

Allied Landfill: OU1

EPA Cleanup Alternatives

January 13, 2011



Agenda

- Update on Activities
- Conceptual Site Model
- Descriptions of Alternatives
- Discussion

Allied Landfill Update

- Millennium Submits Feasibility Study (FS)
 - EPA rejects with comments
- Millennium Bankruptcy
- EPA takes over FS - May 2010

Anticipated Schedule

- Proposed Plan April 2011
- Public Hearing May 2011
- Record of Decision September 2011
- Design and Implementation

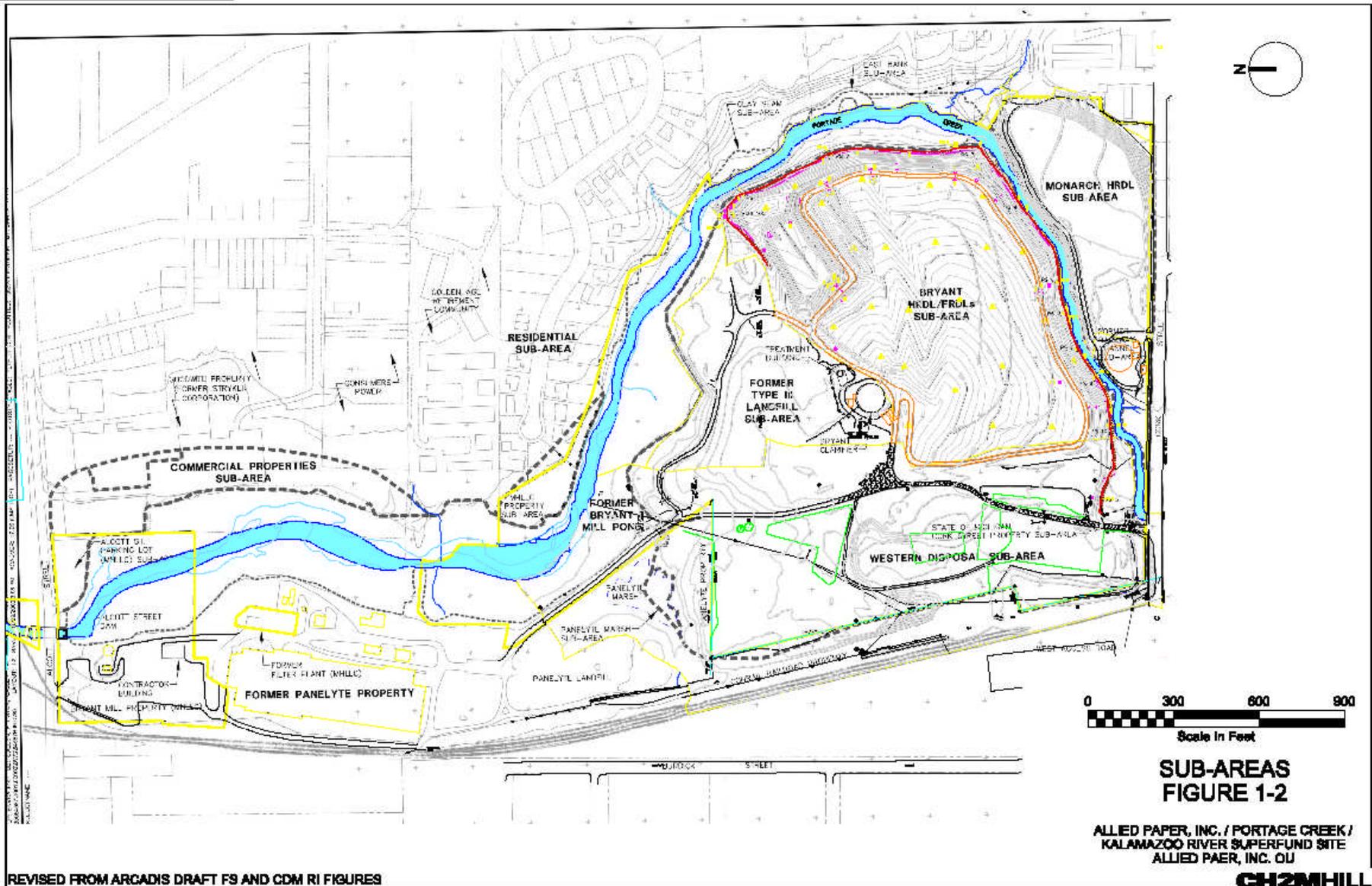
Conceptual Site Model

- Contaminated Media/Exposure Pathways
 - Risk Assessments
- Remedial Action Objectives
 - Actions to Prevent Exposure
- Remedial Goals
 - Cleanup Numbers (Concentrations)

