2015 Business Plan

Administrative and Finance Committee
July 26, 2012
Agenda

- Strategic and Tactical Alignment
- 2015 Business Plan Description
- 2015 Business Plan Performance
- Next Steps
Strategic and Tactical Alignment

BUSINESS PLAN
(5-year outlook)
3 focus areas, 20 programs

STRATEGIC PLAN
(25-year outlook)
3 key result areas, 21 objectives

WATER SUPPLIES PORTFOLIO
7 programs

WATER FACILITIES
4 programs

CORE BUSINESS
9 programs

WATER SUPPLY DIVERSIFICATION
4 strategies, 6 objectives

LEADERSHIP
4 strategies, 10 objectives

ASSET MANAGEMENT
3 strategies, 5 objectives
2015 Business Plan Description
2020 Water Supply Portfolio

- Metropolitan Water District: 30% (231 TAF)
- Canal Lining Transfer: 10% (80 TAF)
- Conservation: 13% (103 TAF)
- Recycled Water: 6% (44 TAF)
- Desalination: 9% (72 TAF)
- Groundwater: 2% (11 TAF)
- Local Surface Water: 6% (48 TAF)
- Imperial Irrigation District Transfer: 24% (190 TAF)

Total = 779 Total Acre Feet
Business Plan Description
The "New Normal"

- Sustained lower demands and 20% by 2020
- Constrained supplies (regulatory)
- Worst recession in decades and anticipated slow recovery
- High and rising water rates and ratepayer fatigue
Business Plan Description
The “New Normal”

- Heightened scrutiny/demand for increased transparency and accountability

- Transition from “building” to “operating/maintaining” type of organization

- Key litigation effort (QSA and MWD)
2015 Business Plan Description
Focus

- Complete major components of the current CIP
- Enhance organizational efficiency
- Minimize rate impacts
- Concentrate on new facilities and impacts to the current system
- Evaluate long term water supply reliability
2015 Business Plan Description

129 Goals

- **CORE BUSINESS**
  - 65 goals (50%)

- **WATER SUPPLY PORTFOLIO**
  - 42 goals (33%)

- **WATER FACILITIES**
  - 22 goals (17%)
2015 Business Plan Performance

- **Completed**: 65
- **On track**: 39
- **Not on track**: 13
- **Deleted or delayed**: 12

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San Diego County Water Authority
2015 Business Plan
Goals Not on Track or Delayed

- Not on Track, Delayed, or Deleted
  - San Vicente Dam Raise & Lake Hodges
  - Rate Stabilization Fund Target
  - Resolution of Judicial Ruling to the QSA
  - Secure additional dry-year water transfers
  - Secure $100 Million from State Water Bond
  - BOR acceptance of the All American Canal
2015 Business Plan Performance
Completed Goals: Water Supplies Portfolio

- Adoption of the Bay Delta Policy Principals
- Acceptance of the Coachella Canal Lining Project by the U.S. Bureau of Reclamation
- Completion of the emergency local water supply implementation plan
2015 Business Plan Performance
Completed Goals: Water Facilities

- Integration of the San Vicente Projects into the Aqueduct Operations
- Development of best management practices for the Capital Improvement Program
- Development of an online water quality reporting system
$1 million in grants to advance conservation and water supply awareness

Completion of the Natural Community Conservation and Habitat Conservation Plans and receipt of long term habitat permits

Conduct energy audit in participation with SDG&E and member agencies to maximize energy efficiencies
Next Steps

- Update of the 2017 Business Plan
- Regular progress reports
Water Authority’s Grant Efforts

- Effective in obtaining grant funds to support projects that:
  - Improve water use efficiency
  - Expand reliable water supplies
  - Enhance water quality
  - Protect the environment

- The Water Authority has helped the region receive about $449 million in grant awards
Water Authority Grant Administration

- Grant Management Efficiency Project (Aug. 2009)

- Previous Grant Administration/Management Structure
  - Departments had own processes and procedures for managing grants
  - Limited cost/benefits analysis during grant acquisition phase
  - No lead in coordination of implementation systems, policies and procedures affecting all aspects of grant
Updated Grant Administration Program

- Centralized and coordinated Water Authority grants
- Process supports grant exploration and management
- Grant Review Committee
- Led by Grant Administrator and supported by Finance Staff
Grant Awards by Funding Agency

- **DWR**: $2,262,769
- **EPA**: $125,804,925
- **Hans & Margaret Doe Charitable Trust**: $331,000
- **SDG&E**: $2,262,769
- **USBR**: $125,804,925

