



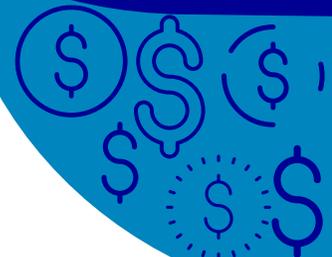
# RECOGNIZING THE POSITIVE ECONOMIC IMPACTS OF SUPERFUND REDEVELOPMENT

Alexis Rourk Reyes, EPA Superfund Redevelopment Program

Jaclyn Kondrk, EPA Region 3

Joe LeMay, EPA Region 1

Denis Dowdle, Madison Properties



February 7, 2024



# Topics Covered

- Introduction to Superfund and Superfund Redevelopment
- Economic Impacts of Superfund Redevelopment
- Case Study: Combining Cleanup and Reuse at the Former Nansemond Ordinance Depot (FNOD) Superfund Site
- Beneficial Effects of Superfund Redevelopment in EPA's New England Region
- Case Study: Economic Growth and Community Revitalization at the Wells G&H Superfund Site
- Superfund Redevelopment Resources and Contacts
- Q&A

# **Introduction to EPA's Superfund Program and Superfund Redevelopment Program**



# What is a Superfund site?

- Congress established the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in 1980
- Informally, the act is referred to as Superfund and the contaminated sites are called Superfund sites
- The act requires the parties responsible for the contamination to either perform cleanups or reimburse the government for EPA-led cleanup work
- EPA's Superfund program is responsible for cleaning up some of the nation's most contaminated land and responding to environmental emergencies and natural disasters



*Davie Landfill Superfund site in Broward County, Florida (Region 4)*

# EPA's Superfund Redevelopment Program

Helping communities affected by Superfund sites return land to safe and beneficial use.



Each Superfund site holds reuse potential waiting to be realized!



# Benefits of Superfund Redevelopment

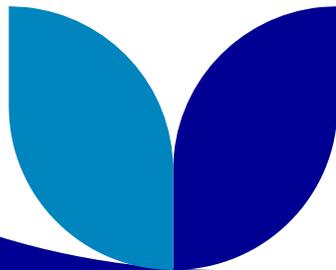
## Environmental Protection



## Economic Improvement



## Social Equity





# Types of Site Reuse

Commercial

Ecological

Recreational

Public Service Uses

Industrial

Mixed Uses

Agricultural

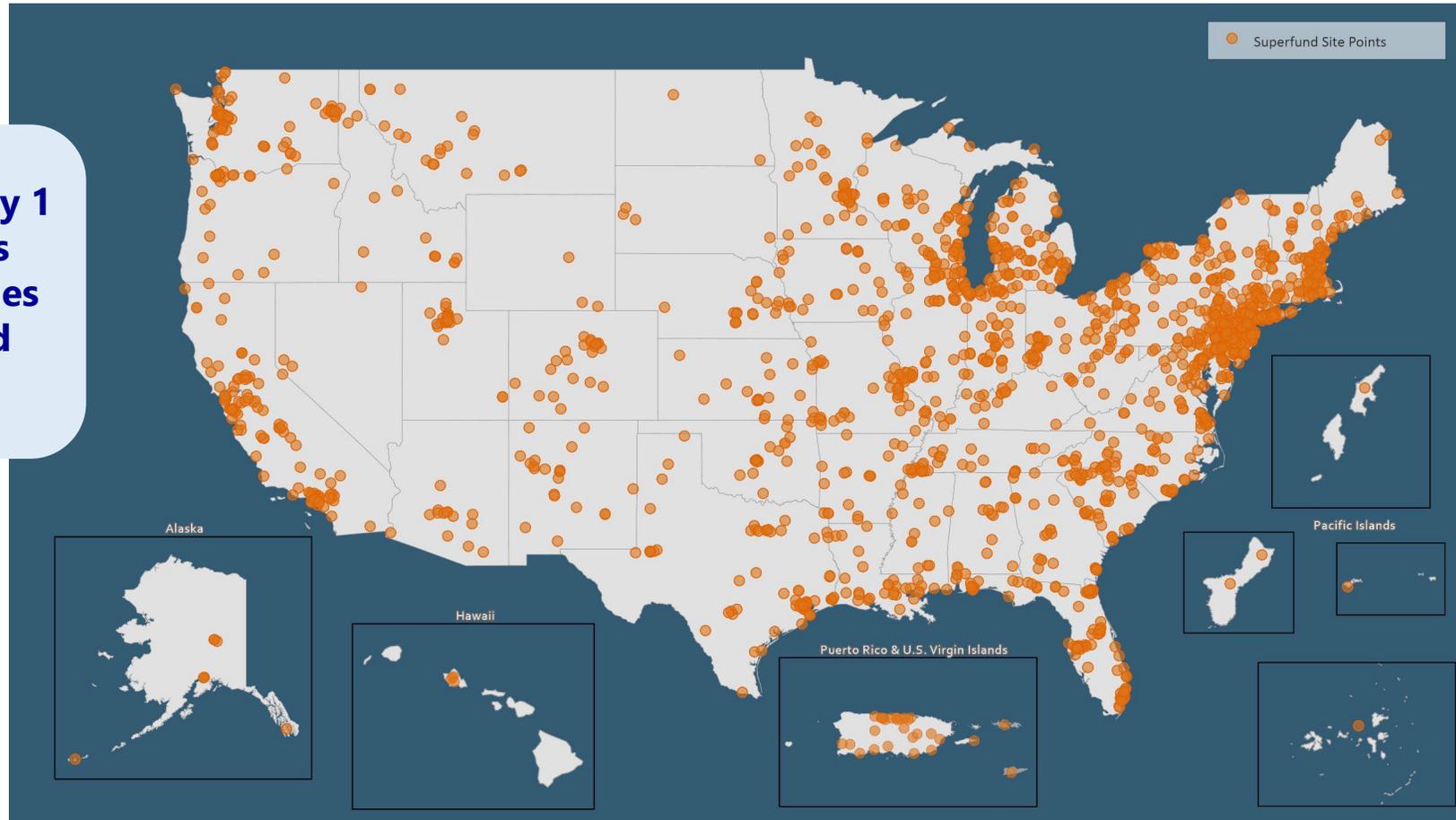
Residential





# Environmental Justice and Community Revitalization

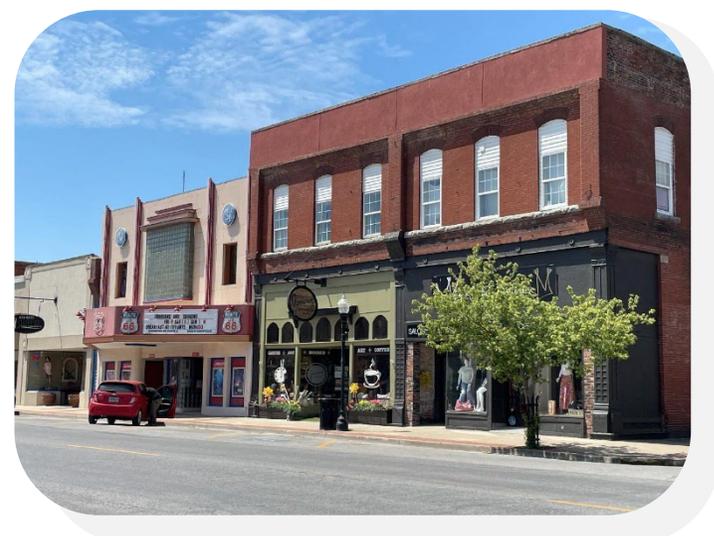
Nationally, nearly 1 in 4 Americans live within 3 miles of a Superfund NPL site.



