

James A. Yost, PE

Resume

James Yost has over 38 years of civil/environmental engineering experience, serving as principal-in-charge or project manager for projects involving; water quality, water rights, and water transfer; water resource evaluation; water supply, treatment, distribution, and conservation; wastewater collection, treatment, disposal and reuse; storm drainage and flood control; and urban development.

James has spent a major part of his career assisting local and regional agencies in resolving water resources issues and meeting water supply needs. This work has included integrated water resources planning, negotiating and processing of water transfers, water supply and facilities master planning and design, and identifying and negotiating institutional issues and constraints. Projects have been completed that integrate all water resources elements (surface, groundwater, conjunctive use, and reuse of wastewater; and both imported and local resources) into logical plans to maximize resource value and water yield to the planning areas. He has assisted agencies in the Sacramento region in water supply master planning, water rights applications and processing, conjunctive use analyses, and evaluation of the benefits of wastewater reuse and its integration into the overall water resources planning. He has built up many contacts in local, state and federal agencies through the development and processing of these projects, and is very familiar with the regulatory and permitting process related to water supply and water rights.

EXPERIENCE

MASTER PLANNING

Davis-Woodland Water Supply Project (DWWSP), Cities of Davis and Woodland and UC Davis: Principal-in-Charge for a large regional project to provide a sustainable approach to water supply, groundwater management, water conservation, and wastewater issues. The project could result in one of the largest design/build/operate (DBO) projects ever undertaken in Northern California. Jim Yost is currently serving as the Program Manager for the Woodland-Davis Clean Water Agency(WDCWA) to implement a surface water supply project to improve drinking water quality and ensure compliance with wastewater discharge requirements through 2040. Surface water will be diverted from the Sacramento River to meet the majority of water demands, with groundwater meeting the remaining portion of demand on peak summer days. Surface water will be acquired under an area of origin water right permit, supplemented by water purchased from upstream water rights holders. The DWWSP will divert surface water from the Sacramento River through a new shared intake with RD 2035. Raw water will be conveyed through pipelines to a new water treatment plant near Woodland. New pipelines will deliver treated water to the Woodland and Davis city limits.

Jim Yost, who led the planning efforts, is currently leading the consulting team in the first phase of implementation, which will take the project through preliminary design, including all services necessary to prepare for final design and construction. Phase 2 will encompass the final design and

construction of the planned facilities. During Phase 1, the method of project delivery to be employed in Phase 2 will be determined. Design/Bid/Build, Design/Build and Design/Build/Operate options are all being considered.

The primary goals of the DWWSP are to:

- Increase long-term sustainability of the local water supply
- Diversify the Project Partners' water supply portfolios
- Improve drinking water quality in the service areas
- Improve treated wastewater effluent quality to comply with existing and anticipated requirements

Throughout the project, Jim has assisted the Project Partners on technical studies, environmental documents, partnering and management strategies, master planning, implementation planning, and outreach to both stakeholders and the public. He assisted in the acquisition of the water right permit and in securing additional summer water supplies to complement the new water right permit, through market-based water transfers from agricultural water users in the Sacramento Valley.

Water Master Plan/Supply Study, City of Davis, California: Directed this water planning effort for the City of Davis, which included demand analysis, hydraulic network modeling, evaluation of the capacity and condition of the 33 well system, water quality analysis, evaluation of surface and groundwater supply alternatives, revenue analysis and financial plan, and water conservation plan. He also directed a study of water supply options for the City that included the development and evaluation of a number of surface and groundwater supply alternatives. Analyses included evaluation of the capacity and condition of existing wells and quality of produced groundwater, need for upgrades and wellhead treatment, potential for conjunctive use, and sizing and costing of extraction/injection wells and wellhead treatment needed to comply with drinking water standards.

Water System Optimization and Master Plan, City of Napa, California: Directed the preparation of a plan for Napa to optimize the operation of its multiple water supply sources and treatment plants, and to maximize the yield of local and imported surface water and groundwater. Analyzed a number of supply augmentation options including conjunctive use of excess surface water and local groundwater, wastewater reuse, purchase of supplemental supply entitlements, and banking of water outside the Napa Valley. Plan included demand projections, comparison with normal and firm yield of supplies, system optimization, system modeling analysis, CIP and financial plan and rate study.