**Water Authority Grant Awards by Program**

- *All American Canal Lining Project*: 38%
- *Coachella Canal Lining Project*: 19%
- **Title XVI Grant Program**: 28%
- **Groundwater Conjunctive Use Project**: 7%
- **IRWM Prop 50 Impl Project**: 5%
- **IRWM Prop 84 Impl Grant**: 2%
- **IRWM Prop 84 Plan Grant**: 0%
- **Public Affairs and Conservation**: 1%
- **Camp Pendleton Seawater Desalination Feasibility Study**: 0%

**Other**

- $319,987,427
- $301,614
Canal Lining Projects

$254 million to SDCWA, IID, CVWD
Title XVI Grant Program

Member Agencies --
Regional Recycling

Water Authority
Desalination

More than $125 million for projects in region
IRWM Grants

$33.9 million, supporting 30 projects in region
Conservation Programs

$4.5 million in Grant Funding
Future Efforts

• Upcoming Priority Grants
  o IRWM Proposition 84 Implementation - $56M
  o USBR – WaterSmart (Title XVI and Water & Energy Efficient)
  o Hans and Margaret Doe Foundation Grants

• Effectively manage grants

• Continue to seek funding opportunities to support region and Water Authority’s mission
Bay-Delta Quarterly Update

Imported Water Committee

July 26, 2012
Bay-Delta Announcement

- July 25
- Governor and Secretary of Interior
- State and Federal Joint Recommendations
- Amend draft BDCP:
  - Downsize tunnel project
  - Use “decision tree” over 15 years to determine operations and yield of the project
Downsize Tunnel Project

- Draft BDCP called for double tunnel under Delta with capacity of 15,000 cfs
  - Five intakes on Sacramento River with capacities of 3,000 cfs
- Revised BDCP will call for double tunnel with capacity of 9,000 cfs
  - Three intakes with capacities of 3,000 cfs
  - Gravity flow, instead of pumped
Decision Tree

- At the outset, the state and federal water projects will operate under the best criteria available.

- As the tunnel project is built, operating criteria will be adjusted either up or down depending on achievement of biological goals and objectives.

- When the tunnel is completed, operating criteria will be based on adjustments.
Concerns

- Outcome of decision tree may result in less water being available when tunnels are complete than present 4.9 maf per average year.

- While yield is expected to be between 4.5 and 5.3 maf per year. Actual outcome water supply yield will not be known until tunnels are complete.
Finance

- Expected cost of tunnels is $13 billion over 10 years.
- Cost will be born by the state and federal water contractors.
- "Step up" provisions will be required by bond holders.
  - Require remaining contractors to pick up default if one or more contractors back out.
Finance

- MWD is expected to pick up 25 percent or more of cost of tunnel project.
- MWD does not have contractual commitments from its member agencies to pay for project.
- MWD could be faced with a larger burden if other contractors back out or default.
Next Steps

- State and federal water contractors have to decide whether the reduced yield is worth the expense.
- A public review draft of the BDCP and its companion EIR/EIS are expected in September.
Water Management Discussions With Mexico Update

Imported Water Committee
July 26, 2012
Results of Mexico’s Election

- Mexico held elections on July 1

- President-elect is Enrique Pena Nieto, Institutional Revolutionary Party (PRI)
  - Returns PRI to office for first time in 12 years
  - Begins 6-year term on Dec. 1, 2012

- PRI also gained legislative seats
  - Senate: PRI won most seats, but no party has majority
  - Deputies: PRI could obtain majority with coalition
Binational Discussions

- U.S. federal government, seven Basin states, and Mexican federal and state agencies

- Focus of discussions:
  - Shortage & Surplus guidelines for Mexico
  - Storing Mexican river water in U.S. reservoirs
  - Binational Projects and salinity management

- Includes study of a seawater desalination plant at Rosarito Beach in Baja California.
Progress on Binational Agreement

- U.S. and Mexico intend to execute a “minute” by end calendar year 2012
- Three workshops held since May 2012
  - Technical issues and linkages between U.S., Mexican proposals
    - Pilot projects
    - Surplus and shortage volumes and options
    - Water for the environment
    - Calculating salinity differential at northerly border
- Next step to negotiate details for draft minute
Binational Desalination Study

- Mexican agencies began working on second phase of a Rosarito Beach seawater desalination feasibility study
  - Reviews pipeline alignments from plant to San Diego County border connections, pipeline rights of way, design parameters, costs
  - Funded with $180,000 from Mexico
  - Final report due in fall of 2012
Evaluation of Alternatives

- Consultant conducted broad analysis of each alignment alternative:
  - Field inspection
    - Topographic and geologic features, rights of way, existing infrastructure, environmental constraints, traffic and social impacts
  - Design flows
  - Hydraulic analysis
  - Pipe sizing and materials
Coastal Route Alternative
Central Route Alternative
Corridor 2000 Route
Draft Study Conclusions

