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Improving Transportation Investments through Performance-Based Programming

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EXECUTIVE SUMMARY

With the passage of Rebuild Illinois in 2019, it has never been more important for Illinois to consider performance-based project selection. The historic multi-year capital bill provides billions in increased transportation funding every year. However, the process behind the selection of transportation projects in Illinois is not always clear. Performance-based programming is a data-driven and transparent project selection process that can ensure the most beneficial projects are selected every year and taxpayers can easily understand the reasoning behind them.

Performance-based programming uses data to evaluate and compare proposed transportation projects and is known as a best practice within the transportation industry.

- Decision making is improved by using data to focus on specific goals. Goals may include adequate road and bridge maintenance, reduced congestion, increased safety, or economic development.
- By using data on past and expected future performance, it ensures the best value for taxpayers.

The federal government has adopted standards for performance measures for all states. Despite this, a formal data-driven, transparent project selection process has not been adopted in Illinois.

- IDOT has laid out performance-measures through the Long Range Transportation Plan. And while it is clear IDOT is tracking these measures, little is done to incorporate them into the project selection process.
- IDOT has adopted the TAMP as a means to prioritize the maintenance of roads and bridges. This process is limited in its reach for project selection, as it only applies to maintenance projects.

IDOT receives billions of dollars every year through the Multi-Year Plan (MYP) to perform projects on state-maintained roadways, yet much remains unclear regarding the project selection process.

- IDOT distributes funding to its nine districts based on 11 criteria.
- IDOT districts select projects to receive funding. Following new guidance, IDOT works with districts to determine an agreed upon amount of preservation, rehabilitation, and reconstruction work. IDOT also provides training and pavement and bridge condition information to support the district's choices.
- While these steps have sought to improve the project selection process, little is formally defined or published for general review.

Ultimately, a project selection process should objectively match dollars to quantifiable public needs and goals. In Illinois, transportation needs are widespread.

- Maintenance needs can be a priority, as 19% of IDOT roadways are considered to be in "poor condition," 9% of Illinois' bridges are considered structurally deficient, and Chicago's transit capital State of Good Repair backlog exceeds \$19 billion.
- Equity can be a goal, as a study found that 95% of the 100 census tracts with the longest commute times in the Chicago region are majority black or Latinx. Conversely, 53% of the 100 tracts with the shortest commutes are majority white.
- The state can also prioritize safety, as Illinois saw 1,031 fatalities in 2018 from vehicular crashes.
- Congestion reduction may be a goal in the Chicago region, as the average commuter experienced 73 hours of delay in 2017, up from only 59 hours in 2010.
- Under IDOT's current plan, it is unclear whether these goals are adequately addressed through projects selected for the MYP.

Four states that have adopted performance-based programming were analyzed – Virginia, Ohio, Minnesota, and Kentucky. Each state handles the process differently and offers a range of examples for Illinois to consider.

- Different types of projects and programs are required to use the performance-based programming process in each state. Virginia, Ohio, and Kentucky largely do not include maintenance projects, while Minnesota does.
- Two states developed specific executive boards to provide oversight and select projects. Other states depend solely on the state DOT.
- All four states depend on local transportation agencies and other local governments to submit projects for consideration, including MPOs, DOT districts, counties, and municipalities.
- Safety, congestion, economic development, and benefit-to-cost ratios are the most common criteria used for evaluation. Some states also consider accessibility, environmental impacts, asset management needs, and land use coordination.

INTRODUCTION

Every year, billions of taxpayer dollars are spent on transportation projects across Illinois. However, the process behind the selection of these projects is not always clear with politics and other undisclosed preferences ultimately playing a part. Performance-based programming is a data-driven and transparent project selection process that ensures the most beneficial projects are selected and taxpayers can easily understand the reasoning behind them. Ultimately, it certifies infrastructure dollars objectively match public needs – like congestion reduction and safety improvements.

With the passage of Rebuild Illinois in 2019, it has never been more important for Illinois to consider performance-based project selection. The historic multi-year capital bill has provided billions in transportation funding through increased fees and bonding. Specifically, the increased motor fuel tax, registration fees, and certificate of title fees is estimated to generate over \$1.9 billion in new funding every year (ILEPI, 2020). Rebuild Illinois was passed with the intent to address massive infrastructure needs – with 19% of Illinois Department of Transportation (IDOT) roadways considered to be in “poor condition,” 9 percent of Illinois’ bridges considered structurally deficient, and Chicago’s transit capital State of Good Repair backlog exceeding \$19 billion (IDOT, 2019; ARTBA, 2020; RTA, 2018). Illinois has an imperative to demonstrate exactly where that new funding is going and that it is truly addressing these needs.

Performance-based programming is becoming the norm across state departments of transportation (DOTs), including some of Illinois’ Midwest neighbors – Minnesota, Ohio, and Kentucky. This report by the [Illinois Economic Policy Institute](#) explores the benefits of this process, examines Illinois’ current transportation project selection methods, and provides examples from other states.

PERFORMANCE-BASED PROGRAMMING BASICS AND BENEFITS

In the simplest terms, performance-based programming uses data to evaluate and compare proposed transportation projects. This analysis is then used to select projects, ensuring the most beneficial projects receive funding. Long-range planning helps define priorities and goals and ultimately defines data to be used in the evaluation process.

For example, goals may include adequate road and bridge maintenance or state of good repair, reduced congestion, increased safety, or economic development. In turn, projects may be analyzed on structural deficiency ratings, average delay, number of crashes, potential to enhance freight access, or other factors. Each criterion is weighted to indicate the importance it holds. After a project is appropriately evaluated, the scores can be compared to create a ranking of priority projects.

THE VALUE OF PERFORMANCE-BASED PROGRAMMING

In recent years, performance-based programming has become widely accepted and known as the best practice within the transportation industry. It offers a variety of benefits to state DOTs and transportation agencies.

- **Transparency and Accountability:** a clear documentation process is created which shows exactly how goals are built into project selection and exactly how taxpayer money is being spent.

- **Improved Investment Decision Making:** decision making is improved by using data to focus on specifically outlined goals. Performance-based programming creates a heightened focus on performance outcomes, allowing for open and honest conversations to ensure investments are aligned with the public interest.
- **Improved Return on Investments and Resource Allocation:** by using data on past and expected future performance, performance-based programming ensures the best value for taxpayers' money—particularly when facing limited resources.
- **Improved System Performance:** this process takes into account the overall impact of a single project on the larger transportation system, as opposed to focusing on the singular benefits of that project.
- **Demonstrates Link between Funding and Performance:** similar to the benefits of transparency, performance-based programming provides a means to articulate specific improvements possible with a set amount of funding. The entire process not only leads to greater public trust, but also improves the public's understanding of transportation issues and the funding needs required to reach performance goals (FHWA, 2013; NCHRP, 2000).

