

Pipeline and Hazardous Materials Safety Administration Office of Pipeline Safety & Office of Planning & Analytics

Natural Gas Distribution Infrastructure Safety and Modernization (NGDISM) Grant Program Tier 2 Site Specific Environmental Assessment



U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

PHMSA: Your Safety is Our Mission



NGDISM Environmental Compliance

Agenda

- Welcome and Introductions
- NGDISM Grant Program Reminders and Updates
- NGDISM NEPA Background
 - Tier 1 Environmental Assessment
- Tier 2 Site Specific Environmental Assessment
- Grant Award and Next Steps



Welcome and Introductions

Pipeline and Hazardous Materials Safety Administration:

- Shakira Mack - Director, NGDISM Grant Program
- Matthew Hufford - Senior Grants Management Specialist
- Carolyn Nelson, P.E. - Director of Environmental Policy & Justice

U.S. DOT Volpe National Transportation Systems Center:

- NEPA and Environmental Resource Specialists

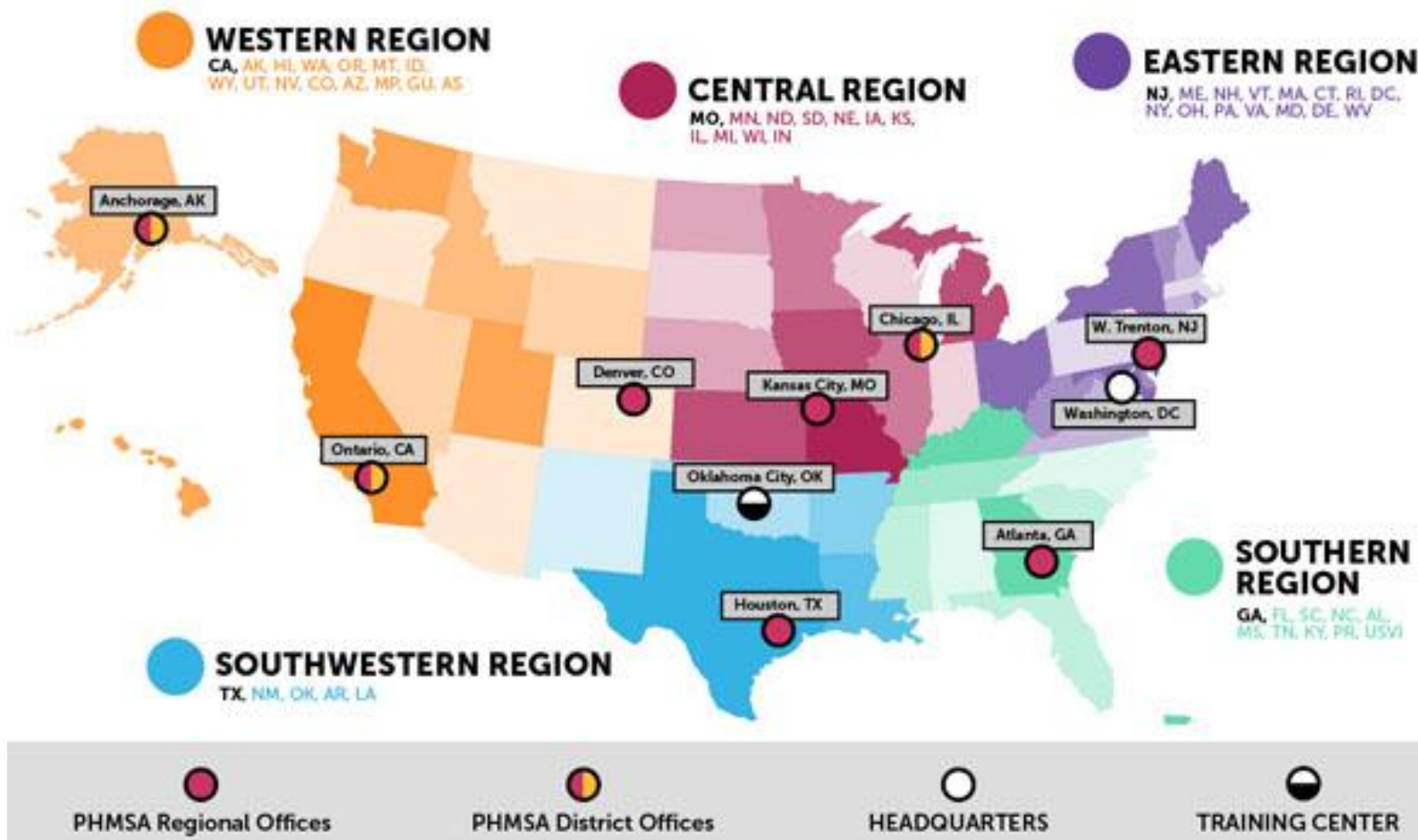


Program Reminders and Updates: PowerApps

- PHMSA will offer a PowerApps tutorial on Wednesday, June 7th.
 - An invitation for the tutorial will go out later today.
- If your business-to-business ("B2B") account was successfully enabled, you have received a confirmation message from PHMSAPipelineBILGrant@dot.gov.
- If your B2B account has not yet been enabled, you will be contacted by your Grants Management Specialist for next steps.
 - Solution #1: PHMSA resends the invite to create the B2B account.
 - Solution #2: Submit a ticket to your organization's helpdesk. In some instances, IT departments/internal firewalls blocked invites.
- PHMSA cannot assign a PowerApps license until your B2B account is enabled. Without a PowerApps license, there may be delays in starting the Tier 2 environmental assessment.