Water Master Plan, City of Folsom, California: Project Manager for development of master plan for Folsom, a city experiencing tremendous growth and greatly increased infrastructure needs. Major effort was devoted to analysis of how the City could comply with the provisions of the draft Water Forum Agreement, a regional effort to develop consensus on future water supply. Developed and analyzed supply options including conjunctive use of excess year flows in cooperative regional approach, wastewater reclamation, and cooperative projects involving

Sacramento River pump back. Plan also included extensive work to develop demand projections which integrated need for compliance with water conservation BMPs developed through the Water Forum, and distribution system modeling and analysis, CIP development, and analysis of rates and fees.

WATER CONSERVATION

State Water Conservation Planning Guide, Water Resources Council, Washington, DC: Principal author of this guide developed for the US Water Resources Council. Conducted 10 workshops to obtain input from water planners from nearly 40 states.

Water Conservation Study, Nevada Division of Water Planning, Carson City, Nevada: Conducted study for the Nevada Division of Water Planning to evaluate feasibility and potential savings of various conservation procedures considering Nevada's unique hydrologic and water rights conditions.

Water Conservation Study, US Department of HUD, Washington, DC: Project Manager for nationwide field study of methods for conservation of water. Projects were conducted jointly with water utilities in California, Colorado, and Virginia. The field studies documented water savings after installation of residential water-conserving fixtures and devices, leak detection, and other water conservation measures.

WATER SUPPLY

Delta Water Supply Issues, Delta Wetlands, Lafayette, California: Provided expert input to the Delta Wetlands Project which included review and critique of the EIR prepared for the project, emphasizing the water quality, hydrologic and hydraulic modeling of the Delta by Jones and Stokes. Participated in review meetings with state and federal agencies and potential protestants to identify concerns and additional modeling and analysis needed. Participated in specific studies of the impacts on THM concentrations of storing water on Delta islands.

Water Storage Tank Siting/Design, City of Napa, California: Directed a treated water storage tank predesign study for siting of a 14 million gallons of treated water storage. Predesign efforts included geotechnical investigation, hydraulic modeling of impacts on the distribution system, detailed site plans and layouts for three tanks, and presentation of the results in public meetings with site neighbors. Completed predesign and design of 5 MG reservoir, which included abandoning existing 30 MG open reservoir, constructing a 5 MG buried tank, and regrading the original 7-acre site to integrate a more natural water feature, hiking trails, and new booster pump station. This project included intensive interaction with several city departments and a neighborhood advisory group.

Water System Study, Tahoe City Public Utility District, California: Directed evaluation of a water system reconstruction project for the Tahoe City Public Utility District. This work included evaluation of a new supply source, distribution system improvements, and increased storage capacity.

Conjunctive Use/Supply Planning/Groundwater Investigation, Conaway Conservancy Group, Davis, California: Conducted a conjunctive use study jointly with the Department of Water Resources which investigated the potential for integrating surface and groundwater use and recharge alternatives into plans for regional water supply for eastern Yolo County. In-lieu recharge, winter flooding, and other feasible options were evaluated. Also developed supply options for an 18,000-acre proposed development in Eastern Yolo county, including both surface and groundwater sources. Developed costs for supply, treatment, and distribution facilities. Analyzed water rights, compared available supply with projected demand, and prepared applications for changes in water rights permits. Also conducted groundwater investigation that included testing capacity of about 40 producing wells over a 64-square mile area; design, installation, and monitoring of 14 monitoring wells; installation and monitoring of well meters; construction and surveying of 20 subsidence monuments; construction and operation of an extensometer; analysis of monitoring data; and development of a groundwater model. Extensive participation with regulatory agencies and local public agencies through Technical Review Committee also included.

Water Supply Planning, Town of Yountville, California: Assisted in projecting water demands, defining potential supply deficits, and investigation of supplemental supply options. Supply options included Napa Valley supply sources, conjunctive use, groundwater well field, purchase of imported water, and exchange of entitlements with other North Bay Aqueduct Contractors. Assisted in negotiation of water purchase agreements, analysis of in-valley water conveyance, and analysis of water importation facilities.

Water Supply Facility Planning, Oat Creek Developers, Davis, California: Conducted water supply study for Dunnigan Hills, a 1,600-acre proposed development in Western Yolo County including analysis of both surface and groundwater supplies. Analysis included evaluation of groundwater underlying site, evaluation of potential surface supply sources and water rights, and estimates of cost for supply, treatment, and distribution facilities.

Water Supply Study, North Tahoe Public Utility District, Lake Tahoe, California: Conducted study of alternatives for upgrading water supply capacity including a new intake in Lake Tahoe, surface diversion with filtration treatment, and high elevation springs integrating a small hydroelectric power plant.

