METRO WASTEWATER JPA

Metro TAC
(Technical Advisory Committee to Metro Commission/JPA)

ACTION MINUTES

DATE OF MEETING: June 19, 2013

TIME: 11:00 AM

LOCATION: MWWD, MOC II Auditorium

MEETING ATTENDANCE:

Greg Humora, La Mesa
Al Lau, Padre Dam MWD
Dennis Davies, El Cajon
Tom Howard, Poway
Kristen Crane, Poway
Leah Browder, Poway
Rita Bell, Otay WD
Roberto Yano, Chula Vista
Ed Walton, Coronado
Chris Helmer, Imperial Beach
Hamed Hashemian, La Mesa
Ann Sasaki, City of San Diego
Marsi Steirer, City of San Diego
Edgar Patino, City of San Diego
Lee Ann Jones-Santos, City of San Diego
Huy Nguyen, City of San Diego
Mike Faramarzi, City of San Diego
Pete Wong, City of San Diego
Monika Smoczyunski, City of San Diego
Amy Forman, City of San Diego
Jeffrey Pasek, City of San Diego
Amer Barhoumi, City of San Diego
Dawn Guendert, GHD
Karyn Keese, Atkins
Scott Tulloch, Atkins

1. **Review and Approve MetroTAC Action Minutes for the Meetings of May 15, 2013**
   On a motion by Al Lau and seconded by Dennis Davies the minutes passed unanimously.

2. **Metro Commission/JPA Meeting Recap**
   Chairman Humora reported that the Commission approved all items and received a presentation by Scott Tulloch on the Point Loma Wastewater Treatment Plant Waiver Overview. This presentation was similar in nature to the one that Scott had presented to Metro TAC at their May 2013 meeting.

3. **Water Demonstration Project Final Report**
   Marsi Steirer gave a presentation (included as Attachment A to these minutes) on the water demonstration project final report. This is the same presentation that was given to the City Council in June. The study came in $1.3 million under budget and those funds are being used for additional engineering projects such as additional alignments for the pipelines to save money and refining other costs. Discussions on cost sharing will start next year and an implementation task force will be convened. Marsi will be giving an update to NR&C on the San Diego City Council's directives (see slide 34) to NR&C on July 31, 2013, and to IROC on July 19, 2013. Marsi will give Metro TAC an update on the Directives at the August 2013 meeting.

   Leah Browder asked where the IPR water will be used. Marsi referred to slide 24 and stated that the water would go to the Alvarado water treatment plant and then distributed to that treatment plants area. IPR water could however be used in other areas of the County in case of an emergency. Marsi will give Metro TAC an update on the implementation of the Directives at the August 2013 meeting.

4. **Action Item: Operation Optimizations Consultant Services Agreement**
Pete Wong handed out an updated staff report on this agreement (Attachment B to these minutes). The consultants scope includes review and evaluation of existing facilities, operations, and pertinent documents to determine if improvements in operational efficiencies and/or cost saving or revenue improvement can be made in the areas of energy utilization, water production and distribution, chemical usage, etc. This is follow-on to work already performed by PUD staff in the area of improvement of operational efficiencies. This contract will be split between water and wastewater, and further between Metro & Muni. The charges will be billed based on the work performed and the financial impact to the PAs is an estimate. This item will be going to San Diego City Council in July 2013 and the Metro Commission in August 2013. Upon a motion by Roberto Yano, seconded by Tom Howard, the Metro TAC unanimously approved the proposed agreement and moving it forward to the Metro Commission/JPA for their consideration and possible approval.

5. **Action Item: Programmatic Wastewater Pipelines Condition Assessment Agreement**
Monika Smoczynski handed out the staff report (Attachment C to these minutes). PUD staff is recommending a proactive condition assessment program to assess wastewater pipelines with the aim to reduce future costs and improve effectiveness of operation, maintenance, and replacement of the aging Metro and Muni wastewater conveyance systems. The PAs estimated cost is $1.12 million. This item will be going to San Diego City Council in July 2013 and the Metro Commission in August 2013. Upon a motion by Greg Humora, seconded by Al Lau, the Metro TAC unanimously approved the proposed agreement and moving it forward to the Metro Commission/JPA for their consideration and possible approval. Chairman Humora requested that from now on all attachments be included with the agenda so that they can be reviewed prior to the meeting.

6. **Cost of Service Study**
Lee Ann Jones-Santos reviewed a presentation of the wastewater portion of the cost of service study (Included as Attachment D). The focus and considerations for the cost of service study (slide 13) are to match the costs of providing service to customer classes and to design rates to equitable recover the costs. The presentation included both muni and metro costs but as the study progresses Ms. Jones-Santos will carve out the Metro portion and present to Metro TAC/Commission/JPA. PUD staff is moving forward with the water cost of service study for adoption by City Council so that rates can go into effect in January 2014. However, preliminary results from the wastewater cost of service does not show any required rate increases for wastewater in the next two years and the wastewater cost of service study will continue to be vetted with IROC and Metro TAC/Commission/JPA over the next few months.

7. **Use of Funds**
Lee Ann Jones-Santos reviewed the selection process for the use of funds study and the report from MGO (Included as Attachment E). The use of funds study was required by the City Council as part of the last water and wastewater rate increases. Essentially the review found no red flags. PUD under collected projected revenues from their last rate case (due to economic factors and water conservation) but the same economic factors allowed for excellent bids and substantially lower construction costs than anticipated by the rate case and thus projected costs were considerably less. The report has been accepted by IROC and will go to the Finance Committee in July 2013 and the Commission/JPA in August.

8. **Metro Wastewater Update**
Karyn Keese asked Lee Ann Jones-Santos when Metro TAC would receive the Recycled Water Pricing Study as she had noticed that it was on the agenda for IROC for June 24, 2013. Lee Ann stated that the report had not been released by the Mayor's office and that Metro TAC would receive it as soon as it was released.

9. **Metro Capital Improvement Program and Funding Sources**
   a. **5-year CIP Update.** Guann Hwang reported that the CIP was down $2 million per year from last month's handout. Discussion ensued that there needs to be continued attention given to project prioritization because of large spikes in CIP spending in FYE 2014 and 2015 which will be cash funded. Ann Sasaki will work with Guann to do an actual cash flow of when project dollars would actually be spent to see if the projected CIP could be smoothed out over the planning period.
   b. **CIP Prioritizations.** The shaded projects are new projects. Guann reviewed the City's prioritization process. He will provide the detailed scoring methodology to Metro TAC at their July meeting. The projects from the Recycled Water Study have been integrated with the wastewater master planned CIP.
   c. **CIP Quarterly Report.** The 3rd Quarter Report for Metro CIP was reviewed. The planned CIP was $24.1 million. Through the 3rd quarter the cumulative expenditures have been $13. 5 million. There have not been any change orders to date this fiscal year.

10. **2013 Transportation Rate Update**
    Karyn Keese reported that the subcommittee (Dan Brogadir, Al Lau, and Ms. Keese) had met with PUD staff to review how the rate is calculated. Although the subcommittee understands how the rate is calculated and that it is calculated on the correct operational costs the rates structure itself needs further review. The subcommittee will continue to meet with PUD staff and come back with additional comments at the July meeting.

11. **SCAP Collection System Questions Regarding Discharge from Fire Sprinklers**
    This item was postponed to the July meeting due to time constraints.

12. **Metro TAC Work Plan (Standing Item)**
    This item was postponed to the July meeting due to time constraints.

13. **Padre Dam Mass Balance Correction (Standing Item)**
    This item was postponed to the July meeting due to time constraints.

14. **Metro Strength Based Billing Evaluation Draft Report (Standing Item)**
    This item was postponed to the July meeting due to time constraints. It will be moved to the front of the July agenda.

15. **RWQCB Settlement Order**
    This item was postponed to the July meeting due to time constraints.

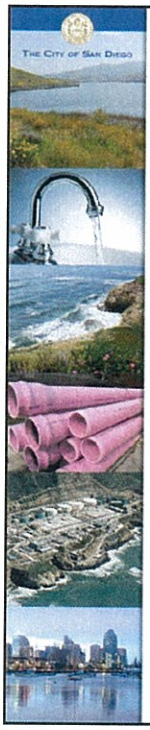
16. **Financial Updates (Standing Item)**
    This item was postponed to the July meeting due to time constraints.

17. **Review of Items to be brought forward to the next Metro Commission/Metro JPA Meeting August 1, 2013.**
    This item was postponed to the July meeting due to time constraints.

18. **Other Business of Metro TAC.**
    There was no other business of Metro TAC.

19. **Adjournment (To the next Regular Meeting, July 17, 2013)**

Attachment A: Item 3
Water Demonstration Project Final Report Presentation



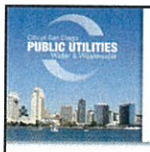
METRO TECHNICAL ADVISORY COMMITTEE MEETING

WATER PURIFICATION DEMONSTRATION PROJECT REPORT

MARSI STEIRER
DEPUTY DIRECTOR

JUNE 19, 2013

PUBLIC UTILITIES



PROJECT OBJECTIVES

- Evaluate the feasibility of using advanced treatment technology to produce water that can be sent to San Vicente Reservoir and later distributed as potable water
- Determine if the Demonstration Project provides evidence of viability for a full-scale Indirect Potable Reuse/Reservoir Augmentation (IPR/RA) project

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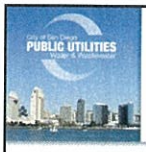

WATER REUSE TIMELINE

- 1993 — City & County Water Authority propose Water Repurification Project
- 1994-1998 — Planning, regulatory reviews & conditional approval, preliminary design on project
- Fall 1998 — Water Repurification Project becomes an issue in several closely contested political campaigns
- Spring 1999 — Project cancelled by City Council
- 2002-2004 — City enters into a settlement agreement with environmental groups committing to:
  - Evaluate improved ocean monitoring
  - Pilot test biological aerated filters
  - Study on increased water reuse

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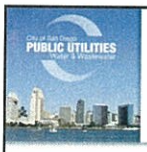

WATER REUSE TIMELINE

- 2004-2005 — City undertakes Water Reuse Study
- October 2007 — City Council votes to proceed with the Demonstration Project