Contaminated Media/Exposure Pathways

- Contaminated Media at OU1
 - Residuals/Soils
 - Sediments
 - Groundwater
 - Seeps

Allied Landfill Sub-Areas



REVISED FROM ARCADIS DRAFT F9 AND CDM RI FIGURES

Contaminated Media/Exposure Pathways

- Exposure Pathways
 - Direct Contact/Direct Ingestion
 - Residuals/Soils
 - Groundwater/Seeps
 - Ingestion of Contaminated Animals
 - Off-Site Migration of Impacted Groundwater/Surface Water
 - Flow to Portage Creek

Remedial Action Objectives

- RAO 1-Mitigate the potential for human and ecological exposure to materials at OU1 containing PCB concentrations that exceed applicable risk-based cleanup criteria.
- RAO 2-Mitigate the potential for PCB-containing materials to migrate, via erosion or surface water runoff, into Portage Creek or onto adjacent properties.
- RAO 3-Mitigate the potential for groundwater with PCB concentrations exceeding applicable criteria to migrate to Portage Creek or offsite.

Remediation Goals

Medium		Pathway	PCB Remedial Goals
Soils	Human Health	Residential	2.5 mg/kg
		Commercial/Industrial	16 mg/kg
	Ecological	Recreational	23 mg/kg
		Aquatic	0.5–0.6 mg/kg
Sediments	Human Health	Terrestrial	6.5–8.1 mg/kg
		Fish Consumption	0.33 mg/kg
	Ecological	Aquatic	0.5–0.6 mg/kg
Groundwater (including seeps)	Human Health	Direct Contact	3.3 µg/L
		Groundwater-Surface Water Interface	0.2 µg/L
Residuals		N/A	Qualitative: Where a removal is proposed, all visible residuals are to be removed unless analytical data are non-detectable to confirm PCBs (if present) are below applicable Criteria.

Notes:

The sediment PCB criterion of 0.33 mg/kg is to be applied to soils or sediments within inundated areas, based on an applicable inundation period that has not yet been defined.

