



PRACTITIONERS PEER EXCHANGE ENVIRONMENTAL JUSTICE ROADMAP

The Center for Environmental Excellence
by AASHTO



AMERICAN ASSOCIATION
OF STATE HIGHWAY AND
TRANSPORTATION OFFICIALS
AASHTO



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Prepared for:

American Association of State Highway and
Transportation Officials (AASHTO)
Center for Environmental Excellence

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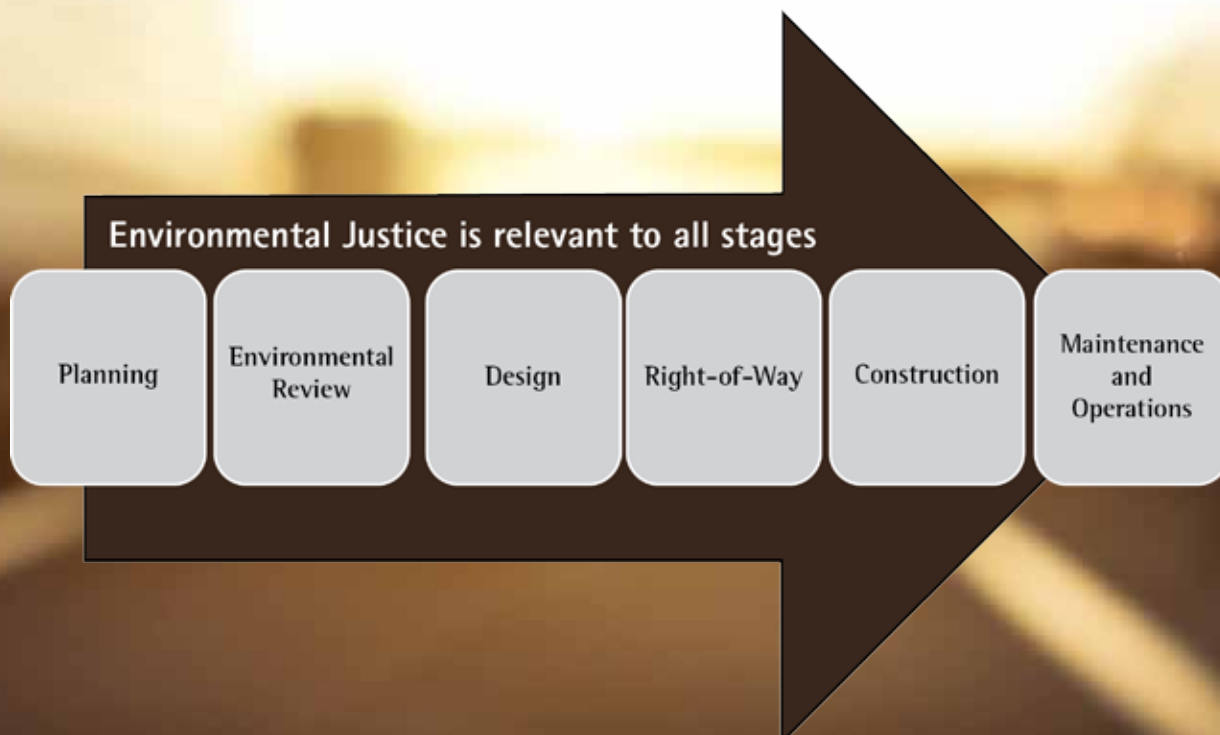
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EXECUTIVE SUMMARY

Executive Order (EO) 12898 authorized Federal actions to address environmental justice. This EO requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental impacts of their programs, policies, and activities on minority populations and low-income populations. Both the United States Department of Transportation and the Federal Highway Administration (FHWA) issued guidance outlining how to incorporate EO 12898 throughout the transportation decision-making process in [DOT Order 5610.2\(a\)](#) and [FHWA Order 6640.23A](#).

It has been over 20 years since EO 12898 was promulgated, and the context for transportation decision-making has changed significantly since then. Consequently, the Center for Environmental Excellence by the Association of State Highway and Transportation Officials (AASHTO), in coordination with FHWA, hosted a national peer exchange in Washington, D.C., on February 17 and 18, 2016. During this two-day event, participants reviewed the current state of the practice for integrating environmental justice (EJ) into transportation decision-making processes. The peer exchange brought together 13 State Department of Transportation (DOT) agencies from across the United States (U.S.) and representatives from 6 metropolitan planning organizations (MPOs) to share lessons learned, case studies, challenges, and opportunities for addressing EJ during the transportation planning and project development phases (includes all phases following planning as noted in diagram below). The goal of the peer exchange was to provide participants with an opportunity to develop an Environmental Justice Roadmap that includes considerations for AASHTO, FHWA, and practitioners to better integrate EJ considerations from early planning through implementation decision-making processes. To that end, the peer exchange participants identified eight focus areas through interactive group discussions. The focus areas provide the foundation of the Environmental Justice Roadmap.



The Environmental Justice Roadmap explores each focus area and includes examples of current practices provided by peer exchange participants. Each chapter examines one focus area and outlines:

- Key issues
- Current state of the practice
- Considerations for AASHTO
- Considerations for FHWA
- Considerations for practitioners
- Benefits to practitioners

In addition to the peer exchange, the Center for Environmental Excellence hosted a webinar on May 18, 2016, with more than 350 participants. Through a series of poll questions, webinar participants provided further input into the current state of the practice and considerations for each focus area.

The Environmental Justice Roadmap is not an implementation action plan; however, it provides considerations for AASHTO, FHWA, and practitioners to collectively advance the state of the practice for EJ and improve transportation decision-making. The Environmental Justice Roadmap concludes with several emerging issues that are important in the development of future research needs statements. The top three emerging needs identified by the webinar participants included community indirect and cumulative effects for EJ populations, the changing demographics of the U.S, and health impacts on EJ populations from transportation projects. AASHTO and FHWA will continue to collaborate to prioritize and implement the strategies and associated considerations that comprise the Environmental Justice Roadmap.

Focus Areas and Key Issues



ROLE OF EJ IN TRANSPORTATION DECISION-MAKING:

Increasing understanding of the purpose and intent of addressing EJ as part of all phases of transportation decision-making.



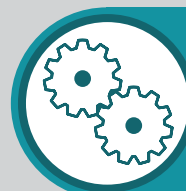
PEER NETWORKS:

Ensuring that transportation professionals have a forum to share stories of project successes and failures, including lessons learned and effective practices.



AGENCY COLLABORATION:

Exploring shared EJ responsibilities and interests by Federal, State, and local agencies to identify and cultivate collaborative partnerships throughout planning and project development.



INTER-AGENCY COLLABORATION:

Developing closer working relationships among FHWA, MPOs, and DOTs to improve collaboration during planning, project development, and implementation.



EJ HOUSEHOLD DEMOGRAPHICS:

Examining the changing demographics across the U.S. and how this affects the way impacts on EJ households and communities are identified, located, and evaluated.



EJ DATA & ANALYSIS:

Identifying challenges and opportunities associated with collecting EJ data and analyzing this data with the appropriate methods and tools.



TRAINING:

Delivering the knowledge and skills needed by transportation practitioners to successfully address EJ as part of all phases of the transportation decision-making process.



COMMUNITY ENGAGEMENT:

Understanding how to conduct meaningful engagement of community members to identify EJ populations and understanding the potential impacts from a transportation plan or project.

INTRODUCTION

Environmental justice involves identifying and addressing disproportionately high and adverse impacts of transportation programs, policies, and activities on minority populations and low-income populations.

Executive Order 12898 requires Federal agencies to identify and address, as appropriate, the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minorities and low-income populations. For more than 20 years, transportation agencies have implemented EO 12898 as they plan, design and deliver projects to ensure that transportation decisions effecting these communities do not cause disproportionately high and adverse human health or environmental effects to these populations. EO 12898 is informed by the principles of nondiscrimination contained in Title VI of the Civil Rights Act of 1964 and other environmental and transportation regulations. Environmental justice (EJ) encompasses issues of human health and safety, such as access to clean water and air, equitable access to economic opportunities, and access to affordable and reliable transportation options. The keys to success for implementing EO 12898 involve understanding the benefits and potential impacts associated with a given transportation action, and meaningfully engaging those populations directly and indirectly affected by such actions.

EXECUTIVE ORDER 12898, FEDERAL ACTIONS TO ADDRESS ENVIRONMENTAL JUSTICE IN MINORITY POPULATIONS AND LOW-INCOME POPULATIONS, 1994

"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."

TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

"No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

FHWA ORDER REFERENCE 6640.23A

"It is FHWA's longstanding policy to actively ensure nondiscrimination in federally funded activities. Furthermore, it is FHWA's continuing policy to identify and prevent discriminatory effects by actively administering its programs, policies, and activities to ensure that social impacts to communities and people are recognized early and continually throughout the transportation decisionmaking process--from early planning through implementation. Should the potential for discrimination be discovered, action to eliminate the potential shall be taken."

The context of how agencies conduct transportation decision-making has changed over the last 20 years since President Clinton promulgated Executive Order 12898. The tools and techniques used to identify and assess impacts on EJ communities have advanced. Performance accountability is driving new data reporting systems, decision-making approaches, and innovative project delivery strategies to be as efficient as possible. New information technology tools and communication platforms (e.g., social media), including a growing number of data analytic tools and resources, are abundant.

While many transportation projects are now focused on rehabilitation and modernization of major highways, these projects may include recurring community impacts on traditionally disadvantaged communities. This presents an opportunity to bring transportation agencies together to discuss opportunities and challenges associated with identifying and addressing impacts on EJ communities. Consequently, the Center for Environmental Excellence (CEE) by the American Association for State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA) co-hosted a National EJ peer exchange on February 17 and 18, 2016.

The goal of the peer exchange was for participants to identify focus areas to inform an Environmental Justice Roadmap which describes the current state of the practice of EJ and provides considerations on how to better incorporate EJ in transportation planning and project development. The Environmental Justice Roadmap identifies key issues and considerations for AASHTO, FHWA, and practitioners to collectively advance the state of the practice for EJ and to improve transportation decision-making.

The peer exchange event hosted 13 State departments of transportation (DOTs) and 6 metropolitan planning organizations (MPOs), including representation from FHWA and AASHTO. The program agenda was guided by a working group involving representatives from four State DOTs, one

MPO, and FHWA. Prior to the peer exchange event, the working group distributed a questionnaire to participating agencies asking the following questions:

- Does your agency have guidance on identifying and addressing EJ populations?
- Does your agency have effective practices or case studies to share?
- What are your agency's key challenges or issues when identifying and evaluating EJ impacts?
- Has your agency received EJ-related training?

A summary of the questionnaire responses is provided in the callout box on the next page.

DOT AND MPO PEER EXCHANGE PARTICIPATION

STATE DOTs:

- Arizona (ADOT)
- California (Caltrans)
- Minnesota (MnDOT)
- Tennessee (TDOT)
- New York (NYSDOT)
- Georgia (GDOT)
- North Carolina (NCDOT)
- Maryland (MDOT - SHA)
- Kentucky Transportation Cabinet (KYTC)
- Illinois (IDOT)
- Washington (WSDOT)
- Ohio (ODOT)
- Massachusetts (MassDOT)

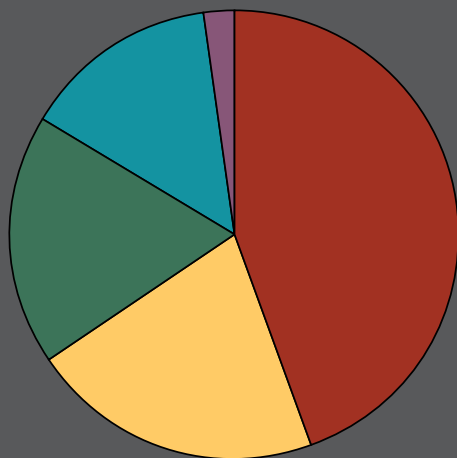
MPOs:

- Baltimore Regional Transportation Board (BRTB) (Maryland)
- Omaha-Council Bluffs MAPA (Nebraska)
- Wichita Area MPO (WAMPO) (Kansas)
- Hampton Roads TPO (HRTPO) (Virginia)
- Miami-Dade MPO (Florida)
- North Central Texas COG (Texas)

BRIEF SUMMARY OF PEER EXCHANGE QUESTIONNAIRE RESPONSES

- The majority of agencies have some type of guidance in place to identify and address the effects of transportation plans or projects on EJ populations.
- Several agencies have effective practices or case studies that they showcased as part of the peer exchange event.
- Most agencies have some type of environmental justice-related training but not on a consistent, ongoing basis.
- Challenges were identified in the following topic areas:
 - » Data collection and reliability
 - » Meaningful community engagement
 - » Methods to identify disproportionately high and adverse impacts
 - » Appropriate mitigation strategies

WEBINAR PARTICIPANT COMPOSITION



2% Academic/Non-Profit

14% Consultant

18% Federal

21% Local

44% State

The peer exchange program included 15 presentations, several breakout sessions, and a facilitated group discussion to identify needs, goals, and objectives that could be developed into the Environmental Justice Roadmap. The peer exchange program and all presentations can be accessed at http://environment.transportation.org/center/products_programs/conference/2016_environmental_justice_peer_exchange.aspx

Peer exchange participants were guided through an interactive, consensus workshop on the second day to identify the key areas to better integrate EJ considerations into transportation planning and project development. The participants worked in small groups and came together as a larger group to identify eight focus areas. Following the consensus workshop, the small groups identified strategies to address the intent of the eight focus areas.

