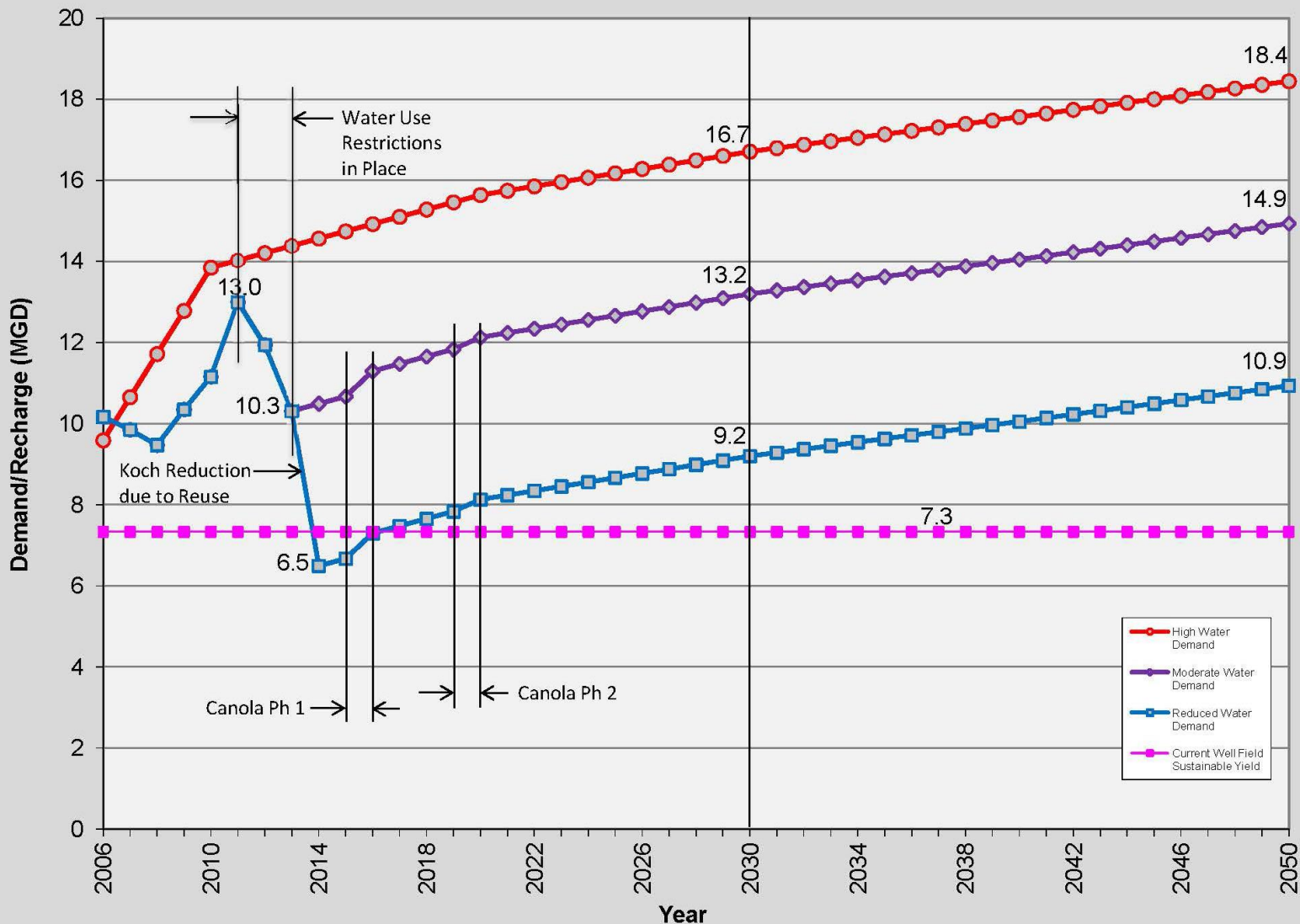


## Phase I Update



# Water Demand Projections

## Enid Annual Water Demand



# Phase I

- Phase I Goals
  - Establish strong Program Management processes and controls
  - Initiate Storage Contract, Environmental Review Process, and Permitting
  - Refine Program Cost and Schedule Estimates
  - Develop data required for Council to initiate the next phase