mg/kg – milligrams per kilogram

µg/L – micrograms per liter

N/A – not applicable



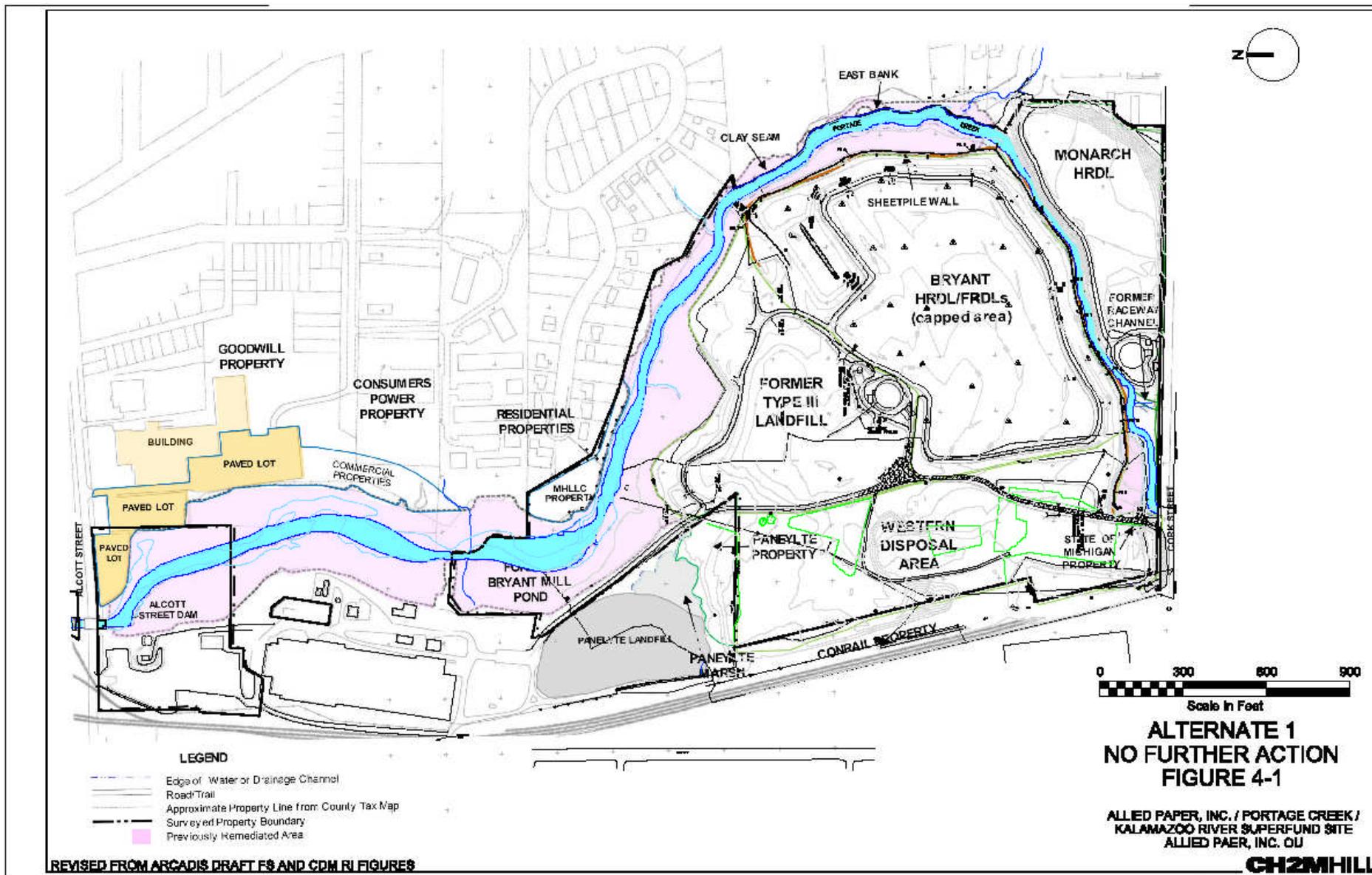
Treatment Consideration

- City Proposal
 - In-Situ Solidification of Residuals
 - GW collection and Slurry Walls
- Treatment
 - Reduce Mobility of Contaminants
 - Paper Residuals and PCBs
 - Treatment Adds Volume

