

# SMRID Facility Asset Management Plans

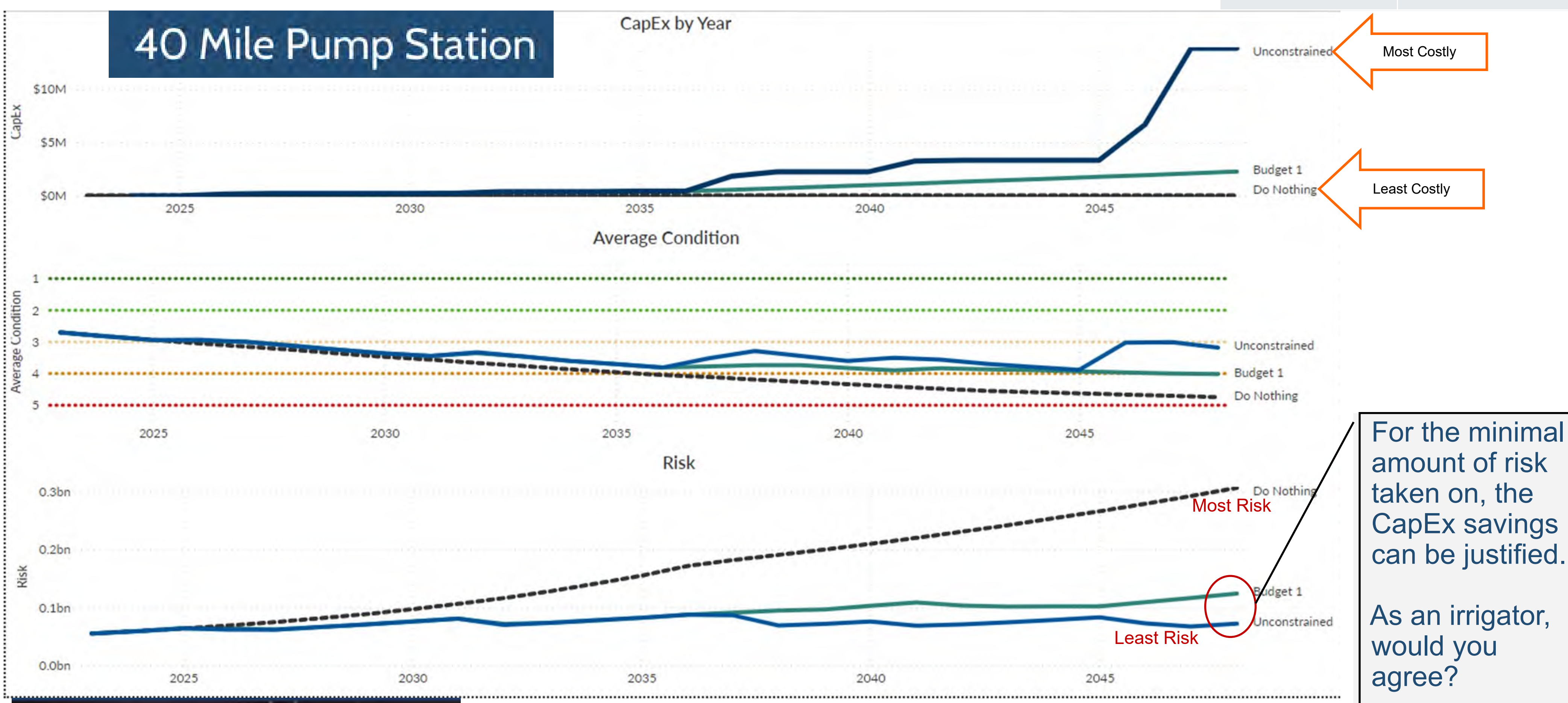


## 40 Mile Pump Station Stats:

- 1988 Construction
- 10-1,000 hp pumps
- Constructed to supplement flows up to 20m<sup>3</sup>/s downstream of 40 Mile Reservoir
- Access 70,000 ac-ft of storage

