6 ways to help Georgia be a leader in transportation planning

Wednesday, Sept. 14, 2022

APA GA

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Frank Broen

METRO ANALYTICS

- Right-Sizing 
- Corridor Management 
- Resilience 
- MPO Strategies 
- Visualization 
- Decision Making 

6 ways to help Georgia be a leader in transportation planning

Bringing transportation research to life.

- Right-Sizing
- Corridor Management
- Resilience
- MPO Strategies
- Visualization
- Decision Making

6 ways to help Georgia be a leader in transportation planning

Getting the very best value for every dollar that you spend

- Right-Sizing
- Corridor Management
- Resilience
- MPO Strategies
- Visualization
- Decision Making

6 ways YOU can help Georgia be a leader in transportation planning

- 5-minute introduction to each topic
- Small group discussions about each
- How can you apply this to your work?

METRO ANALYTICS

Right-Sizing

NCHRP 20-44(22)
NCHRP Report 917

Right-Sizing Transportation Investments:
A guidebook for Planning and Programming Implementation

Right-Sizing

Does your community have the right sized system at the right place at the right time?

Corridor Management

NCHRP 20-124

Quantifying the Impacts of Corridor Management

Corridor Management

How can durable coalitions create the future they choose?

Resilience

NCHRP 20-125

Strategies for Incorporating Resilience into Transportation Networks

Resilience

Does your community have a plan to show why resilience is essential?

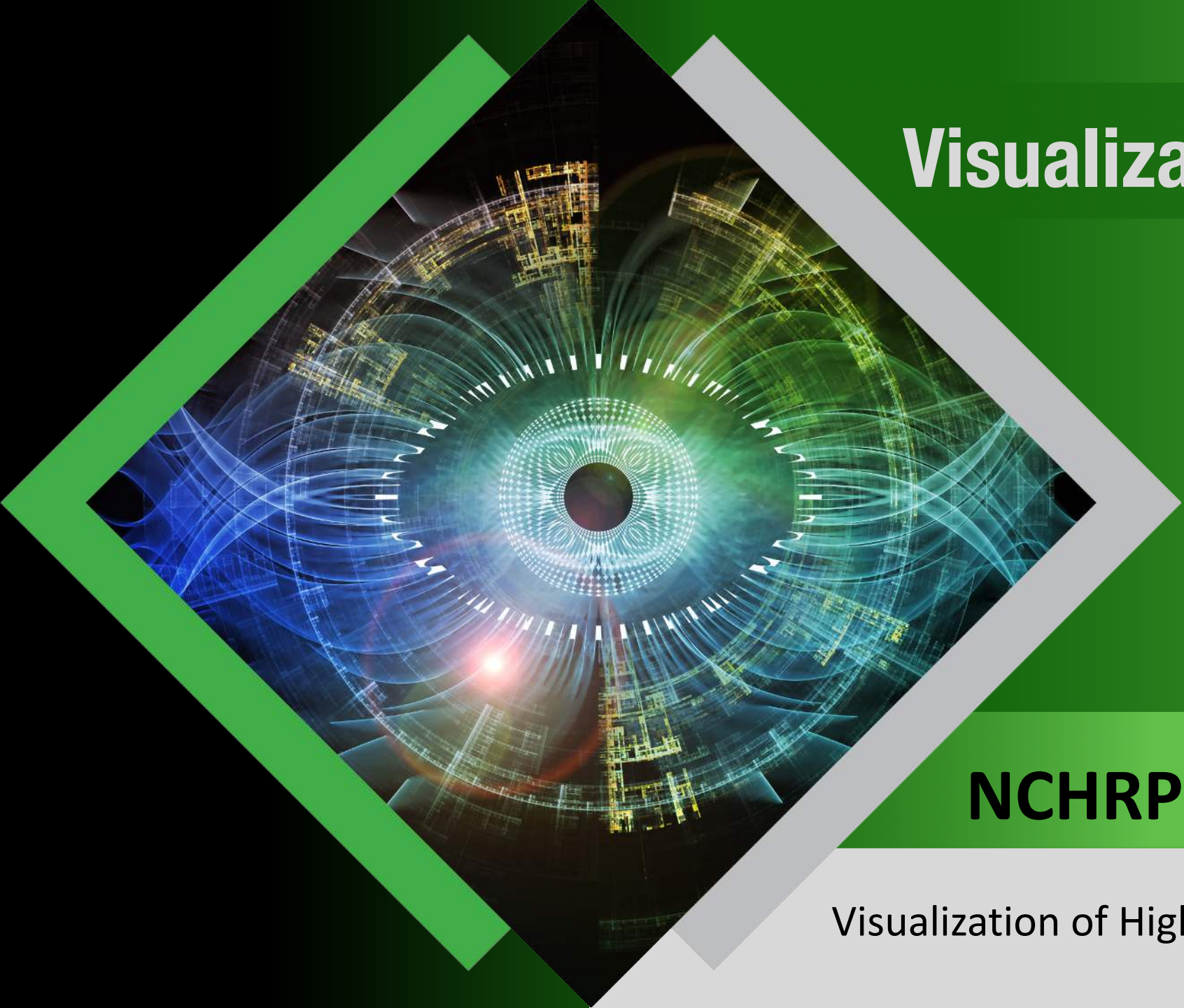
MPO Strategies

NCHRP 1002

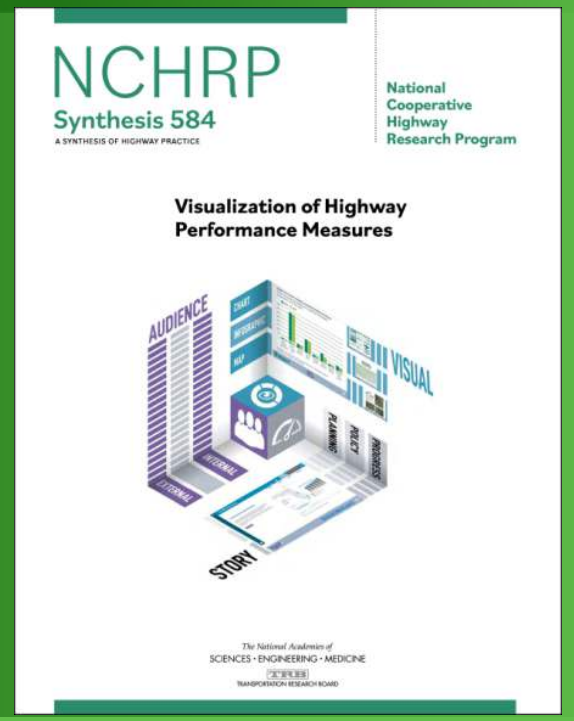
Metropolitan Planning Organizations:
Strategies for Future Success

MPO Strategies for Future Success

3 significant takeaways that will help MPOs address key issues.



Visualization

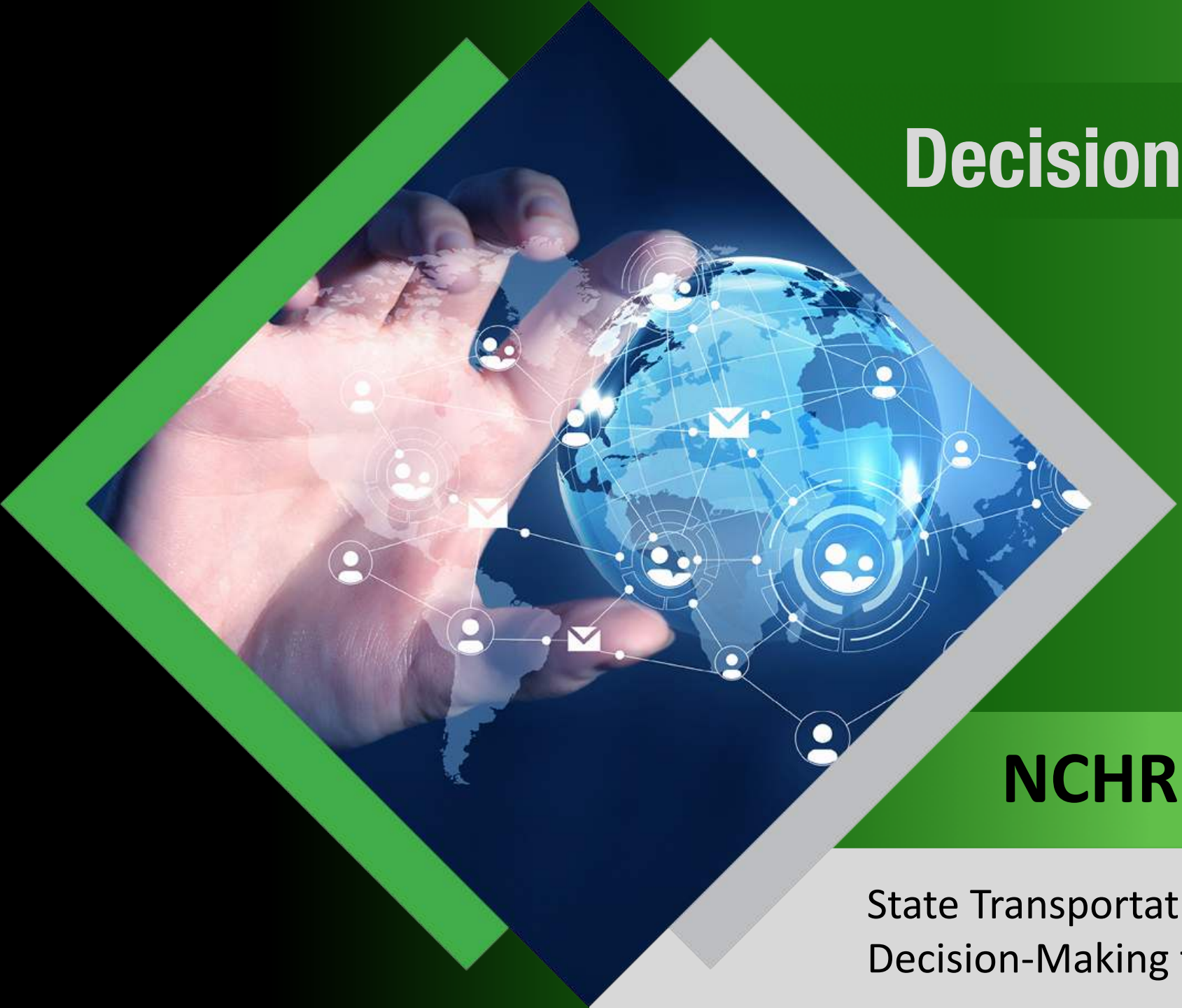


NCHRP Synthesis 584

Visualization of Highway Performance Measures

Visualization

A great opportunity for Georgia to tell their story with visualizations that resonates with their audience



Decision Making

NCHRP 20-126(2)

State Transportation Agency Multifaceted Decision-Making for Future System Performance

Decision Making

A new way to prioritize the many challenges facing Georgia.

6 ways to help Georgia be a leader in transportation planning

Frank Broen
Visualization Specialist
Metro Analytics

- Right-Sizing
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- Visualization
- Decision Making

Right-Sizing

NCHRP 20-44(22)
NCHRP Report 917

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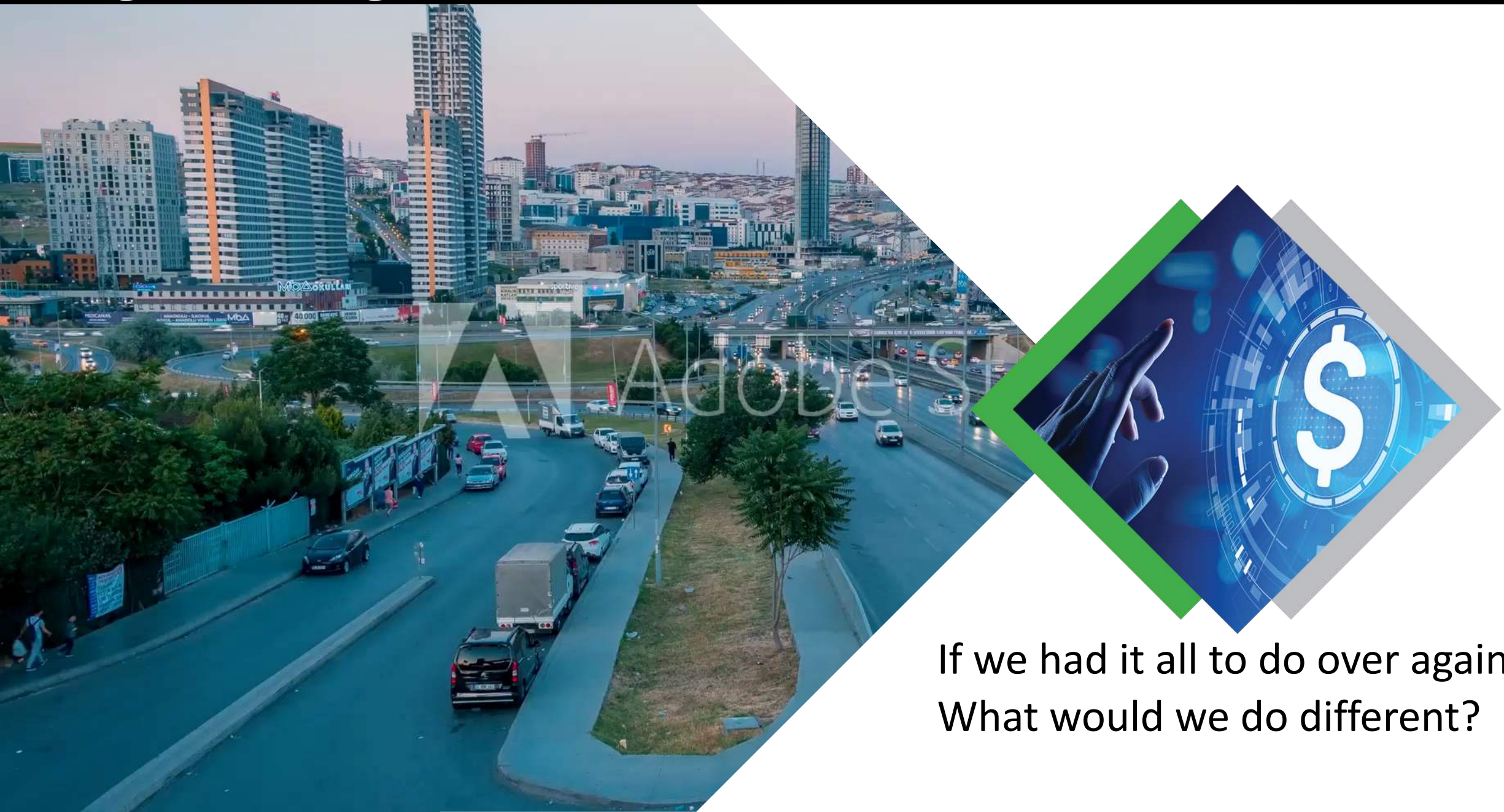
Right-Sizing Plan

METRO ANALYTICS



If we had it all to do over again.
What would we do different?

Right-Sizing Plan

METRO ANALYTICS

What makes a Right-Sizing Plan different?

A Right-Sizing plan can save millions of dollars in life cycle costs.

Right-Sizing Plan

METRO ANALYTICS

A re-set for the transportation portfolio

Need to Reduce Life Cycle Cost

Right-sizing plans identify different project opportunities, often with greater economic payoffs than other plans.

Right-Sizing Plan

METRO ANALYTICS

A re-set for the transportation portfolio

“All Sources” Funding Strategies

A right-sizing plan identifies all sources of potential value and pinpoints potential funding sources and coalitions to invest in solution sets.

Right-Sizing Plan

METRO ANALYTICS

A re-set for the transportation portfolio

Matching Assets to Markets

Right-sizing plans analyze

1. Who is using a facility?
2. For what purpose?
3. Funded by the most appropriate source?

METRO ANALYTICS

Why have a Right-Sizing Plan?

Maximize public value and minimize life-cycle cost.

METRO ANALYTICS

Why have a Right-Sizing Plan?

Utilization Assessment:

Assess who is using the infrastructure and for what purposes.

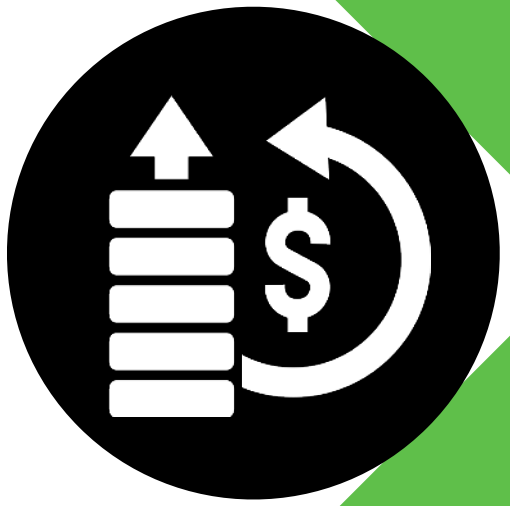
Planning is based on the needs of end users of the facility without investing in features that no longer benefit users.

METRO ANALYTICS

Why have a Right-Sizing Plan?

Stratified Return on Investment Analysis:

Assess who can most benefit from changes to the infrastructure.



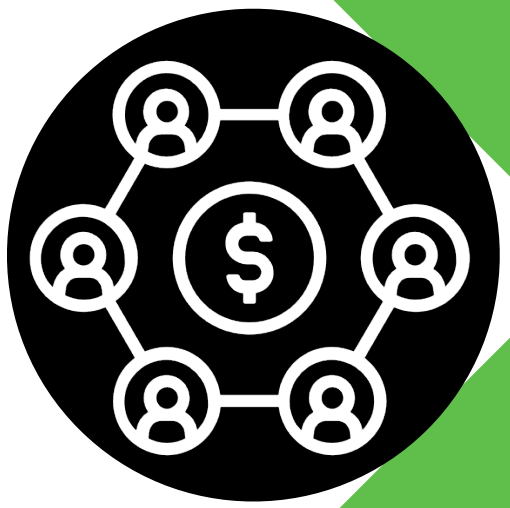
All sources of potential infrastructure value and funding are realized.

METRO ANALYTICS

Why have a Right-Sizing Plan?

