Transportation Planning Capacity Building

GIS and Equity Peer Exchange

A TPCB Peer Exchange Event

Location:	Virtual
Date:	June 22 and 23, 2021
Host Agency:	Association Metropolitan Planning Organizations (AMPO)
National Peers:	Jared Austin, Forward Pinellas
	Craig Casper, Corpus Christi Metropolitan Planning Organization
	Carson Cooper, Greater Nashville Regional Council
	Caroline Daigle, Chattanooga-Hamilton County Regional Planning Agency
	Grégory Gabriel, Palm Beach Transportation Planning Agency
	Betsy Harvey, Boston Region Metropolitan Planning Organization
	Kimberly Korejko, Delaware Valley Regional Planning Commission
	Sungmin Lee, Houston-Galveston Area Council
	Andrea Napoli, Bend Metropolitan Planning Organization
	Angela Ryan, Forward Pinellas
	Pramod Sambidi, Houston-Galveston Area Council
	Bill Swiatek, Wilmington Area Planning Council
	Kate Zielke, North Central Texas Council of Governments
Sponsoring Agency:	Federal Highway Administration (FHWA)

U.S. Department of Transportation
Federal Highway Administration

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13. ABSTRACT (Maximum 200 words)

This report summarizes proceedings of a virtual peer exchange sponsored by the Federal Highway Administration (FHWA) and hosted by the Association of Metropolitan Planning Organizations (AMPO) on June 22-23, 2021. The purpose of the peer exchange was to discuss how metropolitan planning organizations (MPOs) can build MPO capacity for using geographic information systems (GIS) to advance equity goals. The event provided an opportunity for MPOs to share experiences, lessons learned, successes, and challenges related to the topic. Specifically, participants discussed how to define equity at an agency and project level, how to use data to inform decision-making, and how to use data and GIS to share information and "tell the story" about equity populations and projects. The topics of discussion stemmed from an AMPO survey conducted to solicit MPO needs surrounding equity, data, and GIS. The event was sponsored by FHWA through its Transportation Planning Capacity Building Program, led in partnership with the Federal Transit Administration (FTA).

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Peer Exchange Overview

The Association of Metropolitan Planning Organizations (AMPO) requested a peer exchange from the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) Transportation Planning Capacity Building (TPCB) Program to provide AMPO members with an opportunity to exchange noteworthy practices and discuss ways to build MPO capacity for using geographic information systems (GIS) to advance equity goals.

AMPO sought to use key takeaways from this peer exchange to inform its future GIS & Data Visualization Working Group research and activities.

The peer exchange planning team designed the event as a two-day interactive, virtual dialogue between representatives from various metropolitan planning organizations (MPOs). AMPO's goal was to include peers from small, medium, and large MPOs as well as geographically diverse areas from across the country. The peer exchange consisted of three peer panels with breakout group discussions, a session on current and upcoming FHWA resources for equity planning, and a brainstorming session on current needs and future activities.

To determine the topics for the peer exchange, AMPO sent a survey to members prior to the event asking participants to identify their capacity for GIS activities both generally and specifically pertaining to equity work; the equity indices they use in planning projects; and any tools and resources they use to visualize or otherwise share GIS equity analysis with internal or external stakeholders. Based on results from the survey, the planning team structured each session on the following topics:

- Defining equity, on an agency level and a project level;
- Using data to support equitable decision-making; and
- Using data and GIS to share information and "tell the story" about equity populations and projects.

The peer panels and discussion focused on the challenges agencies face related to using GIS to advance MPO equity goals, and notable practices and opportunities for addressing these challenges.

Host and Peer Panel Discussions

Overview of Environmental Justice (EJ) and Equity Efforts among MPOs Using Tableau

AMPO provided an overview of existing legislation that serves as the basis for the environmental justice (EJ) and equity work that takes place across FHWA and MPOs, including Title VI of the Civil Rights Act. Using a survey, AMPO was able to assess the state of EJ and equity efforts among MPOs. Among other considerations, AMPO asked questions that allowed the group to analyze MPOs by size and number of GIS staff and then used those results to determine a "size status" of EJ/Equity index.

