NOVATO SANITARY DISTRICT

May 7, 2013

The Strategic Planning and New Facilities Committee of Novato Sanitary District will hold a meeting at 3:00 PM, Monday, May 7, 2013, at the District offices, 500 Davidson Street, Novato.

AGENDA

1. AGENDA APPROVAL:

2. PUBLIC COMMENT (PLEASE OBSERVE A THREE-MINUTE TIME LIMIT):

This item is to allow anyone present to comment on any subject not on the agenda, or to request consideration to place an item on a future agenda. Individuals will be limited to a three-minute presentation. No action will be taken by the Board at this time as a result of any public comments made.

3. MINUTES:

a. Consider approval of the minutes of the March 4, 2013 committee meeting.

4. STRATEGIC PLAN 2013 UPDATE:

a. Review the 2013 Strategic Plan Workshop Notes and provide direction to staff.

5. RECLAMATION FACILITY ONSITE SOLAR POWER:

a. Review Danlin proposal and give direction to staff.

6. WASTEWATER TREATMENT PLANT:

a. Review bids received and make a recommendation to the Board for Digester Rehabilitation Project.
b. Review statement of qualifications for air quality specialist and give direction to staff.

7. ADJOURNMENT:

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the District at (415) 892-1694 at least 24 hours prior to the meeting. Notification prior to the

meeting will enable the District to make reasonable accommodation to help ensure accessibility to this meeting.

Materials that are public records and that relate to an open session agenda item will be made available for public inspection at the District office, 500 Davidson Street, Novato, during normal business hours.

March 4, 2013

The Strategic Planning and New Facilities Committee of the Novato Sanitary District held a special meeting at 4:00 p.m., Monday, March 4, 2013, at the District offices, 500 Davidson Street, Novato.

COMMITTEE MEMBERS PRESENT: Members Michael Di Giorgio and Jean Mariani.

STAFF PRESENT: Manager-Engineer-Secretary Beverly James and Administrative Secretary Julie Swoboda. Deputy Manager-Engineer Sandeep Karkal was absent

AGENDA APPROVAL: The agenda was approved as presented.

PUBLIC COMMENT: None.

MINUTES: The Minutes of the November 1, 2012 committee meeting were approved as presented.

WASTEWATER FACILITY UPGRADE PROJECT CONTRACT C - SOLIDS HANDLING:

- Consider recommending the Board approve plans and specifications, and authorize Manager-Engineer to advertise for bids. The Manager reviewed the plans and discussed what this phase of the contract included. She stated that the construction phase would be spread out over fiscal year 2013/14 and potentially into fiscal year 2014/15. The Manager reported that the Capital Improvement Projects (CIP) budget amounts for these years will be adjusted within the overall CIP budget to allow construction of this contract to proceed, upon evaluation of the bids received.

Member Mariani moved to recommend approval of the plans and specifications and authorize the District Manager-Engineer to seek construction bids from the construction contracting community.

STATEGIC PLAN:

- Workplan status update. The Manager noted that she continues to hold monthly meetings with District management personnel to review the District's Strategic Plan Workplan. She stated that she plans to schedule a Board Workshop on April 22, 2013 to review and update the Strategic Plan.

The Manager reviewed the Strategic Plan Workplan and outlined the items due/completed and provided a status update on the items due/not completed.

ADJOURNMENT: The meeting was adjourned at 5:00 p.m.

Respectfully submitted,

Beverly B. James
Secretary

Julie Swoboda, Recording

NOVATO SANITARY DISTRICT

MEMORANDUM

Date: May 2, 2013

To: Strategic Planning and New Facilities Committee

From: Beverly James SSE for BBJ
Manager-Engineer

SUBJECT: STRATEGIC PLAN 2013 UPDATE

BACKGROUND AND DISCUSSION

The 2013 Strategic Plan review began with one-on-one interviews with board members and management staff. The Board then met in a workshop format at a regularly scheduled meeting on April 22, 2013. Martin Rauch served as the facilitator and led the board and management through a review of progress on meeting the goals and objectives of the 2012 Strategic Plan as well as a review of the Mission, Vision, and Values statements.

Martin Rauch has prepared a discussion draft of the 2013 Strategic Plan based on the input from the workshop. A review copy is attached. Topics that need further input are highlighted in the notes.

NEXT STEPS

After receiving the committee's comments, staff will work with Martin Rauch to prepare a draft final 2013 Strategic Plan update, including an updated workplan. This is scheduled to be presented to the Board of Directors for approval at the meeting on June 24th along with the Preliminary Budget.

Attachment: Strategic Plan Workshop Notes

NSD.Workshop.Notes_13.5.2_v2

Novato Sanitary District

2013

Strategic Plan Update

NSD.Workshop.Notes_13.4.30

Prepared by Rauch Communications Consultants, Inc.

BOARD OF DIRECTORS

Michael Di Giorgio, President

Jean Mariani, President Pro-Tem

William C. Long, Past President

Jerry Peters

Dennis Welsh

DISTRICT MANAGEMENT STAFF

Beverly James, Manager/Engineer

Sandeep Karkal, Deputy Manager/Engineer

Tim O'Connor, Collection System Superintendent

Steve Krautheim, Field Services Superintendent

Laura Creamer, Finance Officer

Andrew Oko, Environmental Services Supervisor

Craig Deasy, Senior Engineer

CONSULTANT

Martin Rauch, Managing Consultant

Updating the Plan in 2013

Update Development Process

The strategic planning process was updated following the process outlined below.

Background Research. The consultants began by holding discussions with the Manager-Engineer and by reviewing background documents.

Confidential Interviews. This was followed by a series of confidential interviews carried out by the consultant. The goal is for the interviewees to candidly express their interests and perspectives on the District's and its priorities.

The interviewees included the entire Board of Directors, Manager-Engineer and the entire management team, specifically:

BOARD: Bill Long, Mike Di Giorgio, Jean Mariani, Dennis Welsh, Jerry Peters

MANAGEMENT: Beverly James, Manager-Engineer; Sandeep Karkal, Deputy Manager/Engineer; Tim O'Connor, Collection System Superintendent; Steve Krautheim, Field Services Superintendent; Laura Creamer, Finance Officer; Andrew Oko, Environmental Services Supervisor; Craig Deasy, Senior Engineer.

Planning Workshop. The Board of Directors and senior management staff participated in a strategic planning update workshop on April 22, 2013. At this workshop, the following was undertaken:

- **Manager's Report.** The Manager-Engineer presented a brief written and verbal report on progress in 2012 on the strategic plan. The report was organized in the same format as the work plan.
- **Report On the Interviews.** The consultant reviewed the results of the interviews and research phase, with a focus on areas of strength and areas where challenges remain. A summary that combines the Manager's Report and the results of the interviews are found on the following pages.
- **What Can We Do To Make This District Better?** The workshop participants were asked to write down their response to this single question: "What can we do to make this District better?" They were asked to focus on only the most critical actions that needed to be completed and to incorporate policy level guidance on how it should be approached. The responses were collected one by one and discussed.
- **List of Priority Issues.** Out of this discussion, the priority actions were outlined and the essential few highest priorities were identified.

