



INFRASTRUCTURE PLANNING IN DISADVANTAGED COMMUNITIES

New England Water Environment Association
Annual Conference

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ENVIRONMENTAL
 PARTNERS

— An Apex Company —

WELCOME



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BEFORE WE BEGIN
THERE ARE SOME THINGS YOU SHOULD KNOW

Information & Intentions



BEFORE WE BEGIN

THERE ARE SOME THINGS YOU SHOULD KNOW

- Our goal is to approach this presentation honestly and fairly
- We are here as resources but are not experts in environmental or social justice
- Some topics discussed may cause discomfort
- These conversations are necessary
- There are wonderful resources available



BEFORE WE BEGIN KEY TERMS

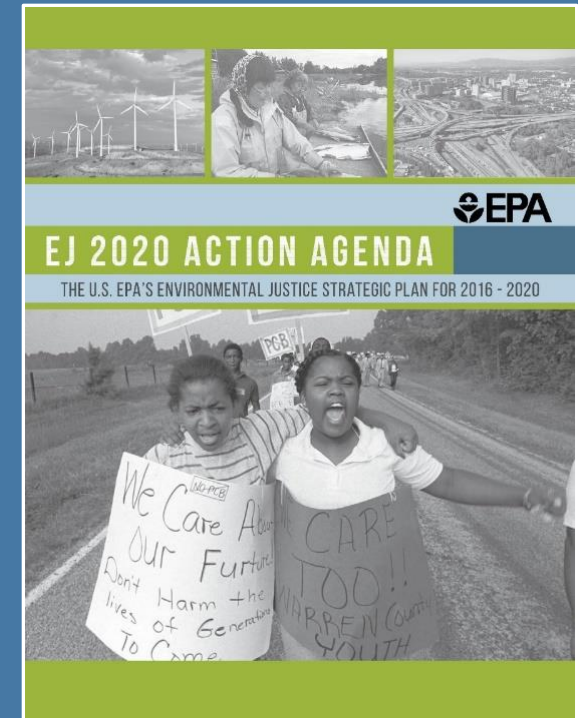
Environmental Justice (EJ)

the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

Source: EPA

- EJ is based on the principle that all people have a right to be protected from environmental hazards and to live in and enjoy a clean and healthful environment regardless of race color, national origin, income, or English language proficiency. Environmental justice is the equal protection and meaningful involvement of all people and communities with respect to the development, implementation, and enforcement of energy, climate change, and environmental laws, regulations, and policies and the equitable distribution of energy and environmental benefits and burdens.

Source: EOEEA Environmental Justice Policy, 2017





AGENDA

1. Infrastructure Decision Making
 - Traditional & Historical View
2. An Unpleasant History of Policies & Decisions
 - Crafted Inequities
 - Environmental Justice
3. Shifts in the Decision-Making Process
 - Precedents: Intentionally Addressing Inequities
 - Green Infrastructure
 - Climate Change
4. Where do we go from here?
5. Questions & Discussion

PART 1

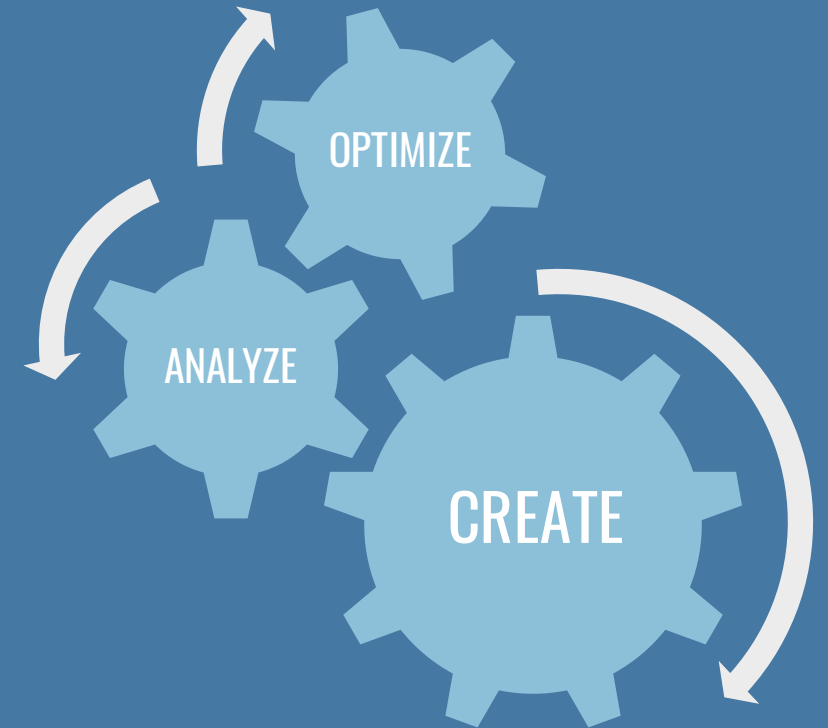
INFRASTRUCTURE DECISION MAKING

Traditional & Historical View

INFRASTRUCTURE DECISION MAKING

We should be asking ourselves

- What are our goals as engineers/public works stewards?
- How have infrastructure projects impacted different populations?
- How can we do better?





