



## Exploring the Impact of Brownfields

April 2025

An aerial photograph of a wide river flowing through a landscape with dense forests. The trees on the banks are in various stages of autumn, showing shades of yellow, orange, and green. The river itself is a deep blue-grey color. In the distance, the horizon is flat under a pale blue sky with some light clouds. A small, dark structure is visible on the left bank in the lower-left corner.

# MPCA mission

Protect and improve the environment and enhance human health.





What is a Brownfield, and how does it impact communities?

## What is a Brownfield Site?

An abandoned or underutilized property whose redevelopment is hindered by real or perceived environmental contamination.



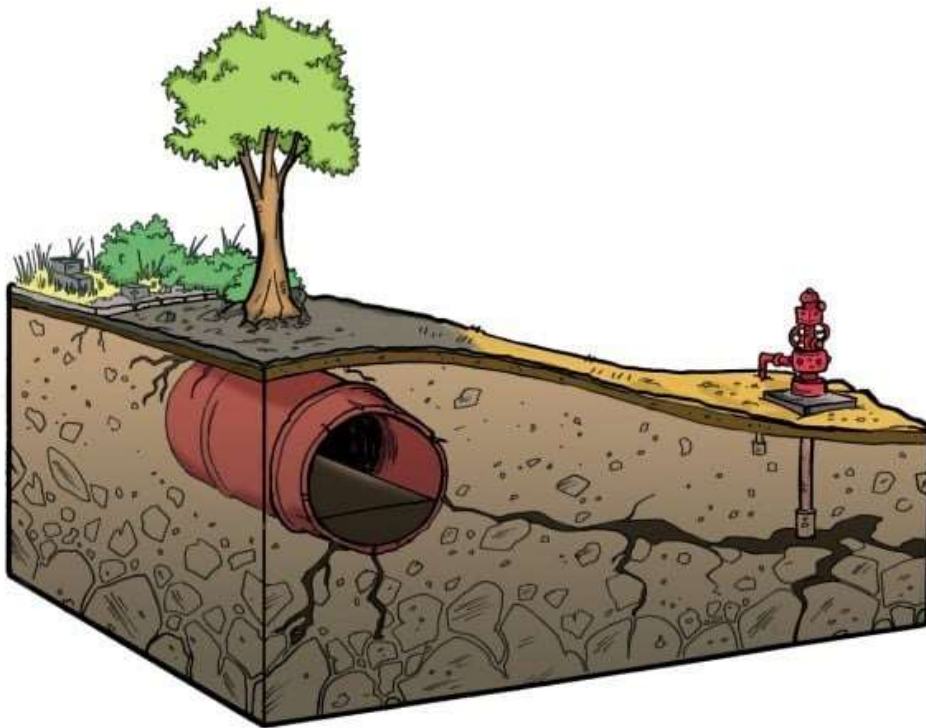


## Environmental Benefits



- Cleanup/Reduce threat to public health
- Responsible growth and saving land from destructive sprawl development
- Air quality improvements
- Saving energy and reducing greenhouse gases
- Water quality impact improvement by reducing runoff

# Contaminant Exposure



Brownfields may contain hazardous substances such as heavy metals, petroleum products, or chemicals from past industrial activities.

# Environmental Contaminants

Contaminant	Substance Type	Examples of Past Uses
1. Lead (Pb)	Metals	Mining, fuel, paint, inks, piping, batteries, ammunition
2. Petroleum	Oil, hydrocarbon compounds	Drill and refining, fuel, chemical and plastic production
3. Asbestos	Fiber in rock	Mining and processing, piping, insulation, fire proofing, brakes
4. Polycyclic aromatic hydrocarbons (PAHs)	Hydrocarbon compounds, combustion byproduct	Coal tar, creosote, soot, fire, industry/ manufacturing byproduct
5. Other metals	Metals	Metal fabrication, plating, mining, industry/ manufacturing
6. Volatile organic compounds (VOCs)	Manmade chemicals	Industry and commercial product solvents, degreasers, paint strippers, dry cleaning
7. Polychlorinated Biphenyls (PCBs)	Manmade chemicals	Heat and electrical transfer fluids, lubricants, paint and caulk, manufacturing, power plant
8. Arsenic (As)	Metals	Pesticides, agriculture, manufacturing, wood preservative

## Exposure Pathways

The risks associated with brownfields stem from the potential exposure to hazardous substances present at these sites, affecting nearby communities, wildlife and ecosystems.



