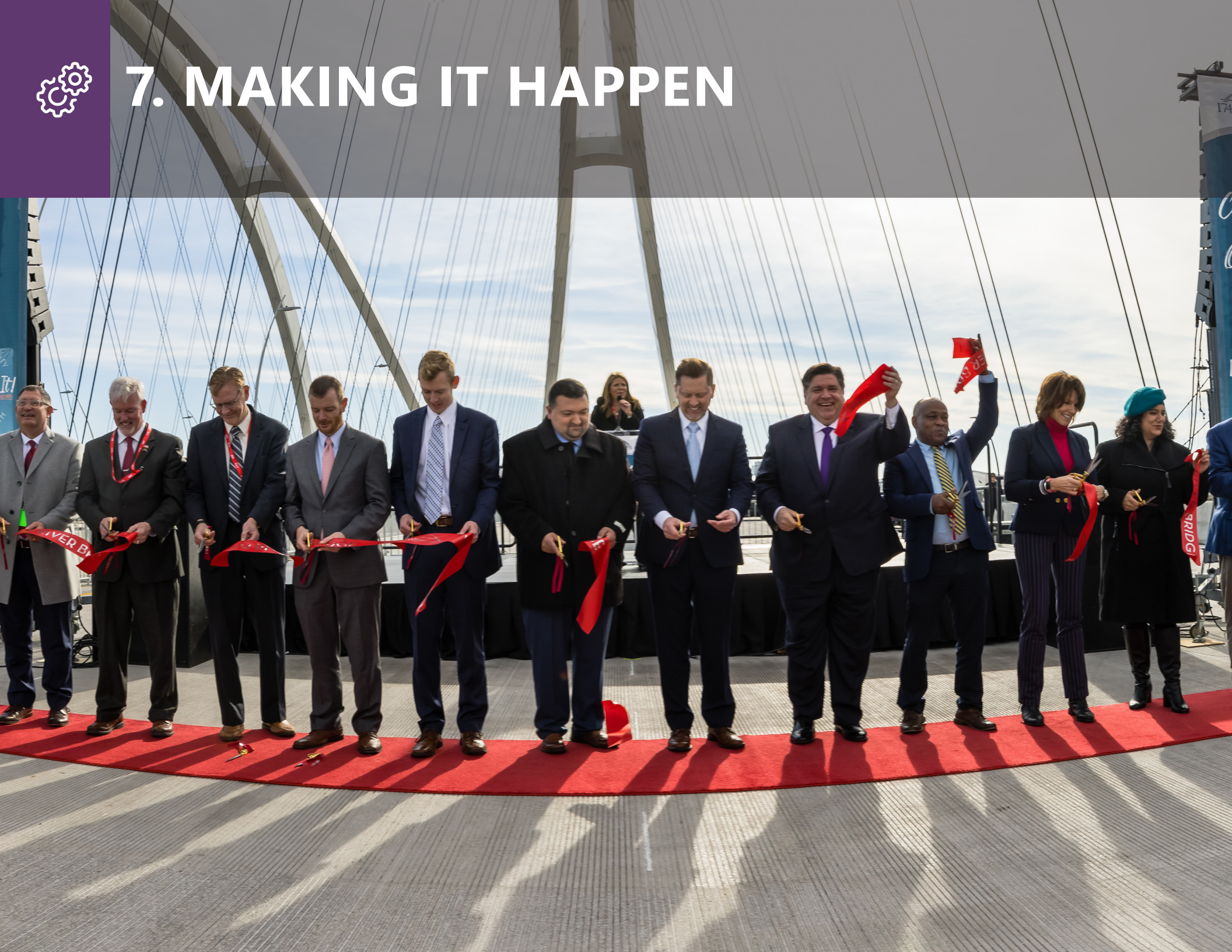
7. MAKING IT HAPPEN



Chapter 6 showed that funding shortfalls are anticipated across modes and discussed potential revenue generating mechanisms to address those needs. This chapter rounds out the plan by discussing how specific investments are programmed and how performance is monitored.

7.1 Programming

The Five-Year Program, which is approved annually by the Iowa Transportation Commission (Commission), lists the investments that translate planning into projects. This document is used to inform Iowans of planned investments across the state's multimodal transportation system. The Five-Year Program is updated and approved each year in June, and encompasses investments in aviation, transit, railroads, trails, and highways.

Program Development and Management

Each day some facet of the complex transportation system affects Iowans. The process of making the critical decisions about what investments will be made to manage the state-owned system is also complex. It involves input from a wide range of individuals and organizations, and is based on a robust programming process. Over the past several years, the Iowa DOT has transitioned to an enhanced programming process in an effort to improve transparency, align available tools and plans, and better incorporate appropriate stakeholders. The major steps in that process include:

1. Problem/need statement development
2. Project scoping and charter development
3. Project advancement
4. Project prioritization
5. Program synthesis
6. Program approval

Problem/Need Statement Development

The initial step in the process is a recognition that all projects should result from an original problem or need identified on the transportation system. Those problems could be related to mobility, safety, infrastructure condition, operations, resilience, or many other factors. The first step in the process is to clearly state and document the original problem or need such that solutions can be evaluated against the issue as stated.

Project Scoping and Charter Development

Once a problem or need has been identified, the next step is to scope the project and initial solutions. The current system that supports the scoping process is the Project Prioritization/ Scoping tool maintained through the Iowa DOT's Location and Environment Bureau. After the project is checked for consistency with the Plan, the final stage of the scoping process will result in the development of a project charter. The project charter will contain relevant information necessary to initiate the development of a project. Authority to approve the project charter is assigned to various individuals or work units depending on project type and estimated cost.

Project Advancement

Once a project has been chartered, it is assigned a project number and becomes a candidate for further prioritization and development. While simple projects may quickly advance through this step, it is intended to provide "pause points" to ensure the proposed project still aligns with the stated problem or need. If the proposed project advances through these checks, it is allowed to proceed towards possible program consideration.