The Alamo Area MPO, one of the peer exchange planning team members, used Tableau[1] to communicate clear differences among MPOs by size, which can also be seen in figure 1:[2]

- Smaller-sized MPOs were less likely to consider equity and/or vulnerable populations in their work;
- Medium-sized MPOs were more likely to consider equity and/or vulnerable populations; and
- Large MPOS were also more likely to consider equity and/or vulnerable populations.
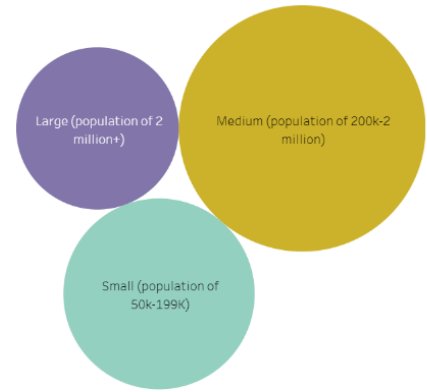
MPO by Size status of EJ/Equity Index

MPO Size	Created an index to examine equity		
	No	In Progress	Yes
Large (population of 2 million+)	5	3	5
Medium (population of 200k-2 million)	15	9	6
Small (population of 50k-199K)	17		1

Figure 1. Chart. AMPO survey results as presented in Tableau.

Defining Equity Peer Panel

This panel included five GIS and planning practitioners from MPOs around the U.S. to discuss challenges, notable practices, and lessons learned related to equity. This section includes key takeaways from the discussion.

Moderator: Mara Kaminowitz, Baltimore Metropolitan Council

Panelists

- Craig Casper, Corpus Christi MPO
- Grégory Gabriel, Palm Beach Transportation Planning Agency (TPA)
- Betsy Harvey, Boston Region MPO
- Bill Swiatek, Wilmington Area Planning Council (WILMAPCO)
- Kate Zielke, North Central Texas Council of Governments (NCTCOG)

Challenges
- Defining Equity and underserved communities
  - Each MPO has had to develop its own criteria for defining equity and what is considered an underserved community. While most built their definitions based on existing legislation and executive orders (EOs), they have had to adapt their definitions in order to meet the needs of their communities.
- Developing successful methodologies for identifying underserved communities
  - MPOs have encountered challenges with their methodologies for identifying and reaching underserved communities. In one instance, communities whose residents were all considered underserved would not as a whole be considered an underserved community due to the community's low population density.
- Data accuracy and applicability across smaller geographies.
  - In most cases, MPOs use American Community Survey (ACS) data from the Census Bureau. It can be a challenge addressing the margin of error included in these data especially at the block group level.

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[1] A link to the Tableau report can be found here.
[2] One caveat to this analysis is that these results only apply to MPOs that participated in the survey and therefore it is not necessarily indicative of the entire MPO population.

- Evaluating project equity impacts after their completion.
  - While MPOs want to perform these evaluations, obtaining data for measuring equity impacts from a project after completion can be difficult. The main challenges are timing and funding.

Notable Practices

- Corpus Christi
  - The most common definition of equity used by the MPO is equal spending of funds across different locations, equal access for pedestrians, and equal distances to jobs and projects.
  - The MPO used ACS data as well as FHWA's noise model and estimated the impacts of noise across communities.
  - When measuring equity, they considered the differences between the most-advantaged and least-advantaged communities.
- Palm Beach TPA
  - TPA defines equity based on EO 12898.
  - TPA used a methodology that originally only looked at ACS data. Today, TPA uses the ACS along with the Florida Geographic Data Library (FGDL) to develop a variable index. The formula for this index is:
    - Actual Value – Minimum Value/(Maximum Value – Minimum Value)

$$\text{Variable Index} = \frac{\text{Actual value - Minimum Value}}{\text{Maximum value - Minimum Value}}$$

Figure 2. Chart. Palm Beach Transportation Planning Agency Equity Index inputs and formula.

  - Using this index, TPA is now able to assign points to projects that consider factors such as lower income communities and underserved populations.
  - When developing TPA's plans, the MPO includes analyses such as a Bike Lane Gaps where they look at the differential impacts of bike lane availability across communities.
- Boston MPO
  - The Boston MPO defines equity by focusing on Title VI.
  - The MPO created an index to award progressively more points to projects based on the share of equity populations, normalize scoring of projects by their share of equity populations, and have one equity score.
  - The Boston MPO looked at distributions of minority populations by number of transportation zones, using standard deviations above or below the mean.
  - At the Boston MPO there is a needs assessment that is developed through the long-range planning process but published in advance of the plan. They also do a disparate impacts and disproportionate burden analysis, all of which incorporate equity components.
- WILMAPCO
  - The MPO has nearly two decades of equity analysis experience.
  - The cornerstone of the MPO's work is defining EJ neighborhoods.
  - Equity analyses (crashes, traffic levels, TIP spending, etc.) are conducted on individual racial/ethnic minority neighborhoods and impoverished neighborhoods. The MPO does
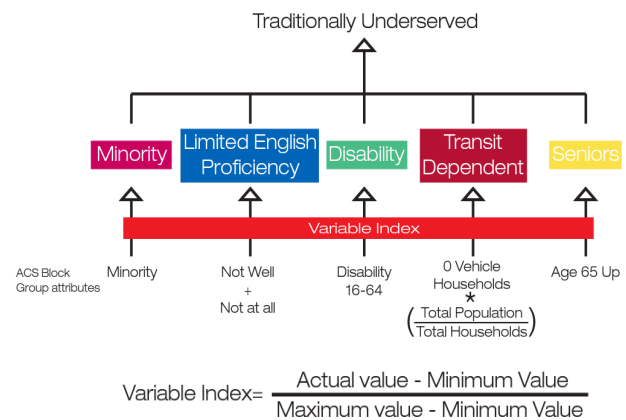
not group minorities into a singular category to avoid discounting the presence of smaller groups.

