

Flats East Redevelopment: *Post-NFA Remedy During Construction* Cleveland, Ohio



courtesy of Flats East Development, LLC

Ohio Brownfields Conference

May 2012

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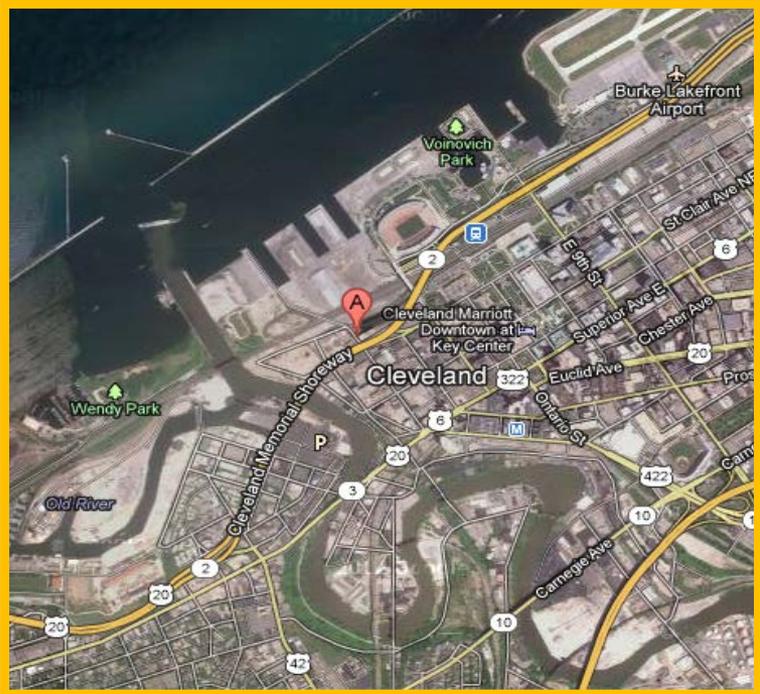
URS