Project Prioritization

During prioritization, the focus shifts from examining individual problems and projects to examining the best mix of projects to achieve documented objectives for the system. Parallel to some project development activities, chartered projects will be periodically evaluated using the Project Prioritization/Scoping tool, which will compare the benefits and costs of each project and allow for comparisons and ranking of projects against system-level targets and objectives. In this step, development resources will be balanced with system objectives, resulting in a portfolio of priority projects that will optimize investment.

Program Synthesis

In this step, the Iowa DOT's Program Management Bureau will manage the development of the draft Five-Year Program, incorporating information from the portfolio optimization process. Schedule and funding constraints will be evaluated and used to inform a recommendation from the Transportation Asset Management Implementation Team (TAMIT) to the Program Team for inclusion in the proposed Five-Year Program to be presented to the Commission.

Program Approval

The Program Team will review the recommended program and consider any necessary changes to the draft program. They will then finalize the draft program with the Program Management Bureau and prepare it for presentation to the Commission, or refer it back through the program development process for modification as necessary.

Multimodal Programming

It should be noted that the programming process described in the prior section is most directly applicable to the highway portion of the Five-Year Program. As previously mentioned, the document is multimodal in nature, and contains the following program sections that are directly related to one of the five non-water modes discussed in the State Long Range Transportation Plan (SLRTP).

- Aviation Program
- Transit Program
- Railroad Program
- State and Federal Trails programs
- Revitalize Iowa's Sound Economy (RISE) Program
- Iowa Statewide Transportation Alternatives Program
- Iowa's Clean Air Attainment Program
- Traffic Safety Improvement Program
- Highway Program

With few exceptions, the funding for the nonhighway programs is associated with an application-based process in which applications are solicited, typically on a defined schedule, by Iowa DOT staff. Staff and/or a standing committee evaluates eligible applications against a set of established criteria. Following the evaluation process, a funding recommendation is developed and presented to the Commission for its review. The Commission then holds final approval authority for each of the individual programs contained in the Five-Year Program.

The Funding Cycle and Program Monitoring

The transportation programming process is a continuous, year-round effort. The Iowa DOT's contracting and revenue experiences are closely monitored and monthly updates are reviewed by the Commission. Because Iowa uses a "pay-as-you-go" investment model, adjustments to the Five-Year Program may be warranted throughout the year to ensure the investment plan remains balanced and expenses do not exceed revenues. If revenues or expenses significantly exceed projections, projects may be added or removed accordingly. The Five-Year Program is available on the Iowa DOT's website: https://iowadot.gov/program_management/five-year-program.

7.2 Performance Monitoring

Monitoring system performance is what enables us to know if the investments that are made are impacting the system in the way they were intended. Performance monitoring also allows a public agency to demonstrate how well the transportation system is performing relative to stated goals and expectations. The transportation planning process is cyclical (see Figures 1.2 and 1.3), and performance monitoring has long been a key component of the process. Evaluating the performance of the system helps determine what impacts have been achieved by investments, and where new or additional investments may be needed.

Part of this SLRTP update has involved the adoption of the system performance objectives of safety, sustainability, accessibility, and flow. As Figure 4.1 showed, while these objectives and areas of measurement are being defined as part of the SLRTP, specific performance measures for them will be developed as appropriate by individual business units. This enables the performance measures to be tailored to specific purposes and activities, rather than the SLRTP defining measures that may or may not be appropriate in unique applications.

An area of performance monitoring that this SLRTP does address is those metrics that are federally required. Performance-based planning and programming was formalized for federal-aid programs with the 2012 Moving Ahead for Progress in the 21st Century (MAP-21) Act, which established seven national goals for the federal-aid highway program. These goals were affirmed in the 2015 Fixing America's Surface Transportation (FAST) Act and 2021 Infrastructure Investment and Jobs Act (IIJA). The goals are:

- **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.

In order to monitor progress towards these goals, states, metropolitan planning organizations (MPOs) and public transit providers are required to establish performance targets for a number of federally defined measures. States are also required to describe these measures, targets, and associated performance in their long-range plans as part of a system performance report. This is the first iteration of a system performance report in the SLRTP. The following sections will discuss the different performance measures that are required along with the target setting process and specific targets that have been set. State DOT targets are set in coordination with Iowa's MPOs; likewise, when MPOs are setting targets, they coordinate with the Iowa DOT. Coordination agreements for target-setting and other performance-based planning related items are included annually in each MPO's Transportation Planning Work Program (TPWP).

Federal Highway Administration (FHWA) Performance Measures

FHWA has established performance measures in the areas of safety, pavement condition, bridge condition, performance, freight movement, traffic congestion, and on-road mobile source emissions. The specific performance measures are shown in Table 7.1. The traffic congestion and on-road mobile source emissions measures are not currently applicable in Iowa as they only apply to areas that are designated as nonattainment or maintenance for ozone (O_3), carbon monoxide (CO), or particulate matter (PM_{10} and $PM_{2.5}$) National Ambient Air Quality Standards (NAAQS). Iowa is fully in attainment for these pollutants, so the measures are not currently required of the state or any of its MPOs.

Table 7.1: FHWA performance measures

Area	Performance measure	Applicability	State cycle	MPO cycle
Safety (targets set as 5-year rolling averages)	Number of fatalities	All public roads	Due as part of HSIP annual report each year on August 31.	MPOs report targets to Iowa DOT by February 27 annually.
	Rate of fatalities	All public roads		
	Number of serious injuries	All public roads		
	Rate of serious injuries	All public roads		
	Number of nonmotorized fatalities and nonmotorized serious injuries	All public roads		
Pavement condition	Percent of Interstate pavements in Good condition	Interstate System	Initial target setting: State two-year and four-year targets were due 5/20/18. Next targets due 10/1/22; every four years afterwards.	MPOs report 4-year targets to Iowa DOT within 180 days of Iowa DOT targets being set.
	Percent of Interstate pavements in Poor condition	Interstate System		
	Percent of non-Interstate NHS pavements in Good condition	Non-Interstate NHS		
	Percent of non-Interstate NHS pavements in Poor condition	Non-Interstate NHS		
Bridge condition	Percent of NHS bridges classified as in Good condition	NHS		
	Percent of NHS bridges classified as in Poor condition	NHS		
Performance	Percent of the person-miles traveled on the Interstate that are reliable	Interstate System		
	Percent of the person-miles traveled on the non-Interstate NHS that are reliable	Non-Interstate NHS		
Freight	Truck travel time reliability index	Interstate System		
Traffic congestion	Annual hours of peak hour excessive delay (PHED) per capita	NHS, urbanized area	*Not currently applicable in Iowa*	
	Percent of non-single occupant vehicle (SOV) travel	NHS, urbanized area		
Emissions	Total tons of emissions reduced from CMAQ projects for applicable criteria pollutants and precursors	NHS, urbanized area	*Not currently applicable in Iowa*	