- Separate pipeline systems are proposed for U.S. and Mexican water supplies from desalination plant.
- For U.S. water supply, best alignment option is dependent upon selected U.S. delivery point:
  - Coastal alternative best for delivery point near binational wastewater treatment plant.
  - Corridor 2000 alternative best for delivery point near emergency Tijuana connection.
Next Steps

- Mexico has budgeted $400,000 to study environmental impacts of plant in 2013
- U.S. agencies deferred funding phase 2 work pending results of binational minute discussions
Today's Status Report on Carlsbad Desalination Project

1. Status of WPA Negotiations
2. Status of Due Diligence Activities
3. Other Project Related Issues
4. Upcoming Board and Other Public Meetings
Status of Negotiations for a Water Purchase Agreement

- Final Draft Agreement under production
  - All major deal points and key provisions previously reviewed by Board Advisory Group
    - Commercial terms
    - Economic terms
  - Resizing of minimum annual commitment to 48 TAF included in final draft
  - Technical appendices near completion

- Due Diligence status
  - Finalizing financial pro-forma assumptions to reflect terms and conditions of Draft WPA
  - Poseidon finalizing price for construction and operations based on Water Authority direction
Other Carlsbad Desalination Project Related Issues

- Bond and Financing Process Advancing
  - Draft documents prepared and under review
  - Ensure Project is investment grade
  - BBB- or better

- July 26th Water Planning Committee
  - Energy Pricing Workshop
  - SWRCB development of intake and discharge guidelines for seawater desalination at July 26 Water Planning

- Draft Design Build Agreement for conveyance pipeline being developed

- Pricing for improvements at Twin Oaks WTP under discussion
Other Carlsbad Desalination Project Related Issues (Continued)

- Incorporation of Carlsbad desalination into rates and charges
  - Presented workshop information to member agency managers
  - Meet again with member agency managers and finance officers in August
  - Return to Board at August meeting with information item on alternatives and member agency comments

- Contracts with member agencies for purchase as local supply
  - Meeting scheduled with interested member agencies on July 31st
  - Provide draft Water Authority – Member Agency agreement in August
  - 60 day member agency review period begins with distribution of Draft WPA
Upcoming Meetings

- **August 9th Board workshop**
  - Overview of Key Provisions in Draft WPA
  - Assignment of risk to the parties
  - Detailed discussion on pricing

- **August Regular Board Meeting**
  - Continue discussion on incorporation into rates and charges
  - Presentation on desalination and supply reliability
  - Update on member agency local supply planning

- **September Regular Board Meeting**
  - Continue discussion on key provisions of Draft WPA
  - Review actions related to Pipeline 3 rehabilitation, Twin Oaks and other distribution system activities

- **September Public Meetings (Two)**
  - Evening Water Planning Committee meeting in Carlsbad
  - Evening Water Planning Committee Meeting in Kearny Mesa
Energy Pricing Related to the Carlsbad Seawater Desalination Project
1. **The Capital Costs are driven by:**
   - Poseidon’s Capital Budget
   - Bond Issuance
   - Negotiated Equity Return
   - Conveyance Pipeline Costs
   - Water Authority system improvements

   *The Capital Charge is fixed at a pre-established escalation rate*

2. **Operating Cost is driven by:**
   - Terms of Poseidon’s O&M Agreement with IDE
   - Other Water Authority operating expenses

3. **The Electricity Charge is driven by:**
   - Terms of Poseidon’s O&M agreement with IDE
   - SDG&E rates
   - Water Authority’s option to select supplier

   *The Electricity Charge will vary with electricity prices*
The Water Unit Price with Conveyance and Water Authority Improvements

Fixed Costs
- Debt Service Charge
- Equity Charge
- Fixed O&M
- Fix. Elec

Variable Costs
- Var. O&M
- Variable Electricity

Conveyance

Indirect Costs

TO Ineff.

Total

$2,062 - $2,329

$85/AF

$406/AF

Water Authority Improvements

Twin Oaks Inefficiencies
Energy and Water

- Energy is an imbedded cost in all water supplies
  - Imported water
  - Local supplies
- SWP is the single largest user of energy in California
  - 3,200 kW/Hr per acre foot
  - 50% of the FY 2012-2013 SWP payment
  - $238 per AF in electricity cost
# Energy Usage in kWh and Energy Cost $/AF