- o WILMAPCO has produced a Social Determinants of Health index and an index that IDs Urban Technology Desert neighborhoods.
- o WILMAPCO uses these data for project prioritization and to inform public engagement.
- o All data are publicly available and include an interactive map.
- NCTCOG
    - o Developed an interactive map that helps users identify EJ neighborhoods and uses that information when developing project prioritization criteria.
    - o The MPO developed an indicator that looks at total minority, below poverty, population density as underlay, and additional demographic layers including transportation disadvantaged groups. The method used includes having staff use underlying data to create more nuanced analysis, including a block group-to-regional percentage. The scale for this analysis is at the Census block group level.
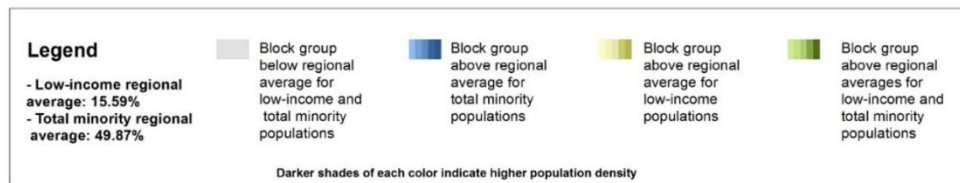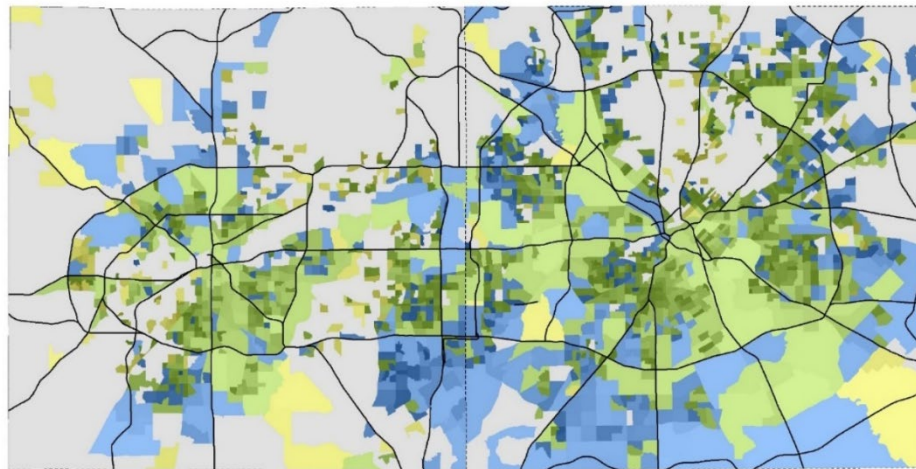

Legend

- Low-income regional average: 15.59%
- Total minority regional average: 49.87%

| Block group below regional average for low-income and total minority populations | Block group above regional average for total minority populations | Block group above regional average for low-income populations | Block group above regional averages for low-income and total minority populations |

Darker shades of each color indicate higher population density

Figure 3. Map. NCTCOG's 2016 basic EJ index with population density represented by shade for Dallas and Tarrant Counties.

Lessons Learned
- Allow room for updating definitions and methodology used for identifying underserved populations.
- Use the latest data available in order to create a more robust analysis. Data can get outdated very quickly so it is important to recognize when this happens.
- Make sure clear forms of communication exist between GIS practitioners and other staff. Having a specific staff member that bridges the gap between these groups or staff members that can work on each side will ensure that all groups can interpret the data correctly while understanding the data's limitations.

- Incorporating equity into long-range plans will increase buy-in across an agency. Most peer MPOs were able to incorporate equity in a way that allowed them to use equity metrics as part of their project prioritization process.