- **Staff Work Plan.** Once the policy level portions of the plan were completed in the Board workshop, the entire management team will work with the consultant to develop a detailed staff work plan designed to meet the mission of the District and strategic goals and objectives.
- **Goals and Objectives Review.** The participants briefly reviewed the goals and objectives and made recommendations to align the goals and objectives more with categories used to manage the District. This includes, for, example, dividing up the current Goal #1 into several parts: operations, management and financial. The group discussed how these priorities and the results of the general manager's report and interviews would be combined and worked into the goals and objectives jointly by the consultant, staff and a Board committee and brought back to the entire board. The updated goals and objectives are listed on page __
- **Ensuring Communication:** Board Monitoring and Oversight Review. The Board Committee responsible for the strategic plan led a discussion on Board engagement with the strategic plan as wells as monitoring and oversight. It was agreed that the current quarterly report should be continued but with a little more time, and emphasis devoted to it.
- **Mission, Vision, and Values Update:** Throughout the workshop, there was discussion about language in the original strategic plan that is aspirational but not clear in terms of policy direction. Also discussed was the possibility of refining the mission, vision and values to make them more succinct, memorable and inspirational. While it is not typical to update these core statements after a single year, it was agreed it would be beneficial. The Strategic Planning and New Facilities Committee was tasked to take this up with support of staff and the consultant.
- **Staff Work Plan.** With the policy-level portions of the plan completed in draft form, the management team worked with the consultant to develop a detailed staff work plan designed to meet the mission of the District and strategic goals and objectives.
- **Board review and Approval.** The completed updated, draft strategic plan for 2013 was brought back to the board and approved on (date).

Report on 2012 Progress on the Strategic Plan

Below is a summary of the status of the District and progress made in the strategic plan to-date. This summary incorporates information from interviews conducted by the Consultant, from the Manager's report at the strategic planning update workshop, and from comments made during the workshop.

MANAGEMENT/GOVERNANCE

STRONG:

Morale has clearly improved in recent years, with **improved communication** between staff and management, and a sense of **continuous improvement** in many areas.

The board is working effectively together.

The District's 2012 **Safety and Wellness program** was a particular success with **no lost time accidents**. The Safety Incentive and Wellness program was tweaked for 2013 and is moving ahead. We continue to work toward improving our safety culture and are currently following the goals set in the CSRMA Shell Award program.

Veolia is making good progress toward implementing an **EMS at the treatment plant**. They have strong corporate commitment and have completed the scope of work for this task area.

District staff are working on **records management and retention** – reviewing records and evaluating vendors.

The District has been proactive in forming **relationships and agreements with other agencies** where it improves service.

Current policies were compiled and provided to the board and we have been bringing a few policies through the committees to the board. Next priority is to update the reserve policy.

CHALLENGE:

Laboratory SOPs are completed, but the remaining SOPs are in various stages of development. A consultant has been hired to help with high priority emergency SOPs. **Getting ahead of the curve on SOPs is a** challenge and will require a long-term commitment of energy and resources.

Succession/salaries/benefits/package planning. Need to develop a plan for long-term staff sustainability, including the approach to salaries, benefits, recruiting, retention, and development. Consider hiring or developing replacements before retirees leave.

Deeper engagement of Board with strategic plan would be beneficial.

Additional training resources may be needed in the coming year as we train new employees and plan for succession.

Employee development is a continuous process. Staff will be working with consultants to update the **Performance review process, Personnel Manual,** and **job descriptions** to provide better guidelines.

FINANCES

STRONG: Finance has been a strong point with **low rates** and improved **financial reporting.** Revenues are in place to fund a robust operations and maintenance program and planned capital improvements.

The Finance Officer attended the **GFOA training on budgets** and incorporated some of the ideas into the Final 2012-13 budget. Full implementation of the GFOA guidelines was determined to be not practical for NSD.

NSD has reduced retirement liability significantly in the past 5 years so that annual CalPERS retirement costs have been reduced by 32% from $513,239 to $344,718. The cost as a percent of salary has been reduced from 19.42% to 17.68%. Future increases will be shared with employees.

CHALLENGE: There was a consensus that setting clear, well understood **reserve levels** and settling the District's **approach to benefits (pensions)** is important with a need to complete the actuarial study. It would be beneficial to develop **more easy-to-understand financial reporting** for the Board & public.

A **financial analysis of the connection charges** is scheduled to be completed by June 2013.

Development of an updated reserve policy is also planned.

TREATMENT PLANT

STRONG:

Veolia, the **treatment plant** itself, and the success of the **recycled water project** makes the entire treatment plant unit a source of strength.

The new recycled water plant is operating. **NSD has taken a leadership role in both NBWRA and the IRWMP** as well as **building partnerships** with the County and Coastal Conservancy that promise to **greatly increase the amount of recycled water that can be used by the community**. Meanwhile an **ongoing maintenance** plan is being implemented to keep the reclamation field and equipment in good condition.

NSD is partnering with the Coastal Conservancy to evaluate the receiving water permitting issues for a recycled water wetlands and discharge. This will be a long term effort but it is getting better than expected regulatory support.

There have been **zero discharge violations since October 2011**. Plant operation and maintenance is closely monitored by District staff and board. **Equipment is well-maintained**.

CHALLENGE: NSD's reputation is improving but more communication is needed. In the past year, the District has taken a number of steps to address odor, noise, and aesthetic issues including sound enclosures for blowers, screening fences, landscaping, and operational changes. The remaining challenge is the **odor affecting a few of the residents**. The next steps are to clearly identify the odor and develop a plan and determine the costs for any necessary modifications.

The **Reclamation Master Plan** is on hold pending the outcome of the **Novato Creek Watershed stud**y and the NBWRA scoping study since both could impact the Reclamation Facility.

COLLECTION SYSTEM

STRONG:

Collection system maintenance has improved substantially, with notable improvements in **sewer line cleaning efficiency**.

The collection crew itself is good, with a stronger **culture of being on top of management and maintenance.**

There were very **few overflows or spills**.

Pump station upgrades are going well: the District has almost updated all of them; there are far fewer pump station call outs.

The focus this year has been on behind the scenes preparation for completing these tasks including preparing the documentation necessary to revise the local limits in the sewer use ordinance, developing the data to revise the collection system master plan, and improving televising procedures. The coming year should see the results of some of these efforts.

CHALLENGE: Completing CCTV is a challenge. **Collection crew may need another crew member** or contract out some of the CCTV work.

FACILITIES

STRONG: The study on the potential **outfall levee** is considered promising and innovative.

CHALLENGE: There is a desire to settle the **odor control** issue: identify problem if any, identify what to do or not and be done. There is question about whether enough priority is being given to **lateral problems**.

REGULATORY AND GRANTS

CHALLENGE: Are we in a good position to respond to new regulations and emergencies and take advantage of opportunities.

MISCELLANEOUS

STRONG:

Environmental Services/Pretreatment had a good audit. It is where it wants to be and spending more time in lab. **Novato Creek Watershed study** will help us manage reclamation field better. **Reclamation area** is being updated area-by area and the recycled water plant makes it easier to manage since it has to absorb less water. **Collaboration with other agencies** is a source of strength, cost savings and improved services. **Training** is increasing and improving.

Excellent public outreach and transparency is clearly a priority of the Board and District and a number of steps have been taken to achieve this as noted above.