HSIP = Highway Safety Improvement Program; MPO = Metropolitan Planning Organization; NHS = National Highway System
Source: 23 CFR 490

Safety

Safety targets, also known as "PM1," have been required annually since 2017, when targets for 2014-2018 were set. The targets are set based on a rolling five-year average; the most recent targets were set for the years 2018-2022 on August 31, 2021. Because of the relatively short-term nature of the targets, the Iowa DOT's methodology has focused on historical information and creating a forecast based on trends. The approach relies on the use of prediction intervals around a trend model forecast to inform a "risk-based" target setting method. More information on the safety target setting process can be found on the department's federal performance management website.[1] Table 7.2 shows the historical 5-year averages along with the safety targets that have been established each year. Data is shown through the most recent reporting cycle.

Starting in 2020, safety targets from the initial target setting period of 2014-2018 were assessed by FHWA; this assessment is repeated annually for the next oldest set of targets. A state DOT is considered to have met or made significant progress toward meeting its safety performance targets when at least four of the five safety performance targets have been met or the actual outcome is better than the baseline performance. In the 2020 assessment, the actual performance was based on a 5-year average ending in 2018 (i.e., 2014-2018). The baseline performance was the 5-year average ending with the year prior to the establishment of the targets (i.e., 2012-2016).

Through the first two assessment cycles, the Iowa DOT has met or made significant progress toward achieving its safety performance targets. These targets are shown in green on Table 7.2.

Table 7.2: Iowa DOT safety performance data and targets

Time period	Fatalities	Fatality rate	Serious injuries	Serious injury rate	Non-motorized injuries and fatalities	Fatalities	Fatality rate	Serious injuries	Serious injury rate	Non-motorized injuries and fatalities
	Actual 5-Year average for time period					**Targets set for time period**				
2012-2016	345.2	1.066	1,532.6	4.741	132.2					
2013-2017	338.8	1.033	1,506.2	4.596	129.6					
2014-2018	339.2	1.022	1,459.6	4.400	128.0	367.9	1.080	1,562.2	4.587	150.7
2015-2019	342.0	1.022	1,424.8	4.257	130.4	353.6	1.047	1,483.7	4.391	149.8
2016-2020	345.2	1.053	1,391.6	4.241	128.6	345.8	1.011	1,396.2	4.083	138.1
2017-2021						336.8	0.983	1,370.8	4.002	131.0
2018-2022						337.8	1.037	1,327.2	4.073	129.8

Green = target met or significant progress made

Source: Iowa DOT

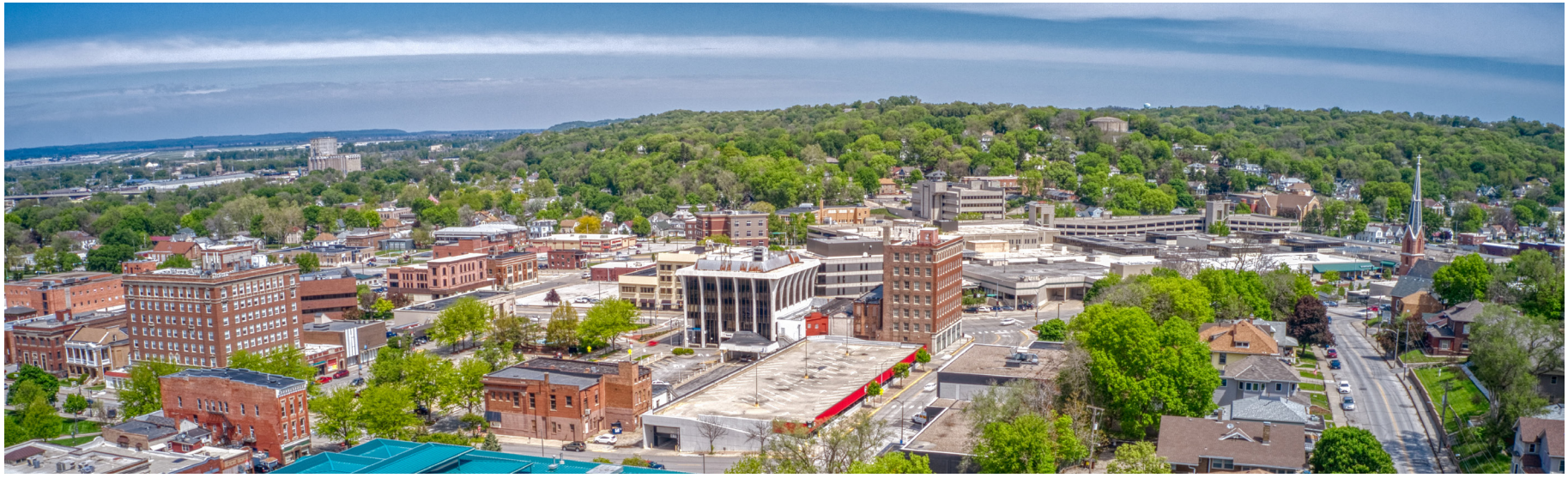
[1] https://iowadot.gov/systems_planning/planning/federal-performance-management-and-asset-management

MPOs are also required to set safety targets annually within 180 days of the Iowa DOT's targets being set. MPOs have the option to set their own targets or to support the Iowa DOT targets. For multistate MPOs that set their own targets, they are required to set them for the entire metropolitan area. MPOs report their targets to the Iowa DOT, and are also required to incorporate them into their long-range transportation plans (LRTPs). MPO LRTPs are updated on a five-year cycle. Most MPOs have now integrated their most recent targets into their LRTPs, but it will be another planning cycle before they are able to begin reporting performance relative to their targets. Links to MPO LRTPs can be found on the Iowa DOT website.[2] Table 7.3 shows the action MPOs have taken for safety targets each year.

