

Revitalization of the former Bethlehem Steel Plant



Agenda

1. History & Background
2. Brownfield development
3. Remediation
4. Statement of Basis (SOB)
5. Planned public access
6. Smokes Creek Basin Study

History and Background



Site History

- Iron/steel production 1901-1983
- 2 miles long by 1 mile wide
- 2001 BSC files for bankruptcy
- 2020 Cleveland-Cliffs - **Tecumseh Redevelopment Inc.**

MILD
Chance of rain late today.
Most chance of rain tonight and tomorrow.

COMPARE DETAILS ON PAGE A-10

THE BUFFALO NEWS


1982 by Buffalo Evening News, Inc.

Metro North

56 Pages 3 sections MONDAY, DECEMBER 27, 1982 Vol. CCV, No. 38 25 Cents

Bethlehem to Cease Steelmaking In Lackawanna; 3,900 Jobs Lost

1,300 Will Stay For Operation of Finishing Mills



By ROBERT J. SUMMERS
Bethlehem Steel Corp. today said it plans to shut down permanently the heart of its sprawling Lackawanna plant.

About 3,900 people will lose their jobs, and another 3,400 who have been laid off can give up hopes for a callback. About 1,300 jobs will remain.

The shutdown, which will involve the plant's basic steelmaking operations, climaxes the worst year in the recent history of the plant, the company and the American steel industry.

The news, which Bethlehem workers and the city of Lackawanna had worriedly anticipated for some time, came this morning in an announcement of a "restructuring plan" from Donald H. Trivette.

Union Asks Politicians To Intervene

Bethlehem Steel Corp. plans to phase out another 3,700 jobs and end basic steelmaking at its sprawling Lackawanna plant.



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**Department of
Environmental
Conservation**

Challenges

- 1600 acres – RCRA Interim Status & EPA lead
- 104 Solid Waste Management Units
- Extensive soil/gw/sw/sediment contamination
- 6 water bodies
- Bankruptcy – Contentious relationship with Beth Steel

Challenges

- ~ 500 acres of slag fill up to 90 feet in thickness
- TENORM – Technologically Enhanced Naturally Occurring Radioactive Material
- RCRA Corrective Action, SSF, & BCP regulatory programs
- CMS, after 3 revisions, was **NOT** approved by DEC
- Article 78 Lawsuit

November 2016







Temperature inversion



RCRA Facility Assessment (RFA) – 1988



RCRA Facility Investigation (RFI) – 1990-2006



Interim/Expedited Corrective Measures

Corrective Measures Study (CMS) – 2009-2020

Corrective Action Consent Order
2020



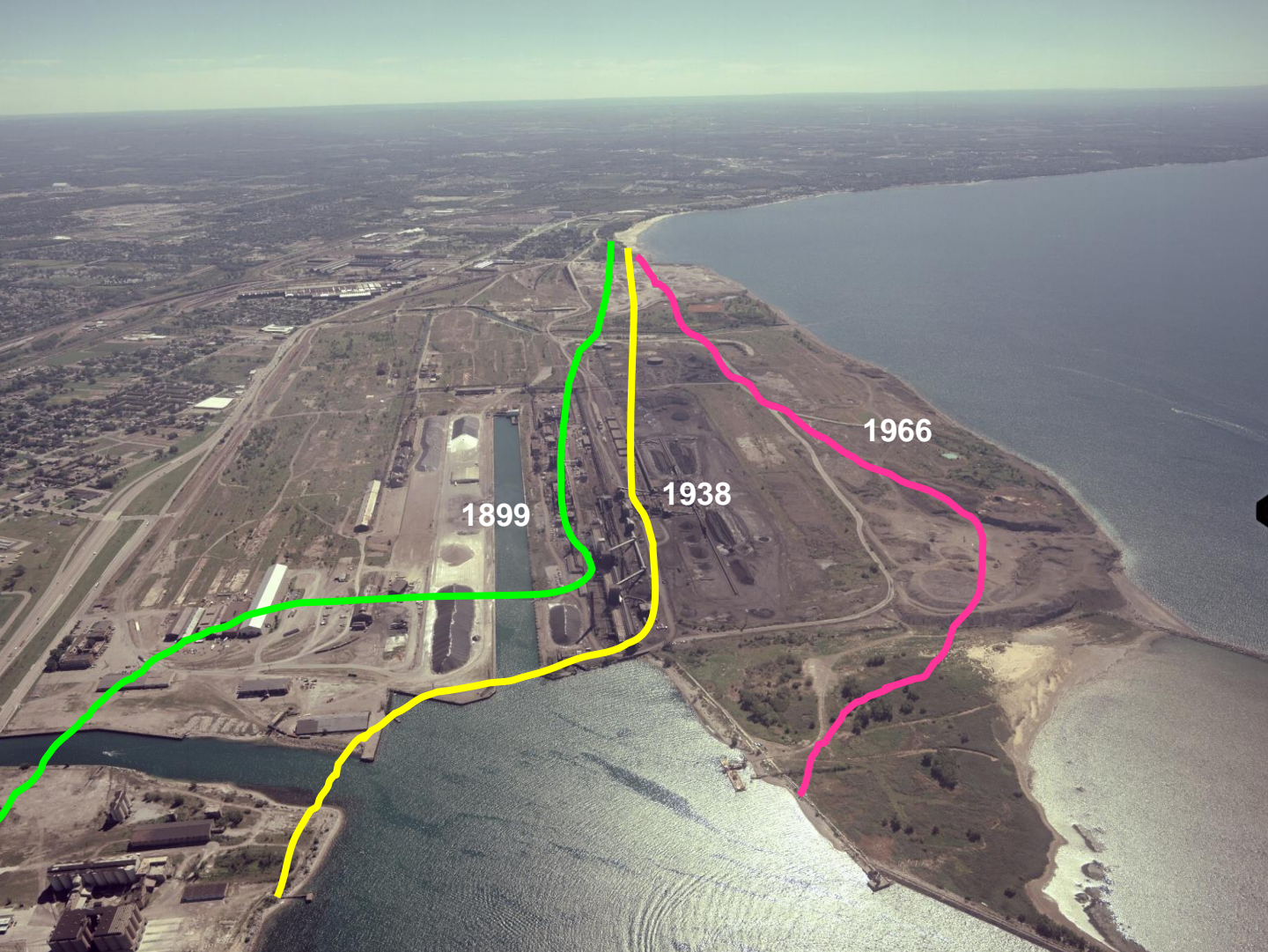
Interim/Expedited Corrective Measures

Statement of Basis (SOB) – 2021



Corrective Measures Implementation (CMI)





1899

1938

1966



Union Ship Canal



Lackawanna Ship Canal



Smokes Creek



Confined Disposal Facility



Integrated Steel Making

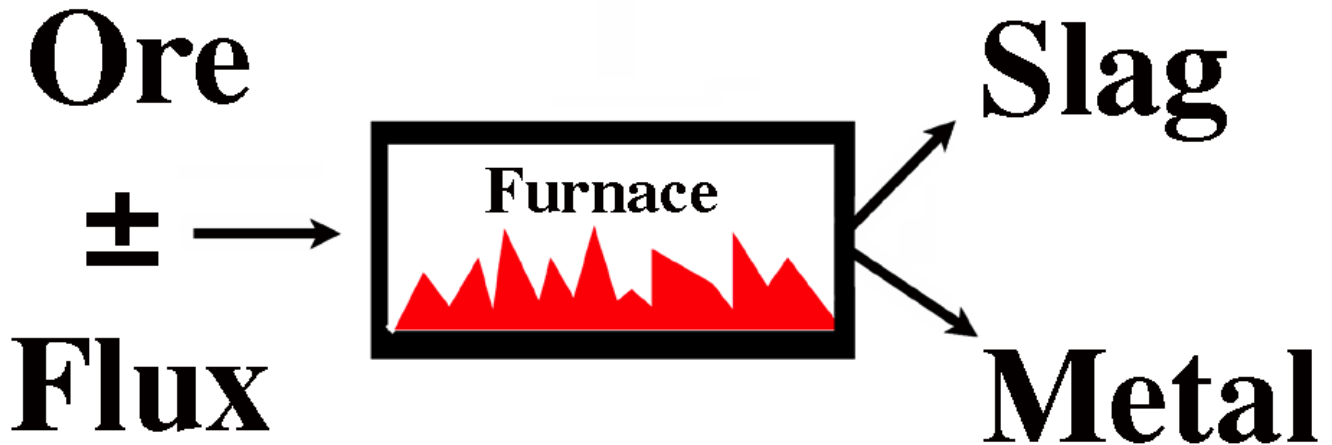
COKE - Coal baked in coke ovens

IRON - Limestone & iron ore in blast furnace produced iron & slag

STEEL - Molten iron + alloys + scrap in open hearth or basic oxygen furnace produced steel and slag



What is slag?



