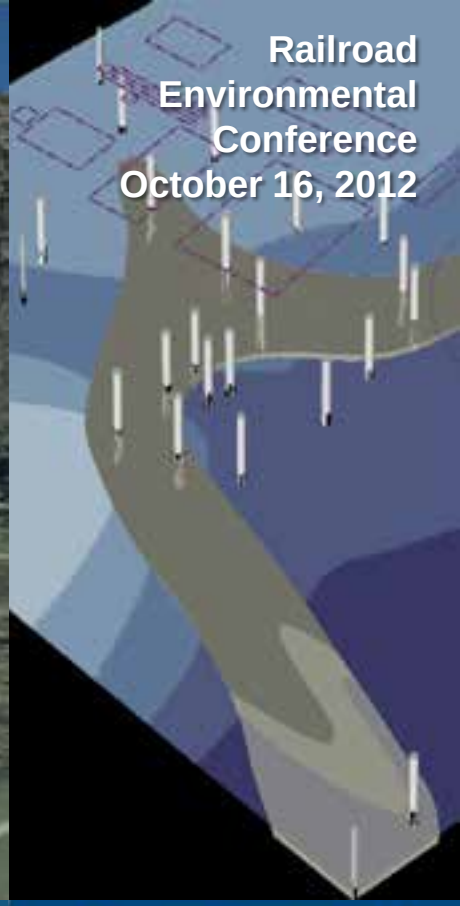


Railroad Environmental Conference
October 16, 2012

Authors: Marc Sanford, Robbi McKinney (ARCADIS)
William Parry (CSX Transportation)

CSX How tomorrow moves

Three Dimensional Visualization Improves Conceptual Site Models

ARCADIS

Authors

Salamanca Rail Yard

William Parry, CSXT – Remediation Manager

Robbi McKinney, ARCADIS – GIS Analyst

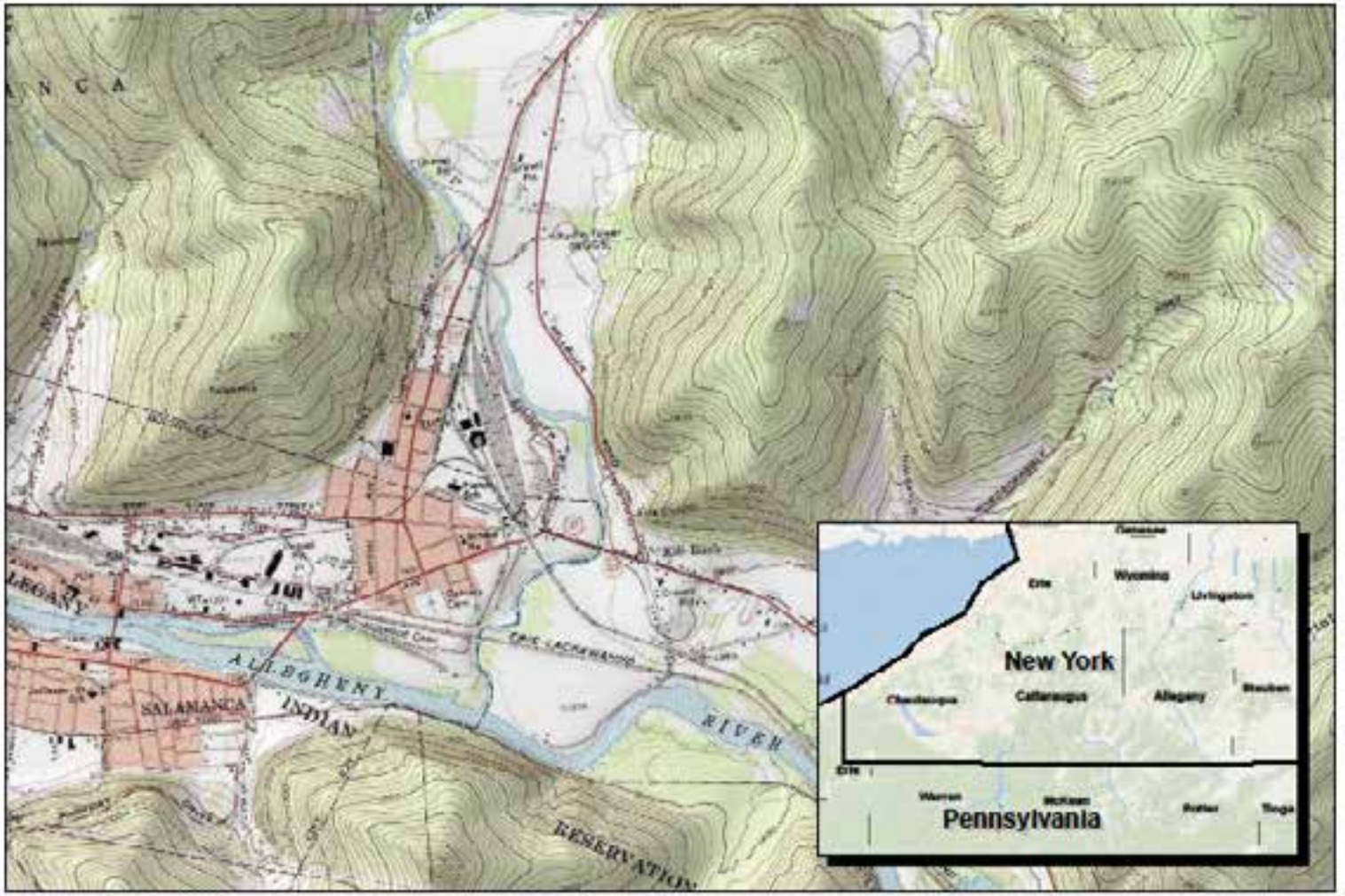
Marc Sanford, ARCADIS – Principal Scientist