In addition to the 2-day peer exchange, CEE hosted a webinar on May 18, 2016. The purpose of the webinar was to share the focus areas developed by the peer exchange participants with a wider audience and receive input on the focus areas through poll questions presented during the webinar itself. More than 350 participants, representing Federal, State, local, academic, non-profit, and consulting entities, took part in the webinar. As part of the registration process, two poll questions were asked, and an additional seven poll questions were presented during the webinar. This report discusses the webinar poll results in the appropriate focus areas to provide useful information that AASHTO and FHWA may take into account as both agencies begin to prioritize the strategy considerations in the Environmental Justice Roadmap.

The remainder of this report is organized by the eight focus areas, and includes a brief overview of the participants input on each focus area, followed by a discussion of current practice that incorporates effective practices from peer exchange participants' presentations. The Moving Forward section for each focus area includes the strategies identified by peer exchange participants and considerations for AASHTO, FHWA, and practitioners. In addition, each focus area describes the benefits to practitioners resulting from the implementation of the strategies and associated considerations. The Environmental Justice Roadmap concludes with a discussion of emerging issues, including research ideas related to addressing EJ considerations as part of planning and project development, and a list of EJ resources.



WEBINAR PARTICIPANT POLL:
What is your preferred method of receiving best practices, case studies or lessons learned?

In-Person Workshops
or Conferences

48%

Online Discussion
Forum (ex: Webinar)

24%

Online Resources
(No Interaction)

28%

Focus Areas and Key Issues



ROLE OF EJ IN TRANSPORTATION DECISION-MAKING:

Increasing understanding of the purpose and intent of addressing EJ as part of all phases of transportation decision-making.



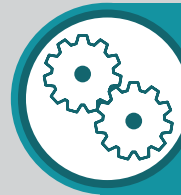
PEER NETWORKS:

Ensuring that transportation professionals have a forum to share stories of project successes and failures, including lessons learned and effective practices.



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TRAINING:

Delivering the knowledge and skills needed by transportation practitioners to successfully address EJ as part of all phases of the transportation decision-making process.



COMMUNITY ENGAGEMENT:

Understanding how to conduct meaningful engagement of community members to identify EJ populations and understanding the potential impacts from a transportation plan or project.



THE ROLE OF EJ IN TRANSPORTATION DECISION-MAKING



Joe Fudge /



KEY ISSUE

Increasing the understanding of the purpose and intent of addressing EJ as part of all phases of transportation decision-making.

"EJ at FHWA means identifying and addressing disproportionately high and adverse effects of the agency's programs, policies, and activities on minority populations and low-income populations to achieve an equitable distribution of benefits and burdens."

Source: 2015 EJ Reference Guide, page 1

Representatives from MPOs, State DOTs, and FHWA offered expertise and experiences related to the transportation planning and project development process. As the group worked collaboratively to identify the key focus areas to better integrate EJ into decision-making processes, they coalesced around two ideas related to aspects of informing or guiding transportation decision-making. They called these ideas the "Why of EJ" and "EJ start to finish."¹

The "Why of EJ" involves creating a "shared vision" of the critical importance of incorporating the interests and needs of EJ populations into all planning and project development key decision-making points. Participants used the term "EJ Ethics" to describe a culture reflective of a "sense of purpose and urgency" when defining, understanding, evaluating, and addressing impacts on EJ populations. MPOs highlighted the importance of "understanding the value" of incorporating EJ issues into the project development process, thereby "instilling pride in projects through the inclusion" of EJ considerations as part of project planning and design. The "EJ start to finish" phase captures the intention that EJ should not be an add-on consideration but rather a fundamental decision factor when programming projects to ensure that EJ is considered at project conception.

¹ Throughout this document, quoted text not attributed to a specific source refers to one or more verbal remarks during the peer exchange.



Current Practice

Transportation decision-making is complex and includes several phases governed by different rules, regulations, and policies. The key players of the different phases of transportation decision-making change as projects move from concepts, through funding prioritization, to environmental review, design, construction, operation, and maintenance. There are different levels of government representing different geographies with different jurisdictional, regulatory, and funding responsibilities throughout the phases of decision-making. As funding challenges have required most agencies to do more with less, competing interests and priorities have imposed challenging work environments for practitioners to navigate. Peer exchange participants emphasized the importance of practitioners having a clear understanding of what comprises an EJ community, the history of EJ communities related to transportation, and incorporating EJ considerations early in the project development process.

Many initiatives, process improvements, and guidance resources have been developed over the last two decades to assist with integrating EJ into transportation decisionmaking. Beginning in 1998, State DOTs around the country began embracing the concept of [Context Sensitive Solutions \(CSS\)](#) to understand the total decision-making context as a fundamental aspect of defining the transportation problem to be solved. Community context is a fundamental aspect of CSS. In the 1990's, FHWA published the [Community Impact Assessment: Quick Reference Guide](#) (known as the CIA Purple Book) that lays out "an iterative process to evaluate the effects of a transportation action on a community and its quality of life." This process helps to define the community context, including the issues and needs of EJ populations. State DOTs around the country have used this process to develop a community characteristics inventory which reflects the demographics, values and interests of the potentially affected community. Then socio-cultural, economic, land use, displacement, sensory and aesthetic, safety and health; as well as access and mobility impacts are evaluated for

transportation alternatives. Some State DOTs have adopted slightly different language to characterize these studies, such as socio-cultural impact assessment, social impact assessment, or socioeconomic assessment. In summary, the CIA process, as part of planning and project development decision-making, has been shown to support context sensitive solutions for EJ communities.

Most recently, FHWA released the [Environmental Justice Reference Guide](#) which discusses all phases of transportation decision-making, including key questions, resources, case examples, and tools. Participants expressed an appreciation for this reference, however, only slightly more than half of the registrants were familiar with it. This highlights an opportunity for FHWA to ensure that the guide is disseminated more widely to increase awareness.

Webinar Registrants Familiarity with FHWA EJ Reference Guide



CSS Guiding Principles

A Context Sensitive Solution approach is guided by four core principles:

1. Strive to create a shared stakeholder vision to provide a basis for decisions.
2. Demonstrate a comprehensive understanding of contexts.
3. Foster continuing communication and collaboration to achieve consensus.
4. Exercise flexibility and creativity to shape effective transportation solutions, while preserving and enhancing community and natural environments.



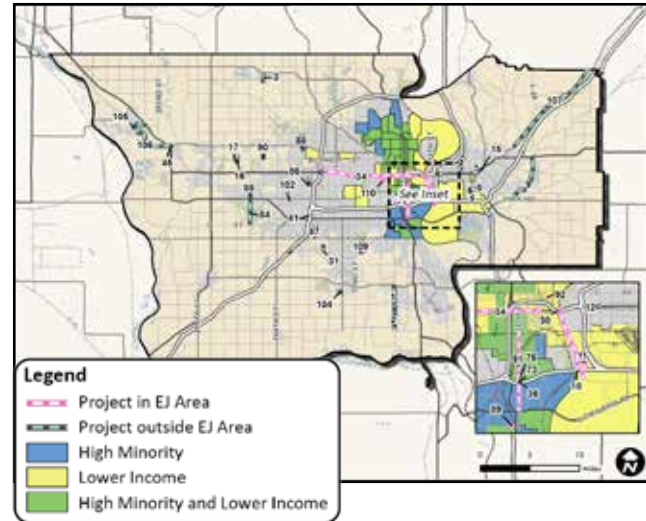
Two examples of MPOs incorporating EJ metrics as part of planning and programming activities were presented at the peer exchange. Omaha Council Bluffs MPO (MAPA) developed a quantitative approach that encourages communities to support projects that improve access and mobility for EJ populations. EJ populations are identified by comparing Census tract populations to the transportation management area average populations for low-income and minority. One standard deviation above the average is flagged as an EJ population. Investments within the transit shed are compared with travel time savings and metro transit funding within the EJ populations with the goal of improving access to jobs and services. Another example from the North Texas Council of Governments (NTCOG) presented an EJ index developed to evaluate the potential impacts from the long-range plan investments as well as for tolling analysis. Data on low-income and race demographics and population density are used to identify areas of concern. Variable scores are added together for an EJ index score of 1 to 100 to identify protected zones. Six key performance indicators are compared for protected and non-protected zones to identify areas of potential impact. These performance indicators are consistent with current MAP-21 performance requirements.

Moving Forward

Peer exchange participants identified several strategies to highlight the importance of considering EJ through all phases of transportation decision-making. Participants expressed an overarching interest in advancing EJ by institutionalizing transportation equity as a mindset for transportation practitioners. Developing "Why EJ" marketing materials would assist in educating practitioners on the critical importance of addressing EJ as part of decision-making. Another important focus was to update the CIA Purple Book (CIA: A Quick Reference for Transportation) and Community Impact Mitigation Case Studies to include more detail on EJ considerations and provide links to updated guidance, reference materials, and resources.

Peer exchanging participants identified the following considerations:

Omaha Council Bluffs MPO Environmental Justice Areas with TIP Projects



Source: Omaha-Council Bluffs MAPA Peer Exchange Presentation. February 17, 2016

Considerations for AASHTO:

- Disseminate the results of the EJ peer exchange to appropriate AASHTO standing committees and State DOTs.
- Prioritize action items in the peer exchange for all focus areas and develop a work plan of activities to support implementation of actions.
- Update EJ information on the CEE website.
- Promote the topic of EJ at standing committee meetings by adding agenda items to discuss and present EJ case studies and effective practices.

Considerations for FHWA:

- Review the key decision points in [PlanWorks](#) and other SHRP2 products to identify appropriate EJ considerations for each decision point.
- Update the Community Impact Mitigation case studies and Community Impact Assessment Quick Reference Guide (CIA Purple Book) with a renewed focus on EJ considerations for transportation projects.



- Provide technical assistance for EJ and transportation decision-making (e.g., data collection methods, data analysis tools, outreach strategies, determining disproportionately high and adverse impacts).
- Develop a brochure with key messages on the importance of EJ in the transportation decision-making process.

Considerations for Practitioners:

- Be proactive in raising EJ-related issues and needs during the decision-making process.
- Take time to review case studies, effective practices, references, and resources to advance the practice of understanding and addressing the EJ impacts as part of transportation decision-making.
- Share lessons learned through peer network outlets, professional organization meetings, and calls for papers and presentations.

Benefits to Practitioners

Incorporating EJ considerations into decisionmaking ensures that **transportation actions do not place undue burdens on minority or low-income populations** that may be transportation-disadvantaged or distressed. Other benefits include:

- Clear guidance and expectations around the role of EJ in transportation decision-making.
- **Streamlined project delivery.**
- **Encouraging the development of new approaches, tools, and techniques** to better identify and address EJ impacts.



STRATEGIES

- ☑ Institutionalize transportation equity.
- ☑ Develop "sound bite" training.
- ☑ Identify multiple messengers of the message "Why EJ" (i.e., AASHTO, AMPO, FHWA, National Association of City Transportation Officials, American Planning Association, Institute of Transportation Engineers).
- ☑ Update the 1996 CIA Purple Book and Community Impact Mitigation Case Studies case studies.
- ☑ Reference EJ in other resources related to decision-making (e.g., PlanWorks).





PEER NETWORKS



Peer Exchange Practitioner Collaboration



KEY ISSUE Ensuring that transportation professionals have a forum to share stories of project successes and failures, including lessons learned and effective practices.

Peer exchange participants spoke often throughout the two days about the critical importance of having access to peer networks to help practitioners move forward with addressing issues they have not previously encountered. While there are EJ-related guidance materials available to practitioners, it is sometimes difficult to translate these materials into specific transportation planning or project contexts. Opportunities to collaborate with peers who have experience on similar EJ topics and issues can provide the support needed to address EJ impacts and move projects forward to completion.

