Integrating Economic Resilience in Performance-based Transportation Planning

January 2018

NADO National Association of Development Organizations
Research Foundation

Contents

About the NADO Research Foundation

Founded in 1988, the NADO Research Foundation is the nonprofit research affiliate of the National Association of Development Organizations (NADO). The NADO Research Foundation identifies, studies, and promotes regional solutions and approaches to improving local prosperity and services through the nationwide network of regional development organizations. The Research Foundation shares best practices, offers professional development training, analyzes the impact of federal policies and programs on regional development organizations, and examines the latest developments and trends in small metropolitan and rural America. Most importantly, the Research Foundation is helping bridge the communications gap among practitioners, researchers, and policymakers. Learn more at www.NADO.org and www.RuralTransportation.org.

The research conducted for this report was conducted using qualitative research methods, including reading relevant literature, conducting interviews and seeking information from regional planning practitioners and state DOT staff, and reviewing websites and planning documents. Information from dozens of organizations was reviewed and analyzed for trends. Several themes emerged across agencies and planning documents; citations are provided where specific plans are referenced, but much additional information is not cited from a particular source because it was found to be consistent across information or documents from multiple organizations.

This report was primarily authored by NADO Associate Director Carrie Kissel. Many regional planning and development organization and state DOT staff and others assisted with this project in a variety of ways. We offer deep and heartfelt thanks to all the individuals who have provided information and images, consented to be interviewed, and offered editorial guidance in support of this research. This work is supported by the Federal Highway Administration under contract number DTFH61-15C-00022. Any opinions, findings and conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of FHWA or the NADO Research Foundation.

Introduction

Moving the economy and facilitating residents' participation in economic activity and access to goods and services are among the central purposes for investing in the transportation system. However, measuring transportation's impact on the economy can be difficult for transportation agencies to do. Incorporating economic performance into the strategic planning process can help regions ensure projects and investment priorities align with their goals and track progress over time.

During the course of conducting research on transportation planning conducted by regional organizations and their state-level partners, the NADO Research Foundation heard practitioners develop a new definition to guide consideration of economic impacts throughout transportation and related planning efforts: Economic development in transportation involves deliberate interventions to produce tangible benefits that are specific to the context, are sustained over time, and make a place more resilient.[1] This approach to transportation and economic development builds on the concept of economic resilience, which indicates a region's ability to recover quickly when experiencing a shock such as a disaster or major economic shift, withstand such a shock, or avoid a shock altogether.[2]

This framework can lead practitioners to consider economic goals that are specific to their particular context. It also leads practitioners toward a practice of performance-based planning. Embedded in this definition is the assumption that progress toward goals and wellbeing of the region should increase over time and be tracked. This can be accomplished by including economic development goals and progress in the transportation planning process, such as through regional transportation plans or prioritizing projects. Economic development planning including developing Comprehensive Economic Development Strategies (CEDS), as required by grantees of the U.S. Economic Development Administration, is another opportunity to integrate performance measurement, as is general regional planning and local comprehensive planning.

This guide is meant to introduce concepts of measuring progress with regard to economic development, vitality, and resilience, with a particular focus on integration with planning processes conducted by regional planning and development organizations (RDOs), regional transportation planning organizations (RTPOs) or metropolitan planning organizations (MPOs), and their state and local partners with an interest in transportation and economic development.

Why Measure Progress?

Strengthening economic resilience is a long-term prospect for many regions, with progress being noticeable over a period of time. Gathering information for measurement can seem like a daunting and time-consuming effort on top of regular planning and implementation work. Ideal data are not always readily available, and data may be available at the wrong scale, such as state rather than local level. But performance measurement is still a valuable effort to integrate into the planning process.

Measuring progress is an important way to ensure that projects and activities that are planned end up being executed and resulting in outcomes. State and regional transportation agencies are responsible for conducting particular planning activities. Implementing the projects and strategies requires partnerships across agencies, and collecting the right information to understand performance will likely also require getting data from partners.

Documenting change over time keeps those implementation partners engaged, recognizes their efforts, and validates the resources they have dedicated to projects.

Performance measurement is also important to show outcomes to other audiences, including decision makers and the public. Demonstrating both need for investment and ability to make progress on solutions can be important to show to legislators, decision makers, and other funders, so that they know what they are getting for their investment or what impacts arise from their policies or actions. Accountability to the public is critical, in order to make a case for increased, or even steady, levels of funding. Transportation projects are often completed with funding from multiple sources; measuring performance can demonstrate to current and potential funders, or even outside investors where private funding is an option, that future projects are worthwhile.

As outcomes become clear over time, performance information can help transportation planning organizations and their partners prioritize their strategies and projects to make the best use of limited funds, and to be adaptable to refining strategies or trying new directions if gaps continue to exist.

Making Sense of Regional Organizations

Organizations operating at the regional level have varying names and responsibilities around the United States. Regional development organizations (RDOs) are multijurisdictional, multi-function entities that assist communities and local governments through some form of regional planning or strategic visioning; technical assistance on local issues; and identifying, applying for, or administering grant funds for local and regional projects. These organizations often have economic development or support for economic vitality as a central aspect of their mission. Some also provide human services programs, business financing, or other services to their region. RDOs often have multiple state or federal program designations, and they go by different names in different places, including Council of Governments, Economic Development District, Regional Planning Commission, Planning and Development District, and others.

In transportation planning, metropolitan planning organizations (MPOs) are designated in regions that have an urbanized area with a population of 50,000 or greater, in order to fulfill responsibilities through the federally required transportation planning process. These tasks include long-range planning, short-range programming, public outreach, and other responsibilities.

While MPOs must be formed in metropolitan areas, rural regions or places with a smaller urbanized area can voluntarily form regional transportation planning organizations or rural planning organizations (often called RTPOs or RPOs). RTPOs generally operate under contract to the state department of transportation (DOT) to perform regional planning, public outreach, and technical assistance to local governments on transportation issues, and to support the statewide planning process.

RDOs, MPOs, and RTPOs often have a similar structure, typically consisting of a policy board primarily made up of local governments served within the region, as well as committees that guide the organization's work and decisions. For that reason, RDOs sometimes house and staff transportation programs among their other program areas, including MPOs, RTPOs, and in some cases both for regions that include urbanized and rural areas. In some cases, RDOs, RTPOs, and MPOs may not be housed together but still have working relationships because of overlapping boundaries, shared board members, or neighboring service areas. Some areas are served only an MPO or RTPO where there is no RDO or other general purpose regional organization, or have no regional agency affiliation.

Working toward Economic Resilience and Adapting Wealth Creation

Although major firm location decisions tend to dominate the public perception of economic development, efforts to improve regional prosperity have increasingly tended to focus less on recruiting large new employers from outside the region. Instead, planning and economic development professionals and stakeholders are using strategies that capitalize on a region's assets and competitive advantages to improve economic resilience, such as through business retention and expansion, entrepreneurship and economic gardening, strengthening supplier relationships, and improving connections to market demand that is local or in other nearby regions.