Outline

- Site Location
- Historical Railroad Operations
- Remedial Program
- Stakeholders
- Design and Simulation

Site Location
Salamanca Rail Yard

Site Location
Salamanca Rail Yard



Historical Railroad Operations
Salamanca Rail Yard 1958

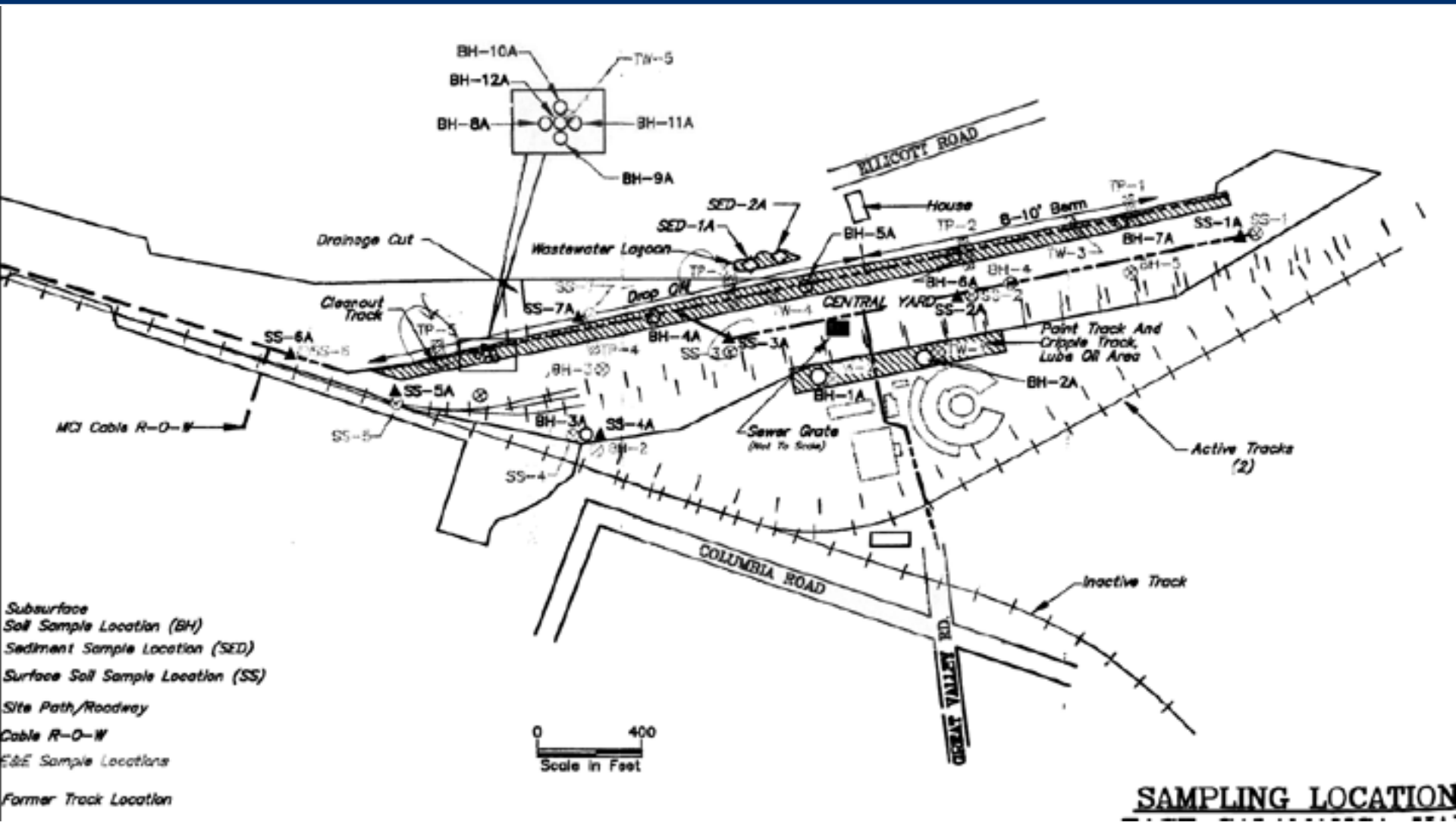
Historical Railroad Operations