# **Economic Impacts of Superfund Redevelopment**

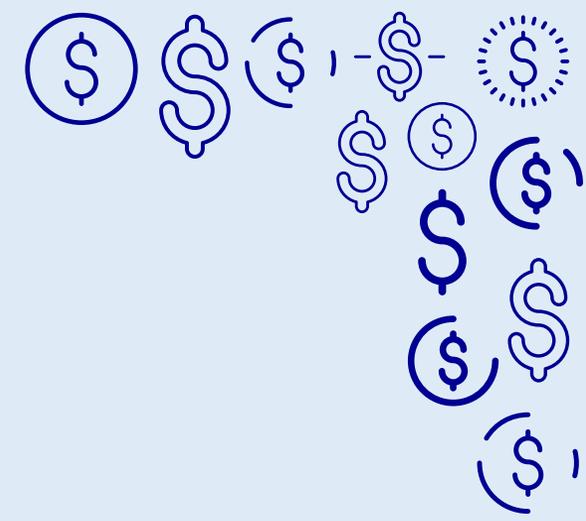


# Economic Beneficial Effects



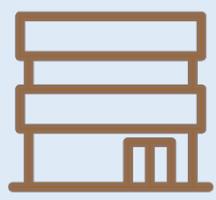


# 2023 National Economic Beneficial Effects



**Over 690**  
Superfund sites in  
reuse in FY 2023

**10,261**



businesses operating

**\$71.4B**



in annual sales

**237,054**



people employed

**\$18.8B**



annual  
employment income



# Examples of Successful Reuse

**EPA**  
www.epa.gov

Reuse and the Benefit to Community  
Big River Mine Tailings/St. Joe Mineral Corp. Superfund Site  
*Local Economic Impact Case Study and Technical Appendix*

**Introduction**

For more than a century, mining companies mined lead at the Big River Mine Tailings/St. Joe Mineral Corp. (Big River) Superfund site in St. Francois County, Missouri. Wind and erosion pathways – as well as municipal use of mine tailings and chat – contaminated soils, sediments, surface water and groundwater with lead. Cooperation by EPA, the Missouri Department of Natural Resources (MDNR), potentially responsible parties (PRPs), local governments and developers is leading to the successful cleanup and continued use and reuse of the site. Today, the site is home to residential, commercial, industrial, recreational, public services, agricultural and ecological areas.

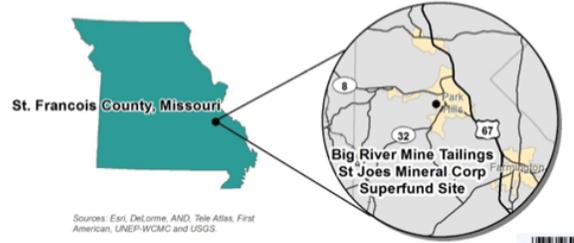
Superfund site restoration and reuse can revitalize local economies with jobs, new businesses, tax revenues and local spending. Cleanup may also take place while active land uses remain on site. However, active cleanups did not take place on all commercial or industrial properties profiled in this case study. This case study explores the Big River Mine Tailings/St. Joe Mineral Corp. (Big River) area's cleanup, continued use and reuse, illustrating the beneficial effects of Superfund redevelopment.

**Beneficial Effects**

Site businesses in the response area employ about 5,871 people, providing estimated annual employment income of over \$220 million and generating over \$670 million in annual sales revenue.

Site properties in the response area are currently valued at nearly \$828 million and generate nearly \$8 million in annual property tax revenues.

Cleanup has allowed residential, commercial, industrial, recreational, public services and agricultural uses to continue on site. Innovative redevelopment projects led by the private sector and local governments are helping to offset the loss of jobs from mine closures and providing valuable community benefits.



Sources: Esri, DeLorme, AND, Tele Atlas, First American, UNEP-WCIC and USGS.

Figure 1. The site's location in St. Francois County, Missouri.