Table 7.3: MPO safety target-setting selection by year

Time period	AAMPO Ames	BSRC Davenport	CMPO Cedar Rapids	DMAMPO Des Moines	DMATS Dubuque	INRCOG Waterloo	MAPA Council Bluffs	MPOJC Iowa City	SIMPCO Sioux City
2014-2018	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	**MPO-specific**	Support state	Support state
2015-2019	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	**MPO-specific**	Support state	Support state
2016-2020	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	**MPO-specific**	Support state	Support state
2017-2021	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	**MPO-specific**	Support state	Support state
2018-2022	Support state	Support state	Support state	Support state	Support state	Support state	**MPO-specific**	Support state	Support state

See Figure 1.1 for MPO acronyms
Source: Iowa MPOs



[2] https://iowadot.gov/systems_planning/planning-resource-guide#26634637-long-range-transportation-plan-lrtp

Pavement, Bridge, Performance, and Freight

Pavement and bridge targets are also known as "PM2", and performance and freight measures are also known as "PM3." Both PM2 and PM3 targets are required to be set as 2- and 4-year targets for 4-year performance periods. The initial 4-year performance period was from January 1, 2018 to December 31, 2021. States report their targets and progress through three required reports to FHWA.

- The baseline period performance report (BPPR) is due October 1 of the initial year of the performance period. Targets are established through this reporting.
- The mid-performance period progress report (MPPPR) is due October 1 of the third year of the performance period. Performance of the 2-year targets is discussed, and the state has the opportunity to adjust the 4-year targets. FHWA assesses progress of the 2-year targets after the report is submitted.
- The full performance period progress report (FPPPR) is due October 1 of the year after the performance period. Performance of the 4-year targets is discussed, and FHWA assesses progress of the 4-year targets after the report is submitted. This report is submitted concurrently to the baseline period performance report for the next reporting period.

While the methodology for each set of targets will be described briefly here, additional data and information on the target-setting process can be found on the department's federal performance management website.[3]

Pavement

Pavement targets are set based on 0.1-mile sections of the through travel lanes of mainline highways on the applicable highway systems. The FHWA definitions of good, fair, and poor for pavement are determined based on the condition of three attributes – the pavement section's International Roughness Index (IRI), the pavement's cracking condition, and the pavement's rutting rating (concrete) or faulting rating (asphalt). Per FHWA's definitions, a pavement section is considered "poor" if two of these three ratings are poor. A pavement section is considered "good" if all three ratings are good. Otherwise, it is considered "fair." As part of the phase-in requirements for the FHWA rules, the first 4-year performance period used an alternate measure for non-Interstate NHS pavement condition, and based the condition solely on the IRI measure. Pavement that is part of a bridge deck is excluded from metric calculations. Missing, invalid, or unresolved data is also excluded from the calculations and is not to exceed five percent of the system's mileage.

Iowa DOT has a long history of collecting pavement condition data and has used a state-developed pavement condition index for measuring condition for some time. However, the federal performance measure requires measuring condition based on a different segmentation of the network than used previously and on a federally defined scale of good, fair, and poor, which includes data elements that were not historically collected. This made developing a data-driven approach to target forecasting a challenge for the first performance period.

[3] https://iowadot.gov/systems_planning/planning/federal-performance-management-and-asset-management

For Interstates, output from the pavement management system was used to forecast pavements in good, fair and poor condition annually; this was then augmented with information about the observed variability in annual measures in order to account for uncertainty in future values. A similar process was used for the non-Interstate NHS targets, which was based solely on IRI for the first performance period. Future performance periods will use the full FHWA definition, which will likely result in a substantial difference of the good, fair, and poor performance and targets for the non-Interstate NHS between the first two performance periods.

Table 7.4 shows data through the most recent reporting cycle, the 2020 MPPPR for the first performance period. This includes targets that were established in the BPPR as well as the actual performance of the 2-year targets at the time of the MPPPR. The 4-year targets for pavement condition were not adjusted as part of the MPPPR submittal. FHWA has assessed the initial 2-year targets and found that the Iowa DOT met or made significant progress towards meeting all 2-year pavement targets. These targets are shown in green on Table 7.4.

In addition to setting pavement targets, state DOTs are subject to a minimum condition level for Interstate pavements that was established as part of MAP-21. The percentage of the lane-miles of the Interstate System classified as poor condition is not to exceed 5.0 percent. If a state's percentage of poor condition Interstate lane-miles exceeds 5.0 percent in a given year, funding flexibility restrictions may apply. The percentage of Iowa's Interstate lane-miles in poor condition is currently below the 5.0 percent threshold, and is forecast to remain below that threshold through the first performance period.

Bridge

As part of the National Bridge Inventory (NBI) program, condition is rated for each bridge's deck, superstructure, and substructure using a scale of zero to nine. Per FHWA's definitions, a bridge is considered "poor" if one of the ratings is less than or equal to four. A bridge is considered "good" if all the three ratings are greater than or equal to seven; otherwise it is considered "fair." The metrics are calculated based on the deck area for all bridges carrying the NHS, including highway bridges on ramps connected to the NHS and bridges that cross state borders, which count toward both states' totals.

