

APPENDIX G
Peer Review Forms and Memorandums

Procurement Sensitive

**San Diego MWWD Peer Review
Peer Review Team Guidance Memorandum**

General Guidelines and Comments for the Peer Review Team Members:

1. Welcome to the San Diego Metropolitan Wastewater Department and thank you for participating in the San Diego MWWD Peer Review! This is a great opportunity for MWWD and other utilities to share information and ideas about how to continuously improve key operations, maintenance and management functions.
2. We understand that you have a limited amount of time to complete this effort. To more efficiently utilize the Peer Review Teams, MWWD has prepared Peer Review Team data collection forms listing a few Key Focus Areas for each topic. The data collection form(s) for your peer review topic (s) should be attached to this document.
3. For each topic listed on the data collection form, please complete the 3 columns.
4. For the “**Peer Review Team Ranking**” column, please provide a general ranking of how the MWWD organization is performing relative to wastewater organizations in general. The guidelines for ranking each topic please see Note 1 in the footer of the data collection form.
5. For the “**Peer Review Team Comments**” column, please document any general observations about MWWD’s current practices. We would like to have both positive feedback and constructive criticism from the Peer Review Teams. If you would like your comments to be anonymous, please let us know and we will make sure that comments are not attributed to any specific person.
6. For the “**Peer Review Team Recommendations**” column, please provide your recommendations about how MWWD can improve their practices or systems. Please be as specific as possible about specific changes that could help MWWD improve their practices related to each topic. This is the most important part of the peer review process, so please save time to complete this portion of the data collection form.
7. If it appears that you will not have time to complete the entire Peer Review Data Collection form, please provide your ranking, comments and recommendations on the topics you feel are most important first, then complete the remaining topics if time is available.
8. Thank you again and please let us know if there is anything we can provide to make your visit a success!

San Diego MWWD Peer Review Data Collection Form
Topic: General Management

MWWD Sponsor(s): Joe Harris

Peer Review Team Members: __Jeffrey Meyer_____

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
City Organizational Structure			
<ul style="list-style-type: none"> ○ Division of Responsibility Between MWWD and Other City Departments for Performance of the Following Functions: <ul style="list-style-type: none"> ○ Human Resources ○ Information Technology & Management ○ Budget and Financial Management ○ Purchasing/ Contract Administration ○ Engineering Design ○ Construction Management ○ Provision of Other Key Functions 	<p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p>	<p>Current practice of in-house HR, IT and Purchasing shops exceed standards – however, when outsourced to city some level control will be lost and estimate that it will meet standards as long as SLA's are enforceable. No opinion on how moving engineering group will affect product – new territory. Budget and finance department should not be affected, but will consolidation internally, one option would be to have all analyst assigned to finance but located within the division to ensure strong relationships with both division and finance, but allow for finance to coordinate department wide strategies.</p>	<p>It is critical that all outsourced functions have SLA's developed that have performance indicators that are linked to financial consequences. Performance indicators can include required skill sets, individual personnel requests, project timelines and milestones, and consequences for not meeting goals. Consequences could include quarterly notifications leading up to reduction of fees or cost allocation, current or present, moving to time and materials hybrid (budget at cost allocation, actual based on time and materials), and ability to outsource to private industry.</p>

Note 1: For Ranking Each Key Focus Area, the Peer Review Team Should Select One of the Following:

- A: Most Practices Exceed Industry Standards for this Key Focus Area
- B: Most Practices Meet Industry Standards for this Key Focus Area
- C: Some Practices Meet Industry Standards and Some Do Not
- D: Most Practices Do Not Meet Industry Standards
- NR: Not Ranked (Please Add a Brief Comment)
- N/A: Not Applicable

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Departmental Organizational Structure			
<ul style="list-style-type: none"> o Organizational Structure for MWWD as a Whole Regarding Operations, Maintenance, Planning, Engineering, and Support Services. 	B	The proposed realignment has potential for streamlining operations and consolidating like functions (finance, budget and admin svcs). This structure will allow for more budget/finance/admin coordination and possible cost efficiencies.	The key will be the ability of division heads and finance/admin to promote trust and cooperation when analyst report to finance/admin, but remain available to divisions, either housed within their on division (preferred), or readily accessible.
Outsourcing of Services			

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<ul style="list-style-type: none"> ○ Management of Cost and Quality of Services Provided by Other City Departments Via Service Level Agreements 	NR	See peer team review recommendations on previous page	If engineering is outsourced to city, this may provide opportunity for reduced engineering costs. They should not increase. If city is looking to consolidate engineering functions, then they must believe that efficiencies are to be had, and MWWD should realize some of those efficiencies. If proposed billing is cost allocation and no reduction of cots, go to direct billing.
Performance Measurement and Reporting			
<ul style="list-style-type: none"> ○ Format for the Current Performance Reporting System 	A	Dashboard system is very effective.	Continue to focus on select group of indicators as review of all indicators can be cumbersome and ineffective.

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
○ Alignment of Report with Current Driving Forces (i.e. Regulatory Permits, Partial Consent Decree, etc...)	A		
Strategic Planning			
○ Update Process to Ensure Alignment of Strategic Initiatives with Current Driving Forces	A	Look to provide short term (1-2 years) and long term strategies that are linked to use of current resources and new resources.	
Financial Statement Preparation			
○ MWWD and City of San Diego Practices Regarding Preparation of Stand Alone Financial Statement vs. Peers	C	City prepared financial statements are too late to be effective work tool (MWWD still looking for 04-05 CAFR, and 05-06 estimated to be complete in 07.	MWWD should prepare a stand alone financial statement if the city can not improve their CAFR performance. This will allow management a better understanding of their financial standing, provide for better forecasting and rate analysis.

Additional Peer Review Team Observations:

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City Organizational Structure			

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
<ul style="list-style-type: none"> ○ Division of Responsibility Between MWWD and Other City Departments for Performance of the Following Functions: <ul style="list-style-type: none"> ○ Human Resources ○ Information Technology & Management ○ Budget and Financial Management ○ Purchasing/ Contract Administration ○ Engineering Design ○ Construction Management ○ Provision of Other Key Functions <p>Note 1: For Ranking Each Key Focus Area, the Peer Review Team Should Select One of the Following: A: Most Practices Exceed Industry Standards for this Key Focus Area B: Most Practices Meet Industry Standards for this Key Focus Area C: Some Practices Meet Industry Standards and Some Do Not D: Most Practices Do Not Meet Industry Standards NR: Not Ranked (Please Add a Brief Comment) N/A: Not Applicable</p>	B/C	<p>It is important that the support services function in an effective and efficient manner in order for the MWWD to perform effectively and efficiently.</p> <p>HR:MWWD needs to be able to recruit the skilled people necessary to maintain and operate complex facilities. Generation Y'ers have to be recruited via internet.</p> <p>IT: Essential to have strong IT group to help MWWD stay on top of the new technology necessary to reduce staff in operation and maintenance of system. Many of systems MWWD needs will only benefit them and are best operated by them.</p>	<p>HR: MWWD should be proactive in the recruitment of skilled employees and should use the best practice tools such as recruiting via the internet which is best way to access the younger Gen X'ers and Gen Y'ers.</p> <p>IT: City should use MWWD IT group to develop new leading edge systems that would be beta tested within MWWD and funded with their enterprise funds that the general government could later piggy back.</p> <p>Engineering: Engineering needs to be more closely integrated with the Treatment and Collections operations and the maintenance management systems that help keep the huge investment in plant functional.</p>