EXISTING FEDERAL POLICIES

Performance-based planning is a concept that has become more common in recent years, with the federal government adopting guidelines for all states and transportation agencies. However, a formal data-driven, transparent project selection is not as widespread, and is not currently employed in Illinois. The following section will summarize current federal and state policies used in Illinois.

Federal Performance-Based Planning and Programming Requirements

The last two federal transportation bills – Moving Ahead for Progress in the 21st Century Act (MAP-21) and Fixing America's Surface Transportation Act (FAST Act) – establish requirements for state departments of transportation (DOTs) and other transportation agencies to develop and use performance based planning. Federal language specifically states, “The performance measures and targets established [in relation to national performance measures] shall be considered by a State when developing policies, programs, and investment priorities reflected in the statewide transportation plan and statewide transportation improvement program” (FHWA, 2013). The specific performance measures and evaluation criteria are summarized in Figure 1.

Each state's DOT, Metropolitan Planning Organizations (MPOs), and transit agencies must develop a system to evaluate their overall performance using these measures. The Illinois Department of Transportation (IDOT) has laid out these measures and its strategy through the Long Range Transportation Plan. IDOT's specific evaluation process is outlined in Figure 1. The initial targets for each measure were set between 2017 and 2018. The targets will be evaluated annually for safety measures, and between two and four years for others.

IDOT Specific Performance Measures

While it is clear IDOT intends to track these performance measures, they are not fully incorporated into the project selection process. IDOT began exploring a performance-based project selection process for expansion projects in 2016, which included draft evaluation weights and criteria. A performance-based project evaluation tool was discussed specifically for new capacity projects, yet this process was not widely shared and has not been implemented in annual programming through the multi-year plan

(IDOT, 2017; IDOT, 2018a). Specifics regarding this evaluation tool is explained in two presentations made by IDOT in 2017 and 2018, which are shown in Appendix A.

Figure 1: Federal Performance Measures and Evaluation from IDOT

Performance Measure	Evaluation Criteria	Evaluation Process
Safety	<ul style="list-style-type: none"> ▪ Number of fatalities ▪ Rate of Fatalities per 100 million vehicle miles traveled (VMT) ▪ Number of serious injuries ▪ Rate of serious injuries per 100 million VMT ▪ Number of non-motorized fatalities and serious injuries 	If targets are not met, additional funding should be dedicated to safety projects and IDOT should submit a Highway Safety Improvement Plan (HSIP) Implementation Plan
Pavement & Bridge Condition	<ul style="list-style-type: none"> ▪ % pavement of interstate system in good condition ▪ % pavement of interstate system in poor condition ▪ % pavement of non-interstate national highway system (NHS) in good condition ▪ % pavement of non-interstate NHS in poor condition ▪ % NHS bridges classified as in good condition ▪ % NHS bridges classified as in poor condition 	If certain targets are not met, portion of state's National Highway Performance Program (NHPP) and Surface Transportation Block Grant (STBG) program funding to address pavement and bridge conditions on the NHS
System Performance	<ul style="list-style-type: none"> ▪ % reliable person-miles traveled on interstate ▪ % reliable person-miles traveled on non-interstate NHS 	No financial penalties if targets are not met
Freight Movement	<ul style="list-style-type: none"> ▪ % Interstate system mileage providing for reliable truck travel time 	
Traffic Congestion	<ul style="list-style-type: none"> ▪ Total emissions reductions ▪ Annual hours of peak hours excessive delay per capita ▪ Percent of non-single occupancy vehicle travel 	
Transit Asset Management	Different measures depending on size of transit agency, state of good repair	No penalty for missing a target

Source: IDOT, 2019

Transportation Asset Management Plan (TAMP)

Similar to performance measures, the federal government adopted requirements related to transportation asset management in 2012 under MAP-21. States are required to adopt Transportation Asset Management Plans (TAMP), which use data and an evaluation process to assess existing assets and ensure needed preservation and maintenance strategies will sustain a state of good repair at minimal costs. Put simply, the TAMP is meant to prioritize the maintenance of roads and bridges in the most cost-effective way possible.

IDOT's TAMP was completed in 2019. It applies this new maintenance strategy on all pavements and bridges under IDOT's jurisdiction and was used in the recent FY 2021-2026 Proposed Highway Improvement Program – also known as the Multi-Year Plan (MYP) (IDOT, 2020b). IDOT's specific preservation goals are summarized in Figure 2. Each roadway and bridge is judged differently depending on whether it is an interstate, other National Highway System (NHS) roadway, non-NHS marked route, or non-NHS unmarked routes. Following the consideration of the condition of all roadways and bridges and of IDOT's preservation goals, maintenance projects are selected, as further described in the following section (IDOT, 2020b).

Figure 2: IDOT Transportation Asset Management Plan Preservation Goals

System		Acceptable Condition Based on IDOT Condition Rating Survey (CRS) – Scale 1-9	Desired System % in Acceptable Condition
Roadways	Interstate	5.5 or greater	90%
	Other NHS	5.0 or greater	90%
	Non-NHS Marked Routes	5.0 or greater	75%
	Non-NHS Unmarked Routes	5.0 or greater	50%
Bridges	Interstate	5 or greater	93%
	Other NHS	5 or greater	93%
	Non-NHS Marked Routes	5 or greater	90%
	Non-NHS Unmarked Routes	5 or greater	90%

Source: IDOT, 2020b

ILLINOIS' CURRENT PROJECT SELECTION PROCESS

The federal government has clearly outlined guidelines to support the implementation of performance-based planning and programming. While Illinois has addressed the federal requirements, much remains unclear regarding the project selection process used by IDOT.

IDOT receives billions of dollars every year to perform projects on state-maintained roadways. The Multi-Year Plan – also known as the Highway Improvement Program – is the foundation of project selection for IDOT. The MYP is developed every year and outlines a six-year program to specify how transportation funding will be invested across Illinois. The plan includes both state managed and local projects, identifying the use of state, federal, local, and bond funding.