Water Purification Demonstration Project

- November 2008 — City Council approves temporary water rate increase (3.08%) to fund $11.8 million Demonstration Project
- January 2009 - August 2010 — Temporary water rates in effect

PUBLIC UTILITIES

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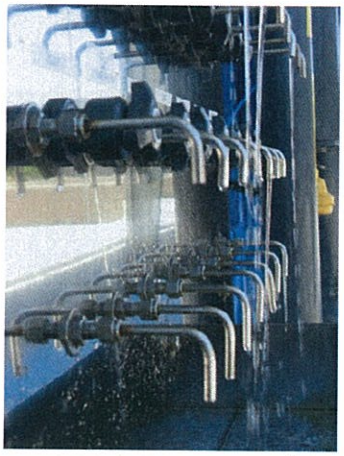
Demonstration Project Components

- Advanced Water Purification (AWP) Facility
- Independent Advisory Panel (IAP)
- San Vicente Reservoir Study
- Regulatory requirements
- Energy and economic analysis
- Pipeline alignment study
- Public outreach & education program



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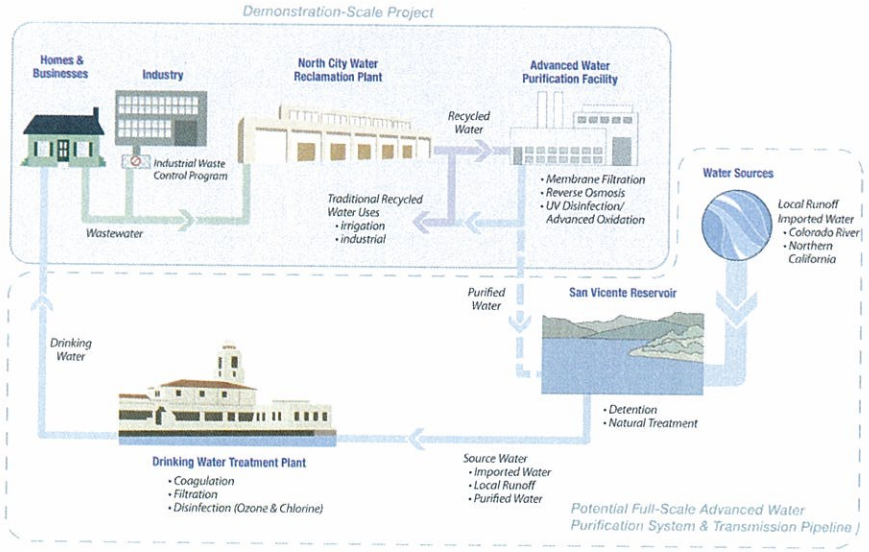
City of San Diego's
Water Purification Demonstration Project
Purification Process



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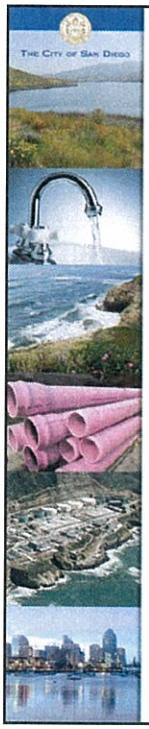

Advanced Water Purification Facility

AWP Facility
Scope of Work

- Design, procure, install, operate, and test a one million-gallon per day (mgd) AWP Facility at North City
- Develop and implement a Testing and Monitoring Plan
- Prepare a report based on the operation and testing of the demonstration facility

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AWP Facility
Testing & Monitoring Plan

- Testing period August 1, 2011 to July 31, 2012
- Measured for 342 constituents and parameters in recycled water, purified water, & imported water
- Conducted 9,000 individual water quality laboratory tests
- Implemented continuous and daily monitoring before and after each treatment step to verify integrity of each treatment process

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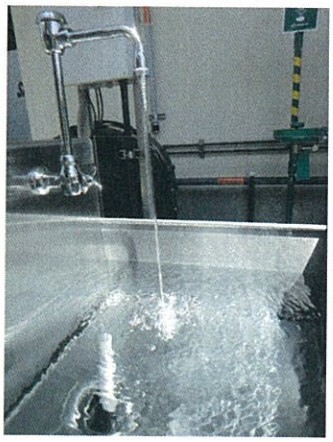
AWP Facility
Testing & Monitoring Results

- Purified water met all federal and state drinking water standards
- Lab tests plus continuous monitoring ensures only high quality water is produced
- Overall water quality was exceptional, comparable to distilled water
- Continuous and daily monitoring verified the integrity of the treatment process and equipment



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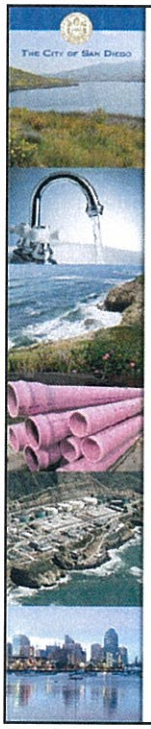

INDEPENDENT ADVISORY PANEL

PUBLIC UTILITIES

INDEPENDENT ADVISORY PANEL

- Convened to provide expert peer review of the technical, scientific, and regulatory aspects of the Demonstration Project
- Requested by California Department of Public Health (CDPH)
- Provided feedback regarding
  - San Vicente Reservoir
  - AWP Facility
  - Proposed regulatory framework

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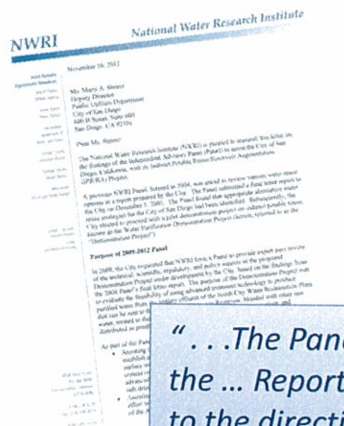
Independent Advisory Panel Conclusions



- Ten IAP meetings over three years
- IAP issued summary "letter of findings" November 16, 2012
- Unanimously concluded the Demonstration Project satisfied all City Council directives, and a San Vicente Reservoir augmentation project would be a landmark project

". . .The Panel believes that the ... Report ... (is) responsive to the directives set forth by the City Council."

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San Vicente Reservoir Study

City of San Diego
PUBLIC UTILITIES
Water & Wastewater

San Vicente Reservoir Study

- Determine water quality effects of purified water in the reservoir
- Establish the retention time and dilution of purified water in the reservoir

- Secure regulatory approval from CDPH and San Diego Regional Water Quality Control Board

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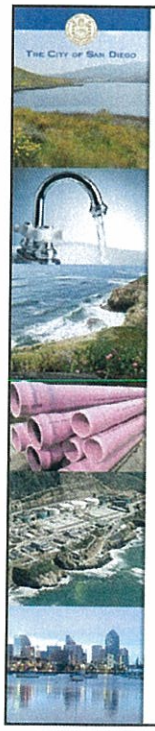
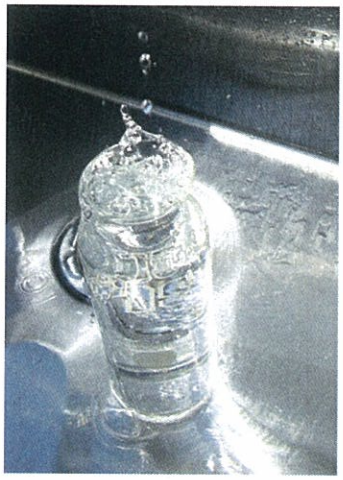


Regulatory Framework

Regulatory Framework

- Regulatory agencies, CDPH, Regional Water Board, and County Dept of Environmental Health, attended IAP meetings
- Regulators commented on:
  - AWP Facility equipment
  - Testing & Monitoring Plan
  - San Vicente Reservoir Study



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Regulatory Framework Results

- California Department of Public Health (CDPH) concept approval letter 9/7/2012

> *"Based on CDPH's review of the City's ... submittal ... CDPH approves the San Vicente Reservoir Augmentation Concept."*

- City received a letter of concurrence from the Regional Water Board on 2/12/2013

> *"The . . . Water Board, with concurrence from USEPA, strongly supports the efforts of the City to develop the San Vicente Reservoir Augmentation Project..."*

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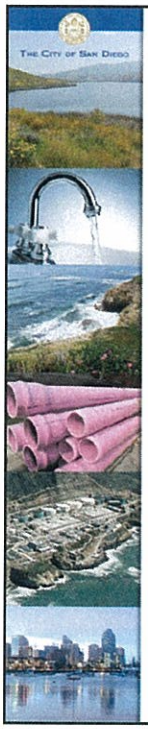
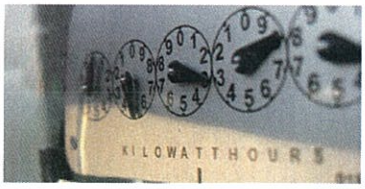


Energy & Economic Analysis & Full-Scale Facilities

Long-Range Water Resources Plan 2012 Update
Energy & Economic Analysis

Energy:

- Energy consumption and greenhouse gas emissions of purified water delivered to San Vicente comparable to that of imported water
- Energy consumption and greenhouse gas emissions of purified water lower than ocean desalination



Cost:

- $2,000 per acre-foot to produce and convey 15 mgd of purified water to San Vicente Reservoir

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Long-Range Water Resources Plan 2012 Update
Energy & Economic Analysis

- Various water supply portfolios were evaluated and ranked based on their performance in meeting stakeholder objectives
- The three highest-ranked portfolios included San Vicente IPR/RA
- Estimated cost of San Vicente IPR/RA: $2,100/acre-foot to $2,300/acre-foot
  - Portfolio rankings do not change over this range
  - Costs exclude potential for grants and local resource credits

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Demonstration Project
San Vicente IPR/RA Cost Estimate

	Capital	Annual Operating and Maintenance
AWP Facility	$144,700,000	$8,145,000
Pipeline & Pump station	$224,500,000	$3,385,000
Increased North City Tertiary Treatment	$0	$3,965,000
Total	**$369,200,000**	**$15,495,000**

- Result - $2,000 per acre-foot to produce and convey 15 mgd of purified water to San Vicente Reservoir

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Demonstration Project, San Vicente IPR/RA
Avoided Wastewater Costs