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Departmental Organizational Structure			

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<p>o Organizational Structure for MWWD as a Whole Regarding Operations, Maintenance, Planning, Engineering, and Support Services.</p>	A	<p>The core services of treatment, collection, compliance and storm water are clearly focused with the support services split effectively between the engineering and all the other support services including finance, HR, and IT being combined in administrative services.</p>	<p>A wastewater utility is highly plant/asset intensive, more so than any other utilities except for water, and to provide high quality service the organization must be focused on the maintenance, repair, replacement of those facilities. In addition the organization must be prepared to meet the demands of new customers and changing regulatory requirements. Engineering, finance and operations and maintenance must work closely together for the efficient and effective use of resources. The use of technology to transparently link, for ease of use, maintenance management systems to the GIS system is the emerging best practice and will help closely link the service provider, engineering, to the core service providers, treatment and collection.</p>
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Outsourcing of Services			
<ul style="list-style-type: none"> ○ Management of Cost and Quality of Services Provided by Other City Departments Via Service Level Agreements 	C	MWWD appears to have little or no control over the level of service and the cost methodology for paying for those services provided by other City agencies. A common problem in many cities, which should be avoided, is general government agencies looking at enterprise funds as cash cows.	Agencies providing services to MWWD should have a clear cost formula, that is transparent and auditable by MWWD and the cities the Metro serves, and if possible should use a time and materials approach to billing for actual services provide to MWWD.
Performance Measurement and Reporting			

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<ul style="list-style-type: none"> o Format for the Current Performance Reporting System 	A	<p>MWWD has an excellent performance measurement system that is an industry leader and has been replicated by other best practice organizations. The dash board approach to focus each month on key indicators is very creative. The bid to goal system has a good track record and has been proven over many years. Even with the recent government turmoil in San Diego, employee morale seems to be good.</p>	<p>MWWD should stay the course. The City should look into expanding MWWD's performance reporting system and bid to goal system to other selected City departments, especially other enterprise activities.</p> <p>MWWD should look into putting a flat screen monitor in lobby and maybe other areas where employees congregate to show all the dashboard indicators, which are extremely easy to quickly read.</p>

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<ul style="list-style-type: none"> ○ Alignment of Report with Current Driving Forces (i.e. Regulatory Permits, Partial Consent Decree, etc...) 	A	MWWD has dedicated resources and a clear focus on current and future needs. Upper management and the day to day operations and key measurements seem aligned with key driving forces.	
Strategic Planning			
<ul style="list-style-type: none"> ○ Update Process to Ensure Alignment of Strategic Initiatives with Current Driving Forces 	A	MWWD has a very thorough and mature Strategic Plan process with dedicated resources to maintain the implementation momentum of strategic initiatives that includes annual updates of the plan to remain current and aligned with the changing environment.	Involve more employees at the the line and lower supervisory level in the planning process and updating of plan to bring more alignment between day to day tasks and the strategic initiatives.
Financial Statement Preparation			

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<ul style="list-style-type: none"> ○ MWWD and City of San Diego Practices Regarding Preparation of Stand Alone Financial Statement vs. Peers 	D	Best practice municipal utilities prepare stand alone financials that feed into the owning municipalities CAFR.	MWWD should start preparing stand alone financials. As an enterprise fund responsible to thousands of rate payers and a number of other cities it is essential that MWWD have good and timely financial information for both bond buyers and internal management in running the operation and projecting future rate increases.

Additional Peer Review Team Observations:

Topic / Description	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations

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Public Utility Advisory Commission	B	MWWD and other City utilities use an advisory commission for review of their strategic plan and other major items. This is commonly done in the industry.	The advisory commission should be strengthened and used more to provide another link from MWWD to the City Council and rate payers.
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Independent Authority	NR	Enterprise activities such as a asset intensive wastewater utility that must plan and manage its assets in terms of the next century needs stable management and a stable political environment in which to operate. Facilities are extremely expensive and are engineered to last 50 to 100 years.	The City should look into setting up MWWD as an independent authority of the City. The City would still own the utility and assets. As an authority it could have its own Board of Directors that would make all the day to day operational and management decisions and be focused on long term strategic direction of MWWD. The Board should be somewhat insulated from politics by giving members fairly terms and making it difficult, say a super majority of council, to remove members. It could have budget and rate approval authority or that could remain with City Council. Mayor should not be in chain of command. The relation with Metro customers, cities, could remain as is currently.
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San Diego MWWD Peer Review Data Collection Form
Topic: Rate Case Formulation

MWWD Sponsor(s): Darlene Morrow-Truver

Peer Review Team Members: _____ Jeffrey Meyer _____

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Cost of Service Analysis			
<input type="radio"/> Residential Cost of Service	B	Last cost of service performed in 2004 with 2003 data.	Cost of Service does not tend to change frequently, however, with potential realignment, growth, recent technological and capital improvements, as well as the potential ramifications of the recent <i>Bighorn</i> decision, it may be prudent to perform a comprehensive cost of service study for residential, commercial and industrial, as well as an analysis of strength and volume (would provide agencies with advanced comfort level).
<input type="radio"/> Commercial Cost of Service	B	Last cost of service performed in 2004 with 2003 data.	See above
<input type="radio"/> Industrial Cost of Service	B	Last cost of service performed in 2004 with 2003 data.	See above
<input type="radio"/> Analysis of Strength and Volume of Wastewater from Various Customer Classes	B	Last cost of service performed in 2004 with 2003 data.	See above

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Cost Allocation to Support Rate Structure			
<ul style="list-style-type: none"> ○ Customer Classification System 	A	Last customer classification performed in 2004 with 2003 data.	This update may not be as necessary to update as the cost of service, but if time permits, it may ease the transition to higher rates and alleviate potential effects from the <i>Bighorn</i> decision.
<ul style="list-style-type: none"> ○ Determination of Rate Structure for Various Customer Classes 	A	Last customer classification performed in 2004 with 2003 data.	See above
Utilizing Capital Improvement Program and Operational Budget Forecasts to Establish Future Revenue Requirements			

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○ Process to Forecast Future Costs and Budgets	A	Capital improvement schedule thru 2020 is impressive and most helpful. Cost increases of 5% annually for o&m inline with other agencies. The use of tracking by periods for appropriation and cash flow is an added benefit.	This process will have to be updated once outsourcing to city occurs. It will be important to closely monitor cost allocations and direct billings as historical will be lost and you will have to build new projections.
○ Process to Update Budget Forecasts on a Periodic Basis	A	Annual updates are standard with mid year report/updates to management and/or council. Quarterly financial and strategic updates to management and/or council are also helpful.	Current process of relying upon the city to produce a CAFR, often quite late in production, restricts the use of current financial information and can skew the forecast process. It may be helpful for MWWD to prepare a stand alone.
Rate Case Development and Updates			
○ Process and Model Utilized to Develop MWWD's 10-year Rate Case	B	Current model is an in-house model approximately 10 years old, but is being updated. In-house models can become obsolete if knowledge base	It may be useful to have an outside source to review model and make recommendations. Current in-house model required retiree/consultant to come in and

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		leaves department with no backup.	update. This knowledge base may not be available in the future and you will need to plan for contingencies.
○ Frequency of Rate Case Updates	B	Last rate increase approved 5-6 years ago with annual increases.	
Organizational Structure and Division of Responsibility			
○ Organizational Responsibility for Preparation of the Rate Case: MWWD Practices vs. Peers	A	MWWD finance department prepares rate case. City of Folsom's Finance Department is lead on Utility rate increases and liaison between Utility Department and consultant.	With the current status of the rate model, it may be useful to have a rate consultant come in and do a one-time model update or replacement for all components of the rate model, including costs of service and customer classification and related rate structure.