Soil-human health pathway



Soil leaching pathway



Vapor intrusion pathway



Groundwater pathway



## Potential Health Effects

Contaminant	Potential Health Effects
1. Lead (Pb)	Damage to brain, nerves, organs, and bone; cancer
2. Petroleum	Headache; nervous system, immune, liver, kidney, and respiratory damage; cancer
3. Asbestos	Lung scarring, mesothelioma and lung cancer
4. Polycyclic aromatic hydrocarbons (PAHs)	Liver disorders; cancer
5. Other metals <sup>2-5</sup>	Immune, cardiovascular, developmental, gastrointestinal, neurological, reproductive, respiratory and kidney damage; cancer
6. Volatile organic compounds (VOCs)	Eye irritation; nausea; liver, kidney and nervous system damage; birth defects; cancer
7. Polychlorinated Biphenyls (PCBs)	Disruption or damage to the immune, hormone and neurological system; liver and skin disease
8. Arsenic (As)	Nausea, vomiting and stomach pain; blood disorders; nerve damage; skin disease; lung and skin cancer

## Safety Risks

1. Abandoned structures, open foundations, and deteriorating infrastructure on brownfield sites pose safety hazards.
2. Such sites invite improper waste disposal that adds to the risks.
3. Brownfields near flood zones or natural hazard areas can spread contaminants and contribute to structural deterioration.



## Environmental Health Risks

1. Soil and groundwater contamination, emissions, and waste deposits contribute to health risks.
2. These risks affect both current and future generations.