CHALLENGE:

Not carrying out restaurant FOG inspections, but have a plan to do it.

There were some initial discussions with the City on **property** but this was put on hold pending developments in recycled water and HHW facility siting.

Further improvements remain to be made in the use of **social media and electronic communication.**

ENVIRONMENTAL

STRONG:

Staff is evaluating a plan for **solar power** at Reclamation. **Cogeneration** at the treatment plant is in the Capital Plan after digester rehabilitation and maintenance building construction.

Priority Issues

Below are the Priority Issues for the coming years, identified by the strategic planning update process.

HIGH PRIORITIES

Continuous Improvement Efforts. The Board agreed that continuous improvement programs are a top priority. This includes completion of the SOPS, being aware of trends in new work practices and technology and adopting them as appropriate.

Staff Development. The top priority for the coming years is to complete a number of initiatives related to ensuring the District has a stable, well trained, happy, and high performing work force. This includes succession planning (there are a large number of potential retirees within a handful of years), and updating pay and benefit policies as well as hiring, training and management practices

SECOND LEVEL PRIORITIES

Emergency Preparedness. Continued progress on on Emergency Management Systems and emergency preparedness in general is a priority. This includes developing an explicit plan and approach to preparing for other challenges, including regulatory (nutrient removal and emerging contaminants, for example),fiscal constraints, global warming and other significant potential future challenges.

Building new Field Support Facilities. The field staff is in temporary facilities. There has been a plan to build new, modern facilities for them. This is needed to support continued progress on collection system productivity improvements and emergency response.

THIRD LEVEL PRIORITIES

Public Outreach and Communication. The importance of maintaining and even increasing communication to the public in general so there is understanding of the District and its programs on behalf of the community. There is a specific request to make explicit new messages on the District's role as a resource agency and on the value and specific benefits it provides to the community.

Openness to the Public and Ease of Interaction with the District. The District should review its processes to ensure that it is open to the public and its key documents and information are readily accessible. This might include simpler and clearer financial reporting, making policies more accessible and other steps.

Attention to Aesthetics. In many ways the Districts services are seemingly invisible: sewage or trash is taken away and appears to disappear. In other cases the district has a direct impact on certain customers through odors, the appearance of certain facilities in the community, and in other ways. The District should be cognizant of the ways it impacts people and consider if actions should be taken to minimize impacts.

FOURTH LEVEL PRIORITIES

Resolving Odor Issues. Odor problems have been substantially solved following substantial effort and investment. There are a few neighbors still complaining of odor. The board seeks to quantify any remaining problem, identify potential solutions and decided on a final course of action.

Developing a Policy on Laterals. The District has a lateral grant program but needs to develop lateral inspection and repair policies and ordinances.

District Mission, Vision and Values

MISSION: A brief statement describing the reason an organization or program exists: Services you exist to supply, who serve, how measure excellence.

CONSIDER REFINING: 1) Whom do we serve; 2) What services do we provide; 3) How do we measure excellence; 4) How can we make the statement brief, memorable and inspiring (see examples).

Novato Sanitary District provides safe and reliable wastewater and solid waste services to its customers in an environmentally and economically sustainable manner. The District communicates openly and works collaboratively for the betterment of the community.

ONE SUGGESTED EDITED VERSION:

We provide responsible, environmental and economic wastewater and solid waste resource management for Novato.

VISION: A brief, inspiring statement describing the long-term change resulting from your work.

CONSIDER REFINING: 1) What needs to be changed. What are the major issues or problems? 2) What is the dream end-state? What would success look like? 3) Consider if the details in the Vision are encompassed in the values and if the vision can be pruned back dramatically aren't all needed? 4) consider how short, memorable and inspiring can we make the vision?

The language below was a goal that is recommended to be removed. The concepts can be built into the vision if desired:

Goal 6. Community and Environmental Sustainability and Leadership. *Proactively Take a leadership role in carrying out operations and develop innovative programs in a manner that raises the bar for environmental stewardship and performance.*

EXAMPLE: A Novato without waste OR POSSIBLY: A Novato without solid or liquid waste.

Novato Sanitary District is a representative local government; its Board and staff are closely aligned with the community through excellent communication and customer services.

We strive to attain an ever improving record of environmental protection, safe and efficient operation, and prudent financial management.

We deliver regulatory compliant, quality, reliable, and cost-effective services.

Our staff is well trained, positively motivated, and has opportunities for self-improvement.

Our capital facilities are in excellent condition and cost-effectively maintained.

The Board and Staff partner seamlessly with other public and private entities to provide high quality and cost-effective wastewater and solid waste services.

We innovate and change as opportunities and needs arise.

Our Values: How We Do Our Work

- *Does it provide safe, regulatory compliant and reliable service to our customers?*
- *Is it cost effective?*
- *Does it protect the environment?*
- *Does it foster a strong, trusting and supportive relationship with our customers?*
- *Is it proactive and does it take advantage of opportunities?*
- *Is it honest?*
- *Does it enhance our efforts to attain excellence?*
- *Does it promote local control and collaboration?*

Some Examples of Mission and Vision Statements

OXFAM

Mission: To create lasting solutions to poverty, hunger, and social justice.

Vision: A just world without poverty.

SONY 1950s

Vision: To become the Company most known for changing the worldwide poor quality image of Japanese products.

STANFORD 1940s

Vision: Become the Harvard of the West.

BMW MISSION

Mission: The BMW Group is the world's leading provider of premium products and premium services for individual mobility.

FORD 1900S

Vision: Democratize the automobile

FORD NOW

Mission: People working together as a lean, global enterprise for automotive leadership, as measured by: Customer, Employee, Dealer, Investor, Supplier, Union/Council, and Community Satisfaction.

Vision: To become the world's leading Consumer Company for automotive products and services

HONDA 1970s

Vision: We will destroy Yamaha.

HONDA Now

Vision: To be a company that our shareholders, customers and society want.

DISNEY ACCORDING TO SOME

Mission: To Make People Happy".

DISNEY ACCORDING TO OTHERS

Mission: The mission of The Walt Disney Company is to be one of the world's leading producers and providers of entertainment and information. Using our portfolio of brands to differentiate our content, services and consumer products, we seek to develop the most creative, innovative and profitable entertainment experiences and related products in the world.

ENCINA WASTEWATER AUTHORITY

Mission: As an environmental leader, EWA provides sustainable and fiscally responsible wastewater services to the communities it serves while maximizing the use of alternative and renewable resources.

IRVINE RANCH WATER DISTRICT

Mission: To provide high-quality water and sewer service in an efficient and cost-effective manner, in an environmentally sensitive way that provides a high level of customer satisfaction.

EAST BAY MUD

Mission: To manage the natural resources with which the District is entrusted; to provide reliable, high quality water and wastewater services at fair and reasonable rates for the people of the East Bay; and to preserve and protect the environment for future generations.

SONOMA COUNTY WATER AGENCY

Mission: The mission of the Sonoma County Water Agency is to effectively manage the water resources in our care for the benefit of people and the environment through resource and environmental stewardship, technical innovation, and responsible fiscal management.