Array of Alternatives

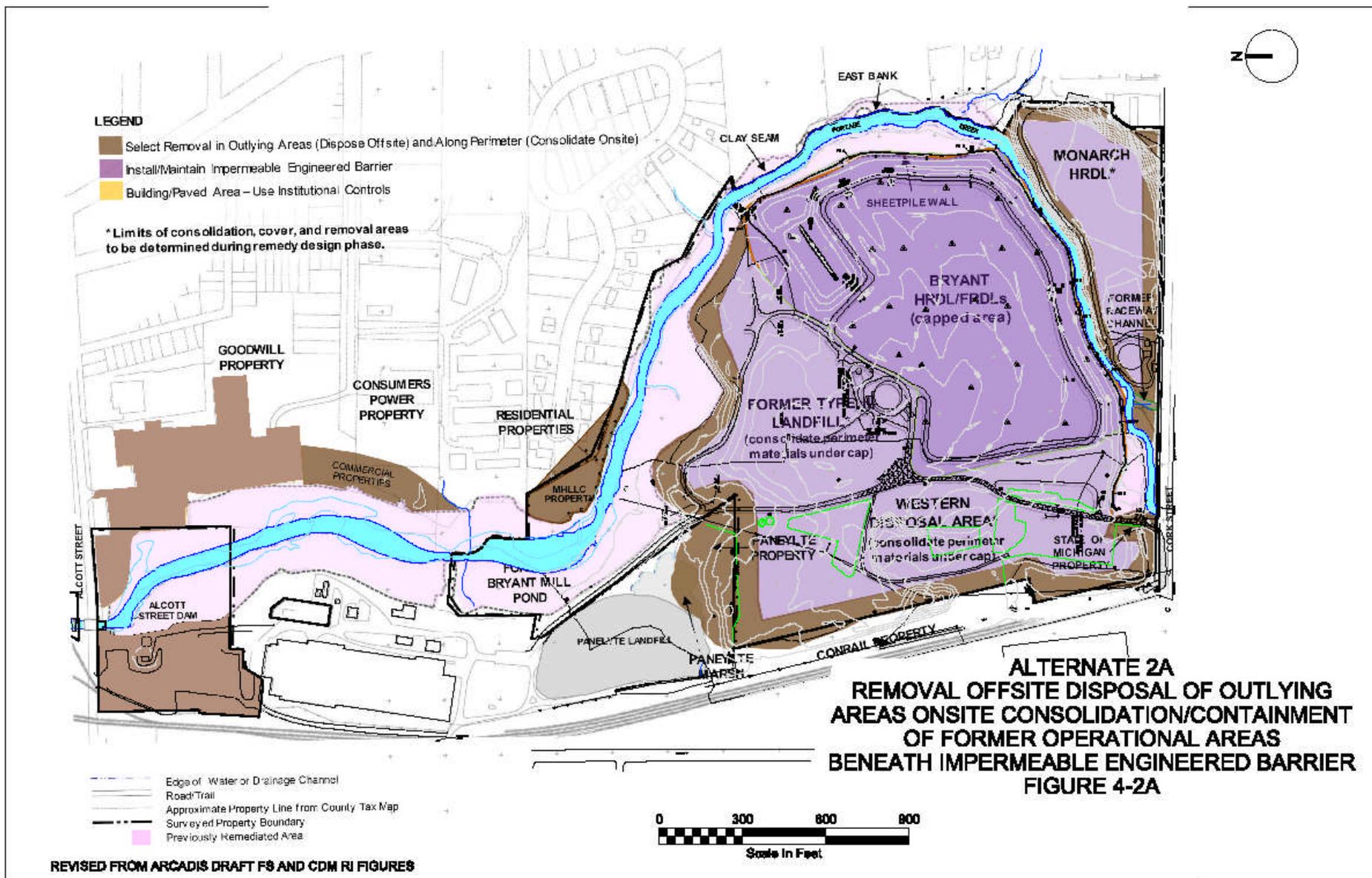
- 1 - No Action Alternative
- 2 - Consolidation and Capping
 - a – Monarch Capped in Place
 - b – Monarch Consolidated into Bryant HRDLs
- 3 - Excavation and Off-Site Disposal
- 4 – On-Site Encapsulation in Cells