100002113  
November 2018

**REGION 2 ECONOMIC PROFILE**

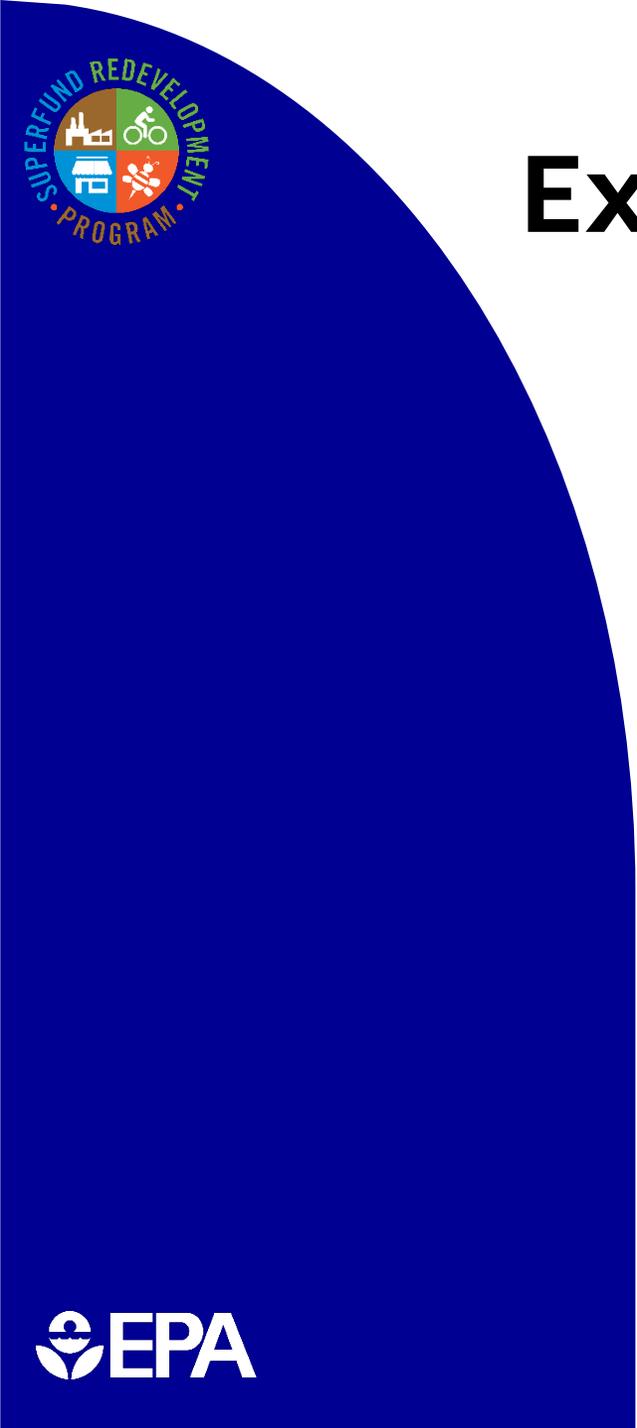
**PUTTING SITES TO WORK**

*How Superfund Redevelopment in Region 2 Is Making a Difference in Communities*

**2021 DATA**

**EPA**

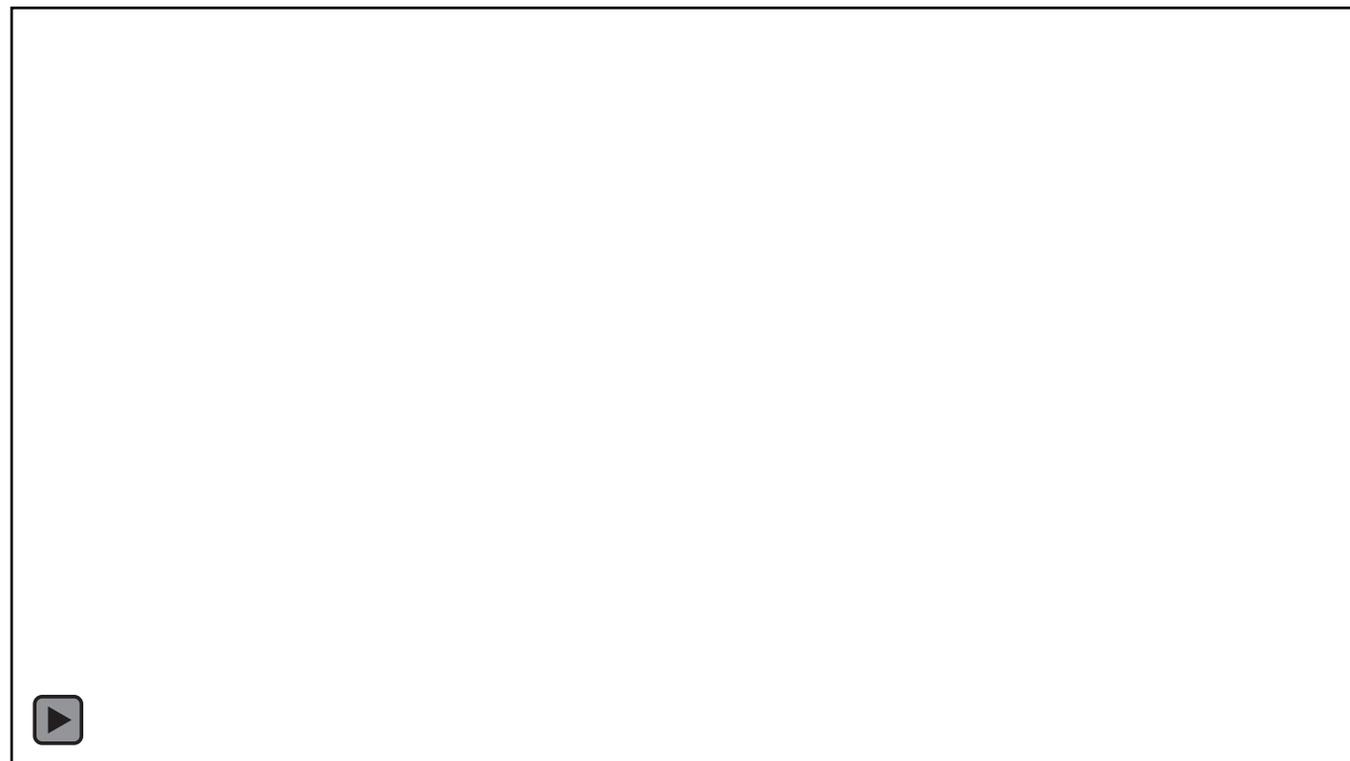




# Examples of Successful Reuse

*Koppers Co., Inc. (Charleston Plant)*

*Charleston, South Carolina - Region 4*



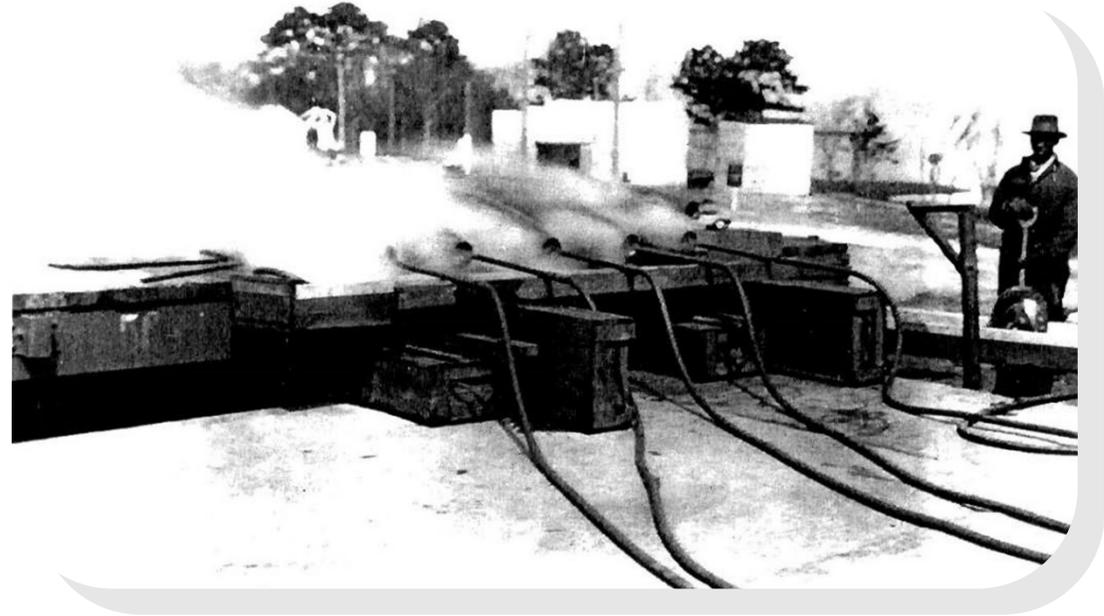
# Case Study: Combining Cleanup and Reuse at the Former Nansemond Ordinance Depot (FNOD) Superfund Site

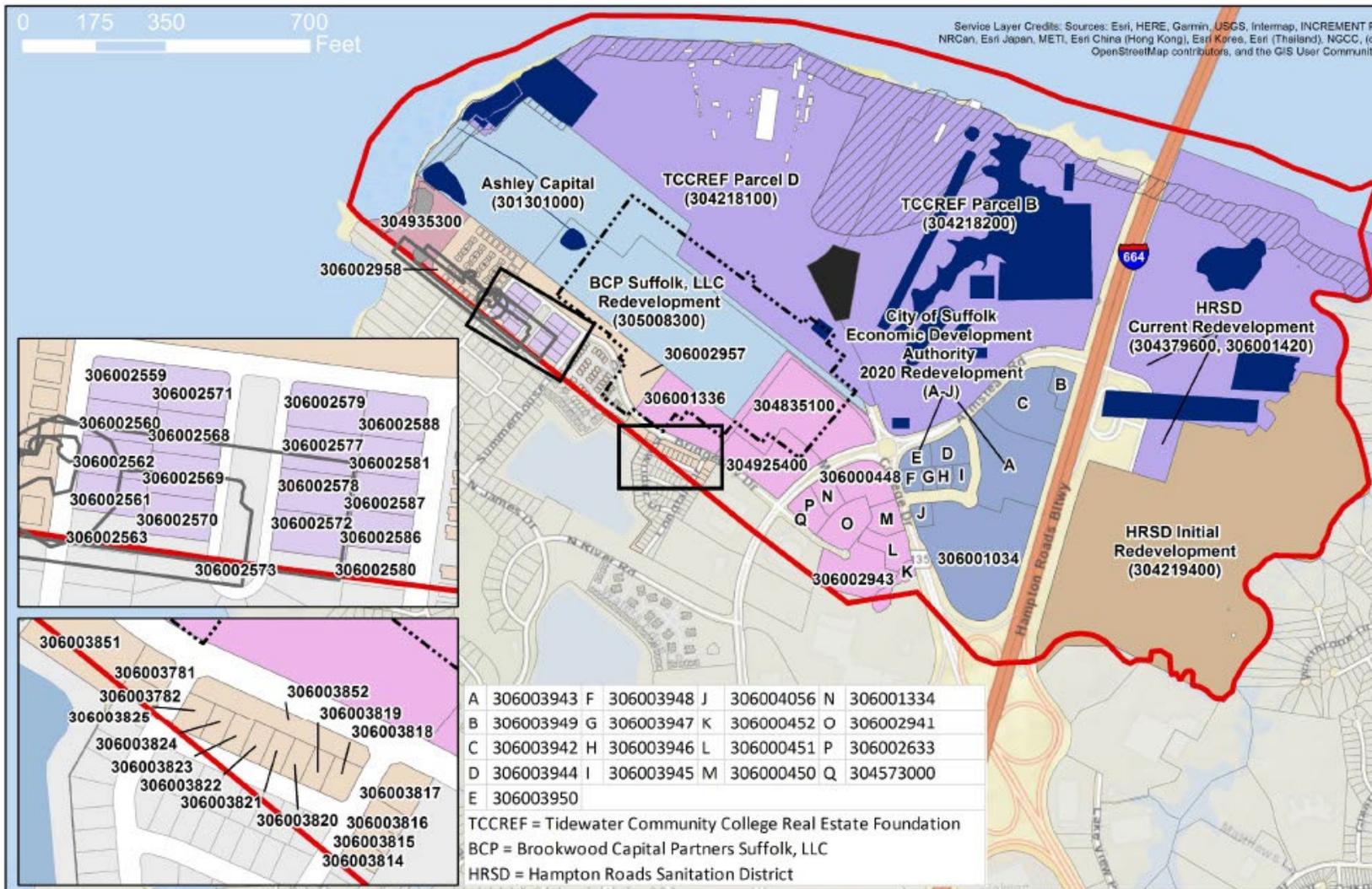
*Suffolk, VA*

*Region 3*



# Site History





**Legend**

- Site Boundary
- Parcel Boundary
- Shoreline MEC Areas
- Contonment Area
- Areas of Concern
- IKA Boundary
- Fuel Storage Tank
- Horseshoe Pond
- Investigation Area
- James River Beachfront
- TNT Source Area