## Imported and Local Supply

<table>
<thead>
<tr>
<th>Supply</th>
<th>Raw water conveyance</th>
<th>Supply/Treatment</th>
<th>Distribution</th>
<th>Total (rounded)</th>
<th>$/AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carlsbad Desalination Project</td>
<td>3,750</td>
<td>1,530</td>
<td>5,300</td>
<td>$491</td>
<td></td>
</tr>
<tr>
<td>State Water Project</td>
<td>3,200</td>
<td>260-490</td>
<td>230-390</td>
<td>3,700-4,100</td>
<td>$238</td>
</tr>
<tr>
<td>Recycled Water (IPR)</td>
<td>2,500-4,230</td>
<td>230-390</td>
<td>2,700-4,600</td>
<td>$300-$500</td>
<td></td>
</tr>
<tr>
<td>Brackish Water</td>
<td>980-1,630</td>
<td>230-390</td>
<td>1,200-2,000</td>
<td>$120-$200</td>
<td></td>
</tr>
</tbody>
</table>
Energy Cost of Water Authority Supplies (in 2012 dollars)

Water Authority Supplies = 557 TAF
Member Agency Supplies & Conservation = 222 TAF

- Metropolitan Water District (30%)
- Imperial Irrigation District Transfer (24%)
- All American & Coachella Canal Lining (10%)
- Local Surface Water (80 TAF)
- Groundwater (190 TAF)
- SWP (115,000 AF, $238 /AF)
- Recycled Water (56 TAF, $491 /AF)
- Seawater Desalination (56 TAF, 7%)
- Conservation (existing and additional) (231 TAF, 30%)

557 TAF

$238 /AF
2020 Water Authority Supplies

Supply Portion
- Desalination: 10%
- MWD - SWP: 21%
- MWD - CRA: 90%
- Canal Lining: 97%
- IID: 3%

Incremental Energy Usage
- MWD: 3%
- Canal Lining: 97%
- IID: 3%
What is the Energy Price Risk of Desalinated Water?

- **Incremental Energy use of Carlsbad Desal Project**
  - 30% or 1,200 kW/hr per acre foot above imported supply

- **Carlsbad Desalination would be smallest part of Water Authority future sources of supply**
  - ≤ 10% of supplies sold to member agencies
  - 30% of 10% of supplies = 3% more energy related to WA supply
  - Price risk directly related to desalination moderated by melding with 90% of other sources of supply
What is the Energy Price Risk of Desalinated Water?

- Water Authority is subject to energy price risk with or without Desalination
  - Little/no control over managing energy prices for imported supplies
  - Amount of energy consumed in Carlsbad project guaranteed by Poseidon in WPA
Analysis of Energy Pricing in Draft Water Purchase Agreement (WPA)
Carlsbad Desalination Project
Energy Use and Pricing

*Presentation to Water Planning Committee, July 26, 2012*
Objectives

- Present Clean Energy Capital’s analysis of the energy-related costs of the Carlsbad Desalination Project
- Provide an overview of the risk allocation set forth in the Water Purchase Agreement (WPA)
- Discuss the key drivers of future electricity prices
- Present three electricity price projections (low, mid, high)
- Quantify the impact of the price projections on the cost of desalinated water
- Answer questions of the Water Planning Committee
Electricity Requirements of the Project

- Electricity Requirements
  - 36 MW peak demand
  - 24/7 demand profile
  - 250,000 to 300,000 MWh / annum

- Electricity Supplier: San Diego Gas & Electricity (SDG&E)

- Service to be provided through a newly-constructed substation
  - Approximately $19 million capital cost
  - Included in the capital budget
  - Investment will be rebated by SDG&E over initial years of operation

### Annual Electricity Usage

<table>
<thead>
<tr>
<th>AF / Year</th>
<th>Plant MWh</th>
<th>Pumpstation MWh</th>
<th>Total MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>48,000</td>
<td>178,050</td>
<td>75,389</td>
<td>253,439</td>
</tr>
<tr>
<td>56,000</td>
<td>208,133</td>
<td>87,955</td>
<td>296,088</td>
</tr>
</tbody>
</table>
Rate Structure: ALTOU + EECC Tariff

- Transmission and distribution
- Basic services charges ($/month)
- Peak demand charge ($/kW)
- Energy charge ($/kWh)

Components vary with:
- Season: Winter versus Summer
- Time of Day: On-peak, semi-peak, off-peak

Electricity pricing for the Project will benefit from its large and constant load
- Current price of **9.29 cents/kWh**, versus SDG&E industrial average of 14.38
Risk Allocation in the WPA

### Poseidon bears consumption risk
- Electricity consumption allowances are established in the WPA (kWh/kgal)
  - Raw seawater temperature
  - Raw seawater TDS
  - Plant operating mode
- Poseidon bears “over-under” risk versus consumption allowance
- Poseidon is incentivized to operate efficiently
- Consumption allowance will be trued-up after three years operations

### Water Authority bears price risk
- The price of energy is passed through in the Water Unit Price
- The “price of energy” is expected to be SDG&E’s ALTOU+EECC tariff
- The Water Authority has the right to:
  - Direct energy supply to a third-party power provider
  - Supply energy itself
The Electricity Charge

