



Lake Mary Plant Flocculation/Sedimentation Basin Rehabilitation

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Location



★ Lake Mary Water Treatment Plant Sedimentation Basins

LM Water Treatment Plant - Aug 17, 1941

LMWTP provides up to 60% of community's water supply

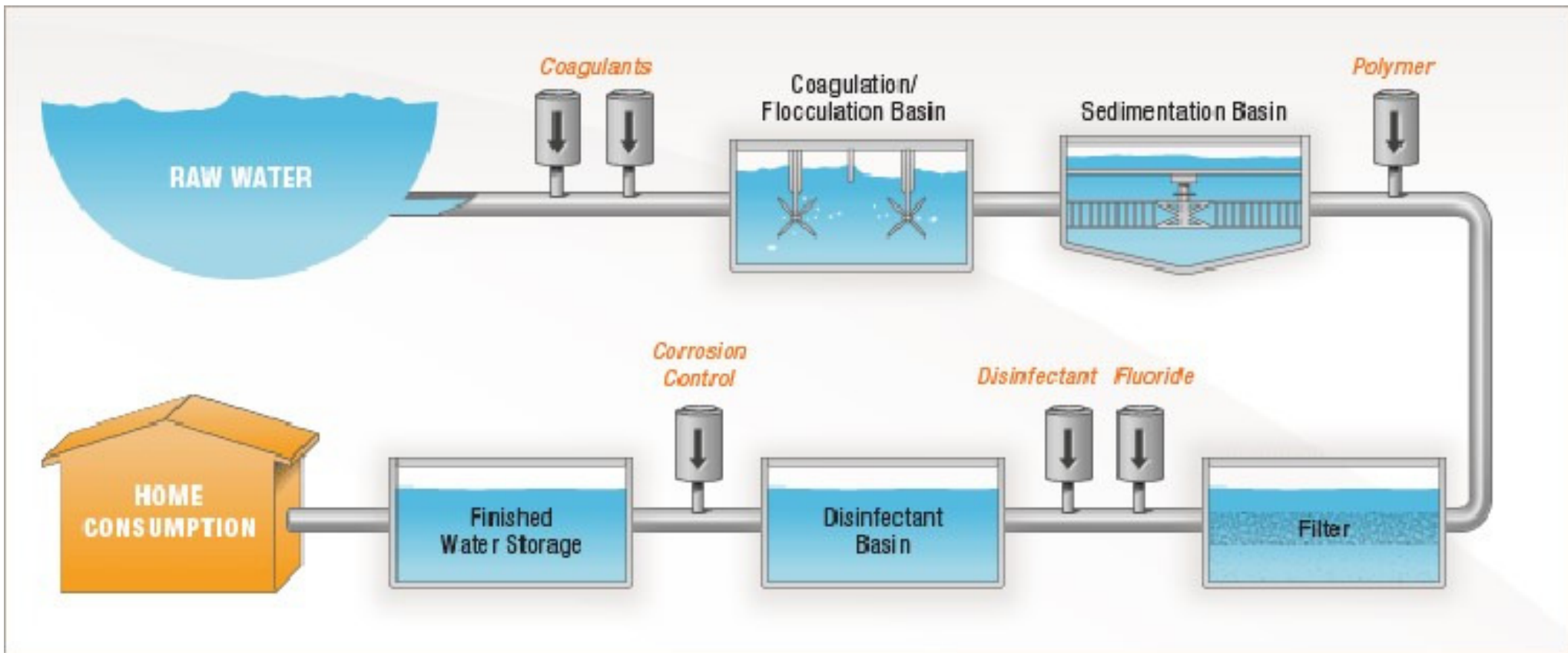




Background



Process





Background



LMWTP Flocculation/Sedimentation Basin Rehabilitation

- Flocculation and sedimentation basin is a core treatment process
- The facilities were constructed in 1965 and the original equipment is still in service (>50 years).
- Typical service life for this type of equipment is 25 to 30 years
- Replacement Parts are unavailable





Aging Water Infrastructure



LMWTP Flocculation/Sedimentation Basin Rehabilitation

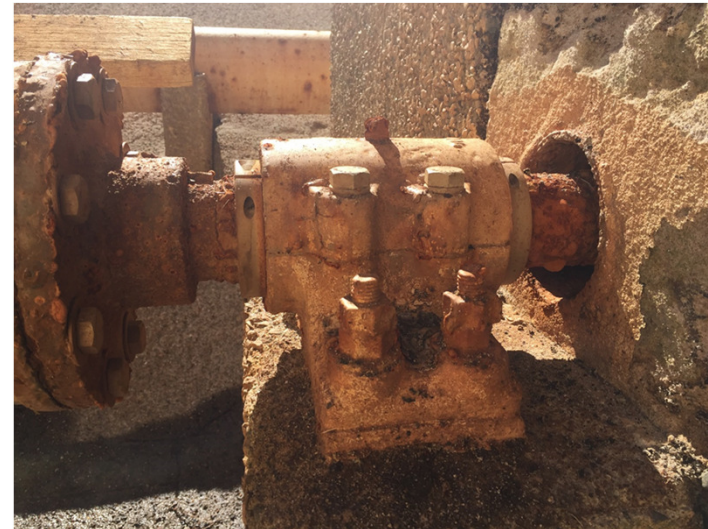
- Sedimentation Basins Built in 1965



Inlet flow distribution piping corroding



Clarifying Rake Assemblies-55 yrs



Concrete and Structural deterioration



Aging Water Infrastructure



LMWTP Flocculation/Sedimentation Basin Rehabilitation

- 2014 Water System Master Plan – Condition Assessment
- The assessment found
 - Significant deterioration of equipment
 - Basin isolation valves inoperable
 - Surface etching of concrete with some isolated cracks and spalling
 - Electrical componentry not compliant with current codes





Sedimentation Rehabilitation



Design to include:

- Remove and replace all vertical structural elements
- Remove and replace concrete toppings
- Remove, clean and replace deteriorated concrete paste on other surfaces
- Provide concrete corrosion-resistant coating to all wetted surfaces
- Replace flocculation/clarifier rake mechanisms
- Install new basin isolation valves
- Replace associated electrical conduit/wiring and componentry per current electrical codes



FLOCCULATION PADDLES



Sedimentation Rehabilitation



- Other operational improvements include:
 - Improved rapid mixing for better chemical dosing control
 - New underflow pumps. Existing system utilizes gravity flow and is hydraulically limited. Temporary pumps have been installed by operations staff.
 - Replace basin interconnecting piping which leaks



Electrical Wiring in Equipment Tunnel



Clarifier Scraper Blades



Consultant Selection



RSOQ Process:

- Advertised Request for Statements of Qualifications
- COF received 5 Statements from Qualified Consulting Engineer Firms
- Evaluation Committee of 6 Members
- Scores for firms below:
 - Brown and Caldwell - 535
 - Carollo Engineers - 511
 - Garver, LLC - 508
 - NCS Engineers - 497
 - Greeley and Hanson - 454





Our Vision



Water Services Division will provide Flagstaff with Safe, High quality and Reliable water services it needs now and for generations to come.



Questions?

