2014 Master Plan
Capital Improvement Program

James Strayer, P.E.
2014 Master Plan Status

- Assign **approved** land use to all properties
- Create water and sewer models
- Assign duty factors to land use categories
- Generate future water and sewer demand projections

- Establish design criteria
- Establish project phasing and Capital Improvement Program

- Revise Projections and Update CIPs
- Complete Master Plan
- Final Program EIR
Updated Water and Wastewater Projections

• Initial Capital Improvements
  – Based on a thorough process
  – Consistent with the 2002 and 2008 plans
  – Produces conservative totals based aggressive growth projections

• Staff via Board direction asked Black & Veatch to re-look at the demands based on more recent data
  – Accessed multiple sources
    • SANDAG projections
    • SDCWA projections
    • More recent VWD data which dictate supplies.
Updated Projections

• Re-forecasted population projections
  – Based on revised SANDAG projections
  – Results in more likely projections for interim years
Updated Water and Wastewater Projections

• Black & Veatch reformulated projections
  – Only approved land uses can be considered
  – Updated water demands
  – Confirmed with SDCWA that results were consistent with the projected water supply available to VWD
  – Updated sewer flows
  – Refinement of Capital Improvement Program
  – Net result: Reduced cost and deferred projects
Water Demand Projections

Ultimate projection about same as 2008 Master Plan as conservation is offset by increase in planned land uses.
Projected Water System CIPs

- Population growth shift ➔ shifted demand
- Shifted demand
  ➔ Shifted timing of needs
  ➔ Reduction in sizes of early phased projects
Projected Water System CIPs

### Graph:
- **Y-axis:** CIP Costs ($M)
- **X-axis:** Planning Year (2020, 2025, 2030, 2035, Ultimate)
- **Legend:**
  - Initial Projections
  - Revised Projections

### Table:

<table>
<thead>
<tr>
<th>Planning Year</th>
<th>Cost ($M)</th>
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<tbody>
<tr>
<td>2020</td>
<td>$5</td>
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<tr>
<td>2025</td>
<td>$14</td>
</tr>
<tr>
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<tr>
<td>Ultimate</td>
<td>$94</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$116</strong></td>
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Wastewater Flow Projections

Average Annual Wastewater Flow Projections

- 2008 Master Plan Projected
- Initial 2014 Projection
- Revised 2014 Projection
Wastewater Flow Projections

• Average annual flows
  – Define average operational costs
  – Define average recycled water availability

• Peak dry & wet weathers flows
  – Establish maximum flows
  – Define improvement needs and sizing
Projected Wastewater System CIPs

Land Outfall Peak Flows (VWD + Contract Flows)

- Initial Wet Weather Flows
- Revised Wet Weather Flows
- Initial Dry Weather Flows
- Revised Dry Weather Flows

Flow (mgd)

Planning Year:
- 2010
- 2020
- 2030
- 2040
- Ultimate
### Wastewater CIP Cost Estimates

- Little change in peak flow projections
- Costs include sewers, outfall, and treatment

No change in wastewater CIP needs

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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<tr>
<td>Wastewater CIP Total</td>
<td>$47,000,000</td>
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<tr>
<td>Parallel Land Outfall</td>
<td>$31,000,000</td>
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<tr>
<td>Wastewater Treatment</td>
<td>$88,000,000</td>
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<td>Total CIP</td>
<td>$166,000,000</td>
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Wastewater CIP Cost Estimates

Projected Wastewater CIP Costs by Phase

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<td>Total</td>
<td>$165</td>
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CIP Cost Estimates by Phase

Adjusted growth deferring nearly $100M in CIPs beyond 2035

CIP Costs ($M)

Planning Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Wastewater CIPs</th>
<th>Water CIPs</th>
<th>Total</th>
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<tbody>
<tr>
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<td>$186</td>
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Next Steps

- Finalize CIP descriptions (Feb 2017)
- Add CIPs to Supplemental Environmental Impact Report (SEIR) (Feb 2017)
- Finalize Master Plan Report (March 2017)
- Complete and approve SEIR (Fall 2017)
Questions?
Backup Slides
Projected CIP Cost Estimates

• Unit costs developed based on:
  – Input from recent District construction projects
  – Input from other water agency projects

• A scaling factor has been developed to address economy of scale for large, small and challenging projects

• Unit costs applied to CIP projects to generate a planning level cost estimate
2014 Master Plan
Wastewater CIP – Land Outfall

- 8 miles long
- Pipe diameter ranging from 24-inch to 48-inch
- Sized to transport ultimate peak dry weather flow of 22.65 MGD