TRADITIONAL INFRASTRUCTURE DECISION MAKING

Traditional public works projects

- Transportation
- Water Supply
- Wastewater
- Stormwater
- Solid Waste
- Power
- Parks and Recreation
- Government Buildings





HISTORICAL INFRASTRUCTURE DECISION MAKING

Historically, decision making focused on

- Location
- Function
- Need
- Costs
- Revenues

Cost benefit, financial analysis





HISTORICAL INFRASTRUCTURE DECISION MAKING

- Infrastructure decisions typically made at state and local level
- Secondary considerations include economic development benefits



SO...WHAT'S MISSING?





NEW OBJECTIVES IN INFRASTRUCTURE DECISION MAKING

- Sustainability
- Environmental Quality
- Environmental Justice

PART 2

AN UNPLEASANT HISTORY OF POLICIES & DECISIONS

Examples & Implications

HISTORIC EXAMPLES

1. Redlining
2. National Interstate Highway Act of 1956
3. Clean Water Access
4. Water Quality Case Studies

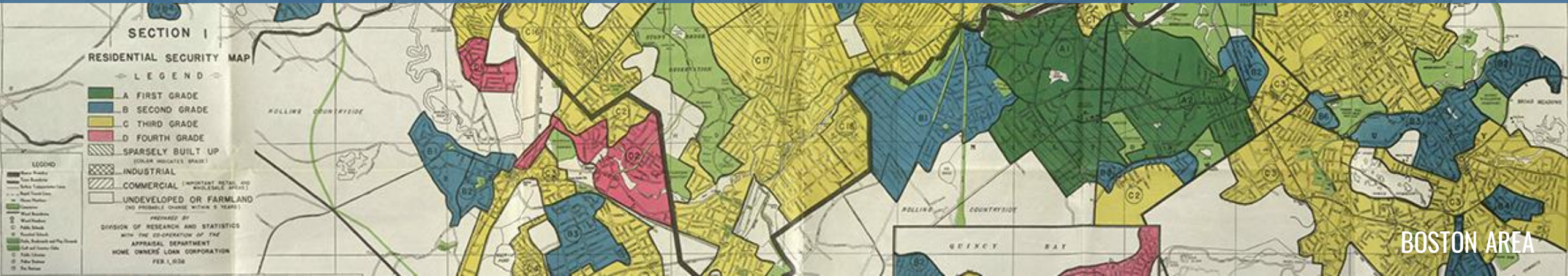




1. REDLINING

Legal Definition | Source: Merriam-Webster (2022)

The illegal practice of refusing to offer credit or insurance in a particular community on a discriminatory basis (as because of the race or ethnicity of its residents)





1. REDLINING

U.S. NATIONWIDE

- Began in the 1930s
- Legal until the Fair Housing Act of 1968 was passed
- Maps developed during the New Deal by Federal Housing Administration
 - Red lines were drawn on federal maps to identify minority neighborhoods labeling them “hazardous”
- Federal Home Loan Bank Board was legally permitted to deny lending and investment services to minorities
- Mortgage companies deemed redlined neighborhoods as “uninsurable”
- Long lasting negative impacts on specific neighborhoods & communities

Reference: Robert K. Nelson, LaDale Winling, Richard Marciano, Nathan Conolly, et al. “Mapping Inequality.” American Panorama, ed. Robert K. Nelson and Edward L. Ayers, accessed January 20, 2022, <https://dsl.Richmond.edu/panorama/redlining/Massachusetts>



1. REDLINING

LONG TERM IMPLICATIONS

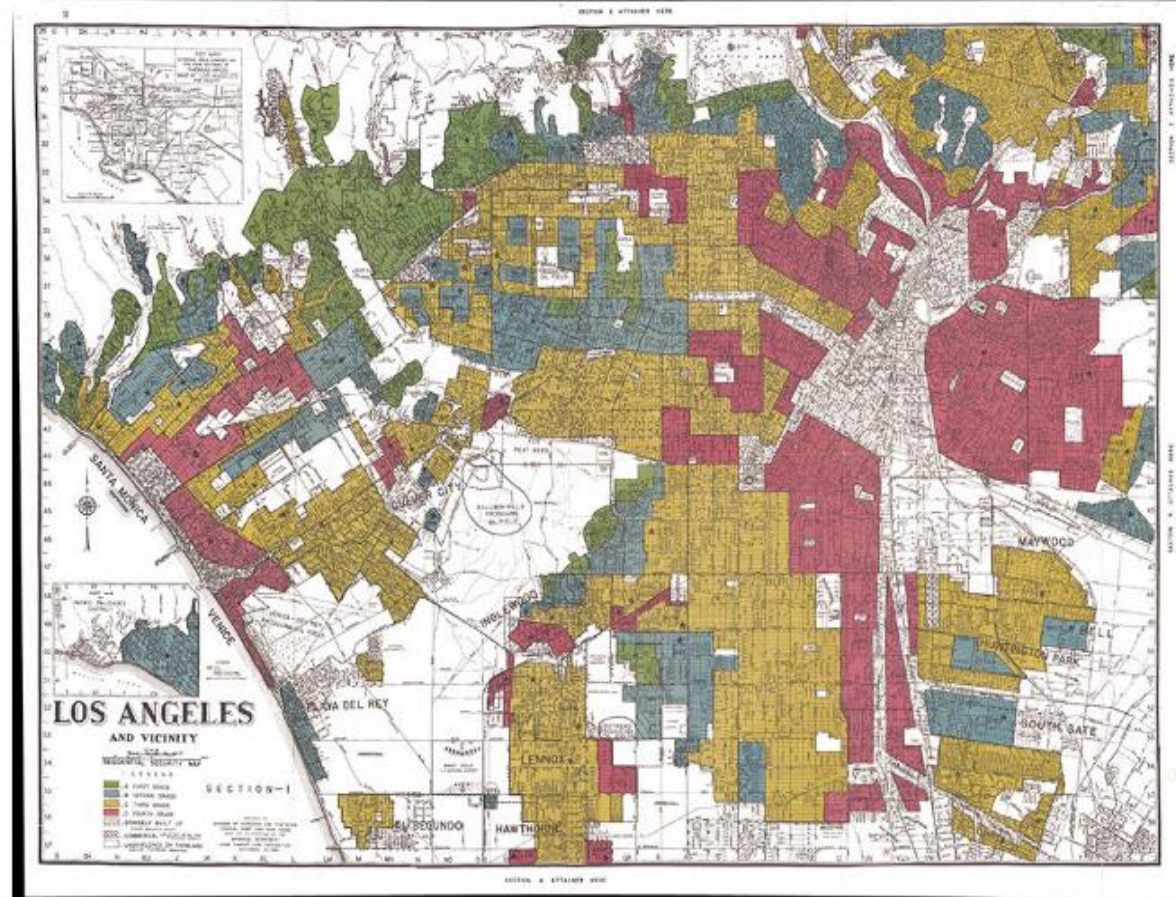
Reference:
<https://www.wbur.org/hereandnow/2020/09/14/redlined-neighborhoods-coronavirus-study>

