

**JOINT MEETING
CITY OF MORRO BAY AND CAYUCOS SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
(UNDER JOINT POWERS AGREEMENT)**

Cayucos Sanitary District Board of Directors:

Robert Enns, President
Harold Fones, Vice-President
Shirley Lyon, Director
Michael Foster, Director
Dan Chivens, Director

City of Morro Bay City Council:

William Yates, Mayor
Noah Smukler, Vice-Mayor
Carla Borchard, Councilmember
Nancy Johnson, Councilmember
George Leage, Councilmember

AGENDA

MEETING DATE:

6:00 p.m., Thursday, May 12, 2011

HOSTED BY:

City of Morro Bay

MEETING PLACE:

Multi-Purpose Room, Community
Center
1001 Kennedy Way
Morro Bay, CA 93442

CALL TO ORDER AND ROLL CALL

PUBLIC COMMENT PERIOD

Members of the audience wishing to address the governing bodies on Morro Bay-Cayucos Wastewater Treatment Plant (WWTP) business matters may do so at this time. By the conditions of the Brown Act, the governing bodies may not discuss issues not on the agenda, but may set items for future agendas. When recognized by the Chair, please come forward to the podium and state your name and address for the record. Comments should be limited to three minutes. All remarks shall be addressed to the governing bodies, as a whole, and not to any individual member thereof. This governing body requests that you refrain from making slanderous, profane, or personal remarks. Please refrain from public displays or outburst such as unsolicited applause, comments, or cheering. Any disruptive activity that substantially interferes with the ability of this governing body to carry out its meeting will not be permitted and offenders will be requested to leave the meeting. Your participation in JPA meetings is welcome and your courtesy will be appreciated.

A. CONSENT CALENDAR

Unless an item is pulled for separate action by the City Council or Cayucos Sanitary District Board, the following items are approved without discussion

A-1 MINUTES OF APRIL 14, 2011 JPA MEETING

Recommendation: Approve as submitted

A-2 WWTP OPERATIONS REPORT THROUGH MARCH, 2011

Recommendation: Receive and file

B. OLD BUSINESS

B-1 STATUS REPORT ON UPGRADE PROJECT AS OF MAY 1, 2011

Recommendation: Receive the Status Report and direct staff accordingly

B-2 DISCUSSION OF COASTAL LAND USE AND ADVOCACY CONSULTANT (CLUAC) STATUS REPORT

Recommendation: Authorize the Project Manager to suspend the Agreement for Consultant Services with McCabe & Company, pursuant to Section 6(a), at such time as the collaborative process between McCabe, the Technical Consultant, MBCSD staff and Coastal Commission staff in finalizing the scope of the substantive content of the Alternatives Analysis is complete and preparation of the written report is underway.

C. NEW BUSINESS

C-1 SELECTION OF CONSULTANT TO PREPARE SUBSTANTIAL ISSUES STUDIES TO ADDRESS THE CALIFORNIA COASTAL COMMISSION APPEAL WITH CONSIDERATION TO AUTHORIZE STAFF TO NEGOTIATE A CONTRACT

Recommendation: Authorize staff to negotiate a final scope of services, schedule and fee and execute a contract with Dudek for the preparation of substantial issues studies for a fee not to exceed \$350,000.

C-2 SCHEDULE NEXT JOINT MEETING AND AGENDA ITEMS

ADJOURNMENT - (Next meeting will be hosted by the Cayucos Sanitary District)

Copies of staff reports and other public documentation relating to each item of business for this meeting are available for inspection at Morro Bay City Hall at 595 Harbor Street and the Cayucos Sanitary District at 200 Ash Ave. A copy of this packet is available from the City of Morro Bay for copying at Mills Copy Center and from the Cayucos Sanitary District for a copy and duplication charge. Any person having questions regarding any agenda items may contact Bruce Keogh, Wastewater Division Manager (City of Morro Bay) at 772-6261 or Bill Callahan, District Manager (Cayucos Sanitary District) at 995-3290. In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Public Services' Administrative Technician at (805) 772-6261, or the Cayucos Sanitary District at (805) 995-3290. Notification 24 hours prior to the meeting will enable the City and District to make reasonable arrangements to ensure accessibility to this meeting.

Materials related to an item on this Agenda submitted to the City of Morro Bay or the Cayucos Sanitary District after distribution of the agenda packet are available at the scheduled meeting.

**JOINT MEETING
CITY OF MORRO BAY AND CAYUCOS SANITARY DISTRICT
WASTEWATER TREATMENT PLANT
(UNDER JOINT POWERS AGREEMENT)**

MINUTES

**CAYUCOS SANITARY DISTRICT
BOARD OF DIRECTORS:**

Robert Enns, President
Harold Fones, Vice-President
Shirley Lyon, Director
Michael Foster, Director
Dan Chivens, Director

**CITY OF MORRO BAY CITY COUNCIL
MEMBERS:**

William Yates, Mayor
Noah Smukler, Vice-Mayor
Carla Borchard, Councilmember
George Leage, Councilmember
Nancy Johnson, Councilmember

MEETING DATE:

6:00 p.m., Thursday, April 14, 2011

HOSTED BY:

Cayucos Sanitary District

MEETING PLACE:

Cayucos Veterans Hall
10 Cayucos Drive
Cayucos, CA 93430

CALL TO ORDER AND ROLL CALL

President Enns called the meeting to order at 6:03 p.m.

Morro Bay City Council present were Mayor Yates, Vice-Mayor Noah Smukler, Councilmember Carla Borchard and George Leage. Councilmember Nancy Johnson was absent.

Cayucos Sanitary District Board members present were President Robert Enns, Vice-President Hal Fones, Directors Shirley Lyon, Michael Foster and Dan Chivens.

Morro Bay Staff members present were Bruce Keogh, Rob Livick, Susan Slayton, Dylan Wade, Rob Schultz, and Andrea Lueker. Also present was JPA WWTP Project Manager Dennis Delzeit

Cayucos staff present were District Manager Bill Callahan and District Council Tim Carmel

PUBLIC COMMENT PERIOD

Members of the audience wishing to address the governing bodies on Morro Bay-Cayucos Wastewater Treatment Plant (WWTP) business matters may do so at this time. By the conditions of the Brown Act, the governing bodies may not discuss issues not on the agenda, but may set items for future agendas. When recognized by the Chair, please come forward to the podium and state your name and address for the record. Comments should be limited to three minutes.

President Enns opened Public Comment.

- Kathy Ryan - Commented that we should follow the advice of the CCC and also not waste our money on a lobbyist.

- Barbara Dorre – Commends the Board on their Public Comment structure and appreciates the agenda items being available online.
- Betty Winholtz – Wants the smallest footprint and the least expensive project along with keeping the aesthetics pleasing.
- David Nelson – We need to work together and get out the 100 year flood plain. Do the right thing and don't build a trench plant like in Pismo Beach, look at alternatives. Commented that they've been called "gnats" for public speaking, but someone has to speak up
- Judy Newman – Representing Sustainable Cayucos, aesthetics is key. Staff needs to have transparent reports.
- Ann Reeves – Listen to the people.
- Al Barrow - Coalition for Low Income Housing, saw the Los Osos project spend and spend on consultants, look where it got them. MWH is driving us the wrong way and sending cost soaring
- Alex Beatty – Wants the proper verbiage used, it's a WWTP, not a sewer plant.
- Steve Hennigh – Compliments the board on listening to the public
- Karen Elliott – Has worked in the corporate world where they would go into the war room and come up with the worst case scenario. Here, we are following the best case scenario, thinking there are unicorns at the wastewater project turning the project into mermaid shaped jellybeans and not following the CCC worst case scenarios.
- Dorothy Fones – Six years ago we were looking at the same scenario, the Board tried to please everyone, they didn't have to go to full tertiary but that's what the public wanted. There was no mention of moving the plant, where were all these people then? PERC was going to put the plant in the same location, when that didn't happen, the public turned on the Board.

Hearing no further comments President Enns closed Public Comment.

A. CONSENT CALENDAR

1. Minutes of March 10, 2011 JPA Meeting – Recommend approve.

MORRO BAY MOTION: Borchard made a motion to approve Consent Calendar Item A1. Smukler 2nd. Motion passed (4-0).

CAYUCOS MOTION: Fones made a motion to approve Consent Calendar Item A1. Lyon 2nd. Motion passed (5-0).

B. OLD BUSINESS

1. Status Report on Upgrade Project as of April 1, 2011 – Recommend receive and provide direction to staff.

Delzeit presented the activities on the project, the update on the CCC appeals and the process going forward. He reported that additional studies are necessary before the CCC will schedule the *de novo* hearing. These additional studies and RFQ results are contained in a separate staff report later on the agenda.

Delzeit pointed out that since his contract did not include the appeals process. All his time spent since the suspension of the design phase of the project is outside the scope of his contract and he is analyzing the financial impact and the subsequent extension of his services.

Smukler questioned the \$820,000 figure for project consultants (not including the lobbyist) spent up to when the design phase was stopped.

Keogh clarified the reporting of these consultant's figures as being the only one's involved in this part of the process and does not include the FMP in the amount of approximately \$240,000.

Foster questioned Delzeit's role and costs during the appeals process as being outside the scope of his contract.

Delzeit responded it was clear the appeals process was not in the scope of work when the RFP was put out for a Project Manager

Foster and Delzeit continued discussion as to whether or not Delzeit was discontinuing his work until the appeals process was over. Foster stated Delzeit's contract is a perfect illustration as to why the Board needs to make decision on the scope of work for any RFP's. He questioned how the McCabe contract went from 1 month commitment to an ongoing ordeal. Foster asked where Ms. McCabe is, why isn't she present?

Enns clarified the McCabe contract and stated there was more information on the next agenda item.

President Enns opened Public Comment.

- Alex Beatty – Running trucks back and forth in front of the high school hauling water is ridiculous. Tertiary water is only good for dust control and concrete. The Board isn't trained in WWTP design; we need professionals here to answer these questions.
- Betty Winholtz – Doesn't remember the omission of the appeals process in the Delzeit contract.
- Marla Jo Bruton – Remarked that Wade had stated several times he came here from Los Osos to build a WWTP, he's our professional, why are we outsourcing? Infrastructure is a big part of the equation. Starting over is costly, how much are we willing to spend?
- Bob Dorre – Asked the Board, if you could make decision on the location, would you vote for this location?
- David Nelson – Has anyone looked at the Chevron land? Cayucos is already pumping through there; Morro Bay should be able to add a pumping station to get there.
- Barbara Dorre – Unable to get reports online. Agrees that we were proud to say we were going to full tertiary. Current staff should work with the CCC not a lobbyist.
- Jack McCurdy – Many questions have been raised on Delzeit contract by Foster and Smukler and whether it does or does not cover the appeals process, the Board needs to settle this once and for all.

Hearing no further comments President Enns closed Public Comment.

Mayor Yates asked to say a few things – Yes the Board voted for tertiary and reclaimed water, decision made 16 years ago. They don't want secondary treatment, but we need to move on. Speaking to David Nelson Mayor Yates commented that he has never called nor heard the public referred to as gnats. The JPA is trying to do the right thing, the people here are not the majority, he hears from the majority all day long, and they too just want the project to move forward.

Smukler commented on Dorothy Fones statements that yes we were comfortable until the flood plain analysis was completed; the shift took place from renovation of the old plant to a whole new plant shifted to the south. With this drastic change the public then asked us to look at alternative sites.

2. Discussion of Advocacy Consultant Status Report – Recommend receive and provide direction to staff

Delzeit recapped the motions and votes on hiring McCabe. He noted that there will be peaks and valleys in time required by McCabe during the appeals process. He pointed out the highlights of the McCabe report and stated he had spoken with a former CCC commissioner who also voiced his opinion that an advocate is necessary for this process. Delzeit reported that a new CCC commissioner from Ventura County, Brian Brennan, had been appointed by the Governor and McCabe said this is good news as she is familiar with this commissioner.

Smukler asked does the \$155,000 for the McCabe contract include the \$12,500 already approved.

Delzeit confirmed it does.

Smukler stated he would like to see an incentive for success written into the McCabe contract.

Delzeit – Contract is already complete and signed by all parties. Payment based on performance is not done in this field of work

Borchard asked for clarification on the cost stated in the McCabe report – Would have been \$32,093 if we were being charged by the hour, but our cost was only \$12,500?

Delzeit confirmed that \$12,500 was our cost.

Borchard asked if we had a cancellation clause in the contract and it was confirmed by Delzeit that she would continue as agreed until we cancel.

Yates asked if McCabe was going to attend a meeting.

Delzeit responded she will certainly be invited.

Smukler asked aren't we deciding on going forward on the contract?

Delzeit – We haven't terminated her contract, the contract reads that she provide her services until it is deemed they are no longer needed.

Foster said he is an advocate of alternative plans including PERC, can't sole source as we accused on PERC, now we are sole sourcing on the advocate. We have our answers from the CCC, we don't need McCabe. What is this \$32,093 in costs? How did this come about? Foster moved to suspend the McCabe contract until we have the alternative site analysis, then we can decide if going forward with McCabe is deemed necessary. Hearing no second, motion failed.

Foster then addressed the idea of having the public advocate and lobby to the CCC.

Enns commented on the CCC suggestions for alternative sites.

President Enns opened Public Comment.

- Barry Branin – If Delzeit is off the clock, why is he negotiating with McCabe, arranging for RFP's etc., who's in charge here?
- Steve Hennigh – McCabe actual costs are a moot point; we pay the \$12,500 stop with her and proceed with alternative site analysis.
- Bob Dorre – Thorough studies needed, don't just place anywhere without research.
- Marla Jo Bruton – We were given a special waiver 19 years ago, it's been 35 years since the State mandated full secondary and we're not even there yet. Tertiary treatment is the way to clean up the pollutants that are entering the ocean. Spend the \$12,500 on inspecting the sewer lines that run down Main St. to the WWTP and their effects on the drinking aquifers.
- Alex Beatty – Why pay McCabe to do what Livick, Delzeit & Dylan could do? Agrees with Foster to suspend McCabe contract
- Al Barrow – Concurr with Beatty. De novo hearing is a higher bar than sustainable issues hearing. Don't bring a tank in to do what a fly swatter can take care of. Don't use the mafia style approach to shove project down the public's throat.

- Barbara Dorre – Do we have a \$155,000 contract with McCabe?
(Delzeit clarified that the contract has not been cancelled, the \$12,500 per month is ongoing, Enns confirmed)
She read the motion on the McCabe contract from the staff report and asked how did the decision get made to go forward with McCabe? Who is in charge and where is she? Who does she report to?
- David Nelson – The public is your best lobbyist, outside lobbyist isn't needed.
- Nancy Bast – Confused, if McCabe reported to Enns and Yates, why can't we hear from them on what she had to report instead of hearing it from Delzeit?
- Betty Winholtz – Her recollection was that the CCC meeting was over midday today, why isn't she (McCabe) here? If the plan were to change utilizing the suggestions of the CCC, no lobbyist is needed. Stop wasting ratepayer money. Lobbyist will manipulate the CCC and they'll do the same to the public.
- Richard Margetson – Agrees with Foster, we don't need McCabe. Suspend or at least amend the monthly stipend or this will go on and on.

Hearing no further comments President Enns closed Public Comment and called for a short break at 8:05 p.m.

President Enns re-adjourned the meeting at 8:29 p.m.

Mayor Yates commented on the meeting he, President Enns and staff had with Ms. McCabe. This staff report is accurate and much of the information in the report wasn't available for this meeting with Ms. McCabe due to timing. The town spoke when they elected Nancy Johnson, George Leage and himself, and he is behind Ms. McCabe and this complicated project.

Leage said people ask him when is this going to get done; the majority just wants it done. They do hear both sides.

Borchard clarified that regarding sole sourcing, referred to by Foster on the McCabe contract, the consultant wasn't sole sourced, the JPA was presented with options. She also is concerned that the McCabe contract is not open ended and agrees this needs to be watched.

Smukler asked, what's the harm in suspending the McCabe contract until the Delzeit contract is finalized?

Yates said suspending the contract then coming back and saying okay let's go, it just doesn't work that way. He stated he feels Marla's frustration on the time it's taken and can see the Los Osos cycle coming if alternate sites have problems.

Smukler said opposition has occurred due to concerns expressed and these concerns have been brushed off with "we have a good plan, don't worry about it" and has caused delays as these issues come up. Smukler moved to suspend the McCabe contract.

Carmel pointed out this is a discussion item and no action can be taken at this meeting.

Smukler requested that the McCabe contract along with the Delzeit contract be put on the next agenda for further discussion and review.

Foster apologized for pulling a number out of his hat earlier but stated the \$155,000 is also out of the air. He suggested hiring someone so we could keep these items "in-house" instead of hiring a consultant.

C. NEW BUSINESS

1. Discussion of Requests for Qualifications for Substantial Issues Study to address California Coastal Commission Appeal with Consideration to Authorize Staff to Negotiate a Contract for JPA Consideration in May

Delzeit reported on the Request for Qualifications for a Substantial Issues Study to address the issues brought up by the CCC. He reviewed in brief the background and discussion section of his staff report. Delzeit reported that four firms were interviewed today and narrowed to 2 based on qualifications, now the full scope of the work must be identified to meet the CCC requirements. There is no budget for this and there are only estimates at this time. The Board needs to decide on going forward with consultants so a contract can be presented to the Board in May.

Yates asked if a contract amount will get nailed down that is within the estimated range in the staff report.

Delzeit responded that it was probably too early in the process to be exact but \$300,000-\$350,000 is more likely.

Further discussion ensued among the Board and staff regarding process, scope and fee for this work.

It was stated the two finalists from among the five consultants interviewed were Sage Institute, Atascadero and Dudek, Santa Barbara.

Chivens asked if a performance clause was appropriate for this so as not string this process out.

Delzeit explained that a schedule is part of the scope of work and will be in the contract.

Foster stated that the current site seems to be the preference for Delzeit and commented that this might bring bias into the hiring process of the consultant. Can't we step back and look at other alternatives like the possibility of each community having their own WWTP, or if a percentage of monies spent on contracts should remain in the community.

Smukler gave a brief presentation on the Atascadero and Shell Beach/Pismo Beach WWTP's showing that they accomplished site relocations.

President Enns opened Public Comment and presented an email received from Michael Lucas who stated his concerns on costs and implications.

- Steve Hennigh – Alternative site appeal he put forward is because if we are only looking at alternative sites to appease the CCC then that's wrong. We may have to widen our scope of thinking too.
- Al Barrow – Previous Board refused to look at alternative sites, are we going to get a fair analysis or just a spin from the consultants.
- David Nelson – Don't build old technology like Pismo, look at alternate sites and alternate designs, like PERC.
- Barry Branin – Concur with Nelson, we need to look at new designs.
- Brent Bosserman – Toro Creek oilfield is an alternate site, he has toured it and it fits the criteria outlined and can go inland, similar to SLO.
- Marla Jo Bruton – Pointed out that in 2008 and 2010 the CCC staff wrote letters suggesting alternative site analysis, this was ignored, now we have to look at alternative sites. She has trust issues with staff especially with a current staff member that may be biased towards MWH having been a former employee of theirs. (Delzeit clarified that this staff member Marla Jo is referring to abstained himself from the issues and

selection involving MWH contract)

- Richard Margotson – MWH needs to be looked at along with alternative sites.
- Barbara Dorre – Thought two years ago it was looked at to move the plant and it was decided at that time to not move it, now we have to look at alternate sites. Need openness to change.
- Don Ritter – Stated he was team member with one of the firms interviewed today and unfortunately not one of the final two. He said it was made very clear to him that staff wanted a thorough, open and honest analysis.
- Betty Winholtz – Agrees with Barbara Dorre. Staff should not be whittling down selections, it should be the Board. CCC requires two workshops, is that where the consultant comes in?

Hearing no further comments President Enns closed Public Comment.

Foster stated the \$200,000 to \$650,000 is a big range. It's important to realize the results of this study will direct the future of a \$35-\$60 million dollar project. As an elected representative of the community, he wants to be a part of this decision making process, not just get a narrowed down recommendation from staff. He stated he doesn't recall giving staff the direction to interview consultants.

Delzeit responded that as the Project Manager he took the initiative to move forward on what was obvious and to keep the process moving.

Discussion continued between Foster and Delzeit.

Yates responded that he didn't think Foster could invite himself into the process of interviewing the consultants without the approval of his Board. Yates continued that he appreciates the Project Manager and his abilities.

Fones concurred with Yates and stated we can't always second guess staff. The Project Manager has not brought them a contract; it's just a preferred list of qualified consultants.

Lyon stated that neither she, nor other Board members have the expertise to do this type of work. That is why we have a Project Manager; she has no problem letting the staff do this work.

There was further discussion among the Board regarding a subcommittee including Foster to be involved in the consultant interviews. It was asked of Carmel if this decision could be done at this time and Carmel responded it could be ratified on an agenda if need be.

Enns said they need to move on with this consultant process and they need to look at how they conduct business in the future then put it on an agenda. He is satisfied with the work that staff has brought before them but if the Board wants to see all 5 candidate qualifications then by all means do so, he personally doesn't want to be a staff member and a Board member. He trusts staff to make the right decision.

There was additional discussion amongst the Board on the subject.

CAYUCOS MOTION: Foster moved that the Board members be notified of all communication and meetings between the staff and these consultants. That the Board is copied on any correspondence and that they are notified and invited to participate in any interviews. Chivens 2nd.

Carmel advised that the motion was too broad and recommended pairing down the motion to include just Foster in the interview and selection process to stay within the bounds of the Brown Act.

Enns brought the motion back for vote. Motion failed. (1-3-1) Foster-Yes, Enns, Fones and Lyon-No, Chivens abstained.

CAYUCOS MOTION: Foster moved to appoint 1 member each from the MB City Council and Cayucos Sanitary District to participate in the selection of the consultants. Chivens 2nd. Motion passed (3-1-1) Enns, Foster and Chivens-Yes, Fones-No, Lyon abstained.

MORRO BAY MOTION: Smukler moved to appoint 1 member each from the MB City Council and Cayucos Sanitary District to participate in the selection of the consultants. Borchard 2nd with discussion on who the MB member would be. Discussion ensued. Borchard called the question. Motion failed (2-2) Yates, Smukler-Yes, Borchard, Leage-No.

MORRO BAY MOTION: Smukler moved to allow Cayucos to send a member of their board to participate in the process of selection of alternative site analysis consultants. That member along with the staff, bring a recommendation back to the Board and include information about a minimum of 2 firms. Also, other Board members are given the ability to submit scoping questions and content to staff to be included in those discussions as they see fit. Hearing no second motion failed.

MORRO BAY MOTION: Smukler moved that MB allow a representative for Cayucos to attend the interview process for alternative site analysis consultants. Borchard 2nd with the emphasis of “allows a Board member to attend” Smukler responded with “participate”, Borchard again clarified he said “attend”. Borchard then withdrew her 2nd.

Smukler amended his previous motion to remove the word “attend” and include the word “participate”. Hearing no second motion failed.

MORRO BAY MOTION: Smukler moved to allow Cayucos to send a member to the interview process for alternative site analysis consultants and that member can then bring their personal recommendation to the Board to be reviewed alongside the staff recommendation. Hearing no second motion failed.

MORRO BAY MOTION: Smukler moved to allow Foster to attend the interview meetings. Borchard 2nd. Motion failed (2-2) Smukler, Borchard-Yes, Yates, Leage-No.

MORRO BAY MOTION: Smukler moved to bring back a minimum of 2 evaluated firms and that the Board makes the final decision. Borchard 2nd. Discussion of whether the 2 firms would attend or just their qualifications and recommendations would be evaluated at the next JPA. Smukler clarified at next JPA they will evaluate the qualifications and recommendations. Motion passed (4-0).

CAYUCOS MOTION: Fones moved to bring back a minimum of 2 evaluated firms and that the Board makes the final decision. Foster 2nd. Discussion to get Foster the information on the criteria for the firms and the evaluation process. All information is available to Foster and will be given to him. Motion passed (5-0).

Yates asked to pull Item C2 and continue it to next agenda.

ADJOURNMENT

President Enns adjourned the meeting at 10:19 p.m.

STAFF REPORT

**MORRO BAY-CAYUCOS J.P.A.
WASTEWATER TREATMENT PLANT**

to: Honorable Mayor and City Council, City of Morro Bay
Honorable President and Board of Directors, Cayucos Sanitary District

from: Bruce Keogh, Wastewater Division Manager

date: May 6, 2011

subject: WWTP Operations Report through March, 2011

recommendation:

This Department recommends this report be received and filed.

fiscal impact:

None

summary:

Attached, find copies of the Morro Bay-Cayucos Wastewater Treatment Plant monthly reports, from January 2011 to March 2011 and the WWTP flow summary, through March 2011. This information updates the item, from the February 10, 2011 meeting.

The City of Morro Bay-Cayucos Wastewater Treatment Plant

MONTHLY OPERATIONS SUMMARY **JANUARY 2011**

Flow for the month of January averaged 1.366 Million Gallons per Day (MGD). Removal of suspended solids ranged from 94.4 % to 97.1 % for the month, with an average removal of 95.9 % for the month. BOD removal ranged from 88.6 % to 92.0 % for the month, with an average removal of 90.5 % for the month. Rainfall for the month was 2.01 inches. For the month of January, the plant was in compliance with the discharge and receiving-water limitations specified in the NPDES discharge permit. Other than normal operations and maintenance, the following items are noteworthy:

City and District staff continued to work with staff from Montgomery Watson Harza and Environmental Science Associates on the environmental review and permitting process for the upgrade project. At the January 11, 2010 City Council meeting, the City Council approved the Conditional Use Permit (CUP) and the Coastal Development Permit (CDP) and certified the Environmental Impact Report (EIR). The deadline for filing appeals of the City Council's approval of the CDP to the California Coastal Commission is January 31, 2011.

During the month of January, staff continued to work with various contractors and staff at PG&E to determine the cause of the power incident on October 31 that had resulted in operational issues for the main influent pumps. The steps they took included:

- Staff from Harbor Electric continued to monitor the data logger on the in-coming power supply to the VFD's for the main influent pumps. The data logger monitors both voltage and current draw and will assist in determining if influent power to the VFDs is within range.
- Staff from PG&E installed a data logger on the main power feed coming to the plant for a period of five days, January 6 - 10. The data logger monitors both voltage and current draw and will assist in determining if influent power to the plant is within acceptable range.

During January, staff from Alpha Electric installed new control circuitry at the headworks to allow plant staff to control the main influent pumps by either an ultrasonic level controller or a bubbler system. The new controls provide both redundant equipment for level control as well as operational flexibility for controlling the main influent pumps.

On January 13, staff installed a rebuilt sump pump located in the lower headworks pump room. The pump had been sent to Perry's Motors for inspection and repair after staff discovered the pump was not operational. The pump is now operating as designed.

On January 14, staff replaced a portion of the main air manifold that feeds the aeration system in the solids contact channel. The existing pipe was badly corroded and was replaced with PVC pipe to minimize corrosion in this area.

On January 4, staff from Harbor Electric replaced the motor on primary collector drive #1.

On January 12, staff from North County Backflow Services tested and performed inspection and maintenance on the four-inch main backflow preventor for the plant.

On January 13, staff replaced the drive motor on the grit aeration blower for the aerated grit chamber.

On January 28, staff from Coastline Equipment performed the 1000 hour service on the front end loader.

The following reports were submitted to the appropriate agencies:

- The Discharge Monitoring Forms (DMR) for December 2010
- The Semiannual Discharge Monitoring Forms for January 1 through June 30, 2011.

The following reports were submitted to the CIWQS electronic reporting system:

- The December 2010 Monthly Monitoring Data
- The Offshore and Monitoring Program Quarterly Report Water Column Sampling October 2010 Survey.
- The Offshore and Monitoring Program Semiannual Effluent Sampling Chemical and Bioassay Analyses Results January 2011

The twenty-four hour flow totals reported for two dates in January were based on the twenty-four hour flow total recorded on the effluent flow meter that was adjusted downward by 25 % (historically the effluent flow meter over totalized the flow by about 25%) as recommended in the Recommendations Section of the 2002 Annual Report (page 5-8). The errant flow totals recorded on January 1 and 2 were due to the influent flume surcharging during periods of heavy rainfall.

On January 1, the influent flow meter recorded a twenty-four hour flow total of 2.911 million gallons. The effluent meter recorded a twenty-four hour flow total of 2.810 million gallons. The twenty-four hour flow total for January 1, was calculated as: $2.810 \text{ MG} * .75 = 2.108$ million gallons.

On January 2, the influent flow meter recorded a twenty-four hour flow total of 4.807 million gallons. The effluent meter recorded a twenty-four hour flow total of 4.189 million gallons. The twenty-four hour flow total for January 2, was calculated as: $4.189 \text{ MG} * .75 = 3.140$ million gallons.

The results of the January 29 BOD analyses for twenty-four hour influent and effluent composite samples were not reported. Per Standard Methods for the Examination of Water and Wastewater, 20th Edition, for the test blanks, “DO uptake should not be more than 0.2 mg/L.” The blanks set up for the January 29 analysis both had DO drops of greater than 0.2 mg/L. The unofficial results of the test had an influent concentration of 304 mg/L and an effluent BOD concentration of 48 mg/L, which represents an eighty-four (84) percent removal rate. Lab staff is looking into possible reasons for the DO uptake in the blanks.

Staff continued the composting process on compost batch #34. The composting process is expected to take twelve weeks to complete.

On January 26, Mr. Randy Freidlander from the California Integrated Waste Management Board – Permitting and Enforcement Division toured the composting operation at the plant as part of their regularly scheduled quarterly inspection.

Mr. John Gunderlock received his Grade IV Wastewater Operators Certification, certificate number IV-10500.

On January 21, Mr. Dave Williams, Mr. George Helms, Mr. Bruce Keogh, Mr. Les Girvin, Mr. John Gunderlock, and Mr. Dave Bierman attended a CPR class sponsored by the California Joint Powers Insurance Authority. Mr. Keogh also attended a first aid class being offered after the CPR class.

On January 24, Mr. John Solu toured the plant.

The National Estuary Program Volunteer Monitoring Program continued analysis of bacterial samples collected from throughout the watershed in the laboratory at the plant. The volunteers are using space provided in the lab by plant staff.

The permanent household hazardous waste collection facility (PHHWCF) at the plant continued to be well used by the public. Between twenty and fifty participants are using the facility each Saturday.

Bruce Keogh
Wastewater Division Manager
Lab/C/Bruce/Monthlys/January 2011

The City of Morro Bay-Cayucos Wastewater Treatment Plant

MONTHLY OPERATIONS SUMMARY

FEBRUARY 2011

Flow for the month of February averaged 1.271 Million Gallons per Day (MGD). Removal of suspended solids ranged from 91.3 % to 96.5 % for the month, with an average removal of 93.9 % for the month. BOD removal ranged from 82.1 % to 87.9 % for the month, with an average removal of 85.7 % for the month. Rainfall for the month was 1.81 inches. For the month of January, the plant was in compliance with the discharge and receiving-water limitations specified in the NPDES discharge permit. Other than normal operations and maintenance, the following items are noteworthy:

The following items are noteworthy concerning the upgrade project for the wwtp:

- On February 1, a staff member from the California Coastal Commission (CCC) toured the plant. They also toured some of the alternative site locations outlined in the Surfrider comment letter to the CCC concerning the upgrade to the wwtp.
- The City and District received notice that the Coastal Development Permit (CDP) issued for the wwtp upgrade project had been appealed to the California Coastal Commission. The hearing date for a Substantial Issue Determination is scheduled for Friday, March 11, 2011. This first hearing is for the purpose of determining if there is a substantial issue relative to conformance with the Local Coastal Plan or with the Coastal Act public access policies. Assuming the CCC finds that there is a substantial issue, the commission will take jurisdiction over the coastal permit.
- A *force majeure* letter was delivered to the Regional Water Quality Control Board (RWQCB) on February 24, requesting a time extension as the result of the appeal of the CDP for the WWTP upgrade project to the CCC. Due to the uncertainty of the appeal process, an open ended time extension was requested.

On February 7, PWT Inc. performed a solids dewatering demonstration with their PWT screw press. The demonstration lasted until February 14 and utilized solids from the anaerobic digesters at the plant. During that time period PWT staff provided operational training on the dewatering unit to plant staff. PWT will be providing a written report summarizing the performance of the screw press to plant staff that includes sludge moisture content, polymer dose, screw speed, and solids capture. This information will be useful in determining the optimum dewatering strategy for the upgraded treatment plant. In addition PWT performed a dewatering demonstration at the Pismo Beach WWTP. During that demonstration they dewatered solids directly from the oxidation ditch, in a manner that will best typify the solids to be dewatered from the proposed upgrade project. They will be providing plant staff with a written report summarizing the results of that demonstration when the report is complete.

The 2010 Annual Report of sludge production and disposal activities was submitted to the Environmental Protection Agency (EPA) Region IX in San Francisco on February 14. The report covered the amount of sludge generated and the method of disposal. Annual biosolids production for 2010 was 223 dry metric tons. Of the 223 dry metric tons produced in 2010, 130.3 dry metric tons were transported to McCarthy Family Farms, Inc., San Joaquin

Composting facility. Approximately 92.7 dry metric tons were composted at the plant. There are no biosolids in storage at the plant at this time.

On February 3, plant staff worked on the controls and ignition unit for the waste gas burner. They replaced both time clocks used to control the sparking unit as well as replacing the spark plug unit used to keep the waste gas burner lit at all times.

On February 10, staff from Titan Safety performed the quarterly calibration of the gas monitors located in the headworks. They also provided training on the calibration and bump testing of the plant's handheld atmospheric monitors.

On February 9, staff noted an electrical problem with the jib crane at the headworks. They locked out the unit until staff from Harbor Electric could perform temporary repairs. They are working with various vendors to purchase the necessary parts to repair the situation.

On February 10, staff replaced the batteries for the emergency auxiliary generator. The batteries are on a work order for replacement every two years.

The following reports were submitted to the appropriate agencies:

- The Discharge Monitoring Forms (DMR) for January 2011

The following reports were submitted to the CIWQS electronic reporting system:

- The January 2011 Monthly Monitoring Data

On February 24, staff sent a sample of a crystal like material that has been building up in the discharge piping of the digesters to Abalone Creek Laboratory for analysis. Based on the results of the analysis provided by Abalone Creek, the crystal structure appears to be struvite. Staff is concerned that the crystal like material will build up in the discharge piping of the digesters, and potentially impact the hydraulic capacity of those pipelines. Plant staff is currently in contact with various vendors in an attempt to correct the problem.

The results of the February 9 BOD analyses for twenty-four hour influent and effluent composite samples were not reported. Per Standard Methods for the Examination of Water and Wastewater, 20th Edition, for the test blanks, "*DO uptake should not be more than 0.2 mg/L.*" The blanks set up for the February 9 analysis both had DO drops of greater than 0.2 mg/L. The unofficial results of the test had an influent concentration of 340 mg/L and an effluent BOD concentration of 38 mg/L, which represents an eighty-eight point eight (88.8) percent removal rate. Lab staff is looking into possible reasons for the DO uptake in the blanks and will implement corrective actions as required.

The oil and grease concentration in the effluent sample collected on 15 February 2011 was reported as 7.6 mg/L, as determined from a split sample. As described in the chemist's case narrative for BC Laboratory Work Order 1103031, the erroneously elevated concentration determined in the original sample was caused by glassware contamination.

On February 14, staff faxed the 2010 Emissions and Throughput Data for the Morro Bay WWTP to staff at the Air Pollution Control District.

Staff continued the composting process on compost batch #34. The composting process is expected to take twelve weeks to complete.

On February 14, Mr. Bruce Keogh and Mr. Les Girvin attended a storm water training seminar sponsored by the City of Morro Bay. Mr. John Gunderlock, Mr. George Helms, Mr. Dave Bierman, Mr. Steve Aschenbrener, and Mr. Steve Sibley attended the storm water training seminar on February 18.

On February 4, Mr. Dan Chivens toured the plant.

The National Estuary Program Volunteer Monitoring Program continued analysis of bacterial samples collected from throughout the watershed in the laboratory at the plant. The volunteers are using space provided in the lab by plant staff.

The permanent household hazardous waste collection facility (PHHWCF) at the plant continued to be well used by the public. Between twenty and fifty participants are using the facility each Saturday.

Bruce Keogh
Wastewater Division Manager
Lab/C/Bruce/Monthlys/February 2011

The City of Morro Bay-Cayucos Wastewater Treatment Plant

MONTHLY OPERATIONS SUMMARY

MARCH 2011

Flow for the month of March averaged 1.545 Million Gallons per Day (MGD).

Removal of suspended solids ranged from 88.6 % to 95.3 % for the month, with an average removal of 91.7 % for the month. BOD removal ranged from 75 % to 88.8 % for the month, with an average removal of 83.2 % for the month. Rainfall for the month was 5.33 inches. For the month of March, the plant was in compliance with the discharge and receiving-water limitations specified in the NPDES discharge permit. Other than normal operations and maintenance, the following items are noteworthy:

The following items are noteworthy concerning the upgrade project for the wwtp:

- A *force majeure* open ended time extension was granted by the Regional Water Quality Control Board (RWQCB) on March 24, as the result of the appeals to the Coastal Commission.
- A meeting was held with the RWQCB staff on March 29 to discuss the project status.
- The California Coastal Commission (CCC) conducted the first hearing of the appeals on March 11, 2011 in Santa Cruz. At this hearing the CCC determined that there are substantial issues relative to conformance with the Local Coastal Plan or with the Coastal Act public access policies. As the result of this determination, the CCC took over jurisdiction of the coastal permit.
- The next step in the CCC process is the *de novo* hearing. At the *de novo* hearing the CCC will determine if the coastal permit for the project will be granted. The CCC is requiring additional studies before the hearing date is set. It is estimated that the *de novo* hearing will occur late this year or early next year.
- Requests for qualifications were issued to consulting firms to prepare the additional studies that were determined to be necessary by the CCC staff in their report to the CCC. Five proposals were received and a report is contained in a separate staff report.
- At the February 10, 2011 JPA meeting, the JPA authorized McCabe & Company to provide an analysis of the Coastal Commission appeals and related documents and provide a preliminary analysis for a fee not to exceed \$12,500. A separate report is provided on the April 14, 2011 JPA agenda.

On March 11 at 0230 hours, plant staff was notified that a Tsunami was scheduled to hit the central coast of California at approximately 0830 hours. Plant staff arrived at the plant at approximately 0530 hours. They performed their normal open up rounds and ensured that the plant was operating as designed. The local area around the plant was evacuated as a precautionary measure. Staff moved vehicles and equipment to higher ground and communicated with the Emergency Operations Center (EOC) regarding this event. Despite a tsunami striking the central coast, the plant suffered no problems associated with this event. Staff is currently reviewing and updating their tsunami preparedness program based on the events they observed and noted on March 11.

On March 28, staff was notified that approximately 100 feet of the outfall pipe was exposed on the beach due west of the plant. Staff inspected the exposed section of the outfall and noted that the path of Morro Creek had been diverted north due to high creek flows during the rain event of March 19-22, coupled with extreme high tides and large surf that caused the path of the creek to flow northward. The northward flow removed a large volume of sand from the beach and exposed the outfall. City staff made preparations to perform emergency repairs to the outfall that included applying for and receiving emergency permits from the Army Corp of Engineers, the California Coastal Commission, and the Regional Water Quality Control Board. The City and District contracted with Associated Pacific Divers to cut a new creek channel across the beach diverting the creek to flow west across the beach several hundred yards south of the outfall. They completed this work on April 1 and 2. Once the creek was diverted the tides and waves naturally moved

sand back across the outfall and reburied the pipe. There was no indication of structural damage to the outfall pipe that was exposed.

On March 31, staff discovered a problem with the effluent flow meter used to pace the sodium hypochlorite (for disinfection) and sodium bisulfite (for dechlorination). They removed the meter for inspection and consulted the manufacturer for possible solutions. On April 4, they shipped the unit to the manufacturer for repairs and maintenance. While the effluent flow meter is off line, staff switched to the influent flow meter to provide pacing signals for both the disinfection and dechlorination processes.

On March 22, staff from Perry's Motors installed Aeration Air Blower # B-5111. The blower had been shipped to Perry's Motors for repairs and maintenance. Staff at Perry's Motors installed new bearings in the blower, installed a new motor and aligned the blower and motor on the frame. They also increased the height of the frame the blower sits on as part of the flood proofing effort at the plant.

During the month of March, staff performed repairs to the two grit bins used to collect grit prior to hauling grit to the landfill. Staff performed minor repairs to the end gates to provide a better door seal.

On March 16, staff from Kones Cranes performed the quarterly inspection of three cranes at the plant. In addition they performed repairs to the jib crane at the headworks that included installation of a new electrical pendant for the controls, installation of a new cable, and adjustments to the stop limit switches. Staff is still waiting on an electrical component that is required to complete the repairs to an electrical problem on the jib crane.

On March 9, staff from Titan Safety installed a new oxygen sensor and calibrated the MG-40 #1 hand held atmospheric monitor used for confined space entries. They also calibrated the MG-40 #2 hand held atmospheric monitor.

On February 10, staff replaced the batteries for the emergency auxiliary generator. The batteries are on a work order for replacement every two years.

On March 1, Ms. Patricia Reynolds of the San Luis Obispo Environmental Health Services Department (SLO County EHS) conducted an annual inspection as a component of the plant's Hazardous Waste Business Plan, which is on file with the SLO County EHS.

The following reports were submitted to the appropriate agencies:

- The Discharge Monitoring Forms (DMR) for February 2011

The following reports were submitted to the CIWQS electronic reporting system:

- The February 2011 Monthly Monitoring Data

The twenty-four hour flow totals reported for three dates in March were based on the twenty-four hour flow total recorded on the effluent flow meter that was adjusted downward by 25 % (historically the effluent flow meter over totalized the flow by about 25%) as recommended in the Recommendations Section of the 2002 Annual Report (page 5-8). The errant flow totals recorded on March 19, 20, and 21 were due to the influent flume surcharging during periods of heavy rainfall.

On March 19, the influent flow meter recorded a twenty-four hour flow total of 3.904 million gallons. The effluent meter recorded a twenty-four hour flow total of 3.729 million gallons. The twenty-four hour flow total for March 19 was calculated as: $3.729 \text{ MG} * .75 = 2.797$ million gallons.

On March 20, the influent flow meter recorded a twenty-four hour flow total of 5.177 million gallons. The effluent meter recorded a twenty-four hour flow total of 4.004 million gallons. The twenty-four hour flow total for March 20 was calculated as: $4.004 \text{ MG} * .75 = 3.003$ million gallons.

On March 21, the influent flow meter recorded a twenty-four hour flow total of 3.224 million gallons. The effluent meter recorded a twenty-four hour flow total of 2.476 million gallons. The twenty-four hour flow total for March 21 was calculated as: $2.476 \text{ MG} * .75 = 1.857$ million gallons.

On March 18, at 2105 hours, staff responded to a high water level alarm in the primary clarifiers. Staff opened the blending valve and the situation was corrected. They performed a detailed inspection of the plant and no other problems were noted. The alarm was received during a rain event that resulted in elevated flows to the plant.

On March 20, at 0220 hours and 1940 hours, staff responded to low chlorine residual alarms at the plant. Staff believes the slightly depressed chlorine residual were due to high flow rates corresponding to a storm event. They adjusted the hypochlorite dosing pumps and performed a detailed inspection and no other problems were noted. Staff noted that the change in the alarm set point for the chlorine residual alarm was effective in prompting a quick response time.

On March 28, at 2105 hours, staff responded to a high water level alarm in the primary clarifiers. Staff opened the blending valve and the situation was corrected. They performed a detailed inspection of the plant and no other problems were noted. The alarm was received during a rain event that resulted in elevated flows to the plant.

During March, plant staff continued to investigate possible solutions to the struvite problem that has been noted at the plant. Struvite, which is crystal like material, appears to be building up in the discharge piping of the digesters. Staff is concerned that the crystal like material will build up in the discharge piping of the digesters, and potentially impact the hydraulic capacity of those pipelines. Plant staff is currently in contact with various vendors and other treatment facilities in an attempt to correct the problem.

On March 24 and 25, Mr. Bruce Keogh gave a presentation at the Scenic Coast Association of Realtors Bimonthly Education Meetings held in Cambria and Los Osos. The presentation included a summary of the progress on the upgrade project and the sewer fee schedules for the City and Sanitary District. The presentation also provided public outreach on *toxoplasma gondii*, best management practices for cat litter including not flushing cat litter, information on the new County wide pharmaceutical take back program, proper disposal of FOG, collection system do's and don't's, information on the household hazardous waste facility at the plant, the lateral inspection program, and an update on the biosolids composting project.

Staff completed the composting process on compost batch #34. The composting program at the plant has been shut down due to potential space constraints imposed by the upgrade project.

On March 10, Ms. Susan McCabe toured the plant.

The National Estuary Program Volunteer Monitoring Program continued analysis of bacterial samples collected from throughout the watershed in the laboratory at the plant. The volunteers are using space provided in the lab by plant staff.

The permanent household hazardous waste collection facility (PHHWCF) at the plant continued to be well used by the public. Between twenty and fifty participants are using the facility each Saturday.

Bruce Keogh
Wastewater Division Manager
Lab/C/Bruce/Monthlys/March 2011

MORRO BAY/CAYUCOS WWTP FLOW DATA

2009	Total Flow	Daily Flow	Total Flow	Daily Flow	%	Total Flow	Daily Flow	%	# of days	Dates
JAN	30.468	0.983	7.585	0.237	24.9%	22.883	0.738	75.1%	32	Jan 1 - Feb 1, 2009
FEB	33.479	1.196	8.968	0.332	26.8%	24.511	0.875	73.2%	27	Feb 2 - Feb 28, 2009
MAR	33.975	1.096	7.973	0.257	23.5%	26.002	0.839	76.5%	31	Mar 1 - March 31, 2009
APR	33.841	1.128	7.341	0.245	21.7%	26.500	0.883	78.3%	30	April 1 - April 30, 2009
MAY	33.558	1.083	7.495	0.242	22.3%	26.063	0.841	77.7%	31	May 1 - May 31, 2009
JUNE	32.980	1.099	7.849	0.262	23.8%	25.131	0.838	76.2%	30	June 1-30, 2009
JULY	39.578	1.277	10.034	0.324	25.4%	29.544	0.953	74.6%	31	July 1 - July 31, 2009
AUG	35.664	1.150	8.843	0.285	24.8%	26.821	0.865	75.2%	31	Aug 1 - Aug 31, 2009
SEPT	30.367	1.012	7.219	0.241	23.8%	23.148	0.772	76.2%	30	Sept 1 - Sept 30, 2009
OCT	31.338	1.011	7.873	0.254	25.1%	23.465	0.757	74.9%	31	Oct 1 - Oct 31, 2009
NOV	30.237	1.008	7.181	0.239	23.7%	23.056	0.769	76.3%	30	Nov 1 - Nov 30, 2009
DEC	33.261	1.073	8.260	0.266	24.8%	25.001	0.806	75.2%	31	Dec 1 - Dec 31, 2009
ANNUAL AVERAGES	33.229	1.093	8.052	0.265	24.2%	25.177	0.828	75.8%		
2010	Total Flow	Daily Flow	Total Flow	Daily Flow	%	Total Flow	Daily Flow	%	# of days	Dates
JAN	42.053	1.357	11.058	0.357	26.3%	30.995	1.000	73.7%	31	Jan 1-Jan 31, 2010
FEB	35.432	1.265	9.845	0.352	27.8%	25.587	0.914	72.2%	28	Feb 1-Feb 28, 2010
MAR	36.204	1.168	9.396	0.303	26.0%	26.808	0.865	74.0%	31	March 1 - 31, 2010
APR	34.481	1.149	8.560	0.285	24.8%	25.921	0.864	75.2%	30	April 1 - April 30, 2010
MAY	34.141	1.101	8.059	0.260	23.6%	26.082	0.841	76.4%	31	May 1 - 31, 2010
JUNE	33.550	1.118	8.109	0.270	24.2%	25.441	0.848	75.8%	30	June 1-30, 2010
JULY	39.626	1.278	10.695	0.345	27.0%	28.931	0.933	73.0%	31	July 1-31, 2010
AUG	37.919	1.223	8.993	0.290	23.7%	28.926	0.933	76.3%	31	August 1-31, 2010
SEPT	31.984	1.066	7.510	0.250	23.5%	24.474	0.816	76.5%	30	September 1-30, 2010
OCT	32.144	1.037	7.490	0.242	23.3%	24.654	0.795	76.7%	31	October 1- 31, 2010
NOV	31.512	1.050	7.885	0.263	25.0%	23.627	0.788	75.0%	30	November 1-30, 2010

DEC	44.378	1.432	14.061	0.454	31.7%	30.317	0.978	68.3%	31	December 1-31, 2010
ANNUAL AVERAGES	36.119	1.187	9.305	0.306	25.6%	26.814	0.881	74.4%		
2011	Total Flow	Daily Flow	Total Flow	Daily Flow	%	Total Flow	Daily Flow	%	# of days	Dates
JAN	42.338	1.366	12.089	0.390	28.6%	30.249	0.976	71.4%	31	Jan 1-Jan 31, 2011
FEB	35.600	1.271	9.674	0.346	27.2%	25.926	0.926	72.8%	28	Feb 1-Feb 28, 2011
MAR	47.887	1.545	13.770	0.444	28.8%	34.117	1.101	71.2%	31	March 1 - 31, 2011
APR	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	#DIV/0!	30	April 1 - April 30, 2011
MAY	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	#DIV/0!	31	May 1 - 31, 2011
JUNE	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	#DIV/0!	30	June 1-30, 2011
JULY	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	#DIV/0!	31	July 1-31, 2011
AUG	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	#DIV/0!	31	August 1-31, 2011
SEPT	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	#DIV/0!	30	September 1-30, 2011
OCT	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	#DIV/0!	31	October 1- 31, 2011
NOV	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	#DIV/0!	30	November 1-30, 2011
DEC	0.000	0.000	0.000	0.000	#DIV/0!	0.000	0.000	#DIV/0!	31	December 1-31, 2011

MEMORANDUM

To: Honorable Mayor and City Council, City of Morro Bay
Honorable President and Board of Directors, Cayucos Sanitary District

From: Dennis Delzeit, P.E., Project Manager

Date: May 1, 2011

Subject: Status Report on Upgrade Project as of May 1, 2011

Recommendation: Receive the Status Report and direct staff accordingly

Activity During the Past Month:

The following is a condensed summary of the activity that has occurred since the April 14, 2011 JPA meeting:

- Requests for qualifications were issued to consulting firms to prepare the additional studies that were determined to be necessary by the California Coastal Commission (CCC) staff in their report to the Commission.
- Consultants were interviewed on April 14, 2011 and the selection committee narrowed the field to the final two consultants. Interviews were conducted with the final two consultants on April 19.
- The selection committee prepared a semi final scope of services for the studies and the final consultant selection is scheduled for the JPA meeting of May 12, 2011.

Looking Ahead:

Upcoming activities will be involved with the preparation of the substantial issues studies. The following activities are anticipated:

- Refinement of the work scope, schedule and fee with the consultant.
- Execution of the consultant contract.
- Kick off meeting with the consultant.
- Setting up the public input workshops.

Fiscal Impact:

- No new expenditures are requested on this agenda item.

Discussion:

Major Milestone Schedule

- Council certified the EIR and approval of the Conditional Use Permit and Coastal Development Permit January 11, 2011
- Deadline for Coastal Commission Appeals January 31, 2011
- Coastal Commission *substantial issue* hearing March 11, 2011
- Coastal Commission *de novo* hearing Not scheduled
- Submit SRF loan application to the State Board On hold
- Issuance of SRF Financing Agreement On hold
- Submit first SRF disbursement request to State Board On hold
- Completion of the Design On hold
- Advertise for Construction Bids On hold
- Receive Construction Bids On hold
- Award Construction Contract, after receiving State Revolving Fund Loan Approval On hold
- Start Construction On hold
- Completion of Construction On hold
- Achieve full compliance with federal secondary treatment Requirements Extended per *force majeure* action

Design:

No design work has been done the past month. Final design of the project will resume after completion of the Coastal Commission Appeal Process.

MWH Contract Fee Status:

- Contract Amount: \$2,700,000.00
- Addendum #1, updated flows and loadings: \$ 9,000.00
- Addendum #2, advanced treatment options: \$ 9,600.00
- Addendum #3, updated cost estimate \$ 18,700.00
- Revised MWH Contract Amount: \$2,737,300.00
- Amount Billed to Date: \$ 371,407.62
- Amount Remaining: \$2,365,892.38
- Most Recent Billing Amount (1/26/11)¹ \$ 73,245.29
- Percent of Contract Billed: 14%

State Revolving Fund Loan:

The State Revolving Fund loan process is on hold for due to the *force majeure* time extension.

¹ MWH work was suspended on 11/19/10 except for completion of surveying, geotechnical report, floor plan layout and support at the PC and CC meetings in support of the permits.

California Coastal Commission Coastal Land Use and Advocacy Consultant Services:

The McCabe & Company contract fee status:

- Invoice dated 4/11/11: $\$12,500 + \$857.47^2 = \$13,357.47$
- This is the only invoice received to date.

Project Manager Activities:

- Read, studied and evaluated the Statements of Qualifications (SOQ's) submitted by consultants for the additional studies;
- Chaired the selection committee meeting of April 4, 2011 to evaluate the SOQ's for the additional studies consultants;
- Set up selection committee consultant interviews and interviewed 4 consultants on April 14, 2011;
- Coordinated and answered consultant's questions before and after the interviews;
- Coordinated with Susan McCabe;
- Processed the McCabe invoice;
- Prepared three staff reports for the April 14, 2011 meeting:
 - Monthly Status Report
 - Advocacy Consultant Staff Report
 - Substantial Issues Consultant Request for Qualifications Staff Report
- Participated in the JPA meeting of April 14, 2011;
- Prepared the agenda and participated in the post-JPA executive meeting of April 21;
- Met on April 25 with MBCSD staff to refine the scope of services for the consultant study.
- Contract Fee Status:

▪ Original Contract amount:	\$250,000.00
▪ Contract Amendment (PERC)	\$ 3,000.00
▪ Revised Contract Amount:	\$253,000.00
▪ Amount billed to date:	\$ 81,197.06
▪ Amount remaining:	\$171,802.94
▪ Most Recent Billing Amount (4/6/11)	\$ 10,818.65
▪ Percentage of contract billed:	32%

It is estimated that the \$253,000 project limit will be reached in July 2012. An update will be provided each month.

Attachment:

None

² Travel expenses to Morro Bay and the Santa Cruz Coastal Commission hearing on 3/11/11. The contract fee is \$12,500 per month plus outside expenses.

STAFF REPORT

MORRO BAY-CAYUCOS J.P.A. WASTEWATER TREATMENT PLANT

To: Honorable Mayor and City Council, City of Morro Bay
Honorable President and Board of Directors, Cayucos Sanitary District

From: Dennis Delzeit, P.E., Project Manager

Date: May 5, 2011

Subject: Discussion of Coastal Land Use and Advocacy Consultant (CLUAC) Status Report

Recommendation:

Authorize the Project Manager to suspend the Agreement for Consultant Services with McCabe & Company, pursuant to Section 6(a), at such time as the collaborative process between McCabe, the Technical Consultant, MBCSD staff and Coastal Commission staff in finalizing the scope of the substantive content of the Alternatives Analysis is complete and preparation of the written report is underway.

Fiscal Impact:

Suspension of the consultant services while the alternatives analysis being prepared could represent a suspension of approximately 5 or more months. This translates into a potential savings of \$12,500 plus expenses per month for an estimated total of at least \$62,500.

Background and Discussion:

At the April 14, 2011 JPA meeting there was considerable discussion of the coastal land use and advocacy consultant services that are under contract with McCabe & Company.

In response, McCabe & Company provided the attached memo providing an overview of services and a projection of predicted services. In response to concerns expressed at the last JPA meeting the May 3, 2011 states:

" Based on past experience, our work is most effective when we serve a consistent role to our clients throughout the Coastal Commission process. However, we are mindful of fiscal considerations of MBCSD and are open to discussions about modifying our contract during periods in which our services would be required to a lesser degree. One such period may be during the time in which the technical consultants are preparing their written reports after they have been provided direction. We look forward to engaging in a dialogue with you about this. We have enjoyed our service to MBCSD to date and believe we have much to offer to the JPA to achieve success on this important public works project."

Ms. Susan McCabe will be present at the May 12, 2011 JPA meeting to discuss this issue.

Conclusion:

MBCSD staff and the project manager have had discussions with Ms. McCabe about time frames in which her services could be reduced. It is the consensus of the MBCSD staff and project manager that her services could be suspended while the technical studies are underway and resumed when the studies are nearly complete. She could then participate in the final technical report preparation and assist as a CLUAC with the facilitation of communication with the Coastal Commission staff and Commissioners.

Attachments:

McCabe & Co. Memo Dated May 3, 2011 and April 4, 2011

MEMORANDUM

TO: Dennis Delzeit, Project Manager
FROM: McCabe & Company (Susan McCabe & Anne Blemker)
RE: Morro Bay/Cayucos WWTP On-going Consulting Role
DATE: May 3, 2011

McCabe & Company was retained by the Morro Bay-Cayucos Sanitary District (MBCSD) in February 2011 to provide an analysis of the appeals of the wastewater treatment plant (WWTP) upgrade project filed with the Coastal Commission and to provide a preliminary analysis as to the feasibility of obtaining Coastal Commission approval of the project. All tasks requested of our firm to date have been completed in a timely and comprehensive manner. It has come to our attention that questions have been raised regarding the need for our firm's services while a formal Alternatives Analysis requested by Commission staff is being prepared. We appreciate the opportunity to discuss our role as MBCSD's Coastal Commission land use consultant and the value we bring to MBCSD's efforts to obtain Coastal Commission approval of the WWTP project.

Both Susan McCabe and Anne Blemker bring an extensive understanding of the Coastal Act, and local coastal programs (LCPs), the evolving interpretation of these documents, and the Commission's case-by-case approach to land use planning. Susan has deep policy experience from her years as a coastal commissioner and principal consultant to the Assembly Energy and Natural Resources Committee, as well as hands-on experience in dealing with Commission staff and commissioners through her representation of a wide array of public and private sector clients in a span of over twenty years of consulting. Anne, who was a Coastal Commission staff analyst for seven years and holds a Master of Urban Planning degree, interfaces with clients, technical consultants, and Commission staff on a daily basis to bring resolution to issues surrounding applicants' needs, local planning issues, LCP considerations and Coastal Act requirements. We will continue to provide MBCSD with our Coastal Commission land use expertise throughout the duration of our contract with the JPA.

We have worked closely with MBCSD staff in the development of the RFQ seeking proposals from consulting firms to prepare an Alternatives Analysis and other technical studies responsive

to requests for supplemental information from the Coastal Commission staff. We are currently advising MBCSD staff as to refinements to the scope of work that could provide cost savings without sacrificing important work products. Once a consulting firm has been selected to prepare the Alternatives Analysis, we would work closely with MBCSD and the consulting firm to ensure that the study components are responsive to issues identified by the Coastal Commission staff. We have extensive experience working with the Central Coast Coastal Commission staff, including Deputy Director Charles Lester, District Director Dan Carl and Staff Analyst Madeline Cavalieri. We are able to communicate well with both Coastal Commission staff and technical consultants to facilitate maximum understanding of policy considerations, timely communication exchanges and ensure an expeditious review of data submittals and drafts. We are confident that we can assist MBCSD in fostering a collaborative process between the JPA, its technical consultants and Coastal Commission staff that will result in submittal of a complete package of supplemental information and timely review by Commission staff.

In our status memo dated April 3, 2011 (see attached), we outlined a number of activities in which we would engage during the course of project review by the Commission through the date the Commission acts on the project. We continue to believe those activities are important components to obtaining a successful outcome at the Coastal Commission. Based on past experience, our work is most effective when we serve a consistent role to our clients throughout the Coastal Commission process. However, we are mindful of fiscal considerations of MBCSD and are open to discussions about modifying our contract during periods in which our services would be required to a lesser degree. One such period may be during the time in which the technical consultants are preparing their written reports after they have been provided direction. We look forward to engaging in a dialogue with you about this. We have enjoyed our service to MBCSD to date and believe we have much to offer to the JPA to achieve success on this important public works project.

MEMORANDUM

TO: Dennis Delzeit, Project Manager
FROM: McCabe & Company (Susan McCabe & Anne Blemker)
RE: Morro Bay/Cayucos WWTP Coastal Issues Progress Summary
DATE: April 3, 2011

ACTIVITY SUMMARY

McCabe & Company was retained by the Morro Bay-Cayucos Sanitary District (MBCSD) to provide an analysis of the appeals of the wastewater treatment plant (WWTP) upgrade project filed with the Coastal Commission and to provide a preliminary analysis as to the feasibility of obtaining Coastal Commission approval of the project. To date, we have conducted the following activities:

- Communicated with Coastal Commission Santa Cruz District staff by phone and e-mail and coordinated a meeting with Coastal Commission staff following the Substantial Issue hearing on March 11, 2011;
- Conducted a site visit of the project site and visited several alternative sites discussed in the EIR and identified by appellants;
- Participated in a strategy session with project representatives to discuss process and timing;
- Attended the Coastal Commission's Substantial Issue hearing and participated in a subsequent meeting with Coastal Commission staff to discuss appeal issues, supplemental information requested by Commission staff, and a processing timeframe;
- Participated in MBCSD team debriefing session to discuss the meeting with Coastal Commission staff; and
- Engaged in periodic communications with project manager, Dennis Delzeit, regarding the project and next steps.

MEETING WITH COASTAL COMMISSION STAFF

Upon review of the appeals of the WWTP project and related documents and participation in a meeting with Coastal Commission staff, we offer the following observations.

The meeting with Coastal Commission staff (District Director Dan Carl and Staff Analyst Madeline Cavalieri) was both informative and productive. The purpose of the meeting was to develop a clear understanding of the Commission staff's concerns relating to the project and actions MBCSD could take to address those concerns. Staff recognizes the water quality benefits provided by the project and made clear that their primary concern with the proposed project was a lack of a thorough alternatives analysis of other sites that might be preferable to the proposed project location from a Coastal Act perspective. Absent such an analysis, they said they could not conclude that the proposed project location is the best site under the standards of the Coastal Act and the Morro Bay Local Coastal Program (LCP). They offered to coordinate with MBCSD to develop a list of alternative sites to be analyzed, as well as criteria under which the sites should be reviewed. We discussed the other issues raised in the Commission appeals (reclaimed water, plant capacity, hazards, archeology, and public views) and agreed to provide supplemental information requested by Commission staff for their review of the project. We believe that if an alternatives analysis demonstrates that the proposed location for the WWTP is the most appropriate location for the project, Commission staff will be open to recommending approval of the project and that other issues raised in the appeal could be dealt with through conditions to the permit.

PROPOSED NEXT STEPS AND ROLE OF MCCABE & COMPANY

The meeting with Commission staff resulted in a better understanding of the issues raised by the Commission appeals and a road map MBCSD can follow to provide Commission staff with necessary supplemental information by which Commission staff can thoroughly evaluate the proposed WWTP project. Below is a list of activities we would propose that MBCSD undertake with the assistance of McCabe & Company leading up to and through Coastal Commission action on the WWTP project.

- Coordinating with MBCSD's technical consultants to ensure that supplemental studies and data submittals are responsive to Coastal Commission staff concerns and data gaps in the

policy areas identified in the Commission appeals (alternatives analysis, water reclamation plan, plant capacity, coastal hazards, archaeological resources, public views);

- Coordinating with Coastal Commission staff to facilitate timely communication exchanges and expeditious review of data submittals;
- Developing and communicating MBCSD's position on the project to Coastal Commissioners, Coastal Commission staff, regulatory agencies, other elected and appointed officials, decision-makers and stakeholders involved with the project;
- Providing briefings to Coastal Commissioners on a periodic basis, as appropriate, with particular emphasis on the commissioner representing the South Central Coast Region;
- Identifying and mobilizing support for the project, and creating appropriate messages for those entities;
- Developing appropriate oral and written communications (briefing materials) for Commissioners and Staff; and
- Assisting in preparing effective oral and Power Point presentations for the Coastal Commission hearing(s) on the project and recommending appropriate speakers for the public hearing(s).

CHANCES FOR SUCCESS

We have learned much in the first month following the filing of appeals on the WWTP project. We have begun a productive dialog with Commission staff, have developed an understanding of Commission staff's concerns with the project, and have created a road map by which to address those concerns. While we cannot pre-judge the outcome of the alternatives analysis, we have every expectation that if the currently proposed site is found to be the environmentally preferred site, it will weigh heavily in the Commission staff recommendation. With regard to the Commission itself, we believe that a favorable staff recommendation coupled with appropriate communications and educational efforts with commissioners will best position MBCSD to obtain a favorable outcome on the project.

TIMING AND COASTAL COMMISSION CONSULTING SERVICES PROJECTED COSTS

The timing of the de novo hearing on the project will be dependent on several factors, including preparation and submittal of an alternatives analysis and other supplemental information requested by Commission staff, Commission staff workload, and Commission hearing dates near the South Central Coast Region. We are prepared to work closely with MBCSD, its technical consultants and Commission staff to reduce delays and ensure expeditious consideration of the project by the Coastal Commission. While it is difficult to accurately predict when the project will be scheduled for a Commission hearing based on the uncertainties of the above-mentioned factors, we believe that it is reasonable to expect a Commission hearing in approximately ten months.

McCabe & Company would charge a monthly fee of \$12,500.00 for services provided to MBCSD through the month of Coastal Commission action on the project. Although we believe that the activities to be performed by McCabe & Company as outlined above will involve a steady level of work on our part, there will be periods of varying levels of activity. During the first month in which we provided services based on an hourly rate to be capped at \$12,500.00, our fees would have totaled \$32,093.75. We've found that our fee structure evens out such periods and provides our firm, as well as our clients, with a level of budgeting consistency.

STAFF REPORT

MORRO BAY-CAYUCOS J.P.A. WASTEWATER TREATMENT PLANT

To: Honorable Mayor and City Council, City of Morro Bay
Honorable President and Board of Directors, Cayucos Sanitary District

From: Dennis Delzeit, P.E., Project Manager

Date: May 12, 2011

Subject: Selection of consultant to prepare substantial issues studies to address the California Coastal Commission appeal with consideration to authorize staff to negotiate a contract.

Recommendation: Authorize staff to negotiate a final scope of services, schedule and fee and execute a contract with Dudek for the preparation of substantial issues studies for a fee not to exceed \$350,000.

Fiscal Impact:

The fee for the preparation of substantial issues studies will be an evolving process as the alternative site analysis is conducted. There are complex issues that could be evaluated at each of the sites. Since the alternative sites are unidentified at this time, a work scope is being developed that will provide flexibility to expand or reduce the services as the project unfolds. As an example, some sites may require extensive coastal hazard analysis and other sites may not. Each site will have specific issues that will be analyzed after the sites are identified through the public outreach process.

The most responsible way to deal with these unknown and evolving issues is to structure the work scope and fee in a phased manner. MBCSD staff and the project manager will then have the capability to exercise flexibility to assure that all of the issues that are required by the Coastal Commission are addressed and also manage the scope and fee for maximum cost effectiveness. An update on actual expenditures will be provided on a monthly basis to the JPA. A budget ceiling for a not to exceed amount of \$350,000 is recommended.

Background and Discussion:

At the April 14, 2011 JPA meeting the consultant selection procedure was discussed and the following motions¹ were made:

Morro Bay Motion: "Smukler moved to bring back a minimum of 2 evaluated firms and

¹ Please note that these motions are in draft form and are subject to review and approval of the City Council and District Board of Directors.

that the Board makes the final decision. Borchard 2nd.

Discussion of whether the 2 firms would attend or just their qualifications and recommendations would be evaluated at the next JPA. Smukler clarified next JPA evaluate the qualifications and recommendations. Motion passed (4-0)."

Cayucos Motion: "Fones moved to bring back a minimum of 2 evaluated firms and that the Board makes the final decision. Foster 2nd. Discussion to get Foster the information on the criteria for the firms and the evaluation process. All information is available to Foster and will be given to him. Motions passed (5-0)."

On March 11, 2011 the California Coastal Commission (CCC) determined that additional study of substantial issues is required prior to placing the coastal development permit on the Commission's agenda.

On March 15, 2011 requests for qualifications (RFQ's) were issued to seven firms. The stated goal in the RFQ is:

"The preparation of an analysis of the substantial issues that are identified in the California Coastal Commission staff report prepared 2/16/11 (copy enclosed)."

The RFQ asked that the consultants provide the following information:

1. **Scope of Services:**

- a. Describe in sufficient detail to identify the major elements of the services that are to be provided by the consultant.
 - b. The scope of services shall be accomplished in two phases: Phase 1 will evaluate the alternative sites (rough and fine screening); Phase 2 will provide analysis of the other issues that are required in the Coastal Commission staff report.
 - c. Consultants were asked to assume two public workshop presentations and two presentations to the JPA. Also, include two meetings with CCC staff and presentations at two California Coastal Commission hearings.
 - d. Developing the list of alternate sites is part of the consultant's work scope. For estimating purposes, consultants were asked to assume that a maximum of 10 sites will be evaluated in the "rough screening" analysis and a maximum of 3 sites will be evaluated in the "fine screening" analysis.
 - e. Provide a first and second draft of each of the reports to MBCSD staff and after approval of the reports by the MBCSD staff, two drafts will be presented to the Coastal Commission staff.
2. **Project Team:** Identify the project team and specify the responsible project manager and key individuals.
 3. **Qualifications:** Provide the qualifications of the key individuals on the project team.
 4. **Schedule:** Describe major work task items assuming that the JPA approves the consultant selection at the May 12 meeting. Allowing for contract signing, the start date should be assumed as June 1. There is no specific deadline. However, the MBCSD expects that the schedule will reflect an aggressive commitment.
 5. **Fee:** Please submit a rough cost estimate. The consultant selection will not be based upon the fee. However, it is necessary to request the fee for budget estimating and decision making purposes. The MBCSD does not have budget approval for this study. The contract fee will be based upon a "time and materials" basis with a not-to-exceed limit.

6. **References:** *Provide references of the key individuals of the project team, particularly the project manager. Please provide contact information of the references.*

Proposals were submitted on March 31, 2011 by:

Dudek, Santa Barbara
Sage Institute, Atascadero
Kennedy/Jenks Consultants, Palo Alto
Chambers Group, Santa Ana
RBF, Temecula

On April 4, 2011 the Statements of Qualifications were evaluated by the "selection committee" that included Bill Callahan, Rob Livick, Dylan Wade, Bruce Keogh, Jon Hanlon, and Dennis Delzeit. The proposals were evaluated according to industry standard procedures and included the following categories:

- Understanding of the work to be done
- Experience with similar kinds of work
- Quality of staff for the work to be done
- Suggestions for added success on this project
- Performance on past projects

The selection committee also evaluated the consultants' ability to:

- Provide the facilitation necessary to solicit public participation in the site selection criteria and site selection process and
- Effectively communicate with the Coastal Commission staff and the Coastal Commission.

