Population served: 1,000,000
(2008 PAG Estimate)

Service area: 2000 square miles

Annual budget: $134,200,000
(FY 2009/10)

Treatment capacity: 92 million gallons per day

Eleven treatment facilities, 3400 miles of public sanitary sewers, and 31 pump stations
Ina Road WRF
Service Area = 198 square miles

Roger Road WRF
Service Area = 275 square miles

Pima County Metropolitan Wastewater Service Area
ROMP Planning Objectives

- Develop the optimal treatment process and plan to comply with regulatory requirements to reduce total nitrogen concentrations in discharged effluent
- Master plan foreseeable future regulatory requirements
- Determine the long-term capacity needs of the County
ROMP Planning Objectives

- Develop regional plan for the treatment, handling and reuse of system biosolids and bio-gas
- Develop a detailed implementation schedule to meet regulatory implementation deadlines
- Develop a financial plan to support the system’s regulatory and other needs for the next fifteen years
## Regulatory Implementation Requirements to Reduce Total Nitrogen Concentrations

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Ina Road WRF</th>
<th>Roger Road WRF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete initial engineering study</td>
<td>February 1, 2007</td>
<td>January 30, 2007</td>
</tr>
<tr>
<td>Recommendation for upgrading treatment plants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit recommended plan letter to ADEQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Award contract for construction</td>
<td>December 31, 2010</td>
<td>January 30, 2011</td>
</tr>
<tr>
<td>Treatment of effluent to non-toxic nitrogen levels</td>
<td>January 30, 2014</td>
<td>January 30, 2015</td>
</tr>
</tbody>
</table>
ROMP Plan at a Glance

✓ Upgrade and Expand Ina Road WRF to 50 mgd
  Centralized solids handling and bio-gas power generation

✓ Construct new 32 mgd Water Reclamation Campus
  (in vicinity of existing Roger Road WRF)
  Regional laboratory and staff facilities

✓ Plant Interconnect – 36 mgd average, 81 mgd peak flow
  Major wash crossings and odor control structures

✓ Good neighbor facilities
  Odor control, architecturally compatible to local area

✓ Decommission existing 41 mgd Roger Road WRF
Expand treatment capacity to 50 mgd
  ➤ Convert existing processes to Bardenpho process
  ➤ Additional 12.5 mgd expansion
➤ Centralized biosolids processing and handling
  ➤ Reduces overall cost
  ➤ Provides for co-generation bio-gas utilization at one location
  ➤ Provides one point of distribution of final product
Existing and Expanded Ina Road WRF
Approximately 160 acres

Ina Road WRF Expansion and Upgrade

PROPOSED:
- Primary Clarifier
- Bardenpho Treatment Units
- Secondary Clarifiers
- Centralized Biosolids
- Enhanced Chlorination

EXISTING

Sports Park
Water Reclamation Campus

- Develop project in campus-type setting
- 32 mgd Bardenpho treatment train
- Central Laboratory Facility
- Showcase for cultural and biological resources
- Environmental enhancements: adjacent parks, natural areas, and economic development centers
- Solar energy project
Water Reclamation Campus

Approximately 40 acres

WRF - 32 MGD
WRF EXPANSION

SOLAR SITE
COMPLIANCE LABORATORY
CRAO FACILITIES
TRAINING CENTER

Water Reclamation Facility
(20 acres)

HEADWORKS
CONTROL BLDG
BIological treatment
SOLIDS SEPARATION
DISINFECTION
ELECTRICAL
ODOR CONTROL
SOLIDS HANDLING

WRF EFFLUENT DISCHARGE

Existing Roger Road WRF

W. SWEET
ROMP Implementation Schedule

- Ina Road WRF 50 mgd
- Power Plant (Ina Road WRF)
- Water Reclamation Campus 32 mgd
- Central Laboratory (Water Reclamation Campus)
- Demolish existing Roger Road plant

ADEQ Treatment Deadline – Ina Road WRF
ADEQ Treatment Deadline – Roger Road WRF

Design / Approval  Construction  Acceptance / Startup Testing
ROMP Implementation Costs

ROMP planning level estimated cost (2006 dollars): $536 million

ROMP budget including cost inflation (assuming an inflation rate of 5%): $720 million

Bonding/debt service: $1+ billion

Note: Largest capital improvement program in Pima County to date
Pima County Regional Wastewater Reclamation Department
Regional Optimization Master Plan