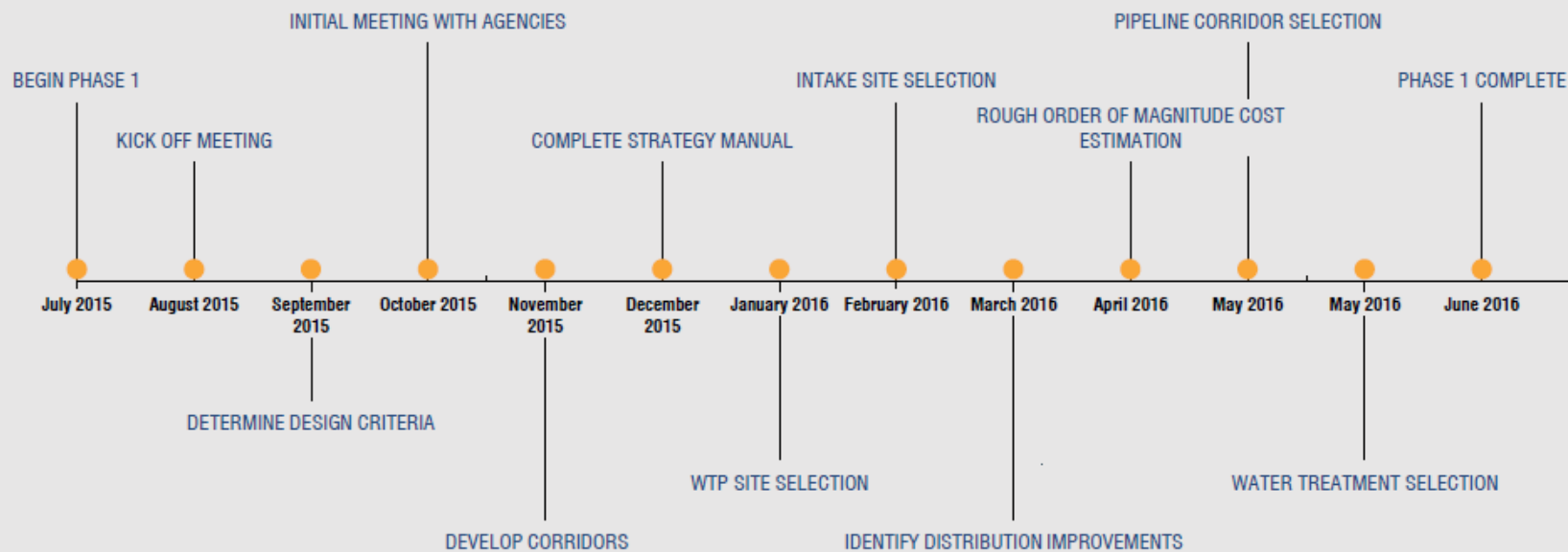
# Program Segments

- Program Management
- Intake/Pump Station
- Terminal Storage
- Water Treatment Plant
- Distribution
- Environmental

# Program Management

- Schedule milestones
  - Monthly status reports and meetings
  - Kick-off and workshop meetings – Summer 2015
  - Results of Stillwater/Ponca discussions – Summer 2015
  - Results of USACE discussions – Fall 2015
  - Plant/Terminal storage results – Winter 2016
  - Updated cost estimate and funding profile – Spring 2016
  - Technical Memorandum – Spring 2016
  - Storage contract package – Spring 2016
  - Develop follow-on effort – Spring/Summer 2016

