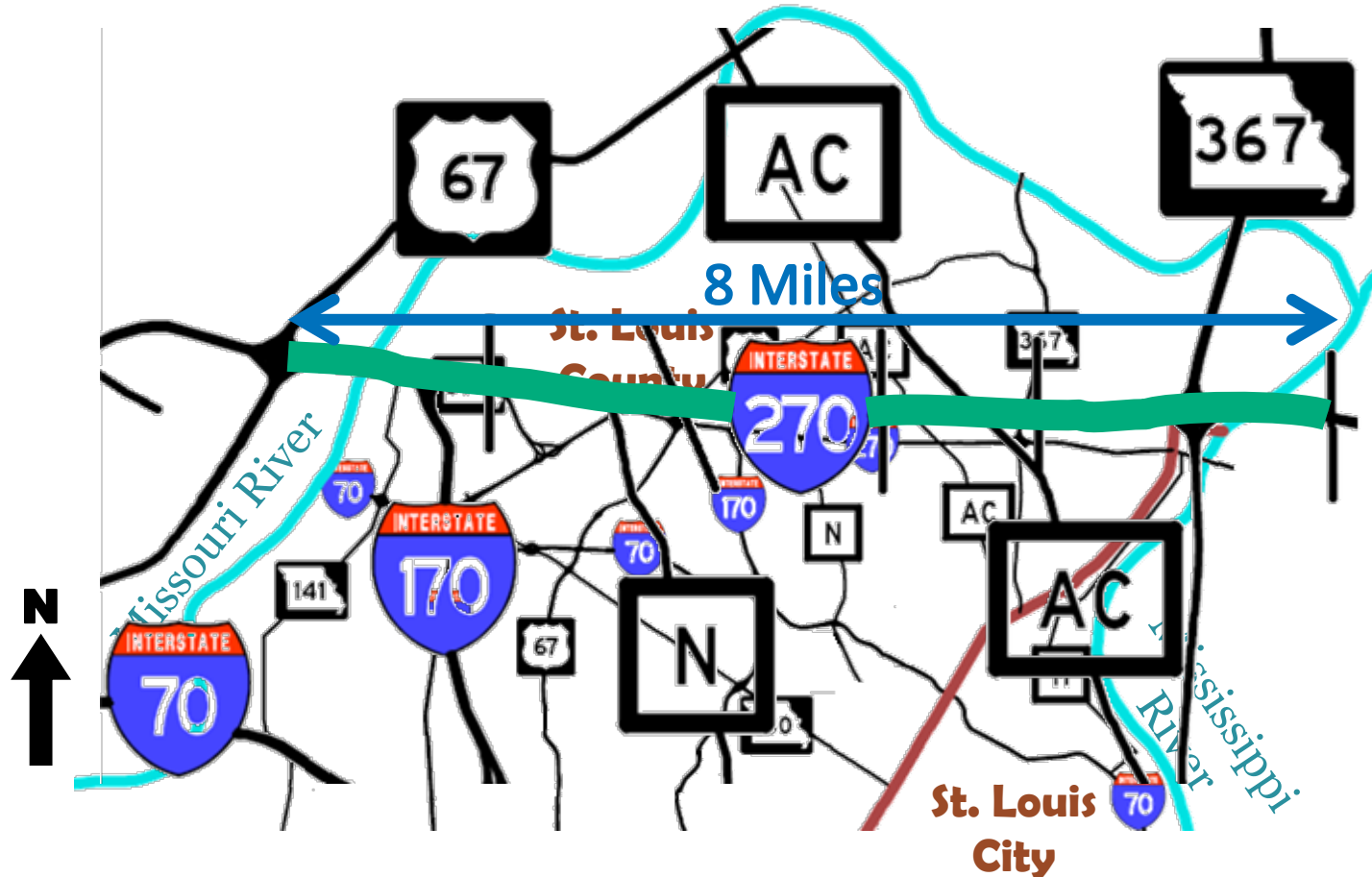


I-270 North Project: Facilitating Partnerships to Address Environmental Risks



Tabitha Locke – MoDOT Area Engineer

I-270 North Project Location

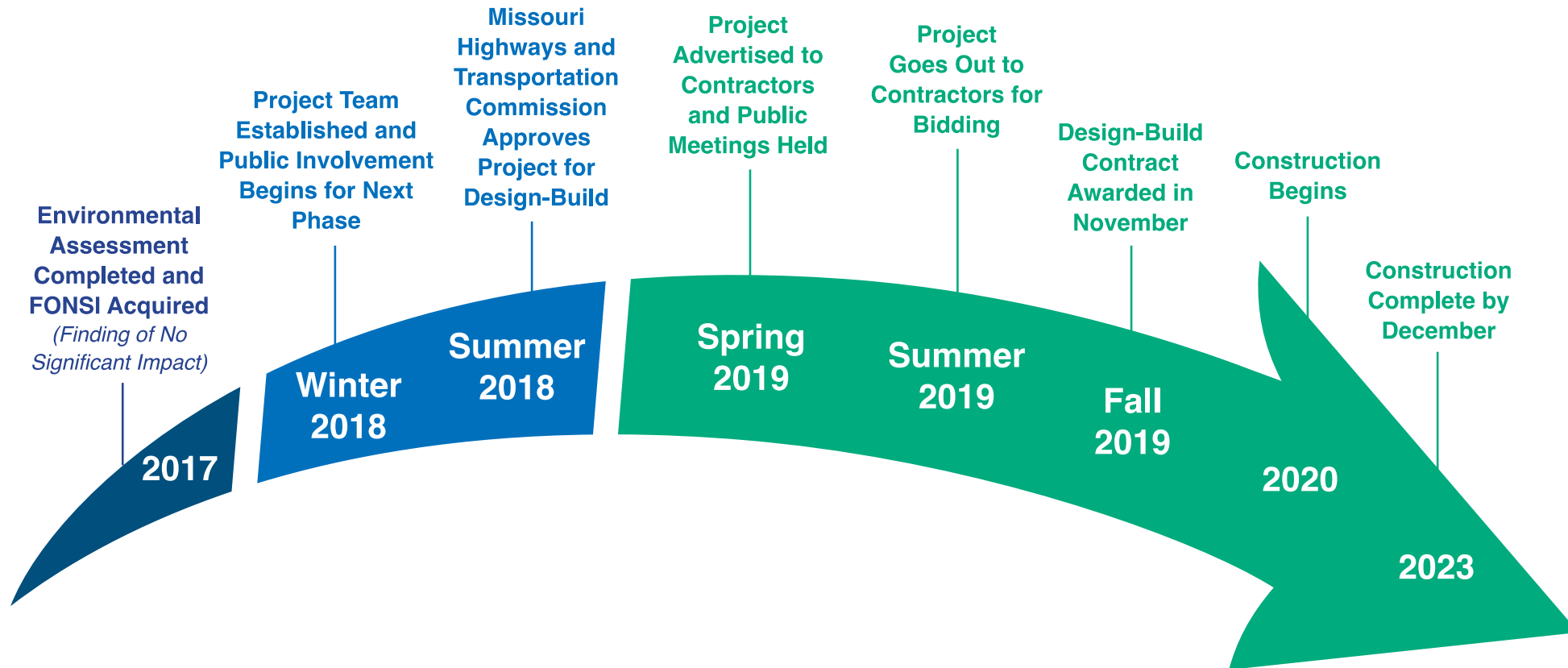


I-270 North Overview

- One of the heaviest traveled interstates in Missouri
- Dunn Road was part of Route 66 – built in the 1930's
- Interstate and Pershall Road – built in the early 1960's
- 18% heavy trucks
- Limited pedestrian facilities

