

Scoring Points on Climate-Focused Aspects of Your Brownfields Grant

July 24th, 2024

Does your community have problems with urban heat?



Does your community have problems with excessive heat?



Does your community have problems with flooding?



Let's use brownfields!



Brownfield revitalization can support community efforts to become more resilient to **Climate Change** impacts.

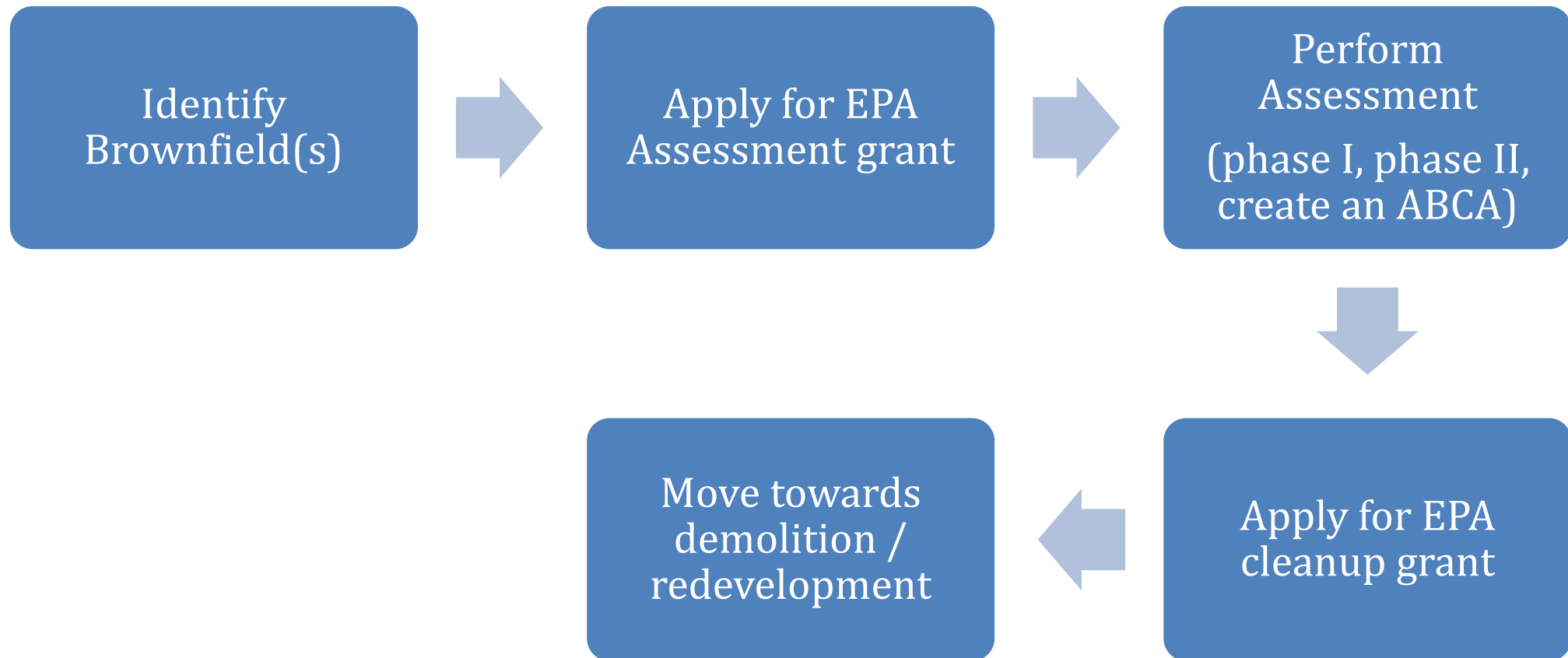
Adaptation = methods to prepare and adjust for future climate change effects.

Examples include creating improved storm water systems, planning for increased floodplains, building retrofits, managing contaminants in changing environment, urban agriculture.

Mitigation = human intervention to reduce human impact on climate.