**Zoning Class**

- Conservation District (C)
- Commerce Park (CP)
- Light Industrial (M-1)
- General Industrial (M-2)
- Mixed Use Development (MUD)
- Office/Institutional (O-I)
- Residential Low Density (RL)
- Urban Residential (RU)



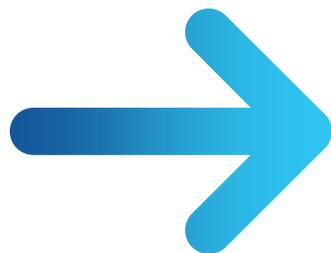


# The FNOD Community





# Combined cleanup and reuse





# Current site use and planned future use





# Economic Benefits of FNOD Site Reuse



Number of  
Businesses:

**34**



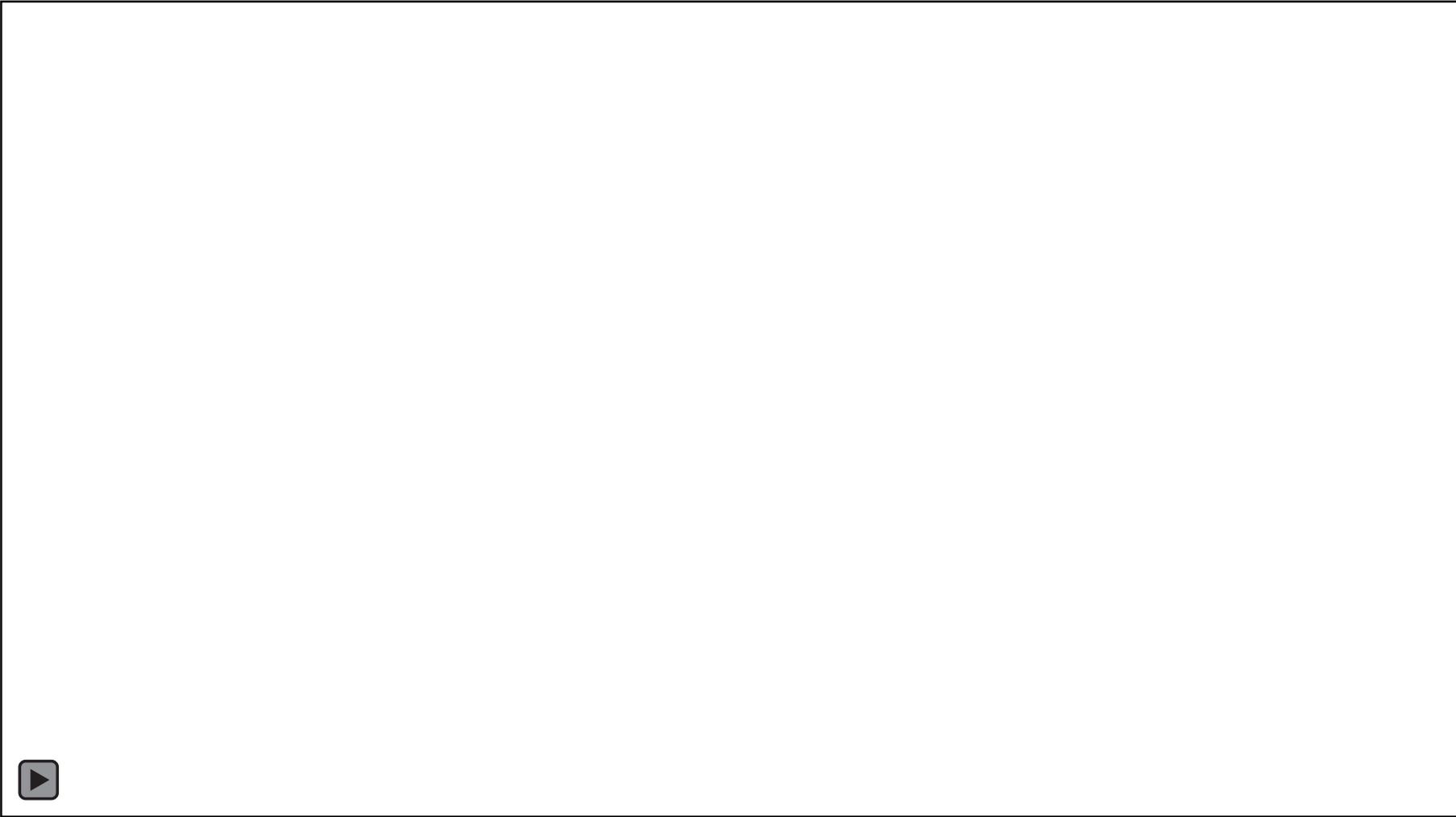
Number of  
Jobs:

**895**



Total Annual  
Employment Income:

**\$62,170,004**

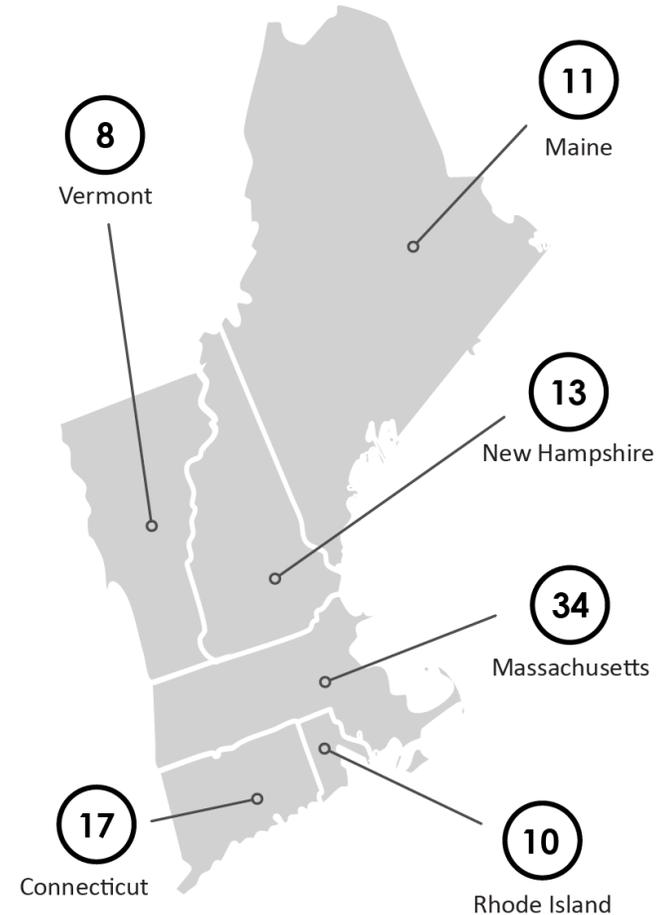


# **Beneficial Effects of Superfund Redevelopment in EPA's New England Region**



# EPA Region 1 Superfund Redevelopment Economics

<b>In Reuse</b>	<i>Part or all of a site is being used in a new, different manner than before Superfund involvement. Or, the property was vacant and cleanup was designed to support a new, specific land use.</i>
<b>In Continued Use</b>	<i>Historical uses at a site remain active, and/or the site is still used in the same general manner as when the Superfund process started at the site.</i>
<b>In Reuse and Continued Use</b>	<i>Part of a site is in continued use and part of the site is in reuse.</i>