Current Practice

Peer networks take the form of face-to-face interactions as well as virtual or web-based applications. While both AASHTO and FHWA have supported peer exchange events, participants identified that more opportunities for in-person engagement of practitioners is needed to expand the body of knowledge. Certainly, travel restrictions and time away from work are considerations that thwart frequent face-

to-face interactions; consequently, virtual or web-based applications such as [Re: NEPA](#) have become a popular forum to support the open exchange of knowledge, information, experience, and ideas among practitioners. Re: NEPA includes a community, social issues, and environmental justice tab to ask questions.

AASHTO's CEE supports an [environmental topics tab](#) for EJ that posts useful information for practitioners. FHWA supports peer exchanges through State Planning and Research Program funds. FHWA defines peer exchanges in its 2010 Guide to Peer Exchanges as "*a focused collaboration among transportation research colleagues through which a host State may find the means to restructure or merely fine tune research program processes.*"¹ In addition, the [Transportation Planning Capacity Building Program \(TPCB\)](#) allows MPOs, transit operators, State DOTs, tribal governments, and other key transportation decision-makers to apply for peer exchange assistance for specific events.² These opportunities are presented in four different formats (i.e., peer exchanges, peer workshops, peer roundtables, and webinars) demonstrating flexibility in approach and delivery.

¹ <http://www.fhwa.dot.gov/publications/research/spr/10048/10048.pdf>

² https://www.planning.dot.gov/peer_app.asp



Moving Forward

Peer exchange participants identified two key strategies to support the implementation of peer networks—providing more in-person opportunities for practitioners to share their stories and initiating professional share sites where practitioners can ask fellow practitioners questions. During the webinar following the peer exchange, the majority of webinar participants selected in-person workshops and conferences as their preferred method to receive information on best practices and case studies (see page 4 of this report).

Peer exchanging participants identified the following considerations:

Considerations for AASHTO:

- Update the [EJ environmental topic tab](#) to include an option to submit examples of EJ analysis/case studies as part of DOT planning and environmental studies.
- Add EJ topics/sessions to annual AASHTO standing committees (Standing Committee on the Environment [SCOE], Standing Committee on Planning [SCOP], Standing Committee on Public Transportation [SCOPT]).
- Add EJ to the [communities of practice forum](#).
- Initiate joint AASHTO/FHWA-supported peer exchange events on a regular basis.

Considerations for FHWA:

- Increase outreach and knowledge of [FHWA's Livable Communities discussion board](#), a professional collaboration site devoted exclusively to questions and answers on livability topics, including EJ and Title VI related questions.
- Increase exposure of the [Re: NEPA](#) website to help practitioners share effective practices and lessons learned.
- Increase knowledge and awareness of the [Transportation Planning Capacity Building Program](#), the application process for peer exchange events, and the searchable database of resources.
- Continue to promote EJ case studies as part of the [Biennial Environmental Excellence Awards Program](#).

Considerations for Practitioners:

- Commit to making time to share stories of effective practices and lessons learned through web-based application forums or calls for presentations or case studies for peer events or awards applications.
- Use the social network connections at conferences, peer exchanges, and other face-to-face events by creating their own peer groups through email, Facebook, LinkedIn, or other social media outlets to ask questions and share experiences.

Benefits to Practitioners

The ultimate measure of success for advancing peer networks is to improve the state of the practice and help practitioners plan and deliver quality projects in a timely manner. The following benefits are expected from increased peer network activities:

- Practitioners **gain knowledge** in dealing with EJ considerations as part of both planning and project delivery.
- Practitioners have a community that provides support while dealing with critical questions and issues.
- Peer networks create an easily accessible communication forum to quickly receive answers, which can support **timely decision-making** and project delivery.
- Peer networks can provide practitioners the opportunity to learn from others experiences and employ methodologies that work.



STRATEGIES

- ☑ Provide more opportunities for face-to-face events to share effective practices and lessons learned.
- ☑ Initiate a professional share site where practitioners can solicit input from their peers as needed.





FOSTERING EXTERNAL AGENCY COLLABORATION



KEY ISSUE

Exploring shared EJ responsibilities and interests by Federal, State, and local agencies to identify and cultivate collaborative partnerships throughout planning and project development.

"Through transportation, we can help ensure that the rungs on the ladder of opportunity aren't so far apart—and that the American dream is still within reach for those who are willing to work for it."

– USDOT Secretary Anthony Foxx

The EJ peer exchange participants were very supportive of the concept of working with other agencies to understand the unique interests and needs of EJ communities. For example, collaborating with health and human services agencies to understand the health issues of EJ populations as part of transportation decision-making. Participants discussed the importance of reaching out to external agencies early in the decision-making process to collaborate on EJ topics.

Current Practice

Federal, State, and local agencies create policies and projects commensurate with their missions, jurisdictional responsibilities, and the geographic extent of their authority. Communities are shaped by the resultant integrated policy environment. Many of these agencies share responsibilities and interests in developing programs, policies, and projects that will not place undue burdens on distressed or vulnerable populations. In 2009, the [Partnership for Sustainable Communities \(PSC\)](#) between United States Department of Transportation (USDOT), Environmental Protection Agency (EPA), and Housing and Urban Development (HUD) was created to better coordinate decisions for efficient use of resources and improving community quality of life. The PSC is an excellent example at the Federal level of agencies coming together to make collective decisions that have substantial consequences for communities, and especially



for EJ populations. For example, in 2015 the PSC identified the following key areas of focus in support of United States Department of Agriculture (USDA) and Federal Emergency Management Association (FEMA):

- Using PSC agency resources to advance [Ladders of Opportunity](#) for every American and every community.
- Helping communities adapt to a changing climate, while mitigating future disaster losses.
- Supporting implementation of community-based development priorities.

In 2014, [PSC published a five-year anniversary report](#) to showcase lessons learned and future priorities.

Three projects profiled during the peer exchange highlighted examples that included collaboration with external agencies to identify and facilitate mitigation associated with community impacts (see below).



What agencies do you think are most important to collaborate with in terms of addressing environmental justice considerations?

Peer Exchange Responses:

- Housing and Urban Development (HUD)
- Faith-based and non-profits with a social focus
- Workforce development program offices
- Universities/colleges
- Environmental Protection Agency (i.e. the Environmental Justice Interagency Working Group)
- Housing authorities
- Community action agencies/civic organizations
- Transit agencies
- Health departments/social services
- Police and emergency management services
- Advocacy groups (housing, transportation, bike/ped)
- Chambers of commerce/business district associations
- Public information officer (i.e. regional and local governments)

Kentucky Transportation Cabinet (KYTC)–Newtown Pike Extension

FHWA, KYTC, HUD, and local officials collaborated on a strategy to mitigate displacement impacts borne by an environmental justice community through a 25-acre redevelopment plan implemented as part of a Community Land Trust.

Georgia DOT (GDOT): I-16/I-75 Interchange

GDOT is working closely with community members to mitigate negative historic and community impacts associated with relocating several homes in the Pleasant Hill Community. The cohesive African American community was divided during the initial construction of I-75. GDOT and the community are exploring strategies to provide housing in accordance with agreed upon design guidelines that honor the social, cultural, and aesthetic character of the community.

North Carolina DOT (NCDOT): Austin Avenue

NCDOT worked with HUD and local leaders as part of a HOPE VI redevelopment strategy to identify a context-sensitive solution for the widening of Austin Avenue. The design included a complete streets concept to improve access to transit, bicycling, and walking in an environmental justice community with a large number of carless households.



Another effective practice, in Massachusetts, showcased the McGrath Boulevard project that is restoring a grade separated roadway to at-grade level. The boulevard traverses a predominantly low-income neighborhood with limited English populations. A health impact assessment required by Massachusetts DOT's Healthy Transportation Policy Directive was prepared to identify health issues for the community. Extensive coordination with the City of Somerville and Massachusetts Bay Transportation Authority helped develop a design that best integrates into the community. An example of an MPO working with other agencies to address transportation-disadvantaged individuals came from Miami-Dade MPO working with the [Commission for the Transportation Disadvantaged \(CTD\)](#). The State is divided into service areas of which Miami-Dade is one service area. The structure and administration of the CTD is complex, but its purpose is to work with locals and communities to ensure that funds received through the program go to help transportation-disadvantaged persons. There are 16 different agencies and organizations representing a variety of issues, and each is involved in shaping investment decisions. These are all examples of agencies working together for shared benefit and shared solutions that lead to successful project outcomes for EJ communities.



WEBINAR PARTICIPANT POLL:
Have you worked on a project which included resources or financial support from another government agency as part of the plan/project?

YES

69%

NO

22%

UNSURE

9%

To understand if receiving support from other agencies is a common practice, webinar participants were asked if they had worked with other agencies that provided resources or financial support as part of the planning process or delivering a project. Surprising, the majority of webinar participants had received some type of support for plans or projects. This finding is very encouraging, especially for compiling success stories that foster external agency collaboration.

Moving Forward

Peer exchange participants discussed several strategies to build a supportive environment for collaborative partnerships between Federal, State, and local agencies to co-create solutions that benefit EJ populations. For example, transportation agencies can scan potential partner agencies' missions, goals, and legal responsibilities to identify shared EJ interests and key decision points where partner agency collaboration would be most effective.

Peer exchanging participants identified the following considerations:

Considerations for AASHTO:

- Develop a synthesis research statement for submission to NCHRP that collects examples of State DOTs working with other agencies to co-create solutions that address EJ community issues and needs. The synthesis would result in a list of effective practices that other agencies could learn from and replicate.
- Add a session at the annual SCOE and SCOP meetings that highlights exemplary examples of shared responsibilities and solutions between DOTs and other agencies.

Considerations for FHWA:

- Continue to encourage transportation agencies to apply for the FHWA Environmental Excellence Awards by promoting the EJ category through all appropriate dissemination networks and websites.
- Share lessons learned from the Partnership for Sustainable Communities by widely disseminating the upcoming 7-year anniversary report to be released later in 2016.



- Continue to provide case study examples of transportation agencies and external agencies working together to address EJ as part of planning and project development in training courses related to EJ and technical assistance.
- Identify key decision points in [PlanWorks](#) that are most beneficial to engage partner agencies with shared EJ interests.

Considerations for Practitioners:

- Identify agencies that may be process or funding partners during the start of study or scoping phase of decision-making.
- Develop an EJ statewide working group of key agencies with missions, goals, and legal responsibilities around topics of importance to EJ communities (Federal example: [EPA EJ Interagency Working Group](#)).

Benefits to Practitioners

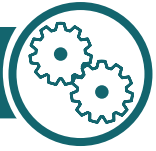
Working with other agencies can help practitioners by:

- Providing examples of how other agencies are partnering to develop and deliver quality projects that benefit EJ populations will **allow practitioners to try** new ideas and approaches.
- Understanding how and when to engage agency partners for the benefit of **developing quality projects** that benefit EJ populations.
- Leveraging knowledge, skills, networks, and funding from other agencies to deliver projects in a **timely manner** and **reduce cost** to transportation agencies.



- ☑ Scan potential partner agencies for shared interests.
- ☑ Define partner agency interest at key decision points in the planning and project development processes.
- ☑ Share success stories of agency collaborative partnerships.





INTER-AGENCY COLLABORATION



KEY ISSUE

Developing closer working relationships among FHWA, MPOs, and DOTs to improve collaboration during planning, project development, and implementation.



WEBINAR PARTICIPANT POLL:
What guidance does your agency have on linking planning and environmental decisions?

FORMAL 45%

INFORMAL 29%

UNSURE 26%

Peer exchange participants included representatives from FHWA, State DOTs, and MPOs, creating an atmosphere for frank discussions about how each level of government can support the integration of EJ from planning through project development. Numerous key topics surfaced during discussions over the 2-day peer exchange that highlighted the critical importance of good working relationships between FHWA and MPOs, and FHWA and DOTs as well as between MPOs and DOTs. One of the overarching discussion themes focused on the importance of consistent EJ documentation, including the transfer and exchange of critical EJ data and information between planning to environmental studies. Participants discussed the need for strong, supportive relationships between all levels of government, including additional training and guidance from FHWA regarding MPO and DOT coordination on EJ.



Current Practice

Streamlining and stewardship initiatives promoted at the national and state levels have focused heavily on the critical linkages between planning and the environmental review process in transportation decision-making. FHWA has widely promoted the [Planning and Environmental Linkages \(PEL\) program](#) through tools and resources in the areas of institutional change, process improvements, data and analysis, and coordination and communication. PEL is a "collaborative and integrated approach to transportation decision-making that: considers environmental, community, and economic goals early in the transportation planning process; and uses the information, analysis, and products developed during planning to inform the environmental review process."¹ While many of the resources have focused on natural environmental planning and environment linkages, there is equal focus on human environmental considerations. FHWA's PEL website features [Florida's Efficient Transportation Decision Making \(ETDM\)](#) process as

¹ https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/index.cfm

an example of a data and analysis tool composed of three phases: Planning, Programming, and Project Development. ETDM includes a Geographic Information System (GIS) data exchange platform supported by robust agency and stakeholder input throughout all three phases.