Data-Informed Decision-making Peer Panel

This panel included four planners and GIS analysts from U.S. MPOs to discuss challenges, notable practices, and opportunities MPOs experience using equity data to inform agency decision-making. This section includes key takeaways from the discussion.

Moderator: Jenny Wallace, Denver Regional Council of Governments

Panelists:

- Jared Austin, Forward Pinellas
- Angela Ryan, Forward Pinellas
- Caroline Daigle, Chattanooga-Hamilton County/North GA Transportation Planning Organization
- Andrea Napoli, Bend MPO
    o Andrea Napoli presented examples from her career with the Rogue Valley MPO (RVMPO) in Oregon.

Challenges
- Limited resources, ranging from funds for staff and staff training to projects
    o While some equity, particularly environmental justice, data is required in Federal reporting, analysis beyond those requirements often requires significant staff time and additional funding. MPOs, particularly smaller MPOs, lack the staff and budget to dedicate to additional equity data collection and analysis.
- Data gaps
    o Data collection is costly and time consuming. Most MPOs elect to use Census data for equity analysis, though that data is often out-of-date and can be limited, especially for more granular analysis. Similar to the challenges listed in the Defining Equity Panel, obtaining data from the private sector can be difficult and expensive.
- Relationship building with equity communities
    o Building trust with equity communities can be a challenge due to:
        ▪ Lack of training. A culturally competent workforce is essential for respectful interaction with diverse communities.
        ▪ History of mistrust between equity communities and government entities.
        ▪ Lack of knowledge and transparency in government policies and procedures.
    o Engagement with vulnerable populations can feel transactional if MPOs do not regularly engage with these communities.
- Buy-in from elected and appointed officials
    o Ultimately, decisions are made in the political sphere, so factors other than data inform a decision.
    o Not all elected and appointed decision makers understand the value of data-driven decisions.
    o Additionally, equity is not always a key priority.

- Forward Pinellas
    - Forward Pinellas is conducting an [equity assessment](#) to ensure their mission to "provide leadership to align resources and plans that help to achieve a compelling vision for Pinellas County, our individual communities and our region" is both inclusive and equitable. This assessment aims to research the systems, policies, and practices that have resulted in inequity, particularly among ethnic minorities, in Pinellas County, and develop a series of actions to ensure that our work as the countywide planning agency is inclusive and results in equitable outcomes for the entire community.
    - In ongoing efforts, Forward Pinellas uses GIS to identify disadvantaged groups and associated geographic areas; determine the level of basic access and needs for these groups; and conduct a comparative analysis of transportation and land use plans in advantaged and disadvantaged areas.
- Chattanooga-Hamilton County/North GA Transportation Planning Organization (TPO)
    - The TPO integrates equity directly into their long-range planning efforts. Their [2050 Regional Transportation Plan (RTP)](#) includes equity considerations in the plan's project and performance evaluation frameworks. For example, some project-level evaluation criteria include the following:
        - Project improves infrastructure conditions within an Equity Emphasis Area; and
        - Project improves multimodal access options and experiences between transit (bus stop) or community resources and Equity Emphasis Area
    - Internal and external stakeholders can comment on the TPO's ongoing equity analysis via their [story map](#). The story map helps the TPO not only share information with users, but also allows users to share their thoughts on the overall analysis. Users can also self-identify neighborhoods and communities they want to consider as an equity emphasis area.
- RVMPO
    - RVMPO dedicated two of their three-person staff team to conducting a [transportation needs assessment](#) to understand transportation gaps, challenges, and proportion of investment for equity areas in their jurisdiction. RVMPO produced [a series of publicly accessible maps](#) to share this information with internal and external partners, decision makers, and the public, and directly incorporated results into their funding criteria.

Lessons Learned
- Public outreach is an essential component, not only to build community trust and partnership, but also to communicate procedures, policies, and future action. MPOs should consider public outreach as an ongoing engagement, not only in the checklist for specific projects.
- MPOs, particularly smaller MPOs, often lack the staff time and resources for robust equity analysis; it is important for MPOs to include equity analysis and funding for equity projects in their budgets proactively and when scoping projects to prevent loss of staff time and funding as they become constrained.
    - Including equity as part of project funding scoring criteria is one way MPOs can ensure equity remains a priority.

