



Case Studies to Apply and Analyze Use of Tools at Brownfield Sites

SHC Research Area 9 Output 4
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Common Brownfield Examples

Gas Stations



Mine Scarred Land



Vacant Lots



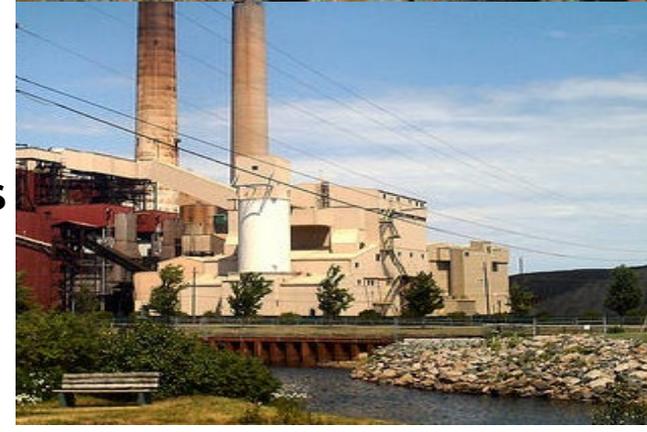
Building with asbestos and lead paint



Abandoned Factories



Power Plants



How Do We Effectively Support Decision Making?

- **Partner Needs:**
 - Brownfield grantees could make use of additional technical expertise to maximize the public benefits, including improving community health, from site cleanup, redevelopment, and revitalization efforts.
 - SHC's science-based tools can potentially support improved redevelopment decisions but need to be more widely available and tested in real-world situations to ensure usability.



How Do We Effectively Support Decision Making?

- **Output Goals:**

- Work with Office of Brownfields and Land Revitalization and EPA Regions (Brownfields Programs), and communities receiving Brownfield grants to select relevant tools and assess their applicability across different project types, timeframes, and community scales
- Evaluate and improve the applicability and usability of these tools
- Develop products that describe tool functions, experience level needed, data and system requirements, and criteria for tool selection, in the context of Brownfield-related activities

Overview of Products in Output 4

- Product 1: Applying EnviroAtlas to Brownfields assessments and redevelopment
- Product 2: Demonstration of Effectiveness of Revitalization of a Prevalent Type of Brownfields Site
- Product 3: Health Impact Assessment (HIA) Applications to Brownfields Reuse and Redevelopment to Support Community Resiliency and Revitalization

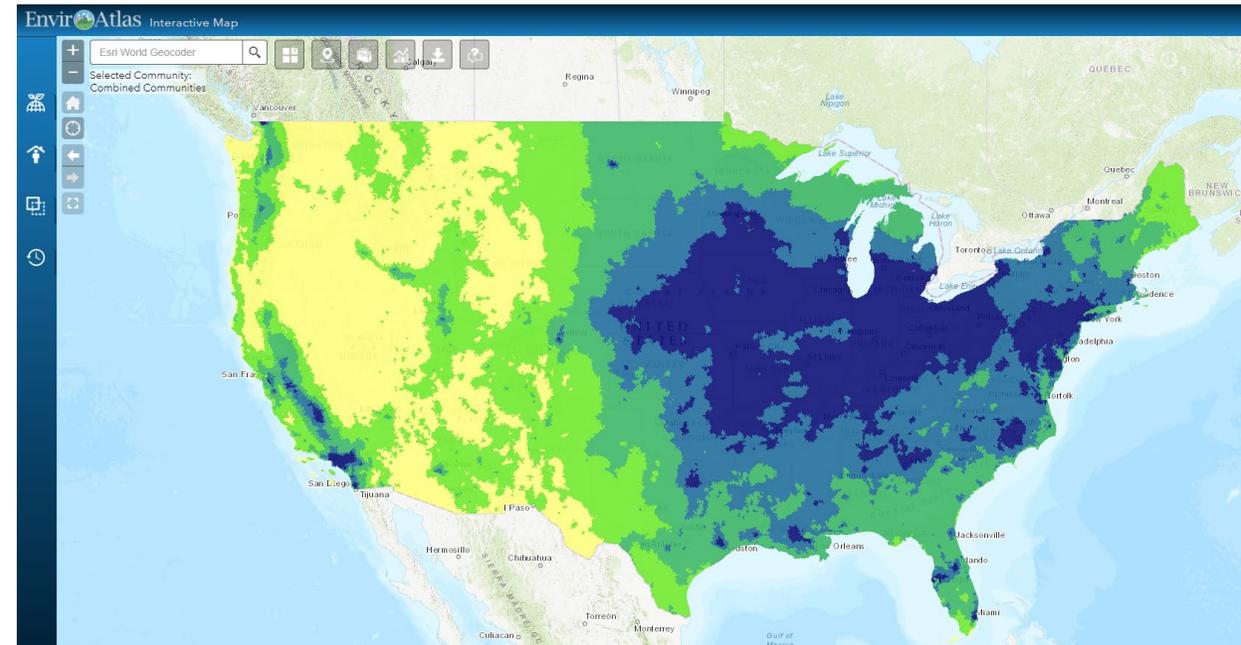
Applying EnviroAtlas to Brownfields Assessments and Redevelopment

