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WEDA - Dredging Summit & Expo 2014

Working within Regulations to Dredge without a Section 404 Permit and Fill Confined Disposal Facilities

WEDA Western Dredging Association

June 2014

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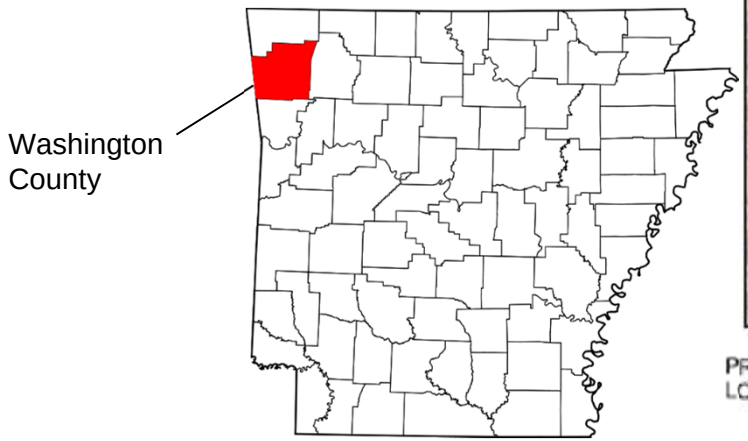
Background

- **Lake Sequoyah**
  - Constructed in 1961 by the City of Fayetteville, Arkansas
  - Approximate 500-acre lake just east of Fayetteville
  - Originally a supplemental municipal water source
  - Currently used recreationally for fishing, boating, and lakeshore hiking
  - Over the years, phosphorus laden sediment has accumulated within the lake compromising many of the long-term uses



Project Description

- **City of Fayetteville owns the lake and proposes to do annual maintenance dredging of Lake Sequoyah**
  - 3,000,000 cubic yards of sediment available to dredge over a period of several years
  - Up to 50,000 cubic yards of sediment proposed to be dredged annually
  - Approximately 70 acres of forest and grassland available for use on the south side of the lake
  - Hydraulic dredging would pump to 1 of 3 sedimentation basins on the south side of the lake

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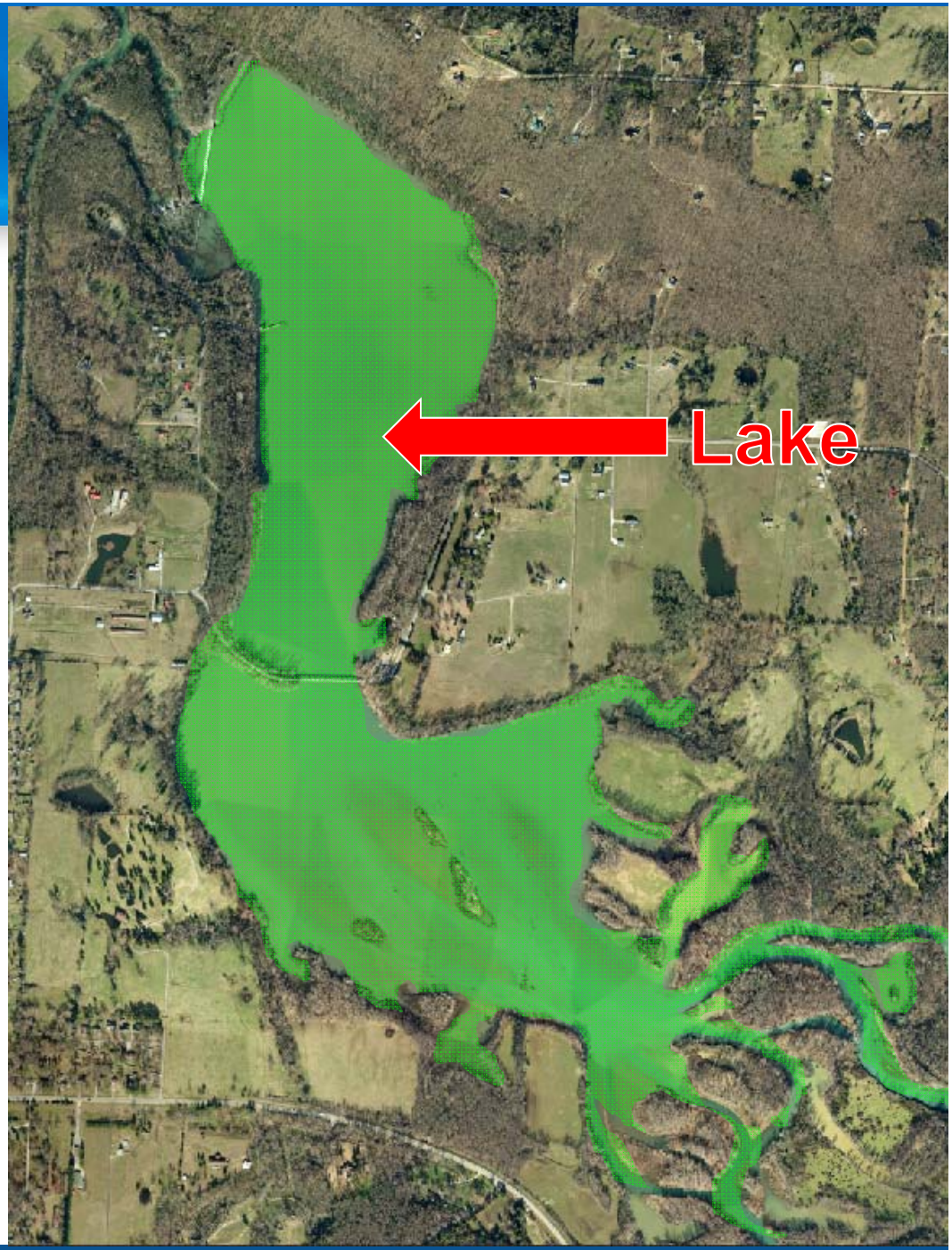