Discussions of the firms' submittals involved several iterations and extensive technical discussions that took many hours. At the conclusion of these discussions, the selection committee invited four firms for interviews. On April 14 interviews were conducted with Dudek, the Sage Institute, RBF and the Chambers Group. After the interviews were concluded, the relative merits of each of the firms was discussed. Dudek and the Sage Institute were judged to be the two best qualified but the selection committee determined that one more interview would be needed to make the final determination of the most qualified firm.

On April 19, 2011 Dudek and the Sage Institute were given a final interview. After a discussion and a review of the written statements of qualifications the selection committee unanimously agreed that Dudek is the best qualified consultant. Dudek's references were checked and received high ratings.

The selection committee has completed a thorough analysis of the consultant candidates and is unanimous in their recommendation of Dudek as the firm best suited for the project. Dudek was judged to be especially strong in the following categories:

1. Qualifications:

The Dudek project manager is a former Coastal Commission staff member. Dudek has coastal planners that specialize full time in CCC policy and procedures. Dudek offers an extensive history of successful coastal planning, permitting, and permit appeals support before the CCC and maintains a positive and effective working relationship with CCC staff throughout the coastal zone, including the CCC's Central Coast District staff in Santa Cruz.

2. Project Understanding:

The team has a clear understanding of the CCC's study requirements. Dudek's draft scope of services became the template for establishing the parameters for this very unique project assignment.

3. Public Participation and Stakeholder Process:

Dudek demonstrated a strong background in facilitating public participation through workshops and other processes. The attached "Public Outreach Work Plan Details Alternative Site Analysis" provides specific detail of this task.

4. Successful Track Record

Dudek's references rated their CCC experience as very successful.

As previously described in this report, the scope of services for responding to the California Coastal Commission's concerns is very challenging. The selection committee spent hours studying details of the draft Dudek work scope and refining it as accurately as can be determined. A phased approach is recommended in order to address the unknown conditions on the alternative sites and the unknown hazards that will need to be evaluated. The final draft of the scope of services is attached. It is recommended that the JPA authorize the MBCSD staff and project manager to conduct final discussions and final refinements of the project scope of services and negotiate a fee based upon the final work scope, and enter into a contract so the work can begin. State law and industry practice preclude selecting professional services based upon "low bid fee"². The work scope for this project is a hybrid study, and the MBCSD staff and project manager are of the opinion that a fee of approximately \$350,000 will cover the cost of the anticipated services.

² California Government Code Chapter 10 Section 4526:

"Notwithstanding any other provision of law, selection by a state or local agency head for professional services of private architectural, landscape architectural, engineering, environmental, land surveying, or construction project management firms shall be on the basis of demonstrated competence and on the professional qualifications necessary for the satisfactory performance of the services required. ..."

It is anticipated that the final studies could be presented to the JPA in November or December and Coastal Commission hearings could occur in the Spring of 2012. The Project Manager will provide the Council and District Board with updates of the on-going substantial issues analysis as necessary.

Conclusion

Staff recommends that the JPA Board, after considering the two final proposers:

Authorize staff to negotiate a final scope of services, schedule and fee and execute a contract with Dudek for the preparation of substantial issues studies for a fee not to exceed \$350,000.

Attachments:

Scope of Services (Final Draft)

Dudek's Statement of Qualifications

Dudek's "Public Outreach Work Plan Details, Alternate Site Analysis"

Sage Institute's Statement of Qualifications

Draft Scope of Work

On January 11, 2011, the Morro Bay City Council conditionally approved MBCSD's request for an upgrade of the MBCSD WWTP and certified the environmental impact report (EIR) for the proposed project. The proposed plant upgrade will provide full secondary treatment for all effluent discharged through the facilities' ocean outfall and tertiary filtration capacity equivalent to a peak seasonal dry weather flow of 1.5 million gallons per day (mgd).

The City's approval of a coastal development permit for the proposed project was appealed to the CCC. At the CCC hearing on March 11, 2011, the CCC found that the City's action to approve the proposed project raised "substantial issue" with respect to the proposed project's consistency with various policies of the City's certified LCP and the public access and recreation policies of the California Coastal Act (CCA). As a result, the CCC has asserted jurisdiction over the proposed project's coastal development permit, which is now subject to the CCC's *de novo* hearing requirements.

The primary issue raised during the CCC's substantial issue review is that the City's approval lacked the necessary alternatives analysis to demonstrate the current WWTP site is the most appropriate location for the proposed project in terms of the various coastal resource constraints that occur at the existing site, and in consideration of other potentially feasible off-site locations that may better avoid or minimize impacts to coastal resources. The CCC's substantial issue review further determined that additional analysis and technical study is necessary to conclude that the proposed project at its current location can be designed and conditioned to ensure potential impacts to coastal resources are avoided and minimized, and to better achieve LCP objectives for public works projects.

The CCC determined that a *de novo* review of the coastal development permit for the proposed project would be premature absent additional work on the City's part to develop the necessary supporting documentation for the CCC to more thoroughly evaluate the proposed project for consistency with applicable LCP and CCA policies, including a more comprehensive analysis of alternative site and design options and additional site-specific study and analysis of the proposed project site. To this end, MBCSD issued a RFQ on March 15, 2011, with an addendum on March 17, 2011, to conduct an alternatives site analysis (phase 1) and analyze the other policy consistency issues identified in the CCC staff report (phase 2) for the proposed project.

It is understood that any site alternatives considered for the alternatives analysis should meet the objectives of the proposed project, as stated in the final EIR:

- Comply with the secondary treatment standards contained in 40 CFR Part 133
- Phase out the need for a 301(h) modified discharge permit
- Minimize flooding impacts on site at WWTP and adjoining properties
- Accommodate future installation of reclamation capability to meet Title 22 requirements for disinfected tertiary recycled water for unrestricted use
- Comply with "Settlement Agreement for Issuance of Permits to and Upgrade of Morro Bay Cayucos Wastewater Treatment Plant," including full operation by March 31, 2014.

Phase I: Alternative Sites Analysis

Consultant will conduct a comprehensive alternatives analysis for the proposed project using a rough screening analysis of up to 10 potential sites, including the proposed project site and Chorro Valley site, and a fine screening analysis of up to three selected sites, including the proposed project site. For both the rough and fine screening analysis, environmental and coastal resource/policy factors considered in the analysis may

exceed those identified in the CCC's substantial issue determination to ensure any new, potentially feasible sites identified during the alternatives analysis do not result in previously unidentified environmental or coastal resource policy conflicts.

ROUGH SCREENING ANALYSIS (10 SITES)

A rough screening analysis will be conducted to identify feasible and appropriate project alternatives to carry forward into a fine screening analysis. The site alternatives for the rough screening analysis will be preliminarily identified based on the proposed project documents that describe the current WWTP and Chorro Valley sites, and the Surfrider Foundation appeals letter, which identifies six additional potential sites.

These site alternatives will be supplemented by additional sites to be determined based on a public workshop and siting criteria to be developed by Consultant, MBCSD staff, and the project manager. The site alternatives will include at a minimum:

1. Current WWTP site (proposed project)
2. Chorro Valley site – EIR Alternative 3 (Cannon Associates, 2007)
3. Surfrider Foundation site – Whale Rock site
4. Surfrider Foundation site – Highway 41 Corridor Madonna property
5. Surfrider Foundation site – Chevron Oil Facility
6. Surfrider Foundation site – Hayashi or Giannini properties
7. Surfrider Foundation site – Power plant site
8. Surfrider Foundation site – PG&E/City property
9. Additional site that meets established siting criteria
10. Additional site that meets established siting criteria.

Rough screening will be based on the site alternatives meeting the overall project objectives and established evaluation criteria. Evaluation criteria will be discussed and established during the public workshops. It is anticipated that the criteria will be based on a combination of environmental, policy, and engineering factors/requirements. Each alternative will then be assessed according to the established evaluation criteria, preliminarily identified below, and ranked based on weighting factors as determined in coordination with public and stakeholder input, MBCSD and CCC staff, as well as the project manager. The evaluation criteria assessment will be based on a visual assessment of the sites, and review and analysis of existing available information applicable to each criterion.

Candidate Criteria for Evaluating Alternatives

1. Environmental constraints/preliminary LCP consistency analysis:
 - Coastal hazards (as identified in the CCC appeal staff report)
 - Public access and recreation
 - Visual resources
 - Cultural resources
 - Biological/marine resources (sensitive upland habitat, water quality, wetlands, marine habitat)
 - Agricultural resources
 - Land use compatibility.
2. Logistics (can the proposed project be implemented in the required timeframe considering legal and institutional issues):
 - Proximity to existing wastewater collection/conveyance facilities
 - Site suitability – ability to accommodate growth
 - Site availability – landowner rights
 - Legal restrictions
 - Regulatory restrictions

- Recycled water feasibility and opportunities.
3. Economic factors:
 - Economic feasibility
 4. Other factors:
 - As identified in the public outreach meetings.

A summary report and evaluation criteria matrix addressing each alternative site considered will be prepared to clearly document and summarize the results of the rough screening analysis. The current WWTP site (proposed project site) and the top two ranking site alternatives will move forward to the fine screening analysis.

Public Outreach

The rough screening analysis will include the following opportunities for public input and team/CCC staff collaboration:

- Public workshop presentations (2)
- CCC staff meetings (3)
 - Kick-off meeting between CCC staff and consultant
 - Meeting after the workshops to review the established criteria
 - Meeting with the CCC to present the final list of rough screening sites
- Presentation to joint powers authority (JPA) (1).

The public workshops proposed during the rough screening analysis phase are intended to facilitate public input on feasible alternative sites, and to identify and discuss the proposed screening approach and evaluation criteria. Accordingly, Consultant shall to prepare supporting materials, including a formal PowerPoint presentation discussing the approach and methodology, and lead the public question and answer period along with the City and MBCSD team. The public workshops are assumed to be held in the evening at Morro Bay or Cayucos, and will be attended by the Consultant project manager, phase I task leader, and additional key staff. A second workshop will be held to provide an alternate time for the public to attend if they are not available to attend the first workshop. If people attend both meetings, they will only get to vote one time for their preferred sites. The meetings will be scheduled to minimize the consultants travel and down time (eg Evening followed by a daytime meeting).

It is assumed the meetings with CCC's Central Coast District staff to discuss the rough screening analysis and preliminary findings will be held at the local CCC office in Santa Cruz, and will be attended by the Consultant project manager, phase I task leader, and additional key staff.

The presentation to the JPA shall occur following the public workshops and CCC staff meeting. A formal PowerPoint presentation will be prepared to present the three suggested alternative sites to bring forward for further analysis based on comments received, and per the results of the rough screening analysis. It is assumed this presentation will occur in the evening at City Hall, and that the Consultant project management team will attend and be prepared to respond to any questions from the JPA.

FINE SCREENING ANALYSIS (3 SITES)

The fine screening analysis will be based on site alternatives meeting additional, focused evaluation criteria and will include:

- I. The current WWTP site (proposed project)

2. Two sites determined to meet the project objectives while minimizing environmental impacts and engineering constraints.

The evaluation criteria presented herein are based on project objectives and the need for more technical and detailed analysis of LCP and CCA policy conflict issues presented in the CCC Appeal Staff Report, which would be augmented, as necessary, should any previously unidentified environmental or coastal resource impact issues be carried over for a particular site from the rough screening analysis.

The fine screening analysis will be conducted at a level of detail sufficient to demonstrate the proposed project's consistency with applicable LCP and CCA policies while ensuring project goals and objectives are achieved, and will thus support the Phase 2 Substantial Issue Analysis. As such, the fine screening analysis will be conducted concurrently with the technical analyses included in the phase 2 scope of work as applicable and noted below for each criterion. Each of the three alternative sites will then be ranked based on predetermined weighting factors as determined in coordination with stakeholders, MBCSD and CCC staff, as well as the project manager.

Candidate Criteria for Evaluating Alternatives

1. Avoid and minimize environmental impacts/LCP consistency analysis:
 - Coastal hazards (Phase 2 Coastal Hazards Technical Study)
 - Risk of flooding – 100-year storm event
 - Tsunamis
 - Shoreline erosion – sea level rise
 - Liquefaction
 - Public access, recreation, and visitor-serving uses
 - Traffic/parking
 - Objectionable odors
 - Opportunities to enhance recreation/visitor-serving resources
 - Visual resources
 - Public viewsheds
 - Significant landforms
 - Compatible design
 - Sustainable use of public resources
 - Maximize water reclamation (based upon conceptual reconnaissance information)
 - Maximize treated wastewater disposal options
 - Biosolids treatment and reuse options
 - Cultural resources
 - Recorded archaeological and historical sites
 - Environmentally sensitive habitat areas (ESHA)
 - Water quality/groundwater basin recharge
 - Marine habitat/ocean outfall.
2. Ability to accommodate existing and planned development through the life of the facility (based on Facility Master Plan Amendment #2)
3. Project implementability:
 - Maximize proposed project's ability to meet objectives
 - Compliance with the secondary treatment standards
 - Compliance with "Settlement Agreement for Issuance of Permits to and Upgrade of Morro Bay Cayucos Wastewater Treatment Plant" with full operation by March 31, 2014
 - Minimize project delays

- Additional infrastructure requirements – wastewater collection/conveyance system (facilities/pipelines)
 - Acquisition of land
 - Regulatory permits and approvals
 - Public controversy.
4. Economic factors – minimize cost:
- Capital cost (planning, design, property acquisition, construction, mitigation)
 - Operational cost.

Public Outreach

The fine screening analysis will include the following opportunities for additional public input and team/CCC staff collaboration:

- Public workshop presentation (I)
- CCC staff meeting (I)
- Presentation to JPA (I).
- Presentation to the CCC as an informational item prior to the substantial issue hearing (Optional)

The public workshop proposed during the fine screening analysis phase is intended to provide clear direction and comparison at an equal level of detail for the three feasible alternative sites evaluated pursuant to the criteria described above, and in accordance with CCA directives. Consultant shall prepare supporting materials, including a formal PowerPoint presentation discussing the approach, methodology, and findings. The public workshop is assumed to be held in the evening at City Hall, and will be attended by the Consultant project manager, phase I task leader, and additional key staff.

It is assumed the meeting with CCC's Central Coast District staff to discuss the preliminary conclusions of the fine screening analysis will be held at the local CCC office in Santa Cruz, and will be attended by the Consultant project manager, phase I task leader, and additional key staff.

The presentation to the JPA would occur following the above meetings, and would reflect input received from the public and CCC staff. It is assumed this presentation will occur in the evening at Morro Bay or Cayucos, and that the Consultant project management team will attend.

As an option and prior to substantial issue hearing, the consultant shall schedule a presentation item for to update the CCC on the progress of the alternatives analysis.

Phase 2: Substantial Issue Analysis

The CCC's *Appeal Staff Report, Substantial Issue Determination* identified substantial issue with respect to the City's approval of a coastal development permit for the proposed project, on the basis of inconsistency with the CCA and/or certified LCP policies. Accordingly, the City has been directed by the CCC to provide additional project details and analysis deemed necessary to evaluate the proposed project for consistency with the LCP and the public access and recreation policies of the CCA before the CCC will review the proposed project in a *de novo* hearing context.

CCC/CITY LCP CONSISTENCY ANALYSIS

The CCA includes the basic policies for managing and balancing the use of resources for state and national interests in California's coastal zone. CCA policies address coastal resource issues including public coastline access, coastal and inland recreation, low-cost visitor activities, protection and enhancement of sensitive

habitats and species, water quality, and agricultural and visual resources. Development activities requiring a coastal development permit in the coastal zone are regulated by the CCC and local governments through their coastal development permit processes.

The City assumed coastal development permit authority in most areas within the City pursuant to its LCP certified in October 1982. As such, the City's certified LCP serves as the regulatory framework and standard of review for all development activities in the City that are subject to coastal development permit requirements. However, because the proposed project site is within the Coastal Appeals Jurisdiction, the proposed project may be appealed to the CCC.

Building on the data and assessment produced through the phase 1 alternatives analysis scope of work, and additional technical study generated through the phase 2 scope of work described below, the Consultant team will complete additional analysis of coastal resources potentially affected by the proposed project. The analysis shall focus on resolving each policy conflict issue raised in the substantial issue determination and providing appropriate project detail and analysis to support CCC staff review of the proposed project and preparation of CCC staff report findings.

In addition, because the CCC's *de novo* review of the proposed project is not limited to only those policy consistency issues identified in the substantial issue determination, Consultant shall prepare a policy consistency analysis for all CCA and LCP policies potentially applicable to the proposed project. The CCA and LCP consistency analysis will include close coordination with the City and MBCSD to identify options and opportunities for addressing and resolving potential policy conflicts, including design options, project phasing, and mitigation.

Coastal Hazards

The City's LCP requires that new development be located to minimize risks to life and property and ensure structural stability, and that it not create or contribute to geologic hazards of the site or surrounding area. The LCP further requires that new development, with some exceptions, be prohibited in 100-year floodplain areas, that grading be limited to the extent feasible, and that new development and/or existing structural hazards be designed to withstand natural and man-made hazards to acceptable levels of risk.

Review of alternative sites and issue conformity will ensure appropriate project siting in accordance with LCP policies, including in the context of the project potentially being subject to coastal hazards associated with floodplain development, tsunami, wave uprush, shoreline erosion (with anticipated sea level rise), and liquefaction.

Alternative sites not located in proximity to the shoreline may reduce impacts relative to coastal hazards, while the proposed coastal hazards technical study (see scope of work below) and additional analysis may confirm the proposed project site is appropriate for the project by demonstrating the proposed project is located and designed to avoid or minimize risks associated with coastal hazards.

The proposed project and alternative sites (up to three) will be assessed at an equal level of detail for potential impacts associated with coastal hazards. The Consultant shall review and summarize data and reports previously prepared for the proposed project, and prepared pursuant to this scope of work, to analyze the project for consistency with applicable LCP policies. The analysis shall:

- Consider site-specific and project design features to assess whether the proposed project is designed to ensure geologic and structural integrity while minimizing grading to the extent feasible
- Determine if the project would be subject to existing or future wave uprush or shoreline erosion impacts for any sites in proximity to the shoreline

- Determine if a shoreline protection device would be required to protect the site over the design life of the project
- Ensure adequate mitigation has been required to address potential tsunami risks (i.e., tsunami evacuation plans).

Public Access and Recreation

City LCP and CCA policies require new development to maximize public access to and along the shoreline and to protect oceanfront land for public access and recreation. Various factors are considered when applying coastal access and recreation policies, including: 1) the physical availability of access and recreation areas; 2) the ability of the public to reach and utilize these sites (via pedestrian, bike, and vehicular corridors); 3) parking availability; 4) provision of other support facilities, such as restrooms and picnic areas; 5) addressing user demands and conflicts; and 6) maintenance of a diversity of coastal recreation experiences.

The proposed project and alternative sites (up to three) will be assessed at an equal level of detail for potential impacts to public access and recreational resources in the project area, as well as for opportunities to protect and enhance these resources pursuant to applicable CCA and LCP policies. The analysis will consider how the proposed project construction and operation may adversely or positively affect the various factors affecting the public's right to access and use the shoreline and other recreational facilities in the project area, including changes in visual or usable open space or recreational facilities, odor and noise impacts to adjacent recreation sites, availability of support facilities, and the potential for project construction and operation traffic to compete with access opportunities.

Visual Resources

The City's LCP requires the scenic and visual qualities of the coast to be protected, and further requires development to be sited and designed to protect views from public roads and open spaces to and along the ocean and other coastal areas. The proposed project involves new construction immediately adjacent to multiple areas in the City that are used by the public for coastal access and recreation, including on a street designated in the LCP as providing scenic views. In addition, views from the dunes looking inland across the site include mountain ridgelines and other coastal resources, including Morro Rock, a significant visual, geologic, and cultural landform. The site is also visible from Highway I.

The review of alternative sites and issue conformity will ensure appropriate project siting and location is considered in regard to the best and highest use of that site in accordance with LCP policies, including its relation to potential significant coastal visual resources and/or public views. Sites located further inland may reduce impacts to visual resources along the coast, while alternative design features, such as reduced building height, scale, and bulk; location of open space areas; and use of appropriate landscaping and architectural materials may further ensure development minimizes impacts to the extent feasible.

The proposed project and alternative sites (up to three) will be assessed at an equal level of detail for potential impacts to public visual resources in the project area, as well as for opportunities to protect and enhance visual resources pursuant to applicable LCP policies.

Sustainable Use of Public Resources

The City's certified LCP indicates the use of reclaimed water should be required as part of a wastewater plant upgrade or permit condition, or when it is shown as cost-effective for City use. The LCP further specifies that the City's environmentally sensitive habitat areas shall be maintained and, where feasible, restored through, among other means, maintenance and enhancement of the quantity and quality of Morro Bay and Chorro Valley groundwater basins.

The consultant shall prepare an update to the 2011 recycled water feasibility study sufficient to address Sustainable Use of Public Resources component of the LCP (see scope of work below), which will assess potential demand for reclaimed water and the various issues and benefits associated with implementing a water reclamation program, including the feasibility of constructing infrastructure to accommodate a water reclamation program, irrigation and salt/nutrient loading, groundwater basin recharge, potential benefits to stream habitats and water supply, potential revenue generation, and elimination of existing ocean outfall.

Archaeological Resources

The City's LCP requires that significant archaeological and historic resources be preserved to the greatest extent possible, and that all available measures, including purchases, tax relief, and purchase of development rights, etc., be explored to avoid development on significant archaeological sites.

The proposed project and alternative sites (up to three) will be assessed at an equal level of detail for potential impacts to archaeological and historic resources. Consultant's archaeologists shall review and summarize data previously prepared for the proposed project. Background research including a records search of recorded cultural resources in the alternative sites will be prepared pursuant to this scope of work. This will provide equivalent data to assess and compare the project and project alternative's potential impacts on cultural resources. Any additional siting, design and/or mitigation measures to avoid or minimize impacts to cultural resources consistent with LCP policies will be identified.

COASTAL DEPENDENT DEVELOPMENT

The City's LCP dictates that the existing WWTP shall be protected in its current location because a critical operational component of the WWTP, the ocean outfall, is a coastal-dependent use.

The review of alternative sites and issue conformity will ensure appropriate project siting and location is considered in regard to the best and highest use of that site in accordance with LCP policies, including consideration of the proposed project and alternative sites (up to three) in the context of new technologies and more aggressive water reclamation, and determination of whether or not the project is truly coastal-dependent. Consultant shall evaluate the feasibility of returning treated wastewater effluent to beneficial uses and whether or not the project is coastal dependent (i.e., whether or not an ocean outfall is a necessary component of the project).

The evaluation will summarize the potential for use of wastewater effluent (reclaimed water) for groundwater enhancement, agricultural irrigation, residential and municipal landscaping, and maintenance, as well as enhancement of water quality and biological resources associated with Chorro Valley and Morro Bay groundwater basins to determine the potential for beneficial uses in the context of possibly eliminating the need for an ocean outfall, and therefore assess the coastal dependency of the project.

ESHA/WATER QUALITY

The City's LCP specifies that ESHA shall be maintained and, where feasible, restored through, among other means, maintenance and enhancement of the quantity and quality of Morro Bay and Chorro Valley groundwater basins. Analysis to address issues associated with the sustainable use of public resources and coastal-dependent development, as described above, will also serve to assess the proposed project's consistency with applicable LCP policies relative to protection and enhancement of ESHA and water quality. Consultant shall also evaluate the steps taken by the City to protect and/or minimize impacts to adjacent sensitive habitat areas, and will discuss the relationship of the WWTP to groundwater basins, watercourses, and other water supply features and how the project could affect such resources.

UPDATED WATER RECLAMATION FEASIBILITY STUDY

MBCSD last reviewed recycled water feasibility in detail in 1999–2000. The *Cayucos/Morro Bay Comprehensive Recycled Water Feasibility Study* (Carollo 2000) thoroughly evaluated water quality and potential recycled water users, as well as narrowed feasible “projects.” The study concluded, however, that recycled water was not economically viable at that time. The *Wastewater Treatment Plant Upgrades, Facility Master Plan* (Carollo 2007) and subsequent two amendments (MWH 2010) incorporate treatment processes for recycled water, but leave recycled water feasibility to further evaluation.

To address the substantial issues identified by CCC Staff, Consultant shall prepare an update to the 1999 recycled water feasibility study sufficient to address Sustainable Use of Public Resources component of the LCP. The study work scope described below will be modified later in the process of the project when more information is obtained from the public process, feedback from the CCC and evaluation of rough and fine screened sites. The work scope below represents the full range of potential issues that may be examined.

The updated 2011 recycled water feasibility study will tier off previous studies and accomplish the following:

- Review and update the list of potential recycled water users identified in the 1999 study with input from MBCSD focused on irrigation and industrial users. Potential users will be mapped and probable recycled water demand quantified.
- Review conclusions regarding groundwater basin recharge and stream flow/estuary enhancement and identify criteria that may have changed feasibility of these alternatives.
- Review water quality objectives for identified recycled water users.
- Comment on updates to recycled water regulations relative to the proposed project(s).
- Establish conceptual design-level infrastructure requirements to implement a recycled water project, including transmission piping and storage.
- Update recycled water project costs for feasible projects.

Major components to be considered in the updated 2011 recycled water feasibility study include water reclamation initiatives, groundwater basin recharge feasibility, potential irrigation demands, and salt/nutrient loading on stream flow and groundwater basin.

Water Reclamation

Holistic evaluation of sustainable use of public resources requires a watershed-level analysis to comprehend the potential for and constraints to using disinfected tertiary treated wastewater to maximize overall water supply and resource management objectives. By evaluating previous studies and available data, the existing conditions of the watershed(s) within the MBCSD sphere of influence will be defined.

In particular, available groundwater, surface water, soils, parcels, land use, sewer, and water data will be evaluated using GIS to assist with interpretation and identification of a wide range of potential uses for disinfected tertiary treated wastewater. All LCP policies regarding water reclamation, including agricultural irrigation inside and/or outside the MBCSD service area, injection wells, and residential and municipal landscaping, among other uses, will be taken into consideration.

Groundwater Basin Recharge

Previous studies have documented the constraints of groundwater recharge, which include low-permeability soils outside stream channels, limited storage capacity of thin alluvial sediments, high groundwater levels, and well spacing throughout the groundwater basins that do not meet the well-setback guidelines developed by the state Department of Public Health. Given these constraints and the existing conditions of the groundwater basins, injection well(s) and percolation basin(s) alternatives will be evaluated.

This evaluation will include the potential to relocate pumping wells to accommodate required well spacing for disinfected tertiary treated wastewater. Relocation of wells may also provide the added benefit of preventing the need to provide nitrate wellhead treatment due to documented nitrate contamination in the Morro Basin. Lastly, the use of injection wells to minimize seawater intrusion will be assessed.

Irrigation

The certified LCP directs the City to participate in the efforts of the California State Coastal Conservancy or other public or private agencies to implement agricultural enhancement programs, including but not limited to assistance programs that include water subsidies and recycling methods. The California Water Recycling Criteria (specified in Title 22 of the California Code of Administration) allows for 43 specified uses of recycled water, including irrigation of all types of food crops. The criteria include different water quality requirements for irrigation of each type of crop: those eaten raw, those receiving processing before consumption, and those not involving any human contact before industrial processing.

Analysis will include a discussion of the beneficial uses of reclaimed water for agricultural purposes; an evaluation and suitability analysis on its application to proposed agricultural products; and discussion of its sustainability, energy conservation aspect, and beneficial nutrients needed by the crops—nitrogen, phosphorus, and micronutrients. In addition, the evaluation will take into consideration the potential limitations of recycled water application in standard agronomics, which is similar to other sources of irrigation water, including salinity, sodicity, and presence of specific ions in higher concentrations than allowed.

Further, environmental effects of the application of reclaimed water will entail evaluation of the redirection of reclaimed wastewater to agricultural uses that may otherwise degrade sensitive water bodies; offset of withdrawals from surface water; and the potential for bolstering water flows for fish and other sensitive wildlife and plant species.

Salt/Nutrient Loading

There is significant incentive for wastewater treatment plants to recycle effluent in order to comply with stringent discharge requirements involving removal of minute concentrations of heavy metals and organic compounds through imposition of total maximum daily load regulations. The upper layer of farm soil and its rich microbial population can handle organic compounds that would otherwise be unhealthful if discharged to a surface water body, such as a river, lake, or ocean, thereby further incentivizing reclaimed water in agricultural applications. Soil precipitates, absorbs, digests, hydrolyzes, or decomposes organic compounds.

Preliminary discussion of salt and nutrient loading issues will be addressed in recognition of the fact that a larger, separate region-wide effort is required beyond the scope of this project. Development of a salt and nutrient management plan for impaired groundwater basins is a requirement of the recycled water policy adopted by the State Water Resources Control Board (SWRCB) in 2009. The recycled water policy requires that salt and nutrient management plans be developed to manage salts, nutrients, and other significant chemical compounds found in recycled water on a watershed or sub-watershed basis. Hence, within the limited confines of this proposed project, the scope of work is restricted to assessment of background studies and data. Presently, data is collected by federal, state, and local agencies, as well as local water users. Publicly available monitoring plans will be evaluated; further, the gaps in data or other data needs will be assembled and a list of potential constituents of concerns (i.e., sodium, chloride, and nitrate) will be generated.

COASTAL HAZARDS TECHNICAL STUDY

Consultant shall provide analysis of the substantial geologic issues, as identified in the CCC appeal staff report, of the site currently proposed for the WWTP. This will include a comprehensive coastal hazards study, taking into consideration expected shoreline erosion over the life of the project and incorporating anticipated impacts related to global climate change and projected rises in sea level.

The study will include the elevation and inland extent of storm surge and flooding that might occur over the expected life of the project, including interactions among and combinations of hazardous conditions, such as high tides and storm surges. Factors to be considered include an eroded beach, a 100-year storm event (or the equivalent of the 1982–1983 El Niño event), an extreme high tide, and the projected 100-year rise in sea level based upon both optimistic and conservative theories.

CCC Coordination/Hearing Support

Consultant will assist the City and MBCSD with coordinating and facilitating issue resolution with CCC staff, including attendance and support at three CCC staff meetings during the alternatives and substantial issue analyses process, as well as two CCC hearings on the proposed project. Consultant will prepare written materials, correspondence, presentations, and graphics to respond to issues raised, and will facilitate discussion regarding CCC staff's policy interpretations and supplemental data/information requests to support the staff's review of the project and preparation of CCC staff report findings. If requested, Consultant will assist in the review of staff reports/recommendations to determine appropriateness and feasibility of findings and conditions of approval.

Consultant will support the City and MBCSD at up to two (2) California Coastal Commission hearings to present the proposed project for *de novo* review and approval. Consultant will coordinate with the project team to prepare presentation materials and written correspondence in response to public comment and/or Coastal Commission staff recommendations for presentation to the Coastal Commission, as needed. The project schedule reflects the expectation that Coastal Commission staff will decide to docket the proposed project at the next available local hearing in Santa Cruz, with a follow-up hearing, if necessary, scheduled in nearby Santa Barbara.

Project Management

Apart from project meetings with MBCSD staff, the Consultant project manager will provide monthly project assessments and status updates with regard to budget, timeline, and deliverables to track progress and achievement of milestones. Consultant will keep a project log to track communications and outstanding action items. At all meetings, Consultant will take notes and prepare meeting minutes and summaries.

Along with the project log, the minutes/summaries will be submitted to the City and MBCSD staff for their review and comment to ensure identification of all necessary steps taken to resolve any potential issue, challenge, or obstacle.

Public Outreach Work Plan Details
Alternative Site Analysis

Overall goal of public outreach is to conduct thorough alternatives analysis in response to comments raised during the environmental and Coastal Commission (Commission) appeals process, and to avoid “late hits” at the Commission’s De Novo Hearing through facilitating relevant input and response to comments/ concerns during the site screening process.

I. Rough Screening (Evaluation Criteria)

- a. Coastal Staff Meeting No. 1 (Optional)
 - i. Held prior to Public Workshop No. 1 to provide buy-in on proposed Work Plan, including support of site screening analysis and evaluation criteria
 - ii. Refinements to scope-of -work anticipated related to revised Plant Capacity study and other substantial issues raised during the appeals process (e.g., Water Reclamation Feasibility Study)
- b. Public Workshop No. 1 June 22nd
 - i. Facilitated public forum – combines town hall format with open workshop dialogue
 - ii. Brief presentation by consultant team on the site screening methodology, proposed evaluation criteria, and preliminary site alternatives (identified to date)
 - iii. Information stations set up to provide one-on-one discussion opportunities and Q&A for the following general topics, with assignment of a “secondary” facilitator to assist with responses:
 1. Site Identification/ Selection (envisioning an MBCSD engineer/PM will be staffed here to assist with understanding of conveyance facilities, treatment processes, design constraints/needs)
 2. Evaluation Criteria (Paul Amberg)
 3. Coastal Commission Appeals Process/ Local Coastal Program Policy Consistency (April Winecki; invite Coastal staff to help with this topic)
 4. Environmental Site Constraints/Impacts (Alison Evans)
 5. Water Reclamation Feasibility (Tom Falk, Mike Hoover)
 - iv. Public comments can be provided in writing, or through use of a court stenographer (to be made available)
 - v. Wrap-up provided through summary by each secondary facilitator of the overall comments/ thoughts provided by the public at the information stations
 - vi. Final public comment period open (2-minute limit) to ensure we’ve accurately characterized the process and evaluation criteria concerns/ goals
- c. We intend to leave the first public workshop with a working list of sites to cull down to 10 feasible options and the evaluation criteria for ranking
- d. Provide public notice at least 2 weeks in advance, with use of an agenda to assist the public with understanding proposed format; held from 5-7pm

II. Rough Screening Preliminary Findings/ Site Ranking

- a. Coastal Staff Meeting No. 2 August 19th
 - i. Held to discuss preliminary ranking results and public feedback from Public Workshop No. 1 to ensure the Fine Screening analysis continues to head in the right direction.
 - ii. Proposed Fine Screening evaluation criteria presented and discussed.
- b. JPA Presentation No. 1 August 24th
 - i. Formal public meeting format, with PowerPoint presentation.
 - ii. Identify the range of public comments provided to-date; review results of Public Workshop No. 1.
 - iii. Discuss the results of the rough screening analysis to the JPA and public, including sites determined infeasible and not carried forward for further analysis (brief explanation of why), sites carried forward through rough evaluation and ranking (10 anticipated), and potential sites to be assessed at an equal level of detail for substantial conformity issues (3 anticipated).
 - iv. Identify proposed Fine Screening evaluation criteria.
 - v. Provide draft technical memorandum 2 weeks in advance of public meeting to JPA, Coastal staff, and public to assist with public comments.
 - vi. Project Team available to respond to questions, as needed (April Winecki, Tom Falk, Alison Evans, Paul Amberg).

III. Fine Screening Preliminary Findings/ Supporting Technical Documentation

- a. Coastal Staff Meeting No. 3 November 2nd
 - i. Held to discuss the preliminary ranking results, suggested site selection, and technical documentation findings, to initiate De Novo review and receive feedback in advance of formal submittal for De Novo review following JPA Presentation No. 2, below.
- b. Public Workshop/Presentation No. 2 November 9th
 - i. Town hall style meeting – Presentation on findings and key supporting technical documentation, followed by open public comment period.
 - ii. Public comments may also be received in writing throughout the meeting.
 - iii. Provide draft technical memorandum 2 weeks in advance of public meeting to JPA, Coastal staff, and public to assist with public comments.
 - iv. Coastal Act does not require/ mandate a written response to comments received during public review; however, all comments will be compiled and acknowledged and presented to the JPA and Coastal Commission (as part of the De Novo review submittal).

IV. Fine Screening Site Determination

- a. JPA Presentation No. 2 November 11th
 - i. Formal public meeting format, with PowerPoint presentation
 - ii. Identify the range of public comments provided to-date; review results of Public Workshop No. 2 (preliminary findings).

- iii. Discuss the results of the fine screening analysis for 3 selected sites, and overall determination of best fit site to the JPA and public.
- iv. Identify Fine Screening evaluation criteria used and/or modified in response to public and Coastal staff comments.
- v. Project Team available to respond to questions, as needed (April Winecki, Tom Falk, Alison Evans, Paul Amberg).



WASTEWATER TREATMENT PLANT UPGRADE PROJECT CALIFORNIA COASTAL COMMISSION APPEAL, ANALYSIS OF SUBSTANTIAL ISSUES

Statement of Qualifications/Proposal



March 31, 2011

PREPARED FOR
City of Morro Bay/Cayucos Sanitary District
Morro Bay City Hall
955 Shasta Avenue
Morro Bay, California 93422

PREPARED BY
Dudek
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Santa Barbara, California 93101
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March 31, 2011

Morro Bay City Hall
Bruce Keogh, Wastewater System Division Manager
955 Shasta Avenue
Morro Bay, California 93422

Subject: City of Morro Bay/Cayucos Sanitary District Wastewater Treatment Plant Upgrade California Coastal Commission Appeal, Analysis of Substantial Issues

Dear Mr. Keogh:

Dudek is pleased to provide the City of Morro Bay (City) and Cayucos Sanitary District (MBCSD) with this technical proposal to conduct an alternative sites analysis and a substantial issue analysis for the Wastewater Treatment Plant Upgrade Project (proposed project) in response to the California Coastal Commission's (CCC's) March 11, 2011, *Appeal Staff Report, Substantial Issue Determination*. Our project team's unparalleled coastal planning experience, including recent, successful coastal development permit appeals support before the CCC, will provide the City and MBCSD with cost-effective and responsive consulting services to secure CCC approval of the proposed project.

Our focused project qualifications and in-house expertise demonstrate a successful history of bringing feasible engineered solutions to large wastewater treatment plant projects throughout the State of California by conducting defensible alternatives analyses and feasibility studies, as well as adequately addressing water reclamation/reuse concerns.

Our coastal and environmental planners, engineers, and geohydrological experts will be joined by *Earth Systems Pacific* to address potential site stability issues unique to California's coastal environment. Our combined team of experts provide the outstanding level of technical expertise necessary to produce the data, analysis, and supporting documentation that will serve as the foundation for developing local coastal program and California Coastal Act policy consistency findings.

Please feel free to contact me with any further questions about our proposal or to set up an interview time. I can be reached at awinecki@dudek.com or 805.963.0651. Dudek acknowledges Addendum #1 with this submittal.

Sincerely,



April Winecki
Senior Project Manager

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I THE DUDEK ADVANTAGE

Dudek provides environmental and engineering services to help clients design, plan, permit, construct, and manage natural resource management, infrastructure development, and regulatory compliance projects throughout California.

For over 30 years, Dudek has been providing practical solutions for California's open space, land development, energy, transportation, water infrastructure, and municipal facility projects. Our mid-sized structure allows us to be nimble problem solvers with project managers who stay involved in clients' projects from start to finish while offering a depth and variety of services. Our professionals work to build your trust, which allows us to offer constructive solutions with your project's long-term success in mind.

COASTAL & ENVIRONMENTAL PLANNING

Dudek planners are recognized experts in coastal planning and development permitting strategy. Our work on high-profile public works projects in California's coastal zone has established the firm's leadership role in the specialized area of coastal environmental planning in preparing public work plans (PWP) and local coastal program (LCP) amendments for large regional projects, including the recently completed Malibu Parks Public Access Enhancement Plan for the Mountains Recreation and Conservation Authority.

Dudek's coastal planners have successfully prepared and processed dozens of governmental and non-governmental development entitlements throughout coastal California, representing projects at California Coastal Commission (CCC) proceedings involving coastal development permits, coastal development permit appeals, LCP amendments, PWPs, and federal reviews.

Our professionals have demonstrated knowledge of CCC laws and regulations, the evolving nature of California Coastal Act (CCA) and LCP policy interpretation, as well as the overall CCC development review and decision-making process potentially affecting approval of the City of Morro Bay (City) and Cayucos Sanitary District (MBCSD) wastewater treatment plant (WTP) upgrade project (proposed project).

For the proposed project, the Dudek team is joined by *Earth Systems Pacific* to address potential site stability issues unique to California's coastal environment. *Earth Systems Pacific* will assist Dudek to develop LCP and CCA policy consistency findings to secure approval of the proposed project.

WASTEWATER INFRASTRUCTURE PLANNING & DESIGN

Dudek engineers specialize in the design, construction, operation, and management of wastewater treatment facilities. Since 1980, Dudek has successfully planned, completed, managed, and inspected the construction of over 20 wastewater treatment plant programs that included obtaining financing, environmental, value engineering, constructability review, design-build, construction management and inspection, and owner's representative services.

DUDEK SERVICES

- Agency Permitting
- Biological Surveys
- CEQA/NEPA Compliance
- Coastal Planning/Permitting
- Civil Engineering
- Construction Management
- Habitat Restoration and Management
- Hazardous Materials Testing
- Hydrology
- Sustainability Planning
- Urban Forestry
- Wildfire Protection Planning
- Water Conservation Planning
- Water Infrastructure Planning & Design

Our engineers are experienced in all areas of water, reclaimed water, and wastewater infrastructure, and have successfully worked with public agencies to develop practical, implementable wastewater engineering and design solutions complemented by our fully integrated environmental professionals. Our engineers offer an array of services for water, reclaimed water, and wastewater sectors, including:

- Master planning and hydraulic modeling
- Feasibility studies
- System analysis and assessment
- Facilities design and construction
- District general management
- Rehabilitation, replacement, and reconstruction
- Right-of-way management/maintenance
- Artificial lakes, swim lagoons & streams
- As-needed and extension-of-staff
- Grant writing and funding assistance.

Dudek's engineering professionals integrate technical excellence, economic soundness, regulatory compliance, and sustainability to ensure each project's efficiency, effectiveness, and useful life.

DIVERSE IN-HOUSE RESOURCES

Dudek's coastal planning and permitting experience is complemented by our full-service environmental expertise, which includes hydrogeological resource specialists with extensive experience evaluating groundwater extraction and overdraft rates to quantify water quality and quantity impacts; biological experts with current working knowledge of delineating and defining wetlands and environmentally sensitive habitat areas pursuant to LCP and CCA policies; agricultural resource specialists; acoustical analysts who are experts at noise contour modeling using state and federal programs; air quality analysts adept at preparing current and defensible air quality and greenhouse gas emissions studies that have been used as templates in numerous jurisdictions; visual impact assessment specialists; and registered professional archaeologists with recent, relevant cultural resources experience.

Our depth and breadth of experience means we can quickly access resources and assemble the right team for each project task. Our complete list of in-house certified staff includes:

- AICP-certified environmental planners
- CDFG- and USFWS-certified biologists
- Registered professional archaeologists
- Noise and air quality specialists
- Registered landscape architects
- Certified arborists and foresters
- Professional foresters
- Certified GIS professionals
- Accredited LEED professionals
- Certified hydrogeologists
- Licensed geologists
- Registered environmental assessors
- Licensed professional engineers
- Licensed contractors.

QUALITY CONTROL

Dudek's technical editorial and publications department uses efficient, accurate styles and agency templates, when applicable, to produce high-quality documents done right the first time. Additionally, our in-house counsel reviews legal defensibility of deliverables. Dudek's geographic information system (GIS) staff helps clients and regulators quickly evaluate complex project issues with topological modeling, infrastructure mapping and modeling, and spatial analysis. Dudek is committed to supporting our quality services with accurate, usable data and documents.

2 SCOPE OF WORK

2.1 Understanding the Scope

On January 11, 2011, the Morro Bay City Council conditionally approved MBCSD's request for an upgrade of the MBCSD WTP and certified the environmental impact report (EIR) for the proposed project. The proposed plant upgrade will provide full secondary treatment for all effluent discharged through the facilities' ocean outfall and tertiary filtration capacity equivalent to a peak seasonal dry weather flow of 1.5 million gallons per day (mgd).

The City's approval of a coastal development permit for the proposed project was appealed to the CCC. At the CCC hearing on March 11, 2011, the CCC found that the City's action to approve the proposed project raised "substantial issue" with respect to the proposed project's consistency with various policies of the City's certified LCP and the public access and recreation policies of the CCA. As a result, the CCC has asserted jurisdiction over the proposed project's coastal development permit, which is now subject to the CCC's *de novo* hearing requirements.

The primary issue raised during the CCC's substantial issue review is that the City's approval lacked the necessary alternatives analysis to demonstrate the current WTP site is the most appropriate location for the proposed project in terms of the various coastal resource constraints that occur at the existing site, and in consideration of other potentially feasible off-site locations that may better avoid or minimize impacts to coastal resources. The CCC's substantial issue review further determined that additional analysis and technical study is necessary to conclude that the proposed project at its current location can be designed and conditioned to ensure potential impacts to coastal resources are avoided and minimized, and to better achieve LCP objectives for public works projects.

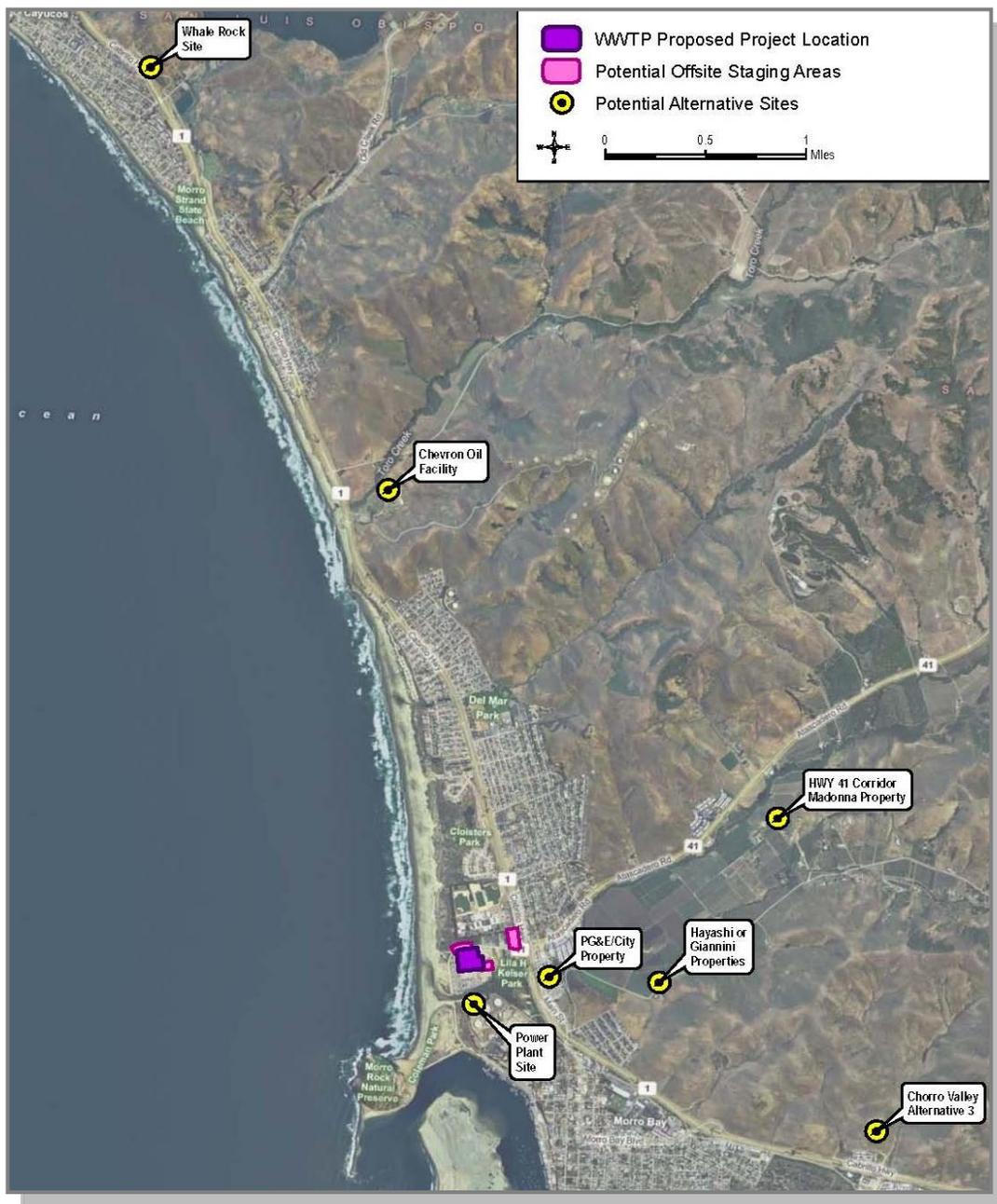
The CCC determined that a *de novo* review of the coastal development permit for the proposed project would be premature absent additional work on the City's part to develop the necessary supporting documentation for the CCC to more thoroughly evaluate the proposed project for consistency with applicable LCP and CCA policies, including a more comprehensive analysis of alternative site and design options and additional site-specific study and analysis of the proposed project site. To this end, MBCSD issued a RFQ on March 15, 2011, with an addendum on March 17, 2011, to conduct an alternatives site analysis (phase 1) and analyze the other policy consistency issues identified in the CCC staff report (phase 2) for the proposed project.

It is understood that any site alternatives considered for the alternatives analysis should meet the objectives of the proposed project, as stated in the final EIR:

- Comply with the secondary treatment standards contained in 40 CFR Part 133
- Phase out the need for a 301(h) modified discharge permit
- Minimize flooding impacts on site at WTP and adjoining properties
- Accommodate future installation of reclamation capability to meet Title 22 requirements for disinfected tertiary recycled water for unrestricted use
- Comply with "Settlement Agreement for Issuance of Permits to and Upgrade of Morro Bay Cayucos Wastewater Treatment Plant," including full operation by March 31, 2014.

The current proposed project location and potential alternative sites are shown in **Figure 1**.

FIGURE I. PROPOSED PROJECT AND ALTERNATIVE SITES



Having coastal planners that specialize full time in CCC policy and procedures, Dudek offers an extensive history of successful coastal planning, permitting, and permit appeals support before the CCC and maintains a positive and effective working relationship with CCC staff throughout the coastal zone, including the CCC’s Central Coast District staff in Santa Cruz.

Dudek’s coastal planning and environmental experience, combined with our wastewater infrastructure planning and design expertise, allows for direct insight into the decision-making process and expectations of the CCC to prepare a suitable alternative sites and substantial issue analysis to facilitate obtaining the CCC’s support for the proposed project without compromising the goals and objectives of MBCSD.

2.2 Phase I: Alternative Sites Analysis

Dudek will conduct a comprehensive alternatives analysis for the proposed project using a rough screening analysis of up to 10 potential sites, including the proposed project site and Chorro Valley site, and a fine screening analysis of up to three selected sites, including the proposed project site. For both the rough and fine screening analysis, environmental and coastal resource/policy factors considered in the analysis may exceed those identified in the CCC's substantial issue determination to ensure any new, potentially feasible sites identified during the alternatives analysis do not result in previously unidentified environmental or coastal resource policy conflicts.

ROUGH SCREENING ANALYSIS (10 SITES)

A rough screening analysis will be conducted to identify feasible and appropriate project alternatives to carry forward into a fine screening analysis. The site alternatives for the rough screening analysis will be preliminarily identified based on the proposed project documents that describe the current WTP and Chorro Valley sites, and the Surfrider Foundation appeals letter, which identifies six additional potential sites.

These site alternatives will be supplemented by additional sites to be determined based on a public workshop and siting criteria to be developed by Dudek, MBCSD staff, and the project manager. The site alternatives will include:

1. Current WTP site (proposed project)
2. Chorro Valley site – EIR Alternative 3 (Cannon Associates, 2007)
3. Surfrider Foundation site – Whale Rock site
4. Surfrider Foundation site – Highway 41 Corridor Madonna property
5. Surfrider Foundation site – Chevron Oil Facility
6. Surfrider Foundation site – Hayashi or Giannini properties
7. Surfrider Foundation site – Power plant site
8. Surfrider Foundation site – PG&E/City property
9. Additional site that meets established siting criteria
10. Additional site that meets established siting criteria.

Rough screening will be based on the site alternatives meeting the overall project objectives and established evaluation criteria. Evaluation criteria will be based on a combination of environmental, policy, and engineering factors/requirements. Each alternative will then be assessed according to the established evaluation criteria, identified below, and ranked based on predetermined weighting factors as determined in coordination with MBCSD and CCC staff, as well as the project manager. The evaluation criteria assessment will be based on a visual assessment of the sites, and review and analysis of existing available information applicable to each criterion.

Criteria for Evaluating Alternatives

- I. Environmental constraints/preliminary LCP consistency analysis:
 - Coastal hazards
 - Public access and recreation
 - Visual resources
 - Cultural resources
 - Biological/marine resources (sensitive upland habitat, water quality, wetlands, marine habitat)
 - Agricultural resources
 - Land use compatibility.

2. Logistics (can the proposed project be implemented in the required timeframe considering legal and institutional issues):
 - Proximity to existing wastewater collection/conveyance facilities
 - Site suitability – ability to accommodate growth
 - Site availability – landowner rights
 - Legal restrictions
 - Regulatory restrictions
 - Recycled water initiatives.
3. Economic factors:
 - Economic feasibility.

A summary report and evaluation criteria matrix addressing each alternative site considered will be prepared to clearly document and summarize the results of the rough screening analysis. The current WTP site (proposed project site) and the top two ranking site alternatives will move forward to the fine screening analysis.

Public Outreach

The rough screening analysis will include the following opportunities for public input and team/CCC staff collaboration:

- Public workshop presentation (1)
- CCC staff meeting (1)
- Presentation to joint powers authority (JPA) (1).

The public workshop proposed during the rough screening analysis phase is intended to facilitate public input on feasible alternative sites, and to identify and discuss the proposed screening approach and evaluation criteria. Accordingly, Dudek proposes to prepare supporting materials, including a formal PowerPoint presentation discussing the approach and methodology, and lead the public question and answer period along with the City and MBCSD team. The public workshop is assumed to be held in the evening at City Hall, and will be attended by the Dudek project manager, phase I task leader, and additional key staff, as indicated in the enclosed Cost Estimate.

It is assumed the meeting with CCC's Central Coast District staff to discuss the rough screening analysis and preliminary findings will be held at the local CCC office in Santa Cruz, and will be attended by the Dudek project manager, phase I task leader, and additional key staff, as indicated in the enclosed Cost Estimate.

The presentation to the JPA is proposed to occur following the public workshop and CCC staff meeting. A formal PowerPoint presentation will be prepared to present the three suggested alternative sites to bring forward for further analysis based on comments received, and per the results of the rough screening analysis. It is assumed this presentation will occur in the evening at City Hall, and that the Dudek project management team will attend and be prepared to respond to any questions from the JPA.

FINE SCREENING ANALYSIS (3 SITES)

The fine screening analysis will be based on site alternatives meeting additional, focused evaluation criteria and will include:

1. The current WTP site (proposed project)
2. Two sites determined to meet the project objectives while minimizing environmental impacts and engineering constraints.

The evaluation criteria presented herein are based on project objectives and the need for more technical and detailed analysis of LCP and CCA policy conflict issues presented in the CCC Appeal Staff Report, which would be augmented, as necessary, should any previously unidentified environmental or coastal resource impact issues be carried over for a particular site from the rough screening analysis.

The fine screening analysis will be conducted at a level of detail sufficient to demonstrate the proposed project's consistency with applicable LCP and CCA policies while ensuring project goals and objectives are achieved, and will thus support the Phase 2 Substantial Issue Analysis. As such, the fine screening analysis will be conducted concurrently with the technical analyses included in the phase 2 scope of work as applicable and noted below for each criterion. Each of the three alternative sites will then be ranked based on predetermined weighting factors as determined in coordination with MBCSD and CCC staff, as well as the project manager.

Criteria for Evaluating Alternatives

1. Avoid and minimize environmental impacts/LCP consistency analysis:
 - Coastal hazards (Phase 2 Coastal Hazards Technical Study)
 - Risk of flooding – 100-year storm event
 - Tsunamis
 - Shoreline erosion – sea level rise
 - Liquefaction
 - Public access, recreation, and visitor-serving uses
 - Traffic/parking
 - Objectionable odors
 - Opportunities to enhance recreation/visitor-serving resources
 - Visual resources
 - Public viewsheds
 - Significant landforms
 - Compatible design
 - Sustainable use of public resources (Phase 2 Updated Water Reclamation Feasibility Study)
 - Maximize water reclamation
 - Maximize treated wastewater disposal options
 - Cultural resources
 - Recorded archaeological and historical sites
 - Environmentally sensitive habitat areas (ESHA)
 - Water quality/groundwater basin recharge
 - Marine habitat/ocean outfall.
2. Maximize the capacity of the WTP to accommodate existing and planned development (Phase 2 Plant Capacity Technical Memorandum):
 - Accommodate demand for wastewater treatment beyond 2030.

3. Project implementability:
 - Maximize proposed project's ability to meet objectives
 - Compliance with the secondary treatment standards
 - Compliance with "Settlement Agreement for Issuance of Permits to and Upgrade of Morro Bay Cayucos Wastewater Treatment Plant" with full operation by March 31, 2014
 - Minimize project delays
 - Additional infrastructure requirements – wastewater collection/conveyance system (facilities/pipelines)
 - Acquisition of land
 - Regulatory permits and approvals
 - Public controversy.
4. Economic factors – minimize cost:
 - Capital cost (planning, design, property acquisition, construction, mitigation)
 - Operational cost.

Public Outreach

The fine screening analysis will include the following opportunities for additional public input and team/CCC staff collaboration:

- Public workshop presentation (1)
- CCC staff meeting (1)
- Presentation to JPA (1).

The public workshop proposed during the fine screening analysis phase is intended to provide clear direction and comparison at an equal level of detail for the three feasible alternative sites evaluated pursuant to the criteria described above, and in accordance with CCA directives. Dudek proposes to prepare supporting materials, including a formal PowerPoint presentation discussing the approach, methodology, and findings. The public workshop is assumed to be held in the evening at City Hall, and will be attended by the Dudek project manager, phase I task leader, and additional key staff, as indicated in the enclosed Cost Estimate.

It is assumed the meeting with CCC's Central Coast District staff to discuss the preliminary conclusions of the fine screening analysis will be held at the local CCC office in Santa Cruz, and will be attended by the Dudek project manager, phase I task leader, and additional key staff, as indicated in the enclosed Cost Estimate.

The presentation to the JPA would occur following the above meetings, and would reflect input received from the public and CCC staff. It is assumed this presentation will occur in the evening at City Hall, and that the Dudek project management team will attend.

2.3 Phase 2: Substantial Issue Analysis

The CCC's *Appeal Staff Report, Substantial Issue Determination* identified substantial issue with respect to the City's approval of a coastal development permit for the proposed project, on the basis of inconsistency with the CCA and/or certified LCP policies. Accordingly, the City has been directed by the CCC to provide additional project details and analysis deemed necessary to evaluate the proposed project for consistency with the LCP and the public access and recreation policies of the CCA before the CCC will review the proposed project in a *de novo* hearing context.

CCC/CITY LCP CONSISTENCY ANALYSIS

The CCA includes the basic policies for managing and balancing the use of resources for state and national interests in California's coastal zone. CCA policies address coastal resource issues including public coastline access, coastal and inland recreation, low-cost visitor activities, protection and enhancement of sensitive habitats and species, water quality, and agricultural and visual resources. Development activities requiring a coastal development permit in the coastal zone are regulated by the CCC and local governments through their coastal development permit processes.

The City assumed coastal development permit authority in most areas within the City pursuant to its LCP certified in October 1982. As such, the City's certified LCP serves as the regulatory framework and standard of review for all development activities in the City that are subject to coastal development permit requirements. However, because the proposed project site is located between the sea and first public road parallel to the sea, the proposed project must also be found consistent with the public access and recreation policies of the CCA.

Building on the data and assessment produced through the phase 1 alternatives analysis scope of work, and additional technical study generated through the phase 2 scope of work described below, the Dudek team will complete additional analysis of coastal resources potentially affected by the proposed project. Our analysis will focus on resolving each policy conflict issue raised in the substantial issue determination and providing appropriate project detail and analysis to support CCC staff review of the proposed project and preparation of CCC staff report findings.

In addition, because the CCC's *de novo* review of the proposed project is not limited to only those policy consistency issues identified in the substantial issue determination, Dudek will prepare a policy consistency analysis for all CCA and LCP policies potentially applicable to the proposed project. The CCA and LCP consistency analysis will include close coordination with the City and MBCSD to identify options and opportunities for addressing and resolving potential policy conflicts, including design options, project phasing, and mitigation.

Coastal Hazards

The City's LCP requires that new development be located to minimize risks to life and property and ensure structural stability, and that it not create or contribute to geologic hazards of the site or surrounding area. The LCP further requires that new development, with some exceptions, be prohibited in 100-year floodplain areas, that grading be limited to the extent feasible, and that new development and/or existing structural hazards be designed to withstand natural and man-made hazards to acceptable levels of risk.

Review of alternative sites and issue conformity will ensure appropriate project siting in accordance with LCP policies, including in the context of the project potentially being subject to coastal hazards associated with floodplain development, tsunami, wave uprush, shoreline erosion (with anticipated sea level rise), and liquefaction.

Alternative sites not located in proximity to the shoreline may reduce impacts relative to coastal hazards, while the proposed coastal hazards technical study (see scope of work below) and additional analysis may confirm the proposed project site is appropriate for the project by demonstrating the proposed project is located and designed to avoid or minimize risks associated with coastal hazards.

The proposed project and alternative sites (up to three) will be assessed at an equal level of detail for potential impacts associated with coastal hazards. Dudek will review and summarize data and reports previously prepared for the proposed project, and prepared pursuant to this scope of work, to analyze the project for consistency with applicable LCP policies. The analysis will:

- Consider site-specific and project design features to assess whether the proposed project is designed to ensure geologic and structural integrity while minimizing grading to the extent feasible
- Determine if the project would be subject to existing or future wave uprush or shoreline erosion impacts for any sites in proximity to the shoreline
- Determine if a shoreline protection device would be required to protect the site over the design life of the project
- Ensure adequate mitigation has been required to address potential tsunami risks (i.e., tsunami evacuation plans).

Public Access and Recreation

City LCP and CCA policies require new development to maximize public access to and along the shoreline and to protect oceanfront land for public access and recreation. Various factors are considered when applying coastal access and recreation policies, including: 1) the physical availability of access and recreation areas; 2) the ability of the public to reach and utilize these sites (via pedestrian, bike, and vehicular corridors); 3) parking availability; 4) provision of other support facilities, such as restrooms and picnic areas; 5) addressing user demands and conflicts; and 6) maintenance of a diversity of coastal recreation experiences.

The proposed project and alternative sites (up to three) will be assessed at an equal level of detail for potential impacts to public access and recreational resources in the project area, as well as for opportunities to protect and enhance these resources pursuant to applicable CCA and LCP policies. The analysis will consider how the proposed project construction and operation may adversely or positively affect the various factors affecting the public's right to access and use the shoreline and other recreational facilities in the project area, including changes in visual or usable open space or recreational facilities, odor and noise impacts to adjacent recreation sites, availability of support facilities, and the potential for project construction and operation traffic to compete with access opportunities.

Visual Resources

The City's LCP requires the scenic and visual qualities of the coast to be protected, and further requires development to be sited and designed to protect views from public roads and open spaces to and along the ocean and other coastal areas. The proposed project involves new construction immediately adjacent to multiple areas in the City that are used by the public for coastal access and recreation, including on a street designated in the LCP as providing scenic views. In addition, views from the dunes looking inland across the site include mountain ridgelines and other coastal resources, including Morro Rock, a significant visual, geologic, and cultural landform. The site is also visible from Highway I.

The review of alternative sites and issue conformity will ensure appropriate project siting and location is considered in regard to the best and highest use of that site in accordance with LCP policies, including its relation to potential significant coastal visual resources and/or public views. Sites located further inland may reduce impacts to visual resources along the coast, while alternative design features, such as reduced building height, scale, and bulk; location of open space areas; and use of appropriate landscaping and architectural materials may further ensure development minimizes impacts to the extent feasible.

The proposed project and alternative sites (up to three) will be assessed at an equal level of detail for potential impacts to public visual resources in the project area, as well as for opportunities to protect and enhance visual resources pursuant to applicable LCP policies.

Sustainable Use of Public Resources

The City's certified LCP indicates the use of reclaimed water should be required as part of a wastewater plant upgrade or permit condition, or when it is shown as cost-effective for City use. The LCP further specifies that the City's environmentally sensitive habitat areas shall be maintained and, where feasible, restored through, among other means, maintenance and enhancement of the quantity and quality of Morro Bay and Chorro Valley groundwater basins.

Dudek will prepare an updated 2011 recycled water feasibility study (see scope of work below), which will assess potential demand for reclaimed water and the various issues and benefits associated with implementing a water reclamation program, including the feasibility of constructing infrastructure to accommodate a water reclamation program, irrigation and salt/nutrient loading, groundwater basin recharge, potential benefits to stream habitats and water supply, potential revenue generation, and elimination of existing ocean outfall.

Archaeological Resources

The City's LCP requires that significant archaeological and historic resources be preserved to the greatest extent possible, and that all available measures, including purchases, tax relief, and purchase of development rights, etc., be explored to avoid development on significant archaeological sites.

The proposed project and alternative sites (up to three) will be assessed at an equal level of detail for potential impacts to archaeological and historic resources. Dudek's archaeologists will review and summarize data previously prepared for the proposed project. Background research including a records search of recorded cultural resources in the alternative sites will be prepared pursuant to this scope of work. This will provide equivalent data to assess and compare the project and project alternative's potential impacts on cultural resources. Any additional siting, design and/or mitigation measures to avoid or minimize impacts to cultural resources consistent with LCP policies will be identified.

PLANT CAPACITY TECHNICAL MEMORANDUM

The proposed project identifies a treatment capacity to serve build-out of the City and Cayucos service area. Furthermore, the facility master plan (MWH 2010) identifies the timeframe for that build-out within the anticipated lifespan of the proposed project. To address the substantial issues identified by CCC staff relative to plant capacity, Dudek proposes to prepare a "technical memorandum – wastewater treatment capacity." The technical memorandum will tier off previous studies and accomplish the following:

- Review historic and projected wastewater flow criteria documented in the *Cayucos/Morro Bay Comprehensive Recycled Water Feasibility Study* (Carollo 2000), the *Wastewater Treatment Plant Upgrades, Facility Master Plan* (Carollo 2007), and two amendments to the facility master plan (MWH 2010). Water demand data from the City's Urban Water Management Plan will also be considered.
- Review relevant neighboring communities' demand and system use to compare wastewater generation factors.
- Evaluate the ability of the proposed WTP project to accommodate LCP-consistent uses and demand for wastewater treatment beyond 2030 and expected design life.
- Document input from CCC, the City, MBCSD, and the County of San Luis Obispo regarding anticipated demographic changes in the region, and more specifically the MBCSD service area.
- Establish "near-term future" build-out capacity of the facility.
- Establish probable "ultimate" treatment capacity.

COASTAL DEPENDENT DEVELOPMENT

The City's LCP dictates that the existing WTP shall be protected in its current location because a critical operational component of the WTP, the ocean outfall, is a coastal-dependent use.

The review of alternative sites and issue conformity will ensure appropriate project siting and location is considered in regard to the best and highest use of that site in accordance with LCP policies, including consideration of the proposed project and alternative sites (up to three) in the context of new technologies and more aggressive water reclamation, and determination of whether or not the project is truly coastal-dependent. Dudek will evaluate the feasibility of returning treated wastewater effluent to beneficial uses and whether or not the project is coastal dependent (i.e., whether or not an ocean outfall is a necessary component of the project).

The evaluation will summarize the potential for use of wastewater effluent (reclaimed water) for groundwater enhancement, agricultural irrigation, residential and municipal landscaping, and maintenance, as well as enhancement of water quality and biological resources associated with Chorro Valley and Morro Bay groundwater basins to determine the potential for beneficial uses in the context of possibly eliminating the need for an ocean outfall, and therefore assess the coastal dependency of the project.

ESHA/WATER QUALITY

The City's LCP specifies that ESHA shall be maintained and, where feasible, restored through, among other means, maintenance and enhancement of the quantity and quality of Morro Bay and Chorro Valley groundwater basins. Analysis to address issues associated with the sustainable use of public resources and coastal-dependent development, as described above, will also serve to assess the proposed project's consistency with applicable LCP policies relative to protection and enhancement of ESHA and water quality. Dudek will also evaluate the steps taken by the City to protect and/or minimize impacts to adjacent sensitive habitat areas, and will discuss the relationship of the WTP to groundwater basins, watercourses, and other water supply features and how the project could affect such resources.

UPDATED WATER RECLAMATION FEASIBILITY STUDY

MBCSD last reviewed recycled water feasibility in detail in 1999–2000. The *Cayucos/Morro Bay Comprehensive Recycled Water Feasibility Study* (Carollo 2000) thoroughly evaluated water quality and potential recycled water users, as well as narrowed feasible “projects.” The study concluded, however, that recycled water was not economically viable at that time. The *Wastewater Treatment Plant Upgrades, Facility Master Plan* (Carollo 2007) and subsequent two amendments (MWH 2010) incorporate treatment processes for recycled water, but leave recycled water feasibility to further evaluation.

To address the substantial issues identified by CCC Staff, Dudek proposes to prepare an updated 2011 recycled water feasibility study. The updated 2011 recycled water feasibility study will tier off previous studies and accomplish the following:

- Review and update the list of potential recycled water users identified in the 2000 study with input from MBCSD focused on irrigation and industrial users. Potential users will be mapped and probable recycled water demand quantified.
- Review conclusions regarding groundwater basin recharge and stream flow/estuary enhancement and identify criteria that may have changed feasibility of these alternatives.
- Review water quality objectives for identified recycled water users.
- Comment on updates to recycled water regulations relative to the proposed project(s).
- Establish conceptual design-level infrastructure requirements to implement a recycled water project, including transmission piping and storage.
- Update recycled water project costs for feasible projects.

Major components to be considered in the updated 2011 recycled water feasibility study include water reclamation initiatives, groundwater basin recharge feasibility, potential irrigation demands, and salt/nutrient loading on stream flow and groundwater basin.

Water Reclamation

Holistic evaluation of sustainable use of public resources requires a watershed-level analysis to comprehend the potential for and constraints to using disinfected tertiary treated wastewater to maximize overall water supply and resource management objectives. By evaluating previous studies and available data, the existing conditions of the watershed(s) within the MBCSD sphere of influence will be defined.

In particular, available groundwater, surface water, soils, parcels, land use, sewer, and water data will be evaluated using GIS to assist with interpretation and identification of a wide range of potential uses for disinfected tertiary treated wastewater. All LCP policies regarding water reclamation, including agricultural irrigation inside and/or outside the MBCSD service area, injection wells, and residential and municipal landscaping, among other uses, will be taken into consideration.

Groundwater Basin Recharge

Previous studies have documented the constraints of groundwater recharge, which include low-permeability soils outside stream channels, limited storage capacity of thin alluvial sediments, high groundwater levels, and well spacing throughout the groundwater basins that do not meet the well-setback guidelines developed by the state Department of Public Health. Given these constraints and the existing conditions of the groundwater basins, injection well(s) and percolation basin(s) alternatives will be evaluated.

This evaluation will include the potential to relocate pumping wells to accommodate required well spacing for disinfected tertiary treated wastewater. Relocation of wells may also provide the added benefit of preventing the need to provide nitrate wellhead treatment due to documented nitrate contamination in the Morro Basin. Lastly, the use of injection wells to minimize seawater intrusion will be assessed.

