Norman Water Reclamation Facility Environmental Impacts

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Public Meeting
January 21, 2014

Meeting's Purpose

- Clean Water State Revolving Fund (CWSRF)
  - Norman Utilities Authority seeks a loan to assist in funding a portion of this project
  - CWSRF utilizes federal funds delegated to the OWRB from the EPA
  - Environmental review is necessary to determine whether any negative environmental impact will occur

OWRB the water agency

Managing, protecting, & improving Oklahoma's water resources...

Agenda

- Existing Facility
- Project Need
- Recommended Plan
- Project Cost Estimate
- Environmental Consequences

Project Need

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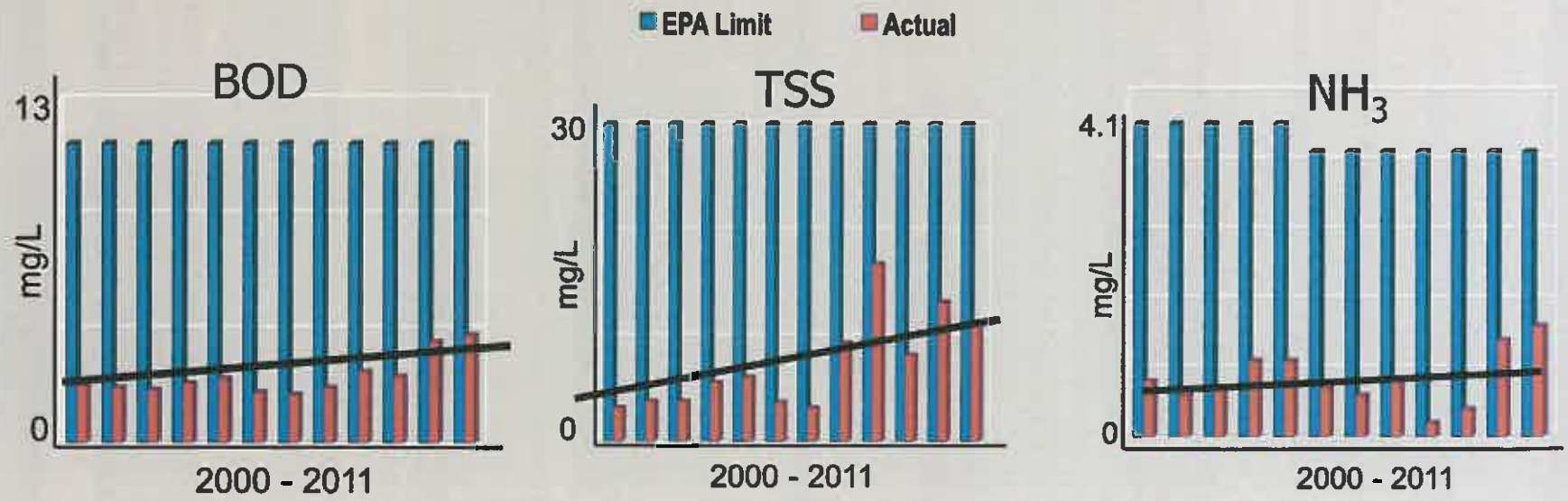
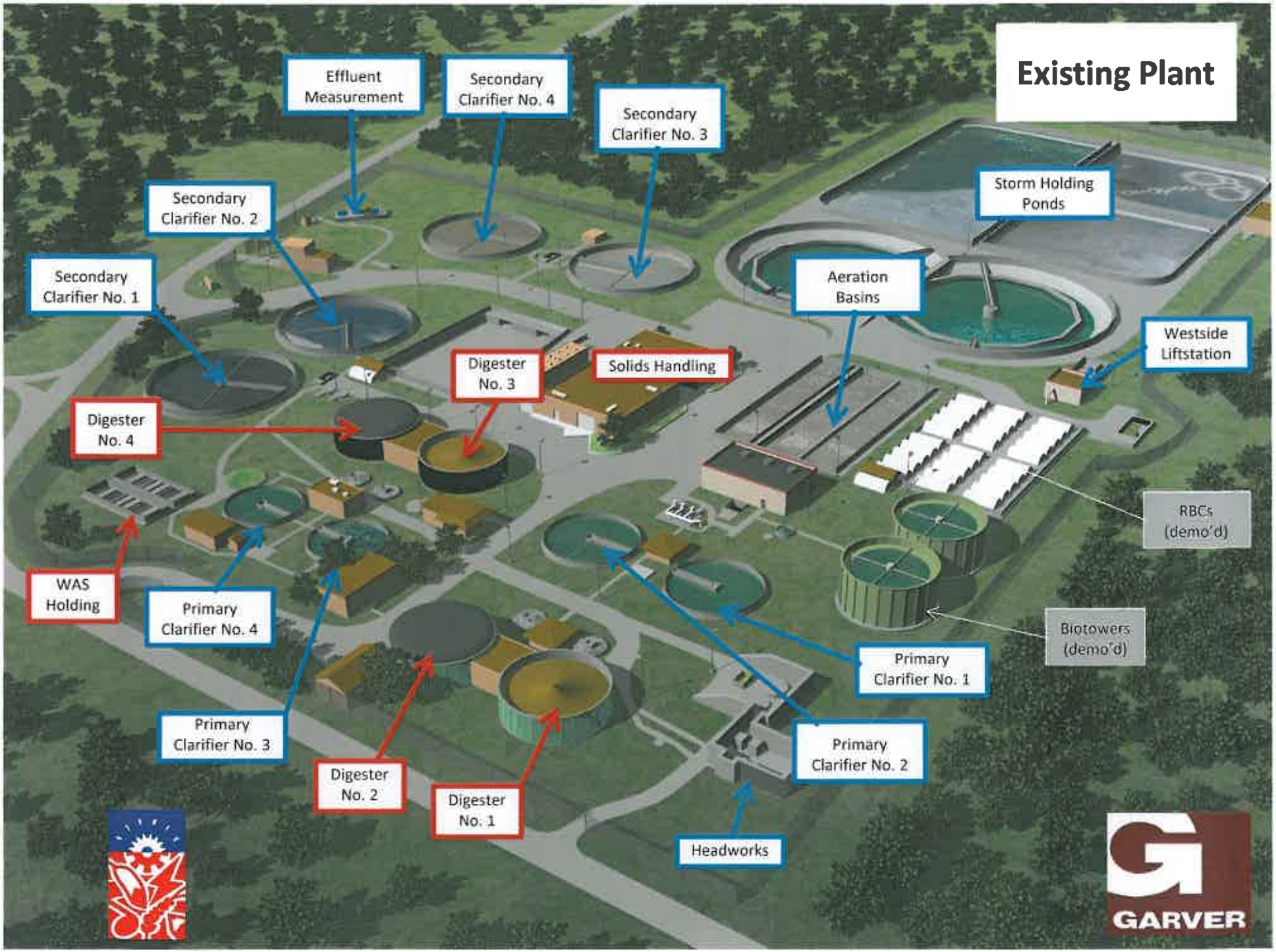
Existing WRF Site