Buffalo Southern R.R. Dumping Slag (9-18-43)

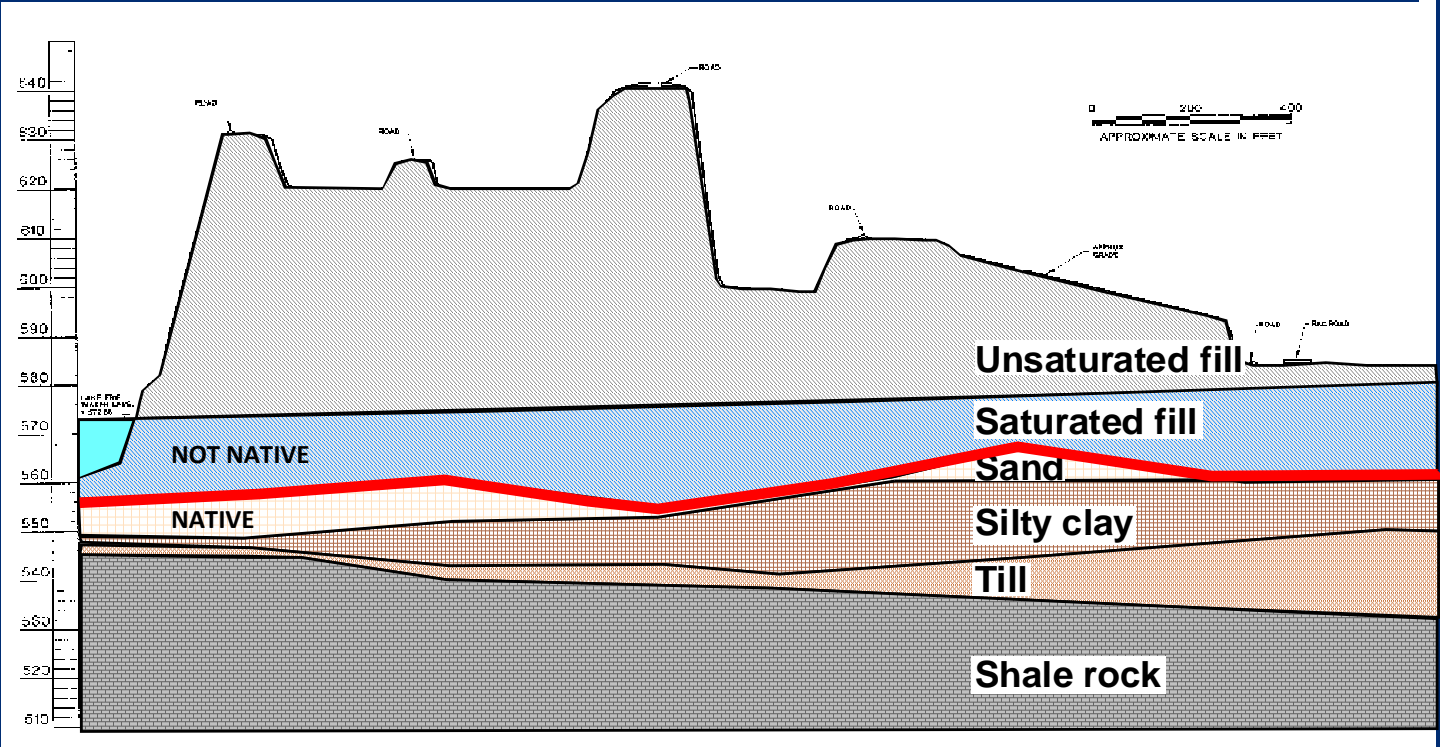


Buffalo Southern R.R. Dumping Slag (9-18-43)



Buffalo Southern R.R. Dumping Slag (9-18-43)





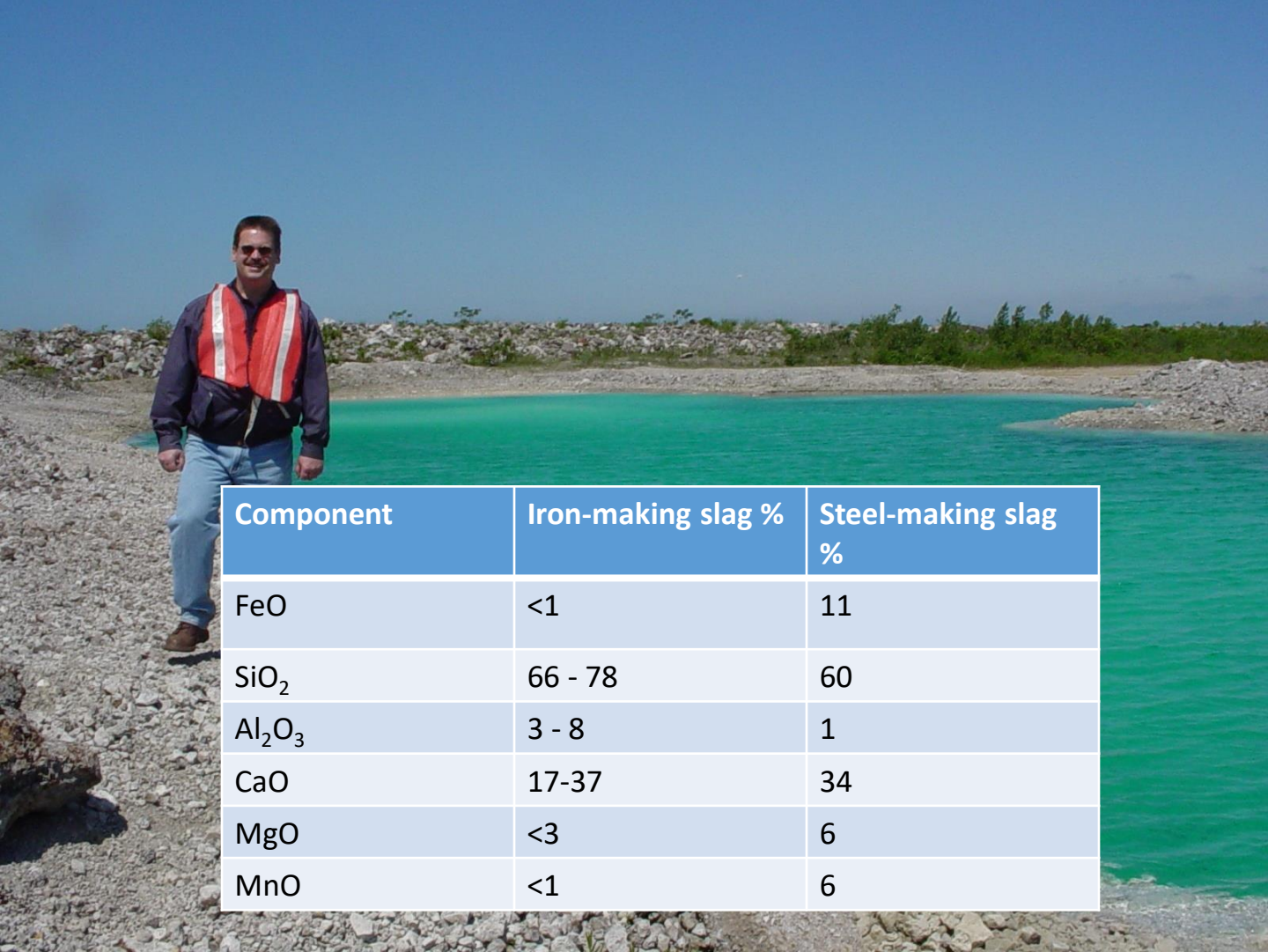


95 12 4









Component	Iron-making slag %	Steel-making slag %
FeO	<1	11
SiO ₂	66 - 78	60
Al ₂ O ₃	3 - 8	1
CaO	17-37	34
MgO	<3	6
MnO	<1	6

