



APPENDIX E:
PERFORMANCE
MEASURE
METHODOLOGY

PERFORMANCE MEASURE METHODOLOGY

Appendix E provides supplemental information about performance measures that the US Department of Transportation (DOT) requires that the Des Moines Area Metropolitan Planning Organization's (Des Moines Area MPO) use in its planning process. As noted in Chapter 2, the US DOT requires that MPOs use a standard set of measures and methodology to set targets related to those measures. Topics for which measures are required include safety (PM1), pavement and bridge condition (PM2), system reliability (PM3), and transit assets. The sections that follow describe the methodology and assumptions used to establish performance measures and targets as required by the US DOT. Note that the US DOT rulemaking requires that the MPO establish measures and targets on timelines that do not necessarily align with its schedule of updating the long-range transportation plan every five years. Additionally, some of the federally-required measures are for aspects of the transportation system that are more specific than the larger system for which the MPO considers in this plan. Therefore, for each topic area there is also a discussion of how the performance measures and targets included in Chapter 2 incorporate or considered these federal requirements.

Safety Performance

In April 2016, the Federal Highway Administration (FHWA) released the final rulemaking for safety performance measures for the Highway Safety Improvement Program (HSIP). Included in the rulemaking are definitions of key terms, the applicability of the rule, and guidance on how to establish performance targets, determine if progress is achieved, and reporting targets for the HSIP.

The safety measures required to be reported annually include:

1. Number of Fatalities
2. Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT)
3. Number of Serious Injuries
4. Rate of Serious Injuries per 100 million VMT
5. Number of Non-motorized Fatalities and Non-motorized Serious Injuries

Performance targets were established by states beginning in August 2017. A Metropolitan Planning Organization (MPO) has 180 days after the state sets its targets to either:

1. Agree to support the State Department of Transportation (DOT) target.
2. Establish target for each of the five performance measures specific to the MPO planning area.

Safety Goals in Mobilizing Tomorrow

Mobilizing Tomorrow outlines four high-level goals to direct Greater Des Moines toward a more vibrant transportation system. Each of these goals identified several performance measures to help track the plan’s progress. Goal 4 in Mobilizing Tomorrow seeks to “further the health, safety, and well-being of all residents in the region” and includes four of the five measures required by federal rulemaking.

In addition to setting baseline values for tracking the performance in the long-range plan, a target was set for the year 2050 to be used to evaluate the ongoing performance of the transportation system. In Mobilizing Tomorrow each of the four measures have a 2050 target of decreasing from the baseline.

Statewide Targets

In August 2018, the Iowa DOT established statewide performance targets for the 2015-2019 time-period as shown in **Figure E1**.

FIGURE E1: IOWA DOT SAFETY TARGETS (5-YR ROLLING AVG)

PERFORMANCE MEASURE	2013-2017 BASELINE	2015-2019 TARGET
Number of Fatalities	338.0	353.6
Fatality Rate*	1.027	1.047
Number of Serious Injuries	1,498.8	1,483.7
Serious Injury Rate*	4.568	4.391
Non-Motorized Fatalities and Serious Injuries	146.4	149.8

*Rates are per 100 million vehicle miles traveled (VMT)

Per 23 § 490.209, the Des Moines Area MPO must establish safety targets within 180 days of the statewide targets being established, by February 27, 2019. The Des Moines Area MPO maintains two options for setting regional performance targets:

1. Support the Iowa DOT’s targets by agreeing to plan and program projects so that they contribute toward the accomplishment of the State DOT safety target for that performance measure
2. Set a quantifiable target for that performance measure for the MPO

Originally the Des Moines Area MPO presented and discussed the first iteration of statewide targets with the MPO Technical, Executive, and Policy Committees in September 2017 to gather feedback on making the decision to support the State’s targets or set targets for the Des Moines Area MPO planning area.

Based on discussion with the MPO Committees and the safety performance targets established for 2050 in Mobilizing Tomorrow, the MPO determined setting safety targets for the Des Moines Area MPO planning area was the appropriate action for the 2014-2018 time-period. For the 2015-2019 timeframe the MPO determined that setting targets for the MPO planning area was the appropriate course of action.

Regional Targets

In order to determine the safety performance targets for the Des Moines Area MPO planning area, the 2013-2017 baseline measures needed to be established. Utilizing crash report data collected by the Iowa DOT and provided to the Des Moines Area MPO for the most recent 10-year period (2009-2018), the Des Moines Area MPO calculated the five-year rolling average for number and rate of fatalities, number and rate for serious injuries, and the number of non-motorized fatalities and serious injuries.