Historical Railroad Operations

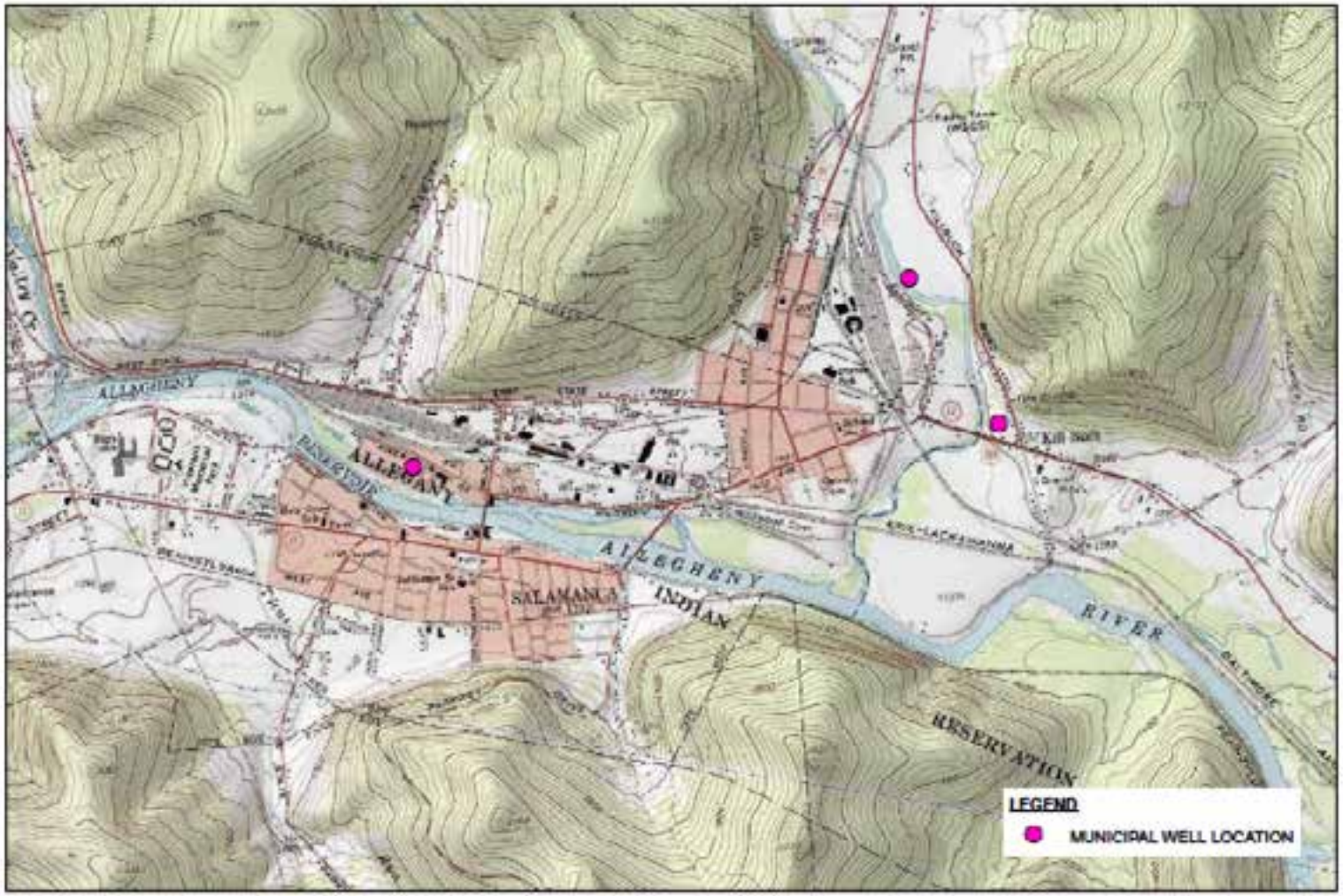
Salamanca Rail Yard
B&P RR 1992

How tomorrow moves CSX

Preliminary Site Investigation
Due Diligence



Preliminary Site Investigation
Salamanca Supply Wells

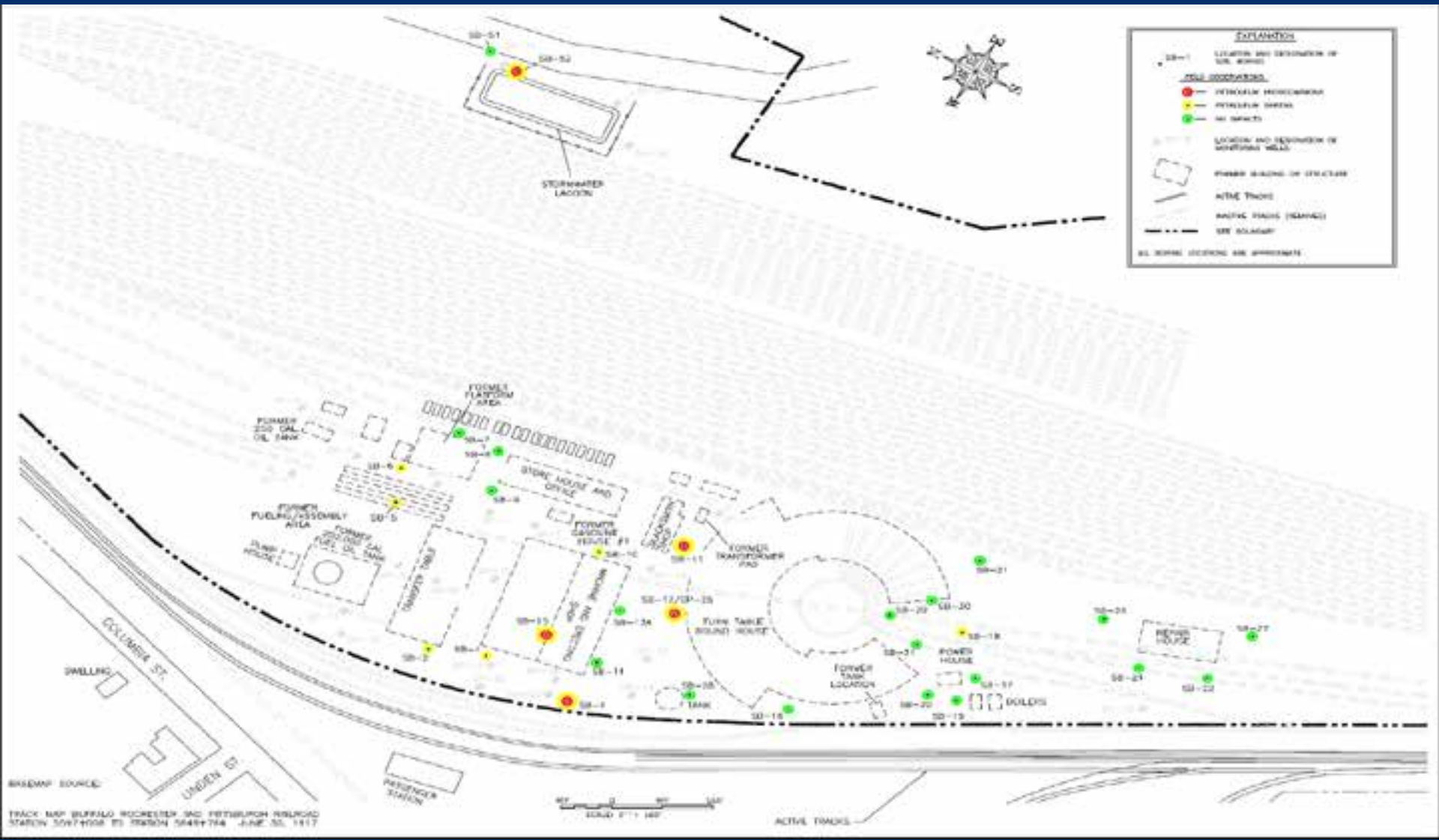


How tomorrow moves CSX