Completed - ongoing projects

Coke oven area groundwater

Removal of 5 million gallon tank

ATP and Coke Agitator Sludge Pit

Smokes Creek dredging

Coke oven gas line (subsurface)



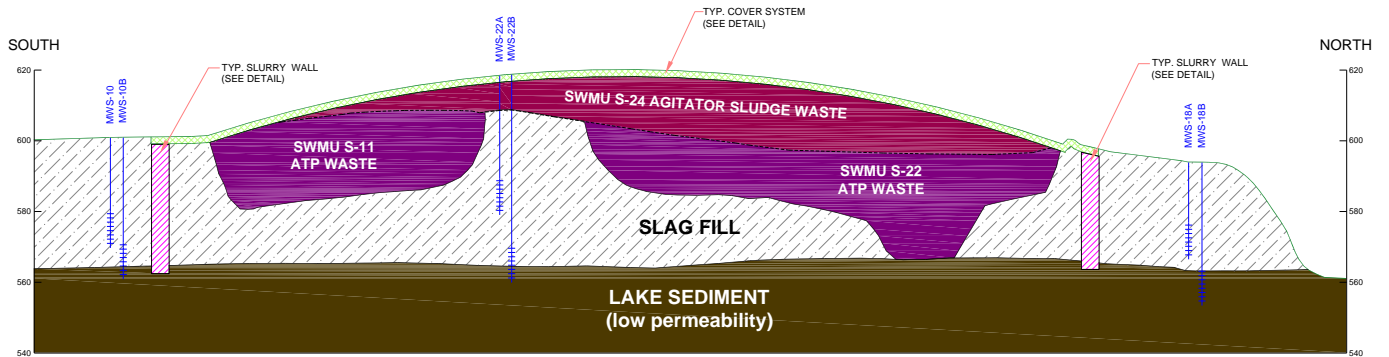
ATP Containment System





2005 5 6

ATP Group X-section



GEOLOGIC CROSS-SECTION OF ATPs

SCALE AS SHOWN







Sampling at SWMU P-18A

34

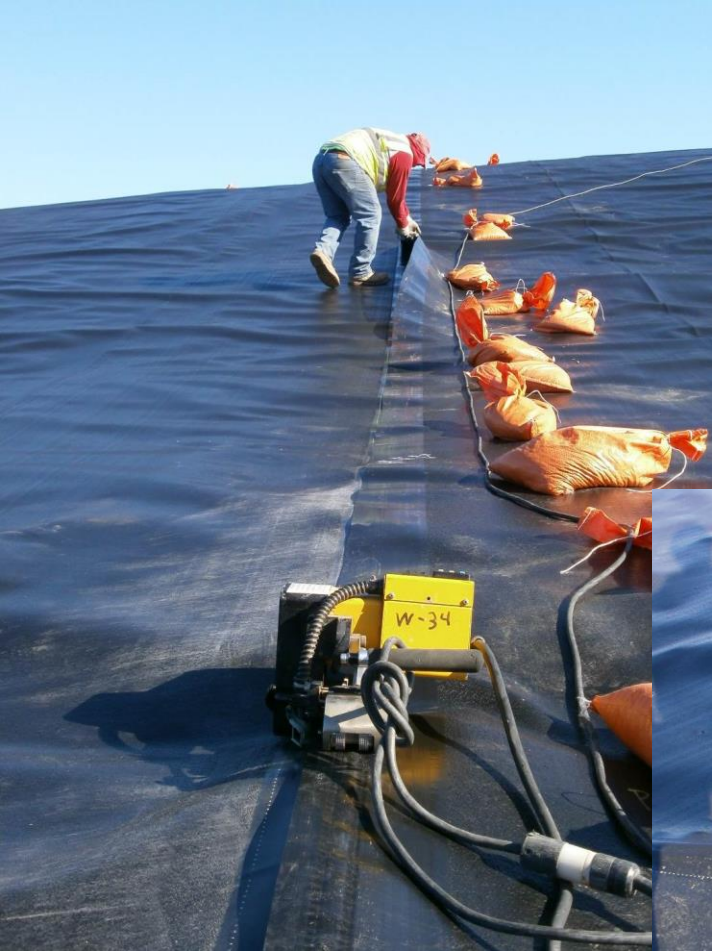








CE
I-10251



ATP Containment System

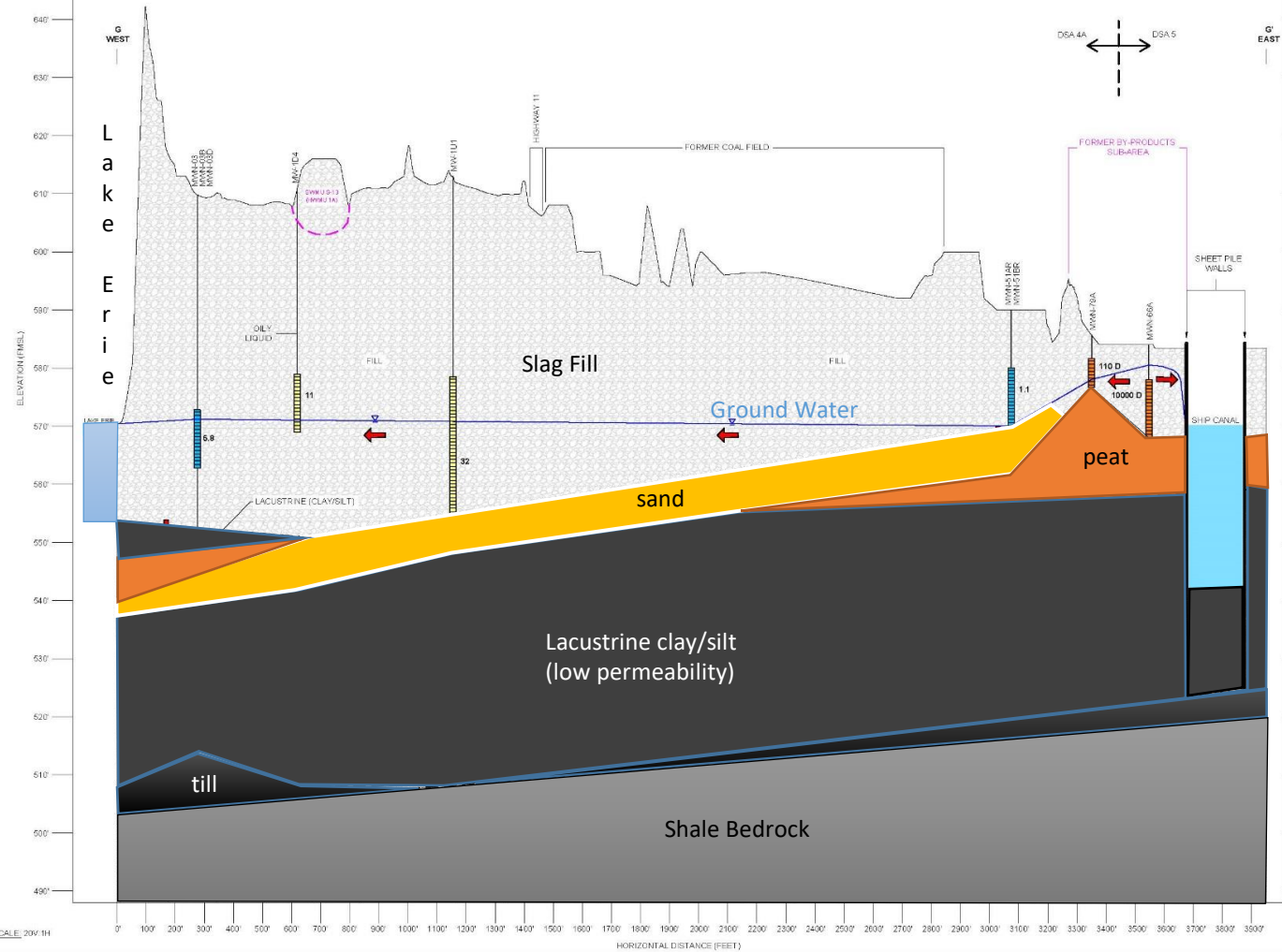
- Construction of slurry wall and cap system
- Pumping inside of ATP to treatment plant
- Pumping outside groundwater to treatment plant
- Monitoring of water elevations inside ATP
- Monitoring of groundwater quality and elevations outside of ATP System