# : Total number of sites in use per state.



# EPA Region 1 Redevelopment Economics



## Superfund sites in Reuse and Continued Use: 2022 Business & Job Highlights

- Number of Businesses: **604**
- Total Annual Sales: **\$2.7 billion**
- Number of People Employed: **10,501**
- Total Annual Employee Income: **\$893 million**



# Case Study: Economic Growth and Community Revitalization at the Wells G&H Superfund Site

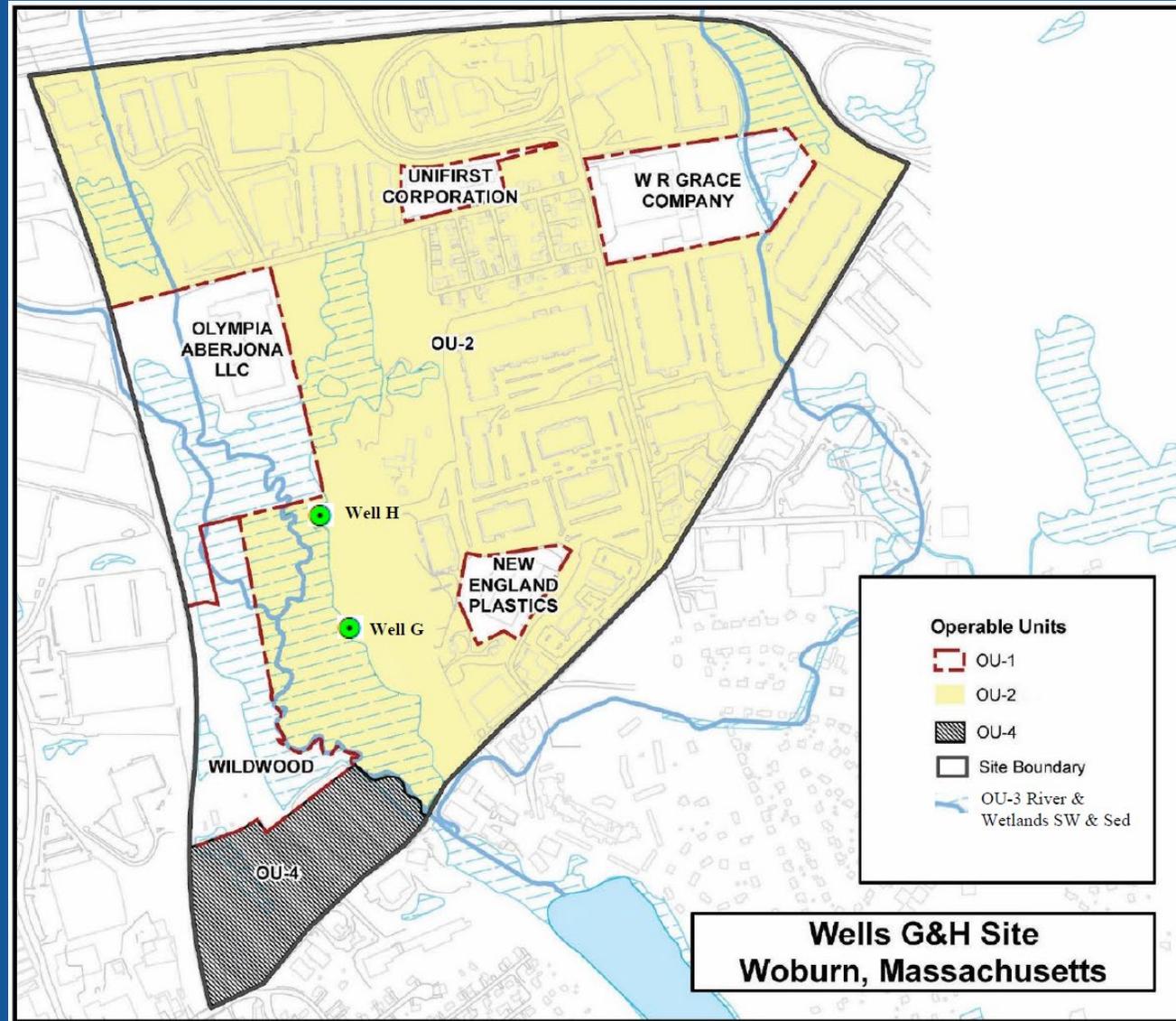
*Woburn, MA*

*Region 1*



# Case Study: Wells G&H

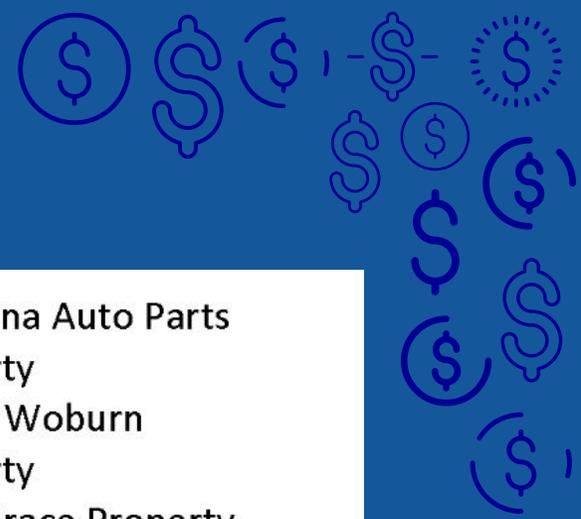
## Woburn, MA, Region 1





# Case Study: Wells G&H

## Woburn, MA, Region 1



- ① Aberjona Auto Parts Property
- ② City of Woburn Property
- ③ W.R. Grace Property

0 465 930 1,860 Feet

Sources: Figures 5.1, 6.2 and 7.1 of the 2005 Woburn Land Use Plan, Figure 1 of the 2014 FYR, Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, the GIS User Community and the City of Woburn Assessors Office.



# Case Study: Wells G&H

## 1: Aberjona Auto Parts Property, (OU4)

Woburn, MA, Region 1

- Owner and City's 2005 Land Use Plan identified Hockey Rink Reuse
- Pre-ROD Reuse
- 2004 Baseline Risk Assessment
- EPA 2004 Comfort/Status Letter
  - Remove all junked cars
  - Preserve monitoring wells
  - Consent for access
  - Final Reuse Designs, including Soil & Groundwater Management Work Plan and Vapor Intrusion Mitigation.
- 2008 Holland Arena constructed





# Case Study: Wells G&H

## 2: City of Woburn Property – Floodplain Area (OU3)

Woburn, MA, Region 1



- 2005 City Land Use Plan identified passive recreational use, AFTER OU3 SEDIMENT CLEANUP
- Post-ROD Reuse
- OU3 Cleanup:
  - Removes and restores sediments
  - Removes construction fill and debris and restores floodplain
- 2017 OU3 cleanup complete and Aberjona Nature Trail created within floodplain