Alternative 1- No Action



REVISED FROM ARCADIS DRAFT FS AND CDM RI FIGURES

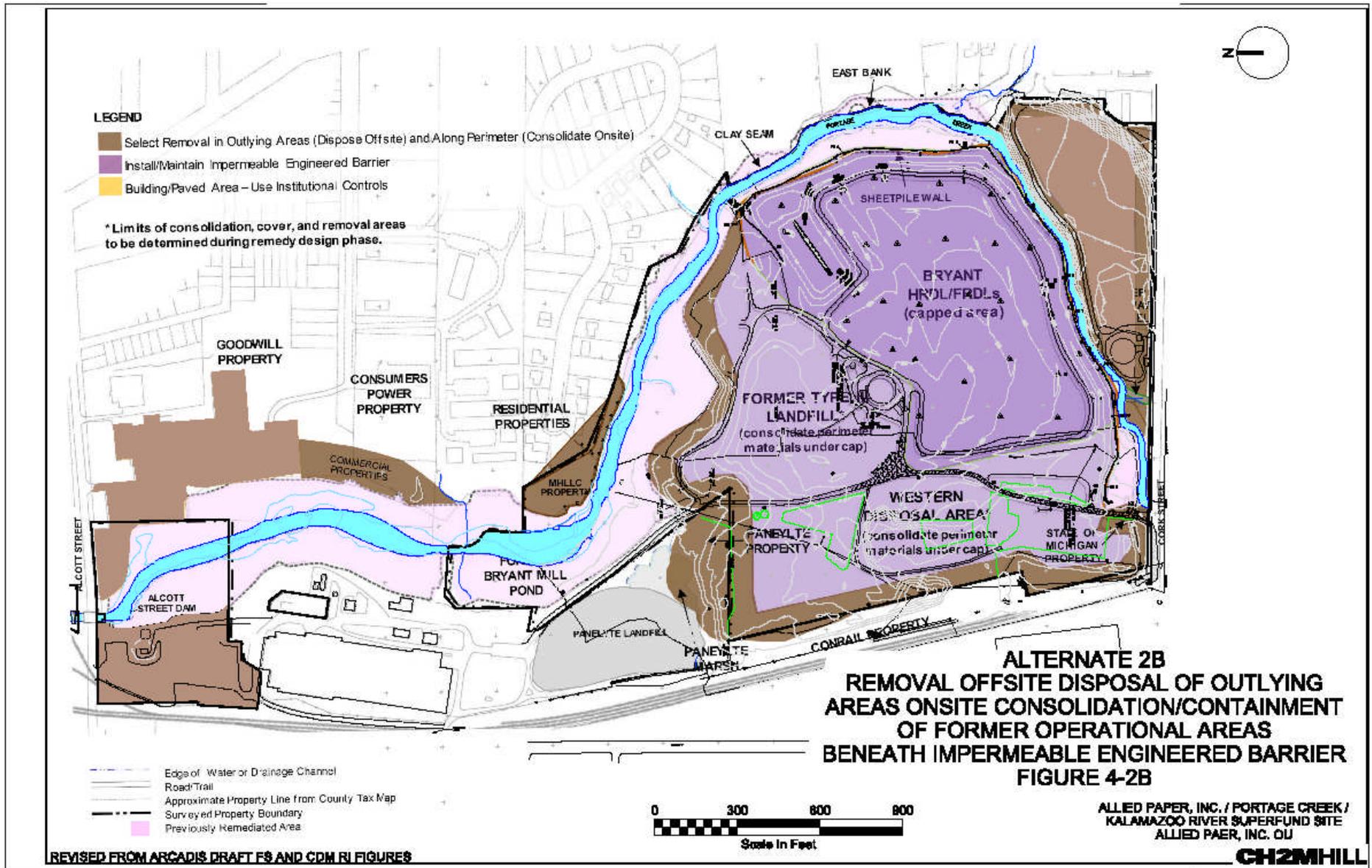
Alternative 2a - Consolidation



Alternative 2a Consolidation

- Site Preparation
- Excavation/Consolidation
- Cover System
- Stormwater Management
- Restoration
- Monitoring System
- O&M
- Total (with Contingency): **\$37 Million**

Alternative 2b – Consolidation (Monarch Moved)