Coke Oven GW Remediation







DATE: JULY 2015
 DRAWN BY: BLS

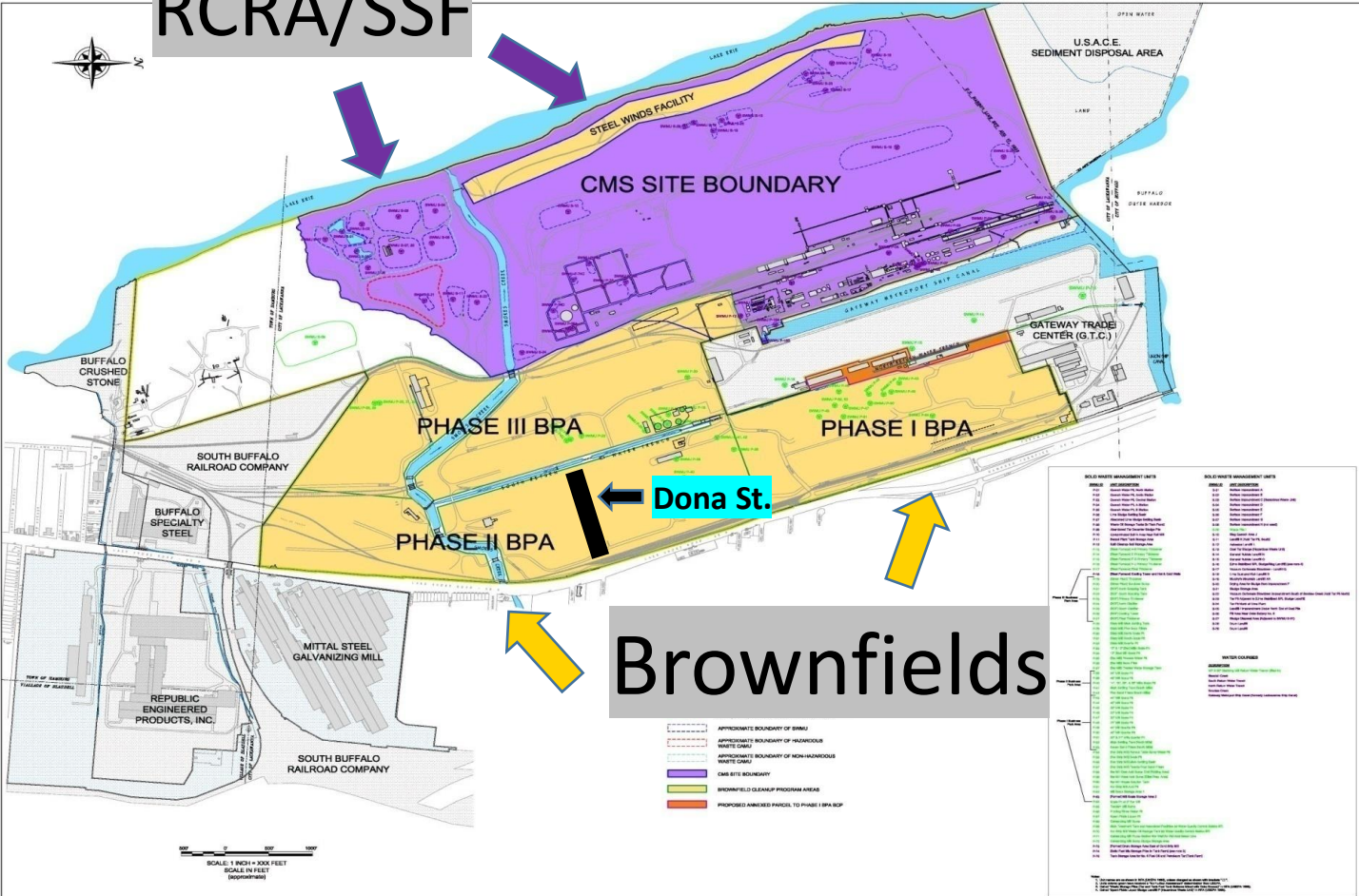
SCALE: 20V:1H

HORIZONTAL DISTANCE (FEET)

Tecumseh completed dredging lower 2600 feet of stream in 2009

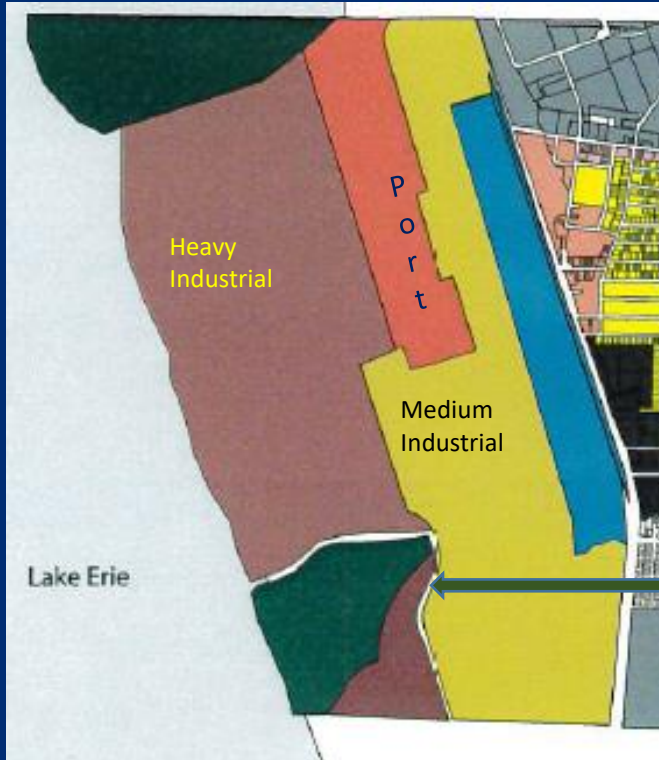


RCRA/SSF



SOLID WASTE MANAGEMENT UNITS		SOLID WASTE MANAGEMENT UNITS	
UNITS	DESCRIPTION	UNITS	DESCRIPTION
U-1	U-1	U-1	U-1
U-2	U-2	U-2	U-2
U-3	U-3	U-3	U-3
U-4	U-4	U-4	U-4
U-5	U-5	U-5	U-5
U-6	U-6	U-6	U-6
U-7	U-7	U-7	U-7
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U-98	U-98	U-98	U-98
U-99	U-99	U-99	U-99
U-100	U-100	U-100	U-100

City of Lackawanna Zoning Ordinance (3/2019)



Map Legend

-  Single Family Residential
-  Mixed Residential
-  Central Business District
-  Neighborhood Commercial
-  Regional Commercial
-  Industrial
-  Light Industrial
-  Medium Industrial
-  Heavy Industrial
-  Mixed Commercial/ Industrial
-  Intermodal Port
-  Open Space
-  McKinley Parkway Overlay
-  Seaway Trail Overlay
-  Smokes Creek Overlay