Program Reminders and Updates: Grant Specialist Assignments



Program Reminders and Updates: Pre-Award Authority to Incur Costs

Requests for Pre-Award Authority should be addressed to:

Shakira N. Mack

Director, Natural Gas Distribution Infrastructure Safety and Modernization (NGDISM) Grant Program

Pipeline and Hazardous Materials Safety Administration

U.S. Department of Transportation

Email: PHMSAPipelineBILGrant@dot.gov

Requests should include the estimated amount to be incurred and a breakdown of those costs. Once approved, this gives entities the authority to incur costs. Reimbursement of these cost will **only** take place **after** the grant agreement is executed.



Pre-Award Authority to Incur Costs continued...

Next steps: PHMSA will issue approval letters on a rolling basis starting June 8. Your Grants Management Specialist (GMS) will review your request against your application to determine if any changes will need to be made to your budget or project narratives.



National Environmental Policy Act (NEPA)

- National Environmental Policy Act (NEPA, 1969) requires federal agencies to consider the effects of their actions on the environment
- Federal funding and/or permits trigger NEPA and other federal regulations to be completed prior to the obligation of funds.
- Details regarding the requirement to complete NEPA were included in the NOFO and your award letter



NGDISM Program & NEPA

	Grant Application/Selection
Tier 2 Site Specific Environmental Assessments (NEPA)	Project Development (Conceptual Engineering and NEPA Completion)
Environmental Permits and Implementation of Mitigation	Grant Obligation/Final Design (Final Engineering, Grant Agreement and Obligation, Utility Relocations, Property Acquisitions)
	Construction



NGDISM Program & NEPA

- PHMSA completed a Tier 1 Programmatic Nationwide Environmental Assessment
- Tier 1 EA Circulated from 11/9/2022 – 12/9/2022
 - APGA Comment Received
- Tier 2 EA
 - Successful applicants must complete a Tier 2 EA prior to award
- All grants subject to successful completion of Tier 2 NEPA document, which includes all federal environmental, historic preservation, and EJ requirements
- No work activities are allowed prior to approval of Tier 2 NEPA document



Tier 2 Site Specific EA

- Includes project description and background; environmental setting; resource analysis; mitigation measures; public involvement; and agency consultation
- PHMSA will use this information to conduct agency consultation; document consistency with the Tier 1 EA; ensure no significant impacts occur for individual project sites
- PowerApps will be used for inputs



- Part I
 - Select project



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Tier 2 Site Specific EA

- Part I
 - Project background
 - Project description
 - Construction methods
 - Need for the project
 - Environmental Setting

The screenshot displays the 'PHMSA BIL Grant Environmental Assessment App' interface. The header bar includes the U.S. Department of Transportation logo, the text 'Power Apps | PHMSA BIL Grant Environmental Assessment App', and a settings icon. Below the header, the title 'PHMSA BIL Grant Environmental Assessment App' is centered. The main content area is titled 'Project Description/Proposed Action' and includes a sub-header 'Project Description/Proposed Action'. The form contains several text input fields for the following questions: 'What construction methods will be used?', 'Does the project require new right-of-way not currently in the ownership of the utility?', and 'How many linear feet of pipe will be replaced or repaired?'. A section titled 'Need for the Project' is also visible. The bottom of the screen features a navigation bar with a back arrow on the left, a progress indicator in the center (a row of dots with the first one filled), and a forward arrow on the right. The top right corner of the app shows 'York County Natural Gas Authority' and 'Test Segment 2'.



Tier 2 Site Specific EA

- Part II
 - Multiple Segments

The screenshot displays the 'PHMSA BIL Grant Environmental Assessment App' interface. At the top, the header includes the U.S. Department of Transportation logo, the text 'Power Apps | PHMSA BIL Grant Environmental Assessment App', and a settings icon. Below the header, the main title 'PHMSA BIL Grant Environmental Assessment App' is centered. The primary section is titled 'Project Segments' and lists a single entry: '_new Segment' with a status of 'Draft'. To the right of this entry are icons for editing (pencil) and navigating to the next segment (arrow). At the bottom of the screen, there is a 'New Segment +' button and a series of small circles representing a progress or segment indicator, with the first circle filled. Navigation arrows are also present at the bottom left and right.



Tier 2 Site Specific EA – Resource Review

- Part III
 - Resource categories correspond with the Tier 1 EA
 - Assists PHMSA in evaluating potential impacts
 - Ensures all agency consultation is complete
 - Documents mitigation measures