In terms of economic impact, transportation projects and programs have often been measured in terms of the jobs they have created or retained. While jobs are certainly an important metric, this may not tell the full story of the region's wellbeing or broader community impacts without additional context. Also, transportation investments are not the only investment in a community or region. Rather, transportation decision-making occurs in the larger context of other infrastructure, development and finance policies, support for workforce, and other factors.

Powerful tools exist for estimating the economic impacts of major transportation projects, significant facilities, or a planned suite of investments. But these tools may be out of reach for regions that lack the funding or staff time and expertise to use them. Increasingly, regional planning and economic development professionals express that they are seeking to measure broader community outcomes from transportation and related investments, beyond the jobs created or return on investment.[3]

For regions and communities seeking to plan for investments that result in increased resilience and broad community impacts, it may make sense to adapt an economic development framework for wealth creation for use in transportation planning in order to break down quality of life and economic resilience into discrete regional characteristics. Quality of life factors are recognized as both an opportunity and a barrier for economic development, including in rural regions.[4] Quality of life can be a difficult term to define, though, as well as to understand in relation to economic development and resilience.

One way to analyze quality of life is by understanding the assets that exist within a community or region. Wealth creation is an approach to economic development that identifies eight forms of assets or capital that exist in a place. These assets are what make a community or region an economically vibrant location and a good place to live and work. The eight forms of capital used in the wealth creation framework include: Individual (skills, health, wellness); Intellectual (knowledge, resourcefulness, creativity); Social (trust and networks); Cultural (traditions, ways of doing, world views); Natural (land, water, air, biodiversity); Built (constructed infrastructure and service); Political (goodwill, influence in decision-making); Financial (monetary resources available for investment).[5]

For places that have adopted the rural wealth creation framework, economic development efforts are focused on developing market opportunities that are demand-driven, with a goal of increasing more than one asset without harming other forms of capital. These initiatives focus on local ownership and control of assets to root an economy in place, and they intentionally include people with limited incomes and those who may have participated or been included in past planning and development efforts. Wealth creation-based

efforts naturally tend to be performance-based, since they identify outcomes related to forms of capital that are relevant to the chosen strategies. They are also naturally diverse efforts, developed according to local priorities as well as local assets and business opportunities. Although many of the places using the wealth creation framework are rural, the concepts of demand-driven strategies and local ownership and control of assets should be transferrable to community and economic development in all kinds of regions.

The wealth creation approach to economic development has often been deployed as sector strategies to develop a particular market opportunity. Transportation plays a central role in wealth creation efforts, and as a result, it may be useful to borrow wealth creation concepts in transportation planning efforts.

The transportation network is itself part of a region's stock of built capital, including the physical infrastructure as well as available transportation services such as transit or freight rail. Any investment in transportation will result in an improvement in the stock of built capital in a region, but analyzing transportation's role in improving other forms of capital can help to guide available funding toward the most impactful uses. Built capital does not exist for its own sake, but to advance a region's priorities. Transportation improvements might be important to advancing a demand-driven economic opportunity by moving goods or people. Better mobility can improve residents' access to jobs, education, or health services, all of which improve individual capital. Transportation that increases residents' access to places where people gather or take part in civic events can increase a region's stock of social capital. Investments that support multiple forms of wealth and specific sector strategies may be one way to produce impacts that strengthen a region's economic resilience, opportunity to prosper, ability to revitalize communities, and improve quality of life.

A performance-based planning and programming process can help regional organizations to weigh how a project contributes to building multiple assets in a region and whether it supports the adopted economic development priorities and wealth-building strategies.

Integrating Performance Measurement and Resilience into the Planning Process

Effective measurement is tied into an existing strategic planning process rather than conducted as a standalone activity. This will help regions to select metrics tied to the work they are doing, and also to have a method for collecting and sharing information on a systematic basis. Planning organizations that choose metrics but do not have a system in place to track measures will likely find themselves without the time or staff capacity to measure performance.

Many RDOs complete a regional plan that addresses transportation and other issues, which could include a CEDS or other regional-level plan, and they often provide assistance to individual local governments to develop their own comprehensive plans. These may include elements of measurement that relate to implementing transportation investments or land use regulations, development goals, or other outcomes that affect transportation.

In addition, all MPOs and many RTPOs follow a transportation planning process that involves developing a long-range transportation plan (LRTP) and short-range priorities

incorporated in a transportation improvement program (TIP) or similar document. For MPOs, state DOTs, and transit agencies, certain aspects of the transportation system must be measured through target-setting and reporting in order to comply with the federally required performance management process that was introduced in the 2012 surface transportation law Moving Ahead for Progress in the 21st Century (MAP-21) and 2015 law Fixing America's Surface Transportation (FAST) Act. These statutes have been instrumental in advancing the state of the practice of performance management by transportation agencies, a trend that was emerging several years prior to being adopted into law. Many new resources, such as guides, webinars, or in-person events, have been developed to help agencies understand performance management in transportation, how it ties into the planning process, and how to comply with the new federal mandates.

Federal surface transportation law does not require measuring the economic performance of the transportation system, but that is an important characteristic for many regions that choose to incorporate economic development or economic resilience into the aspects of performance-based planning that they have adopted. Transportation performance management should operate as a feedback loop, with opportunities to integrate performance information at various steps in the planning process.[6]

Tying the Regional Economy into Visioning

Planning initiatives typically begin with a process to gather input from the public, stakeholders, and regional leaders on developing a strategic vision. Performance measurement starts here, as residents articulate where they want their communities to go.[7] For many organizations, the future vision that is developed has a minimum 20-year time period to comply with the federal transportation planning process, although planning efforts may also be completed with other time horizons to meet state requirements, local interest, or for other purposes. Also, some regional and local plans set strategic direction but without defining a particular time horizon. Considering economic resilience in that process should lead to transportation investments that support strategies for prosperity and lead to increased regional wellbeing and better broad community outcomes.

At this initial stage, planners ask for input on creating a vision and understanding the conditions that residents want to achieve. What characteristics do residents like about the community or region and want to preserve? Where and how do they want to grow? What is the transportation network expected to do in order to serve the economy and to allow residents to participate in the economy? How can transportation support or be consistent with strategies for economic resilience, both strengthening the existing economy and creating new opportunities?

This stage often also includes consulting existing plans to ensure that the new planning effort is consistent with other plans that have been adopted at the state level, in the region, or by communities within the region. To incorporate economic resilience into the vision, planners should ensure that they include economic development professionals and members of the business community in their outreach, and that they reference existing plans for economic development, such as the CEDS if one exists, as well as other economic development plans. If there are major differences in the strategic direction contained in other current plans compared to the input provided through the new outreach effort, use data analysis and gather input on what has changed and why.