Existing Facility

- Original Construction – 1942
- Most Recent Major Upgrade – 2000
  - 10 mgd to 12 mgd
- Permitted Design Flow – 12 mgd
- 2011 Average Day Flow – 11 mgd
  - 92% Capacity

Past Plant Performance




Existing Plant
Effluent Measurement
Secondary Clarifier No. 4
Secondary Clarifier No. 3
Secondary Clarifier No. 2
Secondary Clarifier No. 1
Storm Holding Ponds
Aeration Basins
Westside Liftstation
Digester No. 3
Solids Handling
Digester No. 4
RBCs (demo'd)
WAS Holding
Primary Clarifier No. 4
Biotowers (demo'd)
Primary Clarifier No. 1
Primary Clarifier No. 3
Digester No. 2
Digester No. 1
Primary Clarifier No. 2
Headworks
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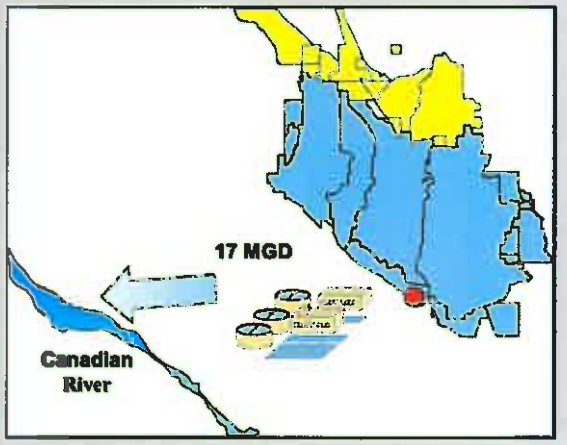
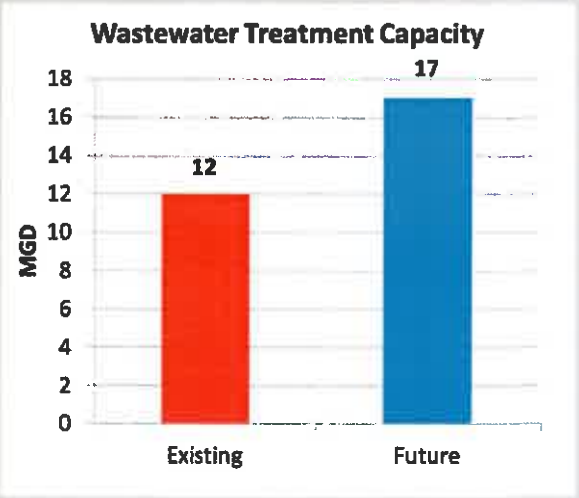
Project Need

- Regulatory Driven Improvements
  - Disinfection
  - Dissolved oxygen
- Capacity
  - Expand from 12 to 17 mgd
  - South Basin buildout (2025 Land Use Plan)
- Equipment Replacement





Alternatives Evaluation

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Alternatives Evaluation

- All treatment alternatives had common improvements required:
  - Headworks
  - New Aeration Basin / Upgrade existing aeration basin
  - Secondary Clarification
  - RAS/WAS upgrades
  - UV / Post Aeration
  - Outfall Piping
  - WAS Thickening
  - Sludge Blend Tank
  - Anaerobic Digestion
  - Odor Control
  - Power, Electrical, SCADA upgrades

Alternatives Evaluation

- Evaluated 4 potential plans:
  - Plan A - Install new primary clarifiers
  - Plan B - Rehabilitate existing primary clarifiers
  - Plan C - Install biologic nutrient removal
  - Plan D - No Improvements
- Recommended Plan B
  - Rehabilitate existing primary clarifiers