Goals and Objectives

Goal 1. Operational Excellence. *Provide timely, cost-effective, reliable and sustainable performance improvements in all aspects of operations.*

1.1 Provide a safe work environment.

1.2 Become a high reliability organization by implementing an Environmental Management System (EMS). Take initial steps toward development of EMS to achieve some of the benefits without the cost of full implementation. Also, make progress toward a future evaluation of final steps needed to implement a full program.

1.3 Develop a process for evaluating operations.

1.4 Achieve an organization-wide commitment to "zero" goals and make progress toward: zero accidents, zero sanitary sewer overflows, zero waste, and zero permit violations.

1.5 NEW: Set a policy on laterals

1.6 NEW: Be aware of trends, such as technology change and take advantage as appropriate. Move with change

1.7 NEW: Develop an explicit approach to evaluating and preparing for future challenges and develop plans as appropriate. Potential challenges to consider include: global warming, nutrient removal, emerging pollutants, fiscal constraints, and emergencies.

1.8 NEW: Manage processes and expectations for cost effectiveness, environmental sustainability and positive impact on people (triple bottom line).

1.9 NEW Develop a plan for obtaining the maximum value for the community for recycled water.

1.10 NEW: Improve work practices with continuous improvement: SOPs, emergency procedures and a contingency plan.

Goal 2. Build and Maintain Facilities that are Reliable, Environmental and Efficient. *Plan, provide for and maintain District facilities and other physical assets to achieve reliable, environmentally sensible, and efficient District operations.*

2.1 Identify cost-effective opportunities to increase the amount of internally generated energy.

2.2 Manage the collection system with the objective of zero spills and zero permit violations.

2.3 Actively pursue opportunities to expand recycled water production and use.

2.4 Ensure the outfall remains compatible with Hamilton wetlands project.

2.5 Manage treatment facility with objective of zero permit violations and long-term preservation of assets.

2.6 Develop a plan to meet real property needs into the future.

2.7 NEW Develop a long-term plan for treatment operations options over twenty years that serves as a Plan B for whatever circumstances occur over time.

2.8 NEW: improve field operations support by getting them out of inadequate temporary facilities and into a new facility

Goal 3. Board District and Community, Alignment and Communications. *Proactively communicate with all stakeholders including customers, the Board, staff and others in a clear, factual, timely, two-way manner to foster greater understanding and alignment between the District and its stakeholders.*

3.1 Take needed steps so that the community knows and respects the District and its decisions. This might include simplifying financials, making policies and documents more available, and the decision making process more accessible.

3.2 Update internal staff communication program to ensure staff are updated on key District issues in a timely manner and have opportunities to have questions answered.

3.3 Formalize interagency agreements and relationships to secure them against changeable personality and budget issues and preferences. Include: the city, North Bay Water Reuse Authority, water and flood control agencies, and others.

3.5 UPDATED: Identify areas in which the District impacts the public and ensure the District is acting as a reasonable and responsive good neighbor. Include issues like odor, aesthetics of facilities and impacts of construction and maintenance.

3.6 NEW: Incorporate into outreach document descriptions of our role as a resource agency and the value we provide to the community. In other words not just tell what we do but why, along with the benefits.

3.10 NEW: Ensure that outreach is effectively communicating important messages to the public and that there are readily understood channels for the public to provide input and feedback.

3.11 NEW: Find a resolution to the odor issue by identifying the problems and what can and cannot reasonably be done and obtain board and community consensus on selected actions.

Goal 4. Well Planned Finances With a Long-Range Outlook. *Maintain a well-planned, proactive financial condition that minimizes rate shocks and impacts on customers while meeting all service needs.*

1.1 Plan for and manage finances to achieve long-range financial stability, and competitive and fair rates and charges, while enabling effective Board and public oversight while maintaining strong bond ratings.

1.2 Ensure that the rate structure and rates are sustainable, defensible, understandable and fair.

1.4 Manage retirement liability both financially and through optimum policies that strike an explicit balance between benefit levels and types, as well as employee retention.

1.5 Resolve unfunded liabilities: pensions and benefits. Identify the approach that brings board consensus that they are appropriately and prudently addressed.

Goal 5. Effective Governance and Administration. *Develop and maintain an organizational structure and management policies that foster a high performing, stable and productive organization that learns and improves. Explicitly recognize the importance of our people as a critical asset to our organization and community.*

1.1 NEW: Develop a succession plan that incorporates programs to develop employees to be promoted from within, hiring practices, takes into account timing, and benefits.

1.2 NEW: ensures employee institutional knowledge is retained and improved upon over time.

1.3 NEW: Recognize generational differences in hiring practices, administration and management.

1.4 NEW: Update all major documents and policies, such as the sewer use ordinance, solid waste, personnel manual, board policies and others as appropriate.

1.5 NEW: Update business practices to bring more online, including permits and other administrative activities and documents.

1.6 NEW: Effectively implement the strategic plan

1.7 NEW: Effectively monitor the strategic plan both at the board and staff level. Include development of initial performance indicators to help measure and assess progress toward achieving the goals and objectives.

1.8 Update Board policies and code of behavior.

1.9 NEW: Maximize employee career quality, commitment and performance with up-to-date hiring and personnel practices that emphasizes professional and leadership development

Novato Sanitary District—

2013 Strategic Plan Update

Prepared by Rauch Communications Consultants, Inc.
936 Old Orchard Road, Campbell CA 95008

408-391-3117

NOVATO SANITARY DISTRICT

MEMORANDUM

Date: May 2, 2013

To: Strategic Planning and New Facilities Committee

From: Sandeep Karkal
Deputy Manager-Engineer

SUBJECT: PHOTOVOLTAIC SOLAR OPTION AT RECLAMATION FACILITY

BACKGROUND AND DISCUSSION

The District has received a proposal from Danlin Rep Energy Services (Danlin) of San Rafael, CA, for Danlin to provide a photovoltaic (PV) solar facility for the District at the District's Reclamation Facilities.

Danlin has proposed that the District install "floating type" solar panels inside the District's Effluent Storage Pond (ESP) No. 1 at the Reclamation facility. In conceptual terms, the panels would be likely be mounted with pontoon-like devices onto vertical supports/poles, and ride up and down with changing water levels in the pond, similar to a floating marine dock.

Danlin has provided concept level siting alternatives and pricing analysis for a 360 MW facility located in ESP No.1. The proposal also identifies that their concept can potentially support a 1MW facility, however, no pricing information was provided for the 1MW facility.

For the 360 KW facility, Danlin has identified three pricing alternatives:

1. Alternative 1 - Power Purchase Agreement (PPA): In this alternative, Danlin would be responsible for all costs associated with constructing, operating, and maintaining the facility. The District would be required to enter in to a PPA to purchase power at a fixed cost of $0.115per kWh for a period of 20 years, with a cost escalation of 2% per year. Danlin's concept level cost analysis indicates an average annual power savings of $40,800 to the District with this option over a 20 year period.
2. Alternative 2 - Purchase: In this alternative the District would pay all capital costs for a turn-key installation of the new 360 KW PV system at a cost of about $1.0 million by Danlin. Danlin's concept level cost analysis for this alternative indicates a payback of 8.3 years and about $1.59 million in cumulative savings over a 20-year period to the District. (Note: Danlin's analysis for this alternative does not appear to include any allowances for operations and maintenance costs).
3. Lease a portion of the Pond: In this alternative, Danlin would enter into a 20-year long-term agreement to lease of a portion of the ESP No.1 surface area from the District in the amount of $15,000 per year. This alternative could be done in conjunction with either of alternatives 1 (PPA) or 2 (Purchase) above, and the $15,000 payment to the District

would be in addition to the annual savings the District would accrue from the facility. At the end of the 20 year lease period all equipment would be removed or re-negotiated.