Additional Peer Review Team Observations:

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Cost of Service Analysis			
<input type="radio"/> Residential Cost of Service	B	Last COSS had "03 TY" and rate structure implemented is consistent with industry and the 140 plus large wastewater utility respondents to NACWA 2005 Financial Survey.	I recommend not doing another COSS until at least the "08 TY" as there is no reason to expect significant changes in the allocation of rates since San Diego is mature area and is not experiencing major changes in makeup and discharge characteristics of system users. I also recommend using recognized national consulting experts to prepare a best in breed COSS model and to perform the periodic studies every 5 years or so. The studies are not required frequent enough to maintain the expertise in house. In house expertise on supporting revenue requirements studies (see comments on rate case

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			preparation below) can provide or coordinate the generation of the necessary in house information requirements for consultant.
o Commercial Cost of Service	B	Same comment	Same comment
o Industrial Cost of Service	B	Same comment	Same comment
o Analysis of Strength and Volume of Wastewater from Various Customer Classes	B	Same comment	Same comment
Cost Allocation to Support Rate Structure			
o Customer Classification System	B	Same comment	Same comment
o Determination of Rate Structure for Various Customer Classes	B	Same comment	Same comment
Utilizing Capital Improvement Program and Operational Budget Forecasts to Establish Future Revenue Requirements			

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
○ Process to Forecast Future Costs and Budgets	A		
○ Process to Update Budget Forecasts on a Periodic Basis	A		
Rate Case Development and Updates			
○ Process and Model Utilized to Develop MWWD's 10-year Rate Case Projections	A	MWWD process of developing rate projections is robust and should lend a high level of confidence in results.	Keep it up.
○ Frequency of Rate Case Updates	A	Regular annual small rate increases, as MWWD was doing in recent past, is best practice for water/wastewater utilities. Bond rating agencies encourage this practice, it minimizes rate shock, it provides a steady slow revenue increase parallel to the usually steady slow expenses increases due to inflation, and it minimizes need for large rate reserve funds.	MWWD should get back on an annual schedule of small rate increases and should phase in new large expense increases whenever possible to support this strategy. Revenue gap created by even a one to two year delay will be permanent unless much larger rate increases occur in future.
Organizational Structure and			

Note 1: For Ranking Each Key Focus Area, the Peer Review Team Should Select One of the Following:

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- C: Some Practices Meet Industry Standards and Some Do Not
- D: Most Practices Do Not Meet Industry Standards
- NR: Not Ranked (Please Add a Brief Comment)
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San Diego MWWD Peer Review Data Collection Form
Topic: Rate Case Formulation

MWWD Sponsor(s): Darlene Morrow-Truver
 Peer Review Team Members: Brian Crewdson
 Page 4 of 5

Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Division of Responsibility			
<ul style="list-style-type: none"> ○ Organizational Responsibility for Preparation of the Rate Case: MWWD Practices vs. Peers 	C	<p>Preparation of rate cases takes to long because of a lack of timely and solid financial information and the number of people outside of MWWD that have to support the generation of information necessary to compute revenue requirements and rates.</p>	<p>MWWD should prepare its own standalone financial statements that feed into the City consolidated financial report. MWWD should also dedicate staff to the preparation of regular revenue requirements studies who have the tools to research and generate the majority of their required information. Since MWWD does not operate in a State PUC regulated environment which has extensive information submittals, testimony preparation and discovery processes, I think that the rate preparation process would take two to three FTE's to accomplish this effort if the Cities current financial systems are able to provide relevant</p>

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San Diego MWWD Peer Review Data Collection Form
Topic: Rate Case Formulation

MWWD Sponsor(s): Darlene Morrow-Truver
 Peer Review Team Members: Brian Crewdson
 Page 5 of 5

Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
			information.

Additional Peer Review Team Observations:

Topic / Description	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations

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San Diego MWW Peer Review Data Collection Form
Topic: Asset Management

MWW Sponsor(s): Lori Vereker (Support from Randy Weaver)

Peer Review Team Members: Andy Morrison

Page 1 of 5

Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Asset Management Program Practices			
○ MWW Asset Management System vs. Peers	B	My overall impression is that you are on the right track. Keep asking the right questions ie What is the criticality? What is the consequence of failure? What are our options vs. rehab or replace	See below for specific comments
○ Asset Databases: Mechanical/WWTP Assets; Pipes and Distributed Assets; Buildings and Other Facilities	B	This database should meet your needs	Populate the fields required for projecting R&R costs so that you can better plan for future budgeting needs and rate setting

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San Diego MWWD Peer Review Data Collection Form
Topic: Asset Management

MWWD Sponsor(s): Lori Vereker (Support from Randy Weaver)

Peer Review Team Members: Andy Morrison

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
○ Forecasting Repair, Rehabilitation and Replacement Budgets to Ensure Adequate Funding is Considered in the Rate Case	C	It seems like you have a good handle on the concept.	Consider projecting out longer period of time ie 20 years. The reason for this is to identify budget shortfalls and start aligning the rates to plan for future costs. Asset Management should dictate the funds needed for future projects, not the availability funds dictating which Assets will be Managed and which ones will simply have to fail.
○ Asset Inspection and Condition Assessment Program: Mechanical/WWTP Assets	C		There should be some criteria defined for evaluating the condition of Lift Stations, Pump Stations and the WWTF. Ie concrete structure evaluation (core samples)
○ Asset Inspection and Condition Assessment Program: Sewers	B		Continue to TV all gravity mains. Consider a second cycle.
○ Process to Identify Rehabilitation and Replacement Projects	B		Continue to use Master Planning and update them as conditions change or periodically ie every 3-5 years or following second round of TVing gravity sewers

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San Diego MWWD Peer Review Data Collection Form
Topic: Asset Management

MWWD Sponsor(s): Lori Vereker (Support from Randy Weaver)

Peer Review Team Members: Andy Morrison

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
○ Process to Analyze Risk and Criticality of Assets to Prioritize and Schedule Rehabilitation and Replacement Projects	B	You are asking the right questions.	It seemed as though MWWD has little influence over changing the rates to match the Asset Management needs,
○ Alternative Solutions Analysis and Project Development (i.e.: O&M fix vs. CIP)	B	Absolutely continue this.	Include maintenance staff that actually work on the assets, those that do the work have thought about longer than you and can be very creative
○ Alternatives Analyses: Life-cycle Costs; Service Level Targets	B		Continue this practice
Funding of Major Rehabilitation and Replacement Projects			

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San Diego MWWD Peer Review Data Collection Form
Topic: Asset Management

MWWD Sponsor(s): Lori Vereker (Support from Randy Weaver)

Peer Review Team Members: Andy Morrison

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
<ul style="list-style-type: none"> ○ Funding of Major Replacements as “Current Expense” vs. CIP 	C		<ul style="list-style-type: none"> • This is one of the major concerns that I saw. It appears that MWWD has little influence over changing the rates to match the Asset Management needs, • In addition to that, If you project your assets’ useful life and project replacement cost you can determine how much \$ per year that you need to set aside in a R&R fund. Further you can tell if that fund is “underfunded” or not. I would hope that if this information is presented in the right way to the policy makers and the governing body that approves rate increases, that they would make the right decision. • Not everything should be a CIP or simply absorbed into O&M, consider using an R&R fund.