The Iowa DOT's bridge target-setting methodology focused on historical information and creating a forecast based on trends. The approach relied on the use of prediction intervals around a trend model forecast to inform a "risk-based" target setting method. Table 7.4 shows data through the most recent reporting cycle, the 2020 MPPPR for the first performance period. This includes targets that were established in the BPPR as well as the actual performance of the 2-year targets at the time of the MPPPR. The 4-year targets for bridge condition were not adjusted as part of the MPPPR submittal. FHWA has assessed the initial 2-year targets and found that the Iowa DOT met or made significant progress towards meeting both bridge targets. These targets are shown in green on Table 7.4.

In addition to setting bridge targets, state DOTs are subject to a minimum condition level for NHS bridges that was established as part of MAP-21. The percentage of the deck area of NHS bridges classified as poor condition is not to exceed 10.0 percent. If, for three consecutive years, a state's percentage of NHS bridge deck area in poor condition exceeds 10.0 percent, funding flexibility restrictions may apply. The percentage of Iowa's NHS bridges in poor condition is currently below the 10.0 percent threshold, and is forecast to remain below that threshold through the first performance period.

Performance and Freight

Data for these measures is provided by FHWA through the National Performance Management Research Data Set (NPMRDS). This is a national data set of average travel times on the NHS. Since February 2017, speed and travel time data from INRIX has been used for the NPMRDS, which is hosted by the University of Maryland Center for Advanced Transportation Technology Laboratory (CATT Lab). States and MPOs can access the raw data at no cost. CATT Lab has also developed a MAP-21 tool to assist states and MPOs in calculating PM3 measures. This tool is available through a pooled fund effort led by the American Association of State Highway and Transportation Officials (AASHTO). Iowa DOT joined the pooled fund for its initial five-year period.

The performance targets for the Interstate and non-Interstate NHS are based on the level of travel time reliability (LOTTR), which is calculated for a roadway segment based on vehicle travel times. Data for an entire year is aggregated into 15-minute time groupings for four different time of day/day of week periods, then the ratio of the 80th percentile travel time to the 50th percentile travel time is calculated for each time period. If the ratio of any of those time periods is 1.5 or higher, the roadway segment is considered unreliable. For the first performance period, a 2-year target was not required for non-Interstate NHS performance.

The freight target is based on truck travel time reliability (TTTR). The TTTR is calculated similarly to the LOTTR, but is calculated for trucks only, across five time periods instead of four, and uses the ratio of the 95th percentile to the 50th percentile for its calculation. Lower ratios are more reliable than higher ratios, but there is not an established threshold for what constitutes reliable for this measure.

NPMRDS data has been collected for several years, but due to a change in vendor, only one full year of consistently-formatted data was available from NPMRDS during development of the initial targets, which created challenges in setting targets because there was not enough information to create trends or understand variability in the annual measure. As a proxy for annual variation, the monthly variance of each measure in 2017 was used and was assumed to follow a normal distribution. For each measure, the standard deviation of the 2017 monthly data was calculated, and the cumulative distribution properties of a normal distribution were used to derive probabilistic (risk-based) targets.

Table 7.4 shows data through the most recent reporting cycle, the 2020 MPPPR for the first performance period. This includes the targets that were established in the BPPR as well as the actual performance of the 2-year targets at the time of the MPPPR. Both the Interstate performance measure and the freight measure showed poorer performance at the 2-year mark than the targets or baselines. However, FHWA assessed the freight target as "progress not determined" as a case for extenuating circumstances was made due to issues caused by severe flooding in 2019. FHWA determined that Iowa DOT did not meet or make significant progress towards its Interstate performance target. These targets are shown in gray and red respectively on Table 7.4. There will be additional reporting as part of the FPPPR for the first performance period to discuss efforts Iowa DOT is making to improve its performance in this area. It is worth noting that the performance of the Interstate system was still over 99 percent reliable per the metric; nationally, Iowa has one of the most reliable Interstate systems per the performance and freight metrics.

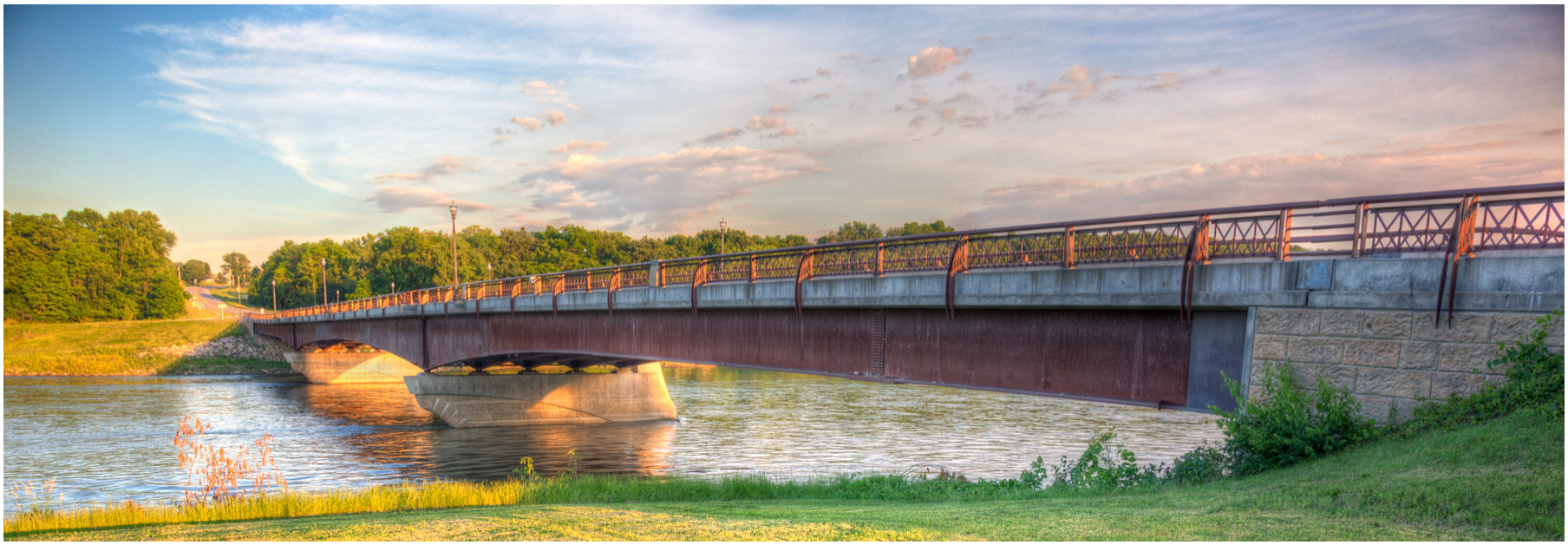
The 4-year targets for Interstate performance and freight were reevaluated and adjusted as part of the MPPPR submittal. Having two additional years of historical data helped in adjusting the distribution models used in calculating targets.