Presentation Focus

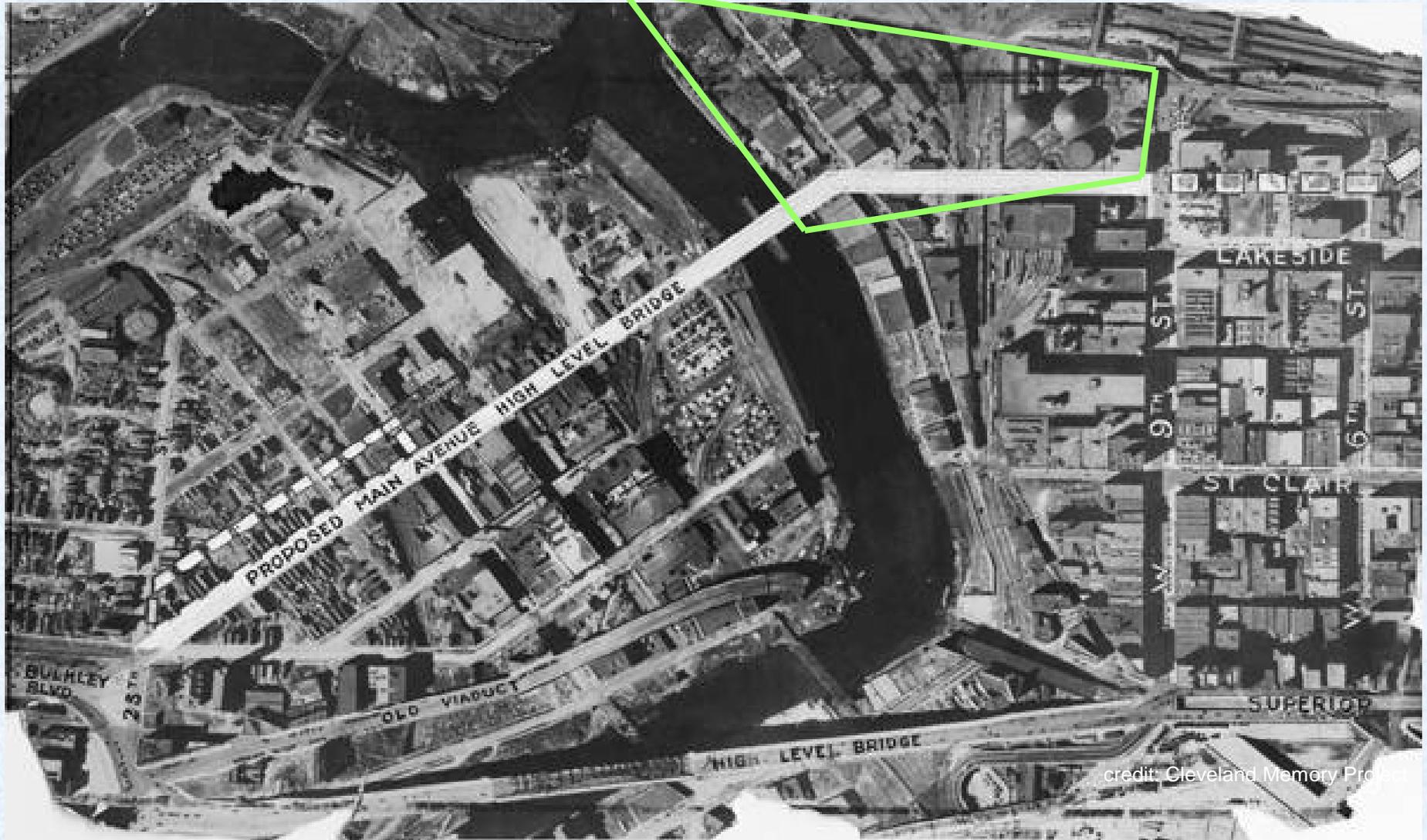
Implementation of cost-effective & innovative remedial solutions during construction