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San Diego MWWD Peer Review Data Collection Form
Topic: Asset Management

MWWD Sponsor(s): Lori Vereker (Support from Randy Weaver)

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Additional Peer Review Team Observations:

Topic / Description	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Treating IT Systems as an Asset	D	I didn't see IT systems in the classes of Assets	Consider adding it into your plan. When taken as a whole, it has a huge cost and the consequence of failure is unthinkable... well maybe just really bad.
Information Management & Knowledge Transfer	C	This is not typically considered an Asset, However in the business world they call this intellectual property.	It sounds like you are already doing some work in this area. Continue to address these needs.
MWWD vs City wide AM	D	It seems backwards that the City of San Diego is not taking the lead in this for all of their Assets	If was the City Manager, I would want to see the AM Plan for the entire City of San Diego, not just MWWD for budgeting purposes if nothing else.

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San Diego MWWD Peer Review Data Collection Form
Topic: Wastewater Treatment Plant Operations

MWWD Sponsor(s): Lori Vereker

Peer Review Team Members: _____ Jim Herberg

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Organizational Structure and Management of Staffing Resources			
<ul style="list-style-type: none"> o Management of Process Engineers and O&M Support Engineers (Management by Plant Supervisor vs. Management Centralized at the Department Level Considering Geographic Diversity of MWWD System) 	C	<p>Process engineers report to operations supervisors at each plant. I can't tell if the engineers get together to strategize about overall system operation.</p>	<p>Consider having a supervising engineer managing team of process engineers. Engineers would be stationed at the plants, and would rotate between plants at some frequency (i.e. yearly). Their customer would be the Operations and Maintenance staff.</p> <p>Use the process engineers as the focus for holistic operation of the system and setting long term goals and strategies for permit compliance, operational efficiency, and asset management.</p>

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San Diego MWWD Peer Review Data Collection Form
Topic: Wastewater Treatment Plant Operations

MWWD Sponsor(s): Lori Vereker

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Page 2 of 7

Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
<ul style="list-style-type: none"> ○ Ratio of Operations Supervisors to Operators 	C	<p>Metro Biosolids Center Supervisor to Operator ratio seems high, in some cases one supervisor to two operators.</p>	<p>At the MBC, consider consolidation of the Wastewater Treatment Superintendent position with other upstream plants, or possibly reorganize the Department to have a Maintenance Manager and an Operations Manager responsible for all of the facilities. The Senior Supervisors at each facility could report to one of the two Managers.</p> <p>Consider eliminating one of the senior Wastewater Operations Supervisor positions at the MBC.</p> <p>During off shifts, consider having a lead operator at the upstream facilities with Supervisors at the MOC and Pt. Loma (w/ regulatory approval)</p>

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San Diego MWWD Peer Review Data Collection Form
Topic: Wastewater Treatment Plant Operations

MWWD Sponsor(s): Lori Vereker

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Page 3 of 7

Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
○ Methods to Forecast Workload vs. Staffing Levels	n/a		
Instrumentation and Automation			
○ Level of Instrumentation	A*	The level of instrumentation and remote monitoring is very high. However, it may be overkill in some cases, resulting in higher maintenance costs than needed for programming and instruments.	Revisit the cost effectiveness of the extent of the remote monitoring capability and reduce the level of automation where it isn't paying off.
○ Analysis of Data Collected by Instrumentation	A	Each control center was manned and Operations personnel were responding to alarms, radio calls and phone calls when we visited. I'm not sure how this data is being used for predictive maintenance, however.	
○ Level of Automation in Treatment Plants	A*	Same response as Level of instrumentation above.	

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San Diego MWWD Peer Review Data Collection Form
Topic: Wastewater Treatment Plant Operations

MWWD Sponsor(s): Lori Vereker

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
<ul style="list-style-type: none"> ○ Reliance on Automation to Support Treatment Plant Operations and to Reduce Staffing 	B	<p>It appears that the plants are highly automated and that operation is happening remotely.</p> <p>The CMOC has extensive capability to remotely operate pumping stations.</p>	<p>Consider consolidating some of the remote pump station operators to one or two pump station locations with a reasonable travel time to the other stations.</p>
<p>Sampling, Data Analysis, and Process Control Calculations to Support Plant Operations</p>			
<ul style="list-style-type: none"> ○ Level of Sampling for Process Control vs. Sampling for Regulatory Compliance 	NA		
<ul style="list-style-type: none"> ○ Process to Analyze Lab Test Results to Make Process Control Decisions 	NA		
<p>Energy and Chemical Optimization Programs</p>			

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Topic: Wastewater Treatment Plant Operations

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Page 5 of 7

Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
<ul style="list-style-type: none"> ○ Energy Management and Optimization Practices 	B	<p>Pt. Loma is beating the Bid to Goal Cost objective, indicating efficient operation.</p> <p>The electrical power generation arrangement with the landfill at Metro Biosolids Facility is cost effective, assuring electrical cost of \$0.05 per KWH.</p>	<p>Conduct a short weekly or bi-weekly conference call or meeting among all of the process control operators and process engineers. Discuss the entire system performance, trends, problems and treatment goals and for the coming week. Upstream or downstream process changes should be well coordinated.</p>

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San Diego MWWD Peer Review Data Collection Form
Topic: Wastewater Treatment Plant Operations

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
<ul style="list-style-type: none"> ○ Chemical Usage Evaluation and Optimization Practices 	B	Requirement to continuously meet 1000 TDS for reclaimed water from the North City Plant requires expensive water conditioning process.	<p>Negotiate new agreement terms to allow a monthly average TDS of 1000, rather than continuously. Cost savings could be achieved from not operating EDR process, which is an extraordinary measure to reduce salinity for irrigation water.</p> <p>Also consider having the most salt sensitive customers periodically switch to potable water to flush salts from the root zones.</p>

Additional Peer Review Team Observations:

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San Diego MWWD Peer Review Data Collection Form
Topic: Wastewater Treatment Plant Operations

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MWWD WWC Peer Review Summary

August 14 & 15, 2006

Peer Review Participants (Team):

Name	Agency
Andy Morrison (Andy)	Union Sanitary District (USD)
Samuel Espinoza (Sam)	Sanitation Districts of Los Angeles County (LACSD)
Barry Berggren (Barry)	City of Los Angeles, Bureau of Sanitation (LABOS)

MWWD Participants: Chris Toth

HDR Participants: Dave Spencer

BACKGROUND

On August 14th and 15th, MWWD held Peer Review Meetings at MOC-1 to discuss the City of San Diego wastewater collection operations and maintenance program. Peer Review participants met with Chris Toth and several MWWD WWC employees to gain an understanding of key programs and develop a list of observations and recommendations. Peer Review participants also spent time in the MOC-1 yard interfacing with MWWD WWC crews and observing equipment used to accomplish cleaning activities. The notes summarized below document the observation and recommendations from the MWWD WWC peer review meetings.

KEY RECOMMENDATIONS

1. Review, revise, and enforce standards for WWC nozzles. Nozzle selection is a vital component to improve both quality and consistency of cleaning work.
2. Eliminate chase vehicles except in instances of unusually difficult traffic conditions.
3. Evaluate the Quality Assurance (QA) program with respect to cleaning.
4. There is an unusually high percentage of pipe in the accelerated program. Evaluate the need to keep pipes on one-month and three-month schedules. This issue may have a direct correlation to cleaning quality.
5. Limit flexible work schedules as much as possible.
6. Analyze need for current level of Pump Station and Interceptor maintenance, cleaning, and patrol.