<https://www.pca.state.mn.us/about-mpca/whats-in-my-neighborhood>



## Socio Economic Impacts



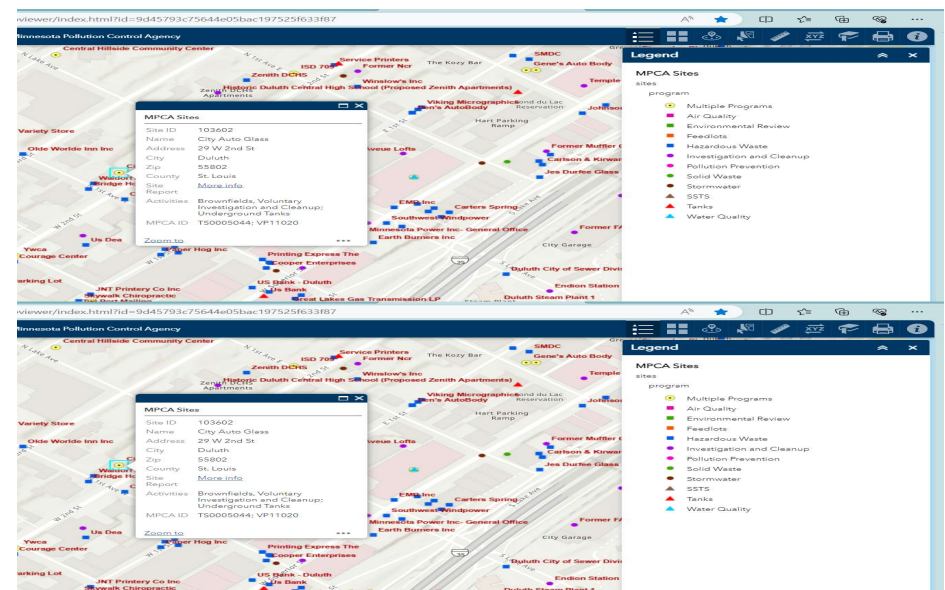
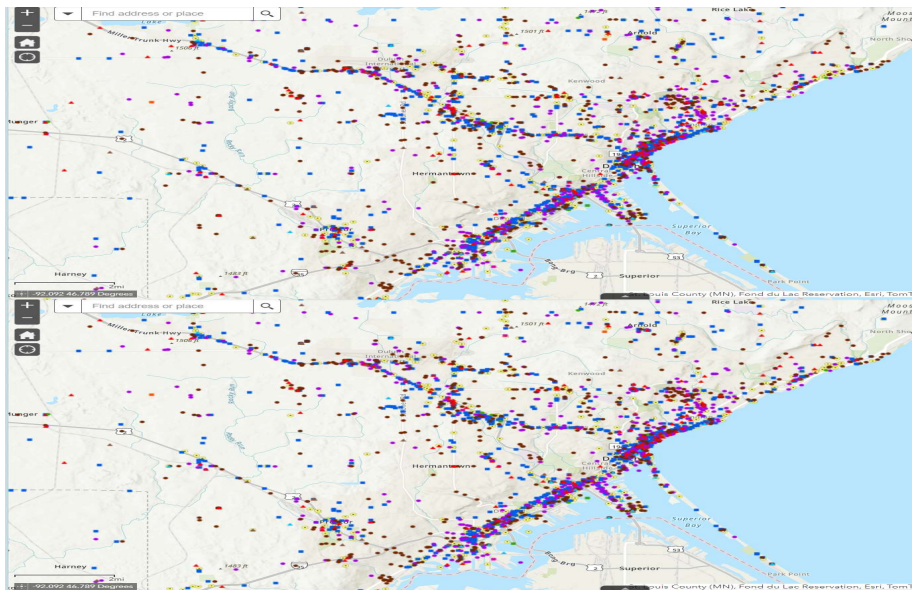
1. Brownfields contribute to stigma about the neighborhood.
2. Reduced investment and declining property values strain local governments' ability to provide services in affected communities.
3. Residents may experience a deteriorating quality of life, or emotional difficulty in watching their neighborhood deteriorate.

# Socioeconomic Impacts

- **Lower-income Minnesotans, people in rural areas, people of color and Tribal communities may be at greater risk of experiencing pollution.**
- **We need to be intentional with our approach and:**
  - Better understand sources of pollution and risks
  - Reduce pollution, improve livability
  - Communicate and engage earlier, more often and more effectively