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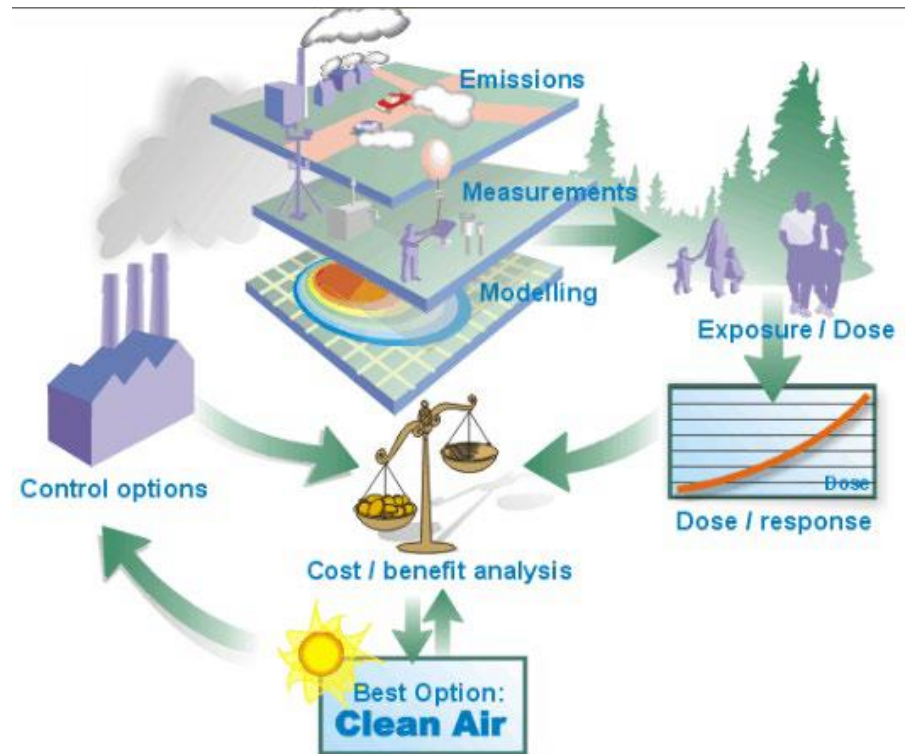
- Are there Section 4(f) properties within or immediately adjacent to the project area?
- If yes, provide a list of properties or as an attachment.
- Will any construction activities occur within the property boundaries of a Section 4(f) property?
- If so, please detail these activities and indicate if these are temporary or permanent.

At the bottom of the form, there is a 'Conclusion - Section 4(f)' section. Navigation arrows (back and forward) are visible at the bottom of the screen, along with a progress indicator showing the current step.



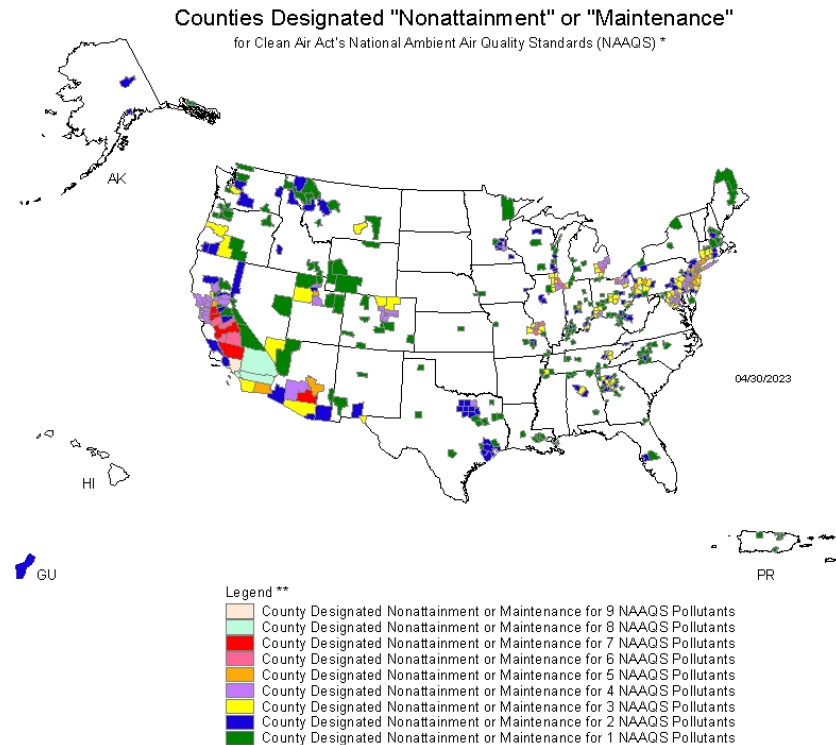
Tier 2 EA – Air Quality

- Clean Air Act Overview
 - NAAQS
 - Criteria Pollutants: ozone, lead, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter (course and fine fraction)
- General Conformity Rule
- NEPA Analysis



Tier 2 EA – Air Quality

- Tier 2 Air Quality Analysis
 - Nonattainment or maintenance areas
 - General conformity applicability
 - Worst case scenario or emissions inventory
- Mitigation Measures



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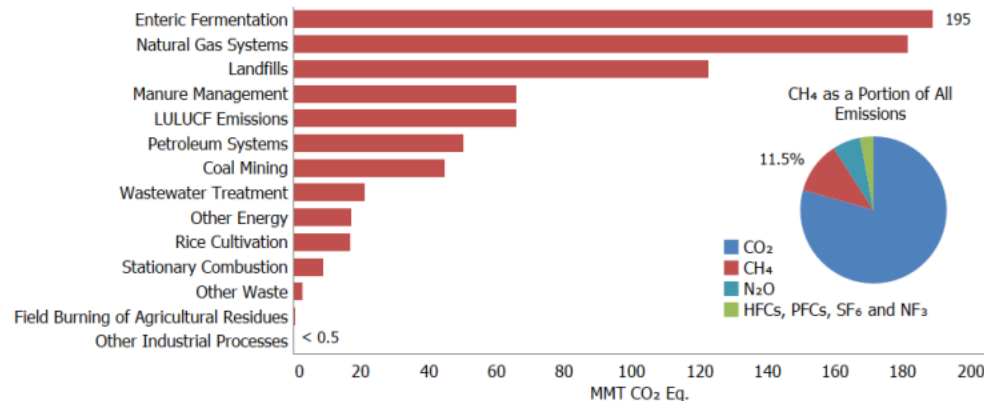


Tier 2 EA – Greenhouse Gases (GHGs)

- GHGs include:
 - carbon dioxide (CO₂)
 - methane (CH₄)
 - nitrous oxide (N₂O)
- Tier 2 GHG Analysis includes:
 - CH₄ leak rates pre- and post-replacement
 - CH₄ venting during construction
 - Other GHG emissions from construction
 - Mitigation

GHG	Atmospheric Lifetime	GWP (over a 100-year period)
CO ₂	1000's of years	1
CH ₄	10 years	25
N ₂ O	> 100 years	298
Fluorinated Gases	1,000 - 10,000 years	1,000 -10,000

Sources of CH₄ Emissions (2021)



EPA (2023). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021. U.S. Environmental Protection Agency, EPA 430-R-23-002.