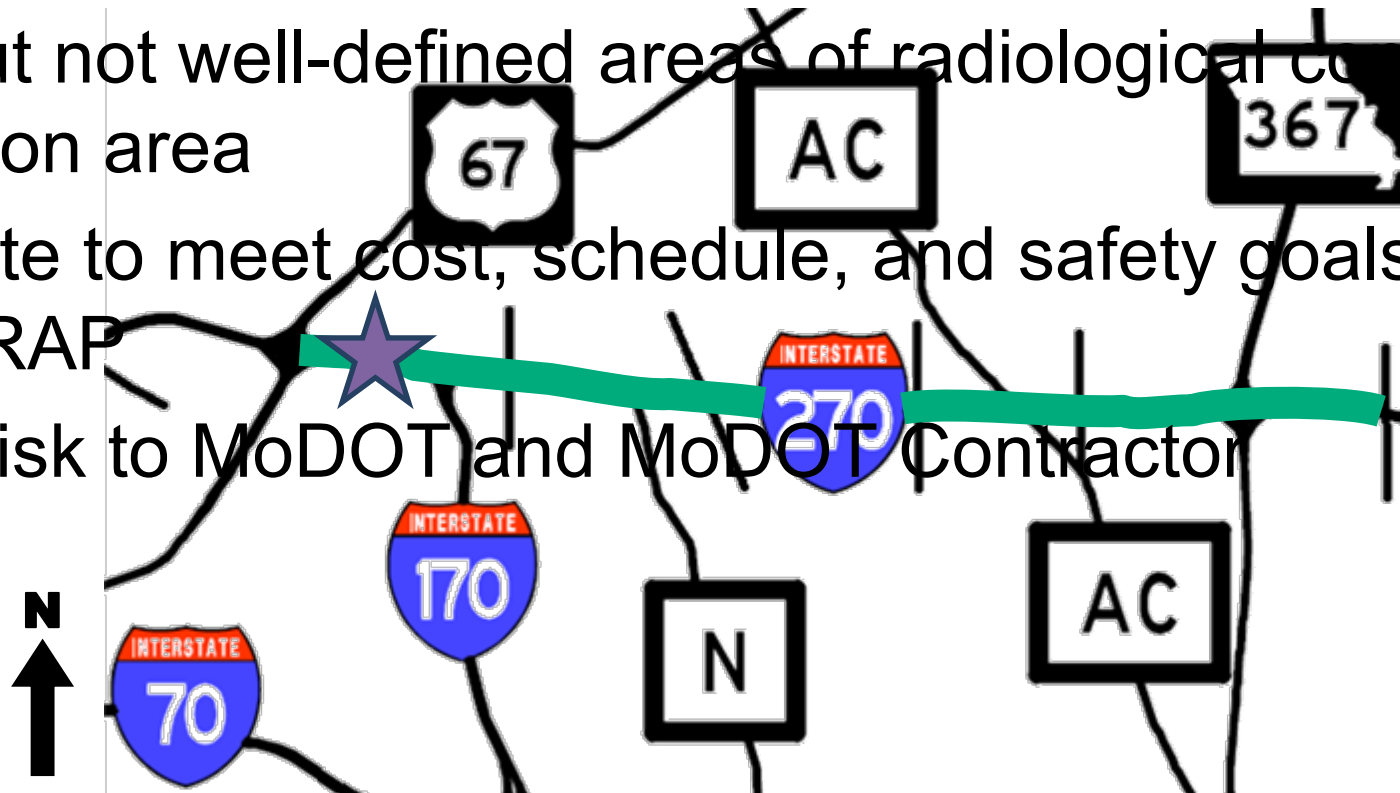


I-270 North Schedule



Coldwater Creek

- Known but not well-defined areas of radiological contamination in construction area
- Collaborate to meet cost, schedule, and safety goals for MoDOT and FUSRAP
- Manage risk to MoDOT and MoDOT Contractor



Radiological Contamination

- I-270 & Pershall Road Corridor
- Approximately 1 mile length



What is FUSRAP

- Formerly Utilized Sites Remedial Action Program
- Managed by the US Army Corps of Engineers (USACE)
- Environmental investigation, design, remediation and restoration
- Investigate / remediate contamination from Manhattan Engineering District and early Atomic Energy Commission work
- St. Louis has two sites, one in the City of St. Louis, and a related site ~12 miles away in Suburban St. Louis County



St. Louis FUSRAP Objectives

- Protect human health and the environment
- Execute the approved cleanup alternative
- Minimize adverse affects on area business operations
- RECORD OF DECISION (ROD) – 2005
 - Outlined the remedial
 - Excavate and properly dispose of **ACCESSIBLE** contaminated soil



