Wet Well Decision Matrix

The wet well was designed as the primary intake structure for the Advanced Water Purification Facility lift station. Its purpose is to receive incoming flow from Outfall 005, provide stable operating conditions for the pump system, and ensure reliable conveyance of water to downstream treatment processes. Proper wet well sizing was critical to balance hydraulic efficiency, storage capacity, constructability, and long-term operational performance.

Alternatives Evaluated
Four wet well diameters were evaluated during conceptual design to determine the most effective balance between performance and site constraints.

Table 1. Wet Well Diameters

Alternative	Description
25-ft Diameter	Smallest footprint with limited storage volume
30-ft Diameter	Moderate footprint with improved operational flexibility
35-ft Diameter	Balanced footprint, storage, and constructability
40-ft Diameter	Largest storage volume with greater excavation needs

Evaluation Criteria
Each alternative was analyzed using a weighted decision matrix based on engineering priorities.

Table 2. Wet Well Criteria

Criteria	Weight
Footprint	20%
Effective Volume Control	30%
Constructability / Excavation	25%
Safety / Operational Stability	25%

Recommended Wet Well Configuration
After evaluation, the 35-ft diameter wet well achieved the highest weighted score and was selected as the preferred design alternative.

Key Advantages of Selected Design

- Balanced storage capacity without excessive footprint
- Supports efficient pump cycling and flow control
- Reduced excavation impacts compared to larger alternatives
- Improved hydraulic stability during varying flow conditions
- Practical for construction, maintenance, and long-term operation