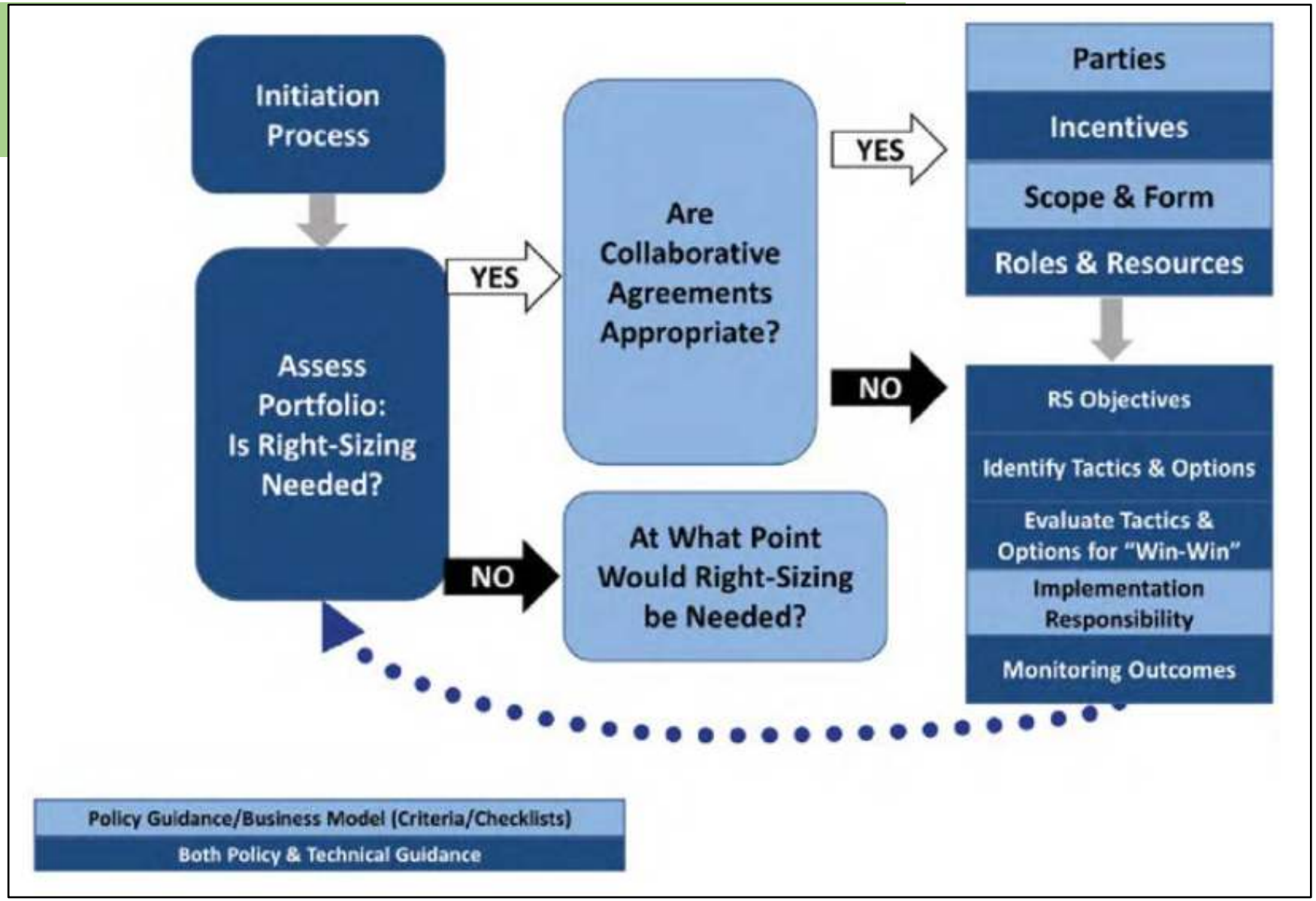
All-Sources Funding Plan:

Develop an innovative funding package.



Broader pools of potential sponsors are brought to the table to improve the infrastructure.

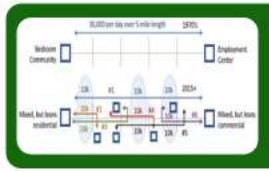
Georgia Right-Sizing Process



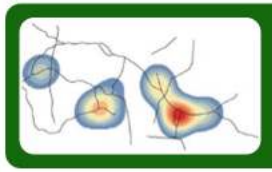
Right-Sizing Tools

ART (Arterial Right-Sizing)

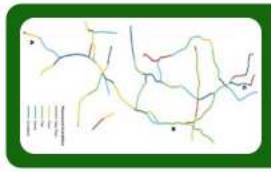
Congestion Threshold



Trip Length Assessment



Asset Deficiency Maps



Utilization/Cost Assessment

Project Scoping

Stratified ROI

Roadway Spacing

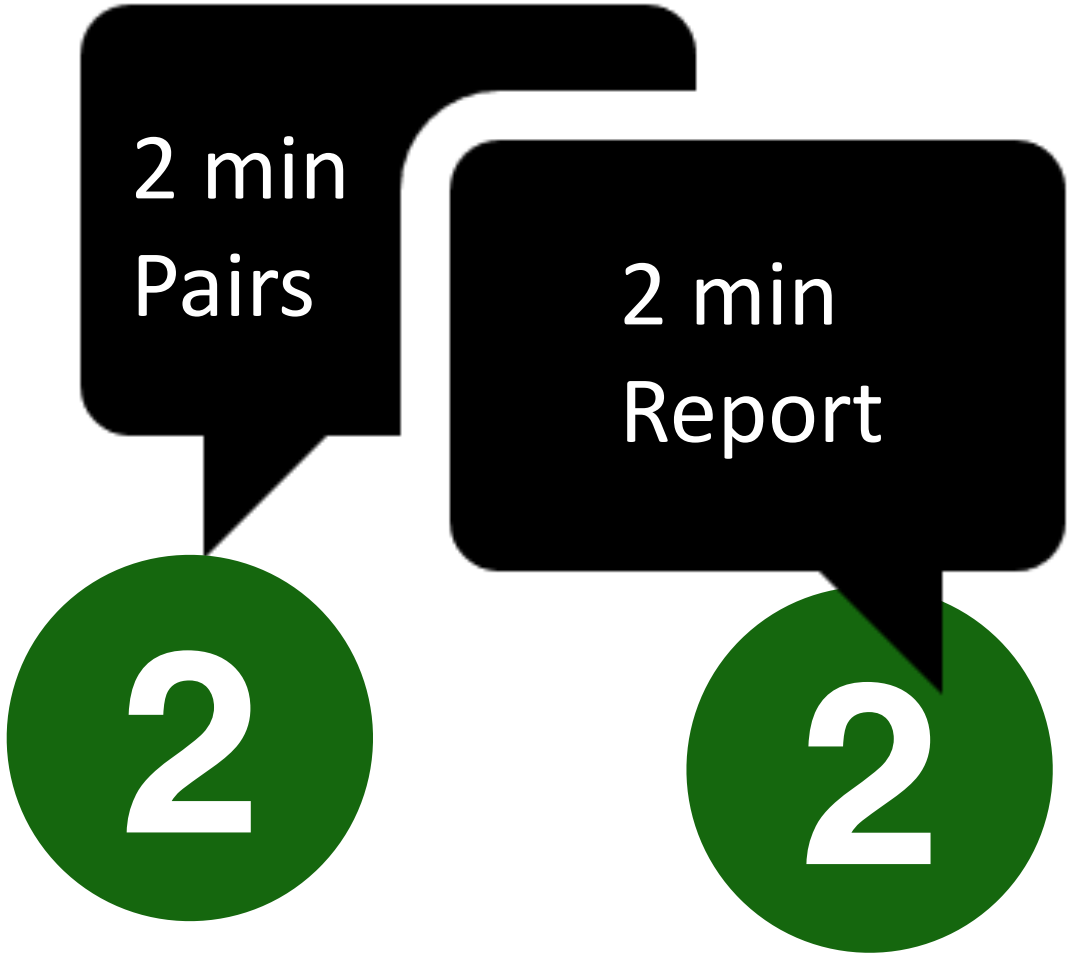
Funding Development Awareness

PBPD CheckList

Performance-Based Practical Design

METROANALYTICS

Right-Sizing



Need to Reduce Life Cycle Cost
"All-Sources" Funding Strategies
Matching Assets to Markets

TOOLS

- ART
- Trip Length Assessment
- Utilization/Cost Assessment
- Stratified ROI
- Funding Development Awareness
- Congestion Threshold
- Asset Deficiency Maps
- Project Scoping
- Roadway Spacing
- PBPD CheckList

Corridor Management

NCHRP 20-124

Quantifying the Impacts of Corridor Management

Corridor Management

How can durable coalitions create the future they choose?

METRO ANALYTICS

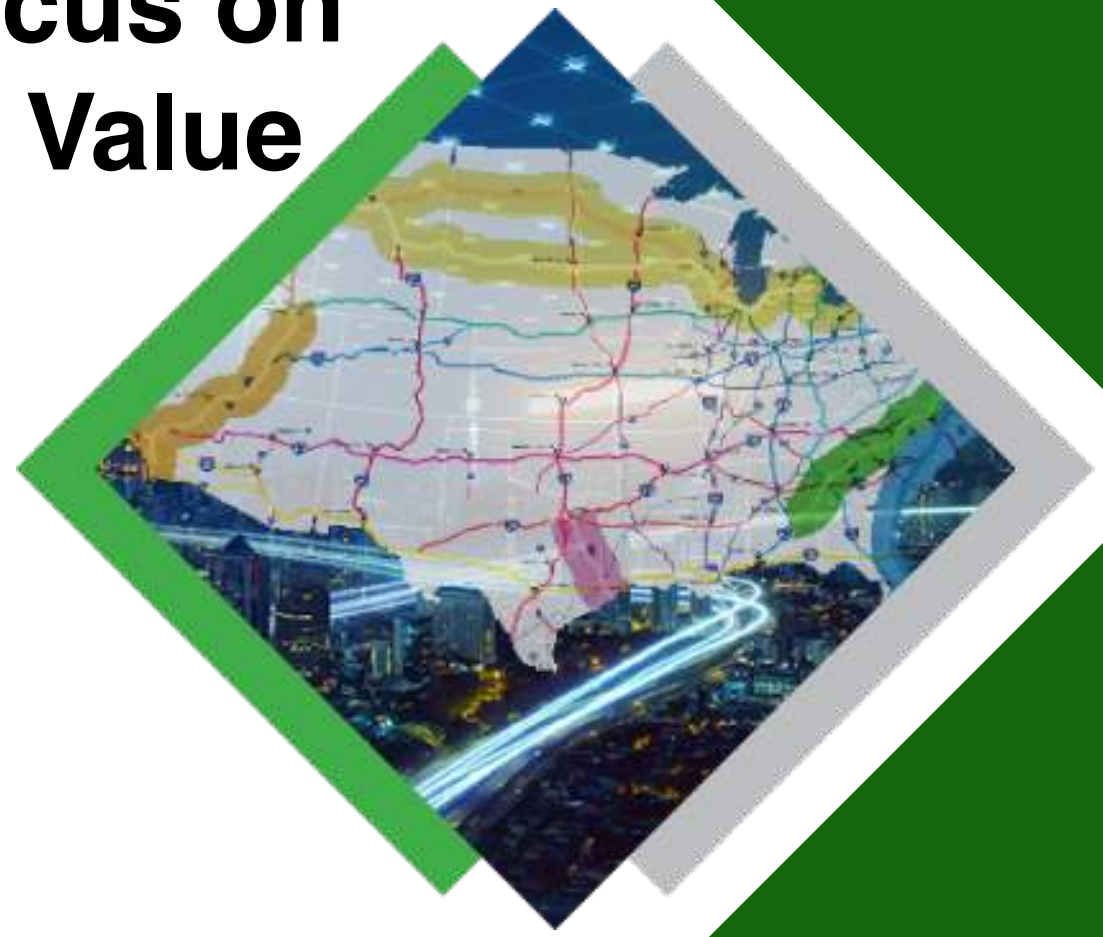
What makes a Value-Based Corridor Plan different?

It maximizes the economic value of developing and sustaining a multi-modal transportation corridor in changing social and economic conditions.

METRO ANALYTICS

METRO ANALYTICS

Holistic focus on Economic Value



A new generation of corridor solutions creates strategies around **maximizing social and performance value** for multi-modal transportation corridors.

Value-Based Corridor Plan

METRO ANALYTICS

Holistic focus on economic value

Market-Based Concept of Operations

Value-Based corridor plans apply a market-based process to determine the relevant modes and partners for managing a corridor, integrating economic forecasting, competitiveness and sources of value ranging from land, to travel time, to crashes and environmental and social equity in a corridor initiative.

METRO ANALYTICS

Holistic focus on economic value

Corridor Balance Sheet

Value-Based corridor plans include a corridor “balance sheet” to assess the long-term assets (not only physical but also economic and social) and liabilities of a corridor today, and how they can be managed through a collaborative process.

METRO ANALYTICS

Holistic focus on economic value

Supply and Demand Relationships

Value-based corridor plans include specific methods for diagnosing the value and potential return of supply enhancement investments with demand management (freight markets, workforce commuting and modal efficiency) to maximize the corridor balance sheet with a solid business case for a corridor's future.

METRO ANALYTICS

Holistic focus on economic value

Durable Coalitions and Solution Sets

Value-based corridor plans establish durable coalitions based on solid analysis of the current and future market and social beneficiaries of corridor management. Flexible solution sets are more agile than a singular “preferred alternative” and offer different pathways to a wider range of economic benefits.

Value-Based Corridor Plan

METRO ANALYTICS

Why have a Value-Based Corridor Plan?

It is a strategy that seeks to optimize the **overall value** of a corridor's "ecosystem."

Value-Based Corridor Plan

METRO ANALYTICS

Big Four Bridge - palmbeachillustrated.com/

Traditional corridor management efforts have focused primarily on access management, safety, and congestion of corridors, emphasizing roadway design and TSMO solutions.

By focusing on **economic value,** these solutions creates strategies around **maximizing social and performance value** for multi-modal transportation corridors.

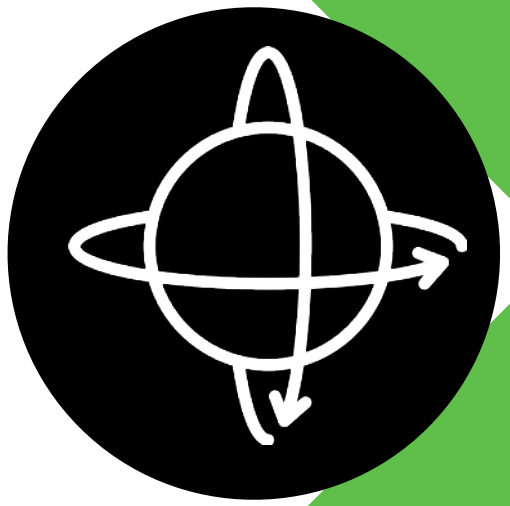
Value-Based Corridor Plan

METRO ANALYTICS

Why have a Value-Based Corridor Plan?

Market-Based Scoping

to determine appropriate modes, stakeholders and geographic extent of corridor.



Community focus on achieving equity with demonstrated historical understanding

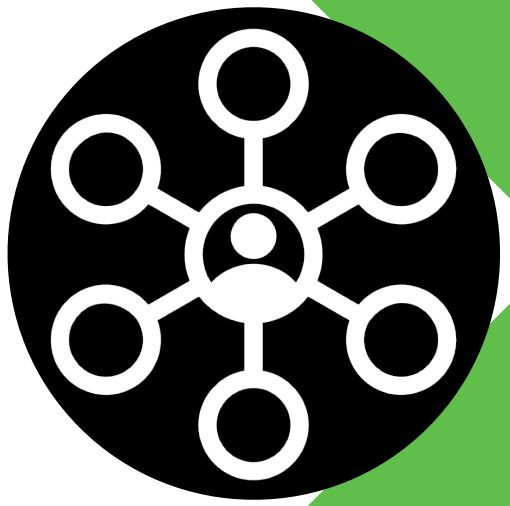
Value-Based Corridor Plan

METRO ANALYTICS

Why have a Value-Based Corridor Plan?

Process for Building Durable Coalitions

based on economic and social interests in a long-term outcome.



Broad base of potential funding alliances, political champions and public and private entities with “skin in the game” to carry out a long-term corridor vision.

Value-Based Corridor Plan

METRO ANALYTICS

Why have a Value-Based Corridor Plan?

Balance Sheets

to compare the assets, liability and overall value of a corridor portfolio under different scenarios.

Hard numbers to demonstrate the policies, performance areas and solutions that will create the most economic value on a corridor.

Value-Based Corridor Plan

METRO ANALYTICS

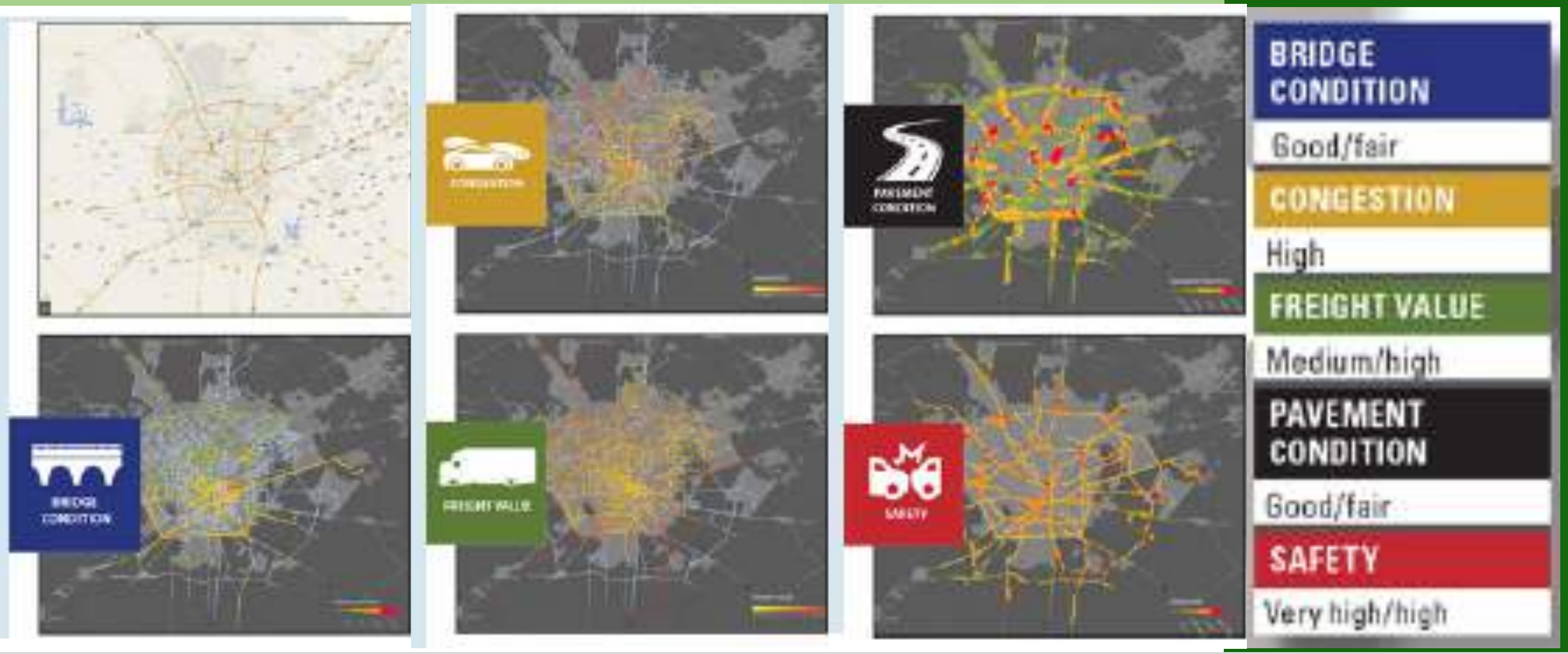
Why have a Value-Based Corridor Plan?

Future Proofing

by working from a menu of solution sets to protect right of way and implement technologies.

Ability to seamlessly adapt a corridor program over time as economic, technological or social conditions change.