CONCLUSIONS AND RECOMMENDATION

Staff has not independently verified any of the analyses or cost/savings projections provided in the Danlin proposal. Also, at this time, the District's 5-year Capital Improvements Program (CIP) does not include provisions a project of this nature. Pending direction from the Committee and further authorizations and approvals form the Board, substantial independent verification work would be required prior to any meaningful consideration of such a project.

Therefore, at this time, staff recommends that the Committee consider the proposal from Danlin Rep Energy Services for a photovoltaic solar project installation option at the District's Reclamation Facility and provide direction to staff.

[SSK:: ssk]

Attachments: (List Attachments)

NOVATO SANITARY DISTRICT

MEMORANDUM

DATE: May 3, 2013

TO: Strategic Planning and New Facilities Committee (Committee)

FROM: Sandeep Karkal, Deputy Manager-Engineer

SUBJECT: WASTEWATER FACILITIES UPGRADE, CONTRACT C (SOLIDS HANDLING), PROJECT NO. 73001

BACKGROUND AND DISCUSSION

At its March 11, 2013 meeting, the District Board approved plans and specifications and authorized the Manager-Engineer to advertise for bids for this project.

On April 23, 2013, the District received six (6) bids for this project, as follows:

1.	RE Smith Contractor Inc. (RESC)	$2,814,928
2.	West Bay Builders (WBB)	$3,044,920
3.	KG Walters Construction	$3,131,432
4.	GSE Construction	$3,177,000
5.	Monterey Mechanical	$3,285,000
6.	Gateway Pacific Construction	$3,397,862

Based on the bids, RESC was identified as the apparent low bidder. However, this apparent low bid was challenged by the apparent second low bidder (WBB), who filed a bid protest letter. In summary, WBB's protest letter contented that RESC did not possess the required experience specified by the contract documents, and that RESC did not provide the required information on the digester cover manufacturer specified by the contract documents.

The District and WBB were then notified by RESC's legal counsel, whose letter contended that: (a) RESC did in fact possess the requisite experience (and provided the basis therein), and (b) WBB's claim on the information requirements for the digester cover manufacturer was frivolous.

CONCLUSIONS AND RECOMMENDATIONS

Staff shared the information provided by the bids, WBB's protest letter, and the letter from RESC's attorney, with District Counsel Kent Alm of Meyers/Nave. Based upon his review and staff's review, it is concluded that RESC does have the requisite experience, and is eligible to be awarded the contract.

Staff therefore recommends that the Committee consider the bids, and the information presented in this memo, to make a formal recommendation to the District Board at its May 13, 2013 meeting, to award the Contract C project to RESC.

[SSK:: ssk]

NOVATO SANITARY DISTRICT

MEMORANDUM

Date: May 2, 2013

To: Strategic Planning and New Facilities Committee

From: Beverly James BBJ
Manager-Engineer

SUBJECT: AERATION BASIN ODOR CONTROL

BACKGROUND AND DISCUSSION

The District has been receiving odor complaints that the residents associate with the aeration basins. The District has taken a number of steps recommended by an earlier analysis prepared by Jim Joyce including operation changes, vegetation planting, and fencing. Since this has not resolved the complaints staff has been investigating alternatives and looking for an odor control specialist that also has a strong understanding of the wastewater treatment process. The attached Statement of Qualifications from Brown and Caldwell more than meets those criteria.

NEXT STEPS

Staff recommends requesting a proposal from Brown & Caldwell to investigate the odors make recommendations for improving plant operations and odor control as needed.

Attachment: Statement of Qualifications from Brown & Caldwell

201 N Civic Drive
Walnut Creek, CA 94596

T: 925-937-9010
F: 925-937-9026

May 3, 2013

Mr. Sandeep Karkal
Novato Sanitary District
500 Davidson Street
Novato, CA 94949

Subject: Brown and Caldwell Odor Control Services Statement of Qualifications

Dear Sandeep:

Brown and Caldwell is pleased to provide you with a statement of qualifications (SOQ) that briefly describes our company-wide odor control services sector and capabilities. Also attached is a resume for David McEwen, Brown and Caldwell's local odor control specialist, who operates out of the Walnut Creek corporate headquarters. David has been completing odor control studies and designs, much of which is similar to the needs of the District, since 1999.

We are excited about the opportunity to provide Novato Sanitary District with a proposal to help you with your current issues associated with residential complaints that have been associated by the complainants with the plant aeration basins. Working with the District, Brown and Caldwell can produce a targeted study that will provide guidance in addressing the complaints and improving plant operations and odor control as needed, based on the scientific results of the study.

David will work with our principal-in-charge, Dr. Denny Parker, who also works out of our Walnut Creek office, and quality reviews will be provided by Victor Occiano, who is Brown and Caldwell's southern California odor control lead point-of-contact. Dr. Parker's involvement in wastewater treatment plant odor control dates back to the 1970's, and Victor has been completing odor control studies and designs since the 1990's.

We look forward to continued correspondence with you regarding this important work. If you have any questions, please contact me directly at 925-210-2518.

Very truly yours,

Brown and Caldwell

David McEwen, Odor Control Engineer and Project Manager
Walnut Creek, CA

BC Odor Control Services

Brown and Caldwell (BC) is a leader in solving odor and corrosion problems in existing wastewater facilities, and in preventing odor problems from occurring in new wastewater facilities. We have extensive experience with a wide range of treatment technologies, including chemical scrubbers, carbon absorption, bioscrubbers, biofilters, and liquid-phase chemical injection. Our selection of treatment processes is based on client requirements, odor control goals, treatment effectiveness, and life cycle cost.

We have completed several hundred odor and corrosion control projects in wastewater collection and pumping systems over the past 30 years. In fact, Brown and Caldwell's work in wastewater and biosolids odor assessment and control design is so extensive that organizations have tapped our resources to provide industry wide leadership for solving problems and providing general odor guidance documents.

BC's History in Odor control

BC's biotrickling filter design technology was based on sound experience gained from our work on wastewater process trickling filters. Dr. Denny Parker has been a leading authority, having invented the trickling filter / solids contact process and the biofilm controlled nitrifying trickling filter.

During the 1970s, in cooperation with researchers in New Zealand, BC developed a biological odor removal system to remove hydrogen sulfide and related odorous gases from foul air. The system consisted of a lightly loaded fixed film biological reactor that employed a high surface area plastic media. While the reactor resembled a plastic media biofilter in some respects, many of its features were specifically figured to improve odor reduction.

This technology pioneered by Dr. Parker and BC has formed the basis for much of the biological odor treatment technologies used today.