Preliminary Site Investigation
Salamanca Supply Wells

Remedial Program
Areas of Investigation

Remedial Program
Areas of Investigation – Former Yard Operations



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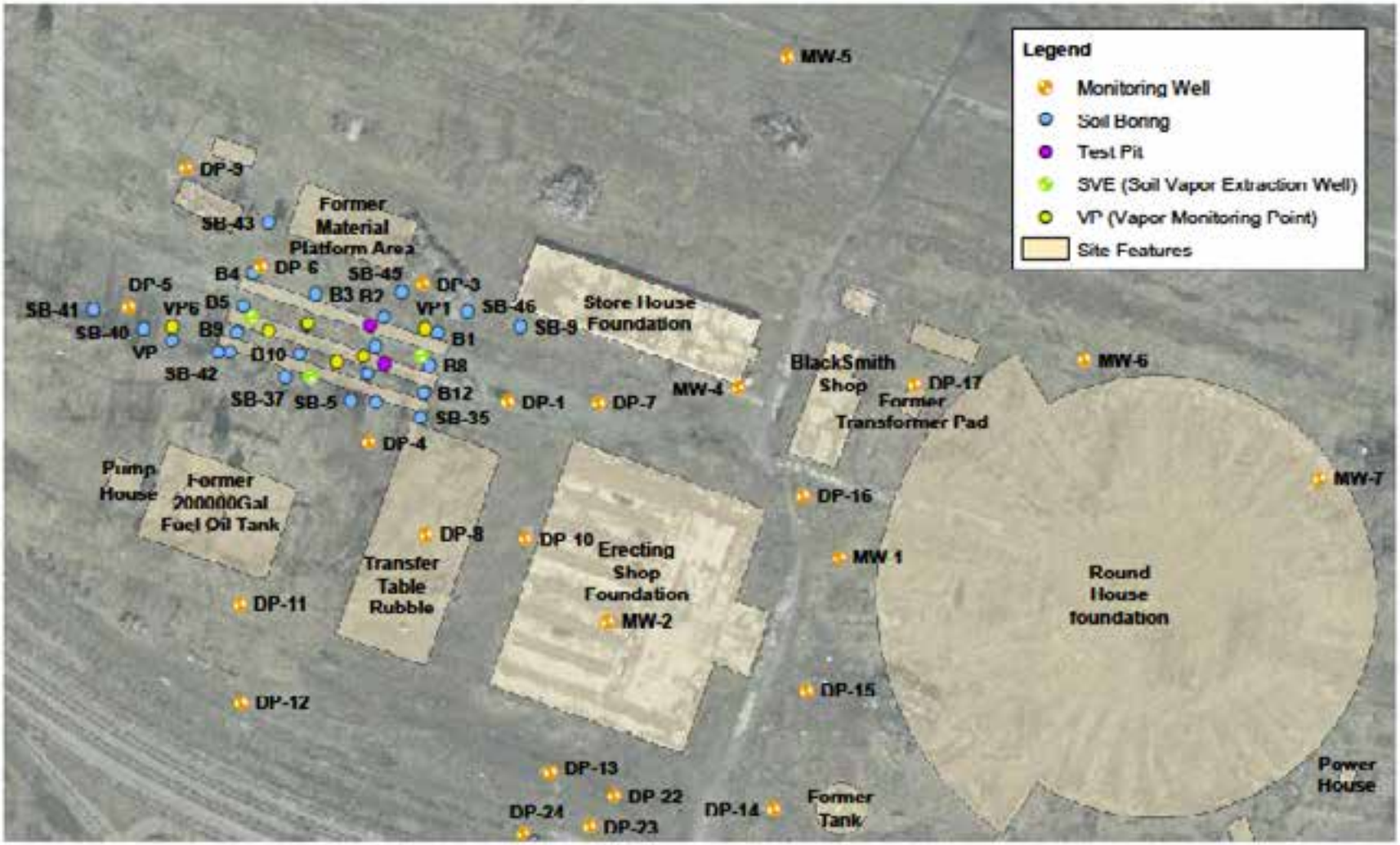
Remedial Program
Areas of Investigation – Former Fuel Storage Areas