- **Product Partners and Need:** Ways to better assist communities with Brownfields process, from grant applications to redevelopment and revitalization

Product Description: Geospatial tools and guides for use in Brownfields redevelopment process.

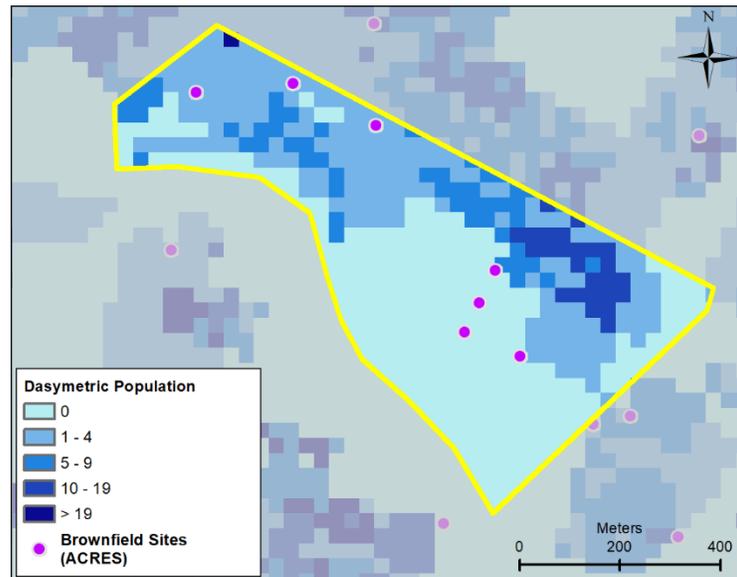
Approach:

- Determine if and how existing EnviroAtlas resources may be useful to Brownfields stakeholders
- Identify tool improvements, co-develop guides, and case studies to assist stakeholders
- Solicit feedback and guidance from partners throughout process



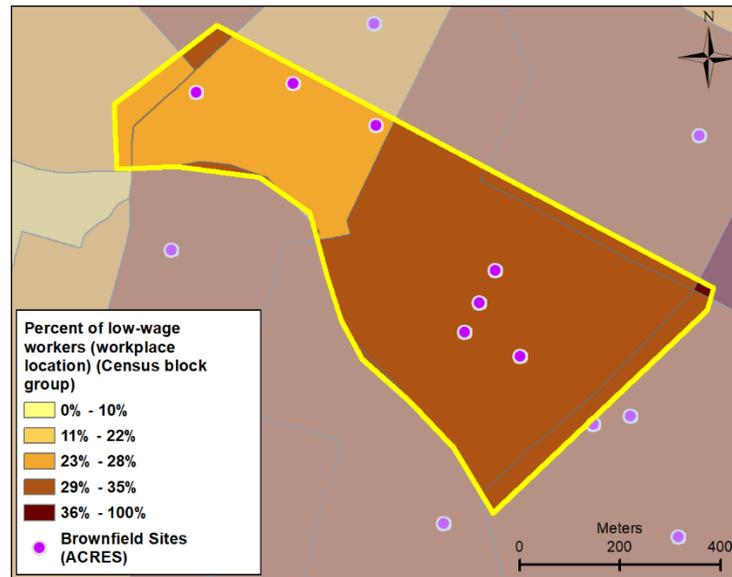
EnviroAtlas and Brownfields

Example: Apply EnviroAtlas to range of topics in area-wide Brownfields plan in Northeast Brandywine River neighborhood of Wilmington, DE using Interactive Map and available data to download