Site Location

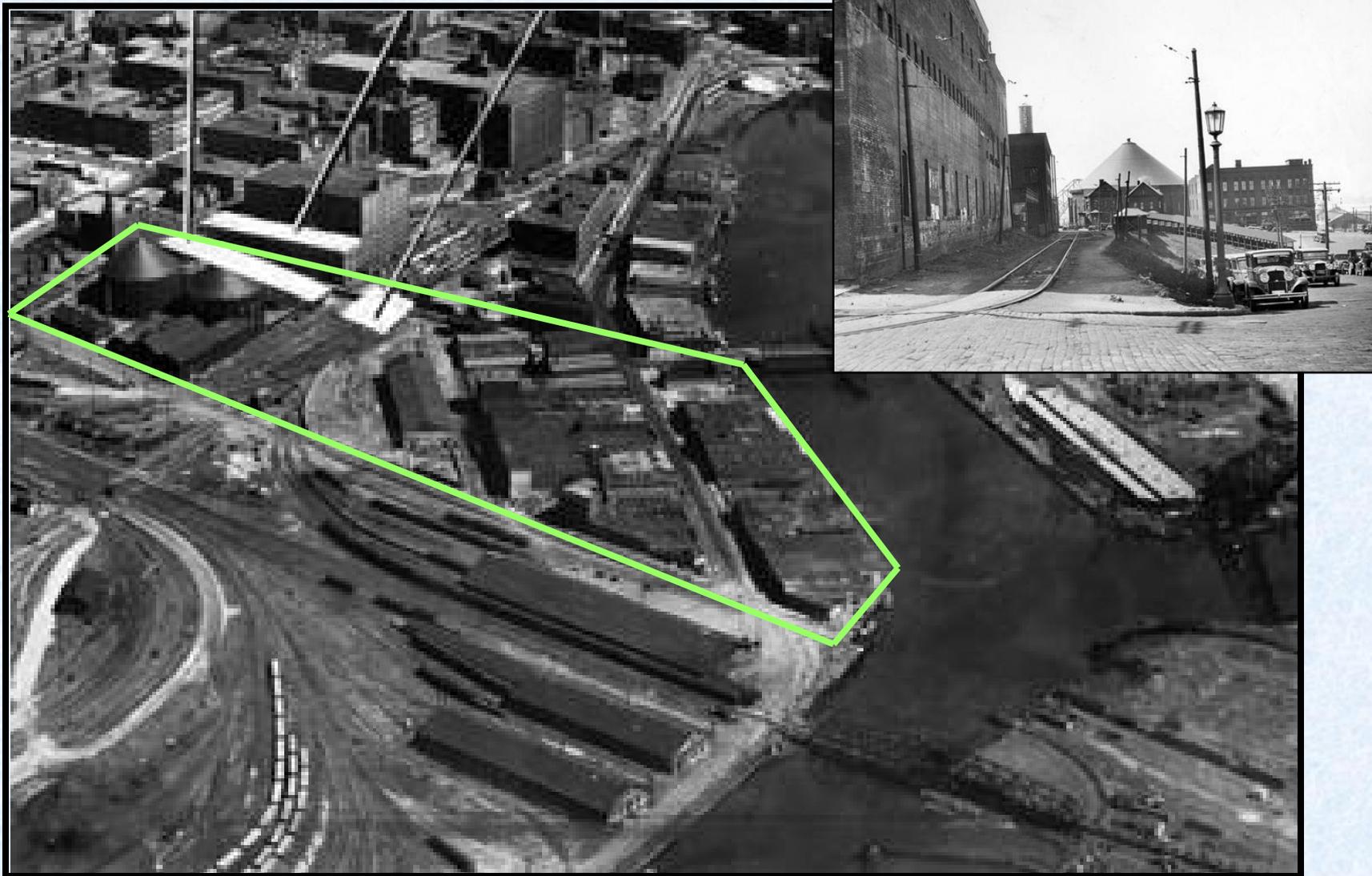


Historical Use – 1930s



credit: Cleveland Memory Project

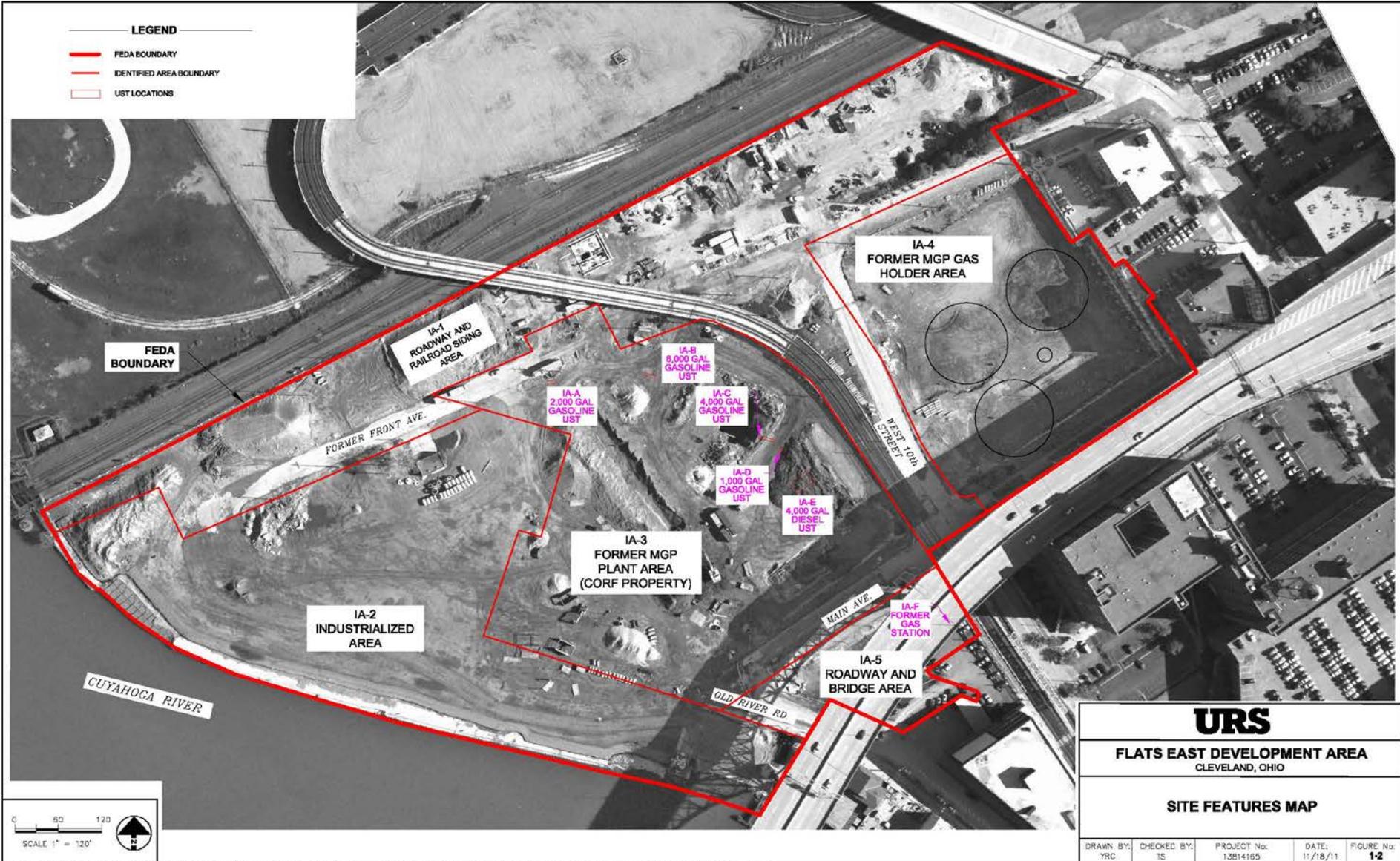
Historical Use – 1930s



Historical Use – 1940s



Identified Areas



Planned End Use

- Office Building & Hotel
- Greenspace
- Surface parking
- Future development: Retail/residential



courtesy of Flats East Development, LLC

Remedy Sequencing

- **Step 1 (2005 to 2010)**
 - Facilitate development – geotech considerations
 - Current receptors – NFA for public & private financing
- **Step 2 (2011 to 2012)**
 - Office tower/hotel construction
 - Utility installations
 - CORF Property 2nd NFA
 - O&M
- **Step 3 (2012 and beyond)**
 - Address new receptors
 - Modify/reduce O&M



Remedy Process

Step 1 – Initial Phase

- ❑ Asbestos abatement & building demolition
- ❑ Remove & replace unsuitable soil (fill, solvents)
- ❑ Locate & remove 5 USTs
- ❑ Remove, stabilize & dispose residual coal tar