- Project evaluation is important to determine if a project had the intended impact.
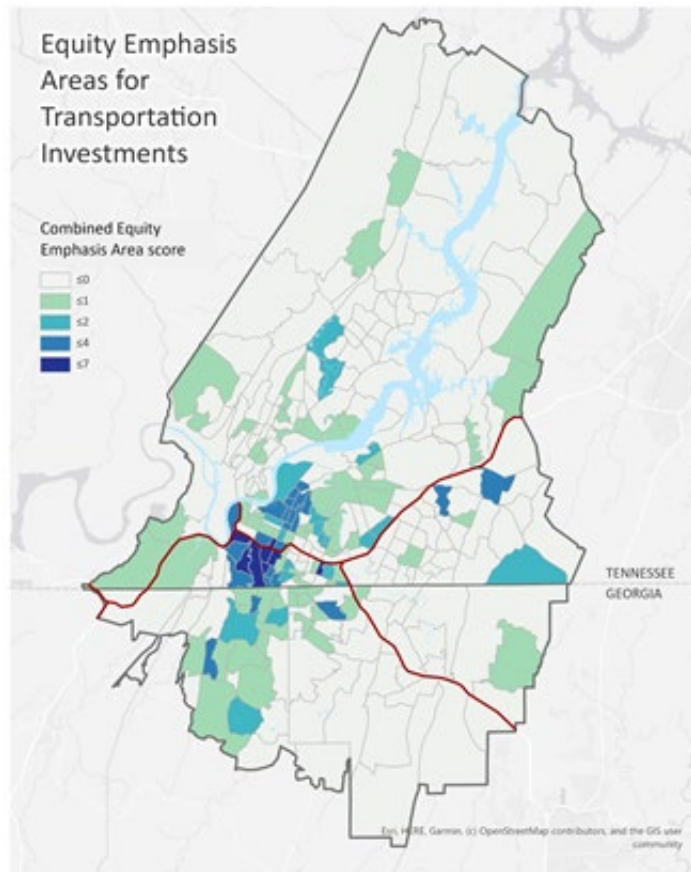

Figure 4. Map. Chattanooga TPO equity emphasis areas for transportation investments.

Telling the Story Peer Panel

This panel brought together four GIS and Planning practitioners from three MPOs around the U.S. to discuss challenges, notable practices, and lessons learned related to how each MPO shares and visualizes their data on equity. This section provides key takeaways from the discussion.

Moderator: Ann Burns, Southeast Michigan Council of Governments

Panelists:

- Pramod Sambidi and Sungmin Lee, Houston-Galveston Area Council (H-GAC)
- Kimberly Korejko, Delaware Valley Regional Planning Council (DVRPC)
- Carson Cooper, Greater Nashville Regional Council (GNRC)

Challenges
- Displaying and sharing data in a simple manner.

- o The more complex the problem, MPOs found, the more complex the answer might be. Trying to present data simply can often lead to an incomplete picture or narrative, ultimately confusing users.
- Developing user-friendly tools.
  - o Even with instructions and a narrative, users can get lost when using tools developed by MPOs. Without demonstrations for each user group, which can take time and resources to develop, users can be overwhelmed by the available tools and discouraged from using them.
  - o It is also a regular challenge deciding how much data to present in a dashboard. Finding the right balance will allow users to understand more easily the content presented.
- Public versus private data-sharing ability.
  - o Not all data sources used are public so many MPOs have to resort to obtaining and using private data. Sharing these data, however, can be very limited due to user agreements with the data providers. All MPOs would like to share data as much as possible.
- Large datasets create speed issues.
  - o The more data available the more taxing it is for MPO servers. Without additional resources and support from internal teams such as IT and the GIS department, accessing data and tools provided by MPOs can be very slow.
- Obtaining user feedback.
  - o Developing a mechanism for obtaining user feedback and encouraging users to provide that feedback is challenging. The more cumbersome this process is for users, the less likely they are to submit this information voluntarily.
  - o Processing this feedback can also be resource and time intensive.
- Data can become stale quickly.
  - o Data is out of date as soon as you use it. MPOs struggle with the timing of potential updates vs. future workload.
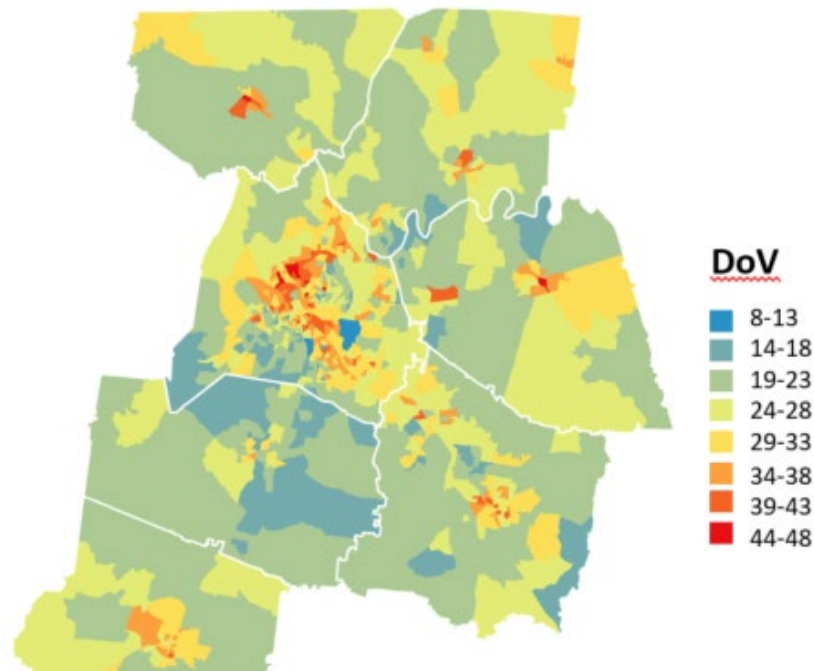