Recent Brownfield Developments



Steel Winds

Development cost ~ \$45.1 M





Welded Tube
Development cost ~ \$41 M

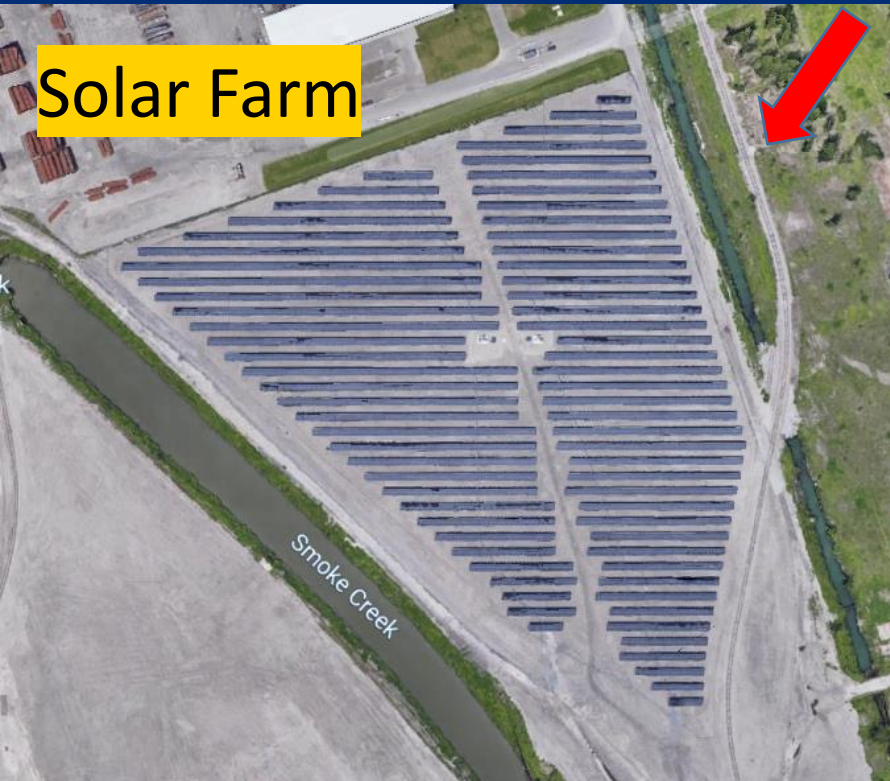
Solar Farms
Development cost ~ \$36 M

Dona Street
Development cost ~ \$2.2 M
First public road in history of site

TMP
Development cost ~ \$30 M

New
Railroad
Line

Solar Farm



Total new and relocated
rail investment ~ \$9.6 M



BLOWING ENGINE HOUSE No. 3

Gateway Metroport

POWER HOUSE No. 1

Sucro Sourcing

Anticipated development cost ~ \$22M





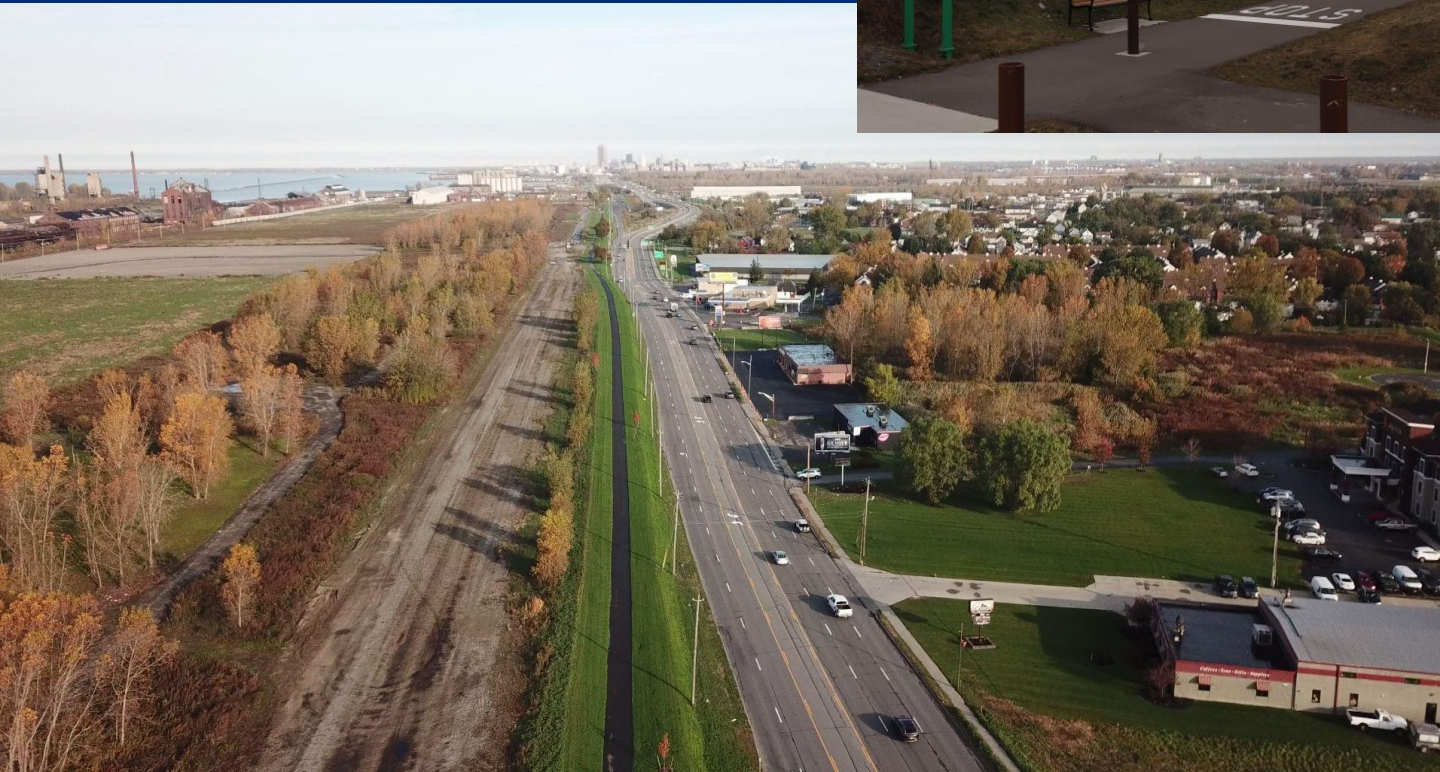
Infrastructure investment:

Horizontal drilling and casing placement under Rt. 5 for sewer installation



Bike Path – Phase I

Development cost ~ \$1.8 M



Additional Erie County Investments

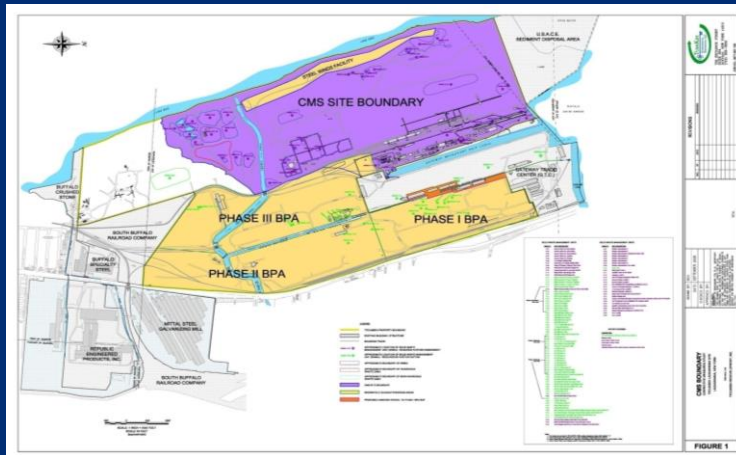
- \$5.5 M - land acquisition and cover system
- \$3.3 M - Proposed new water & sewer (Odell & Ridge)
- \$350,000 - Masterplan – Generic EIS
- \$123,000 - Bike Path Phase 2 design
- \$14.5 M - Spec Building – Now full!