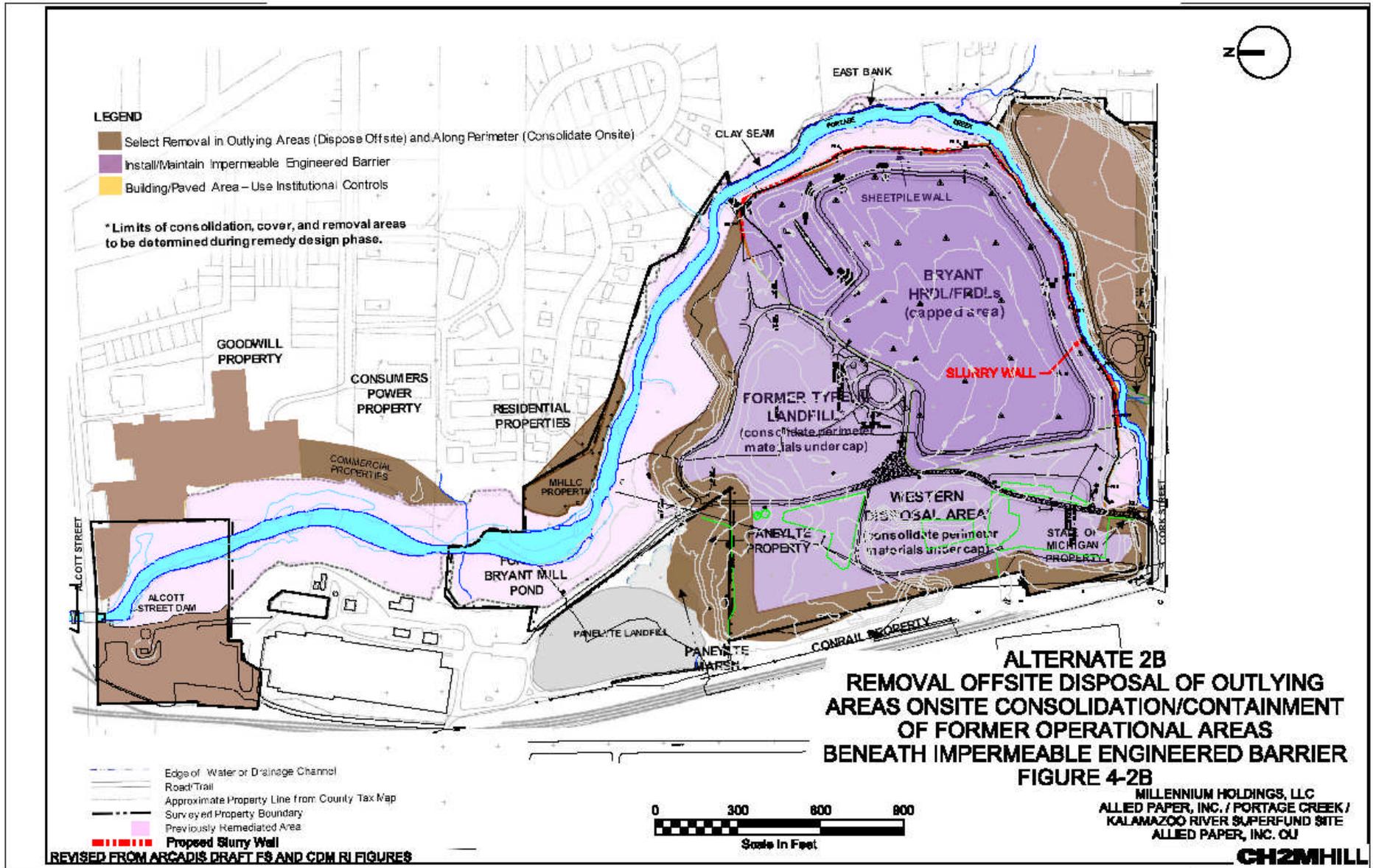
Alternative 2b Consolidation (Monarch Moved)

- Site Preparation
- Excavation/Consolidation
- Cover System
- Stormwater Management
- Restoration
- Monitoring System
- O&M
- Total (with Contingency): **\$37 Million**

Optional Groundwater: 2a and 2b

- Pump and Treat System
 - Alternative 2a: \$4 Million (\$41 Million)
 - Alternative 2b: \$4 Million (\$41 Million)
- Slurry Wall/Pump and Treat System
 - Alternative 2a: \$9 Million (\$46 Million)
 - Alternative 2b: \$8 Million (\$45 Million)