Figure 5. Map. GNRC's new degrees of vulnerability index.

- Working in a virtual environment.
  - One of the biggest challenges has been undertaking all of these efforts virtually and having to coordinate virtually initially required significant adjustments across all staff members and agency groups.

Notable Practices

- H-GAC
  - The MPO developed a Regional Equity Tool. The tool is an interactive mapping application that identifies the distribution of H-GAC region's vulnerable, low-to-moderate income population, and historic settlements. The tool lists H-GAC and other local agencies' current and future planning projects.
  - Users can utilize this tool to better understand the sociodemographic and community characteristics of a given study/project area and enhance their decision-making process.
- DVRPC
  - DVRPC developed a tool called Equity Through Access. The tool allows DVRPC to identify and visualize concentrations of vulnerable populations with low transit accessibility.
  - The tool also allows DVRPC to address their service gaps related to infrastructure, service and funding, and data and coordination. They identified "bridges" that:
    - Created accessible and affordable infrastructure
    - Provided infrastructure that feels safe for vulnerable users
    - Improved transportation service
    - Improved outreach and communication
    - Encouraged creative, flexible use of existing funding sources and identified new funding partners
    - Created data resources
- GNRC
  - GNRC developed a Vulnerable Populations Index as part of a Transportation and Equity Evaluation Application. The index includes the following:
    - Degrees of Vulnerability (DoV): An index of 9 vulnerable populations as being above or below the regional average (i.e., seniors)
    - Vulnerable Area (VA): An area where one or more vulnerable population(s) is above the regional average (i.e., block groups where seniors comprise more than 12.4% of the population)
    - Highly Vulnerable Area (HVA): An area with 6 or more Degrees of Vulnerability (i.e., block groups where seniors and at least 5 other groups are above the regional average)
  - After evaluating their tool, GNRC updated their method for developing a vulnerability spectrum, identifying gaps in key indicators, and developed a new spatial analysis. Uses of this method include:
    - Prioritization of grant funds: Coordinated Human Services Grants, Multimodal Access Grants, Active Transportation Planning Grants, etc.
    - Inform all other planning and outreach efforts
    - Subarea and corridor studies
    - Local comprehensive plans and planning grant applications

Lessons Learned

- Use common geography (block groups) so that users could add their own data, if desired.

- Use narratives to help explain what a prioritization score means and keep things simple.
- Allow users to download data and make it as user-friendly as possible.
- Sidewalk data can be very useful for equity analyses. GNRC obtained data from local GIS departments, open street map, and supplemented that data by comparing their satellite imagery data. DVRPC completed a three-year project to collect and process sidewalk data, which can be found here. Unfortunately, there is no information on the quality of the sidewalks.
- Using a QA/QC process for all data is very important, but may take weeks or more to complete. For example, GNRC had two interns working on this process for several weeks in order to complete the process.
- Partnering with other agencies can help address challenges, share best practices, and validate existing processes. For example, SCAG regularly engages and shares information with their sister MPOs in California to learn about each other's work in the field like EJ and overall equity. Similarly, GNRC partnered with the Chattanooga MPO to develop environmental linkages. Both groups participated in a separate peer exchange, during which they found each MPO used similar analyses.
- Tutorial videos can serve as a good resource for training staff, improve knowledge sharing, and overall limit the impacts of staff leaving the organization with institutional knowledge.

Break Out Sessions

After each peer panel, peer exchange attendees broke out into five small groups to discuss challenges and notable practices for each panel topic. In addition, the small groups discussed research and support needs that AMPO or FHWA could take on in addressing the challenges discussed. Key takeaways from these discussions are displayed in the table below.