St. Louis FUSRAP History

- 1942 - 1957 – Uranium and radium ore extraction / reduction at Mallinckrodt's St. Louis Plant
- Byproducts were stored 12 miles away, near St. Louis Lambert International Airport in North St. Louis County
- In the '60's and '70's, some byproducts were moved closer to the current location of I-270 for sorting / drying
- Materials were dried, packaged, and shipped elsewhere for recycling



Spread of Contamination

- Improper transportation and open-air storage
- Wind dispersion
- Deposition along Coldwater Creek: Urban drainageway subject to frequent flooding
- Two North County storage areas are adjacent to Coldwater Creek



I-270 & Pershall Road Corridor

- Pershall Road runs parallel to I-270
- I-270 and Pershall Road are downstream of the two North County storage sites
- Transport route for ore byproducts – 1966 to 1973
- Coldwater Creek crosses beneath I-270 and both outer roads
- Historical creek meanders and floodplain



Coordination Began Early

- Pre-design investigation – 2014 to 2018
- Surface, shallow subsurface contamination found in proposed construction area
- Lens of contamination identified in historical (pre-interstate) floodplain, 14 feet below current ground surface



Usual FUSRAP Support of Construction

When Construction Occurs in Potentially Contaminated Areas

- FUSRAP remediates in advance when possible
- FUSRAP provides support for a utility company or for a property owner and FUSRAP accepts contaminated materials for disposal
- Latter case: Utility/property owner is responsible for protection of workers and the environment, FUSRAP accepts the waste



Project Risk Assessment

- Early project risk assessment highlighted Coldwater Creek and the environmental impacts of working in the area
- Moderate level of risk:
 - A. Project cost
 - B. Schedule
 - C. Environmental impact concerns



Risk Management

- Looking at past projects in the area
- Incorporation into I-270 North
- Removal before the start of I-270 North
- Individual Project



Communication with Proposing Teams

- Meeting with USACE FUSRAP Division and HGL early had given MoDOT an idea of the impact and possibilities.
- Early Risk Mitigation
 - A. Include FUSRAP in Industry Meeting
 - B. Safety Information and general awareness
 - C. Provide the Proposing teams options



Contractor Risk Assessment

- What is FUSRAP?
- Does it effect our Go/No-Go Decision?
- What costs impacts are there?
- What Schedule impacts are there?



I-270 North Procurement Approach

- Developing the contract
- One-on-one meetings for areas of risk



USACE Support Options

- Three Primary Options
 - A. Utility Support
 - B. Pre-construction Remediation – Non-paved areas
 - C. Pre-construction Remediation – Include paved areas
- OPTION C – Road Closure and limited contractor access



Contract Language

- The team could develop the plans for the bridge and pavement. Submit them to FUSRAP and wait until remediation was complete.
- Contractor would be responsible for excavation of contaminated soil. FUSRAP would haul, remediate, and decontaminate material at their facility.
- Contractor responsible for excavation and hauling material to the FUSRAP facility. FUSRAP would provide utility support on site. FUSRAP would provide testing, storage, remediation, and decontamination.



Meetings During Procurement

- Include one-on-one meeting during procurement with FUSRAP
- Give the team a chance to ask specific questions
- Concerns about confidentiality
- How far into the procurement process should the meeting be placed?