Figure E2 presents the 2013-2017 baseline values for the five safety performance measures for the Des Moines Area MPO planning area. Vehicle miles traveled data were generated for the MPO Planning Area using 2016 Iowa DOT GIMS traffic volumes.

FIGURE E2: DES MOINES AREA MPO SAFETY PERFORMANCE BASELINE AND TARGETS (5-YR ROLLING AVG)

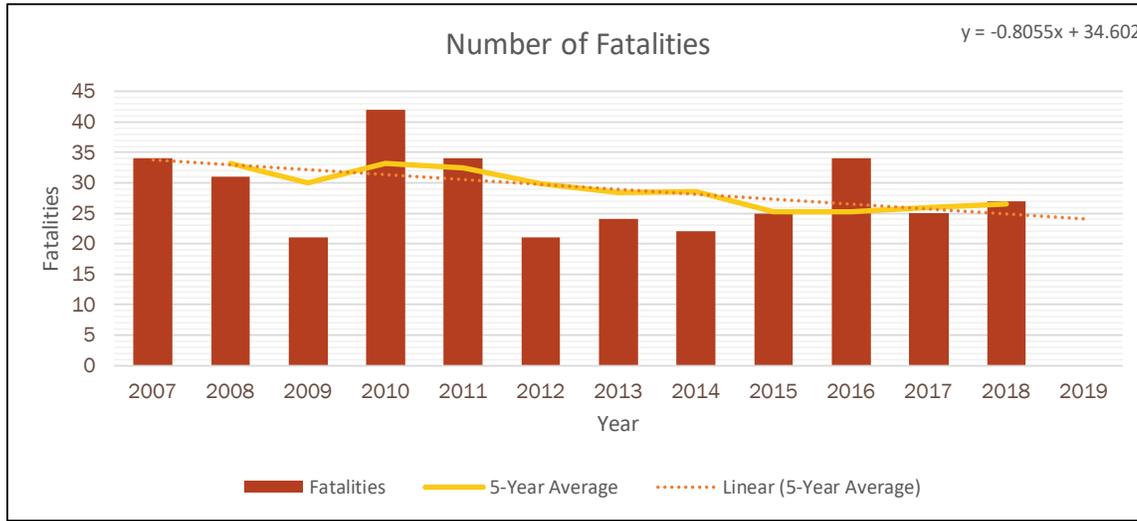
PERFORMANCE MEASURE	2013-2017 BASELINE	2015-2019 TARGET
Number of Fatalities	26.0	27.0
Fatality Rate*	0.558	0.555
Number of Serious Injuries	185.0	170.3
Serious Injury Rate*	3.967	3.505
Non-Motorized Fatalities and Serious Injuries	23.8	24.8

*Rates are per 100 million vehicle miles traveled (VMT)

Safety Performance Forecast – Fatalities

To understand the current trend in the five-year rolling average for fatalities within the Des Moines Area MPO planning area, the number of fatalities per year and rolling five-year average were graphed (**Figure E3**). A linear trendline was then applied to the five-year rolling average and forecasted out one year.

FIGURE E3: HISTORIC FATAL CRASHES 2007-2018



Upon reviewing historic crash data for the Des Moines Area MPO planning area, it is apparent that fatalities fluctuate from year to year. To provide multiple scenarios for target setting Des Moines Area MPO staff began tracking reported fatalities using Iowa DOT SAVER throughout 2018 to provide the actual fatalities that occurred in 2018. As of January 15, 2019, there were 27 fatalities that occurred in 2018.

MPO staff then developed a scenario to forecast the fatalities for the year 2019 using the 50th, 75th, 85th, and 90th percentiles of prediction intervals based on historic crash data and the 2018 value. The Iowa DOT utilizes prediction intervals analysis when setting their required targets. The Des Moines Area MPO also analyzes data with prediction intervals to maintain consistency with Iowa DOT analysis.

Figure E4 provides the forecasted fatalities for 2019 using the 2009-2018 Fatalities.

FIGURE E4: 2019 CRASH SCENARIO FORECASTS (BY PREDICTION INTERVAL)

	50TH PERCENTILE	75TH PERCENTILE	85TH PERCENTILE	90TH PERCENTILE	STRAIGHT LINE PROJECTION
Forecasted Fatalities	25.0	34.0	36.8	41.2	24.1

Safety Performance Target – Fatalities

Using the forecasted fatality values for the above scenario, five-year averages were developed. Figure E5 shows the forecasted five-year averages for fatalities in the Des Moines Area MPO Planning Area for 2015-2019.