	Capital	Annual Operating and Maintenance
Point Loma Wet Weather Storage Facility	$123,000,000	$6,150,000
Reduced Treatment at Point Loma	$0	$2,210,000
Reduced Pumping at Pump Station No. 2	$0	$450,000
Total	**$123,000,000**	**$8,810,000**
Total (per-acre-foot basis)	**$1,000**	

- Net cost: $1,000 per acre-foot to produce and convey 15 mgd of purified water to San Vicente Reservoir

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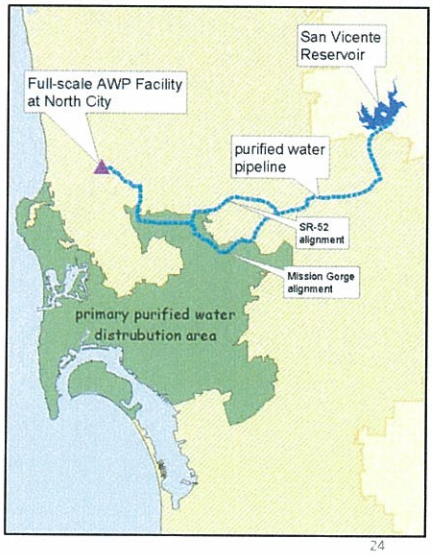
Pipeline Alignment Study

- 22 mile, 36-inch pipeline to convey water from the AWP Facility to San Vicente Reservoir
- Two potential alignments identified:
  - State Route 52 alignment
  - Mission Gorge alignment
- Additional analysis is needed to refine alignment



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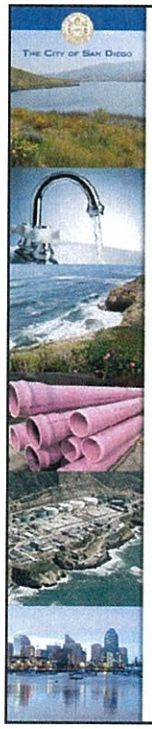
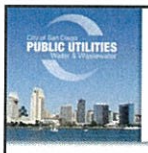


PUBLIC OUTREACH & EDUCATION



PUBLIC OUTREACH & EDUCATION

Program Statistics (through May 2013):

- Speakers Bureau presentations/attendees 152/3,836
- Community events/attendees 56/7,500
- Facility tours/visitors 269/3,529

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Public Outreach & Education

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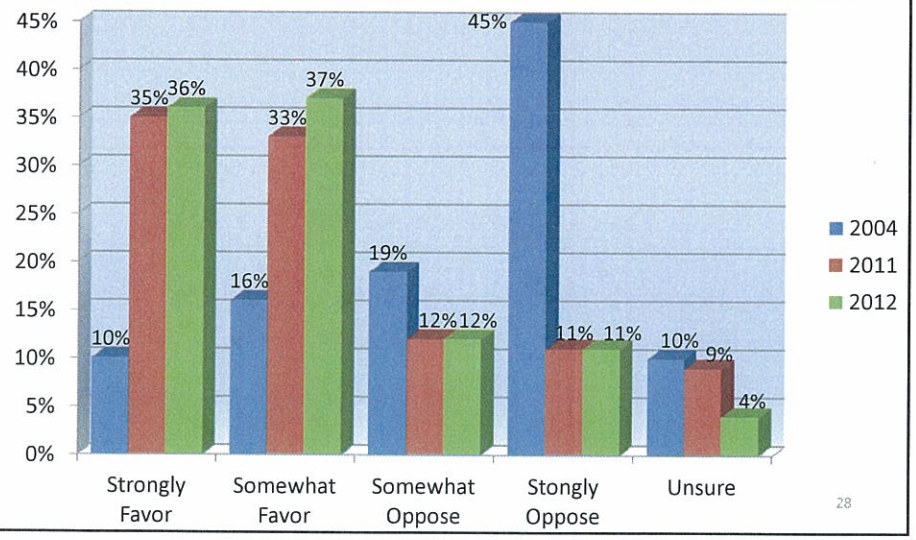
Public Outreach & Education Program
Research Results

Use Advanced Treated Recycled Water as an Addition to Drinking Water Supply



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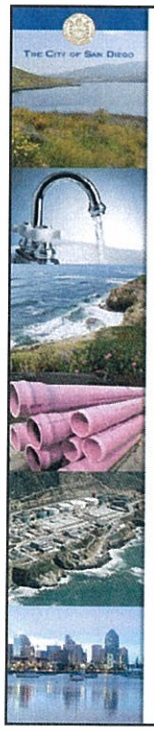

Next Steps

PUBLIC UTILITIES

NEXT STEPS

- Continuing AWP Facility operations
  - Prop 50 extended testing (2013 - 2014)
  - Prop 84 potable reuse study (2014 - 2015)
- AWP Facility tours
- Continuing outreach efforts
  - Tours
  - Speakers Bureau
  - Community events

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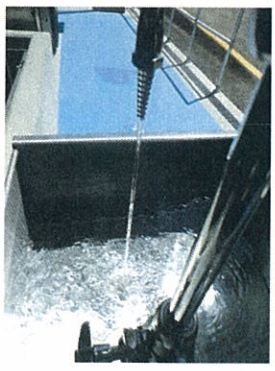
NEXT STEPS CONTINUED

- Determine appropriate cost-sharing concepts for water-wastewater funding sources
- Determine contracting modes
- Refine pipeline alignment
- Coordinate with Point Loma 2015 Permit Renewal and next steps associated with the Recycled Water Study
- Monitor development of direct potable reuse regulations



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SUMMARY

ADVANCED WATER PURIFICATION FACILITY
Operated 12 months; produced water that met all state and federal standards

SAN VICENTE RESERVOIR STUDY
Satisfied all anticipated regulatory requirements

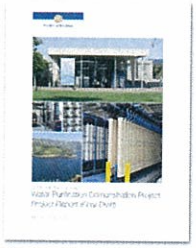
REGULATORY FRAMEWORK
Received conceptual approval for a full-scale project from CDPH & Regional Water Board

ENERGY & COST ANALYSIS
Determined energy use is comparable to imported water and costs $2,000 per AF

EDUCATION & OUTREACH
Increased understanding and approval of water purification

PROJECT REPORT
Completed March 2013 & adopted by City Council in April 2013

AND NOW WE'RE...
- Responding to directives set forth by City Council
- Continuing outreach program (tours, presentations, & events)



CITY COUNCIL DIRECTIVES

1. Adopted the 2013 Water Purification Demonstration Project Report
2. Determine a preferred implementation plan and schedule that considers potable reuse options for maximizing local water supply and reducing flows to Point Loma
3. Develop a strategy for allocating potable reuse costs among local water and wastewater funding sources
4. Develop a financing plan
5. Monitor the development of direct potable reuse (DPR) regulations
6. Report to the Natural Resources and Culture Committee on the progress of each of the above items within 90 days of the City Council hearing
7. Remaining project funds to initiate work described as the "Next Steps"
8. Join the statewide DPR initiative led by the WateReuse Association

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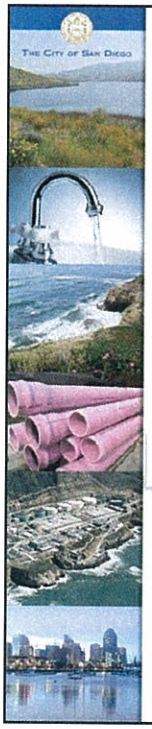


Water Purification | Demonstration Project

PureWaterSD.org

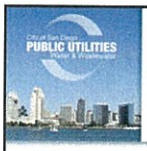
Marsi A. Steirer |msteirer@sandiego.gov| 619.533.4112

Water Purification Demonstration Project

@PureWaterSD

PureWaterSD

PUBLIC UTILITIES



BACK-UP SLIDES

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BUDGET AND EXPENDITURES

PROJECT TASK	ORIGINAL BUDGET	ACTUAL CONTRACT	EXPENDITURES THRU FY2013
Program Management	$1,688,000	$1,781,742	$1,635,537
Independent Advisory Panel	$250,000	$250,000	$217,074
AWP Facility	$7,400,000	$7,400,000	$7,146,897
Energy and Economic Analysis	Done through the Long Range Water Resources Plan 2012 Update		
Limnology and Reservoir Study	$385,000	$420,000	$419,457
Pipeline Alignment Study	$50,000	Incl. in Program Management Contract	
Public Outreach and Education	$,1,700,000	$1,499,611	$1,645,866[3]
Contingency	$338,000	$459,647	$328,399
Regulatory Staff Charges[1]			*$122,075*
Non-personnel expenses[2]			*$206,324*
Total	$11,811,000	$11,811,000	$11,393,230 ($417,770 under budget)

[1]Regulatory staff participated in IAP meetings and commented on AWP Facility Testing and Monitoring Plan
[2]Incurred in support of above project tasks; majority of expenses were due to production of outreach materials.
[3]Supports extended outreach activities through December 31, 2013

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SOURCES OF FUNDING AND REMAINING FUNDS

	Amount
Revenue from Special Rate Increase (Jan 2009 – Aug 2010)	$10,738,165
State Prop 50 Grant	$1,072,835
Bureau of Reclamation Grant *(awarded subsequent to special rate increase)*	$2,952,750
Total Project Funding	**$14,763,750**
(Project Expenditures thru FY2013)	-$11,393,230
(City Staff Charges thru FY2013)	-$1,813,112
(Cost to Continue Operating AWP Facility thru FY2013)	-$200,000
Total Remaining Funds	**$1,357,408**