The Northern Tier Regional Planning and Development Commission included in its 2015 – 2040 LRTP a section on regional direction, identifying the key values from other adopted plans relating to community development, economic development, and environmental protection. These themes were included as a background to setting the transportation policy element and performance measures in the plan. Some of the community development values included maintaining rural and small town character, farmland, and woodland; providing facilities and services to protect the health, safety, and welfare of all residents. For economic development, values included using rural landscapes; retaining and growing business; increasing career opportunities and wages; and enhancing rural and small town tourism. Environmental protection values were consistent with development themes, including minimizing potential negative impacts of development such as pollution, loss of forest, and erosion of agricultural soils, as well as preserving historic features, sites, and structures.

These values were carried through to objectives and measures that were developed for transportation infrastructure, community and economic development, community character, and sensitive environments. The LRTP includes a target for some measures for which there is some existing historical data, such as infrastructure condition, while other new performance measures are new and will likely have a target in the future.[8]

Transportation, along with land use and economic vitality, play a large role in achieving the vision of economic resilience and the broader community outcomes often desired.

Developing Goals for the Region's Economy

The visioning effort shapes goals and objectives that may be documented in the plan. Goals identify outcomes that are desired for the region, including the priority outcomes for the transportation system itself, as well as goals that require transportation to be achieved. Goals related to economic resilience will be specific to each region, but they might be similar to the following desired outcomes reported by planning and economic development practitioners around the United States:

- Attracting and retaining workforce talent
- Attracting and retaining businesses
- Improving job and job training access
- Facilitating freight movement originating in or destined for the region
- Improving residents' access to local businesses and services, to benefit from the impact of local spending and to retain a population that desires a certain level of business access
- Increasing access between outdoor recreation centers and central business districts
- Increasing tourism, and encouraging visitors to stay longer
- Promoting the interrelationship between regions
- Making communities walkable and people-oriented

Objectives are often developed for each goal area and can be written as specific statements that support achieving the goal. Effective objectives should be measurable. As a result, the process of writing objectives and selecting performance measures may go hand in hand in a performance-based planning initiative.

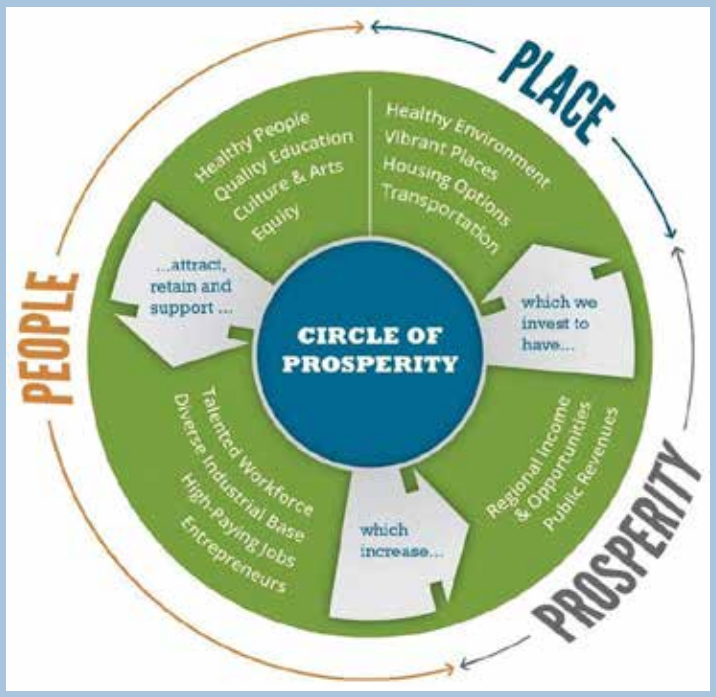
ECOS: Performance-based Transportation and Economic Development Planning in Chittenden County, Vermont

In 2013, the Chittenden County Regional Planning Commission (CCRPC), which serves as the region's MPO as well as general purpose regional organization, adopted a regional plan known as *ECOS* (*Environment. Community. Opportunity. Sustainability.*) that combined its Metropolitan Transportation Plan, Comprehensive Economic Development Strategy, and state-required regional plan. The region released its draft plan update in early 2018, encompassing eight high-level strategies, under which are actions to address the concerns of the community. These strategies demonstrate the region's approach to integrating planning for transportation, economic development, land use, and its human capital. Specific projects are identified for both the MTP and CEDS portions of the plan and relate directly to implementing the strategies.[9]

The CCRPC uses project prioritization criteria to support the implementation of the ECOS Plan. The criteria will be revised in 2018 in concert with the Vermont Agency of Transportation. The updated criteria will be more comprehensive and allow for a more holistic review of how well a project meets all of the needs of the region and state.

Also in 2013, CCRPC developed the ECOS scorecard to monitor and communicate the results of over 90 indicators of regional wellbeing, which also relate to the plan's strategies. The organization updates the ECOS Scorecard regularly and produces annual reports that summarize milestones achieved in plan implementation, using the collective impact model. These actions are taken not only by CCRPC, but also through its network of state, regional, and local agencies and other partners.[10]

For CCRPC, the performance-based planning effort to connect transportation and economic development is a cycle focused on implementation and results. "We talk frequently with our members about the Circle of Prosperity," says CCRPC Executive Director Charlie Baker about the process of developing and implementing the region's ECOS plan. CCRPC staff often use the Circle of Prosperity concept as a tool to discuss with stakeholders and partners how their decisions, actions, and investments work together toward outcomes desired by the region's residents.



Images courtesy CCRPC

Selecting Measures that Reflect Progress toward Economic Goals

Performance measures should indicate what changes are expected to come about by implementing strategies to achieve the vision and goals. What change in condition will show whether progress is being made? As much as possible, focus on the actual desired outcome that improves conditions in the region, rather than completion of tasks or milestones, such as holding outreach meetings. Remember that some measures might be connected to more than one goal area, and that each goal might have more than one outcome that the region wishes to measure. Goals and measures may be related across plans; international analysis has shown that investment in transportation and other infrastructure can be effective in improving regional prosperity when complemented by strategies to boost skills, employment, and innovation.[11] In contrast, infrastructure investment alone can actually reduce a region's economic resilience by allowing population and economic activity to leak out of the region by greater connectivity, unless complementary efforts are made in workforce development or to improve other regional characteristics.[12]

Implementing transportation planning objectives should have an impact on the region's economy. How do these objectives align with the vision, goals, and objectives of adopted economic development plans or the development sections of comprehensive plans? What do economic development stakeholders say about the implementation of these goals and objectives? What data could those agencies share that might support regional measurement? How do the intended beneficiaries of development, such as business owners, workers, and people of limited income, view the future of the region?