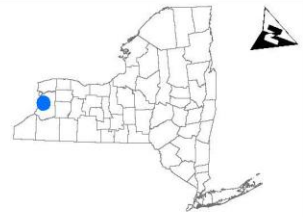
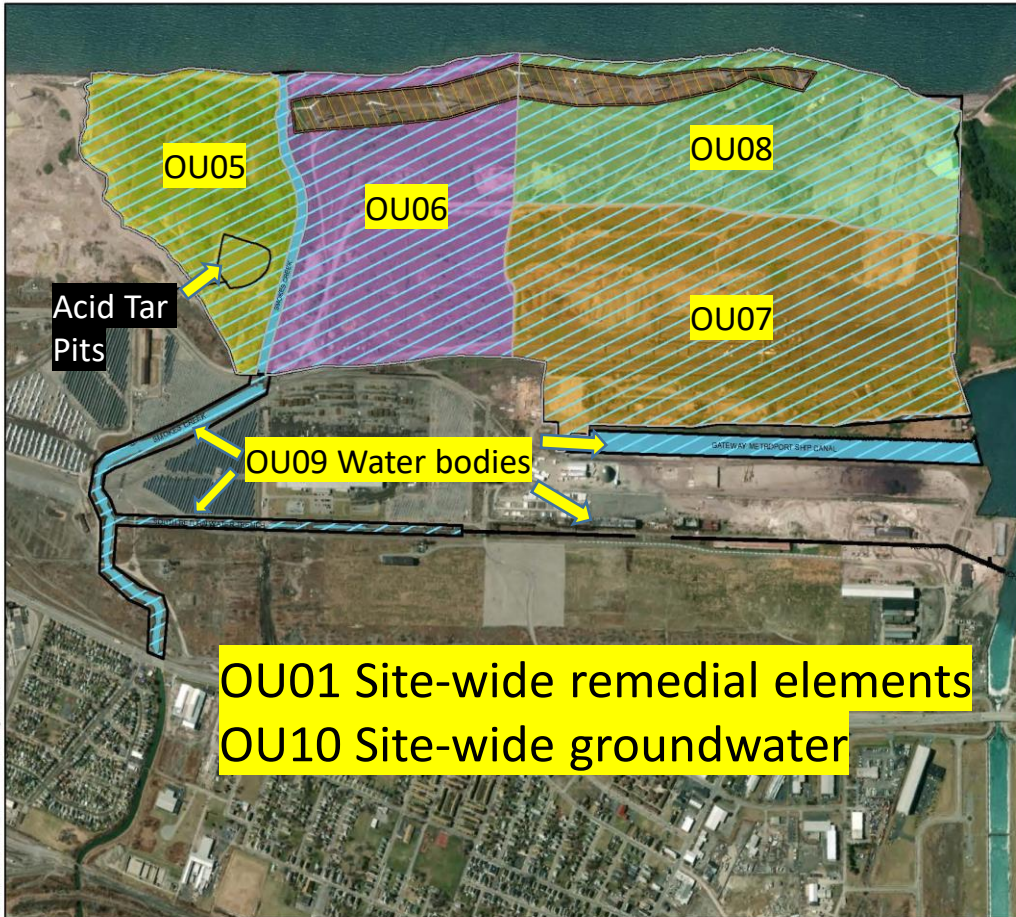
Renaissance Commerce Park
(~150 acres)



Statement of Basis

- Propose remedial actions to address remaining contamination
- Proposed remedy goals are to restore the property consistent with zoning and anticipated use
- Be protective of human health and the environment





LEGEND

-  CMS Boundary (OU-01 & OU-10)
-  OU-05
-  OU-06
-  OU-07
-  OU-08
-  OU-9 Boundaries
-  Steel Winds Boundary

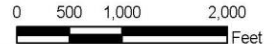


Figure 2



Department of
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Conservation

Operable Units

Tecumseh Redevelopment Site
Lackawanna, New York

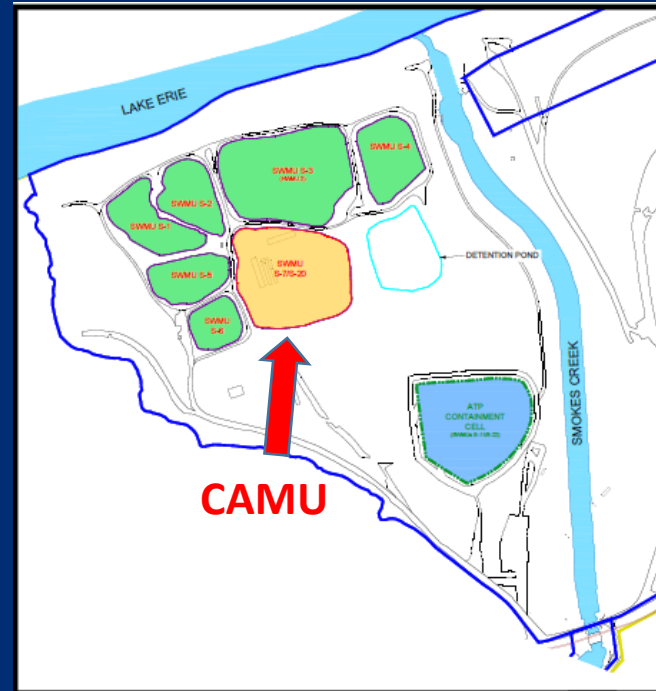
PARSONS

301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 • 315-451-8560

Plot Date: 2/17/2021 Plotted By: Sisson, Evan

OU01- Site-wide remedial elements

- Corrective Action Management Unit (CAMU)
- CAMU would serve as consolidation and containment cell for solid waste from SWMUs located across the site
- Result will reduce SWMU footprint and open land for future development





**CAMU
Location**

Corrective Action Management Unit (CAMU)

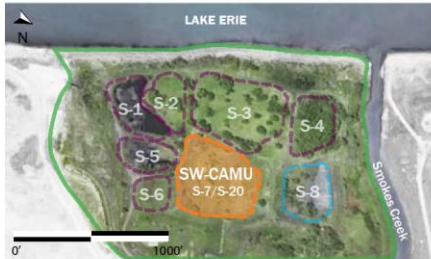
CAMU cell (about 4.3 acres) would be constructed over an area of slag fill and water quality residuals (S-7 S-20)

Engineered cell: geocomposite bottom liner, leachate collection system, and low permeability cover system to fully encapsulate and isolate waste material.



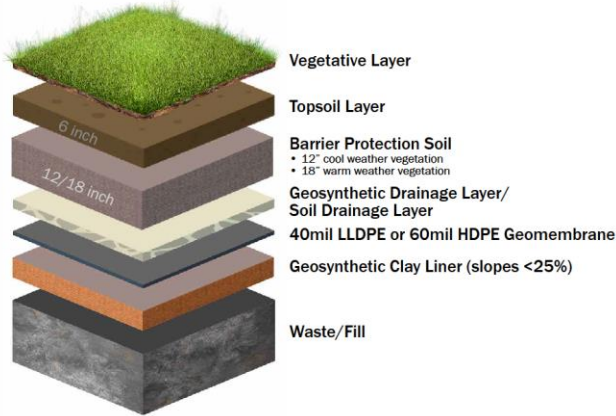
SOLID WASTE CORRECTIVE ACTION MANAGEMENT UNIT COVER SYSTEM AND LINER DETAIL

Former Bethlehem Steel Site, Lackawanna NY

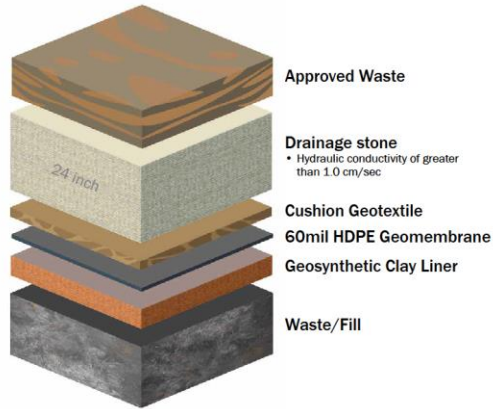


- Solid Waste Containment Action Management Unit SW-CAMU
- Solid Waste Management Unit Areas (SWMUs)
- Stormwater Retention Basin
- Passive Recreation Area (area also known as Operable Unit OU5)