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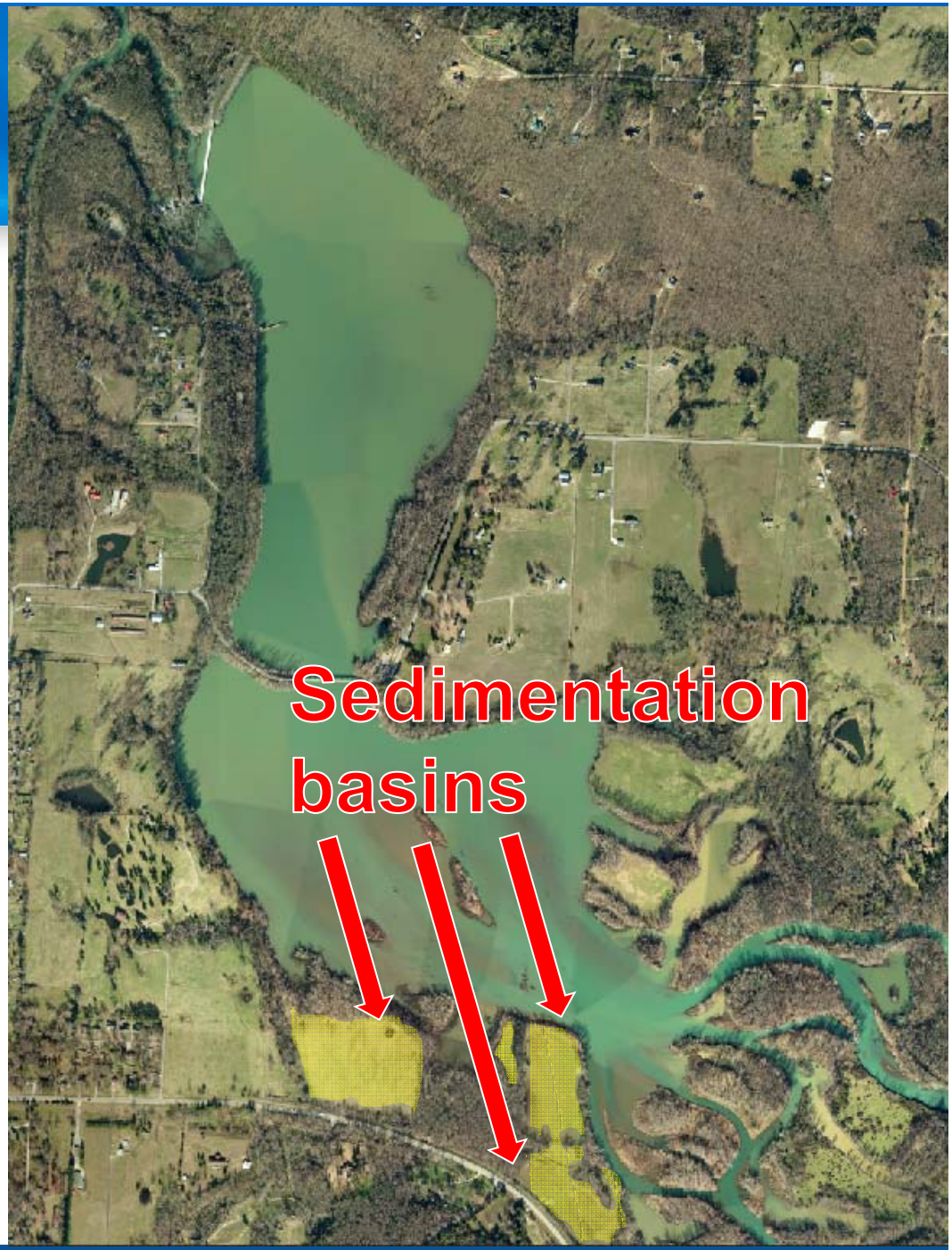
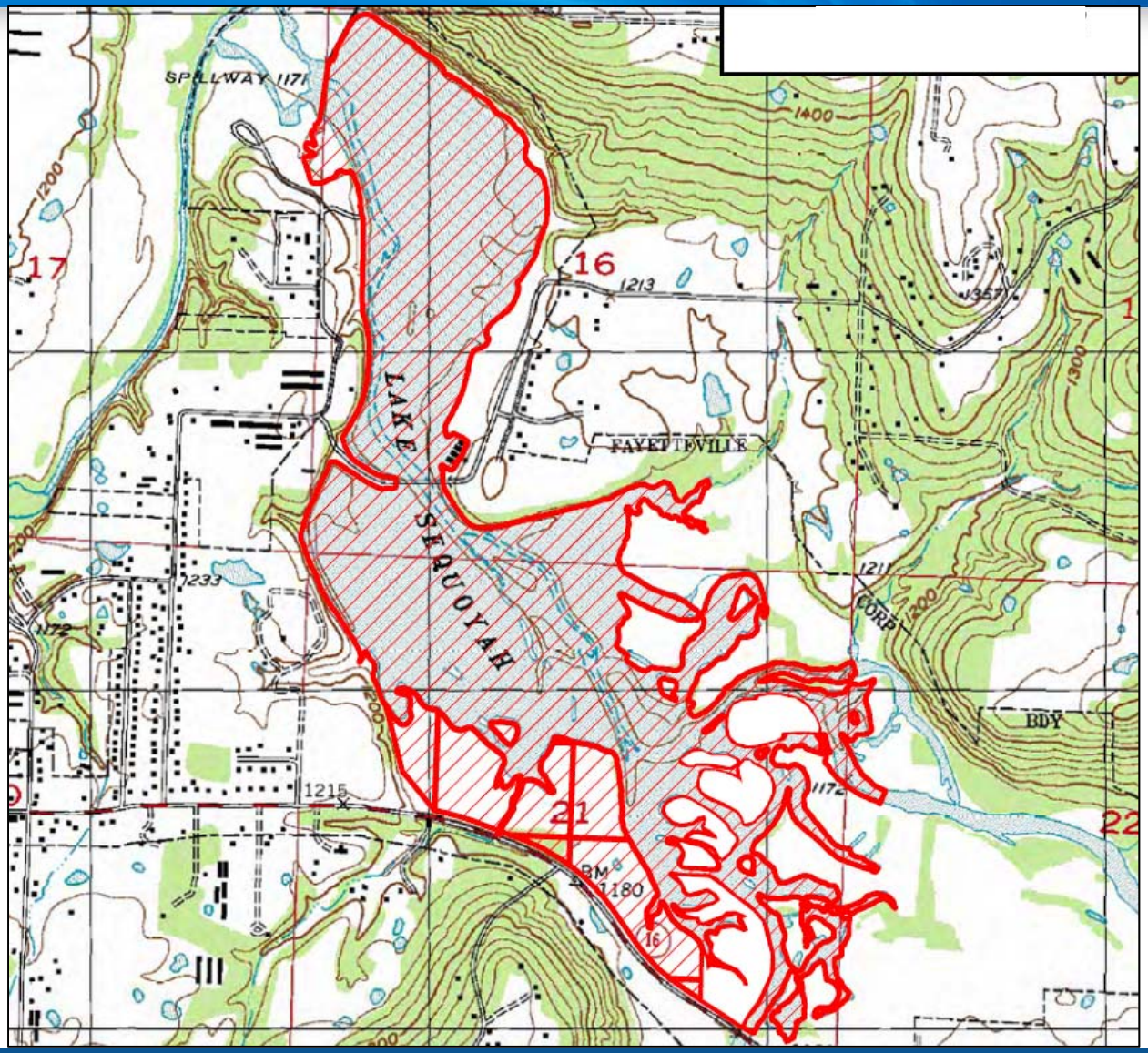