Build a Spatial Analysis Environment



- I-45 Corridor in Texas -TOSTADA

METROANALYTICS

Build Durable Coalitions and Processes

Figure 4: Critical Elements for A Durable and Effective Coalition

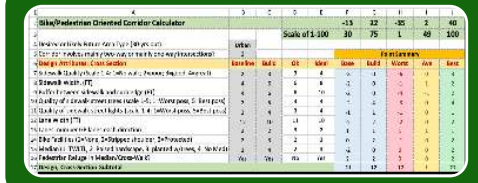
- Secure the Ingredients for a High-Impact Corridor Coalition
- Select Partners Appropriate for the Context
- Align Management Roles with Stakeholder Perspectives
- Identify Impact Indicators for Each Group
- Follow Programmatic Steps to Build a Coalition
- Implement a Framework for Governance and Accountability
- I-15 Case Study

METROANALYTICS

Corridor Management Tools

Step	Criteria/Quantifiable Indicators	Outcome Possibilities (Categories)	Code
Step 1: Corridor Size & Market	Volume, Distance, Number of Trade Centers, etc.	Rural- Dense	10
		Rural- Sparse	11
		Urban Dense	12
		Urban Sparse	13
Step 2: Purposes & Function	Peak/Seasonal Distribution, Trip Purposes/Commodity Distribution, concentration of trip ends	Mixed/Transitioning	14
		Year-Round Freight	20
		Year-Round Passenger	21
		Seasonal Freight	22
		Seasonal Passenger	23
		Year-Round – Both	24
		Seasonal - Both	25
Step 3: Modal Access - Divertible	Modal Shares, Divertible %, Modal Access Quality/Catchment	Unimodal	30
		Multimodal - Freight Divertible	31
		Multimodal - Passenger Divertible	32
		Multimodal - All Divertible	33
		Multimodal - Non- Divertible	34
Step 4 - Context	Cost of Access, Distance to Transit, Stability of Development, Community/Development Value	High Local Impact	40
		Medium Local Impact	41
		Low Local Impact	42
		No Local Impact	43

Corridor Orientation Tool



Bike/Pedestrian Oriented Corridor Calculator

Scale of 1-100 | -15 | 32 | -35 | 2 | 40 | 30 | 75 | 1 | 49 | 100

Walkability Explorer

Innovation Database

7-D Interactive Calculator

METROANALYTICS

Corridor Management

2 min
Pairs

2

2 min
Report

2

Broadly Defined Concept of Operations
Corridor Balance Sheet
Supply and Demand Relationships
Durable Coalitions and Solution Sets

TOOLS

- Community Impact Assessment
- Walkability Explorer
- Innovation Database
- 7-D Interactive Calculator
- Corridor Orientation Tool

METROANALYTICS

Resilience

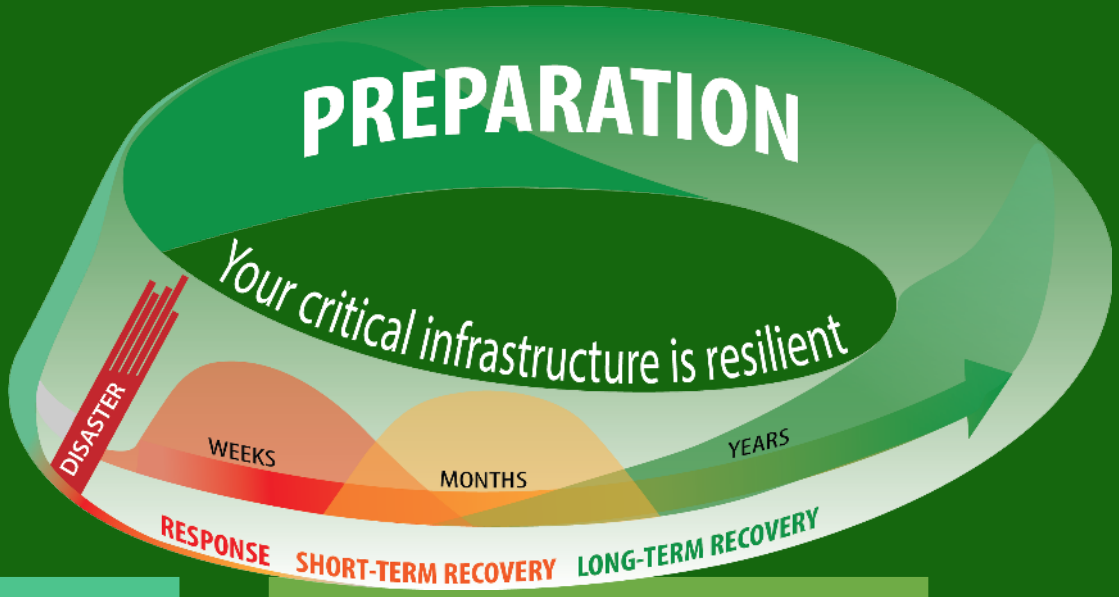
NCHRP 20-125

Strategies for Incorporating Resilience into Transportation Networks

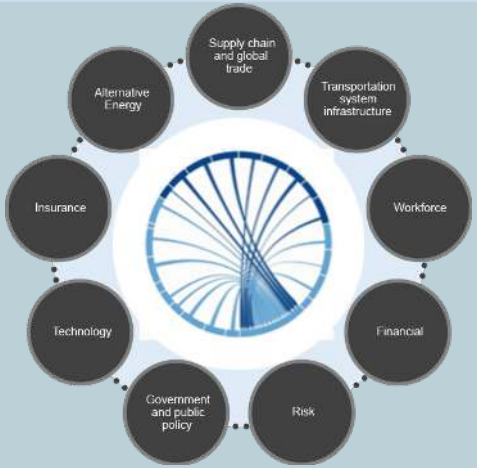
Resilience

Does your community have a plan to show why resilience is essential?

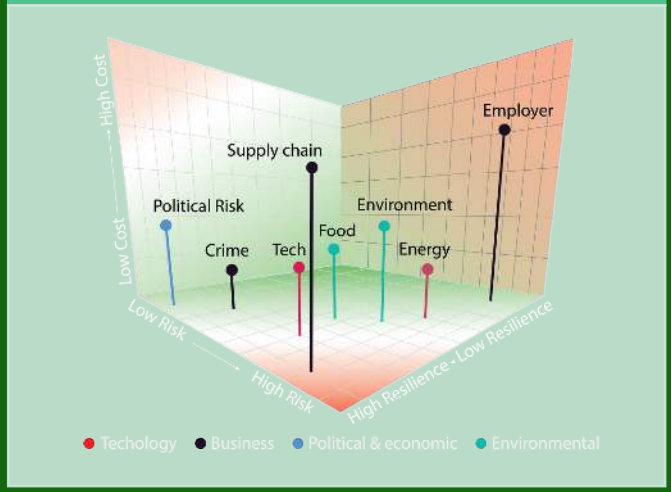
The Business Case for Resilience



Definition STAGE 1



Risk Analysis STAGE 2



Mainstreaming STAGE 3

Sustainability

Economic | Social | Environment

Safety

METROANALYTICS

NCHRP 20-125 Playbook

PLAY 1 | Define the resilience ecosystem

PLAY 2 | Build and Prepare the Resilience Team

PLAY 3 | Define Disruptions, Risks and Vulnerabilities

PLAY 4 | Define “Hard” and “Soft” Assets

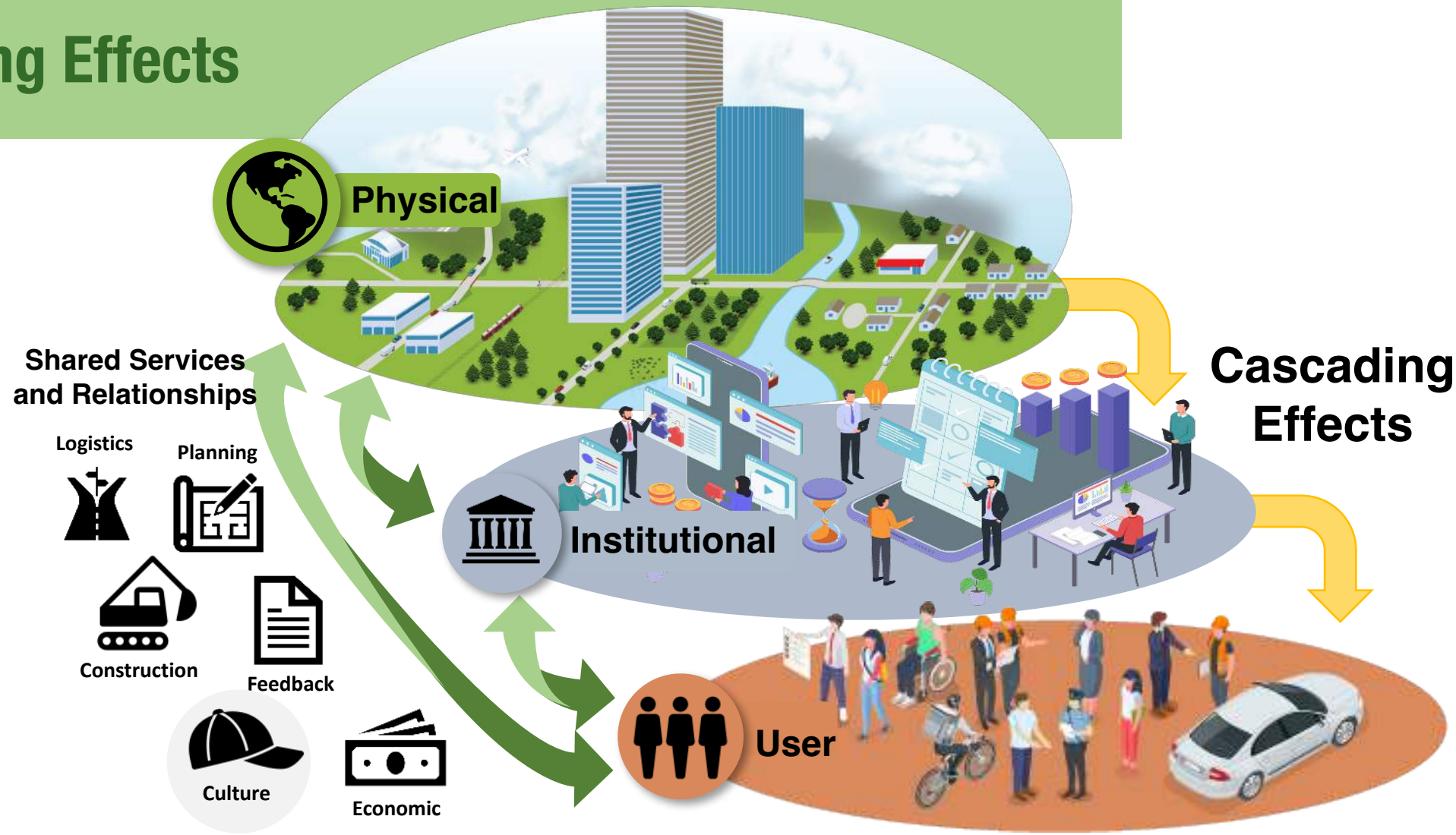
PLAY 5 | Invest in Resilience

PLAY 6 | Playing to Win: Scenarios, Priorities and Learning from Experience

PLAY 7 | The Future of Network Resilience

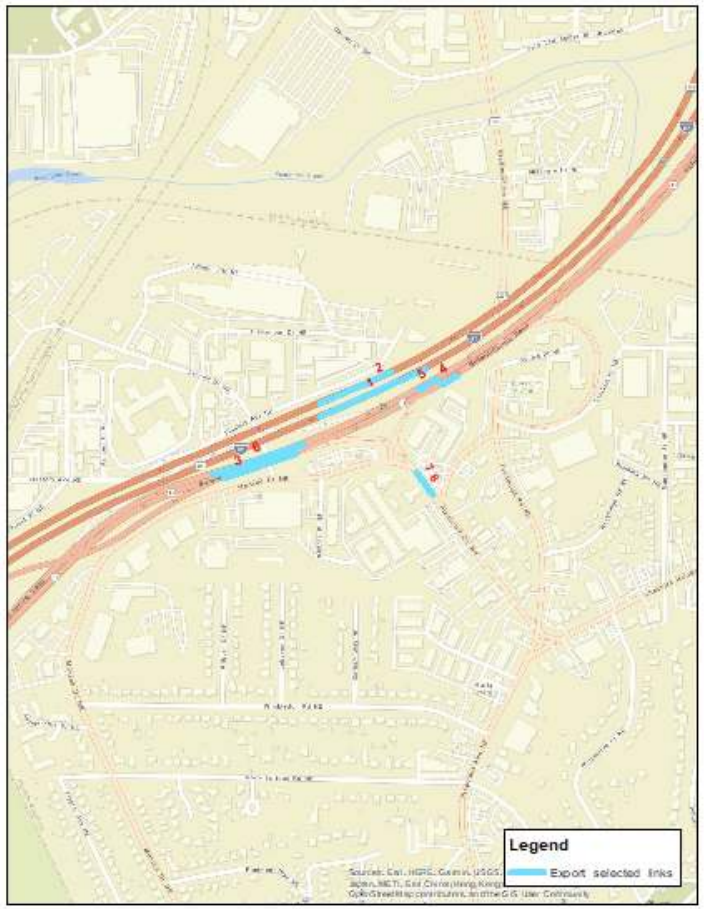
METROANALYTICS

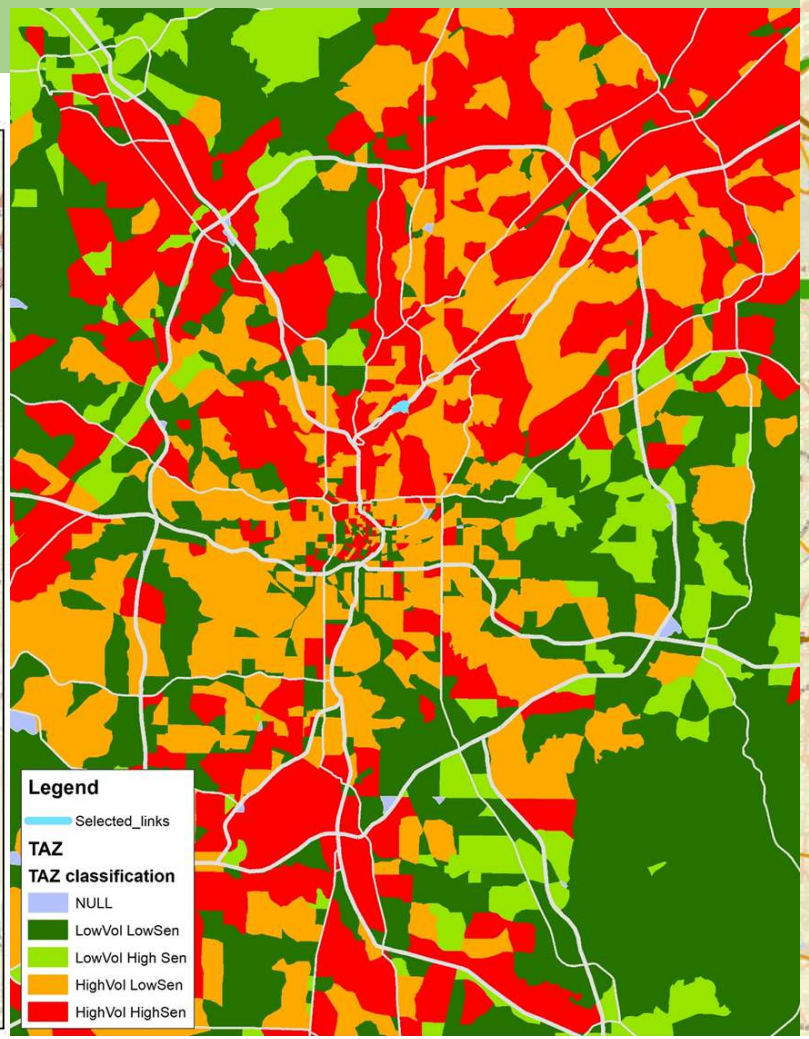
Cascading Effects

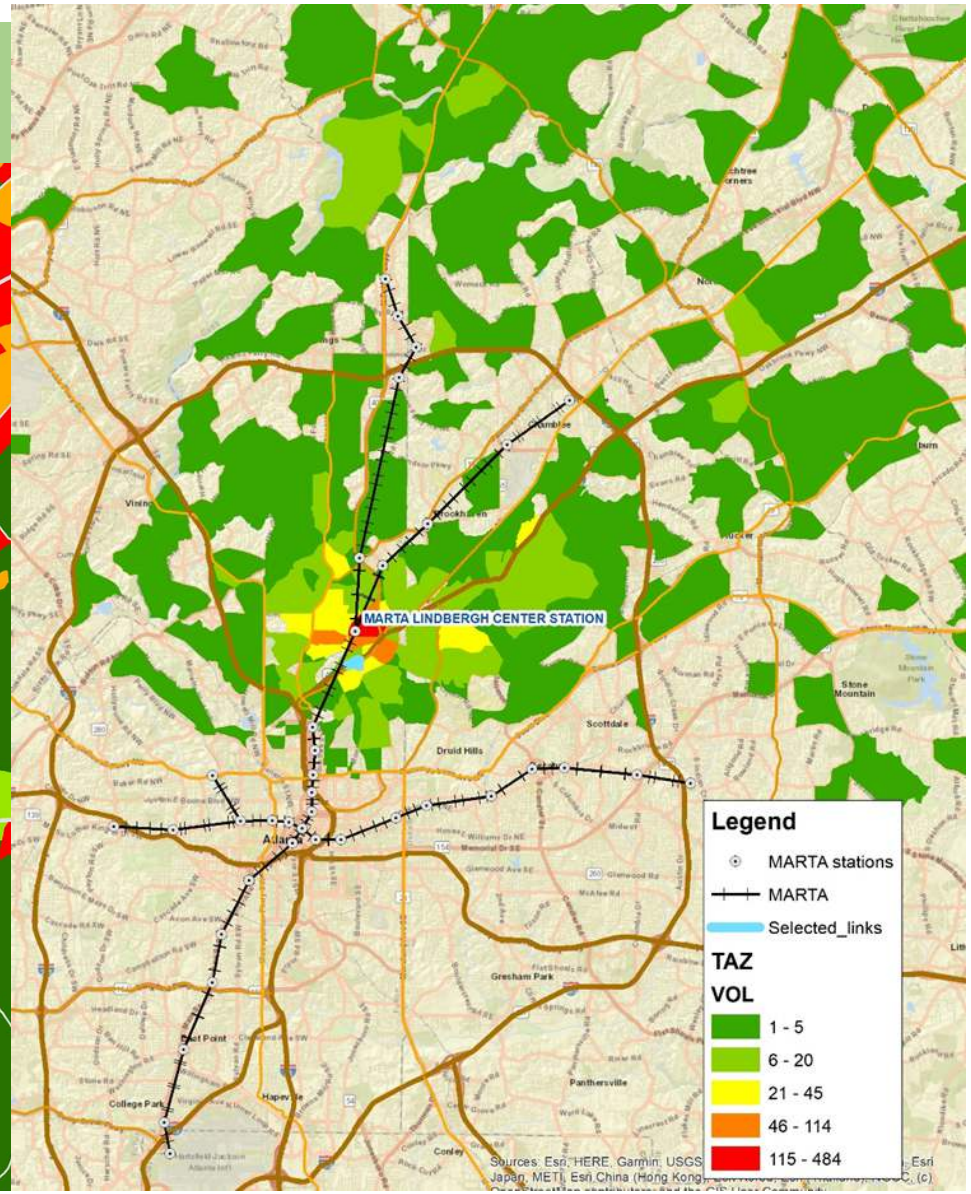


METROANALYTICS

Cascading Effects







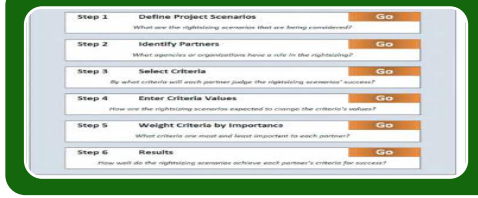
METROANALYTICS

Resilience Tools

Statewide Cascading Effects

Metropolitan Cascading Effects

Asset Management



Preservation Impact Calculator

METROANALYTICS

Resilience

2 min
Pairs

2

2 min
Report

2

Building the Business Case for Resilience

TOOLS

- Statewide Cascading Effects
- Metropolitan Cascading Effects
- Asset Management
- Preservation Impact Calculator

METROANALYTICS

MPO Strategies

NCHRP 1002

Metropolitan Planning Organizations:
Strategies for Future Success

MPO Strategies for Future Success

MPOs will be challenged to stay abreast of emerging issues and opportunities

Addressing Social Equity in MPO Transportation Planning

NCHRP NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Topic: Social Equity
Category: Internal Operations, External Influences, Policy Issues, Partnering & Coordination

Addressing Social Equity in MPO Transportation Planning

MPO CHALLENGE

Social inequity is a critical issue nationwide, and metropolitan planning organizations (MPOs) are well suited to help address racial and socioeconomic disparities. MPOs have the opportunity to help mitigate some of the effects of social inequities as well as change the decision-making that may have contributed to them.