Tier 2 EA – GHGs

Methane (CH₄) specific analysis:

- Leak Rates
 - Existing
 - Replacement
- Blowdown
 - Replacement (equations on next slide)

Table 1 EPA GHG Inventory - Annex 3.6, Table 3.6-2

Pipeline Material Type	Average Rate (kg/mile/year)
Cast Iron	2,877.35
Unprotected steel	1,491.80
Protected steel	77.90
Plastic	109.85



Tier 2 EA – GHGs

- Equation

- The following equation should be used to estimate blowdown emissions in metric cubic feet (MCF), using the length of pipeline being replace, the existing pipeline diameter (d), and pressure (P). An atmosphere (atm) is a unit of measurement equal to the average air pressure at sea level at a temperature of 15 degrees Celsius (59 degrees Fahrenheit). One atmosphere is 1,013 millibars, or 760 millimeters (29.92 inches) of mercury.

$$E_{blowdown} = V \times \frac{P_{pipe} + P_{atm}}{P_{atm}} \quad (1)$$

- Where the pipeline volume (V) is calculated by multiplying the cross-sectional area of the pipe by the length of pipeline (L):

$$V = \pi \times \frac{d^2}{4} \times L \quad (2)$$



Tier 2 EA – GHGs

Blowdown Emissions (thousand cubic feet, Mcf):

(1)

- V = volume of existing pipeline being replaced (ft^3)
- P_{pipe} = pressure within existing pipeline (psi)
- P_{atm} = atmospheric pressure (psi)

Volume of pipeline (cubic feet, ft^3)

$$V = \pi \times \frac{d^2}{4} \times L \quad (2)$$

- d = diameter of existing pipe (ft)
- L = length of existing pipe (ft)



Tier 2 EA – GHGs

Example blowdown emissions calculation:

Replacing 25 miles of a 4" pipe under 250 psi pressure

$$V = \pi \times \frac{d^2}{4} \times L$$

$$\text{Diameter, } d \text{ (ft)} = 4\text{inch} * (\text{ft}/12\text{inch}) = 0.33$$

$$\text{Length, } L \text{ (ft)} = 25\text{mi} * (5280\text{ft}/\text{mile}) = 1.32 \times 10^5$$

$$V = \pi \times \frac{0.33^2}{4} \times 132,000 = 11,290\text{ft}^3$$

$$E_{\text{blowdown}} = \frac{V}{1,000} \times \frac{P_{\text{pipe}} + P_{\text{atm}}}{P_{\text{atm}}}$$

$$P_{\text{pipe}}(\text{psi}) = 250$$

$$P_{\text{atm}}(\text{psi}) = 14.7$$

$$E_{\text{blowdown}} = \frac{11,290}{1,000} \times \frac{250 + 14.7}{14.7} = 203\text{Mcf (or .203 MMcf)}$$



Tier 2 EA – Environmental Justice

Executive Orders

- **EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 16, 1994)** requires that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States...”
- **EO 14008 Tackling the Climate Crisis at Home and Abroad (January 27, 2021)** further directs Federal agency actions to support making environmental justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on "minority populations and low-income populations."

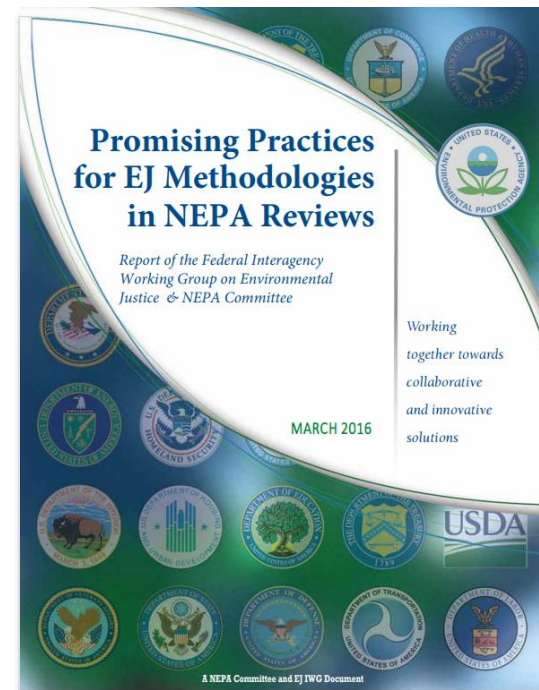
U.S. DOT's Environmental Justice Policy

- DOT [Order 5610.2\(c\)](#) (2021) updates the U.S. DOT policy to consider environmental justice principles in all (U.S. DOT) programs, policies, and activities.
- DOT [Environmental Justice Strategy](#) describes the Department's framework for accomplishing the goal of incorporating EJ considerations into all of the Department's programs, policies, activities.