Examples include strategies to reduce green house gas (GHG) emissions, creating GHG sinks, sustainable commercial or industrial site uses, greener clean ups, green roofs.

Order of Brownfields Operations



FY24 MAC Competition RFA Changes related to climate change:

1.b.ii. Outcomes and Benefits of Reuse Strategy

Describe the potential of the proposed project or revitalization plans to stimulate economic development in the target area(s) upon completion of the cleanup of the priority site(s), and/or how the grant will facilitate the creation of, preservation of, or addition to a park, a greenway, undeveloped property, recreational property, or other property used for nonprofit purposes in the target area(s).

Describe how the **proposed project** will improve local climate adaptation/mitigation capacity and resilience to protect residents and community investments.

(Climate adaptation/mitigation is defined in [Section I.F.](#))

If applicable, describe how the reuse of the priority site(s) will facilitate renewable energy from wind, solar, or geothermal energy; or will incorporate energy efficiency measures.

FY24 MAC Competition RFA Changes related to climate change:

3.c. Plan to Measure and Evaluate Environmental Progress and Results (5 points)

The extent to which the plan and mechanism to track, measure, and evaluate progress in achieving expected project outputs, overall project results, and eventual project outcomes are reasonable, appropriate, and clearly correlate with information previously presented in the Narrative.

Why are we asking this of you in your application?

- Use brownfield resources to help your community become more climate resilient
- Utilize brownfield resources to promote Environmental Justice
- Direct communities towards climate focused redevelopment



How the BUILD ACT Includes New Emphasis on Use of RE/EE


In March 2018, Congress passed the Brownfields Utilization, Investment and Local Development (BUILD) Act, which amended the Brownfields provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The BUILD Act included a ranking criterion focusing on RE or EE projects. This criterion is considered by EPA when evaluating brownfields grant applications.

How do you meet these new requirements?

Try mentioning...

1. Language from the EPA Climate Smart Manual!
2. Data points from CJEST **and** EJSCREEN tools (connect Environmental Justice (EJ) and climate related initiatives!)

For current and future grantees...

3. Recording climate initiatives in your Property Approval Questionnaires (PAQ)
 4. Recording climate focuses in ACRES
 5. Potential sources of leveraged resources
- 


1. Referencing the EPA Climate Smart Manual

- a) Brownfield Assessments
 - I. Phase I Environmental Site Assessments (ESA)
 - II. Phase II ESA
 - III. Analysis of Brownfield Cleanup Alternatives (ABCAs)
- b) Greener Clean Ups
- c) Greener Demolition
- d) Redevelopment for Climate Resiliency
 - I. [Renewable energy and energy efficiency factsheet](#)



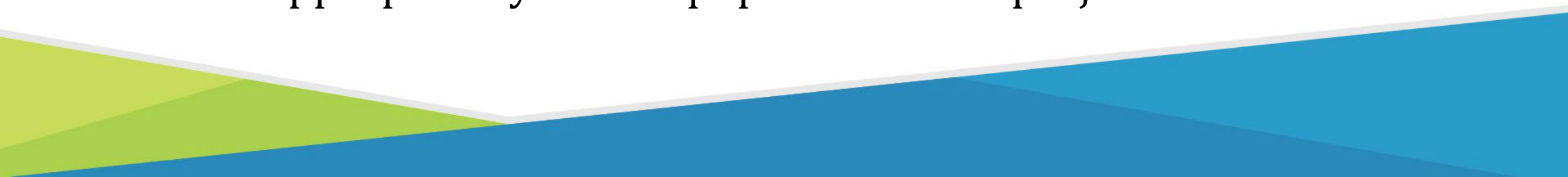
I) Phase I ESAs

Questions to Consider During a Phase I ESA

1. What are the historical weather/climate-related impacts to this property?
 2. What are the current and projected weather/climate-related impacts to the property?
 3. Are there any vulnerabilities evident? Based on projected climate impacts in the area, will the structures, soil, vegetation, and other elements be resilient?
 4. Will existing water infrastructure be resilient to climate changes?
 5. Is the historic school, railroad spur, mill, foundry, mine, or other type of brownfield close to areas where wildfire or flooding risks are likely to increase?
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II) Phase II ESAs


Phase II ESA Strategies for Climate Mitigation

1. Use renewable energy
 2. Incorporate remote sensing capabilities
 3. Maximize reuse of existing wells where appropriate and/or design wells for future reuse
 4. Use field test kits whenever possible
 5. Use local laboratories when possible
 6. Use appropriately sized equipment for the project
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III) ABCAs and climate change

What is an Analysis of Brownfields Cleanup Alternatives (ABCA)?