Tools that MPOs have for creating change include providing forums for regional collaboration, forming or participating in regional partnerships, setting regional goals and priorities, influencing the use of federal transportation funding, and monitoring regional data and performance toward goals that reduce future or mitigate existing inequity. The topic of social equity in MPO planning looks at how some MPOs have used these tools to promote greater equity and how the tools can be scaled to regions of different sizes.

WHY IS IT IMPORTANT?

MPOs have the influence, resources, opportunity, and obligation to help promote social equity through regional collaboration and distributing federal funding for projects.

POTENTIAL SOLUTIONS

Approaches to promoting social equity include establishing regional priorities that focus on equity, providing meaningful engagement with disadvantaged communities, and allocating funding equitably during project selection for MPOs' metropolitan transportation plans (MTPs), transportation improvement programs (TIP), and other planning activities. MPOs can also help form partnerships among agencies that control resources and decision making.

Addressing social inequity can be categorized as relating to external influences (i.e., the social inequity that exists due to many contributing factors). Policy issues, partnerships, and coordination are ways to address this topic. Social equity concerns may extend to MPO staff and leadership positions that should reflect the diversity of the communities they serve.

Solution 1: Meaningful Engagement with Disadvantaged Communities. MPOs can develop outreach strategies that promote widespread involvement, particularly targeting populations that have not previously been engaged or have been negatively affected by transportation planning decisions. MPOs also can require more robust outreach in planning studies led by recipients of MPO funds. Outreach strategies include interviewing community leaders, identifying trusted local champions to promote participation from within communities, providing food and childcare at public meetings/events (provided that the project funding sources allow such use and/or obtaining separate funding if needed), attending other organizations' meetings/events, and using on-the-ground "street teams" to interact with residents where they live and work.

Scalable Solutions and/or Resources

Solution 2: Transportation Project & Policy Impact Forecasting. A key function of MPOs is to develop the transportation plans that inform federal funding decisions for the region's transportation projects. MPOs can forecast potential effects on historically transportation disadvantaged communities, such as low-income and minority communities within the region as well as the region as a whole.

Solution 3: Framework and Goals for Addressing Inequity. This solution involves identifying social equity as an issue that MPOs have a role in addressing and then identifying goals and actions the MPO can take to promote equity. MPOs should then track and monitor performance toward goals. An example of social equity in fees collection and monitoring is the Penny for Pinellas funding program, which has been in effect since 1990 through several referendums and is used to fund transportation, parks, water quality, safety, and other improvements. This one-cent sales tax is not collected on groceries and some other essential goods and relies heavily on expenditures from visitors to the county. Importantly, Pinellas County monitors and reports on expenditures in easy-to-understand language and graphics.

SOCIAL EQUITY

WHERE IT HAS BEEN DONE

Los Angeles Department of Transportation (LA DOT) uses a Dignity-Infused Community Engagement (DICE) approach to public engagement that seeks to recognize and mitigate the negative effects of historically inequitable systems and decision making and to engage all communities in meaningful discussion on these topics as part of the planning process. This approach acknowledges inequitable practices and identifies concrete steps (see below) for mitigating inequity and engaging everyone in the process.

The **San Francisco Municipal Transportation Agency's (SFMTA's)** Bayview Community-Based Transportation Plan created an equity index to locate projects where they would provide the greatest benefit to the largest number of vulnerable residents. SFMTA identified "Communities of Concern" using Census Block Group level demographic data and vetting it with input from community leaders and residents to develop a weighted Equity Index to spatially prioritize equity in the study area. The index was a key component of the project selection process.

The **Metropolitan Council (the Minneapolis-Saint Paul region MPO)**, in collaboration with the **Center for Economic Inclusion** and **Greater MSP (Minneapolis Saint Paul (MSP) Regional Economic Development Partnership)**, created and adopted their Regional Economic Framework. A key element of the Framework is its nine strategy priorities, one of which is Racial Inclusion. The priorities are measured in the MSP Regional Indicators Dashboard that benchmarks how the region's economy is performing over time against 11 peer regions. Examples of the framework's measures for Racial Inclusion are workforce participation and unemployment rates disaggregated by race, racial employment gap, the racial wage gap, and the number/percentage of companies whose hiring practices reflect the racial and ethnic composition of the region.

HIGH-LEVEL DETAILS OF APPROACH

Elements of LA DOT's Dignity-Infused Community Engagement approach are applicable to MPOs. This approach can be applied to all planning processes, from MTPs to corridor studies, modal plans, housing strategies, safety, and other activities. MPOs can begin by conducting a social climate analysis to understand cultural identity, demographics, social services needs, environmental factors, infrastructure conditions, and transit access. This analysis may include oral histories and interviews with resident leaders and community-based organizations. Next, MPOs can form targeted engagement teams, which may include paid partners in the community, to help guide the engagement process and reach previously excluded groups; street teams to canvas, phone bank, and participate in community meetings and events; and Resident Advisory Councils to help share information about the project with the community.

HIGH-LEVEL STEPS

1. Conduct a formal social climate analysis
2. Develop or support community teams, street teams, and resident advisory councils
3. Conduct capacity-building trainings
4. Facilitate restorative justice discussions
5. Conduct community engagement events and formal public comment opportunities
6. Identify and use anti-displacement strategies

MPOs can also host capacity-building training that promotes sharing of institutional knowledge related to plans and projects. MPOs can hold restorative justice sessions to talk about practices that have historically negatively affected communities and how to reverse these practices. Traditional outreach methods like small- and large-scale engagement events should also be used as well as formal public comment opportunities that allow engagement in-person and via phone, texting, live polling, public notices, and mailers, in case internet access is not available. Lastly, MPOs can identify other specialized efforts to include people of all demographic groups in the process and recommend implementation of anti-displacement strategies in MPO plans. Examples of anti-displacement strategies include community benefits agreements, community land trusts, inclusionary zoning, property tax abatement assistance funds, and home repair assistance funds.

WHERE TO FIND MORE INFORMATION

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SOCIAL EQUITY

Addressing Social Equity in MPO Transportation Planning

METROANALYTICS

Addressing Regional Freight Issues in the MPO Planning Process

NCHRP NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Topic: Regional Freight Issues
Categories: Internal Operations, External Influences, Policy Issues, Partnering & Coordination

Addressing Regional Freight Issues in the MPO Planning Process

MPO CHALLENGE

As freight is a critical component of the transportation system, MPOs must address a range of freight-related matters in the MPO planning process. Some key challenges include the following.

Need for increased consideration of movement of goods in the Metropolitan Transportation Plan (MTP) planning processes. When freight is considered in a separate section or chapter and not fully integrated throughout the MTP, the resulting implementation and transportation system performance can underrepresent the role of freight in the transportation system.

Identifying and balancing freight-related project prioritization metrics. MTPs and other MPO plans must adequately quantify freight project performance. Such projects may benefit some modes that are confined to roadways (e.g., personal vehicles and fixed-route bus transit), but can harm other modes of travel or exacerbate impacts (e.g., noise, air quality, and bicycle and pedestrian safety).

Accommodating increasing freight volumes and associated needs, such as truck parking and curbside management. With the increasing freight volumes (amplified by rapid growth of e-commerce during the COVID-19 pandemic), demand for truck parking facilities, and speed and volume of deliveries to homes and businesses have accelerated. Lack of truck parking is associated with unauthorized truck parking, which causes safety issues for commercial vehicle drivers and others on the roadway. These trends have direct implications for curb space availability, freight vehicle emissions, and freight-intensive land use (including growing demand on the urban periphery and conflicts with other development patterns).

WHY IS IT IMPORTANT?

The efficient movement of goods is vital to the health of people and the economy.

POTENTIAL SOLUTIONS

Some ways for MPOs to address freight more thoroughly and meaningfully include weaving freight considerations throughout the MTP document, incorporating freight metrics into project prioritization processes, and addressing truck parking in MPO planning documents, including the MTP.

Addressing regional freight issues can be categorized primarily within external influences associated with changing freight and goods movement patterns. Freight planning relates to internal operations, and policies and partnerships can help address freight-related challenges.

Solution 1: Weaving movement of people and goods throughout the MTP. Instead of consolidating freight considerations into a single section of the MTP, MPOs should address both movement of people and movement of goods throughout the plan. This approach ensures goods movement is adequately incorporated rather than addressed without consideration of other users, modes, and resources.

Solution 2: Incorporate Freight Performance Measures and Metrics into Plans. When evaluating projects, MPOs can incorporate project prioritization metrics that measure impacts on the movement of goods. Plan performance measures should also include measures specific to freight and goods movement.

Solution 3: Address Truck Parking in MPO Planning Documents. MTPs, regional freight plans, and similar planning documents should address emerging freight issues, such as theshortage of truck parking availability. Some MPOs have developed freight plans that address truck parking using a truck parking inventory and general types of truck parking solutions even if specific locations are not identified. Examples of innovative truck parking solutions include truck staging and commercial vehicle loading zones; truck parking information and management systems; smart parking systems; and locating truck parking in interchange areas, along transit routes, or in other underutilized spaces. Other relevant topics may include curb management, emissions, and freight-intensive land use.

REGIONAL FREIGHT ISSUES

WHERE IT HAS BEEN DONE

Rather than addressing all freight considerations in a separate plan, the **Harrisonburg Rockingham Metropolitan Transportation Planning Organization's** *2040 Long Range Transportation Plan* (LRTP) weaves the movement of people and goods throughout the entire plan document. Freight is addressed in the plan's existing conditions inventory (including freight corridors and generators), needs, LRTP goals, LRTP performance measures (e.g., intermodal access and efficiency/tons of goods impacted), and improvement strategies. This balanced approach ensures that the movement of people and goods are considered in combination instead of by themselves.

The **Colorado Department of Transportation's** *Colorado Freight Plan* established key strategies, freight-specific performance measures, and investment actions aligned with each of the plan's goals. The freight plan performance measures are in addition to the required federal performance measures. Examples include commercial vehicle involved incident rate per 1 million truck vehicle miles traveled (VMT), available truck parking space per 100,000 VMT, percent of bridge crossings over interstates, U.S. routes and state highways with a vertical clearance less than the minimum design requirement, peak period incident clearance times on key corridors, annual cost of congestion to commercial motor vehicles, and emissions (pounds of carbon dioxide) due to excess truck delay. Freight-specific performance measures can also be incorporated into MTPs.

Big cities have a lot of freight movements. **New York City** has created a very accessible but still comprehensive guide to working with local companies to promote off-hour deliveries. Topics include noise mitigation and how-to guides for transporters and receivers.

The **Georgia Department of Transportation (GDOT)** completed a *Statewide Truck Parking Research Project* that included a national review of best practices for truck parking; an inventory of public, private, and unauthorized truck parking locations (in the state and within a 30-mile buffer outside the state); as well as potential solutions for consideration.

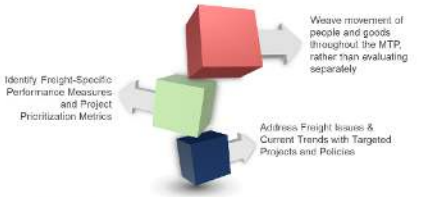
Curb space analysis and management are highly relevant to regional freight issues. The **University of Washington's Urban Freight Lab** (UFL) conducted the Final 50 Feet research program to understand and quantify current use and operational capacity of curb space for commercial vehicle parking in downtown Seattle. The UFL will also pilot active curb management using sensors and a data platform to provide real-time data.

HIGH-LEVEL STEPS

1. Weave movement of people and goods throughout the MTP, rather than evaluating separately
2. Identify freight-specific performance measures and project prioritization metrics in planning documents
3. Address freight-related issues, such as truck parking, curb management, freight vehicle emissions, and freight-intensive land use in MTPs and freight plans

HIGH-LEVEL DETAILS OF APPROACH

MPO plans and MTPs should address both the movement of people and the movement of goods to ensure a balanced approach. Next, incorporating regional freight issues in the MPO transportation planning processes to identify and incorporate freight-related performance measures into MPO plans. Lastly, freight plans should address pressing freight issues like truck parking, curb management, freight vehicle emissions, and freight-intensive land use.



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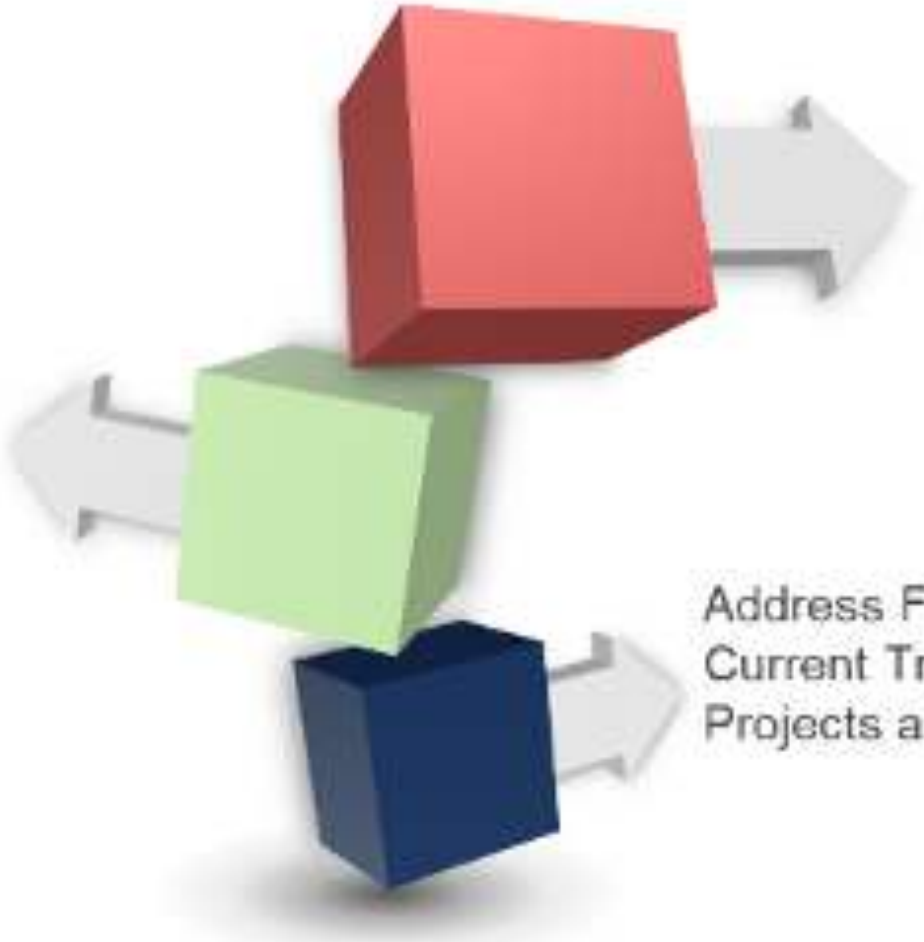
REGIONAL FREIGHT ISSUES

NCHRP 1002

Addressing Regional Freight Issues in the MPO Planning Process



Identify Freight-Specific Performance Measures and Project Prioritization Metrics

Weave movement of people and goods throughout the MTP, rather than evaluating separately

Address Freight Issues & Current Trends with Targeted Projects and Policies

Evaluating Future Uncertainties for MPOs in Planning

NCHRP NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Topic: Planning for the Unknown
Categories: External Influences, Policy Issues, Partnering & Coordination

Evaluating Future Uncertainties for MPOs in Planning

MPO CHALLENGE

Forecasting future conditions in MPO planning processes has become increasingly complex due to changing social, technological, environmental, economic, and political factors that influence how regions develop. MPOs are addressing these changing dynamics in a variety of innovative ways. For example, "what if" scenario planning has gained prominence by helping to prepare for potential changes ahead of time such that MPOs can better respond to or benefit them. Experts can help guide the planning process to consider potential transformative changes occurring over the 20-year or longer planning horizon. These changes can encompass opportunities as well as challenges. MPOs must determine how to allocate funding to ensure infrastructure and development is prepared to handle the future changes.

WHY IS IT IMPORTANT?

It is important for MPOs to ensure that their limited resources for transportation investments will stand the test of time. Understanding and planning for the potential effects of changes in future mobility promotes the long-term success and relevance of these investments.

POTENTIAL SOLUTIONS

There have been several reports generated through the American Planning Association (APA), as well as the American Association of State Highway and Transportation Officials (AASHTO) NCHRP Report 750 Series that address incorporating future changes into comprehensive plans. These reports address several topics, includeing autonomous vehicles, ridesharing, micro-mobility, climate effects, resiliency, equity, health, and other topics that may be relevant to a given region. MPO staff can also host local experts to brainstorm future scenarios that may impact the region given their field of expertise. Additionally, MPOs can prepare plans that address "what if" scenarios through creating collaborative planning processes that work to analyze multiple uncertainties and implications. These future viewpoints can be used to clarify visions and gain insight into keeping the region on a desired path.

Planning for the unknown is related to external influences, policy issues, and partnering and coordination. Being unknown does not mean that there are not methods for gathering information and inputs that can help define the magnitude and direction of potential change or outcomes. The following are some solutions that can be used by MPOs to bring clarification to unknown factors.

Solution 1: Develop Trend Analyses. Utilizing available data sources in air quality, transportation mode shifts, and other relevant information, MPOs can evaluate how areas have shifted over time and in some cases, make forecasts on future expectations. These future expectations can then be evaluated by expert groups, near-term observations, or developed into alternative scenarios to determine their potential impacts.

Solution 2: Create Future-Focused Expert Groups. Some trends are more recent or have not occurred yet. These trends can be discussed as part of local, regional, or statewide focus groups of experts on areas of concern to the MPO. These groups can be one-off workshops or recurring meetings that allow MPO planners to engage with experts and remain abreast of current information. Colleges, universities, and non-profit organizations in the area are excellent resources to engage in this process. These future scenarios can then be used in a backcasting exercise in which the differences between the vision and reality are identified as well as actions that need to be taken to bridge the two.

Solution 3: Develop Alternative Scenarios. Incorporating future scenarios into metropolitan transportation plans (MTPs) can help guide MPOs in planning for their desired futures. Through these scenarios, the consequences of certain actions can be quantified or qualified to better prepare agencies for what may occur. It is important to test these scenarios against near-term observations and explain differences in long-term forecasts if they exist.

PLANNING FOR THE UNKNOWN

WHERE IT HAS BEEN DONE

The **Los Angeles Department of Transportation (LADOT)** and **Seattle Department of Transportation (SDOT)** have developed functional transportation plans that cover policy frameworks for implementing autonomous vehicles (AVs) within their jurisdictions. These plans include policy frameworks for addressing equity, pilots and partnerships, infrastructure and street design, mobility economics, and land use and building design. The plans work to ensure that future infrastructure investments and projects consider how the growth of AVs can impact the jurisdictions and ensure that planned transportation infrastructure projects are prepared to handle AVs.

Delaware Valley Regional Planning Commission (DVRPC) developed the *Dispatches from Alternate Futures: Exploratory Scenarios for Greater Philadelphia* that works with regional experts and transdisciplinary subject experts called the Future Working Group to generate multiple views of the future by assessing uncertainty within a changing environment to understand what conditions or events may emerge and what their likely outcomes may be. DVRPC is planning a third step within its 2050 long-range plan that will identify potential actions to respond to, or benefits that may accompany, these uncertainties.

Valley Visioning is a three-part outreach path to plan for the future of Utah County, Utah. First, the county conducted listening surveys to understand how the public thought growth would occur. Second, growth scenarios were developed accounting for the survey concerns with scenarios such as: business as usual, organized growth around mixed-use centers, westward growth, and urban infill. Each scenario incorporates housing, transportation, open space, water, resilience, workforce, education, and air quality scenarios. Finally, these scenarios were used to model the transportation, land use, and water consumption outcomes that could be drafted into a final vision for Utah County.