Project Goals

- **Dredge to the original lake bottom depth**
- **Restore some portion of the sediment accumulation capacity of the lake**
- **Reduce the buildup of phosphorus**
- **Recover lost boat access and fish habitat**
- **Minimize impacts to wetlands**
- **Provide a beneficial re-use of soil to the community**

www.accessfayetteville.org

Lake Sequoyah



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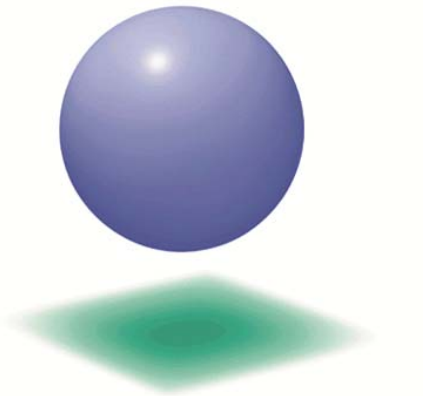
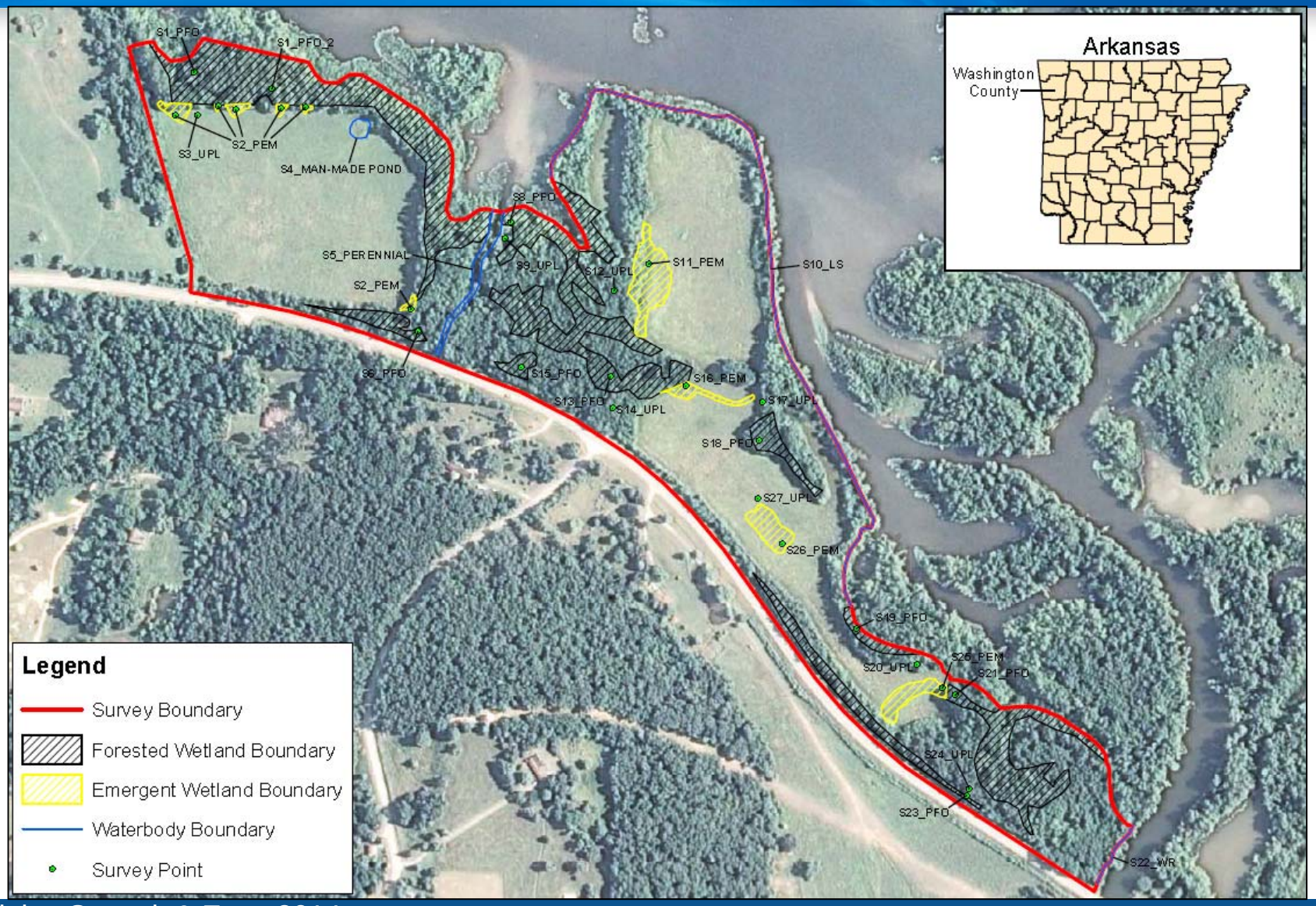
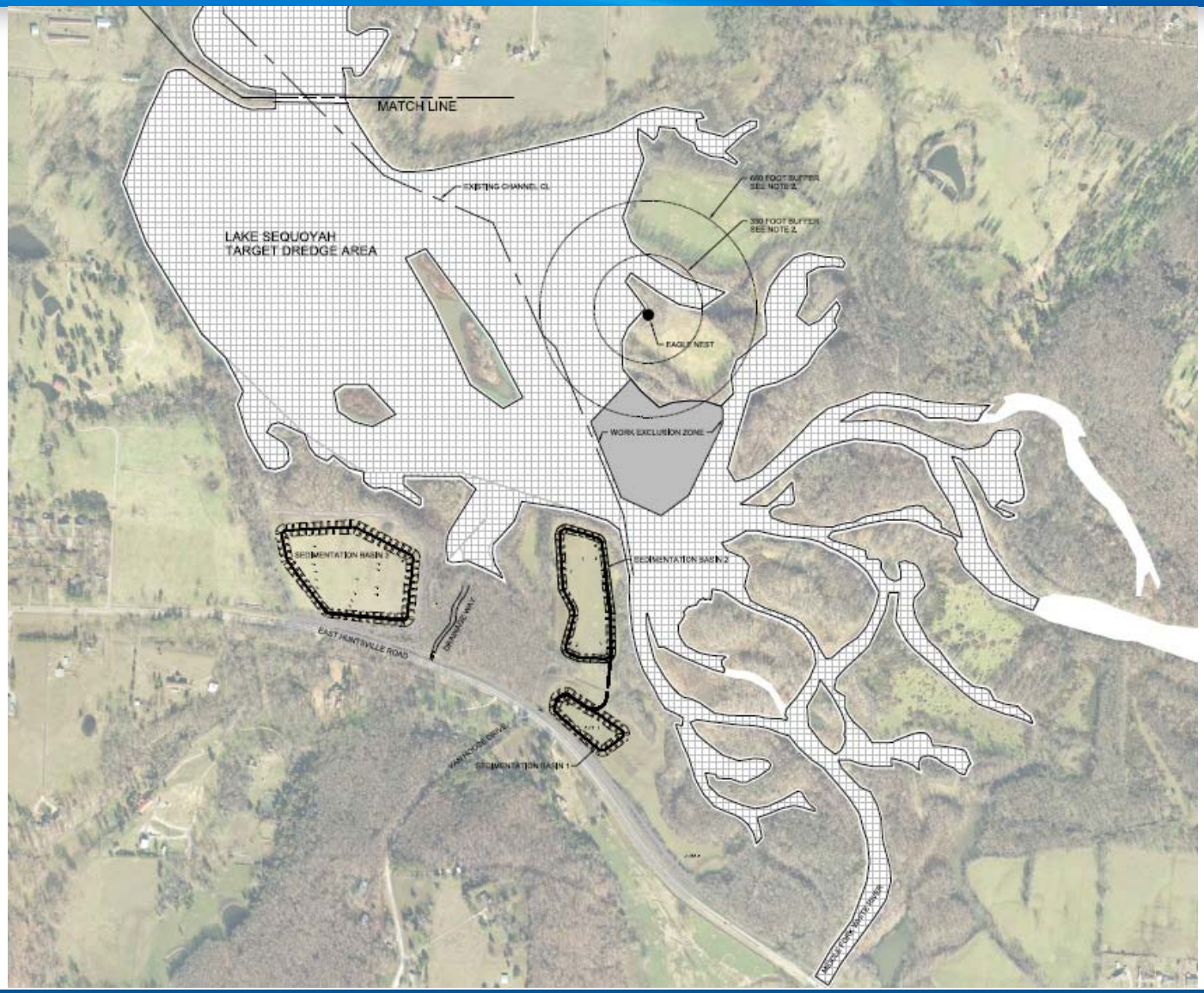
- **Operator of the City Wastewater Treatment Plant**
- **Contracted for dredging and sedimentation basin design and associated environmental permits**
- **Conducted a wetland and waterbody delineation in May 2013 of the proposed upland sedimentation basin areas**
- **Survey area encompassed approximately 70 acres of partially wooded and partially pasture/grassland areas**
- **Results of wetland and waterbody delineation**
  - 12 acres of forested wetlands
  - 2 acres of emergent wetlands
  - 1 perennial stream