September 2020

New Study Finds Formerly Redlined Neighborhoods Are More At Risk For COVID-19

September 14, 2020

By [Cristina Kim](#)



A digital image of a map used for redlining in Los Angeles, California. The faded red sections were labeled as "hazardous." (Courtesy of the University Of Richmond's Mapping Inequality project)



2. 8-MILE/BIRWOOD WALL

Built in 1941 to separate white neighborhoods from Black neighborhoods



2. 8-MILE/BIRWOOD WALL

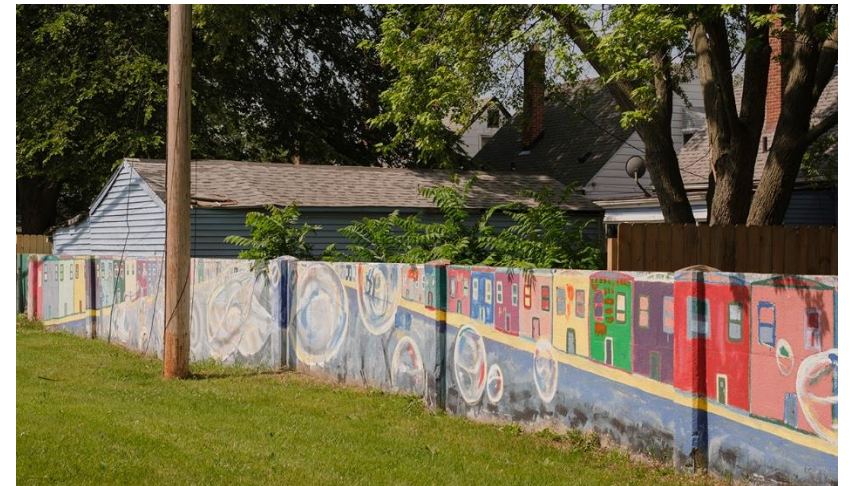
DETROIT, MI

- Intent was to enable developers to secure financing for neighborhood redevelopment
- White neighborhood on west side, black neighborhood on east side
- FHA agreed to construction of wall and granted financing

Image Source: <https://www.bridgedetroit.com/built-to-keep-black-from-white-the-story-behind-detroits-wailing-wall/>



ORIGINAL - 1941



REMNANTS - 2021



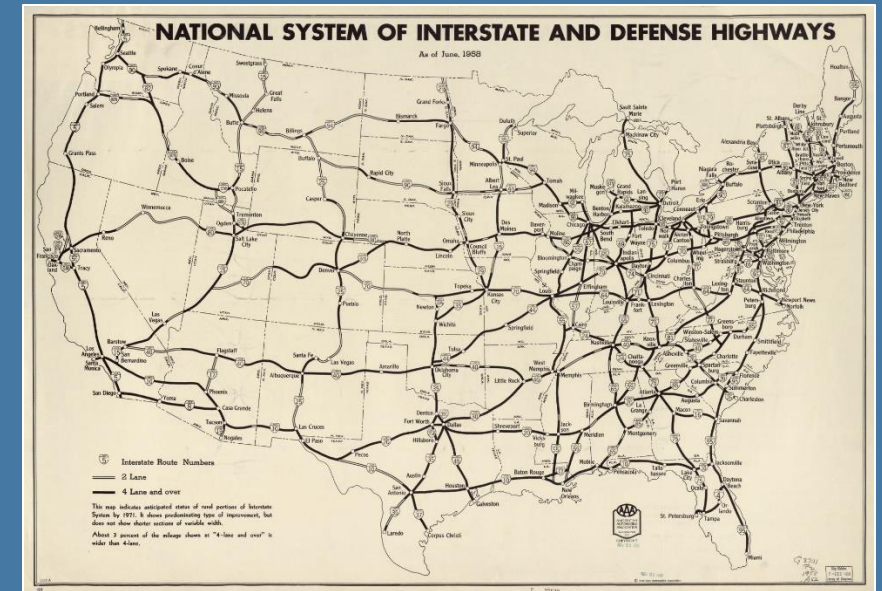
3. NATIONAL INTERSTATE & DEFENSE HIGHWAYS ACT OF 1956