Recommended Plan

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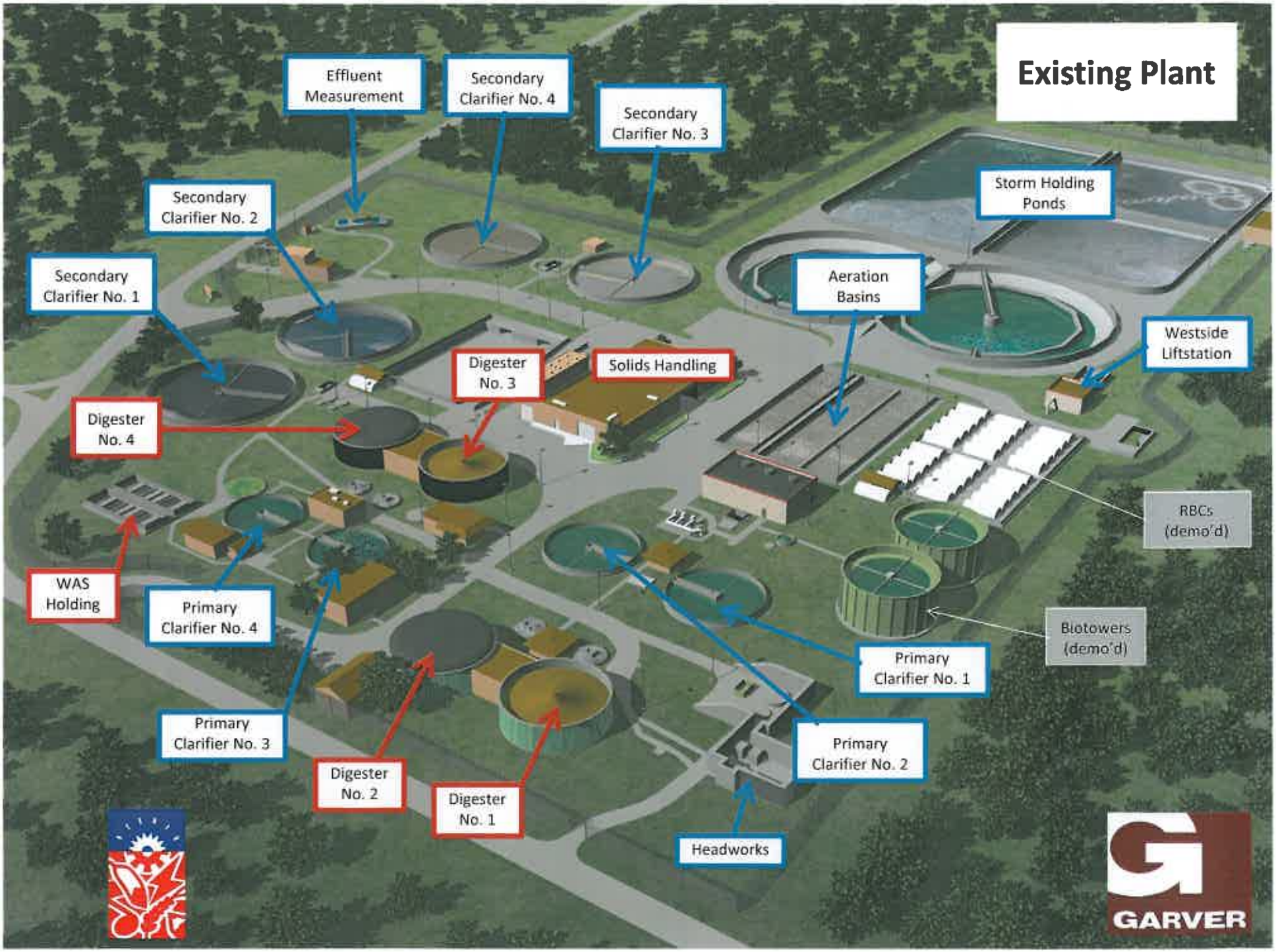
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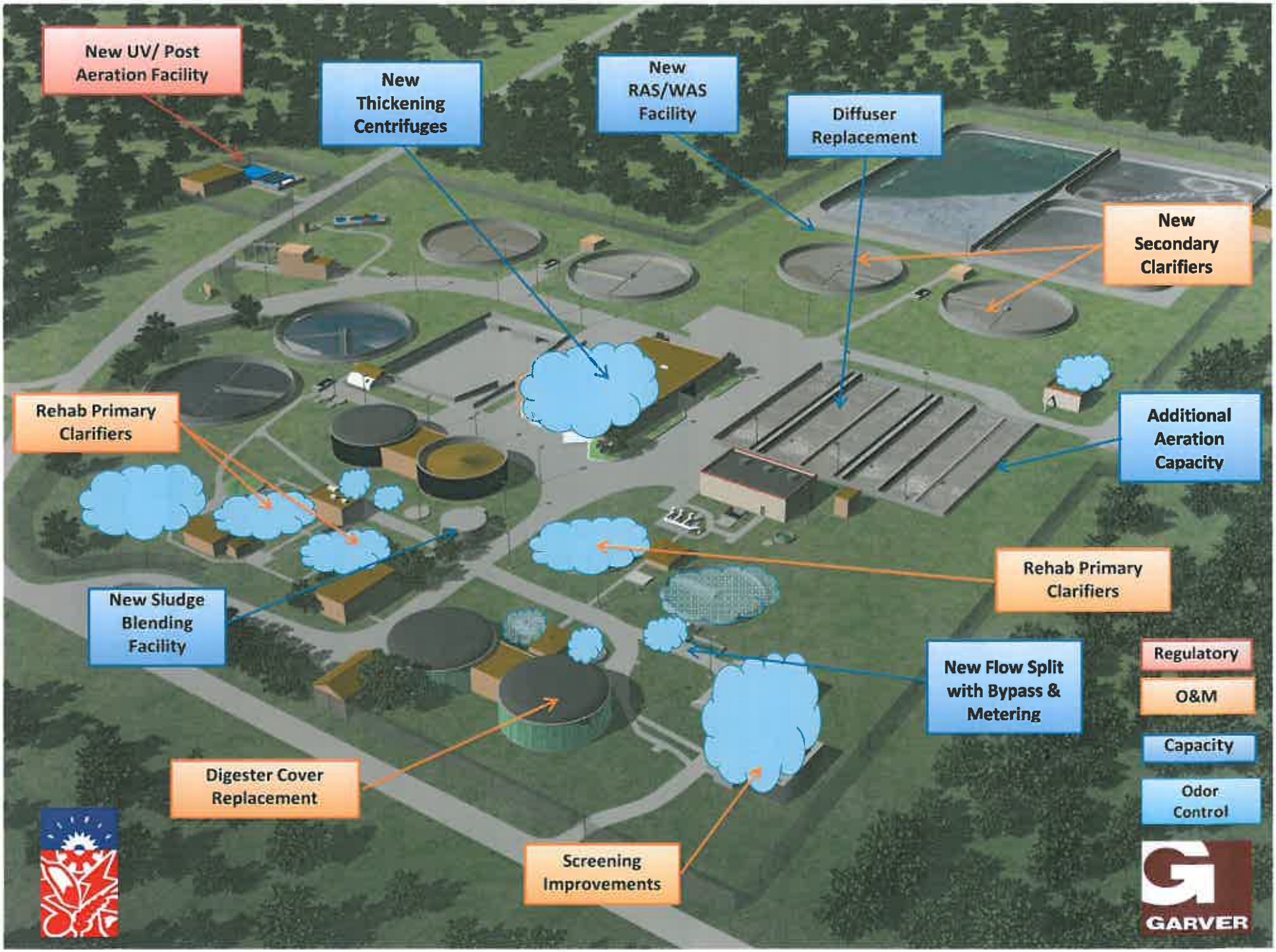
New UV/ Post Aeration Facility
New Thickening Centrifuges
New RAS/WAS Facility
Diffuser Replacement
New Secondary Clarifiers
Rehab Primary Clarifiers
Additional Aeration Capacity
Rehab Primary Clarifiers
New Sludge Blending Facility
New Flow Split with Bypass & Metering
Digester Cover Replacement
Screening Improvements
Regulatory
O&M
Capacity
Odor Control
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Project Cost Estimate