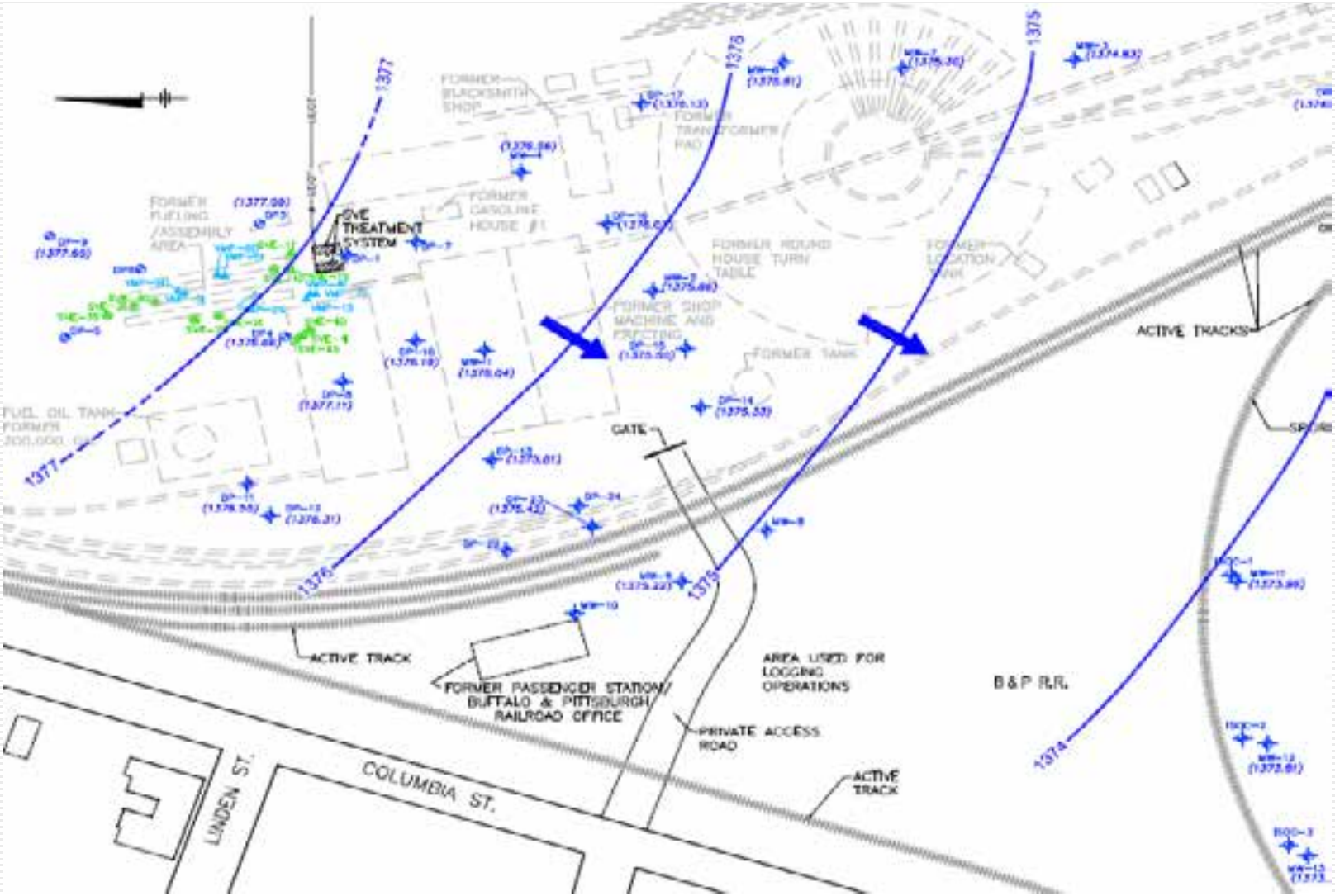


How tomorrow moves CSX

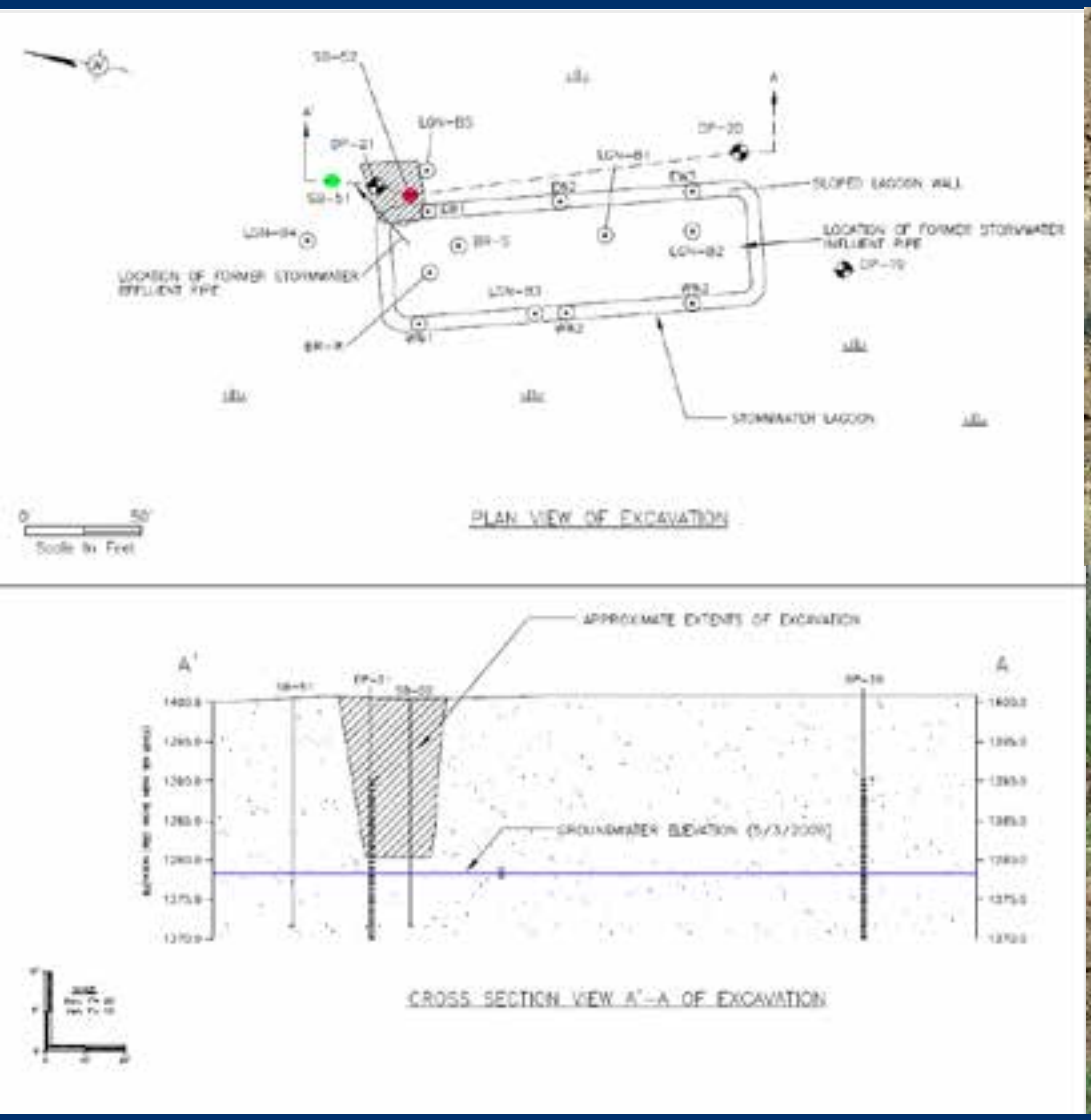
Remedial Program
Areas of Investigation – Former Fuel Dispenser Area