Law passed authorizing the construction of interstate highways that would span the nation and allocated \$26B for the project

NATIONAL INTERSTATE HIGHWAY ACT OF 1956

U.S. NATIONWIDE

- Historically Largest Public Works Program in the U.S.
- Constructing 41,000 miles of interstate highway
- Program displaced 475,000 families (more than 1M people) between 1956 – 1976
- Communities of color uprooted
 - Physically Dividing Thriving Communities
 - Miami, FL – Overtown Community
 - Creating Racial Boundary Line
 - Birmingham, AL
 - Pittsburgh, PA – Hill District





4. WATER QUALITY CASE STUDIES

Aging Infrastructure | Lead Contamination | The Impacts of Poverty
Health & Safety Implications for Minority Cultures and Communities



WATER QUALITY ISSUES

AN OVERVIEW

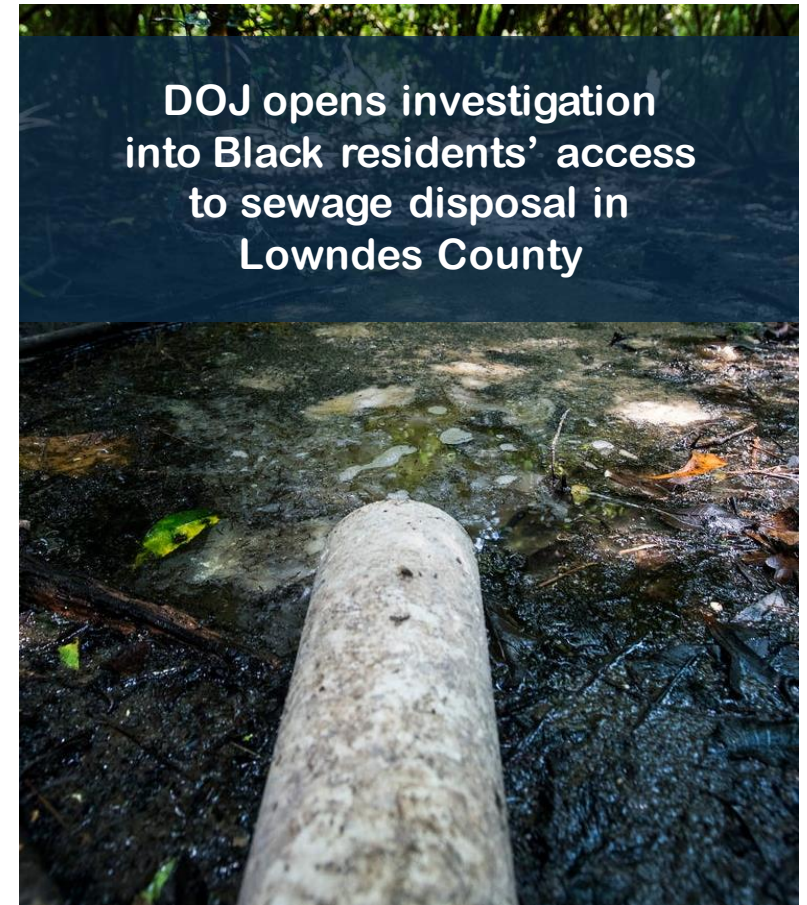
- America's water infrastructure is aging
- Approx. 15 – 22 million Americans are served by lead water lines
- Upgrades and improvements are expensive, lower income communities cannot afford raise money for improvements
- Gary, Indiana – 31% of residents cannot pay water bills
- Detroit – 14% of residents cannot pay water bills
 - 100,000 residents have had water shut off since 2014
- Native American communities chronically underserved by water
 - 30% of Navajo Nation do not have piped drinking water
- Communities with substandard water systems bear the brunt of health issues
- PFAS contamination more likely in low-income communities



LOWNDES COUNTY, ALABAMA

NOVEMBER 9, 2021

- Department of Justice investigating Alabama, Department of Public Health and Lowndes County Health Department
- The Community
 - 70% minority population
 - 25% of residents live in poverty
 - 2017 – 1/3 of residents tested positive for hookworm
- The Problem
 - No sanitary sewer
 - Soils cannot support on-site sewage disposal system
 - Unable to attract economic development, good jobs, because of lack of sewer



JACKSON, MISSISSIPPI

ONGOING INFRASTRUCTURE TROUBLES

- The Community
 - Capitol of Mississippi
 - Predominantly African-American population
 - High poverty rates
- The Problem
 - City is Unable to invest in Infrastructure Upgrades due to cost
 - 2019 City turned off water service for 20,000 resident due to inability to pay bills
 - 2020 half a billion gallons of raw sewage leaked into Pearl River
 - March 2021 went through 4 weeks without safe drinking water after mid-February storm
 - Frequent water main breaks
 - Four water plants, one plant is over 100 years old, one outdated



TOOLEVILLE, CALIFORNIA

COMMUNITIES IN CONFLICT

- Both communities have high minority rates (Pacific Islander, Hispanic/Latino)
- Tooleville has lowest income per capita in California at \$3,711 (over 85% of residents are in poverty)
- Exeter has median income per capita of \$13,795 (2010)
- Tooleville has no access to clean and safe water