Irrigation

The certified LCP directs the City to participate in the efforts of the California State Coastal Conservancy or other public or private agencies to implement agricultural enhancement programs, including but not limited to assistance programs that include water subsidies and recycling methods. The California Water Recycling Criteria (specified in Title 22 of the California Code of Administration) allows for 43 specified uses of recycled water, including irrigation of all types of food crops. The criteria include different water quality requirements for irrigation of each type of crop: those eaten raw, those receiving processing before consumption, and those not involving any human contact before industrial processing.

Analysis will include a discussion of the beneficial uses of reclaimed water for agricultural purposes; an evaluation and suitability analysis on its application to proposed agricultural products; and discussion of its sustainability, energy conservation aspect, and beneficial nutrients needed by the crops—nitrogen, phosphorus, and micronutrients. In addition, the evaluation will take into consideration the potential limitations of recycled water application in standard agronomics, which is similar to other sources of irrigation water, including salinity, sodicity, and presence of specific ions in higher concentrations than allowed.

Further, environmental effects of the application of reclaimed water will entail evaluation of the redirection of reclaimed wastewater to agricultural uses that may otherwise degrade sensitive water bodies; offset of withdrawals from surface water; and the potential for bolstering water flows for fish and other sensitive wildlife and plant species.

Salt/Nutrient Loading

There is significant incentive for wastewater treatment plants to recycle effluent in order to comply with stringent discharge requirements involving removal of minute concentrations of heavy metals and organic compounds through imposition of total maximum daily load regulations. The upper layer of farm soil and its rich microbial population can handle organic compounds that would otherwise be unhealthful if discharged to a surface water body, such as a river, lake, or ocean, thereby further incentivizing reclaimed water in agricultural applications. Soil precipitates, absorbs, digests, hydrolyzes, or decomposes organic compounds.

Preliminary discussion of salt and nutrient loading issues will be addressed in recognition of the fact that a larger, separate region-wide effort is required beyond the scope of this project. Development of a salt and nutrient management plan for impaired groundwater basins is a requirement of the recycled water policy adopted by the State Water Resources Control Board (SWRCB) in 2009. The recycled water policy requires that salt and nutrient management plans be developed to manage salts, nutrients, and other significant chemical compounds found in recycled water on a watershed or sub-watershed basis. Hence, within the limited confines of this proposed project, the scope of work is restricted to assessment of background studies and data. Presently, data is collected by federal, state, and local agencies, as well as local water users. Publically available monitoring plans will be evaluated; further, the gaps in data or other data needs will be assembled and a list of potential constituents of concerns (i.e., sodium, chloride, and nitrate) will be generated.

COASTAL HAZARDS TECHNICAL STUDY

Earth Systems Pacific will provide analysis of the substantial geologic issues, as identified in the CCC appeal staff report, of the site currently proposed for the WTP. This will include a comprehensive coastal hazards study, taking into consideration expected shoreline erosion over the life of the project and incorporating anticipated impacts related to global climate change and projected rises in sea level.

The study will include the elevation and inland extent of storm surge and flooding that might occur over the expected life of the project, including interactions among and combinations of hazardous conditions, such as high tides and storm surges. Factors to be considered include an eroded beach, a 100-year storm event (or the equivalent of the 1982–1983 El Niño event), an extreme high tide, and the projected 100-year rise in sea level based upon both optimistic and conservative theories.

2.4 CCC Coordination/Hearing Support

Dudek will assist the City and MBCSD with coordinating and facilitating issue resolution with CCC staff, including attendance and support at two CCC staff meetings during the alternatives and substantial issue analyses process, as well as two CCC hearings on the proposed project. Dudek will prepare written materials, correspondence, presentations, and graphics to respond to issues raised, and will facilitate discussion regarding CCC staff's policy interpretations and supplemental data/information requests to support the staff's review of the project and preparation of CCC staff report findings. If requested, Dudek will assist in the review of staff reports/recommendations to determine appropriateness and feasibility of findings and conditions of approval.

Dudek will support the City and MBCSD at up to two (2) California Coastal Commission hearings to present the proposed project for *de novo* review and approval. Dudek will coordinate with the project team to prepare presentation materials and written correspondence in response to public comment and/or Coastal Commission staff recommendations for presentation to the Coastal Commission, as needed. The project schedule reflects the expectation that Coastal Commission staff will decide to docket the proposed project at the next available local hearing in Santa Cruz, with a follow-up hearing, if necessary, scheduled in nearby Santa Barbara.

2.5 Project Management

Apart from project meetings with MBCSD staff, the Dudek project manager will provide regular project assessments and status updates with regard to budget, timeline, and deliverables to track progress and achievement of milestones. Dudek will keep a project log to track communications and outstanding action items. At all meetings, Dudek will take notes and prepare meeting minutes and summaries.

Along with the project log, the minutes/summaries will be submitted to the City and MBCSD staff for their review and comment to ensure identification of all necessary steps taken to resolve any potential issue, challenge, or obstacle. Dudek will make every effort to keep you informed as to the actual and anticipated costs as work progresses and will provide you with a monthly detailed accounting of all costs incurred for the project.

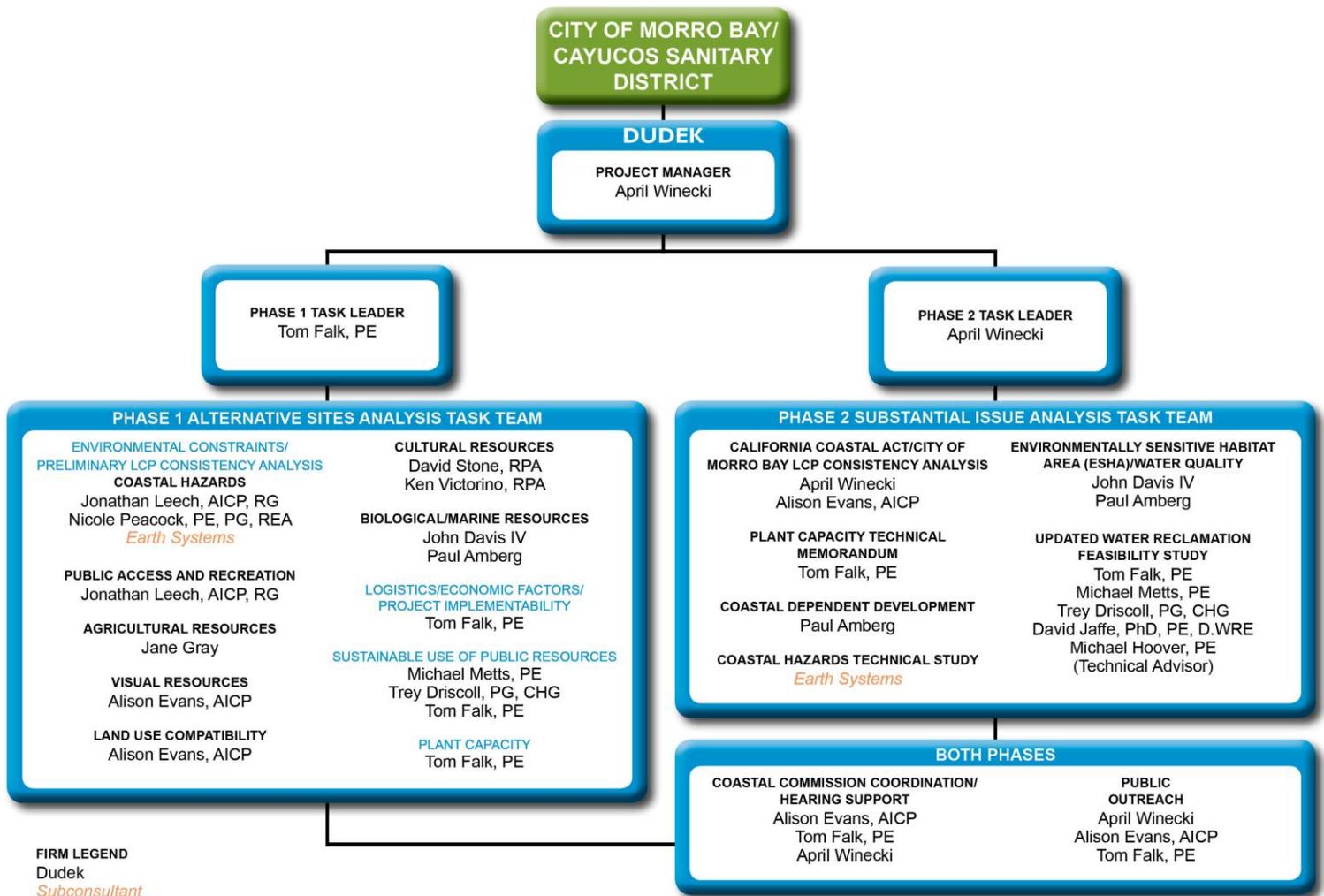
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3 PROJECT TEAM AND QUALIFICATIONS

The Dudek team’s experience providing CCC policy and substantial issue analysis for projects similar to this proposed project enhances our understanding of the environmental review and permitting challenges faced by the City and MBCSD. Our experienced professionals facilitate project planning and environmental approvals, environmental documentation, and public outreach. We currently provide these services for many of California’s coastal cities and wastewater districts.

Another key requirement for the successful implementation of simultaneous coastal, environmental, and engineering consulting services supporting the City and MBCSD is a clear organizational framework that defines lines of communication among team members. Dudek has developed a proven management plan that has led to successful coastal projects and satisfied municipal clients. **Figure 2** shows our team organization for this project.

FIGURE 2. TEAM ORGANIZATIONAL CHART



3.1 Project Management

APRIL WINECKI

April Winecki is an environmental planner with over 13 years' professional planning experience, specializing in coastal resource planning and policy analysis, land use planning, and environmental impact analysis. Ms. Winecki has worked as a coastal program analyst and policy advisor for a variety of private and public agency development and restoration projects, and she has served as a project manager and CCC liaison for a number of LCP amendment and PWP proposals, coastal development permit applications, and appeals to the CCC.

EDUCATION

University of California, Santa Barbara
BS, Environmental Studies, 1997

Ms. Winecki has also worked as a project and environmental planner for public and private development projects, having prepared and reviewed a range of California Environmental Quality Act (CEQA and National Environmental Policy Act (NEPA) compliance documents throughout California. These projects have included environmental planning and impact analysis, environmental constraint analysis, condition compliance, and mitigation monitoring.

Ms. Winecki is an expert in the Coastal Act procedures for public agencies, as well as coastal development permit and appeals processing. She has experience working on projects involving CCA and LCP policy constraint and consistency analysis, as well as coastal land use plan and zoning ordinance amendments. Ms. Winecki has a deep understanding of PWPs and federal consistency determinations and certifications. She serves as a CCC staff liaison to facilitate resolution of coastal development permit appeals and commission-initiated enforcement actions. In addition, she has years of experience in condition compliance and mitigation monitoring.

TOM FALK, PE

Development of the comprehensive WTP site alternatives analysis will be prepared in accordance with CCA requirements and led by Dudek engineer, Tom Falk. Technical resource support will be provided by Dudek's in-house coastal and environmental planners, including water resources and geohydrologic experts.

Tom Falk has a unique blend of training and experience in civil engineering and environmental sciences. He has served as project manager on numerous water and sewer infrastructure design projects and specializes in wastewater treatment and recycled water. He also has valuable field construction experience, serving as resident engineer on large public works projects, including sewer and waterline construction, street rehabilitation, and wastewater treatment plants.

For this project, Mr. Falk will oversee and assess logistic, economic, and project implementation factors for the rough and fine screening alternatives analysis. He will also oversee and plan for plant capacity using his experience with wastewater treatment systems. He will be supported by project engineers and technical advisors, as required.

EDUCATION

San Diego State University
BS, Civil and Environmental Engineering,
2002 – Cum Laude

CERTIFICATIONS

Professional Civil Engineer CA No.
69780

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers
California Water Environment
Association
WaterReuse Association

ALISON EVANS, AICP

Alison Evans is a certified environmental planner with 11 years of project experience, specializing in planning and regulatory compliance pursuant to CEQA, NEPA, and the CCA. Ms. Evans has completed numerous environmental and regulatory compliance documents in support of a diverse range of public and private developments, including public utilities and infrastructure, port-related industry, transportation, school redevelopment and expansion, and mixed-use commercial and residential developments.

Her background is in land-use policy consistency, visual quality, and public services issues for complex and controversial programmatic and project-specific environmental documents. She has conducted feasibility and alternatives analyses for public infrastructure projects, including WTPs and recycled water systems throughout California.

Ms. Evans has contributed to the planning and evaluation of public and private projects within the coastal zone requiring consistency analysis with CCA and LCP policies. She is currently providing project management and technical resource support for preparation of the San Diego North Coast Corridor Transportation and Resource Enhancement Program/Public Works Plan, involving preparation and processing of the PWP, LCP amendments for five cities, and a federal consistency review analysis for the 30-mile transportation improvement and resource enhancement program.

EDUCATION

University of California, Santa Barbara
BA, Environmental Studies, 2000

CERTIFICATIONS

American Institute of Certified Planners (AICP)

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals (AEP), Channel Counties Chapter, Treasurer

American Planning Association (APA)

3.2 Project Team

PAUL AMBERG

Paul Amberg is a senior environmental planner with over 40 years' experience in planning and conducting engineering and environmental programs throughout California. Mr. Amberg is highly adept at managing technical studies for engineering and environmental projects, preparing EIRs and environmental assessment (EA) reports, and coordinating and implementing project quality assurance plans and procedures.

He has participated in a number of major ocean outfall projects, including the South Bay Ocean Outfall project for the U.S. International Boundary and Water Commission, the Point Loma Outfall Extension project for the City of San Diego, and the Clearwater Program Master Facilities Plan and Ocean Outfall project for the Sanitation Districts of Los Angeles County.

EDUCATION

California State University, Long Beach
BA, Environmental Studies, 1976

Fullerton College, Fullerton, California
AA, Oceanographic Technology, 1971

CERTIFICATIONS

County of San Diego CEQA-Approved Consultants List for EIR Preparers

PROFESSIONAL AFFILIATIONS

AEP

JOHN DAVIS IV

John Davis IV is a senior biologist in the Santa Barbara office with over 14 years' experience, specializing in biological resource assessments, special-status plant and wildlife species surveys, habitat restoration, and environmental regulations, permitting, and compliance. Mr. Davis IV's expertise is in identification and risk management of potential biological constraints for a diversity of land use projects, including energy, infrastructure, residential, commercial, and restoration projects.

He has effectively assisted clients with project design and agency negotiations, produced defensible biological technical reports, and managed and coordinated the biological resources sections of CEQA and NEPA documents. Mr. Davis IV represents Dudek on several qualified biologist lists, including the Counties of San Luis Obispo and Riverside, and is recognized as a qualified biologist by the Significant Ecological Area Technical Advisory Committee (SEATAC) for Los Angeles County.

Mr. Davis IV has extensive experience surveying for a number of special-status invertebrate, reptile, amphibian, and mammal species. He is permitted by the U.S. Fish and Wildlife Service (USFWS) to conduct surveys for listed vernal pool branchiopods (fairy and tadpole shrimp) and the federally endangered Morro shoulderband snail (*Helminthoglypta walkeriana*). USFWS has also permitted him to perform habitat enhancement and construction-related activities for the Morro shoulderband snail and handle the federally threatened California red-legged frog (*Rana draytonii*). In addition, he is California Department of Fish and Game (CDFG)-qualified to survey for the San Joaquin kit fox (*Vulpes macrotis mutica*) and the desert tortoise (*Gopherus agassizii*) throughout their ranges. Other types of wildlife species surveyed include the blunt-nosed leopard lizard (*Gambelia sila*), flat-tailed horned lizard (*Phrynosoma mcallii*), fringe-toed lizards (*Uma* spp.), California tiger salamander (*Ambystoma californiense*), arroyo toad (*Bufo californicus*), western spadefoot (*Spea hammondi*), southwestern pond turtle (*Clemmys marmorata pallida*), southern steelhead (*Oncorhynchus mykiss gairdneri*), tidewater goby (*Eucyclogobius newberryi*), Swainson's hawk (*Buteo swainsoni*), and burrowing owl (*Athene cunicularia*). In addition, Mr. Davis IV also has conducted numerous focused floristic (rare plant) surveys, vegetation mapping, and wetland delineations in Southern and Central California.

TREY DRISCOLL, PG, CHG

Trey Driscoll is a hydrogeologist with over 11 years' experience in the environmental field. Mr. Driscoll specializes in environmental investigations, groundwater supply and remediation, and soil gas studies. Mr. Driscoll brings diverse experience to the project team and has supported numerous projects encompassing a wide range of areas.

Mr. Driscoll's project experience includes municipal well design, logging, and construction oversight; municipal well destruction; soil gas surveys for methane; experiments with pilot studies for in situ remediation; water quality and hydrology technical reports; phase I and II site assessments; and exploratory groundwater investigations.

EDUCATION

Cal Poly State University, San Luis Obispo

MS, Biology, 2003

San Diego State University, San Diego

BS, Ecology, 1998

CERTIFICATIONS

USFWS 10(A) Recovery Permit
No. TE-110095-1

- California red-legged frog
- Listed vernal pool branchiopods
- Morro shoulderband snail

CDFG Scientific Collecting Permit
SC-008527

- Focused floristic surveys
- Herpetological surveys
- Small mammal trapping

ESA Certified Ecologist

EDUCATION

Hobart and William Smith Colleges,
Geneva, New York

BS, Geoscience and Environmental
Studies, 2000

CERTIFICATIONS

Professional Geologist, CA No. 8511
(exp. 3/31/11)

PROFESSIONAL AFFILIATIONS

National Groundwater Association

RICK GORMAN, EARTH SYSTEMS PACIFIC

A Registered Geologist and Certified Engineering Geologist, Rick Gorman is experienced in all phases of engineering geology, from project inception, field investigation, data analysis, to final compilation and issuance of the completed report, as well as post-study consultation. Mr. Gorman is responsible for developing and conducting field investigations, document research, and report preparation. He has conducted large-scale geologic investigations involving site-specific studies of seismicity, geologic hazard, landslides, faults, shoreline erosion, and coastal bluff retreat.

He has performed analyses of coastal erosion and wave run-up for such projects as the San Simeon Wastewater Treatment Plant, the Beachwalk Resort, and the Morro Bay–Cayucos Connector Trail. He has provided evaluation of landslides for California Polytechnic State University, Chevron Pipeline Company, Unocal, AT&T, San Luis Coastal Unified School District, and the County of San Luis Obispo. The Route 68 realignment between Salinas and Monterey, the Chorro Valley Water Transmission Line, and the Pismo Beach Bluff Erosion Study are among his major projects.

EDUCATION

California Polytechnic State University, Pomona BS, Geology

PROFESSIONAL AFFILIATIONS

Association of Engineering Geologists
Geologic Society of America

JANE GRAY

Jane Gray is an environmental planner and project manager with over 11 years of project management and environmental planning experience specializing in agricultural resources planning, policy analysis, and grant writing for myriad public projects, including water and wastewater projects, entitlement services, and CEQA.

Ms. Gray's relevant agricultural experience entails the development of agricultural land-use policies, participation in various agricultural land use forums and working groups to focus attention on sustaining and updating agriculture in the Central Valley, and the generation of an agricultural tourism ordinance for the County of Fresno. She has conducted land evaluation site assessments analyses for projects in the Counties of Fresno and Santa Barbara, and assisted in the update of the uniform rules for agricultural preserves for Santa Barbara County, as well as the accompanying EIR for the Williamson Act Program. Ms. Gray has also been involved with the County of Santa Barbara's Integrated Regional Water Management Program and with implementation of wastewater treatment plant and water system upgrade projects for a variety of jurisdictions.

EDUCATION

Universität Dortmund, Germany
MS, Regional Planning and Management, 2001

SUNY College Buffalo, New York
BS, Social Work, 1995

PROFESSIONAL AFFILIATIONS

APWA

MICHAEL HOOVER, PE

Michael Hoover has 40 years' experience as an engineer focused on water resource engineering and management of projects throughout the southwestern U.S. He has served as project manager for comprehensive groundwater investigations; water program management studies; facilities planning; design; construction management; and startup of water, wastewater, and solids treatment facilities. Mr. Hoover's professional expertise includes proven success interfacing with regulatory agencies, as well as consensus building between public and private agencies for project implementation. He received the Outstanding Service Award for private-sector work in recognition of his contribution to water reclamation development in California from the Association of Water Reclamation Agencies and the California Association of Water Reclamation Agencies (WateReuse).

EDUCATION

San Diego State University
BS, Civil Engineering, 1966

CERTIFICATIONS

Registered Civil Engineer California No. 19155, 1968

Registered Corrosion Engineer
California No. 150, 1976

Registered Professional Engineer
Arizona No. 34527, 2000

Registered Professional Engineer
Maryland No. 7932, 1971

Since 2007, Mr. Hoover’s focus has been on the drought and economic conditions that directly impact California cities, public agencies, and businesses, particularly with the tremendous threat and ongoing impact to watersheds and infrastructure. Mr. Hoover’s focus has turned to finding innovative solutions to water supply shortfalls and facility optimization. Success of these plans and optimization programs is measured by timely implementation with sustainable solutions. Optimizing existing operations and facilities to increase their life and efficiency can be measured by specific metrics. In addition, there are significant advantages for many projects that reflect environmental and green benefits. Examples include recycled water projects and programs, biosolids composting, energy and chemical optimization, and improvements to control and monitoring practices.

DAVID JAFFE, PHD, PE, D.WRE

David Jaffe has worked for more than a decade at the intersection of water resource development, water infrastructure financing, and water policy. Dr. Jaffe has focused his technical expertise on the translation of engineering science into actionable environmental benefit.

Dr. Jaffe’s expertise in civil and environmental engineering and water policy includes document preparation (i.e., report authoring and preparation, plan preparation and review, construction document preparation and review); meeting organization; resource agency contact (Federal Emergency Management Agency Conditional Letter of Map Revision and Letter of Map Revision, U.S. Army Corps of Engineers/U.S. Environmental Protection Agency (ACOE/EPA) 404 permitting, CDFG and Clean Water Act permitting (i.e., 1600 series, 401 certification)); CEQA/NEPA review and subsequent EIR preparation.

Dr. Jaffe’s engineering analysis and design expertise also includes hydrology (e.g., HEC-1 modeling, rational method, statistical analysis, etc.); hydraulics (e.g., HEC-RAS modeling, FLO-2D modeling, empirical analysis); sediment analysis (e.g., debris production, debris basin design, erosion control specification and design, bank protection specification and design, SAM modeling, HEC-6T modeling, empirical analysis, fluvial/alluvial hazards mitigation); flood control and water quality (e.g., runoff mitigation analysis and design, flood storage analysis and design, weir design, channel design, BMP specification and design); research; statistical analysis; and research publication.

JONATHAN LEECH, AICP, RG

Jonathan Leech is an environmental planner with over 25 years’ professional experience as an environmental analyst specializing in impact assessment, field research, and land use analysis. Mr. Leech is an expert in environmental quality assurance programs, mitigation monitoring, environmental constraint analysis, and air quality planning. He has experience in land development permit processing and hazardous waste assessment/ management plan development. Mr. Leech has participated in the preparation of over 200 CEQA and NEPA documents, including EAs, EIRs, specific plans, and policy documents for numerous local agencies within the State of California. In addition, he has experience with master EAs, parks and community planning, water resource development and management, and infrastructure.

EDUCATION

University of California, Irvine
PhD, Civil & Environmental Engineering, 2002

Regent’s Dissertation Fellow, 2001–2002

University of California, Irvine
MS, Civil & Environmental Engineering, 2002

University of Southern Mississippi,
BS, Physical Marine Science/Stennis
Space Center, 1998

Johns Hopkins University,
BA, Earth Science, 1994

CERTIFICATIONS

Registered Civil Engineer, California
(68321)

Registered Civil Engineer, Arizona
(44318)

Disaster Service Worker, California
(SAP62634)

Diplomate, Water Resource Engineer
(D.WRE) American Academy of Water
Resource Engineers, 2010

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

EDUCATION

University of California, Santa Barbara
BA, Environmental Studies/Geology, 1984

University of California, Santa Barbara,
Extension

Hazardous Materials Management
Certificate Program, 1989

CERTIFICATIONS

AICP

Professional Geologist, CA 1997

MICHAEL METTS, PE

Michael Metts is a principal engineer at Dudek, having worked as a professional engineer throughout the southwestern U.S. for the past 28 years, 17 of them in California. His engineering responsibilities include project engineering and management, consisting of systems analysis, computer modeling, planning, and design of water, wastewater, and reclaimed water facilities. Mr. Metts’ project experience encompasses the evaluation and expansion of existing facilities, as well as the design of new facilities.

As a task manager, Mr. Metts focuses on open lines of communication between internal team members, as well as between the Dudek team and the district. He will facilitate and lead all project meetings to ensure that the team is remaining on schedule, staying within scope, and maintaining the agreed-upon project fee.

EDUCATION

University of Kentucky
BS, Civil Engineering, 1983

CERTIFICATIONS

Professional Civil Engineer CA No. 42586

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers
American Water Works Association
California Water Environment Association
Water Environment Federation
American Public Works Association

NICOLE PEACOCK, PE, PG, REA

Nicole Peacock has over 10 years’ environmental engineering and geology experience and has performed numerous tasks dealing with hazardous waste investigation and remediation projects. Responsibilities include soil, soil vapor, and groundwater investigation and remediation projects; phase I and II site assessments; preparation of groundwater monitoring reports and Comprehensive Environmental Response, Compensation, and Liability Act and Resource Conservation and Recovery Act documents; landfill monitoring; and community relations.

EDUCATION

University of California, Los Angeles
BS, Civil and Environmental Engineering/Geology, 1999

CERTIFICATIONS

Professional Civil Engineer
CA No. 68775 – exp. 9/30/2011
Professional Geologist
CA No. 8553 – exp. 6/30/2011
Registered Environmental Assessor No. 08272 – exp. 6/30/2011

DENNIS SHALLENBERGER, PE, GE, EARTH SYSTEMS PACIFIC

Dennis Shallenberger is president of Earth Systems Pacific. As a registered professional engineer in the states of California and Nevada, and a registered geotechnical engineer in California with over 30 years’ experience in the geotechnical field, Mr. Shallenberger is head of the geotechnical engineering department of Earth Systems Pacific. His project experience includes a geotechnical feasibility study for the Morro Bay WTP, geotechnical investigations for several phases of the Paso Robles Wastewater Treatment Plant, the Pismo Promenade project, and numerous studies pertaining to soil and geologic hazards for EIRs.

EDUCATION

California State University, Long Beach
MS, civil engineering with a geotechnical specialty
University of Montana at Missoula
BS, Geology

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

Mr. Shallenberger is a fellow of the Institute for Advancement of Engineering. He is a former member of the Division of the State Architect Advisory Board, and is a member of the inspection and testing committee of that board. He formerly chaired and vice-chaired that committee. Currently, he serves as co-chair on the County of San Luis Obispo’s recently formed countywide Hydromodification Technical Advisory Committee, which was established to develop policies relative to such issues as on-site storm water retention.

DAVID STONE, RPA

Mr. Stone is a project manager with 28 years’ experience in environmental planning and 32 years’ experience in cultural resources management. He manages all levels of cultural resources (archaeology, history, and architectural history) technical studies and environmental compliance analyses. In addition to managing hundreds of archaeological investigations throughout Central California, he is well-versed in Native American consultation procedures, including Sacred Land Inventory data collection obtained from the Native American Heritage Commission, and conducting outreach with Native American tribes and individuals.

Mr. Stone has served the City of Morro Bay as a consulting archaeologist and contract planner, preparing environmental documentation for the State Highway 41/Main Street Roundabout project and the Morro Bay Waterfront Improvements projects’ mitigated negative declarations. He also managed the review of the Duke Energy Company Morro Bay Power Plant Modernization Project for the City, during which he managed a multidisciplinary team in reviewing the company’s California Energy Commission Application for Certification. This also involved assessment of archaeological resources and potential impacts in the vicinity of the power plant.

Mr. Stone recently completed a series of archaeological investigations for Goleta Sanitary District’s full-secondary treatment improvement project. The studies resulted in reducing potential significant impacts, improving project design efficiencies, and contributed to the District’s successful Coastal Development Permit (CDP) approval from the California Coastal Commission.

EDUCATION

University of California, Santa Barbara
MA, Anthropology, 1984
University of California, Santa Barbara
BA, Anthropology, 1978

CERTIFICATIONS

Register of Professional Archaeologists

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals
American Planning Association
Society for American Archaeology
Society for California Archaeology
California Preservation Foundation

KEN VICTORINO, RPA

Mr. Victorino is a senior archaeologist with over 18 years’ professional experience in cultural resources management and extensive experience in all aspects of fieldwork, laboratory analysis, and report preparation. He has been an author, project manager, field supervisor, and laboratory supervisor for phase I archaeological surveys, Extended Phase I testing programs, Phase 2 site significance evaluations, and Phase 3 data recovery mitigation programs, as well as archaeological monitoring projects at prehistoric and historic archaeological sites in coastal, foothill, and desert regions of Southern and Central coastal California, on San Clemente Island, and in northwestern Arizona.

He has supervised cultural resources projects in accordance with state and federal regulations, such as CEQA, NEPA, and Section 106 of the National Historic Preservation Act. He contributes to EAs, initial studies, EISs, EIRs, and mitigated negative declarations. Mr. Victorino recently supervised the Extended Phase I archaeological investigations for Goleta Sanitary District’s full-secondary treatment improvement project that contributed to the District’s successful CDP approval from the California Coastal Commission. He also has supervised similar constraints analyses for the Carpinteria Sanitary District’s expansion of sewer distribution lines, demonstrating avoidance of cultural resource impacts leading to CDP approvals issued by Santa Barbara County.

EDUCATION

California State University, Fullerton
MA, Anthropology, 1996
California State University, Fullerton
BA, Anthropology, 1991

CERTIFICATIONS

Register of Professional Archaeologists

4 PROJECT EXPERIENCE

MALIBU PARKS PUBLIC ACCESS ENHANCEMENT PLAN

CLIENT: Mountains Recreation and Conservation Authority

The Dudek team was contracted by the Mountains Recreation and Conservation Authority (MRCA), a public entity established by a joint powers agreement between the Santa Monica Mountains Conservancy, the Conejo Recreation and Park District, and the Rancho Simi Recreation and Park District, based in Los Angeles, California, to assist in preparing an LCP amendment, PWP, and associated CEQA review for MRCA's plan to improve 1,700 acres of regional parklands in the Santa Monica Mountains. The plan included developing a variety of camping areas, an integrated trail network, associated support facilities, and maintenance guidelines. The Dudek team's coastal planning and policy professional prepared an LCP amendment and PWP to streamline CCC review of the project and expedite project implementation.



The Dudek team prepared technical studies and conducted environmental analysis for an EIR to support the PWP review process, including biology surveys, visual resources, noise, air quality, transportation/circulation, hazards, hydrology/water quality, cultural resources, and policy consistency analysis. Dudek also represented the plan on behalf of MRCA at public outreach workshops and at public hearings before the City of Malibu and CCC. The LCP amendment was approved by the CCC in June 2009, and the PWP was subsequently approved by the CCC in October 2010. The successful application was only the third new PWP approved by the commission in the last 10 years, and was supported by a unique LCP amendment override process, one of only two such amendments ever approved by the commission.

SAN DIEGO NORTH COAST CORRIDOR TRANSPORTATION AND RESOURCE ENHANCEMENT PROGRAM PUBLIC WORKS PLAN

CLIENT: San Diego Association of Governments/California Department of Transportation, under contract to Kimley-Horn and Associates, Inc.

The Dudek team was subcontracted by Kimley-Horn and Associates, Inc., on behalf of the San Diego Association of Governments (SANDAG) and California Department of Transportation (Caltrans) to provide coastal development analysis, permitting, and documents associated with the Interstate 5 (I-5) North Coast Corridor Public Works Plan. The PWP addresses improvements to mobility, coastal access, and natural resources in San Diego's North County.



The proposed improvements to I-5 and the Los Angeles to San Diego (LOSSAN) rail corridors in northern San Diego County consist of adding managed and general-purpose lanes to I-5 (including a number of bridge and interchange structure replacement and community enhancement projects), double-tracking of and station improvements for the LOSSAN rail corridor, and development of a comprehensive coastal resource enhancement program addressing impacts to five coastal lagoons and natural resources within the 30-mile transportation corridor. These improvements potentially impact coastal wetlands and other coastal resources, including environmentally sensitive habitat.

Dudek coastal planners are preparing and processing the PWP, LCP amendments for four Cities, and a federal consistency review analysis for the transportation improvement program. The PWP is an alternative to project-by-project review, and provides a comprehensive permitting vehicle for obtaining CCC approval of the plan's improvements pursuant to the CCA and LCPs. LCP amendments are being developed concurrently with the PWP to establish the policy framework for plan implementation, including developing specific standards to address wetland and environmentally sensitive habitat use and setback requirements, water quality treatment criteria, agricultural resource impact mitigation, and project phasing.

BEACHWALK RESORT

CLIENT: HMW GROUP

Dudek served as project manager and CCC liaison to resolve an appeal of a city-approved coastal development permit for a project involving demolition of 13 residential cabins and a 7,000-square-foot commercial building and construction of a 77,585-square-foot, three-story, 69-room oceanfront hotel and subterranean parking structure in downtown Pismo Beach, located in San Luis Obispo County.



Dudek worked with HMW Group and the CCC personnel to develop mitigation plans and conduct technical study and analysis to address coastal policy issues related to shoreline hazards and protection, visual resources, and coastal recreation to secure CCC staff support of the project and expedite the appeals process. The project was unanimously approved by the CCC in July 2007.

GREEN HERON SPRING RESIDENTIAL DEVELOPMENT

CLIENT: SCOTT ELLINWOOD

Dudek began work as the project planner and CCC liaison in 2004 for a 34-unit condominium project located in unincorporated Santa Barbara County. The project included annexation to the City of Carpinteria, enrollment in the SWRCB General Waste Discharge Requirements Program for pond



habitat restoration and water reclamation, a coastal development permit, and a land use plan amendment for the City of Carpinteria's LCP. Dudek facilitated permitting requirements with the SWRCB, and coordinated closely with City of Carpinteria and CCC personnel to develop environmental documentation and prepare an LCP amendment to modify wetland and environmentally sensitive habitat use and setback standards to enable development of the site.

The General Waste Discharge Requirement enrollment for the project was approved by the Central Coast Regional Water Quality Control Board in January 2006. The project's coastal development permit and coastal land use plan amendment were approved by the City of Carpinteria City Council in November 2007 and the land use plan amendment was then certified by the CCC in February 2009.

LAGUNITAS MIXED-USE DEVELOPMENT

CLIENT: Investec

Dudek's coastal planners served as CCC liaison to resolve multiple CCC and third-party appeals of a city-approved coastal development permit for a mixed-use project consisting of an 84,550-square-foot office building, 37 single-family detached residences, and 36 condominium units on a 25.3-acre parcel in the City of Carpinteria. Dudek worked with Investec, city, and CCC personnel to facilitate redesign of the project and development of mitigation plans to address open space and sensitive habitat protection policies, as well as secure city support of an amended coastal development permit and CCC staff support of the project. The project's coastal development permit was approved by the city council, and the city's permit approval was upheld by the CCC.

SANTA BARBARA MUNICIPAL AIRPORT AIRFIELD SAFETY PROJECT, LCP AMENDMENT

CLIENT: City of Santa Barbara

Dudek coastal planners provided analysis and recommendation for CCC review and certification of the City of Santa Barbara Airport and Goleta Slough LCP amendment, proposed to facilitate development of necessary airfield safety projects and associated wetland and upland habitat restoration plans, to define new resource impact mitigation policies for the airport property, and to incorporate a draft aviation facilities plan into the city's certified LCP.

DOHENY STATE BEACH OUTFALL STRUCTURE REHABILITATION PROJECT

CLIENT: South Orange County Wastewater Authority

Dudek provided environmental, regulatory, and permitting services for the rehabilitation of SOCWA's treated wastewater outfall structure located at Doheny State Beach in southern Orange County near the mouth of San Juan Creek. Dudek services included a biological reconnaissance survey with vegetation and sensitive species mapping, formal wetlands delineation procedures in accordance with state and federal law, CEQA compliance procedures including filing any appropriate notice of exemption available in accordance with state procedures, preparation and filing of all applicable wetlands permitting documentation, and arranging and attending necessary meetings to discuss Dudek's research and recommendations with the client and all appropriate resource and permitting agencies as needed to advance the project.

ENCINA WASTEWATER TREATMENT PLANT EXPANSION PROJECT

CLIENT: Encina Wastewater Authority

Dudek prepared the CEQA document that met state revolving funds loan application requirements, which included analysis for the expansion of wastewater treatment capacity for the Encina Wastewater Treatment Plant from 36 mgd liquid and 38 mgd solids to 40.5 mgd liquid and 43.3 mgd solids. Improvements/upgrades required to implement the phase V expansion included modifications to the existing preliminary treatment facilities, primary/secondary treatment facilities, and effluent pumping facilities. Additionally, the Encina Wastewater Authority proposed to include a new biosolids handling and disposal facility that would produce biosolids to a class A product as well as modifications to the existing on-site cogeneration system.

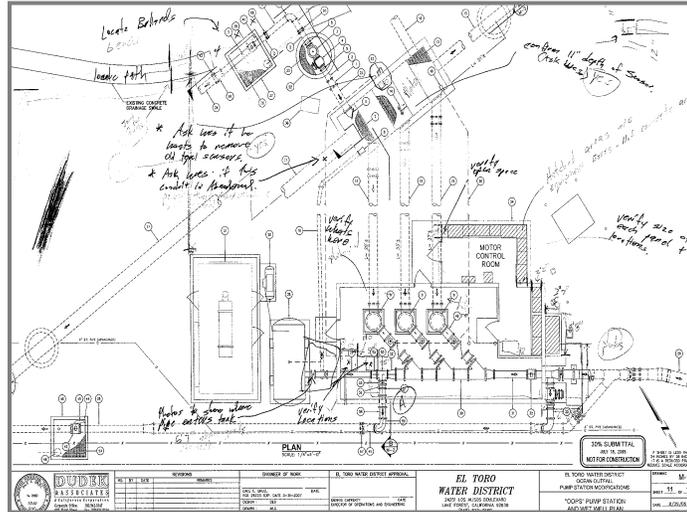
Dudek analyzed studies and monitoring data on the ocean outfall discharge and water quality characteristics, including the NPDES monitoring and reports completed for the facility, to gain an understanding of the present extent of the ocean discharge and associated water quality and marine biological considerations. Recommendations included additional annual monitoring of ocean water quality and flora, fauna, and sediment sampling. Dudek also participated in the public outreach effort, which ultimately led to a successfully completed project with no opposition.

OCEAN OUTFALL PUMP STATION MODIFICATIONS

CLIENT: El Toro Water District

The Ocean Outfall Pump Station, located at the El Toro Water District's Water Recycling Plant, discharges secondary effluent from the plant into the effluent transmission main. The transmission main conveys effluent to a regional trunk sewer that discharges to the ocean. Several conditions degraded the pump control system's performance and precluded it from matching the inflow rate.

Dudek evaluated the pump station performance and determined improvements in pump control could be achieved without abandoning the existing pump station. The recommended design included construction phasing to enable the pump station to remain in operation throughout construction except for district-allowed outages of no more than 48 hours. The improvements developed by Dudek reduced construction costs by several hundred thousand dollars. The district also benefits from cost savings in energy use and maintenance.



PROPOSITION 50 WASTEWATER TREATMENT PLANT GRANT PROCESSING

CLIENT: City of Guadalupe

The City of Guadalupe, California, contracted Dudek for assistance in the administration of Proposition 50 funding pursuant to Component 5 or State Agreement No. 08-613-550 between the city and the State of California, involving the Guadalupe Wastewater Treatment Plant improvement project. The Proposition 50 funding has been allocated to upgrades including:

- Headworks' modifications to influent pumps and grit removal
- Treatment process improvements to increase aeration capacity, including replacement of proprietary equipment and installation of a dissolved air flotation unit
- Disposal improvements, including a new pipeline for effluent distribution, effluent pond capacity/flood protection, and replacement of the irrigation pump station
- Collection system improvements to the pump stations
- Supervisory control and data acquisition system.

Dudek maintains regular contact with the city to ensure clear information and communication on the entire scope of work for the improvements to the plant. Dudek also has prepared and transmitted, or will prepare and transmit, progress reports, a project assessment and evaluation plan, a quality assurance project plan, and other requirements to Kennedy/Jenks Consultants (Kennedy/Jenks) and the state as required by the contract. Finally, Dudek maintains regular contact with the County of Santa Barbara Water Agency, Kennedy/Jenks, and the grant manager for the state contract to ensure that all entities are satisfied with the project's progress.

CARLSBAD SEAWATER DESALINATION PLANT EIR

CLIENT: City of Carlsbad

The Dudek team prepared an EIR for a precise development plan (PDP) for the Encina Power Plant, including the proposed Carlsbad Desalination Plant, in the City of Carlsbad, California. The project consisted of land use approvals to construct and operate an approximately 50 mgd seawater desalination plant and other appurtenant and ancillary water and support facilities to produce potable water. The project is the



only large-scale seawater desalination plant on the west coast to have received approvals and permits from all major regulatory agencies, including the CCC, California State Lands Commission, Regional Water Quality Control Board, and other local and state responsible agencies.

The PDP application was made jointly with Cabrillo Power I LLC (Cabrillo Power), owner and operator of the Encina Generating Station. Cabrillo Power is a co-applicant because the desalination plant would depend on the seawater cooling discharge from the power plant as a source for intake water, as well as on the power plant to supply electricity to run the water filtration pumps. Primary environmental issues associated with the project include the impact of saline concentrate discharge from the desalination plant on marine organisms, since the discharge contains twice the salt content of seawater. The EIR carefully addressed the numerous concerns raised by the permitting agencies, environmental organizations, and the public.

SAN LUIS OBISPO WATER REUSE MASTER PLAN

CLIENT: City of San Luis Obispo

Dudek prepared the City of San Luis Obispo Water Reuse Master Plan. The master plan identified prospective recycled water users throughout the city and developed a distribution system to efficiently deliver up to 600 acre-feet per year of recycled water.

A parcel-based analysis of water consumption data, irrigated areas, and demand patterns for all water connections was conducted using GIS applications. Various pipeline alignments and system storage scenarios were developed based on geographic location of user sites, physical and environmental constraints, capital cost, operational cost, and hydraulic considerations. An implementation program was developed that included funding and financing options. The master plan was prepared in accordance with requirements of the San Luis Obispo Recycled Water Facilities Planning Grant. This project was approved by the Office of Water Recycling.

SANTA FE IRRIGATION DISTRICT RECYCLED WATER MASTER PLAN

CLIENT: Santa Fe Irrigation District

Dudek performed market assessment for a recycled water system expansion that reviewed and quantified recycled water system demands and identified potential recycled water customers. Commitments from potential customers were confirmed and retrofit requirements considered. Supply sources were investigated to identify preferred alternative for recycled water production comparing water quality and availability from several neighboring communities. Recycled water system criteria were developed and infrastructure requirements defined. The district's rules and regulations were updated.

LAGUNA BEACH MAIN BEACH LIFT STATION

CLIENT: City of Laguna Beach

In support of the EIR and LCP approval, Dudek prepared a comprehensive project definition and alternative analysis, ultimately deciding to abandon an existing wastewater lift station and construct a new facility. The beachfront project is located in a high-profile public park, adjacent to a high-end hotel and popular tourist attractions. With EIR and LCP approvals in place, the project is in the final design stages and scheduled to be constructed during the short off-peak tourist season of 2011–2012.

GUADALUPE WASTEWATER TREATMENT PLANT

CLIENT: City of Guadalupe

Dudek is designing and assisting the city with permitting the 0.96 mgd facility. The project is located in the Regional Water Quality Control Board Central Coast Region. Improvements include conversion of an ill-performing pond system to extended aeration activated sludge, upgrades at the headworks and influent lift station, and addition of sludge dewatering facilities. The project, currently in final design stages, will begin construction in the summer of 2011.

SAN ELIJO RECYCLED WATER SYSTEM EXPANSION

CLIENT: San Elijo JPA

Dudek planned, designed, and permitted the 2.4 mgd tertiary treatment expansion and recycled water system expansion for the San Elijo JPA. The plant upgrades included granular media filtration and chlorine disinfection. Approximately 10 miles of off-site pipeline and storage reservoirs were constructed to serve a number of recycled water customers.

YUCAIPA VALLEY WATER DISTRICT RECYCLED WATER SYSTEM

CLIENT: Yucaipa Valley Water District

Dudek engineering services included preparation of a preliminary design report, completion of a final design documents, and provision of subsequent construction services. The project focuses on the physical facilities needed for transport and delivery of both raw and recycled water to recycled water customers, as well as a proposed wetlands habitat. The project includes definition of facilities for environmental review and construction within jurisdictional timelines. Phase IA has recently completed construction and included 3,600 linear feet of 24-inch pipeline and 5,700 linear feet of 12-inch pipeline. Phase IB consists of 12-inch and 24-inch ductile iron pipe and appurtenances.

5 PROJECT SCHEDULE

Our proposed schedule (**Table I**) is based on our most accurate assessment of the tasks presented in the request for proposals to complete the preparation of a project location alternatives analysis, as well as an analysis of the CCC substantial issue determination for the City.

TABLE I. PROPOSED SCHEDULE

Task	Timeframe
JPA approves consultant selection	May 12, 2011
Notice to Proceed	June 1, 2011
Phase 1: Alternative Sites Analysis	June 1 to November 11, 2011
Rough Screening Alternatives Analysis	June 1 to August 24, 2011
<ul style="list-style-type: none"> Public Workshop to Identify Feasible Sites 	June 22, 2011
<ul style="list-style-type: none"> Draft Analysis to MBCSD for Review 	July 15 to July 29, 2011
<ul style="list-style-type: none"> Revise/Resubmit Final Analysis to MBCSD for Approval 	July 29 to August 12, 2011
<ul style="list-style-type: none"> Coastal Commission Staff Meeting 	August 19, 2011
<ul style="list-style-type: none"> Presentation to JPA 	August 24, 2011
Fine Screening Alternatives Analysis	August 24 to November 11, 2011
<ul style="list-style-type: none"> Draft Analysis to MBCSD for Review 	September 30 to October 14, 2011
<ul style="list-style-type: none"> Revise/Resubmit Final Analysis to MBCSD for Approval 	October 14 to October 28, 2011
<ul style="list-style-type: none"> Coastal Commission Staff Meeting 	November 2, 2011
<ul style="list-style-type: none"> Public Workshop to Discuss Findings 	November 9, 2011
<ul style="list-style-type: none"> Presentation to JPA 	November 11, 2011
Phase 2: Substantial Issue Analysis	August 24 to December 9, 2011
California Coastal Act/LCP Consistency Analysis	August 24 to October 28, 2011
<ul style="list-style-type: none"> Draft Analysis to MBCSD for Review 	September 30 to October 14, 2011
<ul style="list-style-type: none"> Revise/Resubmit Final Analysis to MBCSD for Approval 	October 14 to October 28, 2011
Updated Water Reclamation Feasibility Study/Plant Capacity Tech Memo	August 24 to October 28, 2011
<ul style="list-style-type: none"> Draft Study to MBCSD for Review 	September 30 to October 14, 2011
<ul style="list-style-type: none"> Revise/ Resubmit Final Study to MBCSD for Approval 	October 14 to October 28, 2011
Coastal Hazards Technical Study	August 24 to October 28, 2011
<ul style="list-style-type: none"> Draft Study to MBCSD for Review 	September 30 to October 14, 2011
<ul style="list-style-type: none"> Revise/Resubmit Final Study to MBCSD for Approval 	October 14 to October 28, 2011
Submit Substantial Issue Analysis and Supporting Studies to CCC for <i>De Novo</i> Hearing	November 2, 2011
<i>De Novo</i> Materials Reviewed & Deemed Complete	January 2, 2011
Coastal Commission Hearing Presentations (1 to be held in Santa Cruz, 1 to be held in Santa Barbara)	March/April 2012

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6 SCHEDULE OF FEES AND HOURS

Employee :	April Wlrecki	Tom C. Falk	Alison Evans	Arthur (Trey) Driscoll	Paul Amberg	Jonathan V. Leech	John Davis, IV	Jane Gray	David Stone	Kenneth Victorino	Michael Metts	David Jaffe	Michael Hoover	Nicole Peacock	Kirsten Zecher	Linda D. Oppen Giles	Total	Subs ¹	ODCs ²	Total	
Employee Type :	Enviro Specialist Planner VI	Project Manager	Enviro Specialist/Planner IV	Project Manager/ Hydro	Sr. Hydro-geologist/ Sr. Project Manager	Enviro Specialist Planner VI	Enviro Specialist/Planner IV	Enviro Specialist Planner III	Cultural Resources Manager	Enviro Specialist Planner III	Senior Engineer	Senior Enviro Engineer	Senior Engineer/ Technical Advisor	Hydro-geologist	Project Engineer	GIS Specialist III	Publications Assistant I	Hrs.	Earth Systems Pacific		\$
Tasks	180	170	150	155	170	180	150	140	180	140	200	190	200	155	145	140	80				
Task 1: Phase 1 Alternatives Analysis																					
Task 1.1 Rough Screening Analysis (10 sites)																					
Environmental Constraints/ Prelim LCP Consistency	40		30	16	16	16	16	16	16	16				16	60	24		206		\$32,900	
Logistics/Economic Factors/Project Implementability		60									20							156		\$25,380	
Task 1.2 Rough Screening Public Outreach																					
Public Workshop (1)	14	14	14															58	\$500	\$9,740	
Coastal Commission Staff Meeting (1)	14	14	14															50	\$250	\$8,370	
Presentation to JPA (1)	12	12	12															52	\$150	\$8,390	
Task 1.3 Fine Screening Analysis (3 sites)																					
Coastal Hazards	6					8								8	12			34	\$18,450	\$23,890	
Public Access and Recreation	6					32									4			42		\$7,400	
Visual Resources	6		24												16			46		\$6,920	
Biological/Marine Resources	6				24		40											70		\$11,160	
Land Use Compatibility	4		24												12			40		\$6,000	
Agricultural Resources	6							40										46		\$6,680	
Cultural Resources	4								12	24					6			46	\$350	\$7,430	
Sustainable Use of Public Resources	6			60	32							40			16			184		\$30,010	
Plant Capacity	4	80											20	30				134		\$22,670	
Task 1.4 Fine Screening Public Outreach																					
Public Workshop (1)	12	12	12	12	12										8			68	\$580	\$400	\$12,000
Coastal Commission Staff Meeting (1)	14	14	14		14													56	\$2,320	\$150	\$11,850
Presentation to JPA (1)	12	12	12		12										6			54	\$580	\$150	\$9,610

SCHEDULE OF FEES AND HOURS

Employee :	April Winecki	Tom C. Falk	Alison Evans	Arthur (Trey) Driscoll	Paul Amberg	Jonathan V. Leech	John Davis, IV	Jane Gray	David Stone	Kenneth Victorino	Michael Metts	David Jaffe	Michael Hoover	Nicole Peacock	Project Engineer	Kirsten Zecher	Linda D. Oppen Giles	Total	Subs ¹	ODCs ²	Total	
Employee Type :	Enviro Specialist Planner VI	Project Manager	Enviro Specialist Planner IV	Project Manager/Hydro	Sr. Hydro-geologist/Sr. Project Manager	Enviro Specialist Planner VI	Enviro Specialist Planner IV	Enviro Specialist Planner III	Cultural Resources Manager	Enviro Specialist Planner III	Senior Engineer	Senior Enviro Engineer	Senior Engineer/Technical Advisor	Hydro-geologist	Project Engineer	GIS Specialist III	Publications Assistant I	Hrs.	Earth Systems Pacific			
Tasks	180	170	150	155	170	180	150	140	180	140	200	190	200	155	145	140	80				\$	
Task 2: Phase 2 Substantial Issues Analysis																						
Task 2.1 Coastal Act/LCP Consistency Analysis	40		40															80			\$13,200	
Task 2.2 Plant Capacity Technical Memorandum	4	24											8	80			4	120			\$18,320	
Task 2.3 Coastal Dependent Development	4				18													22			\$3,780	
Task 2.4 ESHA/ Water Quality	16				20		16											52			\$8,680	
Task 2.5 Updated Water Reclamation Feasibility Study	8	40		24	24						160	24	40	16	420	40	40	836			\$132,780	
Task 2.6 Coastal Hazards Technical Study	6					8												14	\$19,000		\$21,520	
Task 3: Coastal Commission Coordination/Hearing Support																						
Task 3.1 Coastal Commission Hearing Presentations (2)	32	16	32	8	6	6	6	6	6									112	\$2,320	\$750	\$21,490	
Task 4: Project Management																						
Task 4.1 Meetings/Coordination	40	24	16															80		\$1,500	\$15,180	
Task 4.2 QA/QC; Document Production	24	16	16														40	96		\$2,500	\$15,140	
Total Hours	340	338	260	120	172	70	78	62	34	40	180	64	68	40	620	184	84	2754	n/a	n/a	n/a	
TOTAL LABOR & DIRECT COSTS	\$61,200	\$57,460	\$39,000	\$18,600	\$29,240	\$12,600	\$11,700	\$8,680	\$6,120	\$5,600	\$36,000	\$12,160	\$13,600	\$6,200	\$89,900	\$25,760	\$6,720	n/a	\$43,250	\$6,700	\$490,490	
Contingency Fund (15% of total costs) – see note in proposal text																						\$73,574
TOTAL (including contingency fund)																						\$564,064

7 CLIENT REFERENCES

Dudek works hard to build and maintain positive, successful working relationships with our clients. We offer the following references (**Table 2**) as clients who can speak to our team and firm abilities, specifically with regard to coastal planning and environmental projects.

TABLE 2. CLIENT REFERENCES

Client	Client Reference	Dudek Contact
Mountains Recreation and Conservation Authority 5810 Ramirez Canyon Road Malibu, California, 90265	Paul Edelman Chief of Natural Resources & Planning 310.589.3200 x128	April Winecki
California Department of Transportation 4050 Taylor Street, MS 122 San Diego, California, 92110	Arturo Jacobo Caltrans Project Manager 619.688.6816	April Winecki Alison Evans
San Diego Association of Governments 401 B Street, Suite 800 San Diego, California, 92101	Rob Rundle SANDAG Project Manager 619.699.6949	April Winecki Alison Evans
HMW Group 124 West Main Street, Suite G Santa Maria, California, 93458	Anthony Wells Project Manager 805.922.9129	April Winecki
City of Laguna Beach 505 Forest Avenue Laguna Beach, California 92651	Wade Brown Project Director 949.497.3311	Tom Falk
South Orange County Wastewater Authority 34156 Del Obispo Dana Point, California 92629	Brian Peck Director of Engineering 949.234.5411	Tom Falk
City of Coachella 1515 Sixth Avenue Coachella, California 92236	Jerry Jimenez Superintendent of Sanitation 760.391.5008	Tom Falk
Yucaipa Valley Water District 12770 Second Street Yucaipa, California 92399	Joe Zoba General Manager 909.797.5119	Tom Falk Mike Metts
Goleta Sanitary District One Moffet Place Goleta, California 93117	Kamil Azoury General Manager 805.967.4519	David Stone Ken Victorino
Carpinteria Sanitary District 5300 Sixth Street Carpinteria, California 93013	Craig Murray General Manager 805.684.7214, x12	David Stone Ken Victorino

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APPENDIX A

Resumes

April Winecki – Environmental Specialist Planner VI

April Winecki has over 11 years' planning experience, which includes coastal resource planning and policy analysis, land use planning, and environmental impact analysis. Ms. Winecki has worked as a coastal planner for a variety of private and public agency development and restoration projects, and has served as a project manager and Coastal Commission liaison for a number of Local Coastal Program Amendment and Public Works Plan proposals, coastal development permit proposals, and Federal Consistency Review analyses. Ms. Winecki has also worked as a project and environmental planner for various public and private development projects throughout the coastal areas of California. These projects have included land development permit processing, environmental planning and impact analysis, and environmental constraint analysis. Ms. Winecki is an expert in California Coastal Commission procedures for public agencies and private development. She has experience working on projects involving Coastal Act and Local Coastal Program policy conflict resolution, including coastal land use plan and zoning ordinance amendments. Ms. Winecki has a deep understanding of all aspects of coastal permitting and serves as a California Coastal Commission liaison to facilitate resolution of coastal permit appeals to the California Coastal Commission and Commission-initiated enforcement actions. In addition, she has years of experience in condition compliance and mitigation monitoring. Ms. Winecki specializes in the following areas:

EDUCATION

University of California, Santa Barbara
BS, Environmental Studies, 1997

- Preparation and representation of Local Coastal Program Amendments, Public Works Plans, Federal Consistency Review analyses, and Coastal Development Permit applications for processing by local governments and the Coastal Commission, as applicable
- Coastal Commission liaison and representation for resolving Coastal Development Permit Appeals
- Early coordination with Coastal Commission staff to identify potential coastal resource issues for project design consideration to avoid undue delays in the Coastal Development Permit process and/or Coastal Commission appeals
- Monitoring of statewide Local Coastal Program and Coastal Act policy interpretations to determine what changes in policy interpretation are occurring and anticipate how they may affect project planning and development
- Coordination with local government to assist in the Local Coastal Program/Coastal Act project consistency review process to ensure thorough findings of project consistency with applicable coastal policies are prepared to avoid potential appeals
- Coordination and preparation of appropriate technical studies and coastal policy analyses for projects to support required findings of approval
- Evaluation of Coastal Commission staff reports and recommendations to determine appropriateness and feasibility of findings and conditions of approval
- Preparation of Coastal Commission staff and/or commissioner correspondence in response to staff reports/ recommendations.

PROJECT EXPERIENCE

Transportation

Santa Barbara Airport Taxiway Realignment, Airfield and T-Hanger Improvements Project, City of Santa Barbara, California. Project and environmental planner for the City of Santa Barbara Airport proposal to demolish a 6,400-square-foot building and construct metal aircraft hangars totaling approximately 31,000 square feet, and to construct various airfield modifications and improvements including realignment of a taxiway, construction of a new taxi lane,

and various other components at the Santa Barbara Municipal Airport Airfield. Approved by the City of Santa Barbara in April 2006, and Federal Aviation Administration “Finding of Significant Impact and Record of Decision” (FONSI/ROD) issued in June 2006.

Santa Barbara Airport Airfield Safety Project, Local Coastal Plan Amendment, City of Santa Barbara, California. Coastal program analyst for the City of Santa Barbara Airport and Goleta Slough Land Use Plan and Zoning Ordinance amendments that were proposed to facilitate development of necessary airfield safety projects and associated wetland and upland habitat restoration plans, to define new resource impact mitigation policies for the airport property, and to incorporate a Draft Aviation Facilities Plan into the Local Coastal Plan. Certified by the California Coastal Commission in November 2003.

North Coast Corridor Transportation and Resource Enhancement Plan/Highway Public Works Plan, San Diego Association of Governments (SANDAG) and California Department of Transportation (Caltrans), North San Diego County. Deputy project manager and Coastal Commission liaison for preparing and processing a Public Works Plan, Local Coastal Program Amendments for four Cities, and a Federal Consistency Review analysis for a transportation improvement program in the Interstate 5 (I-5) and Los Angeles to San Diego (LOSSAN) rail corridors in northern San Diego County. Transportation improvement program consisted of adding managed and general-purpose lanes to I-5, including a number of bridge and interchange structure replacement and community enhancement projects, double-tracking and station improvements for the LOSSAN rail corridor, and developing a comprehensive coastal resource enhancement program addressing project impacts to five coastal lagoons and other natural resources, including environmentally sensitive habitat areas, within the transportation corridor.

National Environmental Policy Act (NEPA) Delegation and Strategy/Coastal Commission Policy Support, Caltrans, State-wide California. As-needed advisor to Caltrans headquarters staff to provide guidance and support regarding California Coastal Act and Local Coastal Program policy, procedures, and permitting requirements.

Public Works Plans and Local Coastal Program Amendments

Malibu Parks Public Access Enhancement Plan Local Coastal Program Amendment and Public Works Plan, Santa Monica Mountains Conservancy/Mountains Recreation and Conservation Authority, Malibu and Santa Monica Mountains Coastal Area, California. Project manager and California Coastal Commission liaison for Malibu Parks Public Access Enhancement Plan Local Coastal Program Amendment and Public Works Plan (Plan). The project includes development of the comprehensive Plan, consisting of a Public Works Plan and City of Malibu Local Coastal Program Amendment, to address regional park and recreational facility program needs for state-owned parklands, including developing trail network improvements and beach access opportunities, locating and designing recreation support facilities, developing public program and facility maintenance guidelines, and public transit program improvements; coordinating environmental review and public outreach for interested parties and agencies; and representing the Plan at public hearings before the City of Malibu and California Coastal Commission. City of Malibu Local Coastal Program Amendment approved by the California Coastal Commission June 2009; Public Works Plan approved by the California Coastal Commission October 2010.

Green Heron Spring Residential Development, Ellinwood, Carpinteria, California. California Coastal Commission liaison for a proposed 34-unit condominium project located on a 4-acre site in unincorporated Santa Barbara County. The project includes annexation of the site to the City of Carpinteria, enrollment in the State Water Board General Waste Discharge

Requirements program for pond habitat restoration, and a proposed text amendment to the City of Carpinteria's certified Local Coastal Program. General Waste Discharge Requirement enrollment approved by the Central Coast Regional Water Quality Control Board in January 2006. Project and Coastal Land Use Plan Amendment approved by the City of Carpinteria City Council in November 2007. Local Coastal Program Amendment approved by the California Coastal Commission in February 2009.

King Gillette Ranch Design Concept Plan, National Park Service, Santa Monica Mountains Conservancy/Mountains Recreation and Conservation Authority, and California State Parks, Los Angeles County. Project manager and Coastal Commission liaison for the Joint-Agency Design Concept Plan for King Gillette Ranch, located in the Santa Monica Mountains National Recreation Area in unincorporated Los Angeles County that was prepared to formalize public access and recreational use of the 585-acre property and to identify and implement site-specific improvements for a joint agency administrative, environmental, and cultural education center and Gateway Visitor Center for the Santa Monica Mountains National Recreation. Coordinating environmental review for California Environmental Quality Act (CEQA)/NEPA compliance, preparing and processing associated Federal Consistency Review and Coastal Development Permit requirements, and representing the Plan at public hearings before the California Coastal Commission.

Coastal Development Permits and Appeals

Lagunitas Mixed-Use Development, Investec, Carpinteria, California. California Coastal Commission liaison for appeal of city-approved coastal development permit for a mixed-use project consisting of an 84,550-square-foot office building, 37 single-family detached residences, and 36 condominium units on a 25.3-acre parcel in the City of Carpinteria. Approved by the City Council in September 2008 and California Coastal Commission finding of No Substantial Issue in November 2008.

Beachwalk Resort, HMW Group Ltd, City of Pismo Beach, California. Project manager and California Coastal Commission liaison for appeal of a city-approved coastal development permit for a project involving demolition of 13 residential cabins and a 7,000-square-foot commercial building, as well as construction of a 77,585-square-foot, three-story, 69-room ocean-front hotel with two conference rooms, a fitness center, underground parking, outdoor courtyard with access connections to adjacent public pedestrian boardwalk, and replacement of a seawall foundation with caisson/piling foundation to address potential shoreline hazards. Approved by the California Coastal Commission on appeal in July 2007.

Residential Estate, Lilichiman LLC, Malibu, California. Project manager and California Coastal Commission liaison for a residential estate located on a bluff top lot on Pacific Coast Highway in the City of Malibu. The project consisted of construction of a two-story, 11,158-square-foot, single-family residence with a 5,550-square-foot basement/garage, and alternative on-site wastewater treatment system. The project included special design elements to address potential bluff erosion and stability issues, impacts to archaeological resources, and preservation of significant coastal views. Approved by the Malibu City Council on appeal in July 2006 and by the California Coastal Commission on appeal in May 2007.

Sea Center, Santa Barbara Museum of Natural History, Santa Barbara, California. Project and environmental planner for the Santa Barbara Museum of Natural History Sea Center Revitalization Project, located on Stearns Wharf in the Santa Barbara waterfront area. The project consisted of demolition of two existing buildings and construction of the 6,327-square-foot, two-

story Sea Center with additional appurtenant structures on the pier. Unanticipated building loads and structural pier weakness required that the original project approvals from the City of Santa Barbara and California Coastal Commission be amended to include reconstruction of a portion of Stearns Wharf with replacement piles and with new and recycled wharf-deck materials. Final approval granted by the City of Santa Barbara Planning Commission in June 2003 and by the California Coastal Commission in September 2003.

Chapala One, William Levy Investments, Santa Barbara, California. Project and environmental planner for a mixed-use development project in the downtown area of Santa Barbara consisting of a four-story, 99,800-square-foot building with 10,400 square feet of general office/retail use, 46 condominiums units (35 market rate, 11 affordable units), and a split-level 72-stall parking garage. Approved by the City of Santa Barbara Planning Commission in September 2003.

Entrada de Santa Barbara, William Levy Investments, Santa Barbara, California. Project planner for an appeal to the California Coastal Commission of a decision by the City of Santa Barbara granting a coastal development permit to William Levy Investments for redevelopment of a three-block area on lower State Street in the City of Santa Barbara, consisting of 17,532 square feet of commercial/retail space, a 2,500-square-foot Visitors Center, 81 time-share units, and parking for 210 automobiles. California Coastal Commission finding of No Substantial Issue in October 2001.

Santa Barbara Harbor Dredging Program, City of Santa Barbara, California. Project planner for the Santa Barbara Harbor Comprehensive 5-Year Sediment Management Program for the Santa Barbara harbor and waterfront area beaches. The project included a 5-year plan for maintenance dredging, beach nourishment, and grooming operations designed to provide optimal vessel navigation and operation, recreational activities, and shoreline stability for the harbor and waterfront area. Approved by the California Coastal Commission in November 2000.

Point Dume Natural Preserve Site Improvements Project, City of Malibu and California Department of Parks and Recreation, Malibu, California. Project planner for the Point Dume Natural Preserve Site Improvements Project involving public access improvements for the Preserve, located on a coastal bluff in the City of Malibu. The project included installation of an inland perimeter pedestrian path, street curbing and signs, construction of a roadside parking lot and drop-off zone, coastal bluff vegetation restoration, and implementation of a public shuttle bus program operating between Westward Beach and the preserve. Approved by the California Coastal Commission in October 2000.

Malibu Water Pollution Control Plant Rehabilitation, Los Angeles County Department of Public Works, Malibu, California. Served as project planner for the rehabilitation. The project involved upgrade and expansion of the Malibu Water Pollution Control Plant, located on Pacific Coast Highway in Malibu, California. It included replacement of deteriorated facilities, installation of new and upgraded facilities, and monitoring equipment required to meet current Regional Water Quality Control Board standards and an increase in the facility's treatment capacity to accommodate previously approved capacity levels. Approved by the California Coastal Commission in February 2000.

Tom Falk, PE – Project Manager

Tom Falk has a unique blend of training and experience in civil engineering and environmental sciences. Mr. Falk has served as project manager on numerous water and sewer infrastructure design projects, and specializes in wastewater treatment. He also has valuable field construction experience, serving as resident engineer on large public works projects, including sewer and waterline construction, street rehabilitation, and wastewater treatment plants. Mr. Falk recognizes the importance of comprehensive design documents as a key factor in risk avoidance during construction.

Treatment

Seeley Wastewater Treatment Plant Improvements, Seeley, California. The district commissioned Dudek to perform process evaluation and prepare construction documents for implementation of the 0.25-million-gallons-per-day (mgd) Title 22 recycled water treatment plant upgrade that was scheduled to begin construction in January 2010. Mr. Falk was the design manager for the upgrades that include conversion of the district's existing facultative ponds to an activated sludge process utilizing Biolac coupled with submerged membrane filtration units to provide a low mixed liquor membrane bioreactor. Filtrate is disinfected by a Title 22-approved ultraviolet process. Other site improvements include replacement of a sewage grinder at the existing influent pump station with an automatic basket screen, installation of a new grit removal facility, and on-site recycled water storage and pumping facilities.

Cuyama Wastewater Treatment Plant Improvements, New Cuyama, California. Mr. Falk was the project manager for the disinfection system improvement project that included removal of the deteriorating chlorine contact basin, abandonment of the existing chlorine disinfection system, and construction of a new ultraviolet disinfection system. Construction began in October 2010.

South Orange County Wastewater Authority (SOCWA) Regional Treatment Plant Upgrades, Laguna Niguel, California. SOCWA and Dudek collaborated to identify alternatives for backing up the regional treatment plant's interstage pump station. The selected project implements a two-prong approach to backing up the critical 30 mgd pump station that lifts primary influent from the primary sedimentation tanks to the aeration basins. First, three semi-permanent, diesel-engine-driven emergency standby pumps, 4,200 gpm each, provide automatic emergency pumping capacity in the situation of a major failure of the interstage pump station. Second, a fully redundant, standalone motor control center, independent control system, and standby generator provides operational flexibility of the interstage pump station in case of prolonged outage of the existing electrical system. Construction on the \$1.5 million project began in July 2010.

Coachella Wastewater Treatment Plant Expansion, Coachella, California. Mr. Falk was the project engineer for the secondary treatment plant design project. Dudek provided engineering services for the 3 mgd expansion, which included process selection and design of a new 13 mgd influent pump station and headworks, 3 mgd oxidation ditches/clarifiers, sludge pumping stations, and chlorine disinfection facilities. The project also included 1.5 miles of influent trunk sewer ranging in size from 42 inches to 54 inches in diameter and a 3,000-square-foot administration and control building. Mr. Falk provided on-site resident engineer services with Dudek's construction management team during construction and coordinated the plant start-up, testing, and commissioning. Project construction cost was \$21 million.

EDUCATION

San Diego State University
BS, Civil and Environmental Engineering,
2002 – Cum Laude

CERTIFICATIONS

Professional Civil Engineer CA No. 69780

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers
Chi Epsilon Alumni Association
(National Civil Engineering Honor Society)
California Water Environment Association
WaterReuse Association

Rancho Santa Fe Water Reclamation Facility Expansion, Rancho Santa Fe, California. Mr. Falk was the project manager and engineer of record for the design of the 150,000 gallons per day plant expansion. The project involved designing new aeration and secondary clarifier tanks and expanding the existing return-activated sludge pumping station. To promote removal of nitrogen species, the project accomplished reconfiguration of the treatment process flow pattern so that the aeration tanks can be operated in series, as well as the addition of internal mixed liquor recycle pumps. Other site improvements included modifications to the influent, effluent disposal, and sludge disposal lines and design of a control panel to automate the return sludge pumping operation.

Lee Lake Water Reclamation Facility Expansion, Corona, California. As the project engineer, Mr. Falk assisted in design of a 0.675 mgd tertiary treatment plant expansion, including the expansion of an influent pump station, sequencing batch reactors, flow equalization facilities, filters, chlorination facilities, and centrifuge dewatering facilities. During construction, Mr. Falk provided construction assistance that included shop drawing review and responding to contractor's requests for information. Project construction cost was \$7 million.