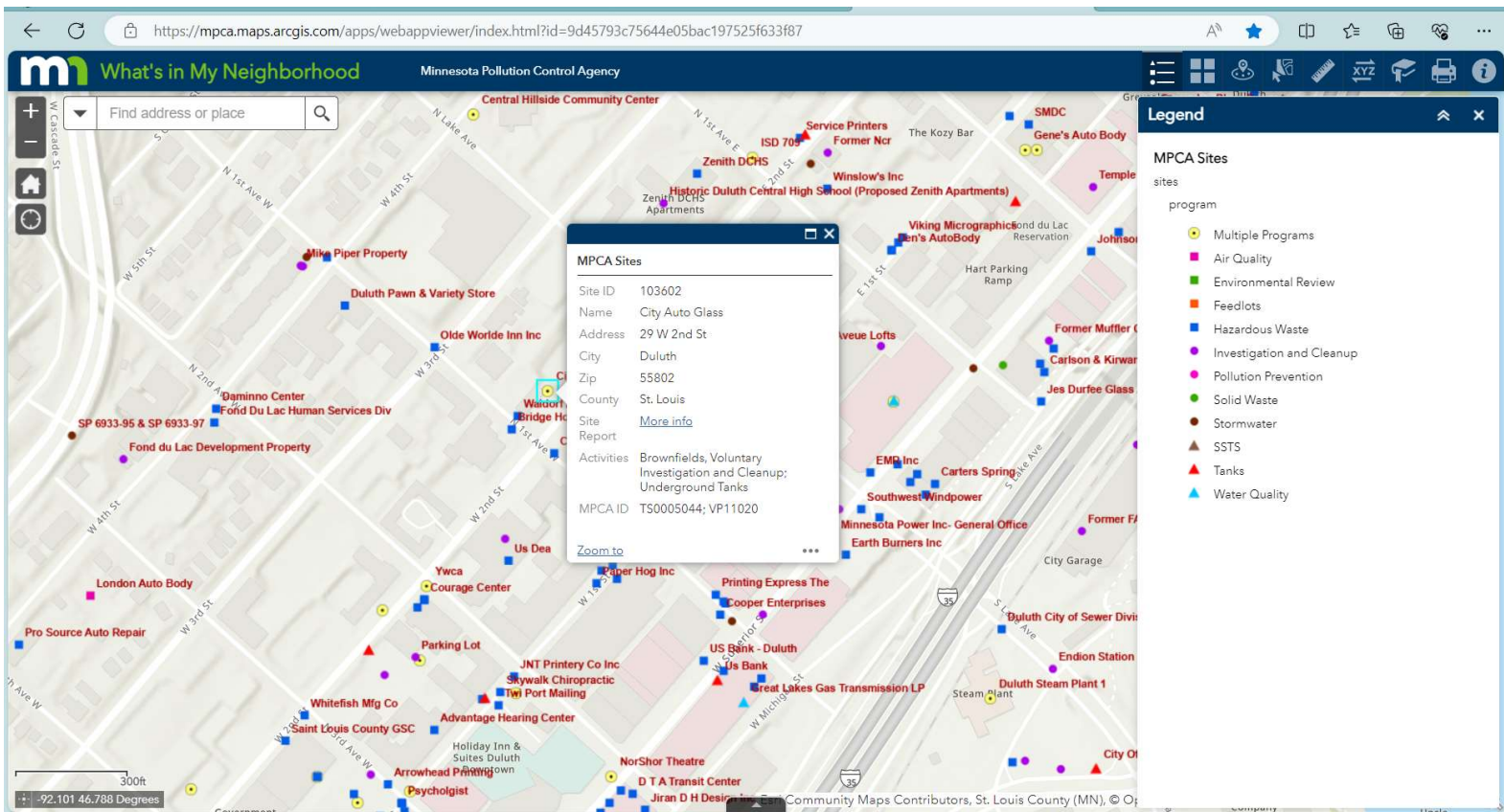
# What's In My Neighborhood?



<https://www.pca.state.mn.us/about-mpca/whats-in-my-neighborhood>



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# DEED mission

To empower the growth of the Minnesota economy, for everyone.



# Economic Consequences



- Vacant buildings
- Blight – affects surrounding community
- Job/tax loss
- Crime, vandalism, safety
- Sprawl – added costs of new infrastructure, school, housing