OBSERVATIONS AND RECOMMENDATIONS

Management

- **Staff**
 - A conscious effort must be made to promote based on performance not tenure
 - Barry has found that many of the best employees and supervisors in other agencies have come from private industries
 - Based on MWWD staffing, the most likely way to positively affect the current organization is to concentrate on getting good productive employees into the first line supervision roles
 - Leadership training is a key aspect in giving supervisors the right tools to perform their job (involve the unions in development of the training course)
 - In most public operations, it is difficult to remove employees that are not productive. One way to combat this is to hire new employees on a temporary basis which allows a manager much more flexibility in removing employees who do not perform.
 - Place an emphasis on first line supervisors being responsible for solving crew issues (behavior, productivity, quality, getting crews out of the office in the morning, etc).

- **Motivation/Communication**
 - All three agencies give crews access to cleaning productivity statistics. For the most part, this is not broken down by crew. If a crew does have a significant drop in productivity or quality, meet with them privately.
 - Important to recognize good performance. Recognize a crew when they have a productive month with good QA results or a supervisor that handles a behavior problem on their own.

- **Budget formulation and tracking**
 - One issue that WWC faces is that there is a disconnect between the staff who create and track the budget and the staff that understand and perform the work. The section managers typically come from a blue-collar background and do not have a particularly strong background or desire the budgeting and expenditure tracking process. The staff that put the budgets together does not have a strong operational background to understand what work is being performed. The result is that responsibilities are blurred, budgets do not reflect anticipated expenditures, and tracking on anything but the highest level becomes very cumbersome.
 - The Team Agencies all have a similar organizational structure and general difficulty in bridging that gap between fiscal knowledge and operational knowledge.
 - In Barry's organization, he is the key person that bridges that gap. He is trying to impart some of this fiscal knowledge to his operational staff but

has mixed success. Barry's approach is to first meet with crews to determine what they think are their needs. Then he moves up the chain of command to the supervisors and finally the senior staff. At each level, he tries to steer the group to the "correct" conclusion. Currently, Barry could put together a budget much faster on his own but is hoping that this significant involvement of staff at all levels will pay dividends at some point down the road.

Cleaning

- **Cost Competitiveness of Cleaning (In-house versus Contractor)**
 - LACSD has contracted some of his lower priority cleaning out to private companies. He still holds on to all higher priority cleaning. His cleaning crews are interested in contractor productivity numbers and will try and out-perform their private sector counter-parts.
 - LABOS has also contracted out for cleaning in the past. The private contractors would have good productivity rates but he found that the quality of the cleaning suffered. For his productivity and QA requirements, his analysis is that he gets better value out of his in-house cleaning crews.

- **Chase Vehicles**
 - The consensus was that chase vehicles have their place in cleaning when traffic conditions warrant it. This is a very rare case however.

- **Cleaning Frequency**
 - To the right is a breakdown of how San Diego's system was scheduled in February of 2006. The Team indicated that for an older system such as San Diego's, they would expect to see approximately 25% of the pipes in the accelerated program. Based on these numbers, 61% of San Diego's system is in the accelerated program. Of particular concern was the length of pipe in the 1-month and 3-month categories.

Schedule Info (Feb '06)	
Frequency	Miles
1	25
3	58
6	126
12	660
24	835
36	65
60	1037

 - Team was concerned that crews and supervisors seem disconnected from frequency optimization process. In other agencies, supervisors play a critical role in frequency optimization.

- **Nozzle Selection**
 - Sam and Barry spent some time talking to crews and looking at trucks and noticed that:
 - Root saws appear to be rarely used
 - Crews do not proof lines

- Nozzles had various states of wear which likely result in various states of effectiveness
 - There was little consistency in nozzle selection
 - Many of the nozzles used were considered by the Team to be less effective than other available nozzles
- USD has a matrix of which identifies the nozzle to be selected under various field conditions
- USD includes nozzle type in his CMMS and work orders in an attempt to standardize cleaning activities. Crews have the ability to recommend/change nozzle types.
- In particular, Andy mentioned a nozzle that is particularly effective in cleaning down stream which gives crews the flexibility to set up on either the upstream or downstream manhole depending on traffic or other field conditions.
- Barry recommended that some San Diego staff go up to participate in his upcoming Benchmarking Meeting. Their crews can see what equipment works for other agencies and the differences it is making in the quality of their cleaning.
- Benefits of standardization of nozzles:
 - Higher quality cleaning
 - More uniform cleaning quality
 - Crews work smarter not harder
 - Ordering parts is easier
- The Team discussed the difficulties in standardizing nozzles for an organization. Some of the challenges:
 - Crews grow accustomed to their nozzles
 - Crews think their cleaning quality is good
 - Crews don't know better
 - Afraid of change
 - Don't want to learn a new technique
 - Think they know better
- Key tips to help the transition process
 - Conduct CCTV tests before and after cleaning with all nozzle type. The best proof is visual.
 - Involve crews in nozzle selection
 - After crews leave, go to trucks and physically remove and destroy any unacceptable nozzles
 - Promote staff interaction with other agencies to see what works for other agencies.
- **Cleaning Quality Assurance**
 - Based on cleaning schedule frequency distribution, discussions with crews about cleaning practices, and a review of nozzles currently on the cleaning trucks, the Team is concerned that cleaning quality may be low.

- The Team believed that the choice of nozzle could likely be the biggest factor in low-quality cleaning.
- When issues of quality arise it is important to show the CCTV results to crews so they have a visual account of the differences between pipes that are cleaned properly and improperly.
- LABOS crews proof every pipe they clean. Using what method?
- LABOS uses a detailed standard for assessing quality. In order to “pass” QA, the pipe must be restored to 95% of it original diameter. The standard has different levels of failure severity based upon diameter restored.
 - When originally implemented, only about one-third of the pipes cleaned by LABOS passed QA
 - LABOS uses progressive intervention based upon a crew’s QA history, their rate of improvement, and the severity of the particular failure.
- **Use of CCTV Data in Cleaning Frequency Optimization**
 - Condition Assessment data should play an important role in Cleaning Frequency Optimization. San Diego CCTVs 250 miles of pipe per year which could be leveraged to improve frequency optimization.
 - <non-Peer Review comment from Dave Spencer> WWC has access to all CCTV data. All that is needed is a decision process to begin using the data. It could be beneficial to map the use of Condition Assessment Reports as part of the BPR Process to better understand how the data is currently being used and what additional benefits it could bring to WWC in the future.
- **Root Inhibitor Program**
 - In San Diego, pipes identified to be included in the Root Inhibitor Program go through a cycle of Clean/Treatment every 12 months.
 - The LABOS RI cycle is Clean/Treat/Clean every 18 months with the second cleaning occurring approximately 5 months after treatment. The purpose of the second cleaning is to remove the dead roots.
 - One of the major problems in RI pipes is that it is difficult to control root growth from laterals. USD combats this problem by filling specific problem pipes with as much foam as he can to try and get as far up the laterals as possible without overflowing into someone’s house. The process usually requires an extra person on the crew to radio when to cut off the foam and some extra time up front to determine how much can be filled. Would be an especially interesting idea for the canyon areas in San Diego due to the fact that they have a number of root problems, generally a large grade separation between the main and the adjacent homes, and it could reduce the number of entries into a Canyon.
 - Team recommends a video program of RI activity to assess the effectiveness of current practices.