# Case Study: Wells G&H

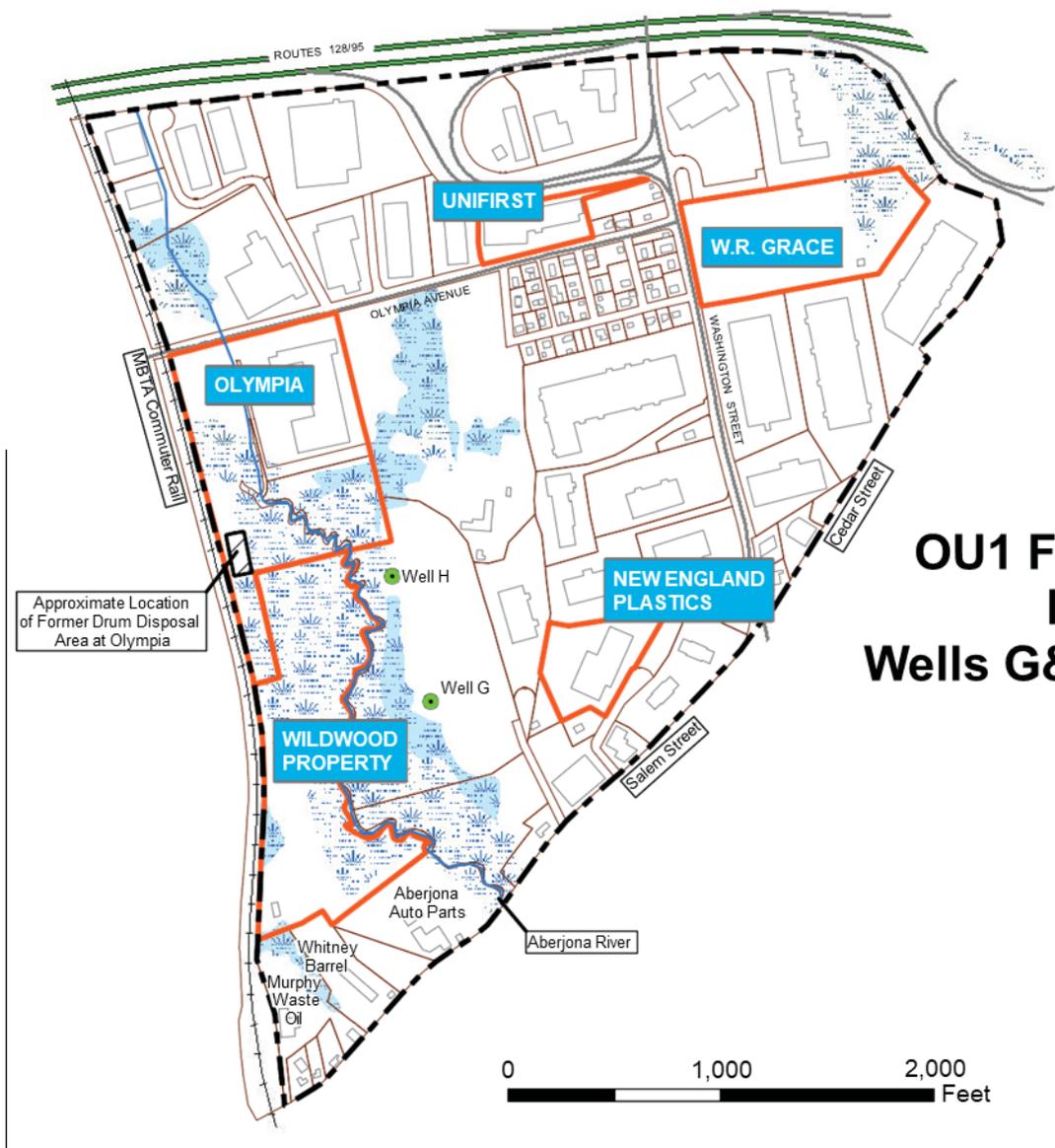
## 3: W.R. Grace Property (OU1)

### Woburn, MA, Region 1



- 2005 City Land Use Plan identified Hotel
- Post-ROD Reuse
- 2006 W.R/ Grace building demolished
- 2014 EPA Comfort/Status Letter to **Madison Properties:**
  - Ownership change does not alter W.R. Grace responsibility under 1991 Consent Decree
  - Protect P&T Remedy
  - Prepare Soil/GW Work Plan and Health & Safety Plan
  - Vapor Intrusion Mitigation

# Developer Perspective

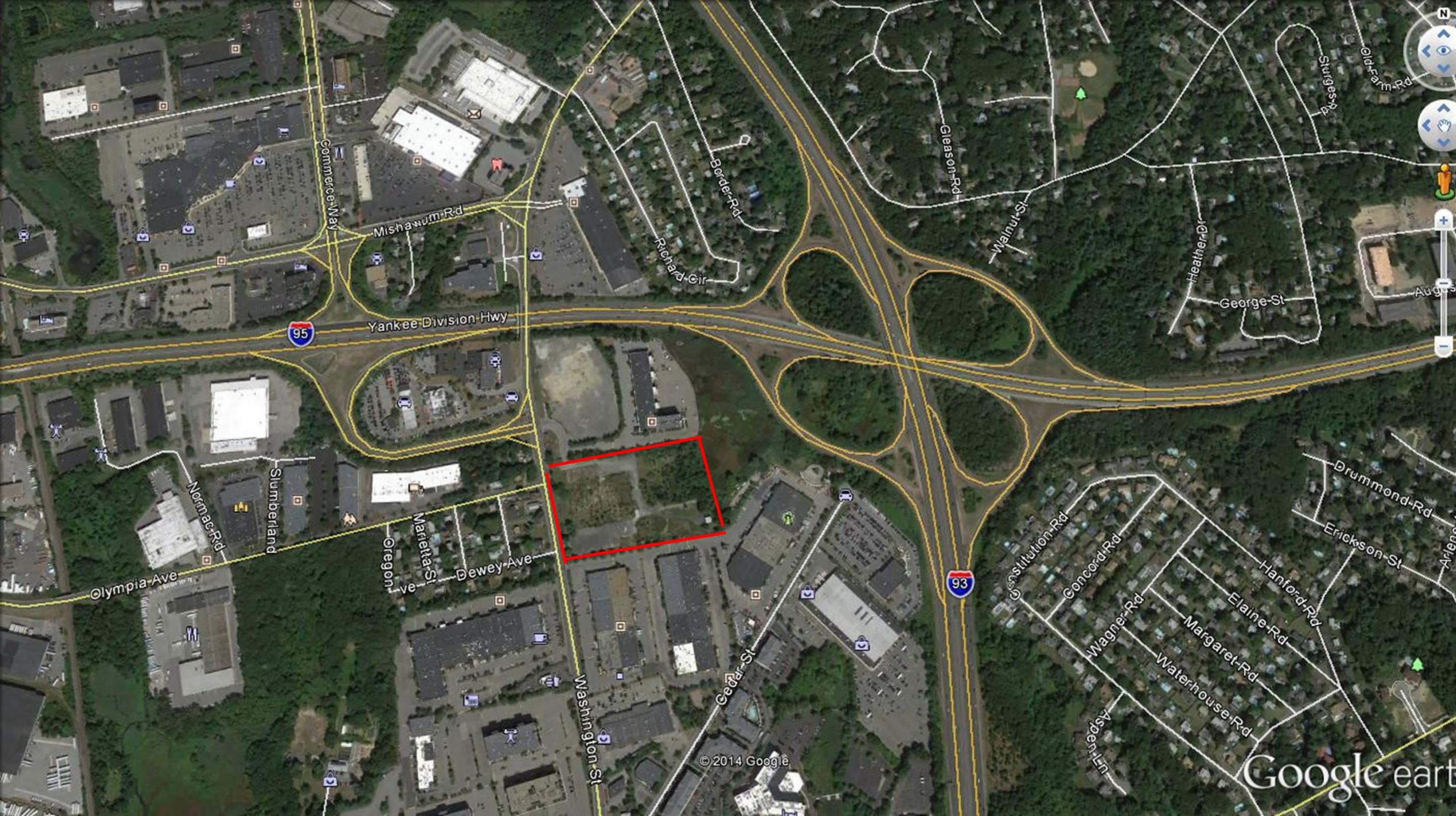


**Figure 2**  
**OU1 Five Source Area**  
**Properties**  
**Wells G&H Superfund Site**

- Legend**
- Wells G & H
  - Site Boundary
  - Source Area Property
  - Drum Disposal Area
  - Building Footprint
  - Woburn Parcel
  - Aberjona River
  - Wetland