## TIMELINE

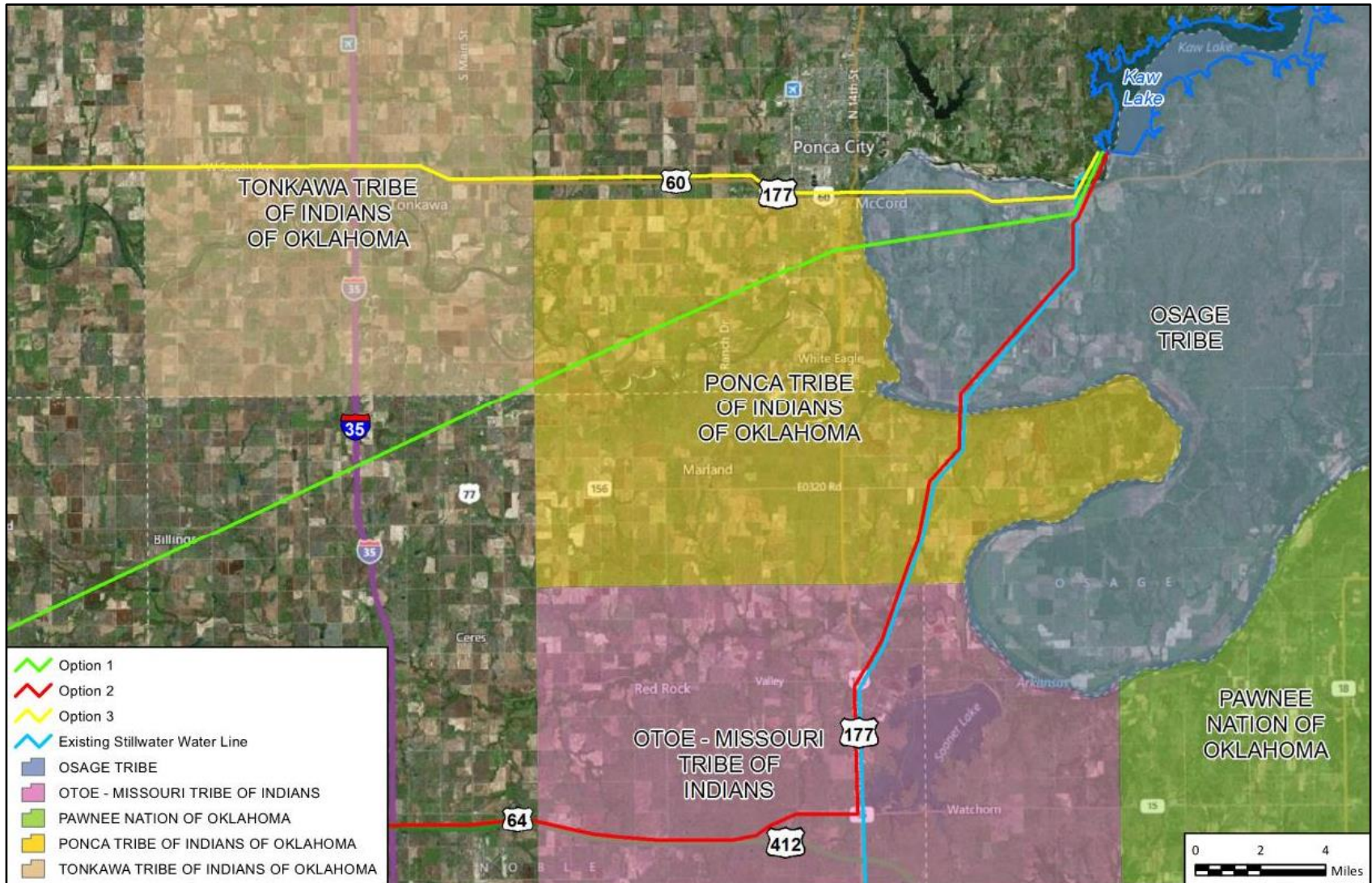


- Status
  - Results of Stillwater/Ponca discussions
    - Met with Stillwater, Ponca City, Blackwell, and Tonkawa
    - Generated significant interest
  - Results of USACE discussions
    - Preliminary discussions associated with storage contract
    - Currently no issues with completing/submitting contract request
  - Plant/Terminal storage results
    - Preliminary assessment of terminal storage requirements complete