Table 7.4: Iowa DOT pavement, bridge, performance, and freight performance data and targets for the 2018-2021 performance period

Area	Performance measure	Baseline	2-year target	2-year performance	Original 4-year target	Adjusted 4-year target
Pavement condition	Percent of Interstate pavements in Good condition*	N/A	N/A	66.4%	49.4%	N/A
	Percent of Interstate pavements in Poor condition*	N/A	N/A	0.4%	2.7%	N/A
	Percent of non-Interstate NHS pavements in Good condition	50.9%	48.8%	55.4%	46.9%	N/A
	Percent of non-Interstate NHS pavements in Poor condition	10.6%	13.2%	9.3%	14.5%	N/A
Bridge condition	Percent of NHS bridges classified as in Good condition	48.9%	45.7%	48.7%	44.6%	N/A
	Percent of NHS bridges classified as in Poor condition	2.3%	3.7%	2.2%	3.2%	N/A
Performance	Percent of the person-miles traveled on the Interstate that are reliable	100.0%	99.5%	99.3%	99.5%	98.5%
	Percent of the person-miles traveled on the non-Interstate NHS that are reliable*	N/A	N/A	96.3%	95.0%	N/A
Freight	Truck Travel Time Reliability (TTTR) Index	1.12	1.14	1.19	1.14	1.21

**2-year target not required for first performance period.*
Green = target met or significant progress made; gray = progress not determined; red = significant progress not made

Source: Iowa DOT



MPOs are required to set 4-year PM2 and PM3 targets within 180 days of the Iowa DOT's targets being set or adjusted. MPOs have the option to set their own targets or to support the Iowa DOT targets. For multistate MPOs that set their own targets, they support the state targets or set their own targets for each portion of the MPO in a different state. MPOs report their targets to the Iowa DOT, and are also required to incorporate them into their LRTPs. MPO LRTPs are updated on a five-year cycle. Most MPOs have now integrated their most recent targets into their LRTPs, but it will be another planning cycle before they are able to begin reporting performance relative to their targets. Links to MPO LRTPs can be found on the Iowa DOT website.[4] Table 7.5 shows the action MPOs have taken for PM2 and PM3 performance targets for the first performance period.

Table 7.5: MPO pavement, bridge, performance, and freight target-setting selections for the first performance period

Area	Performance measure	AAMPO Ames	BSRC Davenport	CMPO Cedar Rapids	DMAMPO Des Moines	DMATS Dubuque	INRCOG Waterloo	MAPA Council Bluffs	MPOJC Iowa City	SIMPCO Sioux City
Pavement condition	Percent of Interstate pavements in Good condition*	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	Support state	Support state	Support state
	Percent of Interstate pavements in Poor condition*	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	Support state	Support state	Support state
	Percent of non-Interstate NHS pavements in Good condition	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	Support state	Support state	Support state
	Percent of non-Interstate NHS pavements in Poor condition	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	Support state	Support state	Support state
Bridge condition	Percent of NHS bridges classified as in Good condition	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	Support state	Support state	Support state
	Percent of NHS bridges classified as in Poor condition	Support state	Support state	Support state	**MPO-specific**	Support state	Support state	Support state	Support state	Support state
Performance	Percent of the person-miles traveled on the Interstate that are reliable*	Support state	Support state	Support state	Support state	Support state	Support state	**MPO-specific**	Support state	Support state
	Percent of the person-miles traveled on the non-Interstate NHS that are reliable	Support state	Support state	Support state	Support state	Support state	Support state	**MPO-specific**	Support state	Support state
Freight	Truck Travel Time Reliability (TTTR) Index*	Support state	Support state	Support state	Support state	Support state	Support state	**MPO-specific**	Support state	Support state

**Iowa DOT adjusted its 4-year targets for two measures in 2020. In both cases, all MPOs chose to take the same action they had on Iowa DOT's initial 4-year targets.*

Source: Iowa MPOs

[4] https://iowadot.gov/systems_planning/planning-resource-guide#26634637-long-range-transportation-plan-lrtp

Federal Transit Administration (FTA) Performance Measures

FTA has established performance measures in the areas of asset management and safety. The specific performance measures and their applicability are shown in Table 7.6.

Table 7.6: FTA performance measures applicable in Iowa

Area	Performance measure	Applicability
Asset management	Rolling stock: percent of revenue vehicles (by asset class) that have met or exceeded their useful life benchmark (ULB)	Tier I providers (large urban systems in Iowa) set their own targets. Tier II providers (small urban and regional systems in Iowa) participate in a group asset management plan and annual target-setting process sponsored by the Iowa DOT. MPOs are required to set targets within 180 days of their transit providers' initial target setting.
	Equipment: percent of non-revenue vehicles (by asset class) that have met or exceeded their ULB	
	Facilities: percent of facilities (by group) that are rated less than 3.0 on the TERM Scale	
Safety	Number of fatalities	Recipients of 5307 funding (large urban systems in Iowa) set their own targets. Iowa's small urban and regional systems are not required to set safety targets at this time. MPOs are required to set targets within 180 days of their transit providers' initial target setting.
	Fatalities per 100 thousand vehicle revenue miles	
	Number of injuries	
	Injuries per 100 thousand vehicle revenue miles	
	Number of safety events (accidents, injuries, or occurrences)	
	Safety events per 100 thousand vehicle revenue miles	
	System reliability – vehicle revenue miles/failures	