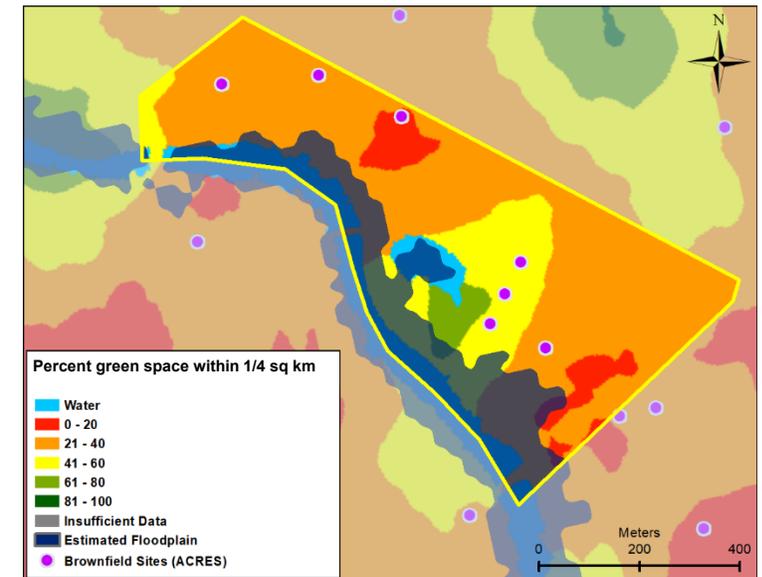
Where are residential areas and where are existing Brownfields? (30m pixels)

Can be in close proximity to where people live



What economic opportunity is there near Brownfields?

Communities with many brownfields, few job opportunities may be good candidates for reinvestment



Where are potential hotspots and flood prone areas?

Map urban heat islands (red, 1m pixels) and flood risks (dark blue, 30m pixels) and show compound effects

Checklist for Abandoned Gas Stations

- Background:
 - About 225,000 brownfield sites could be impacted by petroleum, most from leaking underground storage tanks at old gas stations
 - Sites blight surrounding neighborhoods and can affect human health and the environment
- Goals are to help communities:
 1. Understand potential contaminants from station operations and structures
 2. Plan for opportunities to use green and gray infrastructure investment along commercial corridor areas
- Work with Brownfields Program to assess and test conditions that make abandoned gas station sites good candidates for revitalization

Initial Approach

- Identify abandoned gas stations in Central NC by searching state tanks records
 - Identify common characteristics of gas station sites from tank records, GIS and other data
- Develop checklists to help communities with limited capacity streamline assessment and cleanup
 - Determine criteria for selecting good candidate abandoned gas station sites for revitalization
 - Test checklist with partner communities
 - Explore incorporating into EnviroAtlas

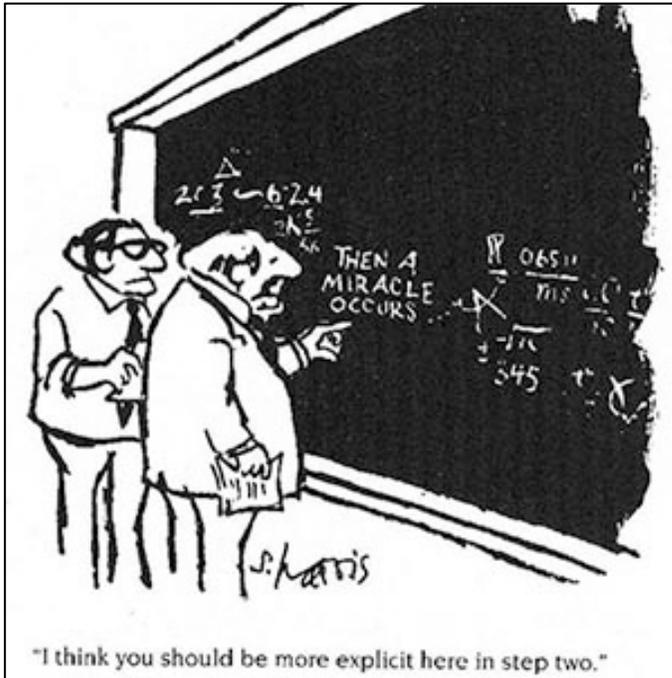


Creating Caring Communities: Improving Health with Brownfield and Land Revitalization

- Goal: Incorporate health impact decision-making into Brownfield and Land Revitalization (BF/LR) activities
- Implementation: Collaborate with Brownfields Programs and local BF/LR stakeholders to evaluate success of prior EPA Health Impact Assessments (HIAs)
 - Apply HIAs to current BF/LR projects to inform decisions
- Scientific Approach: Apply structured decision-making to environmental data analysis to promote solution-driven science
 - Objective: Target materials to inform BF/LR stakeholders about health impacts without detracting from BF/LR statutory requirements

HIA Evaluation

- Systematically analyze and evaluate available data on existing EPA ORD and Brownfield-specific HIAs
- Compile best practices of HIA applications
- Map HIA onto BF process to maximize inclusion of health in decisions



WHAT IS A "HEALTH IMPACT ASSESSMENT"?