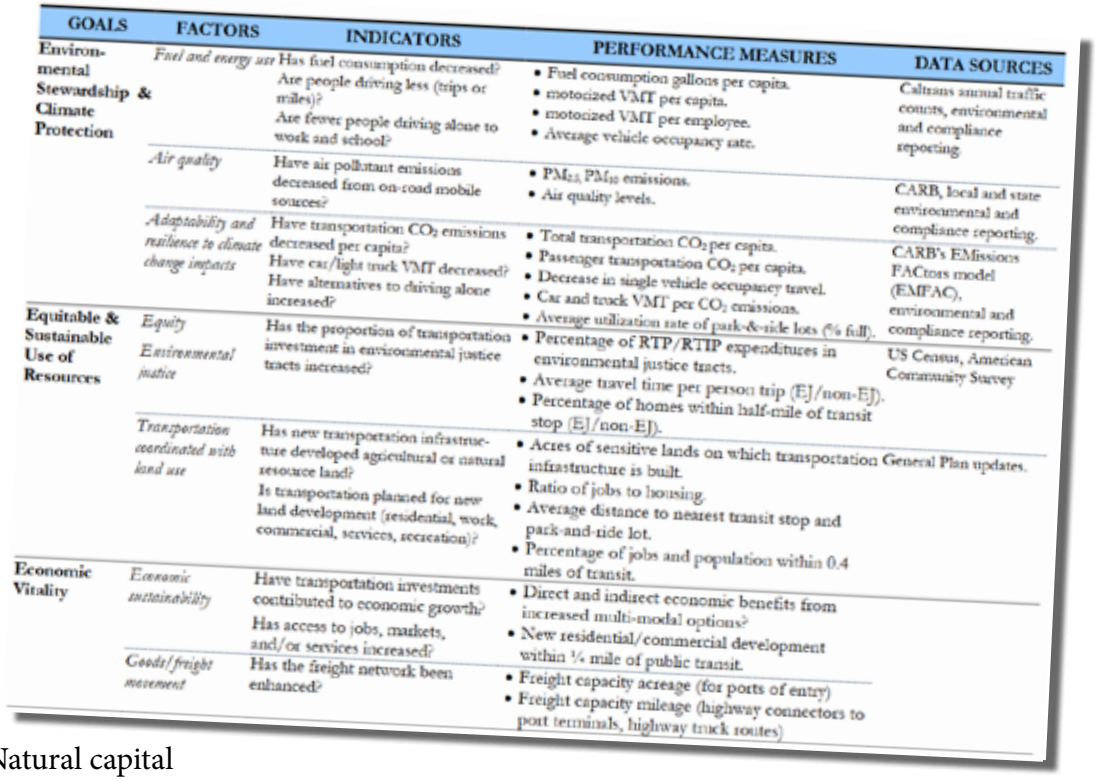
For organizations that are new to measurement or updating their measurement plan, the wealth creation framework may offer insights on measuring various transportation impacts on community resilience. Transportation can link to and support a number of different forms of capital, and some of these may be worth measuring over time and using to prioritize among competing needs. Thinking through transportation's effect on community capital and the linkages to other types of investment can be fruitful for improving economic resilience. The exact measures chosen by transportation agencies will vary according to their vision and locally developed strategies.

Image courtesy Greenlee County, AZ


Image courtesy Coastal Regional Commission

Measures related to regional wellbeing that are included in a regional plan, CEDS, or regional dashboard could include some of the measures from these examples below, reported by practitioners. Not all are transportation-specific measures, rather some relate to regional prosperity more generally, using the systems perspective of the wealth creation framework to capture broader community impacts. How transportation impacts these characteristics and how important the measures are should also shape the investment plan and project consideration steps of the planning process.

- Built capital
  - Asset condition of transportation facilities, such as pavement and bridge condition on Interstate and other National Highway System routes, other significant transportation routes in the region
  - Transit availability and use
  - Bicycle and pedestrian facilities and use
  - Sidewalk inventories from Americans with Disabilities Act (ADA) transition plans
  - Walkability score
  - Asset condition or availability of other infrastructure, such as water and wastewater, broadband, or housing stock
  - Public and/or private investment in regional infrastructure
- Political capital
  - Local or regional plan adoption, and consistency among plans and programs
  - Support for regionally significant projects
  - Regional projects included in the STIP (Statewide Transportation Improvement Program), or other document indicating intent to fund and deliver projects
  - Number of communications with decision-makers
  - Public participation in decision-making efforts, including by individuals with limited income and other underrepresented groups
  - Number of political offices or decision-making positions filled
  - Other systems change indicating a development in public or private sector policy in the region
- Financial capital
  - Transportation housing index or cost of living index
  - Median household income
  - Number of jobs paying a living wage within the region
  - Changes to the regional tax receipts
  - Gross regional product
  - Revolving loan fund and other lending activity
- Individual capital
  - Residents' educational attainment or participation in job training
  - Improved health and wellness outcomes
  - Improved roadway safety through a decrease in fatalities and serious injuries (representing an impact on individual wellness)



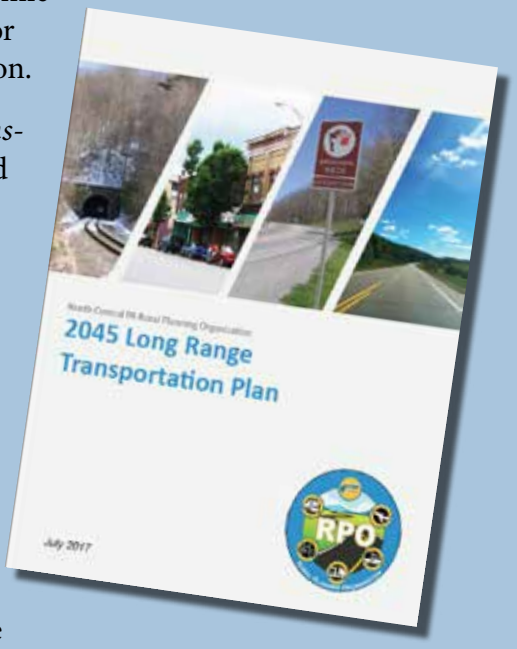
GOALS	FACTORS	INDICATORS	PERFORMANCE MEASURES	DATA SOURCES
Environmental Stewardship & Climate Protection	*Fuel and energy use*	Has fuel consumption decreased? Are people driving less (trips or miles)? Are fewer people driving alone to work and school?	• Fuel consumption gallons per capita. • motorized VMT per capita. • motorized VMT per employee. • Average vehicle occupancy rate.	Caltrans annual traffic counts, environmental and compliance reporting
	Air quality	Have air pollutant emissions decreased from on-road mobile sources?	• $PM_{2.5}$, PM_{10} emissions. • Air quality levels.	CARB, local and state environmental and compliance reporting.
	Adaptability and resilience to climate change impacts	Have transportation CO_2 emissions decreased per capita? Have car/light truck VMT decreased? Have alternatives to driving alone increased?	• Total transportation CO_2 per capita. • Passenger transportation CO_2 per capita. • Decrease in single vehicle occupancy travel. • Car and truck VMT per CO_2 emissions. • Average utilization rate of park-&-ride lots (% full).	CARB's EMissions FACtors model (EMFAC), environmental and compliance reporting.
Equitable & Sustainable Use of Resources	*Equity* *Environmental justice*	Has the proportion of transportation investment in environmental justice tracts increased?	• Percentage of RTP/RTIP expenditures in environmental justice tracts. • Average travel time per person trip (EJ/non-EJ). • Percentage of homes within half-mile of transit stop (EJ/non-EJ).	US Census, American Community Survey
	Transportation coordinated with land use	Has new transportation infrastructure developed agricultural or natural resource land? Is transportation planned for new land development (residential, work, commercial, services, recreation)?	• Acres of sensitive lands on which transportation infrastructure is built. • Ratio of jobs to housing. • Average distance to nearest transit stop and park-and-ride lot. • Percentage of jobs and population within 0.4 miles of transit.	General Plan updates.
Economic Vitality	*Economic sustainability*	Have transportation investments contributed to economic growth? Has access to jobs, markets, and/or services increased?	• Direct and indirect economic benefits from increased multi-modal options? • New residential/commercial development within ¼ mile of public transit.	
	Goods/freight movement	Has the freight network been enhanced?	• Freight capacity acreage (for ports of entry) • Freight capacity mileage (highway connectors to port terminals, highway truck routes)	