A report which provides a discussion of the cleanup alternatives.
Considers a minimum two different alternatives plus a 'No Action' option

- A brief discussion of the effectiveness, implement-ability
 - The cost estimate of cleanup alternatives
 - A preliminary cost estimate for each alternative
 - And the 'Recommended Cleanup Alternative.'
- 


III) ABCAs and climate change

How do I show that I considered potential adverse impacts caused by extreme weather events in the draft ABCA?


1. Evaluate Commonly Accepted Impacts:

- Assess how changing weather events (modeled for your locale) might affect proposed cleanup remedies.

2. Site-Specific Assessment

- Analyze how extreme weather events could impact the chosen remedial action, especially if the site is vulnerable
 - Ensure the remedy remains effective under changing climate conditions.
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Addressing Climate Change Concerns in your ABCA Checklist!

- 1) Review authoritative resources
 - 2) Given the pertinent climate change concerns, identify the site-specific risk factors, considering known conditions.
 - 3) As part of the effectiveness evaluation, consider assessing how well each alternative can address the identified climate change risk factors.
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b) Greener Clean Ups

Some ideas for **Best Management Practices:**


- Use biodiesel as fuel source
- Use onsite or nearby sources of fill material
- Use native species for vegetative cover
- Reclaim uncontaminated material for reuse, salvage value or recycling
- Use onsite generated renewable energy (e.g., solar, wind, landfill gas)
- Incorporate wetlands, bioswales and other natural resources into cleanup
- Use biodegradable hydraulic fluids in equipment
- Use local staff to minimize resource consumption
- Use dedicated materials for sampling
- Re-vegetate excavated or disturbed areas quickly



Figure 7. Five core elements of a greener cleanup

c) Greener Demolition

Several factors affect the suitability of deconstructing buildings on brownfields:

- Condition of the building and materials
 - Types and quantities of potentially reusable and recyclable materials
 - Presence of hazardous material
 - Access to building reuse and recycling markets.
 - Cost to transport materials long distances
- 

d) Redevelopment for Climate Resiliency

Potential **outcomes** for your brownfield project:

- Improved water quality
- Reduced municipal water use
- Ground water recharge
- Flood risk mitigation
- Increased resilience to climate change impacts such as heavier rainfalls, hotter temperatures, and higher storm surges
- Reduced ground-level ozone
- Reduced particulate pollution
- Reduced air temperatures in developed areas
- Reduced energy use and associated GHGs
- Increased or improved wildlife habitat
- Improved public health from reduced air pollution and increased physical activity
- Increased recreation space
- Improved community aesthetics
- Cost savings
- Green jobs
- Increased property values

