Aspen
Environmental Group

Recent Accomplishments and Ongoing Projects

Spring 2006

Issue No. 15

1991 **15** 2006
Years of Service

Aspen Environmental Group has been serving California and the western United States with environmental assessment for energy, infrastructure, and water-related projects for fifteen years.

We look forward to many more years of service providing high quality, on-time products to all of our valued customers.

Examples of New Aspen Projects

California Public Utilities Commission
SDG&E Sunrise Powerlink Transmission Project
Antelope Transmission Project Segments 2 and 3

Ventura County Watershed Protection District
Lake Canyon Dam and Detention Basin CEQA Documentation and Regulatory Permit Acquisition

City of Long Beach
LNG Import Project, Review of Environmental Documentation

California Energy Commission
Peak Workload Support for the Energy Facility Siting Program and for the Energy Planning Program

Los Angeles Department of Water and Power
Environmental Assessment Services Contract

Golden Gate Park Conservancy
Evaluation of Environmental Compliance for Coastal Trail Restoration and Lands End Project

Durango Regional Conveyance Channel

One of the missions of the Flood Control District of Maricopa County is to plan and construct flood control projects, many of which require the cooperation of multiple local jurisdictions. The Durango Regional Conveyance Channel (DRCC) located in Avondale and Phoenix, Arizona, is one such project for which the Flood Control District prepared an Area Drainage Master Plan in 2002. The DRCC will be in an agricultural area that is rapidly developing into residential housing.

Aspen Consulting Engineers was given the task to revise the ADMP, in response to rapid development in the City of Phoenix, by the Flood Control District as part of Aspen's on-call planning contract. The purpose of the study was to update the hydrologic analysis to account for new development, develop a new concept design for the conveyance channel based on the new hydrology and a new channel alignment, and develop a 10% design plan and a cost estimate for the recommended plan.

Aspen developed and evaluated eight project alternatives in terms of hydrology, hydraulics, conceptual design, and cost. During the evaluation Aspen coordinated with Maricopa County, the Cities of Avondale and Phoenix, and local developers to arrive at a solution that would best meet the needs of these stakeholders.

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Sulphur Creek Restoration Projects, Orange County, California, 2004-Current

Aspen Environmental Group, under contract to RBF Consulting and the City of Laguna Niguel, prepared the Upper Sulphur Creek Conceptual Restoration Plan, obtained regulatory permits, provided implementation oversight, and is currently monitoring the restoration of approximately 8,050 linear feet of Upper Sulphur Creek along the west side of Crown Valley Parkway. Aspen's pre-construction preparation included updating the baseline functional condition using the Hydrogeomorphic (HGM) Approach to wetlands assessment, coordinating with the contractor to educate the construction crew, and marking invasive non-native species on-site. Beginning in October 2005, Aspen oversaw the restoration actions, which included removing concrete v-ditches to restore a natural creek channel and terraces where possible; removing more than 5 acres of invasive non-native species (predominantly pampas grass, salt cedar, eucalyptus, artichoke thistle, and black mustard); and planting native species.

Specific tasks included coordinating with the contractor and the City of Laguna Niguel staff on the channel grading, installation of erosion control fabric, delivery and placement of container plants, native hydroseeding, and completing monthly photo-documentation. Aspen completed the first post-construction monitoring event during April 2006. Monitoring utilized the same HGM functional assessment method to compare pre- and post-construction conditions that will be summarized in the monitoring report along with recommendations for weeding, replanting, and/or reseeding. It is estimated that the project has restored more than 2 acres of wetlands and, once mature, the project is expected to have created more than 6 acres of riparian

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We are Growing
and searching for key staff members

- **Senior Restoration Specialist**
- **Senior Energy Policy and Economics Expert**
- **GIS Specialist**

See www.AspenEG.com for details.

Riparian Restoration Strategies

The restoration of riparian habitats is a key requirement of most Lake/Streambed Alteration Agreements and is often an important part of successfully completing projects in aquatic areas. The success of a restoration project can be affected by a number of abiotic and biotic factors, including the timing of the restoration, site hydrology, proximity to existing populations of native vegetation, and maintenance activities. Typically, restoration efforts are scheduled to occur after the completion of construction activities, which can result in lengthy delays in the establishment of replacement vegetation. To limit time delays and reduce the cost of restoration, Aspen has been working in cooperation with contractors to place native plant stock (poles, logs, cuttings, and wattles) during construction activities. To accomplish this, the biologist harvests dormant vegetation at the site prior to and during construction and stockpiles the material for use during the subsequent restoration. Because the construction crews and the biologist are working together, this allows the collection and installation of large poles or trunks that would otherwise be costly or unavailable during construction.