Reference: Malini Ranganathan & Carolina Balazs (2015) Water marginalization at the urban fringe: environmental justice and urban political ecology across the North–South divide, *Urban Geography*, 36:3, 403–423, DOI: 10.1080/02723638.2015.1005414 <https://doi.org/10.1080/02723638.2015.1005414>
<https://www.latimes.com/environment/story/2021-10-30/california-water-crisis-state-intervenes-to-help-town>,
<https://www.deccanherald.com/content/219332/bommanahalli-has-roads-drains-only.html>



TOOLEVILLE, CALIFORNIA

COMMUNITIES IN CONFLICT

- Tooleville has requested water from Exeter since ~1990s
- Exeter unanimously voted down extending their drinking water in 2019
- As of October 2021, Tooleville has no access to clean drinking water



EXETER

TOOLEVILLE



FLINT, MICHIGAN

5+ YEARS OF STRUGGLES

- The Community
 - Industrial City
 - Majority of residents are Black
- The Problem
 - 2014 – City switched from Detroit Water to Flint River to save money
 - Flint River receives industrial waste discharges
 - Discolored, foul smelling water piped into residences
 - Failed to treat pipes with corrosion inhibitors
 - Lead leaching from City's pipes
 - Significant negative impacts to community health including newborns from elevated lead levels and e. coli due to ingestion and exposure
 - 2016 Flint ordered to replace lead pipes and deliver bottled water to residents
- Work remains ongoing
(as of 2019 Flint's lead levels were within federal and state standards)





LOOKING FORWARD – IDENTIFYING OPPORTUNITIES

- What do we do now?
- What resources exist?
- Who is supporting change?
- What precedents might we learn from?

PART 3

SHIFTS IN THE DECISION-MAKING PROCESS

Resources | Tools | Funding

1. PRECEDENTS



COACHELLA VALLEY WATER DISTRICT (CVWD)



COACHELLA VALLEY
WATER DISTRICT

- The District

- Formed in 1918 to protect and conserve local water sources
- Located in Riverside, Imperial, and San Diego, California counties
- Provides domestic and irrigation water, agricultural drainage, wastewater treatment and reclamation services, stormwater protection groundwater management, water conservation
- Serves 109,000 customers
- 1,000 square miles

- The Work

- DAC defined in California as a community with less than 80% statewide annual median household income
- **CVWD Set up Disadvantaged Communities (DAC) Infrastructure Task Force**
- Mission to secure access to safe affordable drinking water, wastewater and flood control services in historically disadvantaged Coachella Valley Regions
- Task Force includes staff to coordinate activities and secure funding for DAC infrastructure projects
- Implement projects in DAC
- Provide training to DAC stakeholders
- Mapping of infrastructure and DAC communities
- Quarterly updates, community forums, etc.
- Increase funding for DAC infrastructure

A circular arrangement of many hands of various skin tones (light, medium, and dark) reaching towards the center. The hands are stylized with simple lines for fingers and are set against a dark blue background. Some hands have accessories like watches, bracelets, or rings. The overall composition is symmetrical and emphasizes unity and support.

2. WHO IS SUPPORTING CHANGE?

DC WATER GREEN INFRASTRUCTURE

- Currently constructing Green Infrastructure Projects to reduce flows to combined sewer overflows
- Constructing a series of projects that include the extensive construction of Green Infrastructure Best Management Practices
- Memorandum of Agreement signed in 2015 between DC Water and the District provides for jobs for DC residents and job training
- Require contractors to provide mentor/internship programs to DC residents
- Established Green Infrastructure certification program to train District Residents



MEPA



Energy & Environmental Affairs

MEPA Environmental Monitor

- Climate Roadmap Act signed March 26, 2021
- New definition of EJ Populations
 - Median Income Level
 - Percent People Of Color
 - Limited English Proficiency
- Public involvement protocol For Environmental Justice Populations
- Effective January 1, 2022
 - MEPA will provide meaningful Public Involvement by EJ Populations
 - Changes to Environmental Notification Form
 - Applies to Wastewater, Air Emissions, Solid and Hazardous Waste Projects
 - Projects show EJ Populations within 5 Miles of Project Site
 - Describe whether project is reasonably likely to affect EJ Populations
 - Measures to Enhance Public Involvement
 - Advanced Notification to EJ Reference List



MEPA (CONTINUED)