Tier 2 EA – Environmental Justice

- **NEPA requires federal agencies to consider environmental justice in their activities. Requirements include:**
 - Consideration of the social, economic, and environmental effects of the action.
 - Documentation of the assessment of the effects, including those on minority and/or low-income populations, and the mitigation measures (as necessary).
 - Public engagement, including making information related to the action available to the public for comment prior to implementation.
- **EJ requires:**
 - Explicit consideration of potential effects on minority and low-income populations (otherwise known as EJ populations) in NEPA documents where Federal approvals are required.
 - [Promising Practices for EJ Methodologies in NEPA Reviews](#) provides a variety of methodological approaches for agencies to use as they consider environmental justice in their NEPA activities.



Tier 2 EA – Environmental Justice

Definitions

- **Low-Income**

- DOT Order 5610.2(c):

- Individual or person whose median household income is at or below the Department of Health and Human Services poverty guidelines.
 - Low-Income Population means any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons who will be similarly affected by a proposed DOT program, policy or activity.

- **Minority**

- DOT Order 5610.2(c):

- Person who is: Black, Hispanic or Latino, Asian American, American Indian and Alaskan Native, or Native Hawaiian and Other Pacific Islander
 - Minority Population means any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons who will be similarly affected by a proposed DOT program, policy or activity.



Tier 2 EA – Environmental Justice

A Tier 2 EJ analysis includes:

1.

- A **demographics analysis** to assess the potential project-related impacts to minority and/or low-income individuals. This includes maps or other data to demonstrate the presence (or lack thereof) of minority and/or low-income populations.

2.

- Determine if there are adverse effects to EJ populations and whether they are **disproportionately high and adverse**.
- Impacts may include displacements, service disruptions, construction impacts, etc.

3.

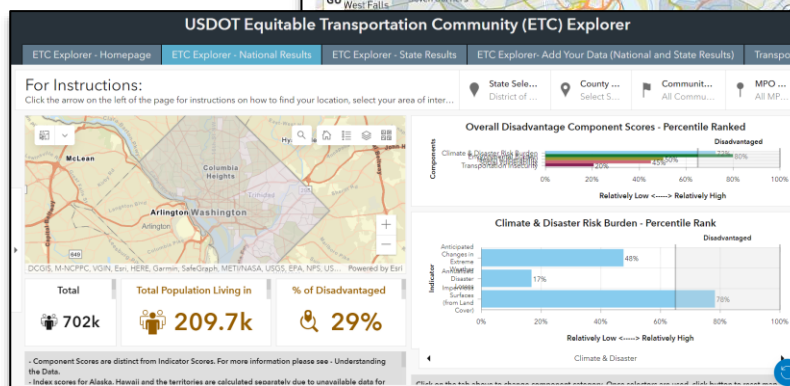
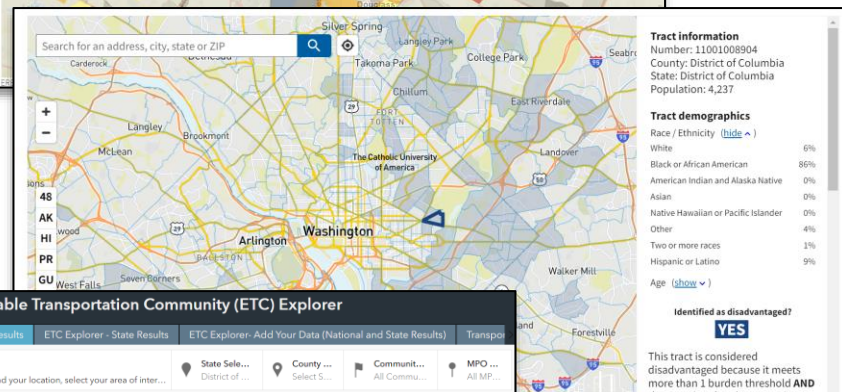
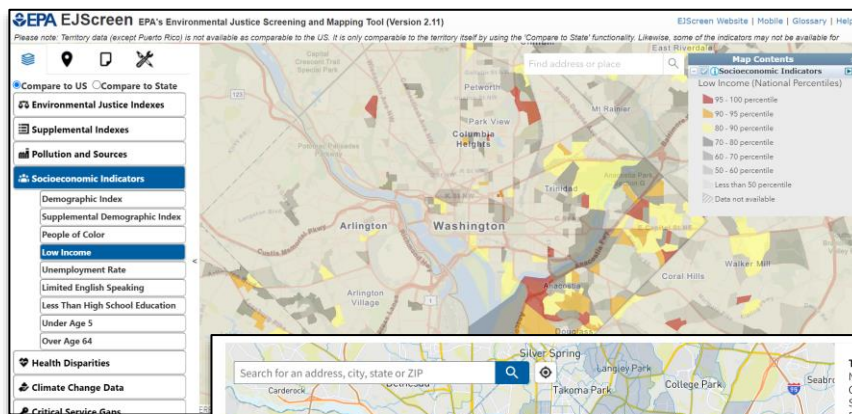
- A commitment of **mitigation measures** to reduce or offset any impacts to EJ populations.
- Some examples include targeted outreach and public involvement to EJ populations; coordination with local community leaders and groups; and advanced notification of service disruptions and construction schedule.