Funding Breakdown and Rebuild Illinois

The FY 2021-2026 MYP – released in July 2020 – totals \$21.26 billion, with \$3.15 billion dedicated for FY 2021. Total state funding makes up over 50% of MYP funding, including both state transportation revenue and bonding (Figure 3). State transportation revenue is generated largely by the motor fuel tax and vehicle registration fees. Both state transportation revenue and bonding experienced significant increases as a result of Rebuild Illinois. Specifically, increased motor fuel tax, registration fees, and certificate of title fees are estimated to generate over \$1.28 billion in additional state funding every year (ILEPI, 2020b). This is reflected in the MYP, with state transportation revenue in the FY 2021-2026 MYP over \$5.6 billion more than the FY 2019-2024 MYP, and bonding experiencing a similar increase of \$4.0 billion between the two years (Figure 3).

Figure 3: FY 2021-2026 MYP Funding Sources

Funding Source	FY 2021-2026 MYP		FY 2019-2024 MYP (last MYP pre-Rebuild IL)	
	Amount (billions)	% of Total	Amount (billions)	% of Total
Federal Aid	\$9.24	43%	\$9.06	82%
State Transportation Revenue	\$6.96	33%	\$1.34	12%
Local Funds	\$1.06	5%	\$0.65	6%
Bonding	\$4.00	19%	\$0.00	0%
Total	\$21.26	100%	\$11.05	100%

Source: IDOT, 2020b; IDOT, 2018b

Understanding the Project Selection Process

IDOT largely does not have a clear process for how exactly it distributes funding statewide and how projects are selected. IDOT's process is briefly summarized below.

Funding Distribution: IDOT distributes funding to its nine districts based on 11 criteria, including truck percentages, backlog and accruing miles, backlog bridges, congestion, and safety. This process was slightly changed following the adoption of the TAMP, with IDOT also issuing funding targets and suggesting certain percentages are spent on particular project types (IDOT, 2019b).

Project Selection: IDOT districts select projects to receive funding, which are ultimately compiled in the MYP. Following new guidance from the TAMP, IDOT's Office of Planning and Programming works with districts to determine an agreed upon amount of preservation, rehabilitation, and reconstruction work to be accomplished during the MYP timeframe. IDOT statewide offices also provide training and pavement and bridge condition information to support the district's choices (IDOT, 2019b).

Ultimately, the goal of the project selection process should be to address the traveling public's most pressing transportation needs. In the Chicago region, this may include congestion reduction, as the average commuter experienced 73 hours of delay in 2017, up from only 59 hours in 2010 (TTI, 2019). The state may also prioritize safety, as Illinois on the whole saw 1,031 traffic fatalities in 2018 and an 8% increase in the fatality rate between 2014 and 2018 (IDOT, 2019c). Yet it is unclear whether these goals are adequately addressed in the projects selected for the MYP.

While steps have been made in recent years to improve the project selection process, emphasizing data and training to support district project choices, little is formally defined nor published for general review. Regarding funding distribution, the process is partially outlined in the TAMP, yet transparency is lacking. It is unknown how different criteria are weighted or how exactly funding is distributed.

Overall, there is a lack of transparency in understanding how taxpayer funding is used and how projects are selected. There is no way to fully understand why one project may have received funding over another and little opportunity for public feedback. Nor is there a complete understanding of the goals and benefits of projects. The process should be well outlined, stakeholders should be able to submit projects, and the public should have the opportunity to provide feedback on selected projects.

PERFORMANCE BASED PROGRAMMING IN OTHER STATES

Transportation agencies across the United States are shifting to performance-based programming. At the federal level, certain surface transportation discretionary grant programs – like the Infrastructure for Rebuilding America (INFRA) program – have adopted a variety of criteria for which to be evaluated. Criteria may include cost-effectiveness (measured by a cost-benefit ratio), reduction in traffic fatalities, or reduction in congestion. Projects are appropriately evaluated to provide data in support of which projects to be selected. The United States Government Accountability Office (GAO) states that, “this approach can help assure accountability for federal investment by more clearly linking program funds to desired outcomes” (GAO, 2019, p. 5).

Similarly, state departments of transportation (DOTs) across the country have begun transitioning to performance-based planning and programming, instituting formal processes to select projects. This section will explore four states that have adopted a form of performance-based programming – Virginia, Ohio, Minnesota, and Kentucky. These four states were chosen to exhibit both well-known, established programs (Virginia) and other Midwestern examples. Each state handles the process in a slightly different way and offers examples for other states to consider. Figure 4 summarizes the key information behind each state’s performance-based programming process.

Projects Included and Eligible

Depending on the state, different types of projects and funding programs are required to use the performance-based programming process. It is fairly common for maintenance and asset management projects to not use this process, as is the case in Virginia, Ohio, and Kentucky.

Virginia developed their priority ranking system for transportation construction projects in 2014 – called the System Management and Allocation of Resources for Transportation: Safety, Congestion, Accessibility, Land Use, Economic Development, and Environment, or SMART SCALE. Certain federal and state funding programs must apply SMART SCALE, including the Congestion Mitigation and Air Quality Improvement (CMAQ), Surface Transportation Block Grant Program (STBG), and Highway Safety Improvement Programs (HSIP) at the federal level, and statewide High-Priority Projects Program and District Grant Programs at the state level. Virginia’s State of Good Repair of Structures and Pavement are not subject to SMART SCALE (VDOT, 2020).

Ohio created the Transportation Review Advisory Council (TRAC) in 1997 to develop and oversee a process to select projects for their Major New Capacity Program. This process was revised in 2015 to expand its reach to freight, transit, and other funding sources (Haake, 2018). Ohio’s program applies only to “Major New Capacity Projects,” which are defined as those greater than \$12 million and will increase the capacity of a facility or reduce congestion. This would include all new interchanges, any significant interchange modifications, bypasses, general purpose lane additions, intermodal facilities, major transit facilities, or Intelligent Transportation Systems (ITS) (ODOT, 2020).

Kentucky initiated performance-based programming in 2016 through the development of the Strategic Highway Investment Formula for Tomorrow (SHIFT). Potential project types include safety improvements, road widening, reconstruction, construction of new routes, and interchange improvements. Projects that do not fall under the SHIFT process include rural and secondary road and bridge projects, maintenance projects, and certain projects scheduled to use federally dedicated funds (KYTC, 2020).