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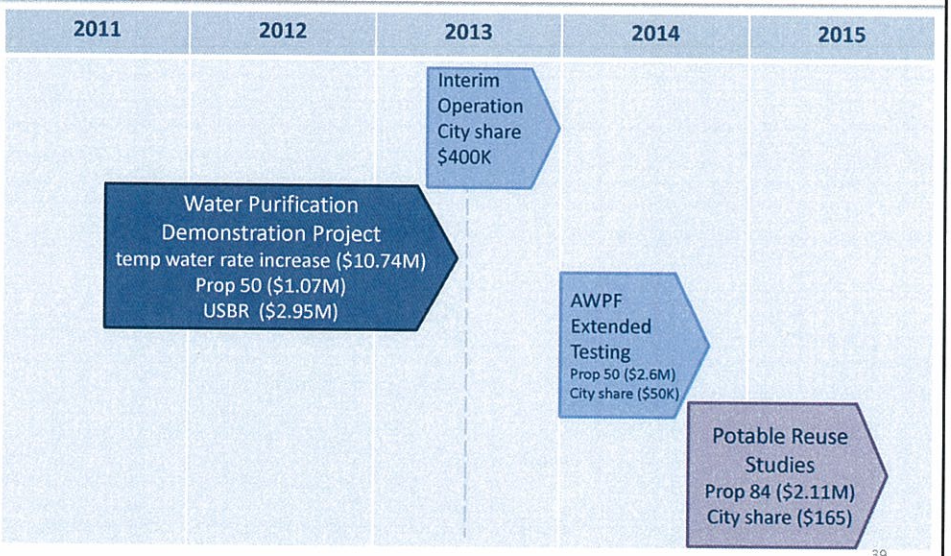
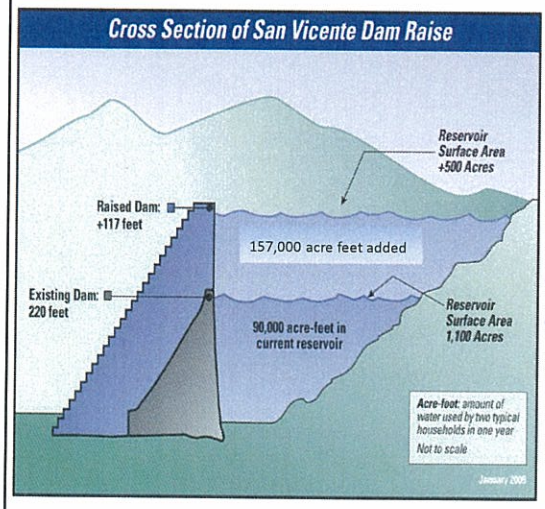
CONTINUED OPERATION OF DEMONSTRATION AWP FACILITY



39

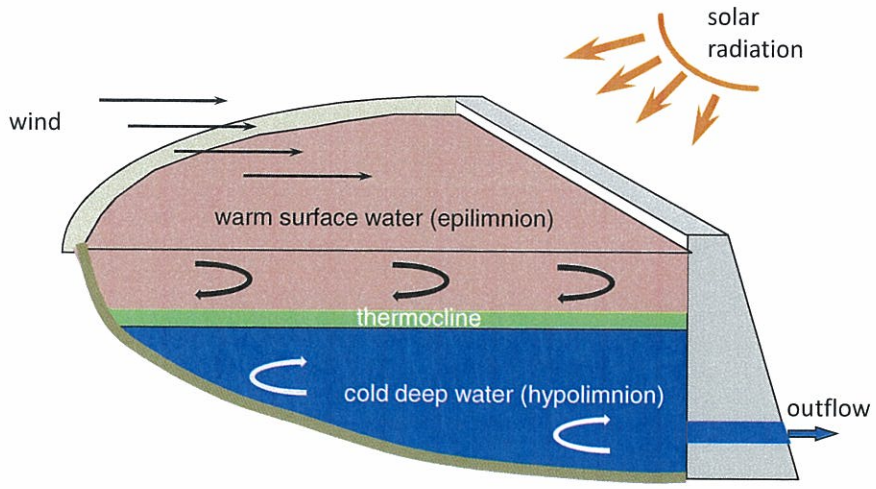
SAN VICENTE DAM RAISE PROJECT



- Water Authority is constructing facilities
- City will operate reservoir, dam, and outlet works
- Existing reservoir 90,000AF
- Enlarged reservoir 247,000AF
- Construction 2010 – 2013
- Refilling reservoir will take 3 to 5 years

40

Density Stratification: A Fundamental Characteristic of Reservoirs in SoCal

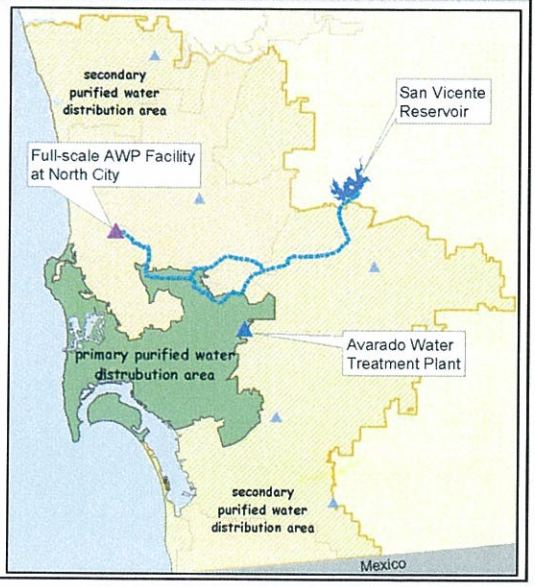


41

Purified Water Distribution Areas

Under normal operations, purified water is delivered to the Alvarado WTP and to the area in green.

In an extraordinary event, such as extended drought, purified water could go to six WTPs and to the crosshatched area.



Regulated Constituents

Regulations/Guidelines	Number of Constituents
California Department of Public Health Goals	
Primary Drinking Water Maximum Contaminant Levels (MCLs)	90
Secondary Drinking Water MCLs	18
Microbial	4
Notification Levels	30
Groundwater Replenishment Criteria	142
San Diego Water Board (projected)	
San Vicente Reservoir Limits	143
Total	231

43

Non- Regulated Constituents

Lists	Number of Constituents
Unregulated Contaminate Monitoring Rule 3 (UCMR3)	30
Constituents of Emerging Concern (CEC's)	90
Beta Emitters (Cesium-137, Iodine-129, and Iodine-131)	3
Nitrosamines	5
Lithium	1
Total Non-Regulated Constituents	111*

*Total when accounting for duplication between lists and with regulated constituents

44

Non-Regulated Constituents in Purified Water

Constituent	Classification/ Common Use	Units	Laboratory Reporting Level	Purified Water	
				Average Concentration	Maximum Concentration
Bromochloro-methane	UCMR3 Disinfection byproduct	ppb	0.06	0.23	0.25
Chromium (VI)	UCMR3 Disinfection byproduct, Industrial byproduct	ppb	0.02	0.09	0.16
Strontium	UCMR3 Naturally occurring metal, dietary supplement	ppb	0.3	ND	0.37
Acesulfame-K	CEC Sugar Substitute	ppt	20	ND	50
Iohexal	CEC X-ray contrast agent	ppt	10	ND	19
Triclosan	CEC Antibacterial	ppt	10	ND	19

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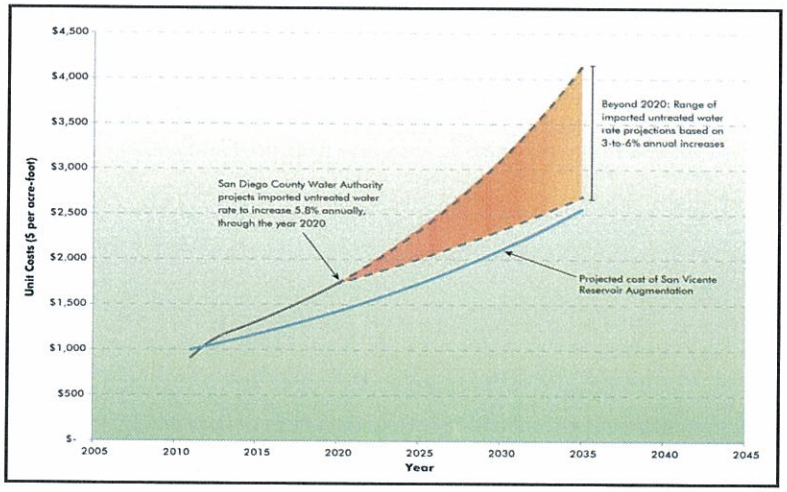
Comparing the Cost of the Water



Projected cost of purified water (solid line) of a full-scale reservoir augmentation project at San Vicente Reservoir compared to actual and projected costs of untreated imported water (dashed lines).

46

Recycled Water Study Objectives

- Identify opportunities to increase recycling of wastewater for Indirect Potable Reuse (IPR)and Non-Potable Reuse (NPR) for a 2035 planning horizon
- Determine the extent recycling can reduce wastewater flows to the Point Loma Wastewater Treatment Plant
- Determine implementation costs

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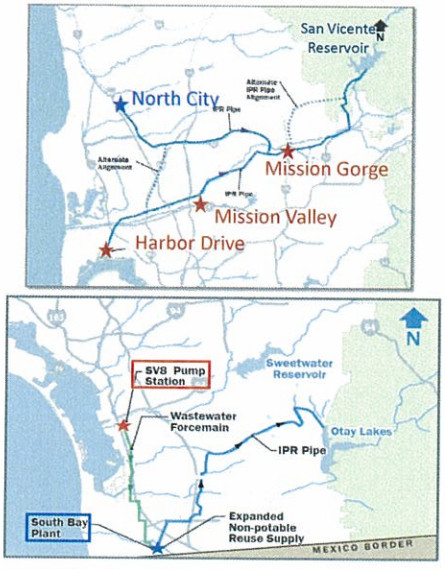
Facility Concepts



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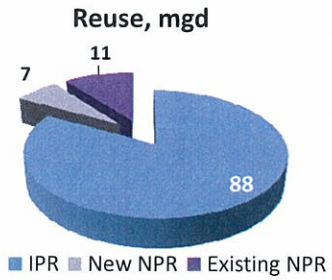
Point Loma-IPR Supply Benefits

- Reduces projected Point Loma flows by 135 mgd to 143 mgd (~50% reduction)
- Reduces Cost of Point Loma Secondary Upgrades
  - Capital cost reduction: $430 million[1]
  - Annual Operations and Maintenance reduction: $19 million[2]
- Creates 95 mgd of new reuse
  - 7 mgd non-potable
  - 88 mgd indirect potable
  - Equivalent to ~35% of projected water demand
  - Reduces overall salinity in water supplies
- Cost of new reuse: $1700 to $1900 per acre-foot (2011$)