Our Strengths	Benefits to You
Knowledge of the best means to contain odorous air and ventilate at appropriate air change rates	Lower air flow rates reduce foul air treatment costs and energy costs associated with fans.
Emphasize benefits to operation and maintenance staff, including work environment and safety.	Improved operator safety and comfort leads to operator buy-in and acceptance of the selected technology; they take pride in maintaining the equipment and seeing it perform at its optimal level.
Use cutting-edge odor measurement technologies to best characterize odors	Speciation of compounds that contribute most significantly to odors helps ensure you invest in the right technology.

BC's odor control engineers are also highly experienced in collecting air samples that are shipped to laboratories for speciation of odorous compounds and also olfactometry analysis by an "odor panel," which uses human characterization of how detectable an odor is in a given sample, and how offensive the odor is.

Put our Experience to Work for You

BC seamlessly integrates odor and corrosion control with facility and process requirements. We recognize that successful odor control requires accurate characterization of odor and sulfide conditions. Our technical experts test and evaluate odor systems to determine appropriate operational and system parameters for optimal performance.

Following a coordinated evaluation of the cause of foul air and/or corrosion problems, our engineers and technical experts determine cost-effective treatment alternatives. In treatment plants, we focus on source control, improved operating practices, and innovative containment and process design to protect wastewater systems and the surrounding community from the effects of foul air. Our engineers design preventative programs and rehabilitation options for treatment plants, biosolids processing facilities, wastewater collection systems, and pumping stations.

BC uses several field instruments that help characterize odorous air streams at wastewater conveyance and treatment facilities. Very commonly used instruments include those that measure a wide range of hydrogen sulfide concentrations. Hydrogen sulfide is typically the dominant odor-causing compound at wastewater treatment facilities and can be detected by humans at concentrations as low as 1 part per billion by volume. Field equipment is also used for measurement of ammonia, volatile organic compounds, and some organic sulfides, all of which may contribute to odors.

Our Brown and Caldwell team often uses odor data collected in the field or analyzed in the laboratory to produce dispersion model plots. These plots show the influence of plant odor emissions from various sources and the meteorological conditions of the area (typical wind speeds and directions over the course of a year) on the occurrence of odors beyond a wastewater treatment plant property line. Dispersion modeling is often used in conjunction with the raw odor data to identify the optimal choice of odor reduction technology. This selection often aligns with the client's established goal in bringing odor contours back closer to the plant boundary, or within dedicated buffer zones. Gas-phase odor control units such as biofilters, chemical scrubbers, and activated carbon adsorbers are often identified as preferred technologies, and sometimes the units are aligned in series to produce optimal odor removal, which tends to minimize odor complaints

Dispersion model plots help identify the influence of plant odor emissions.

Meet Two of BC's Odor Control Experts

David McEwen, P.E. is BC's Northern California Odor Control Lead. David has 18 years of environmental engineering experience, most of which has been in odor control planning, studies, and design for wastewater treatment facilities. David has specialized experience in life cycle cost analyses and odor complaint investigations. He has applied a variety of technological odor control solutions, including chemical scrubbers, activated carbon, and biological foul air treatment systems. He has presented papers on odor control applications in numerous conferences.

Victor Occiano, P.E., has 29 years of experience in environmental engineering, including design of wastewater and sludge treatment facilities and wastewater pump stations. He also is Southern California's Odor Control Lead and has completed numerous odor-related studies and designs for that area. Included in his experience are ongoing upgrades for the City of San Diego Metropolitan Biosolids Center, in which he is providing an evaluation of improved ventilation and foul air removal to provide a safe working environment. He also completed a detailed odor source investigation for the City of San Diego Point Loma wastewater treatment plant.

Odor Investigation

East Bay Municipal Utility District, California

Following a number of odor complaints from residents near its main plant, EBMUD asked BC whether the increased complaints were due to a new odor source at the plant or failure of an existing odor control system.

BC implemented an odor sampling and analysis program and supplemented laboratory findings with field odor data. Four areas of concern were highlighted in the sampling and analysis program: (1) The septage receiving facility odor control unit, (2) The sludge truck loadout facility, and (3) The primary clarifiers, and (4) The Wood Street Interceptor.. Off-site odor monitoring in the locations of complaints as well as other potential sources were also conducted. Jerome Analyzer and Nasal Ranger measurements were taken at these locations.

Brown and Caldwell's odor investigation concluded that the most likely source of the odors that led to the complaints was the plant's septage receiving facility odor control unit, which contained spent carbon and a poorly performing first stage of

treatment during the rash of complaints. The report further indicated that odor emissions from the primary clarifiers could be of concern during low-flow periods, when high sulfide loading from the collection system, in particular the Wood Street Interceptor, is not sufficiently controlled by the existing chemical injection system.

John's Creek Environmental Campus

Fulton County, Georgia

As part of a design-build team, Brown and Caldwell provided an extensive odor control system that treats all air that comes in contact with liquid or solids within the new Johns Creek Environmental Campus wastewater treatment facility. Designing such an extensive odor control system required air flow rates of up to 168,000 cubic feet per minute (cfm).

In the operating system, foul air from the more odorous locations (headworks and primary clarifiers) is treated by wet scrubbers and then blended with air from other parts of the facility prior to treatment in seven 30,000 cfm carbon absorbers.

In this project, it was important to be a "good neighbor" during construction, as the Campus is adjacent to a nearby residential community. Maintaining good neighbor status was achieved by mitigating such things as odor emissions from constructed process units, construction and equipment noise, traffic congestion, and spills. Brown and Caldwell also facilitated productive interaction between the

public, Fulton County and the design/build team, providing the community with ownership of the project, including the odor control elements, which were of paramount importance to the public.

Elements of outreach included a project website, email construction updates to stakeholders and neighbors, press kits, public service announcements, community meetings and a 24-hour hotline. The project was constructed with minimal issues and it has received awards for its sound design and treatment capability.

Experience Summary

David specializes in preparation of odor control technology studies and designs that minimize impacts to communities surrounding wastewater and industrial facilities throughout North America. He has extensive experience in calculation of optimal air withdrawal requirements for odorous processes to properly capture odors and minimize corrosion and selection of the most cost-effective and sustainable air treatment solution for odorous processes. He has completed numerous detailed designs of new and retrofitted odor control systems utilizing all established odor treatment technologies.

Assignment

Project Manager

Education

M.S., Environmental Engineering, University of Florida (1995)

B.S., Environmental Engineering, University of Florida (1993)

Registration

Professional Civil Engineer 014755, Nevada, 2001

Professional Civil Engineer 69475, California, 2006

Experience

17 years

Joined Firm

June 2008

Odor Control Planning and Design

P2-92 Solids Handling Odor Control Design, Orange County Sanitation District, Fountain Valley, California

Odor Control Design Lead. David is the design lead for odor control improvements and new odor control facilities for the District's P2-92 Sludge Dewatering and Odor Control at Plant 2 Project. The design consists of a biofilter that will treat foul air from the centrifuge facility, centrate wet well and cake storage silos, and an activated carbon odor control system that will treat odorous air from the truck loading bays. Innovative approaches were used in providing containment for the truck loading facility while not creating a confined space. A comprehensive life-cycle cost analysis identified the optimal approach, which was determined in a group format with District stakeholders. (Est. Design Completion January 2014)