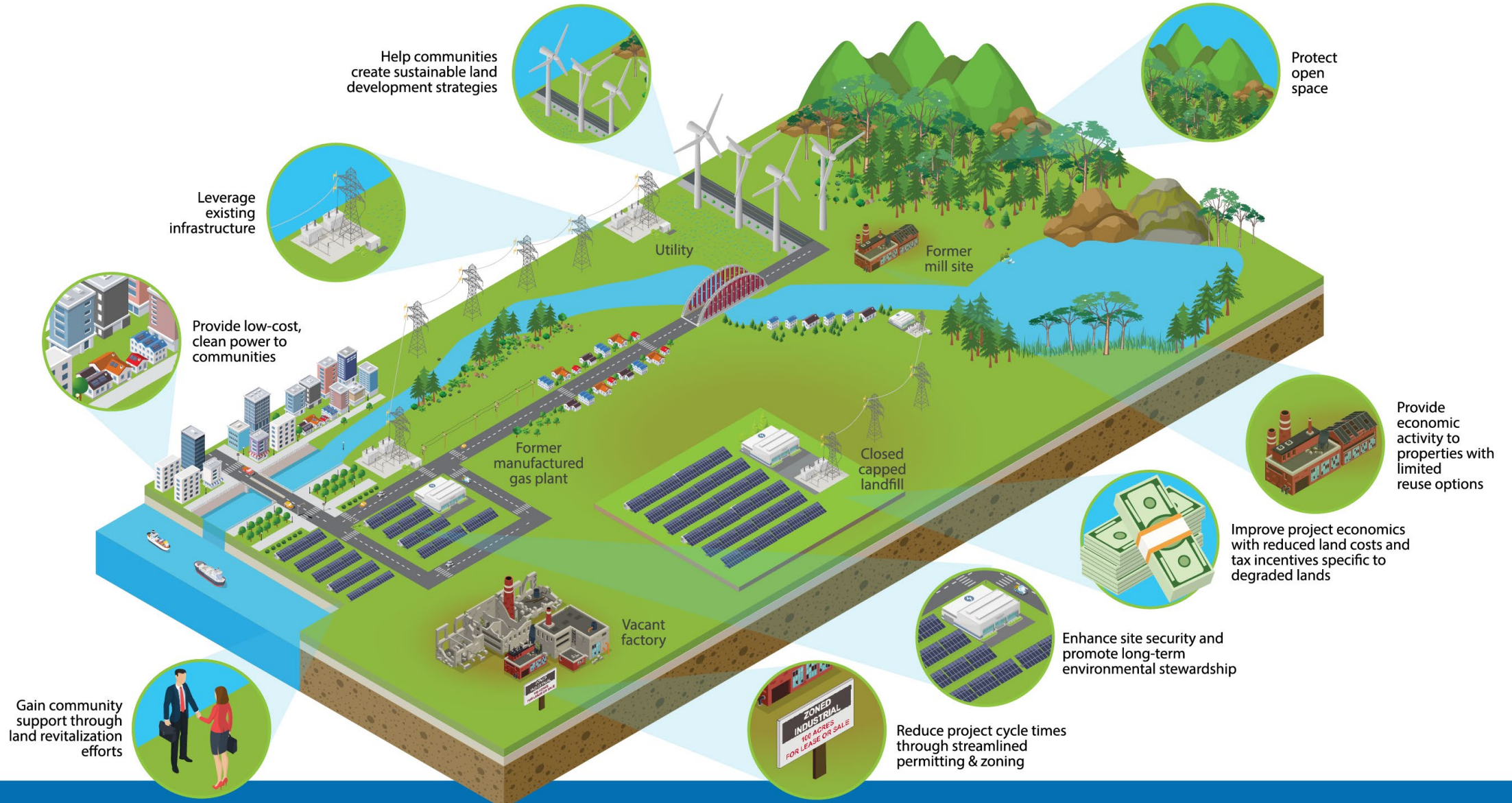
I. Considering Renewable Energy or Energy Efficiency Approaches in Brownfield Redevelopment?

The best time to consider RE and/or EE technologies is early in your brownfield revitalization planning process because this is the time when you have the most flexibility. These documents can be especially helpful:

- A general reuse plan, which describes whether the site will be used for industrial, commercial, residential, mixed-use, recreational or greenspace purposes, will help you identify initial possibilities for RE and/or EE.
- A site conceptual design– with potential building footprints and other developable v. non-developable areas – will help identify location and size options for RE production and EE measures.
- A Phase I or Phase II environmental site assessment will give you an understanding of site conditions and allow you to appropriately design and implement RE or EE plans.

RE-Powering America's Land

Potential Advantages of Reusing Potentially Contaminated Land for Renewable Energy



Energy Efficiency in cleanup and redevelopment

EE as Part of Cleanup Remedy:

- Install onsite RE systems to meet the project's electricity demand, including powering cleanup equipment such as groundwater extraction systems.
- Equip field machinery with clean-emission technology for exhaust systems.
- Use energy-efficient field equipment.