The **American Planning Association** has also developed comprehensive plan standards for considering how AVs can be addressed in the planning process, plan context, and implementation phases. These standards cover six principles consisting of livable built environment, harmony with nature, resilient economy, interwoven equity, healthy community, and responsible regionalism. These principles can be researched in conjunction with **AASHTO's** NCHRP Report 750: *Strategic Issues Facing Transportation* reports, which have several volumes exploring freight movement, climate change, technology, sustainability, energy, and other trends to demonstrate the importance of foresight in navigating a rapidly changing future.

HIGH-LEVEL STEPS

1. Use existing data to evaluate trend analyses in areas of interest such as travel mode or climate change
2. Create expert working groups or public surveys
3. Use feedback to develop alternate future scenarios
4. Incorporate scenarios into long-range plans as recommended policies or action items

HIGH-LEVEL DETAILS OF APPROACH

Given the availability of disciplinary experts in large metro areas, forming expert groups to help envision the future of cities may be a viable solution for agencies. Smaller agencies may be able to form virtual expert groups that pull interested subject matter experts to discuss the future of regions from a distance.

With the information acquired, MPOs can begin the process of developing and evaluating "what if" scenarios to incorporate into the transportation planning process. These scenarios can help to either develop policy for implementing future projects that are future resilient or develop model ranges that help to convey the message that certain scenarios could affect expectations should they be implemented.

Trend Analyses
Utilize existing data to develop trend analyses that can be used to make future projections.

Alternate Scenarios
Developing alternate scenarios that envision different future paths that may occur.

Policy Frameworks
Use information from future scenarios to develop policy for handling the potential effects.

WHERE TO FIND MORE INFORMATION

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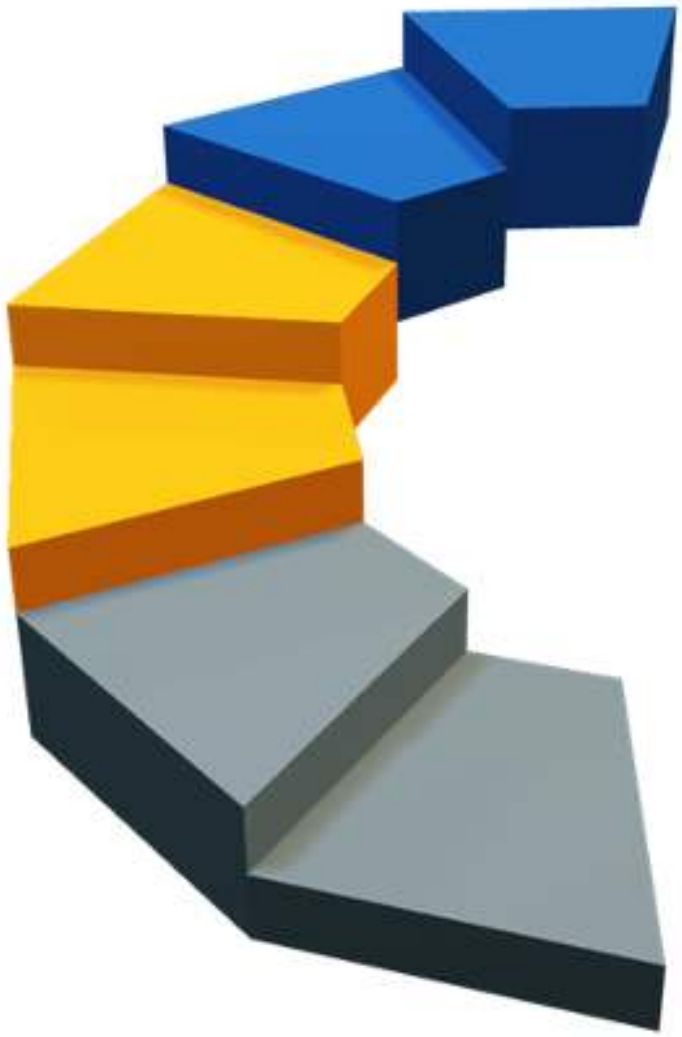
PLANNING FOR THE UNKNOWN

NCHRP 1002

Evaluating Future Uncertainties for MPOs in Planning



Trend Analyses

Utilize existing data to develop trend analyses that can be used to make future projections.

Alternate Scenarios

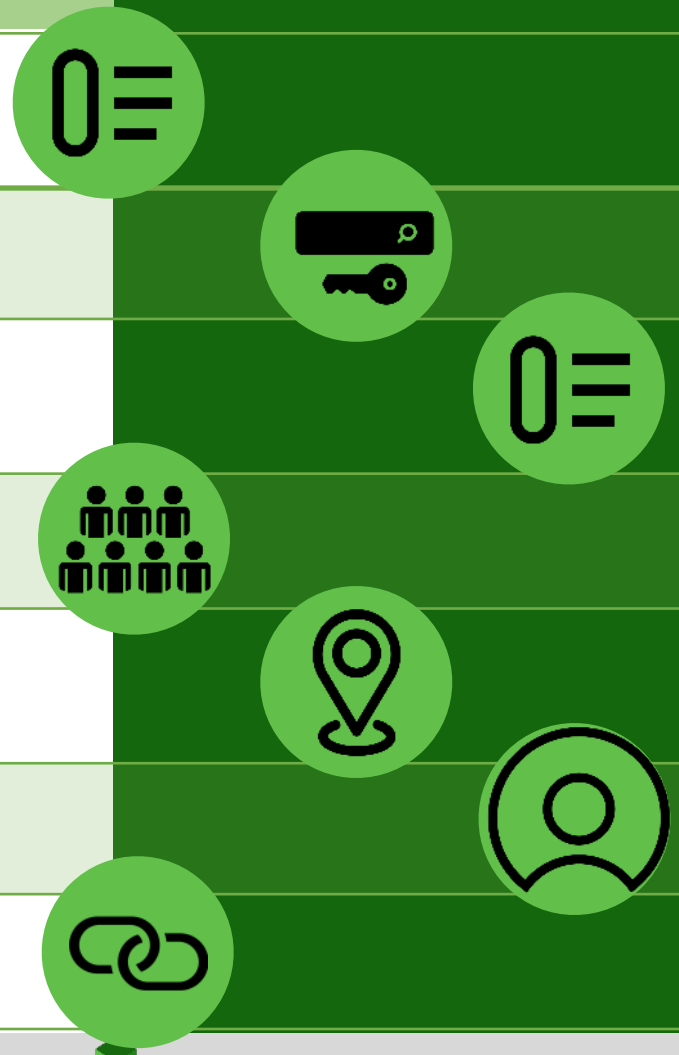
Developing alternate scenarios that envision different future paths that may occur.

Policy Frameworks

Use information from future scenarios to develop policy for handling the potential effects.

MPO Innovation Database

Basic description of best practice record information
Key Topics (Max: 2) and **Keywords** (Max: 3)
Description of project or process, why the work was done, and resources.
MPO population range
The Region and Mega-Region where the source originated
Publicly cited contact person or contact information
Primary source of information



MPOs: Strategies for Future Success

- Social Equity
- Financial Constraints
- Inclusive Engagement
- Curb Space
- New & Emerging Technologies
- Changing Travel Patterns
- Changing Demographics
- Resilience in Planning
- Planning for the Unknown
- Regional Freight Issues
- Staff Retention
- Shared Mobility

MPO Strategies

2 min
Pairs

2

2 min
Report

2

MPOs emerging issues

TOOLS

- Social Equity
- Financial Constraints
- Inclusive Engagement
- Curb Space
- New & Emerging Technologies
- Changing Travel Patterns
- Changing Demographics
- Resilience in Planning
- Planning for the Unknown
- Regional Freight Issues
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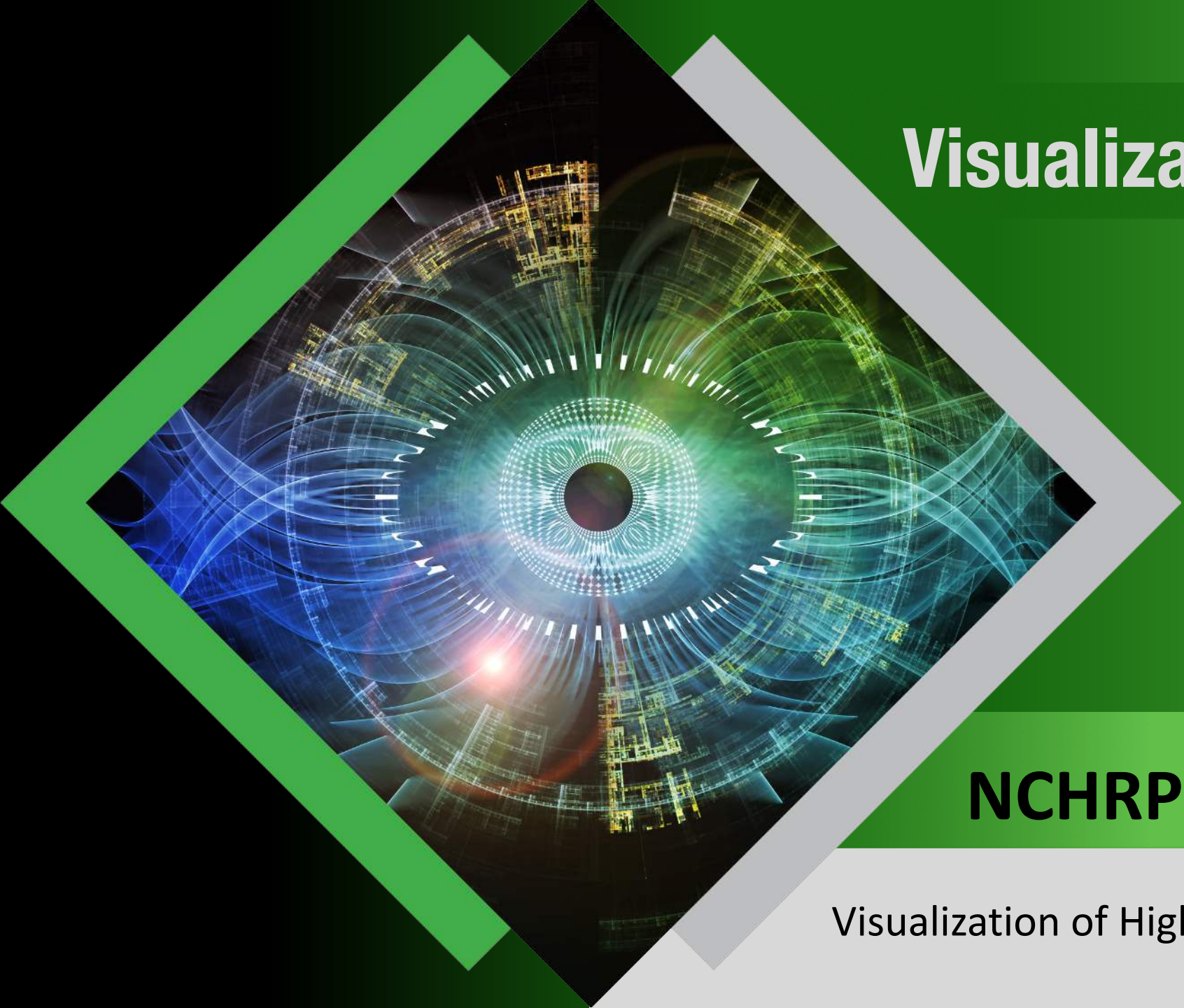
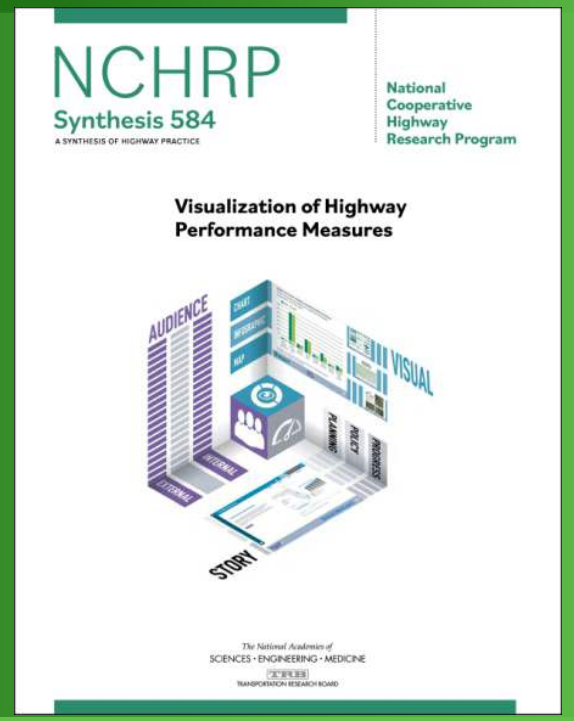


Visualization



NCHRP Synthesis 584

Visualization of Highway Performance Measures

Visualization

A great opportunity for Georgia to tell their story with visualizations that resonates with their audience

Visualization

VISUALIZING PERFORMANCE MEASURES

Tell your performance STORY

Document current status
Show trend over time
Progress towards a target
Help tell a performance story
Support a policy
Inform Long-Term Planning
Inform Medium-Term Planning
Inform Day-to-Day Operations

with VISUALIZATIONS

Chart
Infographic
Map
Dashboard

that resonate with your AUDIENCE

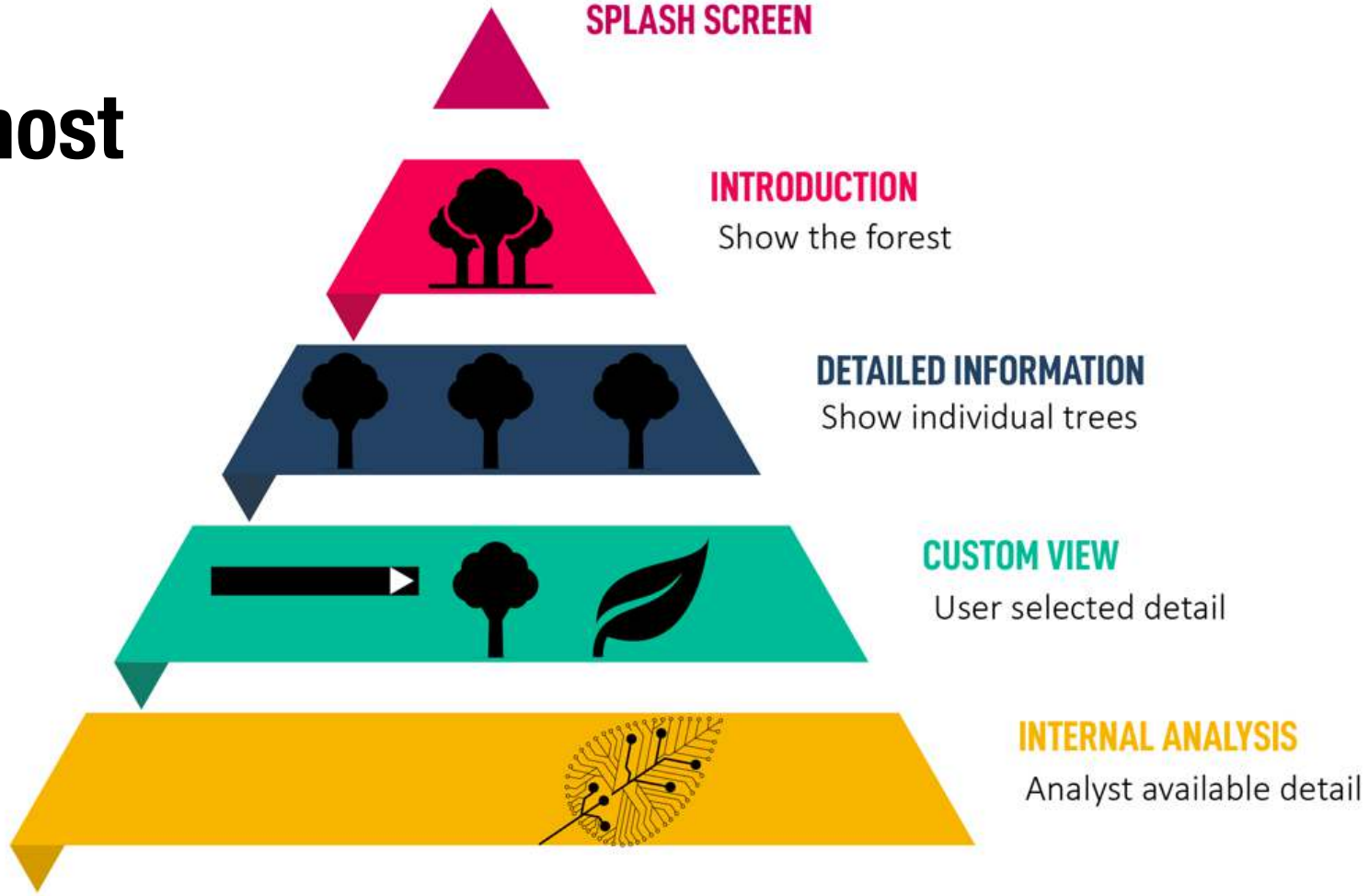
Internal Analyst
Internal Decision Maker
External Stakeholders
Public

NCHRP 52-16 Synthesis
Visualization of Highway Performance Measures

METRO ANALYTICS

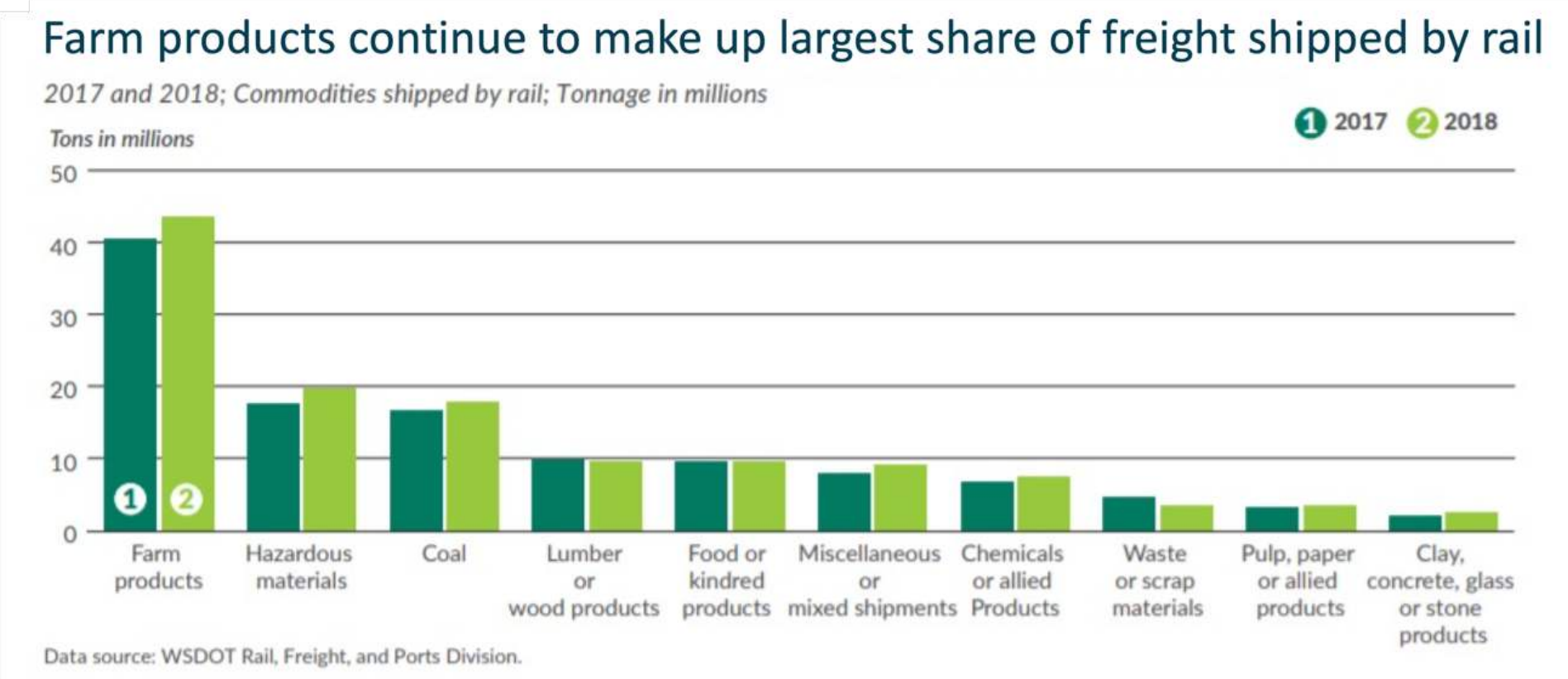
Visualization

Tell a data story
about what matters most



Keep it Simple.