Odor Control Design Upgrade, City of San Diego, San Diego, California

Design Manager. David is the design lead for odor control improvements to the City's Metro Biosolids Center. Several upgrades are included in this work, including optimizing current treatment of solids handling units, providing better foul air capture for grit facilities, improving foul air duct routing in several locations to reduce pressure losses, and providing new ventilation to the facility's truck loadout area. The design is based on system wide pressure measurements and targeted odor sampling at key processes, which will ultimately create an optimal system with lower energy requirements and more efficient odor removal. (Est. Design Completion: December 2013)

Odor Control Monitoring and Improvements, Republic Services Sunshine Canyon Landfill, Sylmar, California

Odor Control Lead. David is the odor control lead advisor for an independent environmental monitoring program advising Republic Services on detecting off-site odors and complaints that may be associated with the Sunshine Canyon Landfill. David provides feedback on possible causes of complaints and is working with Republic Services to identify the best steps to control odorous emissions from the landfill, minimize complaints and meet regulatory requirements. The project is a team effort that synthesizes the input from odor control experts with solid waste engineers to best advise the client for managing operations and controlling odors. (Est. Completion 2013)

Reeside Pump Station Odor Control Study and Design, Monterey Regional Water Pollution Control Agency, California

Project Manager. David completed a study that evaluated options for controlling odorous emissions from the Agency's Reeside Pump Station, which is located in a highly sensitive area along Cannery Row in historic Monterey, CA, and whose foul air emissions are currently unimpeded into the surrounding

environment. The Agency goal is to reduce odors to non-detect levels outside of the pump station. The study identified activated carbon adsorption with potassium permanganate dry media polishing as the ideal technology for odor control. David has completed the design of the odor control system, which is being constructed in 2012, and provided engineering services during construction. (2012)

Food Waste Composting System Odor Control Technical Assistance, Confidential Waste System Company, California

Lead Engineer. David is the lead odor control engineer for BC's consulting work with this client, whose goal is minimization of odor emissions from a 75 ton-per-day food and green waste composting facility. BC is helping the client with process-related changes and facility upgrades that will reduce complaints from the compost facility's neighbors. David is responsible for odor monitoring on- and off-site, speciation of odorous compounds from key processes, and prioritization of facility improvements. Importance has been noted for the highly odorous liquid component of the waste stream, and BC is working with the client to remove and treat this liquid to aid in the overall odor control effort. As a result of David's efforts, odorous emissions from the facility have decreased in 2011 and 2012 as compared to previous on-site odor measurements. Verified odor complaints from the surrounding community have also decreased by more than 50 percent since David's involvement in the project. (2012)

Odor Control Study and Design, Union Sanitary District, Union City, California

Project Engineer and Project Manager. David led the production of a comprehensive odor study for the District's Alvarado Treatment Plant. He conducted an extensive odor testing program that evaluated 18 existing chemical scrubbers, and led a technological evaluation of the most cost-effective means of upgrading the existing odor control system using dispersion modeling and pilot testing results. He has led the design of physical improvements to existing scrubber stacks and construction of a barrier wall, both of which will promote additional vertical dispersion of scrubber effluent. He completed a design for upgrading the existing hollow vessel chemical scrubbers to new packed tower chemical scrubbers for two of the District's more odorous process areas—the headworks building and the influent pump station. These upgrades require an innovative approach in dealing with large foul air streams and the District's desire to avoid the use of caustic solution for odor control scrubbing. (2012)

Sewer System Odor Evaluation and Emissions Control, Orange County Sanitation District, Fountain Valley, California

Project Engineer. David evaluated potential odor emissions from 17,500 linear feet of the District's Santa Ana Trunk Sewer, which BC was inspecting during completion of a system wide condition assessment. Work included completing a baseline odor assessment and a technical memorandum that recommended means of containing odors during field inspections such that nearby neighbors would not be impacted by sewer emissions. The evaluation included a comprehensive approach in which hydrogen sulfide concentrations and manhole air pressures were measured at strategic locations. The final memorandum was praised by the District as being the most thorough and useful plan of its kind that they had seen to date. (2011)

Lift Station Improvements Project, City of Foster City, California

Odor Control Expert. BC is designing the rehabilitation of six wastewater lift stations, which includes replacement of stand-by generators, installation of portable generators, replacement of pump control panels, and upgrades to control monitoring equipment for the SCADA systems. David is providing odor control expertise and recommendations for upgrades to individual lift stations on an as-needed basis, with the goal of not increasing off-site odor impacts upon construction of the required improvements. (2011)

Odor Control Design, East Bay Municipal Utility District, Oakland, California

Project Engineer. David led the design of two new odor control systems to be installed at the District's main plant—one for the new fats, oils and grease (FOG) storage tanks and one for the sludge blending tanks. The design used innovative principles and a technology mostly used for digester gas conditioning to control anticipated large spikes in hydrogen sulfide and a diverse profile of organic odorous compounds that if not controlled would produce significant impacts to the surrounding neighborhood. (2008)

Odor Investigation, East Bay Municipal Utility District, Oakland, California
Project Engineer and Project Manager. David conducted a study that investigated potential sources of odorous emissions at the EBMUD Main Wastewater Treatment Plant that could have contributed to off-site odors and associated complaints in the summer of 2010. The study included targeted hydrogen sulfide and odor sampling at potential sources, including the septage receiving facility, headworks, primary clarifiers and truck loading facility. David also reviewed OdoLog data that measured hydrogen sulfide concentrations in key process areas during the time of the complaints. The study concluded that a primary contributor to odorous emissions and potentially the complaints was breakthrough of the carbon odor control system that was controlling foul air from the septage receiving facility. Following the study, EBMUD changed out the carbon media and has since experienced fewer odor complaints. (2010)

Odor Mitigation Plan, East Bay Municipal Utility District, Oakland, California
Project Engineer. David conducted a study focusing on odor issues at the District's main plant. The study considered odorous emissions from new process units and projected odor contours based on dispersion modeling to assess current off-site impacts. He recommended odor control technology improvements. Data and recommendations were used in the current update to the odor control master plan. (2007)

Odor Control Design, Gippsland Water Factory, Traralgon, Australia
Project Engineer. David completed a basis of design for a new odor control system at four wastewater pump stations within the new Gippsland Water Factory collection system in southeastern Australia. The odor control system includes combinations of bioscrubbers and activated carbon systems that treat odorous air from various process areas. Odor treatment produces non-detectable odors at the nearest receptors. (2007)

Odor Control Facilities Plan Update, Central Contra Costa Sanitation District, Martinez, California
Project Engineer. David conducted a thorough evaluation of odorous sources at the District plant and predicted offsite impacts. The study provided new flux chamber sampling data and analysis of odorous emissions from the wastewater treatment facility, along with an update to the odor dispersion modeling. He provided recommendations for optimizing existing odor control units and confirmed success of previous odor control recommendations. (2006)

Odor Control Master Plan and Design, Delta Diablo Sanitation District, Antioch, California
Project Engineer and Project Manager. David led the engineering analysis for an odor control master plan update that estimated emissions from the wastewater treatment facility and made recommendations for additional odor control at the plant and conveyance system. He managed the subsequent design of a new 52,000 cfm soil biofilter, a hypochlorite liquid-phase treatment system, and bioscrubbers at two pump stations and at plant headworks, all of which are currently on line and providing good treatment. (2007)