Wetland and Waterbody Delineation



Three Upland Sedimentation Basins & Dredging Limits

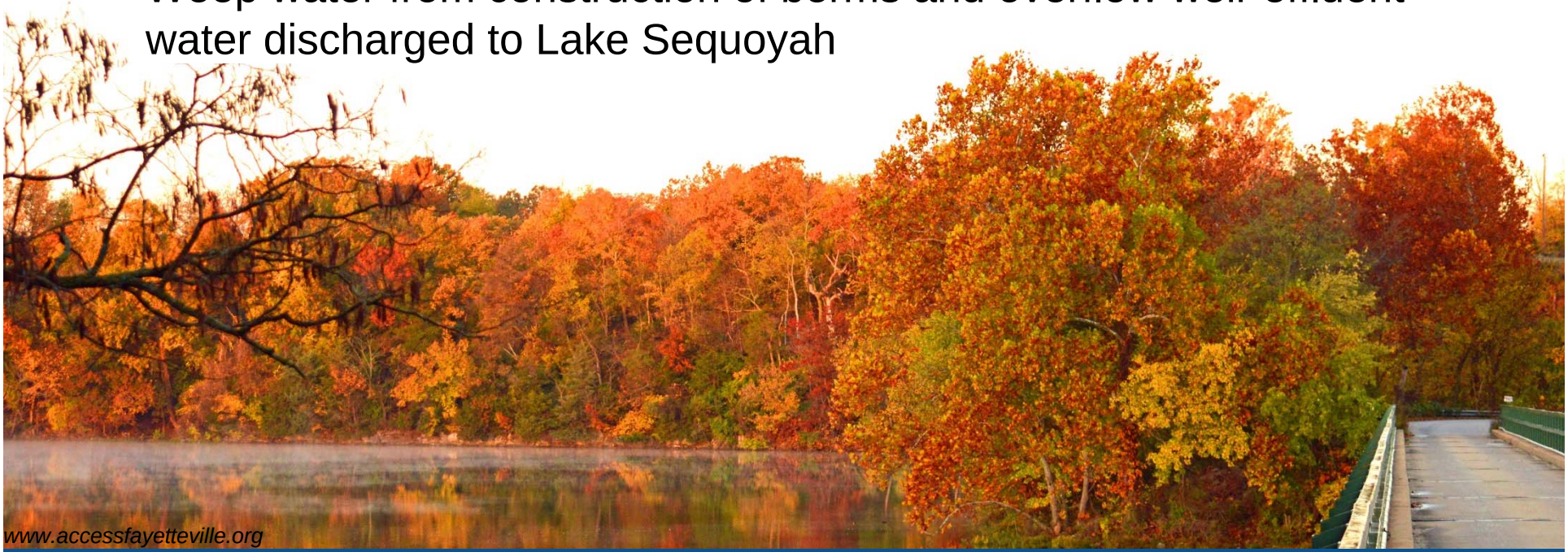


Initial Sedimentation Basin Design

- **Three sedimentation basins south of the lake**
  - Built up levee sections surround each basin
  - Access roads connecting all three basins
  - Construction entrance/exits area
  - Dredge discharge pipes run to each basin
  - Basin effluent pipes for discharge of the decant water
  - Areas for staging of equipment during construction

Initial Sedimentation Basin Design

- **Wetlands and waterbody impacts**
  - Approximately 0.40 acre of emergent wetlands
    - Impacted as a result of sedimentation basin construction
  - Approximately 20 linear feet of a perennial stream
    - Impacted as a result of access road crossing – culvert installation
  - Weep water from construction of berms and overflow weir effluent water discharged to Lake Sequoyah



