Regional Optimization Master Plan

**Goals/Program**

- Develop the optimal treatment process and plan to comply with regulatory requirements to reduce total nitrogen concentrations in effluent discharge to the Santa Cruz River.
- Produce reuse quality effluent.
- Master plan foreseeable future regulatory requirements.
- Provide for the long-term treatment capacity needs of the County to 2030.
Regional Optimization Master Plan
Goals/Program

✓ Upgrade/rehabilitate aging infrastructure
✓ Utilize state-of-the-art technology/automation
✓ Develop long-term plan for the treatment, handling and reuse of system bio-solids and bio-gas
✓ Provide staff and community friendly facilities
Regional Optimization Master Plan

Goals/Program

- Develop a detailed implementation schedule to meet regulatory implementation deadlines of 2014/2015
- Develop a financial plan to support the system’s regulatory and other needs for the next fifteen years
- Obtain community acceptance
## Regulatory Implementation Schedule to Reduce Effluent Nutrient Concentrations

<table>
<thead>
<tr>
<th>Task Description</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>✓ Submit recommended plan letter to ADEQ</td>
<td>January 2007</td>
<td>January 2007</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 levels</td>
<td>January 30, 2014</td>
<td>January 30, 2015</td>
</tr>
</tbody>
</table>

**Contract Dates**
- **Ina Road WRF:**
  - Complete initial engineering study: January 30, 2007
  - Submit recommended plan letter to ADEQ: January 2007
  - Award contract for construction: December 31, 2010
  - Treatment of effluent to non-toxic levels: October 19, 2013

- **Roger Road WRF:**
  - Complete initial engineering study: January 30, 2007
  - Submit recommended plan letter to ADEQ: January 2007
  - Award contract for construction: December 9, 2010
  - Treatment of effluent to non-toxic levels: August 14, 2014
# ROMP BUDGET

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ina Road Upgrade &amp; Expansion Project</td>
<td>$301,290,000</td>
</tr>
<tr>
<td>Plant Interconnect</td>
<td>41,190,000</td>
</tr>
<tr>
<td>Water Reclamation Campus 32 MGD Facility</td>
<td>275,100,000</td>
</tr>
<tr>
<td>Central Laboratory/Training Center</td>
<td>28,870,000</td>
</tr>
<tr>
<td>Biosolids/Biogas Master Plan</td>
<td>21,810,000</td>
</tr>
<tr>
<td>SCADA</td>
<td>13,460,000</td>
</tr>
<tr>
<td>Roger Road Decommissioning/ Clean Closure/Deconstruction</td>
<td>38,290,000</td>
</tr>
</tbody>
</table>

**Total:** $720,010,000

**Bonding/Debt Service:** $1+ billion

*Note: Largest Capital Improvement Program in Pima County to date*
History of Design-Bid-Build Projects in RWRD = History of Litigation

<table>
<thead>
<tr>
<th>Project</th>
<th>Budget Overrun</th>
<th>Schedule Overrun</th>
<th>Litigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ina Road WRF 12.5 MGD Expansion</td>
<td>35.2%</td>
<td>38 months</td>
<td>Litigation</td>
</tr>
<tr>
<td>Green Valley Sub-Regional WRF Expansion</td>
<td>34.8%</td>
<td>15 months</td>
<td>Litigation</td>
</tr>
</tbody>
</table>
Procurement Method Selection

- All construction projects within ROMP Program undergo an in-depth analysis of procurement methods best suited for the particular project.

- Analysis of procurement methods is a program management requirement within the ROMP Program.

- Procurement method determinations made by multi-disciplined teams of program management consultants and Department staff in workshop settings.
Procurement Method Selection Criteria

- Capital and life-cycle cost comparisons
- Risk and risk transfer analysis
- Implementability in the marketplace
- Public-Private Partnership opportunity
- Financial analysis
- Implementation schedules / regulatory compliance schedule
- Design quality / design competition
- Cost competition
- Accountability, responsibility, liability
- Staff impacts
- Level of County control / Service Contract

Evaluations are performed in workshop setting leading to a formal recommendation.
A Public-Private Partnership (PPP) is a contractual agreement between a public agency and a private sector entity. Through this agreement, the skills and assets of each sector are shared in delivering a project for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards in the delivery of the project.