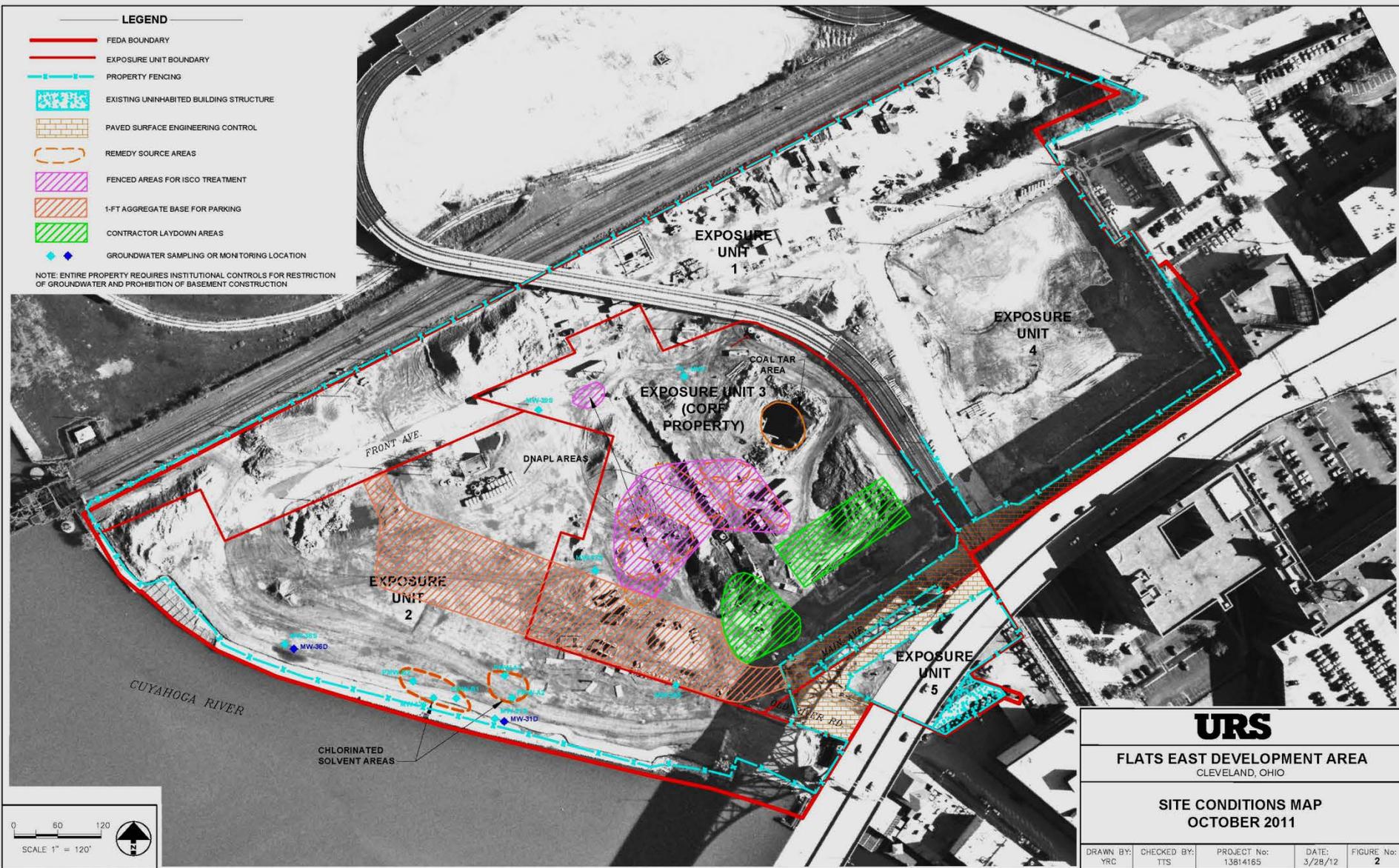
Remedy Process

Step 1 – Initial Phase (cont'd)

- ❑ Need NFA to secure financing
- ❑ Current receptors (construction worker, Cuyahoga River)
- ❑ In-Situ Chemical Reduction: Groundwater treatment adjacent to river
- ❑ Delineate DNAPL & monitor groundwater
- ❑ Maintain perimeter fence
- ❑ Risk Mitigation Plan