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Construction Cost Estimation

Facility	Total
Site Civil	$ 6,510,000
Headworks	$ 1,949,000
Influent Flow Metering/Splitting	$ 679,000
Primary Clarifiers Rehab	$ 1,491,000
New Aeration Basins (3)	$ 11,435,000
Secondary Clarifier Splitter Box	$ 432,000
Secondary Clarifiers (2)	$ 6,070,000
RAS/WAS Upgrades	$ 3,264,000
UV/Post Aeration	$ 6,726,000
Outfall Pipe	$ 2,093,000
WAS Thickening (2)	$ 3,040,000
Sludge Blending and Pump Station	$ 836,000
Anaerobic Digestion	$ 1,153,000
Odor Control	$ 3,483,000
Standby Power / Site Electrical	$ 3,548,000
PLC/SCADA	$ 555,000
Misc. Site Improvements	$ 400,000
Sub-total	**$ 53,664,000**
Escalation for 2 years @ 3% per annum	**$ 3,268,000**
Total	**$ 56,932,000**

Project Schedule

Task	Date
Prequalification submittals	January 10, 2014
Notification to prequalified bidders	January 28, 2014
Bid period	February 6 – March 20, 2014
Bid award	April 22, 2014
Contract approval	May 20, 2014
Construction period (30 months)	June 2014 – December 2016

Environmental Review

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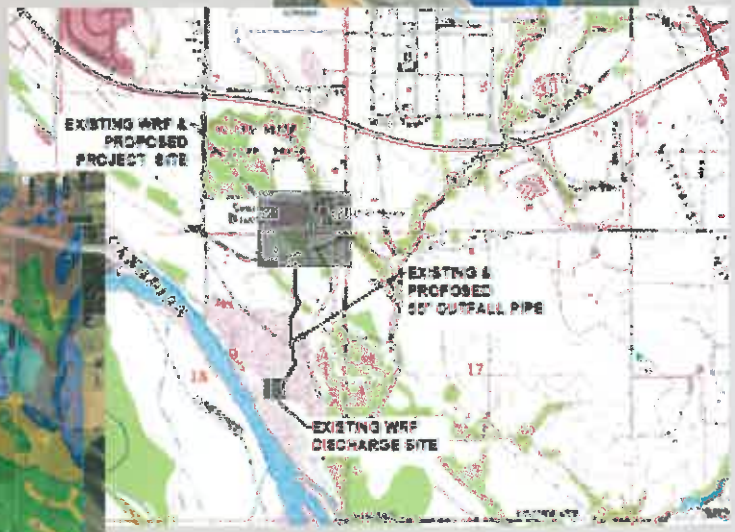
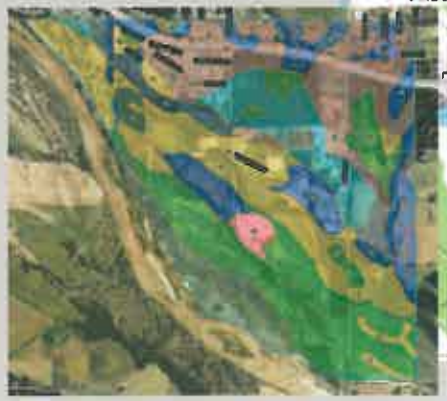
Environmental Consequences

- Description of the project area
  - USGS Topo Maps
  - NRCS Survey Maps
  - FEMA Flood Insurance (FIRM) Maps
  - Nationwide Wetland Inventory Maps
  - Hydrologic Atlas
  - Critical Habitat
  - Site photographs