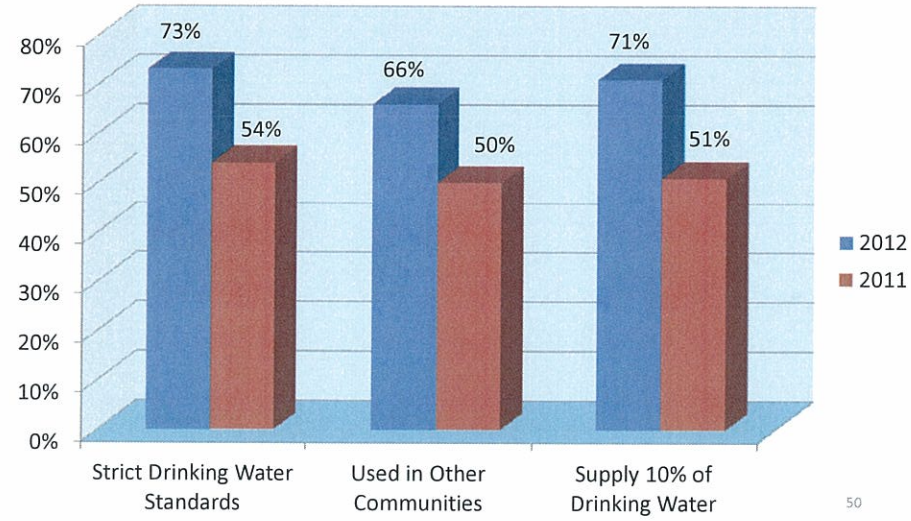


[1,2]Estimated capital and annual O&M costs at full capacity, respectively: $1.2 billion and $48 million

49

Public Outreach & Education Program Research Results

Accepting of Recycled Water to Supplement Drinking Water if Respondent Learned Certain Facts



50

Direct Potable Reuse Concept

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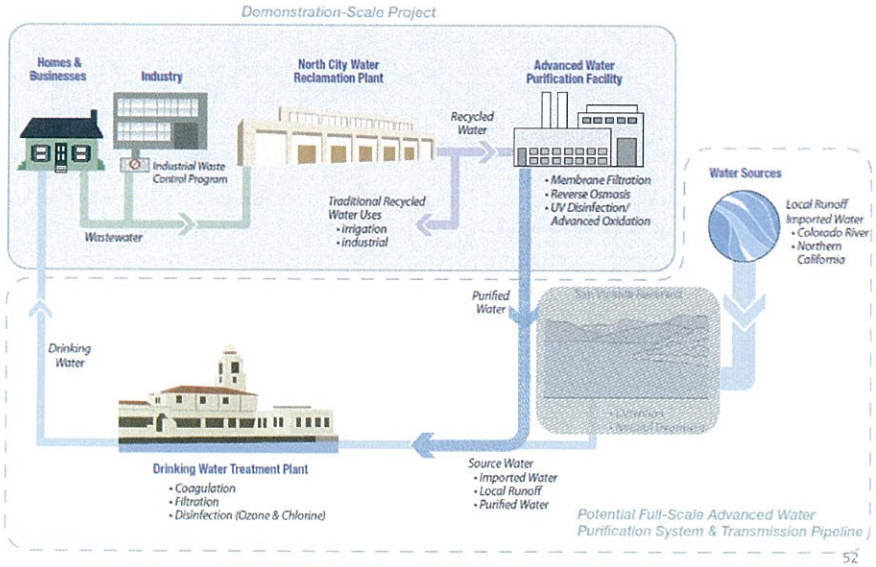
City of San Diego's

Water Purification Demonstration Project

Purification Process



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SENATE BILL 918

Senate Bill 918 directs CDPH to:

- Adopt regulations for IPR/groundwater replenishment December 31, 2013
- Convene an expert panel to advise CDPH on IPR/reservoir augmentation and feasibility of DPR
- Adopt regulations for IPR/reservoir augmentation December 31, 2016
- Report on feasibility of DPR December 31, 2016

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DEMONSTRATION PROJECT REPORT PRESENTATIONS

• Natural Resources & Culture Committee	March 20, 2013
• Conservation Action Committee	April 8, 2013
• Independent Rate Oversight Committee	April 15, 2013
• Building Owners & Managers Association	April 15, 2013
• County Water Authority Member Agency Managers' Meeting	April 16, 2013
• ~~County Water Authority Board meeting~~	~~May 23, 2013~~
• Metro TAC	June 19, 2013

Attachment B: Item 4
Operation Optimization Consultant Services Agreement Staff Report

METRO JPA/TAC
Staff Report

Subject Title:
Consultant Services for Operation Optimizations

Requested Action:
Request to approve the subject agreement and proceed to forward item to Metro Commission for approval.

Recommendations:

Metro TAC:	Present to Metro Commission for approval
IROC:	IROC I&O Subcommittee supported on June 10, 2013
Prior Actions: (Committee/Commission, Date, Result)	This action was heard at the Natural Resources and Culture Committee on June 12, 2013

Fiscal Impact:

Is this projected budgeted? Yes _X_ No ___	
Cost breakdown between Metro & Muni:	70 % Metro and 30% Muni of $2,575,000
Financial impact of this issue on the Metro JPA:	35 % Metro of $1,802,500 = $630,875

Capital Improvement Program:

New Project? Yes _X_ No ___	
Existing Project? Yes ___ No _X_ upgrade/addition ___ change ___	

Comments/Analysis: Executive Summary attached

Previous TAC/JPA Action: None

Additional/Future Action: Present to Metro Commission

City Council Action: City Council approval anticipated in July 2013.

CITY OF SAN DIEGO
PUBLIC UTILITIES DEPARTMENT

Project Name: Operation Optimizations Consultant Services Agreement

Name of Project Presenter: Pete Wong, Senior Civil Engineer

Project Description:

In the past several years, the Public Utilities Department (Department) has been evaluating and performing studies for ways to improve operational efficiencies through optimizations. These studies have been performed by Department staff. Based on the outcomes and recommendations of these studies, numerous strategic and efficiency measures have been developed and implemented to optimize Department operation and maintenance. To improve on what the staff has done, the Department intends to procure consultants with extensive experience and knowledge in optimizing operation and maintenance of large water and wastewater facilities. The selected consulting team will conduct a comprehensive Operational Optimization Study recommending optimization measures and implementation plans.

The Department issued a Request for Proposals for Professional Consultant Services on July 26, 2012. Three (3) firms submitted proposals on September 19, 2012. On January 25, 2013, a selection panel interviewed all three firms and selected CH2M Hill Engineers, Inc. as the most highly qualified firm based on the selection criteria and procedure.

CH2M Hill's contract scope requires review and evaluation of existing facilities, operations, and pertinent documents to determine if improvements in operational efficiencies and/or cost savings or revenue improvement can be made in the areas of energy utilization, water production and distribution, chemical usage, data utilization, wastewater sludge processing and disposal, operator staffing, and warehouse practices and procedures. The expected outcome of the contract is to develop implementable recommendations to improve operational efficiencies, and to increase cost savings and revenues. All recommendations will be based on the intent of maintaining the Department's operational performance with no additional risk such as wastewater spills, reduction in potable water quality, or increases in potable water main breaks. Recommendations will also ensure continued compliance with all regulatory requirements. It is the City's sole discretion to decide which recommendations will be implemented.

Project Cost and Schedule:

The proposed contract with contract with CH2M Hill has a total cost value of not to exceed $5,150,000 for a duration of three (3) years effective from the date of City Council approval. It is estimated that the funding will be 50% Water and 50% Sewer. The breakdown in sewer portion will be 70% Metro and 30% Muni.

The following schedule is anticipated:

City Council Approval	July 2013
Issue NTP	September 2013
Project Completion	August 2015

Attachment C: Item 5
Programmatic Wastewater Pipelines Condition Assessment Agreement Staff Report

METRO JPA/TAC
Staff Report

Subject Title:
Programmatic Wastewater Pipelines Condition Assessment Agreement

Requested Action: Request to approve the subject agreement and proceed to forward item to Metro Commission for approval.

Recommendations:

Metro TAC:	Present to Metro Commission for approval
IROC:	Presented to IROC on July 9, 2012 as part of the wastewater system-wide condition assessment program.
Prior Actions: (Committee/Commission, Date, Result)	This action was presented to the Natural Resources and Culture Committee as part of the system-wide condition assessment program on February 27, 2013.

Fiscal Impact:

Is this projected budgeted? Yes √ No ___

Cost breakdown between Metro & Muni:	It is estimated that the funding will be distributed as follows: Metro: 40% and Muni: 60%
Financial impact of this issue on the Metro JPA:	35% Metro of $3,200,000= $1,120,000

Capital Improvement Program:

New Project? Yes √ No ___

Existing Project? Yes ___ No √ upgrade/addition ___ change ___

Comments/Analysis:
Please view attachment.

Previous TAC/JPA Action: None

Additional/Future Action: Present to Metro Commission

City Council Action: City Council approval anticipated in July 2013.

CITY OF SAN DIEGO
PUBLIC UTILITIES DEPARTMENT

Project Name: Programmatic Wastewater Pipelines Condition Assessment Agreement

Name of Project Presenter: Pete Wong, Senior Civil Engineer

Project Description:
The Public Utilities Department (Department) owns and operates the Metropolitan Wastewater System, which is a vast and complex system consisting of over 3,000 miles of pipelines along with a myriad of pump stations and four treatment facilities. To enhance the system's longevity and operational reliability, the Department is pursuing a proactive condition assessment program to assess wastewater pipelines with the aim to reduce future costs and improve effectiveness of operation, maintenance and replacement of the aging wastewater conveyance system.

The performance of pipeline condition assessment requires a multi-disciplined engineering team to provide specialized expertise in various engineering disciplines to satisfy the many facets associated with the implementation and execution of facility condition assessments. Characteristically, assessments require expertise in the areas of geotechnical, structural, civil, mechanical, corrosion engineering and various other disciplines. Another essential component of facility assessment is the utilization of highly specialized and propriety equipment to identify facility defects, including acoustic, remote field eddy current and other technologies.