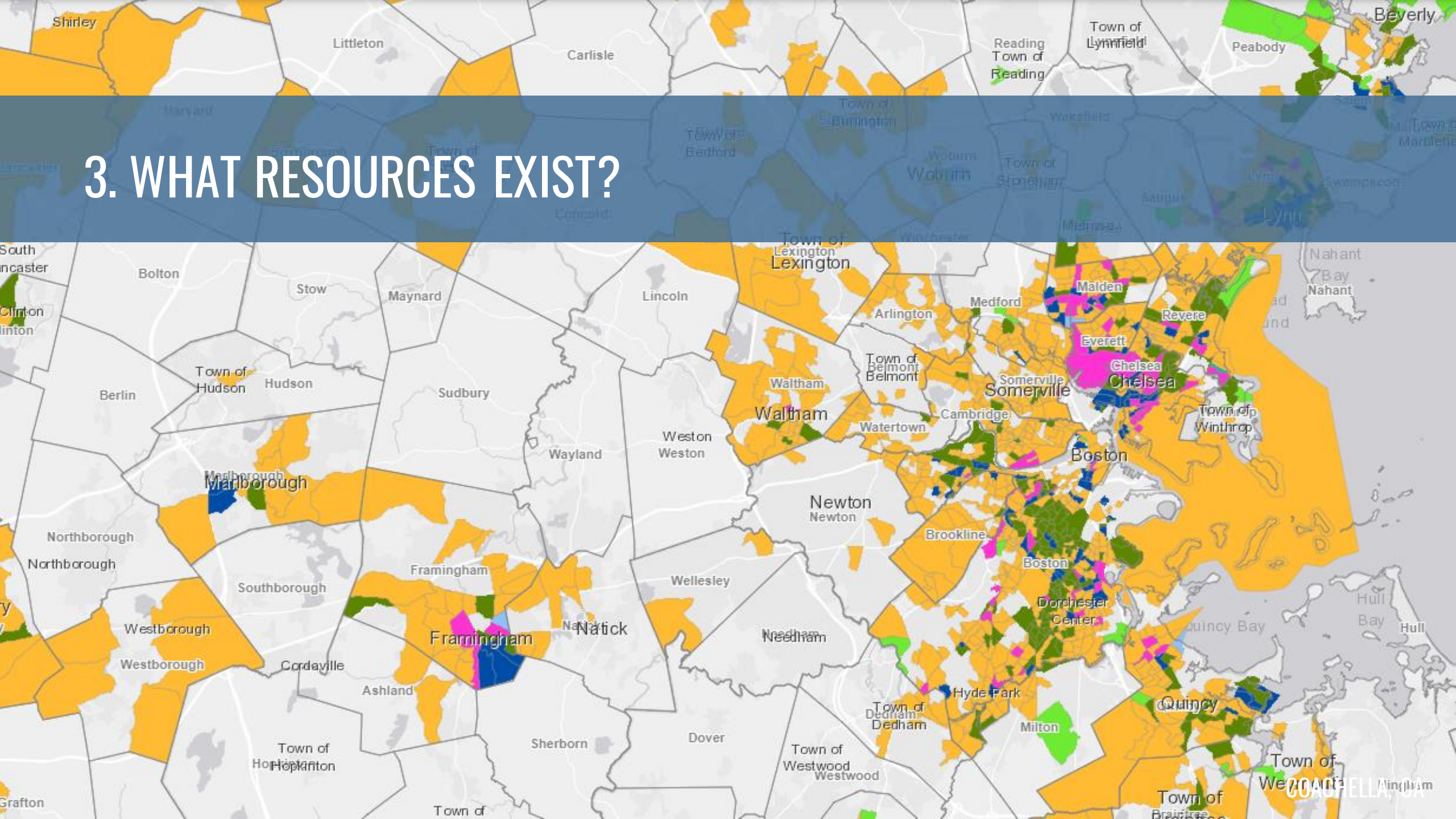
Energy & Environmental Affairs

MEPA Environmental Monitor

- Work with EJ populations to promote meaningful Public Involvement
 - Hold meetings with communities receiving advance notification
 - Disseminate materials with translation
 - Use non-english /community specific media outlets
 - Identify specific neighborhoods surrounding project site for targeted engagement
 - Develop local information repository accessible to EJ populations
- Environmental justice screening form
- Printout from EJ maps viewer



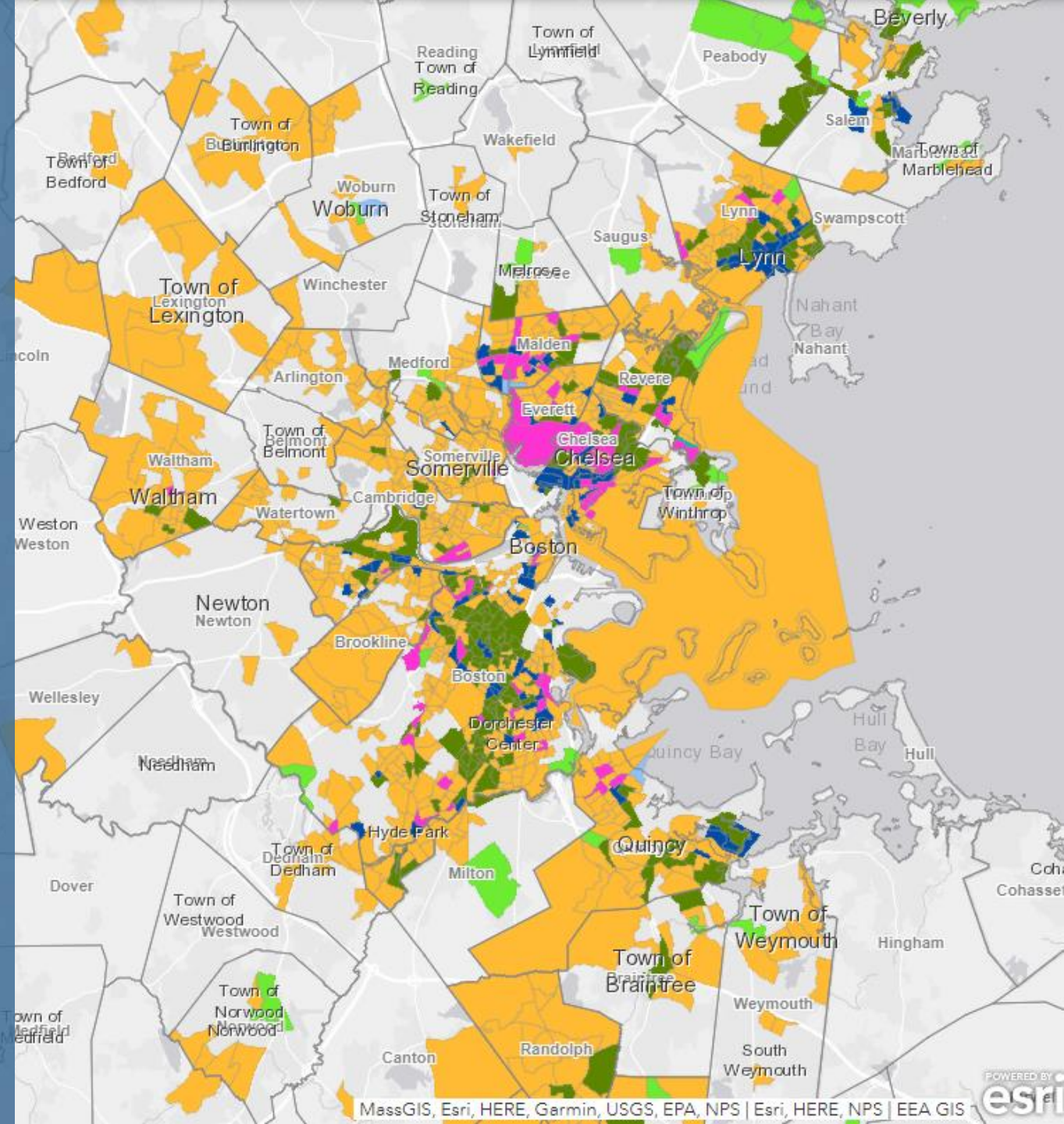
3. WHAT RESOURCES EXIST?