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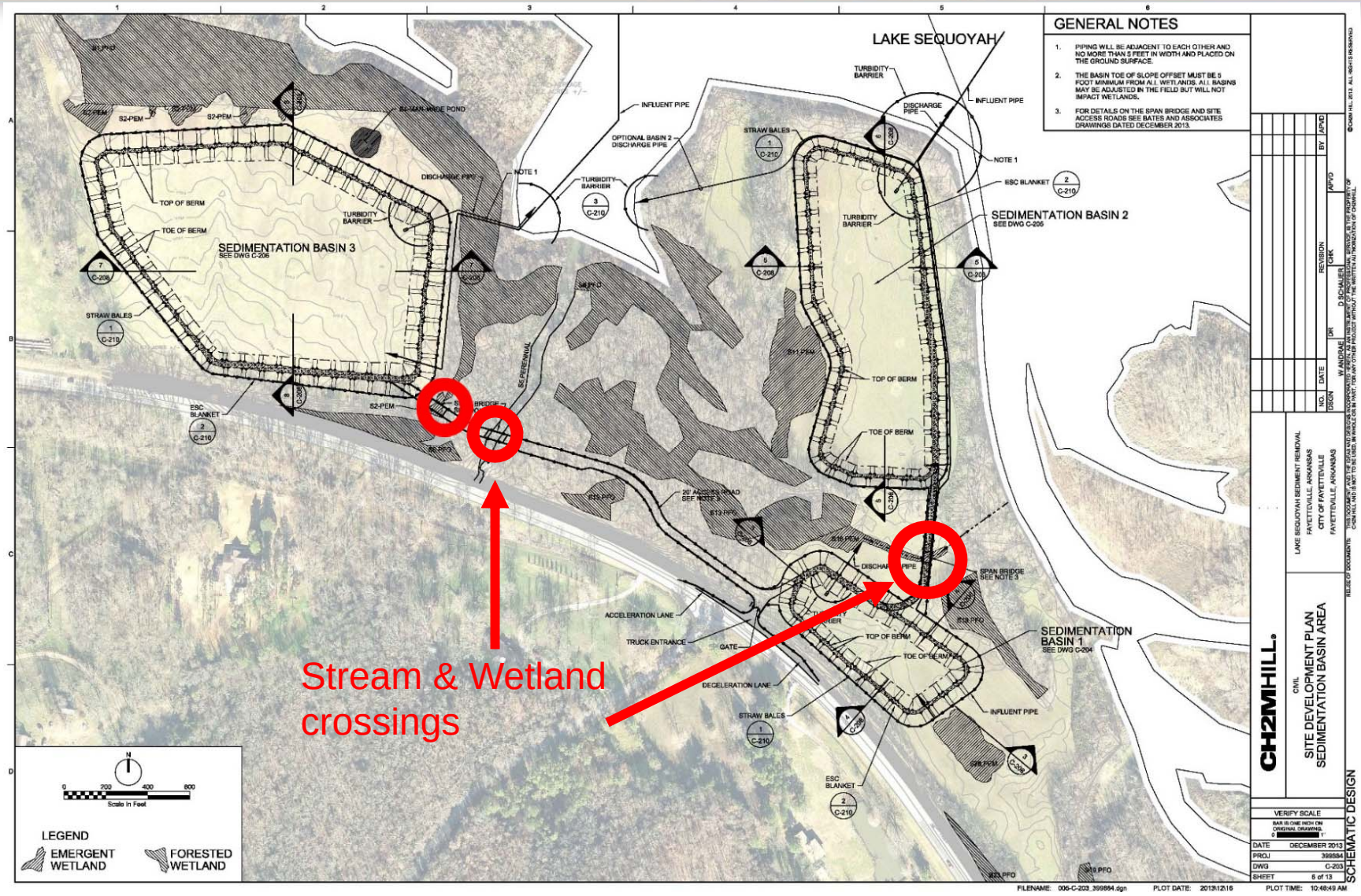
Proposed Sedimentation Basin Design