Minnesota developed a new project selection process in 2017. Minnesota works slightly differently than the other states mentioned, in that it covers most types of projects, including asset management, targeted safety improvements, and mobility and capacity expansion. Projects are selected within these categories, in which there are also subcategories. For example, under asset management, subcategories include pavement projects and bridge projects. Minnesota’s selection process also applies to special state and federal programs, such as the Corridors for Commerce Program, Highway Freight Program, Highway Safety Improvement Program, and Transportation Economic Development Program. Certain projects are exempt, including minor maintenance projects like chip seals, patching, and crack sealing, painting of bridge steel structures, sign, signal, lighting, sensor, and guardrail replacement, striping, emergency repairs, and others (MnDOT, 2020).

Figure 4: Performance-Based Programming State Comparison

State	Process Applied To	Program Oversight	Agencies Eligible to Submit Projects	Scoring Criteria
Virginia	<p>Certain federal and state funding programs; Virginia's High-Priority Projects Program for Key Statewide Needs and District Grant Programs are subject to SMART SCALE; State of Good Repair for Structures and Pavement program is not.</p> <p>Highway, transit, railroad, operational improvements, and transportation demand management projects and strategies can be submitted.</p>	<p>The Technical Evaluation Team – made up of technical staff from state agencies – conducts the official calculations and ratings for each project submitted.</p> <p>The Commonwealth Transportation Board (CTB) – a 17-member board of members appointed by the governor – ultimately selects which projects are funded.</p>	<ul style="list-style-type: none"> Metropolitan Planning Organizations (MPOs) Planning District Commissions (PDC) Counties Cities Certain eligible towns Certain transit agencies 	<p>A variety of criteria that fall within six main categories:</p> <ul style="list-style-type: none"> Safety Congestion Accessibility Environmental Economic Development Land Use Coordination <p>Different weights are assigned based on a regional category.</p>
Ohio	<p>Major new transportation capacity projects: defined as those costing more than \$12 million which add transportation capacity or reduce congestion. Funding for these projects is made available by the ODOT director after system preservation needs have been met.</p> <p>Road, transit, intermodal, and freight projects can be submitted, if eligible.</p>	<p>Ohio Department of Transportation (ODOT) staff perform the technical analysis of all projects submitted.</p> <p>The 9-member Transportation Review and Advisory Council (TRAC) ultimately selects projects. Members include:</p> <ul style="list-style-type: none"> Chaired by Director of ODOT 6 governor-appointed 1 appointed by Ohio House of Representatives 1 appointed by president of Ohio Senate 	<ul style="list-style-type: none"> ODOT district offices MPOs Counties Municipalities Transit Authorities Port Authorities Transportation Improvement Districts 	<p>A variety of criteria that fall within four main categories:</p> <ul style="list-style-type: none"> Transportation Economic Performance Local Investment Project Funding Plan
Minnesota	<p>Capital construction projects on state owned highways. Projects are selected within different categories, including asset management, targeted safety improvements, and mobility and capacity expansion. Additionally, a variety of “special programs” – like corridors of commerce program and highway freight program – are evaluated separately.</p>	MnDOT scores and selects projects	<ul style="list-style-type: none"> MnDOT districts Counties Municipalities Local road authorities 	<p>Scoring varies across different categories and programs, examples of criteria include:</p> <ul style="list-style-type: none"> Crash history Traffic volume Benefits environmental justice population Travel time reliability Economic Impact Freight Efficiency
Kentucky	<p>Projects that address safety improvements, road widening and reconstruction, and new interchanges and routes. The process does not apply to maintenance, select federally funded projects, or MPO priority projects.</p> <p>Statewide priority projects are considered first. Regional priority projects are then considered. Regional priority projects can receive added points by getting a “boost” from the KYTC District or MPO/ADD.</p>	KYTC evaluates and selects projects.	<ul style="list-style-type: none"> Kentucky Transportation Cabinet (KYTC) Districts Area Development Districts (ADD) MPOs 	<p>A variety of criteria that fall within five main categories:</p> <ul style="list-style-type: none"> Safety Asset management Economic Growth Congestion Benefit / Cost

Sources: KYTC, 2020; ODOT, 2020; MnDOT, 2020; VDOT, 2020

Program Oversight

Of the four states in this comparison, two specifically developed boards to provide oversight and ultimately select projects. Virginia created the 17-member Commonwealth Transportation Board (CTB) and Ohio created the nine-member Transportation Review and Advisory Council (TRAC). State law outlines the members for each board. The Virginia board is made up of the Commissioner of VDOT, Director of Rail and Public Transportation for VDOT, and representatives from VDOT districts throughout the state. The Ohio Council is chaired by the Director of ODOT and includes six governor-appointed representatives and two appointments by the Ohio House of Representatives and President of the Ohio Senate. While these boards have ultimate authority over ranking and selecting projects, each state's DOT staff supports the analysis and scoring of actual projects. Virginia has a dedicated Technical Evaluation Team made up of staff from the Office of Intermodal Planning and Investment (OIPI), Virginia Department of Rail and Public Transportation (DRPT), and VDOT (VDOT, 2020; ODOT, 2020).

The remaining two states rely on their respective transportation agencies – Minnesota Department of Transportation (MnDOT) and Kentucky Transportation Cabinet (KYTC) – to both evaluate and select projects.

Agencies Eligible to Select Projects

All four states depend on local transportation agencies, other local governments, and local transportation offices to submit projects for consideration. Most common examples are local districts of each DOT, Metropolitan Planning Organizations (MPOs), counties, and municipalities. Both Virginia and Ohio note transit agencies are eligible, and Ohio also accepts projects from Port Authorities. While Kentucky is the most selective, primarily accepting project proposals from KYTC districts, area development districts, and MPOs, it also provides specific scoring input from these local agencies.

Scoring Criteria

An evaluation of scoring criteria shows that safety, congestion, economic development, and benefit-to-cost ratios are the most common criteria and were used under the evaluation process of all four states. Accessibility was also used in three different states. Some states also take into account environmental impacts, asset management needs, and land use coordination (Figure 5).

Virginia also divides the state's districts and MPOs into different categories in order to assign different weights to each scoring criteria, as summarized in Figure 6. For example, Category A districts are those with the largest cities and greater populations. As such, Category A districts weight the congestion mitigation criteria at a 45% weight, compared to only 15% for other categories. Category A also places a 20% weight on land use, while other categories have a lower or no emphasis on land use. Conversely, Category D districts – those in more rural areas – only place a 10% weight on congestion mitigation, but a 30% weight on safety (Figure 6). This approach allows for different regions to have unique priorities based on their needs.