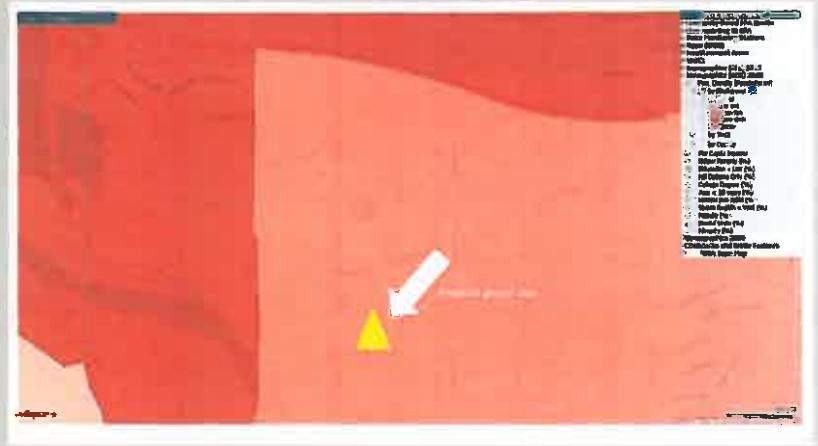


Environmental Consequences

- Environmental setting of the project
  - Prime Farmland, Forestland, or Rangeland
  - National seashores, lake shores, and [illegible]s
  - National parks and monuments
  - National natural landmarks
  - National battlefield park sites
  - Native American owned lands
  - Wild, scenic, or recreational areas
  - Wilderness areas
  - Wildlife Refuges
  - State Parks
  - BLM lands

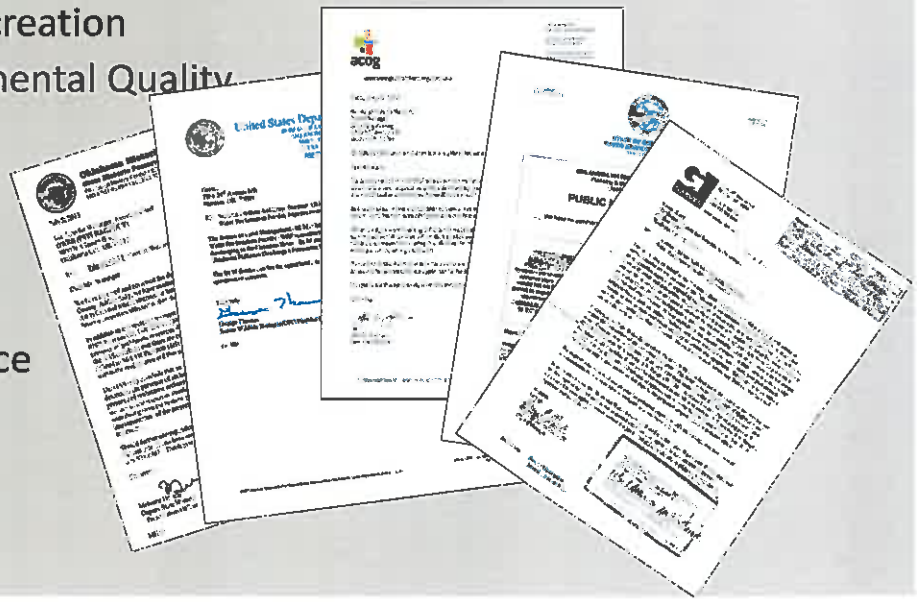
Environmental Consequences

- Biological resources impacted by project
  - Threatened and Endangered Species
  - Fish and Wildlife Resources
  - Vegetation
  - Geological Hazards
  - Environmental Justice
  - Air Quality
  - Transportation