- Energy Consumption Allowance x Energy Price = Electricity Charge
  - The Electricity Charge is approximately 25% of the Water Unit Price

- The Electricity Charge has two components:
  - Fixed Electricity Charge
  - Variable Electricity Charge

### Water Authority Payment Obligation

<table>
<thead>
<tr>
<th></th>
<th>Fixed Electricity Charge</th>
<th>Variable Electricity Charge</th>
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</thead>
<tbody>
<tr>
<td>Product Water Taken by the Water Authority</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Unexcused Demand Shortfall</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Unexcused Supply Shortfall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excused Demand or Supply Shortfall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excess Water</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Historic Electric Prices

- SDG&E’s average industrial rate increased by **1.18%** annually 1981-2010
  - Inflation during this period was 2.61%
  - Relative to other goods and services, electricity has become less expensive
## Future Electricity Prices – Key Drivers

<table>
<thead>
<tr>
<th>Factors driving higher growth rate</th>
<th>Factors driving lower growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Renewable Portfolio Standard (RPS)</td>
<td>• Natural Gas Prices</td>
</tr>
<tr>
<td>• AB 32</td>
<td>• Demand-Side Response</td>
</tr>
<tr>
<td></td>
<td>• Rate-Setting Process</td>
</tr>
</tbody>
</table>

[CleanEnergyCapital logo]
Renewable Portfolio Standard (RPS)

- SDG&E is committed to increase its renewable energy production to 33% by 2020
  - The primary renewable resources are wind, solar, biomass and geothermal
  - These resources are typically more expensive than traditional generation
  - A portion of the cost of investment is offset through federal subsidies

- Implementation of RPS depends on rate increases approved by the California Public Utilities Commission (CPUC)
  - Generally, the California investor-owned utilities have not met their intermediate RPS targets

- RPS is expected to increase the rate of electricity price escalation during the period of utility investment

- Once in service, renewable generating resources have little or no fuel cost
Assembly Bill 32 (AB 32)
- The California Global Warming Solutions Act of 2006

- AB 32 will phase-in a carbon cap-and-trade system for California
  - Cap-and-trade works by establishing a cap on CO2 emissions for target emitters
  - SDG&E is included as a target emitter
  - The Project is not

- AB 32 will require emitters to:
  - Produce no more CO2 emissions than their cap amount, or
  - Purchase carbon credits from the State or other emitters, or
  - Acquire offsets in the form of greenhouse gas savings

- Over time, the State will gradually lower the caps until a 15% reduction in emissions is achieved
  - This 15% reduction is required by 2020
  - However, implementation is complex and has been delayed
AB 32 compliance is expected to exert upward pressure on electricity prices

However, the impact on SDG&E’s cost of power is unclear

- Much depends on the initial allocation of credits
- SDG&E expects to at least partially satisfy its carbon cap as a result of its RPS investments in renewable generating resources
- Depending on the timing of AB 32 implementation, versus RPS implementation, SDG&E could be a buyer or a seller of credits
SDG&E generates 60% of its electricity from natural gas
- Natural gas availability and pricing is a key driver of electricity prices

The natural gas outlook is favorable
- Combined-cycle gas turbines are highly efficient and emit up to 50% less carbon than coal-fired power plants
- Natural gas reserves have expanded dramatically
- Prices are expected to settle at $4–5/mBtu

U.S. natural gas fundamentals are expected to exert downward pressure on future electricity price escalation
Demand-Side Response

- Price elasticity: demand for electricity will respond to electricity pricing
- Higher escalation rates create higher incentives for conservation
- Lower demand growth exerts a downward pressure on electricity price escalation, especially over the long term
Rate-Setting Process

- SDG&E lacks rate-setting authority
  - Instead, rate-setting authority is vested in the California Public Utilities Commission (CPUC)

- CPUC regulation of rates is considered to be a significant constraining factor on both electricity price escalation and RPS implementation

- SDG&E adjusts its rates every 3-4 years through rate cases with the CPUC
  - SDG&E would typically expect to receive approval of rate increases of 3 – 6% every three years
  - This range equates to annual rate escalation of 1 – 2%

- SDG&E’s historic electricity price escalation of 1.18% annually is equivalent to a rate case increase every three years of approximately 3.60%
Future Electricity Prices
- California Energy Commission Projections

- Rate forecasts for SDG&E’s industrial rate from 2010 to 2022
- These forecasts incorporate variations in the key drivers discussed on previous slides
- Forecasted escalation varies from 0.5% - 1.7% annually
## Future Electricity Prices
- Staff / Clean Energy Capital Projections for the Project

