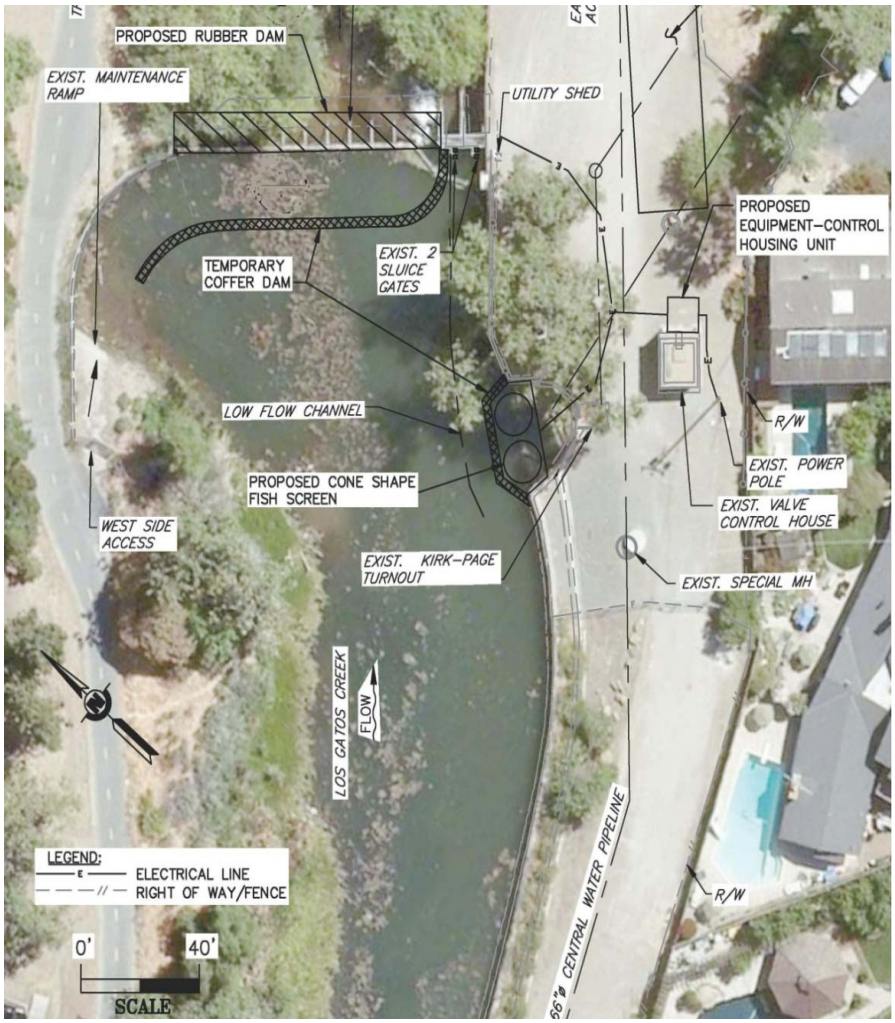

Figure 2. Proposed Site Layout

Figure 3. Typical Inflatable Rubber Dam

Figure 4. Typical Cone-Shape Fish Screen