Brownfields, Battery Caps, and a Junkyard Dog of a Site - Part II

NCDOT
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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The Project – Charlotte Locomotive and Railcar Maintenance Facility

- NC DOT Rail Division, with the Federal Railroad Administration (FRA), is developing a new Locomotive and Railcar Maintenance Facility (LRMF) for the NC DOT Piedmont Improvement Project (PIP) and Charlotte Railroad Improvement and Safety Program (CRISP)
- Includes 11 properties totaling approximately 18 acres

RAILROAD IMPROVEMENTS
CHARLOTTE RAIL AND LOCOMOTIVE MAINTENANCE FACILITY
NCDOT RAIL DIVISION

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The Project Cont'd

- Includes former Smith Metal & Iron (SMI) junkyard (metals, PCBs & PAHs), Trucking Terminal (petroleum), and other impacted sites
- SMI is a Brownfields Project

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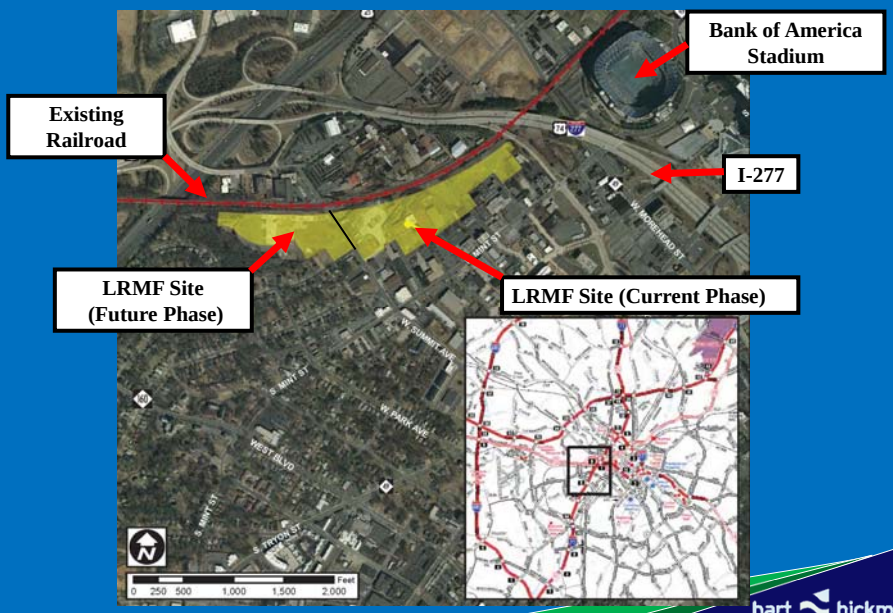
Project Location - Charlotte, NC



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Proposed Charlotte Locomotive and Railcar Maintenance Facility – Current Phase

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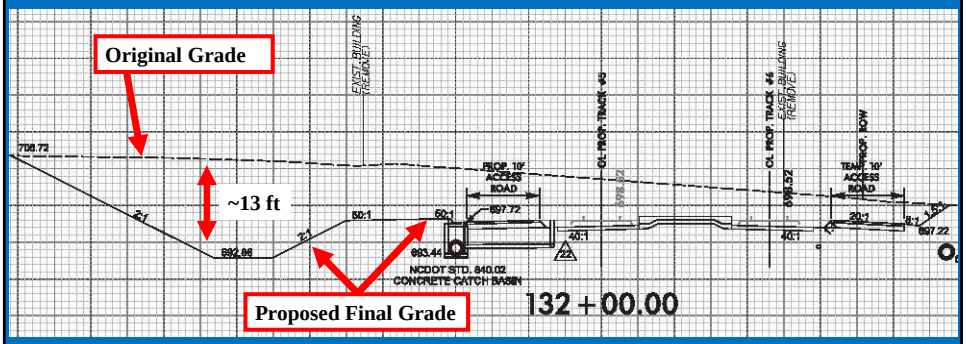
Proposed Cut Area Near Former SMI property



- Cut up to ~13 ft near SMI
- Includes stormwater attenuator ditch and piping

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The Site – Former Smith Metal & Iron (SMI)

- SMI junkyard from the 1920's to the mid-1970's.
- Occupied by Ferguson Plumbing Supply (early 1990s to 2016).

Ferguson Plumbing Supply

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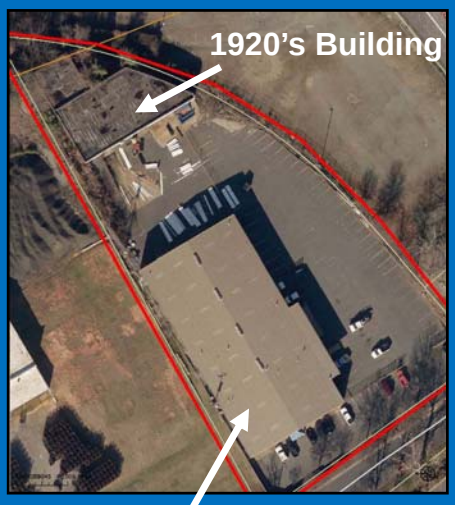
Pre-Construction (2015) and Former SMI Property



SMI - 1950

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Assessment at Former SMI

- H&H assessed former SMI property for NC DOT
- Observed widespread black soil with metal debris
- Battery caps identified on surface (Gould, Willard and others).
- Gould and Willard were mid-century battery manufacturers

- Suspect “battery cracking” operation near the former battery storage building.