Gafner Water Reclamation Facility, Carlsbad, California. Mr. Falk was the project engineer responsible for the design of an expansion and upgrade to the water reclamation facility. Responsibilities included equipment selection, preparation of design plans and specifications, and cost estimates for continuous backwash sand filters, microfiltration/reverse osmosis, and an ultraviolet disinfection system.

Water/Sewer Infrastructure

Yucaipa Valley Regional Brineline Extension, Yucaipa, California. As the project manager, Mr. Falk was responsible for development of the alignment study and preliminary design report for the district's 2–4 mgd regional brine disposal pipeline. The 15-mile pipeline traverses four cities along the border of Riverside and San Bernardino Counties and required permitting from seven jurisdictional agencies. The final project alignment incorporates two directional drills under the Santa Ana River and San Timoteo Creek; two bridge crossings; and seven auger borings to avoid existing utilities, railroad crossings, sensitive habitat, and Interstate 10. The first two phases of the project (approximately 10 miles) is currently under construction. The third phase, currently under review by permitting agencies, is expected to begin construction in January 2011.

Yucaipa Valley Water District Crow Street Non-Potable Water Pipeline, Yucaipa, California. As the project manager, Mr. Falk prepared plans, specifications, and construction cost estimates for the 24-inch-diameter ductile iron pipe between the district's Wocholz Water Recycling Facility and a non-potable water reservoir. The 1-mile pipeline was designed within a narrow 25-foot-wide access road paralleling existing sewer and potable water lines. The pipeline alignment required careful consideration of the district's separation requirements for the non-potable water pipeline as well as thrust restraint in the congested utility corridor.

Avenue 48 Sanitary Sewer Upgrades and Waterline Replacement, Indio, California. Mr. Falk prepared the front-end bid documents and performed pre-bid design review for the joint venture facility improvement project for Valley Sanitary District (trunk sewer) and the City of Indio (waterline replacement and street rehabilitation). The 1-mile-long project included installation of 18- and 27-inch-diameter trunk sewer, an 18-inch ductile iron water transmission main, and street rehabilitation for a four- to five-lane arterial roadway. Mr. Falk was the project manager and construction manager, overseeing a full-time inspector, processing construction contractor progress payments, evaluating change orders, authorizing field changes during construction, and directing project closeout. Project construction cost was \$3.6 million.

Shadow Hills Sewer Upgrade, Indio, California. Mr. Falk provided on-site construction management services for the joint venture facility improvement project for Valley Sanitary District and the City of Indio. The 2-mile-long project included installation of 24- to 36-inch-diameter trunk sewer and street rehabilitation through an existing arterial roadway. Mr. Falk was the project manager and construction manager, overseeing a full-time inspector, processing contractor progress payments, evaluating change orders, authorizing field changes during construction, and directing project closeout. Project construction cost was \$3.2 million.

Coachella “High-Zone” Reservoir Rehabilitation, Coachella, California. Mr. Falk was the project manager for the rehabilitation of the City of Coachella’s “high zone” reservoir after the 1.5-million-gallon welded-steel water tank began leaking through the corroded floor plates. Mr. Falk coordinated the services of a professional tank maintenance inspection firm and provided rehabilitation recommendations to the City of Coachella. Following a feasibility study and the City of Coachella’s acceptance of Mr. Falk’s recommendation to rehabilitate instead of replace the facility, Dudek completed rehabilitation design plans, including removal/disposal of lead-contaminated paint, structural modifications to replace the badly corroded floor plates, reinforcement of corroded support columns, replacement of tank appurtenances, and recoating of the interior and exterior steel surfaces. Mr. Falk provided as-needed engineering services during construction, including review of shop drawings and response to contractor requests for information.

Avenue 48 Reservoir and Booster Pump Station, Coachella, California. Mr. Falk was the project design engineer for the 5.0-million-gallon welded-steel tank reservoir and two-zone booster pump station comprised of four fully automated, 150 horsepower, variable-frequency-driven vertical turbine pumps and integration of two off-site potable water wells. Mr. Falk’s responsibilities included preparation of plans and technical specification preparation, as well as bidding assistance and engineering assistance during construction. Project construction cost was \$6.0 million.

Avenue 52 Sewer Pump Station, Coachella, California. Mr. Falk was the on-site resident engineer responsible for monitoring construction progress; verifying compliance with the construction contract; and providing startup, testing, and commissioning services for an expandable 4 mgd sewage pump station comprised of fully automated 175 horsepower, variable-frequency-driven centrifugal pumps. Project construction cost was \$5.5 million.

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Alison Evans, AICP – Environmental Planner

Alison Evans is a certified environmental planner with over 11 years' professional experience specializing in project planning and regulatory compliance pursuant to the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and the California Coastal Act. Ms. Evans has completed numerous environmental and regulatory compliance documents in support of a diverse range of public and private developments, including public utilities and infrastructure, port-related industry, transportation, school redevelopment and expansion, mixed-use commercial developments, and residential subdivisions. Her current project management responsibilities include preparation of successful, competitive grant funding applications; client and team coordination; technical editing; and development and adherence to scopes of work, budgets, and schedules. Her background is in land-use policy consistency, visual quality, noise, and public services and utilities issues for complex and controversial programmatic and project-specific environmental documents.

EDUCATION

University of California, Santa Barbara
BA, Environmental Studies, 2000

CERTIFICATIONS

American Institute of Certified Planners
(AICP)

PROFESSIONAL AFFILIATIONS

Association of Environmental
Professionals (AEP), Channel Counties
Chapter, Treasurer

American Planning Association (APA)

PROJECT EXPERIENCE

Development

Bacara Resort & Spa Completion Phase Project, City of Goleta, Goleta, California.

Assessed the proposed project's consistency with the City of Goleta General Plan and Local Coastal Plan, as well as California Coastal Act policies, in support of the project environmental impact report (EIR) and coastal planning process.

Isla Vista Master Plan EIR, County of Santa Barbara, California. As deputy project manager, performed assessment of visual quality and cultural resources impacts and also provided peer review and technical editing of the biological resources assessment related to the proposed master plan development policies and projections. Incorporated and analyzed visual simulations of new anticipated development and street improvements prepared by a subcontractor.

Granite Mining Expansion Project EIR, County of Santa Barbara, California. As a project team member, performed assessment of visual quality impacts related to the conversion of current agricultural land to mining uses. Incorporated and analyzed visual simulations depicting potential new development, including proposed vegetative screening mitigation prepared by a subcontractor.

Saint Athanasius Church Project EIR, Saint Athanasius Church, Goleta, California. As a project team member, performed assessment of visual quality and agricultural resource impacts resulting from conversion of viable agricultural land located within an agricultural-designated tract to developed, urban-type uses. Incorporated and analyzed visual simulations of new development, including potential vegetative screening mitigation prepared by a subcontractor.

Port of Los Angeles Ultramar Marine Terminal Lease Renewal EIR, Ultramar, Inc., Wilmington, California. The 20-year lease renewal project included assessment of changing vessel and truck trips, recent air quality regulations, and ongoing soil and groundwater remediation efforts. Served as point of contact for client and team members, including two subcontractors; adherence to scope of work; schedule and budget; and data organization and document quality assessment. Other duties included preparation of EIR sections, including project description, alternatives analysis, land use, noise, aesthetics, and public services and utilities.

Port of Los Angeles Pacific Energy Marine Terminal, Storage Terminals, and Pipelines Supplemental Environmental Impact Statement/EIR; Port of Los Angeles Port-wide Noise Study; Port of Los Angeles Port-wide Light and Glare Study; and the Port of Long Beach Back Channel Navigational Safety Improvements Project, Port of Los Angeles and Port of Long Beach, California. As deputy project manager, duties included data organization; master schedule maintenance; document quality assessment; and analysis and preparation of initial study checklists, land use, noise, public services and utilities, and other CEQA-required issues.

Education

Joint Programmatic and Project-Specific Marine Science Campus EIR, University of California, Santa Cruz, California. As deputy project manager, tasks included assessment of visual quality and land use and policy consistency, including California Coastal Act policies and cultural resource issues for the Marine Science Program, as well as for six identified projects to be tiered off and included within the programmatic EIR. Oversaw subcontractor work on the analysis of agricultural resource issues associated with conversion of agricultural land to developed uses. Other duties included preparation of EIR sections, including the executive summary, introduction, project description, and growth inducement. Management duties included data organization, document quality control, and position as point of contact for both client and team members.

Development of New Facilities, U.S. Department of Energy/University of California, Berkeley, California. Deputy project manager for the preparation of CEQA/NEPA documents for several new buildings at the Lawrence Berkeley National Laboratory, including an off-site, third-party building and a new administrative building, as well as preliminary studies completed for the long-range master plan.

Transportation

North Coast Corridor Transportation and Resource Enhancement Plan/Highway Public Works Plan, San Diego Association of Governments (SANDAG) and California Department of Transportation (Caltrans), North San Diego County. Supported the preparation and processing of a public works plan, local coastal program amendments for five cities, and a federal consistency review analysis for a transportation improvement program in the Interstate 5 and Los Angeles–San Diego (LOSSAN) rail corridors in northern San Diego County. Program includes highway expansion, a number of bridge and interchange structure replacement and community enhancement projects, double-tracking and station improvements for the LOSSAN rail corridor, and development of a comprehensive coastal resource enhancement program addressing project impacts to five coastal lagoons and other natural resources, including environmentally sensitive habitat areas, within the transportation corridor.

Bay Area Rapid Transit (BART) Seismic Retrofit Project, BART District, Oakland and San Francisco, California. Served as project manager for the BART Seismic Retrofit Project. This project includes assessment of the first phase of system retrofit, from the Berkeley Hills Tunnel in Oakland to the Montgomery Street BART Station in San Francisco, including the 3.6-mile Transbay Tube located beneath the bay floor. Oversaw preparation of 13 technical studies and an environmental assessment, which required coordination with multiple responsible agencies, including the Federal Highway Administration (lead agency), California Department of Transportation (co-lead agency), BART (co-lead agency), National Marine Fisheries Service, California Department of Fish and Game, U.S. Fish and Wildlife Service, and the State Historic Preservation Office. Served as point of contact for client and team members, including four subcontractors. Responsible for adherence to schedule and budget, data organization and document quality assessment, responding to multiple agency requirements, and attendance at all public and staff meetings.

Water/Wastewater

Determination and Disposition of State Water Project Allotment Surplus Negative Declaration (ND), Carpinteria Valley Water District, Carpinteria, California. Project manager for preparation of an ND for determination of surplus state water project allotment and the decision to dispose of the surplus to prospective, qualified entities in accordance with a 1991 water supply agreement with the Central Coast Water Authority.

Santa Barbara Countywide Integrated Regional Water Management Plan (IRWMP) Proposition 50 Implementation Grant, Santa Barbara County Water Agency, Santa Barbara, California. Served as project administrator for the Santa Barbara Countywide IRWMP Proposition 50 Implementation Grant. In January 2008, the Santa Barbara County Water Agency successfully submitted a \$25 million grant application to fund implementation of its countywide IRWMP, with specific funding sought for 14 projects. As part of the grant agreement with Santa Barbara County and the State Water Resources Control Board (SWRCB), was tasked with developing a database/website to facilitate the data gathering and invoice reporting, as well as all associated communication and coordination among project proponents, Santa Barbara County, and the SWRCB. Responsibilities included day-to-day project management and coordination for submittal of quarterly invoices and progress reports, required project deliverables, and overall grant execution.

Antelope Valley Integrated Regional Water Management Plan and Proposition 50 Implementation Grant Application, Regional Water Management Group, Antelope Valley Region, California. Provided staff support for the plan, which was developed with a regional focus designed to identify a set of integrated solutions addressing goals for water supply, water quality, habitat improvement, and increased recreational parks and open space. Potential management actions and alternatives were evaluated against regional objectives identified to meet the issues and needs of Antelope Valley. A step 2, round 2, grant application (the final phase in the grant program) requesting \$25 million for implementation of seven key projects was prepared, including all required supporting documentation and cost-benefit analysis, and submitted to the Department of Water Resources.

North Los Angeles/Kern County Regional Recycled Water Master Plan Program EIR, Los Angeles County Waterworks District No. 40, Los Angeles County, California. The project entails construction of a regional recycled water distribution system that would include backbone conveyance pipelines, storage reservoirs, and pump stations. Responsibilities while providing project management included review and technical support for preparation of the program EIR's hydrology/water quality, geology/soils, and hazards and hazardous materials technical analyses sections.

Tuscany Recycled Water Project Subsequent Mitigated Negative Declaration (MND), Elsinore Valley Municipal Water District (EVMWD), Riverside County, California. Environmental task leader for preparation of a subsequent MND addressing implementation of the second phase of EVMWD's Recycled Water Master Plan, which would deliver 832 acre-feet per year of recycled water (in lieu of potable water) to converted landscape irrigation users, requiring development of a new reservoir, pump station, turnout facility, and 38,000 linear feet of pipelines. The subsequent MND addressed the new and previously unaccounted for site-specific impacts of the Tuscany facilities, including new development within sensitive biological habitats. Responsibilities included preparation of the subsequent MND and associated technical studies, management of subcontractor work, and coordination with several state and federal funding programs.

Santa Rosa Water Reclamation Facility (SRWRF) Expansion and Solar Power Project MND, Rancho California Water District, Riverside County, California. This project involves the expansion of SRWRF from a capacity of 5 million gallons per day (mgd) to 7 mgd; provides upgrades to the treatment processes; and requires construction of a new, solar-panel-array, power-generating facility to provide an alternative, renewable source of power to SRWRF. Responsibilities as environmental compliance task manager included team and subcontractor coordination and technical reviews, and preparation of an MND and associated resource analyses.

Water Use Efficiency Master Plan, Western Municipal Water District (WMWD), Riverside County, California. In concert with a growing emphasis on water use efficiency programs, WMWD commissioned the preparation of the Water Use Efficiency Master Plan to comprehensively address the long-term use of water resources within its service area by adopting objectives, policies, and programs designed to promote innovative emerging technologies and practices, as well as proven and cost-effective conservation measures. Responsibilities while providing project management included authoring multiple sections of the plan, conducting an evaluation of water conservation measures through development of a weighted scoring matrix, identifying current incentives and funding opportunities, describing emerging indoor technologies, and reviewing and assisting in the production of the master plan.

Olivenhain Sewer Pump Station MND and Coastal Development Permit, City of Encinitas, California. This project consists of construction of a new sewer pump station and emergency storage basin within the coastal zone and abandonment of the existing sewer pump station to alleviate ongoing and increasing maintenance concerns and to better accommodate the range of flows handled at the pump station. Responsibilities as environmental compliance task manager include management and preparation of the MND, technical studies, mitigation monitoring program, and Coastal Development Permit application.

Awards

2004 Award of Excellence, Science Applications International Corporation.

Paul Amberg – Senior Project Manager

Paul Amberg is a senior environmental planner with over 40 years' experience in planning and conducting engineering and environmental programs throughout the continental United States, Alaska, and Peru. Mr. Amberg is highly adept at managing technical studies for engineering and environmental projects, preparing environmental impact/assessment reports, coordinating and implementing project quality assurance plans and procedures, and overall procurement and subcontractor management.

PROJECT EXPERIENCE

Water/Wastewater

Environmental Consultant, San Diego County Water Authority (SDCWA), San Diego, California. Environmental program manager for implementation of SDCWA's Regional Water Facilities Master Plan and Capital Improvement Program. Responsible for identifying SDCWA projects or actions that require environmental compliance or technical studies; determining the appropriate environmental process for proposed projects; preparing requests for proposals; selecting project consultants; directing, reviewing, and evaluating consultant work and project deliverables; organizing and maintaining project schedules; and administering consultant agreements. Major projects being conducted as part of the this program include the San Vicente Dam Raise and Carryover Storage Project; the Mission Trails FRS II, Pipeline Tunnel, and Vent Demolition Project; and the Camp Pendleton Seawater Desalination Project. Also responsible for administering as-needed technical studies and reports prepared for SDCWA, and for managing a supplemental environmental impact report (EIR) for SDCWA's Emergency Storage Project, Lake Hodges Pump Station Project, and a mitigated negative declaration (MND) for SDCWA's Mission Trails to Lake Murray Pipeline 3 Relining Project.

Joint Outfall System (JOS) Master Facilities Plan Environmental Documentation, Joint Administration Office, County Sanitation Districts of Los Angeles County, California. Outfall task manager responsible for preparation of environmental compliance documents for the district's updated JOS Master Facilities Master Plan (Clearwater Program) for wastewater management facilities. The plan will address the long-term wastewater collection, treatment, reuse, and disposal needs of the 5.2 million people in the JOS service area, including the near-term need to add capacity to the existing tunnels and ocean outfalls that convey the secondary-treated effluent from the district's Joint Water Pollution Control Plan to the Pacific Ocean off the Palos Verdes peninsula. The environmental documentation would specifically address construction and operation of a new wastewater tunnel and outfall system. Key issues to be considered included the marine environment, terrestrial and marine biological resources, hydrology and water quality, geology, terrestrial and marine cultural resources, hazards and hazardous materials, terrestrial and marine transportation and circulation, air quality, noise, aesthetics and visual resources, land use, and community services and utilities.

Black Mountain Water Treatment Plant EIR, City of San Diego, California. Project manager responsible for preparation of an EIR to assess the potential environmental impacts associated with the construction and operation of the City of San Diego's proposed Black Mountain Water Treatment Plant. The project included acquisition of a 160-acre site for potential future development of a 40-acre water treatment plant and the establishment of a 120-acre open space area. The major issues addressed in the EIR included land use, transportation/traffic,

EDUCATION

California State University, Long Beach
BA, Environmental Studies, 1976

Fullerton College, Fullerton, California
AA, Oceanographic Technology, 1971

CERTIFICATIONS

County of San Diego CEQA-Approved
Consultants List for EIR Preparers

PROFESSIONAL AFFILIATIONS

Association of Environmental
Professionals (AEP)

biological resources (impacts to lands within the city's Multiple Habitat Planning Area (MHPA)), cultural resources, hydrology and water quality, landform alteration and visual quality, noise, geology and soils, and air quality. The project analysis included an MHPA boundary adjustment.

On-Call Sewer and Water Pipeline Studies, City of San Diego Water and Wastewater Division, California. Project manager for a series of on-call environmental services task order assignments for the City of San Diego's Water and Wastewater Division. Task order assignments included biological and cultural resources field studies, letter reports, vegetation restoration and soil erosion plans, and, where appropriate, wetland delineations and agency permitting assistance (i.e., Army Corps of Engineers (ACOE), California Department of Fish and Game (CDFG), Regional Water Quality Control Board (RWQCB), etc.). All task orders were associated with city sewer and water line construction and/or abandonment projects.

Point Loma Wastewater Treatment Plant Ocean Outfall Extension Project, City of San Diego, California. Deputy project manager/senior project scientist responsible for oceanographic field data collection and technical report preparation, oversight and review of project EIR/environmental assessment (EA), and coordination and preparation of environmental and regulatory permits. The project included continuous current and temperature measurements, monthly water quality profiles, marine biological studies, marine cultural resource investigations, and comprehensive geophysical studies during a 12-month study period. Data collected during the field studies were used for outfall modeling and design, and as input for the environmental analysis and permitting efforts. The project required an ACOE Section 404 Nationwide Permit, RWQCB Section 401 Water Quality Certificate, and regulatory permits from the State Lands Commission and the California Coastal Commission. Informal consultation was held with the National Marine Fisheries Service to evaluate potential impacts to and mitigation for marine mammals. Project data were used for design and construction of a 12,500-foot extension to the existing Point Loma outfall.

Terminal Island Treatment Plant Feasibility Study, City of Los Angeles, California. Deputy project manager/senior project scientist for engineering feasibility studies and environmental analyses for a new Terminal Island Treatment Plant effluent disposal system for the City of Los Angeles. Responsible for oceanographic field data collection and technical report preparation for an 8-month measurement program designed to assess oceanographic, water quality, geotechnical and geophysical, sediment, cultural resource, and biological conditions on San Pedro shelf just offshore of the Los Angeles/Long Beach Harbors. The project included engineering feasibility studies, circulation modeling, and EAs for extension of the city's existing Terminal Island Treatment Plant Ocean Outfall. Important factors considered in the design included installation of pipelines through existing urbanized areas, unstable local geological conditions, heavy commercial and recreational marine traffic, proximity to sensitive biological resources, and compliance with local and state effluent and discharge standards.

Point Loma Wastewater Treatment Plant 301(h) Waiver Application, City of San Diego, California. Project scientist responsible for analyzing and describing the receiving water oceanographic conditions, evaluating the ocean outfall discharge performance, and identifying and evaluating water quality standards to determine if the city's discharge would comply with these standards. The waiver analysis included extensive computer modeling to identify the physical characteristics of the receiving waters and to determine the impacts of the discharge on the marine environment.

South Bay Land and Ocean Outfall Design Project, U.S. International Boundary and Water Commission (IBWC), San Diego, California. Deputy project manager/senior project scientist responsible for coordinating environmental review of the project environmental impact statement (EIS), conducting marine cultural resource investigations for the outfall construction and anchorage areas, developing the Predischarge Baseline Marine Monitoring Program for the ocean outfall discharge, and assisting in preparation of project permits. Duties also included subcontractor coordination, client invoicing, project quality assurance (QA), and coordination of contract tasks. The project included engineering services for planning and design of a 144-inch-diameter, 18,500-foot-long, combined tunnel and seafloor ocean outfall pipeline for the proposed International Wastewater Treatment Plant to be constructed in San Diego, California, to handle combined waste effluent from San Diego, California, and Tijuana, Mexico. Total engineering fee was \$12,722,442. The project team received an excellent rating from IBWC for overall management of the design services.

Line Q3 Replacement, J.C. Heden & Associates/Rainbow Municipal Water District, Bonsall, California. Project director responsible for preparation of a California Environmental Quality Act (CEQA) notice of exemption and regulatory permitting for emergency repair work associated with Rainbow's Q3 22-inch water pipeline under the San Luis Rey River. Line Q3, which broke in December 2009 following a significant rain event, will be replaced with two 16-inch PVC pipelines via directional drilling. Conducted biological and cultural surveys of the project area, a noise study for potential construction impacts, and helped Rainbow secure a CEQA categorical exemption and a CDFG permit for the project.

Tijuana Oceanographic Engineering Study, City of San Diego, California. Deputy project manager/senior project scientist responsible for oceanographic field data collection and technical report preparation for a 27-month measurement program designed to assess oceanographic, water quality, geotechnical and geophysical, sediment, cultural resource, and biological conditions on the Coronado shelf from just south of the Point Loma peninsula to the Coronado Islands. The purpose of these studies was to support the engineering design for the new South Bay International Wastewater Treatment Plant. Results of the field studies provided data for preliminary outfall design and development of a coastal circulation model to identify transport patterns within the study area. The project included state-of-the-art field studies to determine the rate of bacterial disappearance (T90) at depth in the near-shore waters off San Diego. These studies provided the base data for the City of San Diego's program EIS and IBWC's project EIS.

Development

Wharf Development EIR, Port of San Diego, California. Project manager for preparation of an EIR to assess the potential environmental impacts associated with a plan amendment to the Port of San Diego's (Port's) master plan and development of a commercial "Wharf Development" in the City of Coronado on Port-owned property. The site development plan consisted of retail shops, restaurants, and pier facilities to be constructed next to the Old Ferry Landing in Coronado. Major issues addressed in the EIR included land and water use compatibility, traffic circulation and parking, marine resources including potential loss of eelgrass habitat, soil and sediment contamination, noise, and visual impacts. Since the site had operated as an active boatyard and maintenance facility for over 50 years, the study included a preliminary site assessment for hazardous materials contamination.

South Bay Development Feasibility Study, Port of San Diego, California. Project manager for the Port's South Bay Development Feasibility Study. The Port identified the potential for recreational aquatic access and development along the shoreline interface of the City of Imperial Beach with the Otay River and south San Diego Bay. The project included development and evaluation of conceptual design plans for the area. Studies were conducted to evaluate the existing

street and highway network, review and verify stormwater quality and floodway design requirements, collect and review geology and soils data, characterize zoological and botanical resources, and evaluate the economic viability of alternative conceptual design plans. Both plans included landscaped parkways, restaurants and shops, and a marina with boat launch and storage facilities.

Salt Creek Beach Sand Transport Study, Confidential Client, Laguna Beach, California. Project manager for a 1-year sand transport and beach monitoring program at Salt Creek Beach to determine the extent and ramifications of altering the littoral sand transport processes due to a major coastal development. The long-term objective of the project was to determine if the development would affect drainage basin sediment discharge rates, the sand budget of the associated coastal beach, and sand transport patterns within the Laguna littoral cell.

Energy

Tehachapi Renewable Energy Project (TRTP) Biological Consulting Services, Southern California Edison (SCE), California. Environmental planner responsible for development of the project management plan and supporting documents for the overall TRTP Biological Consulting Services program. Project services consisted of preconstruction biological resource surveys and biological resource construction monitoring for approximately 173 miles of transmission line rights-of-way, substations, access roads, tower or pole locations, and temporary construction areas and marshaling yards.

Aquatic Biological Resources Impact Analysis/Castaic Power Plant/Elderberry Forebay, Los Angeles Department of Water and Power (LADWP), California. Project scientist for an aquatic biological resources impact analysis in support of LADWP's waste discharge requirement application for maintenance and repair activities at the Castaic Power Plant and associated Elderberry Forebay. The document describes the expected impacts to the beneficial uses of the receiving waters associated with repair and maintenance activities, describes the potential biological resources at risk, determines the potential significance of any projected impacts, and outlines actions that LADWP could undertake to reduce a projected impact to a level of insignificance.

Chevron El Segundo Marine Terminal EIR, Chevron USA, El Segundo, California. Technical director for an EIR to assess the potential environmental impacts associated with renewal of a lease for the Chevron El Segundo Marine Terminal. The proposed project involved exercising an option to renew an existing lease by the State Lands Commission for continuation of operations at the Chevron petroleum refinery facilities in El Segundo. The EIR addressed the project-specific impacts that may occur as a result of normal facility operations, as well as those from accidental conditions. Of particular concern were the potential impacts to local resources within Santa Monica Bay, which could occur from an accidental oil spill at the marine terminal.

Offshore Oil Development EIR/EA, Shell Oil Company, Huntington Beach, California. Deputy project manager/senior project scientist responsible for preparation of an EIR/EA to assess the potential environmental impacts associated with development of the Shell Beta Unit offshore oil exploration and development platforms off Huntington Beach, California. Responsible for all oceanographic, water quality, and sediment quality investigations and analyses connected with the EA. Analyzed potential impacts from construction, drilling, production, and transport of crude oil, including dispersion and trajectory modeling for accidental oil spills.

Coastal Generating Station National Pollutant Discharge Elimination System Monitoring Studies, SCE, LADWP, Los Angeles, California. Technical reviewer for the SCE and LADWP generating stations biannual monitoring programs. Studies included biological (intertidal surveys, fish and macroinvertebrate trawls, fish transects, and benthic infauna and macrobiota studies), water quality, and sediment sampling and analysis for seven SCE and three LADWP coastal generating stations in compliance with state and federal operating permits.

San Onofre Generating Station Monitoring Program, SCE, San Diego, California. Director of QA/senior project scientist for a comprehensive monitoring program to assess the effects of the cooling water discharge from the San Onofre Nuclear Generating Station (units 1, 2, and 3) on the marine environment. Developed QA program and procedures manual, implemented monitoring methods and procedures, and ensured compliance with regulatory agency requirements and client's QA department. Responsible for supervising bimonthly oceanographic field surveys to assess water quality conditions and current patterns. Helped develop real-time oceanographic data acquisition system to continuously measure and telemeter in situ, offshore water temperature and current data. Prepared technical data reports and monthly client invoices and progress reports.

Long Beach Generating Station (LBGS) Monitoring Program, SCE, Long Beach, California. Senior project scientist for an extensive 5-year marine monitoring program in connection with the modernization of the Long Beach Combined-Cycle Generating Station. The purpose of the monitoring program was to determine the effects of LBGS thermal discharge on the marine environment. The program was designed to evaluate existing conditions over a 3-year period prior to plant operation and to assess changes that occurred during interim and operational conditions. Primarily responsible for supervising monthly and quarterly field surveys to assess water quality conditions, current patterns, meteorological parameters, and biological conditions; preparing technical data reports; and providing monthly client invoices and progress reports.

Bering Sea/Chukchi Sea Measurement Program, Exxon Company, Alaska. Project scientist for a 3-year oceanographic measurement program in the Bering Sea and a 2-year oceanographic measurement program in the Chukchi Sea. Both programs were conducted for a group of petroleum companies headed by Exxon Company, USA. Projects included deployment and maintenance of wave, current, and meteorological-measuring instrumentation at remote locations in the Bering and Chukchi Seas. The purpose of the program was to gather data for oil exploration planning and design. Field data were telemetered via satellite every 3 hours and retrieved daily by an automated computer system. Data were summarized in monthly and annual technical data reports. Primary responsibilities included logistics support and planning, client liaison, and data assimilation and report preparation.

Military

Beach Replenishment EAs, U.S. Navy, Southwest Division, San Diego, California. Project manager for two EAs to assess the potential impacts of placing 7 million cubic yards of sand dredged from San Diego Bay on local beaches. Two separate EAs were prepared for the project along with Coastal Consistency Determinations and ACOE permit applications. The major issues dealt with direct impacts to biological resources, including vegetated reefs, surfgrass areas, and nearshore kelp beds. Extensive field studies were conducted to identify and map the potentially affected resource areas. Impacts to recreation, land use, noise, and aesthetics were also addressed.

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John Davis IV – Senior Biologist

John Davis IV is a senior biologist in the Santa Barbara office with over 14 years' experience, specializing in biological resource assessments, special-status plant and wildlife species surveys, habitat restoration, and environmental regulations, permitting, and compliance. Mr. Davis IV's expertise is in identification and risk management of potential biological constraints for a diversity of land use projects, including energy, infrastructure, residential, commercial, and restoration projects. He has effectively assisted clients with project design and agency negotiations, produced defensible biological technical reports, and managed and coordinated the biological resources sections of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents. Mr. Davis IV represents Dudek on several qualified biologist lists, including the Counties of San Luis Obispo and Riverside, and is recognized as a qualified biologist by the Significant Ecological Area Technical Advisory Committee (SEATAC) for Los Angeles County.

Mr. Davis IV has extensive experience surveying for a number of special-status invertebrate, reptile, amphibian, and mammal species. He is permitted by the U.S. Fish and Wildlife Service (USFWS) to conduct surveys for listed vernal pool branchiopods (fairy and tadpole shrimp) and the federally endangered Morro shoulderband snail (*Helminthoglypta walkeriana*). USFWS has also permitted him to perform habitat enhancement and construction-related activities for the Morro shoulderband snail and handle the federally threatened California red-legged frog (*Rana draytonii*). In addition, he is California Department of Fish and Game (CDFG)–qualified to survey for the San Joaquin kit fox (*Vulpes macrotis mutica*) and the desert tortoise (*Gopherus agassizii*) throughout their ranges. Other types of wildlife species surveyed include the blunt-nosed leopard lizard (*Gambelia sila*), flat-tailed horned lizard (*Phrynosoma mcallii*), fringe-toed lizards (*Uma* spp.), California tiger salamander (*Ambystoma californiense*), arroyo toad (*Bufo californicus*), western spadefoot (*Spea hammondi*), southwestern pond turtle (*Clemmys marmorata pallida*), southern steelhead (*Oncorhynchus mykiss gairdneri*), tidewater goby (*Eucyclogobius newberryi*), Swainson's hawk (*Buteo swainsoni*), and burrowing owl (*Athene cunicularia*). In addition, Mr. Davis IV also has conducted numerous focused floristic (rare plant) surveys, vegetation mapping, and wetland delineations in Southern and Central California.

RELEVANT PROJECT EXPERIENCE

Water/Wastewater

Environmental Protection Agency (EPA) 319(h) Morro Bay National Monitoring Program (1992–2002) in San Luis Obispo County, California. Managed data collection, management, and analysis for the program. Other responsibilities included annual report submittal to the Environmental Protection Agency and presentations at National Nonpoint Source Monitoring Workshops. Data collection in the Morro Bay watershed consisted of weekly water quality sampling for 20 creek sites and annual CDFG rapid bioassessment for stream habitat quality and macroinvertebrate diversity. Creeks were also surveyed for changes in stream channel morphology, plant coverage, and stream substrate composition. Focused studies included the

EDUCATION

Cal Poly State University, San Luis Obispo
MS, Biology, 2003

San Diego State University, San Diego
BS, Ecology, 1998

CERTIFICATIONS

USFWS 10(A) Recovery Permit
No. TE-110095-1

- California red-legged frog
- Listed vernal pool branchiopods
- Morro shoulderband snail

CDFG Scientific Collecting Permit
SC-008527

- Focused floristic surveys
- Herpetological surveys
- Small mammal trapping

ESA Certified Ecologist

SEATAC Qualified Biologist

PROFESSIONAL AFFILIATIONS

Ecological Society of America

The Wildlife Society

Society for the Study of Amphibians
and Reptiles

Botanical Society of California

California Society for Ecological
Restoration

effects of rangeland best management practices on water quality for a paired watershed and for upstream–downstream comparisons. Coordinated and performed water quality and benthic macro-invertebrate sampling, stream bank stability and stream bed sediment analysis, stream morphology assessment, long-term data management and statistical analysis and interpretation, land owner coordination, and professional and public information presentations.

Development

Santa Margarita Ranch Agricultural Residential Subdivision Project and Future Plan Environmental Impact Report (EIR), County of San Luis Obispo, California. Managed and prepared the biological resources section of the EIR. Coordinated survey efforts for protocol California red-legged frog and listed vernal pool branchiopod (fairy shrimp), as well as rare plant and general wildlife surveys and jurisdictional wetland review. Attended meetings with county staff and regulatory agencies.

Santa Barbara County Housing Element and Action Plan EIR, Santa Barbara, California. Conducted field visits and prepared the biological resources section of the EIR. Coordinated and trained staff on special-status species assessment, sensitive biological resources, and jurisdictional boundaries. Analyzed potential policy and development impacts on 10 county-selected sites.

Stenner Creek, City of San Luis Obispo, California. Conducted a substrate analysis for the southern steelhead and prepared a technical report for National Oceanic and Atmospheric Administration (NOAA) Fisheries. Coordinated with NOAA, City of San Luis Obispo, and Whitaker Construction during monitoring of the highly visible construction of the Stenner Creek Bridge near the intersection of Foothill Boulevard and Santa Rosa Road/Highway 1. Conducted and designed restoration and revegetation projects and monitored a variety of construction activities to ensure compliance with federal, state, and local resource agency requirements

Agoura Hills, City of Agoura, Los Angeles County, California. Conducted focused floristic surveys and vegetation mapping in support of the Agoura Village Specific Plan. The canyon liveforever (*Dudleya cymosa* ssp. *agourensis*; FT, List 1B.2) and Lyon's pentachaeta (*Pentachaeta lyonii*; FE, List 1B.1) were observed and recorded. Vegetation mapping included valley needlegrass grassland and valley oak savannah. The survey was conducted in 2007 and included an area of 300 acres.

Talley Farms, County of San Luis Obispo, California. Technical specialist and environmental monitor. Conducted California red-legged frog surveys and monitoring for the construction of a bridge over Arroyo Grande Creek.

Energy

Pacific Valley's Ruby Solar Project, Antelope Valley, Northern Los Angeles County, California. As managing biologist, supervised and conducted focused biological surveys, coordinated with agencies and client, and prepared and reviewed reporting for a 20-megawatt (MW) photovoltaic (PV) power plant on a 160-acre site. Surveys included botanical (floristic), spring/nesting bird, burrowing owl, Swainson's hawk, and general wildlife. Habitat and Joshua tree (*Yucca brevifolia*) mapping was also performed. A biological resources assessment report was prepared in November 2010 to support a conditional use permit (CUP) application for the solar project.

Pacific Valley’s Whitney Point and Westside Solar Projects, Fresno County, California.

As managing biologist, supervised and conducted focused biological surveys, coordinated with agencies and client, and prepared and reviewed reporting for a 20 MW PV power plant on a 160-acre site. Surveys included botanical, Swainson’s hawk, and general wildlife. A San Joaquin kit fox and burrowing owl habitat assessment and vegetation/habitat mapping were also performed. A biological resources assessment report was prepared in July 2010 in support of the CUP application for Fresno County.

Tessera Solar, Calico Solar Project, San Bernardino County, California.

Conducted focused floristic and desert tortoise surveys in support of Bureau of Land Management/California Energy Commission permit conditions. Numerous tortoises, tortoise burrows, and signs were observed in April and May. The white margined beardtongue (*Penstemon albomarginatus*; List 1B.1) and small-flowered androstephium (*Androstephium breviflorum*; List 2.2) were observed and mapped during spring surveys. The survey area included 16,000 acres for desert tortoise and 8,000 acres for botanical surveys. All surveys performed by Mr. Davis IV occurred in 2010.

SunPower’s 225 MW California Valley Solar Ranch Project in Eastern San Luis Obispo County, California.

As project manager and lead biologist, supervised field team consisting of 53 biologists performing focused surveys on a 5,227-acre site and two 3-mile-long transmission routes. Species surveys included floristic (rare plant), small mammal trapping, San Joaquin kit fox, blunt-nosed leopard lizard, burrowing owl, giant kangaroo rat (*Dipodomys ingens*) precinct mapping, wintering birds, wetland delineation, and vernal pool assessment. Orchestrated field surveys, data collection, technical report preparation, and agency and client coordination. A biological resources assessment report was submitted to the county in January 2009. A revised technical report containing all survey methodology and results was submitted to SunPower in October 2009 for delivery to the County of San Luis Obispo in support of a revised CUP application and later the county’s CEQA review of the project.

First Solar Electric’s (formerly Nextlight’s) 250 MW Antelope Valley Solar One Project, Antelope Valley, Northern Los Angeles County, California.

As managing biologist, supervised focused biological surveys, habitat/vegetation mapping, wintering bird surveys, botanical surveys, Joshua tree woodland assessment, and technical biological resources reporting for the County of Los Angeles. This included winter field surveys on a 2,000-acre site and preparation and submittal of a biological constraints report to the County of Riverside in February of 2009. As a SEATAC-qualified biologist, reviewed the biota report that was prepared by URS biologists and attended SEATAC meetings.

Solel’s 550 MW Solar Thermal Site in Johnson Valley, San Bernardino, California.

As managing biologist, supervised field crew of 30 biologists and performed USFWS protocol desert tortoise, focused botanical, jurisdictional determination, and wildlife and vegetation mapping surveys on a 9,315-acre site and 10-mile-long transmission and gas routes. Orchestrated survey efforts and data collection, and performed agency and client coordination. Prepared the biological survey work plan and coordinated with regulatory agencies on biological resource issues and potential mitigation. Field surveys were completed in June 2008. Project involvement was between January 2008 and November 2008. The project site was abandoned by Solel.

First Solar Electric, 50 MW PV Solar Site near Blythe, California. As managing biologist, supervised desert tortoise survey and technical biological resources reporting for USFWS, CDFG, and the County of Riverside. Coordinated with regulatory agencies on biological issues and mitigation. Provided guidance to a field crew of three biologists during USFWS protocol desert tortoise, floristic surveys, point bird counts, burrowing owl, and preconstruction surveys. Peer reviewed technical biological reports. The project initiated construction in 2009.

Due Diligence/Fatal Flaw Analysis for Pacific Valley, LLC in Fresno, Madera, Kern, Los Angeles, and San Bernardino Counties, California. As managing biologist, supervised reconnaissance field surveys, agency coordination, and biological constraints reporting for 16 potential solar project sites.

Due Diligence/Fatal Flaw Analysis for SunPower Corporation in San Luis Obispo County, California. As managing biologist, supervised reconnaissance field surveys, agency coordination, and biological constraints reporting for a solar project site in the Carrizo Plain, eastern San Luis Obispo County.

Due Diligence/Fatal Flaw Analysis for First Solar Electric (formally Nextlight), Los Angeles County, California. As managing biologist, supervised reconnaissance field survey, agency coordination, and biological constraints for a solar project site in Antelope Valley, eastern Los Angeles County.

Due Diligence/Fatal Flaw Analysis for Solel, San Bernardino County, California. As managing biologist, supervised reconnaissance field survey, agency coordination, and biological constraints for three solar project sites.

Due Diligence/Fatal Flaw Analysis for WDG Partners, Riverside and San Bernardino Counties, California. As managing biologist, supervised reconnaissance field survey, agency coordination, and biological constraints for six solar project sites.

Due Diligence/Fatal Flaw Analysis for Southern California Edison, San Bernardino County, California. As managing biologist, supervised reconnaissance field survey, agency coordination, and biological constraints for a project site in Lucerne Valley.

Military

Bridge 101, 102, 106, and 107, Camp San Luis Obispo, California. Project manager, environmental compliance monitor, and restoration specialist for the demolition and construction of four bridges on Camp San Luis Obispo. Prepared, implemented, and monitored revegetation on creek banks for the military and ensured compliance during bridge activities on Chorro Creek and its tributaries.

Fort Hunter-Liggett, Monterey County, California. Performed long-term vegetation trend analysis using point line transects, yellow star-thistle (*Centaurea solstitialis*) mapping, Valley oak (*Quercus lobata*) burn frequency study, erosion site evaluation and prioritization, and ammunition bunker and stony valley oak restoration. Mapped special-status plant and wildlife locations and habitats, vegetation communities, exotic invasive plant distributions, and line transect locations using a Trimble Pathfinder Pro XR GPS.

Marine Corps Air Ground Combat Center, Twentynine Palms, California. Conducted creosote-ambrosia scrub restoration and mesquite mound recreation. Designed, managed, implemented, and monitored a perennial desert shrub (*mycorrhizae inoculum*) experiment and a survey of the mycorrhizal status of desert annuals.

Naval Submarine Base, Point Loma, San Diego County, California. Provided support for maritime coastal sage restoration of Bay View, South Tank, and Erosion Slope at Point Loma Submarine Base.

Miramar Naval Air Station, San Diego County, California. Provided support for coastal scrub and vernal pool restoration and management.

Resource Management

Western Goleta Slough Wetland Enhancement Project, Goleta, California. Served as project manager for a multidisciplinary team on the creation and enhancement of 20 acres of wetland and upland habitat on CDFG property. Coordinated with regulatory agencies on environmental and development issues and permitting. Supervised and prepared coastal (Coastal Development Permit with Hearing), wetland/stream (401/404/Streambed Alteration Agreement), and air pollution permit applications, as well as the restoration plan. All permits were granted for the project. Managed and coordinated with civil engineers, archaeologists, and geologists on the project design, cultural resources, soil contamination, and unexploded ordnance issues. CDFG was the lead agency for the initial study/mitigated negative declaration. The project is currently under construction.

Los Osos Bureau of Land Management Property, San Luis Obispo County, California. Provided floristic inventory; herbarium development; Morro shoulderband snail, federally endangered Morro manzanita (*Arctostaphylos morroensis*), and additional rare plant, wildlife, and vegetation surveys and mapping in San Luis Obispo County.

Transportation

Ekwill Street and Fowler Road Extensions, City of Goleta, California. Biological task manager. The existing natural environment study (NES) was edited and later finalized in 2010, and the EIR/environmental assessment is currently undergoing review.

Tepusquet Road Crossing, County of Santa Barbara, California. Served as project manager and lead biologist. The existing NES and wetland delineation were edited and finalized at the end of 2007. Coordinated with species experts and state and federal agencies. The project was permitted in 2008. Project was reviewed by Caltrans, District 5.

San Miguel Ranch Highway 101 Off-Ramp, County of San Luis Obispo, California. Project manager and lead biologist for the preparation of a biological assessment that included the Caltrans right-of-way. The project consisted of widening the off-ramp and roadways for safer access to San Miguel Ranch, which is proposed to be subdivided. The project was conducted in coordination with Caltrans, District 5. The project is tied to the San Miguel Ranch development, which is currently on hold.

Calle Joaquin Road Realignment Project, City of San Luis Obispo, California. Prepared a biological assessment and conducted protocol fairy shrimp and focused floristic surveys. Coordinated with USFWS and U.S. Army Corps of Engineers regarding federally listed species. The project was reviewed by Caltrans, District 5, and completed in 2006.

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Trey Driscoll, PG, CHG – Associate Hydrogeologist

Trey Driscoll is an associate hydrogeologist with over 9 years' experience in the environmental field. Mr. Driscoll specializes in environmental investigations, groundwater supply and remediation, and soil gas studies. He brings diverse experience to the project team and has supported numerous projects encompassing a wide range of areas. Mr. Driscoll's project experience includes municipal well design, logging, and construction oversight; municipal well destruction; soil gas surveys for methane; experiments with pilot studies for in situ remediation; water quality and hydrology technical reports; phase I and II site assessments; and exploratory groundwater investigations.

EDUCATION

Hobart and William Smith Colleges,
Geneva, New York
BS, Geoscience and Environmental
Studies, 2000

CERTIFICATIONS

Professional Geologist, CA No. 8511
(exp. 3/31/11)

PROFESSIONAL AFFILIATIONS

National Groundwater Association

PROJECT EXPERIENCE

Water/Wastewater

Monitoring Well Installation and Pump Testing, Santa Barbara County, California. Project geologist for the installation of two monitoring wells in the Monterey formation along the Gaviota Coast. Supervised the drilling, construction, and logging of the wells. Currently conducting pump testing to determine the sustainable yield in accordance with County of Santa Barbara guidance.

Water Supply Well Installation Project, City of Vista, San Diego County, California. Project geologist/manager for the installation of a water irrigation supply well for Vista Sports Park. Supervised drilling, construction, and pumping of an artesian well completed in fractured granite.

Recycled Water Storage Project, City of San Diego, San Diego County, California. Project geologist for the City of San Diego in cooperation with the U.S. Geological Survey evaluating the potential to use the Tijuana River Alluvial Basin for seasonal storage of recycled water.

Remediation Technologies Research, SPX Corporation, City of Stockton, San Joaquin County, California. Researched remediation technologies, including in situ redox manipulation, for use at a site contaminated with metals including hexavalent chromium. Also conducted stormwater investigation to determine source of metals in water. Determined that the degrading asphalt layer at the site was the primary source and developed list of potential remedial options, including phytoremediation.

Sewage Treatment Facility Percolation Study, Rancho Santa Fe, San Diego County, California. Investigated treated effluent wastewater discharges to percolation beds. Installed piezometers and monitored water levels during a percolation study.

Water Treatment Plant Hydrology Study, City of Indio, Riverside County, California. Prepared hydrology study for water treatment plant in Indio under the California Environmental Quality Act (CEQA) for plan to update the facility.

Groundwater Management Plan, Rainbow Valley, San Diego County, California. Served as researcher on lithology and hydrology of Rainbow Valley for a groundwater management plan.

Development

Installation of Methane Mitigation System, City of Los Angeles, Los Angeles County, California. Designed and oversaw installation of methane mitigation system for Eleven South, a new 13-story residential building in downtown Los Angeles. Completed plans in accordance with the Los Angeles Department of Building and Safety Methane Mitigation Standard.

Soil Gas Monitoring, San Diego County, California. Managed soil gas monitoring for methane, including the collection, analysis, and reporting of data in compliance with the County of San Diego's former methane testing ordinance, for over 1,000 new homes.

Redevelopment Project, City of Chula Vista, San Diego County, California. Performed phase I site assessments for property undergoing redevelopment.

Education

School Site Monitoring Project, Santa Barbara County Education Office, Santa Barbara County, California. Project geologist/manager for indoor air quality and sub-slab vapor monitoring for school site undergoing investigation for chlorinated solvents in Santa Barbara. Work was performed under the oversight of the California Department of Toxic Substance Control.

Energy

Methane Mitigation Project, San Diego Gas and Electric (SDG&E), San Diego County, California. Inspected proper methane mitigation for transformers, service connections, and distribution trench dams as required by SDG&E.

Weldon Solar Project, Renewable Resources Group, Kern County, California. Performed a hydrology and water quality analysis to determine the potential impact of the project on drainage and downstream water bodies.

Methane Gas Venting Systems Project, San Diego and Los Angeles Counties, California. Designed, inspected, and certified installation of passive sub-slab venting systems for methane gas.

Municipal

Municipal Water Well Installation Project, Santa Ynez River Water Conservation District, Los Olivos, Santa Barbara County, California. As site geologist, supervised installation of four municipal water wells. Conducted aquifer pump tests and logged lithology of borehole for a project funded by the Federal Emergency Management Agency.

Municipal Assessment to Determine the Suitability for Groundwater Development, Lee Lake Water District, Corona, Riverside County, California. Project manager for assessment to determine the suitability for groundwater development. Evaluated potential well sites in context of local geology and fault zones, existing wells, water levels, and water quality.

Municipal Water Supply Well Project, U.S. Department of Agriculture, Joshua Tree, San Bernardino County, California. As project geologist, prepared all contract documents, including technical specifications, for project funded by a U.S. Department of Agriculture Rural Development Grant.

Resource Management

Beach Replenishment Material Evaluation, Unified Port of San Diego, San Diego County, California. Project geologist and manager for the project, which involved determining the compatibility of previously dredged material for beach replenishment in accordance with U.S. Army Corps of Engineers guidance.

Monitoring Well Installation Project, Former Crazy Horse Landfill, City of Salinas, Monterey County, California. Geologist for project that included installation of six monitoring wells at a landfill. Responsible for characterizing vertical and horizontal movement of contamination in conjunction with ongoing litigation.

High Groundwater Conditions Evaluation, Cal Sorrento Ltd., San Diego County, California. Geologist for project that involved installation of multiple wells. Conducted 5-day aquifer test to determine hydraulic properties of alluvial aquifer. Estimated theoretical well spacing required to dewater the site.

Gas Station Site Contamination, Las Vegas, Nevada. As project geologist, oversaw the installation of four monitoring wells and 10 soil borings to characterize site lithology and the vertical and horizontal extent of contamination.

Expansion of Water Treatment Facilities, Cities of Irvine and Indio, Orange and Riverside Counties, California. Prepared water quality and hydrology technical reports in conjunction with environmental impact reports (EIRs) performed under CEQA for water treatment facilities undergoing expansion.

Phase II Site Assessment for Dry Cleaning Facility, Toluca Properties, City of Oceanside, San Diego County, California. Created a work plan for soil gas sampling and installation of monitoring wells, as well as collection of soil samples to determine soil properties. Conducted soil vapor extraction test to determine radius of influence. Received risk-based closure for the site from the County of San Diego.

Phase II Site Assessment for Leaking Underground Storage Tank Site, Saint Vincent's School, Santa Barbara County, California. Delineated the extent of soil contaminated and developed work plan for removal of petroleum-contaminated soil. Oversaw soil remediation and received closure for site from the County of Santa Barbara.

Evaluation of Contamination, Santa Barbara County, California. Investigated previously unknown hydraulic cylinder uncovered at site in Santa Barbara. Worked in conjunction with regulators to develop soil sampling plan to determine presence of soil contamination. Received closure on site.

Soil Analysis Project, Phoenix, Arizona. Drilled four exploratory soil borings at site to determine soil properties. Involved logging of borehole and collection of soil samples for laboratory analysis. Developed work plan and health and safety plan.

Environmental Analysis Project at MGM Mirage and Mandalay Bay Resort Group Merger, Las Vegas, Nevada. Performed an environmental due diligence audit completed for the researched subsidence in Las Vegas due to groundwater withdrawal and the potential for differential subsidence to impact building foundations. Also investigated faults and fissures in the Las Vegas valley to determine their potential impacts.

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RICHARD T. GORMAN

Certified Engineering Geologist

As Chief Geologist with Earth Systems Pacific, Mr. Gorman is in charge of geologic hazards investigations, bluff stability studies, and landslide analyses. A Certified Engineering Geologist, Mr. Gorman has conducted major geologic studies such as the City of Hollister fault investigation and the City of Pismo Beach bluff erosion study. Mr. Gorman has over 30 years of experience in his field.

HIGHLIGHTS OF RESPONSIBILITIES

- Conducts geologic fault investigations that include the excavation and logging of exploratory trenches, reviews of regional and local geologic structure and stratigraphy, reviews of stereo photographs to observe topographic and geomorphic features related to faulting, analyses of resulting data, development of conclusions, and recommendations related to geologic considerations.
- Conducts geologic bluff studies consisting of site reconnaissance, geologic mapping, research of available reports, survey maps, and photographs, estimation of historic, current, and future bluff erosion retreat rates, evaluation of bluff stratigraphy including structural characteristics such as bedding, jointing, and folding, evaluation of bluff stability, evaluation of the effects of sea wave erosion, and development of conclusions and recommendations such as appropriate building setbacks and rip-rap placement.
- Provides analyses of landslide areas (including computer-generated slope stability analysis).
- Performs computer-generated seismicity analyses and historical earthquake analyses using geologic technical software.
- Performs geologic inspections of mass grading operations.

REGISTRATIONS AND CERTIFICATIONS

Certified Engineering Geologist, State of California, 1986 (No. 1325)

Registered Geologist, State of California, 1985 (No. 4065)

PROFESSIONAL BACKGROUND

1999 to present	Chief Geologist	Earth Systems Pacific San Luis Obispo, CA
1989 to 1999	Chief Geologist	Earth Systems Consultants Northern California
1987 to 1989	Senior Engineering Geologist Geology Department Manager	Buena Engineers San Luis Obispo, CA
1978 to 1987	Project Geologist	Irvine Soils Engineering Irvine, CA
1976 to 1978	Soils Technician	Le Roy Crandall & Associates Los Angeles, CA

EDUCATION

California Polytechnic State University, Pomona
B.S., Geology, 1974

PROFESSIONAL AFFILIATIONS

Member – Inland Geologic Society, Association of Engineering Geologists and Geologic Society of America

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Jane Gray – Environmental Specialist, Project Manager

Jane Gray is an environmental specialist and project manager with over 11 years' project management and environmental planning experience specializing in agricultural resource and rural transportation planning, policy analysis, land use planning, and project development and entitlement services. Ms. Gray has worked as a project manager, analyst, and environmental planner for various non-governmental and public agencies responsible for projects ranging from small-scale development and infrastructure planning in developing economies to private residential and commercial development.

PROJECT EXPERIENCE

Water/Wastewater

Carpinteria Stormwater Management Plan (SWMP), City of Carpinteria, California. Responsible for project management and preparation of the City of Carpinteria's SWMP, as well as leadership and implementation of the city's first-year permit requirements under the National Pollutant Discharge Elimination System Small Municipal Separate Storm Sewer Systems General Permit. The city's final SWMP was approved by the Central Coast Regional Water Quality Control Board in November 2009. This effort included revising the existing SWMP document, forging productive relationships with interested stakeholder groups, building consensus and spearheading public education and outreach, and public participation campaigns and programs, as well as working with neighboring jurisdictions on collaborative management of pollutants of concern. Ms. Gray is still involved with implementation of the public education and outreach component and was key in developing the watershed awareness curriculum that is implemented in the Carpinteria Unified School District's afterschool program for at-risk elementary school students.

Santa Barbara Countywide Integrated Regional Water Management (IRWM) Proposition 84 and Proposition 1E, Santa Barbara County Water Agency, Santa Barbara, California. As extension of county water agency staff, Ms. Gray was part of a team that generated a regional acceptance process application required for competition in the multiple rounds of funding associated with Proposition 84 and Proposition 1E under IRWM provisions. The position also entails overall program management assistance and coordination of the 29 agencies involved in proposing regional benefit projects for competitive grant applications. Ms. Gray also coordinates and manages the public stakeholder process. The intent of the IRWM is to promote and practice integrated regional water management to ensure sustainable water uses, reliable water supplies, better water quality, environmental stewardship, efficient urban development, protection of agriculture, and a strong economy. This is an ongoing role and function for the county and Ms. Gray.

Santa Barbara Countywide IRWM Proposition 50, Santa Barbara County Water Agency, Santa Barbara, California. Provides project assistance and administration as extension of staff for the county water agency in administration of grant funds received under Proposition 50. Duties associated include reviewing and coordinating the data gathering and reporting requirements as specified in the grant, as well as the communication, coordination, and administration of the grant process associated with the 14 projects under the IRWM. This is an ongoing role and function for the county and Ms. Gray. It requires contract management, frequent and ongoing communication and coordination with the County of Santa Barbara, project proponents, and staff at the State Water Resources Control Board.

EDUCATION

Universität Dortmund,
Dortmund, Germany
MS, Regional Planning and
Management, 2001

SUNY College Buffalo, Buffalo,
New York
BS, Social Work, 1995

PROFESSIONAL AFFILIATIONS

American Public Works Association
(APWA)

Development

Miramar Beach Resort and Bungalows, Caruso Affiliated, Montecito, California. Project manager for development of the 192-room luxury resort, three restaurants, a spa, beach club, ballroom facilities, and a beachfront boardwalk along Miramar Beach in Montecito, California. The project entitlements include demolition of the dilapidated buildings and bungalows associated with the Miramar Hotel, a complete redevelopment, and re-contouring of the site. A focused environmental impact report (EIR) was prepared on the issue of historic resources and other contentious issues, including flooding and drainage in the Oak Creek Channel and aesthetics. The project was approved on appeal by the Santa Barbara County Board of Supervisors in December 2008 and successfully resolved litigation out of court in the spring of 2009.

Marriot Residence Inn, R.D. Olson, Goleta, California. Completed project management, permit processing (including a general plan amendment, development plan, and tentative parcel map), and the preparation of an air quality report for successful entitlement of a 140-room hotel with full kitchen units, a pool, fitness center, library, guest laundry facilities, and 2,400 square feet of meeting space in the City of Goleta. Subsequent to project approval in November 2008, the project was under threat of a lawsuit and is now completing a focused EIR on archaeological impacts.

Michael Hoover, PE – Recycled Water Feasibility and Facility Planning Technical Advisor

Michael Hoover has 40 years' experience as a professional engineer and has focused on water resource engineering and management of projects throughout the southwestern U.S. He has served as project director/manager for assignments involving comprehensive groundwater investigations, water program management studies, facilities planning, design, construction management, and startup of water, wastewater, and solids treatment facilities. Mr. Hoover's professional expertise includes proven success interfacing with regulatory agencies, as well as consensus building between public and private agencies for project implementation. He received the Outstanding Service Award for private-sector work in recognition of his contribution to water reclamation development in California from the Association of Water Reclamation Agencies and the California Association of Water Reclamation Agencies (WateReuse).

Since 2007, Mr. Hoover's focus has been on the drought and economic conditions that directly impact California cities, public agencies, and businesses, particularly with the tremendous threat and ongoing impact to watersheds and infrastructure. As such, Mr. Hoover's focus has turned to finding innovative solutions to water supply and facility optimization: in essence, doing more with less (e.g., less imported water, less energy and fewer chemicals, and fewer capital expenditures). These are ongoing management issues confronting virtually all local, state, and regulatory agencies.

Success of the plans and optimization programs that he has developed are measured by timely implementation with sustainable solutions and savings in resources. Optimization of existing operations and facilities to increase their life and efficiency can be measured by specific metrics. In addition, there are significant advantages for many projects that reflect environmental and green benefits. Examples include recycled water projects and programs, biosolids composting, energy and chemical optimization, and improvements to control and monitoring practices. In this regard, Mr. Hoover has been instrumental in assembling prestigious teams of professional engineers, water quality experts, urban planners, environmentalists, and private industry to identify and implement solutions, appropriate technology, and develop innovative solutions.

PROJECT EXPERIENCE

Wastewater and Recycled Water

Water Reclamation Program Study, Sacramento County Regional Sanitation District, Sacramento County, California. The Sacramento County Regional Sanitation District conducted a study to evaluate the feasibility of implementing a water recycling program in Sacramento County. The program was ultimately recommended for delivering up to 293,000 acre-feet per year (AFY) of recycled water to both urban and agricultural users. This program included a recommendation to construct a 70,000 AFY reservoir at Clay Station to provide seasonal storage of reclaimed water. Key implementation considerations were identified, their potential impacts on program implementation evaluated, and a phased plan developed for the recommended reclamation program.

EDUCATION

San Diego State University
BS, Civil Engineering, 1966

CERTIFICATIONS

Registered Civil Engineer California No. 19155, 1968

Registered Corrosion Engineer
California No. 150, 1976

Registered Professional Engineer
Arizona No. 34527, 2000

Registered Professional Engineer
Maryland No. 7932, 1971

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

American Water Works Association

National Association of Corrosion
Engineers

Water Environment Federation

WateReuse Association

Recycled Water Implementation Plan, Inland Empire Utilities Agency (IEUA), City of Chino, San Bernardino County, California. Developed an accelerated 3-year business plan for increasing recycled water use during the drought crisis. The plan calls for an increase of the previous 10,000 AFY to 50,000 AFY. Currently, the connected use is at 35,000 AFY, and construction projects in progress will add another 10,000 AFY. Key to this implementation and success is agreement by all member agencies, financial assistance through grants and other subsidies, and regulatory teaming.

Water Recycling Program Feasibility Study and Implementation Plan, Upper San Gabriel Valley Municipal Water District, City of El Monte, Los Angeles County, California. Program manager for the implementation of the multimillion-dollar program for potential use of 40,000 AFY to 50,000 AFY of recycled water from the Los Angeles County Sanitation District's San Jose Creek Plant. The program is currently supplying irrigation and industrial use in a portion of the Valley Municipal Water District and will eventually add spreading (recharge) in the river. The phased implementation plan is currently on schedule.

Water Reclamation Program, West Basin Municipal Water District, City of Carson, Los Angeles County, California. Program manager for the concept study and design of key facilities and user connections for one of the largest reclamation programs in California, with 70,000 AFY (potentially 100 million gallons per day (mgd)) planned for irrigation, industrial use, and seawater barrier injection. This program cost about \$250 million and included the supply of demineralized recycled water to users such as oil refineries and the Los Angeles County Seawater Intrusion Barrier Project. Services included a recycled water market assessment, program concept development, assistance to establish institutional arrangements and project financing, and coordination of users and consultants. Responsibilities also included design for on-site retrofit for about 100 customers—including irrigation users—and engineering reports for industrial customers. Part of the recycled water is injected into the seawater barrier of the West Basin.

Recycled Water Feasibility Studies, Central Basin Municipal Water District, City of Commerce, Los Angeles County, California. Project manager for various feasibility studies, including those for the Century and Rio Hondo areas. Services included assessing recycled water markets, developing program concepts, planning for institutional and financial arrangements, and coordinating participating water agencies and design consultants. Serving as program manager for implementation, Mr. Hoover was responsible for overseeing the design and construction of pumping stations, reservoirs, pipelines, and user facilities. The \$17.5 million Century Reclamation Program is providing users with over 8,000 acre-feet of reclaimed water from the Los Angeles County Sanitation District's treatment plants. The \$24 million Rio Hondo system is supplying 15,000 acre-feet of reclaimed water.

Water Reclamation Studies for the Cities of Glendale, Pasadena, and Santa Fe Springs (Los Angeles County); Carpinteria Sanitary District (Santa Barbara County); and Capistrano Beach Sanitary District (Orange County). Served as project manager or principal in charge for all of these programs, which involved user identification, water quality analyses, recharge basins, institutional and regulatory concerns, financial management, and development of implementation plans. Reclaimed water from these combined programs was estimated at over 40,000 AFY.

Orange County Reclamation and Reuse Master Plan, Orange County, California. Served as principal in charge to evaluate local reclaimed water systems and identify regional facilities to increase the reclamation potential in Orange County. The master plan included an evaluation of linking existing and planned reclamation supplies, distribution, and storage to improve reliability, increase flexibility, and enhance the county's overall water resources. In addition, the master plan provided information for the U.S. Bureau of Reclamation's Southern California Comprehensive Water Reclamation and Reuse Study.

Recycled Water Distribution System User On-Site Retrofit Design, City of Oceanside, San Diego County, California. Role in quality assurance/quality control for evaluating the distribution system alignment; conducting site visits and developing 30 on-site user drawings, specifications, and one engineering report for Department of Health Services approval; and operator training and startup assistance.

South Bay Recycling Program, Cities of San Jose and Santa Clara, Santa Clara County, California. Principal in charge of a portion of this project. Specific tasks included meeting with the largest identified potential recycled water customers and establishing what quantity and quality of water they would require for their specific purposes. A preliminary determination of the amount of effort that would be required to retrofit the individual customers was also made. In addition, responsible for obtaining letters of interest from potential customers, developing customer on-site retrofits, and developing an operations and maintenance manual. Member of the Blue Ribbon Committee and the Value Engineering Team, which was established to confirm that the most economical approach was used in meeting the ambitious goals of the program.

Expansion of the Moulton Niguel Water Reclamation Plants, Moulton Niguel Water District (now part of South Orange County Water Authority (SOCWA)), City of Dana Point, Orange County, California. Project manager for the planning, permitting, and institutional arrangements for expansion of the Moulton Niguel Water Reclamation Plants, including the Regional Treatment Facility and 3A Reclamation Plant. At the regional plant, the reclamation expansion was from an existing 0.5 mgd to its current 2.4 mgd. The 3A plant is a new 2.4 mgd plant that ties into the regional plant and enlarged network. The reclamation plants are in operation today and are meeting or exceeding all design and operation parameters.

Fallbrook Reclamation Plant, Fallbrook Sanitary District (now Fallbrook Public Utility District), City of Fallbrook, San Diego County, California. Responsible for the planning, permitting, user identification, and institutional arrangements of this water recycling plant. Later, the design and construction of the facilities were completed under Mr. Hoover's direction.

System Improvement and Recycling Studies, Aliso Water Management Agency (now part of SOCWA), City of Dana Point, Orange County, California. Project director for planning and design of several improvements, operation assistance, permitting, and preparation of operation budgets for the Aliso Water Management Agency. Developed water recycling programs for individual SOCWA member agencies and coordinated these programs on a regional basis.

Step I Facility Plans, Various Agencies throughout Southern California, including in Ventura County: Simi Valley and Saticoy; Los Angeles County: Crescenta Valley; San Diego County: San Elijo. Project director/manager for the preparation of facility plans (under the step I grant program) for the Simi Valley County Sanitation District, Saticoy Sanitation District, Crescenta Valley Water District, and San Elijo Water Pollution Control facilities. Studies included flow projections, financial analyses, and environmental impact reports.

Soil Aquifer Treatment (SAT), IEUA, City of Chino, San Bernardino County, California. As a program advisor for IEUA, Mr. Hoover advocated the SAT process for recycled water groundwater recharge. He participated in a recycled water groundwater recharge workshop hosted by IEUA where experts presented various findings, in part demonstrating SAT to be very effective at further reducing levels of toxic organic compounds and nitrogen in recycled water being recharged.

Improvement Designs, IEUA, City of Chino, San Bernardino County, California. Developed and managed the “Green Team” for optimization and improvements to the regional treatment and recycling plants. Low-cost, high-value projects were developed and are being implemented to improve operations and flow equalization, and to save costs in operations and future expansions.

Wastewater Reclamation System, Walnut Valley Water District, City of Walnut, Los Angeles County, California. Design engineer for this recycled water system, the facilities of which included a pumping station; a 2-million-gallon storage reservoir; 120,000 linear feet of supply, transmission, and service lines; and auxiliary supply from wells. Negotiated with regulatory and grant funding agencies and the public.

Expansion of Plant No. 1, Fallbrook Sanitary District, City of Fallbrook, San Diego County, California. Project manager of master planning and design for the expansion of Plant No. 1 at the Fallbrook Sanitary District. Planning services included identifying potential recycled water users, developing interagency agreement, and assisting the district in obtaining project funding. Design incorporated facilities expansion from 1.55 mgd to 2.7 mgd and incorporated effluent tertiary treatment facilities.

Water Reclamation Facilities, Moulton Niguel Water District, City of Laguna Niguel, Orange County, California. Design engineer for the expansion of existing wastewater treatment plants and incorporation of water recycling facilities for the Moulton Niguel Water District. This included advanced tertiary treatment facilities, regional biosolids digestion, solids dewatering, and a cogeneration plant. Determined cost allocations among entities sharing the use of the treatment and reclamation facilities.

Expansion of Tertiary Plant and Reclaimed Water Distribution Facilities, South Coast Water District, City of South Laguna, Orange County, California. Project manager for upgrading and improvements to the existing facilities, optimization of the tertiary plant, odor control, identification of additional recycled water users, and assistance in obtaining project funding for the upgraded facilities.

Point Loma Wastewater Treatment Plant, City of San Diego, San Diego County, California. Project manager for a disinfection study of the Point Loma Wastewater Treatment Plant discharge for the City of San Diego. Work included negotiations with the U.S. Environmental Protection Agency and California Regional Water Quality Control Board for a consent decree compliance schedule, as well as design and operation of effluent disinfection pilot plants. Also served as project director for a value engineering study of the influent channel design for expansion.

Plant Upgrade/Expansion and Filtration Facility, Simi Valley Sanitation District, City of Simi Valley, Ventura County, California. Design engineer for this expansion and filtration facility. Process design included process improvements, a new clarifier, and the addition of conventional filters requiring variable application rates to meet the diurnal flow through the plant

(this design was considerably more challenging and different from most steady flow reclamation plants). The Simi Valley Filtration Plant has been in operation over 10 years and consistently meets or exceeds all Title 22 reclamation criteria.

Los Angeles Aqueduct Water Filtration Plant, Los Angeles Department of Water and Power, City of Los Angeles, Los Angeles County, California. Project manager for the planning, design, and construction of the 900-cubic-feet-per-second Los Angeles Aqueduct Water Filtration Plant. This was the first major water plant in this country to use ozone as a primary disinfectant and filtration aide. The filtration rate was a maximum of 13.5 gallons per minute/square foot. The plant was constructed under budget, the performance exceeds the design criteria, and the plant operates under original budget estimates.

Water System Analysis, Los Angeles Department of Water and Power, City of Los Angeles, Los Angeles County, California. Work included a detailed analysis of the aqueduct system and major distribution network throughout the City of Los Angeles. Prepared an operations and maintenance manual for water treatment and maintenance of chlorination stations. Provided consultation relating to the installation of a major telemetry system.

Evaluation of Short- and Long-Term Water Quality and Supply Needs, City of San Diego, San Diego County, California. Advisor to the City of San Diego and its consultants to evaluate short- and long-term water quality and supply needs specific to the water treatment needs at existing and planned water treatment plants. Focus was on ozone and filtration facilities being specifically applied to the design of these plants.

Comprehensive Water System Analysis, City of San Diego, San Diego County, California. Project engineer for a comprehensive analysis of major water pipelines, reservoirs, and treatment facilities for the City of San Diego. The analysis focused on corrosion protection and included specific recommendations for the corrosion protection of the El Monte, Coronado, South San Diego, Bonita, Second Otay, and El Capitan pipelines; Alvarado Filtration Plant; and various reservoirs and standpipes.

Alvarado Filtration Plant and Pre-Design of the Miramar Filtration Plant, City of San Diego, San Diego County, California. Member of technical review group for the preliminary and detailed design of these facilities. This was a major program for the City of San Diego's drinking water quality improvement program. Duties include advice and consultation in the layout and design features specifically relating to the inclusion of direct filtration and ozonation processes. Oversaw the design of the portion of the facility dealing with waste solids. Participated in key decisions involving all the treatment plants with capacities totaling in excess of 400 mgd.