FEWD

- The Team spent a limited amount of time on the FEWD program. In general, they were impressed by the sophistication of the overall program and the tools used to plan work.
- Andy suggested that WWC present their FEWD Program and scheduling tools at one of the monthly CalFog meetings. Not only would this be beneficial for WWC to see how other agencies approach their FEWD programs, he also thinks that other agencies would be interested in seeing the level of effort/sophistication of the WWC operation.

Pump Station/Interceptor Program

- The Team spent a limited amount of time reviewing the Pump Station group.
- The Team felt that flexible work schedules generally negatively impact:
 - Overall Productivity
 - Ability of different disciplines to work together
 - Ability to function efficiently especially during holiday periods
 - Scheduling complexity
 - Duration of major activities such as pump overhauls
- The Team believes that on a high level, pump stations are probably visited too frequently. If you have a SCADA system in place, there shouldn't be a need to visit sites so frequently. The justification from Leroy Davis for the visits was the system age, the proximity to the ocean, and lack of storage capacity. LABOS faced a similar problem in his organization when he first took over but they have not had any pump station spills that could have been prevented based on patrol or maintenance issues. The wet well cleaning also seemed to be extensive.

Construction

- The Team spent a limited amount of time reviewing the construction group. USD has a small construction group focused largely on small point repairs. LACSD has one special projects crew that has the capability to do minor construction activities. This crew also cleans pipe. For all intents and purposes, his group does not perform construction on the sewerage system (more block walls or pad work). LABOS contracts all construction to private entities. He feels that this is the most cost effective alternative. If WWC goes down that path, he recommends that WWC avoid time and material contracts and instead get specific unit costs for each replacement type.

Engineering

- The Team spent a limited amount of time reviewing the Engineering group. USD has a relatively small operations group. LABOS and LACSD have groups of approximately ten people. Without looking at the specific tasks performed,

the Team agreed that WWC seemed to have more engineers than they would expect.

San Diego MWWD Peer Review Data Collection Form
Topic: Laboratory Operations, Industrial Waste Control, Regulatory Permitting and Ocean Monitoring

MWWD Sponsor(s): Alan Langworthy

Peer Review Team Members: _____D Montagne, LACSD_____

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Ocean Monitoring			
○ Scope of the MWWD Ocean Monitoring Program vs. Peers	A	See Peer Review Document	
○ Ocean Sampling Practices	A	See Peer Review Document	
○ Testing Program	A	See Peer Review Document	
○ Reporting Scope and Format	A	See Peer Review Document	
○ Other MWWD Ocean Monitoring Practices	B	See Peer Review Document	
Chemistry Laboratory Function			
○ Scope of the MWWD Program vs. Peers	A	To extent applicable to Ocean Monitoring Program. See Peer Review Document	
○ Status of Chemistry Laboratory Facilities		NA/ Outside scope of my expertise	
○ Work Planning and Scheduling		NA/ Outside scope of my expertise	
Industrial Wastewater Control Program			
○ Scope of the MWWD program vs. Peers		Not subject to my review	
○ Inspection Practices		Not subject to my review	
○ Enforcement Practices		Not subject to my review	

Note 1: For Ranking Each Key Focus Area, the Peer Review Team Should Select One of the Following:

A: Most Practices Exceed Industry Standards for this Key Focus Area

B: Most Practices Meet Industry Standards for this Key Focus Area

C: Some Practices Meet Industry Standards and Some Do Not

D: Most Practices Do Not Meet Industry Standards

NR: Not Ranked (Please Add a Brief Comment)

N/A: Not Applicable

San Diego MWWD Peer Review Data Collection Form
Topic: Laboratory Operations, Industrial Waste Control, Regulatory Permitting and Ocean Monitoring

MWWD Sponsor(s): Alan Langworthy

Peer Review Team Members: _____D Montagne, LACSD_____

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Special Studies			
<input type="radio"/> Process to Justify and Evaluate the Benefit of Special Studies (Beyond Regulatory Requirements)	A	See Peer Review Document	

Additional Peer Review Team Observations:

Topic / Description	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations

Note 1: For Ranking Each Key Focus Area, the Peer Review Team Should Select One of the Following:

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- C: Some Practices Meet Industry Standards and Some Do Not
- D: Most Practices Do Not Meet Industry Standards
- NR: Not Ranked (Please Add a Brief Comment)
- N/A: Not Applicable

Peer Review: San Diego MWW Ocean Monitoring Program
16 October 2006

Reviewer: David E Montagne, Supervising Environmental Scientist, Ocean Monitoring & Research Group, County Sanitation Districts of Los Angeles County

In reviewing the MWW Ocean Monitoring Program it is important that the historical and regulatory setting in which this program has evolved and operates be considered. Ocean Monitoring programs conducted by large POTWs in the Southern California Bight (SCB) are unique in size and scope and the manner in which they have been developed. This character reflects differences from other coastal regions of the nation. In the highly developed coastal plain bordering the SCB very large municipal/regional collection and treatment systems have been built that dispose of wastewater through a small number of large ocean outfalls. There are four of these large systems: City of Los Angeles, The County Sanitation Districts of Los Angeles County (LACSD), the Orange County Sanitation District (OCSD) and the City of San Diego MWW. These four POTWS discharge approximately 90% of the 1.2 billion gallons of treated wastewater discharged to the SCB daily. This concentration of flow contrasts with other coastal regions of the state and the nation where ocean discharges are typically smaller (lower population density) or more dispersed through a larger number of smaller outfalls (less centralized treatment and disposal). The receiving water environment of the SCB is also unique in the narrowness of the coastal shelf providing nearshore access to deep water (>60M). The ocean outfalls of the four large POTWs in southern California are the deepest in the nation and the MWW Point Loma Outfall is the deepest of these four.

In addition, these programs share a commonality of design and practice that has developed since their inception 35+ years ago. Underlying this commonality is the reliance on in-house staff and facilities rather than outside consultants to perform receiving water monitoring. These four agencies are unusual nationally, if not unique, in having developed large multidisciplinary staffs of marine scientists to conduct these monitoring programs. These staffs are organized as integrated teams and are responsible for all aspects of receiving water environmental assessment, including the program and survey design, field sampling, sample analysis, data management, data interpretation, assessment and reporting. The facilities owned and operated by these agencies include research vessels and their crews, chemistry, microbiology and marine biology laboratories, and marine ecologists capable of integrating and interpreting data in the form of assessment reports. They are also important contributors to the interaction of their agency with state and federal regulators, environmental advocacy organizations and other stakeholders in the environmental policy arena. This organizational solution to the challenges of large deep-ocean monitoring programs in the SCB has provided these POTW agencies with capability to efficiently satisfy the regulatory requirements of their core monitoring programs, respond to the constantly evolving demands of adaptive special studies, and provide expertise on marine ecology to their agencies and communities. The MWW Marine Biology and Ocean Operations Section and its associated laboratories typifies this type of organization and capability.¹

¹ The others are the LACSD Ocean Monitoring and Research Group, the City of Los Angeles Environmental monitoring Division, the OCSD Environmental Assessment Division

The common reliance on permanent in-house science teams to provide monitoring and assessment has created a community of marine scientists in the southern California coastal region that shares common responsibilities and goals. This shared purpose led the large POTWs to jointly form in 1969 a regional research arm, the Southern California Coastal Water Research Project (SCCWRP) to augment the activities of their agency staffs. From its inception, SCCWRP has provided a forum and mechanism for establishing the monitoring principles and frameworks, standardization and coordination of survey design, and the techniques and procedures for monitoring the effects of deep-ocean outfalls in the SCB. The most recent expression of that regional standardization is the Model Monitoring Program.² The MWWO Ocean Monitoring Program embodies these principles, framework and monitoring designs.