The Humboldt County Association of Governments' 20-year Regional Transportation Plan, *Variety in Rural Options of Mobility (VROOM)*, contains a matrix connecting goals to performance measures. The plan was adopted by the California region in 2017. Image courtesy HCAOG.

- Natural capital
  - Acreage of land used to meet regional goals (such as land in agricultural production or conservation, managed for timber, or used for outdoor recreation, or land developed/redeveloped within targeted growth areas)
  - Air quality
  - Water quality
- Social capital
  - Regional population trends
  - Number of residents affected by projects within one mile of social-oriented facilities, such as schools, parks, community centers, downtown areas or other hubs, and health care centers
  - Participation in civic groups or regional networks
  - Events or festivals where residents can come together
  - Collaborative efforts among economic development, planning, and other agencies
- Cultural capital
  - Local Arts Index (produced by Americans for the Arts), or other arts measure
  - Number of organizations or enterprises engaged in creative placemaking efforts
  - Number of new businesses in sectors significant to regional identity (such as agriculture, arts, etc.)
  - Events and festivals celebrating regional identity as it evolves over time
- Intellectual capital
  - Investment in technology, including Intelligent Transportation Systems (ITS)
  - Local government participation in training opportunities such as the Local Technical Assistance Program (LTAP)
  - Business participation in continuity planning
  - Innovation activity, such as patents or new knowledge

Performance-based Planning in North Central Pennsylvania

The Pennsylvania Department of Transportation has required its regional planning partners, including rural planning organizations (RPOs) to incorporate performance measurement into their planning efforts. Over time, as transportation performance management has evolved as a field, the RPOs in Pennsylvania have increasingly incorporated vision, goals, objectives, and measures into their long-range plans, as well as adopting project prioritization criteria for their regional TIPs that reflect those strategic planning efforts. These rural-serving organizations have a close connection to the economy and see direct linkages between regional community and economic development work and transportation planning. For the North Central RPO, most of its transportation priorities are focused on a core system that serve the major economic corridors and hubs of the region, as well as recreation nodes and areas targeted for future economic and community development, since limited funding does not allow for investment in every infrastructure to address all the needs in the region.



In its 2017, the North Central RPO adopted its *2045 Long-Range Transportation Plan*, a performance-based plan that identifies measures and milestones indicating progress for each of its goal areas. For the goal "Economic Vitality," the plan includes the objective "Develop, manage, and maintain a safe, efficient, and reliable transportation system to provide access to and from intermodal freight facilities, industrial and commercial districts, and the region's core transportation system." The emphasis on the core system serving the region's economy is evident in the measures and multimodal strategies that support economic vitality in the LRTP. Measures related to this goal area include the percent of the core system in excellent or good condition, number of structurally deficient bridges on the core system, as well as number of jobs and miles of Appalachian Regional Commission access roads completed.[13] Targets and progress over time are reported in a standalone Annual Performance Measures Report.[14]

The regional map depicts the North Central RPO core system, which is the focus of its project prioritization process and regional economic and transportation strategies.

Images courtesy North Central RPO.

Setting Targets

Progress can be tracked against desired outcomes when the agency sets targets for its measures. These numeric goals indicate what the region hopes to achieve within a given timeframe, such as the time horizon of a regional long-range transportation plan, or a shorter-term target that could be revised over time. If data showing past progress are available, target-setting might involve analyzing a trend line of what has happened in the past and selecting a target that could be achieved if these trends continue.

If no historical data are available, agencies can set a target based on what they think they and their partners can reasonably achieve with available funding and resources. Performance measurement is an iterative process, so if actual progress ends up being vastly different from the target, agencies should analyze whether that desired outcome is achievable or should be modified.

For regional agencies with limited staffing and resources, it may not be realistic to expect to analyze trends and set a numeric target for each individual metric of interest. However, it may be helpful to look at the metrics and targets set by other agencies to see how their adopted targets might apply to the region. For example, for the federally required transportation performance measures, has the state recommended a target for the region? If not, does it make sense for an agency to adopt a target that shows progress toward the state's target? Are those metrics and targets in line with the vision and goals set by the region's transportation, economic development, and other plans? For characteristics such as regional wage and employment rates, have other state agencies set a target that also makes sense at the regional level, or could be adapted to show regional progress? Does it make sense for a given measure, such as wages, to compare the region to a state average?

For new issue areas, it may not be possible to use historical data to estimate a future trend. It may be a good option for some measures to begin with baseline data and track progress over time, monitoring the direction of change (positive, negative, or maintain) before setting a target. Or, it may be more useful to develop a qualitative measure for some characteristics that regions see as demonstrating progress.

Moving Toward Prosperity through Programming

Unless the projects that advance in a region are the most critical ones to supporting the vision and goals for regional prosperity, revitalization, or other desired outcomes, the transportation planning process will not play much of a role in advancing the region's vision. Transportation agencies that include a list of projects in their long-range transportation plan or that create a short-range transportation improvement program (TIP) can prioritize projects that support strategic goals within the expected budget. Not all rural or local transportation planning organizations are required to complete a TIP; however, they often still identify projects to recommend to the state for inclusion in the STIP and other state-specific investment plans.

Project-level decision-making can be influential even in regions that do not prioritize projects in a TIP or as STIP requests. Some RDOs and other organizations with a role in planning and economic development include regionally significant projects in their CEDS or other plans. Even where there is no project list, RDOs are often involved in writing grant applications for transportation and other types of projects, or they share funding opportunities with local communities or stakeholder groups who may have eligible projects.

Projects that are included in grant applications are often analyzed for consistency with the adopted vision and goals for the region or community.

When funding is extremely limited and the needs are great, it can be difficult to prioritize projects in a meaningful way. But where it is possible to rank projects, selecting ranking criteria that reflect the strategies and priorities of a region can make projects more likely to move the needle toward the issues that are significant and the measures of progress that are selected for the region.