Iron and Manganese Removal Facilities, City of Morro Bay, San Luis Obispo County, California. Project engineer for the planning and design of iron and manganese removal facilities for water supply wells using potassium permanent treatment on behalf of the City of Morro Bay. Services included analyses of well water production and water quality.

Water Master Plan, City of Fullerton, Orange County, California. Project director for the preparation of a Water Master Plan for the City of Fullerton. The plan required detailed computer modeling of the City of Fullerton's existing water system, which included 10 reservoirs, 14 pressure zones, 6 booster pumping stations and reservoirs, and 11 pressure reducing stations. The computer model was verified through actual flow and pressure measurements. The model was ultimately adapted and implemented, with training, on the city's in-house computer.

Water Master Plant, City of La Palma, Orange County, California. Project engineer in the evaluation of the City of La Palma's water distribution system, water treatment, and telemetry systems, with specific recommendations for a multiyear program to meet the quality and distribution needs of the city. Also included were specific operation requirements and an emergency preparedness plan.

Water Supply Distribution Pipelines, County Waterworks Districts, Ventura County, California. Project engineer for the planning, design, and construction of over 100,000 feet of water supply and distribution pipelines in Ventura County (mostly in Simi Valley) for the County Waterworks Districts. Engineer responsible (chief engineer) for over 300,000 feet of pipelines, including transmission, supply, and distribution throughout Southern California.

Corrosion Protection, Various Agencies throughout Southern California, including in Santa Barbara County: Goleta; Ventura County: Simi Valley and Oxnard; Los Angeles County: Long Beach and Los Angeles; and San Diego County: San Diego and San Elijo. Design of numerous corrosion protection systems for water and wastewater facilities, including the following:

- Corrosion surveys and evaluations of coatings and protection systems for Simi Valley County Sanitation District and Cities of Oxnard, Goleta, San Diego, Long Beach, Los Angeles, and San Elijo.
- Trainer and lecturer on corrosion and coating systems to city and county agencies, special services districts, and private consultants throughout Southern California.
- Member A21 Committee of the American Water Works Association and Subcommittee on Corrosion Protection Systems.
- Sulfide corrosion experience in analysis and repairs of sewers, manholes, force mains, pumping stations, and treatment plants.

David Jaffe has worked for more than a decade at the intersection of water resource development, water infrastructure financing, and water policy. Dr. Jaffe has focused his technical expertise on the translation of engineering science into actionable environmental benefit. His scope has been varied both domestically and internationally. Dr. Jaffe's long-term goals embrace the application of water resource and energy development for the enablement of positive social change.

Dr. Jaffe's accomplishments and expertise in civil and environmental engineering, well as in domestic and international water policy, include the following:

International Projects

- Adaptation to international regulatory concerns: engineering design and policy compliance in Russia and China related to flood control (i.e., flood control structures design, development, and operation; statistical analysis of hydraulics and hydrology); water quality (i.e., best management practice (BMP) design, development, and operation); water and wastewater treatment (i.e., treatment plant design, development, and operation); civil design (i.e., infrastructure layout and design)
- Project management: client relations; international meetings; billing; foreign resource agency contact; local labor procurement (i.e., selection and advisement of local contractors, engineers, and designers); and project-specific standards development
- Technology transfer (for Cape Verde, West Africa): applicability, legal and security compliance, operations and maintenance, site setting, and research.

Domestic and International Projects

- Project management: contract and proposal preparation and authoring; cost estimates; project team lead; internal and external client relations; document preparation (i.e., report authoring and preparation, plan preparation and review, construction document preparation and review); meetings organization; billing; resource agency contact (Federal Emergency Management Agency (FEMA) Conditional Letter of Map Revision and Letter of Map Revision (CLOMR/LOMR), U.S. Army Corps of Engineers/U.S. Environmental Protection Agency (ACOE/EPA) 404 permitting, state Department of Fish and Game and Clean Water Act permitting (i.e., 1600 series, 401 certification)); team member training (i.e., development of coursework; review and training of engineering and analytic methods); California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA) review and subsequent environmental impact report (SEIR) preparation; internal standards development; and numerical modeling.
- Engineering analysis and design: hydrology (i.e., HEC-1 modeling, rational method, statistical analysis, etc.); hydraulics (i.e., HEC-RAS modeling, FLO-2D modeling, empirical analysis); sediment analysis (i.e., debris production, debris basin design, erosion control specification and design, bank protection specification and design, SAM modeling, HEC-6T modeling, empirical analysis, fluvial/alluvial hazards mitigation); flood control and water quality (i.e., runoff mitigation analysis and design, flood storage analysis and design, weir design, channel design; BMP specification and design, etc.); research; statistical analysis; conference presentation; and research publication.

EDUCATION

University of California, Irvine
PhD, Civil & Environmental Engineering,
2002

Regent's Dissertation Fellow,
2001–2002

University of California, Irvine
MS, Civil & Environmental Engineering,
2002

University of Southern Mississippi,
BS, Physical Marine Science/Stennis
Space Center, 1998

Johns Hopkins University,
BA, Earth Science, 1994

CERTIFICATIONS

Registered Civil Engineer, California
(68321)

Registered Civil Engineer, Arizona
(44318)

Disaster Service Worker, California
(SAP62634)

Diplomate, Water Resource Engineer
(D.WRE) American Academy of Water
Resource Engineers, 2010

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

PROJECT EXPERIENCE

Relevant Previous Experience

Santa Clara River and Tributaries, Private Land Developer, Santa Clarita, California. Led the design for buried soil cement bank protection from upstream of Interstate 5 to downstream of the Los Angeles–Ventura County Line (approximately 7 miles). Bank protection design was based on Los Angeles County Flood Control District Design Manual and Los Angeles County Department of Public Works Sedimentation Manual criteria, updated to ensure HEC-18 compliance. The design encompassed the lateral location, the top and toe elevations, and the backfill coverage. Buried soil cement bank protection led to a 30% to 50% reduction in cost over conventional methodologies and provided aesthetic and environmental benefits. Approximate contract value: \$550,000.

Santa Clara River and Tributaries, Private Land Developer, Santa Clarita, California. Led the design and developed analysis methodologies for sediment transport with Santa Clara River from upstream of Interstate 5 to downstream of the Los Angeles–Ventura County Line (approximately 7 miles). Numerical modeling (SAM) was employed to estimate general adjustment, historical topographic analysis techniques were created to estimate long-term adjustment, and empirical analyses were utilized to calculate local scour components. Approximate contract value: \$850,000.

Newhall Land, Santa Clarita, California. Total bed adjustment was estimated following HEC-18 criteria. Sediment stream yield and sediment watershed yield were determined; maximum and no delivery scenarios were examined.

Newhall Land, Santa Clarita, California. Led the analysis for placement of a sanitary sewer siphon within Santa Clara River upstream of the Interstate 5 Bridge. Numerical modeling (historical and contemporary), historical topographic analysis, and bridge scour estimates were conducted. Siphon design was based on Los Angeles County Department of Public Works and Los Angeles County Sanitation Department criteria and was based partially on a new analysis of the historically significant San Francis Dam failure. Approximate contract value: \$100,000.

Santa Clara River, Private Land Developer, Santa Clarita, California. Led the hydraulic investigation for habitat impacts analysis related to infrastructure improvements within Santa Clara River from upstream of Interstate 5 to downstream of the Los Angeles–Ventura County Line (approximately 7 miles). Geographic information system (GIS)-based numerical methods were developed to compare changes in local hydraulic parameters to habitat location and quantity. Impacts were quantified by location and habitat type. The methods developed here are a powerful tool for both impacts analysis and for the mitigation of impacts within the design phase prior to construction. These methods were used to provide preliminary and final design for habitat restoration following construction, and in conjunction with biology and habitat teams. Approximate contract value: \$250,000.

Malibu Creek and Lagoon, Private Land Owner, Malibu, California. Led Clean Water Act, Department of Fish and Game, FEMA, and California Coastal Commission permitting for the restoration and remediation of 500 linear feet of bank protection in lower Malibu Creek. Also led alternatives and design efforts for the restoration and remediation effort, including the selection of environmentally sensitive methods of mitigation and bank protection in environmentally sensitive habitat. Approximate contract value: \$150,000.

Santa Clara River, Private Land Owner, Santa Clarita, California. Led Clean Water Act and Fish and Game permitting for bank restoration, habitat mitigation, and flood control improvements along the south bank of the Santa Clara River. Also led the alternatives analysis and design for habitat restoration measures in an environmentally sensitive area. Approximate contract value: \$225,000.

Private Developer, San Jacinto, California. Led Clean Water Act permitting efforts for a large, unnamed ephemeral drainage, crossing several property boundaries and a tributary to San Jacinto River. Particular effort was taken to resolve issues related to the (then) recent Solid Waste Agency of Northern Cook County (SWANCC) Supreme Court decision, particularly related to connectivity. Approximate contract value: \$75,000.

Whittmann Study Area H-3 Fan, Public Agency, Maricopa County, Arizona. Led 2-D, numerical modeling effort of the Whittmann Study area. The project achieved the three main goals of determining the baseline FEMA floodplain, calculating the design discharge of the main alluvial fan feeder channels, and providing a preliminary estimate of sediment transport within the sub-fan study area. Modeling results provide an aid to FEMA, Arizona Department of Game and Fish, and ACOE permitting efforts. Approximate contract value: \$100,000.

Ft. Tejon Road, Public Agency, Palmdale, California. Modeled the railroad underpass using FLO-2D to calculate the distribution of surface flow crossing the study area to design regional stormwater infrastructure improvements. The project addressed a complex site condition where a regional road was crossed by a local road and a railroad overpass bridge. Approximate contract value: \$50,000.

Conejo & Calleguas Creek, Public Agency, Ventura County, California Led 2-D modeling efforts to characterize the baseline floodplain of the Conejo-Calleguas floodplain downstream of State Highway 101, Camarillo, California. After the baseline flood condition was determined, modeling was updated to the proposed condition where infrastructure improvements to both channels and several crossings were designed. Improvements included updating bridges, increasing channel capacity, removing several parcels from the floodplain, and providing additional flood protection improvements in a system characterized by several confluences. Special modeling effort was made to consider the influence of stream confluences on 2-D hydraulics. Modeling results were utilized for FEMA CLOMR/LOMR applications. Approximate contract value: \$275,000.

Whitewater River, Private Development Group, Riverside County, California Led modeling of Whitewater River to include design for part of an 18-hole, championship golf course, erosion control, and habitat improvements. Tees, greens, and erosion control were designed to minimize disturbance during the design event, while improving the current state of channel habitat. Coordinated with the local Indian tribe and Bureau of Indian affairs to accomplish federal and state water quality and habitat permitting. Approximate contract value: \$300,000.

San Jacinto River, Public Agency, Riverside County, California. Led modeling and design support team to develop improvements to the existing ACOE levee with the City of San Jacinto. Led sediment data collection efforts and hydrology determination, including design storm and long-term hydrographs, numerical modeling, gas pipeline protection measures, levee top- and toe-elevation determination, and downstream habitat impacts analysis. Project included historical and gravel mining operations analysis. Coordinated with local Indian tribe to address local tribal concerns. The primary design concern was to restore River habitat and functions while minimizing impacts to downstream special habitat areas. Approximate contract value: \$300,000.

San Juan Creek, Public Agency, Orange County, California. Led technical analysis for sediment transport from the Pacific Ocean to Caspers Regional Park (approximately 13 miles), including HEC-6T sediment transport numerical modeling, site surveying and sampling, empirical streambed analysis, historical geomorphologic analysis, and floodplain and erosion limits determination. The project also determined the historical variation in lateral migration and the design top and toe of hypothetical bank protection. Approximate contract value: \$275,000.

Lytle Creek, Private Developer, Riverside County, California. Led the design of pipeline scour protection along the Lytle Creek alluvial fan complex adjacent to Interstate 15. Significant design tasks included sediment transport estimates, scour potential, habitat impacts mitigation, and on-site drainage. Approximate contract value: \$75,000.

Special Project Area 4, Public Agency, Maricopa County, Arizona. As stormwater project lead, conducted analysis and led design for roadway drainage and on-site stormwater improvements, including a downstream discharge weir intended to mitigate downstream, off-site habitat. Approximate contract value: \$45,000.

Special Project Area 4, Public Agency, Maricopa County, Arizona. As stormwater project lead, conducted analysis and led design for on-site stormwater improvements and associated infiltration basins, and off-site alluvial fan feeder channel diversions. Approximate contract value: \$30,000.

Jonathan Leech, PG, AICP – Environmental Planner

Jonathan Leech is an environmental planner with over 25 years' professional experience as an environmental analyst specializing in impact assessment, field research, and land use analysis. Mr. Leech has participated in over 200 California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents, including environmental assessments (EAs), environmental impact reports (EIRs), specific plans, and policy documents for numerous local agencies within the State of California. Mr. Leech has also taught university-level courses in environmental impact assessment.

Mr. Leech is an expert in environmental quality assurance programs, mitigation monitoring, environmental constraint analysis, and air quality planning. He has experience in land development permit processing, hazardous waste assessment, and hazardous materials management plan development. Mr. Leech also has extensive knowledge of CEQA procedures for public agencies, environmental planning and impact analysis, specific plan and master development, and general plan elements. In addition, he has experience with master EAs, water resource development and management, and transportation infrastructure. Mr. Leech also specializes in training development and workshop facilitation.

PROJECT EXPERIENCE

Water/Wastewater

Wastewater Master Plan EIR, City of Santa Maria, California. Managed and co-authored the EIR. This program EIR assessed the assorted activities, physical wastewater system improvements, and ordinances designed to accommodate wastewater treatment demands in the City of Santa Maria through the year 2010. Key issues included public health and safety, air quality (toxic hot spots), water quality, land use, hazardous materials, and geology.

Water Storage Tank and Pipeline, Vandenberg Village Community Services District (VVCSD), Lompoc, California. Served as CEQA coordinator for VVCSD's Water Storage Tank and Pipeline Project. Responsible for creating their guidelines for implementing CEQA, CEQA users' guide, and all CEQA documents for the water tank project. Also provided mitigation monitoring for the construction of the pipeline and water tank.

Emergency Water Pipeline Tie-In, Summerland County Water District (SCWD), Summerland, California. Served as CEQA coordinator for SCWD's Emergency Water Pipeline Tie-In Project with Montecito Water District. Responsible for creating SCWD's guidelines for implementing CEQA, CEQA users' guide, and all CEQA documents for the water pipeline project. Also provided mitigation monitoring for the construction of the pipeline.

Water Treatment Plant EIR, Santa Ynez River Water Conservation District (SYRWCD), Improvement District #1, Santa Ynez, California. Managed the CEQA environmental review process for the SYRWCD on this project. Duties included preparation of the IS, public notices, and staff reports to the board, as well as completion of an EIR. Managed and co-authored the EIR on this project, which included alternative local pipeline alignments and a water treatment plant for the District's allocation of water from Lake Cachuma. New surface

EDUCATION

University of California, Santa Barbara
BA, Environmental Studies/Geology,
1984

University of California, Santa Barbara,
Extension
Hazardous Materials Management
Certificate Program, 1989

CERTIFICATIONS

American Institute of Certified Planners
(AICP)

Professional Geologist, CA 1997

PROFESSIONAL AFFILIATIONS

American Planning Association (APA)

Association of Environmental
Professionals (AEP)

water treatment standards from the EPA resulted in the proposal by the SYRWCD to build a treatment plant for Lake Cachuma waters. Key issues in the EIR included water quality, geology, archaeology, land use, aesthetics, public health and safety, and agriculture (the effect of increased water rates upon agricultural users).

Reclaimed Water System and Distribution Pipeline, Goleta Sanitary District and Goleta Water District, Goleta, California. Co-authored the EIR on this project, which included the addition of a water reclamation component to the Goleta sanitary district wastewater treatment plant in order to provide reclaimed water for landscape irrigation. The project also involved a distribution pipeline to deliver the reclaimed water to areas within the Goleta Valley. Managed the mitigation monitoring and reporting program for the project, and functioned as the on-site environmental coordinator for the monitoring effort. Monitoring was provided for geology, erosion control, air quality, noise, traffic, and biological habitat.

Santa Barbara School Districts National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Management Plan (SWMP), Santa Barbara School Districts, Santa Barbara, California. Managed the preparation of, and was the principal author for, the SWMP for the Santa Barbara school districts. The SWMP addresses 24 properties of the districts, including elementary, junior high, and high school campuses, the administration center, and the maintenance facility. The SWMP provides a prioritized implementation schedule for the six minimum control measures specified by the NPDES phase II regulations. Dudek teamed with a local civil engineering firm to provide appropriate technical evaluation and design standards.

Development

Summerland Community Plan, County of Santa Barbara, Summerland, California. Co-managed the preparation of the community plan for the Summerland Area, which was adopted by the County of Santa Barbara. Managed and co-authored the EIR on the community plan. Issues of primary concern included traffic and circulation, parking resources, water supply, wastewater treatment, biological habitat, and geology and soils.

Wye Annexation and Sphere of Influence Expansion EIR, County of Santa Barbara, Lompoc, California. Co-authored the EIR for this study, which compared the impacts of annexing the “Wye” area of Santa Barbara County (south of Lompoc) to the City of Lompoc against the impacts of annexing the area to the Mission Hills Community Services District. Key issues in the EIR included land use, water supply, wastewater treatment, and public services.

Smith Food Shopping Center EIR, City of Santa Maria, California. Managed and co-authored the EIR for this shopping center project, which included Smith Food King, a major drugstore chain, and subordinate retail. The project site fronted a state highway, for which encroachment permits were sought and obtained. Major issues included transportation, air quality, drainage, wastewater collection and conveyance, noise, solid waste, and geology.

Kmart EIR, City of El Centro, California. Managed and co-authored the EIR for this shopping center project, which included Kmart, a major grocery chain, a major drug store chain, subordinate retail space, and three restaurants. The project site fronted a state highway, for which encroachment permits were sought and obtained. Major issues included transportation, air quality, drainage, wastewater treatment, noise, schools, and fiscal impacts.

Turnpike Auto Center, Gerard Development Company, Santa Barbara, California. Served as environmental and land use project manager for entitlement and permitting of an automotive-oriented commercial center, including fast lube, detailing, automobile service, and auto parts retailer.

South Fairview Mixed-Use Center, Gerard Development Company, Goleta, California. Served as environmental and land use project manager for entitlement and permitting of an office, retail, and residential complex located on a former gasoline service station site; remediation of the site was a key issue in the land use permitting review and approval. The project was also the first development subject to a new growth management ordinance enacted immediately prior to land use approvals.

Toyota Facility Expansion, Toyota of Santa Barbara, Goleta, California. Served as environmental project manager for the expansion and modernization of the showroom and service facilities.

Ocean Bluffs Specific Plan EIR, City of Carpinteria, California. Managed and co-authored the EIR for a specific plan project located on 85 acres of oceanfront property in the City of Carpinteria. The proposal included a 150-room hotel, 325 semi-attached townhomes, several restaurants, and a gas station. Site constraints included an active earthquake fault, an adjacent seal rookery, limited water supply, problematic drainage, and an adjoining gas processing facility with a risk of upset hazard zone that extended onto the subject property.

Arroyo Quemada Slope Repair, Merrill/Schafer/Jones, Gaviota Area of Santa Barbara, California. Served as project manager/agent representing three oceanfront property owners to repair failure of the sea cliff from a massive landslide. Prepared applications for emergency and coastal development permits, solicited bids for structural engineering design, and solicited bids for contractors (for caissons, retaining wall, and earthwork).

Emerald Hills EIR, County of San Luis Obispo, California. Managed and co-authored the EIR for this residential proposal located outside of the urban limit line of the City of San Luis Obispo. Under the proposal, 37 homes were to be sited on the 56-acre property. The site is located in an area of high scenic value, on gently to moderately sloping land in the foothills of the Irish Hills of San Luis Obispo County. Key issues in the EIR included geology, water supply (proposed from a localized, fractured bedrock aquifer), wastewater disposal (private wastewater treatment plant), biology, aesthetics, traffic, drainage, and air quality.

Los Robles Del Mar Specific Plan EIR, County of San Luis Obispo, California. Co-authored the EIR for this project, which included a range of residential lots and structures, as well as a private school site. Key sections authored in the EIR included geology, surface drainage, water quality, and air quality.

Education

Physical Sciences Building Mitigated Negative Declaration/Initial Study (MND/IS), University of California, Santa Barbara, California. Served as CEQA coordinator for the proposed physical sciences building and subsequent north and south physical sciences buildings (proposal was redesigned following initial environmental review). Responsible for preparing the IS and MND documents, noticing of the project, and acting as environmental hearing officer.

Isla Vista Elementary School MND/IS, Goleta Union School District, Goleta, California. Served as CEQA coordinator for the redevelopment of the Isla Vista Elementary School. Responsible for preparing the IS and MND documents, noticing of the project, and acting as environmental hearing officer.

Dos Pueblos High School Master Improvement Plan MND/IS, Santa Barbara School and High School District, Santa Barbara, California. Served as CEQA coordinator for the environmental review of the comprehensive master improvement plan for Dos Pueblos High School that included stadium completion (visitor bleachers, permanent public address system, night-lighting), a new performing arts center (300-seat theater, dressing rooms, two music instruction classrooms, theater set production area), and the replacement of the swimming pool. Also included in the improvement project is a creek restoration effort in response to a U.S. Army Corps of Engineers (ACOE) violation notice for non-permitted fill activities. As project manager, was responsible for preparing the IS and MND documents, noticing of the project, and management of technical subcontractors. The Dudek biology group provided assessment of project and historic creek impacts, devised the mitigation program, prepared construction specifications for the creek restoration, and will monitor the implementation of the creek restoration effort.

Santa Barbara Community Academy Elementary School, Santa Barbara School and High School District, Santa Barbara, California. Served as CEQA coordinator for the phased expansion/completion of the Santa Barbara Community Academy Elementary School. The project involves relocation of the Santa Barbara School and High School District administration function from the site and conversion of that structure for additional classroom space. The Santa Barbara School and High School District maintenance facility would be relocated in Phase 4 of the project to accommodate development of an auditorium. Currently preparing the IS and MND documents. The environmental review process is temporarily suspended to allow completion of a preliminary endangerment assessment (PEA) for the site.

Municipal

Household Hazardous Wastes Collection Center EIR, City of Santa Barbara, California. Managed and co-authored the EIR. The scope included air quality (toxic hot spots), risk of upset, traffic and circulation, and noise.

Chicago Grade Landfill Solid Waste Transfer Station, Chicago Grade Landfill, Templeton, California. Served as environmental project manager for a solid waste transfer station proposal in northern Santa Barbara County designed for the consolidation and transfer of solid waste to the Chicago Grade Landfill in San Luis Obispo County. Responsibilities included preparation of land use development permit applications, creation of the expanded project description, and completion of individual studies in the areas of air quality, visual resources, traffic, and hazardous wastes. Also involved interjurisdictional coordination between City of Santa Maria, County of Santa Barbara, and County of San Luis Obispo. Project was approved in 1998.

Chicago Grade Landfill Expansion, Chicago Grade Landfill, Templeton, California. Served as environmental project manager for expansion of the boundary for this permitted Class III landfill, a private facility.

Transportation

Metropolitan Transit District's (MTD's) Relocation/Consolidation, MTD, Santa Barbara, California. Served as CEQA coordinator for MTD's relocation/consolidation project in Santa Barbara. Was responsible for creating their guidelines for implementing CEQA, CEQA users' guide, and all CEQA and NEPA documents for their proposed projects.

Las Vegas/San Pedro Creeks Capacity Improvements Project, Caltrans, City of Santa Barbara, Santa Barbara County Flood Control District, and City of Goleta, California. Served as principal in charge for the preparation of CEQA/NEPA environmental review documentation for this joint partnership between Caltrans District 5, City of Santa Barbara, City of Goleta, and the Santa Barbara County Flood Control District, to develop flood control improvements for these two creeks within the U.S. 101 corridor, Union Pacific Railroad (UPRR) rail corridor, and local streets.

U.S. 101 High-Occupancy Vehicle (HOV) Lane Santa Barbara/Ventura Corridor Project; Linden Avenue and Casitas Pass Road U.S. 101 Overcrossings Replacement Project; and U.S. 101 South Coast HOV Project, City of Carpinteria, California. Served as City of Carpinteria's representative on the Caltrans Project Development Team (PDT), representing the City as a project partner in the planning and implementation of the portions of these three U.S. Highway 101 widening projects located partially or wholly within the City of Carpinteria.

Circulation Element Update EIR, City of Solvang, California. Managed and co-authored the EIR. The scope was limited to transportation and air quality issues. The EIR provided a full assessment of two alternative bypass routes to Solvang to relieve congestion on Highway 246 through the city. The air quality assessment included a full caline evaluation to address the potential for carbon monoxide "hot spot" formation.

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Michael Metts, PE – Recycled Water Study Task Manager

Michael Metts is a principal engineer at Dudek, having worked as a professional engineer throughout the southwestern United States for the past 28 years, 17 of them in California. His engineering responsibilities include project engineering and management, consisting of systems analysis; computer modeling; planning; and design of water, wastewater, and reclaimed water facilities. Mr. Metts' project experience encompasses the evaluation and expansion of existing facilities as well as the design of new facilities.

As task manager, Mr. Metts focuses on open lines of communication between internal team members, as well as between the Dudek team and the district. He will facilitate and lead all project meetings to ensure that the team is remaining on schedule, staying within scope, and maintaining the agreed-upon project fee.

PROJECT EXPERIENCE

Northern Service Area Reclaimed Water Distribution System Master Plan, San Diego and Poway, California. Project manager and lead engineer for the planning and design of reclaimed water distribution facilities that serve agricultural, industrial, and recreational reclaimed water markets in northern San Diego and Poway. Elements of the project included reclaimed water market assessment, development of a comprehensive reclaimed water distribution system using a hydraulic analysis program, and development of the operational and phasing considerations for project implementation.

San Pasqual Wastewater Management and Water Reclamation Facilities Plan, San Pasqual, California. Senior project engineer for evaluation and layout of reclaimed water distribution system alternatives in the San Pasqual Valley of northern San Diego County, including hydraulic modeling and analysis, recommendation of the preferred system, and development of phasing and implementation recommendations.

San Luis Obispo Water Reuse Master Plan, San Luis Obispo, California. Dudek prepared a water reuse master plan for the City of San Luis Obispo. The objective was to identify prospective recycled water users throughout the city and to develop distribution system improvements to efficiently deliver up to 600 AFY. Project involved a parcel-based analysis of water consumption data, irrigated areas, and demand patterns for all water connections, using GIS applications.

Las Virgenes MWD Recycled Water Pipeline Design, Las Virgenes, California. Dudek assisted the District with doubling the capacity of its recycled water system by constructing a 9,000-foot, 24-inch pipeline to complement an existing 18-inch pipeline. This project allowed the District to route excess recycled water to various irrigation locations within its service area. Project challenges included impenetrable volcanic rock in the pipeline alignment, the alignment ran a heavily-trafficked route and crossed through a state park.

EDUCATION

University of Kentucky
BS, Civil Engineering, 1983

CERTIFICATIONS

Professional Civil Engineer CA No.
42586

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers
American Water Works Association
California Water Environment Association
Water Environment Federation
National Society of Professional Engineers
American Public Works Association

Yucaipa Valley Water District Water, Wastewater, and Reclaimed Water Master Plan Updates, Yucaipa, California. Mr. Metts managed the efforts to develop the system mapping and modeling analyses for existing and projected water, wastewater, and reclaimed water infrastructure. GIS-based mapping and modeling techniques were used to identify the existing parcel base and facilities. This information was then used for hydraulic models to prepare simulations of each system.

North Poway Reclaimed Water Distribution System Master Plan, Poway, California. Senior project engineer for the hydraulic model development and analysis of reclaimed water distribution servicing the northern portion of the City of Poway. This included alignment determination and sizing and location of pump stations and reservoirs, recommendation of the preferred distribution system, and development of implementation recommendations.

Lee Lake Water District Water, Wastewater, and Non-Potable Water Model Updates, Corona, California. Mr. Metts prepared hydraulic model updates for the Lee Lake Water District's water, wastewater, and non-potable water systems. The updates were made to provide Lee Lake with information on how to provide non-potable water for use in construction and irrigation.

Local Projects Program Survey, Metropolitan Water District of Southern California, San Diego County, California. Senior project engineer for the survey of all existing reclaimed water projects not included in the Local Projects Program (LPP). The information was used to determine LPP eligibility. Similar information was gathered for projects included at the program's inception to document participation and specific details of those projects.

Valley Sanitary District Master Plan and GIS, Indio, California. Mr. Metts served as principal-in-charge for the development of Valley Sanitary District's sewer GIS, hydraulic model, sewer master plan, and capital improvement program.

Carpinteria Sanitary District Master Plan and GIS, Carpinteria, California. This master plan included a GIS-based mapping system with functional links to their maintenance management system (MMS) and the internal billing database. The project also included development of a hydraulic model used to analyze system hydraulics for current and future flow conditions and to identify remedial system improvements. The recommended capital improvements were summarized in a comprehensive collection system capital improvement plan that incorporates rehabilitation projects previously identified in a system-wide condition assessment project, also completed by Dudek. All findings and recommendations were presented in a wastewater collection system master plan document.

Yucaipa Valley Water District Phase I Non-Potable Water Distribution System, Yucaipa, California. Mr. Metts was the project manager for Phase I of the Yucaipa Valley Water District's Non-Potable Water Distribution System. Engineering services included preparing of a preliminary design report, completing final design documents, and subsequent construction services. The project focuses on the physical facilities needed for transport and delivery of both raw and recycled water to recycled water customers, as well as a proposed wetlands habitat. The project includes definition of facilities for environmental review and construction within jurisdictional timelines. Phase IA has recently completed construction and included 3,600 linear feet of 24-inch pipeline and 5,700 linear feet of 12-inch pipeline. Phase IB consists of 12-inch and 24-inch ductile iron pipe and appurtenances.

Ramona Municipal Water District Waterline Replacement and Looping Project, Ramona, California. Project engineer for design and construction of approximately 16,000 linear feet of water line replacement and looping extensions within the older portions of the Ramona Municipal Water District's service area. Project included identification and location of system facilities, replacement of multiple waterline facilities while maintaining service and fire water availability, and design of looping installation to increase reliability.

Reclaimed Water Distribution System, Mesa, Arizona. Project engineer for the development of a 20 mgd reclaimed water distribution system, including pumping facilities, distribution piping, and operational storage reservoirs. Additionally, underground storage and recovery facilities were sited and designed into the system.

Lee Lake WWTP Reclaimed Water Facilities Expansion, Corona, California. Mr. Metts was the principal-in-charge for the preliminary design, final plans, and specifications. Engineering services were provided for a 0.68 mgd expansion to the existing water reclamation facility. The design included new facilities for sequencing batch reactors, influent pumping, chlorine disinfection, sludge digestion, sludge dewatering, flow equalization pumping/storage, and reclaimed water pumping.

San Elijo Joint Powers Authority Water Reclamation Facility. Mr. Metts provided design services for the design of a 2.2 mgd reclaimed water treatment facility and distribution system. The designs included 80,000 feet of up to 24-inch-diameter PVC distribution piping, five pump stations, and two storage tanks. Multi-agency coordination was a critical success factor for this project.

Northeast Water Reclamation Plant, Mesa, Arizona. Senior project engineer for the conceptual and preliminary design of a 16 mgd water reclamation facility including on-site underground storage and recovery facilities. Additional facilities included VOC/odor-control facilities and an on-site effluent distribution system pumping station.

Los Angeles/Glendale Water Reclamation Plant Expansion, Los Angeles, California. Senior project engineer for expansion of the existing 20 mgd plant to 50 mgd average daily treatment capacity. Responsibilities included design of preliminary, primary, secondary, tertiary, and VOC/odor-control facilities. Additional planning was conducted for further expansion of the facility to 100 mgd capacity, including solids-handling facilities.

Scottsdale Water Campus Water Reclamation Plant, Scottsdale, Arizona. Senior project engineer for the conceptual and preliminary design phases of a planned 40 mgd water reclamation plant. Project components included design of preliminary treatment and VOC/odor-control facilities. Additional project components included advanced water treatment, underground storage and recovery, and indirect potable water reuse.

Awards

- APWA Outstanding Service in the Private Sector (2000)
- APWA Project of the Year – Salt Creek Gravity Sewer Interceptor (2005)

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Nicole Peacock, PE, PG, REA – Environmental Engineer/Geologist

Nicole Peacock has over 12 years' environmental engineering and geology experience and has performed numerous tasks dealing with hazardous waste investigation and remediation projects. Responsibilities include soil, soil vapor, and groundwater investigation; remediation projects; phase I and II site assessments; preparation of groundwater monitoring reports and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA) documents; landfill monitoring; and community relations.

PROJECT EXPERIENCE

Environmental Assessments

Del Mar School No. 8, Del Mar Unified School District, Del Mar, California. Evaluated hazardous materials information, including potential methane production from fill soil at the proposed Elementary School No. 8. Coordinated the grid search to determine if any sites located within 0.25 mile of the proposed school site could be expected to emit hazardous emissions.

Phase I Environmental Site Assessment (ESA), Palm Springs Unified School District, Desert Hot Springs, California. Performed a Phase I ESA for the Palm Springs Unified School District in 2006. Research was conducted to identify oil and gas transmission pipelines that may have been on or near the undeveloped subject property. Based on the research conducted, Dudek recommended no further investigation for the subject property.

Phase I ESA, San Marcos Unified School District, San Marcos, California. Performed a Phase I ESA for the San Marcos Unified School District in November 2003. The undeveloped subject property was surrounded by residential and agricultural sites. Dudek observed potential asbestos-containing material on the site and recommended testing and proper off-site material disposal. Dudek discussed potential issues with the Department of Toxic Substances Control (DTSC) prior to submittal of the Phase I report.

Phase I ESAs and Preliminary Environmental Assessments (PEAs), Sweetwater Union High School District, Chula Vista and National City, California. Performed Phase I ESAs for Chula Vista High School and Hilltop High School for the Sweetwater Union High School District. PEAs were required for both sites due to nearby former underground storage tanks (USTs). Dudek negotiated with DTSC to limit the PEA investigation area to the area of new construction on the school sites in order to meet tight construction deadlines. DTSC approved the PEAs.

Phase I and II ESAs, Agricultural Properties, Indio and Coachella, California. Performed four Phase I and II ESAs for agricultural properties in Indio and Coachella, California. Dudek collected soil samples from the agricultural fields and storage areas. Additionally, Dudek collected samples around former USTs. Based on comparison of the sample results to the Environmental Protection Agency preliminary remediation goals for the residential scenario, Dudek recommended no further investigation of the sites.

EDUCATION

University of California, Los Angeles
BS, Civil and Environmental
Engineering/Geology, 1999

CERTIFICATIONS

Professional Civil Engineer
CA No. 68775 – exp. 9/30/2011
Professional Geologist
CA No. 8553 – exp. 6/30/2011
Registered Environmental Assessor No.
08272 – exp. 6/30/2011

Phase I ESAs, Undeveloped Properties, Coachella Valley, California. Performed five Phase I ESAs on undeveloped properties in Desert Hot Springs, Palm Desert, and Coachella. Dudek recommended no further investigation of four of the sites, and Dudek recommended further sampling of one of the sites due to evidence of dumping and burning.

Phase I ESA, City of Coachella, California. Performed a Phase I ESA for the City of Coachella City Yard. The city yard was used to store heavy equipment and was used as a debris storage/transfer station for the City. The site was also formerly used as a wastewater treatment plant. Based on the site observations and site history, Dudek recommended sampling to identify potential site contamination.

Phase I and II ESAs, City of Fontana, California. Performed four Phase I and II ESAs on current or former commercial or light industrial sites for the City of Fontana. Performed soil and soil gas sampling on a former gas station site, an auto body shop, a machine shop, and an RV repair facility. Reported sample results were below standards and risk levels.

San Diego Former Agricultural Land Phase I ESA, San Diego, California. Performed a Phase I ESA for a residential development company in San Diego. Aware that the site was previously used for agriculture, Dudek collected soil samples and evaluated the sampling data in the Phase I ESA. Soil samples were analyzed for chlorinated pesticides, chlorinated herbicides, and organophosphorus pesticides. These analytes were not detected in the soil samples. No additional recognized environmental conditions were noted.

San Diego Service Station Phase II ESA, San Diego, California. Performed a Phase II ESA that included soil sampling for petroleum hydrocarbons and volatile organic compounds.

El Centro Gas Station Phase II ESA, El Centro, California. Performed a Phase II investigation at a gas station site in El Centro, California. The soil and groundwater at the site were investigated. Based on evaluation of the results of groundwater sampling, Dudek recommended closure of the site. In July 2002, the Regional Water Quality Control Board (RWQCB) agreed with the recommendation for closure of the gas station.

Puebla Industrial Facility Phase I ESA, Puebla, Mexico. Performed a Phase I site assessment at an industrial facility in Puebla, Mexico. The facility manufactured sound-dampening foam products and had several material and chemical storage areas.

Site Investigation and Remediation

Newport Beach Aerospace Facility, Newport Beach, California. Performed two pilot study tests at a Newport Beach facility contaminated with chlorinated solvents; implemented in situ chemical oxidation using potassium permanganate and enhanced in situ bioremediation by injecting ethanol as an electron donor for existing bacteria.

Pump and Treat Facilities, Stockton and Newport Beach, California. Performed quarterly groundwater monitoring at chlorinated solvent and 1,4-dioxane-contaminated sites in Stockton and Newport Beach, California. These sites are undergoing containment and remediation using pump and treat technologies.

Inglewood Former Oil Field, Inglewood, California. Investigated total petroleum hydrocarbon contamination at a site in Inglewood by conducting soil sampling and research. Based on the site investigations, excavated and treated (off site) approximately 1,000 tons of contaminated soil in order to prepare the site for a transfer of ownership. The excavation was conducted under Air Quality Management District oversight.

Naval Air Station (NAS) North Island Solid Waste Management Unit (SWMU) 132 Site Investigation (SI), San Diego, California. Served as project manager for the environmental investigation of a NAS North Island site contaminated with metals including arsenic and lead. Coordinated the site investigation, conducted soil and groundwater sampling, coordinated and prepared the analytical data set for risk assessment, and completed the SI. Helped plan an interim remedial action involving removing a layer of metals debris and soil. Coordinated meetings with DTSC and the RWQCB and received regulatory buy-in for no further action following the interim remedial action.

NAS North Island SWMU 87 SI, San Diego, California. Served as project manager for the environmental investigation of a suspected former wash area at NAS North Island believed to be contaminated with pesticides. Coordinated the site investigation, including historical research and soil and groundwater sampling; coordinated and prepared the analytical data set for risk assessment; reviewed the risk assessment results and the comparison of data to water quality objectives with DTSC, RWQCB, and the client; and completed the SI report.

Soil Vapor Investigations, Azusa and Newport Beach, California. Performed soil gas sampling for facilities contaminated with chlorinated solvents in Azusa and Newport Beach, California.

Stormwater Investigations, San Diego and Corona, California. Performed stormwater sampling at two sites on NAS North Island and at a landfill in Corona, California.

Groundwater Investigations, Various Locations, California. Performed groundwater monitoring at chlorinated solvent sites in Stockton, Newport Beach, NAS North Island, and Naval Station San Diego; metals sites in Warner Springs and NAS North Island; and petroleum hydrocarbon sites in Buena Park, San Diego, and El Centro, California. Wrote several groundwater monitoring reports for these sites, evaluating groundwater flow and contaminant fate and transport, including monitored natural attenuation.

Laguna Niguel Landslide Investigation, Laguna Niguel, California. Conducted pump tests and evaluated previous water level and pump test data to evaluate the aquifer conditions that existed during a 1998 landslide in Laguna Niguel, California.

San Diego Lead Paint Sampling. Sampled potential lead paint for characterization prior to demolition. Obtained x-ray fluorescence sampling training and certification.

Landfill Studies

Palm Springs City Landfill, Palm Springs, California. Conducted inspections of the former Palm Springs City Landfill. Observed the landfill remediation to identify any deviations from the Remedial Action Plan approved by DTSC.

Corona Inert Landfill Investigation, Corona, California. Conducted soil, fill material, and surface water sampling in Corona, California, to characterize landfill material prior to excavation and relocation of the material for redevelopment.

Coachella Landfill Closure, Coachella, California. Produced a closure and maintenance report for a former landfill in Coachella, California, which included a plan for landfill inspections, monitoring, and maintenance.

Landfill Post-Closure Maintenance, San Diego and Warner Springs, California. Served as a project manager on landfill monitoring and post-closure maintenance sites on NAS North Island and Survival, Evasion, Resistance and Escape (SERE) Camp in Warner Springs, California. Performed groundwater sampling and water quality evaluation. Updated the post-closure maintenance plan and wrote an annual post-closure maintenance report for each site.

NAS North Island Methane Monitoring, San Diego, California. Performed methane monitoring at a landfill monitoring site on NAS North Island. Coordinated installation of a methane detection system and calibrated it.

Regulatory Compliance

RCRA/CERCLA Documents, Various Locations, California. Produced documents for several different sites on NAS North Island, Port Hueneme, and in the Cities of San Diego, Stockton, and Corona, California, including site investigation; remedial investigation work plan; feasibility study, including RCRA and CERCLA Applicable or Relevant and Appropriate Requirements (ARAR); 5-year review; proposed plan fact sheet; record of decision; interim measures assessment/current conditions report; site management plan; post-closure maintenance plan; and corrective action plan.

Audits, Stockton, California. Performed an internal audit of groundwater monitoring activities at two sites in Stockton based on compliance with the RCRA permit, RWQCB Waste Discharge Requirements, and sampling guidance.

Community Relations

Fact Sheet, San Diego, California. Prepared a fact sheet regarding soil excavation on NAS North Island and transportation through the City of Coronado, California.

Public Meetings, San Diego, California. Participated in several Restoration Advisory board meetings in the City of Coronado. Presented status updates on several NAS North Island remediation and investigation activities to the community.

Information Repository, San Diego, California. Provided oversight for maintenance of the NAS North Island information repository.



DENNIS C. SHALLENBERGER

President, Chief Geotechnical Engineer

Dennis Shallenberger has over 30 years of professional experience in the geotechnical field, ranging from field and laboratory work to project management. As President and Chief Geotechnical Engineer of Earth Systems Pacific, Mr. Shallenberger is responsible for the overall management of our San Luis Obispo, Santa Maria, Hollister, Salinas, and Paso Robles offices, and oversees the engineering and testing departments, ensuring that high standards of accuracy and quality are consistently met.

HIGHLIGHTS OF RESPONSIBILITIES

- Oversees production of soils engineering reports that include evaluation of foundation types and design criteria, criteria for improvements including slabs-on-grade, retaining walls and pavement, and grading criteria including stability of slopes and fills.
- Provides value engineering of alternative foundations and site development methods, and consultation and forensic evaluation of distressed foundations.
- Reviews and updates internal technical procedures for drilling, sampling, and analysis, and ensures timely completion of projects.
- Since 1979, has performed materials testing and special inspection of concrete and masonry construction, driven pile and caisson foundation installation inspection, and drilling and sampling for soils engineering investigations.

REGISTRATIONS AND CERTIFICATIONS

Registered Professional Engineer (Geotechnical), State of California, (No. 2158)

Registered Professional Engineer (Civil), State of California, (No. 39909)

Registered Professional Engineer (Civil), State of Nevada, (No. 9851)

ICC Certified Special Inspector: Reinforced Concrete (No. 0825868-88)

Licensed Nuclear Gauge Operator

Hazardous Waste Operations and Emergency Response, 40-hour and 8-hour refresher courses (OSHA 29 CFR 1910.120 and Title 8, CCR 5192)

PROFESSIONAL BACKGROUND

2008 to Present	President, Chief Geotechnical Engineer	Earth Systems Pacific San Luis Obispo, CA
1999 to 2008	Sr. Vice President, Chief Geotechnical Engineer	Earth Systems Pacific San Luis Obispo, CA
1984 to 1999	Vice President, Chief Geotechnical Engineer	Earth Systems Consultants Northern California
1987 to 2008	Instructor, Sr.-Level Classes in Foundation Engineering	Architectural Engineering Department California Polytechnic State University
1983 to 1984	Civil Engineer	U.S. Army Corps of Engineers Los Angeles District
1979 to 1980	Staff Engineer	Central Coast Laboratories San Luis Obispo, CA

EDUCATION

California State University, Long Beach, California
M.S., Civil Engineering, Specialization: Geotechnical Engineering
University of Montana, Missoula, Montana
B.A., Geology

PROFESSIONAL AFFILIATIONS

Member — American Society of Civil Engineers
(Former President, San Luis Obispo Branch and Former Director, Los Angeles Section)
Fellow — Institute for the Advancement of Engineering
Corporate Representative — ASFE (Formerly American Society of Foundation Engineers)
Division of the State Architect — Former Advisory Board Member, Inspection and Testing Committee
Member, Former Chair and Vice Chair
Former Corporate Representative — California Geotechnical Engineers Association
Member, and Vice Chair — San Luis Obispo County Hydromodification Technical Advisory Committee

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David Stone, RPA – Project Manager/ Cultural Resources Manager

Mr. Stone is a project manager with 32 year's experience in cultural resources management and 28 year's experience in environmental planning. Mr. Stone manages cultural resources (archaeology, history, and architectural history) technical studies and environmental assessments, as well as complex, interdisciplinary National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) compliance projects. He has extensive experience in environmental review and project management in a variety of issue areas, including residential, commercial, industrial, and energy development, as well as comprehensive, programmatic planning efforts. During his many years of experience managing cultural resources, including archaeological and historic resources, Mr. Stone has worked on environmental thresholds and CEQA guidelines development, planning staff report preparation, submittals to the California Coastal Commission, and decision maker hearing presentations.

EDUCATION

University of California, Santa Barbara
MA, Anthropology, 1984

University of California, Santa Barbara
BA, Anthropology, 1978

CERTIFICATIONS

Register of Professional Archaeologists
(RPA)

PROFESSIONAL AFFILIATIONS

Association of Environmental Planners

American Planning Association

Society for American Archaeology

Society for California Archaeology

California Preservation Foundation

Mr. Stone's background and experience managing cultural resources analyses and documentation includes archaeological and historic resources projects, and Native American values. He has prepared numerous studies pursuant to federal statutes pertaining to the protection of historic properties (Section 106 of the National Historic Preservation Act) and for implementation of CEQA. Several studies have addressed the California Department of Transportation (Caltrans) Section 106 review process.

Mr. Stone served for more than 9 years as Santa Barbara County (County) archaeologist and cultural resources program manager, and has a variety of field, laboratory, and management experience with cultural resources. As County archaeologist, he developed and maintained the County's Cultural Resources Thresholds of Significance and Technical guidelines, both of which have been cited as planning jurisdiction models in CEQA and by the State Historic Preservation Office. In consultation with historians and architectural historians, Mr. Stone also developed a methodology for evaluating historical significance and for determining appropriate methods of historical resource mitigation. He has worked with Native Americans and the state Native American Heritage Commission to establish guidelines for ethnic impact assessment, monitoring requirements, and consultation procedures.

Mr. Stone has prepared hundreds of cultural resource management technical reports covering initial assessment, significance determination, and mitigation phases. He has also authored and managed production of several cultural resource technical reports and provided cultural resource technical support to the City of Morro Bay, City of Goleta, and Santa Barbara County planning staff. He is listed as a qualified archaeologist by the City of San Luis Obispo.

REPRESENTATIVE PROJECT EXPERIENCE

Waterfront Improvements MND/Categorical Exclusion, City of Morro Bay Public Works Department, San Luis Obispo County, California. Included cultural resources assessment of development adjacent to Morro Rock and Waterfront.

Duke Energy Company Morro Bay Power Plant Modernization Project, City of Morro Bay, San Luis Obispo County, California. Project manager of a multidisciplinary team assisting the City of Morro Bay in reviewing an Application for Certification. Managed technical study reviews, preparation of issue papers and staff reports including cultural resources assessment, presentation to Morro Bay City Council, and presentation of public workshops and public outreach programs.

SH 41/Main Street Roundabout in Morro Bay, California Archaeological Survey Report/Historic Properties Survey Report, and Mitigated Negative Declaration. National Historic Preservation Act Section 106 Compliance technical studies and documentation for transportation improvements to this gateway intersection in Morro Bay, California.

Unocal Remediation at Avila Beach and Guadalupe Dunes Leroy Lease EIR, San Luis Obispo County. Assessment of potential impacts on prehistoric cultural resources.

Diablo Canyon Nuclear Power Plant Spent Fuel Storage EIR, San Luis Obispo County. Assessment of potential impacts on prehistoric cultural resources.

Goleta Sanitary District Wastewater Treatment Plan Secondary Treatment Upgrades. Managed Extended Phase I excavations at Chumash coastal village site that demonstrated no residual significant impacts would result from proposed facilities, supporting certification of a Mitigated Negative Declaration. Provided the District information used in Value Engineering design review that achieved \$1 million treatment plant savings.

Carpinteria Sanitary District Rincon Point Septic to Sewer Project. Phase 2 Significance Assessment Investigation at a Chumash village site provided evidence used to refine main sewer line placement, reducing environmental impacts and costs of mitigation. Contributed to the successful project CDP issuance by Santa Barbara County.

Carpinteria Sanitary District Avenue Del Mar Sewer Extension Project. Extended Phase I excavations within a developed roadway extending across the Carpinteria Slough sand bar, demonstrating that proposed construction would have no impact on unknown buried archaeological resources. Contributed to the successful project CDP issuance by Santa Barbara County.

El Capitan Bikeway and Trail, Caltrans and County of Santa Barbara Parks Department, Santa Barbara County, California. Prepared National Historic Preservation Act Section 106 Compliance technical studies and documentation for bikeway/trail project along the Gaviota Coast.

Kenneth Victorino, RPA – Senior Archaeologist

Mr. Victorino is a senior archaeologist with over 18 years' professional experience in cultural resources management and extensive experience in all aspects of fieldwork, laboratory analysis, and report preparation. He has been an author, project manager, field supervisor, and laboratory supervisor for Phase I archaeological surveys, extended Phase I testing programs, Phase 2 site significance evaluations, and Phase 3 data recovery mitigation programs. In addition, he has provided archaeological monitoring of projects at prehistoric and historic archaeological sites in coastal, foothill, and desert regions of southern and central coastal California, on San Clemente Island, and in northwestern Arizona. He has supervised cultural resources projects in accordance with state and federal regulations, such as the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act (NHPA). He contributes to environmental assessments (EAs), initial studies (ISs), environmental impact statements (EISs), environmental impact reports (EIRs), and mitigated negative declarations (MNDs). He was certified by the Register of Professional Archaeologists in 1997.

EDUCATION

California State University, Fullerton
MA, Anthropology, 1996

California State University, Fullerton
BA, Anthropology, 1991

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists

Mr. Victorino currently serves as senior archaeologist for Phase I surveys, extended Phase I programs, Phase 2 evaluations, Phase 3 data recovery programs, and archaeological monitoring projects. He prepares cultural resources management technical reports covering initial assessment, significance determination, and mitigation phases. He contributes to CEQA and NEPA documents as well as studies relating to the protection of historic properties (Section 106 of NHPA). Mr. Victorino prepares proposals and develops budgets, conducts and supervises surveys and excavations and laboratory analyses, consults with Native Americans, and writes draft and final documents.

PROJECT EXPERIENCE

Water/Wastewater

Lee Lake Sewage Lift Station, Lee Lake Water District, Western Riverside County, California. Surveyed for sewage lift station.

Lake San Marcos Sewer Pipeline, Vallecitos Water District, San Diego County, California. Surveyed for 4,300-foot sewer pipeline.

Archaeological Investigation Wastewater Treatment Upgrade Project, Goleta Sanitary District, Goleta, California. Conducted geoprobe excavations to define constraints and areas of development potential within ethno-historic Chumash village site. Supervised one crew member, geomorphologist, Native American observer, and geoprobe subcontractor during fieldwork for wastewater treatment plant upgrading.

Las Vegas/San Pedro Creeks Capacity, Santa Barbara Flood Control District, Goleta, California. Used unit excavations to identify prehistoric deposit below non-cultural overburden. Supervised one crew member and a Native American observer during fieldwork and lab analyses. Managed subcontractors for specialized analyses.

Creek Maintenance Archaeological Monitoring, Santa Barbara Flood Control District, Santa Barbara County, California. Performed archaeological monitoring during routine creek maintenance and emergency debris rack installation at numerous locations in Santa Barbara County.

Development

Skytt Property, Private Developer, Santa Barbara County, California. Surveyed approximately 173 acres of proposed building envelopes and roads for tentative parcel map.

El Capitan Canyon Campground, County of Santa Barbara, California. Surveyed proposed campground relocation area.

Kenwood Village, Private Developer, Goleta, California. Surveyed for 10-acre residential project. Due to dense grass across much of the project area, “shovel scrapes” were performed to increase ground surface visibility.

Cabrillo Business Park, Sares–Regis Group, Goleta, California. Conducted unit and backhoe trench excavations at two extensive Early Chumash village sites. Supervised four-person crew, geomorphologist, Native American observer, and backhoe operator during fieldwork and lab analyses. Managed subcontractors for specialized analyses.

Freese Property, Private Developer, Solano County, California. Surveyed approximately 100 acres prior to placement of 204,000 cubic yards of fill soil.

Happy Canyon Excavation, Happy Canyon Vineyards, Santa Ynez, California. Performed backhoe trench excavations for septic tank installation. Supervised one crew member, Native American observer, and backhoe operator during fieldwork.

151 South Fairview, City of Goleta, California. Conducted solid core geoprobe excavations to determine the horizontal and vertical distribution of prehistoric archaeological materials associated with Chumash village site. Supervised one crew member, geomorphologist, Native American observer, and geoprobe subcontractor during fieldwork for commercial project.

Education

Victor Valley Solar Farm, Victor Valley Community College District, San Bernardino County, California. Surveyed for 11-acre solar farm project.

Energy

Arroyo Grande Oil Field, Plains Exploration and Production Company, San Luis Obispo County, California. Used shovel test pit excavations to determine the presence/absence of subsurface prehistoric archaeological materials at two Chumash shell midden sites. Supervised two-person crew and Native American observer during fieldwork and lab analyses.

Transportation

5399 Dorwin Lane, County of Santa Barbara, California. Used hand-auger excavations to verify the subsurface boundary of Chumash shell midden site. Supervised one crew member and a Native American observer during fieldwork and lab analyses.

6300 Hollister Avenue, City of Goleta, California. Used shovel test pit, backhoe trench, and solid core geoprobe excavations to evaluate the presence of intact archaeological materials associated with Chumash shell midden site. Supervised three-person crew, Native American observer, backhoe operator, and geoprobe subcontractor during fieldwork and lab analyses.

Selected Clients and Cultural Resource Projects

- **Private Clients.** Managed four-person crew and Native American observer during fieldwork and laboratory analysis for Las Varas/Edwards Ranch Extended Phase I Archaeological Investigation that excavated shovel test pits (Hatch & Parent LLC); managed four-person crew and Native American observer during fieldwork and laboratory analysis for the Preserve at San Marcos Extended Phase I Archaeological Investigation that systematically excavated 20 backhoe trenches (Bermant Development Company); managed one crew member during excavation of backhoe trenches for Vintage Ranch Extended Phase I Archaeological Investigation (Martin-Farrell Homes, Inc.); managed two-person crew and Native American observer during fieldwork and laboratory analysis for Santa Barbara Botanic Garden/Southerly Garden Area Extended Phase I Archaeological Investigation that systematically excavated 19 backhoe trenches and 8 shovel test pits (Santa Barbara Botanic Garden); managed two-person crew and Native American observer during archaeological construction monitoring that recovered large quantities of ground stone artifacts at El Capitan Canyon Campground (El Capitan Canyon LLC); managed one crew member and a Native American observer during archaeological monitoring for the Ali D'Oro Residential Project (Comstock Homes).
- **U.S. Navy.** Prepared the cultural resources section for an EIS to evaluate various basing alternatives related to the introduction of MV-22 aircraft; assisted with the management of National Register eligibility evaluations of prehistoric sites CA-SDI-10007 and CA-SDI-14502 in the Papa Three Training Area of Marine Corps Base Camp Pendleton, in compliance with Section 106 of the NHPA; managed five-person crew during National Register of Historic Places eligibility evaluations of sites CA-SBR-9067 and CA-SBR-9573 in the Noble Pass Training Area and sites CA-SBR-8965, CA-SBR-9003, CA-SBR-9005, CA-SBR-9006, CA-SBR-9007, and CA-SBR-9010 in the Sand Hill and Gypsum Ridge Training Areas of Marine Corps Air Ground Combat Center Twentynine Palms; directed eight-person crew during archaeological survey of approximately 1,500 acres for Marine Corps Air Ground Combat Center Twentynine Palms for the Assault Breacher Vehicle; assisted in preparation of condition assessment, site monitoring, and treatment plan for Marine Corps Base Camp Pendleton; conducted Phase I survey and impact assessment for the Base Realignment and Closure Palos Verdes and San Pedro Housing.
- **U.S. Forest Service, Santa Barbara Ranger District, Los Padres National Forest.** Supervised four-person crew and Native American observer during subsurface archaeological investigation to assist forest archaeologist in determining the significance and National Register of Historic Places eligibility of FS 54-643 for the First River Crossing Project; directed Emergency Relief-Federally Owned road surveys.
- **Federal Highway Administration.** Conducted Phase I archaeological investigation along California Forest Highway 119/Quincy-Oroville Road and California Forest Highway 177/Beckwourth-Clover Valley Road, in Plumas County; conducted Phase I archaeological investigation along California Forest Highway 95/Mount Pinos Road, in Ventura and Kern Counties.
- **California Public Utilities Commission.** Served as cultural resource and environmental monitor for Metromedia Fiber Network Services in Los Angeles and Orange Counties; assisted with numerous tasks, including developing and preparing monitoring programs, editing and reviewing documents, purchasing equipment, and scheduling field personnel.

- **County of Santa Barbara.** Managed four-person crew during 232-acre survey that implemented “shovel scrapes” to increase ground surface visibility and identified four prehistoric temporary camps/special activity areas associated with stone tool manufacturing for the proposed North County jail site; managed four-person crew and Native American observer during archaeological monitoring and Phase 3 data recovery that collected approximately 850 ground stone artifacts at CA-SBA-16 for the QAD Ortega Hill Campus Development; conducted archaeological monitoring for the Franciscan Sediment Basin; directed Phase 3 data recovery at CA-SBA-1539 for the General Services Building.
- **City of Santa Barbara.** Conducted Phase I survey for the Arroyo Burro and Mission Creeks Stream Bank Stabilization Project for the Parks and Recreation Department; supervised extended Phase I testing involving backhoe trenching for the Lot 6 Parking Structure; conducted archaeological monitoring for various sidewalk improvement projects for the Public Works Department.
- **Carpinteria Sanitation District.** Managed six-person crew and Native American observer during extended Phase I backhoe trenching and Phase 2 evaluations at CA-VEN-62, the Chumash Village of *Shuku*, for the Beach Communities Septic to Sewer Project.
- **Castaic Lake Water Agency.** Prepared the cultural resource section addressing historic, archaeological, and paleontological resources for both the Rio Vista Water Treatment Plant Expansion IS and the Honby Pipeline IS.
- **Marine Research Specialists.** Prepared the cultural resource section addressing historic and archaeological resources for both the Venoco Ellwood Marine Terminal Lease Renewal Project EIR and the Venoco Ellwood Oil Development and Pipeline Project EIR.
- **Global West Network.** Served as cultural resource monitor in San Luis Obispo and Santa Barbara counties; assisted with preparation of the cultural resource monitoring plan for the Global West Fiber Optic Cable Project, reviewed by the California State Lands Commission; conducted Phase I survey and extended Phase I testing.
- In addition, prepared the cultural resource section for numerous EIRs, including Carpinteria Salt Marsh Enhancement Plan, Simi Valley Landfill and Recycling Center, Wye Specific Plan, and Diablo Canyon Spent Fuel Storage. Has also assisted biologists with California grunion surveys for the West Beach Dredging Project, for the Santa Barbara Waterfront Department, and with revegetation monitoring that entailed counting, measuring, and rating condition/health of coast live, blue, and valley oaks for the State Water Project (Central Coast Water Authority).

APPENDIX B

Subconsultant Proposal



March 25, 2011

Ms. April Winecki
DUDEK
621 Chapala Street
Santa Barbara, CA 93101

PROJECT: CITY OF MORRO BAY/CAYUCOS SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADE

SUBJECT: Proposal for Evaluation of Alternate Sites, Tsunami and Shoreline
Erosion Risks

REF: Request for Qualifications, City of Morro Bay/Cayucos Sanitary
District, Wastewater Treatment Plant Upgrade, California Coastal
Commission Appeal, Analysis of Substantial Issues

Dear Ms. Winecki:

In accordance with your request, this proposal has been prepared to provide geotechnical and geologic evaluation related to the proposed upgrade of the Morro Bay Wastewater Treatment Plant (WWTP). We understand that the project was determined by the California Coastal Commission (CCC) to have "substantial issues." In the CCC staff report, it was alleged that the project was in an inappropriate location due in part to risks associated with tsunamis and shoreline erosion. In an appeal letter to the EIR, several other sites were suggested as potential alternatives to the existing WWTP site.

The City of Morro Bay/Cayucos Sanitary District has requested that the issues raised in the staff report and appeal be addressed in two phases. Phase 1 will include the development of a list of a maximum of ten alternate sites, which are to be "rough screened" with respect to suitability for construction of the proposed WWTP. Based upon the results of the rough screening, including input from public workshops, three of the sites will be selected for further, more detailed evaluation. We understand that the existing WWTP site will be one of the three sites to be considered.



SCOPE OF SERVICES

Per the Request for Proposal, our geologic assessment will be provided in two phases.

Phase 1.

Project Approach

The first phase will consist of an assessment of a maximum of ten potential alternate sites from a geologic/geotechnical perspective. Each of the proposed alternate sites will be visually assessed to provide a qualitative evaluation of the geologic and geotechnical characteristics of the site, focusing upon identification of those characteristics that could constitute a constraint to the proposed use of the land for a wastewater treatment plant. Information will be presented regarding general site characteristics and issues of potential concern. The objective of the assessments will be to provide a framework for selection of the three most suitable sites, from a geologic/geotechnical standpoint. The tasks envisioned for Phase 1 will include a review of existing published geologic maps, aerial photographs, and available geologic literature pertaining to the geologic units on the site. Potential hazards related to faulting, liquefaction, landslide, tsunami and other geologic/geotechnical hazards will be identified based upon document research. A site reconnaissance will be performed by a Registered Geotechnical Engineer and a Certified Engineering Geologist.

Following review of the initial findings and input from public workshops, we understand that the ten initial sites will be narrowed to three sites that will be assessed in greater detail. As we understand that one of the three sites slated for further consideration will be the existing WWTP site, for which considerable geologic and geotechnical data are already available, we propose to conduct more detailed investigation only of the two other alternate sites. Our scope of work will consist of subsurface exploration, limited laboratory analysis, and geologic/geotechnical assessment of the data.

Deliverables

A report will be prepared that will discuss the geologic/geotechnical characteristics of each of the ten initial sites. The intent of the report will be to provide a "broad-brush" overview of the ten sites. Items to be addressed will include a site description, the geologic units underlying the site, and geologic/geotechnical hazards such as faulting, potential for liquefactions, landslides, and other geologic/geotechnical constraints that could affect the proposed project. Conclusions will be drawn regarding geologic/geotechnical suitability, and what additional investigation would be necessary to further define or identify potential hazards.

For the two sites for which subsurface exploration and additional evaluation are performed, a geotechnical/geologic report will be prepared that will summarize the field work and laboratory testing program, the subsurface conditions encountered, and provide more detailed discussion of the geotechnical/geologic issues at the site, and their anticipated impact upon the project. Issues may include but are not limited to liquefaction potential, tsunami risk, shoreline erosion, landslides, settlement issues, expansive soils, and subsurface water. The report will discuss, in general terms, potential mitigation measures that may be implemented to reduce risks. Recommendations for further studies will be made as applicable.



Phase 2.

Project Approach

During Phase 2, we will provide analysis of the substantial geologic issues, as identified the CCC staff report, of the site currently proposed for the WWTP. This will include a comprehensive coastal hazards study, taking into consideration expected shoreline erosion over the life of the project and incorporating anticipated impacts related to global climate change and projected rises in sea level. The study will include the elevation and inland extent of storm surge and flooding that might occur over the expected life of the project, including interactions and combinations of hazardous conditions such as high tides and storm surges. Factors to be considered will include an eroded beach, a 100-year storm event (or the equivalent of the 1982/1983 El Nino event), an extreme high tide, and the projected 100-year rise in sea level based upon both optimistic and conservative theories.

Deliverables

A written report will be prepared. All assumptions and methodologies will be clearly described and documented in the report, and the threshold at which the WWTP would be in danger from flooding or erosion will be identified. Any shoreline protection or other project modifications that would be necessary to protect the WWTP will be discussed. The potential for damage due to tsunamis and a 100-year storm event, and strategies to minimize risks associated with these occurrences will be addressed.

Additional Services. We will be available to provide consultation as necessary for public workshops and meetings. We understand that our staff may be requested attend two public workshops, two meetings with CCC staff, and two CCC hearings to be held in Santa Cruz, California.

Fees and unit rates for our services are attached.

FIRM PROFILE

Earth Systems Pacific offers a full spectrum of preconstruction and construction-related services designed to aid the development process. We are part of the Earth Systems group of companies, which has been operating in California since 1969. With offices throughout California, the Earth Systems companies are consistently named in Engineering News Record as being among the top 500 engineering/design firms in the nation.

Earth Systems Pacific encompasses the Santa Maria, San Luis Obispo, Milpitas, Hollister and Salinas offices of Earth Systems. This project would be managed by our San Luis Obispo office, with Richard Gorman, PG, CEG, as project manager. Our staff consists of registered geotechnical engineers, professional civil engineers, certified engineering geologists, environmental geologists, and field/laboratory personnel. Each member of our senior engineering and geology staff has over 25 years of experience. Our environmental division can provide environmental assessment for projects where soil or groundwater contamination is suspected. Our materials testing laboratory participates in the Caltrans Transportation Materials and Research Correlation Testing Program (RSP), the AASHTO Materials Reference Laboratory



(AMRL) testing program, and the Cement and Concrete Reference Laboratory (CCRL). In addition, our laboratory is certified by the Division of the State Architect (DSA) and approved by Caltrans and the Army Corps of Engineers. To maintain these laboratory certifications, our equipment and procedures undergo rigorous annual inspection by the certifying agencies.

Our geotechnical, geologic, and environmental assessment services include the following:

- Geotechnical Engineering Investigations
- Geotechnical Feasibility Studies
- Percolation Testing
- Geology and Soil Studies for Environmental Impact Reports
- Failure Investigations of Foundations, Retaining Walls, Slopes, and Pavement
- Engineering Analysis of Settlement-Reduction Methods
- Geologic Evaluations, Slope Stability Studies, and Fault Location Studies
- Analysis of Shoreline Erosion and Wave Run-up
- Coastal Bluff Erosion Studies
- Development of Criteria for Earth Retention Structures
- Groundwater Monitoring and Sampling
- Laboratory Analysis of Soil and Groundwater Samples
- Monitoring Well Installation and Development
- Geophysical Exploration
- Liquefaction and Seismicity Studies
- Seismic Refraction/Rippability Studies
- Peer Review Services

PROJECT GEOLOGIST

Richard T. Gorman, PG, CEG. A Registered Geologist and Certified Engineering Geologist, Mr. Gorman is experienced in all phases of engineering geology from project inception, field investigation, data analysis, to final compilation and issuance of the completed report, as well as post-study consultation. Mr. Gorman is responsible for developing and conducting field investigations, document research, and report preparation. He has conducted numerous large-scale geologic investigations involving site specific studies of seismicity, geologic hazard, landslides, faults, shoreline erosion, and coastal bluff retreat. He has performed analyses of coastal erosion and wave run-up for such projects as the San Simeon Wastewater Treatment Plant, the Beachwalk Resort, and the Morro Bay to Cayucos Connector Trail. He has provided evaluation of landslides for Cal Poly, Chevron Pipeline Company, Unocal, AT&T, San Luis Coastal Unified School District, and the County of San Luis Obispo. The Route 68 realignment between Salinas and Monterey, the Chorro Valley Water Transmission Line, and the Pismo Beach Bluff Erosion Study are among his major projects. Mr. Gorman received his Bachelor of Science degree in Geology from California Polytechnic State University at Pomona. He is a member of the Association of Engineering Geologists and the Geologic Society of America.



Dennis Shallenberger, President, Chief Geotechnical Engineer. Dennis Shallenberger, PE, GE, is president of Earth Systems Pacific. A registered professional engineer in the states of California and Nevada, and a registered geotechnical engineer in California with over 30 years of experience in the geotechnical field, Mr. Shallenberger is head of the geotechnical engineering department of Earth Systems Pacific. His project experience includes a geotechnical feasibility study for the Morro Bay Wastewater Treatment Plant, geotechnical investigations for several phases of the Paso Robles Wastewater Treatment Plant, the Pismo Promenade project, and numerous studies pertaining to soil and geologic hazards for environmental impact reports. His education consists of a Bachelor's degree in Geology from the University of Montana at Missoula and a Master of Science degree in Civil Engineering with a geotechnical specialty from California State University, Long Beach. Mr. Shallenberger taught senior level courses in soil mechanics and foundation design for more than 20 years at California Polytechnic University, San Luis Obispo. He is a member of the American Society of Civil Engineers and a fellow of the Institute for Advancement of Engineering. He is a former member of the Division of the State Architect Advisory Board, and is a member of the Inspection and Testing Committee of that Board. He formerly chaired and vice-chaired that committee. Currently, he serves as co-chair on the County of San Luis Obispo's recently formed countywide Hydromodification Technical Advisory Committee, which was established to develop policies relative to such issues as on-site storm water retention. Mr. Shallenberger has been employed with the Earth Systems companies since 1984.

Full resumes of the project team are attached.

RELATED PROJECT EXPERIENCE

San Simeon Wastewater Treatment Plant Bluff Protection Alternatives, San Luis Obispo County, California. Mr. Gorman provided an analysis of various bluff protection alternatives for the San Simeon Wastewater Treatment Plant in the County of San Luis Obispo. The wastewater treatment plant lies atop an ocean bluff, adjacent to the banks of Arroyo del Padre Juan Creek, which drains onto the beach. Rock rip-rap had been placed along the ocean bluff and the creek banks in the past as emergency erosion protection; however, the rip-rap had been placed without a coastal development permit. An analysis of potential bluff protection alternatives was required to obtain a retroactive permit. Mr. Gorman reviewed geologic literature, maps, and aerial photographs and conducted an assessment of bluff retreat, taking into account the stability of the bluff and the potential for rises in sea level. He also performed a wave run-up study and analyzed sand supply. Impacts to resources, including the effects of erosion, sand supply, and public access were assessed.