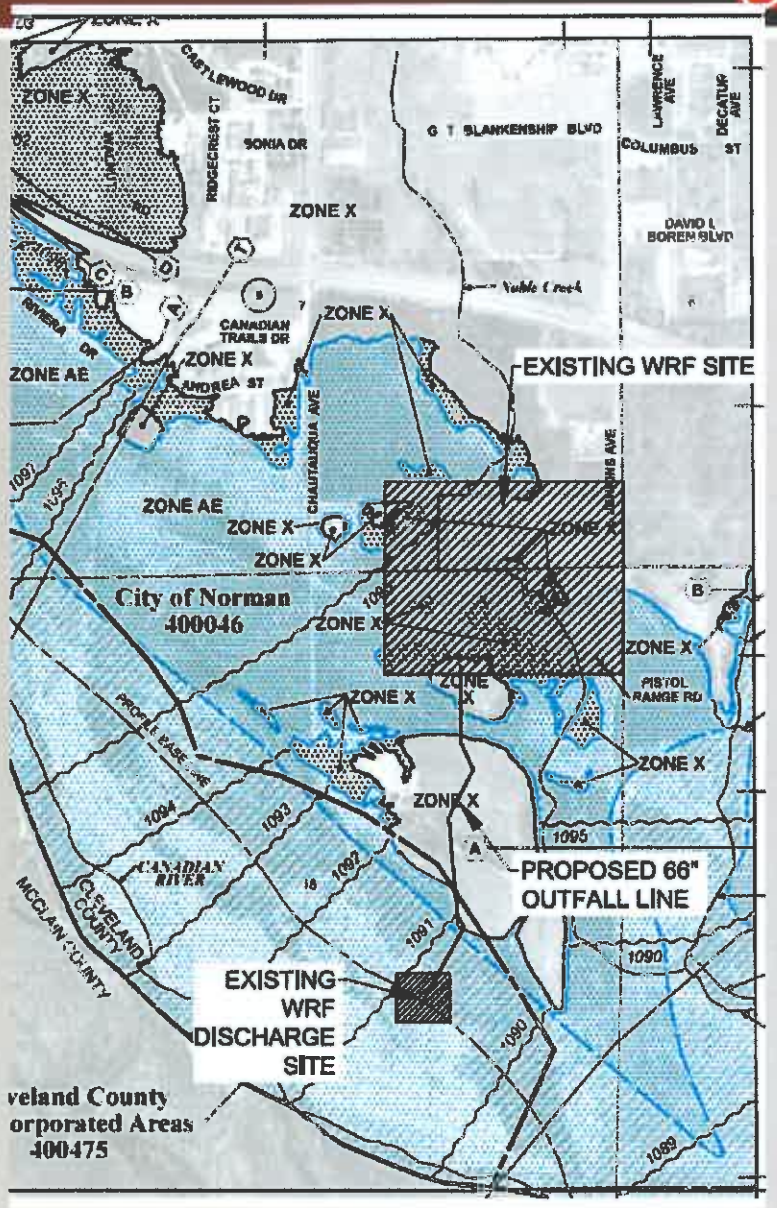
Environmental Consequences

- Summary of Environmental Correspondence
  - Cleveland County NRCS
  - State Historic Preservation Office
  - Oklahoma Archeological Survey
  - US Army Corp of Engineers – Planning and Regulatory
  - Bureau of Land Management
  - US Fish and Wildlife Services
  - Association of Central Oklahoma Governments
  - OK Department of Tourism and Recreation
  - Oklahoma Department of Environmental Quality
  - National Parks Service
  - FEMA / Local CFM
  - Bureau of Indian Affairs
  - Indian Health Services
  - Oklahoma Department of Commerce
  - Oklahoma Water Resources Board



Environmental Consequences

- Mitigation Measures
  - CON Floodplain Permit
    - Structures 100-yr floodplain compliant
    - Excavate soil and construct swales to account for additional fill for structures
  - Protect against erosion during construction
  - Construct new clay cap over excavated closed landfill area



Environmental Consequences

- Direct Impacts
  - Increased wastewater treatment capacity
  - More effective and efficient wastewater treatment
  - Effluent becomes ODEQ compliant
    - Disinfection
    - Dissolved Oxygen
  - Reduction in unpleasant odors with odor control
  - Slight increase in noise and dust during construction (temporary)

Environmental Consequences

- Indirect Impacts
  - Higher quality effluent will improve river water quality
  - Supports beneficial uses of the Canadian River
  - Allows future industrial, commercial, and residential development
- Cumulative Impacts
  - Protects and improves the environment
  - Creates opportunities for the City of Norman

Questions?