Regions that are developing a new or updated project prioritization process should reflect on how their project-level measures connect to any performance measures that are tracked at the regional level. Also, these project-level measures should support the strategies that regional partners are pursuing for prosperity and economic resilience. Ranking criteria should reflect how projects support the characteristics that make a place unique, build regional assets, and offer opportunities for revitalization in ways that are appropriate for the context.

Using the wealth creation framework to think through the impacts of projects may be helpful, similar to how it provides a lens on regional metrics and an outlook on demand-centered economic opportunities. Gauging every project's impact on every form of community capital may become overly complicated and result in a set of metrics that are unwieldy. For example, the relationship of transportation to regional innovation strategies might be unimportant for some regions. Still, the framework offers options for improving the condition of the network as a whole (as built infrastructure) as well as insights on how projects might connect to other priorities of the region and funding agencies.

When prioritizing transportation projects or measuring regional wellbeing, it may be helpful for transportation agencies to consider project-level measures that indicate support for economic development efforts, such as:

- Is this transportation project or suite of projects supportive of an economic development strategy that has been adopted by the region?
- Does it support local ownership and control of assets? (This might mean addressing a transportation concern of a local employer.)
- Is a project likely to benefit individuals with limited income, as well as others in the community?

In addition, analyzing the impacts on some forms of community capital that are central to a region's development strategies or more generally the desired vision and goals could include some of the following asset-based project criteria:

- Support for built capital
  - Does the project improve the condition of the existing transportation network?
  - If the project is adding new capacity or service, can it be maintained in the future without becoming a liability?
- Support for political capital
  - Is the project in line with the community or regional vision, and supported by stakeholders?
  - Can project sponsors address any concerns that might become impediments to

project delivery?

- Support for financial capital
  - Is the project likely to retain or increase jobs that pay a living wage?
  - Is the project likely to leverage other investments?
  - Does the project support financial success of families, businesses, or other regional institutions?
  - Is there investment by the community in the form of matching funds or preliminary engineering?
- Support for individual capital
  - Does the project increase access to job sites within or near the region?
  - Does the project increase access to education, job training, or other sites to build skills?
  - Does the project increase access to healthcare or wellness?
  - Does the project help to avoid health care costs, such as by increasing active transportation or improving transportation safety?
- Support for natural capital
  - Does the project support revitalization or new development in areas targeted for growth?
  - Does the project avoid harm to natural resources?
  - Does (or could) the project include environmental services, such as green infrastructure to help manage stormwater runoff?
- Support for social capital
  - Does the transportation project facilitate people making connections with one another or building trust? (Examples could include connecting to a community center or a place where people gather, or providing infrastructure where people can move safely outside of individual vehicles.)
- Support for cultural capital
  - Does the project enhance, complement, or protect the qualities people like about their community or region?
  - Does it avoid harm to local cultural or historical sites or resources?
  - Does it improve access to locally important sites or events?
  - Does the project address mobility concerns of businesses involved in sectors important to regional identity?
  - Is the project in line with cultural norms, recognizing that norms change over time?
- Support for intellectual capital
  - Does the project support regional innovation?
  - Does the project invest in ITS?
  - Does the project prepare the region for evolving transportation technologies?

Using all of the sample project-level measures above would make the project prioritization process time-consuming and difficult. These sample measures are provided as examples

of how a region could think through the impacts of transportation on a variety of assets, and to choose the prioritization criteria that best fit the region's values and vision for prosperity and future growth. How these forms of capital tie into economic resilience may vary by region. For some places, for instance, increasing transportation access to health care facilities can help to boost health outcomes that in turn support family economic security, allowing residents to participate more fully in the regional economy as workers and/or as consumers.

Project prioritization processes such as those adopted statewide in Kentucky and in the Brazos Valley region of Texas act on the strategic connection between regional planning and project-level programming by selecting criteria that align with goals in order to score projects.

Using Data for Project Prioritization in Kentucky

In 2017, the Kentucky Transportation Cabinet (KYTC) began a process known as Strategic Highway Investment Formula for Tomorrow (SHIFT) to prioritize funding among significant needs. The 2018 Recommended Highway Plan covers six years (2018 – 2024) and includes $6.6 billion in projects, to be considered by the Kentucky General Assembly. Of the total, $2.6 billion is recommended for projects prioritized through the SHIFT model.[15] This model prioritized statewide and regional priority projects using measurable criteria, including:

- Improving safety
- Preserving existing infrastructure
- Reducing congestion
- Fueling economic growth
- Cost/benefit[16]

To measure the characteristic "fueling economic growth," KYTC used the tool TREDIS to gauge the impact of projects of statewide significance and developed an accessibility measure for projects of regional significance. The accessibility measure was defined on a county basis with help from the Kentucky Cabinet for Economic Development.[17] The types of projects included in SHIFT were new interchanges and routes, as well as reconstruction projects, road widening, and safety improvements. Other projects, such as rural and municipal aid, MPO dedicated projects, projects with federally dedicated funding (including safety, transportation alternatives, and others), maintenance projects, and major infrastructure projects that are federally significant were included in the highway plan under their own funding streams, rather than prioritized through SHIFT.

The first step in SHIFT was to rank the projects with a statewide impact, such as interstates, major arterials, and highways. National Highway System (NHS) projects were ranked using the statewide formula based solely on quantitative data, such as crashes and average daily traffic. KYTC identified 70 projects of statewide importance to consider for funding from the statewide funding pool. The top NHS projects were included in that pool. The remaining NHS projects could be considered for regional funding.[18]

The next step of ranking regional projects was a collaborative effort. KYTC has a long-established process to work with its MPO and Area Development District (ADD) partners to identify priority projects and consider them for funding. This continued through SHIFT's regional prioritization process, with the MPOs, ADDs, and KYTC Highway District Offices (HDOs) fulfilling specific roles to identify local needs and rank them. ADDs, which are responsible for conducting regional transportation planning activities in nonmetropolitan areas, worked with their HDOs to hold meetings with stakeholders such as local officials and road supervisors in each county that they serve. Through these meetings, local stakeholders narrowed

their list of priority projects to be presented to the regional transportation committee convened by the ADD. Each ADD then developed a list of projects they chose to sponsor, and each HDO did the same.

After KYTC conducted quantitative scoring of the regional projects, each ADD and HDO had the opportunity to boost the scores of a certain number of projects, adding local support as a criteria toward a project's total points. The ADDs could choose to boost any of their sponsored projects. For example, the Cumberland Valley ADD decided to place its local support points on projects also supported by the HDO, projects to benefit each county, and those that improved overall regional connectivity because these projects would be most likely to meet regional economic need.[19] This is consistent with one of the infrastructure goal statements developed for the region's 2017 Comprehensive Economic Development Strategy, "Develop and maintain transportation facilities and services to adequately provide for the movement of people and products."[20]

In the SHIFT process, once those "boosted" projects had been chosen, the HDOs met by region to determine the highest priorities across multiple HDO districts, and communicated that to the KYTC Central Office, who selected regional and statewide projects to be included in the SHIFT portion of the 2018 Recommended Highway Plan. KYTC presented the 2018 Recommended Highway Plan to the General Assembly and Governor Matt Bevin for consideration during the Legislative Session that runs from January 2018 through April 2018. The General Assembly and Governor are responsible for enacting the final Highway Plan.