The next step is to coordinate with the contractor regarding the placement of native material as construction areas are completed. This allows the biologist to integrate entire trees, large poles, or logs directly into the backfill versus disturbing the compacted slope by later trenching or excavating it to effect native material installation. The placement of mature tree trunks and poles during this phase allows the plants to be placed at the correct depth to prevent or limit scour and in close proximity to the water table to reduce the need for costly irrigation systems. This type of planting has been demonstrated to reduce the time required to meet vegetation performance standards/success criteria and provides for a natural, cost effective, and drought and herbivory resistant plant community.

California Department of Water Resources

Aspen continues to support ongoing DWR projects including the Horsethief Creek Bridge, Mojave Siphon Access Road Project, Piru Creek Erosion Repairs and Seismic Retrofit Project, Lake Perris Beach Replenishment, and the Pyramid Dam Emergency Access Road Project. Aspen is also preparing to conduct biological surveys for sensitive plants and wildlife that occur along portions of the East Branch Extension Project. Some of the recent support activities conducted by Aspen for DWR include agency coordination, CEQA and NEPA documentation, habitat restoration plans, construction monitoring, restoration planting, sensitive species surveys, and permit assistance. Aspen is also developing project environmental commitments to reduce project impacts to the arroyo toad, a federally endangered species known to occur at the Horsethief Creek project site. Implementation of environmental commitments as part of the project design has facilitated the permitting for projects with populations of sensitive species and can be viewed as an integral component in the development of future project descriptions.

Sulphur Creek, cont'd

July 2005: Pre-Construction Concrete

habitat as well as enhanced 9 acres of existing wetlands and riparian habitat. In addition, approximately 7.5 acres of sage scrub is currently being restored in the adjacent upland buffer areas. The monitoring report and acreage estimates were submitted to the funding agency, the State Water Resources Control Board, to meet one of the grant requirements in April 2006.

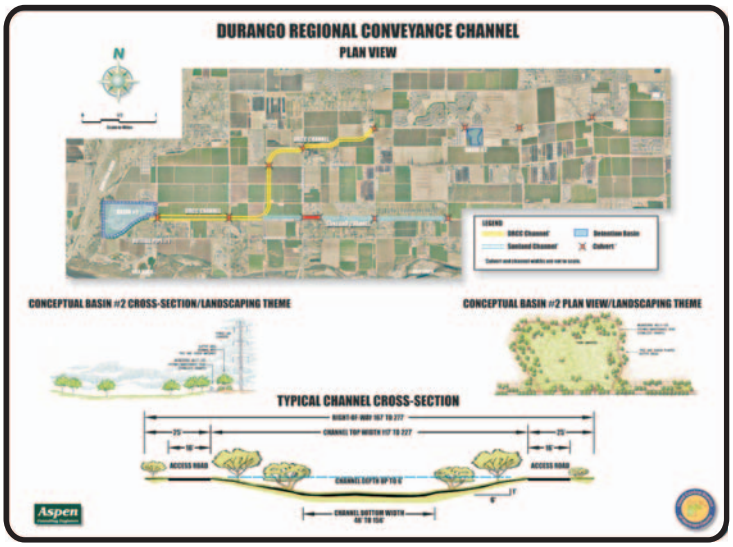
Downstream of the Upper Sulphur Creek Restoration Project is the Lower Sulphur Creek Ecosystem Restoration Project being implemented by the U.S. Army Corps of Engineers (Corps) in coordination with the City of Laguna Niguel. Under contract to the Corps, Aspen developed the restoration plan and alternatives for this 2,000 linear feet project area in 2004. Unfortunately, federal funding constraints have slowed the construction of this project and it is being completed in two phases. Currently, Aspen is monitoring the implementation of the first phase (roughly the lower half) of this project for the Corps. The first phase has been graded and erosion control fabric and irrigation lines were installed in March 2006. No planting or hydroseeding has occurred as of April 2006. It is unknown when the second phase will be completed.

March 2006: Post-Construction Channel

Durango Channel, cont'd

The recommended DRCC plan consists of a main conveyance channel entirely within Avondale, a regional detention basin in Phoenix, and culverts along an existing drainage channel at major street alignments in the City of Phoenix. The Phoenix culverts are provided for all-weather access. The Phoenix detention basin is provided to maintain design discharges at existing levels.

The main drainage channel in the City of Avondale will be constructed primarily along the alignment of an existing irrigation return canal. It will be approximately six feet deep, with gentle side slopes at 6 horizontal to 1 vertical, and landscaped with grass and other vegetation which will provide the City of Avondale with an opportunity to use the corridor for trails and other passive recreational uses. The Phoenix detention basin will provide the City of Phoenix with both flood control and a local park.