PROPOSED COVER SYSTEM



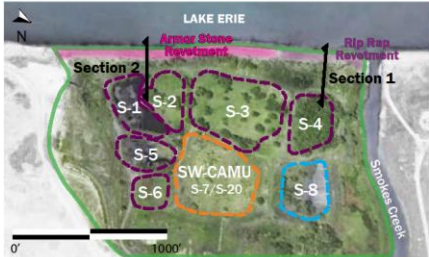
CONCEPT DETAIL OF LINER SYSTEM





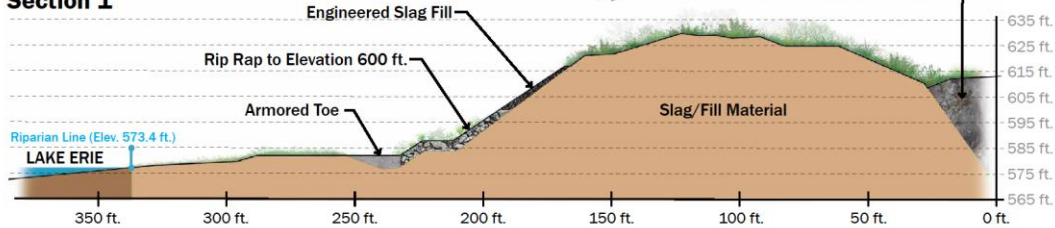
SHORELINE STABILIZATION AND REVETMENT DETAILS

Former Bethlehem Steel Site, Lackawanna NY

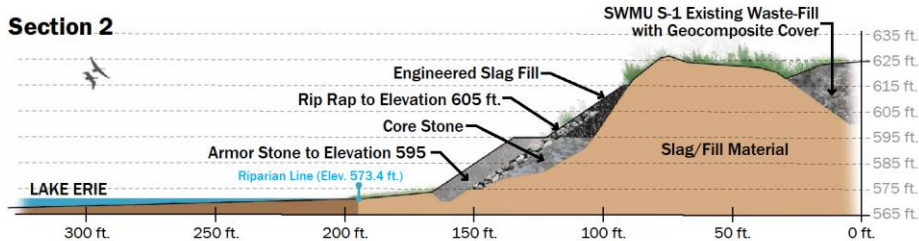


- Solid Waste Containment Action Management Unit SW-CAMU
- Solid Waste Management Unit Areas (SWMUs)
- Stormwater Retention Basin
- Passive Recreation Area (area also known as Operable Unit O05)

Section 1



Section 2



Future Public Access Opportunities



Goal: Connecting the community to the waterfront for the first time in over 120 years

MADISON AVENUE TRAILHEAD



Phase 2 Bike Path

Bethlehem Steel Phase 1
(Constructed)



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Conservation

PUBLIC ACCESS CONCEPTUAL LAYOUT

Former Bethlehem Steel Site, Lackawanna NY



Legend:

- Proposed Tree
- Low-Profile Vegetation/Bushes
- Solid Waste Management Unit Areas (SWMUs)
- Solid Waste Containment Action Management Unit SW-CAMU
- Stormwater Retention Basin
- Passive Recreation Area (area also known as Operable Unit OU5)
- Proposed Hiking/Bike Trail
- Existing Bike Path
- Active Recreation Areas
- Transportation Infrastructure

SMOKES CREEK - BETHLEHEM STEEL PASSIVE RECREATIONAL PARK

SITE MASTER PLAN

PARK PROGRAM

- 1** Park Access Road
- 2** Shoreline Trail Extension: Access South to Woodlawn Beach State Park, North to the Outer Harbor.
- 3** Flex Lawn/Event Space: Gathering events, kite flying, star gazing, lawn games, etc.
- 4** Site Mound: Potential area for recreation (sledding, sledding, etc.).
- 5** Natural Play Area: Sustainable features and interpretive elements playing off of the site history and local natural ecology.
- 6** Gathering Area: Interpretive sculpture/art, seating, and wildflower/pollinator meadows.
- 7** Identified High Points: Location for views of local region and possible wind sculptures / interpretive signage.
- 8** Waterfront Promenade: Path along the Lake Bluff with focal nodes, seating, interpretive signage, and public art - highlighting the local region and site history.

**LAKE
ERIE**

ECOLOGICAL / SUSTAINABILITY

- Containment Area -**
Capped Mound with Mowed Grass Paths and Native Grasses / Meadows



- Pollinator / Wildflower Meadows**
Pollinator wildlife enhancement and ecological rehabilitation



- Native Grasses / Meadows (Low-Mow)**
Treatment strategy where there is potential to see different use in the future. Would be mowed a specified number of times a year to prevent woody plants from establishing.



SITE LEGEND

- Shoreline Trail Extension 
- Gravel Pathways 
- Sculpture / Public Art 
- Grass Paths (Mowed) 
- Monitoring Wells 

SMOKES CREEK - BETHLEHEM STEEL PASSIVE RECREATIONAL PARK



PHASE 2 Potential Implementation Options

PHASE 2: Park expansion elements and features are potential - Additional funding and maintenance support will need to be identified.

Possible Phase 2 Features

- 1 Rubblemound Jetties:** Jetty installation goal would be to minimize the shoaling at the inlet to Smokes Creek. Potentially the Jetties would also allow for public access for views along the water and fishing. Jetties would be accessed via new path along Smokes Creek. (Project proposed and budgeted by Army Corps of Engineers)
- 2 Access Road Extensions:** Future vehicular access could be expanded with closer (seasonal) parking near the Lake, and additional parking at eastern edge of site.
- 3 Dog Park:** Potential 3-acre (+/-) dog park with perimeter fencing and adjacent parking.
- 4 Natural Playspace Expansion:** Potential expansion could include additional features, equipment or sensory stations and trails.
- 5 General Pathway Expansion:**



PHASE 3 Potential Implementation Options

PHASE 3: Park expansion elements and features are potential - Additional funding and maintenance support will need to be identified.

Possible Phase 3 Features

- 1 Eco-Center:** Potential Eco-Center facility could provide on-site programming and space accommodations for education services. Facility may also provide areas for park staff and maintenance space.
- 2 25+ Acres of New Pathways:** New pathways expand along the lower portion of the site creating new points of connections and amenities.
- 3 Potential Vehicular North Access:** North access through Renaissance Commerce Park to Route 5 (pending agreements on private property and rail crossing approvals)
- 4 Pollinator/Wildflower/Habitat Expansion:**
- 5 Potential Area for Disc Golf Course:** Possible implementation with partnership opportunity with Western New York Disc Golf Club (WNYDGC)

SMOKES CREEK - BETHLEHEM STEEL PASSIVE RECREATIONAL PARK

PARK RENDERINGS

Key Plan

(View Point Locations)