MASSACHUSETTS EJ VIEWER

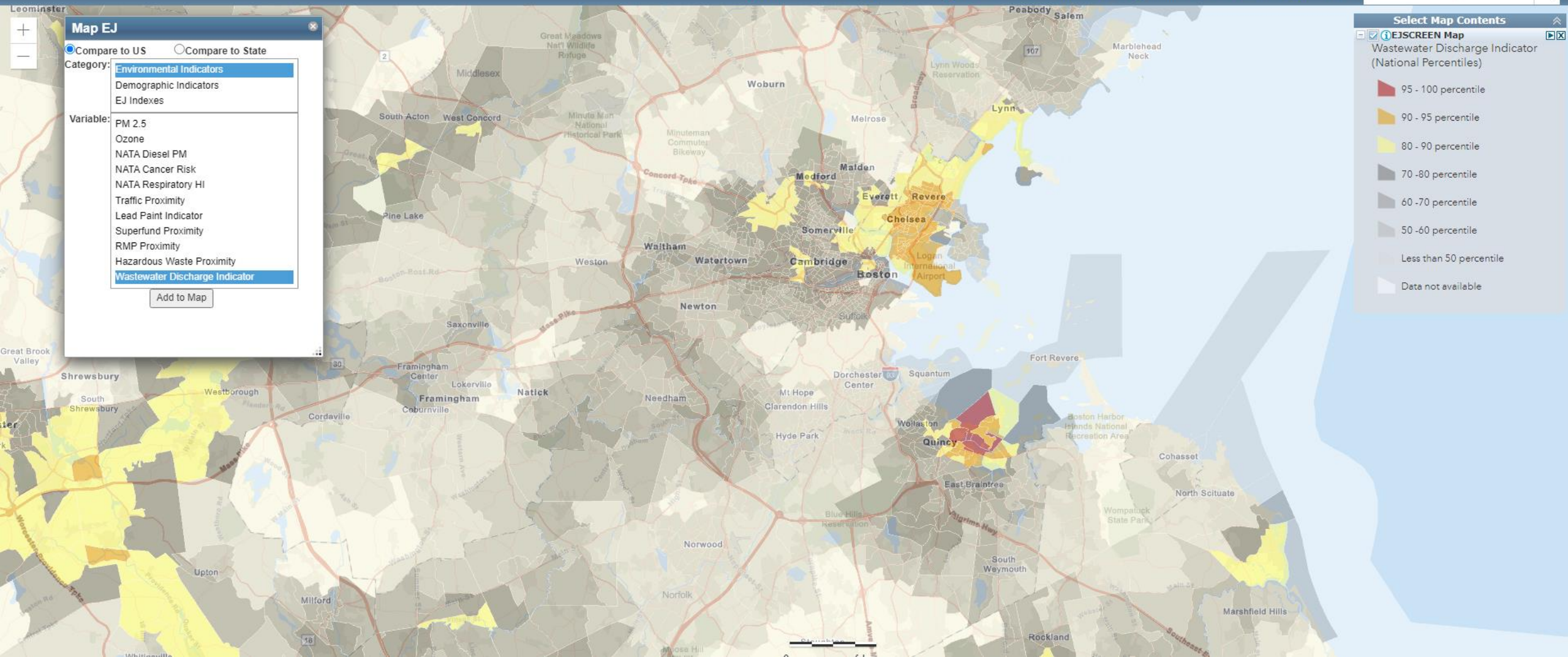
- Available through mass.gov website
 - <https://www.Mass.Gov/info-details/environmental-justice-populations-in-massachusetts>

Source: <https://mass-eoea.maps.arcgis.com/apps/MapSeries/index.html?appid=535e4419dc0545be980545a0eeaf9b53>



EPA EJ SCREEN

[HTTPS://WWW.EPA.GOV/EJSCREEN](https://www.epa.gov/ejscreen)