Tier 2 EA – Environmental Justice

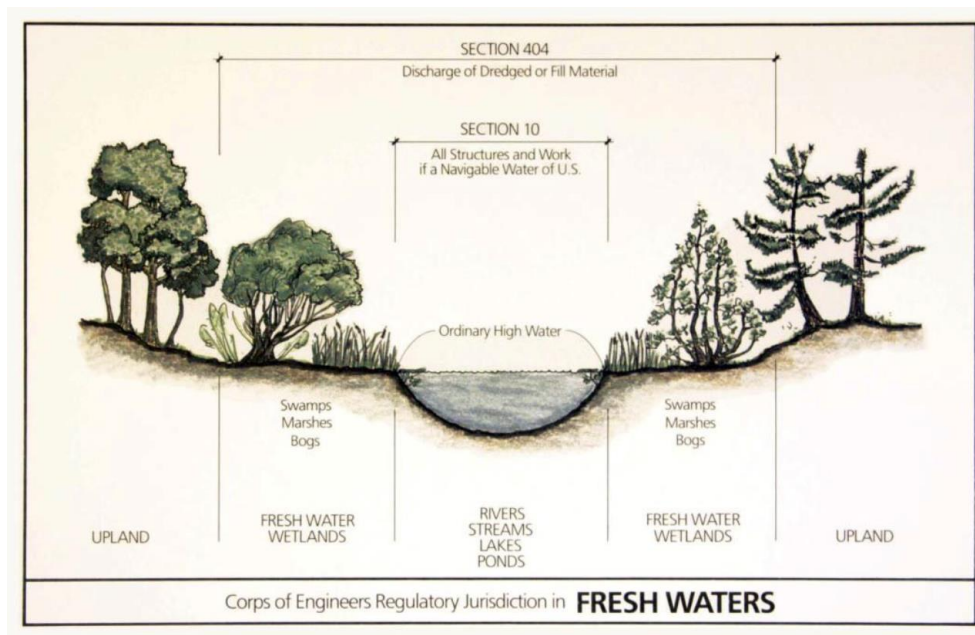
- Resources

- EPA's [EJScreen](#)
- [Census data](#)
- White House's [Climate and Economic Justice Screening Tool \(CEJST\)](#)
- US DOT's [Equitable Transportation Community \(ETC\) Explorer](#)



Tier 2 EA – Water Resources

- The Clean Water Act (CWA) establishes the basic structure for regulating discharges into waters of the United States and regulating quality standards for surface waters.
- Water resources includes wetlands and waterways (streams, rivers), and floodplains

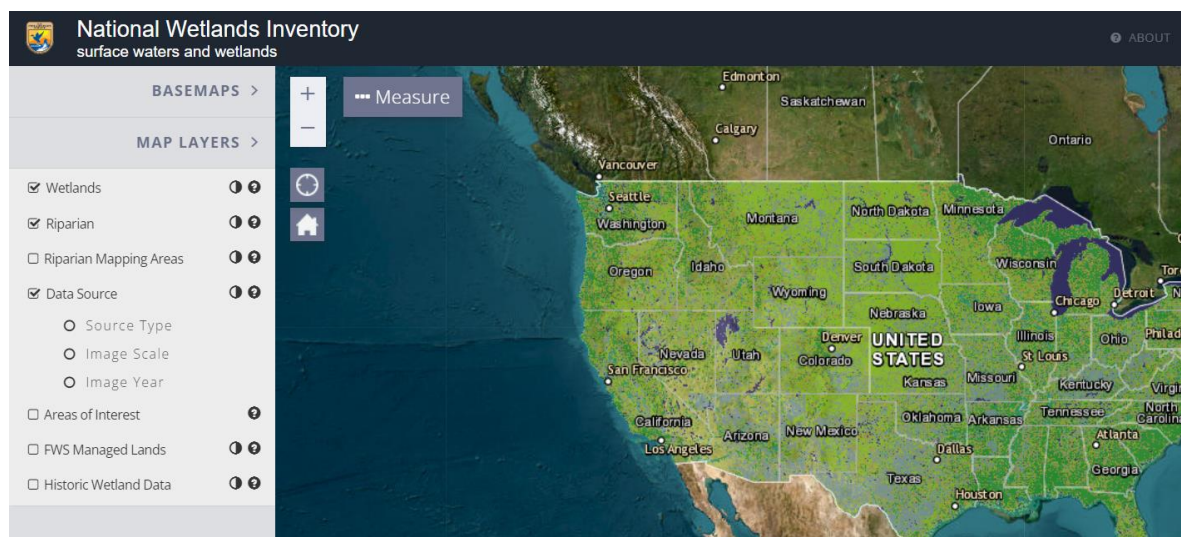


Tier 2 EA – Water Resources

- Tier 2 Analysis
 - Identify aquatic resources within and adjacent to the project site.
 - Sources for identifying resources
 - Provide a description of the specific work to occur in aquatic sites (clearing, grubbing, discharging fill/ pipe, etc.)
 - Estimate impacts

- Mitigation

- Permitting



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Tier 2 EA – Groundwater and Hazardous Materials/Waste

- Groundwater
- Hazardous Materials/Waste
 - Brownfields, leaking underground storage tanks, prior pipelines carrying coal gas, etc.
- Tier 2 Analysis
 - Describe hazmat sites within the project area.
 - Explain potential to encounter groundwater or hazardous materials during construction.
 - Identify areas where coal gas could have been utilized in the past.
 - Encountering these materials could require additional surveys and soil removal.