Breakout Group Key Takeaways

	Challenges	Notable Practices	Additional Needs
Defining Equity	Lack of staff time, specifically to work on acquiring and validating data Definition of equity can change over time, requirements can change administration to administration	Use composite indices to determine equity over a single factor Identify the total disparity between most and least advantaged groups, over data on averages Become your agency's equity champion	Case studies and notable practices Consistency among various datasets across agencies Funded Federal requirements on equity reporting
Data-Informed Decision-making	Census tracts and even block groups can be too coarse or not detailed enough	Set expectations and priorities for equity on a project level during scoping Conduct regular evaluations of projects and	Higher resolution data Dedicated funding to acquire private datasets (e.g., StreetLight data)

	Data gaps (e.g., Census is only every 10 years, ACS doesn't include all desired data) Lack of involvement and influence on decision-making Private datasets are often necessary but prohibitively expensive	programs to determine if equity goals were addressed Communicate the context for how or what an index means to decision makers Create a framework for project prioritization, including equity as a weighted component	Resources for technical staff related to decision maker communication
Telling the Story	GIS teams often work in siloes. It's challenging to create partnerships with intra and interagency partners Lack of trust with the community	Communicate the value of GIS tools. Work with your communications department and invest in good PR Avoid "transactional" community engagement. Invest in a robust community engagement plan Do not overlook the low hanging fruit – lower-level effort projects, like dashboards, can be impactful	More examples and access to tools for developing project narratives Data on sidewalk quality More opportunities for peers to engage in knowledge-sharing More opportunities for training in data visualization software

Conclusion and Key Takeaways

This peer exchange convened MPO representatives across the U.S. to share notable practices and lessons learned on key challenges related to advancing equity goals in local agencies. Participants engaged in group discussions where they learned about available resources and notable practices for addressing key challenges, and connected with others who shared similar issues. For each topic discussed, participants provided additional research needs that AMPO and Federal agencies can use to address key challenges.

Key takeaways from discussions:

- While resources and staff time can be limited, it is beneficial for MPOs to proactively identify equity goals and obtain buy-in from their agency. This may help agencies consistently prioritize across projects.
- Publicly available data is often too general and outdated. To fully assess equity needs in their communities, MPOs must pursue additional resources and data sources, which can be prohibitively expensive and time consuming.

- It is important that MPOs engage with underserved communities to ensure representation and inclusion in data collection and decision-making.
- MPOs should consider how they share and use the data they collect to support equity initiatives in their agency and with their partners. Being able to "tell the story" via visualizations and accessible data is essential for MPOs seeking to support decision makers in creating data-driven policy.

Appendices

Appendix A: Key Contacts

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Appendix B: Peer Exchange Agenda

Dates: **June 22-23, 2021**

Overview of Peer Exchange: This peer exchange, hosted by the Federal Highway Administration (FHWA), in partnership with the Association of MPOs (AMPO), brings together peers from across the country to discuss ways to build MPO capacity for using GIS to advance equity goals. The peer exchange focuses on topics pertaining to: defining equity on an agency level and on a project level; using data to support equitable decision-making; and using data and GIS to share information and "tell the story" about equity populations and projects.

Day 1: June 22, 2021

Time (EDT)	Session Overview
1:00 – 1:15pm	**Welcoming Remarks and Introductions** This session will open the peer exchange, allowing for welcomes and introductions. The session will provide an overview of the goals for the peer exchange as well as the sessions to follow. Speakers: • Spencer Stevens, FHWA Office of Planning • Caitlin Cook, AMPO • Patricia Cahill, U.S. DOT Volpe Center
1:15 – 1:30pm	**Tableau Presentation – Who's Who?** Cecilio Martinez from the Alamo Area MPO and the AMPO Working Group provides an overview of who is attending this peer exchange and where they are in their GIS and equity work. This data comes from the AMPO survey on GIS and equity. Speakers: • Cecilio Martinez, Alamo Area MPO
1:30 – 1:35pm	**Panel 1 Poll**
1:35 – 2:20pm	**Peer Panel 1: Defining Equity** **Moderator: Mara Kaminowitz, Baltimore Metropolitan Council** Speakers: • Craig Casper, Corpus Christi MPO • Grégory Gabriel, Palm Beach Transportation Planning Agency • Betsy Harvey, Boston Region MPO