Supplemental Supply Acquisition, Alameda County Water District, Fremont, California: Assisted in the identification and evaluation of supplemental supply options including water purchases, transfers and exchanges, and water banking. Efforts included solicitation of possible opportunities, conduct of meetings to screen options, and follow-up detailed evaluations.

Supplemental Water Supply Acquisition Plan, City of Calistoga, California: Assisted in the development of a plan to satisfy a compliance order from the Department of Health Services. Work included evaluation of water supply options including conjunctive use, purchase of imported water, wastewater reclamation, and installation of groundwater well field. Presented interim and final results to City Council, and assisted in establishment of financing plan and negotiation of water purchase agreements.

Water Supply Planning, Zone 7 Water Agency, Pleasanton, California: Assisted Zone 7 in the development of a strategy for increasing supplies, and in preliminary negotiations and development of transfer agreements as elements of supply augmentation efforts. Work included successful negotiation of a transfer agreement for Delta supply from the B-BID, preparation of a Supplemental EIR for the transfer of water from Berrenda Mesa Water District to Zone 7 for use in Dougherty Valley, and ongoing evaluation of transfer opportunities. Also directed the preparation of a water supply plan to define demands, compare them with the yield of existing supplies, evaluate the capacity of water conveyance facilities (South Bay Aqueduct and in-valley transmission system) and develop an action plan for securing supplemental supply.

Water Supply Plans, Del Este Water Company, Modesto, California: Directed several projects for the Del Este Water Company in Modesto including: a water supply study outlining water quality problems with 16 water supply well system; development and evaluation of water supply and treatment options for compliance with drinking water regulations; and preparation of a water system master plan for the Salida system, which included demand projection, computer network analysis, and development and evaluation of several alternatives for additional well construction, storage, and distribution system improvements.

Water Supply Projects, Citizens Utilities Company of California, Sacramento, California: Directed several projects including water master plan, system corrosion study, and design of two iron and manganese treatment plants and booster pumping stations for Citizens Utilities Company of California. Master plan evaluated deep versus shallow wells for cost and quality, and the storage, distribution, and pumping systems.

Water Supply Study, Turlock Irrigation District, Turlock, California: Directed a regional water supply study for the Turlock Irrigation District including evaluation of quantity and quality conditions for 64 wells operated by nine participating utilities in the study area, comparison with existing and proposed drinking water regulations, development and analysis of surface and groundwater alternatives to meet future demands and regulations, determination of system costs and impacts on user costs, participation in an extensive public education and participation program, and assistance in development of financial and institutional plans and confirmation of available water rights.

WATER TRANSFER/WATER RIGHTS

Water Entitlements Investigations, Various Locations, California: Investigated water entitlements (riparian and appropriative rights, contractual entitlements and groundwater) for a number of properties to assist in due diligence analyses for property purchase and/or water transfer.

Water Entitlements Yield Evaluation: La Hacienda, Inc, California: Analyzed the yield from high flow entitlements on the Kern River to determine the potential for management and transfer of water. Services included technical engineering studies, development of transfer proposal, and assistance in negotiation and processing of transfer.

Water Rights/Allocation Study, TCPUD, NTPUD, STPUD, Lake Tahoe, California: Conducted this objective critique of the State of California's water rights and allocation procedures for the Lake Tahoe Basin. This project, conducted for the three basin water utilities, involved intense working committee meetings with attorneys and representatives of local, state, and federal agencies to analyze water demand, both existing and projected; water supply; water rights; and procedures for allocation of California share of interstate waters. Also provided assistance to the three Tahoe Basin public utility districts to project future demands, evaluate options for meeting state and federal water rights requirements, and provide technical input to negotiation of Truckee River water rights agreements.

Water Rights Assistance, Tahoe City Public Utility District, California: Conducted analysis of water use for snowmaking, potential water losses resulting from snowmaking, and stream flow increases associated with vegetative clearing for ski trails. Presented and defended results in negotiation sessions for Truckee River Settlement Agreement.

Water Rights Assistance/Master Planning, Sacramento County, California: Assisted Sacramento County in the preparation of water rights applications for multiple diversion points on the Sacramento and American Rivers, and varying rates of diversion keyed to hydrologic conditions. This work included meetings with State Board staff to develop the strategy for configuring the application package, to define needed information, and to identify any concerns. Assisted the County in responding to requests for information from the State Board. Directed the preparation of water master plans for two regions of the County, which integrated surface water entitlements and groundwater systems. This analysis included review of the results of the regional groundwater modeling, and integration with supplies expected from surface water sources. Projected demands, defined needed facilities, and estimated costs.