For the ADDs, SHIFT continued or updated some aspects of the regional planning process that have been successful, such as using project information forms (PIFs) to collect specific data about proposed projects and relying on relationships developed through the regional transportation committees to prioritize projects. But the SHIFT process created some new benefits, too. According to Cumberland Valley ADD Regional Transportation Planner Jessica Bray, the new scoring process helped officials representing different parts of the region to understand the context for why projects were proposed and whether there was a dire need for them. Likewise, it helped to direct projects for certain funding streams; if a proposed turn lane would significantly improve safety but scored low on other SHIFT criteria, it might be more appropriate to apply for safety-specific funding for that project rather than attempt to boost its SHIFT score with local support points.[21]

Benefit-cost Analysis

Benefit-cost analysis is a technique to help justify investing in a project by examining a variety of expected impacts, beyond the cost to deliver the project. Certain benefits and costs may not have a monetary value that is simple to calculate, such as time savings or environmental impacts. However, consideration of the full range of estimated benefits and costs is necessary to understand the most efficient use of funding and who will benefit or lose out from a project.[22] At the state level, few agencies use benefit-cost analysis across all projects, although other scoring methods and lifecycle analysis are alternatives that some state agencies use instead.[23]

However, national discretionary grant programs for transportation, such as Transportation Investment Generating Economic Recovery (TIGER) and Infrastructure for Rebuilding America (INFRA), have required applicants to submit benefit-cost analysis for those proposed projects. As a result, recommended procedures for applying benefit-cost analysis to transportation projects is available for agencies to use, including estimated values for certain pollutants, traffic fatalities, and other factors, as well as examples for calculating those benefits and costs.[24] Organizations wishing to use benefit-cost analysis as a measure may find the recommendations helpful even for projects not submitted through the TIGER or INFRA programs.

Connecting Goals to Project Ranking in Texas's Brazos Valley

In 2016, the Brazos Valley Regional Planning Organization (BVRPO, a program of the Brazos Valley Council of Governments), adopted a new project prioritization methodology. BVRPO provides prioritized projects to the TxDOT District serving their region in an advisory capacity, as a method for local officials in the RPO to share their priorities and concerns. Using the five goals defined in the TxDOT long-range transportation plan, BVRPO surveyed members and stakeholders on the relative importance of the goal areas to determine weights assigned to prioritization criteria. This feedback showed that safety was the most important characteristic to consider, followed by mobility, asset management, multimodal connectivity, and then stewardship. For each goal area, the RPO developed criteria to award five, three, or one point to a proposed project and a weight for that goal. Using the initial weighted criteria, a project can receive a maximum of 75 points. Additional criteria to give projects up to another 25 points for crash rates, congestion level, regional connectivity, freight movement, and local funding support.

These project-level measures relate to the overall regional prosperity and the strategies in the region's CEDS by ensuring that the existing network is adequately maintained, that challenges with existing transportation capacity are addressed, and that multimodal connectivity is prioritized for the movement of both people and freight by giving higher priority to projects on routes that are regional connectors and accommodate more than one mode of travel.

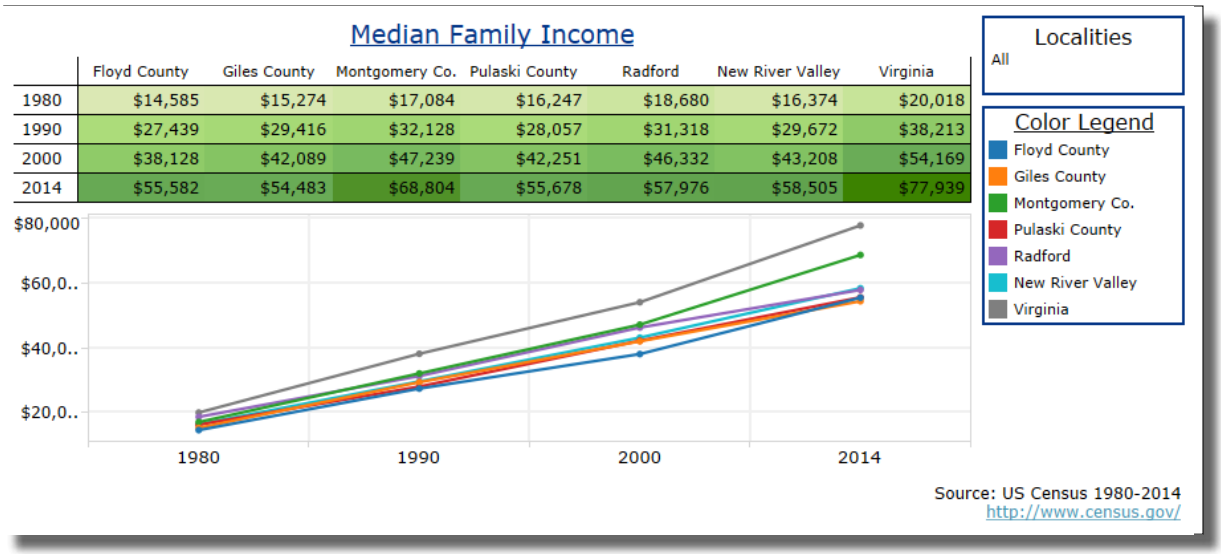
Brazos Valley COG Assistant Director Michael Parks says of the process, "At the Brazos Valley RPO, we must have good planning that leads us to identify the projects we'll insert into the prioritization process. That will lead to better infrastructure, which gives rise to better economic development."[25]

Using Information about Performance

When agencies collect performance information over time, they can understand whether the goals and objectives are moving the region toward the desired outcomes. The measurement process might also indicate whether the measures that were chosen are showing stakeholders what they would like to know about progress, or if the measures need to be rethought.

Communicating performance information to decision making bodies, such as boards or committees, as well as to stakeholders and the public can facilitate the discussion about what the transportation network is expected to do for the region and what resources are needed to achieve that. Ongoing conversations with economic development professionals and stakeholders can help to ensure that strategies for transportation and development remain consistent as conditions change over time.