Post-NFA Conditions – 2011



Remedy Process

Step 2 – Construction Phase

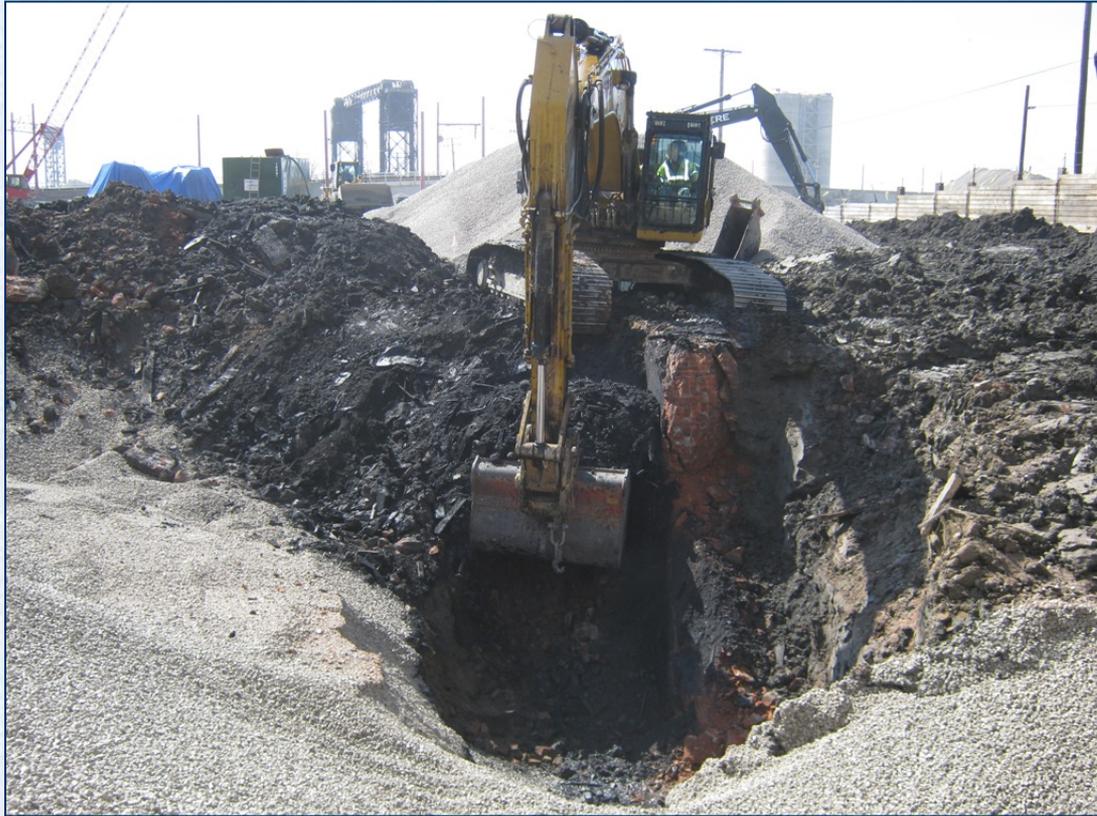
- ❑ MGP gas holders
 - Remove or cap
- ❑ Vapor barrier & vents
- ❑ Excavate coal tar
- ❑ DNAPL treatment
 - In-Situ Chemical Oxidation (ISCO)



Gas Holder Excavation



Gas Holder Excavation



Gas Holder Capping



Vapor Barrier & Vent



Vapor Barrier Protection



Coal Tar Pit Removal



ISCO Injections



Challenges

Work around Heavy Equipment



Unforeseen Conditions



Need for Dewatering



Odor Suppression



Remedy Process

Step 3 – Future Use

1. Building slabs & paved surfaces
2. 2' soil cover in green space
3. Remove fence
4. Add'l Treatment
5. Modify O&M Plan



Owner's Representative

- ❑ Bridge between scientist/engineer & contractor
- ❑ Cost saving solutions
- ❑ Strategic planning
- ❑ Creative bidding
- ❑ Risk management



Mat Foundation



Building Construction

8/1/11



11/29/11



3/13/12



4/30/12



Property-wide Planning



Questions?