EE in New buildings, Renovations, or Retrofits After Development:

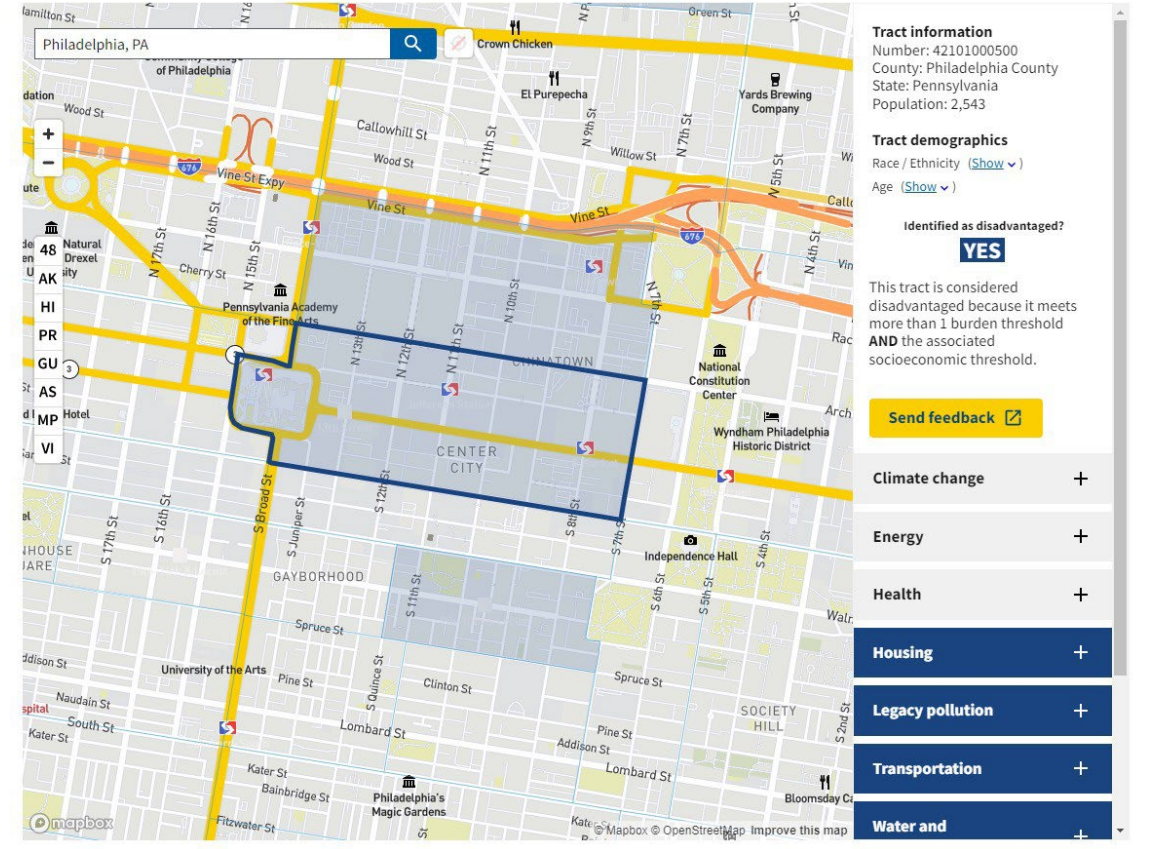
- Replace and upgrade lighting and HVAC systems.
- Install new energy-efficient appliances and windows.
- Incorporate building systems that automatically control heating, ventilation, air conditioning and lighting.
- Consider geothermal heat pump (also called ground source heat pump) technologies that can