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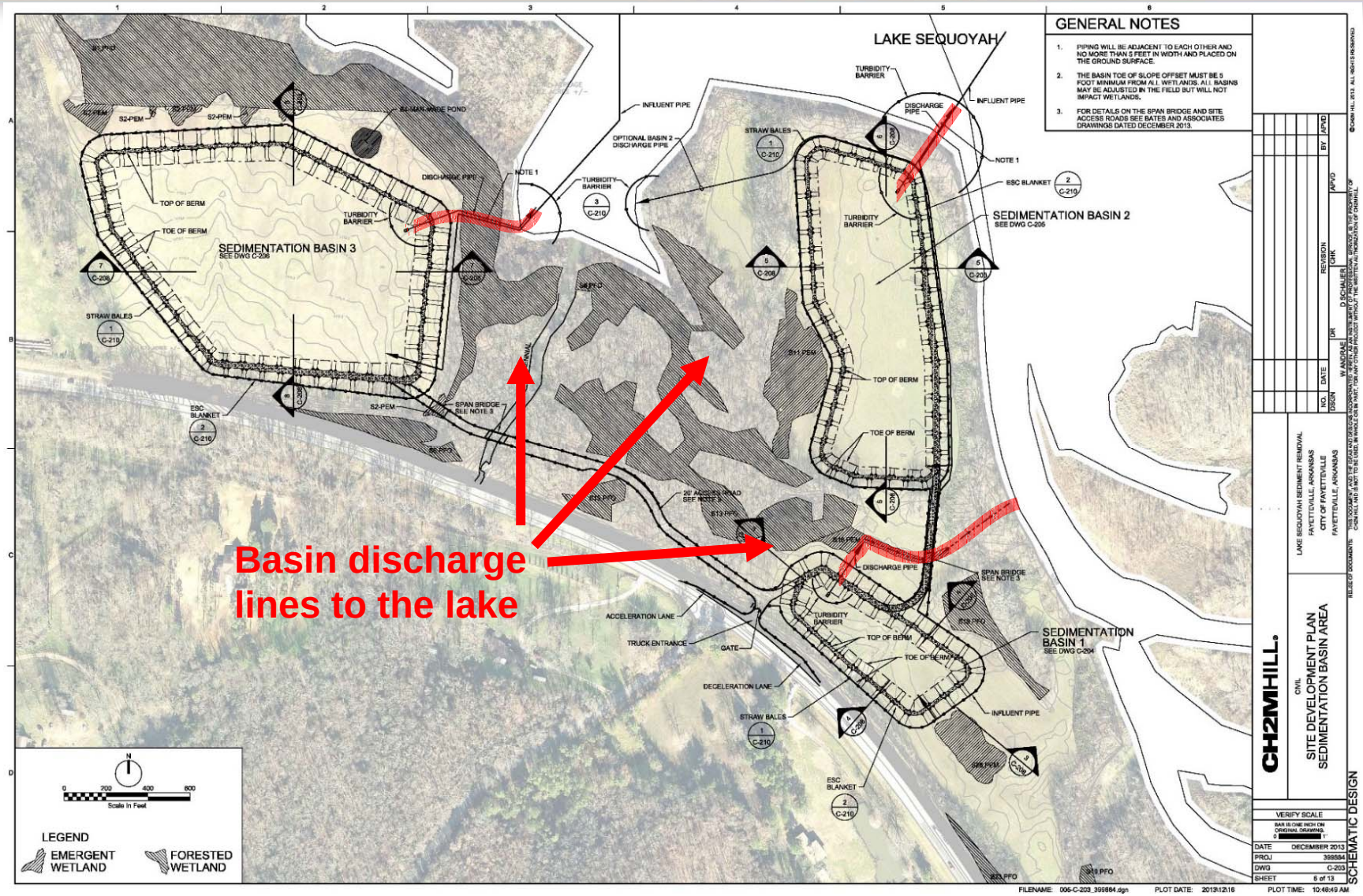
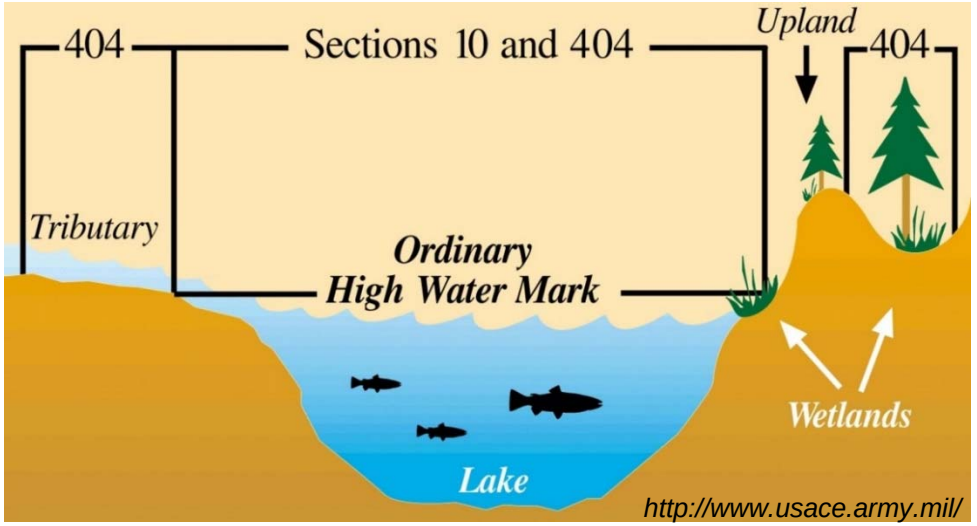