Use maps, line, bar, and pie charts with a title that tells the story.

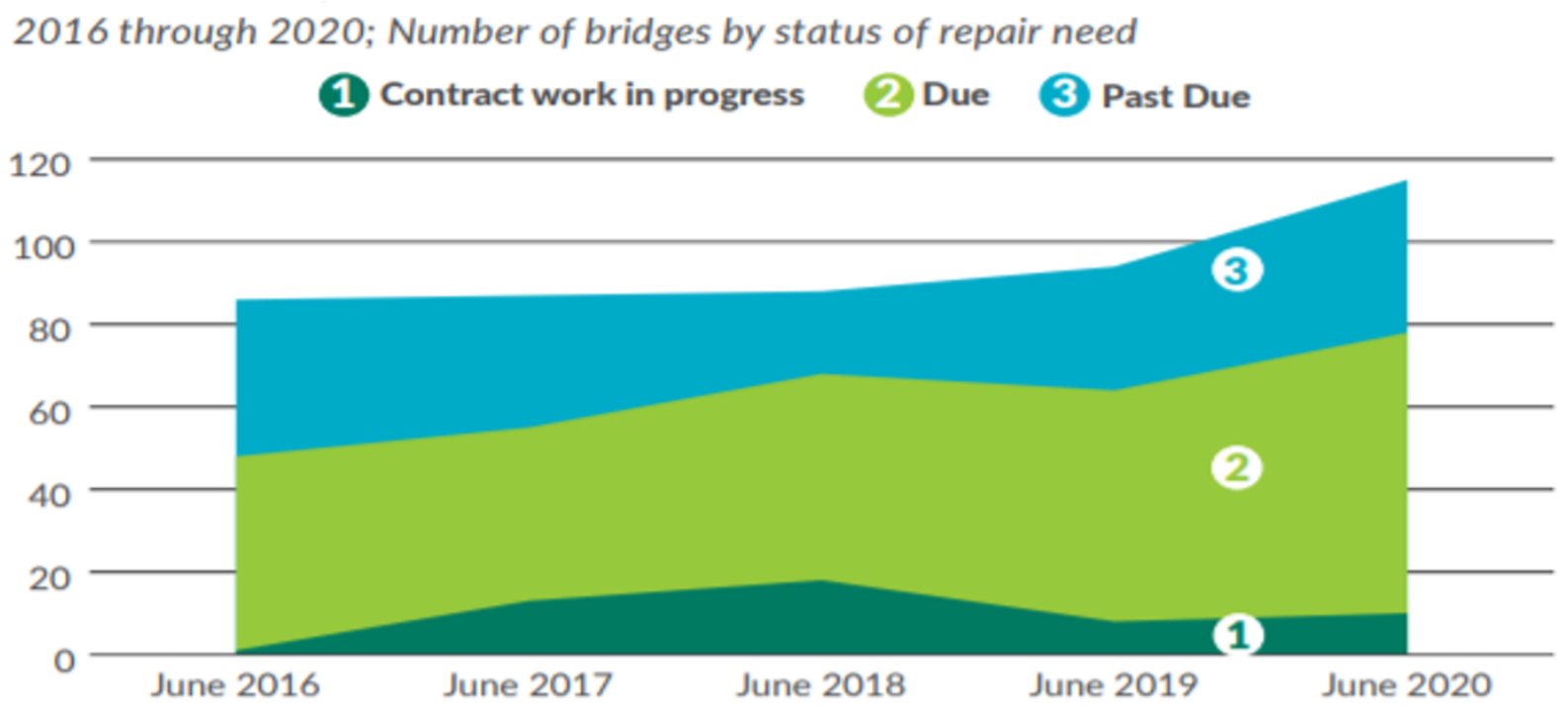


METRO ANALYTICS

Make data transparent.

It builds trust.

WSDOT has 105 concrete bridge decks either due or past due for repair as of June 2020, an increase of 24% from 85 in June 2016



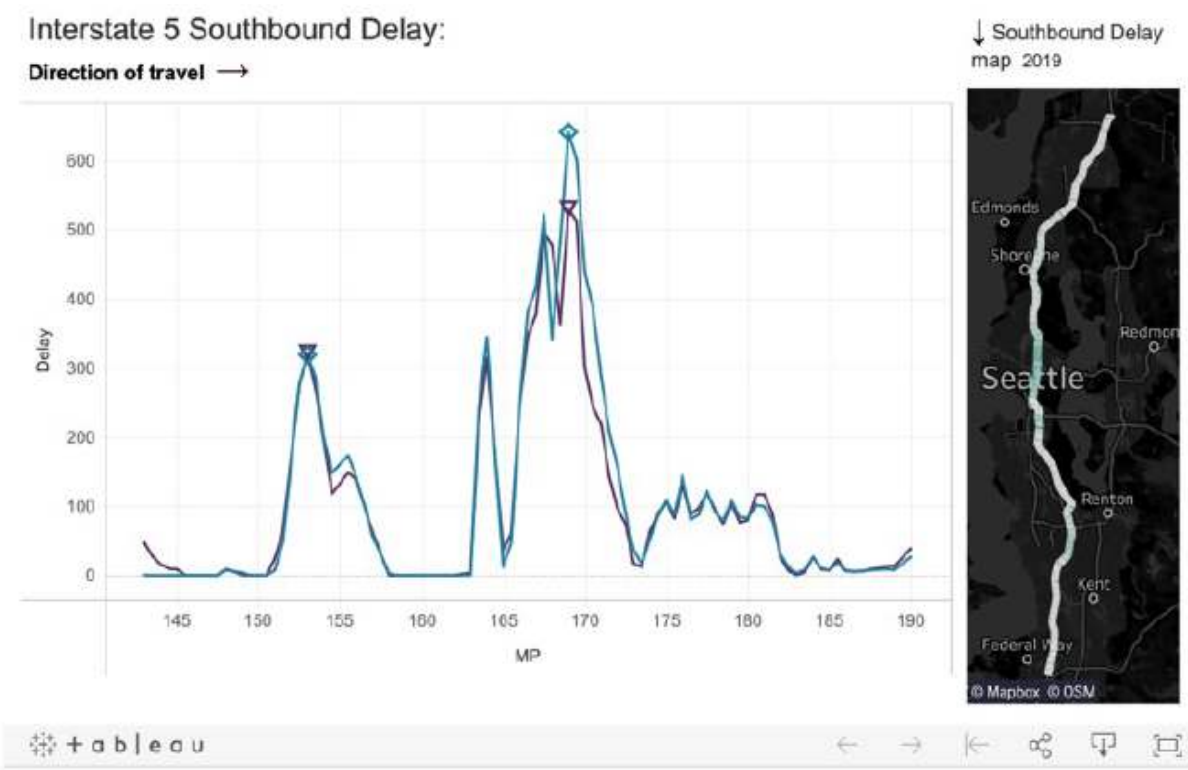
Data source: WSDOT Bridge and Structures Office.

Use performance journalism to tell their agency's story

WA

GNB 80
December 2020

Gray Notebook

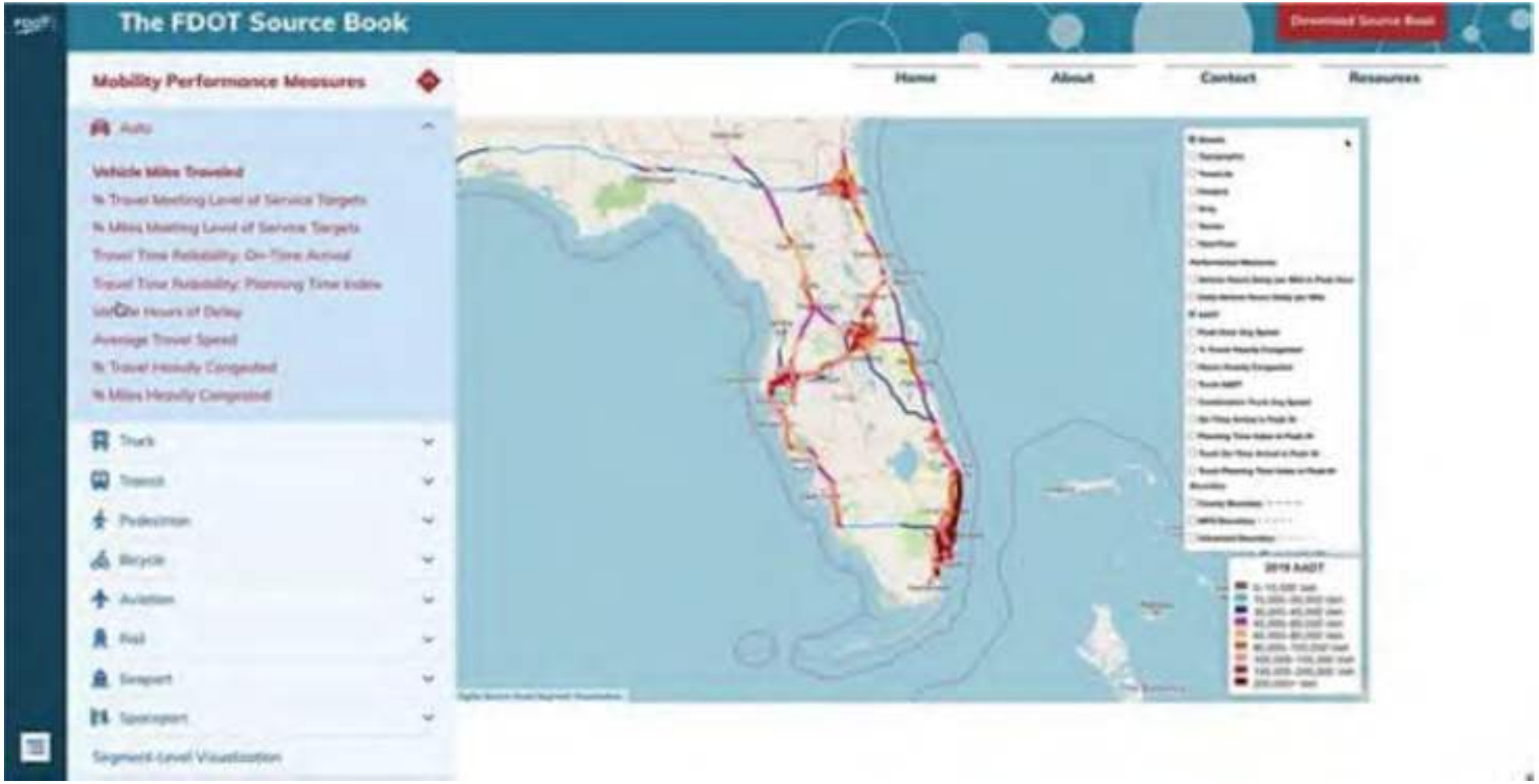


WASHINGTON STATE

METRO ANALYTICS

Dashboard Makes an Impact

Defining Multimodal Mobility Performance Measures

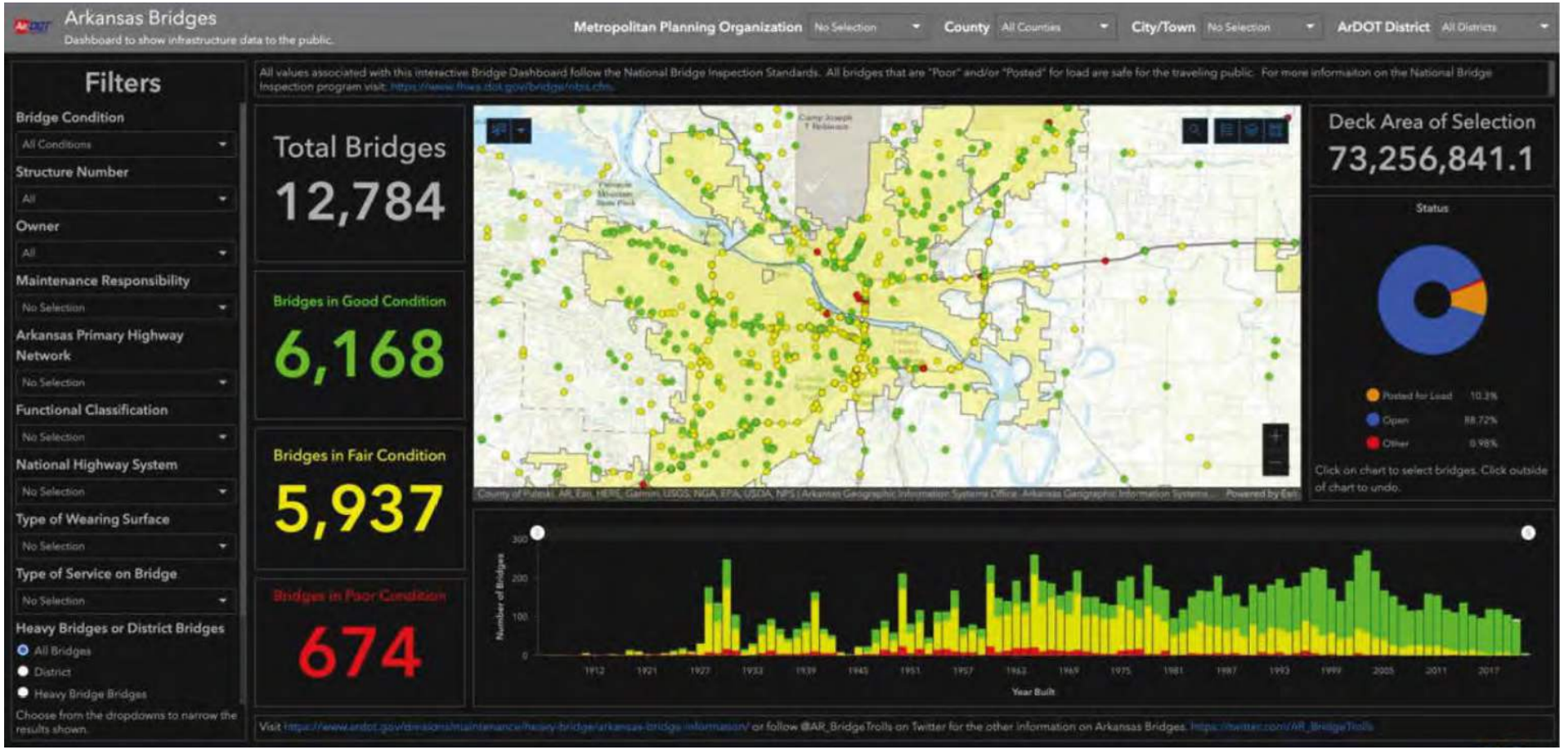


Florida DOT

METROANALYTICS

Telling the Utah Performance Story

Following the Leader to Lead by Example

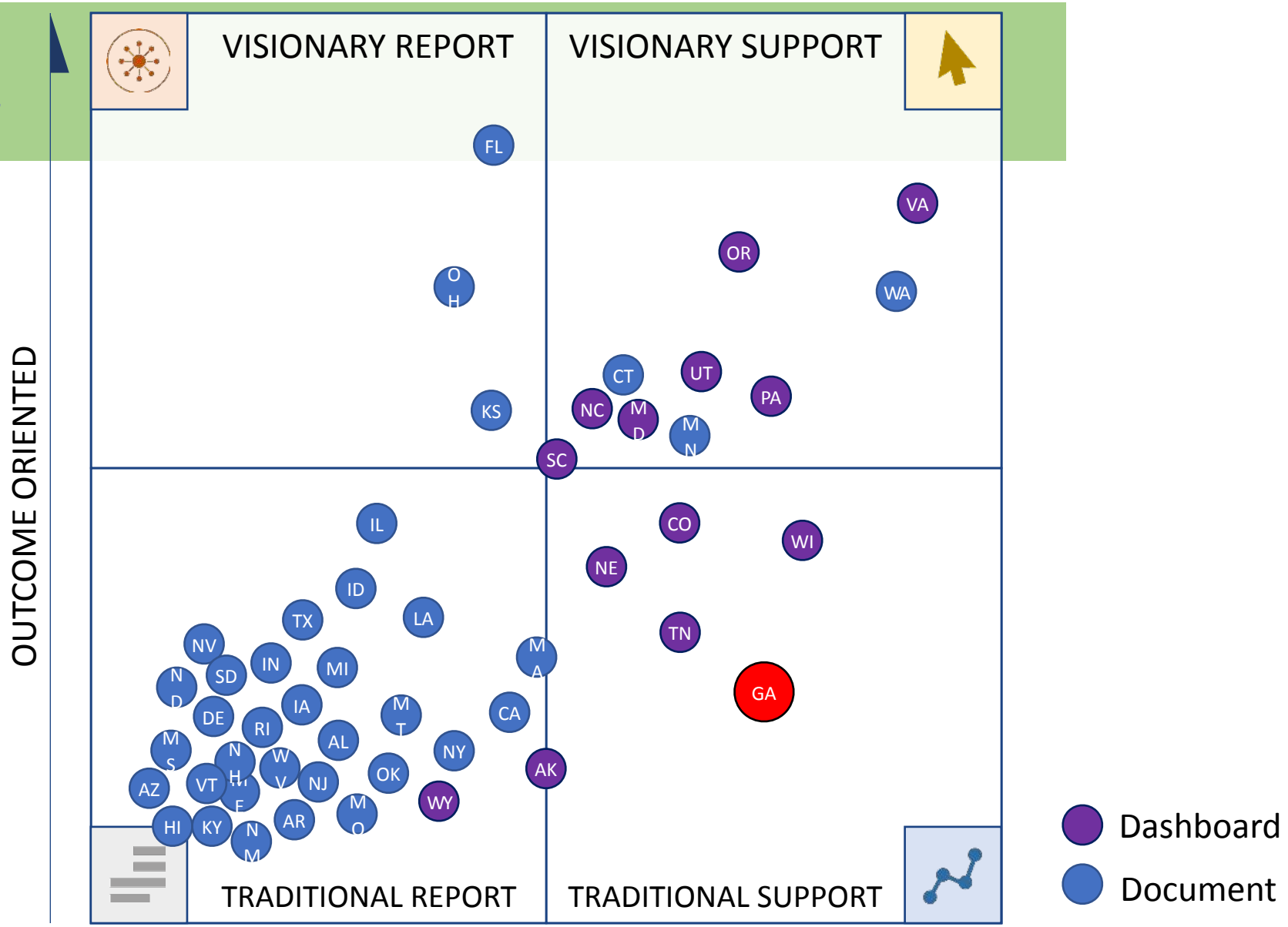


Arkansas DOT

METROANALYTICS

NOTE: These are personal observations from a quick review. A more detailed analysis would address which measures, how detailed and context.