Avila Beach to Harford Pier Bike/Pedestrian Path. We are currently working with the RRM Design group on this project, which will be an approximately one-mile long non-motorized bike/pedestrian path that will link Avila Beach Park in Avila Beach to Harford Pier at Port San Luis. Possible route locations include the south (ocean) side of Avila Beach Drive, the north (inland) side of Avila Beach Drive, both sides of Avila Beach Drive, or the hillside north of Avila Beach Drive. The project involves the development of three to five alternative concepts that will be submitted for the County's consideration. The south side of Avila Beach Drive is bordered by an ocean bluff that descends to Olde Port Beach. The bluff is subject to wave impact and areas are known to be in an actively retreating state. There are also areas along the



south side of the road where rock rip-rap is present along the bluff. The slopes along the north side of Avila Beach Drive are characterized by complex geologic conditions, with some areas affected by landslides and other types of instability. Consideration of the geologic/geotechnical conditions and their ramifications are considered critical in the evaluation of prospective alignments due to their potential impacts upon the feasibility, constructability, and ultimate cost of the proposed project.

Morro Bay to Cayucos Connector Trail/Bike Path, San Luis Obispo County, California. This project, which is currently in the design phase, involves the construction of a trail and bike path that will extend along Highway 1 between Morro Bay and Cayucos in San Luis Obispo, California. Two alignments are under consideration. Mr. Gorman conducted a geologic bluff study for the western alignment alternative, a one-mile segment of which traverses an ocean bluff between the highway and the Pacific Ocean. Where the bike path will cross Toro Creek, a prefabricated, wood plank bridge is planned. The issues addressed in the study included assessment of how future retreat of the ocean bluff would affect the proposed trail/bike path, stability of the bluff, and severe erosional gullies that extended from the bluff top to the beach. The site of the bridge crossing over Toro Creek was evaluated by a geotechnical engineer, and conclusions drawn with respect to appropriate foundations for the bridge abutments.

Beach Walk Resort, Pismo Beach, California. The Beach Walk Resort is a new hotel complex planned for a beachfront property in Pismo Beach, California, which was formerly the site of the Clam Digger Motel. Our scope of work consisted of a geologic report and a wave run-up analysis. Issues evaluated included scour, wave run-up, flooding, and shoreline erosion. The wave run-up analysis was performed under both an extreme storm condition scenario and a 100-year period that took into consideration future rises in sea level and future anticipated changes in the configuration of the shoreline. As part of the permitting process, the report was reviewed by the City of Pismo Beach and the California Coastal Commission.

Morro Bay-Cayucos Sanitary District Wastewater Treatment Plant Upgrade, Morro Bay, California. Earth Systems Pacific provided a geotechnical feasibility study for a proposed upgrade Morro Bay-Cayucos Sanitary District Wastewater Treatment Plant. The project, still in the planning stage, involves demolition of most of the existing plant and construction of new facilities to raise the plant above anticipated flood elevations. Our scope of work consisted of a site reconnaissance, field exploration consisting of CPT and hollow-stem auger drilling, laboratory testing, review of previous geotechnical and geologic data, and analysis of the data collected. The purpose of the study was to develop preliminary geotechnical information regarding subsurface conditions, and to identify and assess major geotechnical issues that could potentially affect the project. The report was intended to provide a framework for continued project planning and to help in the development of an appropriate scope of work for a design-level geotechnical engineering investigation.



CONDITIONS

Please note that the quoted fees do not include charges for meetings other than as indicated, plan reviews, consultation beyond the completion of the reports, report revisions to respond to comments, agency review, etc., or any other services beyond those specifically described herein. Fees for additional services available through our firm will be charged at the unit rates in effect at the time of the request for services.

For project phases involving subsurface exploration, Underground Service Alert will be contacted to locate utilities owned by the member utility companies, except in cases of rural parcels. However, responsibility for accurate location of underground utilities lies with the client or owner and Earth Systems Pacific shall not be held responsible for damage resulting from the responsible party's failure to provide such information. Borings will be backfilled with on-site material.

It is assumed that the client will arrange for right-of-entry onto properties for our personnel, as well as documents associated with the project such as topographic base maps, recent project studies, etc. It is further assumed that no permits or permit fees will apply.

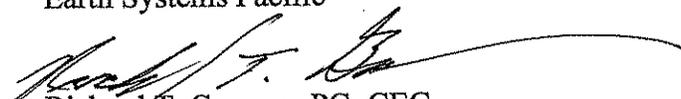
Analysis of the soil for chemical properties including hydrocarbons, geotechnical corrosivity, radioisotopes, etc.; assessment of mold potential, lead, or potential for asbestos (either naturally occurring or man-made), hydrology, estimates of material shrinkage; construction issues within the domain of contractors, and any other services not specifically noted in the preceding paragraphs are beyond the scope of the proposed services.

If the client finds the proposed scope of work, terms, and fees satisfactory, the return of the attached work order, signed and dated by the party responsible for payment, will constitute authorization for work on the project to begin. This agreement can be terminated by either party upon notification in writing. Earth Systems Pacific's responsibility for the project will end upon completion of the services described herein or termination of the agreement, unless authorization to perform additional work and agreement for payment thereof is provided by the client.

We thank you for your consideration of our firm for this project. If you have any questions or require additional information, please contact me at your convenience.

Sincerely,

Earth Systems Pacific


Richard T. Gorman, PG, CEG
Vice President

Attachments: Work Order
 Terms
 Fees
 Resumes

Doc. No.: 110-145.PRP/jr



WORK ORDER

(805) 544-3276 • FAX (805) 544-1786
E-mail: esc@earthsys.com

EARTH SYSTEMS PACIFIC ("CONSULTANT") AND CLIENT AGREE TO A WORK ASSIGNMENT FOR EARTH SYSTEMS PACIFIC AS FOLLOWS:

Date: March 25, 2011 **Doc. Number:** 1103-145.PRP

Name of Project: CITY OF MORRO BAY/CAYUCOS SANITARY DISTRICT
WASTEWATER TREATMENT PLANT UPGRADE

Order Received by: Richard T. Gorman

Client Name: DUDEK, Attn: Ms. April Winecki

Client Address: 621 Chapala Street, Santa Barbara, CA 93101

Scope of Services: Per Proposal dated March 25, 2011

Fees to be Charged: Per Proposal dated March 25, 2011*

Additional Terms Are Printed On The Second Page Of This Document.

I have read and agree to all terms of this document, including the terms for services stated on the second page.

CCGC, Inc. dba
Earth Systems Pacific

Richard T. Gorman, C.E.G.
Vice President

Date 3-25-11

AGREED TO AND ACCEPTED:
(By party responsible for payment)

Client Name (please print)

Signature and Title

Date

Telephone Number

PLEASE RETURN A SIGNED COPY TO EARTH SYSTEMS PACIFIC

IF THE CLIENT DOES NOT OWN THE PROPERTY, PLEASE FILL IN THE PROPERTY OWNER'S NAME AND ADDRESS:

Name: _____

Address: _____

* Rates are subject to change due to changes in prevailing wage law or its application. In the event that it is determined or alleged that Prevailing Wage Law applies to any additional aspect of the project, the client agrees to pay Earth Systems Pacific (Consultant) any and all additional compensation necessary to adjust Consultant's wage, to pay any penalties that may be levied against Consultant due to alleged noncompliance with the Prevailing Wage Law, and to pay for apprentices, supervision, certified payrolls, and other administrative costs as necessary to comply with Prevailing Wage Law. In the event that work thought to be subject to prevailing wage is determined not to be subject to prevailing wage, no refund of fees will be given. **January 2011 Fee Schedule**

1. **INVESTIGATION, MONITORING & INSPECTION** If the services include monitoring or inspection of soil, construction and/or materials, Client shall authorize and pay for Consultant to provide sufficient observation and professional inspection to permit Consultant to form opinions according to accepted statistical sampling methods as to whether the work has been performed in accordance with recommendations. Such opinions, while statistically valid, do not guaranty uniformity of conditions or materials. Similarly, soils and geology investigations do not guaranty uniformity of subsurface conditions. Client hereby represents and warrants that it has provided and shall provide to Consultant all information and sufficient advance notice necessary in order for Consultant to perform the appropriate level of services. No statement or action of Consultant can relieve Client's contractors of their obligation to perform their work properly. Consultant has no authority to stop the work of others.

2. **SITE ACCESS & UTILITIES** Client has sole responsibility for securing site access and locating utilities.

3. **BILLING AND PAYMENT** Client will pay Consultant the proposal amount or, if none is stated, according to the fee schedule attached to the proposal. Payment is due on presentation of invoices, and is delinquent if Consultant has not received payment within thirty (30) days from date of an invoice. Client will pay an additional charge of 1 1/2 (1.5) percent per month (or the maximum percentage allowed by law, whichever is lower) on any delinquent amount, excepting any portion of the invoiced amount that is disputed in good faith. Each payment will first be applied to accrued interest, costs and fees and then to the principal unpaid amount. All time spent and expenses incurred (including any in-house or outside attorney's fees) in connection with collection of any delinquent amount will be paid by the Client to Consultant per Consultant's current fee schedule. Services to be performed by Consultant hereunder which are not set forth in this proposal and/or Work order are additional services. Any additional services provided by Consultant shall be subject to the terms of this contract and charged per Consultant's current fee schedule.

4. **OWNERSHIP OF DOCUMENTS** Consultant owns all documents it creates and grants Client limited license to use the documents for the purposes stated in the documents. Consultant reserves the right to withhold delivery of documents to Client until payment in full of current invoices has been received.

5. **TERMINATION** This agreement may be terminated by either party effective 7 days from the date of written notice, or if the client suspends the work for three (3) months. In the event of termination, Consultant will be paid for services performed prior to the date of termination plus reasonable termination expenses. If Consultant has not received payment for any invoice within 30 days from the date of the invoice, or in the event of anticipatory breach by Client, Consultant may suspend performance of its services immediately and may terminate this contract.

6. **RISK ALLOCATION** In order for Client to obtain the benefit of a fee which includes a lesser allowance for compensating Consultant for its litigation risk, Client agrees to indemnify, hold harmless and defend Consultant, its agents, employees, or officers, from and against any and all loss, claim, expenses, including attorney's fees, injury, damages, liability or costs arising out of non-design services (i.e., services other than as defined by Civil Code Section 2784) performed by Consultant on this project, except where such loss injury, damage, liability, cost, expenses or claims are the result of the sole negligence or willful misconduct of Consultant. Regarding any loss due to the sole negligence or willful misconduct of Consultant, or any loss due to design defects, Client agrees to limit the total aggregate liability of Consultant, its agents, employees, and officers to Client, and to all construction contractors and subcontractors on the entire project, to the lesser of \$25,000.00 or total fees charged by Consultant. Client further agrees to require of the contractor and his subcontractors an identical limitation of Consultant's liability for damage suffered by the contractor or the subcontractor arising from any alleged breach or negligence of Consultant. Client agrees to provide to Consultant proof of insurance covering claims for property damage including construction defects and related personal injury on an occurrence basis in an amount of not less than \$1 million per occurrence and in the annual aggregate. You should consult with an attorney experienced in construction contracts and litigation regarding this provision.

7. **HAZARDOUS MATERIALS** Consultant is responsible only for hazardous materials brought by Consultant onto the site. Client retains ownership and responsibility in all respects for other hazardous materials and associated damage.

8. **ASSIGNS AND THIRD PARTIES** Neither the client nor Consultant may delegate, assign or transfer his duties or rights in this Agreement without the written consent of the other party. This Agreement is intended only to benefit of the parties hereto. No person who is not a signatory to this agreement shall have any rights hereunder to rely on this contract or on any of Consultant's services or reports without the express written authorization of Consultant.

9. **GOVERNING LAW, SURVIVAL AND FORUM SELECTION** The contract shall be governed by laws of the Federal Government. If any of the provisions contained in this agreement are held invalid, the enforceability of the remaining provisions will not be impaired. Limitations of liability, indemnities, representations and warranties by Client will survive termination of this agreement. The signatories represent and warrant that they are authorized by the entities on whose behalf they sign to enter into this contract and that their principals have filed fictitious business name statements, if required. All disputes between Consultant and client related to this agreement will be submitted to the court of the county where Consultant's principal place of business is located and client waives the right to remove the action to any other county or judicial jurisdiction.



HOURLY CHARGES FOR PERSONNEL

Associate Engineer/Geologist	\$145.00
Staff Engineer/Geologist	\$110.00
Field/Lab/Drafting	\$60.00

FEES

Phase 1:

Preliminary Assessment of Potential Alternate Sites (maximum of ten)	\$18,450.00
Geotechnical/Geologic Feasibility Study	\$6,500.00 per site

Phase 2:

Shoreline Erosion Study, existing WWTP Site	\$3,000.00
Tsunami and 100-Year Storm Wave Run-up Analysis	\$3,000.00

Additional Services:

Meetings, Workshops, Hearings	\$145/hr.
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BASIS OF CHARGES

1. Hourly charges are calculated in one-hour increments and time is accumulated on a portal-to portal basis.
2. Mileage is invoiced at a rate of \$0.75/mile (portal to portal).
3. Out of town travel and expenses will be charged at cost plus 15%.
4. Subcontracted services and reimbursable are charged at cost plus 15%.
5. Invoices are payable upon presentation. Invoices thirty days past due will be subject to a service charge of one and one-half percent per month.



OFFICE LOCATIONS

San Diego

605 Third Street
Encinitas, CA 92024
800.450.1818

Orange County

111 Pacifica, Suite 230
Irvine, CA 92618
949.450.2525

ONLINE

Inland Empire

1650 Spruce Street, Suite 240
Riverside, CA 92507
951.300.2100

Coachella Valley

40-004 Cook Street, Suite 4
Palm Desert, CA 92211
760.341.6660

info@dudek.com

Los Angeles

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Santa Clarita, CA 91355
661.705.3399

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805.963.0651

Dudek.com

Sacramento

980 9th Street, 16th Floor
Sacramento, CA 95814
916.443.8335

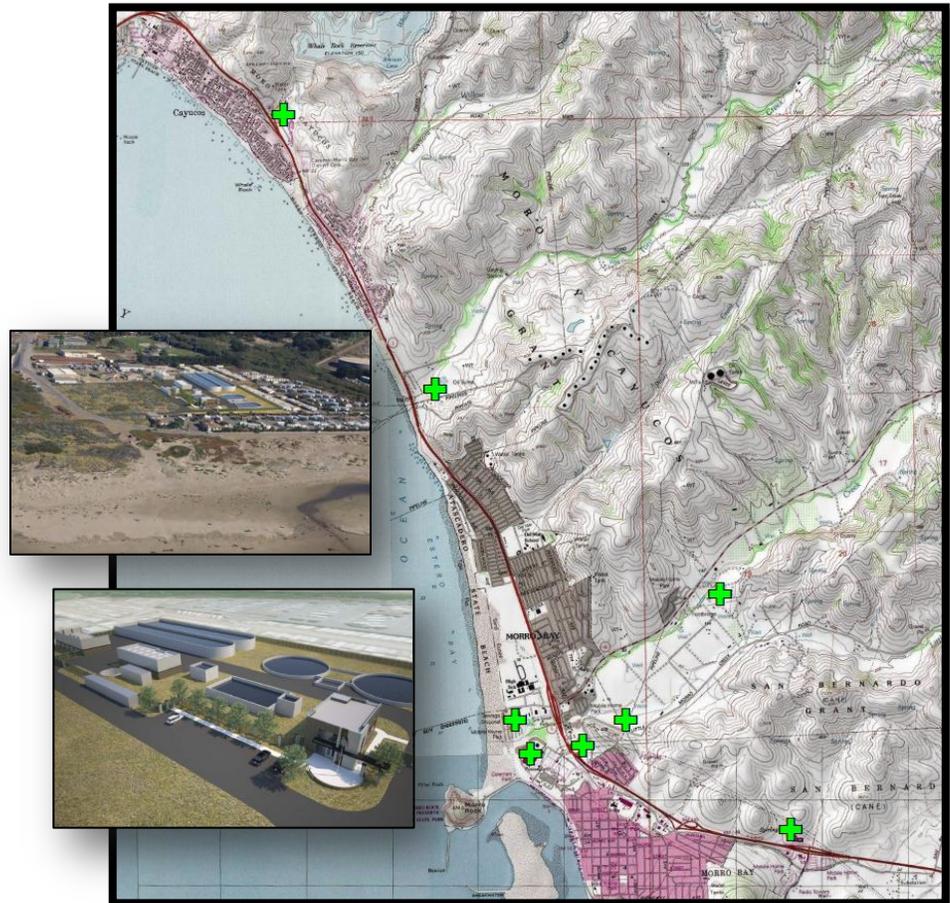
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Statement of Qualifications to Prepare

MBCSD Wastewater Treatment Plant Upgrade Project Studies



sage institute LLC

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Atascadero, CA 93422
tel: 805.434.2804
fax: 805.980.5886

www.sageii.com
sage@sageii.com

Submitted to:
Bruce Keogh, Wastewater System Division Manager
City of Morro Bay

March 31, 2011



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March 31, 2011

Bruce Keogh
Wastewater System Division Manager
City of Morro Bay
955 Shasta Avenue
Morro Bay, CA 93422

Subject: Statement of Qualifications to Prepare Studies for the MBCSD Wastewater Treatment Plant Upgrade Project to Address California Coastal Commission Concerns

Dear Mr. Keogh:

Sage Institute, Inc. is very pleased to submit this Statement of Qualifications to prepare various studies related to the Morro Bay/Cayucos Sanitary District (MBCSD) **Wastewater Treatment Plant Upgrade Project**. We have put together a team of highly skilled environmental scientists, planners, wastewater planning and design engineers, biologists, and cultural resource specialists to conduct the needed studies that will serve decision-makers and the community in general.

To augment our in-house expertise, our team includes the following highly qualified subconsultants:

- **Carollo Engineers** – Engineering and Facility Design Issues
- **Applied Earthworks, Inc.** – Cultural Resources
- **RRM Design Group** – Public Outreach and Coastal Coordination
- **Kevin Merk Associates** – Regulatory Permitting Issues
- **Robert Carr** – Visual Analysis

Throughout our careers, our staff has successfully worked with each of these subconsultants on a range of projects in the Central Coast region, particularly within the coastal zone, which will greatly enhance the efficiency of our project management effort on this assignment.

From a personal standpoint, we'd like to re-introduce ourselves. While Sage Institute may be a new name to some, the people behind the name are experienced, skilled, and know the local and coastal regulatory environment extremely well. Project Manager John Rickenbach has over 20 years of experience managing some of the most complex and controversial projects in the region, requiring a special understanding of how to engage and educate both the public and decision makers. In his career, he has prepared General Plans, complex programmatic CEQA documents, constraints studies, and conducted many public outreach programs in support of these efforts. He was the contract Planning Director for the City of Guadalupe, where creative thinking and his skills at bringing together divergent points of view were put to good use. This experience will be important in the context of the needed studies, which must convey complex technical information in a readily understandable manner.

In addition, Sage Institute Principals David Wolff and Jason Kirschenstein have an unparalleled knowledge of state and federal biological regulations and permitting requirements, and have been successfully serving clients in the Central Coast region for the majority of their careers.

Why choose Sage Institute for this assignment? We know you have many choices, but we believe the Sage team offers some very tangible advantages that would be difficult for other firms to match. While these are described in depth on page one of our Statement of Qualifications, it's worth highlighting some of them here.

- **Project Approach.** Fundamentally, we view the success of this program in our ability to communicate information effectively, and to produce that information in an efficient timeframe. While the technical information is very important, the key to success will be our planning and communication skills. These will be needed to produce the clear yet nuanced presentation of information that puts MBCSD in the best position to move forward with a project that achieves its long-term operational and water quality goals. The key to this lies in our understanding of the regulatory framework, our ability to present our findings in a transparent and open manner, and our experience in working cooperatively with all agencies to achieve a project that all parties—including the California Coastal Commission—can support.
- **Experienced Project Management.** We cannot overemphasize the importance of effective project management in addressing the most common pitfall of any project—keeping it on schedule and within budget. It's all about effective communication and project tracking, and Section 3.2 of our Statement of Qualifications goes into great detail about how we intend to manage this assignment. Based on experience, we intend to allocate a realistic number of hours to this task—about 12-15% of the overall budget—because we know this level of effort is needed to get the job done correctly. The project will be managed locally, from Sage's Atascadero office, so we will have easy access to staff and the study sites.
- **Expert Staff.** Our seasoned in-house staff also includes biologists and environmental professionals with 10 to 30 years of local experience, so we know local issues extremely well, and have the expertise to perform a broad range of analysis. Our subconsultants are also experts in their respective fields—Carollo Engineers is a highly respected firm with outstanding qualifications related wastewater facility planning and design. Applied EarthWorks has the necessary technical depth and outstanding relationships with tribal representatives—both of the Chumash and Salinan peoples. RRM Design Group has invaluable experience with public outreach programs, particularly within the Coastal Zone.
- **Cost-Effectiveness.** Because of our staff's experience and our firm's low overhead, we are able charge highly competitive bill rates for our expert services. For this assignment, our Project Manager, John Rickenbach, who is also a Principal with Sage, would charge \$120 per hour. We believe our firm provides unparalleled value when cost and experience are considered together, and make it possible for Sage to emphasize its high level expertise while staying within budget. We understand the widespread difficulties imposed by the current economic downturn, particularly to public agencies. As one of the few locally-based environmental planning consulting firms, we believe it is in the interest of both the MBCSD and our long-term practice to price our effort affordably but realistically to address these challenging times.

We are excited about this project, for many reasons. Frankly, local projects are where we want to focus our future business, and that all starts with building on our existing professional relationships with staff and the greater community whose input is crucial to a successful planning process. We want to do a great job for you, and based on our experience, we are extremely confident of leading a process that all parties—MBCSD, Coastal Commission, and community in general—can feel was fair and thorough.

If you have questions about our Statement of Qualifications, please feel free to contact John Rickenbach at 434-2804, or at john@sageii.com.

Sincerely,
SAGE INSTITUTE, INC.



John Rickenbach, AICP
Principal-in-Charge

Statement of Qualifications to Prepare Studies for the MBCSD Wastewater Treatment Plant Upgrade Project

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Fee Schedules, Resumes, and Supporting Materials

1.0 INTRODUCTION

Sage Institute, Inc. (Sage) is pleased to submit this Statement of Qualifications (SOQ) in response to the City of Morro Bay and Cayucos Sanitary District's (MBCSD's) Request for Qualifications (RFQ) to prepare various environmental studies related to the Wastewater Treatment Plant Upgrade Project. We welcome the opportunity, and look forward to the challenge of completing this important assignment.

Our SOQ includes a preliminary scope of work and cost, as requested by MBCSD staff. These will be found in Sections 3.0 and 4.0 of this document. This conceptual scope was developed based on our understanding the nature of the required tasks and goals associated this assignment, as described in Section 2.0 of the SOQ. The qualifications of our firm, various subcontractors, and key staff are found in Section 5.0. Our firm's professional references are included at the end of section 5.0.

Why Choose Sage Institute?

Sage provides several key advantages for this particular assignment, all of which stem from our staff's diverse experience in the region, cost-competiveness, and high degree of familiarity with the regulatory framework surrounding this project. These include:

1. **Highly Experienced Project Manager.** Project Manager **John Rickenbach** has over 20 years of experience managing complicated and controversial projects requiring a special understanding of how to engage and educate both the public and decision makers. In his career, he has prepared General Plans, complex programmatic CEQA documents, constraints studies, and conducted many public outreach programs in support of these efforts. He was the contract Planning Director for the City of Guadalupe, where creative thinking and his skills at bringing together divergent points of view were put to good use.
2. **Expert Staff.** Our seasoned in-house staff also includes biologists and environmental professionals with 10 to 30 years of local experience, so they know the key concerns, including coastal issues, extremely well. Uniquely, the Sage team also includes an internationally acclaimed climate scientist, who has done cutting edge research on the issue of climate change and its long-term effects on coastal regions to assist in the analysis of that issue. We augment these considerable in-house capabilities with recognized subconsulting experts in the fields of civil engineering, cultural resources, and visual impact analysis.
3. **Diverse In-House Capabilities.** Sage's in-house staff comes from highly diverse backgrounds supporting the public policy, planning, real estate, and environmental fields. The firm has public policy planning experts, regulatory permitting specialists, biologists, climate scientists, and facilities managers. Uniquely for an environmental planning firm, Sage also has established in-house expertise in land disposition/acquisition and management (including in-house brokerage services), as well as project financing expertise. These diverse skills are crucial for conducting a complete and thorough screening study that comprehensively considers all factors, from site planning and evaluations, environmental, regulatory, and cost issues. In addition, Sage can assist with Public Acceptance Strategies to support successful implementation of the project.
4. **Cost-Effectiveness and Efficiency.** Sage will manage the project from its Atascadero location, so it is positioned close to the project site and agency staff. Sage is a relatively small firm, where the principals are directly involved not only in project oversight, but actually manage the project itself. We do not have excessive overhead, either in terms of unnecessary layers of management, or fixed costs that come from supporting a large staff. At Sage, we emphasize the

direct expertise of the principals, not less experienced personnel who are often put into management roles once the job has been secured, with the occasional input from detached upper level management. Our hands-on approach is critical to ensure a high quality product from the outset, and the single most important factor in avoiding cost overruns.

5. **Project Management Protocols.** Sage prides itself on its program to ensure seamless project management. Through our staff's experience, we have developed a formal system of communication protocols, cost control measures, and internal quality controls, to ensure that our clients get the services they expect, at the stated price. We know that projects evolve, which could affect the scope of work, but our program ensures that there will be no surprises as the project moves forward. Please refer to Section 3.2 of our SOQ for more detail about this program.
6. **A Fresh Look.** While you may already know some of our staff, Sage itself is a fresh face as a business partner. We do not carry any political agenda, nor any perceived biases from past work conducted for the project. We are experts at what we do. We assist our clients, apply our experience, and provide the key bridge between the public, decision makers, staff, and other agencies to ensure a fair and transparent process. We try to make things as easy as possible for the decision makers through our objective analysis, clear writing, communication and concise reporting. We know what our clients value, and how to provide good value to our clients.
7. **Highly Competitive Bill Rates.** Because of our staff's experience and our firm's low overhead, we are able charge highly competitive bill rates for our services. For this assignment, our Project Manager, John Rickenbach, who is also a Principal with Sage, would charge \$120 per hour. Our competitive rates provide unparalleled value when cost and experience are considered together, and make it possible for Sage to apply its high level expertise while staying within budget. We understand the widespread difficulties imposed by the current economic downturn, particularly to public agencies. As one of the few locally-based environmental planning consulting firms, we believe it is in the interest of both the MBCSD and our long-term practice to price our effort affordably but realistically to address these challenging times.

To augment our in-house expertise, our team includes the following highly qualified subconsultants.

- **Carollo Engineers** – Engineering and Facility Design Issues
- **Applied Earthworks, Inc.** – Cultural Resources
- **RRM Design Group** – Public Outreach and Coastal Coordination
- **Kevin Merk Associates** – Regulatory Permitting Issues
- **Robert Carr** – Visual Analysis

Throughout our careers, our staff has successfully worked with each of these subconsultants on a range of projects in the Central Coast region facing similar issues, which will greatly enhance the efficiency of our project management effort on this assignment.

The following sections of this proposal describe our general understanding and approach to this assignment, our proposed methodology for each issue area, personnel and management qualifications, firm qualifications, and our proposed cost and schedule. We believe that you will find the Sage approach highly effective to process this project.

2.0 PROJECT BACKGROUND, CHALLENGES AND GOALS

Background

The City of Morro Bay and the Cayucos Sanitary District (MBCSD) jointly operate a wastewater treatment plant that serves the needs of both communities. To address long-term service needs to accommodate future development, and in response to a 2005 Settlement Agreement between the MBCSD and the Regional Water Quality Control Board to complete a treatment plant upgrade by the end of March 2014 to address discharge requirements, the MBCSD recently approved an upgrade to the existing facility. This upgrade would eliminate the need for the MBCSD to obtain future 301(h) waivers from waste discharge requirements as part of the NPDES permitting process, since the plant would then be in full compliance with RWQCB regulations.

In general, this upgrade would involve not only improved technology that results in tertiary wastewater treatment (improved water quality), it would fundamentally redesign the plant to improve its capacity, function, aesthetics, and efficiency. The upgraded WWTP would treat 1.5 mgd to tertiary treatment levels, and it would treat additional wastewater to full secondary treatment. The effluent would be discharged via the old treatment plant ocean outfall, which would be connected to the new facility as part of the proposed project. The tertiary treated wastewater would be of sufficient quality to be used for industrial purposes on-site, as well as for limited off-site purposes such as soil compaction, concrete mixing and dust control. The project also allows for the future production of 0.4 mgd of disinfected tertiary recycled water, the highest standard for reclaimed water, which could be put to a wide range of uses, including agricultural irrigation, groundwater replenishment and residential landscaping.

Notably, the redesigned plant will be constructed within the same general footprint as the current facility, but will actually make a more efficient use of the land, resulting in fewer buildings and covered land area. While the facility is being redesigned, the existing facility would remain operational. Through a phased approach, the existing facility would be transitioned out of service as the upgraded facility is brought online.

The City of Morro Bay approved the facility upgrade in January 2011. Eleven appeals were filed to the California Coastal Commission (CCC) recommending that the project not be allowed to move forward in its City-approved form. On March 11, 2011, CCC upheld the appeals, primarily on the basis that it believed the project was inconsistent with several policies contained in the City's Local Coastal Plan, but also because it felt the Final EIR for the project did not adequately evaluate alternative sites. Crucially, this determination was based on the CCC's interpretation that the project was not an upgrade, as characterized by the City, but rather an entirely new project—thus subject to a differing interpretation of local coastal policies.

As a result, CCC staff directed that a variety of studies be conducted, most notably a constraints study examining a screening level feasibility of several sites for an alternate location for the wastewater treatment plant. The purpose of these studies, which would also address potential water re-use and specific hazard issues at the current site, is to provide additional information that could be presented to the CCC at a de novo hearing. This new information, when considered with existing studies, would allow that agency to make a fully informed decision on the issuance of a Coastal Development Permit for the proposed facility, if the result of the screening analysis indicates that it should either remain in place, or at another location within the Coastal Zone.

The Challenge

From the MBCSD's perspective, it already operates a functional wastewater treatment plant at a location the General Plan intends for this purpose, and is simply upgrading it not only to increase its capacity and efficiency, but to improve the quality of water that outfalls to the ocean. This approach has the full support of the Regional Water Quality Control Board, the agency that provided the direction to move forward on this project through a 2005 Settlement Agreement with the MBCSD. The upgrade is consistent with its own General Plan and Local Coastal Plan, particularly in regard to the fact that the existing site is not only identified, but protected under the General Plan/Local Coastal Plan for the purpose of operating such a facility.

Nevertheless, it will require the CCC's concurrence and approval to issue the CDP, and until that happens, the upgrade cannot move forward. The challenge will be three-fold: 1) prepare an analysis consistent with CCC's direction, that describes the characteristics of various alternate sites for the facility, and demonstrates the various constraints associated with each; 2) prepare and present an analysis of relevant LCP and Coastal policies in the context of what is learned through the constraints study; and 3) prepare supporting studies shedding additional light on potential water re-use strategies, as well as inundation hazards at the current site resulting from climate change-induced sea level rise, or a possible tsunami.

Playing this out, it is likely that the screening analysis may find one or more fatal flaws with certain sites (regulatory, engineering, environmental, or cost), while other sites may have substantial, if not fatal, constraints. On balance, it is possible that the analysis might show that the current site is the best site when all factors are considered. If this were the case (the best case from the MBCSD's perspective), the discussion of the project's consistency will be re-framed in such a way to account for the relative merits of the site in the context of potential policy inconsistencies associated with other sites. This may include potential inconsistencies with other LCP policies at other sites that may also be within the Coastal Zone. If one of the alternative sites is found to be more favorable than the existing site, we will work closely with MBCSD to determine the next steps in the process.

The Goal

Overall, the goal of this assignment is to provide a fair and thorough analysis as directed by the CCC, to allow that agency to make an informed decision on the issuance of a permit to move forward with an appropriate wastewater treatment project. To achieve this goal will require a combination of technical skills in the constraints study (planning, environmental, engineering, and land acquisition potential), as well as educational skills to inform the public and decisionmakers in a clear concise manner. These skills include clear writing, policy and site analysis, communication, and public outreach. If these goals are achieved, the MBCSD can move forward in partnership with the CCC, in such a way that concerns about the project (and project site) can be understood, but put into a fair context in terms of the project's long-term benefits to the community and environment relative to other possible options considered in the record of decision. Yet even if the goals of the process are accomplished, there is no guarantee that the Coastal Commission will approve the City's preferred and previously approved site.

3.0 PROPOSED STUDY APPROACH

To accomplish project goals, Sage envisions this as a fundamentally planning-oriented process, rather than an engineering process, focused on outreach and public education to convey information in the clearest manner possible. In the experience of our Project Manager, **John Rickenbach**, this is the best approach to achieve success, particularly for projects where there is substantial public controversy, or fundamental differences of opinion in interpreting key policies.

3.1 PRELIMINARY SCOPE OF WORK

Conceptually, we propose the following key tasks in our program to achieve the stated goal, which is broken into two phases:

Phase 1 Tasks:

Task 1. Project Initiation. Following a kickoff meeting with MBCSD staff, the Sage team will carefully review existing documents, including Coastal Commission's basis for upholding the various appeals, their analysis of relevant policies, and the nature of that agency's direction to address their concerns. Based on this, and further input from staff, we will work closely with MBCSD staff to refine our preliminary scope of work to address these concerns.

Task 2. Identify Alternate Sites For Study. The team will identify up to 10 sites for screening. We anticipate the final list will be culled from the 15 sites studied briefly in the Final EIR, which are primarily based on a list provided by the Surfrider Foundation in that group's comment letter to the Draft EIR. The existing site will be among those considered in the study. There may be other sites not yet identified. In developing a list of 10 for study, we will first eliminate sites that have obvious constraints identified in the EIR or from other studies.

Task 3. Rough Screening Analysis. The Sage team will prepare a rough screening analysis of these 10 sites, including the existing treatment plant site. This will be presented in tabular form, with summarized findings keyed to a map, and accompanying explanatory text. Ultimately, the purpose of this exercise is to identify the top three sites for further fine screening evaluation. The document will establish criteria to determine the highest rated sites, possibly based on a numeric scoring system that weights the evaluation factors in terms of their relative importance. Sage will work closely with MBCSD staff to determine appropriate evaluation criteria. Sites with fatal flaws (as described below) will be eliminated from further consideration. The draft document will be presented to MBCSD staff for review and revision, as needed.

The key criteria of this preliminary analysis will be broken into four major categories: site planning criteria, environmental resource criteria, hazards, and regulatory/cost issues. Within these categories, several issues will be identified, and the study will seek to qualitatively answer several questions associated with each issue, at each study site, as shown in the following table:

Proposed Rough Screening Analysis Criteria	
Issues	Key Screening Questions
<i>I. Site Planning</i>	
a. Acreage	<ul style="list-style-type: none"> Is the study site big enough to accommodate the proposed wastewater treatment plant design?
b. Site Configuration	<ul style="list-style-type: none"> Is the proposed site configured in such a way to accommodate the proposed design?
c. Site Access	<ul style="list-style-type: none"> Are current roadways adequate to provide site access? Would roads need to be extended or upgraded to serve the site? Would the location create truck traffic concerns or pose a noise nuisance to nearby residents?
d. Proximity to Existing Wastewater Conveyance Infrastructure	<ul style="list-style-type: none"> Does existing wastewater conveyance infrastructure extend to the site? If not, how far would it need to be extended to make the site? Are existing trunklines sized properly to accommodate the proposed location?
e. Proximity to Sensitive Receptors (neighbors, schools, parks, public gathering areas)	<ul style="list-style-type: none"> Is the project site near sensitive receptors, including homes, schools, parks, churches, or other public gathering places? If so, are there substantial numbers of people who could be exposed to visual, odor, lighting, or other nuisance impacts?
f. Existing Development on Site	<ul style="list-style-type: none"> Does the site currently support residents, businesses, agricultural production, or other facilities that would be displaced and need to be relocated? Will the study site require extensive modification, demolition and possible remediation actions to make it usable for a treatment plant?
<i>II. Environmental Resources</i>	
a. Agricultural Land	<ul style="list-style-type: none"> Does the site support prime farmlands? Is the site under a Williamson Act (Land Conservation Act) contract? Is there existing viable agricultural production on the site?
b. Biological Resources	<ul style="list-style-type: none"> Does the site support sensitive habitat? Is the site designated as an Environmentally Sensitive Habitat Area (ESHA), which would require protection per the Local Coastal Plan? Are there identified endangered species on the site, or does the site have the potential to support such species? Are there wetlands or riparian corridors on the site, or areas that are otherwise under the jurisdiction of state or federal agencies, including the US Army Corps of Engineers, US Fish and Wildlife Service, California Department of Fish and Game, or California Department of Water Resources? What are the regulatory requirements to obtain permitting from those agencies? Is the site protected under local ordinance, General Plan or Local Coastal Plan policy, or within the context of a Habitat Conservation Plan?
c. Cultural Resources	<ul style="list-style-type: none"> Does the project site support known cultural resources, including both historic or prehistoric resources? Is there a high potential for undiscovered cultural resources? Is there a high potential for paleontological resources? Are there any human remains interred on the site?
d. Visual Resources	<ul style="list-style-type: none"> Does the site support impact visual resources, as identified in the General Plan or under local ordinance? Is the site within an important viewing corridor, or visually prominent to public viewers?

Proposed Rough Screening Analysis Criteria	
	<ul style="list-style-type: none"> To what extent would proposed development block existing scenic views? To what extent would the introduction of light and glare pose an impact to nearby residents, if any?
III. Hazards	
a. Flood Hazards	<ul style="list-style-type: none"> Is the site within a FEMA designated 100-year flood zone? Is the site subject to local flooding after major storm events, or does the site have inherently poor drainage characteristics? To what extent would outfall pose a concern relative to affected offsite water quality, or otherwise contribute to existing flood hazards? Is the site subject to tsunami or seiche? Is the site subject to inundation from rising sea levels as a result of global climate change?
b. Geological Hazards	<ul style="list-style-type: none"> Does the site contain, or is near, a potential active earthquake fault? Is a portion of the site located in an Alquist-Priolo Earthquake Zone? Is the site subject to other geologic hazards, including soils with high liquefaction, shrink-swell, or erosion potential?
c. Fire Hazards	<ul style="list-style-type: none"> Is the site in an area having a high potential for wildland fires? If so, what is the likely response time for firefighters to address a potential emergency? Is there adequate emergency access?
IV. Regulatory and Cost Issues	
a. Jurisdictional/Regulatory Considerations	<ul style="list-style-type: none"> Is the site located within the jurisdiction of the City of Morro Bay, or within the MBCSD's service area? If so, does the General Plan or LCP allow for the construction of a wastewater treatment facility? If the site is within unincorporated portions of the County, are there regulatory restrictions on the site that would preclude or hinder the possible construction of a wastewater treatment plant? Is the site within the Coastal Zone? If so, are there policy constraints associated with new development on the site? Are these regulatory constraints greater than those associated with upgrading the current facility on the existing site?
b. RWQCB Compliance	<ul style="list-style-type: none"> Can the goals of the Regional Water Quality Control Board be realistically achieved within the timeframe set forth under their directive at the study site?
c. Ability to Acquire Site	<ul style="list-style-type: none"> Is the study site owned by the City of Morro Bay or MBCSD? If not, is the site under multiple ownership, or does it otherwise present constraints to its easy acquisition?
d. Rough Costs	<ul style="list-style-type: none"> What are the rough costs associated with acquitting the land, designing the facility at the site, modifying the existing Final EIR to address the new site, building the facility, making necessary improvements to the conveyance infrastructure, and implementing required mitigation? Would existing residents, businesses, agricultural production, or other facilities be displaced? If so, what is the rough cost of their relocation? What is the rough cost of potential remediation actions that may be needed to make the site usable for a treatment plant?

The Rough Screening Analysis will also identify any potentially fatal flaws associated with these sites, which would preclude these sites from further consideration. Such flaws may include, but not be limited to:

- *Inadequate site size*
- *Unworkable site configuration*
- *Alquist-Priolo Earthquake Zone*
- *Substantial Endangered Species/Habitat Issues*
- *Major Cultural Resource Site*
- *Regulatory Incompatibility*
- *Prime Agricultural lands*
- *Significant site hazards*
- *Proximity to substantial numbers of residents*
- *Difficulty of Site Acquisition*
- *Lack of connectivity to existing wastewater conveyance infrastructure*

Task 4. Public Workshop and Presentation #1. Sage will present the results of the Rough Screening Analysis in a public workshop forum. The presentation would identify the three most promising sites from this list. Input gained from this workshop will be used to potentially refine the three sites chosen for further study.

Task 5. Fine Screening Analysis. The top three sites identified in the rough screening analysis will be further scrutinized using the same criteria as in the Rough Screening Analysis, but in more detail. It is assumed that the existing approved project site will be one of the three sites examined in this report. Since this analysis assumes that none of the three sites have fatal flaws, the purpose of this analysis will be to provide further insight as to the relative merits of each site from the perspective of each of the key issues. For example, if one site appears to have more regulatory or permitting constraints than others, then this will be identified, and a preferred option from this perspective will be identified. Similarly, if one site is constrained with more severe hazards or issues affecting site design than others, this will also be identified. Where appropriate, hazards and other site issues will be mapped where they are known, to help focus the extent and nature of the constraint. Ultimately, the results will be compiled in tabular form, and a preferred site identified through this process. The draft document will be presented to MBCSD staff for review and revision, as needed.

Task 6. Public Workshop and Presentation #2. Sage will present the results of the Fine Screening Analysis in a public workshop forum. The presentation would identify the preferred site from the three examined. Input gained from this workshop will be used to provide additional perspective on which should be considered the preferred site.

Task 7. Meetings with MBCSD Staff. Our preliminary scope of work assumes two meetings with staff through the course of the project, based on direction in the RFQ. However, based on our experience, we anticipate that additional coordination meetings may be needed. We will determine the appropriate number of meetings at the time we refine the scope of work with staff.

Task 8. Presentations to the JPA. Sage will formally present the findings of the screening reports to the JPA for input and concurrence. Our scope assumes 2 hearings will be needed.

Task 9. Hearings Before the California Coastal Commission. Our preliminary scope of work assumes two hearings before the California Coastal Commission, based on direction in the RFQ. We are prepared to present our findings at these hearings, and we would coordinate our presentations with MBCSD staff. The presentations will include the findings of the Rough and Fine Screening Analyses, identification of a preferred site, and an evaluation of the preferred site's consistency with relevant LCP policies in light of the new information prepared as part of the screening studies. Presentations may also include the findings of the studies included in Phase 2 below (Tasks 10 and 11).

Phase 2 Tasks:

Task 10. Updated Water Reclamation Feasibility Study. Once the preferred site is known, and if it is not the existing wastewater treatment plant site, the Sage team (under the direction of Carollo Engineers) will prepare an updated water reclamation feasibility study that explores potential demand for reclaimed water, pursuant to consultation with MBCSD staff. The study will:

- *Evaluate the potential to reclaim water by using it for agricultural irrigation inside and outside of the City limits, and the way in which the project could be designed to dispose of treated effluent in this manner;*
- *Qualitatively evaluate the feasibility of constructing infrastructure to accommodate such water reclamation program;*
- *Evaluate the benefits of a water reclamation program, including potential benefits to stream habitats and water supply, potential revenue generation from providing such water to users and offsetting the need for purchased State Water credits, and;*
- *Evaluate the potential for elimination of the existing ocean outfall.*

Task 11. Additional Site Specific Hazards Study. Pursuant to CCC's request, the Sage team will prepare a site-specific hazards study for the existing site, based on to consultation with MBCSD staff. The study, in general, will evaluate the risk to the current wastewater facility site from future shoreline hazards. Specifically, it will explore the relationship between normal coastal erosional processes, the potential for climate change inducted sea level rise, and the increased potential for extreme storm events. With respect to sea level rise, much of the planning direction will be based on the *State of California Sea-Level Rise Interim Guidance Document* (October 2010), developed by the Sea-Level Rise Task Force of the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT). It should be noted this report predicts a potential for a 1.76-meter rise in sea level by 2100, and admits this may be a conservative estimate. This prediction is generally consistent with the latest consensus climate model projections set forth by the Intergovernmental Panel on Climate Change (IPCC 4).

The impact of sea level rise on the California coast is probably best thought of in terms of how it amplifies the impact of extreme meteorological and geophysical events, rather than the direct effect of the sea level rise itself. Infrastructure damage along the coast from natural hazards generally stems from storm-related local flooding, storm surge, wind damage from coastal storm systems, and tsunami damage. The lesson of coastal disasters like Hurricane Katrina and the Japanese tsunami is that the extreme events dominate the risk. How we locate and design coastal infrastructure must therefore be guided by the risk and impacts of extreme events, rather than sea level change per se.

Accordingly, two issues arise with respect to the coastal impacts of sea level rise due to global climate change.

1. Are the frequency and intensity of storm systems that impact the coastal regions increasing? *(short answer - more extreme events are expected)*
2. Does sea level rise compound the destructive potential of storm systems and tsunamis on coastal infrastructure? *(short answer - yes, and coastal inundation maps under various rain, storm surge, and tsunami scenarios are the best guides)*

In California, extreme coastal storm frequency varies generally with the ENSO cycle, with more frequent storms during El Niño events. More El Niños are expected as the tropical oceans warm due to climate change. This is because El Niño is above all a mechanism to extract heat from the equatorial Pacific Ocean, which is the largest energy reservoir in the climate system. Tsunami location, frequency and strength have no connection to climate change, but the coastal impacts of tsunamis will be greater as mean sea level rises.

Based on this direction, the Sage team's study will:

- *Include a comprehensive coastal hazards study applicable to the current site, in terms of expected shoreline erosion over the life of the project, and the relationship of global climate change and sea level rise to expected hazard problems that accrue to this site;*
- *Evaluate the impacts to the project as measured against a range of sea level rise conditions and the interaction of the various coastal hazards described in this report, including information specific to the threshold when the WWTP would be in danger from erosion;*
- *Include the elevation and inland extent of storm surge and flooding that might occur over the life of the development due to shoreline dangers, including as this changes with expected sea level rise over the expected life of the project. Such information must include how far inland and how high such water would go when the combination of hazardous factors are at their most extreme, and must include evaluation of impacts from and appropriate responses to same. Key factors to address include:*
 - *an eroded beach;*
 - *a 100-year storm event (or the equivalent of the 1982/83 El Nino event if the 100-year storm event has not be determined);*
 - *an extreme high tide; and*
 - *a 100-year rise in sea level at both optimistic and conservative ends of the projection spectrum.*
- *This study will include a description of any shoreline protection or other project modifications that would be necessary to protect the WWTP under such future hazardous conditions.*
- *The study will also include an analysis of the tsunami and liquefaction risk and strategies to minimize this risk.*

All assumptions and methodologies for identifying the expected degree of danger will be clearly identified and documented. All information will be supported by appropriate studies, reports and related technical data.

3.2 PROJECT MANAGEMENT APPROACH

The key to any successful project is efficient and effective project management. We know, for example, that insufficient project management—either in terms of allocated hours, or in terms of expertise—is the main reason why projects go over budget, or are not completed on time. To that end, we will

emphasize project management if selected to write a detailed scope of work, allocating roughly 12 to 15% of our labor budget for this purpose. (This does not include additional labor hours expended by the project manager conducting various technical tasks.)

Sage's project manager **John Rickenbach** has years of experience managing similar projects, many that involve multiple jurisdictions. From experience, Sage has developed an internal project management program to ensure that goals are clearly articulated and met, on time, and within budget. It is based on clear and open lines of communication throughout the process, but also includes our approach to technical direction and control, cost control, schedule control, project reporting, editorial review, quality control, and management of subcontractors. The general principles of our project management program are described below.

The most important project management elements associated with this assignment will be adherence to schedule, quality control, and communication. Close communication will be needed between the Project Manager, the staff working on the project, and especially with the MBCSD staff.

Management Team Roles and Responsibilities

Sage uses a two-tiered approach to managing projects. The first tier is the Project Manager, who will interact with the MBCSD staff on a regular basis and provide day-to-day direction to the team. The second level consists of the Technical Issue Coordinators who are responsible for managing the technical experts within their issue areas.

Project Manager's Responsibilities

Specifically, the Project Manager will be responsible for the following major activities:

- *Regular Communication. Includes regular emails, calls, and working sessions with MBCSD staff regarding the overall progress of the study.*
- *Contract Compliance. Systematic review of the contract to make certain that the individual provisions and commitments are being met.*
- *Progress Reporting. Includes preparation of the monthly status reports, which will contain information on the technical progress as well as the project expenditures.*
- *Budget Tracking. Includes monitoring expenditures and regularly reporting this information.*
- *Internal Staff Coordination. Involves coordinating Sage staff, identifying cross-disciplinary impacts, and the standardized presentation of information within the document.*
- *Staffing Adequacy. Ensures that key staff are available when their input and participation are required.*
- *Management of Subcontractors. Includes establishing contractual agreements, as well as tracking deliverables and billing, to assure the coordination of subcontractor activities.*
- *Quality Control. Includes the review of all quality assurance guidelines and will provide a quality control function on the preparation of the environmental or technical review document.*
- *Report Production Control. Includes the organization of production requirements for the draft and final report deliverables.*

Technical Issue Coordinators

Specific staff will be assigned to investigate the various technical issues associated with the studies. Their responsibilities will include:

- *Review and approval of work plans, schedules, and budgets for their issues;*

- *Development of quality assurance guidelines for all field work being conducted;*
- *Review and quality control of the technical documentation;*
- *Analysis of the issues for which they are responsible; and;*
- *Preparation of monthly progress reports for their respective issue areas.*

Project Management and Control Systems

Quality is a top priority for all the work that Sage does. To that end, Quality Assurance/Quality Control (QA/QC) procedures are developed for each of our projects. Relative to Quality Assurance, the major focus is on staff integration, communication, and consistent document production. In addition, we develop a tracking plan to monitor the progress of the project. Sage's Quality Control program uses a multi-tiered approach to assure that all work products are of the highest quality, consistent with client expectations. Each major component of our QA/QC program is described below.

Project Tracking Plan

For every project, Sage develops a Project Tracking Plan that addresses the following issues:

- Work Scope
- Staffing
- Schedule
- Budgeting
- Communication
- Quality Assurance

Once developed, the plan serves as a communication tool for the client and the project team. The document is also used to track the technical progress of the project and the expenditures on a weekly basis.

Regular Internal Staff Meetings

To facilitate coordination of the assessments and communication among staff members, we have established a program of weekly planning and coordination meetings using an agenda developed and circulated in advance. The Project Manager will hold these meetings to review work in progress, plans, and schedules and to ensure effective communication among the project team and with MBCSD staff. The objective of these meetings is to ensure that the quality of communication is maintained.

Monthly Status Reviews

Monthly status reviews provide a continuing forum for mutual discussion and peer review of the quality of our work, often leading to important improvements in performance that results from the widest possible sharing of information.

Problem Anticipation and Management

Sage recognizes problem anticipation and management as an integral part of project management. Unanticipated problems can occur despite the best planning and intentions of the contractor and MBCSD personnel. On task orders, Sage recognizes its obligation to anticipate, identify, and resolve all problems—technical, managerial and financial—as early as possible. Problems may be identified during the planning, execution, review, and reporting phases of the project. They can most often be avoided by thoroughly planning the program; realistically budgeting time, labor and costs; clearly communicating with staff; and closely monitoring the actual performance of the Sage staff and any associated subcontractors.

Cost and Schedule Control

Sage achieves cost and schedule through four distinct processes. First, cost and schedule baselines are established, against which actual cost and schedule performance can subsequently be compared. Second, cost and schedule data are collected and reported on a weekly basis to the Project Manager. Third, actual performance is compared against baseline plans, identifying any deviations from plan. Fourth, deviations in cost or schedule performance are discussed internally, and if necessary, with MBCSD staff and corrective actions are taken.

The most typical sources of “cost and schedule creep” either arise from poor internal project management procedures, a poorly defined EIR project description, or poor tracking procedures relative to performing tasks that are out of scope. We believe that our project management system would address these issues directly, to minimize the possibility of their occurrence. That said, we realize that sometimes delays are inevitable and out of the control of both the consultant and agency staff. Sage is committed to working closely with MBCSD staff to anticipate and identify potential sources of future schedule and cost overruns, so they can be avoided at the outset.

If delays are anticipated to occur during the course of the project, the Project Manager will discuss the situation with MBCSD staff and apply corrective actions to recover and maintain the schedule.

Communications Procedures

Communication is the most important role of the project manager. Formal communication will focus on the deliverables agreed upon for each task assigned. In addition, we expect very close informal communication on a day-to-day basis, mostly by telephone or email. We also will prepare monthly progress reports identifying the work completed during the previous period, any issues encountered, and plans for the upcoming month. Sage’s project management communication procedures are designed to accomplish the following objectives:

- *Establish a formal communication protocol between the consultant team and MBCSD staff;*
- *Specify the documentation procedures to be used by all the team members;*
- *Assure that appropriate information is available to all team members; and*
- *Assure that the studies are internally consistent, communicate clearly to the public and decision makers, and is as clearly written and concise as possible.*

Management of Subcontractors

Each subcontractor will be required to submit a final work plan to Sage. The work plan will include the scope of the study, a list of deliverables and due dates, estimated budgets for professional services and expenses, and a QA/QC program for assuring the highest quality work.

3.3 CERTIFICATION OF OBJECTIVITY

Sage has assembled a highly qualified team of experts to address the specialized needs for the project. Our team includes experienced professionals, many of whom have the majority of their careers consulting in the region. We believe that the Sage team is ideally suited to the unique needs of this project largely because of our staff’s proven ability to prepare unbiased documentation.

We hereby certify that we are unaware of any contractual or other relationships of Sage, its principals or key staff, or subcontractors that would preclude or inhibit our ability to prepare independent, objective and unbiased work products that will be required for this assignment.

4.0 PRELIMINARY COST ESTIMATE and SCHEDULE

4.1 COST ESTIMATE

Based on the available information, Sage Institute estimates that the required studies and supporting tasks can be prepared for **\$194,880**, as shown in the attached table. This preliminary estimate is based on our experience with comprehensive studies of this kind, and our understanding of the controversial nature of the assignment. We know, for example, that the success of the assignment will be in how honestly and openly we communicate with the public and decision makers. It will also depend in part on the nuanced presentation of the material, particularly since we know the public is already well-informed, and in some cases, actively opposed to upgrading the facility at the existing wastewater treatment plant site. This will require not only careful and well-documented analysis, but also extremely clear writing in plain language that can convey the technical and regulatory complexities of the studies.

The assignment will also call for very well-coordinated project management, since timeframes are tight, and there are multiple tasks, some occurring simultaneously. An additional challenge is the multi-jurisdictional nature of the assignment. The studies are intended to address the concerns of the CCC, and yet are being written to satisfy the needs of the JPA to move an already-approved project forward. In addition, for alternative sites in unincorporated areas currently outside the authority of the JPA, we can anticipate a high level of interest from various representatives of San Luis Obispo County.

Our cost estimate reflects our anticipated scope of work, based on a rough estimate of the number of hours needed to accomplish each task. For simplicity, it is also based on an amalgamation of anticipated billing rates of Sage Institute and its subcontractors, which may ultimately differ somewhat once tasks are developed in detail. At the same time, we recognize that these tasks may be able to be completed in fewer hours, or may need additional effort, if MBCSD staff feels this is needed to address key issues. We will work closely with staff to refine our cost estimate, once selected. However, our preliminary estimate is intended to convey a realistic order of magnitude of the effort, based on our staff's experience.

The billing rates for Sage Institute and its subcontractors are included in the appendix of this SOQ. These will be used in developing the more refined cost estimate for the assignment, when requested.

Morro Bay and Cayucos Sanitary District Wastewater Treatment Plant Upgrade Studies Preliminary Cost Estimate

March 31, 2011

Tasks	Cost (Estimate)	Labor Hours	Sage and Subconsultants	
			Sage PM	Staff + subs
			\$120/hour	\$100/hr (avg)
Phase 1 Tasks				
1. Project Initiation (Kickoff, Document Review, Scope Refinement)	\$4,400	40	20	20
2. Identify Study Sites	\$3,200	30	10	20
3. Rough Screening Analysis (10 sites)	\$47,600	460	80	380
4. Public Workshop #1 (includes preparation time)	\$3,440	32	12	20
5. Fine Screening Analysis (3 sites)	\$33,000	320	50	270
6. Public Workshop #2 (includes preparation time)	\$3,440	32	12	20
7. Meetings with MBCSD and CCC Staff (assumes 2)	\$3,040	28	12	16
8. Presentations to the JPA (assumes 2; includes prep time)	\$6,880	64	24	40
9. Presentations to the CCC (assumes 2; includes prep time)	\$6,880	64	24	40
• Project Management/Coordination (Phase 1 tasks)	\$16,800	140	140	
• Printing and Expenses (Phase 1 tasks)	\$6,000			
Subtotal Phase 1 Tasks	\$134,680	1,210	384	826
Phase 2 Tasks				
10. Updated Water Reclamation Feasibility Study	\$14,600	140	30	110
11. Site Specific Coastal Hazards Study	\$34,000	330	50	280
• Project Management/Coordination (Phase 2 tasks)	\$9,600	80	80	
• Printing and Expenses (Phase 2 tasks)	\$2,000			
Subtotal Phase 2 Tasks	\$60,200	550	160	390
TOTAL PRELIMINARY FEE ESTIMATE (Phase 1 and 2 Tasks)	\$194,880	1,760	544	1,216

4.2 ESTIMATED SCHEDULE

At this point, it is premature to provide a firm timeframe for completing the project, though we fully understand that time is of the essence. Sage Institute is prepared to begin the needed studies immediately upon selection. If selected, our highest priority will be to refine our scope and schedule, closely coordinating with MBCSD staff, to ensure that all program needs and expectations are met.

In our general experience, we believe that a rough screening analysis of all 10 sites can be completed within 2 to 3 months, with the follow-up fine screening analysis taking roughly one month. To some extent, these studies can be prepared simultaneously, depending on how early in the rough screening process we can identify the three sites for the fine screening analysis (one of which we already know—the existing treatment plant site). What we cannot be sure of is the nature and timing of public workshops, nor the kinds of unanticipated tasks that may be needed as a result of input gained at those workshops.

With regard to the technical studies in Phase 2 involving the water reuse strategies and detailed flood hazard studies for the current site, much will depend on the level of detail needed to satisfy CCC and MBCSD expectations. We anticipate that these studies could be started concurrently with the screening analysis, which will save some time. We believe these studies may require 2-3 months to complete, but this is a very rough estimate. Our overall goal is to complete all necessary studies within 5-6 months, so the MBCSD can move forward as quickly as possible on an appropriate project.

5.0 PERSONNEL, QUALIFICATIONS and REFERENCES

The consultant team will be managed by **Sage Institute, Inc.** Sage's Principal-in-Charge and Project Manager will be John Rickenbach, AICP. John will also be responsible for quality control and the overall work program. Sage has included subconsultants from Carollo Engineers, RRM Design Group, Applied EarthWorks, Kevin Merk Associates, and Robert Carr, to assist in the effort. Their qualifications are described below and in the Appendix of this proposal.

5.1 KEY TEAM MEMBERS

Principal members of the project team, their responsibilities, and similar project experience are described below. Resumes for all key staff are provided in the Appendix.

John Rickenbach, AICP, will serve as Principal in Charge and Project Manager for this assignment. In this role, he will direct the day-to-day work program, including the subconsultants needed to complete the studies. With over 20 years working within the Central Coast region, John has unparalleled experience for similar kinds comprehensive planning studies, including constraints studies, as well as controversial projects requiring exceptional communication skills. He also has a clear understanding of the regulatory framework of local, state, and federal agencies, and how they interact when a project requires permitting from multiple jurisdictions, especially within the Central Coast region.

John is a land use planner by training, and an acknowledged expert in the application of CEQA as well as other state and federal environmental laws. He specializes in comparative site analysis. He combines this technical background with excellent communication skills, which have been honed managing comprehensive and controversial projects such as the Paso Robles General Plan Update, which won an award of merit from the American Planning Association. He also has managed difficult site studies for other long-range planning efforts, such as the Los Robles Del Mar Specific Plan in Pismo Beach. He has applied his creative problem-solving skills to various diverse constraints studies, including a land suitability analysis for the City of Santa Maria's Sphere of Influence and Annexation Study, alternate bicycle trail routes between Templeton and Atascadero, and various sites considered for a minor league baseball stadium in Ventura County.

John authored an APA award-winning report entitled *Conventional vs. Neo-Traditional Development: A Comparative Analysis*, regarding a development on the urban fringe of the City of Santa Maria.

David Wolff, Principal Ecologist and Biologist, will prepare oversee the preparation of biological resources studies. David is a Certified Professional Wetland Scientist with over 30 years of professional experience. He has special expertise in both flora and fauna, including terrestrial, freshwater aquatic, estuarine, and marine environments. He is knowledgeable in many bioregions of California including Southern California coastal, inland, and desert regions, central coastal & inland areas, Great Valley, and Sierra Nevada foothills. Along with his regional and landscape-scale resources planning experience, he is also an accomplished wetland scientist, botanist, and wildlife biologist well versed in endangered species issues. Throughout his career, David has conducted studies, prepared reports, obtained regulatory compliance permits, monitored construction projects and, and managed projects and staff for a diverse group of projects and clients. He holds a degree in Ecology and Systematic Biology from San Francisco State University.

Jason Kirschenstein serves as the Principal Biologist for Sage Institute, and is also an expert at environmental impact analysis for a wide range of issues. He will be responsible for working with David Wolff to complete the needed biological resource analysis, but will also assist John Rickenbach in the preparation of various other aspects of the screening studies. With over 12 years of wide-ranging environmental compliance experience, Jason is highly trained and experienced in regulatory permitting/consultations, environmental impact analysis, general and special-status wildlife and vegetation surveys, mitigation planning, and Geographic Information System (GIS) applications. He is also well versed in the planning process, and has successfully performed as an integral member of planning and design teams where he has provided biological and regulatory compliance insight for local agencies, utility companies and private development projects. Jason holds a degree in Wildlife Biology, Forestry, and Natural Resource Management from California Polytechnic State University at San Luis Obispo.

Dr. Joel Kirschenstein is the President and founder of Sage Institute. Since the 1970s, Dr. Kirschenstein has established expertise in school district organization studies, public policy planning, master planning and financial structuring, and is proficient in real estate and land use transaction negotiations for public agencies, developers, investors, and lenders. He holds both a Bachelor of Arts and a Masters Degree in Political Science, and a Doctorate in Educational Administration. Dr. Kirschenstein is a former public school educator and administrator, who has spearheaded a variety of public/private joint ventures and has personally been responsible for the alternative use, disposition, and/or acquisition of over \$300 million in public/private sector land use transactions. Dr. Joel Kirschenstein has been requested from time to time to prepare legislative drafts, as well as assist with the drafting of OPSC and SAB rules and regulations.

Irma Tucker will provide technical support on the screening studies. Irma is a seasoned CEQA analyst and technical manager, with more than 25 years of experience in both the private and public sectors, the last 10 of which have been with Sage. Her broad experience encompasses the fields of CEQA project management, community development, city planning, land use entitlements, school facilities planning and finance, public and private property acquisition and disposition, comprehensive master planning, community outreach, and environmental compliance.

Thomas Rickenbach, Ph.D., is an internationally recognized expert in precipitation variability and climate, and will direct the analysis of the impact on global climate change on sea level changes that could affect the existing project site. Dr. Rickenbach's research investigates how weather systems control and respond to changes in regional climate. As a radar meteorologist, Dr. Rickenbach has traveled across the globe in NASA-sponsored field programs to study the local and global impacts of weather systems. His work has played an important role toward improving computer model simulations of future climate change.

Dr. Rickenbach has over 20 years of experience in environmental research, consulting, and expert testimony. His research has been published in leading journals including *Journal of Climate*, *Journal of Atmospheric Science*, *Journal of Geophysical Research*, *International Journal of Climatology*, *Monthly Weather Review*, and *the Bulletin of the American Meteorological Society*. He has also worked as a consultant in the area of air quality regulatory compliance. Dr. Rickenbach serves as an associate editor for the *Journal of Applied Meteorology and Climatology*. He is an award-winning university instructor in the area of weather and climate. He appears frequently on television, radio, and in print media discussing issues from local weather phenomena to the regional impacts of climate change.

Kevin Merk will assist with the evaluation of biological resource issues, particularly with regard to his understanding of resource regulatory permitting issues. Kevin is a plant ecologist and restoration specialist with nearly 20 years of experience, with expertise in quantitative vegetation analysis, habitat evaluation procedures, surveys for legally-protected plant species, methodologies for restoring native plant communities and biotechnical erosion control in California. He is also an expert in coastal issues, and has conducted numerous projects for many communities and private clients within the Coastal Zone. Furthermore, he has conducted multi-parameter wetlands assessments and monitored construction activities to insure compliance with resource agency requirements and Storm Water Pollution Prevention Plans.

Steve Swanback, P.E., of Carollo Engineers will manage issues related to engineering feasibility associated with project design at the various sites. Steve has 29 years of engineering experience and serves as Carollo's Northwest quality control manager for wastewater treatment design. He has managed the preliminary and final design for more than 25 treatment plant upgrades with construction costs totaling more than \$600 million. Relevant projects include expansion designs for California Men's Colony, Fresno, Paso Robles, and Roseville.

Lou Carella, P.E. of Carollo Engineers will advise team members on regulatory issues related to the CCC and RWQCB. Lou has built a solid reputation for implementing complex planning projects. He is a strategic thinker and strong communicator, attributes that will serve MBCSD in critically reviewing project alternatives and navigating the difficult and often political process of winning project acceptance and approval.

Dennis Van Kirk of Carollo Engineers will advise the team on issues related to cost estimation, which will be useful in helping evaluate the feasibility of designing the project at various alternative sites. He has more than 45 years of professional experience in project cost management services including cost estimating, change order analysis, value engineering, and constructability reviews. He is well versed in all CSI Specification Divisions and has served as Carollo's cost estimator for a number of wastewater treatment plant upgrades, including those for Tulare, Fresno, Petaluma, Santa Rosa, and Central Marin Sanitation Agency.

Debbie Rudd of RRM Design Group brings 20 plus years of California waterfront experience, taking projects from the early visioning and policy stages through construction. She will assist on the public outreach component of this project, particularly with the hearings before the California Coastal Commission. Debbie is well-versed in Coastal Commission process, sustainable design principles and implementing them on the California coastline. She excels in public outreach, identifying public concerns and preferences and translating them into supportable plans that can be easily understood by the public and implemented by the City and/or District. Having obtained a Coastal Commission approval on the Port San Luis Master Plan and LCP amendment, as well as responded to a Coastal Commission appeal successfully for the Pismo Promenade IV, Debbie is intimately familiar with how to make a project like this a success. Her experience with public outreach coupled with her experience processing projects through the Coastal Commission will be essential in guiding the Morro Bay /Cayucos Wastewater Treatment analysis to approval.

Jeff Ferber of RRM Design Group, will help coordinate public outreach efforts associated with the project. During the past 25 years, Jeff has been the Principal, project manager, or landscape architect

on many of RRM's most complicated projects involving community outreach. Recently, he was the Facilitator and Project Manager for the 465-acre El Corazon Community Park, where he worked with a 15-member citizen committee to prepare a Master Plan and Specific Plan. His work has been published in Landscape Architecture Magazine and recognized with awards from CPRS and ASLA. Along with his extensive public outreach experience, Jeff has extensive experience working with the Coastal Commission and Coastal Development permits for several Central Coast projects in Morro Bay, Avila Beach and Cambria.

Barry A. Price, is co-owner and vice president of Applied Earthworks, and will direct all work for the cultural resources analysis. Mr. Price is a Registered Professional Archaeologist with more than 35 years of experience in prehistoric and historical archaeology and cultural resources management. Barry currently serves as Program Manager for Æ's three-year on-call cultural resource services contract with the San Luis Obispo County Public Works Department, under which he has directed work on nine separate delivery orders. Since 1995 has served as Program Manager for Æ's five consecutive on-call Master Service Agreements with the County of Santa Barbara for professional services in cultural resources. In that capacity he has managed and directed all phases of cultural resources work for 40 separate delivery orders. He also has served as Principal Archaeologist and Cultural Resources Program Manager for several City of San Luis Obispo infrastructure and capital improvement projects including the Prefumo Creek Bridge Replacement, Marsh Street Garage Expansion, Downtown Water and Sewer Line Upgrades, and New County Government Center. Additionally, he prepared the cultural resource sections of the City's Chinatown Project EIR, Garden Street Terraces Project EIR, Court Street Development Project EIR, and numerous other CEQA compliance documents.

Damon Haydu, MA, RPA, will assist Barry Price in the completion of studies related to cultural resources. With more than 11 years experience as a cultural resource specialist, Damon has participated in numerous archaeological projects throughout the Central Coast region, ranging from surveys and site documentation to testing and data recovery excavations. He currently serves as Æ's Project Archaeologist for PG&E's Morro Bay-Templeton power line upgrade, and recently served as Project Archaeologist and field monitor for the City of San Luis Obispo Downtown Water, Sewer, and Microresurfacing Project, and the County of San Luis Obispo Avila Beach Drive Bluff Repair Project. He also has managed more than 30 State Water Board applications, Tribal Fee-to-Trust actions, and National Register evaluations of both prehistoric and historic-period resources. Damon currently is preparing the cultural resource sections of the EIR for the City's Chevron Tank Farm Restoration and Development Project, and also served as Project Archaeologist for the Le Point Street Parking Lot Expansion Phase I Inventory in the City of Arroyo Grande.

Robert Carr is a licensed Landscape Architect specializing in visual impact analysis, and will provide input on the analysis of aesthetic impacts within the study. As an optional task, he can also prepare photosimulations for the analysis. He has over 20 years of professional experience, both as a private consultant and in the public sector. Bob has extensive experience in preparing aesthetic studies for controversial projects involving high quality visual resources and sensitive viewer groups on the Central Coast and throughout the state. His work has included analysis of planned developments, large-scale controversial commercial projects, residential subdivisions, multi-story apartment buildings, golf course development, wineries, state-wide fiber-optic cable installation projects, wireless communication towers, landfills, wastewater treatment plants, and public parks. His work includes programmatic analysis of city general plans, University of California long-range development plans, and county watershed zone management plans.

5.2 FIRM QUALIFICATIONS

Sage Institute, Inc. (SII) has provided public policy consulting, planning, environmental consulting, and land management services throughout California since 1978. From offices in Atascadero and Westlake Village, California, SII provides a multi-disciplinary consulting perspective unique within the industry. Not only does SII provide long-range planning, CEQA compliance and biological resource consulting services, the firm combines these with a long track record of public policy analysis and assisting public and private organizations in the acquisition and management of land for large capital projects. This is often the missing link to a successful planning process, which depends on the availability of land and the cooperation of land owners for a project to be realized.

