Welcome and Introductions

- Meeting Purpose and Goals
- Design Criteria
- Scoring Criteria
- Preliminary Component Screening and Alternatives Development
Project History

- 2016 Report Culminated in 4 Alternatives
  - 2 selected by the NMCAP Entity
  - Rejected due to land ownership issues later identified
- Additional Information Gathered Since 2016 Report
  - Water Intended for Agricultural Consumption
  - Site Visits
  - ASR Considerations
  - Yield Model
- The 2017 Report is an addendum to the 2016 Report
Scope of Work

• On-Farm Pond Storage and ASR Conceptual Development
• Surface Diversions and Surface Diversion Locations
  • Mogollon Surface Diversion Evaluation
  • Groundwater Pumping
  • Upper Gila Surface Diversion
  • San Francisco Surface Diversion
• Gila, Mogollon and San Francisco Basins
  • Diversion Models
  • Yield Models
• Presentation to NMCAP Entity
Design Criteria
### Design Criteria

<table>
<thead>
<tr>
<th></th>
<th>Gila Basin</th>
<th>San Francisco Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demand</strong></td>
<td>3,000 ACFT/YR</td>
<td>1,000 ACFT/YR</td>
</tr>
<tr>
<td><strong>Diversion</strong>*</td>
<td>425 (max) cfs</td>
<td>75 cfs</td>
</tr>
<tr>
<td><strong>Conveyance</strong></td>
<td>30 / 125 cfs per ditch</td>
<td>75 cfs</td>
</tr>
</tbody>
</table>

*The diversion can be designed to divert 350 cfs of AWSA water and an additional 75 cfs for the Gila Ditches for a total combined maximum diversion rate of 425 cfs.*
Scoring Criteria
Scoring Criteria

Same scoring methodology as 2016 Report

- Engineering
- Construction
- Environmental
- Social
Sensitivity Analysis

• Three sensitivity analyses completed for 2017 Report
  • 1: Same as 2016 Report Sensitivity Analysis
  • 2: Consider average scores instead of maximum
  • 3: Consider Land Acquisition and Ecological Impact sensitivity by adjusting sub-criteria scores to maximum credible weight

• Conclusion: Minor changes to scores, but no significant change in ranking
2017 Report Preliminary Alternatives Description
Preliminary System Alternatives

• Significant Factors in Selecting Alternatives:
  o Scores
  o Scalability
  o Projects that have significantly different elements (because minor adjustments can be made in any project)
  o Projects that have phasing options
  o Engineering judgement
## Alternative 5 – Mogollon + Winn + San Francisco Basin

<table>
<thead>
<tr>
<th>Elements for the Gila Basin</th>
<th>Elements for the San Francisco Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mogollon USGS Diversion</td>
<td>Spurgeon Diversion</td>
</tr>
<tr>
<td>Pipeline from USGS Diversion to Winn Pump Station</td>
<td>Pipeline from Spurgeon Diversion to Weedy Reservoir</td>
</tr>
<tr>
<td>Winn Pump Station</td>
<td>Weedy Reservoir</td>
</tr>
<tr>
<td>Winn Reservoir</td>
<td>Pipeline from Weedy Reservoir to Keller Reservoir</td>
</tr>
<tr>
<td>Return Line from Winn to Irrigation Ditches</td>
<td>Keller Reservoir</td>
</tr>
<tr>
<td>Upper Gila and Fort West Ditch Improvements</td>
<td></td>
</tr>
</tbody>
</table>
30-Percent Engineering Design Services for the New Mexico Unit of Central Arizona Project, Phase II B

Alternative 5
30-Percent Engineering Design Services for the New Mexico Unit of Central Arizona Project, Phase II B

Alternative 5 – HGL Schematic
Alternative 6 – Six Pond ASR + Winn + San Francisco Basin