Figure 5: Basic Summary of Scoring Criteria by State*

Measure	Description	Virginia	Ohio	Minnesota	Kentucky
Safety	Improvement in number or severity of crashes	X	X	X	X
Congestion	Increased throughput / Decreased delay Volume/Capacity ratio	X	X	X	X
Economic Development	Consistency with regional and local economic development plans and policies Interregional freight movement Improvement in travel time reliability	X	X	X	X
Benefit / Cost	Evaluation based on merits (defined differently by state) compared to cost	X	X	X	X
Accessibility	Access to jobs Access to jobs for disadvantaged populations Access to multimodal choices	X	X	X	
Environmental	Improve air quality and reduce greenhouse gas emissions Potential to minimize impact on natural resources	X	X		
Asset Management	Bridge and pavement needs addressed			X	X
Land Use Coordination	Increase in future amount of population and employment located in areas with high non-work accessibility	X			

* This table is only meant to provide a basic overview of scoring criteria and how these four states overlap; many states have more defined scoring measurements, particularly Minnesota which has a different scoring criteria for every funding program

Sources: VDOT, 2020; ODOT, 2020; MnDOT, 2020b; KYTC, 2020; Haake, 2018

Figure 6: Virginia Scoring Criteria Weights

Factor	Congestion Mitigation	Economic Development	Accessibility	Safety	Environmental Quality	Land Use
Category A	45%	5%	15%	5%	10%	20%
Category B	15%	20%	25%	20%	10%	10%
Category C	15%	25%	25%	25%	10%	
Category D	10%	35%	15%	30%	10%	

Source: VDOT, 2017

Minnesota has one of the most extensive scoring criteria processes, outlining specific scoring for each funding program. As previously mentioned, all projects under Minnesota's process are scored and selected within specific categories and subcategories. Altogether, there are 25 different scoring processes outlined in MnDOT's Guide to Project Selection. Scoring may vary based on whether a project is on the National Highway System, is a pedestrian project, or is located in the Twin Cities area (MnDOT, 2020b).

Equity as a Scoring Criterion

While not incorporated by the aforementioned states, equity is another performance criterion that Illinois might consider including in a performance-based programming process. A recent study highlighted in the March/April 2020 edition of the American Planning Association PAS Memo explored transportation equity in the greater Chicago region. It found that communities in which black residents are the largest racial group experience the longest commute times. Specifically, of the 100 census tracts with the longest commute times, 95% are majority black or Latinx. In contrast, 53% of the 100 tracts with the shortest commutes, are majority white (Wennink and Krapp, 2020).

This memo further analyzed equity as a performance measure and how it is currently employed in MPOs across the country. As stated in the study, “If equity were considered in a meaningful way as part of this process, transportation investments could be targeted to improve the quality of life for historically marginalized populations” (Wennink and Krapp, 2020, p. 3). Ultimately, the goal is to influence future investment decisions and increase transportation benefits to populations that need them most.

The study evaluated the 40 largest MPOs in the country – all of which have populations over 1,000,000 – and found that 16 MPOs use at least one type of an equity criterion. The different types of equity criteria are summarized in Figure 7. While there are benefits and disadvantages to each type, these provide a starting point. As Illinois considers the adoption of performance-based programming, there are considerable examples it can draw upon to consider equity as a measure, ensure it has an adequate weight, and considers feedback from historically disadvantaged communities (Wennink and Krapp, 2020).

Figure 7: Example of Equity-Oriented Performance Measures

Type	Description	# MPOs*
Location burdens-based	Awards points if a project is <i>not</i> located within a predefined area with high concentrations of marginalized populations	2
Location benefits-based	Awards points if a project is located within a predefined area with high concentrations of marginalized populations	12
Impact benefits-based	Considers the potential positive impacts a proposed project will have on predefined areas with high concentrations of marginalized populations – would go beyond an assessment of only spatial proximity	5
Access to destinations-based	Considers accessibility improvements projects will provide to areas with high concentrations of marginalized populations	1
User-based	Awards more points to projects that serve a larger number of people considered to be within a marginalized population	3
* Of a study of 40 largest MPOs in the United States, 16 incorporated an equity criterion; these numbers reflect the types of criteria used by those 16 MPOs		

Source: Wennink and Krapp, 2020

CONCLUSION

As performance-based programming continues to be adopted by states across the nation, Illinois could benefit from a similar process for all state transportation project selections, including those in the MYP and competitive grants through IDOT. The federal government encourages the use of performance measures and data-driven analyses are becoming the norm and easier to implement. While much of the needed data is available, states simply need to execute the process.

In 2019, Illinois legislation was proposed in draft versions of the horizontal funding component of the capital bill yet was not ultimately included in the final bill that was passed. The draft language charged IDOT with creating a process and required every project included in the MYP to undergo an evaluation through a performance-based process. Evaluation criteria would include congestion mitigation, economic development, livability, environmental impact, accessibility, and safety. While this proposal did not initially succeed, it could be pursued again.

Few can argue the benefits of transparency in a state government. Illinois spends billions of taxpayer dollars on transportation projects every year. As this report demonstrates, many other states have led

the charge on adopting performance-based programming, each adopting policy innovations that reflect the unique needs of their states. Illinois is well positioned to follow a similar path.

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APPENDIX A



TRANSPORTATION INVESTMENT PERFORMANCE SELECTION

MAY 17, 2017



IDOT LISTENING TOUR

In 2015, IDOT initiated a statewide infrastructure listening tour to establish priorities.

**The current state of
our infrastructure is
not acceptable**

**Infrastructure concerns
are multimodal**

**Greater investment
that results in a bigger
“bang for your buck” is
needed**

**IDOT has room to improve
project delivery and
collaboration with partners**

WE ARE RESPONDING

- **IDOT IS COMMITTED TO BEING RESPONSIVE**

- ✓ Project Selection
- ✓ Project Development
- ✓ Project Implementation



- **FOCUS ON MAINTENANCE AND MODERNIZATION OF EXISTING ASSETS**



- **BE ACCOUNTABLE AND TRANSPARENT IN PROJECT SELECTION**



- **SELECT PROJECTS THAT PROVIDE THE GREATEST RETURN ON INVESTMENT FOR TAXPAYERS - MAXIMIZING LIMITED FUNDS**



PERFORMANCE MEASUREMENT

- **FEDERAL REQUIREMENTS**

- State DOTs and MPOs are required to set performance targets and report progress toward those targets