How tomorrow moves CSX

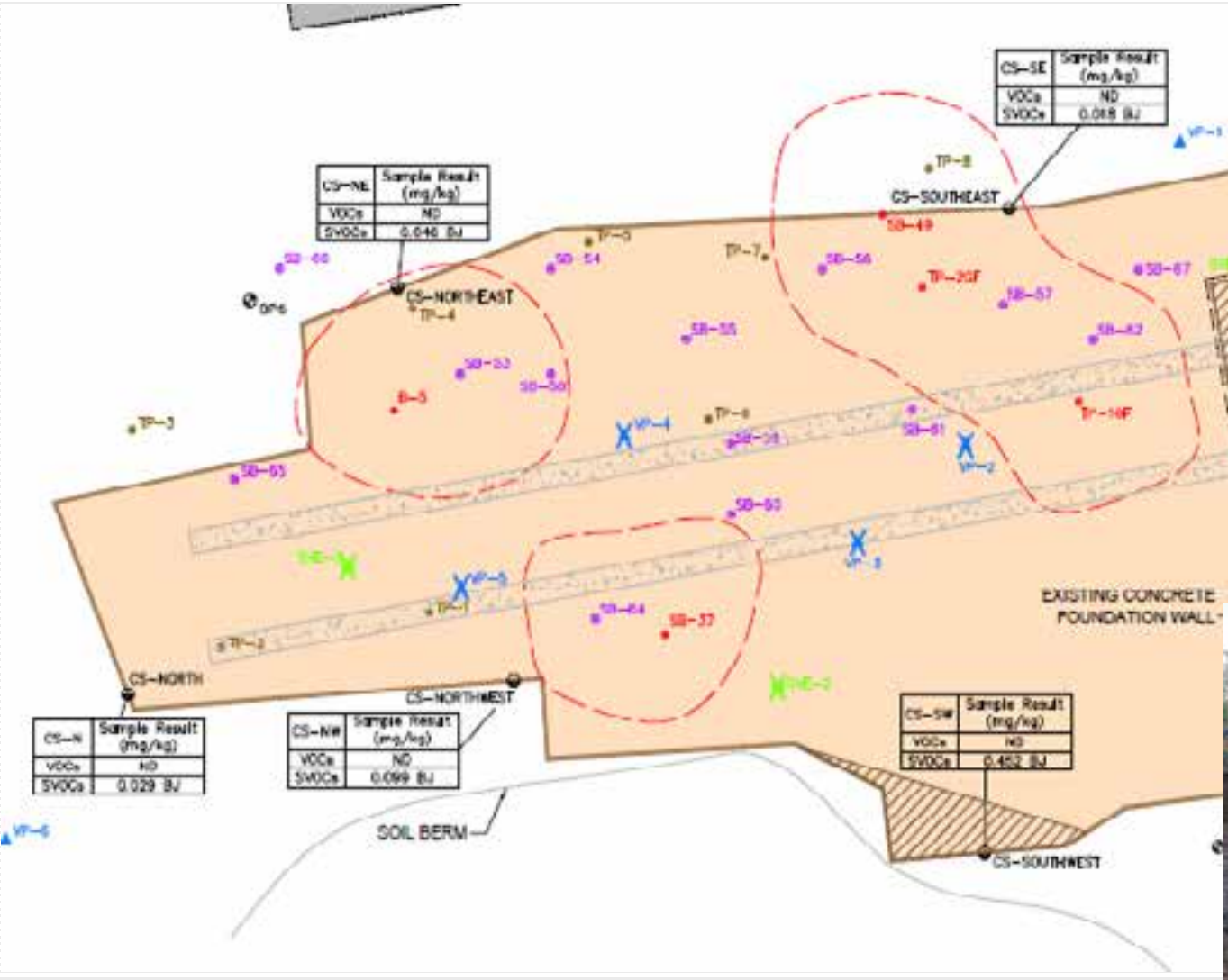
Remedial Program
Areas of Investigation – Off Site B&P Property