Contractor's Prospective

Challenges / Concerns

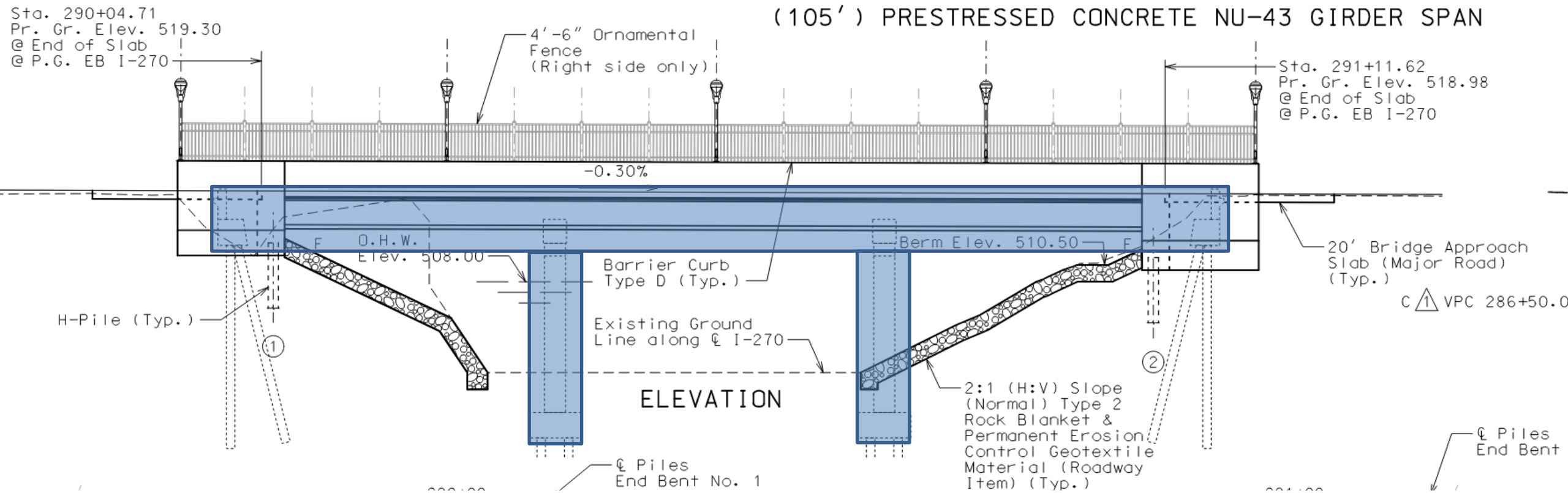
- No Non-Disclosure Agreement
- Limited design completed
- Determining questions to ask to make it a productive meeting

What they learned

- Design approach that minimizes impact in contaminated areas
- Contaminated areas should not be on schedule critical path