	- Bill Swiatek, Wilmington Area Planning Council - Kate Zielke, North Central Texas Council of Governments
2:20 – 2:50pm	**Panel 1 Breakout**
2:50 – 3:00pm	*Break*
3:00 – 3:05pm	**Panel 2 Poll**
3:05 – 3:45pm	**Peer Panel 2: Data-informed Decision-making** **Moderator: Jenny Wallace, Denver Regional Council of Governments** Speakers: - Jared Austin, Forward Pinellas - Angela Ryan, Forward Pinellas - Caroline Daigle, Chattanooga-Hamilton County Regional Planning Agency - Andrea Napoli, Bend MPO
3:45 – 4:15pm	**Panel 2 Breakout**
4:15 – 4:30pm	**Wrap-up of Day 1 and Review of Day 2** This session will conclude Day One with a short summary of the discussions and provide a look-ahead of Day Two. Speakers: - Mark Sarmiento, FHWA Office of Planning - Caitlin Cook, AMPO

Day 2: June 23, 2021

Time (EDT)	Session Overview
1:05 – 1:15pm	**Welcome, Day 1 Recap, Goals for Day 2** This session will welcome participants back to Day Two of the peer exchange, review key takeaways from Day One, and present the sessions for Day Two. Speakers: • Cheng Yan, FHWA Office of Planning
1:15 – 1:20pm	**Panel 3 Poll**
1:20 – 2:20pm	**Peer Panel 3: Telling the Story** **Moderator: Ann Burns, Southeast Michigan Council of Governments** Speakers: • Carson Cooper, Greater Nashville Regional Council • Kimberly Korejko, Delaware Valley Regional Planning Commission • Pramod Sambidi and Sungmin Lee, Houston-Galveston Area Council
2:20 – 2:50pm	**Panel 3 Breakout**
2:50 – 3:00pm	*Break*
3:00 – 3:15pm	**FHWA Resources** **Speaker: Fleming El-Amin, FHWA Office of Human Environment**
3:30 – 3:45pm	**Open Discussion** **Moderator: Jenny Wallace, Denver Regional Council of Governments**
3:45 – 4:00pm	**Closing Remarks** This session will conclude the peer exchange with a short summary of the discussions and next steps.

Appendix C: Federal Resources

Below are Federal and Federal partner resources on environmental justice and equity. These resources support State and local agencies seeking to advance equity in their organizations.

FHWA
- [Addressing Changing Demographics in Environmental Justice Analysis, State of the Practice](#)
- [Climate Change and Environmental Justice: Considerations for Transportation Decision-making](#)
- [Community Impact Assessment Guidebook Update](#)
- [Developing and Advancing Effective Public Involvement and Environmental Justice Strategies for Rural and Small Communities](#)
- [Environmental Justice Analysis in Transportation Planning and Programming, State of the Practice](#)
- [Environmental Justice Considerations for Connected and Automated Vehicles](#)
- [Environmental Justice Screening Tools Peer Network Summary Report](#)
- [Environmental Justice and Tolling: A Review of Tolling and Potential Impacts to Environmental Justice Populations](#)
- [Impacts of Congestion Pricing on Low-Income Populations: Efforts to Measure and Respond to Income Equity Concerns](#)
- [Pursuing Equity in Pedestrian and Bicycle Planning](#)
- [Travel Behavior: Shared Mobility and Transportation Equity](#)
- [Virtual Public Involvement: Tools, Techniques, and Examples](#)

AASHTO EJ Center for Environmental Excellence
- [EJ Case Studies, Webinars, Peer Exchanges, and Upcoming Events](#)
- [Resolution on Addressing Race, Equity, Diversity, and Inclusion](#)

Census Bureau
- [Census Transportation Planning Products (CTPP) Applications E-learning Module](#)
- [Basic Transportation Analysis on CTPP web-based software (Tutorial videos)](#)
- [CTPP Tables for EJ Analysis 2012 - 2016](#)
- Census Transportation Data In-Person Training *under development*
- Environmental Justice E-learning Module *under development*

National Highway Institute
All courses are available at https://www.nhi.fhwa.dot.gov
- Fundamentals of Environmental Justice (142074)
- Basics of Public Involvement in Transportation Decision (142077)
- Basics of Transportation Planning (151052)
- Statewide and Metropolitan Transportation Programming (151055)
- Civil Rights: Risk Mitigation Through Title VI Reviews (361032) *under development*

TRB
- [Diversity, Equity and Inclusion Resources](#)

- [Equity Analysis in Regional Transportation Planning Processes, Volume 1: Guide](#)
- [Equity Analysis in Regional Transportation Planning Processes, Volume 2: Research Overview](#)
- [NCHRP FY22 Equity Research Projects](#)
- [TRB Standing Committee on Equity in Transportation, AME 10](#)
- [Virtual Conference on Advancing Transportation Equity](#)