Another interesting effective practice from Florida comes from the Miami-Dade MPO, where it developed customized demographic reports for all Census tracts and community background reports for all municipalities and neighborhoods in Miami-Dade County, in collaboration with Florida International University (FIU). These reports are part of the MPO's web-based [Transportation Outreach Planner](#) that also includes an interactive web application to identify the appropriate outreach strategies based on community information, resources, and budget considerations. This information provides useful, reliable information to identify and meaningfully engage EJ populations throughout the transportation decisionmaking process.



Another example of an effective practice comes from North Carolina DOT (NCDOT), which identified eight potential linkages between the comprehensive transportation planning process and the starting point for the National Environmental Policy Act (NEPA) ([Integration Project](#)). Of particular importance are linkages for community impacts. The Community Studies Unit develops a Community Characteristics Inventory Report for the planning process that includes important EJ information such as demographics and other social, economic, land use, safety, and health data relevant to understanding potential risks to transportation-disadvantaged populations. This information is on file to be updated during the project development process or as part of the regular long-range transportation planning update, creating reliable, consistent data exchange between planning and project development.

Eight Potential Linkages between Planning and Project Development/NEPA (NCDOT)

Long Range Planning		Project Development
Problem statement	Linked to	Purpose and need
Alternatives analysis	Linked to	Alternatives selected for detailed study
Unreasonable solutions	Linked to	Alternatives selected for detailed study
Multi-modal	Linked to	Multi-modal alternatives
Community impacts assessment	Linked to	Community impacts analysis
Land use	Linked to	Indirect and cumulative effects
Public involvement	Linked to	Public involvement
Mitigation opportunities	Linked to	Mitigation needs and opportunities

Moving Forward

When asked what was needed to better integrate planning outcomes into project development as it relates to EJ analysis and evaluation, peer exchange participants responded by focusing on the need for working agreements and established protocols between FHWA to MPO, MPO to DOT, and FHWA to DOT. They emphasized the need for guidance, including timeframes for coordination (e.g., annually, pre Transportation Improvement Program approval, long-range plan update cycles, and project scoping) as well as "how the integration process should occur." Linking public involvement plans between planning and project development and the linkage between prioritization criteria and project evaluation criteria during the environmental review process were other significant areas of discussion. In addition, participants stressed the critical linkage between the needs assessment phase of planning and the development of a purpose and need statement for NEPA studies in terms of understanding the scale and intensity of potential impacts on EJ populations.



Peer exchange participants identified the following considerations:

Considerations for AASHTO:

- Sponsor a peer exchange on the connection between planning and project development in terms of EJ data and analysis (e.g., SCOE and SCOP).

Considerations for FHWA:

- Collect and showcase EJ-related PEL exemplary practices on the EJ, PEL, and the [State Practices Database](#) websites.
- Develop case studies highlighting how MPOs and DOTs can better collaborate on EJ data and information exchange at key decision points for both planning and environmental review.
- Integrate examples of PEL collaborations between MPOs and DOTs as part of the EJ training and technical assistance.

Considerations for Practitioners:

- Initiate working groups within the State between the MPOs and DOT to discuss how EJ-related data and information can be collected, shared, and maintained for the purpose of developing robust planning and environmental linkages.
- Share stories of success between MPOs and DOTs working collaboratively to evaluate and address EJ as part of long-range planning and project development (e.g. conferences, social media, awards submissions).

Benefits to Practitioners

[FHWA's PEL website](#) outlines many benefits to practitioners and agencies by incorporating both community and environmental goals in planning and carrying these considerations through project development. Additional benefits include:

- **Increased collaboration** between MPOs and State DOT.
- Interagency collaboration between local and State transportation agencies can lead to **"on-the-ground outcome benefits"** by creating a consistent, reliable exchange of EJ-related data and information so projects can be planned and designed to improve community quality of life, particularly for underserved and distressed populations.
- Consistent, reliable data exchange between planning and projects can lead to **better documentation** and **defensible project decisions**.
- Public involvement continuity between planning and project development can **improve relationships with communities**.



STRATEGIES

- ✓ Develop guidance on the consistency of data and information exchange between MPOs and DOT for environmental justice analysis.
- ✓ Develop training between MPOs and DOTs on environmental justice evaluation and analysis.
- ✓ Showcase examples of the benefits of environmental justice data and information collaboration between MPOs and DOTs





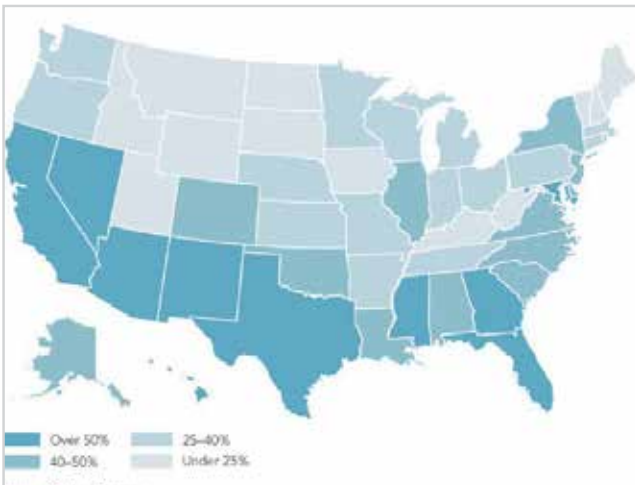
THE DEMOGRAPHICS OF EJ HOUSEHOLDS



KEY ISSUE

Examining the changing demographics across the U.S. and the way this affects how impacts on EJ households and communities are identified, located, and evaluated.

Minority Percent of Child Population, 2010



Source: <https://newrepublic.com/article/120370/five-graphics-show-why-post-white-america-already-here>
November 21, 2014

EJ ensures that traditionally underserved populations are included in the transportation decision-making process. The presentation from the Wichita MPO highlighted demographic shifts, including impacts of aging, racial identification, concentration of populations into discrete areas of metropolitan environments, and other factors associated with demographic changes. The focus of the session was to have the participants view demographics as a driver in the questions:

- Who will EJ serve?
- What are the impacts of the changing demographics?
- How will the environmental review process respond to demographic changes when considering EJ impacts?

The U.S. is changing rapidly in every dimension of society, with many areas of the Country moving to a majority-minority population status. As of 2015, Texas, Hawaii, California, and New Mexico are majority-minority States¹. Additionally, 13 of the largest 40 metropolitan areas and 11 percent of all counties in the United States are majority-minority.² Depending on changing demographic patterns, the entire U.S. is projected to be majority-minority between 2041 and 2046.³ Along with these changing demographic patterns, household compositions are changing as children either remain at home or return home after a post-secondary

¹ <http://www.nbcnews.com/id/8902484/#.V5oFRk1zWUk>

² <http://www.wsj.com/articles/population-of-nonwhites-grows-1466654403>

³ <http://www.globalpost.com/dispatch/news/regions/americas/united-states/121212/whites-be-minority-america-2043-Census>

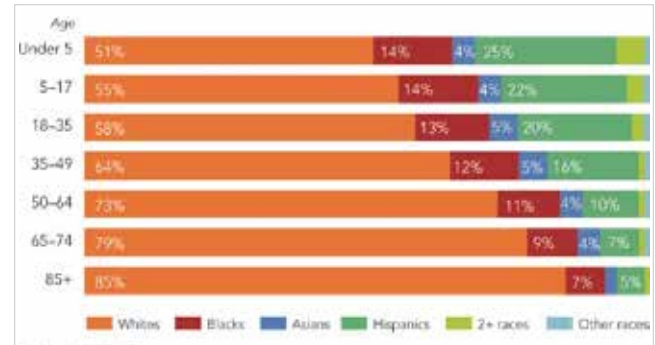


school education experience or because of difficult economic times.

In addition, more households now exist with two or more unrelated persons sharing a household. Key questions that arise include: What are the transportation needs of these households? How are the personal demographics of these households described? Millennials, the largest population group, are causing practitioners to rethink the choices on personal travel and the expectations of the goods delivery networks. Millennials are viewed as a group that is significantly less interested in personal auto travel. Baby boomers generally value private automobiles and the associated mobility more than millennials. These two generations are expected to make up the majority of the users of the transportation system for the next 20 years⁴, and their preferences will drive market forces and transportation demand services.

EJ is about making investments in transportation that address needs in a way that does not cause undue harm to underserved and disadvantaged individuals. The question is how will practitioners accurately identify these populations and account for their needs as part of the transportation decision-making process. Understanding these unique household dynamics and changing socioeconomic trends will be critical to prioritizing modal investments. In addition, a host of new market forces from "just in time" delivery services to driverless vehicles and their associated infrastructure, as well as changes in job skillsets have the potential to affect vulnerable, underserved members of society. All these considerations have ushered in the need to reexamine the information that needs to be collected, mapped, and analyzed to fully understand the benefits and burdens of transportation investment options on low-income and/or minority communities.

Cultural Generation Gap: Population Composition, by Age and Race, 2010



Source: <https://newrepublic.com/article/120370/five-graphics-show-why-post-white-america-already-here>
November 21, 2014

Current Practice

Based on discussions among the peer exchange participants, most agencies screen EJ populations through census data and compare it to a reference population such as the county average to begin the process of identifying areas of concern or hotspots. In addition, agencies use field observations and other public involvement activities to better locate, understand, and evaluate impacts of proposed transportation plans and projects. Agencies can use these practices to provide the necessary detailed analysis at the project level.

Practitioners are identifying new ways to locate and understand the populations that may be adversely affected by transportation decisions. For example, The Hampton Roads Transportation Planning Organization (HRTPO) spends time building trust in its neighborhoods and community organizations by showing up "when they didn't need anything." This relationship is strengthened through HRPTO's EJ Roundtable which provides an ongoing dialogue with community members on the unique role that transportation plays in the diverse communities that make up Hampton Roads, while assuring HRPTO considers EJ in programming and planning activities.

⁴ <http://d2dtl5nnlpr0r.cloudfront.net/tti.tamu.edu/documents/PRC-15-25F.pdf>



The Miami-Dade MPO also has an innovative approach for addressing the changing demographics in its analysis and actions that support EJ. In addition to the basic socio-economic data that the U.S. Census Bureau provides, the MPO is contributing to the Efficient Transportation Decision Making Process (ETDM) developed by Florida DOT and described on page 16. This process provides information on a level that aggregates to MPO-defined neighborhoods, which is important because Census tracts do not always capture the integrated nature of how individuals live together. In addition, the Miami-Dade MPO has developed Community Background Reports in partnership with Florida International University. These reports include geographic descriptions, community dynamics, and business profiles and can be used for projects and planning processes of all types and sizes. The combination of the ETDM output and the Community Background Reports have become the building blocks for the public involvement strategies for transportation planning activities at the Miami-Dade MPO.

While there are noteworthy practices to help identify the unique characteristics of communities, the question of what comprises an EJ community given the changing demographics in the U.S. is still an important consideration for future transportation decisions. A central question for practitioners to consider is how to best identify EJ populations and whether the traditional understanding of "minority community" and "low-income community" are accurate and meaningful in the pursuit of ensuring that transportation actions do not impose undue burdens on underserved and distressed populations.

Moving Forward

Today transportation planners are aware of the changing demographics of state and urbanized area populations. Current practice relies on census data output to conduct analyses based on racial designations, income, and the area's general population profile. Important questions about changing demographics are emerging around:

- What is the correct reference group?
- How will people self-identify in the future on Census surveys?
- How will the issue of minority populations becoming the numerical majority be addressed?

As larger populations become multi-racial, how will race be used as an EJ indicator? It is clear that a better understanding of the consequences of the changing demographics of U.S. households is in order to better address the impacts of transportation decisions on vulnerable populations. A series of well-designed research problem statements could begin to illuminate how transportation agencies may rethink the concept of EJ for the ultimate benefit of ensuring that transportation decisions do not impose hardships on these populations. An interagency task force could begin to layout the key issues that need to inform a new definitional construct that supports the intention of EO 12898. Practitioners also need to hear from their peers about tools, techniques, and outreach strategies that identify, locate, and evaluate issues of concern to traditionally underserved communities.

Peer exchange participants identified the following considerations:

Considerations for AASHTO:

- Participate in a working group with FHWA and other organizations (i.e., the National Association for Regional Councils (NARC), National Association for Developing Organization (NADO), and Association of Metropolitan Planning Organizations (AMPO)) to examine methodologies for identifying an EJ population, and consider issues impacting transportation-disadvantaged populations.