Water Rights/Supplemental Supply Study, City of Tracy, California: Prepared an analysis of the options available to the City of Tracy for supplementing its water supplies from the Delta and San Joaquin River. The analysis included review of DWR operational modeling to determine the availability and water quality of water for a new water right. Also analyzed the potential for acquisition of water entitlements from special districts annexed to the City, other SWP or CVP contractors and other water rights holders, and conjunctive use of regional groundwater.

Water Transfer, Turlock Irrigation District, California: Provided assistance to the Turlock Irrigation District (TID) in formulating a program for transfer of the TID share of the water developed by increasing releases for environmental purposes on the Tuolumne River. Services included technical reviews with DWR to determine pumping windows through the Delta and through the South Bay Aqueduct, to discuss likely carriage losses associated with a San Joaquin River transfer, and to evaluate the benefits to the Delta of increased San Joaquin River flows. Also arranged and conducted a briefing session with South Bay Aqueduct users to describe the transfer and to determine how it could match with their needs. Contacts were also made with other potential purchasers to attempt to match water availability with needs.

Water Transfer, Contra Costa Water District, California: Assisted the District in analysis of the costs and benefits of transfer of water from neighboring agricultural water districts, and in evaluation of other transfer options.

Water Transfer Assistance, County of Sacramento, California: Assisted in developing strategy for obtaining supplemental surface water through water purchase, identifying and evaluating purchase/transfer opportunities, and in negotiating and process of transfer. Also assisted in preparing and filing of a new water rights application for diversion from the Sacramento and American Rivers.

Water Transfer Assistance, Pajaro Valley Water Management Agency, California: Assisted the Agency in defining the role water transfers can contribute to meeting their supplementary water supply needs, and defining wheeling costs through state and federal facilities to convey water from potential sellers to the Agency.

Water Transfer Agreement Negotiation, Conaway Conservancy Group, Davis, California: Assisted in the negotiation of four water transfer agreements for over 100,000 acre-feet with DWR for the State Water Bank. Conducted technical analyses to determine historical surface and groundwater use, underlying groundwater hydrogeology, scheduling of water deliveries, and review of available water rights.

Davis/UC Davis Joint Water Supply Feasibility Study, City of Davis and University of California, Davis: Project Manager for a study to investigate the feasibility of providing surface water to the City of Davis and the University of California, Davis for consumption and/or aquifer storage and recovery. Work included concept design analysis of water treatment plant upgrades, major water transmission pipelines, distribution system trunk mains, storage tanks, booster stations, and reverse osmosis wellhead treatment systems.

WATER QUALITY

DBCP Well Contamination Studies, Central Valley, California: Directed water well supply studies for the cities of Lodi, Sanger, Clovis, and the Del Este Water Company to evaluate the extent of contamination by DBCP, nitrate, radionuclides, and other contaminants. This work included development and evaluation of alternative treatment systems, and evaluation of funding options.

Delta Drinking Water Supply Study, California Urban Water Agencies, Sacramento, California: Directed a comprehensive analysis of the impacts on water quality of movement of water from the rivers upstream of the Delta through the Delta to the export pumps, and compared the cost of treating water from the Sacramento/San Joaquin Delta to alternatives which would protect higher-quality source water.

Sanitary Survey of the State Water Project (SWP), State Water Contractors, Sacramento, California: Directed a study which included an evaluation of potential sources of contaminants in the watersheds tributary to the Sacramento/San Joaquin Delta, a field survey of the SWP and the Delta Mendota Canal of the Central Valley Project, review of available water quality data for the

SWP system including major tributaries to the Delta, and evaluation of the effectiveness of present regulatory actions to control water quality.

Water Quality Impact, Sacramento Regional County Sanitation District, Sacramento, California: Managed evaluation of the impact of the water quality objectives proposed in the January 1990 Inland Water Plan by the State Water Resources Control Board on the Sacramento Regional Wastewater Treatment Plant.

GROUNDWATER

Eastern Yolo County Groundwater Investigation, Conaway Conservancy Group, Davis, California: Work included testing capacity of about 40 producing wells; design, installation and monitoring of 14 monitoring wells; installation and monitoring of well meters; construction and surveying of 20 subsidence monuments; construction and operation of an extensometer; and data analysis and development of a simple groundwater model. Extensive participation with regulatory agencies and local public agencies through Technical Review Committee also included.