- **STATES ARE RESPONSIBLE FOR ADDING MEASURES THAT REFLECT STATE AND LOCAL PRIORITIES**

- Demonstrate the value infrastructure provides
- Good stewards of public dollars
- Easy-to-understand scoring criteria
- No “one size fits all” answer

- **FOCUS ON FUNDING AND INNOVATION**

PERFORMANCE MEASURES IN ILLINOIS

- WE HAVE LIMITED RESOURCES FOR EXPANSION PROJECTS
- IMPLEMENTING PERFORMANCE MEASURES WILL ALLOW US TO:
 - Identify and compare the benefits of different projects across the state
 - Choose projects that provide the best ROI
 - Improve accountability and transparency
 - Prepare for new state or federal revenues
 - Make the case for more funding

PERFORMANCE MEASURES IN ILLINOIS



TRANSPORTATION INVESTMENT PERFORMANCE SELECTION

- **Data-driven approach to investment decisions**
- **Prioritizes projects based on performance measures to maximize taxpayer dollars**
- **Objectively analyzes infrastructure projects that capitalize on the use of limited resources**
- **Identifies cost-effective projects that will maintain and modernize the transportation network**

IDOT'S PERFORMANCE GOALS

SAFETY

Strengthen safety standards across the state's transportation network

OPERATIONS

Enhance system performance to move people and goods efficiently

LIVABILITY

Improve access and multimodal connectivity and preserve the environment

REGIONAL SIGNIFICANCE

Allow flexibility to meet local and regional needs

ECONOMY

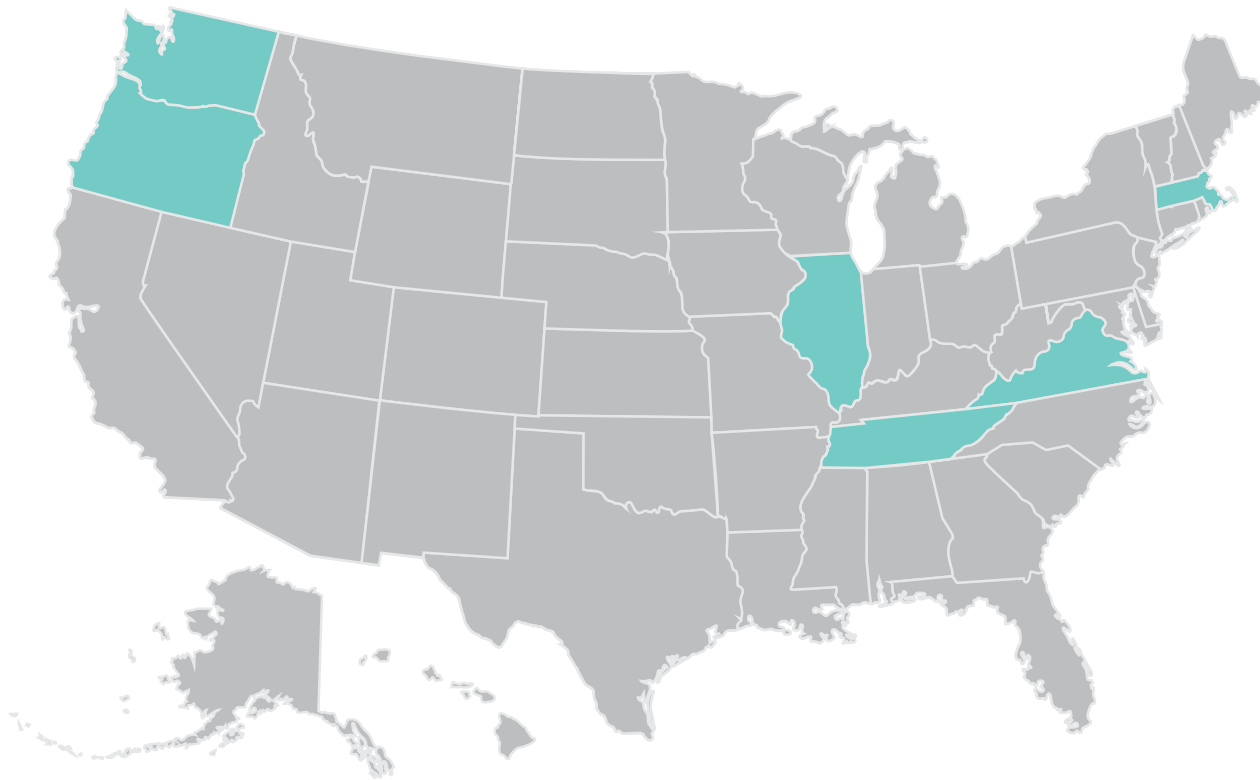
Grow Illinois' economy by improving transportation infrastructure

PROJECT RANKING CRITERIA ENSURE **GREATEST RETURN ON INVESTMENT**



PERFORMANCE MEASUREMENT

IDOT is a National Leader in Using a Performance-Based Selection Tool



INFORMED & OPEN DECISION MAKING PROCESS

	TRAFFIC OPERATIONS/ CONGESTION	SAFETY	ECONOMIC DEVELOPMENT	LIVABILITY	REGIONAL RANKING
NORTHEASTERN ILLINOIS	40%	15%	15%	15%	10%
OUTSIDE OF METRO REGION	25%	25%	25%	10%	10%

- Annual Average Daily Traffic
- Volume/Capacity Ratio
- Hours of Delay

- Safer Roads Index
- Safety Benefit

- Travel Time Reliability
- Freight Hours of Delay
- Intermodal Accessibility
- Econ. Dev. Proximity Index

- Access to Jobs
- Access to Multimodal Choices
- Active Transportation Accessibility
- Environmental Impact

- Regional Ranking

PROJECT SCORES



Benefit



Value to cost



Ability to address corridor issues

TIMELINE AND NEXT STEPS

FALL
2016

- Finalize goals
- Identify measures
- Develop tool

WINTER
2016 / 17

- Testing
- Evaluation

SPRING
2017

- Finalize tool, scoring process
- Stakeholder engagement
- Refine tool

2017+

- Continue to refine and adjust
- Implement in MYP

THANK YOU

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IDOT PERFORMANCE BASED PROJECT METRICS

February 2018

What is Performance Management?

- Performance Management of the Federal Highway Program is a **systematic approach** to **making investment** and **strategic decisions** using information about the condition and performance of the system and developing an approach **to achieve a desired set of national goals**.



Why Performance Management?