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>- Future escalation at historic average escalation rate of <strong>1.18%</strong>&lt;br&gt;- Treating historic rates as a Low Scenario emphasizes the likelihood that future escalation will be higher than historic experience</td>
</tr>
<tr>
<td>Mid</td>
<td>- Assumes significant RPS / AB 32 implementation&lt;br&gt;- Escalation at 3% annually for next 15 years (5 successive 9% rate cases)&lt;br&gt;- Reversion thereafter to 1.18% historic average&lt;br&gt;- Blended average escalation of <strong>2.0%</strong>&lt;br&gt;- 170% of historic average</td>
</tr>
<tr>
<td>High</td>
<td>- Assumes high RPS / AB 32 implementation&lt;br&gt;- Escalation at 3.4% annually for next 18 years (6 successive 10+% rate cases)&lt;br&gt;- Blended average escalation of <strong>2.38%</strong>&lt;br&gt;- More than double historic average</td>
</tr>
</tbody>
</table>
Future Electricity Prices
- Staff / Clean Energy Capital Projections for the Project

- Electricity price projections for the Project are summarized below.
- The Mid Scenario will be used as the Base Case for proforma modeling.
- Actual energy prices may be higher or lower than the forecasts.

![Staff / Clean Energy Capital - Rate Forecast (Cents/kWh)]
Electricity Charge Projections

- Electricity charge escalation is expected to be comparable with Operating Charge escalation and the fixed escalation of the Capital Charge

- Electricity costs are expected to remain approximately 25% of the Water Unit price over the term of the WPA
Strategies for Managing Electricity Price Risk

- The Water Authority’s right to direct power supply mitigates the Water Authority’s price risk
  - In a third-party supply scenario, SDG&E would be expected to continue to provide transmission and distribution services

- Third-Party power supply alternatives might include:
  - Long-term commitment to natural gas generating facility
  - Long-term commitment to renewable energy generating facility
  - Water Authority self-generation
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Aqueduct Operating Plan

E&O Committee Meeting
July 26, 2012
Gary Eaton, Director of Operations & Maintenance
Aqueduct Operating Plan (AOP)

- Improve communication
- Coordinate operations
- Maximize regional resources
- Monthly OP Heads meeting
Aqueduct Operating Plan

- Water Supply (Treated and Untreated)
  - Untreated Water Distribution Priorities
- Aqueduct Shutdowns
- Treatment Plant Shutdowns
- Energy Production/Consumption
- Reservoir Operation/Coordination
- Major Maintenance Activities
Treated Water: Projected Demand vs Deliveries for FY2012

FY2012 Deliveries
FY 2012 AOP Projections
Historical High Demand (FY2004)
Untreated Water: Projected Demand vs Deliveries for FY2012
Treated Water Delivery (FY2013)

![Graph showing average monthly flow (cfs) and historical high demand (FY2004) for treated water delivery. The graph includes data for months from July to June, with average flows ranging from 65 to 650 cfs and percent treated water system capacity ranging from 0% to 100%.]
Untreated Water Delivery (FY2013)

Historical High Demand (FY2004)

Average Monthly Flows (cfs)

Percent Untreated Water System Capacity
Untreated Distribution Priorities

**Summer Untreated Water Delivery Priority**
1) Member Agency Treatment Plants
2) Water Authority Treatment Plants
3) Storage

**Winter Untreated Water Delivery Priority**
1) Member Agency Treatment Plants
2) Storage
3) Water Authority Treatment Plants
   November 1, 2012 - May 31, 2013
Aqueduct Shutdowns and Outages

Shutdown and Outage Schedule FY 2013

- MWD shutdown of Lake Skinner Culled Conduit and Pipeline 5.
- Untreated water limited to 260 cfs on Pipeline 3.
- Major Activities:
  - MWD to perform carbon fiber repairs.
  - WA to repair valve at Rancho Pen Hydro.
  - WA to perform warranty inspection on SV PL.
  - Contractor to begin FY2013 relining project.

**Shutdown: Mar 3 – Mar 12, 2013: Untreated**
- Pipelines 1 and 2 untreated, south of Huhtan Hill to Poway vent. Flows terminate at Crossover Pipeline terminus structure.
- Major Activities:
  - Asset management repairs of corroded spools on air vacuum and blow off structures.

**Shutdown: Jul 22 – Jul 26, 2012: Untreated**
- Untreated flows terminate at Rancho Pen Hydro.
- Major Activities:
  - Contractor reconfiguring bulkheads for post FY2012 realine project operation.

**Shutdown: Jan 13 – Jan 19, 2013: Untreated**
- Pipeline 3 flows terminate at the Pipeline 3-Pipeline 4 interconnect at Miramar. SDGABC flows will be limited to 240 cfs.
- Major Activities:
  - Contractor to reconfigure bulkheads for FY2013 realine project.