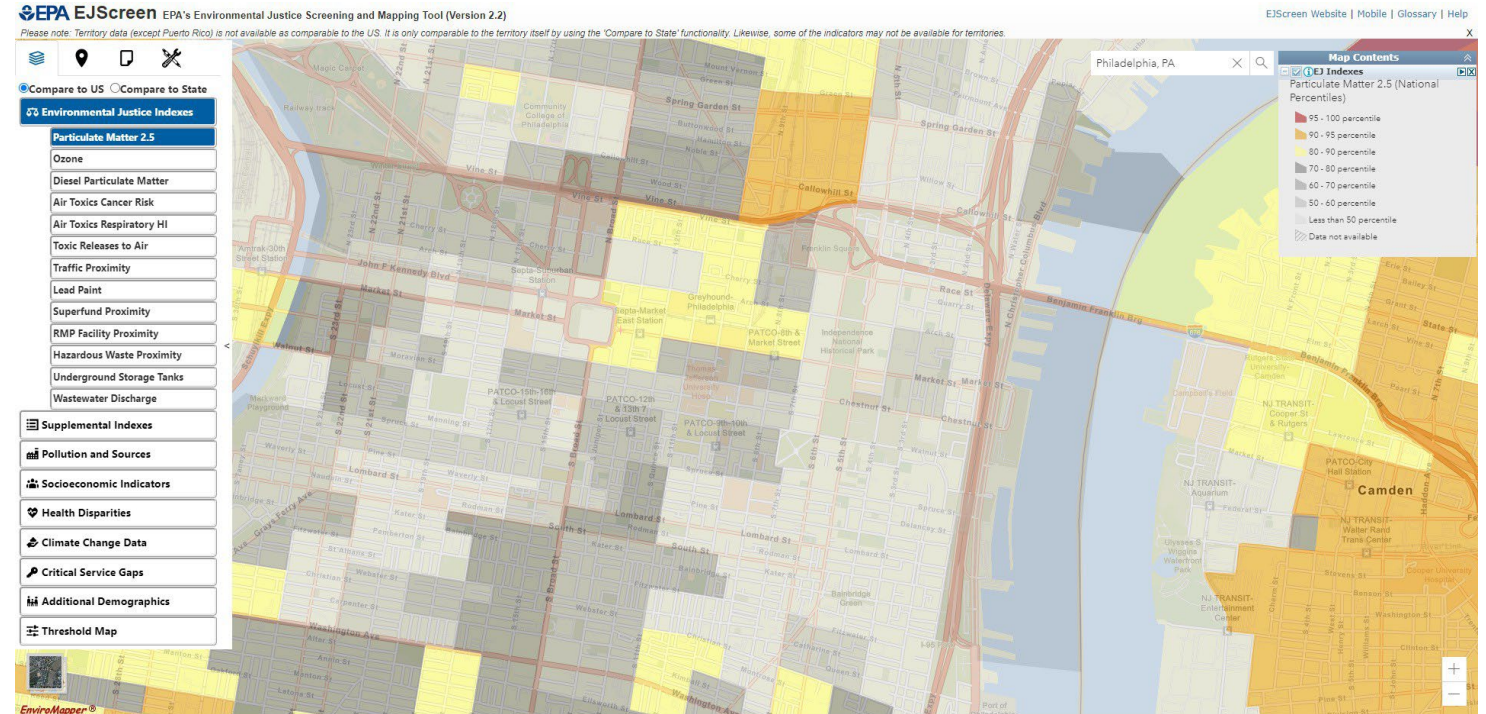
2. Data points from CJEST **and** EJSCREEN tools



Climate and Economic Justice
Screening Tool



2. Data points from CJEST **and** EJSCREEN tools



4. Recording climate focuses in ACRES

Climate Adaption and Mitigation - Planning or Assessment	
DATA FOR REVIEW	APPROVED DATA IN ACRES
Selected Strategies	Selected Strategies
<input type="checkbox"/> N/A	[No Approved Data]
<input type="checkbox"/> Adoption of climate-conscious building codes	[No Approved Data]
<input type="checkbox"/> Updates to floodplain, coastal and wetland, and /or hazard mitigation plans	[No Approved Data]
<input type="checkbox"/> Climate-focused Phase I and Phase II ESAs	[No Approved Data]
<input type="checkbox"/> Evaluate Reuse options that are climate conscious	[No Approved Data]
<input type="checkbox"/> Identify potential risk factors and infrastructure or utility vulnerabilities	[No Approved Data]
<input type="checkbox"/> Other	[No Approved Data]

5. Leveraging Resources

There are numerous federal financial incentives and technical assistance to help make your brownfield project climate smart!