RDOs, MPOs, and RTPOs and similar organizations often are already collecting information about their regions and communities to include in regional plans as context for the vision, goals, objectives, and investment strategies adopted in the plan. When these data points also show progress toward a region's goals, this context-setting data analysis can also be considered performance information. Regional organizations are typically collecting and communicating information about overall regional wellbeing, such as population, median income, educational attainment, or employment trends, as well as asset condition, safety data, and other transportation-specific indicators. These data points do not show the performance of transportation investments on their own, but they do reflect how a whole suite of plans, policies, and investments adopted in a region work together. This



Median family income is just one among several regional measures tracked by the New River Valley Regional Commission. Images courtesy NRVRC.

can be effective for use in by regions that combine transportation and other regional planning efforts, such as the CEDS, but is applicable for any region that intentionally aligns its transportation goals and economic goals.

In addition to incorporating regional data into plan updates, communicating regional wellbeing is often done through data dashboards. Starting in 1969, the New River Valley Regional Commission provided regional stakeholders with data from public sources through its Regional Data Book. Starting in 2016, the commission launched an interactive online data dashboard to share information about the economy, education, health, housing, population change, transportation, and the workforce. Since it is available online, the New River Valley Data Dashboard has served as a resource not only to guide regional planning efforts and assess implementation, but also to inform local governments, grant writers, nonprofit organizations, and New River Valley citizens about regional characteristics and trends.[26]

Similarly, the Eastern Upper Peninsula Regional Planning and Development Commission developed a dashboard as part of its Regional Prosperity Plan. These data, such as population, unemployment rate, per capita income, and educational attainment show trends in how the region is progressing toward the goals in its CEDS, Regional Prosperity Plan, and other adopted documents, which include transportation among several implementation areas.[27] According to CEO Jeff Hagan, the performance measurement and reporting framework has been a work in progress, as finding data to reflect trends important to the region has been one challenge, while other challenges have included finding the right format to use to communicate information and dedicating staff time to update the available information.[28]

Transparent communication about regional performance should lead back into the planning process. Over time, performance information should help regional decision-makers and the public see what kinds of coordinated investments are producing results, or what strategies could be altered for a bigger impact. Connecting transportation planning more closely to economic development stakeholders and economic resilience strategies may help regions to maximize their investments, coordinate across levels of government and with the private sector, and ultimately boost regional prosperity.

Equity, Transportation, and Economic Development

Two central questions to ask in transportation planning are "Who benefits?" and "Development for what?" To address the issue of income inequality, it may be effective for regions and communities to ask these two questions with a focus on equity as they conduct planning and implementation efforts.

The U.S. Department of Transportation and its agencies have identified procedures for addressing equity in the federal transportation programs through compliance with Executive Order 12898 on environmental justice and Title VI of the Civil Rights Act. These policies apply to federal agencies and recipients of federal assistance, although the policies' goals differ. Environmental justice entails identifying and addressing disproportionately high and adverse human health or environmental effects on minority and low-income populations. Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin in programs receiving federal assistance.

Federal funds are often helpful to lay the groundwork for strong economies through investments such as transportation, water and wastewater infrastructure, or workforce development. If any federal funds are used, investments would need to comply with environmental justice, Title VI, and other relevant policies for the funding agencies.

It is important for planning partners to think through who is expected to benefit from an investment or a strategy, and to articulate how lives and livelihoods will improve for people across the economic spectrum, including those who may not have participated in planning in the past or might feel disenfranchised. This might include people of limited income, people of color, immigrants, people with limited English proficiency, people with disabilities affecting their mobility and participation in the economy, people of all genders, older adults, youth, people who are homeless, or others who might be at an economic disadvantage. To improve inclusion, it might be helpful to consider:

- Are people across the economic spectrum engaging in efforts to plan for transportation and economic development?
  - ✓ Are intended beneficiaries of development giving input and making decisions? Are the organizations that are leading the planning and implementation efforts working *with* residents, rather than doing things *for* them?
  - ✓ Are there ways for people from all parts of the economic spectrum to engage in various roles: as explorers and planners of a regional economy, producers or suppliers, employees, owners of assets, consumers, or beneficiaries?
- Are the perspectives of people across the economic spectrum reflected in the measurement strategy?
  - ✓ Do the measures reflect outcomes that are shared by a diverse set of people? Did people from all income levels and those who may have felt disenfranchised by the process influence or help to set the direction of the work?
  - ✓ Do the measures show changes in the well-being and livelihoods for all residents of the region, rather than just an average that might mask continued income inequality?

The interests and livelihood of people with limited income or others may already be built into a region's planning process, strategies, and measurement framework. If not, it may be useful to add roles, strategies, or other measures to track progress for all residents.

For additional inclusion resources, visit the Federal Highway Administration's webpage on Environmental Justice, Title VI, Non-Discrimination, and Equity: www.fhwa.dot.gov/environment/environmental_justice/equity, and Federal Transit Administration's websites on Environmental Justice: www.transit.dot.gov/regulations-and-guidance/environmental-programs/environmental-justice/environmental-justice and Civil Rights/ADA: www.transit.dot.gov/regulations-and-guidance/civil-rights-ada/civil-rightsada. For strategies to engage people with limited income in development efforts, refer to "Engaging Low-Income Partners in the Value Chain" and "Strategies for Lasting Livelihoods: An example," at www.wealthworks.org/economic-development-resources/how-tos.

Key Takeaways

The research suggests practical applications that might be relevant across diverse RDOs and other transportation and economic development organizations seeking to connect transportation and econmoic development and improve regional prosperity. These key takeaways include:

- Take a systems perspective to understand economic resilience goals, regional prosperity, and transportation's role. Multiple systems frameworks exist; the rural wealth creation framework is one focused on existing community assets.
- Embed measurement into the regional planning process, rather than treating it as a standalone task.
- Measure regional wellbeing across several emphasis areas, track it through plan updates, and use the measures in multiple planning efforts. Repurpose measures used by partners, such as state agencies, where appropriate.
- Develop transportation project prioritization criteria that implement the vision, goals, objectives, and measures adopted through the planning process.
- Communicate progress over time in order to make performance measurement a feedback loop that influences future planning and development decisions.
- Intentionally include economic development stakeholders, including both private sector leaders and intended beneficiaries of development such as low-income residents, throughout the planning process.

Additional Information on Transportation and Economic Development

For more information on connecting transportation and economic development, visit the following resources:

Federal Highway Administration, Economic Development Information and Resources, www.fhwa.dot.gov/planning/economic_development

FHWA (2017). Webinar: Understanding Local and Regional Economic Development, www.fhwa.dot.gov/planning/economic_development/webinars

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To learn more about the organizations mentioned in this report, visit their websites: Brazos Valley Council of Governments (www.bvcog.org), Chittenden County Regional Planning Commission (www.ccrpcvt.org), Cumberland Valley Area Development District (www.cvadd.org), Eastern Upper Peninsula Regional Planning and Development Commission (www.eup-planning.org), Humboldt County Association of Governments (www.hcaog.net), Kentucky Transportation Cabinet (transportation.ky.gov), New River Valley Regional Commission (www.nrvrc.org), Northern Tier Regional Planning and Development Commission (www.northerntier.org), and North Central Pennsylvania Regional Planning and Development Commission (www.ncentral.com).

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