- Provide link between goals and specific actions
- Guide decisions on best use of available resources
- Evaluate the effectiveness of policies, plans, programs and projects
- Track system performance over time
- Clearly communicate results to internal and external audiences
- Strengthen accountability to taxpayers

What is IDOT's Role?

- Asset Management
 - Taking care of what we have
- Performance Based Project Evaluation
 - Evaluating expansion projects for ROI

Asset Management

- Asset management is a **strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on engineering and economic analysis** based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a **desired state of good repair** over the lifecycle of the assets at minimum practicable cost. (23 U.S.C. 101(a)(2), MAP-21 § 1103)

Transportation Asset Management Plan (TAMP)

- All states are required to develop a Transportation Asset Management Plan (TAMP)
- The Plan will include:
 - NHS pavement and bridge inventory
 - Objectives and measures
 - Performance gap identification
 - Life-cycle cost and risk management analysis
 - Financial plan
 - Investment strategies
- Interim TAMP due April 30th 2018
- Final TAMP before June 30th 2019

Setting Performance Measures

- Essential requirements for a measure to support asset management
- Help agency make better decisions about where to invest resources

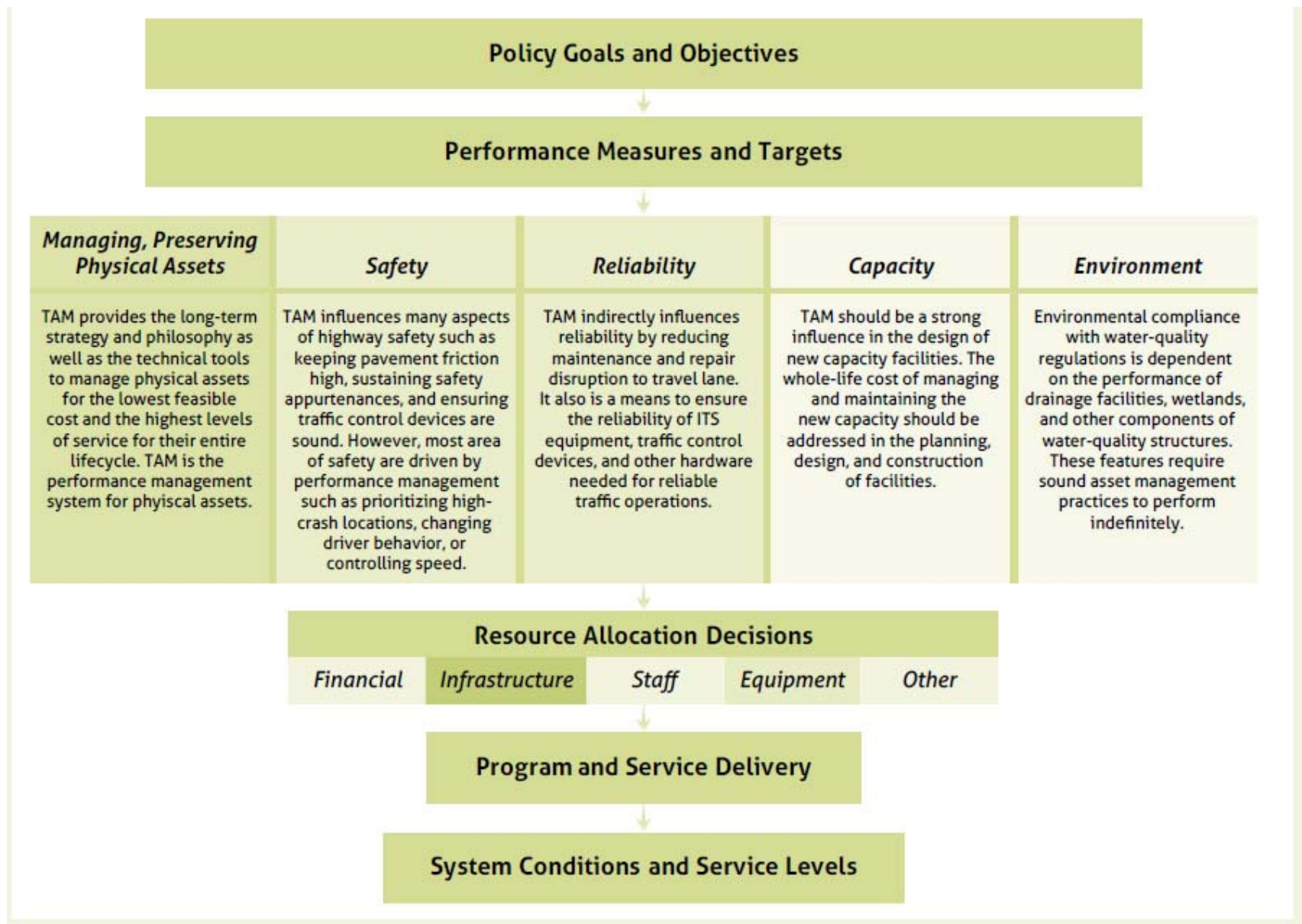
Performance Management vs. Asset Management – MAP 21 View

Performance Management

- National goals and performance management measures – §150
- §150 (b) – National Goal of Infrastructure condition
- §150(c)(3)(A) – NHPP performance requirements
- §150 (d) – Target Establishment
- §Section 150 (e) Target reporting

Asset Management Plan

- A performance driven plan Section 119(e)(2)
- Strategies leading towards the achievement of targets for asset condition and performance
- Support progress towards achievement of national goals



What about new capacity projects?

- TAMP covers existing assets
- States are responsible for adding measures that reflect state and local priorities
- Need to evaluate major expansion projects statewide
 - Demonstrate the value infrastructure provides
 - Good stewards of public dollars
 - Easy-to-understand scoring criteria
 - No “one size fits all” answer

What about new capacity projects?

- We have limited resources for expansion projects
- Implementing performance measures will allow us to:
 - Identify and compare benefits of projects across the state
 - Improve accountability and transparency
 - Prepare for new state or federal revenues
 - Make the case for more funding

Performance Based Project Evaluation

“The current state of our infrastructure is not acceptable.”

“Greater investment that results in a bigger bang for your buck.”

“Infrastructure concerns are multimodal.”

“IDOT has room to improve project delivery and collaboration with partners.”