Federal Permitting Initial Implications

- **Pre-application meeting with USACE to discuss permitting path forward**
  - Lake Sequoyah is not a Section 10 water; therefore, it would not be regulated by the USACE under Section 10 of the Rivers and Harbors Act
  - Hydraulic dredging of the lake may not require a Clean Water Act Section 404 permit if there is no discharge of dredge or fill material into U.S. waters
  - 0.4 acre of wetlands, weep water discharge, and water from sediment dewatering to Lake Sequoyah would be regulated by the USACE and would likely fall under an NWP
  - Mitigation would be required; proposed a 1.5:1 mitigation ratio



http://www.usace.army.mil/

Federal Permitting Implications

- **A Section 404 permit would trigger additional consultations with USFWS and State Historic Preservation Officer (SHPO)**
  - Coordination is the responsibility of the lead federal agency (USACE)
    - Completed during the application process
    - CH2M HILL will complete the coordination early on in the project in case there are issues that could cause a schedule setback
  - USFWS - Section 7 of the Threatened and Endangered Species Act
    - USFWS coordination involving Indiana bat; tree clearing to occur outside of their summer roosting period; avoidance of eagle nest
  - SHPO - Section 106 of the National Historic Preservation Act

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

ARKANSAS HISTORIC PRESERVATION PROGRAM

US Army Corps of Engineers®

The City of Fayetteville Arkansas

Section 106 Coordination

- **CH2M HILL coordinated consultation with SHPO prior to permit application submittal**
  - Several previously identified archaeological sites near the lake and within the lake
  - Able to avoid all upland sites and dredging areas of lake near the sites
  - SHPO requested a Phase I cultural resource survey
  - Subcontractor completed survey early in the project

Arkansas Historic Preservation Program

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Cultural Resource Findings

- **Results of the cultural resource survey**
  - Wooded areas did not reveal any artifacts
  - Approximately 80% of shovel test pits in the grassland areas revealed artifacts
  - Subcontractor could not determine if sites were culturally significant without further evaluation via a Phase II survey – (YIKES!!)

Generic example of archaeological sampling. www.prenticethomas.com

Cultural Resource Results – Implications

- **Discussed findings with the USACE**
  - USACE indicated a Phase II survey would likely be requested by SHPO, based on the findings
  - Phase II survey could cost up to $100,000
  - City potentially unable to afford a Phase II survey
  - Completion of Phase II survey would not guarantee that the project could move forward
    - Additional sites could be found
    - Sites could be determined to be significant
    - Project could potentially be shut down
  - City concerns were heightened
  - **How can we avoid a Phase II survey, preserve the artifacts, and yet still construct the project?**