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<thead>
<tr>
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<td>Upper Gila Diversion*</td>
<td>Spurgeon Diversion</td>
</tr>
<tr>
<td>Upper Gila and Fort West Ditches</td>
<td>Pipeline from Spurgeon Diversion to Weedy Reservoir</td>
</tr>
<tr>
<td>Infiltration Ponds (6-35 acres each)</td>
<td>Weedy Reservoir</td>
</tr>
<tr>
<td>Ranney Collector Wells (6)</td>
<td>Pipeline from Weedy Reservoir to Keller Reservoir</td>
</tr>
<tr>
<td>Winn Reservoir</td>
<td>Keller Reservoir</td>
</tr>
<tr>
<td>Return Line to Upper Gila Diversion*</td>
<td></td>
</tr>
</tbody>
</table>

*The diversion could be constructed on the Jordan/Shelley Property, TNC Property, or Shelley/Smith Property Diversion. Each scores comparably.
30-Percent Engineering Design Services for the New Mexico Unit of Central Arizona Project, Phase II B

Alternative 6

Legend
- Ranney Collector Well
- Proposed Pipeline
- Proposed On-Farm Storage Area

Map Extent Shown in Red

Upper Gila Diversion* (E: 4,657')

Winn Reservoir (WSER 4,450')

Winn Pump Station

Pipeline - Ranney Well Return Line to Winn Reservoir

Pipeline - Return from Winn Reservoir

Pipeline - Spurgeon Diversion to Weedy Canyon Reservoir

Spurgeon Diversion (E: 4,592')

Weedy Canyon Reservoir (WSER 5,126')

Pump Station

Pipeline - Weedy Canyon Reservoir to Keller Canyon Reservoir

Keller Canyon Reservoir (WSER 5,047')

Glenwood Pleasanton

*The diversion could be constructed on the Jordan/Shelsley Property, TNC Property or Shelley/Smith Property. Each option compared.
Alternative 6 – HGL Schematic
Alternative 7 – One Pond ASR + Winn + San Francisco Basin

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<td>Spurgeon Diversion</td>
</tr>
<tr>
<td>Upper Gila and Fort West Ditches</td>
<td>Pipeline from Spurgeon Diversion to Weedy Reservoir</td>
</tr>
<tr>
<td>Infiltration Pond (1-210 acres)</td>
<td>Weedy Reservoir</td>
</tr>
<tr>
<td>Ranney Collector Wells (5)</td>
<td>Pipeline from Weedy Reservoir to Keller Reservoir</td>
</tr>
<tr>
<td>Winn Reservoir</td>
<td>Keller Reservoir</td>
</tr>
<tr>
<td>Return Line to Upper Gila Diversion*</td>
<td></td>
</tr>
</tbody>
</table>

*The diversion could be constructed on the Jordan/Shelley Property, TNC Property, or Shelley/Smith Property Diversion. Each scores comparably.*
Alternative 7
Alternative 7 – HGL Schematic
Alternative Phasing
Alternative 5 – Initial Phase

- Initial Phase* - $149.2 M
  - Spurgeon Diversion - $9.9M
  - Pipeline from Spurgeon Diversion to Weedy Reservoir - $7.3M
  - Weedy Pump Station - $37.2M
  - Weedy Reservoir - $94.8M

*Initial improvements on the San Francisco Basin
Alternative 5 Phasing

- Pipeline - Spurgeon Diversion to Weedy Canyon Reservoir $7.3M
- Weedy Canyon Reservoir $94.8M
- Pump Station $37.2M
- Keller Canyon Reservoir $53.7M
- Spurgeon Diversion ($1.49B) $9.9M

Legend:
- Proposed Diversion
- Proposed Pipeline
- Proposed Reservoir
- Green - Initial Phase
- Bold - Buildout Phase

- USGS Diversion ($1.54B) $2.8M
- Upper Gila and Fort West Ditch Improvements $11.4M
- Mogollon Creek to Winn Reservoir & Winn Reservoir Return $315.7M
- Pump Station - Winn Reservoir $37.2M
- Pipeline - Winn (WSIL 4.88) $118.8M

Map Extent Shown in Red

Legend:
- Proposed Diversion
- Proposed Pipeline
- Buildout Phase
Alternative 6 - Initial Phase