The DRCC will provide local developers adjacent to the channel in Avondale with an opportunity to avoid the normal flood retention requirement for new development. In addition to providing flood protection for existing development, the DRCC will provide local developers with a regional drainage system for flood protection, rather than requiring each developer to design, install and maintain a separate drainage system. For comparison purposes the Aspen report included a conceptual design and cost estimate for what would likely be installed by individual developers for potential development projects along the route.

US Army Corps of Engineers

Aspen is assisting the US Army Corps of Engineers and the Port of Los Angeles in their joint effort to dredge Port channels to accommodate the newest generation of deep-draft container vessels while maximizing beneficial uses of the dredge material. Completion of this project will also allow the Port, the world's 8th largest containerized cargo facility, to provide for improvements that will increase the Port's operational efficiency and economic competitiveness.

Aspen Celebrates 15 Successful Years Providing Services to the Community

In 2006, Aspen celebrates 15 years of successful environmental consulting services in the western United States. Aspen has grown from two employees in Agoura Hills in 1991 to a multitude of specialists in four offices. We have primarily focused on energy and infrastructure projects including power plants, transmission lines, pipelines, offshore and coastal projects, floodplain management, environmental restoration, water supply, surface water drainage, and educational facilities. Our services have expanded over the years to include such areas as: delineation of waters and wetlands, hydraulogic/hydraulic analysis, energy analysis, and habitat assessment.

The management of large and complex projects is our hallmark. Past projects have included work on the Yellowstone Pipeline EIS, Pacific Pipeline EIR and EIS/SEIR, and PG&E Divestiture of Hydroelectric Facilities EIR. Some unique projects include the Combined Array for Research in Millimeter-wave Astronomy Relocation EIR/EIS, Otay River Special Area Management Plan and Otay River Watershed Management Plan, Monterey Accelerated Research System Cabled Observatory EIR/EIS, and LAUSD Program EIR. Recently won projects include our third contract for Peak Workload Support and Energy Planning for the California Energy Commission; Antelope Pardee Transmission Line Segments 1, 2, and 3; SDG&E Sunrise Powerlink Transmission Project; and Western Area Power Authority North Area Right of Way, and Sacramento Voltage Support.

Sylmar to Pacific Ocean Direct Current Electrode Replacement Project

Aspen is preparing an Initial Study for the City of Los Angeles Department of Water and Power (LADWP) that evaluates two possible alternatives for replacing the Sylmar to Pacific Ocean Direct Current Electrode Project. The existing underground system is approximately 30.5 miles long, and extends from the Brentwood area of Los Angeles to an offshore 24-vault electrode array located in the Santa Monica Bay. The system is part of the 1,000-kilovolt, 845-mile long Pacific Direct Current Intertie (PDCI) Transmission Line, transferring power from Oregon to greater Los Angeles.

The two replacement alternatives are proposed to both improve the design and reliability of the existing electrode system, and minimize operational risks associated with overload conditions along the PDCI. Both alternatives involve new onshore alignments, and one involves a new location for the system's offshore elements. The Initial Study will assess all of the environmental issue areas subject to review under the California Environmental Quality Act; however, key subjects are currently anticipated to include off- and near-shore biological resources, traffic and circulation. Aspen is also providing technical support to the LADWP during the proposed replacement project's preliminary agency consultations for future permitting and approval needs.

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New Leaves on the Aspen Tree

Aspen has been enriched by the addition of a number of new employees recently. In Agoura Hills, we have added Jason Ricks, Aubrey Mescher, Lindsay Sirota, and Christopher Hall. In San Francisco Fritts Golden and Qian Li have joined and in Sacramento Ruth Darling was welcomed to the staff. Most recently Jan Farmer has come aboard in our Phoenix office. Aspen is currently expanding our technical expertise in several departments.

Please see page 1 of this newsletter and view our web page to learn more details about job openings at Aspen.

For detailed information about Aspen and our project experience, please visit our website.
www.AspenEG.com

Aspen Consulting Engineers' Union Hills Service Center Project

The City of Phoenix Union Hills Service Center contains property that is within the floodplain of Cave Creek Wash. In order to develop and use this property, the City of Phoenix contracted with Aspen Consulting Engineers to develop a plan to remove this property from the floodplain. Aspen developed a grading plan to remove the property from the floodplain by fill without raising adjacent water surface elevations in Cave Creek Wash. Aspen prepared an application to the Federal Emergency Management Agency for a Conditional Letter of Map Revision (CLOMR) with supporting hydraulic analysis using the US Army Corps of Engineers HEC-RAS river analysis system. Approval of the CLOMR, followed by filling the area according to the grading plan, will allow the City to seek a Letter of Map Revision to revise the floodplain limits.