In October 2012, the Department requested proposals from qualified firms for the Programmatic Wastewater Pipelines Condition Assessment contract. In November 2012, a total of seven (7) firms submitted proposals pursuant to the Request for Proposal. Subsequently, the Department's Selection Panel evaluated the proposals and determined that a total of four (4) firms were highly qualified to participate in the interview process. In February 2013, the Selection Panel interviewed the four (4) short-listed firms. Based on the selection rating criteria and procedure, the Department selected Tran Consulting Engineers as the most qualified firm. The proposed Programmatic Wastewater Pipelines Condition Assessment agreement with Tran Consulting Engineers has a total cost value of not to exceed eight million dollars ($8,000,000) for duration of 60 months (5 years) effective from the date of City Council's approval.

The Department will use this future contract to provide condition assessment services for approximately sixteen (16) existing large-diameter trunk sewers and ten (10) force mains of the major pump stations, which are the most critical reaches of the City's wastewater system. The facilities targeted under this contract include Pump Station 2 Force Mains, Point Loma Digested Sludge Pipeline, MBC/North City Centrate Pipeline and other major facilities. Tran Consulting Engineers will be required to identify and locate pipeline defects, determine structural integrity, liner integrity and identify any other deficiencies and conditions that pose a risk of failure to the conveyance system. Based on the established results of the condition assessment, the consultant will then proceed to develop a planning level action plan to facilitate maintenance, repair and/or replacement of these critical assets. These condition assessment efforts of the wastewater

conveyance facilities will provide a substantial value to the City by enabling early detection and economical correction of the identified problems which in turn will reduce the maintenance costs, catastrophic failures and reduce premature replacement of infrastructure.

Project Cost and Schedule:

The proposed contract with Tran Consulting Engineers has a total cost value of not-to-exceed eight million dollars ($8,000,000) for duration of 60 months (5 years) effective from the date of City Council approval. It is estimated that the funding will be distributed as follows: Metro: 40% (Financial Impact on the Metro JPA: 35% Metro of $3,200,000= $1,120,000) and Muni: 60%.

The following schedule is anticipated:

City Council Approval	July 2013
Issue NTP	September 2013
Project Completion	September 2018

Attachment D: Item 6
Cost of Service Study Presentation

BUILDING A WORLD OF DIFFERENCE

WASTEWATER COST OF SERVICE STUDY

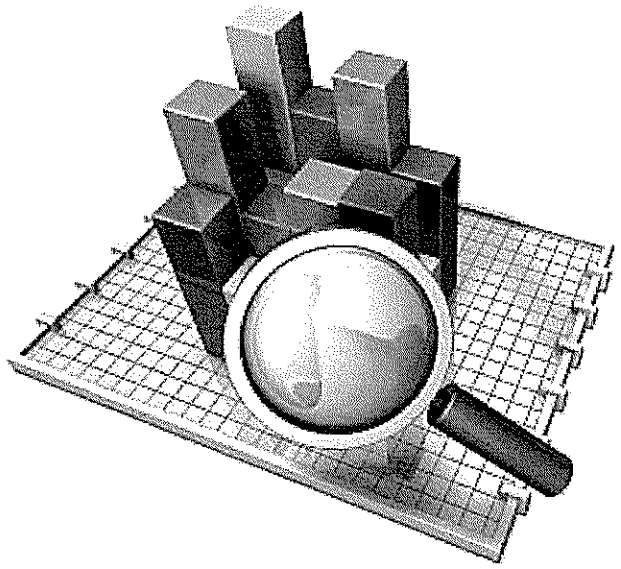
19JUNE 2013

METROTAC

BLACK & VEATCH
Building a world of difference.

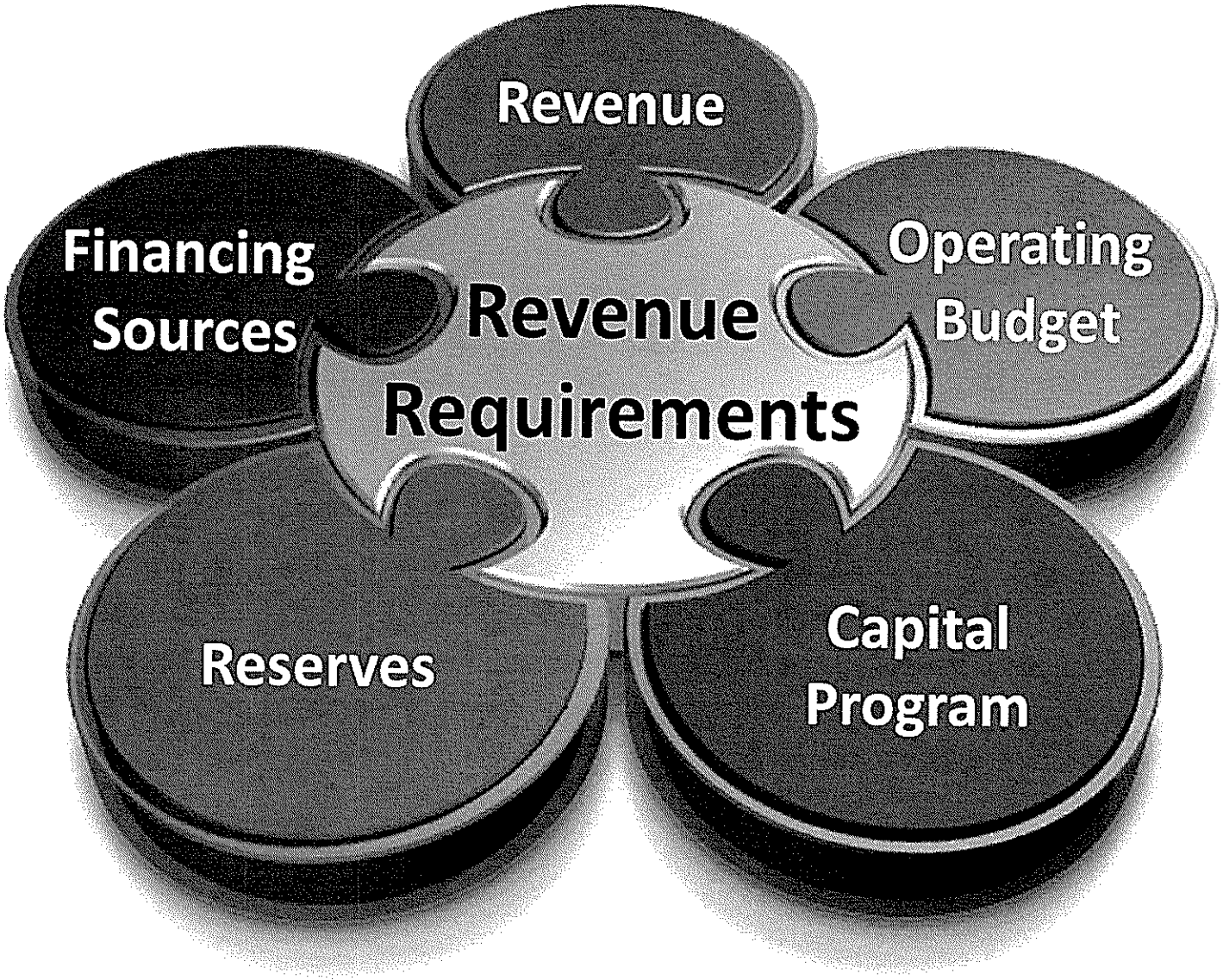
KEY PERFORMANCE INDICATORS OF FINANCIAL VIABILITY

1. Cash Flow
2. Level of Reserves
3. Debt Service Coverage



Current study does not look at the impact due to Point Loma Secondary costs

REVENUE REQUIREMENT COMPONENTS

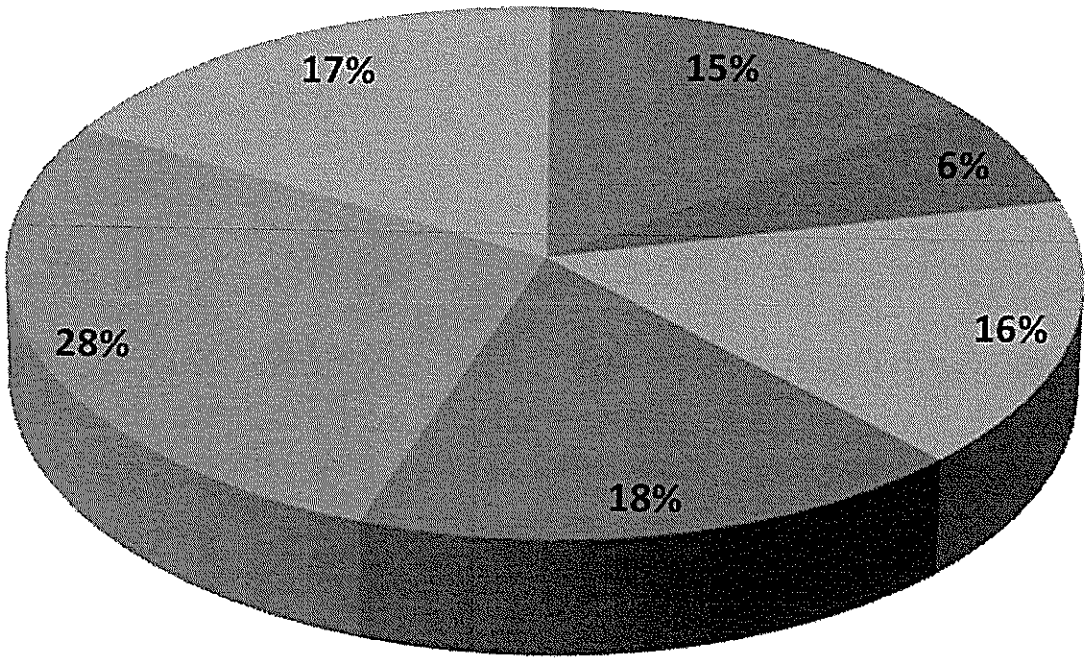


REVENUE REQUIREMENTS

- **Sufficient revenues to meet all obligations**
  - Operations and maintenance expenses
  - Debt Service payments
  - Capital needs
- **Meet legally required debt covenants**
  - Senior and aggregate requirements
    - (Revenue – O&M) ≥ 1.2 x Senior Debt
    - (Revenue – O&M) ≥ 1.1 x Wastewater Aggregate Debt
- **Provide reserve funding**
  - Unrestricted
  - Restricted