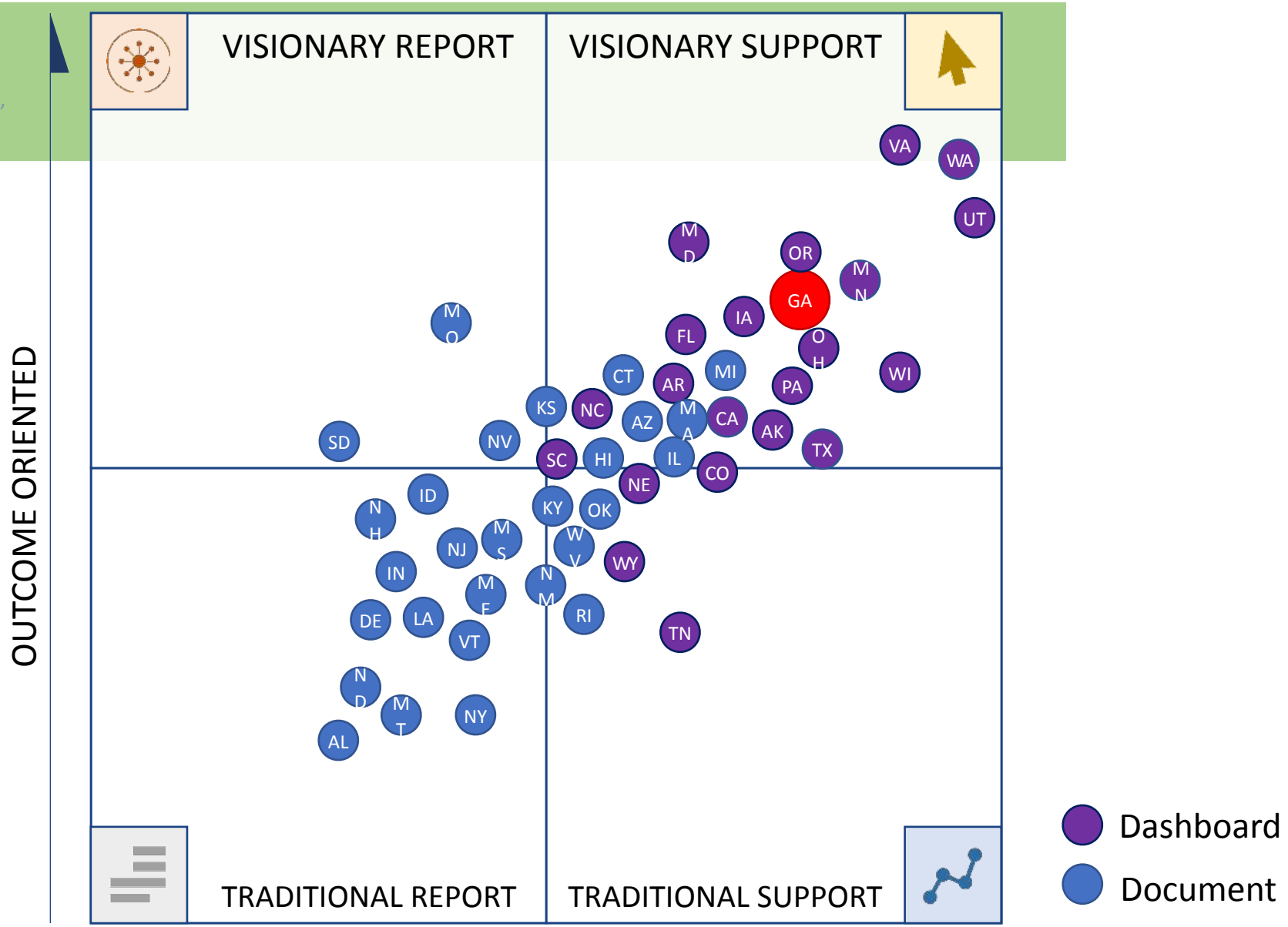
2015



METRO ANALYTICS

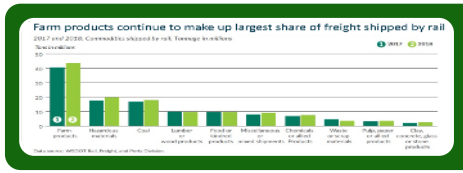
NOTE: These are personal observations from a quick review. A more detailed analysis would address which measures, how detailed and context.

2021

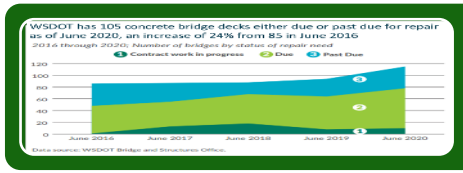


METRO ANALYTICS

Visualization Success Factors



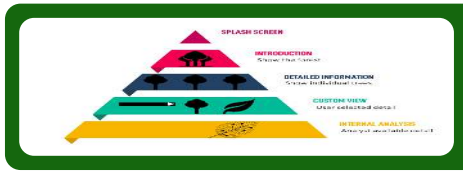
Keep it Simple



Make data transparent

Use performance journalism

Evaluate Effectiveness

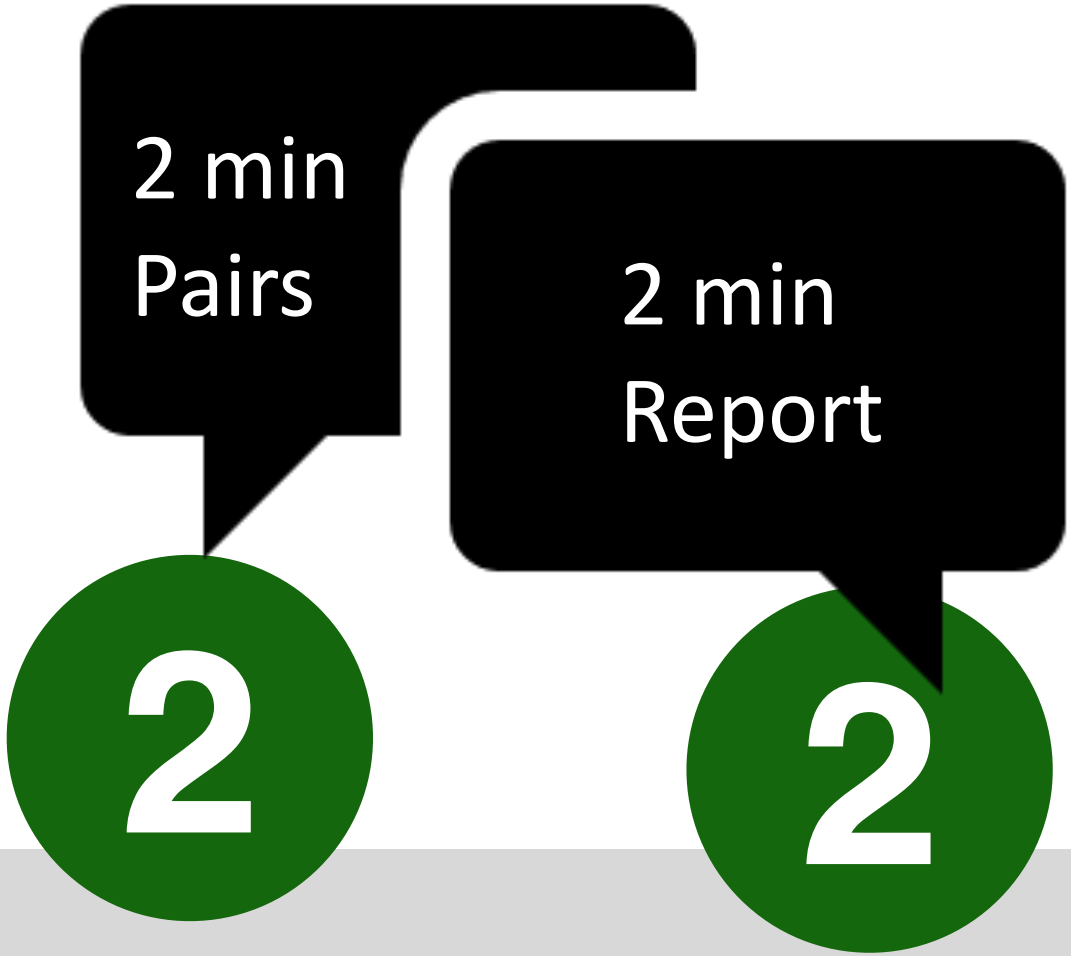


Tell a data story

METROANALYTICS

Visualization

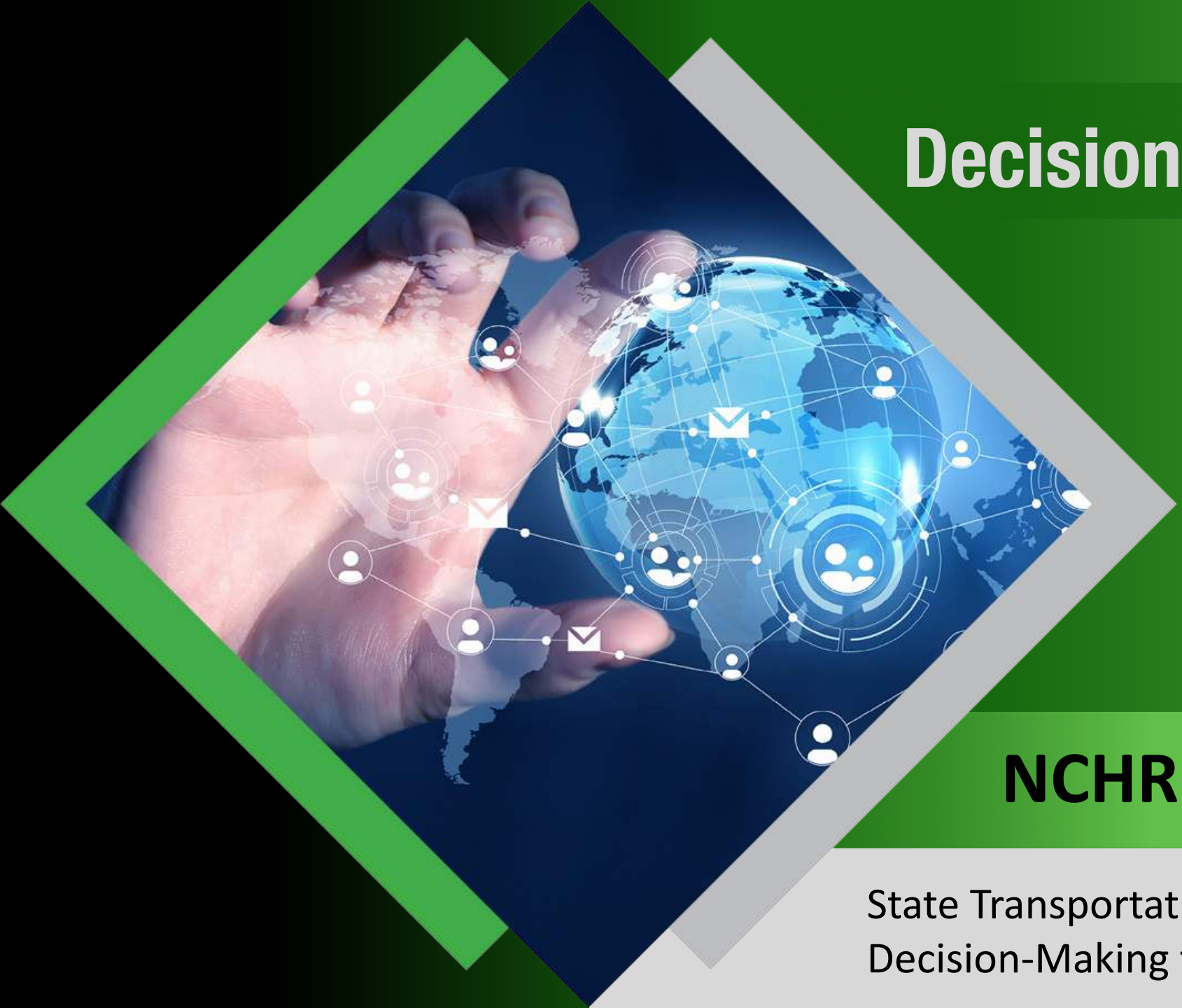
Tell your performance story with visualizations that resonate with your audience



Tools

- Keep it Simple
- Make data transparent
- Use performance journalism
- Evaluate Effectiveness
- Tell a data story

METRO ANALYTICS



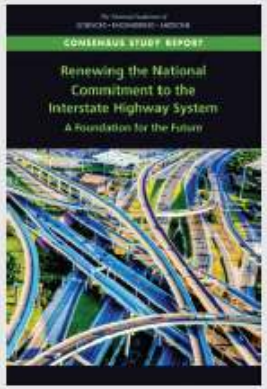
Decision Making

NCHRP 20-126(2)

State Transportation Agency Multifaceted Decision-Making for Future System Performance

Decision Making

A new way to prioritize the many challenges facing Georgia.



Renewing The National Commitment To The Interstate Highway System: A Foundation For The Future 2019 (TRB)

Rebuilding the System's Foundations, Expanding and Managing Urban System Capacity, Demand for Changing the System's Length and Layout, Changing Centers of Population and Economic Activity, Future Travel Demand and the IHS, Climate Change, Adding Resilience, Ensuring Safety While Accommodating a Growing and Changing Vehicle Fleet, Future Impact of Connected and Automated Vehicles on the IHS

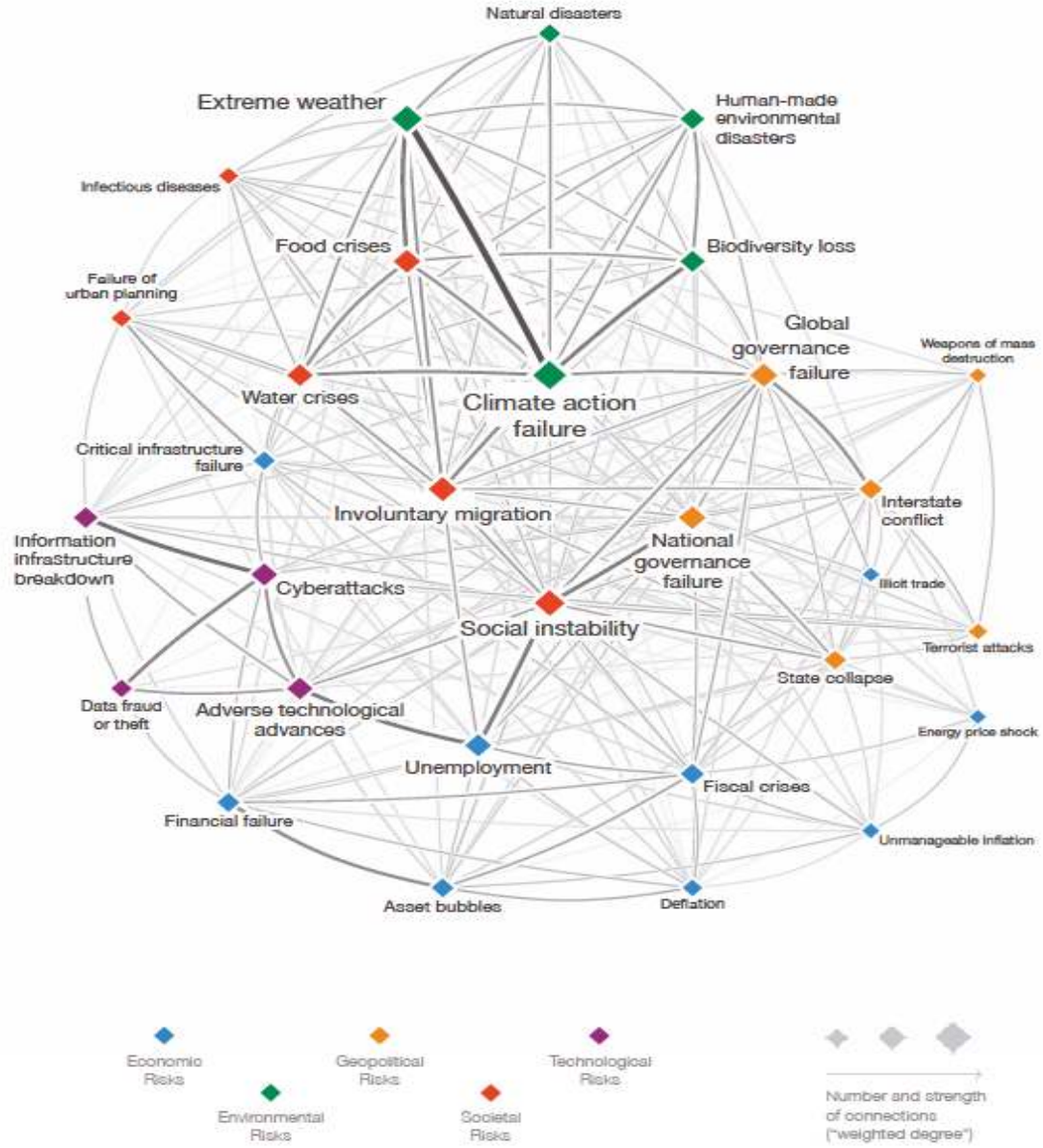
Critical Issues In Transportation 2019 (TRB)

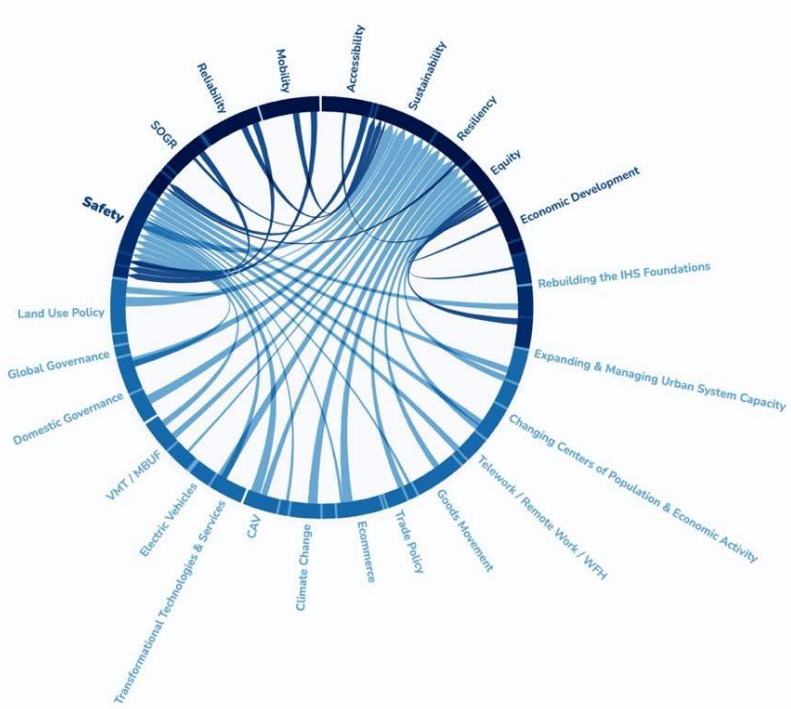
Serving a Growing and Shifting Population, Goods Movement, Safety and Public Health, Equity, Energy and Sustainability, Resilience and Security, System Performance and Asset Management, Transformational Technologies and Services, Research and Innovation, Funding

World Economic Forum Global Risk Report 2020

The world's (in)ability to collectively address pressing issues, Trade Policy, Climate Change