~ The National Council of Public-Private Partnerships
What is a Public-Private Partnership

- Joint undertaking by public and private parties
  - Not arms-length relationship
- Both parties take responsibility for the success (or failure) of the project
- Appropriate sharing of risk, responsibility and reward
- Each party doing what it does best for the mutual benefit of the project
Project Delivery Alternatives

- Design-Bid-Build (DBB)
- Public-Private Partnerships (PPP)
- Construction-Manager-at-Risk (CM@R)
- Design-Build (DB)
- Design-Build-Operate (DBO)
- Design-Build-Finance-Operate (DBFO)
- Design-Build-Finance-Own-Operate (DBFOO)
- Request for Expressions of Interest (RFEI)
ROMP
Public-Private Partnerships
Ina Rd WRF Upgrade & Expansion Project
Construction Manager at Risk (CM@R)
Procurement Method Selected

- Project is complex, not clearly defined
- Complicated design
- Contractor input needed from inception of design
- Design professional / contractor / staff to partner design
- Poor as-built drawings / unknown subsurface conditions
- Transfer of construction risk to contractor
- Existing plant to remain in operation and in compliance during construction
- Stringent regulatory compliance schedule
- Can proceed with design and construction of project in a series of negotiated Guaranteed Maximum Price (GMPs) segments
Need photo from Mr. Gritzuk
Ina Road WRF Upgrade & Expansion

Project Status

Original ROMP Budget = $301,290,000

Current ROMP Budget $311,720,000
(Mostly owner initiated additions)

Project 71% Complete

On Schedule for October 19, 2013 Substantial Completion
Replace existing 41 MGD antiquated Roger Road Treatment Facility:
- Original plant built in early 1950s
- Prohibitive upgrade and replacement cost
- Maintaining existing operations during construction too risky

Build new 32 MGD state-of-the-art treatment facility in green field setting

Allows for design innovation to achieve effluent quality requirements and cost effectiveness
Design-Build-Operate Procurement

All costs associated with:

- Designing, permitting, constructing, testing
- Placing the project into operations
- Meeting all regulatory requirements

are transferred to and are the obligation of the DBO Company without any additional cost to the County.
DBO Partnering
Water Reclamation Campus DBO Project Status

Original ROMP Budget = $275,100,000
- Design & Construction Budget $240,000,000

Awarded DBO Contract $164,063,000
- Award under budget $79,937,000

Current ROMP Budget $182,466,000

Project 62% Complete

Ahead of schedule for August 14, 2014 Substantial Completion
Biogas to Biomethane Project

Design-Build-Finance-Own-Operate (DBFOO)
Biogas to Biomethane Project
Design-Build-Finance-Own-Operate (DBFOO)
Procurement Method Selected

RWRD produces 1,000,000 cubic feet digester gas (biogas) daily

RFEI marketplace input:

- Cogeneration
- Clean biogas to natural gas pipeline quality to sell to national markets
- Compress biomethane to CNG vehicle fuel
- Strong recommendation from marketplace for private financing
DBFOO procurement selected:

- Cleaning/marketing biomethane not a RWRD core function
- No capital cost outlay by RWRD
- Guaranteed revenue (royalty)
- Maximum risk assigned to DBFOO contractor

DBFOO procurement process underway

DBFOO project on line late 2014
1. ROMP Budget of $720,000,000 reduced to $660,000,000

2. All ROMP Projects on or ahead of schedule

3. Overall ROMP Program 65% complete

4. Only one litigation matter resulting in favor of Pima County

5. On schedule to come in ahead of regulatory compliance dates

6. RWRD has found Public-Private Partnership procurements viable and effective
Pima County Regional Wastewater Reclamation Department