In addition, the MWWO is a participant and, with the other large POTW ocean monitoring staffs, a principle driver of the Southern California Bight Regional Monitoring Program. This program and its periodic bight-wide surveys, has led to the development of regionally standardized QA project plans, measurement quality objectives and procedures for ocean monitoring. These standards of practice are derived largely from the pre-existing regional standards established among the four POTW ocean monitoring programs and SCCWRP. All elements of the MWWO Ocean Monitoring Program are governed by and consistent with these standards, which are among the most fully evolved and demanding in the nation.

Within this regional context, the MWWO Ocean Monitoring Program is unique in its size and scope. Two factors account for this difference: one geographical, the other regulatory. First, the program is carried out over a much larger area (~880 km²) than any other SCB POTW program.³ This greater geographical area reflects the inclusion of all receiving waters monitoring for both the Point Loma and South Bay outfall regions, the latter representing the broad extent of the coastal shelf south of Point Loma. Furthermore, these monitoring efforts are subject to different regulatory requirements. Wastewater discharge via the Point Loma Outfall is governed by the NPDES permit for the Point Loma Wastewater Treatment Plant (PLWTP), while discharge from the South Bay Outfall is regulated by permits for both the South Bay Water Reclamation Plant (SBWRP) and the International Wastewater Treatment Plant (IWTP). The necessity of conducting two large and distinct ocean monitoring programs regulated by separate NPDES permits and covering such a large geographic area greatly increases the complexity and scope of the MWWO program.

Additionally, the City of San Diego is operating under a waiver of the requirement for full secondary treatment for the PLWTP under section 301(h) of the Clean Water Act (CWA). Because the MWWO monitoring program is able to establish that the current level of wastewater treatment satisfies the requirements of CWA section 301(h), the ratepayers of San Diego are able to avoid hundreds of millions of dollars in additional treatment infrastructure at PLWTP and tens of millions of dollars in annual O&M costs. The hurdle to meet the 301(h) standards is quite high. The MWWO is the only large (>100 mgd) POTW nationally that has been able to maintain a waiver. In addition to the rigor of the 301(h) standards, there is an expectation among regulators, environmental advocacy groups and the community at large that a waiver is accompanied by extra

² Schiff, K., J Brown, and S. Weisberg. 2002. Model Monitoring Program for Large Ocean Discharges in Southern California. Technical Report 357. Southern California Coastal Water Research Project. Westminster, CA

³ In contrast, the LACSD monitoring area, located on a very narrow shelf is approximately 100-150 km²

vigilance in assuring that the receiving water environment is being protected. This burden goes beyond that which is required of other dischargers. That expectation has led the MWWD to seek unprecedented critical review of its ocean monitoring practices (e.g., the Scripps Institute of Oceanography Review), and to accept the responsibility for a greatly expanded monitoring program. An important element of that expanded role is a large number of special studies. These studies are short-term focused research-oriented projects. The MWWD has done an excellent job in responding to these demands, which are by their nature ad hoc and difficult to anticipate. The process developed by MWWD to identify, scope, and seek collaborators for special studies is unique and scientifically effective. Just as importantly, it satisfies the need for MWWD to act in a way that assures stakeholders that the maintenance of the 301(h) waiver is justified and protective. The effect of this regulatory setting is that the MWWD Ocean Monitoring Program has become the principle mechanism for monitoring the cumulative impact of urbanized San Diego County on the adjacent coastal ocean, a mission considerably more demanding and complex than simply monitoring the Point Loma Outfall. These demands and enhanced monitoring requirements are reflected partially in the greater cost of the MWWD Ocean Monitoring Program compared to that of other large POTWS in the region.⁴ The fact that MWWD has been able to accept this broader mission and produce the data and analyses necessary to satisfy all the expectations imposed by the 301(h) waiver for Point Loma is of significant value to the City.

As a peer, I see no significant deficiencies or inefficiencies in the approach MWWD has taken to its ocean monitoring responsibilities. All aspects of the MWWD program are very familiar to me as they are derived from well established regional standards that govern my agency's activities, and we have a long history of collaborative activities. The greater elaboration of the MWWD program when compared to that of the other three large POTWs in the SCB region is a direct outcome of a) the need to meet the greater burden of proof necessary to maintain the 301(h) waiver for the PLWTP, and b) the inclusion of a second large and separate monitoring program for the South Bay region. The additional costs associated with this greater regulatory burden and overall program scopes are proportionate to the tasks compared to the other POTW programs in the SCB.

In discussion with the MWWD staff, a single area of administration, that of project time tracking, arose as an area in which improvement should be sought. Current time keeping practices are limited in their ability to effectively track the time devoted to the many discreet projects and tasks performed within the MWWD Ocean Monitoring Program. The current system's reliance on only two identifiers, Org# and JO#, is insufficient to usefully capture actual staff time (costs) associated with program elements at an operationally useful level of precision. As a citywide system, it may be difficult to modify this approach, but consideration should be given to a three-level system. In the MWWD program, there is an implicit capability that is flexed to meet the changing demands of special studies. At times this capability will not be fully utilized by the core programs. This temporarily unutilized capability is the flexible resource drawn upon for special studies as they arise. Because of the importance of these special studies to the MWWD program, a more useful understanding of the distribution of staff time is needed to provide an objective basis for managing and planning. In addition, the current system

⁴ The MWWD program is approximately \$5 million/yr. In contrast, the LACSD program is approximately 20% less. LACSD does not have a 301(h) waiver, and was required to build-out secondary treatment in 2002 at a capital cost of >\$400 million and additional O&M of 15 million annually.

appears to suffer from a lack of relevance from the staff's point of view. This has led to inconsistent application of the current system, leading managers to view the data as unreliable at the operationally relevant level. Unless that staff perception is addressed, a better accounting system alone will not accomplish the goal. Therefore, staff training and acceptance must accompany any revision of the existing system or deployment of a local system crafted to meet the needs of the MWWD program.

1San Diego MWWWD Peer Review Data Collection Form

Topic: Laboratory Operations, Industrial Waste Control, Regulatory Permitting and Ocean Monitoring

MWWWD Sponsor(s): Alan Langworthy

Peer Review Team Members: Paul Martyn_____

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Ocean Monitoring			
o Scope of the MWWWD Ocean Monitoring Program vs. Peers			
o Ocean Sampling Practices			
o Testing Program			
o Reporting Scope and Format			
o Other MWWWD Ocean Monitoring Practices			
Chemistry Laboratory Function			
o Scope of the MWWWD Program vs. Peers			
o Status of Chemistry Laboratory Facilities			
o Work Planning and Scheduling			
Industrial Wastewater Control Program			

Note 1: For Ranking Each Key Focus Area, the Peer Review Team Should Select One of the Following:

- A: Most Practices Exceed Industry Standards for this Key Focus Area
- B: Most Practices Meet Industry Standards for this Key Focus Area
- C: Some Practices Meet Industry Standards and Some Do Not
- D: Most Practices Do Not Meet Industry Standards
- NR: Not Ranked (Please Add a Brief Comment)
- N/A: Not Applicable

2San Diego MWWWD Peer Review Data Collection Form

Topic: Laboratory Operations, Industrial Waste Control, Regulatory Permitting and Ocean Monitoring