Source Data: MassGIS





95

93

© 2014 Google

Google earth

Commerce Way

Mishawum Rd

Border Rd

Richard Cir

Gleason Rd

Walnut St

Heather Dr

George St

Yankee Division Hwy

Norman Rd

Slumberland

Oregon Ave

Maretha St

Dewey Ave

Olympia Ave

Washington St

Cedar St

Institution Rd

Concord Rd

Wagner Rd

Waterhouse Rd

Margaret Rd

Elaine Rd

Hanford Rd

Erickson St

Drummond Rd

Arlene

Woburn 2013

Legend



Google Earth

300 ft





# Madison Properties Woburn Landing Proposed Color Plan



**TOWER PARK DRIVE**  
(PUBLIC VARIABLE WIDTH)  
BUSINESS INDUSTRIAL (B-1)  
OFFICE PARK (O-P)

SINGLE & TWO FAMILY (R-2)  
OFFICE PARK (O-P)

**WASHINGTON STREET**  
(PUBLIC - VARIABLE WIDTH)  
(CROWNED 25 FEET & WIDE)

PROPOSED RESTAURANT A  
8,010± S.F.  
FFE=98.5

PROPOSED CHICK-FIL-A  
4,876± S.F.  
FFE=100.0

PROPOSED RED ROBIN  
5,820± S.F.  
FFE=96.25  
BUILDING PAD ELEVATION=65.34

PROPOSED DUAL BRAND HOTEL  
6 STORIES @ 250 ROOMS  
147,780 S.F.  
FFE=97.0  
PE=95.58

1,266± S.F.  
WETLAND DISTURBANCE  
(SEE WETLAND REPLICATION PLAN)

2,880± S.F.  
(2.28:1 RATIO)  
WETLAND REPLICATION AREA  
(SEE WETLAND REPLICATION PLAN)

LATERAL





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### FIGURES

- Figure 1 Site Plan
- Figure 2 Decontamination Pad Sketch

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- Appendix A Jar Headspace Screening Procedure
- Appendix B Prior Reports
- Appendix C December 11, 2014 Comfort Letter





95

Olympia Ave

Hobson Ave

Dewey Ave

Wainwright Ave

Google Earth

300 ft





Olympia Ave

Hobson Ave

Google Earth

300 ft





Olympia-Ave

Hobson-Ave

Dewey-Ave

Washington-St

Google Earth

© 2018 Google



300 ft





Shine On Performing Arts Center





# **Wrap Up: Superfund Redevelopment Resources and Contacts**



# Superfund Redevelopment Tools



## THE OMAHA LEAD SUPERFUND SITE OMAHA, NEBRASKA

INNOVATIVE PARTNERSHIPS AND HOLISTIC REMEDIAL APPROACHES  
PRIORITIZE COMMUNITY HEALTH

### Introduction

For over 125 years, lead smelting and refining works operated along the Missouri River in eastern Omaha, Nebraska. Omaha and Grant Smelting and Refining Company constructed the smelter and refinery and ran the facilities from 1870 to 1889. The American Smelting and Refining Company, Inc. (ASARCO) operated the smelter from 1889 until the closure of the facility in 1997. During the smelter's heyday in the early twentieth century, it was considered the largest lead refinery in the world.

In addition to ASARCO, Aaron Peter & Sons Company and later the Gould Electronics, Inc. owned and operated a smaller smelter facility for recycling of lead batteries near the ASARCO smelter for many years. More than a century of smelter operations churned out dark billowing exhaust from their smokestacks, resulting in the release of vast quantities of lead particles into the air. The lead particles traveled in the clouds and on the wind across the city of Omaha, falling to the ground when it rained or as natural airborne deposition. The lead particles from the smelters worked on surfaces and soils throughout eastern Omaha.

In the 1990s, the Douglas County Health Department (DCHD) determined that over 36% of children tested in eastern Omaha had elevated blood lead level concentrations above the Centers for Disease Control (CDC) recommended action level of 10 micrograms per deciliter (ug/dL) at the time. When blood lead screening results confirmed these elevated blood lead concentrations exceeded the national average in children 7 years and younger, the DCHD approached the city of Omaha for assistance. The city of Omaha immediately reached out to the EPA to identify the source of lead exposures in eastern Omaha driving the elevated blood lead levels in children.

In 1999, EPA began the first sampling and cleanup of residential properties to address the risk of lead exposure in contaminated soil. While sampling and cleanup continued, the EPA contracted for the completion of studies, conducted the Remedial Investigation and Feasibility Study, and developed the Proposed Plan for what would later be named the Omaha Lead Site (OLS). The OLS was listed on the National Priorities List as a Superfund Site in April 2003 and the final Record of Decision (ROD) was signed in May 2009.

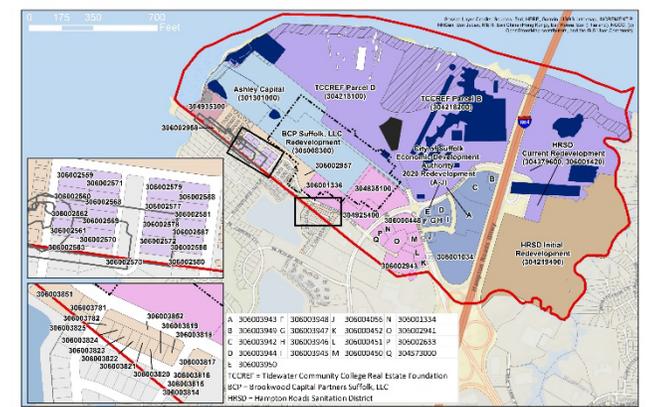
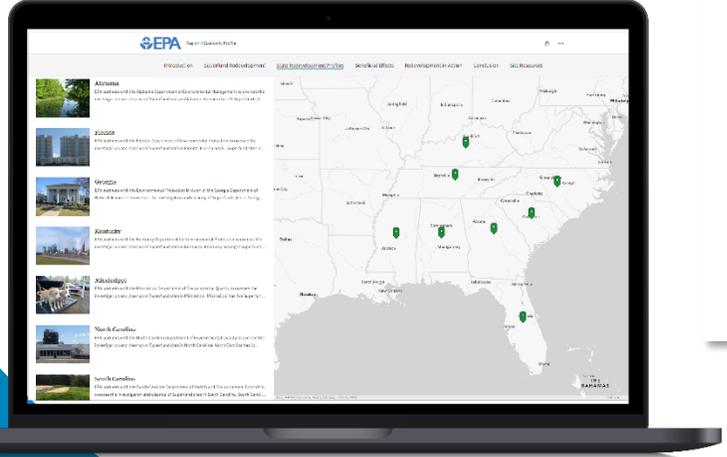
Based on the various studies and investigations into the impact from the historic smelter activities on residential properties, the EPA delineated a 27-square-mile area as the Omaha Lead Superfund site. The size and scope of the OLS make it the largest residential Superfund site in the country. Cleanup efforts are continual as scope to cleaning up the Island of Manhattan in New York City 100 times.



A historical photo of the former ASARCO smelting facility. Image from the Omaha World-Herald/John Savage Photography Collection at The Durham Museum, used with permission.

This case study explores the tools and partnerships between local, county, state and federal entities that have led to the successful cleanup and transformation of the Omaha Lead Superfund site. The following pages trace the evolution of cleanup and reuse efforts, highlighting the community's leadership, engagement of local stakeholders and coordination of remedial and reuse considerations to attract businesses to the site. The case study provides information for parties interested in the large-scale study of contaminated sites, unique intergovernmental cooperative agreements, comprehensive cleanup approaches to address cumulative risks and local partnerships to facilitate outreach and education of community members. Sampling and cleanup of residential properties continue ongoing. The DCHD, the City of Omaha, the State of Nebraska and the EPA credit the commitment of all involved with the success achieved at the OLS in reducing the blood lead levels in children. Since 2015, less than 2% of children 7 years and younger within the OLS have had blood lead levels greater than 5 ug/dL.

