Appraisal Level Report Summary on the AWSA Tier-2 Proposals & Other Diversion and Storage Configurations
August 26, 2014

Phoenix Area Office & Denver Technical Service Center
Reclamation Appraisal Level Report Tasks

- MOU with ISC on May 7, 2013
- Appraisal Level Work
  - Engineering Assessment of the 3 Tier 2 Diversion Proposals (GBIC, Hidalgo & Deming)
  - Identification of Other Diversion & Storage Configuration Alternatives
  - Appraisal Level Economic Analyses of the benefits, costs and regional impacts of all 15 Tier-2 proposals and Other Diversion Alternatives
  - Environmental Review on Potential Impacts from Diversion Proposals
- July 31, 2014 for Final Report to ISC (Public Comment Period)
## T-2 Proposals for Diversion

<table>
<thead>
<tr>
<th>AWSA Tier-2 Diversion Proposal</th>
<th>Construction Cost ($)</th>
<th>OM&amp;R $/yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBIC</td>
<td>41,800,000</td>
<td>$585,000</td>
</tr>
<tr>
<td>City of Deming</td>
<td>503,100,000</td>
<td>$8,850,000</td>
</tr>
<tr>
<td>Hidalgo Co.</td>
<td>235,000,000</td>
<td>$1,530,000</td>
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</tbody>
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### T-2 Diversions

- **GBIC Diversion and Storage**
- **Hidalgo County Offstream**
- **Southwest New Mexico Regional Water Supply (Deming Surface Water Diversion)**
- **Private Land**
Gila Basin Irrigation Commission Diversion & Storage (GBIC)

Estimated total project cost is $41,800,000

Estimated OM&R is $585,000/yr
City of Deming
Southwest New Mexico
Regional Pipeline

Estimated project cost is $503,100,000
Estimated OM&R is $8,850,000/yr
Hidalgo County Diversion & Storage

Estimated total project cost is $235,000,000

Estimated OM&R is $1,530,000/yr
Identification of Other Diversion & Storage Alternatives

- 4 Diversion Locations
- 24 Canyon Storage Locations
- Alternatives Evaluated
  - 5 Single Storage
  - 3 Multi-Storage Configurations
Diversion Pt. 1

- 4 Single Storage Sites
  - Winn Canyon
  - Pope Canyon
  - Sycamore Canyon
  - Greenwood Canyon
Diversion Pt. 2

- 1 Single Storage Site
  - Dam Canyon
Diversion Pt. 3

- 1 Single Storage Site
  - Garcia Canyon
Diversion Pt. 4

- 1 Single Storage Site
  - Spar Canyon
Alternative 1
Multi-Storage

- Cost: $598,450,000
  - Sycamore 36,900 AF
  - Greenwood 26,000 AF
  - 62,900 AF
- OM&R: $4,470,000/yr
Alternative 2
Multi-Storage

- Cost: $294,373,000
  - Spar 3,100 AF
  - Garcia 7,500 AF 10,600 AF

- OM&R: 2,525,000/yr
Reclamation Alternative 3
Storage at Mogollon Creek and Winn Canyon

- Mogollon 11,500 AF
- Winn 2,750 AF, 14,250 AF

Cost: $307,303,000
OM&R: 2,684,000/yr
<table>
<thead>
<tr>
<th>Single Storage Site</th>
<th>Construction Cost ($)</th>
<th>OM&amp;R ($/yr.)</th>
<th>Storage Volume (AF)</th>
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</thead>
<tbody>
<tr>
<td>Spar Canyon</td>
<td>161,583,000</td>
<td>990,000</td>
<td>3,100</td>
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<td>Winn Canyon</td>
<td>83,291,200</td>
<td>780,000</td>
<td>2,750</td>
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<tr>
<td>Pope Canyon</td>
<td>234,011,200</td>
<td>1,700,000</td>
<td>7,900</td>
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<tr>
<td>Greenwood Canyon</td>
<td>280,511,200</td>
<td>1,560,000</td>
<td>26,000</td>
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<tr>
<td>Dam Canyon</td>
<td>307,223,000</td>
<td>1,910,000</td>
<td>9,400</td>
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</table>

<table>
<thead>
<tr>
<th>Multiple Storage Site Site</th>
<th>Construction Cost ($)</th>
<th>OM&amp;R ($/yr.)</th>
<th>Storage Volume (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenwood Canyon &amp; Sycamore Canyon (64,000 AF)</td>
<td>598,450,000</td>
<td>$4,470,000</td>
<td>62,900</td>
</tr>
<tr>
<td>Spar Canyon &amp; Garcia Canyon (10,000 AF)</td>
<td>294,373,000</td>
<td>2,525,000</td>
<td>10,600</td>
</tr>
<tr>
<td>Mogollon Canyon &amp; Wynn Canyon (14,000 AF)</td>
<td>307,303,000</td>
<td>2,684,000</td>
<td>14,250</td>
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</table>
Economic Analyses

• Economic Benefits and Costs
  – **Negative** Net Benefits
    • All diversion proposals & 7 of the 12 non-diversion proposals
  – Benefits would increase significantly for diversion proposals if water was used for M&I purposes rather than for Ag purposes
    • M&I benefits per AF are much greater than Ag benefits per AF
  – **Potentially Positive** Net Benefits
    • 5 of the 12 non-diversion proposals

• Regional Impact
  – Indicates the more costly diversion projects will generate greater employment than less costly non-diversion proposals

• Financial – Ability of Potential Project Beneficiaries to Pay project Costs (Not estimated & beyond the scope)
Present Value Cost per Acre-Foot

Non-diversion Proposals
range from $28 to $1,626 per acre-foot

Diversion Proposals
range from $152 to $1,487 per acre-foot

*GSWCD Forest Restoration & USFS Watershed Restoration Proposals were not estimated because quantity of water saved was not available in proposal
National Environmental Policy Act

NEPA

If New Mexico chooses construction of a New Mexico Unit, Reclamation will complete Environmental Impact Statement with New Mexico as joint lead.

If New Mexico pursues a non-diversion “other water utilization” alternative, then NEPA will apply if the project requires Federal Approval & be conducted by the agency providing the approval.

Cultural Resources

- Surveys for Cultural Resources will be required
- Site density is expected to be very high in some areas
- Section 106 Consultation Under National Historic Preservation Act will be required
Endangered Species Act Considerations

Environmental Review of Diversion Proposals

- Gray vireo
- Loach minnow
- Spikedace
- Southwestern willow flycatcher
- Narrow-headed garter snake
- Northern Mexican garter snake
- Yellow-billed cuckoo
Questions?

Photo credit: Americansouthwest.net