Renewable Energy/ Energy Efficiency

Seeking programs to...

- Explore options and plan for renewable energy implementation
- Fund renewable energy projects
- Implement energy efficiency efforts
- Provide energy equality



Risk Mitigation/ Infrastructure

Seeking programs to...

- Update/retrofit storm water systems
- Develop methods for flood mitigation
- Promote green infrastructure



Sustainability/Community Planning

Seeking programs to...

- Conduct community wide sustainability efforts
- Complete large scale transportation projects



Renewable Energy/ Energy Efficiency



Department of Housing and Urban Development

- Green and Resilient Retrofit Program
 - Grants and Loans
 - Contracts and Cooperative Agreements



Environmental Protection Agency

- Greenhouse Gas Reduction Fund



Department of Energy

- Energy Star Program
 - Federal Income Tax Incentive for Energy Efficiency
 - Energy Efficient Mortgages
 - Energy Efficiency Home Improvement Credit
 - Residential Clean Energy Credit
 - New Energy Efficient Homes Credit
- Office of Energy Efficiency and Renewable Energy (EERE)
 - Federal Solar Tax Credits
 - Energy Efficient Commercial Buildings Tax Deductions
 - Energy Infrastructure Reinvestment Financing



Internal Revenue Service

- Tax Credit for Homes Constructed and Acquired before January 1, 2023
- Residential Energy Conservation Subsidy Exclusion
- Increase in Energy Credit for Solar and Wind Facilities Placed in Service in Connection with Low Income Communities



Department of Agriculture

- High Energy Cost Grant Program
- Rural Energy for America (REAP)
 - Underutilized Renewable Energy Technologies
- Assistance for Rural Electric Cooperatives

Find more renewable energy opportunities in
Building a Green Energy Economy Guidebook and Federal Funding Clearinghouse





Risk Mitigation/ Infrastructure



Department of Transportation

- Surface Transportation Block Grant Program for Transportation
- Congestion Mitigation and Air Quality Improvement Program



US Army Corps of Engineers

- Planning Assistance to States



Federal Emergency Management Agency

- Flood Mitigation Assistance
- Building Resilient Infrastructure and Communities (BRIC)



National Ocean and Atmospheric Administration

- National Coastal Resilience Fund (with the National Fish and Wildlife Foundation)



Environmental Protection Agency

- Clean Water State Revolving Fund (CWSRF)
- Five Star Urban Waters Restoration Grant Program
- Urban Waters Small Grants
- Water Infrastructure Finance and Innovation Act (WIFIA)
- Green Streets, Green Jobs, Green Towns (G3)

Find more **Green Infrastructure Funding** opportunities on the EPA website



Sustainability/Community Planning



Environmental Protection Agency

- Greening America's Communities (TA)
- Building Blocks for Sustainable Communities (TA)



Department of Housing and Urban Development

- Sustainable Communities Regional Planning Grants
- Community Development Block Grants (CDBG) Program