Figure IV: The Global Risks Interconnections Map 2020



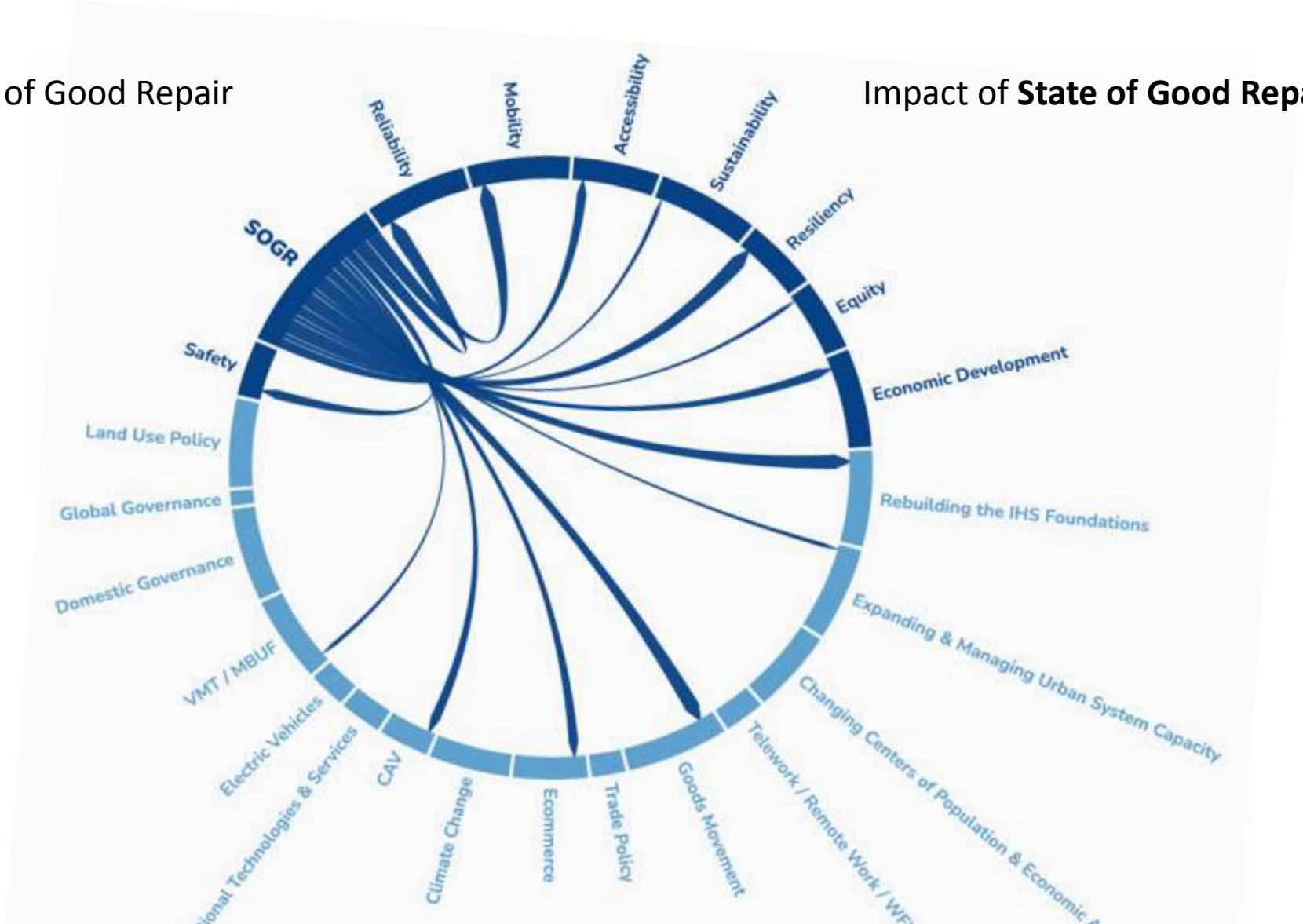


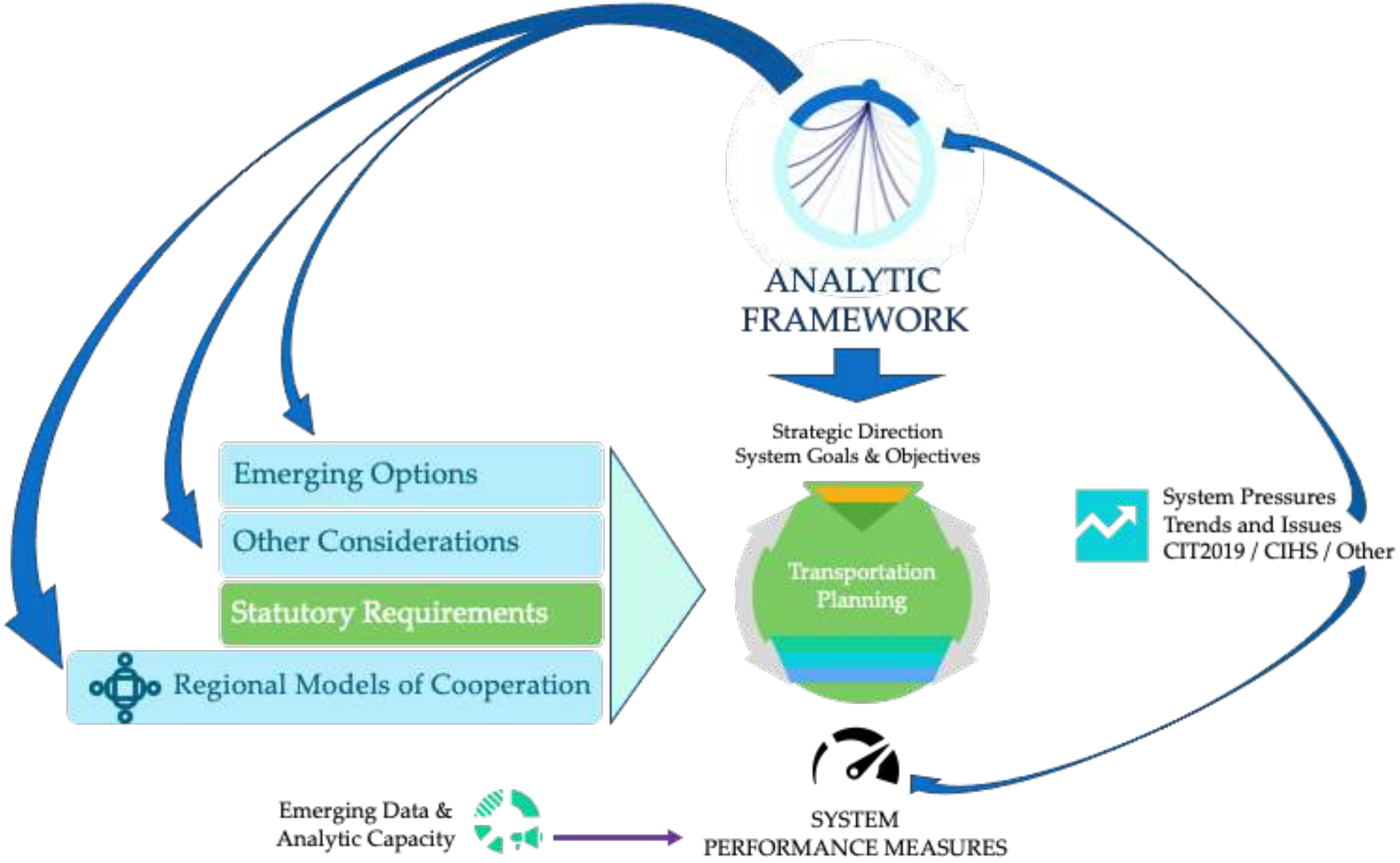
All the relationships are row to column. Does the topic in the row have an influence on the topic in the column and what's the strength of the influence.		Safety	State of Good Repair	Reliability	Mobility	Accessibility	Sustainability	Resiliency	Equity	Economic Development
Objective / Priority	Safety		0	2	2	1	0	1	0	1
	State of Good Repair	2		3	3	2	1	3	1	2
	Reliability	2	0		3	2	2	0	**1**	**3**
	Mobility	2	0	3		3	2	1	2	3
	Accessibility	2	1	3	2		1	1	3	3
	Sustainability	0	1	1	1	1		1	2	2
	Resiliency	1	1	3	2	0	1		1	3
	Equity	0	0	0	2	3	1	0		2
	Economic Development	0	2	2	3	3	2	2	3	
Trends & Issues	Rebuilding the System's Foundations	2	3	3	2	2	2	3	1	3
	Expanding & Managing Urban System Capacity	2	2	3	2	2	2	3	2	3
	Changing Centers of Population & Economic Activity	2	1	3	3	2	2	3	2	3
	Telework / Remote Work / WFH	2	1	2	1	1	2	1	1	1
	Goods Movement	1	3	2	2	1	3	0	2	2
	Trade Policy	0	2	2	1	0	3	0	0	2
	Ecommerce	1	1	2	2	1	2	0	0	2
	Climate Change	1	3	2	1	1	3	2	2	2
	CAV	3	0	2	1	1	1	0	1	1
	Transformational Technologies & Services	2	2	2	1	1	2	1	1	1
	Electric Vehicles	0	0	0	0	0	3	0	0	0
	VMT / MBUF	2	3	3	2	2	3	0	2	2
	Domestic Goverance	2	2	3	2	2	3	2	2	2
	Global Governance	0	0	0	0	0	1	0	0	0
	Land Use Policy	2	2	3	3	2	3	1	3	2

THE ARC DIAGRAM

Impact of **Issue** on State of Good Repair

Impact of **State of Good Repair** on issue

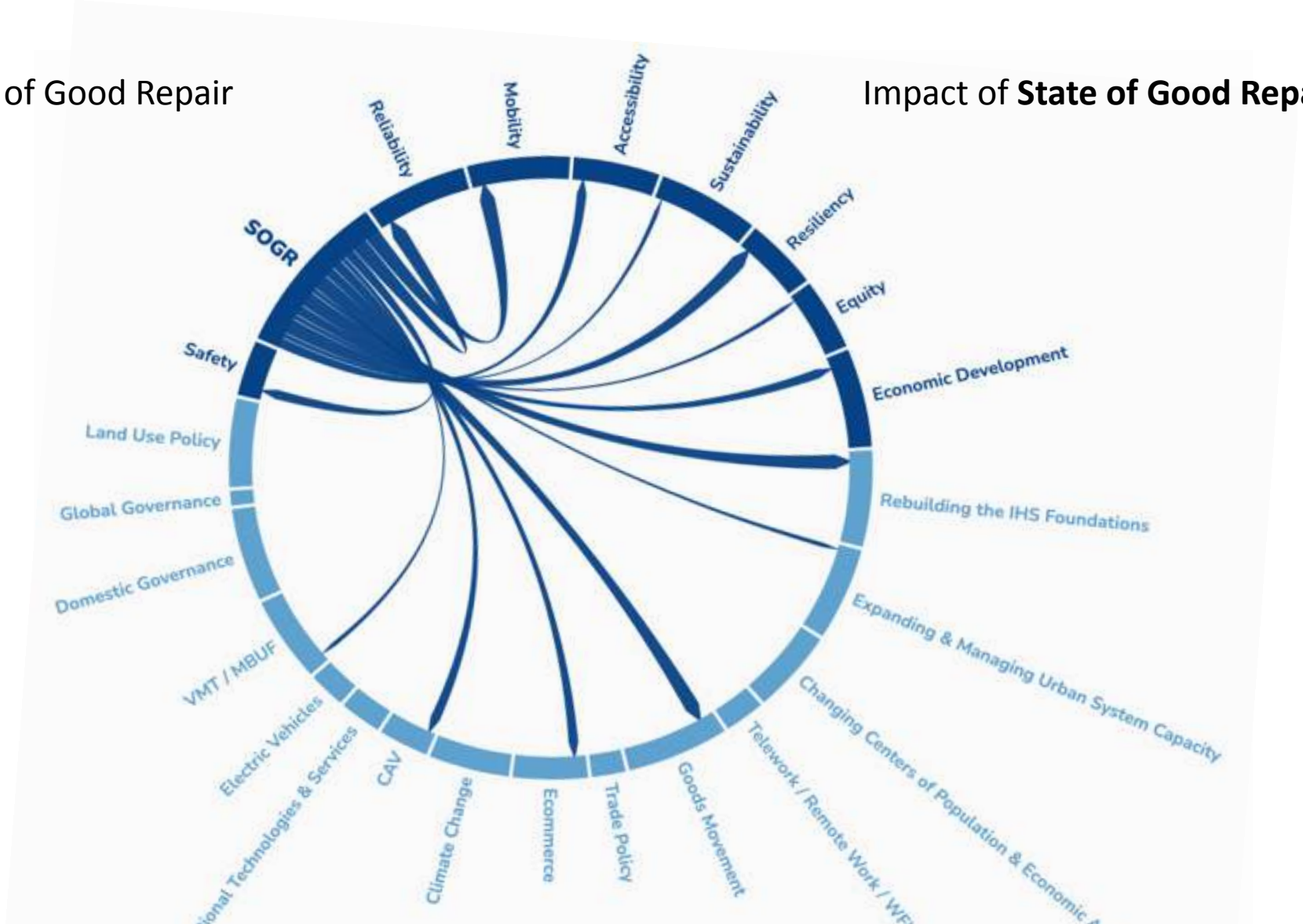



ANALYTIC FRAMEWORK
Strategic Direction
System Goals & Objectives
Emerging Options
Other Considerations
Statutory Requirements
Regional Models of Cooperation
Transportation Planning
System Pressures
Trends and Issues
CIT2019 / CIHS / Other
Emerging Data & Analytic Capacity
SYSTEM PERFORMANCE MEASURES

THE ARC DIAGRAM

Impact of **Issue** on State of Good Repair

Impact of **State of Good Repair** on issue



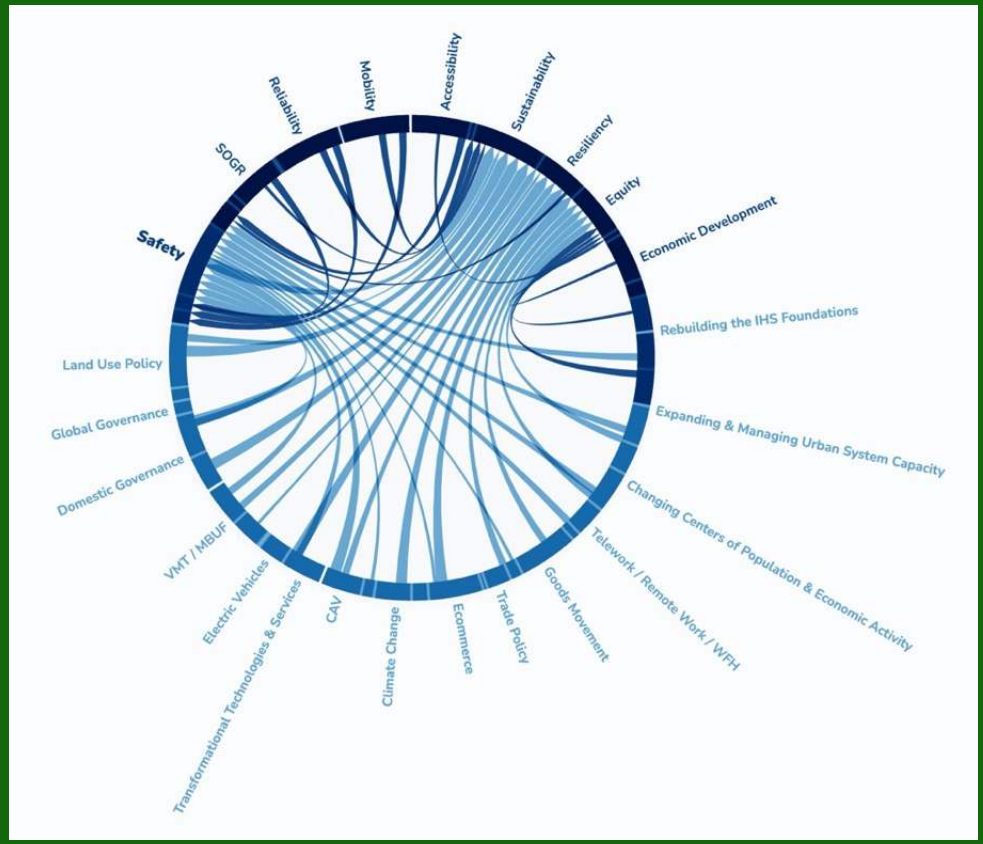
Decision Making

2 min
Pairs

2

2 min
Report

2



METROANALYTICS

6 ways to help Georgia be a leader in transportation planning

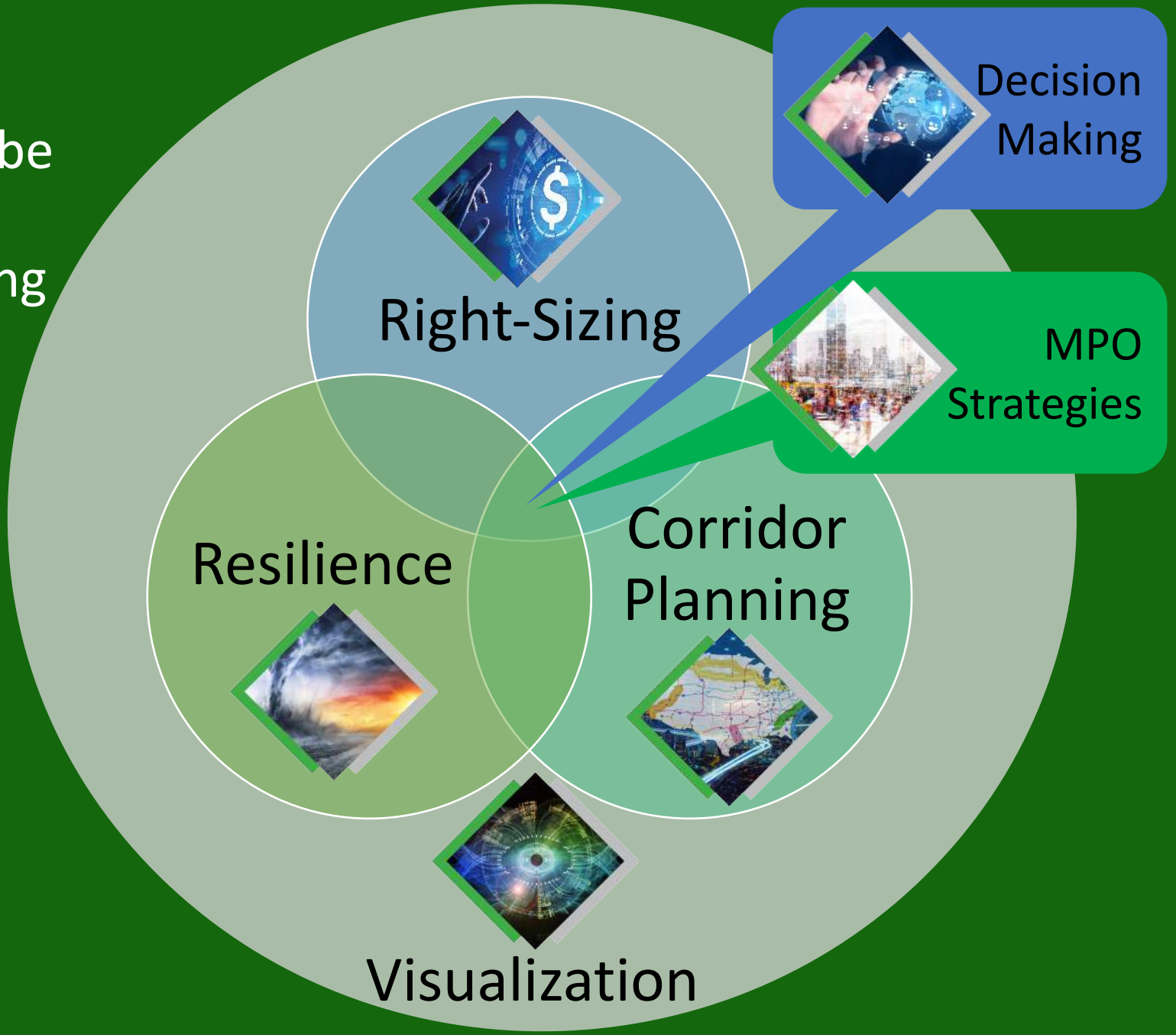
Getting the very best value
for every dollar that you spend

- Right-Sizing 
- Corridor Management 
- Resilience 
- MPO Strategies 
- Visualization 
- Decision Making 

6

ways to help Georgia be a leader in transportation planning

Getting the very best value for every dollar that you spend



6 ways to help Georgia be a leader in transportation planning

Wednesday, Sept. 14, 2022

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METRO ANALYTICS

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