Pond Odor Emissions Analysis, City of Chandler, Arizona
Project Engineer. David analyzed odorous emissions from wastewater evaporation ponds that contained elevated sulfate concentrations. He conducted jar testing and made recommendations for regular injections of ferrous chloride into the ponds. The odor treatment decreased odorous emissions and sharply reduced complaints from the nearby residential community. (2008)

Pond Odor Control Pilot Study, Nevada Power Company, Las Vegas, Nevada
Project Engineer. David conducted a pilot study that tested recommendations for liquid-phase odor treatment of evaporation ponds operated by the Nevada Power Company at a coal-fired power plant in Southern Nevada. He worked with plant staff to inject bulk doses of iron (ferrous chloride) into the ponds and optimize current hydrogen peroxide dose schemes. He also conducted flux chamber odor sampling on the ponds to evaluate pilot study modifications. (2007)

Odor Control Preliminary Design, City of Redding, Redding, California
Project Engineer. David completed a basis of design of an odor control system that treats three process areas in the Clear Creek Wastewater Treatment Plant—the headworks, influent pumping station, and two 30-foot-diameter dissolved air flotation thickeners (DAFT). The DAFT odor control included flat covers over the reactor tanks and enclosures over the associated grit classifiers and cyclone. He calculated airflow requirements and evaluated engineered media biofilter systems, incorporating a life-cycle cost analysis and site layout drawings

to achieve optimal and cost-effective solutions. The analysis concluded that two modular bulk media biofilters was the most efficient solution, given the degree of treatment required and footprint constraints.

Odor Control Study and Design, Sausalito-Marin City Sanitary District, Sausalito, California

Project Engineer. David analyzed emissions and odor control alternatives for the District's wastewater treatment plant and collection system. He incorporated results from plant odor emissions and collection system modeling into the design of a bioscrubber odor control system that treats odorous exhaust from the plant primary clarifier, fixed-film reactor and sludge thickener. The bioscrubber is currently on line and functioning well in reducing odors. (2007)

Odor Control Master Plan Update, Dublin San Ramon Services District, Dublin, California

Project Engineer. David led the engineering analysis for master planning work and several additional odor studies that provided new data and analysis of odorous emissions from the wastewater treatment facility. His work included new flux chamber sampling, emissions analysis, and dispersion modeling. Success was determined at public information meetings, at which neighbors of the plant expressed their approval of master planning work and subsequent odor-related improvements. (2007)

Odor Control Master Plan, Sacramento Regional County Sanitation District, Sacramento, California

Project Engineer. David completed the second phase of an odor control master plan that provided information for the District on methods of best containing odorous emissions from the Sacramento Regional Wastewater Treatment Facility and its collection system. He led focus groups for air permitting revisions that involved meetings with the local air district and completed collection system hydrogen sulfide modeling, analysis, and recommendations for system optimization. (2003)

Collection Systems Odor and Corrosion Research, Water Environment Research Foundation

Program Coordinator. David provided project management and coordination for the second phase a research project analyzing the relationship of sewer ventilation with odor production and corrosion. The research additionally seeks to address data gaps concerning the relationship of hydrogen sulfide levels to corrosion and the importance of organic sulfur compounds in sewer odor production. (2008)

Biosolids Odor Research, Water Environment Research Foundation

Project Manager and Field Engineer. David served in a management and engineering role in a three-phase research project analyzing the potential operations and process parameter impacts on odor emissions from biosolids facilities at wastewater treatment plants. He served as the test site coordinator for six facilities and accumulated data for analysis and production of theories as to the origin of biosolids odorous emissions. (2007)

Wastewater Collection System Interceptor Modeling and Analysis, Clark County Water Reclamation District, Las Vegas, Nevada

Project Engineer. David produced a model of hydrogen sulfide fluctuations in three interceptors conveying wastewater into the District's wastewater treatment facility. Using the model, he identified potential locations of hydrogen sulfide outgassing and evaluated potential liquid-phase treatment options for sulfide minimization, which reduces collection system odors and the overall odor loading to the downstream treatment plant. (2000)

Wastewater Treatment Plant Emissions Modeling, Various Clients

Project Engineer. David completed emissions modeling for multiple wastewater utilities, using treatment parameters and process dimensions to generate estimated flux rates off the emitting surfaces. Model output was used for odor studies, permitting and specific process analyses as part of a wastewater treatment plant optimization effort. He also consulted on the development of a new upgraded Windows-based emissions model, including BETA testing and resolution of issues. He frequently uses the Environmental Protection Agency SCREEN3 model to provide rough estimates of point source odor emissions, primarily from exhaust stacks of existing or planned odor control treatment systems.

Odor Control Quality Control Reviews

Various Clients in North America

Odor Control Study and Design QA/QC Lead. David has provided quality assurance and quality control reviews for odor control documents at various stages of study and design completion for several clients throughout North America. Key goals of these reviews are to provide feedback to the project engineers and design managers from a fresh viewpoint, considering what feedback might be provided by the client or contractor so that issues may be addressed prior before completion of the final design deliverables. He also uses these reviews to confirm consistency between design principles developed in the planning and preliminary design stages and those that comprise the final design deliverables. Some of the larger efforts in which he has been involved in this capacity include work for the City and County of Honolulu (Hawaii), City of Lompoc (California), City of Norfolk (Virginia), Town of Cary (North Carolina), Padre Dam Municipal Water District (California), and the City of San Leandro (California).

Memberships

Water Environment Federation

California Water Environment Association

Publications and Presentations

1. "Solids Handling Systems Odor Control: Trends in California," California Water Environment Association Annual Conference, Palm Springs, California. April 2013.
2. "Targeted Odour and Air Toxic Control for Solids Handling Facilities to Meet Strict Public and Regulatory Requirements," International Water Association Conference, San Francisco, California. March 2013.
3. "Odor Dispersion Barrier Walls: Theory and Practical Application," Water Environment Federation and Air & Waste Management Association Odors and Air Pollutants Specialty Conference, Louisville, Kentucky. April 2012.
4. "Incorporating a Green Approach to Chemical Odor Scrubbing," California Water Environment Association Annual Conference, Ontario, California. April 2011.
5. "Pump Station Odor Control in a Tourist Location," Water Environment Federation and Air & Waste Management Association Odors and Air Pollutants Specialty Conference, Charlotte, North Carolina. March 2010.
6. "Innovative Approaches to Upgrading Atomized Mist Scrubbers," Water Environment Federation and Air & Waste Management Association Odors and Air Pollutants Specialty Conference, Charlotte, North Carolina. March 2010.
7. "Odor Control Master Planning and Biotechnology Applications at Delta Diablo Sanitation District," Water Environment Federation and Air & Waste Management Association Odors and Air Emissions Conference. April 2006.
8. "Identifying and Controlling the Municipal Wastewater Odor Environment: Phase 3, Biosolids Processing Modifications for Cake Odor Reduction." Water Environment Research Foundation. 2007.
9. "Identifying and Controlling the Municipal Wastewater Odor Environment: Phase 2, Impacts of In-Plant Operational Parameters on Biosolids Odor Quality." Water Environment Research Foundation. 2003.
10. "The Impact of Ozone on Bromate Formation in Groundwater at the City of Jacksonville." Florida Water Resources Conference. May 1996.