Tier 2 EA – Biological Resources

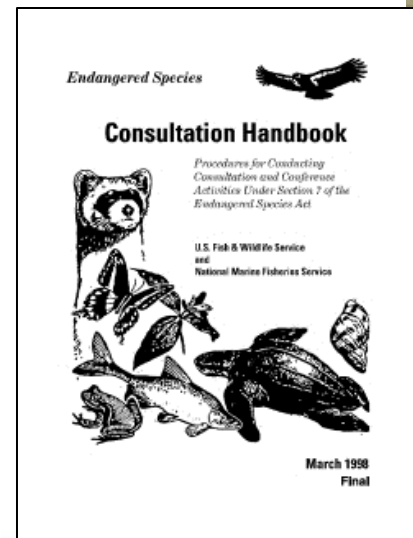
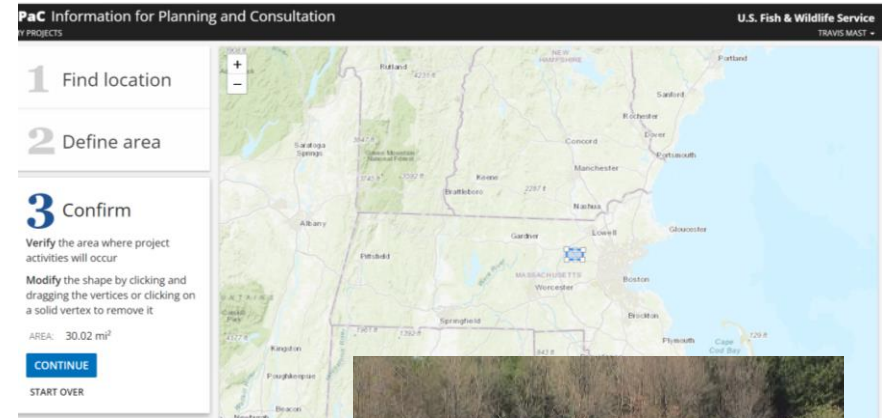
Endangered Species Act

- Created a regulatory process to protect imperiled species from extinction and to promote recovery of those species and the ecosystems that support them.
- Under the law, species of fish, wildlife, and plants may be listed as either “endangered” or “threatened”
- Section 7 of the ESA directs federal agencies to use their authorities to help conserve listed species.



Tier 2 EA – Biological Resources

- Tier 2 Analysis
 - Potential for listed species to occur within the project area
 - <https://ipac.ecosphere.fws.gov/>
 - Is there habitat within the project area?
 - Could that habitat be impacted?
- Section 7 consultation
- Mitigation



Tier 2 EA – Cultural Resources

- National Historic Preservation Act (NHPA)

- The nation's primary historic preservation law -- Defines the legal responsibilities of Federal agencies with respect to the preservation and stewardship of historic properties.
- States the country's legacy should be preserved as a living part of community life.
- Section 106 (54 USC 306108):

"The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, shall take into account the effect of the undertaking on any historic property. The head of the Federal agency shall afford the Council a reasonable opportunity to comment with regard to the undertaking."