Remedial Program
Remedial Actions – Lagoon Closure



Remedial Program
Former Fuel Dispenser – Shallow Soils Source Removal



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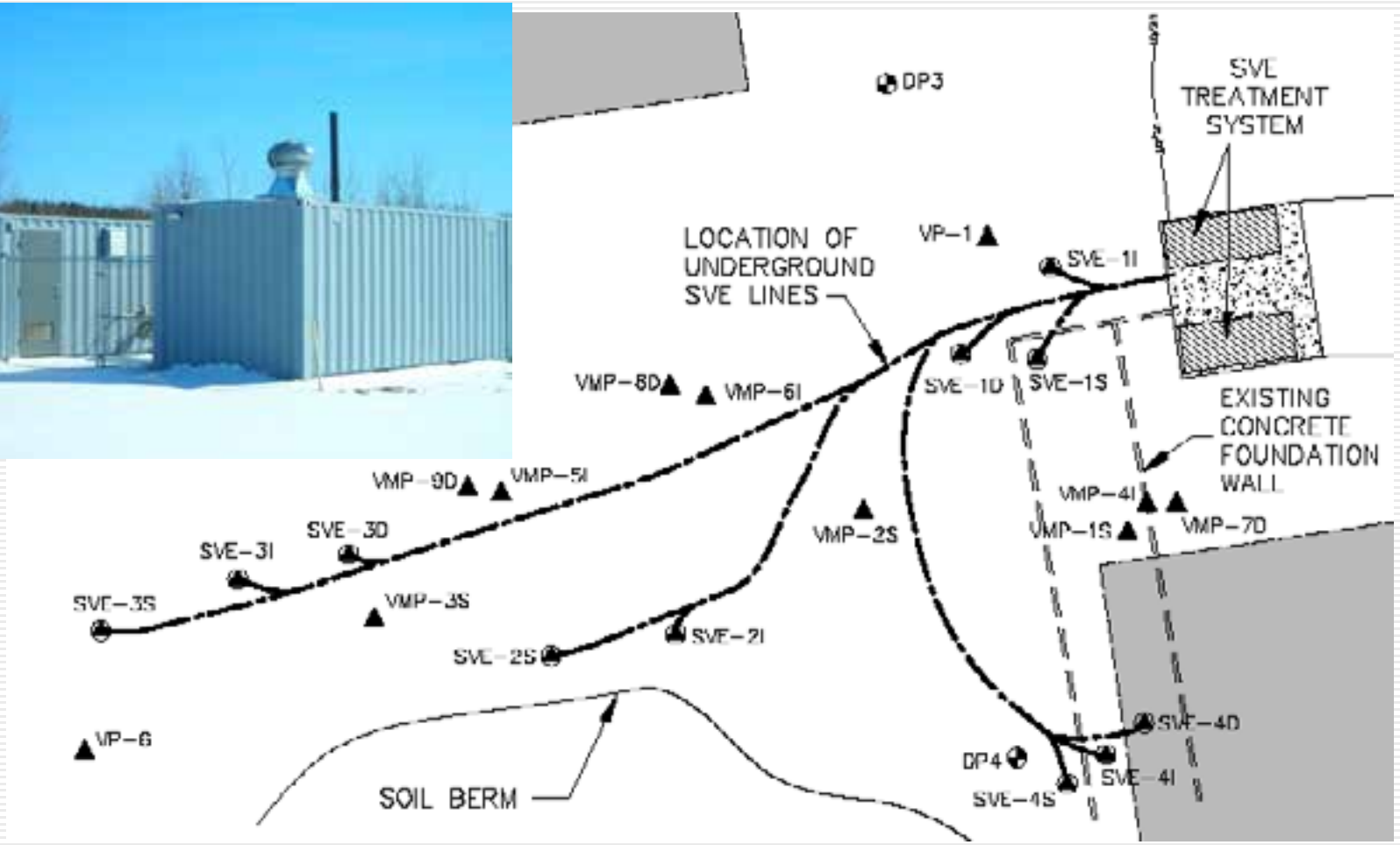
Remedial Program

Former Fuel Dispenser Area – Intermediate and Deep Zone Soil Vapor Extraction



How tomorrow moves CSX

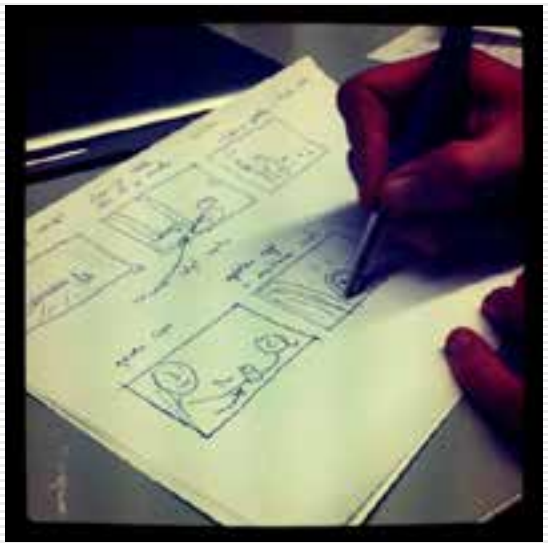
Conceptual Site Model Development
Salamanca Rail Yard

- Identification of source areas
- Migration pathways
- Exposure points/receptors
- Communication to stakeholders
  - City of Salamanca
  - Genesee & Wyoming (Buffalo & Pittsburgh line)
  - Potential private commercial/industrial development
  - New York State