MPO = Metropolitan Planning Organization; TERM = Transit Economic Requirements Model; ULB = useful life benchmark

Source: FTA

FTA performance measures differ from FHWA measures in that the primary entities setting targets are public transit providers and MPOs. Iowa DOT does not set targets itself, but does assist in providing technical guidance in both areas and in administering a group target-setting process for asset management. Table 7.7 lists the 34 public transit agencies in Iowa and notes their performance target setting responsibilities. Large urban systems should be consulted directly for information on their target-setting processes and current targets; contact information can be found on Iowa DOT's Public Transit Bureau website.[5]

[5] https://iowadot.gov/transit/Iowa-Transit-services/Transit-agency-maps-and-listings

Table 7.7: Iowa public transit agencies and applicability of performance metrics

Type	Agency	Agency Targets or Group TAM Plan	Safety targets
Large urban	Ames Transit Agency/CyRide	Agency-specific	Agency-specific
	City of Bettendorf		
	University of Iowa, Cambus		
	Cedar Rapids Transit		
	Coralville Transit System		
	City of Council Bluffs		
	Davenport Public Transit (CitiBus)		
	Des Moines Area Regional Transit Authority (DART)		
	City of Dubuque, The Jule		
	Iowa City Transit		
	Sioux City Transit System		
	Metropolitan Transit System of Black Hawk County/Waterloo MET		
Small urban	Burlington Urban Service	Group TAM Plan	Not required
	City of Clinton Municipal Transit Administration		
	City of Fort Dodge (DART)		
	Marshalltown Municipal Transit		
	City of Mason City		
	City of Muscatine		
Regional	Northeast Iowa Community Action Corporation - Transit/NEICAC-T		
	North Iowa Area Council of Governments/Region 2 Transit		
	Regional Transit Authority/RIDES		
	Siouxland Regional Transit System		
	MIDAS Council of Governments		
	Region Six Resource Partners/PeopleRides		
	Iowa Northland Regional Council of Governments/Regional Transit Commission		
	Region 8 Regional Transit Authority (RTA)		
	River Bend Transit		
	CorridorRides		
	Heart of Iowa Regional Transit Agency		
	Region XII Council of Governments/Western Iowa Transit System		
	Southwest Iowa Planning Council/Southwest Iowa Transit Agency		
	Southern Iowa Trolley		
	10-15 Regional Transit Agency		
	South East Iowa Regional Planning Commission/SEIBUS		

Source: Iowa DOT

Transit Asset Management (TAM)

Iowa's public transit agencies are required to develop TAM plans and set TAM targets. Tier I providers (large urban systems in Iowa) are required to develop their own plans and targets, while tier II providers (small urban and regional systems in Iowa) can participate in a group plan and target setting process sponsored by the Iowa DOT. Initial TAM Plans were due in October 2018 and must be updated every four years. TAM targets are submitted annually to FTA's National Transit Database (NTD). Large urban systems are required to share their TAM Plans and TAM targets with their area's MPO. MPOs are also required to set targets within 180 days of their transit agencies' initial target-setting; they are not required to update targets annually but are required to integrate them into their planning and programming processes.

Most federal assistance for bus replacements comes to the state level, necessitating a process for determining which vehicle replacements to fund across the state. The Iowa DOT uses the Public Transit Management System (PTMS) prioritization process. The Modal Transportation Bureau maintains an inventory of all existing transit revenue vehicles in the state, which is updated annually. The Iowa DOT prioritizes vehicle replacement and rehabilitation/remanufactured projects annually on a statewide basis based on age and mileage of existing vehicles compared to useful life standards for the specific type of equipment. All group plan participants follow FTA guidance for buses and bus facilities to insure they are maintained in good condition and are safe to use. All systems have adopted vehicle maintenance policies that outline the necessary steps to follow.

The required performance targets relate to what percent of revenue vehicles and equipment will exceed their useful life benchmarks (ULBs) by the end of the year, as well as what facilities will be rated at 3.0 or lower on FTA's Transit Economic Requirements Model (TERM), meaning they have moderately deteriorated or defective components; but have not exceeded their useful life. The long-term goal is to use good asset management practices to reduce these numbers in the future.

Facility assessments were conducted in the summer of 2018 to establish existing conditions based on the TERM scale, which ranges from 1 (poor) to 5 (excellent). Vehicles are evaluated based on ULBs, which are the number of years before an asset reaches the end of its useful life. Most of the ULBs are the FTA-suggested default ULBs; the only change was the ULB for cutaway buses. Group plan members provided input that the FTA default of 10 years was too long for cutaways in Iowa's driving conditions and suggested a change to 8 years. To determine targets, the ULBs were used in conjunction with the following:

- All vehicles in the active fleet that have been funded for replacement, with some estimates for delays, as not all of these will be delivered in the target year.
- Vehicles that will exceed ULB in the target year.
- Individual transit agency input to Iowa DOT on what equipment is planned for replacement in the target year using local funds.

Table 7.8 shows the most recent group plan targets that were established in 2022. Large urban system targets can be obtained directly from the applicable transit agencies. MPOs report their targets to the Iowa DOT, and are also required to incorporate them into their LRTPs. MPO LRTPs are updated on a five-year cycle. Most MPOs have now integrated their most recent targets into their LRTPs, but it will be another planning cycle before they are able to begin reporting performance relative to their targets. Links to MPO LRTPs can be found on the Iowa DOT website.[6] All Iowa MPOs have chosen to support their local transit agency targets rather than setting MPO-specific targets.