**Cost of Replacement: ~\$50-70 Million**

3 Types of Maintenance Management Strategies				
Strategy	Description	Pros	Cons	Anticipated Outcomes at End of 25-yr forecast
<b>Do Nothing</b>	•Run all components to failure •Zero reserve building (\$0/year)	•Short Term Cost Savings	•Likely service disruptions to entire SMRID •Extensive overhaul required at the end of forecast	•Facility will be in "Very Poor" Condition •High risk Strategy as short-term cost savings are negated by cost to rehabilitate facility
<b>Unconstrained Spending</b>	•Components meticulously inspected and renewed/replaced based solely on age not actual condition •Annual Reserve building of \$600,000/year	•Least Risk •Minimal service disruptions	•Components in acceptable condition needlessly replaced •Most costly •Out-competes other infrastructure for funding	•Facility will be in "Fair" condition •Lowest risk Strategy •Most expensive in the long run
<b>Optimized Strategy</b>	•Some components are run to failure before replacement •Critical components are maintained, inspected, and renewed •Annual Reserve starting at <b>\$150,000/year</b> •Adjusted with new information and Inflation	•Long Term Cost Savings •Least wasteful •Adaptable with changing service expectations	•Service disruptions cannot be entirely avoided •Very active approach •Out-competes other infrastructure for funding	•Facility will be in "Fair - Poor" Condition •Not entirely risk neutral •Least cost is long term strategy



## Building a Facility Asset Management Plan

1. Assemble Inventory of components from records
  - Determine cost of replacement, age-based condition, etc.
2. Perform technical inspections and test equipment
3. Update Inventory with real world condition data
4. Understand the consequences of facility interruption
5. Determine organizational risk appetite
6. Develop scenario forecasts and determine appropriate targets

**Create Asset Inventory of Facilities Components (310 components tallied)**  
\*Sample of actual assessment data

Basic Asset Data		Age/Useful Life				Condition Data									
Facility Name	Item #	Asset Name	Asset Category	Asset Type	Standard EOL	Modified EOL	Applied EOL	Age	Age-Based EOL	Age-Based Transition Rating	Age-Based Condition Grade #	Assessed Condition Grade #	Utilized Condition Grade #	Utilized Condition Grade Description	Utilized Condition Grade Description
Intake Structure	IS-01	Intake Conduit	Civil	Structure	35	35	35	38	34	2	2	2	2	2	Good
Intake Structure	IS-02	Intake Structure	Civil	Structure	50	50	50	38	34	4	4	2	2	2	Good
Pumpstation Main	MS-08	Steel Sides and Frames	Structural	Structure	35	35	35	38	34	4	4	3	3	3	Fair
Pumpstation Main	MS-09	Backflow Air Well/Traps	Mechanical	Structure	35	35	35	38	34	3	3	2	2	2	Good
Pumpstation Main	MS-11	PLC Asset	Electrical	Control Center	35	35	35	38	34	5	5	2	2	2	Good
Pumpstation Main	MS-12	PLC Asset	Electrical	Control Center	35	35	35	38	34	5	5	1	1	1	Very Good
Pumpstation Main	MS-14	Exterior Door	Architectural	Structure	25	25	25	38	34	5	5	2	2	2	Good
Pumpstation Main	MS-15	PLC Asset	Electrical	Control Center	35	35	35	38	34	5	5	2	2	2	Good
Pumpstation Main	MS-15	PLC	Electrical	Cable	40	40	40	38	34	4	4	2	2	2	Good

**Condition vs % Life Expended**

**Determine Organizational Risk Tolerance**

**Risk Bands and Mitigation Measures**

Risk Band	Risk Description and Urgency	Potential Risk Management Actions
Very High	Critical risks that should be addressed as a high priority to avoid the consequences	Early renewal to reduce the likelihood of failure. More detailed and regular inspections and enhanced preventative maintenance measures
High	High risks that should be carefully assessed and addressed as soon as reasonably possible	More detailed and regular inspections and enhanced preventative maintenance measures. Identify opportunities to mitigate consequences, redundancy, safety precautions, maintain shelf spares and/or replacements
Medium	Medium level risks that should be carefully monitored and controlled through either proactive or contingency measures	Emergency planning for this high consequence, low likelihood risks. Maintain shelf spares and/or replacements
Low	Low level risks that should be carefully monitored and controlled through either proactive or contingency measures	Review periodically. Potentially run to fail if consequence is low
Very Low	Very low risks that may be reviewed occasionally but can generally be left alone	Review occasionally. Likely to Run-to-Fail (RTF)

**Estimate Cost to Replace Components**

**Estimate Service Life of Components**

## Bow Island 12 Pumpstation

- 1982 Construction
- Constructed to supply Bow Island Lateral 12 users with pressurized irrigation
- Supplies ~1,900 acres
- Cost of Replacement: \$10 Million**