Groundwater Supply Project, San Joaquin County, Stockton, California: Directed study and design for the Lincoln Village Water District which started as an iron and manganese sequestering study, and concluded with design of treatment tanks and booster pumping units for four wells.

Well Water Supply Study, City of Davis, California: Directed this comprehensive water supply study conducted jointly with MWH which included review of the City's wells and quality of produced water; analysis of the costs of rehabilitation of existing wells and wellhead treatment for arsenic removal and reduction of the TDS; costs of alternatives which included development of a remote well field with higher water quality and greater production potential, and deep wells tapping into an aquifer producing higher water quality at a depth of 1,000 to 1,500 feet; and analysis of regional geohydrology over a 30 square mile area including well logs and available draw down curves and analysis of water quality and production data. Improvements were determined for connection of all well alternatives to the existing City system, and costs estimated for construction and operation and maintenance. Program recommendations included conduct of a confirming hydrogeologic exploration, well development and monitoring of water quality and yield.

WASTEWATER

Facility Planning and Predesign, Sacramento Regional Wastewater Management Program, Sacramento, California: Directed efforts to secure permits and rights-of-way for interceptor sewers and other facilities; assisted in the management of the design of the Sacramento Combined Wastewater Control System (with direct responsibility for establishment of system design criteria); prepared facility design reports and sewage solids sedimentation studies which served as the design factors for sewage interceptors; prepared operation and maintenance manuals for the operation of reservoirs, pumping stations, and large-diameter interceptors in the Sacramento

Regional Wastewater Management Program; and conducted training sessions for City and County operating staff.

Sewer Capacity Study, City of Reno, Nevada: Directed study that included estimation of flows, modeling of sanitary sewer system, and development of capital improvement program.

Sewer Master Planning, City of Chico and San Joaquin County, California: Directed compilation of land use information, estimation of flows, modeling of system, development of capital improvement program, and evaluation of financing options.

Treatment and Disposal Capacity Study, Calaveras County Water District, California: Managed evaluation of capacity of all process and pumping units, and development, direction and evaluation of results from field testing of land disposal system.

Wastewater Effluent Irrigation Disposal, American Home Food Products, Inc, Vacaville; Beard Land Improvement Company, Modesto, California: Directed investigations of land disposal systems effects on groundwater quality.

Wastewater Facility Plan, City of Reno and Washoe County, Nevada: Managed evaluation of the capacity of the existing treatment units; development of alternatives for collection, treatment and disposal of wastewater at the capacity to serve 30-year future growth; and evaluation of the expansion impacts on water rights, water quality and discharge standards for the Truckee River.

Wastewater Reclamation Study, Conaway Conservancy Group, Davis, California: Managed evaluation of costs and feasibility of relocation and reuse of effluent from food processing land treatment system in eastern Yolo County, and reuse of effluent from cities of Woodland and Davis. Work included providing technical support to obtain modified NPDES permits, and negotiation of agreements for effluent reuse.

Wastewater Treatment Plant Expansions, City of Hanford, City of Modesto, and El Dorado Irrigation District, California: Directed plant expansions which included modifications or expansions to the influent pumping stations, headworks, primary and secondary process units, dissolved flotation thickeners, and sludge handling systems.

Wastewater Treatment Plant Expansions, Sierra Conservation Center and City of Los Banos, California: Directed expansions to the influent pumping stations, headworks, ponds, and effluent irrigation disposal systems.

OTHER

Consultation and Expert Witness, Confidential: Provided services in litigation of three separate cases involving a public health threat, sewerage service, and building permit procedures in and near the Lake Tahoe Basin.

Cosumnes River Water and Power Project, Cosumnes River Water and Power Authority, Sacramento, California: Evaluated alternative project configurations for dams, storage reservoirs,

tunnels, pipelines, and power plants. This work was conducted for the four-county Cosumnes River Water and Power Authority to evaluate the economic feasibility of a project to provide water supply, control downstream flooding, and generate hydroelectric power.

Environmental Assessments, Sacramento Regional County Sanitation District, San Mateo County, City of Roseville, and City and County of San Francisco, California: Assessed the impacts of major wastewater collection, treatment, and disposal projects.

Utility Relocation, City of Folsom, California: Directed the design of relocation of water, sewer, and storm drainage within the area of the reconstruction of the Prairie City Road overcrossing, and some reconstruction of the street and entrance to Intel. This project was completed under a tight time schedule to match the Caltrans construction contract, and was coordinated with the City of Folsom. Utilities were relocated successfully ahead of the Caltrans work.