Financial Plan
Develop Financial Plan

Prepare Strategic Financial Plan and Vision

- Determine Capital Improvements Plan
- Develop Financing Plan
- Identify Operating and Maintenance Costs
- Identify Capital Costs Recovered Through Rates

Determine Revenue Requirements

O&M Capital
PCRWRD CIP (Example Only)
Purpose of Funding Options Analysis

To determine the capital planning alternative that will

*Meet Pima County’s current and future wastewater treatment needs*

and

*Minimize impact on Pima County’s wastewater rates*
Financing Plan

Current Revenues/Reserves
- User Charges
- Connection Fees
- Environmental Fees
- Repair & Replacement Fees
- Reserves

Public Debt
- **Short Term**
  - Commercial Paper
  - Bond Anticipation Notes
  - Revenue Anticipation Notes
  - Certificates of Participation
- **Long Term**
  - Revenue Bonds
  - GO Bonds
  - Double Barrel Bonds
  - State Revolving Funds

Private Financing
- Taxable Debt
- Equity
- Private Activity Bonds
Assessing Funding Options

TYPICAL ASSESSMENT CRITERIA

- Applicability and availability
- Administrative and compliance requirements
- Issuance costs
- Effective interest rate
- Interest rate risk
- Rate impacts
- Effect on balance sheet
Attractive Funding Options

REVENUE BONDS

Secured by revenues generated from assets being funded

Terms of 15 to 40 years

Flexibility in repayment structure

Usually require voter approval

Relatively low interest rates

Coverage requirements

Can preserve issuer debt capacity
Attractive Funding Options

**SRF Loans**

- Borrowing from state loan pools
- Term 20 years
- Very low interest rates
- Minimal flexibility with repayment structure
- Limited available funds
- Administrative requirements
## Financing Plan (Example Only)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>ROMP Projects</th>
<th>Other CIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997 Bonds</td>
<td>$3,945,440</td>
<td></td>
<td>$3,945,440</td>
</tr>
<tr>
<td>2004 Bonds</td>
<td>$150,000,000</td>
<td>$32,283,125</td>
<td>$117,716,875</td>
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<tr>
<td>SDF’s</td>
<td>$144,964,660</td>
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<td>$144,964,660</td>
</tr>
<tr>
<td>2008 Bonds</td>
<td>$565,000,000</td>
<td>$445,000,000</td>
<td>$120,000,000</td>
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<tr>
<td>2012 Bonds</td>
<td>$398,698,624</td>
<td>$227,228,957</td>
<td>$171,469,666</td>
</tr>
<tr>
<td>2016 Bonds</td>
<td>$153,341,187</td>
<td>$1,767,905</td>
<td>$151,573,282</td>
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<tr>
<td><strong>Total ROMP Projects</strong></td>
<td><strong>$706,279,987</strong></td>
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<td></td>
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<tr>
<td><strong>Total Other CIP Projects</strong></td>
<td><strong>$709,669,924</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Total Capital Plan</strong></td>
<td><strong>$1,415,949,911</strong></td>
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</table>
## Annual Costs (Example Only)

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
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</thead>
<tbody>
<tr>
<td><strong>Revenue Requirements ($ Mil.)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating &amp; Maintenance (1)</td>
<td>75.4</td>
<td>77.9</td>
<td>81.2</td>
<td>84.3</td>
<td>87.5</td>
<td>90.8</td>
<td>94.2</td>
<td>99.0</td>
</tr>
<tr>
<td>Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Debt Service</td>
<td>15.5</td>
<td>26.2</td>
<td>26.2</td>
<td>43.4</td>
<td>43.4</td>
<td>75.8</td>
<td>75.3</td>
<td>108.7</td>
</tr>
<tr>
<td>Direct CIP Funding (Cash)</td>
<td>22.5</td>
<td>22.9</td>
<td>48.1</td>
<td>9.2</td>
<td>15.4</td>
<td>6.8</td>
<td>2.0</td>
<td>2.0</td>
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<tr>
<td><strong>Total Revenue Requirements</strong></td>
<td>113.4</td>
<td>127.0</td>
<td>155.5</td>
<td>136.9</td>
<td>146.3</td>
<td>173.4</td>
<td>171.6</td>
<td>209.6</td>
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<tr>
<td>% Change</td>
<td>12.0%</td>
<td>22.5%</td>
<td>-12.0%</td>
<td>6.9%</td>
<td>18.5%</td>
<td>-1.1%</td>
<td>22.2%</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating &amp; Maintenance (1)</td>
<td>104.6</td>
<td>108.7</td>
<td>112.3</td>
<td>116.1</td>
<td>120.0</td>
<td>124.0</td>
<td>128.1</td>
<td>132.4</td>
</tr>
<tr>
<td>Capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt Service</td>
<td>109.3</td>
<td>124.6</td>
<td>116.3</td>
<td>120.6</td>
<td>120.6</td>
<td>128.1</td>
<td>128.1</td>
<td>129.2</td>
</tr>
<tr>
<td>Direct CIP Funding (Cash)</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total Revenue Requirements</strong></td>
<td>215.9</td>
<td>235.3</td>
<td>230.6</td>
<td>238.6</td>
<td>242.5</td>
<td>254.1</td>
<td>258.2</td>
<td>263.6</td>
</tr>
<tr>
<td>% Change</td>
<td>3.0%</td>
<td>9.0%</td>
<td>-2.0%</td>
<td>3.5%</td>
<td>1.6%</td>
<td>4.8%</td>
<td>1.6%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