# Program Management

- Status





# Terminal Storage

## Original Scope

- Engineered Solution



## Alternate Concept

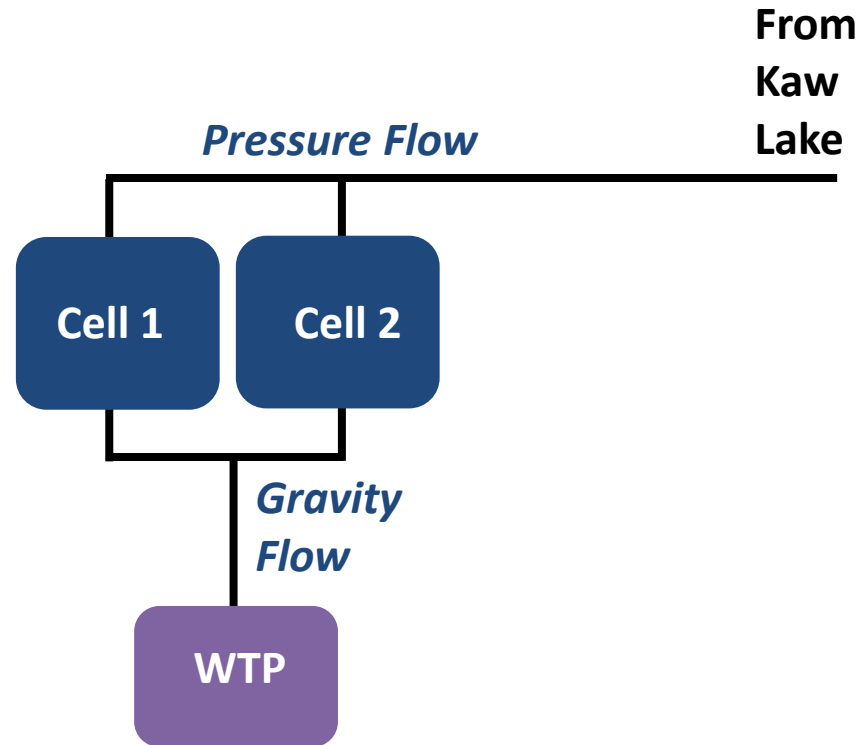
- Integrated community water feature



# Engineered Solution

- TSR is comprised of Emergency, Equalization, and Ancillary storage
- Sizing
  - Emergency storage - 14 days at average demand
  - Equalization storage – storage to reduce peak flows and required intake, pumping, and pipeline infrastructure
  - Ancillary storage – e.g., dead pool, evaporation, freeboard
  - Anticipated footprint – 40 to 60 acres
- Design Considerations
  - Restricted access to maintain water quality
  - Rectangular cells – Efficient
  - Redundancy for maintenance
  - Lined
    - HDPE
    - Soil-Cement

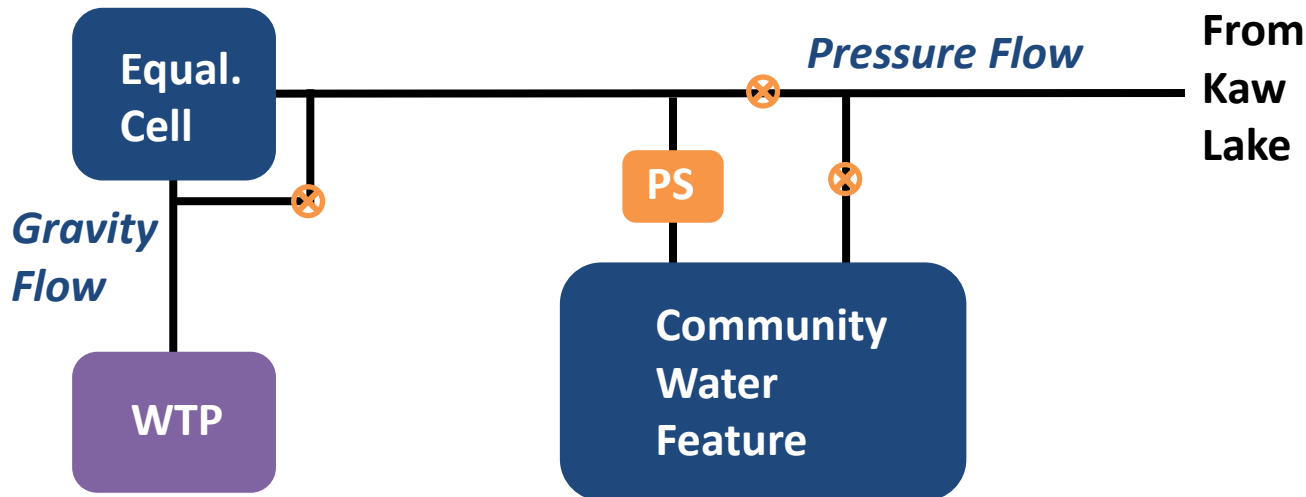
- Site Selection
  - Gravity flow to WTP
- ROM Costs
  - \$15 to 20 M