MWWWD Sponsor(s): Alan Langworthy

Peer Review Team Members: Paul Martyn_____

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
<p>○ Scope of the MWWWD program vs. Peers</p>	<p>A</p>	<p>1. Basic program elements are being met.</p> <p>2. San Diego issues one permit for multiple discharge points at a facility; LACSD issues a permit for each discharge point.</p> <p>3. San Diego must comply with OPRA Urban Area Pretreatment Program and Toxics Control requirements under the waiver permit so must have expanded source control program ie. Labs, film processors, sumps.</p> <p>In contrast, LACSD tertiary effluent must meet drinking water standards so they are highly involved in research and emerging pollutants, which benefits San Diego's program.</p> <p>4. LACSD defines all who must self-monitor as SIUs, including radiator shops. San Diego uses EPA definition of SIU.</p>	<p>1.Consolidation of laboratory operations should be considered. Is there a cost savings to be realized if the analytical work for the source control group and treatment plant monitoring activities is handled by a unified laboratory?</p>

Note 1: For Ranking Each Key Focus Area, the Peer Review Team Should Select One of the Following:

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D: Most Practices Do Not Meet Industry Standards

NR: Not Ranked (Please Add a Brief Comment)

N/A: Not Applicable

3San Diego MWWWD Peer Review Data Collection Form

Topic: Laboratory Operations, Industrial Waste Control, Regulatory Permitting and Ocean Monitoring

MWWWD Sponsor(s): Alan Langworthy

Peer Review Team Members: Paul Martyn_____

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
<p>○ Inspection Practices</p>	<p>B</p>	<p>1. Current staffing levels appear low</p> <p>2. LACSD Monitoring staff (samplers) are in the inspection section, under inspection direction, and deliver samples to the lab. 1 person and 6 auto samplers / truck. Crews are on 3 shifts, to facilitate surveillance and emergency response .</p> <p>3. LACSD Inspectors fill out a standard form in the field; form data is entered into computer by data entry personnel.</p> <p>4. LACSD has separate inspectors, permit writers, data entry personnel, and surcharge evaluators. San Diego inspectors perform all 4 functions for industries in their assigned areas.</p>	<p>1. The number of current vacant positions is a concern. With the uncertainty associated with the renewal of the City’s 301(h) Waiver, it would be prudent to be fully staffed in key source control program elements in order to answer a critic’s comment that sufficient resources were not being provided to control the release of toxics to the environment. It is difficult to establish a staffing level needed for the number of system wide SIUs or the total number of industrial users; however, given the responsibilities the City has to control discharges from commercial sources it is believed the number of allocated inspection positions is appropriate.</p> <p>2. Consider 2 shifts of sampling crews.</p>
<p>Note 1: For Ranking Each Key Focus Area, the Peer Review Team Should Select One of the Following: A: Most Practices Exceed Industry Standards for this Key Focus Area B: Most Practices Meet Industry Standards for this Key Focus Area C: Some Practices Meet Industry Standards and Some Do Not D: Most Practices Do Not Meet Industry Standards NR: Not Ranked (Please Add a Brief Comment) N/A: Not Applicable</p>			

4San Diego MWWWD Peer Review Data Collection Form

Topic: Laboratory Operations, Industrial Waste Control, Regulatory Permitting and Ocean Monitoring

MWWWD Sponsor(s): Alan Langworthy

Peer Review Team Members: Paul Martyn_____

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Description of Key Focus Area	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
<p>○ Enforcement Practices</p>	<p>B</p>	<p>1. Enforcement actions appear sound and adequately address mandated program requirements; however, the time between sample collection and the issuance of a notice of violation could be shortened.</p> <p>2. LACSD spends a lot of enforcement resources collecting revenue because can't shut off water.</p> <p>3. Inspector writes citations in field and gets signature.</p> <p>4. Inspectors can see data on-line real-time; do not have to wait until all are released.</p> <p>5. LACSD uses disposable 2.5 gallon sampling containers in autosamplers, and, after pouring to sample jars, leaves remaining sample with contact as split.</p>	<p>1. Analytical turn-around times were noted in some cases as being excessive. Wastewater discharge samples should be promptly tested, the results certified and forwarded to the Source Control Group for possible enforcement action. For example metals should be analyzed within one week under normal circumstances and organics within 3 weeks.</p>

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D: Most Practices Do Not Meet Industry Standards

NR: Not Ranked (Please Add a Brief Comment)

N/A: Not Applicable

5San Diego MWWWD Peer Review Data Collection Form

Topic: Laboratory Operations, Industrial Waste Control, Regulatory Permitting and Ocean Monitoring

MWWWD Sponsor(s): Alan Langworthy

Peer Review Team Members: Paul Martyn_____

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Additional Peer Review Team Observations:

Topic / Description	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Surcharge Program		<p>1. >50,000 gpd sewer flows must have effluent meter that provides for collection of flow-proportioned composite samples by autosampler. COD and TSS calculated as flow-weighted avg using flow reported for the collection month.</p> <p>2. LACSD has no permit fees or monitoring fees; 100% of \$10M budget supported entirely by industrial / commercial sewer service charges at facilities > 1M gal/year (~3500 + gpd). In future, 20% cost of program may be shared by all users due to system-wide concerns such as endocrine disrupters, NDMA, etc.</p>	

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San Diego MWWWD Peer Review Data Collection Form

Topic: Laboratory Operations, Industrial Waste Control, Regulatory Permitting and Ocean Monitoring

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Topic / Description	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Communication		<p>1. LACSD has found cell phones to be a valuable tool to be used by the inspection staff to communicate between themselves in the case of an on-going investigation and sampling crews to initiate monitoring in nonroutine events. Moreover, the ability of this equipment to incorporate camera and video as well as tracking capabilities should be noted.</p> <p>2. Effective January 07, plan for all inspectors to have tablet PCs to access info in the field, including permits, lab data, surcharge info, and GIS showing laterals.</p>	<p>1. The consolidation of inspection and monitoring crews under one section should be considered.</p>
Document Control System		<p>1. LACSD only retains hard copies for 5 years, with exception of blueprints which they keep while IU is active. All documents are scanned with key word sheet, and accessible from program computers...saves storage space.</p>	

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D: Most Practices Do Not Meet Industry Standards

NR: Not Ranked (Please Add a Brief Comment)

N/A: Not Applicable

7San Diego MWWD Peer Review Data Collection Form

Topic: Laboratory Operations, Industrial Waste Control, Regulatory Permitting and Ocean Monitoring

MWWD Sponsor(s): Alan Langworthy

Peer Review Team Members: Paul Martyn_____

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Topic / Description	Peer Review Team Ranking (See Note 1)	Peer Review Team Comments	Peer Review Team Recommendations
Hauled Waste Program		<p>1. LACSD Trucked waste site attendants are hourly part time, under the IW section.</p> <p>2. Cameras at TW sites can remote monitor haulers and site attendants.</p> <p>3. Teletags on hauler trucks are automatically read and owner, volume, and permitting data added to computer; site manager screens and samples all loads using a coliwasa sampler and adds screening data to computer. Not all samples analyzed.</p>	<p>1.Liquid waste disposal rates for hauled septage and chemical toilet wastes are out of date and should be updated to fully fund treatment, conveyance and administrative costs. Cost updating could be considered in phases over time. Additional revenues and program equity issues could be simultaneously addressed. Include capacity fee in calculations (0.5¢/gallon in LA) Fees cover admin, lab, engineering oversight + treatment cost</p> <p>2. Consider mirror on expanding pole to observe sample collection by waste haulers.</p>

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- N/A: Not Applicable