(1) Includes departmental capital outlays.
### Potential Customer Impacts (Example Only)

<table>
<thead>
<tr>
<th>Year</th>
<th>Typical Customer Bill (1)</th>
<th>% Change</th>
<th>Connection Fee (2)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006/07</td>
<td>$18.98</td>
<td>13.6%</td>
<td>$4,724</td>
<td>12.4%</td>
</tr>
<tr>
<td>2007/08</td>
<td>$21.56</td>
<td>16.9%</td>
<td>$5,308</td>
<td>19.9%</td>
</tr>
<tr>
<td>2008/09</td>
<td>$25.21</td>
<td>10.6%</td>
<td>$6,364</td>
<td>12.4%</td>
</tr>
<tr>
<td>2009/10</td>
<td>$27.90</td>
<td>10.7%</td>
<td>$7,151</td>
<td>12.4%</td>
</tr>
<tr>
<td>2010/11</td>
<td>$30.89</td>
<td>10.8%</td>
<td>$8,035</td>
<td>12.4%</td>
</tr>
<tr>
<td>2011/12</td>
<td>$34.23</td>
<td>9.0%</td>
<td>$9,028</td>
<td>10.3%</td>
</tr>
<tr>
<td>2012/13</td>
<td>$37.33</td>
<td>9.1%</td>
<td>$9,953</td>
<td>10.3%</td>
</tr>
<tr>
<td>2013/14</td>
<td>$40.71</td>
<td></td>
<td>$10,973</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Typical Customer Bill (1)</th>
<th>% Change</th>
<th>Connection Fee (2)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014/15</td>
<td>$40.71</td>
<td>0.0%</td>
<td>$10,973</td>
<td>0.0%</td>
</tr>
<tr>
<td>2015/16</td>
<td>$43.12</td>
<td>5.9%</td>
<td>$11,698</td>
<td>6.6%</td>
</tr>
<tr>
<td>2016/17</td>
<td>$43.12</td>
<td>0.0%</td>
<td>$11,698</td>
<td>0.0%</td>
</tr>
<tr>
<td>2017/18</td>
<td>$43.86</td>
<td>1.7%</td>
<td>$11,899</td>
<td>1.7%</td>
</tr>
<tr>
<td>2018/19</td>
<td>$46.05</td>
<td>5.0%</td>
<td>$12,494</td>
<td>5.0%</td>
</tr>
<tr>
<td>2019/20</td>
<td>$46.05</td>
<td>0.0%</td>
<td>$12,494</td>
<td>0.0%</td>
</tr>
<tr>
<td>2020/21</td>
<td>$46.05</td>
<td>0.0%</td>
<td>$12,494</td>
<td>0.0%</td>
</tr>
<tr>
<td>2021/22</td>
<td>$46.05</td>
<td>0.0%</td>
<td>$12,494</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

(1) Represents the monthly sewer bill for a 10ccf customer.
(2) Non-participating connection fees.
ROMP – Moving Forward

- Continued review and evaluation
- Update strategic financial plan on annual basis
- Optimize project delivery and funding strategies
- Open and effective stakeholder communication
Pima County Regional Wastewater Reclamation Department