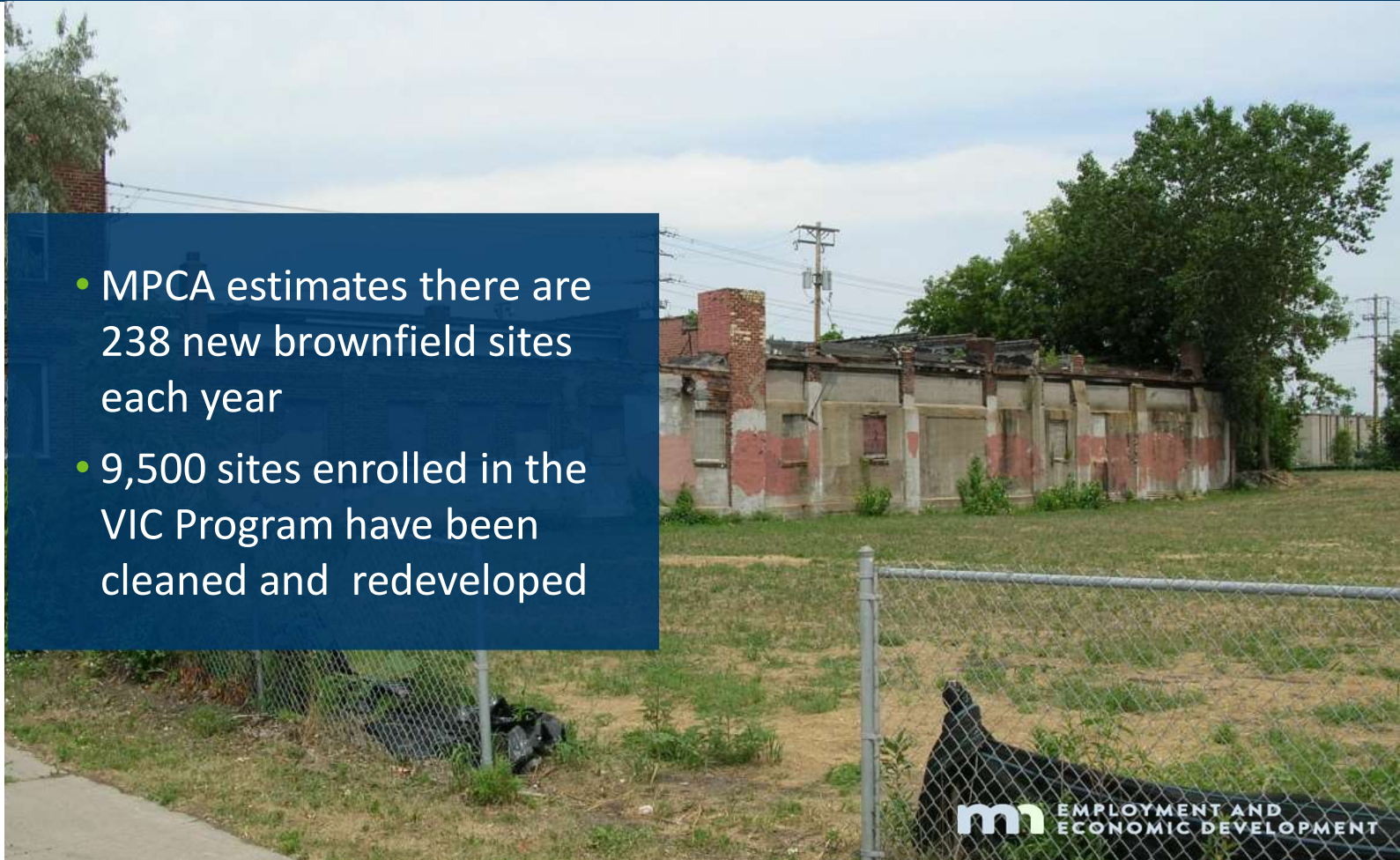
# Economic Benefits



- Jobs, taxes, housing units!
- Blight removal
- Community revitalization – spur additional development
- Private investment, local or outside
- FUNDING OPPORTUNITIES!

## Brownfields by the numbers

- MPCA estimates there are 238 new brownfield sites each year
- 9,500 sites enrolled in the VIC Program have been cleaned and redeveloped





## Impacts and Benefits: Contamination Cleanup Program



DEED's CCGP leveraged \$6.89 **BILLION**



Job Creation: Over 50,000 new or retained jobs



Housing Development: More than 20,000 units



Tax Base: \$123 million



Property Value Increase: Residential Property value increases @ 5-11.5% in surrounding areas

## Impacts and Benefits: Redevelopment Grant Program

Jobs created and retained: over 30,000

Tax Increase: over \$61.6 million

Acres: almost 1,500 acres

Housing: Almost 10,000 units

Private Investment: over \$4 Billion





Questions?

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# Questions?

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<https://mn.gov/deed/government/financial-assistance/cleanup/>