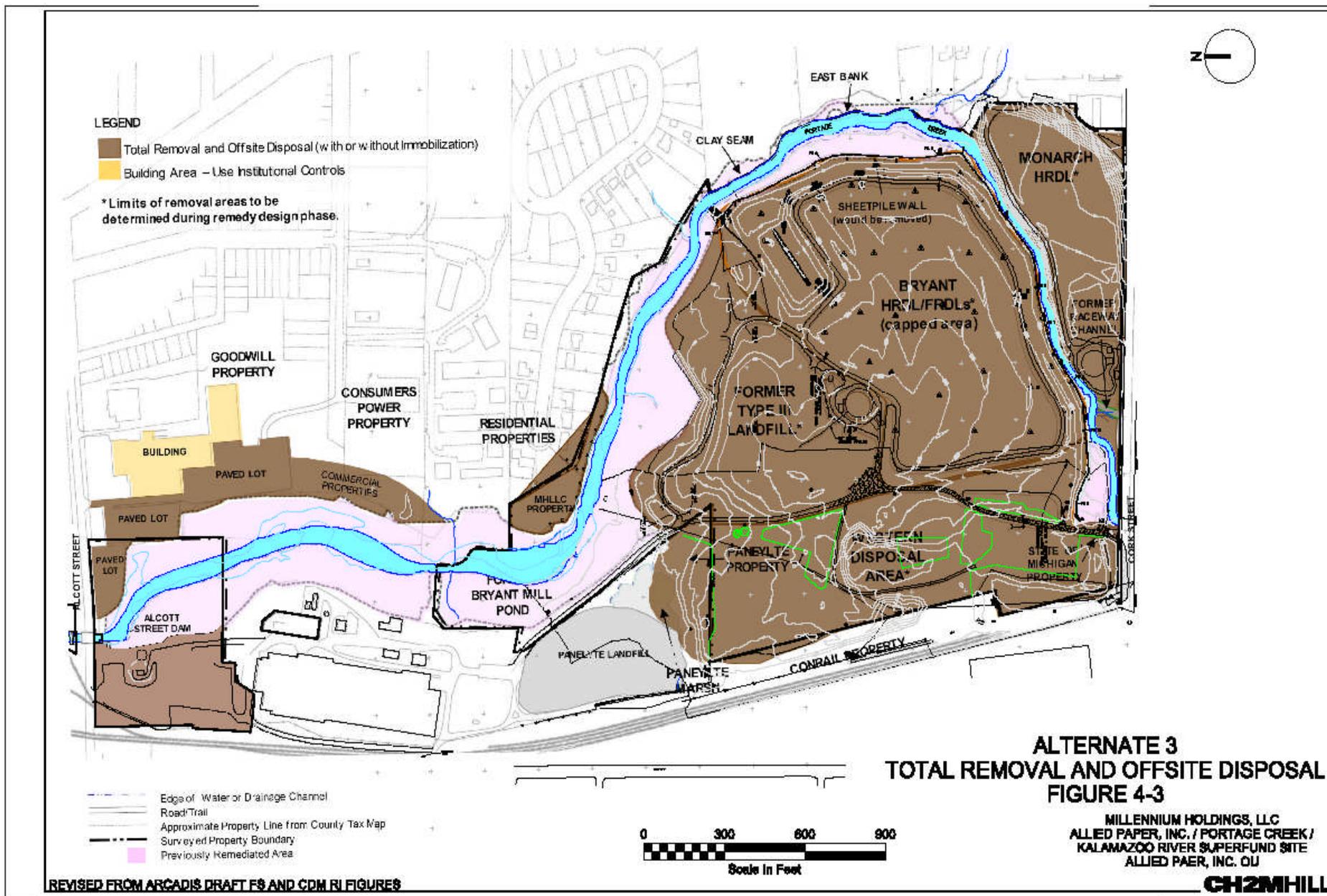
Slurry Wall Option



Optional Groundwater: 2a and 2b

- Pump and Treat System
 - Alternative 2a: \$4 Million (\$41 Million)
 - Alternative 2b: \$4 Million (\$41 Million)
- Slurry Wall/Pump and Treat System
 - Alternative 2a: \$9 Million (\$46 Million)
 - Alternative 2b: \$8 Million (\$45 Million)