# Integration with Community Water Feature

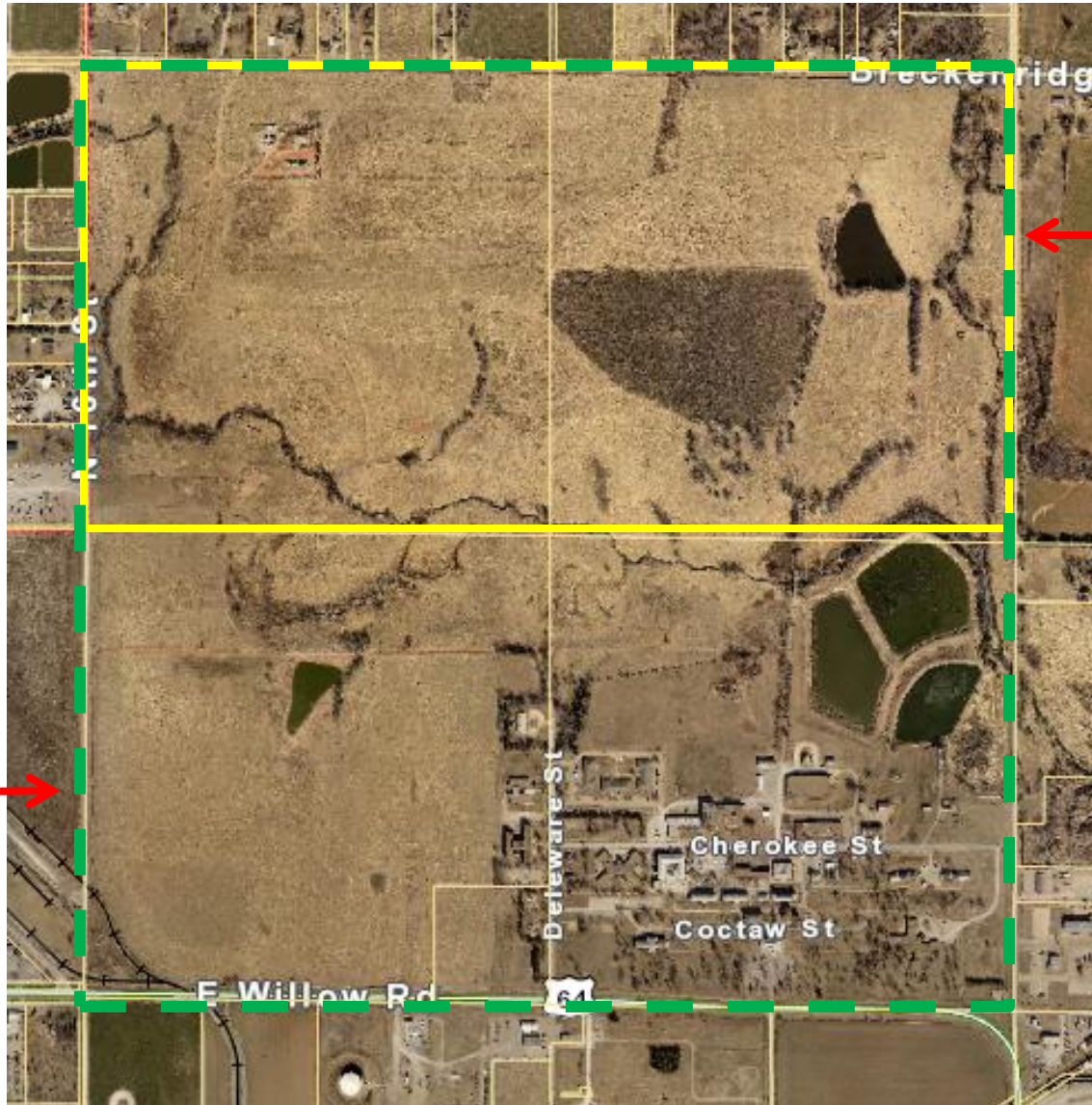
- Separation of equalization and emergency storage
  - Engineered cell
    - Equalization storage
    - Gravity flow to WTP
  - Community water feature
    - Emergency storage
    - Additional volume for aesthetic reasons
    - “Constructed lake”
      - Not created by construction of a dam on an existing waterway
      - Stormwater run-off to water feature will be limited to minimize water quality impacts
    - A pump station may be necessary to utilize storage

- Costs
  - Anticipated to be significantly greater than for engineered solution
    - Dependent on size, site considerations, landscaping, etc.





# NORCE



AOI

NORCE  
PROPERTY



## Phase I Update