As the name suggests, Sage Institute is comprised of uncommonly skilled, highly trained professionals at the top of their fields. Sage's principals have provided practical and effective consulting services to public agencies, educational institutions, and private organizations for the majority of their careers. Sage Institute brings together professionals with diverse backgrounds and skills, and applies these skills—including project management, technical expertise in biology, planning, and environmental science—to provide cost-effective and efficient solutions for a growing and satisfied client base.

SII provides the following general types of services:

- *Municipal and Public Policy Planning*
- *CEQA, NEPA and Related Environmental Studies*
- *Biological Assessments, Surveys and Monitoring*
- *Resource Regulatory Compliance and Permitting*
- *Educational Facilities Consulting*
- *Geographic Information Systems*

Vision

Our company's vision is to challenge ourselves to create new and more effective solutions to old problems. We do this by applying simple, practical thinking to produce results that are positive for all involved. We strive to improve our clients' existing consulting expectations within a cost-effective framework, where goals are clearly communicated, collaboratively established, and ultimately achieved. And we want to have fun doing this.

Mission

To carry out this vision, our mission is simple:

- *Serve the best interest of our clients*
- *Serve the public good*
- *Provide our services at a good value*
- *Continually improve what we do, how we do it, and what we know*
- *Treat every unanswered question as a challenge*

Sage staff have considerable experience on a variety of different project types including long-range planning projects, school facilities, large industrial projects, as well as infrastructure, residential, commercial, and institutional projects. We apply our diverse skills, encompassing planning, environmental science, and biology to these projects. Sage's philosophy is to provide clients with a high

level of professional expertise, with direct involvement in all projects, working collaboratively to resolve key issues, treating clients as colleagues, rather than as customers.

Please refer to our project experience for additional discussion of the specific types of projects we have accomplished within each service line.

SUBCONSULTANTS

The following summarizes the qualifications of our key subconsultants. Additional qualifications for these firms and key individuals assigned to this project are included in the appendix.

Carollo Engineers is an environmental engineering firm specializing in the planning, design, and construction of water and wastewater facilities. Carollo's reputation is based upon client service and a continual commitment to quality. The firm currently maintains 31 offices in 12 states.

In its 77-year history, Carollo has successfully completed more than 20,000 projects for public sector clients, and is currently ranked within Engineering News Record's (ENR) top 100 design firms. More importantly, ENR's annual Source Book ranks Carollo among the top firms for water and wastewater treatment plant design. Unlike many of engineering firms, Carollo only provides water and wastewater engineering services. Because the firm recruits nationwide and hires technical staff who have extensive background and training specific to this field, the quality and professional standing of our core group of water and wastewater professionals equals or exceeds that provided by many of the largest engineering firms in the country. Carollo has recently completed projects for many of the country's major municipalities and special districts.

Carollo has been a leader in the development of award-winning, comprehensive master plans for wastewater agencies facing a variety of complex issues. Within the past 15 years, Carollo has prepared wastewater master plans or facility plans for more than 50 wastewater treatment facilities. We have also completed collection system planning for over 70 agencies. The firm has demonstrated its ability to successfully simplify complex technical, legal, regulatory, and institutional issues to produce clear, concise, cost-effective, and implementable recommendations. Projects range from small planning studies to comprehensive regional master plans. These plans have addressed process and collection system reliability, flexibility, and operational issues.

RRM Design Group is a highly respected San Luis Obispo based planning, design and engineering firm, which brings extensive public outreach and coastal-oriented qualifications to the Sage team. RRM Design Group is committed to engaging the public in community-based planning and design processes by listening to their desires through forums such as workshops, town halls, and community meetings. RRM derails conflict early on by identifying the key stakeholders and then working to enlist their support. RRM is excellent at working out differences and accommodating opinions. Conflict delays can stop a project, but RRM will continue to resolve any conflicts and keep the project on task, while never taking leave of our client's point-of-view.

RRM listens and understand the needs of a community. We educate, facilitate goals, explore visions and ideas, manage expectations, and translate community-based ideas into design concepts and implement the solutions. We collaborate to advance your project, working out neighborhood differences by

respecting vesting interests. Finally, we thrive in challenging political climates and have a knack for finding fresh solutions and crafting a consensus where few thought it possible before.

Applied EarthWorks, Inc. is a consulting firm specializing in archaeology and cultural resources management. Currently in their tenth year of business, Æ is an experienced firm with a solid record of on-time delivery within budgetary limits. Æ personnel are dedicated to efficient and cost-effective management of projects of all sizes and offer services utilizing the latest technologies available, such as geographic information systems, global positioning systems, remote sensing, and electronic mapping. Æ understands that effective communication, economical and efficient project management, and technical know-how are the cornerstones upon which projects are successfully completed. Æ takes pride in their work, and seek to ensure that clients are satisfied with their selection of Æ to serve their consulting needs.

Applied EarthWorks has successfully completed more than 750 projects for 200 clients. Their forte is a proven ability to convene diverse specialists and focus their efforts toward the achievement of project goals. Æ offices and technical facilities in San Luis Obispo, Lompoc, Fresno, and Hemet, California, permit cost-effective work throughout the western United States. Each office maintains a full complement of field, laboratory, and office equipment that is available in support of the current project.

5.3 RELEVANT PROJECT EXPERIENCE

Sage and its highly experienced principals have a very broad background on a variety of project types, both locally and throughout the state, over the course of their careers. In order to provide a contextual framework relevant to the current project effort, we have organized these into several categories, and provide examples of projects within each category. The projects are organized as follows:

- *Policy Planning and Public Outreach*
- *Constraints Studies*
- *Projects in the Coastal Zone*
- *Public Utilities and Infrastructure Projects*
- *Biological Assessments, Surveys and Monitoring*
- *Resource Regulatory Compliance and Permitting*
- *Land Management and Planning Entitlement Services*

The very extensive and relevant project experience of our subconsultants, notably the technical experience of **Carollo Engineers** on wastewater and water treatment facilities, is included in the appendix to this Statement of Qualifications.

We believe this diverse and unique combination of services is the exact fit that is needed to successfully accomplish the goals of the project, as described earlier in our Statement of Qualifications. Sage Institute staff's representative project experience is described in great detail below.

Policy Planning and Public Outreach

Sage planning staff, led by John Rickenbach, AICP, have specific technical expertise is in long-range planning, including General Plans, Specific Plans, and other programmatic policy documents. Through this experience, he has conducted numerous public outreach programs, and has managed some of the

*most complex and controversial long-range planning programs in the region. John works closely with **Dr. Joel Kirschenstein**, who leads Sage's team in the detailed public policy fields associated with land development, site acquisition and disposition, financing, and agency coordination. Between the two of them, they lead a team that brings considerable experience in a variety of specific tasks, including:*

- *General Plans, Specific Plans and Master Plans*
- *Public Agency Municipal Planning Assistance*
- *Policy Analysis and Interpretation*
- *Interagency Coordination and Facilitation*
- *Public Outreach Programs and Public Acceptance Strategies*
- *Site Acquisition and Disposition*

The following represents our staff's broad municipal, policy planning, and public outreach experience:

City of Paso Robles General Plan Update and EIR

City of Paso Robles

While at another firm, John Rickenbach managed a comprehensive update of the City of Paso Robles' General Plan, including all seven state mandated elements, as well as the City's Parks and Recreation Element. David Wolff and Jason Kirschenstein also conducted a biological resource assessment and survey work for the project, while at another firm. The two-year process included the creation, distribution, and analysis of a public survey, followed up by a series of public workshops. Based on this input, several alternative land use patterns were developed. John combined his planning and environmental expertise to coordinate the entire effort, minimizing the use of subcontractors, and ensuring a smooth and efficient blending of baseline data, policy development, and public participation. The City of Paso Robles was awarded an "Award of Merit" by the Central Coast Section of the American Planning Association for its work on this regionally important project.

Chandler Ranch Area Specific Plan and EIR

City of Paso Robles

John Rickenbach, while at another firm, managed and prepared a Specific Plan and subsequently an EIR that examined the proposed future development of an 837-acre area in the Chandler Ranch area of the City of Paso Robles. David Wolff and Jason Kirschenstein also conducted a biological resource assessment and survey work for the project, while at another firm. The Specific Plan combines zoning regulations, capital improvement programs, detailed development standards, and other regulatory schemes into one document that were tailored to meet the needs of the specific area. In conformance with the requirements of State Government Code Section 65451, the Chandler Ranch Area Specific Plan was intended to accomplish the following objectives:

- *Establish the type and general location of land uses for the property including open spaces;*
- *Describe the means of providing necessary public services to support the future uses;*
- *Identify on-site resources and constraints;*
- *Establish standards to guide future development on the site; and*
- *Provide a phasing plan for implementation of the Specific Plan.*

The land uses proposed for the Chandler Ranch Area Specific Plan include a mix of residential, commercial, open spaces and school uses. In total, the Plan calls for development of more than 1,400 residential units and over 200,000 square feet of commercial uses.

The Draft EIR examines land use, transportation, air quality, noise, safety and geologic hazards, cultural and historic resources, aesthetics and community design, flooding and drainage, public services and infrastructure and biological resources. This project involved an extensive public involvement program.

City of Guadalupe Contract Planning Director

City of Guadalupe

While with another firm, John Rickenbach acted as contract Planning Director for the City of Guadalupe. His primary functions included: 1) coordinating with the development community, regulatory agencies, City staff, elected officials, and the community in general to ensure that plans and projects address the broad issues of concern to all; 2) preparing and presenting recommendations to the Planning Commission and City Council to allow those bodies to make decisions on projects; and 3) providing technical expertise. John was instrumental in helping the City to acquire and utilize Clean Air and Climate Protection software to help the City calculate and track emissions and reductions of greenhouse gases. John also oversaw the preparation of Guadalupe's 2009 Housing Element Update, which contained a chapter on energy conservation and emissions reduction strategies.

In his role as Planning Director, John also sat on the Santa Barbara County Association of Governments (SBCAG) Technical Planning Advisory Committee (TPAC), which was a regional land use planning advisory body, consisting of representatives from each city within the county, as well as the county itself and APCD. In this role, he provided key input at a regional level with regard to strategies related to implementing long-range housing and climate action planning requirements.

Price Canyon Specific Plan Processing

City of Pismo Beach

John Rickenbach is processing the City of Pismo Beach's Price Canyon Specific Plan, acting as City staff for the assignment. This project requires coordination between the City, County and LAFCo, since much of the planning area is currently outside the City limits and its Sphere of Influence. The project also requires coordination with Caltrans, Union Pacific Railroad, and various resources agencies, including the Department of Fish and Game and Regional Water Quality Control Board.

Los Robles Del Mar Specific Plan Processing Services

City of Pismo Beach

John Rickenbach currently provides contract planning services to the City of Pismo Beach to in process the Los Robles Del Mar Specific Plan, a residential development on 182 acres in the eastern portion of the City. The challenges are to design the project to avoid sensitive habitat and species, including oak woodlands and Pismo clarkia. David Wolff also conducted a biological resource assessment and survey work for the project, while at another firm.

Orcutt Area Specific Plan Processing Services and EIR

City of San Luis Obispo

While with another firm, John assisted the City of San Luis Obispo in processing the Orcutt Area Specific Plan. Over a two-year period, he conducted workshops, and worked with staff and consultants to guide the planning process, including a revision of the Orcutt Area Specific Plan. The controversial process ultimately resulted in the preparation of an Environmental Impact Report for the Specific Plan, with extensive public participation. The project has facilitated a high level of exposure to regulatory and political issues facing the City, and has required us to coordinate with the various City departments on an on-going basis.

Constraints Studies

Sage planning staff, led by John Rickenbach, AICP, have prepared numerous site constraints studies on a variety of projects, ranging from minor league baseball stadiums, municipal expansion areas, industrial facilities, and trail corridors. From a planning perspective, Sage understands the broad issues that need to be addressed in such studies, from physical, environmental, and economic. Combined with our excellent public outreach skills, we are able to successfully communicate our findings in such a way to allow the public and decision makers to move forward in a collaborative manner, seeking optimal outcomes for sometimes difficult planning choices.

Examples of our staff's experience are highlighted below:

East-West Ranch Management Plan

Cambria Community Services District

While with another firm, John managed the preparation of an environmental constraints analysis and CEQA documentation for the East-West Ranch Management Plan, which guides the long-term use of this large and valuable open space parcel along the Pacific coast in the community of Cambria. Specifically, evaluation included the biological, land use, and cultural resource constraints of the site, and recommended management techniques to preserve the key resources while allowing public access. The Management Plan responds to a multi-agency effort to preserve the site for public access, and included a 2-year public participation effort.

Templeton-Atascadero Bikeway Connector Trail Constraints Report

County of San Luis Obispo

While with another firm, John oversaw the completion of a bikeway constraints study for San Luis Obispo County, which addressed the area between Templeton and Atascadero. The study examined a variety of environmental, engineering, and cost issues, ultimately identifying “preferred” trail segments that would present the fewest constraints to development. In 2005, the project won an award for Outstanding Environmental Resource Document from the Association of Environmental Professionals.

Sphere of Influence Study, Constraints Analysis, Specific Plans, and EIR

City of Santa Maria

While at another firm, John Rickenbach was the project manager for comprehensive study of Santa Maria's future Sphere of Influence, which addressed land availability and development forecasts within

that city over a 20-year horizon. As part of this study, a citywide land inventory was developed to establish land requirements to accommodate future use demands. The future expansion of the City was determined in part by a constraints analysis describing the relative issues with each of 10 potential expansion areas surrounding the City. Ultimately, about half of these area were selected, and were eventually annexed to the City.

John also was the primary author of Specific Plans for five target areas totaling 2,600 acres. Each of the plans addressed neighborhood land use and circulation needs while responding to physical and environmental characteristics, thereby ensuring a compatible relationship with adjacent urban neighborhoods. John then managed the preparation of an environmental impact report addressing the full range of impacts. Key environmental issues included traffic/circulation, agricultural resources, air quality, noise, land use, infrastructure availability, and biological resources. Fundamental to the success of the study was the community involvement component, which included a series of workshops and newsletters. The project won the 1994 Award for Comprehensive Planning Excellence from the American Planning Association's Central Coast Section.

Tri-Cities Minor League Baseball Stadium Constraints Study

Cities of Ventura, Oxnard and Camarillo

John Rickenbach prepared a constraints study that examined the relative merits of 9 potential sites to locate a minor league baseball stadium, in Ventura County. In addition to examining a range of environmental and planning issues, the study also had to consider interjurisdictional issues, including financing issues, since the stadium was envisioned as a regional facility. Ultimately, three site in each city were considered, and the analysis allowed decisionmakers in each city the ability make long-range policy decisions with regard to possible public financing of this venture.

Projects in the Coastal Zone

Sage Institute staff have long experience working on projects within the Coastal Zone, and thus are familiar with not only the regulatory framework, but also the sometimes challenging process needed to ensure the success of projects in this area. Many of these projects are industrial in nature, or involve public utilities, but our broad experience also includes residential entitlements. In many cases, our staff have supported public outreach efforts for projects in the coastal zone. Representative projects include:

Biological Assessment and Regulatory Compliance

San Simeon Community Services District

David Wolff prepared a biological assessment and regulatory compliance review for the San Simeon wastewater treatment plant riprap protection in support of a Coastal Development Permit. The project involved evaluating past activities and existing conditions combined with current application of California Coastal Act and Clean Water Act implementing regulations.

Initial Study/Environmental Clearance for the Moss Landing Marine Laboratories (MLML) Ocean Pier Replacement Project, Moss Landing, California

California State University Moss Landing Marine Laboratory

While with another firm, John Rickenbach managed the CEQA processing for the California State University (CSU) Moss Landing Marine Laboratories (MLML) Moss Landing Ocean Pier Replacement

Project. The IS/MND involved preparation of a physical and programmatic description of the proposed project and evaluation of the project against CSU thresholds, supplemented by standards applicable within Monterey County and information in the *CEQA Guidelines*. Key issues to be addressed include: biological resources, geology and soils, land use and planning, transportation/traffic, utilities, and cultural resources.

Hilton Garden Inn CEQA Compliance and Regulatory Permitting

City of Grover Beach

While at another firm, John Rickenbach was the Principal in Charge of managing the CEQA compliance and regulatory permitting phases of a hotel project within the Coastal appeals zone for the City of Grover Beach. The project was appealed by the California Coastal Commission, since a portion of the project within a riparian area under the CCC's jurisdiction raised concerns related to potential effects on downstream water quality. The City worked closely with the CCC to address that agency's key concerns in the final project design, including mitigation for biological and water quality impacts related to erosion.

Avila Pier Marine Research Facility IS/MND

California State University San Luis Obispo/Unocal Corporation

While with another firm, John Rickenbach oversaw the preparation of an Initial Study and Negative Declaration for the proposed reuse of the Avila Beach Unocal Oil Pier. This project involved a regional collaboration of several California State University (CSU) campuses with CSU San Luis Obispo developing plans to apply the latest techniques in marine instrumentation, computer modeling, 3D visualization, and the Internet to assess the long-term effects of natural (e.g., El Niño, and La Niña) and unnatural (e.g., human-induced habitat destruction, pollution, and pathogens) perturbations on marine and estuarine environments.

Morro Bay National Estuary Program Restoration Feasibility Study

MBNEP and Army Corp of Engineers

David Wolff was an integral member of the local biological resources team to evaluate existing conditions for the joint MBNEP and Corps Planning restoration feasibility analysis for Morro Bay and surrounding watershed.

Grand Avenue Bridge and Storm Water Outfall Replacement Project

City of Grover Beach

David Wolff prepared all the biological resources technical studies and Coastal Development Permit and other regulatory compliance permit applications for the Grand Avenue bridge and storm drain replacement project. Mr. Wolff provided project construction monitoring and habitat restoration implementation and success monitoring.

Regulatory Compliance and Permit Assistance*Unocal/Chevron Corporation*

Sage provided wetland regulatory compliance and California Coastal Act compliance for the ultimate remediation and reuse of facilities for several projects on behalf of Chevron (formerly Unocal), at the SLO Tank Farm, Avila Terminal, and Guadalupe Dunes sites. We consulted with the California Coastal Commission, CDFG, USACE, and Coast Guard for permit compliance for multiple projects.

Avila Tank Farm Biological and Wetland Resources Studies*Unocal/Chevron Corporation*

David Wolff conducted special-status aquatic species protocol surveys for fairy shrimp, red-legged frog, and California tiger salamander. Mr. Wolff also conducted rare plant surveys and wetland determination for the former Unocal Avila Terminal in support of ecological risk studies, remediation and reuse planning efforts.

Addie Street Residential Development Biological Studies*City of Pismo Beach*

Sage Institute conducted a wetland determination, biological assessment, and regulatory compliance evaluation in support of the City's IS/MND and Coastal Development Permit for development of a residence. This work continued with the Coastal Commission original jurisdiction appeal.

Avila Tank Farm SB 18 Cultural Resource Consultation*Unocal/Chevron Corporation*

Sage staff assisted Chevron's public outreach efforts with Chumash tribal representatives, through educational workshops. Much of the effort centered on informing tribal representatives of their rights under state law with regard to the protection of cultural resources. The effort also including educating these groups about the complex regulatory framework that projects must negotiate when they are in multiple jurisdictions, including the Coastal Zone, local land use authority, and a variety of state and federal resource regulatory agencies.

El Colibri Hotel Biological Assessment*Private Client*

David Wolff conducted a detailed biological assessment in support of a Coastal Development Permit for the El Colibri Hotel in Cambria. The project required the analysis of existing site conditions, anticipated future conditions, and recommended mitigation measures.

Port San Luis Master Plan*Port San Luis Harbor District*

Debbie Rudd of RRM Design Group led an effort that included public workshops, consensus building between multiple agencies, the County, Coastal Commission, Port San Luis Harbor District, and the neighboring community to prepare a Master Plan for Port of San Luis and the community of Avila Beach. RRM provided a facilities needs assessment, a focused user survey, public workshops, a coastal access

and implementation plan (with a new policy chapter inserted into the Local Coastal Plan), and schematic design with an evaluation of existing resources and services on the heavily used commercial fishing pier, Harford Pier. Debbie worked closely with the Santa Cruz Coastal Commission staff in preparing the submittal and response to staff modifications.

Avila Beach Front Street Enhancement Plan

Multiple Agencies and Community Groups

Debbie Rudd of RRM Design Group was the project manager and designer responsible for bringing multiple agencies and community groups to consensus on the design and rebuilding of the Avila Beach community. The Plan includes a plaza area, a seawall, a memorial overlook deck, a neighborhood park, a lifeguard/first aid station, an amphitheater, public art, streetscape, beach access, and public restrooms.

Biological Assessments, Monitoring and Permitting Activities

Various Clients

Kevin Merk, while at other firms, has performed a wide variety of biological assessments, monitoring activities and regulatory permitting for many projects in the coastal zone. In many cases, he has presented his findings to, and worked closely with, agency staff to develop solutions to issues of special concern to the Coastal Commission. A representative sample of some of his coastal projects include:

- Pismo Coast Village RV Resort Expansion
- Birch Street Development, Cayucos, CA, SLO Land Corp
- Jones Property, Harmony, CA
- Pebble Beach Lot Development Program, Pebble Beach Company
- Salinas Road Interchange, North Monterey County, Caltrans
- Mid-State Bank Tree Assessment, Cambria
- Santa Rosa Creek Trail Development, Cambria Community Services District
- Jackson Ranch After the Fact Permit Acquisition, Cambria
- Pecho Valley Road Property, Los Osos, CA - Morro Montana Company
- Walker Residence Morro Shoulderband Snail Habitat Assessment, Los Osos, CA
- Russell Residence Habitat Restoration Plan (Morro Manzanita), Los Osos, CA
- De Bruyn Residence Habitat Restoration Plan (Morro Manzanita), Los Osos
- Pismo Lake Ecological Reserve Botanical Inventory, San Luis Coastal RCD
- San Buenaventura State Beach Habitat Restoration Monitoring, CA State Parks, Ventura
- Harmony Headlands State Park Biological Inventory, CA State Parks
- North of Playa Habitat Conservation Plan, Sand City, Monterey County

Public Utilities and Infrastructure Projects

Sage staff have conducted analysis for a variety of public utilities and major infrastructure projects, including for wastewater treatment plants. Thus, our staff is knowledgeable with key issues facing the approval of such facilities, and the regulatory process that must be followed in their entitlement. Our full service environmental compliance efforts have run the gamut from upfront constraints studies through post-approval long-term biological monitoring. Please refer to the SOQ appendix for additional project experience, particularly of our subconsultant Carollo Engineers.

Santa Maria Wastewater Treatment Plant Expansion EIR

City of Santa Maria

While with another firm, John Rickenbach managed an EIR for the City of Santa Maria's Wastewater Treatment Plant Expansion project. The project involved the annexation of 252 acres to be used for treated wastewater percolation and groundwater recharge ponds, pipelines, service roads, a Police Impound Yard, a Humane Society Animal Shelter, and a City Corporation Yard. The intent of the project was to expand the Wastewater Treatment Plant to accommodate the existing community and expected growth, provide adequate sewage treatment capabilities, provide functionally efficient and cost-effective wastewater treatment to serve the community, consolidate public and community facilities in one location to improve services, and link two non-contiguous portions of the City of Santa Maria. The EIR analyzed the following issues: aesthetics, agricultural resources, biological resources, geology/soils, and air quality.

Chevron Estero Marine Terminal Source Removal EIR

County of San Luis Obispo

While at another firm, John Rickenbach managed an EIR addressing the removal of hydrocarbon contaminated soil at the Chevron/Estero Marine Terminal, immediately north of the City of Morro Bay. The purpose of the project is to improve ground water quality by removing separate-phase petroleum hydrocarbons from three designated plume areas at the facility. The proposed project implements the requirements of the Regional Water Quality Control Board, Central Coast Region (RWQCB), and is intended to comply with State Water Resources Control Board (SWRCB) Order No. 2002-0002. Specifically, the project involves excavation and on-site treatment of soil petroleum contaminated hydrocarbons, along with site preparation to accomplish the project objectives. Due to the project's location, immediately adjacent to Toro Creek, installation of a sheetpile wall is needed to protect sensitive biological resources. Key issues examined in the EIR include biological and cultural resources, noise, traffic and air quality.

Biological Assessments, Surveys, Monitoring and Permitting

Southern California Gas Company / Sempra Energy

Sage Institute conducted biological assessments, surveys, monitoring and permitting services for a variety of operation, maintenance, and capital construction projects for Sempra Energy. The projects were within the Central Coast, Southern California, desert, and San Joaquin Valley regions. The efforts included compliance with a variety of state and federal regulations, including the Clean Water Act, Endangered Species Act, as well as local laws. Sage's full service consulting also included construction monitoring and Programmatic Permit developments. Sage led efforts for obtaining Clean Water Act, Endangered Species Act, CA Fish and Game Code, and Regional Water Quality Control Board permits, authorizations, and related mitigation and habitat compensation requirements for gas transmission and distribution projects throughout service areas. Sage's services have been applied to the following projects:

- **Gaviota PIP Project** – agency coordination and rare plant survey for Gaviota tarplant, Santa Barbara County.
- **Matilija Creek Pipeline Exposure Repair** – California red-legged frog USFWS protocol surveys, construction monitoring, CRLF handling (USFWS approved), habitat compensation oversight, and general wetland permit compliance. Ventura County.

- **Sullivan Canyon Pipeline Protection Project** – 5-mile rare plant and wildlife surveys, multi-agency regulatory compliance permitting, large-scale construction monitoring oversight, restoration planning and installation, long-term restoration maintenance and monitoring. City of Los Angeles.
- **CalTrans / SCG** – San Joaquin kit fox protocol surveys/den closure and construction monitoring for natural gas pipeline realignment. State Highway 46 widening project. Kern County.

Santa Maria Regional Landfill Site Facility Permit Second Supplemental EIR

City of Santa Maria

Sage team members, while at another firm, helped prepare a Supplemental EIR for the Santa Maria Regional Landfill Site Facility Permit Project, which involved moving existing facilities to accommodate waste disposal in the lined landfill future area, increasing the height of the active landfill area (with hydrocarbon-impacted soils), and implementing waste diversion operations. Key issues that were analyzed in the EIR include: geology, water resources, air quality, land use, safety, traffic, biology, noise, visual resources, and public service.

Union Valley Parkway Extension/Interchange EIR/EA

City of Santa Maria

While with another firm, John Rickenbach was the principal in charge of preparing environmental documentation for the Union Valley Parkway Extension/Interchange in the City of Santa Maria. The City's purpose for the Union Valley Parkway extension/interchange is to provide a major arterial for the movement of people and goods through the Santa Maria-Orcutt area. The project is expected to accommodate long-term traffic/circulation needs at an acceptable Level of Service within the City of Santa Maria and the community of Orcutt in Santa Barbara County for all proposed intersections and roadways.

The project is subject to federal, as well as local and state environmental review requirements because the use of federal funds is proposed and the project requires a federal approval action. Because of federal funding, the Federal Highway Administration is lead agency under the National Environmental Policy Act, with Caltrans delegated to act as its agent and provide oversight for the National Environmental Policy Act process. Key issues included traffic and circulation, biological resources, noise, and air quality.

US 101/N. Front Street-Moranda Road Interchange Improvements Project PEAR

City of Soledad

While with another firm, John was the principal in charge of preparing a Preliminary Environmental Analysis Report (PEAR) for an interchange improvement project in the City of Soledad. The PEAR evaluates four build alternatives. Anticipated environmental issues to be further explored in the associated CEQA/NEPA compliance are biological resource impacts related to potential loss of San Joaquin kit fox and burrowing owl habitat, potential soil contamination from underground storage tanks in or near the area of work, and potential farmland conversion impacts.

Biological Assessments, Surveys and Monitoring

Sage Institute staff work closely with public, private, and utility clients to provide quality and cost effective biological resource assessments, plant and animal surveys, and long-term construction monitoring and reporting. Our goal is to act as a turnkey operation for our clients. First, we apply our expertise to determine what resources are in the field through a Biological Resources Assessment. Once we know this, we advise our clients about whether special status species surveys are needed, then conduct these surveys as appropriate. Ultimately, we use this information to guide our clients in designing a project that minimizes impacts to identified resources. In the long-term, we provide field monitoring services to ensure that all mitigation measures are implemented.

Sage Institute's biologists have specialized expertise in field survey design, identifying and mapping sensitive biological resources, and communicating the seasonal and regulatory restrictions associated with them.

Our wildlife biologists, botanists, ecologists, and project managers have extensive experience in the following areas:

- *Biological Assessments, Constraints Analysis, Vegetation/Habitat mapping*
- *Habitat Assessments for Special-Status Species Presence*
- *Rare Plant Survey and Floristic Inventory (Uplands, Wetlands, Vernal Pools)*
- *Fairy Shrimp Surveys (Wet and Dry Season) Recovery Permit #TE-090849-1*
- *Rare Wildlife Surveys (Terrestrial, Aquatic, Breeding Bird)*
- *USFWS Approved CA Red-Legged Frog Construction Monitoring*
- *San Joaquin Kit Fox Habitat Evaluations & Pre-Construction Surveys*
- *Wetland Delineations and Jurisdictional Determinations (Federal and State)*
- *Full-service Geographic Information System (GIS) capabilities*
- *California Natural Diversity Database Review and Analysis (CNDDDB)*
- *Construction and Post-Construction Monitoring and Reporting*

Sage Institute's direct experience with regulatory compliance and permitting, or our staff's experience while at other firms, includes the following:

Biological Assessments, Surveys, Monitoring and Permitting

Santa Maria Public Airport District

Sage biologists provided a range of services to the Airport District in support of a potential reuse of airport property and runway extension project. The activities included surveys for the California tiger salamander, California red-legged frog, and vernal pool fairy shrimp. The effort also included FESA Section 7 Consultation, habitat compensation planning, rare plant surveys, and protocol fairy shrimp surveys. Ultimately, this led to long-term water line construction monitoring for a new water line and runway extension.

Regulatory Compliance and Permitting

Southern California Gas Company / Sempra Energy

Sage Institute conducted biological assessments, surveys, monitoring and permitting services for a variety of operation, maintenance, and capital construction projects for Sempra Energy. The projects

were within the Central Coast, Southern California and San Joaquin Valley regions. The efforts included compliance with a variety of state and federal regulations, including the Clean Water Act, Endangered Species Act, as well as local laws. Sage's full service consulting also included construction monitoring and Programmatic Permit developments. Sage led efforts for obtaining Clean Water Act, Endangered Species Act, CA Fish and Game Code, and Regional Water Quality Control Board permits, authorizations, and related mitigation and habitat compensation requirements for gas transmission and distribution projects throughout service areas. Sage's services have been applied to the following projects:

- **Sempra Energy (Southern California Gas Company / San Diego Gas and Electric)** – Clean Water Act, Endangered Species Act, and local agency environmental compliance for operation, maintenance, capital, and Pipeline Integrity projects.
 - Programmatic Compliance Efforts: Programmatic permit compliance efforts in Southern California, San Joaquin Valley, and Coastal California. Performed as key team member for regional Biological Opinion and HCP planning and implementation efforts. Habitat compensation planning and oversight.
 - Transmission, Distribution, Pipeline Integrity Services: Biological impact assessments, permit facilitation, agency negotiations, construction monitoring, habitat compensation coordination and oversight, site restoration, and compliance assistance for State and Federal Endangered Species Acts, Sections 401 and 404 of the Clean Water Act, and CDFG Section 1600 Streambed Alteration Agreements.
 - Construction Monitoring: Lead construction monitor for various Capital Improvement and maintenance (Transmission, Distribution, and Pipeline Integrity) projects. Duties include permit compliance oversight and construction monitor coordination and reporting.
- **SCG Sullivan Canyon** – Coordinated long-term maintenance Corps 404 Individual Permit, RWQCB 401 Certification, CDFG Streambed Alteration Agreement, City of L.A. Tree Permit, restoration planning, habitat compensation oversight.

Biological Studies, Surveys and Monitoring

Various Clients

Sage Institute staff have conducted numerous other biological assessments, surveys, and other related technical studies while at Sage or while at other firms. Our staff has also prepared many biological resource evaluations for CEQA documents, and implemented mitigation programs through long-term construction monitoring. The following provides a brief summary of many of completed jobs:

- **King Ventures Vaqueros (Black Ranch) Rare Plant Survey and Fairy Shrimp Habitat Map, Paso Robles.** David Wolff conducted a rare plant survey over the 300+ acre property to determine the presence/absence of rare plants. To fulfill a condition of approval, Mr. Wolff identified the exact limits of the vernal pool and associated watersheds on the project site that had confirmed presence of the vernal pool fairy shrimp (*Branchinecta lynchii*) that was used as an avoidance mitigation measure.
- **City of Paso Robles General Plan Update** – Conducted biological resources analysis for General Plan Update and EIR including upland, river and wetland species evaluations.
- **City of Paso Robles, Boyle Engineering** – Conducted biological assessment for the reservoir sighting study to evaluate alternative locations for proposed reservoirs including detailed oak tree inventory and mapping.
- **City of Grover Beach** – Grand Avenue bridge replacement and storm drain modification regulatory compliance authorizations, mitigation planning, pre-construction CA red-legged frog and nesting bird surveys, and construction monitoring for a rental car facility project.

- **San Luis Obispo County Airports** – Environmental monitoring & pre-construction CA red-legged frog surveys, fairy shrimp surveys, FESA consultations, & wetland delineation.
- **Cal Poly San Luis Obispo** – Student housing & education facilities Clean Water Act permitting, CA red-legged frog surveys, riparian habitat restoration & monitoring.
- **San Simeon Community Services District** - Arroyo del Padre Juan Creek CA red-legged frog and steelhead biological assessment for Coastal Development Permit.
- **Morro Bay National Estuary Program** – Corps of Engineers Morro Bay restoration feasibility study; Los Osos Creek restoration CA red-legged frog & steelhead monitoring; Walters Creek restoration biological assessment; Maino Ranch invasive weed species study.
- **Templeton Community Services District** – Proposed park site biological assessment and rare plant survey.
- **Winery Projects, North San Luis Obispo County** – Sage biologists have conducted biological assessment and San Joaquin kit fox habitat evaluations for numerous winery projects throughout north San Luis Obispo County.
- **Silverado Vineyards, Branch Road and Firehouse Projects** – Biological assessments & rare amphibian surveys for two proposed developments in north San Luis Obispo County.
- **Meridian Vineyards** – San Joaquin kit fox protocol surveys/den closure adjacent to State Highway 46, San Luis Obispo County.
- **Santa Maria Public Airport District** – California tiger salamander construction monitoring. Santa Barbara County.
- **Miller Ranch Subdivision, Alston and Bird, LLP** – Provided expert biologist review and comment on CEQA Mitigated Negative Declaration for proposed subdivision and annexation project, City of Thousand Oaks.
- **Barrett Ranch Elementary School** – MND Preparation, wetland permitting and restoration compliance. Placer County.
- **Creekview Ranch Middle School** – EIR preparation, wetland permitting, construction monitoring, and restoration compliance for a school in Placer County.

Regulatory Compliance and Permitting

Sacramento & San Joaquin Area Flood Control Agencies

David Wolff while at another firm prepared a wetland delineation, 404 Permit acquisition & compliance monitoring, SMARA Reclamation Plan, wetland/riparian habitat restoration & monitoring, engineering design review & environmental compliance, FESA consultation & construction monitoring for various flood control projects for these agencies within areas in the sensitive Sacramento-San Joaquin Delta.

Resource Regulatory Compliance and Permitting

The permit process associated with addressing impacts to protected biological resources is complex. Construction and other development activities may require permits because of potential impacts to listed species, nesting birds, and jurisdictional drainages and wetlands, or by location within sensitive planning areas such as the Coastal Zone or Significant Ecological Areas (SEAs).

Sage Institute biologists and permitting specialists comprehensively guide our clients through the biological permitting process. We work closely with our clients to determine the most effective permitting approach, and discuss possible project design alternatives to achieve the regulatory requirements, always being mindful of cost and timing considerations. Our excellent working relationship with the various resource agencies helps break down communication barriers that might

otherwise lengthen the permitting process, if left to less experienced hands. Through the process, we will identify those specific permits and approvals necessary, complete the applications, negotiate conditions concerning biological issues. If the project is approved, we will plan and implement the final permit requirements. Some of the key permits or approvals we assist with include the following:

- Army Corps CWA Section 404 Individual & Nationwide Permits
- Federal Endangered Species Act Section 10 HCP & Section 7 Formal Consultation
- California Section 2081 Endangered Species Act Permits
- CDFG Streambed Alteration Agreements
- RWQCB CWA Section 401 Water Quality Certification
- California Coastal Act Coastal Development Permits and LCP Compliance
- Mitigation & Restoration Planning, Design, Implementation & Monitoring
- Stormwater Pollution Prevention Plans (SWPPP)

Our staff's regulatory compliance and permitting experience includes the following projects:

Regulatory Compliance and Permitting

Southern California Gas Company / Sempra Energy

Sage Institute conducted biological assessments, surveys, monitoring and permitting services for a variety of operation, maintenance, and capital construction projects for Sempra Energy. The projects were within the Central Coast, Southern California and San Joaquin Valley regions. The efforts included compliance with a variety of state and federal regulations, including the Clean Water Act, Endangered Species Act, as well as local laws. Sage's full service consulting also included construction monitoring and Programmatic Permit developments. Sage led efforts for obtaining Clean Water Act, Endangered Species Act, CA Fish and Game Code, and Regional Water Quality Control Board permits, authorizations, and related mitigation and habitat compensation requirements for gas transmission and distribution projects throughout service areas. Sage's services have been applied to the following projects:

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Regulatory Compliance and Permitting

Sacramento & San Joaquin Area Flood Control Agencies

Sage prepared a wetland delineation, 404 Permit acquisition & compliance monitoring, SMARA Reclamation Plan, wetland/riparian habitat restoration & monitoring, engineering design review & environmental compliance, FESA consultation & construction monitoring for various flood control projects for these agencies within areas in the sensitive Sacramento-San Joaquin Delta.

Land Management and Planning Entitlement Services

Sage's has developed a fundamental understanding of state and local planning law through its broad experience with its public sector clients. This grasp of public policy issues—and the understanding of how government works—provides the roadmap needed for Sage to assist its private sector clients through the land acquisition, entitlement, and development process. Sage Institute provides public policy consulting and entitlement services to public agencies, energy companies, private home builders, land trusts, and educational institutions such as school districts. Our licensed real estate brokers and planners work together to identify sites and negotiate real estate transactions on behalf of our clients, which is often the key to successful project implementation. Our primary services include:

- *Development Agreements*
- *Land Acquisition and Property Owner Negotiations*
- *Property Subdivision and Entitlements*
- *Redevelopment Agency Project Planning, Financing and Participation*
- *Expert Witness Services*

What follows is represent some of our of land acquisition, entitlement and project implementation experience.

Entitlement and Land Development Processing

Various Clients

Sage Institute staff has managed the entitlement process for proposed development for many private home builders, utilities, and energy companies. Typically, these efforts have been turnkey operations, from initial consultation, financial evaluation, and leading the client through the entitlement process. A key to these efforts included evaluating impacts on public infrastructure, and negotiating a financing mechanism with public agencies to ensure that the necessary infrastructure is built to serve the project in such a way that the project remains fiscally positive to the public agency. In some cases, Sage helped broker deals for acquiring the land needed to implement the project. The process also typically involved negotiating a School Mitigation Agreement, which is greatly facilitated by Sage's long experience working directly with school districts throughout California. For some projects, these efforts have included evaluating the potential policy and fiscal impacts of developing public lands. The following table highlights many of Sage's clients in this process, and summarizes the services provided to them.

Client	Entitlements	Public Facilities Impact Analysis	Fiscal Evaluation	Mitigation Agreement	Public Lands Analysis	Developer Fee Negotiations	Site Constraints Analysis	School District Joint Use Agreement	School Site Financing	LAFco Coordination and Annexation	Special District Formation	Specific Plan Amendment
Baldwin Company	❖	❖		❖								
Braemer Homes	❖		❖	❖	❖							
Chevron Land Co.	❖				❖	❖	❖					
Courtly Homes	❖	❖					❖					
Elliott Homes								❖	❖			
Griffin Homes		❖				❖	❖					
Highlands	❖			❖						❖	❖	
Mobil Land Co.		❖					❖		❖			
Kahn/Golden City	❖			❖		❖				❖		❖
Prudential/N. Ranch					❖	❖						❖
Paradise Valley	❖			❖							❖	❖
Pacific Coast Homes	❖			❖							❖	
Watt Homes/Klein	❖			❖							❖	
Ahmanson Dev.	❖			❖							❖	
Tejon Ranch						❖	❖		❖			❖

Planning, Financing and Land Acquisition Consulting Services

Various School Districts

Since its founding in 1978, Sage Institute has provided full service consulting services to public school districts throughout California. These services have included a broad range of policy, financial, and land management tasks, and in all cases Sage has represented its clients in developer or interagency negotiations relative to financing or mitigation. Sage has developed a reputation as a “one stop shop” for school districts, assisting in a variety of facilities planning needs. These include master planning, asset management, public policy negotiations, real property entitlements, land development, Community and City planning, School District reorganizations, educational master planning, surplus property utilization and related work efforts on a statewide basis. Sage provides the following broad range of services for its clients:

- *Master Planning*
- *Facilities Planning*
- *Land Acquisition and Facilitation Services*
- *Interagency Negotiations*
- *Client Representation Before State Legislature and other Governmental Agencies*
- *CEQA Analysis*
- *Long-Range Financing Strategies*
- *Mello-Roos, Assessment Districts, and Bond Financing for Public Infrastructure*
- *Facilities Asset Management*
- *Joint Use Agreements*
- *Project Feasibility and Long-Term Financial Performance Evaluation*

5.4 REFERENCES

Sage is proud of the reputation that it has built since it was founded in 1978. We encourage you to contact any of the following references regarding our staff's past performance on assignments, some of which were completed while our staff were employed at other firms.

Marc Bierdzinski, AICP
Community Development Director
City of Buellton
(805) 688-7474
marcb@cityofbuellton.com

Chris Hastert
General Manager
Santa Maria Public Airport District
(805) 922-1726
chastert@santamariaairport.com

Carolyn Johnson
Senior Planner
City of Pismo Beach
(805) 773-7043
cjohnson@pismo-beach.org

Don Houston
Supervisor, Natural Resources & Land Planning
Sempra Energy
(213) 244-5412
DFHouston@semprautilities.com

Teresa McClish
Community Development Director
City of Arroyo Grande
805/473-5420
TMcClish@arroyogrande.org

John Mandeville
Community Development Director
City of San Luis Obispo
805/781-7170
jmandeville@slocity.org

Appendix

Fee Schedules, Resumes and Supporting Information



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SAGE INSTITUTE, INC. STANDARD AND REDUCED BILLING RATES		
Position²	Standard Rate	Reduced Rate¹
Principal 1	\$145/hr.	\$120/hr.
Principal 2	\$125/hr.	\$105/hr.
Senior Associate	\$105/hr.	\$85/hr.
Associate	\$85/hr.	\$75/hr.
GIS/Graphics Tech	\$75/hr.	\$65/hr.
Administrative Assistant	\$65/hr.	\$55/hr.
Per Diem For Multiple Day Hourly Tasks (travel, mileage, meals)	\$150/day	N/A
Daily Monitoring Rates (Up to 10 hour days Inclusive of per diem)	30+days = \$1,000/day 15-29 days = \$1,100/day 1-14 days = \$1,200/day	
Direct Expenses: printing, field supplies, communications, etc. Mileage: At current IRS Rate 0.51/mi	Cost plus 10%	N/A
¹ Reduced rates are applied at the discretion of Sage Institute on a project-by-project basis Overtime hours charged for hourly employees at 1.5x Standard Rate for hours over 8/Day		



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Professional Resume

John F. Rickenbach, AICP
Principal Planner

John Rickenbach serves as Principal Planner for Sage Institute, Inc. (SII) with over 20 years of professional of broad-ranging experience serving both the public and private sectors. His experience includes preparing and overseeing a wide range of technical studies, particularly general plans and specific plans, CEQA and NEPA documents, GIS analysis, transportation plans, and a variety of constraint studies. He has a strong background in applying GIS technology and database management to many of these projects. In addition, his expertise includes the creative application of the environmental and public participation processes to guide long-range planning efforts, including complicated annexation studies. Mr. Rickenbach also has high-level public sector planning experience, most notably as the contract planning director for the City of Guadalupe.

TECHNICAL CAPABILITIES

- Mr. Rickenbach has prepared a wide range of planning studies, including specific plans, general plans, constraints analyses, and CEQA/NEPA documents. His particular expertise is planning within rural communities, and for cities in the process of urbanizing. He is an expert at coordinating public input to produce planning documents based on consensus, and has successfully developed plans for communities with differing needs.
- Mr. Rickenbach is an authority regarding the concepts surrounding neo-traditional town development. He co-authored an award-winning study that compared the costs and benefits of standard suburban development to the principles of neo-traditional planning, an approach that emphasizes site planning to improve the functionality of development. He also prepared a corridor constraints study that was recognized with a statewide award by the American Planning Association.
- As a consultant, Mr. Rickenbach developed a successful contract planning service for several public agencies, and applied his expertise to a variety of roles, including that of a contract planning director, staff assistance to process projects, and preparing CEQA studies and staff reports. He has also represented cities to LAFCo boards during complex annexation processes.

EMPLOYMENT HISTORY

- Sage Institute, Inc. (2011 to present)
- John F. Rickenbach Consulting (2009 – 2010)
- Rincon Consultants, Inc. (1997 - 2009)
- ENSR (1997)
- Fugro West, Inc. (1990 - 1997)
- City of Arroyo Grande (1989 - 1990)

EDUCATION, REGISTRATIONS AND AFFILIATIONS

- B.S., Physical Geography, University of California, Davis, 1985
- M.C.R.P., City and Regional Planning, Cal Poly San Luis Obispo, 1991
- American Institute of Certified Planners
- American Planning Association

SELECTED PROJECT EXPERIENCE

General Plans and Specific Plans (including CEQA compliance)

- General Plan Update and EIR, Cities of Paso Robles, Buellton and Lompoc
- Kings County General Plan Update EIR
- Housing Element Update, Cities of Solvang and Guadalupe
- Mahoney Ranch, Blosser Southeast and Southwest Specific Plans, City of Santa Maria
- Chandler Ranch Area Specific Plan and EIR, City of Paso Robles
- Downtown Specific Plan EIR, City of Santa Maria
- Marina Downtown Specific Plan and EIR, City of Marina
- Downtown Project EIR, City of Grover Beach
- City of Patterson General Plan EIR Support
- Scotts Valley Town Center Specific Plan EIR
- River Oaks Specific Plan – Environmental and Demographic Studies

Other Long-Range Planning/CEQA Studies

- Sphere of Influence and Concurrent Annexation Study and EIR, City of Santa Maria
- San Luis Obispo Area Plan EIR, San Luis Obispo County
- Dalidio Marketplace Commercial Annexation Project EIR, City of San Luis Obispo
- Comparison of Conventional and Neo-Traditional Development, City of Santa Maria
- Santa Barbara County 2008 Housing Element Rezone EIR, Santa Barbara County
- North County Hydrogeologic Study, GIS Land Use Analysis, Monterey County
- Minor League Stadium Constraints Study, Cities of Ventura, Oxnard and Camarillo
- Greenhouse Gas Emissions Analysis (various clients)

Rural and Agricultural CEQA Studies

- Biddle Ranch Agricultural Cluster Subdivision EIR, San Luis Obispo County
- Paso Robles Agricultural Cluster Subdivision EIR, San Luis Obispo County
- Santa Margarita Ranch Future Development Program EIR, San Luis Obispo County
- Rabbit Ridge Winery CEQA Monitoring, San Luis Obispo County

Transportation Planning Studies

- Regional Transportation Plan EIRs, Santa Cruz, Kings, San Benito, San Luis Obispo, Santa Barbara Counties
- Pedestrian and Bicycle Master Plan, City of Marina
- Templeton-Atascadero Bicycle Trail Constraints Analysis, San Luis Obispo County
- U.S. Highway 101 Corridor Constraints Study, SLOCOG
- Fulkerth/SR 99 PEAR and CEQA Studies, City of Turlock and Caltrans
- Union Valley Parkway Extension/Interchange Project EIR/EA, City of Santa Maria
- Santa Clara River Bike Trail EIR, City of Santa Clarita

School District Studies

- Twin Rivers Unified School District New High School SEIR
- Monterey Peninsula Unified School District High School EIR
- Marysville Joint Unified School District IS/MND
- Ceres Unified School District High School EIR
- Ceres Whitmore Junior High School IS/MND

Municipal Contract Planning

- Contract Planning Director, City of Guadalupe (2006-2009)
- Orcutt Area Specific Plan Processing, City of San Luis Obispo
- Los Robles Del Mar Specific Plan Processing, City of Pismo Beach
- Price Canyon Specific Plan Processing, City of Pismo Beach
- Technical Planning Advisory Committee, Santa Barbara CAG
- On-Call CEQA and Planning Support, Monterey County



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Professional Resume

David K. Wolff

Certified Professional Wetland Scientist

David Wolff serves as the Principal Ecologist for Sage Institute, Inc. (SII) and is a Certified Professional Wetland Scientist with over 30 years of professional experience. Mr. Wolff has special expertise in both flora and fauna, including terrestrial, freshwater aquatic, estuarine, and marine environments. He is knowledgeable in many bioregions of California including Southern California coastal, inland, and desert regions, central coastal & inland areas, Great Valley, and Sierra Nevada foothills. Along with his regional and landscape-scale resources planning experience, he is also an accomplished wetland scientist, botanist, and wildlife biologist well versed in endangered species issues. Throughout his career, David Wolff has conducted studies, prepared reports, obtained regulatory compliance permits, monitored construction projects and, managed projects and staff for a diverse group of public and private sector projects and clients.

TECHNICAL CAPABILITIES

- David Wolff has conducted and managed endangered plant and wildlife species surveys, holds vernal pool fairy shrimp survey Recovery Permit TE090849-1, and is a USFWS approved California red-legged frog, California tiger salamander, and steelhead construction monitor. He has facilitated ESA Section 7 Formal Consultations and has managed the preparation and implementation of project-specific and large-scale regional multi-species Habitat Conservation Plans that have involved city and county land use approval processes and agency/public consensus building programs. He is experienced in CEQA/NEPA and California Coastal Act compliance.
- David Wolff is a highly trained and experienced wetland scientist whose skills include the delineation of wetlands, Clean Water Act Section 404 permitting, mitigation planning, and the creation, restoration, and monitoring of wetland and riparian habitats. He has assisted clients with obtaining both Individual and Nationwide Permits from the Corps for public and private development and infrastructure projects.

EMPLOYMENT HISTORY

- Sage Institute, Inc., Principal Ecologist, September 2008 - Present
- ESA, Southern California Director of Biology, July 2007 – September 2008
- David Wolff Environmental, Principal Ecologist/Owner, October 2003 – July 2007
- Rincon Consultants, Manager, Biological Resources Group, April 2000 – September 2003
- Foothill Associates, Sr. Biologist, Central Coast Office Manager, August 1998 – March 2000
- EIP Associates, Senior Biologist, Sacramento, April 1989 – July 1998

EDUCATION, CERTIFICATIONS, PERMITS

- Bachelor of Arts (Ecology and Systematic Biology), San Francisco State University
- Certified Professional Wetland Scientist, Society of Wetland Scientists
- Fairy Shrimp Survey Permit (Recovery Permit TE090849-1)
- Approved CA Red-Legged Frog, CA tiger salamander, Steelhead, LBV, and SWFL Monitor

SELECTED PROJECT EXPERIENCE

- **Southern California Gas Company / Sempra Energy** – Clean Water Act, Endangered Species Act, and local agency environmental compliance for operation, maintenance and capital projects. Construction monitoring, and Programmatic Permit development and compliance assistance, Central Coast, Southern California, San Joaquin Valley. Lead efforts for obtaining Clean Water Act, Endangered Species Act, CA Fish and Game Code, and Regional Water Quality Control Board permits, authorizations, and related mitigation and habitat compensation requirements for gas transmission and distribution projects throughout service area.
- **Expert Biologist, Shartsis & Friese, LLP** – Expert biologist & wetland scientist services, attended deposition in Home Depot v. Madonna Enterprises related to Clean Water Act violation in San Luis Obispo County.
- **Expert Biologist, Rancho Larios Development** – Deposed as California red-legged frog expert relating to compliance with Federal Endangered Species Act Biological Opinion.
- **Miller Ranch Subdivision, Alston and Bird, LLP** – Provided expert biologist review and comment on CEQA Mitigated Negative Declaration for proposed subdivision and annexation project, City of Thousand Oaks.
- **Oak Ridge Estates, Castlerock Development, City of Atascadero** – Wetland delineation, regulatory permit facilitation, compensatory mitigation plan, and Cambria morning glory mitigation planning for the 380 acre residential development and roadway improvement project.
- **City of Paso Robles General Plan Update** – Conducted biological resources analysis for General Plan Update and EIR including upland, river and wetland species evaluations.
- **City of Paso Robles, Boyle Engineering** – Conducted biological assessment for the reservoir sighting study to evaluate alternative locations for proposed reservoirs including detailed oak tree inventory and mapping.
- **City of Grover Beach** – Grand Avenue bridge replacement and storm drain modification regulatory compliance authorizations, mitigation planning, pre-construction CA red-legged frog and nesting bird surveys, and construction environmental monitoring.
- **Unocal/Chevron Corporation** – Rare, threatened, and endangered species surveys, wetland regulatory compliance, & California Coastal Act compliance, for remediation & facility reuse projects at the SLO Tank Farm, Avila Terminal, & Guadalupe Dunes sites.
- **San Luis Obispo County Airports** – Environmental monitoring & pre-construction CA red-legged frog surveys, fairy shrimp surveys, FESA consultations, & wetland delineation.
- **Santa Maria Public Airport District** – California tiger salamander, CA red-legged frog, and vernal pool fairy shrimp FESA Section 7 Consultation, habitat compensation planning, rare plant survey, and protocol fairy shrimp survey, water line construction monitoring, runway extension monitoring.
- **Cal Poly San Luis Obispo** – Student housing & education facilities Clean Water Act permitting, CA red-legged frog surveys, riparian habitat restoration & monitoring.
- **San Simeon Community Services District** - Arroyo del Padre Juan Creek CA red-legged frog and steelhead biological assessment for Coastal Development Permit.
- **Morro Bay National Estuary Program** – Corps of Engineers Morro Bay restoration feasibility study; Los Osos Creek restoration CA red-legged frog & steelhead monitoring; Walters Creek restoration biological assessment; Maino Ranch invasive weed species study.
- **Sacramento & San Joaquin Area Flood Control Agencies** – Wetland delineation, 404 Permit acquisition & compliance monitoring, SMARA Reclamation Plan, wetland/riparian habitat restoration & monitoring, engineering design review & environmental compliance, FESA consultation & construction monitoring for flood control projects.



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Professional Resume

Jason L. Kirschenstein

Certified Professional in Erosion and Sediment Control

Jason Kirschenstein serves as the Principal Biologist for Sage Institute, Inc. (SII). Mr. Kirschenstein is highly experienced in general and special-status wildlife and vegetation surveys, mitigation planning, regulatory compliance, Geographic Information System (GIS) applications, and environmental impact analysis. Mr. Kirschenstein is well versed in the planning process, and has successfully performed as an integral member on planning and design teams. He has provided biological and regulatory compliance services for local agencies, utilities, and private development projects.

TECHNICAL CAPABILITIES

- Mr. Kirschenstein has conducted numerous biological surveys and is experienced in preparing biological assessments related to flora, fauna, endangered species, and sensitive habitats. Mr. Kirschenstein is well versed in construction and mitigation monitoring and habitat restoration design / implementation.
- Mr. Kirschenstein has extensive experience in the preparation of permit packages for Clean Water Act Section 404 U.S. Army Corps of Engineers permits, CWA Section 401 Certifications from the Regional Water Quality Control Board, and California Department of Fish and Game Section 1602 Streamed Alteration Agreements. Mr. Kirschenstein has also managed the preparation of U.S. Fish and Wildlife Service Section 7 and Section 10 documentation per the Federal Endangered Species Act and CDFG Section 2081 take authorization documentation per the California Endangered Species Act. Mr. Kirschenstein has worked closely with local agencies on permitting and environmental compliance projects, and is proficient in CEQA and NEPA analysis.
- Jason Kirschenstein has over fifteen years of experience working with various GIS applications. His capabilities range from habitat suitability mapping to performing complex analyses. He has worked closely with various public agencies and private interests to obtain and properly manage GIS data. Mr. Kirschenstein's proficiency with advanced GPS technology, AutoCAD applications, image processing software, database management, and other GIS-related equipment enhances his overall GIS production and management capabilities.

EDUCATION, REGISTRATIONS AND AFFILIATIONS

- B.S., Forestry and Natural Resource Management with concentration in Wildlife Biology, California Polytechnic State University, San Luis Obispo
- Certified Professional in Erosion and Sediment Control (CPESC# 5594)
- Association of Environmental Professionals, Audubon Society, Wildlife Society
- Southwestern Willow Flycatcher Workshop and Certification
- CDFG Blunt-Nosed Leopard Lizard Identification Workshop and Certification
- Giant Kangaroo Rat Identification/Handling Workshop and Certification
- Morro Shoulderband Snail Protocol Survey Training
- USFWS-Approved San Joaquin kit fox, CA Red-Legged Frog, steelhead, Southwestern Willow Flycatcher, and Least Bell's Vireo Monitor.

EMPLOYMENT HISTORY

- Principal Biologist, Sage Institute, Inc. (2003 to present)
- Dendrology Instructor, California Polytechnic State University (2000 to 2002)
- Senior Biologist, Rincon Consultants, Inc. (1998 to 2003)

SELECTED PROJECT EXPERIENCE

- **Sempra Energy (Southern California Gas Company / San Diego Gas and Electric)** – Clean Water Act, Endangered Species Act, SWPPP, and local agency environmental compliance for operation, maintenance, capital, and Pipeline Integrity projects.
 - Programmatic Compliance Efforts: Programmatic permit compliance efforts in Southern California, San Joaquin Valley, and Coastal California. Performed as key team member for regional Biological Opinion and HCP planning and implementation efforts.
 - Transmission and Distribution Services: Biological impact assessments, permit facilitation, agency negotiations, construction monitoring, site restoration, and compliance assistance for State and Federal Endangered Species Acts, Sections 401 and 404 of the Clean Water Act, and CDFG Section 1600 Streambed Alteration Agreements.
 - Construction Monitoring: Lead construction monitor for various Capital Improvement and maintenance (Transmission, Distribution, and Pipeline Integrity) projects. Duties include permit compliance oversight and construction monitor coordination and reporting.
- **Unocal/Chevron Corporation** – Rare, threatened, and endangered species surveys, wetland regulatory compliance, & California Coastal Act compliance, for remediation & facility reuse projects at the SLO Tank Farm and Avila Terminal.
- **SCG, San Julian Ranch** – Completed USFWS protocol surveys for Least Bell's vireo (LBV) and southwestern willow flycatcher (SWFL). Approved CRLF, steelhead, LBV, and SWFL monitor, Santa Barbara County.
- **SCG, Matilija Creek Pipeline Exposure Repair** – CA red-legged frog (CRLF) USFWS protocol surveys in perennial rainbow trout stream. Construction monitoring, CRLF handling (USFWS approved), and general wetland permit compliance. Ventura County.
- **River View Community Park** – Conducted LBV / SWFL USFWS protocol surveys in the Santa Ynez River (**multiple active nest observations and seasonal nest monitoring**). Buellton, Santa Barbara County.
- **Santa Maria Public Airport District** – California tiger salamander construction monitoring. Santa Barbara County.
- **San Luis Obispo Creek Assessment** – CRLF USFWS protocol surveys along approx. 2-mile reach of San Luis Obispo Creek.
- **Davenport Creek Road Crossing** – CRLF construction monitoring (included USFWS handling approval), Weyrich Development. City of San Luis Obispo.
- **Biddle Ranch Subdivision** – **Conducted** CRLF USFWS protocol surveys, Biological and wetlands assessment. San Luis Obispo County.
- **CalTrans / SCG** – San Joaquin kit fox protocol surveys/den closure and construction monitoring. State Highway 46 widening project. Kern County.
- **Meridian Vineyards** – San Joaquin kit fox protocol surveys/den closure adjacent to State Highway 46, San Luis Obispo County.
- **SCG, Gaviota PIP Project** – agency coordination and rare plant survey for Gaviota tarplant, Santa Barbara County.
- **Steelhead Habitat Suitability Assessments** – Conducted various suitability assessments for steelhead in southern and central California Rivers and streams. San Luis Obispo County to Los Angeles County.
- **Barrett Ranch Elementary School** – MND Preparation, wetland permitting and restoration compliance. Placer County.
- **Creekview Ranch Middle School** – EIR preparation, wetland permitting, construction monitoring, and restoration compliance. Placer County.
- **SCG Sullivan Canyon** – Obtained long-term maintenance Corps 404 Individual Permit, RWQCB 401 Certification, CDFG Streambed Alteration Agreement, City of L.A. Tree Permit. SWPPP compliance monitoring.



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Professional Resume

Thomas M. Rickenbach, Ph.D.
Climate Consultant

Dr. Thomas Rickenbach is an internationally recognized expert in precipitation variability and climate. Dr. Rickenbach's research investigates how weather systems, from thunderstorms to hurricanes, control and respond to changes in regional climate. He is also interested in the changing hydrological impacts of seasonal and year-to-year variability in rain system structure. As a radar meteorologist, Dr. Rickenbach has traveled across the globe in NASA-sponsored field programs to study the local and global impacts of weather systems. His work has played an important role toward improving computer model simulations of future climate change.

Dr. Rickenbach has over twenty years of experience in environmental research, consulting, and expert testimony. His research has been published in leading journals including *Journal of Climate*, *Journal of Atmospheric Science*, *Journal of Geophysical Research*, *International Journal of Climatology*, *Monthly Weather Review*, and *the Bulletin of the American Meteorological Society*. He worked as an environmental consultant in southern California, in the area of air quality regulatory compliance. Prior to entering academia, Dr. Rickenbach spent eight years as a research meteorologist at the NASA Goddard Space Flight Center in Greenbelt, Maryland. Dr. Rickenbach serves as an associate editor for the *Journal of Applied Meteorology and Climatology*. He is an award-winning university instructor in the area of weather and climate. He appears frequently on television, radio, and in print media discussing issues from local weather phenomena to the regional impacts of climate change.

TECHNICAL CAPABILITIES

- Dr. Rickenbach conducts federally funded cutting-edge research on weather system structure and regional climate variability using surface and space-borne radars, satellite-based precipitation data.
- Dr. Rickenbach served as a radar meteorologist for research field campaigns in Australia, Brazil, West Africa, the South China Sea, and the equatorial western Pacific Ocean. His responsibilities included design and implementation of radar scanning operations, coordinated sampling with aircraft missions, radar calibration, and dual-Doppler operations.
- Dr. Rickenbach teaches courses in weather and climate, global climate change, radar and satellite meteorology, physical meteorology, tropical meteorology, and aviation weather.
- Dr. Rickenbach provides expert testimony as a forensic meteorologist.

EMPLOYMENT HISTORY

- Assistant Professor, Department of Geography, East Carolina University (2007-present)
- Assistant Professor, Department of Meteorology, San Jose State University. (2004-2007)
- Research Scientist, Joint Center for Earth Systems Technology, NASA/UMBC. (1998-2004)
- National Research Council Fellow, NASA Goddard Space Flight Center. (1996-1998)
- Research Associate, Colorado State University. (1992-1996)
- Engineer, Radian Corporation. (1990-1991)

EDUCATION, REGISTRATIONS AND AFFILIATIONS

- Ph.D., Atmospheric Science, Colorado State University, 1996
- M.S., Atmospheric Science, Colorado State University, 1990
- B.S., Petroleum Engineering, University of California, Berkeley, 1987.
- American Meteorological Society
- American Geophysical Union

RECENT PUBLICATIONS

Rickenbach, T. M., R. Nieto-Ferreira, R. Barnhill, and S. Nesbitt, Regional contrast of mesoscale convective system structure prior to and during monsoon onset across South America. In press, *Journal of Climate*, 2011.

Nieto-Ferreira, T. M. Rickenbach, and E. Wright, The role of cold fronts in the onset of the South American monsoon. In review, *Quarterly Journal of the Royal Meteorological Society*, 2010.

Nieto-Ferreira, R. and T. M. Rickenbach, Regionality of monsoon onset in South America: A three-stage conceptual model. *International Journal of Climatology*, doi:10.1002/joc.2161, 2010.

Rickenbach, T. M., R. Nieto-Ferreira, J. Rickenbach, and E. Wright: Monsoon in the Americas: Opportunities and challenges. *Geography Compass*, 3, 1-16, doi:10.1111/j.1749-8198.2009.00266.x, 2009.

Nieto-Ferreira, R., T. Rickenbach, N. Guy, and E. Williams: Radar observations of convective system variability in relationship to African easterly waves during the 2006 AMMA special observing period. *Monthly Weather Review*, 137, 4136-4150, 2009.

Rickenbach, T., R. Nieto-Ferreira, N. Guy, and E. Williams: Radar-observed squall line propagation and the diurnal cycle of convection in Niamey, Niger during the 2006 African Monsoon Multidisciplinary Analyses Intensive Observing Period. *Journal of Geophysical Research*, 114, D03107, doi:10.1029/2008JD010871, 2009.

Rickenbach, T. M., P. Kucera, M. Gentry, L. Carey, A. Lare, R. F. Lin, , B. Demoz, and D. Starr, Relationship between anvil clouds and convective cells: A case study in South Florida during CRYSTAL-FACE, *Monthly Weather Review*, 136, 3917-3932, 2008.

Haertel, P. T., G. Kiladis, A. Denno, and T. Rickenbach, Vertical mode decompositions of 2-day waves and the Madden Julian Oscillation. *Journal of the Atmospheric Sciences*, 65, 813-833, 2008.

Professional Resume

Irma L. Tucker

Planning, Governmental Relations, Land Development and Entitlement

Ms. Tucker has over 25 years of multi-disciplinary experience in the fields of land use entitlements and expediting, environmental compliance, government relations, site evaluation and due diligence reviews, asset management, public real estate acquisition and disposition, school facilities planning and finance, housing and community development, comprehensive master planning, community outreach, grant applications, and program monitoring.

TECHNICAL CAPABILITIES

- Project/program management, project team coordination and budget management
- Excellent written and verbal communication skills, including editing and presentations
- Strong organizational, research, analysis, and report preparation skills
- Practical approach toward problem solving
- Working knowledge of government regulations in general, with focus on local planning / zoning ordinances, environmental guidelines (CEQA/NEPA), discretionary permit procedures, Subdivision Map Act, Education Codes, and related public policy requirements

EMPLOYMENT HISTORY

Sage Institute Inc. Senior Project Manager, providing local and regional planning, government relations, land development entitlements, and real estate consulting services to public agencies, school districts and private sector clients.

Metro Ventures, Ltd., Westlake Village, CA: Principal, responsible for providing land use entitlement assistance and project management services for major residential subdivisions and commercial development projects throughout the greater Los Angeles area; and for consulting assistance to public/private sector clients and school districts with facilities planning and funding.

Psomas, Los Angeles, CA: Project Manager, responsible for land development planning, entitlements, government relations, civil engineering and survey coordination, and project team management in the firm's Woodland Hills and Santa Clarita offices.

City of Pasadena, Housing and Community Development Agency, Pasadena, CA

- Housing Rehabilitation Program Manager
- Community Development Block Grant Coordinator

EDUCATION, REGISTRATIONS AND AFFILIATIONS

- Masters of Urban Planning / California State Polytechnic University, Pomona, CA
- Bachelor of Arts / California State University, Sonoma, CA
- DRE Accredited Continuing Education; Project Management Training
- Licensed California Real Estate Broker (current)
- Building Industry Association, Government Affairs Committee
- Simi Valley Unified School District, Surplus Property Advisory Committee
- Ventura County Housing Opportunities Made Easier (HOME), Project Review Panel

SELECTED EXPERIENCE

School Facility Planning

- school facilities master planning and finance
- school construction funding applications
- site acquisition and surplus property disposition
- school district asset management
- environmental documentation and CEQA clearances.

Development Project Support

- LNR Warner Center
- Ahmanson Ranch
- Unocal Business Park Simi Valley.

Housing Administration

- housing production, housing rehabilitation and commercial renovation loan programs;
- representation with financial institutions, citizen advisory committees and governing bodies.
- administered City of Pasadena's annual CDBG program, including grant applications, new project development, implementation and performance monitoring, community outreach and committees.



Kevin Merk Associates, LLC

KEVIN B. MERK

Principal Biologist

Kevin Merk is the founding principal of Kevin Merk Associates, LLC. With nearly 20 years of environmental consulting experience, Kevin has directed, managed, and conducted hundreds of natural resource and environmental studies throughout California. Mr. Merk has a diverse background in the biological sciences with expertise in plant taxonomy, quantitative vegetation analysis, habitat classification/evaluation procedures, surveys for special status species, habitat restoration and biotechnical erosion control. His work experience includes general biological and species-specific surveys, U.S. Army Corps of Engineers and California Coastal Commission wetland delineations, as well as permit acquisition and regulatory compliance. He has prepared, implemented and monitored habitat mitigation/restoration projects throughout California. Mr. Merk is a well-versed regulatory specialist that provides a balance between rigorous scientific documentation, environmental regulatory requirements and project development goals and objectives. Prior to founding Kevin Merk Associates, Mr. Merk was a program manager for an environmental consulting firm in the Central Coast region.

TECHNICAL CAPABILITIES

- Mr. Merk has an in-depth knowledge of the California flora and protocols for surveying rare, threatened and endangered plant species.
- He has conducted floristic surveys and mapped vegetation communities for private, state and local government clients including California State Parks, California State University System, Fort Ord Reuse Authority, Cities and Counties of Monterey, San Luis Obispo, and Santa Barbara, and Cities of Arroyo Grande, Lompoc, Sand City, Santa Maria and Scotts Valley.
- Mr. Merk has also conducted rare wildlife surveys throughout California for species such as the California tiger salamander, California red-legged frog, western spadefoot toad, legless lizard, horned lizard, burrowing owl and other raptors and nesting birds.
- Mr. Merk has conducted multi-parameter wetland delineations throughout the state including within the Coastal Zone, and is an expert in environmental regulation compliance (e.g., Endangered Species Act, Clean Water Act, Coastal Development Act, California Department of Fish and Game Code, Porter-Cologne Act).