New project evaluation tool:

- Focus on maintenance and modernization of existing assets
- Be accountable and transparent in project selection
- Select projects that provide the greatest return on investment for taxpayers – maximizing our limited resources
- Incorporate regional goals

Performance Based Project Evaluation Tool Benefits

- Data-driven approach to investment decisions
- Prioritize projects based on performance measures to maximize resources
- Objectively analyze infrastructure projects
- Identify cost-effective projects that maintain and modernize the transportation network
- Find innovative ways to deliver critical safety elements
- Connect to statewide long range, multimodal planning initiatives

Long Range Transportation Plan

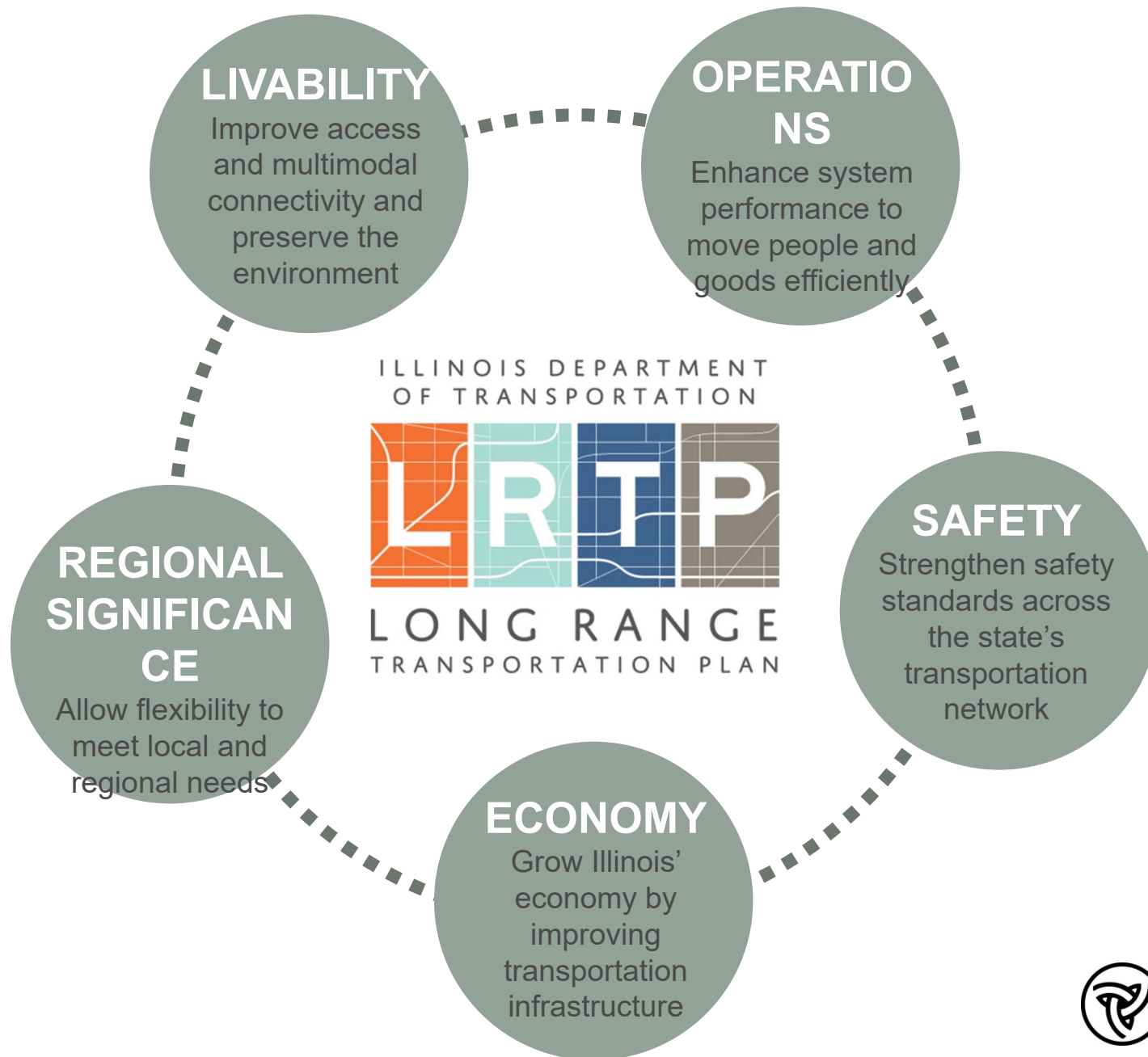


ILLINOIS DEPARTMENT
OF TRANSPORTATION



LONG RANGE
TRANSPORTATION PLAN





Freight Plan

- The FAST Act provides freight formula funds to states with an approved freight plan
- The Freight Plan will identify:
 - Trends, needs, bottlenecks, goals, and performance measures, and develop strategies for improving freight movement in Illinois
 - Projects slated to use these funds
 - Designate Illinois critical urban & rural freight corridors with input from the MPOs and others
- Slated for release in spring 2018
- Call for projects underway now
- Applications due April 6



THANK YOU

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MAP-21

- **Safety** - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- **Infrastructure Condition** - To maintain the highway infrastructure asset system in a state of good repair
- **Congestion Reduction** - To achieve a significant reduction in congestion on the National Highway System
- **System Reliability** - To improve the efficiency of the surface transportation system
- **Freight Movement and Economic Vitality** - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- **Environmental Sustainability** - To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- **Reduced Project Delivery Delays** - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

<u>Rule</u>	<u>Needs targets for:</u>	<u>Date</u>
Safety (PM1)	<ol style="list-style-type: none"> 1. # of fatalities 2. # of Non-Motorized Fatalities and Non-Motorized Serious Injuries 3. # of Serious Injuries 4. Rate of Fatalities per 100 M VMT 5. Rate of Serious Injuries per 100 M VMT 	August 31, 2017
Pavement and Bridges (PM2)	<ol style="list-style-type: none"> 1. % of Interstate Pavement in Good condition 2. % of Interstate Pavements in Poor condition 3. % of non-Interstate NHS pavements in Good condition 4. % of non-interstate NHS pavements in Poor condition 5. % of NHS bridges classified as in Good condition 6. % of NHS bridge classified as in Poor condition 	May 20, 2018
System Performance (PM3)	<ol style="list-style-type: none"> 1. % of person-miles traveled on the Interstate that are reliable 2. % of person-miles traveled on the non-Interstate NHS that are reliable 3. Truck Travel Time Reliability Index 4. Annual Hours of Peak house Excessive Delay per Capita 5. Percent of Non-Single Occupancy vehicle (SOV) Travel 6. Total Emission Reductions 	May 20, 2018
Final Planning Rule	Agreement with MPOs and transit agencies on how to share data and coordinate target setting.	May 27, 2018