COST BREAKDOWN - WASTEWATER

Total FY 2014 Budget $406,116,830

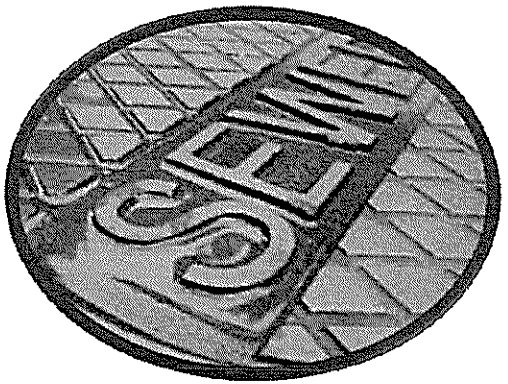


- Personnel & Fringe 59,492,352
- Pension & OPEB 26,072,493
- Non-Personnel Expense 66,970,188
- Contracts 71,758,487
- Debt* 111,933,583
- CIP 69,889,727

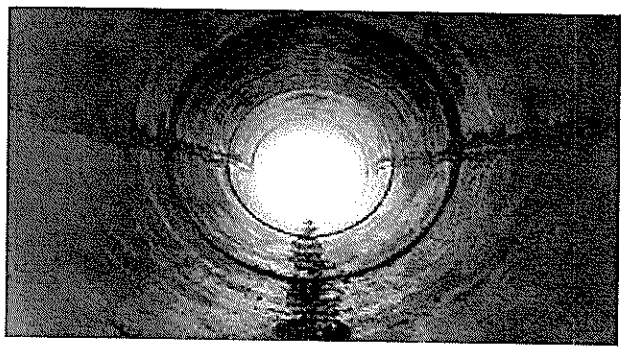
*Debt includes SRF Loan Payments

WASTEWATER FUND FY 08 – 12 CIP OVERVIEW

As of December 12, 2012:

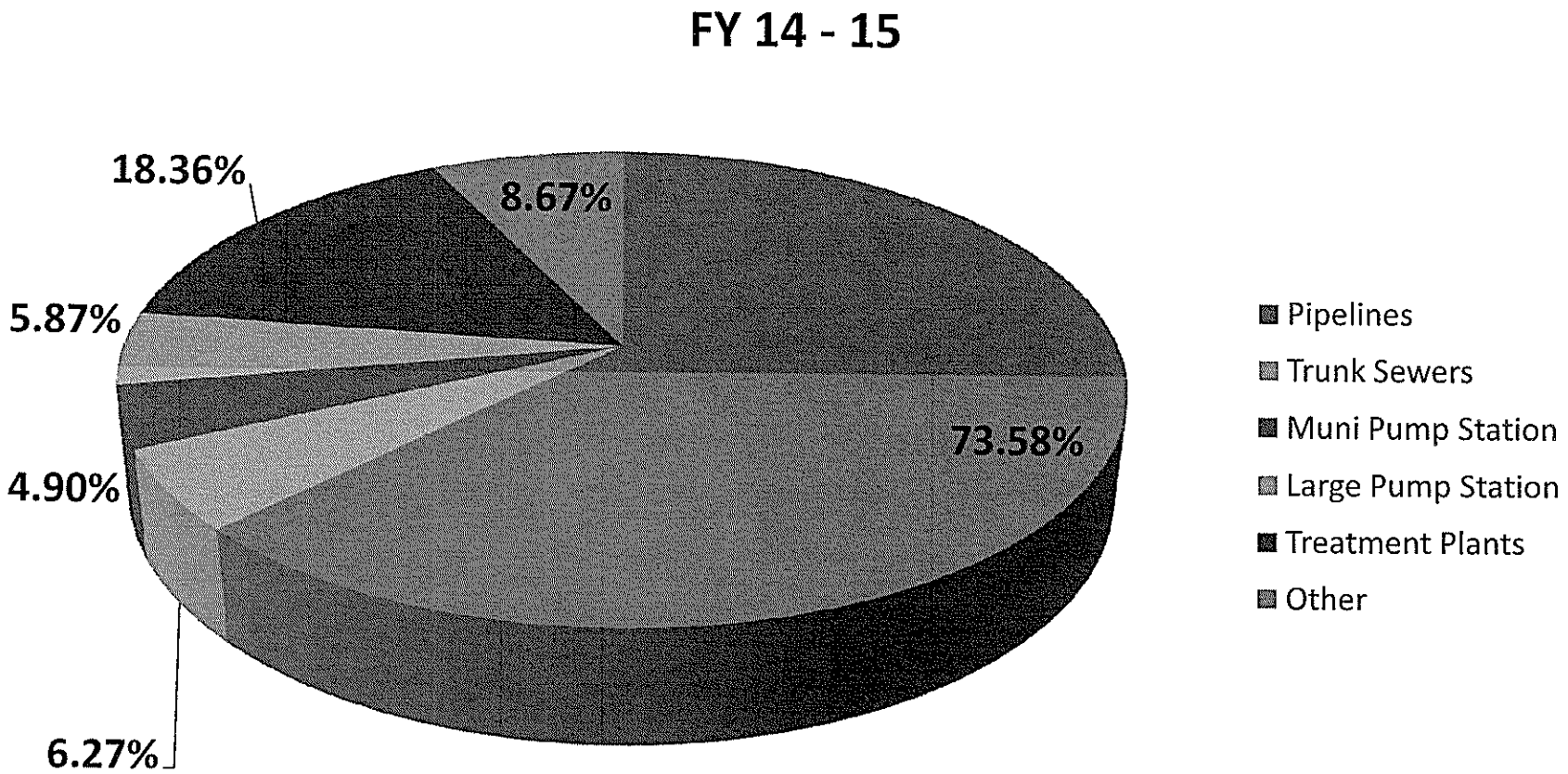


- **50 Projects (Individual and "Annual Allocation")**
  - 23 completed projects - $235M
  - 14 projects in progress - $65M
  - 13 projects cancelled/on hold
- **271.9 miles of main completed**
  - 99.8 miles replaced
  - 172.1 miles rehab



- **14 large diameter main projects**
- **Completed all Consent Decree mileage requirements**

WASTEWATER CIP FY 14 - 15



WASTEWATER CASH FLOW

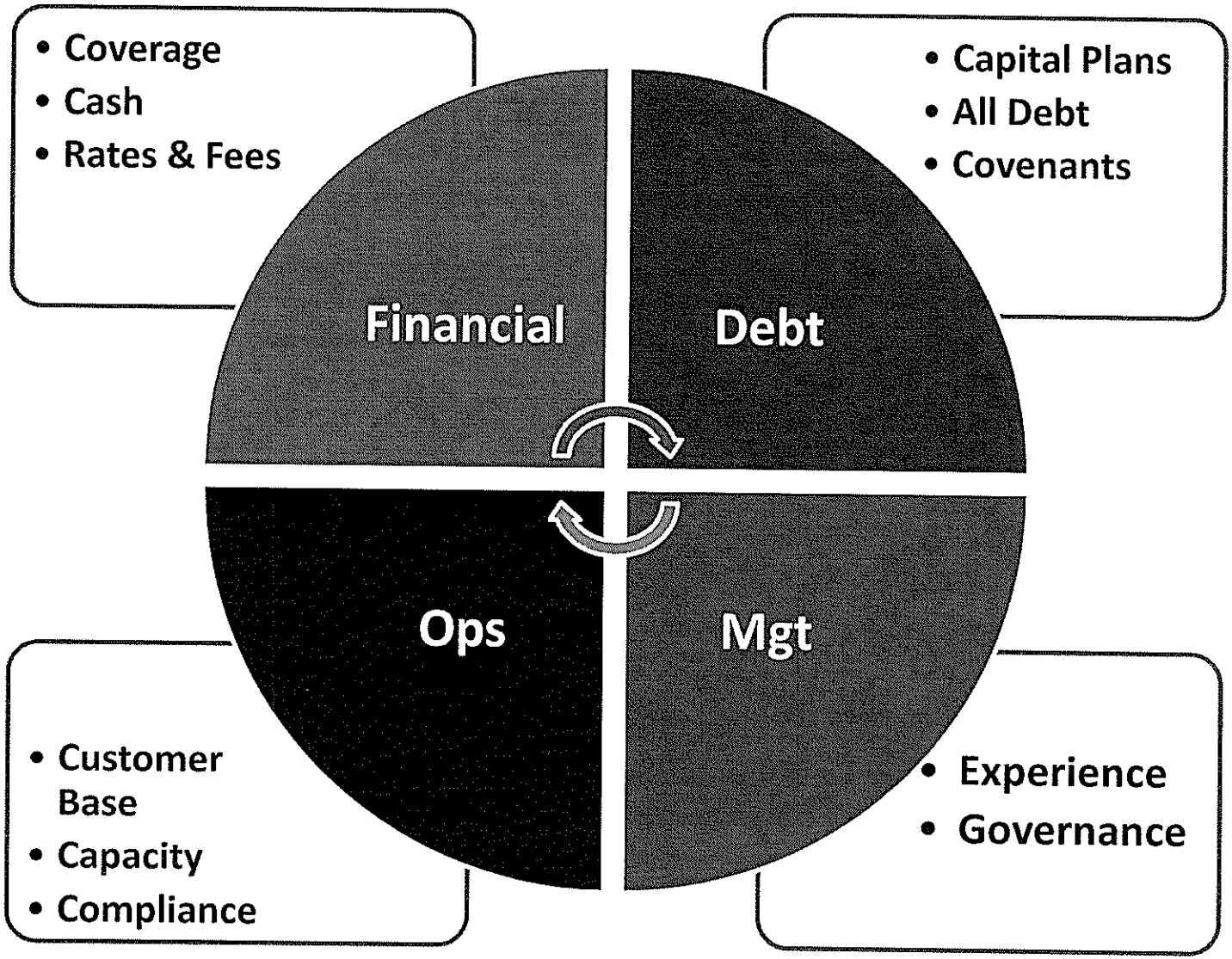
Description	Projected FY 2014	Projected FY 2015
Revenue Adjustment	0.00%	0.00%
Operating Results		
Total Revenues	$384,157,600	$391,718,200
Total Expenses	$425,472,700	$463,267,700
Net Income	($41,315,100)	($71,549,500)
Net Cumulative Cash Balance	$401,340,100	$339,790,600
Net Cumulative Cash Balance (Less Reserves)	$304,730,400	$230,745,700
Debt Service Coverage Metrics		
Parity DSC Ratio (1.2x)	1.59	1.50
Aggregate DSC Ratio (1.0x)	1.51	1.42