EDUCATION, CERTIFICATIONS, REGISTRATIONS

B.A. Biology (Plant Sciences), University of California, Santa Cruz
40 Hour OSHA HAZWOPER Training and 8 eight-hour annual refresher courses
Hydrogeomorphic Approach to Functional Assessment of Riverine Waters/Wetlands in the South Coast Region of Santa Barbara County
Biology and Handling Trainings for California red-legged frog, California tiger salamander, and Santa Cruz long-toed salamander
U.S. Army Corps of Engineers Wetland Delineation Training
California Native Plant Society
California Botanical Society
California Invasive Plant Council
Society for Ecological Restoration

EMPLOYMENT HISTORY

Kevin Merk Associates, LLC (2011 through present)
Rincon Consultants, Inc. (2000-2011)
Zander Associates (1995 through 2000)
University of California, Santa Cruz Natural Resource Assessment Group (1993-1995)

REPRESENTATIVE PROJECT EXPERIENCE

Biological Resources

- Coastal Christian School Biological Resources Assessment, mapped/classified vegetation, conducted rare plant and California red-legged frog surveys, delineated USACE wetlands, and supported architect/design team during planning and CEQA review process, San Luis Obispo County.
- More Mesa Biological Resources Inventory, conducted rare plant surveys, mapped vegetation communities and delineated USACE and Coastal Commission wetlands, Santa Barbara County
- May Family Trust Biological Resources Assessment, mapped/classified vegetation, conducted rare plant surveys, delineated USACE wetlands, and assisted design team during planning and CEQA review process, San Luis Obispo County.
- Harmony Ranch Biological Resources Assessment, mapped/classified vegetation, conducted rare plant and California red-legged frog surveys, delineated USACE and Coastal Commission wetlands, and assisted design team during development planning process, San Luis Obispo County

CEQA and NEPA Compliance Documents

- Keysite 3 EIR Biological Resources Section, Santa Barbara County
- Rancho Maria Estates EIR Biological Resources Section, Santa Barbara County
- Biddle Ranch Agricultural Cluster Subdivision EIR, San Luis Obispo County
- Chevron Estero Marine Terminal Source Removal Project EIR, San Luis Obispo County
- Nipomo Community Health Centers EA, San Luis Obispo County
- Ahmanson Ranch General Plan Amendment and Specific Plan EIR, Ventura County

Regulatory Compliance and Construction Monitoring

- Cherry Creek Residential Development, conducted USACE wetland delineation, prepared USACE, CDFG, and RWQCB permit applications, City of Arroyo Grande
- Bach Hotel, conducted USACE wetland delineation, prepared USACE, CDFG, and RWQCB permit applications, City of Buellton
- Highway 46 East Improvement Project, Senior Biologist overseeing environmental permit compliance during construction, Caltrans District 5 through Papich Construction
- Union Valley Parkway, prepared EIR/EA, BA, ESA Section 7 Consultation, Designated Biologist overseeing environmental permit compliance during construction, Caltrans/City of Santa Maria Local Assistance Project
- Salinas Road Interchange, Senior Biologist overseeing environmental permit compliance during construction, Caltrans District 5 through DeSilva Gates Construction
- Cross Creek Bridge Replacement, prepared and implemented riparian habitat restoration plan, monitored construction to comply with Coastal Development Permit, Malibu, Los Angeles County
- Surfer's Point Shoreline Retreat Project, prepared Coastal Dune Habitat Restoration Plan in support of Coastal Development Permit acquisition, City of Ventura

Debbie Lagomarcino Rudd, AICP, LEED AP

Principal

Project Role

Coastal Commission Coordination and Public Outreach

21 Years of Experience

Education

Bachelor of Science, Interior Architecture/Space Planning, Kansas State University, Manhattan, KS

Affiliations

*American Planning Association (APA)
American Institute of Certified Planners (AICP)
Morros Advisory Committee
Slovene National Benefit Society
LEED-ND Corresponding Committee*

Certifications

*American Institute of Certified Planners (AICP)
LEED-AP*

Presentations

"The Planner's Guide to Implementing Green Principles," October 2007, CCAPA Conference, San Jose, CA

"When Your Waterfront is a Brownfield," October 2002, California APA Conference, San Diego, CA

"Pedestrian and Bike Paths Along Urban Streams," March 1999, Urban Streams Conference, San Luis Obispo, CA

Debbie Rudd brings 20 plus years of California waterfront experience, taking projects from the early visioning and policy stages through construction. Debbie is well-versed in Coastal Commission process, sustainable design principles and implementing them on the California coastline. She excels in public outreach, identifying public concerns and preferences and translating them into well supported plans that can be easily understood by the public and implemented by the City and/or District. Having obtained a Coastal Commission approval on the Port San Luis Master Plan and LCP amendment, as well as responded to a Coastal Commission appeal successfully for the Pismo Promenade IV, Debbie is intimately familiar with how to make a project like this a success. Her experience with public outreach coupled with her experience processing projects through the Coastal Commission will be essential in guiding the Morro Bay /Cayucos Wastewater Treatment analysis to approval.

Related Project Experience

Port San Luis Master Plan, Avila Beach, CA

As the Project Manager, Debbie's responsibilities included public workshops, consensus building between multiple agencies, the County, Coastal Commission, Port San Luis Harbor District, and the neighboring community to prepare a Master Plan for Port of San Luis and the community of Avila Beach. RRM provided a facilities needs assessment, a focused user survey, public workshops, a coastal access and implementation plan (with a new policy chapter inserted into the Local Coastal Plan), and schematic design with an evaluation of existing resources and services on the heavily used commercial fishing pier, Harford Pier. Debbie worked closely with the Santa Cruz Coastal Commission staff in preparing the submittal and response to staff modifications.

Avila Beach Front Street Enhancement Plan, Avila Beach, CA

Debbie acted as the project manager and designer responsible for bringing multiple agencies and community groups to consensus on the design and rebuilding of the Avila Beach community. The Plan includes a plaza area, a seawall, a memorial overlook deck, a neighborhood park, a lifeguard/first aid station, an amphitheater, public art, streetscape, beach access, and public restrooms.

Additional Related Project Experience

- Fort Bragg Georgia-Pacific Mill Site Specific Plan, Fort Bragg, CA
- Huntington Beach Downtown Specific Plan, Huntington Beach, CA
- Jennifer Street Bridge Optoinal Location Anaylsis, San Luis Obispo, CA
- Pismo Beach Promenade IV, Pismo Beach, CA
- Pismo Beach Waterfront Urban Design Plan, Pismo Beach, CA
- Port San Luis Coastal Gateway Interpretive Exhibits, Avila Beach, CA
- Port San Luis Coastal Gateway Project, Avila Beach, CA
- Port San Luis Master Plan and LCP Amendment, San Luis Obispo, CA
- Shell Beach Gateway Vision Poster, Shell Beach, CA
- Venice Beach Oceanfront Walk, Venice Beach, CA
- Capitola Master Plan, Capitola, CA

San Luis Obispo

3765 South Higuera Street, Suite 102
San Luis Obispo, CA 93401

P: (805) 543-1794 | F: (805) 543-4609

San Clemente

232 Avenida Fabricante, Suite 112
San Clemente, CA 92672

P: (949) 361-7950 | F: (949) 361-7955

Oakdale (Field Office)

210 East F Street
Oakdale, CA 95361

P: (209) 847-1794 | F: (209) 847-2511

Oakland (Field Office)

414 13th St., 6th Floor
Oakland, CA 94612

P: (510) 830-3990 | F: (510) 830-3997

San Diego (Field Office)

2952 Main Street
San Diego, CA 92113

P: (619) 398-1864 | F: (619) 235-6018

Firm Size

Total staff of 68

Personnel by Discipline

- 14 California Licensed Architects
- 5 California Licensed Civil Engineers
- 8 California Licensed Landscape Architects
- 3 Certified Planners
- 2 Licensed Surveyors
- 19 LEED® Accredited Professionals
 - 7 Architecture Designers
 - 7 Engineering Designers
 - 10 Planning and Landscape Architecture Designers
- 1 Survey Technicians
- 10 Administrative and Secretarial
- 1 Construction Services

RRM Design Group

RRM's mission and passion is Creating Environments People Enjoy.®

From new communities and revitalized urban areas to parks, trails and open space; from civic, public safety, to our own offices; our designs and our culture embody sustainability, collaboration, innovation, and execution.

Our expert team of over 65 Architects, Landscape Architects, Planners, Engineers, and Surveyors are passionate about implementing your unique vision. And with offices in San Luis Obispo and San Clemente, and field offices in Oakland, Oakdale, and San Diego, we build strong relationships between people, places, resources, and public agencies, Creating Environments People Enjoy® since 1974.

Much of RRM's 37 years of experience has been in the jurisdiction of the Coastal Commission. Our planners have successfully processed projects on beaches, rivers, harbors and bluffs of Southern, Northern and Central Coastal towns.

Principals of the Firm

Victor Montgomery, AIA, NCARB

T. Keith Gurnee

John Wilbanks, AICP, CNU-A

Jeff Ferber, ASLA

Erik P. Justesen, ASLA, LEED AP

Jerry Michael, PE, LS

Greg Peters

Debbie Rudd, AICP, LEED AP

Mike Sherrod, ASLA, LEED AP

Tim Walters

Kirk Van Cleave, AIA, NCARB

Leonard Grant, AIA

Jeff Ferber, ASLA

Principal

Project Role

Public Outreach & Coastal Commission Processing

25 Years of Experience

Education

*Bachelor of Science, Landscape Architecture, California Polytechnic State University
Graduate Studies, Environmental Planning, California State University, Fullerton*

Registrations

1988, Landscape Architect, CA No. No. 2844

Affiliations

*American Society of Landscape Architects (ASLA)
SLOCO Access, President, Board of Directors, 2002-2005
SLOCO Access, Vice President, Board of Directors 2000-2002
Arroyo Grande Watershed Forum Steering Committee 2000-2006
California Parks and Recreation Society, #111328
National Recreation and Park Association, #68691*

Presentations

"Greenways and Trails - Reclaiming Lost Spaces" March 2010, California Trails and Greenways Conference, Cambria, CA

"Great Valley Greenways - Making Communities Livable," May 2008, Great Valley Center Conference, Sacramento, CA

"A Bike Runs Through It" October 2005, APA Conference, Yosemite, CA

"Learn by Doing - Community Benefits within your Restoration Project," March 2003, Urban Streams Conference, San Luis Obispo, CA

During the past 25 years, Jeff has been the Principal, project manager, or landscape architect on many of RRM's most complicated projects involving community outreach. Recently, he was the Facilitator and Project Manager for the 465-acre El Corazon Community Park, where he worked with a 15-member citizen committee to prepare a Master Plan and Specific Plan. His work has been published in Landscape Architecture Magazine and recognized with awards from CPRS and ASLA. Along with his extensive public outreach experience, Jeff has extensive experience working with the Coastal Commission and Coastal Development permits for several Central Coast projects in Morro Bay, Avila Beach and Cambria.

Related Project Experience

Cambria Grammar School, Cambria, CA

Jeff Ferber provided the entitlement strategy, Coastal Commission advisory and Land Use Permit processing services for the new elementary school in Cambria. After years of site selection, Coast Union School District selected a preferred site and RRM lead the effort to change the zoning, urban services boundary, and obtain a use permit and GPA through the County. The Coastal Commission asked for alternative site designs and analysis to address substantial issues. Jeff developed the strategy and implementation for public outreach and Coastal Commission hearing and negotiations with staff.

East West Ranch Public Access and Resource Management Plan, Cambria, CA

Jeff Ferber provided public outreach and Coastal Commission advisory. Through a community-driven process, RRM Design Group provided the Coastal Development Plans (conceptual design through complete construction) for the rebuilding of downtown Avila Beach, a waterfront community that suffered from significant subsurface contamination. The Town's remediation process required demolition; State, County, and stakeholder consensus; and cost effective scheduling.

Cloisters Master Plan, Morro Bay, CA

Jeff provided public outreach and Coastal Commission advisory for this project. RRM Design Group was the lead designer and processor of coastal permits that resulted in the implementation of significant dune habitat restoration, coastal access trails, and a wetland enhancement project in Morro Bay, California. RRM Design Group coordinated all approvals and permits through the City, the California Department of Parks and Recreation, the California Regional Water Quality Control Board, and the California Department of Fish and Game.

Additional Related Project Experience

- Avila Beach Front Street Enhancement Plan, Avila Beach, CA
- Cloisters Master Plan, Morro Bay, CA
- El Corazon Community Park Master Plan, Oceanside, CA
- Guadalupe School Lake and Wetland Park, Guadalupe, CA
- Morro Bay Harborwalk, Morro Bay, CA
- Port San Luis Master Plan, Avila Beach, CA
- San Buenaventura State Beach Facilities, Ventura, CA
- Surfer's Point, Ventura, CA
- Venice Beach Oceanfront Walk, Venice Beach, CA
- Ventura River Estuary Enhancement Plan, Ventura, CA
- Taylor Mountain Public Outreach, Santa Rosa, CA
- COSCA - Rancho Potrero Open Space Facilitation

Steven G. Swanback

Education

MS Civil and Environmental Engineering, University of Missouri, Rolla, 1981

BS Civil Engineering, Valparaiso University, 1976

Licenses

Mechanical Engineer, California

Civil Engineer, California

Professional Affiliations

Water Environment Federation, Past Member, Professional Development Committee, Components of Emerging Concerns Committee

California Water Environment Association, Past Member, Board of Directors

American Society of Civil Engineers

Mr. Swanback, a vice president with Carollo Engineers, has 26 years of experience in collection system and wastewater treatment plant facilities planning and design. He currently serves as quality control manager for the majority of Carollo's wastewater treatment plant design work in the Northwest. This includes facilities ranging in size from 1 mgd to 30 mgd in capacity. Steve has particular expertise in the design and construction of wastewater treatment systems. His project experience includes:

- Partner-in-charge/project manager for investigation and preliminary design upgrades to the wastewater treatment plant for the City of American Canyon, California. The plant currently utilizes an activated sludge process with membrane bioreactors, and disinfects effluent with UV and reclaimed water with chlorine. This project investigates issues such as equalization, screening, aeration, MBR, disinfection, and effluent quality standards, and recommends improvements to meet client goals.
- Project manager for preliminary design, final design, and construction services for a new secondary treatment facility for the California Men's Colony in San Luis Obispo, California. The project included a new headworks, two oxidation ditches, two secondary clarifiers, continuous backwash filters, chlorination / dechlorination facilities, and centrifuges for sludge dewatering.
- Project manager/engineer for the expansion of the City of Paso Robles Wastewater Treatment Plant, El Paso de Robles, California. Responsibilities included planning, final design, and onsite construction management. The existing treatment plant was a single stage trickling filter facility. The final design included modifications to the existing headworks, a new primary clarifier, a filter recirculation pump station, second stage trickling filters, new secondary sedimentation basins, a chlorine contact basin, chlorine facilities,

anaerobic digesters, sludge drying beds, and a standby generator facility.

- Quality control engineer for Central Marin Sanitation Agency, California, Wet Weather Improvement Project. Responsibilities included technical review for design of new primary clarifiers, polymer facility, aeration basin retrofits, chlorine contact tanks, and an effluent pump station.

- Quality control engineer for the City of South San Francisco, California, Improvements Project. Responsibilities included technical review for design of new primary clarifiers, polymer and ferric chloride facilities, anaerobic digesters, and a sludge dewatering building.

- Technical advisor for the City of Burlingame, California, Improvement Project, which included aeration basin retrofit, new multi-stage blowers, fine bubble diffusers, and a sludge dewatering building.

- Technical advisor for the Fairfield-Suisun Sewer District, California, Secondary Expansion Project, which included aeration basin retrofit, new fine bubble diffusers, and secondary clarifiers.

- Project engineer for the design to repair two anaerobic sludge digesters for the Union Sanitary District wastewater treatment plant, Fremont, California. These digesters, equipped with 80-foot-diameter steel covers were damaged by overfilling. The design was complicated by the need to repair the covers without draining the digesters and required careful consideration to mitigate explosion hazards during the repair.

- Project engineer or project manager for the preliminary and final design of 13 construction projects and four equipment prepurchase contracts for the 96-mgd Regional Water Reclamation Facilities serving the communities of Fresno and Clovis, California. The total construction and equipment costs for all of the projects was approximately \$300 million. Also served as project manager for construction

services including shop drawing review, responding to construction-related questions, and issuing change order requests as necessary.

- Project manager for the design of the new Pleasant Grove Wastewater Treatment Plant for the City of Roseville, California. This project provides a wastewater treatment plant with a capacity of 12 mgd capable of meeting California Title 22 reclamation criteria. The selected processes include a 36-mgd influent pump station with mechanical bar screens and aerated grit basins, oxidation ditches, secondary clarifiers, upflow continuous backwash filters, chlorine contact basins, and centrifuges for sludge dewatering. The oxidation ditches, each with a volume of 3.5 million gallons, have a total design capacity of 12 mgd and are designed to provide nutrient removal. The design also includes an emergency storage basin with a capacity of average day flow at buildout to handle any upsets in plant processes. Effluent storage will also allow for storage of peak day flow in the event of downstream flooding.
- Project engineer for the preliminary and final design of sludge handling facilities for the City of Grass Valley Wastewater Treatment Plant, Grass Valley, California. The design included rehabilitation of an existing anaerobic digester, a concrete lined supernatant pit, a belt filter press facility for sludge dewatering, and a ventilation system for odor control. The belt filter press facility was designed to operate on a seasonal basis for landfill disposal.
- Project manager for a sludge handling upgrade project for the City of El Paso de Robles, California, Wastewater Treatment Plant. The final design included rehabilitation of two existing digesters and construction of a new digester, a digester control building, and a belt filter press facility for sludge dewatering.
- Project engineer for the final design of a sludge dewatering facility at Sanitary District No. 5 of Marin County, Tiburon, California. The final design included a pilot plant study using a trailer-mounted belt filter press to determine process performance of an anaerobically digested activated sludge. Components of the design included modifications of the existing sludge feed and polymer feed systems. It also involved design of a washwater booster pump station, a conveyor system, and a ventilation system for odor control.
- Project engineer for the final design of tertiary treatment facilities for the City of Grass Valley Wastewater Treatment Plant, Grass Valley, California. The design included five dual media filters, a backwash storage tank, a waste backwash storage tank, a chemical feed system, a filter feed pump station, a waste backwash pump station, and other ancillary equipment. The facilities were designed to follow the existing trickling filter secondary treatment process.
- Project manager for the expansion of the Cambria Community Services District, Cambria, California, Wastewater Treatment Plant including preliminary design, process selection, final design, and construction services. The existing treatment plant was a contact stabilization / extended aeration activated sludge package plant with influent and effluent flow equalization, aerobic digestion, and offsite land disposal. The final design included modifications to the headworks and grit removal facilities, new extended aeration / activated sludge basins, secondary clarifiers, and a blower building. This project was constructed under the State Revolving Fund Loan Program.
- Project engineer for the preliminary and final design of modifications to an existing ocean outfall surge tower for the Orange County Sanitation District, California. The final design included increasing the existing 27-foot-diameter surge tower from a height of 64 feet to a height of 80 feet, replacement of existing portions of the 66-inch, 84-inch, and 120-inch outfall force main, construction of a new 120-inch-diameter outfall force main, and demolition of the engine driven Rockroth Pump Station. The project required extensive planning and construction sequencing to allow the 185-mgd wastewater treatment plant to stay on-line at all times.
- Staff engineer for the preliminary and final design of the 400-mgd ocean outfall booster pump station for the Orange County Sanitation District, California. Responsible for the design of the 120-inch force main between the new pump station and the existing ocean outfall surge tower, the utility tunnels serving the pump station, and civil site work.

Lou Carella

Education

*BS Civil Engineering,
Santa Clara University,
1980*

Licenses

*Civil Engineer,
California*

Professional Affiliations

*American Society of Civil
Engineers
American Water Works
Association
Association of California
Water Agencies (Water
Reuse Committee
Member)*

WaterReuse Association

Mr. Carella, a senior vice president with Carollo Engineers with 30 years of water experience, specializes in the planning and design of large water supply, treatment, and distribution projects. His experience includes planning studies for development of new water supply, treatment and transmission systems, as well as the evaluation and modification of existing systems. Project experience includes:

- Principal-in-charge for the County of San Luis Obispo, California, Los Osos Wastewater Project, in Los Osos, California. Work involves providing feasibility-level planning and preliminary design of a wastewater system that includes collection, treatment, solids handling, and treated effluent disposal. The project's goal is to address a compliance order by the Regional Water Quality Control Board to stop individual septic tank discharges, as well as balance groundwater supply and mitigate on-going seawater intrusion. The feasibility study identified system configuration options and prioritized alternatives by identifying water resources and seawater intrusion mitigation potential. Design activities include preliminary design of the collection system, including more than 230,000 linear feet of conveyance piping, up to 21 pump stations, and approximately 5,000 service connections.

Work also included providing technical/public presentation support to the client for a Proposition 218 election for assessment of individual parcels to help pay for the project. The election passed with an 80 percent approval from the community and raised approximately \$127 million in funds. The result of the project will be a new wastewater system that includes a combination of reuse, groundwater recharge, and potentially agricultural exchange.

- Principal-in-charge for the City of Fresno Recycled Water Master Plan, to be completed in 2010, which is expected to provide 25,000 ac-ft of landscape irrigation, and 76,300 ac-ft of incidental percolation,

by 2025. Goals include enabling Fresno to control its own recycled water destiny (with or without regional participation), to get recycled water infrastructure in the ground, to obtain financial assistance from developers to build the system, and to optimize the system configuration by strategically using the Regional Water Reclamation Facility versus satellite plants. Inherent in the plan will be flexibility to deal with regulatory uncertainty. The master plan will be customer-focused, dedicated to "no stranded assets," and will uncover opportunities to share costs. Key to this effort are public outreach programs.

- Project manager for the Los Carneros Water District Recycled water Engineering Feasibility Study. The study evaluated alternatives and provided project support for funding of a recycled water system with a capacity of over 18,000 AF/yr. Work included evaluating alternatives for the source, distribution, and use of recycled water in order to improve the water supply (and economic viability) of the southern Napa Valley. Carollo conducted technical workshops as well as community meetings to gain support of this \$20 million project. Ultimately, the project is anticipated to be funded through a combination of grant and State Revolving Fund (SRF) loans. The project team also provided guidance to navigate the Proposition 218 rates process.

- Project manager for the Overall Facilities Assessment, Reliability Response and Water Infrastructure Reliability Plan for the Santa Clara Valley Water District, San Jose, California. Managed an overall facilities assessment and reliability response evaluation and development of a system-wide Water Infrastructure Reliability Plan for the district's water storage, transmission, pumping, treatment, and distribution facilities (including portions of the USBRs San Felipe Project). In addition, the project will evaluate facilities of the county's other imported water supplies (DWR and SFPUC) and the district's retail customer

systems to assess their impact on the district's system ability to supply and deliver water to its customers. The Water Infrastructure Reliability Project included a prioritization of regional solutions for improving the reliability of the district system at a board-selected overall lifecycle cost vs. level of service to its customers.

- Principal in Charge for the San Luis Obispo County Flood Control and Conservation District's Master Water Plan (MWP). The project included preparation of an all encompassing document that 1) provided a comprehensive inventory and analysis of County-wide water resources, and 2) identified and evaluated water management strategies that promoted the best utilization of the County's water resources. The MWP effort included significant interaction with the 50-plus county water stakeholders (Water Resources Advisory Committee); optimization of regional and local water supply systems (before new project could be identified), and coordination with the County's Integrated Regional Water Management Plan, Conservation and Open Space Element, Agricultural Element, Land use Element of the County's General Plan, and the Resource Management system. The completed MWP allowed the District to confidently make sound water resource planning and policy decision based on 1) stakeholder priorities, 2) existing and build-out water demands, and 3) accountability to the water entities throughout the County.

- Project manager for the Overall Facilities Assessment, Reliability Response and Water Infrastructure Reliability Plan for the Santa Clara Valley Water District, San Jose, California. Managed an overall facilities assessment and reliability response evaluation and development of a system-wide Water Infrastructure Reliability Plan for the district's water storage, transmission, pumping, treatment, and distribution facilities (including portions of the USBRs San Felipe Project). In addition, the project will evaluate facilities of the county's other imported water supplies (DWR and SFPUC) and the district's retail customer systems to assess their impact on the district's system ability to supply and deliver water to its customers. The Water Infrastructure Reliability Project included a prioritization of regional solutions for improving the reliability of

the district system at a board-selected overall lifecycle cost vs. level of service to its customers.

- Project manager for the Overall Facilities Assessment, Reliability Response and Water Infrastructure Reliability Plan for the Santa Clara Valley Water District, San Jose, California. Managed an overall facilities assessment and reliability response evaluation and development of a system-wide Water Infrastructure Reliability Plan for the district's water storage, transmission, pumping, treatment, and distribution facilities (including portions of the USBRs San Felipe Project). In addition, the project will evaluate facilities of the county's other imported water supplies (DWR and SFPUC) and the district's retail customer systems to assess their impact on the district's system ability to supply and deliver water to its customers. The Water Infrastructure Reliability Project included a prioritization of regional solutions for improving the reliability of the district system at a board-selected overall lifecycle cost vs. level of service to its customers.

- Principal-in-charge for the development phase of the Infrastructure Reliability Project for Santa Clara Valley Water District (SCVWD), San José, California. The project aims to improve the reliability of the SCVWD water supply to retail customers following a seismic event by supplementing surface water supplies with groundwater wells. This phase investigated the feasibility of collaboration with retail customers for reduction of total project costs by the shared or transferred ownership and management of wells. Project included creating various scenarios of decreasing cost by selecting optimal well locations based on certain criteria. Benefit cost analysis was performed to compare the scenarios.

- Project manager for the Seismic and Reliability Improvement Project for Contra Costa Water District, Concord, California. Managed project that evaluated the capacity constraints of the existing system to serve build-out year demands, identified capacity improvements to serve that build-out demand, and then identified seismic improvements to be constructed with the capacity improvements to improve the seismic reliability of the system at the least overall cost to the District and its customers. The results of this planning effort were

recommendations for \$120 million of capacity and seismic improvements for the District's system.

- Independent advisor for the Enterprise Master Plan (EMP) for the Santa Clara Valley Water District (SCVWD), San Jose, California. Work involves providing technical oversight to guide vision planning, scope development, benchmarking, external outreach, and work product development. The EMP will reflect SCVWD's orientation toward "cleaner, greener, and leaner" infrastructure, including water treatment, distribution, storage, pumping, recycling, desalination, and water supply projects. Responsibilities include working with SCVWD to balance competing concerns such as stakeholder interests, aging infrastructure, and fewer available funds. The goal of the EMP is to provide an invaluable "go to" document that identifies water supply alternatives and prioritizes infrastructure projects through the year 2050. Project prioritization will be based on the ability to reduce operation and compliance costs, serve new customers, and optimize debt service.
- Principal-in-charge/project manager for water resources planning to serve to a 3,500-unit residential/commercial development in Southern California. Water resources being considered include State Project Water, recycled water, and groundwater. Planning considerations include the availability of supplies, their proximity to the proposed development, and the infrastructure required to bring water resources to the project. Work also includes identifying construction, permitting, institutional, and environmental issues associated with new water supplies, as well as project viability, costs, and implementation schedule.
- Principal-in-charge for the City of Winters, California, Sewer System Master Plan Project. Responsible for overseeing development of a master plan to include modeling with a GIS interface, in order to allow the city to build a long-term monitoring and management program on a solid technical base. The scope of work includes an operational and budgetary review in order to assure that the city moves forward with operational practices to support pending CMOM regulations.
- Technical director for the master planning of both water and sewer systems for the City of Milpitas, California. Plan includes heavy focus on land use/hydraulic model interface, and model calibration with field information. The water system analysis includes H2Onet model, calibration with historic water use and fire flow tests data, identification of system deficiencies, and development of prioritized CIP. The sewer master plan includes both dry and wet weather flow monitoring, development of Hydra model, projection of ultimate dry weather flows, verification of system geometry, system deficiency analysis, and CIP prioritization and development.
- Project manager for the Water System Master Plan for the City of Benicia, California. Managed a master plan evaluating the deficiencies of the existing distribution system for meeting existing and future demands. Lou performed a regulatory and operational audit of the water treatment plant, and developed a prioritized list of capital improvements for the treatment plant and distribution system to be included in Benicia's ten-year CIP.
- Project engineer for updating Contra Costa Water District's, Concord, California, 1994 Master Plan to provide sufficient detail to support the development of its revised Facility Reserve Charge (FRC) calculations. The objective of the project was to develop an updated TWMP that both adequately defined the district's distribution system and supported the FRC calculation. Updated TWMP involved developing a new land-use basis for projecting demands in the district's TWSA, updating the district's hydraulic model, confirming the distribution system performance criteria, providing a prioritized list of necessary improvements, establishing cost estimates for improvements, and preparing a new master plan report.
- Project manager for the San Luis Obispo County's Drainage and Flood Studies Project, San Luis Obispo, California. Six communities in the County (Cambria, Cayucos, Nipomo, Oceano, San Miguel, and Santa Margarita) have experienced varying levels of drainage and flood related problems and Lou will lead the effort to identify feasibility-level solutions and provide cost estimates to mitigate those problems. Implementation plans will be prepared as well as schedules for recommended alternatives.

Dennis E. Van Kirk

Education

*Diploma, Liberal Arts,
Yakima Valley College,
Washington*

Certification

*Certified, Engineering
Technician, National
Institute for Certification
in Engineering
Technologies, 1972*

Professional Affiliations

*American Association of
Cost Engineers
International, Founder
and Past President,
Seattle, Indianapolis, and
Oregon Sections; Past
Director, Region 6,
Pacific Rim and Middle
East*

*American Society of Civil
Engineers*

Mr. Van Kirk has over 41 years of professional experience in project cost management services including cost estimating, change order analysis, value engineering, and constructability reviews. He has extensive experience in all CSI Specification Divisions, ranging from conceptual planning and design through construction and close-out, for projects totaling over \$2 billion in value. Projects include pump stations, pipelines, tunnels, treatment plants, power plants, bridges, railroads, transportation systems, aviation complexes, marine structures, manufacturing plants, power generation and transmission facilities, laboratories, office buildings, schools, medical facilities, and underground utilities. His experience includes renovations, remodels, demolition, historic preservation, conversions, additions, hazardous materials remediation, and new construction.

Mr. Van Kirk has participated in and reviewed the engineer's estimates for the following projects:

- City of Livermore, California, Solids Expansion Project
- City of Reno, Nevada, TMWRF Expansion Project
- City of Santa Rosa, California, Biosolids Facility
- Orange County Sanitation District, California, Headworks Replacement Project
- City of Petaluma, California, Ellis Creek Water Recycling Facility
- Fresno-Clovis, California, Wastewater Treatment Plant
- Camarillo, California, Wastewater Treatment Plant
- Eastern Municipal Water District, California, Perris Valley Regional Water Reclamation Facility Tertiary Expansion
- City of Tracy, California, John Jones Water Treatment Plant

- City of Springfield, Missouri, Northwest Wastewater Treatment Plant Expansion

- Eastern Municipal Water District, California, Temecula Valley Regional Water Reclamation Facility

- City of Tulare, California, Industrial Wastewater Treatment Plant

- Eastern Municipal Water District, California, Hemet Water Filtration Plant Design

- City of Benicia, California, Wastewater Treatment Plant Improvements

- Santa Maria, California, Fluoridation Facility

- City of Santa Barbara, California, Cater Water Treatment Plant

- Cost estimator for proposed digester rehabilitation at the Hyperion Wastewater plant in Los Angeles, California. Work included replacement of interconnecting pipelines in galleries beneath the digesters, and rehabilitation/replacement of ferric chloride systems. Estimating work included a field survey of existing conditions and conceptual cost estimates.

- Lead estimator and estimate reviewer on the City of Portland, Oregon, Bureau of Environmental Services CSCC project. Major project elements included a large-diameter tunnel for combined sewer overflow (CSO) conveyance and storage.

- Lead cost estimator for the Portland, Oregon, West Side CSO Project 35-percent design. Project included a large-diameter tunnel, vertical shafts, and a large, deep pumping station on Swan Island.

- Lead estimator for the 5 Denny Way CSO projects in Seattle, Washington. Work included a large diameter tunnel, pumping stations, conveyance lines and a major CSO control facility. For the same client, the Henderson CSO Project, consisting of pipelines, large diameter tunnel and pumping facilities.

- Cost estimator on the city of Portland, Oregon, Bureau of Environmental Services Columbia Boulevard Wet Weather Pump Station project. Estimating work included conceptual, budgetary and final estimates; value engineering team participation; and cost support.
 - Lead cost estimator for the West Point Municipal Wastewater Plant, Seattle, Washington. This large plant had construction costs in excess of \$300 million. Major site work issues included poor soil conditions and restricted access. Estimating work included conceptual estimates, value engineering team participation and cost support, budgetary estimates, final estimates, and change order estimates.
 - Cost estimator for the base infrastructure facilities at the Kodiak, Alaska, Coast Guard Base. Projects included water transmission and wastewater conveyance pipelines, pump stations, a water treatment facility at Buskin Lake, a wastewater treatment plant, and a marine outfall. Estimating work included conceptual, budgetary, final, and change order estimates.
 - Cost estimator for municipal wastewater facilities in Soldotna, Alaska. The project included an interceptor sewer, pumping facilities and an approximately 2-mgd wastewater treatment plant. Estimating work included conceptual, budgetary, final, and change order estimates.
 - Cost estimator for a municipal wastewater plant and conveyance system for Bremerton, Washington. The project consisted of the wastewater plant, pump stations and pipelines, and a marine undercrossing of Port Washington Narrows. Estimating work included conceptual, budgetary, final, and change order estimates.
 - Cost estimator on the Post Point Wastewater Treatment Plant in Anacortes, Washington. The project included demolition of existing facilities and the construction of conveyance pipelines and an influent pumping station. Estimating work included conceptual, budgetary, and final estimates.
 - Cost estimator for infrastructure facilities for the City of Centralia, Washington. Projects included downtown interceptor and collection sewer pipelines, a major caisson-type pumping station at Borst Park, rehabilitation of existing digesters, new clarifiers, and sludge drying beds. Estimating work included conceptual, budgetary, final, and change order estimates.
 - Cost estimator on the Pole Bridge Creek wastewater treatment plant near Atlanta, Georgia. Major project elements included a headworks, primary and secondary clarifiers, aeration basins, flow measurement, and effluent pipelines. Estimating work included budgetary and final estimates.
 - Cost estimating support person for the USAID Cost Control Team on the Alexandria, Egypt, wastewater collection and treatment facilities. Work included budgetary and final estimates.
 - Cost estimating support person for the USAID Cost Control Team on the Cairo, Egypt, wastewater collection and treatment facilities. Work included budgetary and final estimates.
 - Cost estimator for the Marine Park Water Reclamation Facility in Vancouver, Washington. Major project features included an influent pump station, a screening/grit handling facility, primary and secondary clarifiers, aeration basins, auxiliary power generation, and operator laboratory facilities. Estimating work included conceptual, budgetary, and final estimates.
- Mr. Van Kirk has completed the following value engineering studies:
- Brightwater Wastewater Treatment Plant, King County, Washington
 - Sandy Storage Facilities, Portland, Oregon
 - Crescent City, California Wastewater Treatment Plant Improvement
 - Bull Run Water Intertie, Portland, Oregon
 - City of Portland Wellfield Improvements, Portland, Oregon
 - Wet Weather Pump Station, Portland, Oregon
 - Ankeny Pump Station, Portland, Oregon
 - Grant's Pass Master Plan Liquids Stream, Grant's Pass, Oregon
 - Grant's Pass Master Plan Solids Stream, Grant's Pass, Oregon



Resumé

BARRY A. PRICE, RPA Applied EarthWorks, Inc.

Mr. Price has more than 35 years of experience as a professional cultural resource manager. As Vice President, Principal Archaeologist, and Western Division Manager for Applied EarthWorks, Mr. Price is responsible for project administration and technical management on projects throughout the western United States. He ensures compliance with federal and state laws and regulations, and certifies the technical quality of reports and other documents. He serves as principal liaison with clients and government agencies, manages budgets and workscopes, and directs the work of technical staff and subcontractors. He also fulfills corporate administrative duties assigned by the president and board of directors.

EDUCATION

- M.A. Cultural Resource Management, Sonoma State University, 1994.
- B.A. Anthropology (with honors), Sonoma State University, 1976.

Specialized Training

- 2009 “Advanced CEQA Issues: Best Practices, Legal Issues, and Case Studies.” California Preservation Foundation.
- 2005 “CEQA Compliance for Historical Resources.” Society for California Archaeology/Jones and Stokes.
- 2004 “CEQA for the CRM Professional.” American Cultural Resources Association/Hicks and Company.
- 2003 “The California Environmental Quality Act: How Does It Fit in Historic Preservation Efforts?” Planning and Conservation League and the Educational Foundation of America.
- 1999 “The New 36 CFR Part 800: Highlights of Changes.” Advisory Council on Historic Preservation.
- 1995 “California Environmental Quality Act: A Step-by-Step Approach to Compliance,” University of California, Davis, Land Use and Natural Resources Program
- 1995 “Cultural Resources Industry Outreach Training Course,” Federal Energy Regulatory Commission (FERC) Office of Pipeline Regulation
- 1994 “Advanced Seminar on Preparing Agreement Documents under Section 106.” U.S. General Services Administration and the University of Nevada, Reno
- 1992 “Federal Projects and Historic Preservation Law,” Advisory Council on Historic Preservation
- 1992 Lithic Technology Workshop, Dr. Jeffrey Flenniken, California State University, Fresno

PROFESSIONAL MEMBERSHIPS

- | | |
|---|--|
| Register of Professional Archaeologists | Society for California Archaeology |
| Society for American Archaeology | National Trust for Historic Preservation |
| Society for Historical Archaeology | Nevada Archaeological Association |
| Mining History Association | California Preservation Foundation |

REPRESENTATIVE PROJECTS

- Principal Archaeologist and Project Manager, On-Call Cultural Resources Consulting Services, County of Santa Barbara Public Works Department. Directed more than 40 studies under a series of five consecutive three-year professional services contract to provide technical support to the County Public Works Department for highway improvements and transportation enhancements. Projects have included site surveys and inventories, testing and significance evaluation, large scale data recovery projects, and construction monitoring.
- Principal Archaeologist, Cathedral Oaks Bridge Replacement Project, Goleta, CA. Directed background archival and historical research, Native American consultation, archaeological and historical inventory, impact assessment, and preparation of technical reports to meet Caltrans/FHWA specifications.
- Principal Archaeologist, Prefumo Creek Bridge Replacement, San Luis Obispo, CA. Directed technical studies and prepared Archaeological Survey Report and Historic Properties Survey Report to Caltrans/FHWA specifications.
- Principal Archaeologist and Project Manager, San Ysidro Safe Routes to School Walkway Project, Montecito, CA. Directed background archival and historical research, Native American consultation, archaeological and historical inventory, impact assessment, and preparation of technical reports to meet Caltrans/FHWA specifications.
- Principal Archaeologist and Cultural Resources Program Manager, Paradiso del Mare Ocean and Inland Estates EIR, Goleta, CA. Directed all phases of cultural resources studies including background archival and historical research, Native American consultation, archaeological and historical site inventory, identification, and evaluation, mitigation planning, and preparation of technical reports and EIR sections.
- Principal Archaeologist, Paradise Road Emergency Repair Project, Santa Barbara County, CA. Directed Phase 1 inventory and Phase 2 testing and site evaluation. Prepared inventory and evaluation reports, Finding of Effects, Historic Properties Treatment Plan, and Memorandum of Agreement documents to meet Caltrans and FHWA specifications.
- Principal Archaeologist, City of San Luis Obispo Infrastructure Upgrade Project. Directed background research, field inventory, construction monitoring, and preparation of compliance documentation for 12 water and sewer line upgrade projects for the City of San Luis Obispo.
- Principal Archaeologist and Project Manager, Archaeological Assessment and Historical Evaluation of the Former SLO 1 Manufactured Gas Plant. Directed archaeological inventory and site assessment, architectural evaluations, and construction monitoring for hazardous waste remediation at PG&E's former manufactured gas plant in downtown San Luis Obispo.
- Principal Archaeologist and Project Manager, NEPA/CEQA site assessment and data recovery excavations for Chevron's Estero Marine Terminal, San Luis Obispo County. Directed the preparation of an archaeological and historical resources inventory, site evaluations, archaeological testing and historical evaluation, and preparation of mitigation plans and EIR sections.
- Cultural Resource Program Manager, California Coastal Branch Aqueduct, State Water Project, San Luis Obispo and Santa Barbara Counties. Directed all phases of cultural resource investigations, from preliminary routing studies to final construction management, for 67 miles of 39-inch diameter water pipeline.

Robert G. Carr

Visual Resource Specialist

Landscape Architect No. 3473

B.S.L.A., Landscape Architecture, California Polytechnic State University San Luis Obispo.

Robert Carr is a licensed Landscape Architect specializing in visual impact analysis. He has over 20 years of professional landscape architectural experience, both as a private consultant and in the public sector. Robert has been responsible for analyzing the potential aesthetic effects of a variety of proposed major developments. He has prepared visual impact assessments and reports for inclusion in more than 200 environmental impact reports, negative declarations and other environmental documents in accordance with NEPA and/ or CEQA guidelines.

Mr. Carr has extensive experience in preparing aesthetic studies for controversial projects involving high quality visual resources and sensitive viewer groups on the Central Coast and throughout the state. His work has included analysis of planned developments, large-scale controversial commercial projects, residential subdivisions, multi-story apartment buildings, golf course development, wineries, state-wide fiber-optic cable installation projects, wireless communication towers, landfills, wastewater treatment plants, and public parks,. Mr. Carr's work includes programmatic analysis of city general plans, University of California long-range development plans, and county watershed zone management plans.

As a visual resource specialist, his responsibilities have included comprehensive visual impact studies for public works projects throughout the state, including highway corridor impact studies for Santa Barbara/Montecito, Monterey/Carmel, Santa Cruz, Mariposa, and other communities, and the historic arch bridges of the Big Sur Coast.

Robert has considerable expertise with several visual analysis methods, including those developed by the Bureau of Land Management, the U.S. Forest Service, the Federal Highway Administration, and methods preferred by the various cities and counties of the central coast, the State Coastal Commission, and also regional hybridized approaches. Mr. Carr's knowledge of established visual assessment methodology results in legally defensible, understandable technical documents.

Mr. Carr has personally prepared hundreds of visual simulations illustrating the potential visual character of proposed projects and as public disclosure information. Mr. Carr's simulations are high-quality computer-enhanced photographs showing a high degree of realism and accuracy. Robert's photo-simulations and other graphic illustrations are used to support the findings of environmental documents, as prime exhibits at public hearings and informational meetings, as promotional displays, and on the internet. Mr. Carr also is formally trained and has experience in the development of 3-D real-time computer modeling. As an Associate Member of the National Association of Photoshop Professionals, Mr. Carr continues to enhance his skills in the area of visual- simulation.

Mr. Carr also has a variety of other experience relating to analysis of the visual environment. This experience includes guest lecturer for the Cal Poly Landscape Architecture Department, and development and instructing of statewide visual assessment training for the California Department of Transportation.



California Coastal Commission Expertise

RRM Design Group has developed an expertise in Coastal projects and the Coastal Commission permit process. We have developed an extensive body of experience in designing and successfully implementing a wide variety of Coastal Zone projects, many of which include working closely with the Santa Cruz Coastal Staff office. We have a team of planners, engineers, landscape architects and architects that understand the Coastal Commission's hot points and what it takes to respond effectively to a Coastal appeal.



California Coastal Commission Experience:

- Crescent City Harbor Master Plan, Crescent City, CA
- Cloisters Master Plan, Morro Bay, CA
- Cloisters Dune and Wetlands Restoration Project, Morro Bay, CA
- Venice Beach Oceanfront Walk, Venice Beach, CA
- Cypress Cove Inn, Cambria, CA
- Ventura River Estuary Enhancement Plan, Ventura, CA
- Morro Dunes Trails at The Cloisters, Morro Bay, CA
- Hearst Ranch Conservation Easement & Coastal Trail Plan, San Luis Obispo County, CA
- Monterey Catellus Parcels Master Plan, Monterey, CA
- Avila Beach Park, Avila Beach, CA
- Rancho Guadalupe Beach Park, Santa Barbara County, CA
- Broadway Brommer Bike Trail, Santa Cruz, CA
- Twin Lakes Beachfront, Santa Cruz, CA
- Venice Beach Skate Park, Venice Beach, CA
- Port San Luis Master Plan and LCP Amendment, Port San Luis, CA
- Fort Bragg Mill Site Re-Use Plan, Fort Bragg, CA
- Pismo Beach Promenade, Pismo Beach, CA
- Pismo Beach Waterfront Master Plan
- Ballona Creek and Trail Focused Special Study, Culver City, CA
- Morro Bay Harborwalk, Morro Bay, CA
- Oceanside Beach Restrooms, Oceanside, CA
- East-West Ranch, Cambria, CA
- Surfer's Point, Ventura, CA
- San Buenaventura State Beach Facilities, Ventura, CA
- Cambria Elementary School, Cambria, CA
- Mid State Bank, Cambria, CA
- Manhattan Beach, CA
- Hermosa Beach Pier Avenue Street Improvements, Hermosa Beach, CA
- Morro Bay State Sanctuary Scenic Trail, Santa Cruz, CA
- Redondo Beach Pier and Boardwalk, Redondo Beach, CA
- Burton Chace Park, Alhambra, CA
- Marina Beach Strategic Plan, Marina del Rey, CA
- Marina del Rey Urban Design Guidelines, Marina del Rey, CA
- Shelter Island Boat Ramp Feasibility Study, San Diego, CA
- Avalon Community Center/Daycare Facility, Avalon, CA
- Huntington Beach Downtown Specific Plan, Huntington Beach, CA
- Fort Bragg Specific Plan, Fort Bragg, CA





Public Outreach

RRM Design Group is committed to engaging the public in community-based planning and design processes by listening to their desires through forums such as workshops, town halls, and community meetings. RRM derails conflict early on by identifying the key stakeholders and then working to enlist their support. RRM is excellent at working out differences and accommodating opinions. Conflict delays can stop a project, but RRM will continue to resolve any conflicts and keep the project on task, while never taking leave of our client's point-of-view.

RRM listens and understand the needs of a community. We educate, facilitate goals, explore visions and ideas, manage expectations, and translate community-based ideas into design concepts and implement the solutions. We collaborate to advance your project, working out neighborhood differences by respecting vesting interests. Finally, we thrive in challenging political climates and have a knack for finding fresh solutions and crafting a consensus where few thought it possible before.



Techniques

- Design Charrettes
- Fun and Interactive Workshops
- Multi-lingual Outreach
- Key Stakeholder Interviews
- Team Tour
- Steering Committees
- Task Force Facilitation



Tools

- Camera Survey
- Walking Tours
- Project Newsletters
- Project Web Page Design
- Questionnaire/Survey Implementation
- Visual Surveys



Port San Luis Master Plan, Avila Beach, CA

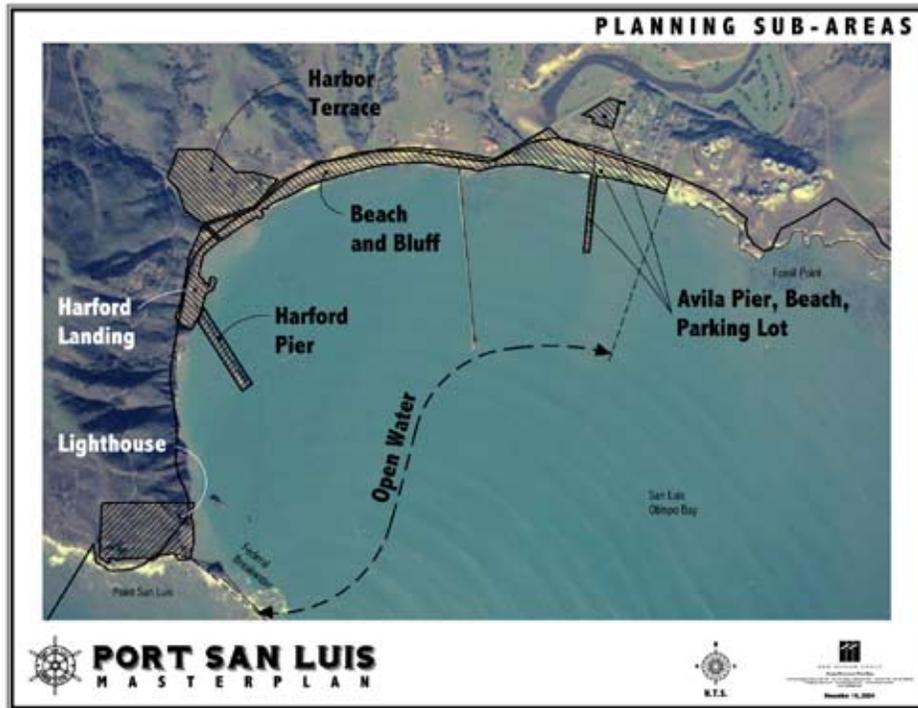
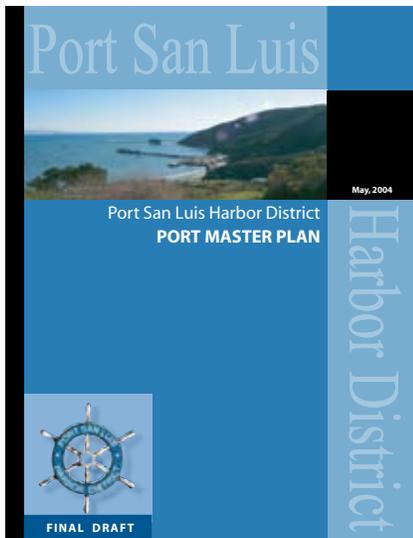


FIGURE 3



With a series of Coastal Conservancy grants, RRM Design Group assisted the Port of San Luis and the community of Avila Beach in preparing the Port Master Plan for the Port San Luis Harbor District. RRM provided a facilities needs assessment, a focused user survey, public workshops, a coastal access and implementation plan (with a new policy chapter inserted into the Local Coastal Plan), and schematic design with an evaluation of existing resources and services on the heavily used commercial fishing pier, Harford Pier. RRM also devised the Pier and landing area plan, satisfying State and County mandates that require the Harbor District to evaluate its resources and demonstrate adequate services and parking availability for high-priority coastal dependent uses. The Plan was approved by the Coastal Commission in November 2006

Avila Beach Front Street Enhancement Plan, Avila Beach, CA



Through a community-driven process, RRM Design Group provided the Coastal Development Plans (conceptual design through complete construction) for the rebuilding of downtown Avila Beach, a waterfront community that suffered from significant subsurface contamination. The Town's remediation process required demolition; Coastal Commission, County, and stakeholder consensus; and cost effective scheduling. The Plan includes a plaza area, a seawall, a memorial overlook deck, a neighborhood park, a lifeguard building, an amphitheater, public art, streetscape, beach access, and public restrooms. RRM worked with Coastal Commission staff on issues ranging from stormwater runoff to protection of seals and bluff resources.



Pismo Beach Promenade, Pismo Beach, CA



RRM Design Group created the comprehensive Urban Design Plan for a six-block waterfront area in downtown Pismo Beach. The Plan redesigned the famous Pismo Pier, destroyed by the floods of 1983 and then rebuilt in 1986 per this Plan. The Plan also included the Pismo Promenades, elevated, lateral, wooden boardwalks on the waterfront requiring Coastal Commission staff coordination and approval. Promenade IV was appealed by the Coastal Commission, RRM coordinated with Coastal Staff, prepared response packages and presented to the Commission. RRM piloted public participation, collaboration with the Coastal Conservancy, design workshops, multi-agency coordination, and three-part phasing for Plan implementation. RRM also provided all background mapping, including topographic map, utility locations, boundary, title, legal descriptions, and determination of the mean high tide line to establish State Land Commission Jurisdiction.

Morro Dunes Trails at The Cloisters, Morro Bay, CA



RRM Design Group prepared an award-winning, comprehensive trail system for the City of Morro Bay on California's Central Coast. The system includes multi-purpose trails in conjunction with the 84 acre, 120 lot Cloisters coastal subdivision for which RRM provided the Master Plan and construction documents. The comprehensive, coastal access trail system navigates environmentally sensitive coastal dunes and wetlands, using innovative solutions such as raised boardwalks (made of recycled materials) to allow water flow in natural flood areas; interpretive educational exhibits; habitat fences; and extensive dune restoration, revegetation, and monitoring focused on eradicating invasive species and restoring native species. The trail also connects to group and individual picnic areas, informal grass play areas, a play area for children, surrounding wetlands, a beach overlook, beachside neighborhoods, and the Morro Bay Class I Citywide bike system. RRM coordinated all approvals and permits through the City, the California Department of Parks and Recreation, the California Regional Water Quality Control Board, the California Department of Fish and Game, and the California Coastal Commission. For its innovations, RRM Design Group received two Gold Nugget Awards: the Award of Merit and the Grand Award for Best Site Plan of 100 acres or less.

Morro Bay Harborwalk, Morro Bay, CA



The City of Morro Bay retained RRM Design Group to prepare construction plans, specifications, detailed engineering cost estimates (PS&E), and associated tasks and documents for the construction of pedestrian and bicycle facilities along Morro Bay harbor, with related roadway relocations and tasks from Beach Street to the area of Morro Rock. The boardwalk and bike trail connect Morro Bay's popular Embarcadero area to the heavily visited Morro Rock and Morro Strand State Beach. The pedestrian improvements provide a scenic and safe route without unwanted automobile conflicts.





firm profile

All of our work is performed in the areas of water and wastewater, resulting in a level of understanding of key project issues that few can match.

WATER AND WASTEWATER EXPERTS

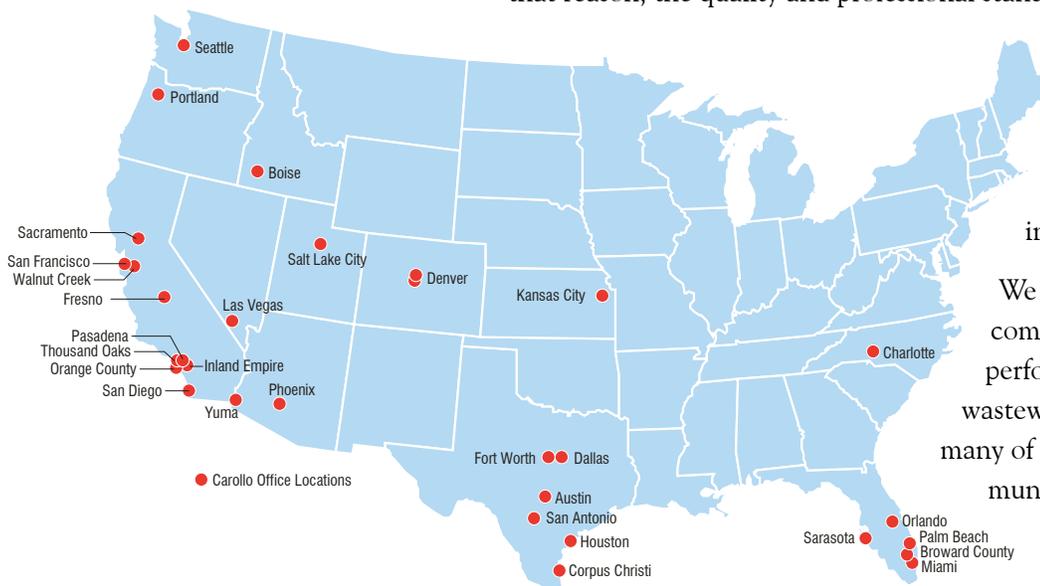
Carollo Engineers is an environmental engineering firm specializing in the planning, design, and construction of water and wastewater facilities. Carollo's reputation is based upon client service and a continual commitment to quality. We currently maintain 31 offices in 12 states.

During our 77-year history, Carollo has successfully completed more than 20,000 projects for public sector clients. Carollo is currently ranked within *Engineering News Record's (ENR)* top 100 design firms. More importantly, *ENR's* annual Source Book ranks Carollo among the top firms for water and wastewater treatment plant design.

Unlike our competitors, Carollo *only* provides water and wastewater engineering services. We recruit nationwide and hire technical staff who have extensive background and training specific to this field. For that reason, the quality and professional standing of our core group of

water and wastewater professionals equals or exceeds that provided by some of the largest engineering firms in the country.

We have recently completed or are performing ongoing water/wastewater projects for many of the country's major municipalities or special districts.



Representative Clients

- ▶ City of Phoenix, Arizona
- ▶ County Sanitation Districts of Los Angeles County, California
- ▶ East Bay Municipal Utility District, Oakland, California
- ▶ Eastern Municipal Water District, Perris, California
- ▶ City of Fresno, California
- ▶ Metropolitan Water District of Southern California
- ▶ Orange County Sanitation District, California
- ▶ Sacramento Regional County Sanitation District, California
- ▶ City of San Diego, California
- ▶ City and County of San Francisco, California
- ▶ City of San José, California
- ▶ Santa Clara Valley Water District, California
- ▶ Colorado Springs Utilities, Colorado
- ▶ Denver Water Department, Colorado
- ▶ Metro Wastewater Reclamation District, Denver, Colorado
- ▶ Miami-Dade, Florida
- ▶ City of Honolulu, Hawaii
- ▶ City of Minneapolis, Minnesota
- ▶ Kansas City, Missouri
- ▶ City of St. Louis, Missouri
- ▶ Clark County Water Reclamation District, Nevada
- ▶ City of Las Vegas, Nevada
- ▶ Southern Nevada Water Authority, Nevada
- ▶ City of Portland, Oregon
- ▶ City of Dallas, Texas
- ▶ El Paso Water Utilities, Texas
- ▶ City of Fort Worth, Texas
- ▶ Salt Lake City, Utah
- ▶ King County, Washington

RESOURCES

Carollo's staff numbers more than 600 employees, including more than 300 registered engineers. We are a full-service company with the experience and qualified professionals to successfully manage projects of any size. Our staff includes civil, sanitary, environmental, electrical, mechanical, chemical, structural, control system, and corrosion control engineers, as well as architects, planners, and specialists in other areas. Consultants are retained as needed in specialized fields depending on the specific needs of the project.

Carollo's state-of-the-art computer network allows us to effectively communicate and efficiently share our workload between offices.



USING ADVANCED TECHNOLOGY TODAY

Carollo is in the forefront of developing and using new tools for our clients. These include innovative uses of the internet for project management, an array of information management services, computational fluid dynamics, and a suite of unique Web-based software packages not available elsewhere in the water and wastewater industry.

Innovative New Tools

Computational Fluid Dynamics
Hydraulix™ Hydraulic Model
Clariflux® Activated Sludge Solids Model
Master Plan Manager

Wastewater Treatment

- ▶ Carollo has designed new or improved facilities for over 200 wastewater treatment plants.
- ▶ We have performed major projects for 10 of the 14 wastewater treatment plants in the western U.S. treating greater than 100 mgd.
- ▶ Wastewater treatment plants designed by Carollo range in size from less than 1 mgd to over 300 mgd.



City of Phoenix, Arizona, Cave Creek Water Reclamation Plant

Water Reuse

- ▶ Carollo has provided engineering services for more than 50 reclamation and reuse projects. Much of our work has been in the planning and design of facilities to meet California Department of Health Services Title 22 requirements for unrestricted reuse.
- ▶ We have provided water reuse planning and design services for agencies currently using over 20 billion gallons of reclaimed water each year.
- ▶ We have performed detailed market assessments for large-scale reuse projects for major municipalities.
- ▶ Our experience spans water reuse for a variety of purposes, including landscape/golf course irrigation, agricultural irrigation, industrial reuse, wetlands/stream enhancement, and groundwater recharge.

Wastewater Infrastructure

- ▶ Carollo has provided engineering services for over 2 million linear feet of wastewater pipeline, ranging in diameter from 6 inches to 120 inches.
- ▶ We have designed pumping facilities capable of handling flows ranging from less than 1 mgd to over 600 mgd.

Combined Sewer Overflow/Sanitary Sewer Overflow Facilities

- ▶ Carollo has been involved in planning, permitting, design, and construction of combined sewer overflow (CSO) and sanitary sewer overflow (SSO) facilities to handle peak flows up to 300 mgd.
- ▶ We have planned and designed sewer separation and rehabilitation projects using a variety of construction techniques.



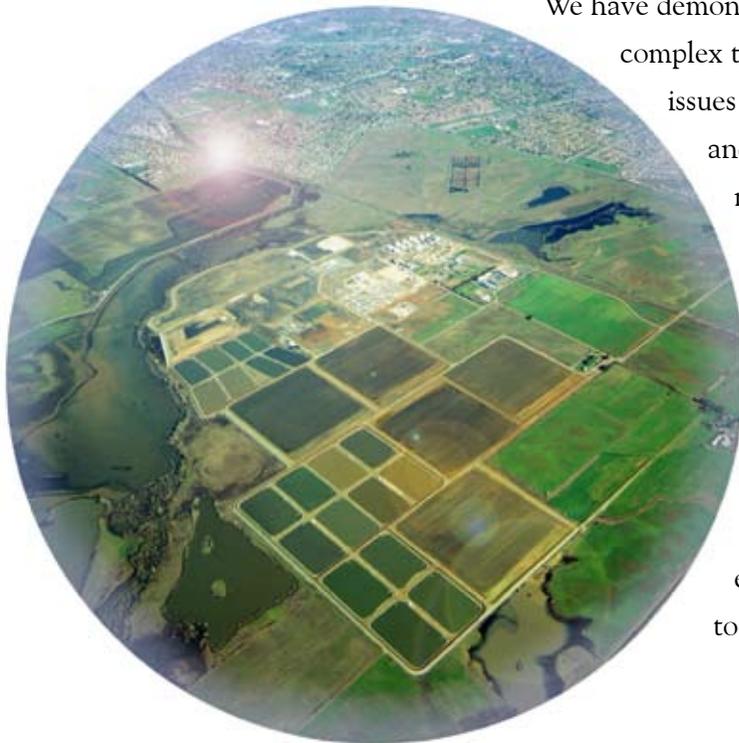
Orange County Sanitation District, California



wastewater planning

In the last 10 years, Carollo has completed master plans for \$8.2 billion in wastewater facilities.

Carollo has been a leader in the development of award-winning, comprehensive master plans for wastewater agencies facing a variety of complex issues. Within the past 15 years, Carollo has prepared wastewater master plans or facility plans for more than 50 wastewater treatment facilities. We have also completed collection system planning for over 70 agencies.



We have demonstrated our ability to successfully simplify complex technical, legal, regulatory, and institutional issues to produce clear, concise, cost-effective, and implementable recommendations. Projects range from small planning studies to comprehensive regional master plans. These plans have addressed process and collection system reliability, flexibility, and operational issues. Our professionals provide cost-effective solutions which utilize existing facilities to the greatest extent possible and limit treatment alternatives and capital expenditures to the most reliable and easy-to-implement options.

Representative Projects - Wastewater Master Planning

Agency/Project	Project Elements												
	Capacity (mgd)	Environmental Enhancement	Collection System Planning/I/I Reduction Program	Public Involvement	Odors/Air Emissions	Discharge Permitting	Plant Hydraulics	Solids Handling	Disinfection	Filtration Enhanced Treatment	Regulatory Compliance	Multi-agency Coordination	Reuse/Recycling
City of Phoenix, Arizona - Three Major Facility/Master Plans	150				●	●	●	●			●	●	
City of Benicia, California - Wastewater System Improvement Project	4.5	●	●	●	●	●	●	●	●		●	●	●
Fresno/Clovis Wastewater Reclamation Facility, California - Facilities Master Plan	160	●	●	●		●	●	●			●		●
Orange County Sanitation District, California - Master Plans	276		●	●	●	●	●	●			●	●	
City of Riverside, California - Master Plan	47				●	●	●	●	●	●	●		●
Sacramento Regional County Sanitation District, California - 2020 Master Plan	181	●		●		●	●		●	●	●	●	●
Sacramento Regional County Sanitation District, California - 20-Year Master Plan	181	●		●	●	●	●	●	●	●	●	●	●
City of San Bernardino, California - 20-Year Master Plan	30				●	●	●	●	●	●	●		
Lower South Platte Regional Group, Denver, Colorado - Wastewater Utility Plan	70			●		●		●			●	●	
Metro Wastewater Reclamation District, Denver, Colorado - Service Area Utility Plan	80		●								●	●	
Carson City, Nevada - 20-Year Master Plan	6.5	●	●	●		●	●	●	●	●	●		
Cities of Reno and Sparks, and Washoe County, Nevada - 20-Year Master Plan	40			●	●	●	●	●		●	●	●	●
Cities of Reno and Sparks, and Washoe County, Nevada - Regional Wastewater Reclamation Facilities Design Phase I, II and III	40	●	●	●		●					●	●	●
Clark County Water Reclamation District, Las Vegas, Nevada - Wastewater Treatment Plant Facilities Master Plan	130				●		●	●		●	●		
City of Davis, California - Strategic Master Plan	7.5	●				●	●	●	●	●	●		
City of Petaluma, California - Water Recycling Facilities Planning	8	●		●		●	●	●	●	●	●	●	●
City of Stockton, California - Master Plan	48	●		●	●	●	●	●	●	●	●		●
City & County of San Francisco, California - Master Plan	84	●	●	●	●	●	●	●	●	●	●		●

QUALIFICATIONS AND EXPERTISE

COMPANY OVERVIEW

Applied EarthWorks, Inc. (Æ) is a consulting firm specializing in history, archaeology, and cultural resources management. Our offices and technical facilities in San Luis Obispo, Lompoc, Fresno, and Hemet, California, permit cost-effective work throughout the state. Since its founding in 1995, Æ has successfully completed more than 1,900 projects for over 475 customers totaling almost \$60 million in revenue. Included among our clients are city, county, state, and federal government agencies as well as property owners, residential and commercial developers, environmental consultants, engineering firms, and large corporations. Æ understands that good communication, economical and efficient project management, and technical expertise are the cornerstones upon which projects are successfully completed. We take pride in our work product and seek to ensure that all of our clients are satisfied with their selection of Æ to serve their consulting needs. As a result, we have maintained a long standing relationship with many of our customers. Æ was recently awarded its 65th contract to perform cultural resources services for Pacific Gas and Electric Company and has completed over 200 studies for the federal Natural Resources Conservation Services alone.

Our forte is a proven ability to convene diverse specialists and focus their efforts toward the achievement of project goals. We are well prepared to assist the City of Morro Bay/Cayucos Sanitary District (MBCSD) with the analysis of alternative sites for their Wastewater Treatment Plant Upgrade Project. Our staff of professional experts allows us to provide comprehensive consultation in all specialties related to cultural resources, including history, prehistoric and historical archaeology, architectural history, legal and regulatory aspects of cultural resources management, ethnography, archaeometry, Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation, obsidian sourcing and hydration analysis, lithic technology, paleoecology, zooarchaeology, geology, geomorphology, and paleontology.

Our firm offers the following basic qualifications:

Full-service capabilities in history, prehistoric and historical archaeology, architectural history, geomorphology, paleontology, and cultural resources management;

Thorough understanding of federal regulatory requirements (NEPA, Section 106) as well as state (CEQA) and local regulatory requirements and compliance procedures;

Excellent working relationships with Native Americans, including local Chumash groups, Caltrans District 5, the California Office of Historic Preservation, and local land-management agencies;

An outstanding record of high-quality, on-time performance in the context of construction projects on tight schedules.

RELEVANT EXPERIENCE

A substantial amount of Æ's work has occurred in San Luis Obispo County and the Central Coast region. Our office in downtown San Luis Obispo will allow our staff to reach the project area promptly and efficiently and give crews easy access to project sites throughout the county. Included among our clients are city, county, state, and federal government agencies as well as property owners, residential and commercial developers, environmental consultants, engineering firms, and large corporations. Some of Æ's recent studies in proximity to the existing MBCSD WWTP are listed below, and are followed by specific examples of our prior experience with similar projects.

- Cultural Resources Inventory for the Morro Bay – Templeton 230kV Tower Replacement Project
- Archaeological Assessment of CA-SLO-239 at the Morro Bay Power Plant
- Archaeological Investigations at Chevron's Estero Marine Terminal
- Cultural Resource Investigations for the Morro Bay State Park Marina Renovation and Enhancement Project
- Diablo-Morro Bay Transmission Line Feasibility Study

City of Morro Bay Wastewater Reclamation Project

Feasibility Study / Preliminary EA in 1998; updated 2006

The City of Morro Bay planned to develop new water sources to serve existing businesses and to support business development in the community. One source that the City considered to offset the potable water demand on the basin is reclaimed wastewater. The City commissioned a feasibility study and environmental assessment to evaluate funding options, economics, environmental concerns, and the general feasibility of the reclamation project. As a subcontractor to Essex Environmental, Applied Earthworks prepared a cultural resource study of project alternatives as part of the feasibility analysis and environmental assessment. Æ conducted a literature and records search at the Central Coast Information Center, University of California, Santa Barbara; reviewed existing documents, aerial photos, and other sources of information on the alternative sites; prepared an overview of potential cultural resource issues associated with the project; and suggested areas of further analysis that needed to be addressed during the EIR/EIS phase. We also addressed the regulatory requirements associated with the proposed project and identified some of the key cultural resource issues that state and federal regulators were likely to raise during the permitting and approval process. Finally, we identified possible methods for avoiding, minimizing, or mitigating the potential cultural resource constraints.

Oakhurst Wastewater Treatment Plant Preliminary Environmental Assessment

Madera County proposed to improve and expand the Oakhurst Sewage Treatment and Disposal Facility. At the request of the County, and in accordance with Section 106 of the NHPA, Æ performed a cultural resources study that included a records search at the California Historical Resources Information System Southern San Joaquin Valley Information Center, a pedestrian archaeological surface survey of the project area, and documentation of four previously recorded

sites and two previously unrecorded resources. We then developed recommendations for site avoidance and/or impact mitigation.

Fresno-Clovis Regional Water Reclamation Facility Dewatering Upgrade

Applied EarthWorks, Inc. performed a cultural resources inventory to support an upgrade to the dewatering facility at the Fresno-Clovis Regional Wastewater Treatment Plant. The investigation involved a records search and background review, Native American consultation, and a pedestrian survey of construction areas within the 9-acre study area. The study found no cultural resources or any definitive evidence that such resources would be exposed during construction. Based on the findings and assessment, no further investigation is recommended.

Cultural Resources Studies for the San Juan Capistrano Water Agency

On behalf of the City of San Juan Capistrano, Applied EarthWorks, Inc. (Æ) conducted cultural resources studies in support of the Non-Domestic/Recycled Water Master Plan Update. Æ performed archival background research and records searches to identify previously surveyed areas and recorded cultural resources within the project area, conferred with local Native American representatives; and conducted a field survey of locations that had not been examined during prior cultural resource investigations. Based on the background research, records searches, and initial field studies, Æ identified 18 previously recorded archaeological sites, two historical transportation features (a bridge and a highway segment), and one historic district within or adjacent to the proposed project area. Æ then revisited all 21 cultural resources within or adjacent to the project area to appraise current site conditions and assess the potential for intact cultural deposits to be affected by the proposed project. As a result of these inspections, Æ found that several previously recorded sites had been destroyed by subsequent development and that the proposed project had no potential to affect certain other sites. Ultimately, Æ concluded that the proposed project would affect eight resources eligible or potentially eligible for the National Register. To conclude the CEQA and Section 106 processes, Æ prepared a Memorandum of Agreement that was executed by the State Water Resources Control Board (on behalf of USEPA) and the California State Historic Preservation Officer (SHPO). The agreement included a treatment plan prepared by Æ to mitigate any adverse effects of the project.