**Shutdown: May 5 – May 11, 2013: Untreated**
- Pipeline 3 untreated flows terminate at Rancho Penagos Hydroplant (south to Lower Otay).
- Major Activities:
  - Contractor to reconfigure bulkheads for post FY2013 relive project operation.

**Shutdown: Jan 13 – Jan 22, 2013: Treated**
- MWD shutdown of Aud Valley Pipeline.
- Pipelines 1 and 2 treated water terminated at point of delivery.
- Major Activities:
  - MWD to perform carbon fiber repairs.
  - Asset management repairs of corroded spools on air vacuum and blow off structures.

**Shutdown: Jan 27 – Feb 5, 2013: Treated**
- MWD shutdown of treated flows on Pipeline 4.
- Second Aqueduct treated flows north of RB8 will be impacted.
- Major Activities:
  - MWD to perform carbon fiber repairs.

**Outage: Mar 18 – Mar 22, 2013: Treated**
- Miramar Pump Station venturi meter installation.

* Green = untreated shutdown, Blue = treated shutdown, Orange = outage
Treatment Plant Shutdowns

- 8/24 - 8/31
  D.C. McCollum WTP Off-line

- 10/15 - 12/15
  D.C. McCollum WTP Off-line
Energy Production

- FY2012
  - Rancho Peñasquitos
    - Goal: 14,900 MW hrs ($800,000)
    - Actual: 20,267 MW hrs ($1,040,365)

- FY2013
  - Rancho Peñasquitos
    - Goal: 16,800 MW hrs ($900,000)
  - Lake Hodges Pump Storage
    - Goal: $2,300,000 (based on availability charges)
Energy Consumption

- FY2012
  - Estimated at $1.4 million
- FY2013
  - Estimated at $2.1 million
Reservoirs and Regional Storage

- **Regional Usable Capacity**
  - 519,038 AF

- **May 1 Inventory (including ESP storage)**
  - 331,400AF (64%)
Major Maintenance Activities

- Pipelines 1 & 2 (Asset Mgmt) – Pipe replacement selected air release and blow off structures
- Padre Dam 3 & 5 FCF’s – Abandon on the La Mesa Sweetwater Extension Pipeline
- Fallbrook 4 and Ramona 1 – Control valve and meter
- Olivenhain Dam – Emergency discharge valve
Aqueduct Operating Plan – Future

- Operating Heads (monthly)
- FY2013 AOP Schedule
  - Shutdown schedule to OP Heads/MWD – Jan 2013
  - Member agency feedback – March 2013
  - OP Heads – April 2013
  - GMs – May 2013
  - Board – June 2013
The Good Old Days
Right of Way Facts

- 168 miles of dedicated right of way
- 98 + % of right of way is easement
- Approximately worth $400 million
- Right of Way patrolled weekly
- 6091 Dig Alert Requests Annually (2011)
- 54 Permits/Agreements Annually
- 25 Violation Notices Annually
Right of Way Management Goals

- Prevent damage to the aqueducts
- Provide direct access to facilities for operation and maintenance
- Allow use of surface by property owner consistent with Water Authority rights
Right of Way Management

Goals → Implementation

- Administrative Code
- Encroachment Prioritization
- Water Authority Act Changes
- Resources

Implementation
Integrated Right of Way Management Program

Regular Inspection

Significant Encroachments

Plan Review

For Sale
Most Significant Encroachments as shown on 4/14/05

1. House and garage, Posthill Road, LMSWTR
2. House and garage, Posthill Road, LMSWTR
3. Pool, wall and fence, St. Andrews, 1st Aq.
4. House and garage, Aqueduct Road, 2nd Aq.
5. House, Ildica, P3
6. Pine trees and fuel tank, Sumac Road, 2nd Aq.
7. Corral, barn and shed, Crocker Road, 1st Aq.
8. Room Addition, La Casa, P4
9. Mobile Home, Pepper Drive, LMSWTR
10. Porch and wall, North Broadway, 1st Aq.
11. Pool and shed, Summit Drive, 1st Aq.
12. Mobile Home, Dulin Road, 2nd Aq.
Ongoing Challenge: Trees

- Concern during an emergency
- Generally not allowed by easement
- Prioritized based upon pipeline condition
- Tree removal a significant issue for property owners
- Attempt to negotiate tree removal
Tree Root Study

- Concern about pipe – root interaction
  - Pipe joints
  - Roots in trench zone
  - Mortar coating

- No published research available
Tree Roots

No Root Impacts on Pipelines
San Vicente Dam Raise
Construction Update and Contract Actions

Engineering & Operations Committee Meeting
July 26, 2012
Agenda

- Construction Progress Update
- Construction Management Services Contract Amendment
- Construction Contract Change Orders
Marina Quarry Operations
RCC Placement
June 28, 2012