- **Adjustments occur on January 1 within each Fiscal Year (FY).**
- **Targets a 1.25x aggregate debt service coverage.**
- **Cash finance all CIP for FY 14 and FY 15.**
- **DSC calculation does not use all revenues or expenses per bond covenant.**

DEBT FINANCING OUTLOOK

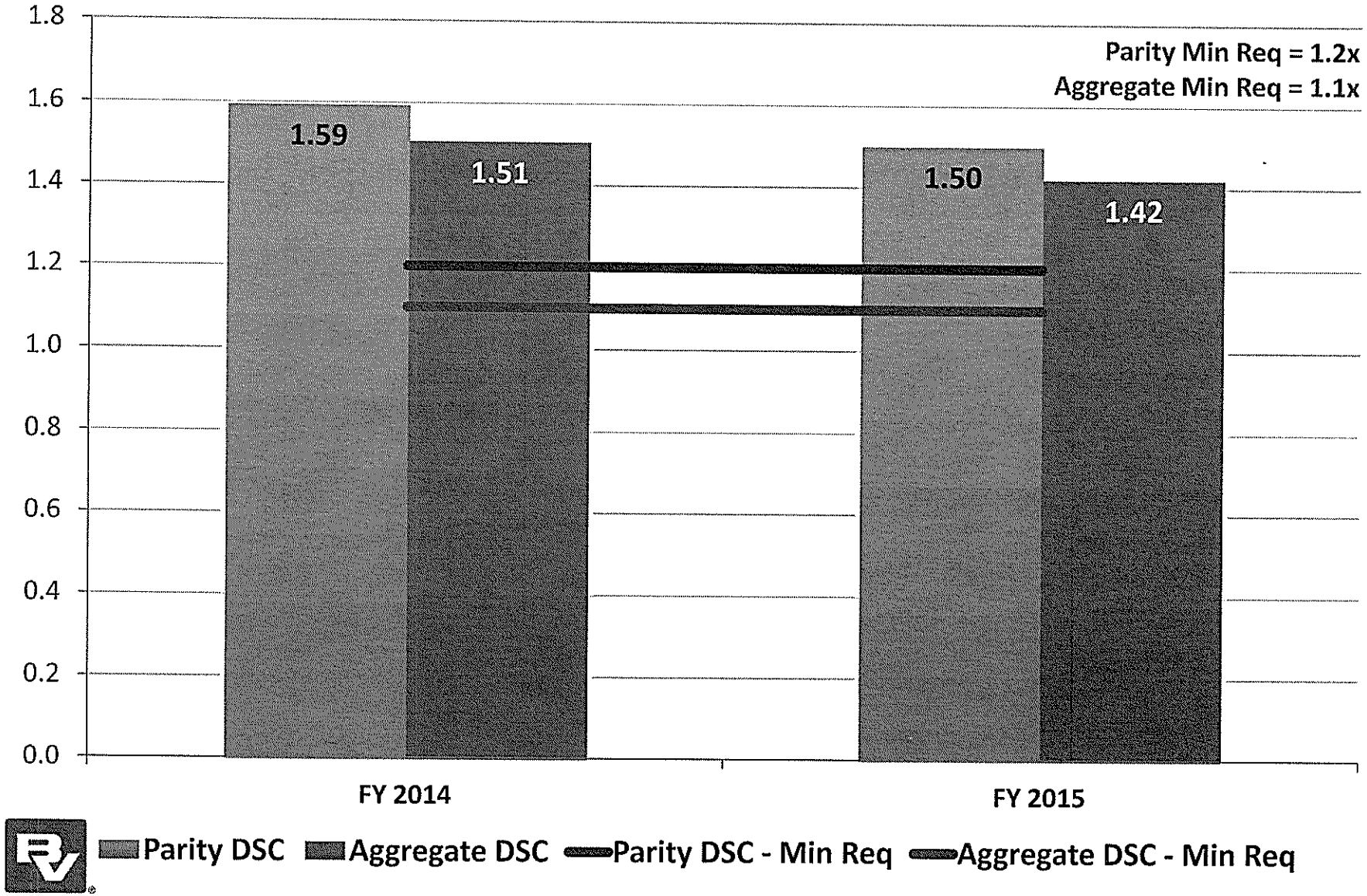
- **Rating agencies applying due diligence criteria more stringently** - Greater focus on credit quality, reserve levels, and debt and reserve policies
- **Rating agencies want to be convinced about the health and sustainability of a utility –** Demonstrated willingness to raise rates is a key criterion
- **Sustainability is determined only after a thorough review of a utility's internal components –** Reviews are happening annually

RATING AGENCY PROFILES



Source: Fitch Ratings, *U.S. Water & Sewer Revenue Bond Rating Criteria*, 8/10/11

WASTEWATER DEBT SERVICE COVERAGE FY14 – FY15



COST OF SERVICE PRINCIPLES

COST OF SERVICE STUDY FOCUS & CONSIDERATIONS

- **Principle:**

  To match the costs of providing service to customer classes and to design rates to equitably recover costs

- **Considerations:**
  - Maintain revenue adequacy
  - Use fair and equitable cost allocations
  - Use practical rate and billing formats
  - Minimize customer impacts
  - Maximize customer understanding and acceptance

Current study does not look at the impact due to Desalination, IPR, or Point Loma Secondary costs

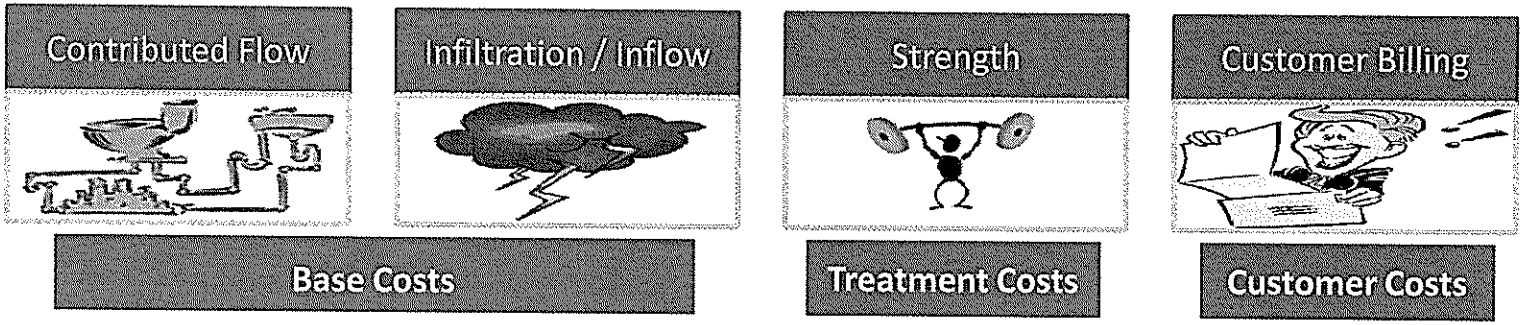
COST ALLOCATION

- **Objective**
  - Allocate the costs of operating the utility to the respective customers for a selected Test Year
- **How is the allocation accomplished?**
  - Allocate costs to utility functions according to cost causative parameters
  - Estimate total customer class service requirements for each cost function
  - Divide costs by requirements for each function to get unit costs of service
  - Distribute costs to each customer class based on its share of total requirements for each cost function

WASTEWATER COST FUNCTIONS AND COST CAUSATIVE PARAMETERS

- Separate O&M and Capital Costs into Cost Functions

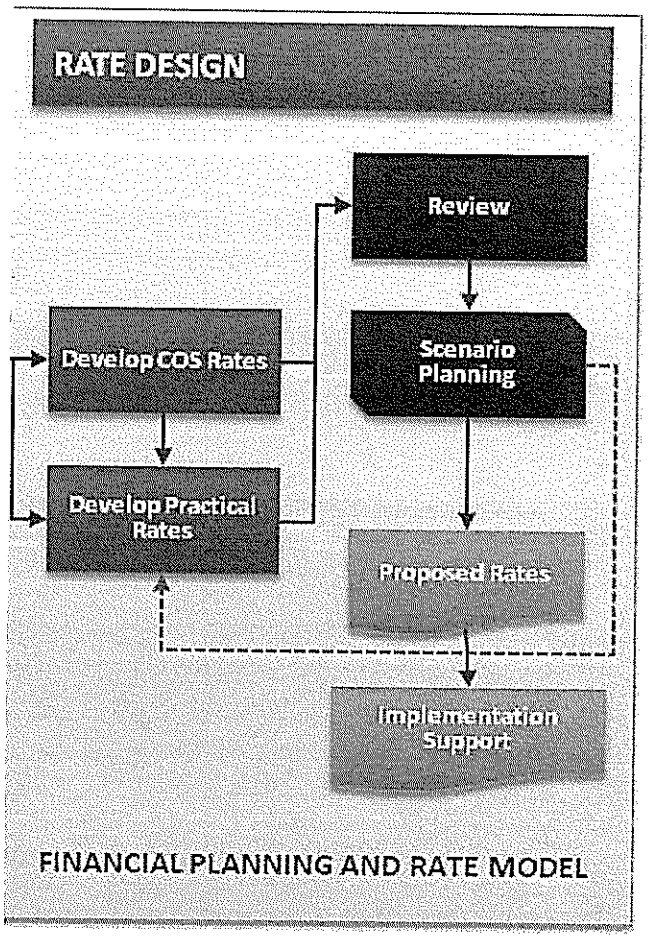
- Distribute O&M and Capital Costs into Cost Causative Parameters



RATE DESIGN

RATE DESIGN

- **Objective**
  - Develop rates adequate to recover the total revenue requirements
- **How are these Accomplished?**
  - Review suitability of existing rate form
  - Design cost of service rates
  - Examine impact of cost of service rates on individual customers and customer classes
  - Design practical alternative rate structures, if necessary
  - Examine impact of alternative rates



BALANCED BUDGET

FY14 – FY15 REVENUES & REVENUE REQUIREMENTS: WASTEWATER