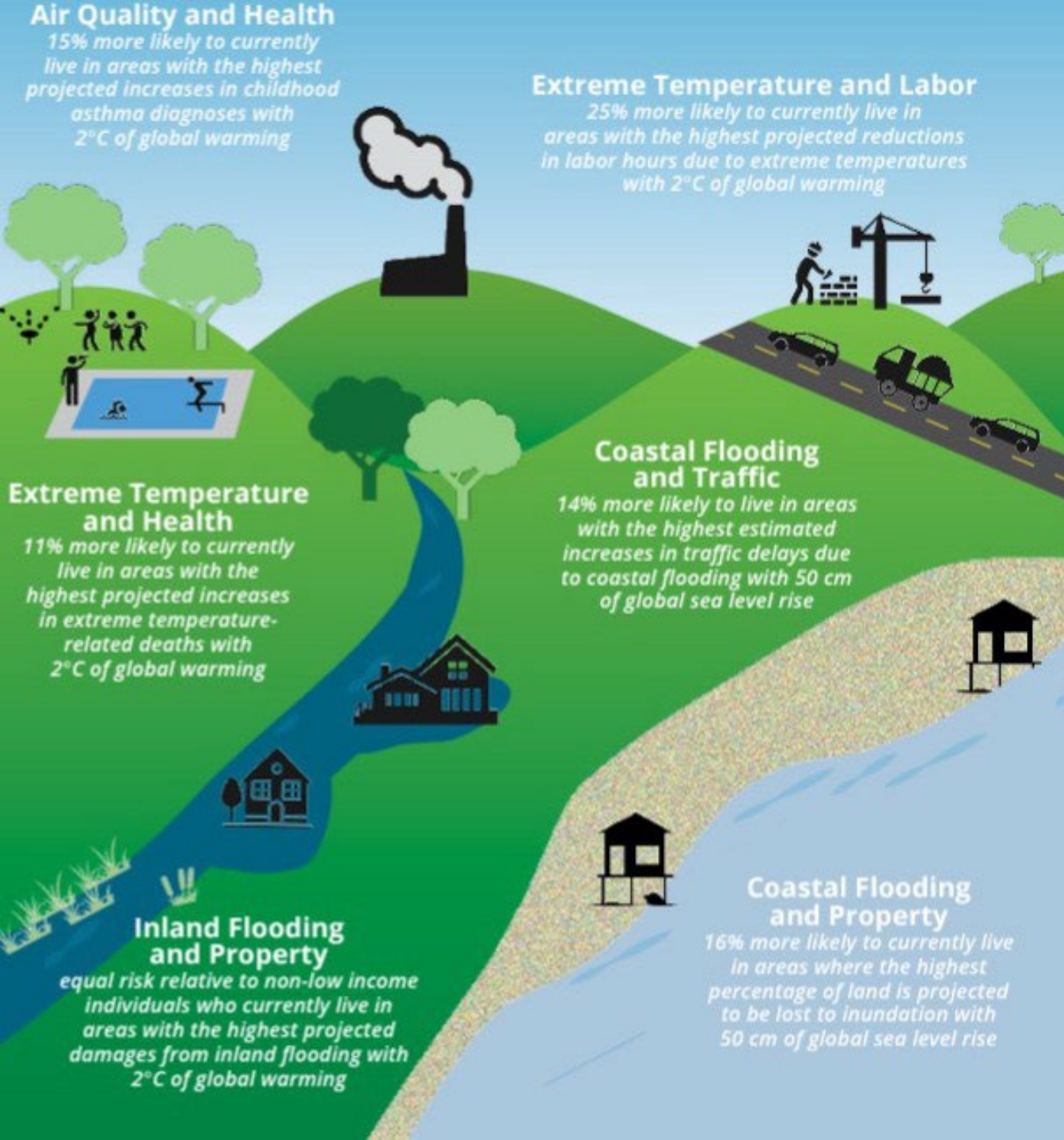


Department of Transportation

- Transportation Planning Grants
- RAISE Discretionary Grants

For **additional finance planning** for your community project consult several federal resources:

- 2021 Brownfields Federal Programs Guide
- EPA Climate Smart Brownfields Manual
- Water Infrastructure and Resiliency Finance Center (Water Finance Center)
- EPA Green Infrastructure Funding Web Page
- EPA Smart Growth Office



Climate Change and Environmental Justice often go hand in hand.

There are findings on the disproportionate risks of climate change affecting:

- Black and African American Individuals
- American Indian and Alaska Native Individuals
- Hispanic and Latino Individuals
- Low Income Individuals
- Asian Individuals and Pacific Islanders

See more about climate change and social vulnerability in the US



Infographic to the left estimates the risk climate change poses to low-income populations (EPA 2021)

Any questions or comments, please reach out!

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