- Develop research problem statements for submittal to NCHRP to define "transportation-disadvantaged populations" and how the changing demographics in the U.S. are affected the way agencies and practitioners need to think about evaluating disproportionate impact evaluations. This includes examining how demographic changes affect basic travel demand assumptions and resulting traffic projections.
- Establish a working partnership with AMPO and NARC to identify resources at the State and MPO levels that can be shared to improve knowledge of communities to improve the success of and support for transportation investment decisions.

Considerations for FHWA:

- Continue to provide resources and technical assistance to help DOTs and MPOs better understand, identify, and address the transportation needs of EJ Communities.
- Continue the development of the EJ analysis course.
- Conduct periodic trainings, hosted by the State transportation agencies or an organized group of MPOs on updates for delivering analysis at the Metropolitan Transportation Planning (MTP) and project level associated with EJ impacts.
- Take peer exchange participants' concerns of changing demographics to the FHWA EJ working group for their understanding and review.

Considerations for Practitioners:

- Recognize the demographic changes occurring in their respective geographies and begin to define what constituents "transportation-disadvantaged" for the purpose of better identifying and addressing EJ impacts.
- Request assistance from FHWA on how to engage EJ communities, and how to determine disproportionately high and adverse impacts, and what constitutes mitigation.
- Submit effective practices through calls for papers, awards contests, and peer networks.

Benefits to Practitioners

In better understanding the demographic shifts in the U.S., there are several benefits to practitioners:

- Consistent guidance on how to identify the characteristics and transportation needs of EJ communities to **better inform the development of public involvement plans and outreach strategies**. This can result in receiving meaningful input into the planning and project development decision-making processes.
- As the changing demographic composition of the U.S. is better understood, **improvements to travel demand assumptions** can illuminate transportation needs and connect them to social and economic mobility considerations for EJ populations.
- Practitioners will be armed with **reliable, meaningful data and information** to inform plans, prioritization of projects, and design considerations for infrastructure that serves the mobility and access interests of the most vulnerable populations.



STRATEGIES

- ☑ Convene an interagency task force to discuss changing demographic trends in relationship to minority population groups.
- ☑ Research the characteristics of under-served and transportation-disadvantaged populations.
- ☑ Research how demographic changes are reshaping the environmental justice evaluation approach, including how to identify disproportionately high and adverse impacts.
- ☑ Share effective practices with peers.





EJ DATA AND ANALYSIS



KEY ISSUE

Identifying challenges and opportunities associated with collecting EJ data and analyzing this data with the appropriate methods and tools.



WEBINAR PARTICIPANT POLL:
Would your agency benefit from more guidance on how to determine disproportionate impacts as part of planning/project delivery?

YES

92%

NO

2%

UNSURE

5%

A variety of data sources and evaluation methods were highlighted throughout the peer exchange in several of the participants' presentations. During the breakout and action planning sessions, participants identified the need to develop better tools for analysis, create more consistency in evaluation methods, define standard best practices and data sources, and the desire for additional guidance on user-generated data and project re-evaluations. Many participants expressed satisfaction at having the opportunity to learn about innovative ways of collecting and analyzing data using GIS and web-based technology during the peer exchange. Given recent technological advancements and ongoing demographic shifts, peer exchange participants also identified the need for data sources, analytical methods, and tools to adapt to these changes.



Current Practice

One of the core principles of EJ includes preventing “the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.”¹ To address this principle, it is critical to evaluate benefits and burdens associated with a transportation action. Both quantitative and qualitative methodologies can be employed to assess benefits and burdens, but this task requires access to data and tools for robust analysis. The Transportation Research Board’s (TRB’s) National Cooperative Highway Research Program (NCHRP) [Report 532: Effective Methods for Environmental Justice Assessment](#), completed in 2004, was created to provide practitioners with a comprehensive analytical framework to identify EJ populations and assess disproportionate impacts throughout planning and project development. AASHTO’s Center for Environmental Excellence [highlights two case studies](#) from Ohio DOT and Pennsylvania DOT that showcase process guidance for identifying and analyzing EJ impacts during the project development decision-making phase. Additionally, in 2011, FHWA issued a memo titled [Guidance on Environmental Justice and NEPA](#).

¹ http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/

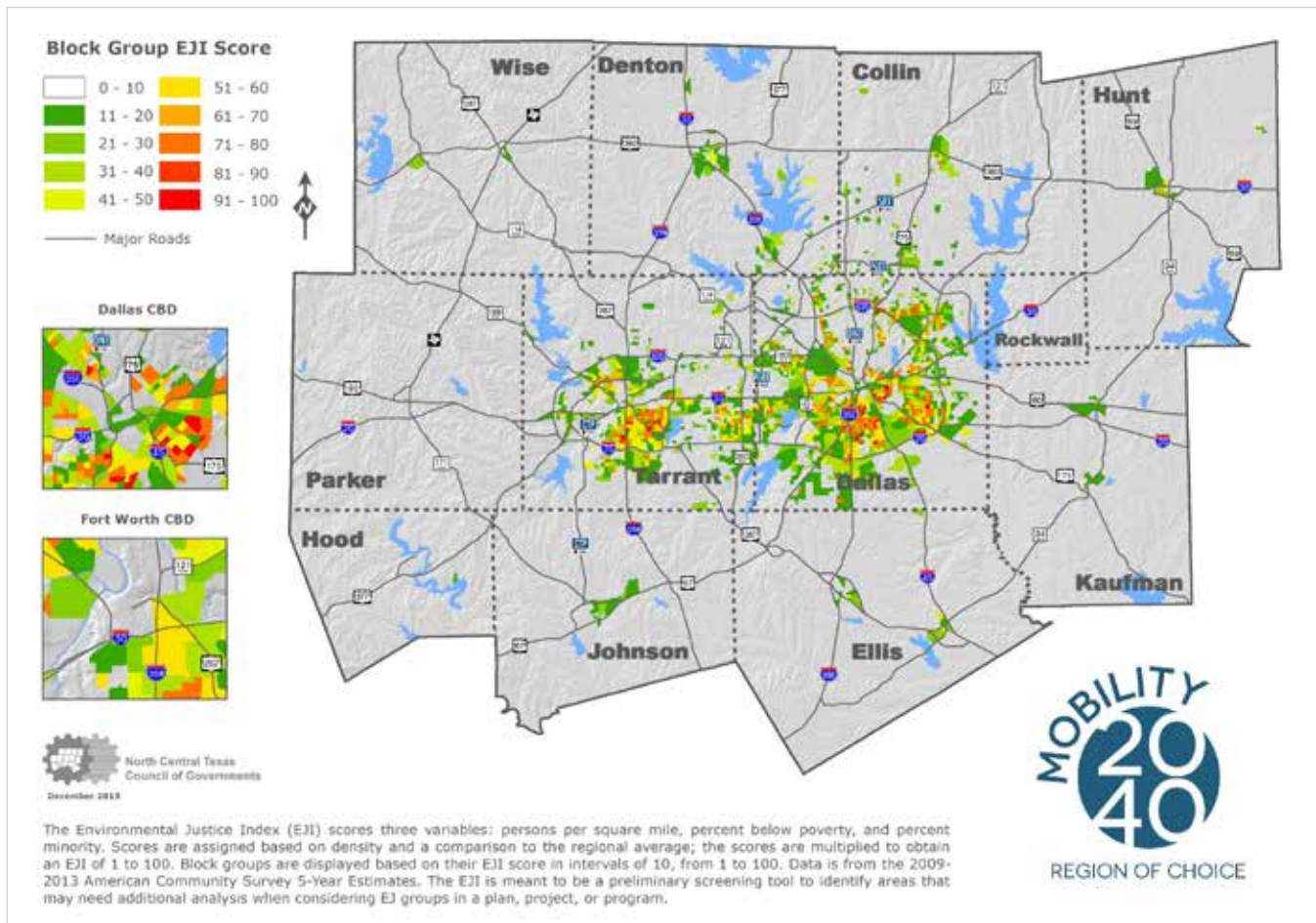
This guidance describes the process to address EJ during the NEPA review, including documentation requirements. It supplements the FHWA Technical Advisory 6640.8A, which provides guidance for documenting the potential social, economic, and environmental impacts considered in the selection and implementation of highway projects.

DOT and MPO participants indicated they currently use a mix of qualitative and quantitative data sources to evaluate EJ impacts. Primary data sources include local governments, field reconnaissance, aerial photo interpretation, information from public engagement activities, Title VI assurances and policy statements, and right-of-way discussions with land owners. Participants also identified difficulties in obtaining data at a local level because the overgeneralization of constituent demographics on the part of local government. Additional sources include U.S. Census Bureau data, including the 2010 American Community Survey, employment population forecasts, and travel demand models. While there are many high-quality data sources, the differences in geographic, spatial, and temporal scale make data aggregation challenging.

AASHTO has created a series of Census Transportation Planning Products (CTPP) based on 2006–2010 five-year American Community Survey (ACS) data designed to help transportation analysts and planners understand commuting patterns. [The CTPP Software](#) allows practitioners to access nearly 350 GB of data consisting of almost 200 residence-based tables, 115 workplace-based tables and 39 flow tables (home to work) for more than 325,000 geographies.



NCTCOG's Environmental Justice Index



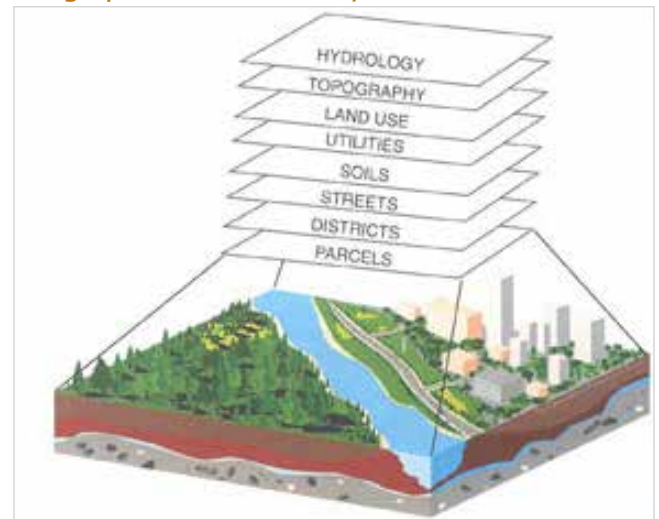
Source: North Central Texas Council of Government Peer Exchange Presentation.
February 18, 2016



DOTs and MPOs currently employ a variety of approaches to data visualization and analysis. Both desktop and web-based GIS are widely used to visualize the geography of EJ populations and evaluate impacts on them. Participants have encountered difficulties in incorporating qualitative data from surveys and oral outreach into the same workflow and information system as more quantitative data, including travel time and distance to services, performance indicators (access to jobs by transit/car, congestion levels, travel time mobility and accessibility), and other metrics.

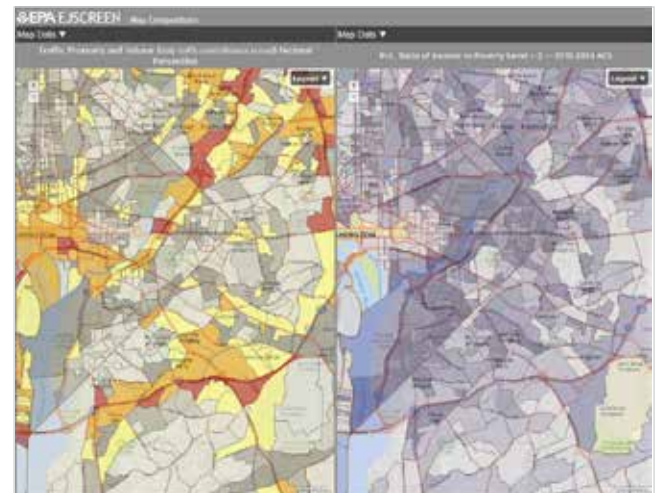
MPOs and DOTs also use GIS to understand the spatial relationships of these populations to other environmental and demographic factors. The North Central Texas Council of Governments (NCTCOG) is notable in its use of GIS to map concentrations of EJ populations by Census block group and compare it to the regional average to create a regional EJ index (see page 25). The data and results are accessed through a customized user interface that is also capable of displaying data on other traditionally underserved populations. See "The Role of EJ in Transportation Decision-making" for more details on NCTCOG's process. EPA's office of Enforcement and Compliance Assistance presented an overview of EPA's EJScreen during the peer exchange event. EJScreen is a web-based, nationally consistent EJ screening and mapping tool based on 12 environmental indicators, intended to be a starting point for identifying EJ populations and potential impacts. The Ohio DOT (ODOT) shared how it uses EJScreen during the early stages of project development to identify potential EJ communities and inform public engagement activities.