- Initial Phase - $65.2 M
  - Upper Gila Diversion* - $10.2M
  - Ditch Improvements to Upper Gila and Fort West Ditches - $1.5M
  - 6 On-Farm Ponds (35 acres each) - $5.1M
  - 6 Ranney Wells - $46.8 M
  - Pipelines from Ranney Collector Wells to Upper Gila and Fort West Ditches - $1.6M

*The diversion could be constructed on the Jordan/Shelley Property, TNC Property, or Shelley/Smith Property Diversion. Each scores comparably.
Alternative 6 Phasing
Alternative 7 - Initial Phase

- Initial Phase - $54.1M
  - Upper Gila Diversion* - $10.2M
  - Ditch Improvements to Upper Gila Ditch - $1.2M
  - 1 On-Farm Ponds (210 acres) - $2.0M
  - 5 Ranney Wells - $39M
  - Pipeline from Ranney Collector Wells to Upper Gila Ditch - $1.7M

*The diversion could be constructed on the Jordan/Shelley Property, TNC Property, or Shelley/Smith Property Diversion. Each scores comparably.
Alternative 7 Phasing

*The diversion could be constructed on the Jordan/Shelley Property, TNC Property, or Shelley-Smith Property Diversion. Each scores comparably.
2017 Report Alternative Details
## 2017 Report Alternatives Details

<table>
<thead>
<tr>
<th>Alternative 5</th>
<th>Mogollon + Winn + San Francisco Basin</th>
<th>Phase</th>
<th>Description</th>
<th>Cost</th>
<th>Supplemental Water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Spurgeon + Weedy Reservoir</td>
<td>$149.2 M</td>
<td>x</td>
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<tr>
<td></td>
<td></td>
<td>2</td>
<td>Keller Reservoir</td>
<td>$64.4 M</td>
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<td></td>
<td></td>
<td>3</td>
<td>Mogollon + Winn Reservoir</td>
<td>$485.9 M</td>
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</table>

<table>
<thead>
<tr>
<th>Alternative 6</th>
<th>Six Pond ASR + Winn + San Francisco Basin</th>
<th>Phase</th>
<th>Description</th>
<th>Cost</th>
<th>Supplemental Water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Upper Gila + 6 Pond ASR</td>
<td>$65.2 M</td>
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<tr>
<td></td>
<td></td>
<td>2</td>
<td>Winn Reservoir</td>
<td>$169.0 M</td>
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<td>3</td>
<td>Spurgeon + Weedy Reservoir</td>
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<td></td>
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<td>4</td>
<td>Keller Reservoir</td>
<td>$64.4 M</td>
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<table>
<thead>
<tr>
<th>Alternative 7</th>
<th>One Pond ASR + Winn + San Francisco Basin</th>
<th>Phase</th>
<th>Description</th>
<th>Cost</th>
<th>Supplemental Water</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>Upper Gila + 1 Pond ASR</td>
<td>$54.1 M</td>
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<td></td>
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<td>2</td>
<td>Winn Reservoir</td>
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<td>4</td>
<td>Keller Reservoir</td>
<td>$64.4 M</td>
<td>x</td>
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</table>

*$80-100M ceiling set by the Entity for initial phase; Alternative 6 and Alternative 7 initial phase does not include surface/carryover storage
### 2017 Report Alternatives Summary

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Comparative Screening Score</th>
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<tbody>
<tr>
<td>Alternative 5, Mogollon + Winn + San Francisco Basin</td>
<td>2.93</td>
</tr>
<tr>
<td>Alternative 6, Six Pond ASR + Winn + San Francisco Basin</td>
<td>2.96</td>
</tr>
<tr>
<td>Alternative 7, One Pond ASR + Winn + San Francisco Basin</td>
<td>2.91</td>
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</table>
2017 Report Findings

- Preferred action should consider overall cost, initial phasing, and land acquisition.
- Yield Model provides additional information on water availability and management.
- Transitory storage (ASR) requires additional analysis, field work and modeling.
30

Percent Engineering Design Services for the New Mexico Unit of Central Arizona Project

Thank You