1

High Point Overlook



2

Pathway to Promenade Overlook



3

Natural Playspace

Passive recreation

Potential Hiking trails

Buffalo Color Area D



Wellsville former BP Site

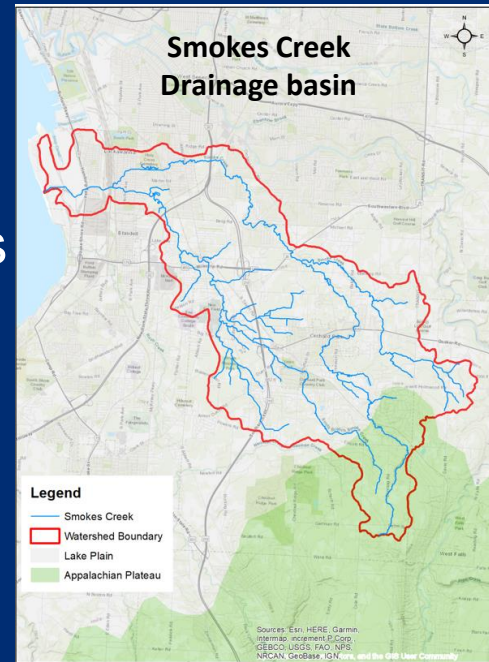


Tift Farm Nature Preserve

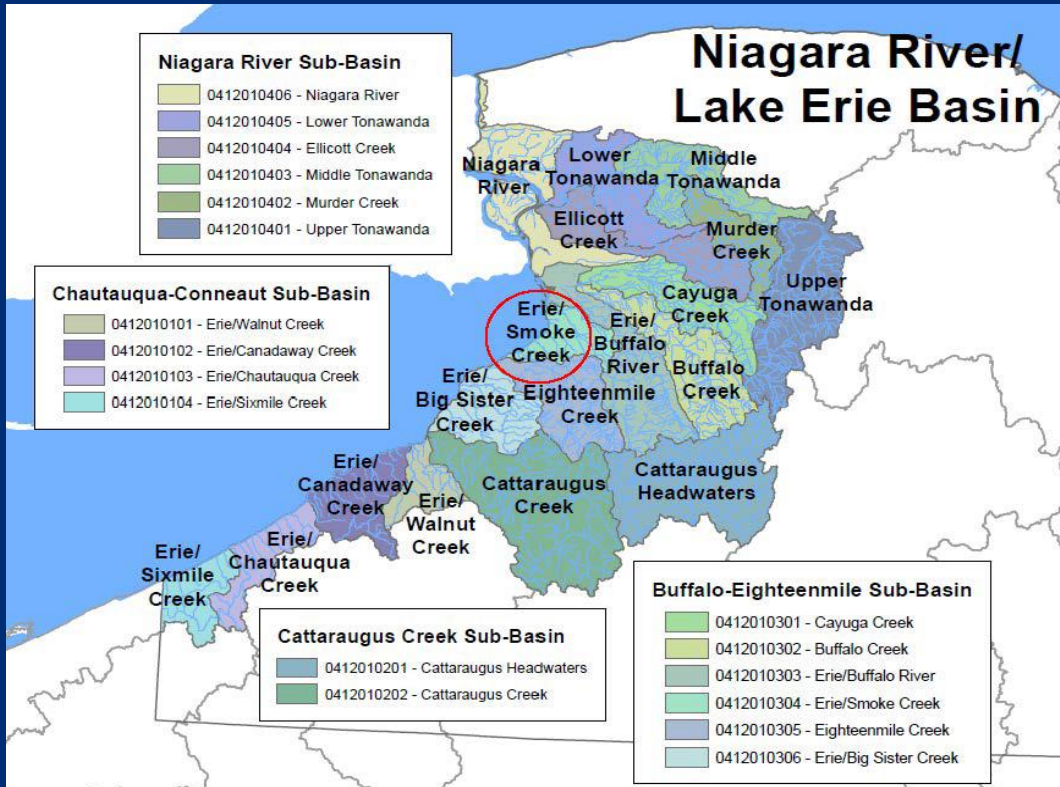
Smokes Creek Habitat Connectivity and Improvement Plan

Evaluating opportunities to improve stream hydrology and habitat connectivity along the Smokes Creek Corridor to create a plan for our communities

- Phase 1 complete (11/22)
- Phase 2 ongoing to fill-in data gaps associated with stream, wetland, natural community assessments
- Project completion – March 2024



Smoke Creek - “Old Smoke” English name for Sayenqueraghta, Seneca chief



Flood control vs. Environment



1960_s USACE Flood Control



LACKAWANNA, N.Y.—View of the same section after completion of the local protection project.

2013





FEMA- USACE Katrina and Smokes Creek



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Environmental
Conservation







Confined Disposal Facility (CDF)



FEMA removes 550 Lackawanna homes from flood zone map

- The release this week of revised flood-plain maps from FEMA spells good news for 550 homeowners in Lackawanna who have been forced for decades to pay for costly flood insurance.

Their houses have been removed from the flood plain, an official from the Federal Emergency Management Agency said.

Not all homeowners received good news. Ten properties on or near Sharon Drive were added to the Lackawanna flood plain.

"The remap significantly reduces the flood plain in Lackawanna," said Andre Martin, risk analysis branch chief for FEMA Region 2. "The topography we used for the update was more precise than we used in the past."

Residents who live in the flood plain near Smokes Creek grew impatient with the federal government over repeated remapping delays.

ADVERTISEMENT



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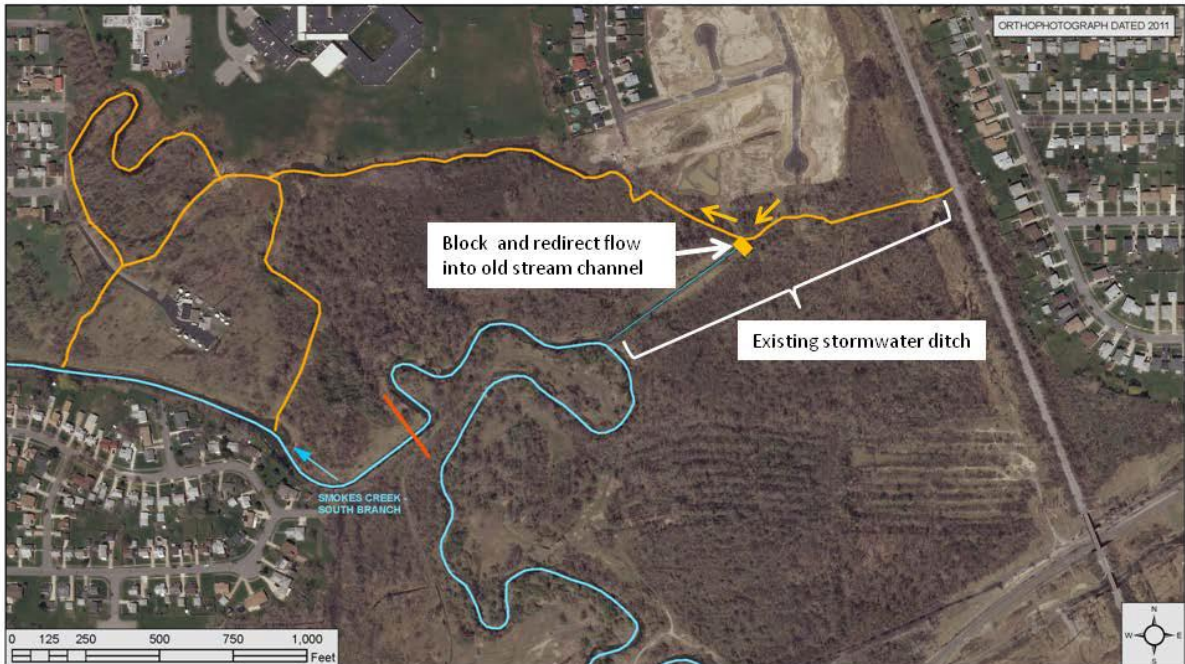
Shoaling at mouth

Key Ecological Elements



- Identify functional and ecologically significant species and habitat: **Wetlands, spawning grounds, forest, lakeshore etc.**
- Identify opportunities to connect habitat types throughout watershed focusing on: **Public access, reduce flooding, natural hydrology, habitat enhancement for wildlife & fish**
- Project will support fish and wildlife





US Army Corps of Engineers
Buffalo District
Building Strong

Legend

- LIMIT OF FEDERAL PROJECT
- RECONNECTED STREAM

ALTERNATIVE 1. SOUTH BRANCH STREAM CHANNEL RECONNECTION

SMOKES CREEK 1135 STUDY

Date: 4/24/13



Department of
Environmental
Conservation

~~Challenges~~ Successes

- Plans for waterfront access
- Global consent order requires remediation, financial assurance, pay NYS costs, habitat restoration, softening of shoreline, Sustainable Restoration Plan
- Development of Great Lakes Restoration Initiative agreement to dredge Lackawanna Ship Canal & restore/dredge(?) Smokes Creek on Tecumseh property
- Smokes Creek basin project
- Economic development

~~Challenges~~ Successes

- Community engagement
- Better working relationship with Cleveland Cliffs
- Infrastructure investment
- Perception of the property

Thank You

Stanley Radon, P.G.

Regional Geologist

NYSDEC

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Buffalo, NY 14209-2202

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716-851-7220

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