Geographic Information Systems (GIS)



Source: <https://www.environment.fhwa.dot.gov/integ/resources.asp>

EPA's EJScreen



Source: https://ejscreen.epa.gov/mapper/help/ejscreen_help.pdf



One of the three principles of EJ includes avoiding, minimizing, or mitigating disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority and low-income populations. Participants expressed a lack of clarity on how to ascertain the severity of impacts, especially with regard to the spatial scale at which affected minority and percent low-income populations are compared to a reference population, whether it be local, county, regional, state, or any variety of spatial contexts in between. Agencies can use field observations and other public involvement activities to provide the necessary detailed analysis at the project level. Participants also noted challenges with the interpretation of disproportionate impacts and indicated that there is a lack of national consistency in impact determinations. However, it is important to note the FHWA's Guidance on Environmental Justice and NEPA states that practitioners should "compare the impacts on the minority and/or low-income populations with respect to the impacts on the overall population within the project area. Fair distribution of the beneficial and adverse effects of the proposed action is the desired outcome." Lastly, practitioners have found that the tools and methods with which EJ and Title VI impacts are assessed are similar despite their distinct legal standing². The EJ Executive Order is not a statutory authority, but is informed by the principles of nondiscrimination contained in Title VI of the Civil Rights Act of 1964 and other environmental and transportation regulations, while Title VI is a Federal statute.

² <https://www.epa.gov/sites/production/files/2015-02/documents/title-vi-ej-comparison.pdf>, page 1

Moving Forward

Peer exchange participants identified several strategies to improve all phases of the EJ impact evaluation process, from data collection through evaluation results. There was an overarching interest in developing a toolbox to standardize the evaluation of disproportionate impacts in terms of both long-term planning and project development. This finding was reinforced by webinar participants' input to the poll question asking if their agency would benefit from more guidance on how to determine disproportionate impacts. Almost all webinar participants responded yes to this question, which clearly signals this as a critical area of attention for improving the practice. Another important focus of action is developing common best management practices and guidance on the various data sources available and how to use them to effectively and properly identify disproportionate impacts. Participants noted that changing demographics may complicate future efforts to identify disproportionate impacts.

Participants also expressed interest in leveraging web-based mapping tools to crowdsource demographic data. Both Hampton Roads TPO and the Baltimore Metropolitan Council (BMC) shared their successes in leveraging crowdsourced data to inform the long-range planning process.



Peer exchanging participants identified the following considerations:

Considerations for AASHTO:

- Develop a research statement to submit to NCHRP to synthesize best practices on how to aggregate and synthesize various data sources into appropriate geographic, spatial, and temporal scales for EJ analysis.
- Develop a research statement to submit to NCHRP providing guidance on how to determine disproportionately high and adverse impacts on EJ populations (update NCHRP 532).

Considerations for FHWA:

- Provide resources on how to use Census data and collect other demographic data to inform EJ evaluation as part of the transportation decision-making process (e.g., EJScreen).
- Continue to provide resources and technical assistance to help DOTs and MPOs effectively use demographic data throughout all phases of transportation decisionmaking.
- Provide examples of good practice in EJ analysis methodologies.

Considerations for Practitioners:

- Share lessons learned about how to effectively use different data sources and aggregate them to appropriate scales of analysis for EJ evaluation.
- Train staff and consultants in spatial analysis and best practices in the identification of EJ populations and disproportionately high and adverse impacts.

Benefits to Practitioners

Important benefits to practitioners are described below.

- Clear guidance will allow practitioners to focus on obtaining quality data and will provide certainty that the data have been properly analyzed and interpreted.
- The development of a universal tool would allow practitioners to **evaluate EJ impacts more efficiently and effectively** and provide a singular standard of disproportionate impacts across States and FHWA divisions.



STRATEGIES

- ✓ Develop guidance on the consistency of data and information exchange between MPOs and DOTs for environmental justice analysis.
- ✓ Research how transportation agencies are determining disproportionate impacts and develop guidance to reflect best practices.
- ✓ Develop analytical tool(s) to standardize the evaluation of disproportionate impacts on environmental justice communities while allowing calibration/flexibility for project-specific information.
- ✓ Adapt methods to changing demographic data and explore new methods of obtaining data.





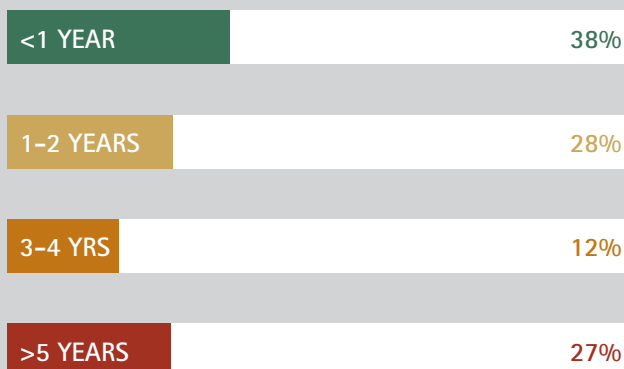
TRAINING



KEY ISSUE

Delivering the knowledge and skills needed by transportation practitioners to successfully address EJ as part of all phases of the transportation decision-making process.

WEBINAR PARTICIPANT POLL: Registrants time since last training course:



The peer exchange provided an opportunity for participants to work in small groups to explore knowledge (what to), skills (how to), and motivation (why to) to support advancement of EJ in transportation decision-making. All three dimensions underpin a successful training program. The groups were instructed by the following information:

The ultimate measure of the effectiveness of educating someone is to observe the person behaving in a way that reflects what has been learned. An effective training program includes three elements:

- desire/motivation
- knowledge
- skill

Without desire, there would be no motivation to change and improve. Without knowledge, it would be difficult to know why a change is needed or what to change. Without skill, it would not be possible to carry out a course of correction. Therefore all three elements must be part of thinking about training.

Peer exchange participants consulted in small groups to identify knowledge, skills, and motivation factors to inform an EJ training program. Following the break-out session, peer exchange participants reported that while training could be expensive, having an untrained staff could be more costly



KNOWLEDGE:

What information is needed to better address EJ as part of planning and project development?

- Environmental justice ethics
- FHWA, DOTs, and MPOs roles and responsibilities
- Successful and unsuccessful case studies
- History of EJ so we are informed of its importance in transportation decision-making
- Disproportionate effect, are you doing harm intentionally or unintentionally (directly or indirectly)
- Knowing who does what (resources and partners)
- Environmental justice applies to all stages of decision-making
- What does disproportionate effect mean at different levels (systems level, project level): how does context change the effect determination?
- Understand what data sources are available and how to gather the information and apply it to decision-making processes
- Better understanding of protected groups under Title VI and covered groups under EJ

SKILLS:

What do we need to do to apply the knowledge we have acquired?

- Identification and development of leadership champions
- Examples, case studies of effective engagement by FHWA Division with MPOs and DOTs
- Identify the right skill sets to do the job correctly
- Household characteristics analysis, defining households/populations appropriately
- Understand the community context
- Outreach and communication skills
- What are tools and how to use tools—does staff have analytical capabilities, communications skills, etc.
- Ability to communicate importance to senior leaders
- Need more than checklists, need team of experts, need interactive piece that makes the point to improve skill development.

MOTIVATION:

What strategies can agency leadership employ to change behaviors within an organization?

- Institutional support
- More resources to support programs
- Cash incentive, cost savings, or funding costs for transportation projects due to a lack of program or proper implementation
- Learn more in peer exchanges
- Demonstrate why it is the right thing to do and makes sense
- What would happen if you do not do EJ
- Interdisciplinary Project Teams would benefit from attending training together

in the long run. They also found that existing training, when available, tends not to focus on the “Why of EJ,” but rather on the regulations. Further, they found a lack of consistency in who was being trained, the content of that training, and the frequency of available training.

When peer exchange participants were asked what knowledge they felt they needed to better address EJ as part of planning and project development, they responded “successful and unsuccessful (EJ strategy) learning

opportunities” and a better understanding of “what builds internal capacity” through mentors, coaching, and the retention of institutional knowledge. Some participants felt that universities needed to play a role. Others wanted to know specifics such as what data are needed, the data source, and what are the implications of using these data to gain a better understanding of protected groups. Participants expressed the need for expertise and sensitivity, rather than a mere yes-no checklist.



Current Practice

While resources, tools, and reference materials are available to identify and address EJ populations' interests and needs, peer exchange participants expressed concern that the training to support the implementation of these resources is either not available or delivered inconsistently. Currently, FHWA is in the process of updating the NHI Fundamentals Environmental Justice course and converting it to a web-based training. FHWA is also developing a two-day, instructor-led EJ Analysis course that will build on the knowledge obtained in the Fundamentals of EJ course. FHWA also provides technical assistance as requested for topics including EJ through the FHWA Resource Centers (see EJ Resources).

At the State level, some DOTs develop their own unique training programs to address EJ in planning and project development. For example, as part of Caltrans' Environmental Planner Academy, hundreds of existing and new employees receive ongoing training. Its [Standard Environmental Reference](#) contains all its procedures online, including guidance on CIA and EJ. Caltrans also delivers [On Demand Training](#) for practitioners to learn about a range of environmental topics. Other state agencies such as Florida DOT sponsor ongoing training through its ETDM process, including specific guidance and courses on [socio-cultural effects](#) (its title for CIA) and public involvement.

It is unclear without further research how many other transportation agencies, including State DOTs, develop training programs around topics of importance to identify and address EJ considerations as part of planning and project development. What is clear is that the last decade of overall economic decline, compounded by reduced funding for transportation infrastructure improvements, has affected staff resources. Through attrition rates and layoffs in certain states, institutional knowledge has been lost or is fledgling at best. The economic climate has also affected the private sector with cutbacks on staff to save core service lines. These circumstances illustrate concerns around practitioner knowledge and skills to identify and address EJ as part of transportation decision-making.

The first roads and bridges built as part of the Interstate system turn 50 years old this decade. Replacing, updating, and expanding this system will occur over the next 15 to 20 years, and much of this action will occur in communities that were affected 50 years ago. The indirect and cumulative impacts associated with these actions has become a beacon for lawsuits, and these are all important issues to consider when thinking about how to move forward with training opportunities to ensure that transportation practitioners are ready for work.

Moving Forward

Peer exchange participants identified the need to provide training for both practitioners and consultants to ensure best project outcomes. State DOTs could consider allotting more training seats to consultants to reduce costs. While agencies are often unable to go out of state because of travel restrictions, consultants may have less stringent travel restrictions and may be able to provide the additional participants necessary to meet the minimum audience size requirement for a training session. State DOTs could explore strategies to allow more non governmental staff to attend relevant NHI courses. Another important consideration moving forward connects to the peer network focus area, and suggests the need for more opportunities for practitioners to learn from each other through conferences, workshops, and virtual forums. For example, between 1998 and 2006, CIA conferences were held regionally and nationally. These events provided important and invaluable learning opportunities for practitioners. In addition, a CIA training course was developed in 2003 with several pilots and courses delivered between 2004 through 2006 to numerous state DOTs. Information collected from the webinar registrants suggests that most participants have been trained in the last year or it has been more than five years since they were trained. This finding further substantiates the need for additional training opportunities.



Peer exchanging participants identified the following considerations:

Considerations for AASHTO:

- Conduct a survey of member states to ascertain EJ-related training needs.
- Collaborate with other transportation organizations to co-sponsor a biennial EJ conference.
- Include mini training opportunities at SCOP and SCOE annual meetings.
- Host annual webinars of EJ-related topics.

Considerations for FHWA:

- Continue the expeditious updates to the EJ NHI 2-day instructor led course and the development of the EJ Fundamentals web-based training course.
- Continue to inform transportation agencies of Resource Center technical assistance support services.

Considerations for Practitioners:

- State DOTs could explore the feasibility of allowing more consultants to attend NHI training courses to reduce the cost to states.
- Explore web-based training offerings to help offset travel expenditures.
- Make the case of the importance of training for expediting project delivery.
- Sponsor the development of an EJ and CIA course for their agencies.

Benefits to Practitioners

Benefits to practitioners include:

- Well-trained practitioners can **confidently undertake** their work to consistently apply EJ procedures, thereby increasing the quality of plans and projects.
- Providing more opportunities for agencies and their consultants to receive training through new courses and a variety of training opportunities will create more opportunities to learn from others and **improve the overall state of the practice in the application of EJ procedures.**
- Better project outcomes should also be an expected benefit.