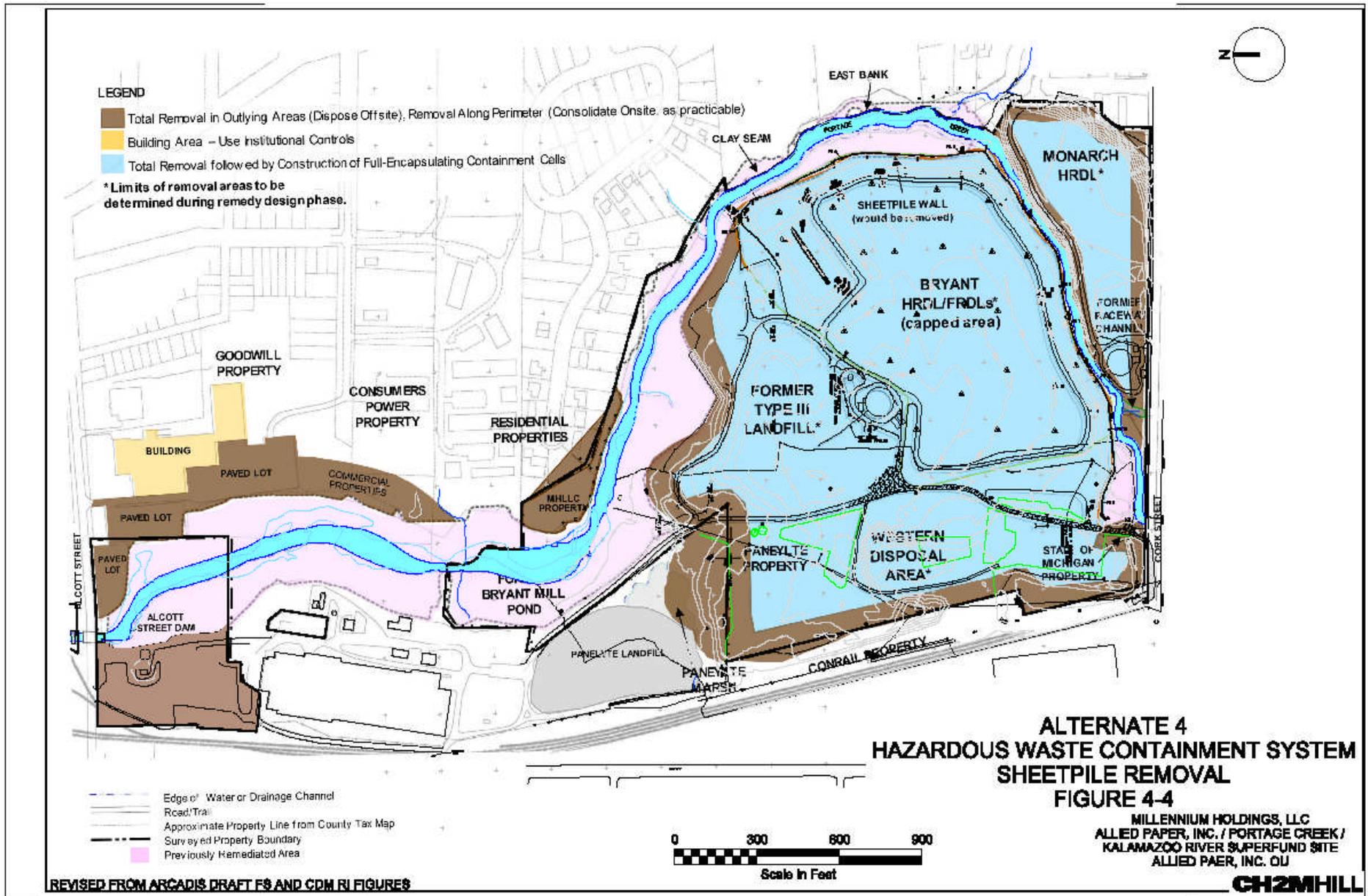
Alternative 3 – Full Excavation



Alternative 3 Off Site Disposal

- Site Preparation
- Excavation
- Off-Site Transportation: \$60 Million
- Off-Site Disposal: \$120 Million
- Restoration
- Total (with Contingency) \$238 Million

Alternative 4 Hazardous Waste Containment System



Alternative 4 Encapsulation

- Site Preparation
- Excavation/Consolidation
- Transportation/Disposal
- Base Liner
- Final Cover System
- Stormwater Management
- Restoration
- O&M
- Total (with Contingency): **\$140 Million**



Discussion

Anticipated Schedule

Proposed Plan April 2011

Public Hearing May 2011

Record of Decision September 2011

Design and Implementation