[6] https://iowadot.gov/systems_planning/planning-resource-guide#26634637-long-range-transportation-plan-lrtp

Table 7.8: Group Transit Asset Management (TAM) Plan participant targets for 2022

Category	Performance measure	2021 Status	2022 Target
Rolling stock	Automobile	58% of fleet exceeds ULB of 8	20%
	Bus	20% of fleet exceeds ULB of 14	17%
	Cutaway bus	56% of fleet exceeds ULB of 8	25%
	Trolley	0% of fleet exceeds ULB of 13	0%
	Van	60% of fleet exceeds ULB of 8	56%
	Minivan	36% of fleet exceeds ULB of 8	32%
Equipment	Automobile	20% of non-revenue service vehicles exceeds ULB of 8	20%
	Other rubber tire vehicle (tractor)	29% of fleet exceeds ULB of 14	65%
Facility	Administrative/maintenance facility	0% of facilities rated under 3.0 on TERM scale	0%

Source: Iowa DOT

Transit Safety

In 2020, rules were finalized regarding the development of Public Transportation Agency Safety Plans (PTASPs) for public transit agencies that receive urbanized area formula funds. In Iowa, that translates to the 12 large urban agencies that are located in urban areas of 50,000 or more. The plans include the documented processes of the agency's safety management systems, including the agency's safety management policy and processes for safety risk management, safety assurance, and safety promotion; an employee reporting program; and performance targets based on the safety performance measures established in the National Public Transportation Safety Plan. Initial plans were due by July 20, 2021.

Seven targets are required to be set as part of the PTASP:

- Number of fatalities
- Fatalities per 100 thousand vehicle revenue miles
- Number of injuries
- Injuries per 100 thousand vehicle revenue miles
- Number of safety events (accidents, injuries, or occurrences)
- Safety events per 100 thousand vehicle revenue miles
- System reliability – vehicle revenue miles/failures

Once transit agencies adopt their PTASPs, they are required to share them with their area's MPO. Large urban system targets can be obtained directly from the applicable transit agencies. MPOs report their targets to the Iowa DOT, and are also required to incorporate them into their LRTPs. MPO LRTPs are updated on a five-year cycle. Most MPOs have now integrated their most recent targets into their LRTPs, but it will be another planning cycle before they are able to begin reporting performance relative to their targets. Links to MPO LRTPs can be found on the Iowa DOT website.[7] All Iowa MPOs have chosen to support their local transit agency targets rather than setting MPO-specific targets.

[7] https://iowadot.gov/systems_planning/planning-resource-guide#26634637-long-range-transportation-plan-lrtp

7.3 Moving Forward

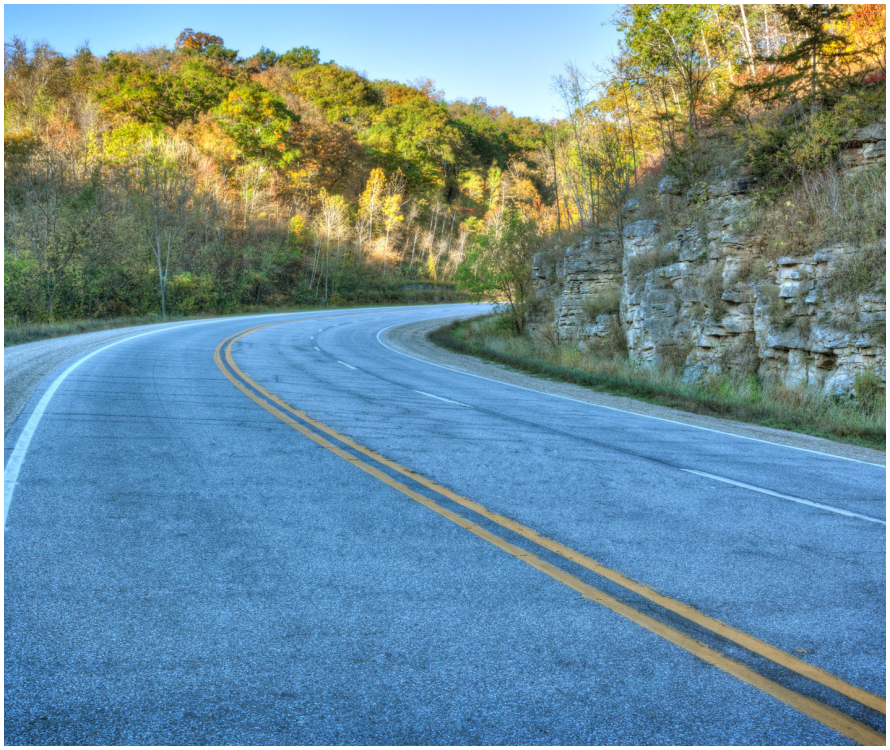
This SLRTP provides a framework for the Commission and the Iowa DOT to identify, prioritize, and select investments that will help maintain and shape the transportation system envisioned for the state. The examination and analysis conducted throughout development of the SLRTP has led to the following general conclusions.

- The state is completing a transition from building the system to efficiently managing the existing system through an emphasis on stewardship and rightsizing.
- The state's transportation system functions well overall, but additional improvements are needed.
- Across modes, there is a funding shortfall that will dramatically worsen over time if action is not taken to identify new or additional sustainable financial resources.

Implementing the SLRTP will be a significant effort across and beyond the Iowa DOT. Some of the key actions to help implement the plan include the following.

- Continuing to support the development and implementation of other modal and system plans, including integrating the system objectives of safety, sustainability, accessibility, and flow into their planning frameworks.
- Implementing the rightsizing policy across planning, programming, and project development activities.
- Advancing planning for areas of new or enhanced focus, including accessibility, emerging technology, equity, resiliency, and sustainability.
- Integrating highway system needs and risks analyses into project planning and investment decisions.
- Enhancing partnerships with metropolitan and regional planning partners and other transportation stakeholders.

As noted in Chapter 4, the vision for Iowa's transportation system is a safe and efficient multimodal transportation system that enables the social and economic wellbeing of all Iowans, provides enhanced access and mobility for people and freight, and accommodates the unique needs of urban and rural areas in a sustainable manner. While the transportation system fulfills many of these attributes today, there is still work to be done. Achieving the system vision is possible. Implementing the system objectives and strategies, emphasizing critical planning considerations, addressing needs and risks, and integrating the themes of this SLRTP throughout the department's activities can put us on the path for success.



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