STRATEGIES

- ✓ Support training through conferences, workshops, and virtual forums.
- ✓ Ensure a variety of courses are available: partner with Association of Metropolitan Planning Organizations (AMPO), American Planning Association (APA), National Association of Environmental Professionals (NAEP), National Association of City Transportation Officials (NACTO), American Public Transportation Association (APTA), Conference of Minority Transportation Officials (COMTO), National Transit Institute (NTI), National Highway Institute (NHI), and Transportation Research Board (TRB) for training opportunities.
- ✓ Revisit the training business model.





COMMUNITY ENGAGEMENT



KEY ISSUE

Understanding how to conduct meaningful engagement of community members to identify EJ populations and understanding the potential impacts from a transportation plan or project.

WEBINAR PARTICIPANT POLL: Have you created and/or developed community characteristic reports for your local communities/neighborhoods?

YES 34%

NO 56%

UNSURE 10%

Meaningful engagement of EJ communities is one of the three EJ guiding principles expressed in the EJ Executive Order as "To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process." Peer exchange participants shared many examples of what works well in practice, including how to identify communities and their leaders, opinion makers, and spokesmen. Participants also referenced the "difference between reactive and pro-active approaches," including the importance of going to the public rather than expecting them to come to the agency. They discussed the importance of early and ongoing involvement with the public, recognizing the value of tribal and other community liaisons, and understanding what tools should be used and when to use them. Participants listed multiple strategies that would help them do a better job of meaningfully engaging EJ communities—taking time to get to know the community, opening a satellite office in the community on large projects, holding meetings inside not outside the community, having more access to interpreters and translators, being appropriately attired for their audience, and participating in more peer exchanges. Participants indicated that their transportation agency would benefit from a standing EJ public involvement officers and/or public roundtable, and from staff's personal interaction and getting to know the community. Another key issue raised was the



need to collaborate with other agencies, including workforce alliances, cities and counties, chambers of commerce, colleges and universities, aldermen, disability advocacy groups, agencies on aging, and other peers to assist with public outreach.

Current Practice

The information age and social media have opened up conduits of communication that in many cases have amplified the voice of the public. However, many challenges still exist to overcome in terms of locating EJ communities and fully understanding how to communicate in a culturally sensitive manner. Questions about how to identify the community, its boundaries, and its leaders continue. These questions illustrate the critical nexus between GIS census data analysis and field discovery to inform the appropriate outreach strategies. Miami-Dade's [Transportation Outreach Planner](#) reflects the intertwined nature of GIS data analysis and community background information to suggest the most appropriate outreach strategies. In addition, new tools like EPA's [EJScreen](#) can be used as a starting point for outreach and engagement. Another example of outreach for a long-range plan update process comes from BMC and its Maximize 2040 plan. BMC uses the [Vulnerable Population Index](#) tool to identify areas of concern to focus outreach efforts, including community festivals, a parking day (where parking lots are used as a place to discuss transportation issues), and other locations through the city such as fresh food drops, food markets, malls, and train stations. Also, HRTPO uses an [EJ Methodology Tool](#) to identify areas of concern. Information is collected about these areas of concern to inform public outreach strategies. In addition, HRTPO created an EJ Roundtable of more than 90 local leaders, community members, and other interested stakeholders representing traditionally underserved and disadvantaged groups to assist with developing policies and approaches to better connect with EJ communities.



What works well for your agency in terms of engaging environmental justice populations in meaningful engagements?

Peer Exchange Responses:

- Multiple open houses
- Using videos
- One-on-one gatherings with 15-20 people
- Learning about communities and their histories and cultures
- Guided outreach
- Showing respect for others
- Going through the community's locally elected leader (e.g. Alderman, City Councilor, County Commissioner, etc.)
- Identifying the community gatekeeper(s)
- Having a project office in the project area
- Spending time in the community
- Identifying their preferred mode of communication
- Using their preferred media to reach them
- Building relationships with members of the community

It is important to note that many resources are available to aid practitioners in developing public involvement plans and approaches for EJ communities. For example, [NCHRP Report 710, Practical Approaches for Involving Traditionally Underserved Populations in Transportation Decision-making](#) and [FHWA's How to Engage Low-Literacy and Limited-English-Proficiency Populations in Transportation Decision-making](#) document best practices and identify outreach techniques for these populations. [FHWA's Public Involvement website](#) contains numerous resources, references, and case studies to assist practitioners with knowledge and skill building endeavors. Of particular interest to State DOTs is [FHWA's Public Involvement Reference tool](#), which is organized so the user can find examples of public involvement plans for statewide plans, NEPA studies, EJ policies, Title VI, limited English populations, and other issues.



Moving Forward

While much has been accomplished in terms of advancing the practice in community engagement and public involvement, questions continue:

- What constitutes “meaningful” involvement?
- How do we determine how far to go in assessing disproportionately high and adverse impacts, adequate mitigation, and benefits and burdens?
- How can we better understand the implications of the data and how much do we need to collect?
- What data should we be collecting?
- How do we ensure that communities feel heard and their input used?
- How do we get the public to come to our meetings?
- How do we effectively engage the affected populations that are directly and indirectly affected?

When participants were asked what they needed to do to better engage EJ populations, they focused on issues related to “more time to get to know the community.” They encouraged satellite offices in areas where there are large projects and more on-site meetings in communities affected by projects. Participants strongly advocated going to where the communities live and work as well as the need for cultural sensitivity training. Peer exchange participants identified several strategies to improve community engagement practices, including identifying best practices for engaging different population groups based on socio-cultural characteristics and better tools to identify community characteristics for outreach purposes. Participants were also interested in understanding the skills needed to conduct meaningful engagement. The webinar also provided interesting findings in terms of gauging the practice of developing community characteristics reports for different community-defined geographies. An opportunity exists to provide more resources and case studies of effective practice on how to develop these studies for the benefit of EJ evaluations and engagement of affected EJ communities.



Peer exchanging participants identified the following considerations:

Considerations for AASHTO:

- Add public involvement and community engagement to the [Communities of Practice](#).
- Add public involvement and community engagement as an environmental topics tab with appropriate information on the current practice by State DOTs.
- Develop a research statement related to information technology tools that can be used to help identify the best outreach strategies for EJ communities.
- Survey member states to identify key challenges with conducting meaningful community engagement. The survey results can inform future SCOE or SCOP research projects, including a practitioner's guide to showcase how to develop community characteristics reports in support of EJ outreach and evaluations.

Considerations for FHWA:

- Provide resource information on EJ screening tools and how to apply them in the transportation decision-making process.
- Develop an engagement strategy with different socio-cultural and economic characteristics, such as "Developing and Advancing Effective Public Involvement and EJ Strategies for Rural and Small Communities."
- Implement the "Improved Engagement through Technology Tools & Techniques" initiative to improve public involvement practices through sharing of peer practices.
- Continue to collect effective practice case studies of innovative community engagement and make the information publicly available.

Considerations for Practitioners:

- Get to know the communities through listening to their stories.
- Develop community characteristics reports for each project.
- Identify public involvement strategies by using information from community characteristics reports.

Benefits to Practitioners

Benefits to practitioners include the following:

- Advancing community engagement **builds trust that can be maintained throughout the project** and beyond.
- Knowing how to work effectively with affected EJ communities can **illuminate issues** that need to be addressed as part of the planning and project development process.
- By listening to the community's perspectives, **appropriate solutions can be identified** to address EJ issues.



STRATEGIES

- ✓ Identify best practices for engaging different environmental justice populations based on social and cultural differences.
- ✓ Identify useful tools as a starting point for developing outreach strategies.
- ✓ Review staff skills and competencies necessary to conduct meaningful community engagement.



EMERGING ISSUES



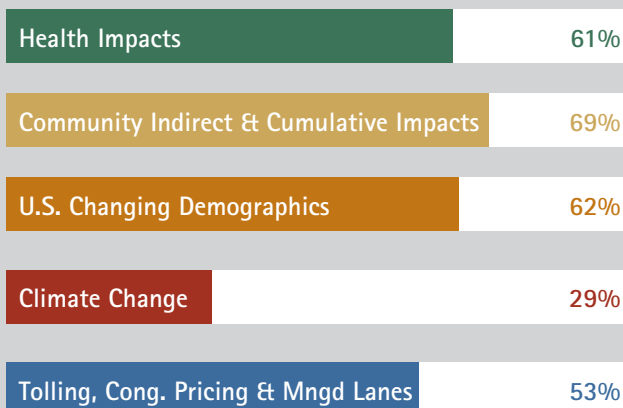
KEY ISSUE

While the eight focus areas will help move transportation agencies forward to address 21st century transportation issues, many emerging issues will continue to shape the state of the practice for incorporating EJ in transportation decision-making".

WEBINAR PARTICIPANT POLL:

What are the three most critical emerging issues that should be addressed in environmental justice transportation decision-making?

(Multiple answers allowed)



During the peer exchange event, several emerging issues were discussed, including health impacts; community indirect and cumulative effects (ICE); the changing demographics of the U.S.; and tolling, congestion pricing, and managed lanes. In fact, the changing demographics of the U.S. became one of the eight focus areas of the Environmental Justice Roadmap. One additional emerging issue of importance to transportation agencies relates to climate change and resiliency. During the webinar event, participants were asked to select the three most critical emerging issues that should be addressed in EJ transportation decision-making. The top three issues were ICE, the changing demographics of the U.S., and health impacts, followed closely by tolling. Each one of these emerging issues is briefly described below with considerations that can drive research ideas.

Indirect and Cumulative Effects (ICE) for EJ communities

While ICE has been part of the decision-making environmental review process for projects for decades, much of the focus has been around understanding the ICE associated with natural systems and water quality. Less attention has been devoted to understanding ICE related to human environment impacts at the community level. As the Interstate system ages, DOTs are finding themselves back in communities where initial construction took place. Currently, ICE analysis is surfacing as an issue for transportation agencies working to rebuild parts of the Interstate. ICE has also become a basis of Title VI complaints in terms of questioning the due diligence and hard look requirements of NEPA impact analyses. Communities have social, cultural, and economic systems much like the ecology of our natural systems. These community systems are complex, and the practitioner needs to understand the histories of these communities and how they are currently functioning to evaluate ICE. Research to synthesize legal case studies would be useful to identify key issues important to include in ICE analyses. This information could be valuable in the development of better guidance to improve community ICE for EJ analysis.

U.S. Changing Demographics

The U.S. is projected to become a majority-minority population in less than 30 years. In addition, changing low-income population demographics are driving new considerations of how EJ households, populations, and communities are identified. The changing demographics of the U.S. is one of the eight focus areas in the Environmental Justice Roadmap. This chapter, beginning on page 20 describes the key questions and strategies to address this changing decision-making context for EJ. More understanding is needed on how to identify EJ population groups in relationship to changing demographics. More knowledge and expertise are also needed to better understand travel characteristics and transportation needs of EJ populations. Research that examines the characteristics of underserved and transportation-disadvantaged populations and how demographic changes are reshaping the EJ evaluation approach is needed to better identify disproportionately high and adverse impacts.

Health Impacts and EJ Populations

There are several connections between transportation and health including air quality; vehicular, bike, and pedestrian safety; access to healthcare, jobs, educational opportunities, and issues related to accommodating active transportation (non-motorized transportation). Recently, TRB announced health as one of three top focus areas, which highlights the importance of the topic to the transportation industry.

Research on understanding the unique health issues faced by EJ populations will assist in developing methods of assessment that can be incorporated into planning, programing and policy development as well community impact and environmental review studies.

Tolling, Congestion Pricing and Managed Lanes

As transportation funding has become more constrained, the way infrastructure is funded to meet demand is changing. Tolling, congestion pricing, and managed lanes are strategies to raise revenue and manage congestion. These strategies have financial, geographic,

and mobility implications for EJ populations. Key issues for EJ populations include access to jobs, housing, and other quality of life amenities. Financial and economic considerations are critical to addressing EJ for tolling and congestion pricing projects. While there is some literature and a forthcoming National Highway Research Program Project ([NCHRP 08-100- Environmental Justice Analyses When Considering Toll Implementation or Rate Changes](#)) dedicated to understanding these issues, there is a need to build capacity in transportation agencies on how to incorporate the findings from the literature into the transportation decision-making process. Another potential area of interest for this topic involves synthesizing post-implementation travel data for EJ populations to better understand how tolling and congestion pricing affects access to jobs, housing, and other amenities. This information could provide insight into prioritization criteria for evaluating different investment alternatives and strategies.