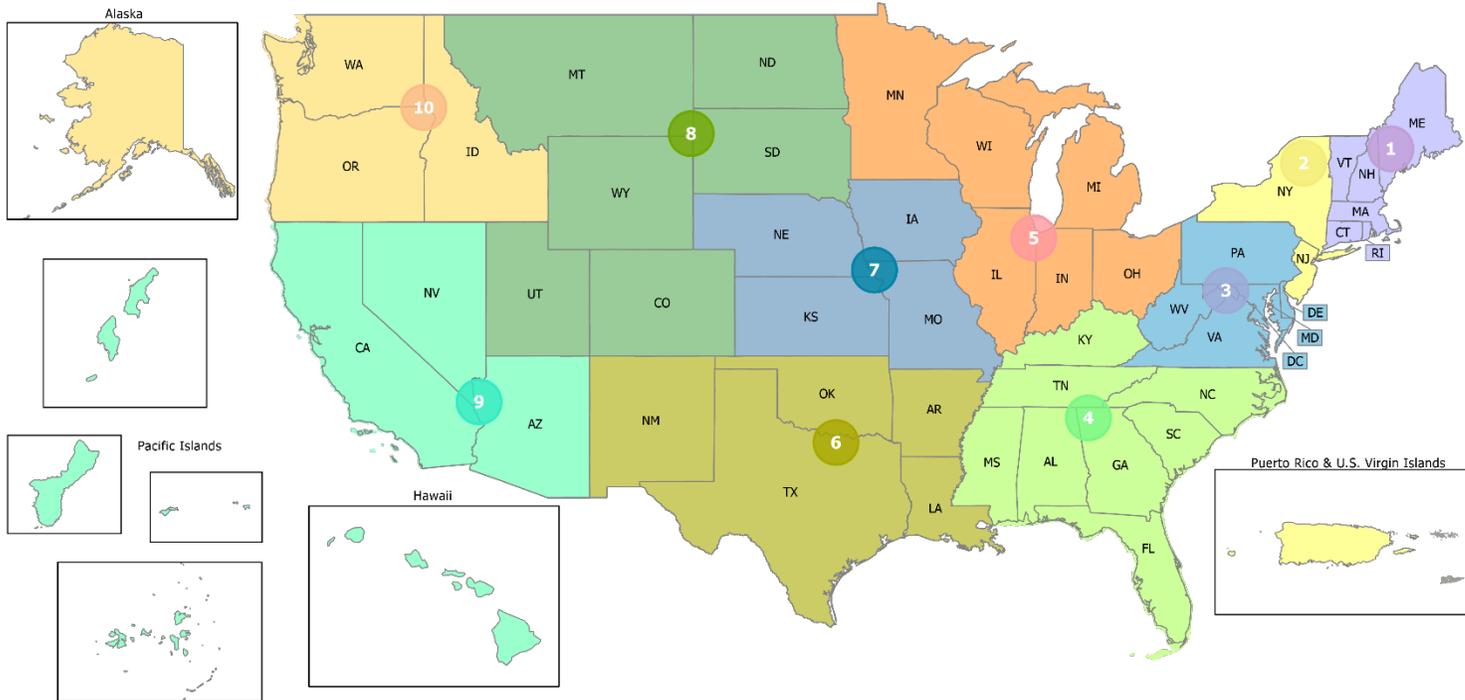
U.S. Environmental Protection Agency  
Superfund Redevelopment Program



Legend		Zoning Class	
[Red outline]	Site Boundary	[Blue outline]	Conservation District (C)
[Blue outline]	Area of Concern	[Light blue outline]	Commerce Park (CP)
[Dashed line]	Parcel Boundary	[Light purple outline]	Light Industrial (M-1)
[Black outline]	BA Boundary	[Orange outline]	General Inclusionary (M-2)
[Blue outline]	Shoreline MEC Area	[Green outline]	Residential Low Density (RL)
[Black outline]	Fuel Storage Tank	[Light blue outline]	Urban Residential (RU)
[Black outline]	Contaminated Area	[Light blue outline]	Mixed Use Development (MUD)
[Black outline]	Investigation Area	[Light blue outline]	Office/Institutional (O-I)
[Black outline]	James River Residential	[Light blue outline]	Residential Low Density (RL)
[Black outline]	TNT Source Area	[Light blue outline]	Urban Residential (RU)
[Black outline]	Ernsbarger Pond	[Light blue outline]	Urban Residential (RU)



# Superfund Redevelopment Coordinators



Region	Contact
1	<b>Joe LeMay</b> <a href="mailto:lemay.joe@epa.gov">lemay.joe@epa.gov</a>
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## Superfund Redevelopment Program Website

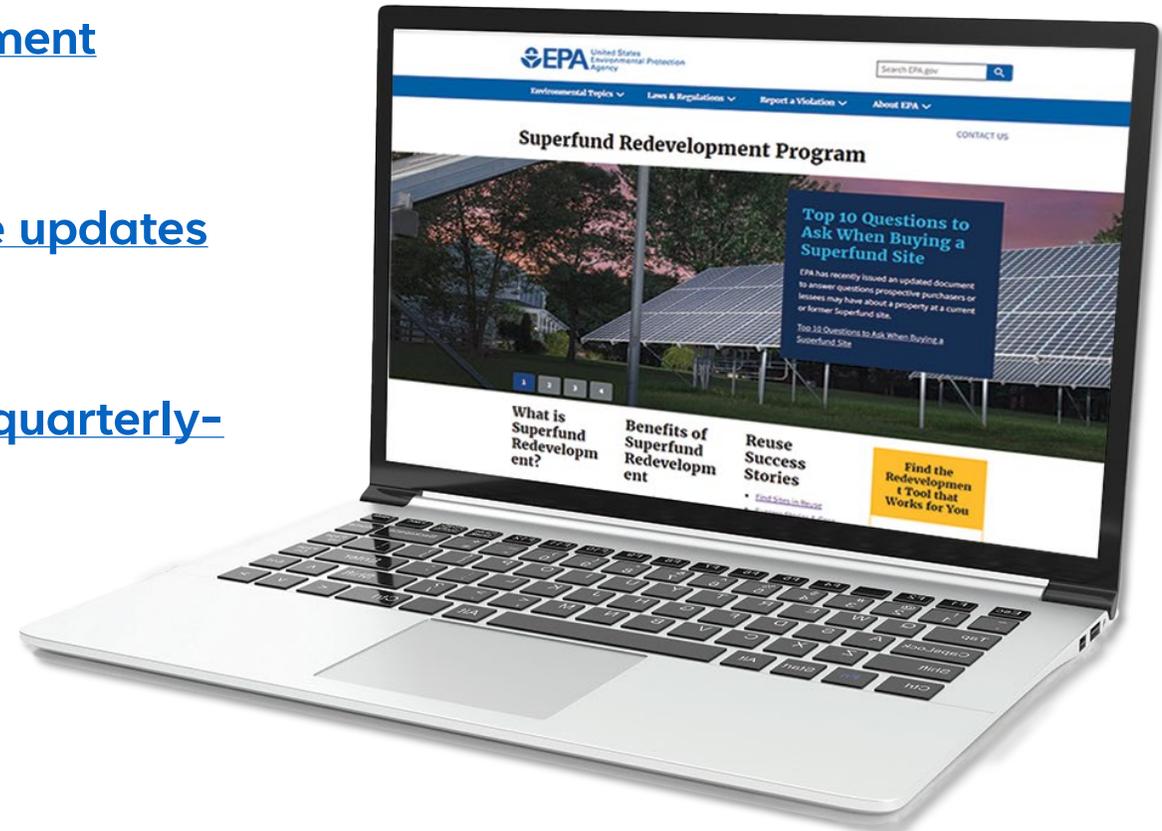
[www.epa.gov/superfund-redevelopment](http://www.epa.gov/superfund-redevelopment)

### SRP Mailing List

[Sign up for the SRP Mailing List to receive updates](#)

### SRP Webinars

[www.epa.gov/superfund-redevelopment/quarterly-webinar-series](http://www.epa.gov/superfund-redevelopment/quarterly-webinar-series)





# Questions?



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***Contact the Redevelopment Experts for Your Area***

**[www.epa.gov/superfund-redevelopment/regional-redevelopment-contacts](http://www.epa.gov/superfund-redevelopment/regional-redevelopment-contacts)**

# Q&A Session



**Thank you!**