Health Impact Assessment (HIA) is an evidence-based tool that incorporates public engagement before decisions are finalized for policies, plans, and projects, which helps create more equitable, healthier communities.

EVIDENCE-BASED TOOL

USED BEFORE DECISIONS ARE FINALIZED

TO CREATE MORE EQUITABLE, HEALTHIER COMMUNITIES

Evaluate community participation and project context to optimize health-impact decision-making.

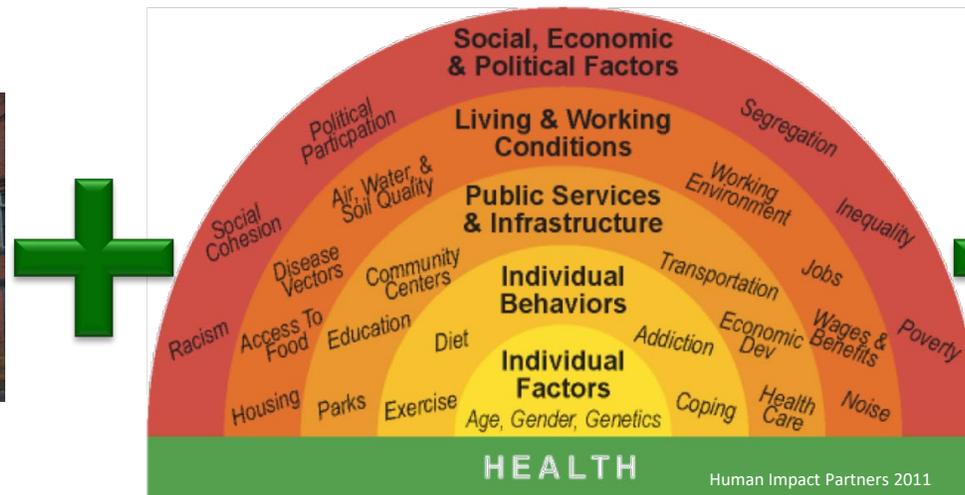
Case Study Applications

- Partner with Brownfields Programs and local BF/LR projects to assess health determinants
- Adapt HIA to BF/LR process
- Create targeted materials that quantify and communicate health impacts

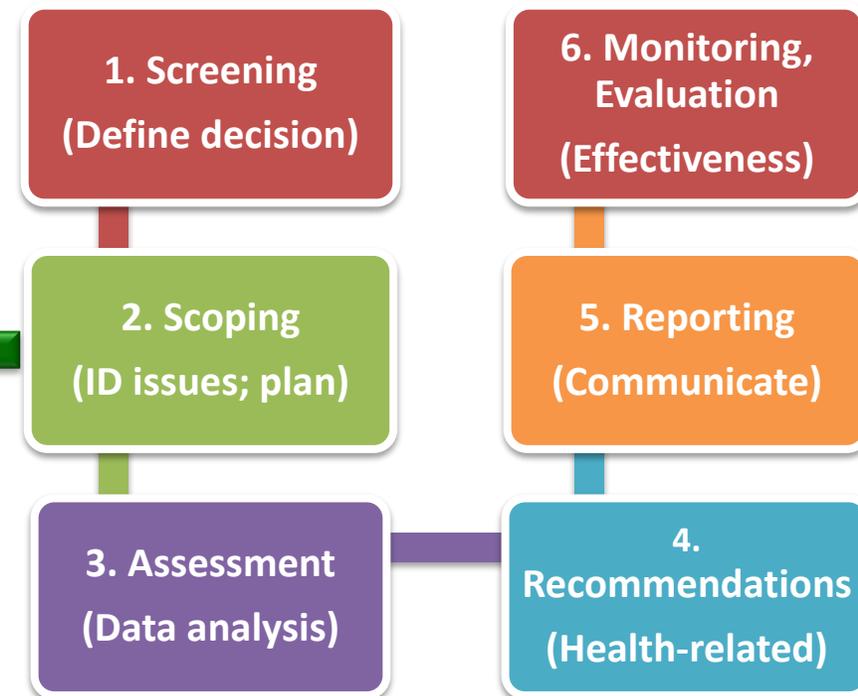
BF/LR Case Studies



Health Determinants



Health Impact Assessment



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