ULTIMATE DAM HEIGHT – FALL 2012

ELEV. (FEET)
800
750
700
650
600
550
500
450
400

776
703
RCC Placement
July 26, 2012

ULTIMATE DAM HEIGHT – FALL 2012
Agenda

- Construction Progress Update
- Construction Management Services Contract Amendment
- Construction Contract Change Orders
Construction Management Contract

- Parsons-Black & Veatch Joint Venture
- Awarded in 2008
- Contract Amount: $28,561,000
- Scope
  - Package 2 (Foundation Excavation) - Complete
  - Package 3 (Dam Raise) - Ongoing
Schedule Update

Contractor’s Baseline Schedule

(Construction Contract Duration)

- RCC Placement: 7 months
- Final Dam Improvements
- Outlet Tower: 23 months
- Electrical/Programming
  - Start Up & Testing

CONTRACTORS BASELINE SCHEDULE
Schedule Update

Contractor’s Baseline Schedule

(Construction Contract Duration)

RCC Placement

7 months 6 months
Final Dam Improvements

Outlet Tower

23 months

7 months
Electrical/Programming

Start Up & Testing

CONTRACTORS BASELINE SCHEDULE

CONTRACTORS RECOVERY SCHEDULE
# Summary of Additional Services

<table>
<thead>
<tr>
<th>Service</th>
<th>Amount</th>
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<tbody>
<tr>
<td>RCC Oversight</td>
<td>$ 1,421,705</td>
</tr>
<tr>
<td>Outlet Tower Oversight</td>
<td>$ 1,269,780</td>
</tr>
<tr>
<td>Administrative/Claim Support</td>
<td>$ 280,458</td>
</tr>
<tr>
<td>Other Extensions</td>
<td>$ 222,900</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$ 3,194,843</strong></td>
</tr>
</tbody>
</table>
Cost Recovery

- Reimbursement for Outlet Tower (Second Shift) Inspection ($320K estimated)

- If contractor fails to meet overall construction contract date:
  - Liquidated damages $50,000/day
    - Cannot collect liquidated damages if Contractor meets Construction Contract duration.
Agenda

- Construction Progress Update
- Construction Management Services Contract Amendment
- Construction Contract Change Orders
## Change Orders Executed under General Manager’s Authority

<table>
<thead>
<tr>
<th>Description</th>
<th>Credit</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Differing Site conditions (1)</td>
<td></td>
<td>$687</td>
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<tr>
<td>Design Modifications (12)</td>
<td></td>
<td>$300,090</td>
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<tr>
<td>Factory Inspection Reimbursement (1)</td>
<td>$456,916</td>
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</tr>
<tr>
<td><strong>NET CREDIT</strong></td>
<td></td>
<td><strong>$156,139</strong></td>
</tr>
</tbody>
</table>
Roller Compacted Concrete Quantity
Additional Excavation
Aggregate Production
Excavated Material for RCC Aggregate

Estimated

50% Aggregate

MARINA FILL
AGGREGATE
Excavated Material for RCC Aggregate

Actual

47% Aggregate

MARINA FILL
AGGREGATE
Marina Fill

- Boat Ramp
- Boat Dock
- Future Water Elevation

Fill To Move To Marina Package
## Summary of Change Orders

<table>
<thead>
<tr>
<th>Description</th>
<th>Credit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Orders for Acceptance</td>
<td>$156,139</td>
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</tr>
<tr>
<td>RCC Unit Price</td>
<td></td>
<td>$3,296,000</td>
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<tr>
<td>Additional Excavation for RCC</td>
<td></td>
<td>$850,000</td>
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<tr>
<td>Marina Fill (Move to Marina Package)</td>
<td>$500,000</td>
<td></td>
</tr>
<tr>
<td><strong>NET CREDIT</strong></td>
<td><strong>$3,102,139</strong></td>
<td></td>
</tr>
</tbody>
</table>
Construction Contract Summary

- Original Contract: $140.2M
- Net Change Orders to Date: $ 0.5M
- Percentage Increase: 0.3%
ITEM 1-B:

- Accept Shimmick/Obayashi Joint Venture Change Orders 19 through 22, 24 and 25 for a credit of $156,139;
- Authorize the General Manager to reduce the contract value by $2,946,000 for roller compacted concrete and marina quarry unit price items, decreasing the authorized contract amount from $143,783,933.70 to $140,681,794.70.
ITEM 1-C:

- Accept no-cost Amendments 1 and 2, and approve Amendment 3 in the amount of $3,194,843 to provide additional construction management, inspection, and materials testing services for the ESP- San Vicente Dam Raise and Carryover Storage Project due to work activity extensions, increasing the contract amount from $28,561,000 to $31,755,843.