Map EJ

Compare to US Compare to State

Category:

- Environmental Indicators
- Demographic Indicators
- EJ Indexes

Variable:

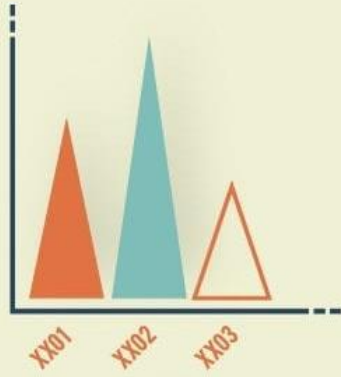
- PM 2.5
- Ozone
- NATA Diesel PM
- NATA Cancer Risk
- NATA Respiratory HI
- Traffic Proximity
- Lead Paint Indicator
- Superfund Proximity
- RMP Proximity
- Hazardous Waste Proximity
- Wastewater Discharge Indicator**

Select Map Contents

EJSCREEN Map

Wastewater Discharge Indicator (National Percentiles)

- 95 - 100 percentile
- 90 - 95 percentile
- 80 - 90 percentile
- 70 - 80 percentile
- 60 - 70 percentile
- 50 - 60 percentile
- Less than 50 percentile
- Data not available



4. FUNDING OPPORTUNITIES





SMALL, UNDERSERVED & DISADVANTAGED COMMUNITIES GRANTS

FINANCIAL SUPPORT THROUGH EPA

- Assist public water systems in underserved, small and disadvantaged communities meet Safe Drinking Water Act (SDWA) requirements
- Provided \$986,000 to Massachusetts FY 2018 and 2019
- EPA program announced FY 21 grant amounts on August 24, 2021
- Provides \$25.9 million dollars in FY 2021
- FY 2021 provided \$310,00 to Massachusetts





MUNICIPAL VULNERABILITY PREPAREDNESS GRANTS

MASSACHUSETTS

- Provides support for municipalities to plan for Climate Change resiliency and implementing priority projects.
- Two step process
 - Planning
 - Action
- Action Grants funding used to implement priority projects
- Provides Environmental Justice and Equity Toolkit
- Recognizes that climate change has disproportionate impacts on socially vulnerable populations



MASS. MUNICIPAL VULNERABILITY PREPAREDNESS GRANTS (CONT.)

- 9 Core Principles including
 - Furthering a community identified priority action to address climate change
 - Utilizing climate change data for a proactive approach
 - Employing Nature-Based Solutions
 - **Increasing equitable outcomes for and supporting strong partnerships with Environmental Justice Populations and Climate Vulnerable Populations**
 - Conduct Robust Community Engagement
 - Applying broad and multiple community benefits
 - Committing to monitoring project success and maintaining the project into the future
 - Utilizing regional solutions towards regional benefits
 - Pursuing innovative, transferable approaches.





MASS. MUNICIPAL VULNERABILITY PREPAREDNESS GRANTS (CONT.)

- Planning Grants

- Prioritizes projects that directly benefits and engages EJ Populations
- Applications must provide specific information regarding race, income, English Isolation
- Provide description regarding engagement of EJ communities
 - Engage community EJ liaison
 - Provide translational services
 - Discussions with persons with Limited English Deficiency

- Action Grants

- Awards points for projects located within mapped EJ populations
- Obtain full points provide specific demographic information related to EJ populations
- Obtain support from EJ population
 - Letters of support
 - Indication that EJ populations will be part of the project team
- Discuss community engagement with EJ populations





U.S. ECONOMIC DEVELOPMENT ADMINISTRATION

NATIONWIDE

- Competitive Grant Process \$3 Billion Allocated from American Rescue Plan Act (ARPA) In 2021
- Address Creation/Retention of High Quality Jobs
- Ability to Commence Projects Quickly
- Investment Priorities
 - Equity
 - Direct Benefits Underserved Populations (Women, Black, Latino, Indigenous Communities)
 - Underserved Communities
 - Build Economic Resilience
 - Workforce Development
 - Manufacturing
 - Technology Based Economic Development
 - Environmentally Sustainable Development



PART 4

WHERE DO WE GO FROM HERE?

Key Considerations



WHERE DO WE GO FROM HERE?

KEY CONSIDERATIONS

- Consider Social and Environmental Justice beyond the traditional technical analysis when prioritizing infrastructure projects or making infrastructure decisions
- Consider creating and incorporating different decision-making structures
 - i.e. Coachella Valley Water District Disadvantaged Communities Infrastructure Task Force
- Analyze and understand how decisions impact various communities
- Pursue funding sources that include EJ considerations



PART 5
QUESTIONS & DISCUSSION

THANK YOU

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ENVIRONMENTAL
 **PARTNERS**

— An Apex Company —

TRUE / FALSE QUESTION #1

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.



TRUE / FALSE QUESTION #1

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

TRUE



TRUE / FALSE QUESTION #2

There is no evidence of historical policies on current day infrastructure.



TRUE / FALSE QUESTION #2

There is no evidence of historical policies on current day infrastructure.

FALSE



LOOKING BACK – IDENTIFYING QUESTIONS WE MUST ASK

- Are there voices that have historically mattered less?
- Were needs of certain populations and demographics overlooked?
- Were there unintended negative consequences of historic policies and practices?
- Were there intended negative consequences of historic policies and practices?
- Are there populations that remain negatively impacted by historic policies and practices?
- Are there still injustices occurring today?