Conceptual Site Model Development
Salamanca Rail Yard

Visualization Concept Process

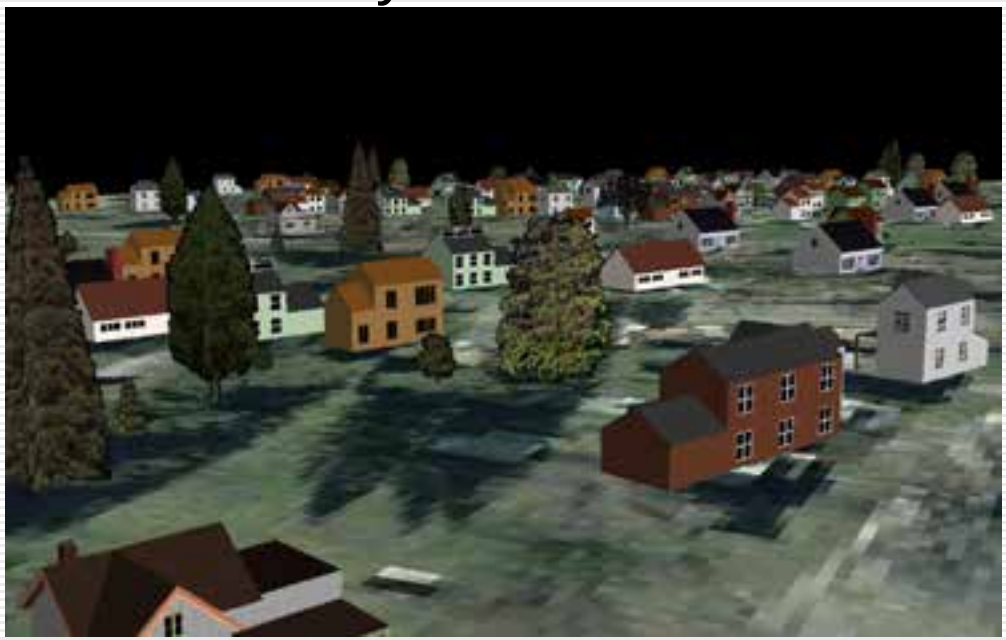
- Think through the known data in 4-Dimensions
  - Space and Time
- Storyboard the desired outcomes
- Identify data gaps and acquire additional data
- Define the deliverables and the scale
  - Animation
  - Poster
  - Real-world model



How tomorrow moves CSX

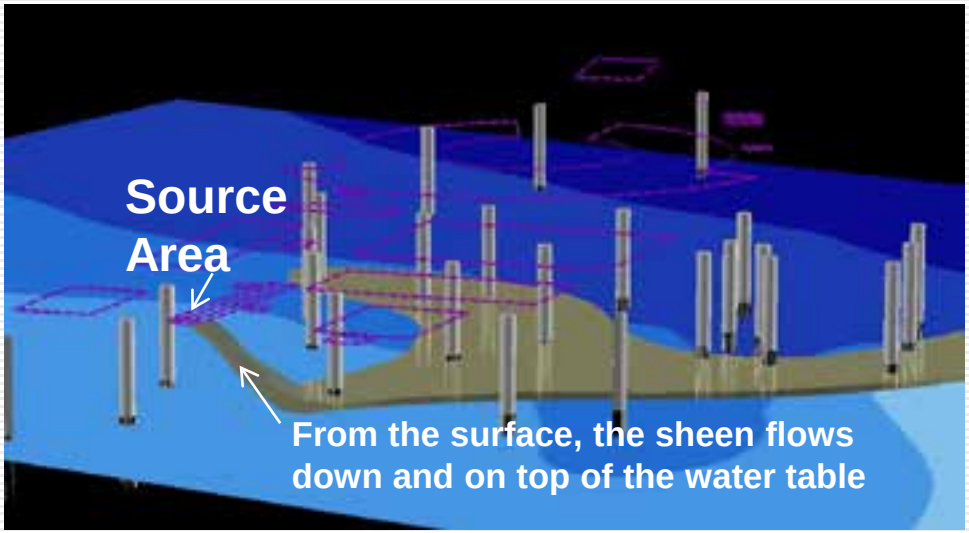
GIS Development
Conceptual Site Model

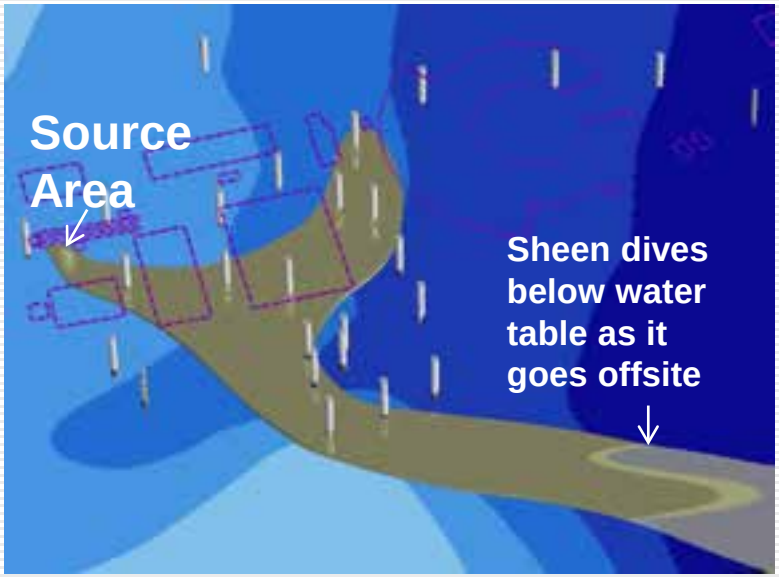
- Data sources
  - CAD, USGS Seamless Data Distribution
- Georeference historical images
- Define XYZ values and Coordinate System
- Assign symbology
  - Points
    - Trees, homes, samples
  - Lines
    - roads, rails
  - Polygons
    - Plumes, building footprints



GIS Development
Conceptual Site Model

- Create bookmarks (view points)
- Create animations
- Export to post-production
  - Final labeling, transitions, additional still images





CSM Animation

Imagine the result

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