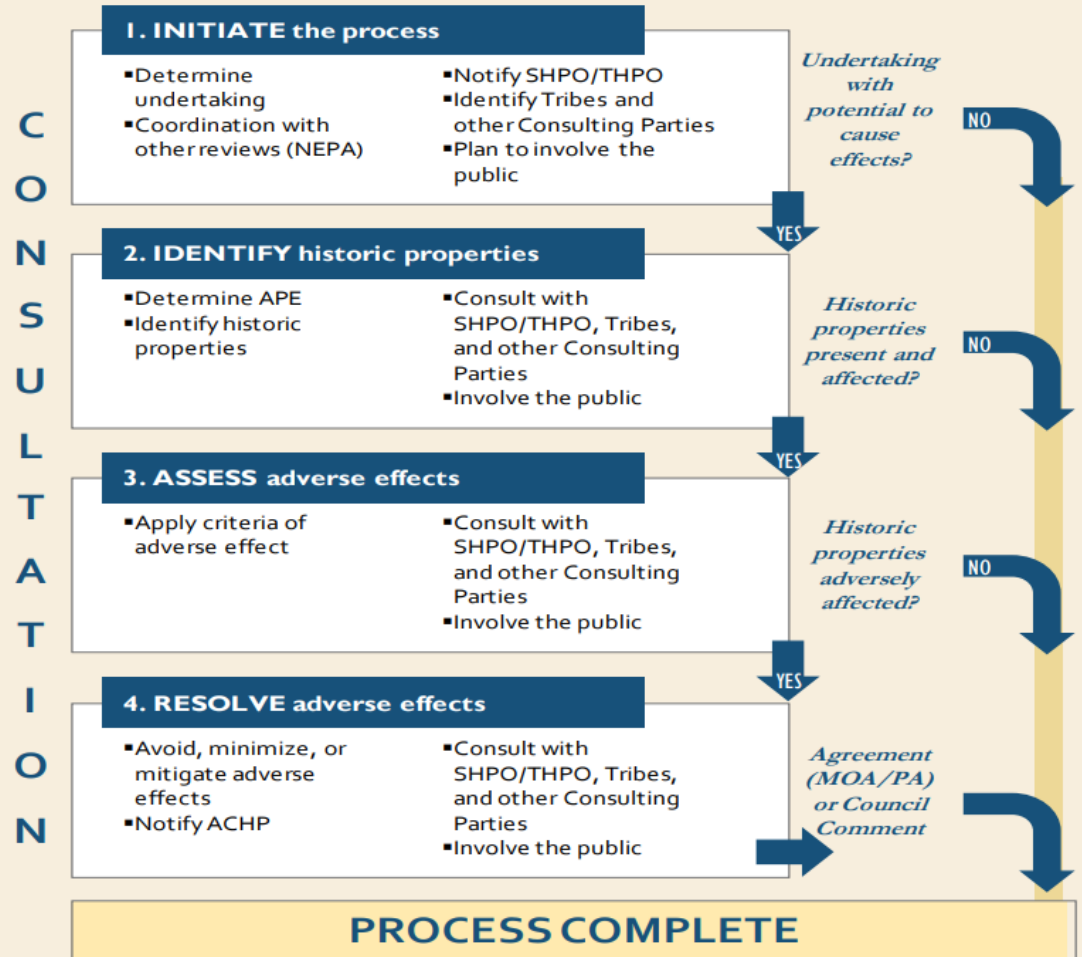
Tier 2 EA – Cultural Resources

• Tier 2 Analysis

■ Input needed

- *Undertaking* = project scope
- *Consulting parties* – local contacts
- *Identification and Evaluation* – Project setting, local resources
- *Adverse effects* - identify Avoidance, Minimization or Mitigation Measures

THE SECTION 106 PROCESS



Tier 2 EA – Cultural Resources

- No Potential to Cause Effects:
 - Purchasing Equipment
- Potential to Cause Effects:
 - Any type of digging, subsurface construction, or ground disturbance. Including:
 - Construction in previously disturbed soils
 - Construction activities within existing rights-of-way
 - Open trenching or directional drilling
 - Pipe sleeve construction method with limited construction locations
 - Above ground addition of pipelines, regulator stations, and other ancillary equipment
 - Meter relocations on homes



Tier 2 EA – Section 4(f)

- Requires that DOT may not approve the use of Section 4(f) property unless a determination is made that:
 - There is no feasible and prudent avoidance alternative
 - The action includes all possible planning to minimize harm resulting from such use; or
 - The agency determines that the use of the property will have a de minimis impact on the property.
- Section 4(f) Properties
 - Historic properties, archeological sites
 - Public parks (publicly owned, open to the public)
 - Recreation areas (publicly owned, open to the public)
 - Wildlife/Waterfowl Refuges (publicly owned)



Tier 2 EA – Section 4(f)

- Permanent Incorporation
 - ROW acquisition, easement
- Constructive Use
 - Proximity impacts result in substantial impairment of qualifying activities, features, or attributes
- *De minimis* impact
 - Minor and temporary.



Tier 2 EA – Section 4(f)

- Tier 2 Analysis
 - Identify 4(f) properties
 - Determine use
 - Coordinate with official with jurisdiction



Tier 2 EA – Noise and Vibration

Depending on

- Duration
- Equipment and
- Methods used
- Proximity to sensitive receptors

Construction noise and vibration may cause

- Human annoyance
- Building damage - *unlikely but possible*



Tier 2 EA – Noise and Vibration

Identify and consider state and local construction and/or noise ordinances

- May limit hours or impose sound level thresholds

Example

Sec. 16-98. - Construction and repairs.

It shall be unlawful for any person to operate equipment or perform any construction or repair work on buildings, structures, or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hours of 8:00 p.m. and 7:00 a.m. so as to create unnecessary, excessive or offensive noise as defined herein, unless beforehand a special permit therefor has been duly obtained from the director of public works. For purposes of this provision, unnecessary, excessive or offensive noise shall include, but not be limited to, sound that exceeds sixty-five (65) decibels (dBA) or when the same is audible to a person of reasonably sensitive hearing at a distance of two hundred (200) feet from its source. No special permit shall be required to perform emergency work, defined as work necessary to restore property to a safe condition following a public calamity or work required to protect persons or property from an imminent exposure to danger or work by private or public utilities when restoring utility service.



Tier 2 EA – Noise and Vibration

Most Tier 2 assessments will be qualitative only!

Qualitative assessment (worksheet)

- Duration and work hours
 - Greater than 1 month at any one location?
 - Occur during nighttime hours?
- Sensitive receptors
 - Residences, schools, houses of worship, etc. within 50 ft?
- Construction methods and equipment
 - Blasting or other high-noise and vibration methods?

A yes to any of these questions indicates there is increased potential for human annoyance and building damage -> Quantitative assessment may be required to identify appropriate mitigation



Tier 2 EA – Noise and Vibration

Identify mitigation measures where needed

- Adhere to state, local, and tribal noise regulations
- Limit activities to occur only during normal weekday business hours, when noise restrictions are not in place
- Ensure proper maintenance of equipment mufflers
- Use acoustical noise tent and/or enclosures surrounding hoe rams, jackhammers, or pavement breakers, to the extent practicable given space constraints at work sites



Tier 2 EA – Land Use and Transportation

- Right of way requirements
 - Easements, acquisition of property
- Traffic and transportation facility impacts
 - Detours, relocation of transit facilities (bus stops)
- Emergency service impacts
- Safety



Tier 2 EA – Public Involvement

- Examples of Outreach
 - Coordination with local community leaders and groups;
 - Advanced notification of service disruptions and construction schedule;
 - Services maintained at temporary facilities, if appropriate;
 - Public engagement to reduce project delivery delays and public controversy;
 - Outreach plans to involve and engage all populations; and
 - Incorporate public awareness programs.
- Posting Tier 2 EA for public review
 - Municipal website
 - Provide contact information to receive comments



Tier 2 Site Specific EA

- Next Steps
 - Fill out questions via PowerApps
 - Reach out with questions
 - Email: PHMSAPipelineBILGrant@dot.gov
 - PHMSA will review and conduct necessary agency consultation
 - Project Proponent to Post EA for public review
 - PHMSA then posts EA/FONSI to regulations.gov
 - Grant Award