Climate Change and Resiliency

Sea levels are rising, severe storms are becoming more frequent, and temperatures are rising across the globe. These events are particularly affecting vulnerable populations as are adaptation strategies to address them. Numerous guides on regional planning for emergency events, resources that describe evacuation plans and procedures, and resources that provide guidance on developing resilient infrastructure are available. However, specific information on how climate change consequences affect EJ populations in terms of transportation issues are not necessarily being thoroughly investigated. Research to examine the hot spots of climate change effects, combined with vulnerable population demographics, could yield useful guidance on incorporating the effects of climate change on vulnerable populations as part of transportation decision-making. This research could also reveal patterns in the equity (or lack thereof) as it relates to disaster response and infrastructure improvements associated with resiliency to climate change.

CONCLUSIONS

While a good foundation of effective practices and lessons learned exists, work is needed to meet the transportation needs of the 21st Century in a way that does not place an undue burden on vulnerable and distressed populations.

Recently, USDOT Secretary Foxx spoke on National Public Radio on the "Legacy of the U.S. Highway System," acknowledging that many of our early built highways divided communities and left them socially and economically isolated and distressed (March 31, 2016). He noted that since that era, significant improvements have been made in the way transportation projects are planned and designed. With the Interstate system aging into repair and replacement, an opportunity exists to help rebuild these connections by investing in infrastructure that helps isolated, poor and minority communities get access to reliable and safe transportation. This goal has many connections to the emerging issues of ICE; changing demographics of the U.S.; health; tolling, congestion pricing, and managed lanes; and climate change. Clearly, the intent of the EJ Executive Order is to ensure that transportation plans and projects are developed with meaningful engagement of affected EJ populations, and that the benefits and burdens of proposed projects on these populations are considered as part of final investment decisions. With that intention, the eight key focus areas and associated strategies and considerations comprising the Environmental Justice Roadmap have been presented.

This Environmental Justice Roadmap is provided to guide the partnership between AASHTO, FHWA, and agency practitioners to improve the state of the practice by addressing EJ in all phases of transportation decision-making with a focus on planning and project development. It provides a single point of reference to stimulate collaboration, momentum, and commitment around numerous strategies to make a true difference in honoring the intent of EO 12898.

LIST OF RESOURCES

ENVIRONMENTAL JUSTICE (EJ)

- Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations": <http://www.archives.gov/federal-register/executive-orders/pdf/12898.pdf>
- US DOT Environmental Justice Order 5610.2a (May 2012): http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/orders/order_56102a
- USDOT Environmental Justice Strategy: http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/dot_ej_strategy
- FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Order 6640.23A (June 2012): <https://www.fhwa.dot.gov/legregs/directives/orders/664023a.cfm>
- Memorandum of Understanding on Environmental Justice and Executive Order 12898 (August 2011): <http://www3.epa.gov/environmentaljustice/resources/publications/interagency/ej-mou-2011-08.pdf>
- FHWA-HEP-15-035, Environmental Justice Reference Guide: http://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/index.cfm

TITLE VI

- Title VI of the Civil Rights Act of 1964: <http://www.justice.gov/crt/title-vi-civil-rights-act-1964-42-usc-2000d-et-seq>
- 23 CFR 200, Title VI Program and Related Statutes—Implementation and Review Procedures: <http://www.fhwa.dot.gov/legregs/directives/fapg/cfr200.htm>
- FHWA Title VI Program: <http://www.fhwa.dot.gov/civilrights/programs/tvi.cfm>
- FHWA Title VI and Environmental Justice Fact Sheet: http://www.fhwa.dot.gov/environment/environmental_justice/facts

LIMITED ENGLISH PROFICIENCY (LEP)

- Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency": <http://www.lep.gov/13166/eo13166.html>
- Policy Guidance Concerning Recipients' Responsibilities to Limited English Proficient (LEP) Persons, Federal Register Volume 70, Number 239, 12/14/2005: <https://www.gpo.gov/fdsys/pkg/FR-2005-12-14/pdf/05-23972.pdf>

NEPA

- National Environmental Policy Act of 1969: <http://www.epa.gov/nepa>
- Environmental Justice Considerations in the NEPA Process: <http://www.epa.gov/nepa/environmental-justice-considerations-national-environmental-policy-act-process>
- National Environmental Policy Act (NEPA)/EJ Resource Compendium: <http://www3.epa.gov/environmentaljustice/resources/publications/interagency/nepa-ej-compendium.pdf>
- FHWA Guidance on Environmental Justice and NEPA—Memo to the Field (December 2011): https://www.environment.fhwa.dot.gov/projdev/guidance_ej_nepa.asp

OTHER LEGISLATION

- Public Law 91-646, Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended: http://www.fhwa.dot.gov/real_estate/publications/act.cfm
- 23 USC 134, Metropolitan transportation planning: <https://www.gpo.gov/fdsys/pkg/USCODE-2011-title23/html/USCODE-2011-title23-chap1-sec134.htm>
- 23 USC 135 Statewide transportation planning: <https://www.gpo.gov/fdsys/pkg/USCODE-2011-title23/html/USCODE-2011-title23-chap1-sec135.htm>
- 23 USC 109(h), Federal Highway Aid, Standards to avoid adverse impacts: <https://www.law.cornell.edu/uscode/text/23/109>

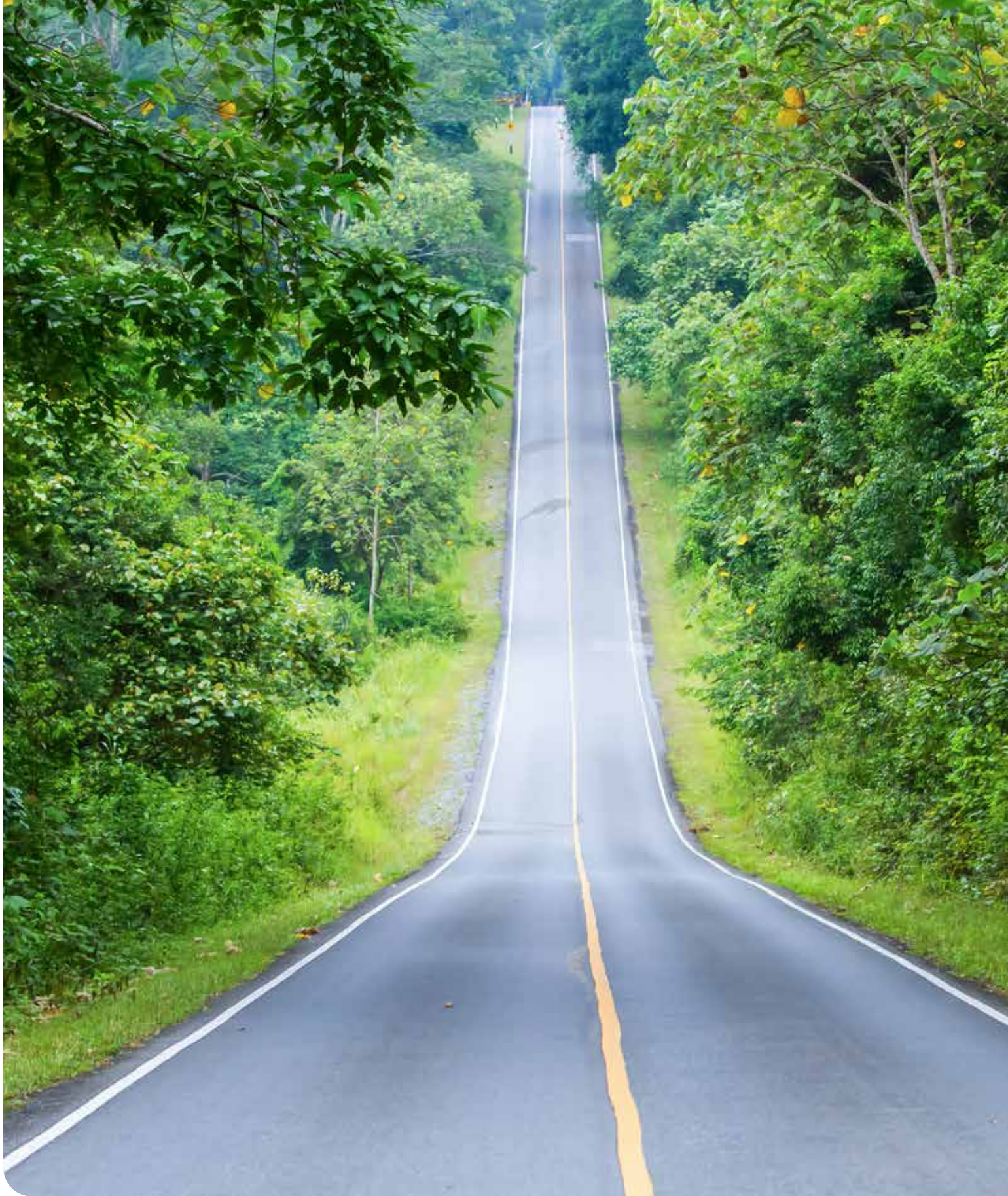
EFFECTIVE PRACTICES, CASE STUDIES AND AGENCY GUIDANCE

- **FHWA Environmental Justice Webpage:** http://www.fhwa.dot.gov/environment/environmental_justice
 - From this landing page you can access a variety of information, including case studies, effective practices, training, resources, and key contacts.
- **Environmental Justice Emerging Trends and Best Practices Guidebook:** https://www.fhwa.dot.gov/environment/environmental_justice/resources/guidebook/
- **FHWA Public Involvement/Public Participation:** https://www.fhwa.dot.gov/planning/public_involvement/
- **FHWA Public Involvement Techniques for Transportation Decision-Making:** https://www.fhwa.dot.gov/planning/public_involvement/publications/techniques/chapter00.cfm
- **Center for Environmental Excellence Environmental Justice Resources:** http://environment.transportation.org/environmental_topics/environmental_justice
- **NCHRP Report 532, Effective Methods for Environmental Justice Assessment:** http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_532.pdf
- **NCHRP Report 710, Practical Approaches for Involving Traditionally Underserved Populations in Transportation Decision-making:** http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_710.pdf
- **How to Engage Low-Income and Limited English Proficiency Populations in Transportation Decision-making:** https://www.fhwa.dot.gov/planning/publications/low_limited/webbook.pdf
- **FHWA Human Environment Digest:** http://www.fhwa.dot.gov/livability/he_digest
- **Transportation & Environmental Justice, Effective Practices:** <http://ntl.bts.gov/lib/12000/12100/12173/booklet.pdf>
- **Environmental Justice in NEPA Case Studies:** https://www.fhwa.dot.gov/environment/environmental_justice/ej_and_nepa/case_studies/case00.cfm
- **Community Impact Assessment; A Quick Reference for Transportation:** http://www.fhwa.dot.gov/livability/cia/quick_reference/index.cfm
- **Community Impact Mitigation, Case Studies:** http://www.fhwa.dot.gov/livability/cia/community_impact_mitigation
- **FTA Environmental Justice Resources:** <http://www.fta.dot.gov/14882.html>
- **Partnership for Sustainable Communities:** <https://www.sustainablecommunities.gov>

- **Transportation & Environmental Justice, Case Studies:** http://www.fhwa.dot.gov/environment/environmental_justice/case_studies/index.cfm
- **Environmental Justice in Transportation: Emerging Trends and Best Practices Guidebook** http://www.fhwa.dot.gov/environment/environmental_justice/resources/guidebook_2011/guidebook00.cfm

TRAINING

- **National Highway Institute Environmental Courses:** http://www.nhi.fhwa.dot.gov/training/course_search.aspx?tab=0&key=142&cat=t&res=1.nhicustomerservice@dot.gov or 877-558-6873
 - Fundamentals of Environmental Justice (NHI 142042)
 - Effective Communications in Public Involvement (NHI 142059)
 - Public Involvement in the Transportation Decision-making Process (NHI 142036)
 - NEPA and the Transportation Decision-making Process (NHI 142005)
 - Advanced Seminar on Transportation Project Development: Navigating the NEPA Maze (NHI 142055)
- **National Transit Institute Environmental Justice course:** <http://www.ntionline.com/environmental-justice>
- **FHWA Additional training and technical assistance offerings:** http://www.fhwa.dot.gov/planning/planning_menu
- **Key FHWA Contacts**
 - **Civil Rights Technical Assistance:** Candace Groudine (candace.groudine@dot.gov) or Teresa Banks (teresa.banks@dot.gov)
 - **Environmental Justice Technical Assistance:** Brian Betlyon (brian.betlyon@dot.gov), or Keith Moore (keith.moore@dot.gov).
 - **Public Involvement Technical Assistance:** Jocelyn Jones (jocelyn.jones@dot.gov) or Jody McCullough (jody.mccullough@dot.gov).
 - **NEPA and Environmental Justice Technical Assistance:** Harold Peaks (harold.peaks@dot.gov) or Carolyn Nelson (carolyn.nelson@dot.gov)



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