Risk Tolerance/Bidding Approach



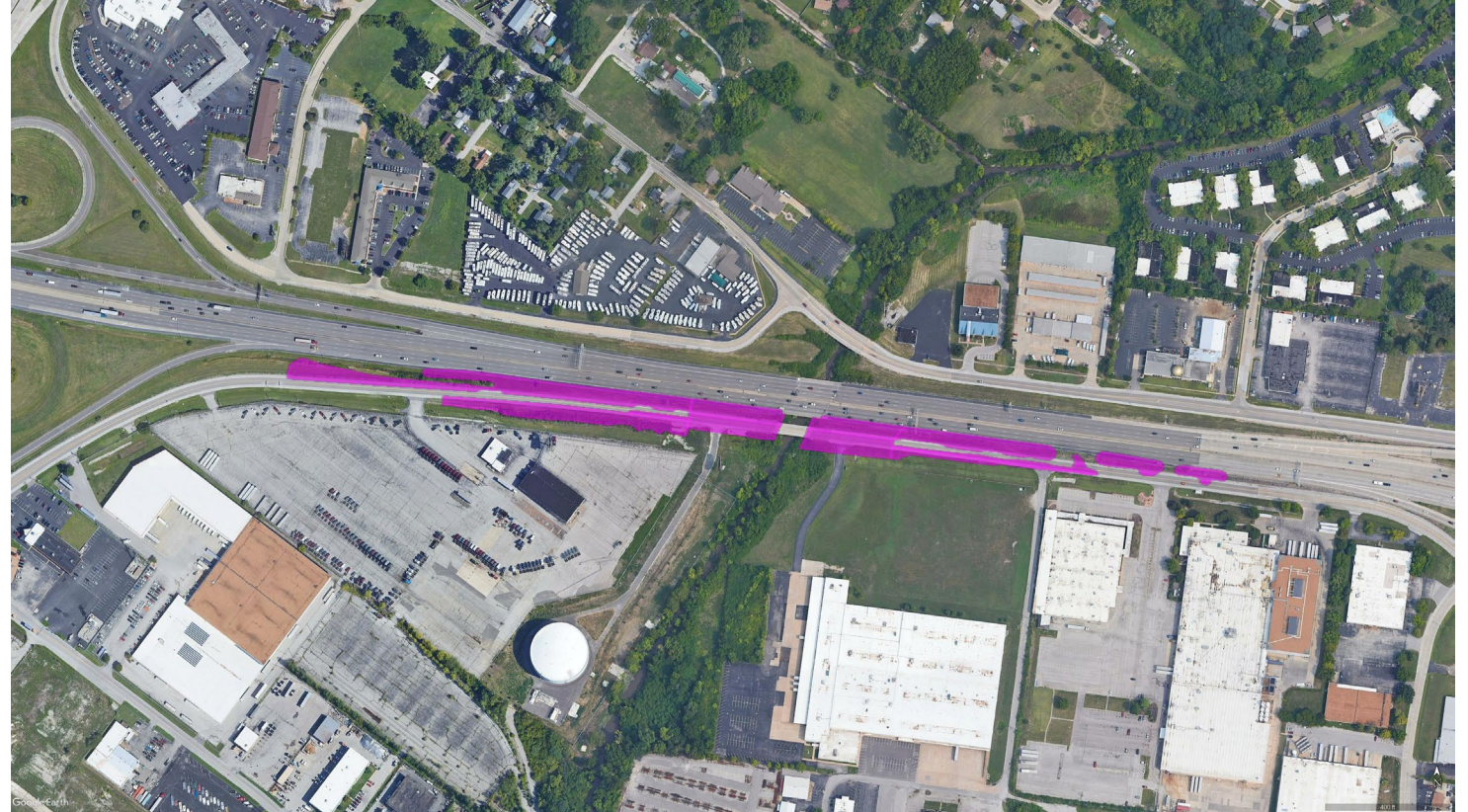
FUSRAP Support Considerations

- ~30,000 Bank Cubic Yards under Pershall Road and I-270
- FUSRAP would not typically have access to this material
- USACE wanted to be proactive and get as much as possible
- Impact to FUSRAP cost, schedule, budget, and facilities



I-270 North Project Construction Areas

- 1,400 feet east and 1,600 feet west of the bridge
- Near surface to 14 feet deep
- Median Area
- Beneath Pershall Road
- South Pershall Road ROW





GUARANTEED FINANCING
CLEMENT
30 YEAR
500,000 MILE
WARRANTY

411-PAIN

Helping...
CREDIT

TOP-RANKED PROGRAMS
Low tuition rates.

Approach During Construction

- Work together to remediate as much contaminated soil as possible
- Include FUSRAP in weekly project updates
- Planning meetings with FUSRAP
- Pre-activity Meetings
- Coordination during construction



Coordination and Cooperation

- HGL coordinated access for the businesses affected by the early closure of Pershall Road
- Coordination with Millstone Weber
- Utility Relocations
- Utility Support to Millstone Weber



Pershall Road Coordination

- Extended closure duration
- Increased access to contaminated soil
- Shared traffic control plans
- Shared traffic control subcontractor



Coordination and Cooperation

Contamination under:

- A. Pershall Road
- B. I-270 Eastbound lanes
- C. I-270 Westbound lanes

In **RED**: Remediation east of new bridge construction

In **Blue**: New bridge construction eastbound I-270



Weekly Task Force Meetings

- Contractor Led Weekly Meetings
- Planned construction activities
- 2 week look ahead schedule
- Standing FUSRAP coordination item
 - Keep open communication between MoDOT, FUSRAP, and Millstone Weber
 - Allowed HGL / USACE to know what was occurring
 - Allowed HGL / USACE to identify any issues ahead of time and reduced project impacts



West of Creek

- Shallow remediation between I-270 and Pershall Road
- Adjacent to I-270 live traffic lane



West of Creek

Shallow remediation of
Pershall Road



West of Creek

Deep remediation
excavation of
underlying Pershall
Road



East of Creek

- Deep Remediation underlying Pershall Road
- Radiological Walkover Survey



East of Coldwater Creek



Goal Accomplished



Results

- Approximately 30,000 Bank Cubic Yards of Contaminated Soil Removed
- New bridges over Coldwater Creek and surrounding concrete pavement for Pershall Road and east bound I-270 built with clean embankment material
- Reduced impact on Environment
- Improvement of Human Health and Safety Measures for Workers and the Public
- **REDUCED CONSTRUCTION WORKER EXPOSURE**