Partial Resolution to the Quandary

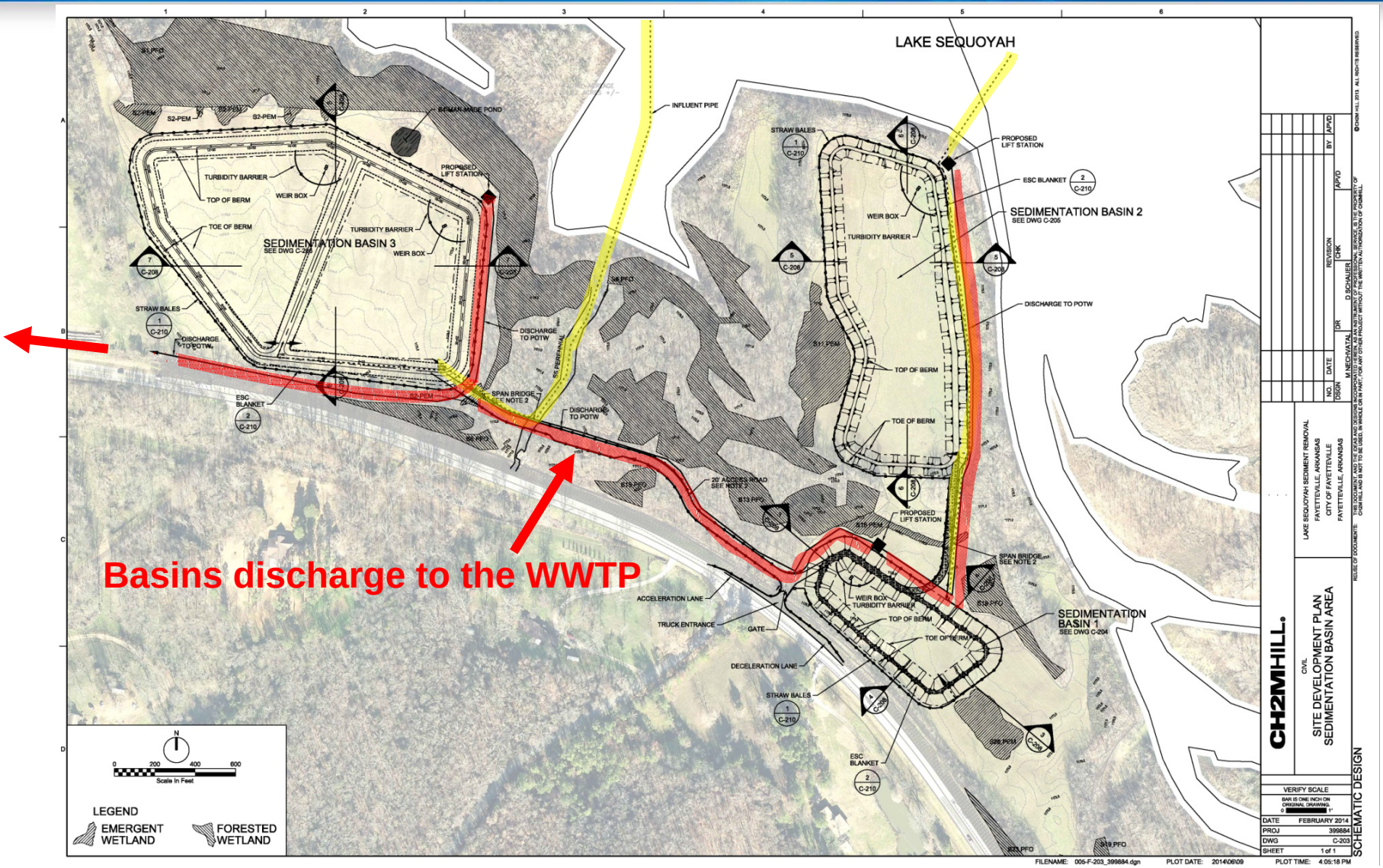
- Discussed totally avoiding wetlands with the USACE and this eliminated the federal nexus trigger for Section 106 compliance
  - Artifacts are only protected on federal land or if there is federal involvement in a project (funding, permitting)
  - No artifacts are protected on private land without federal involvement

    Example: You can disturb/destroy 19th century building foundation on your own land (not protected)
  - Cultural resources are unlike threatened and endangered species, which are ALWAYS protected under the Endangered Species Act
- USACE indicated that even the discharge water from the geotube filling or weir overflows going to the lake would require a Section 404 permit
- **Therefore, how do we get rid of the geotube weep water and weir overflow water?**

Re-Design of Sedimentation Basins

- **CH2M HILL design team modified the upland site design**
  - Sedimentation basin configurations, basin footprints, and access road design were modified to no longer impact wetlands
  - Prevent any construction impacts to the existing ground surface
    - Only strip grass off where the sedimentation berms would be located
    - Clay bottom color different from sediment color
    - Colored geotextile barrier between the sediment and existing ground surface
  - Sensitive area crossings proposed for perennial stream and two small emergent wetland crossings, **eliminating wetland impacts**
  - **Discharge water resolution:**
    - **Construction weep water and water from sediment dewatering would be collected and pumped to the City of Fayetteville's WWTP**

Re-Design of Sedimentation Basins



USACE Decision and Results

- **Resubmitted new design to USACE**
- **USACE determined no CWA Section 404 permit required**
  - No discharge of dredged or fill material to Lake Sequoyah
  - No impacts to wetlands or other waterbodies
  - No geotube weep water or sediment basin weir effluent water discharged back into Lake Sequoyah
- **No disturbance of cultural resources**
- **No longer any federal involvement**
- **No longer a federal trigger for Section 106 – SHPO consultation**

State Permitting

- **No USACE involvement does not exempt us from state level permitting**
  - Stormwater permit still required
  - ADEQ still requires a Short-Term Activity Authorization form for any kind of work within wetlands or waterbodies
  - Threatened and endangered species coordination still required
  - Some states have an Act similar to the federal National Historic Preservation Act that would require coordination with SHPO if any state involvement
    - Arkansas does not have such an Act

ADEQ
ARKANSAS
Department of Environmental Quality

Current Status

City of Fayetteville, Arkansas

- The City and design team went to extraordinary lengths to implement the project despite some unique challenges.
- The City adhered to the guidelines of avoidance, minimization, and mitigation for siting any project and its disposal areas
- Not all projects have the unique ability to resolve these issues as the City of Fayetteville and this project have in common.
- The City will accomplish sediment removal and cleanup of its lake and will beneficially re-use lake sediments.
- The City continues its environmental stewardship for responsible use and protection of the natural environment through conservation and sustainable practices.

Project

- Design is being finalized.
- Procurement and construction are underway.


QUESTIONS
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