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Smelly black soil (up to 5 ft thick).

Battery Cap (Good Year)

Metal pieces encountered in soil borings.

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Maximum Concentrations in Soil (and target level)

- TPH DRO - 4,330 mg/kg (100 mg/kg)
- TPH GRO - 58.7 mg/kg (50 mg/kg)
- Total PCBs - 6.78 mg/kg (0.94 mg/kg)
- Total Lead - 28,700 mg/kg (800 mg/kg)
- TCLP Lead - 398 mg/L (5 mg/L)

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Lead Impacts in Soil

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Why Does Brownfields Make Sense?

Advantages

- Re-use Contaminated Soil
- Lower Cleanup Goals
- Reduces Environmental Liability
- Tax Breaks in Some Cases

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Disadvantages

- Time for Approval Process and Fees
- Requires Regulatory Oversite
- Difficult to Manage Soil Import and Export
- Soil Management is Costly

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LRMF Project Site

Why use Brownfields for Only the Highest Risk Site (SMI)?

1. **Too Much Export Soil (Over 100,000 cubic yards) for the Overall Project**
2. **SMI is Highly Impacted: Widespread Hazardous Waste Lead Impacted Soil**
3. **Impacted Soil Already Capped in Place Over Most of SMI Site**
4. **Limited Export of Impacted Soil at SMI**

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Re-Use of Soil at SMI

- **Brownfields Area was Defined to Fit Our Needs**
- **Non-Hazardous Impacted Soil from SMI Re-used on Brownfields Site**
- **Soil transported to Privacy Berm**
- **Soil Did Not Leave the Brownfields Site**

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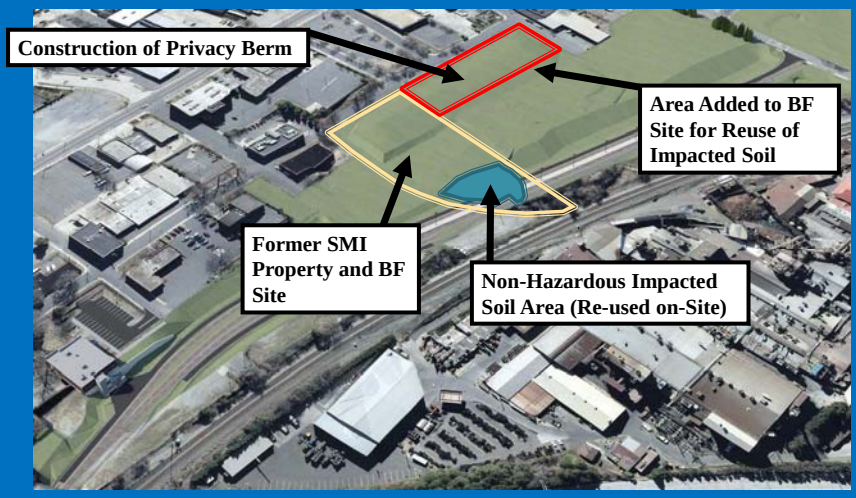
Re-Use of Soil at SMI



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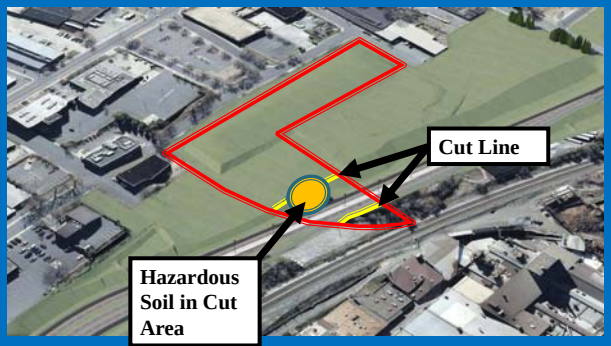
Hazardous Soil Stabilization

- Hazardous Lead Impacted Soil Located in Cut Area on SMI Property



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Hazardous Soil Stabilization

- Soil Treated On-Site to Non-Hazardous Levels Using Enviroblend 80/20 (magnesium oxide & phosphate blend)
- Work Plan Approved by NC DEQ Hazardous Waste Section and Brownfields Program

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Hazardous Soil Stabilization

- Post-Treatment Composite Soil Sampling
  - Max TCLP Lead Before = 398 mg/L
  - Max TCLP Lead After = <0.050 mg/L
- Treated Non-Hazardous Soil Transported to Republic Services Subtitle D Landfill in Concord, NC for Disposal

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Cost Savings

- Re-Use of Non-Hazardous Impacted Soil in On-Site Berm Instead of Disposal in a Subtitle D Landfill
  - Approximately $80,000
- On-site Hazardous Soil Treatment and Disposal in a Subtitle D Landfill instead of a Subtitle C Landfill
  - Approximately $150,000

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Summary

- Major DOT rail project on heavily impacted sites
- Former junkyard/battery cracking site (SMI)
- Use Brownfields to manage SMI
- Able to reuse non-haz impacted soil on Brownfields site
- Treat hazardous soil to non-haz levels for Subtitle D landfill disposal
- Significant cost savings

Questions?

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