FIGURE E5: 2019 CRASH SCENARIO FORECASTS, 5-YR AVERAGE (BY PREDICTION INTERVAL)

	50TH PERCENTILE	75TH PERCENTILE	85TH PERCENTILE	90TH PERCENTILE	STRAIGHT LINE PROJECTION
Forecasted Fatalities	27.2	29.0	29.6	30.4	27.0

After reviewing the five-year averages for the three scenarios and the linear trendline projection, the Des Moines Area MPO determined that to continue to achieve improvement toward the goal set in Mobilizing Tomorrow a 2015-2019 safety performance target should follow the linear trendline while recognizing that fatalities in 2018 were between the 50th and 75th percentile of historic crash fatalities. **Figure E6** provided the five-year average fatalities target.

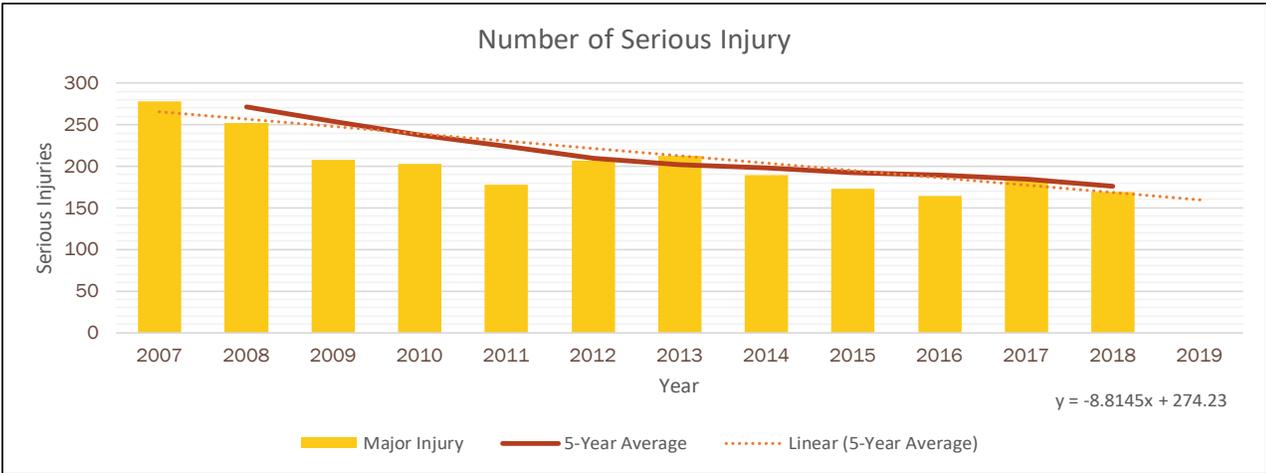
FIGURE E6: 2015-2019 NUMBER AND RATE OF FATALITIES TARGET (5-YR ROLLING AVG)

PERFORMANCE MEASURE	2013-2017 BASELINE	2015-2019 TARGET
Number of Fatalities	26.0	27.0
Fatality Rate	0.558	0.555

Safety Performance Forecast – Serious Injuries

To understand the current trend in the five-year rolling average for serious injuries within the Des Moines Area MPO planning area, the number of serious injuries per year and rolling five-year average were graphed (**Figure E7**). A linear trendline was then applied to the five-year rolling average and forecasted out one year.

FIGURE E7: HISTORIC SERIOUS INJURY CRASHES 2007-2018



Upon reviewing historic crash data for the Des Moines Area MPO planning area, it is apparent that serious injuries have been trending downward over the last several years. To provide multiple scenarios for target setting Des Moines Area MPO staff began tracking reported serious injuries using Iowa DOT SAVER throughout 2018 to provide a year to date total for serious injuries of 169.

MPO staff then developed a scenario to forecast the serious injuries for the year 2019 using the 50th, 75th, 85th, and 90th percentiles of prediction intervals based on historic crash data and the 2018 value. The Iowa DOT utilizes prediction intervals analysis when setting their required targets. The Des Moines Area MPO also analyzes data with prediction intervals to maintain consistency with Iowa DOT analysis.

Figure E8 provides the forecasted serious injuries for 2019 using the 2009-2018 serious injuries.

FIGURE E8: 2019 CRASH SCENARIO FORECASTS (BY PREDICTION INTERVAL)

	50TH PERCENTILE	75TH PERCENTILE	85TH PERCENTILE	90TH PERCENTILE	STRAIGHT LINE PROJECTION
Serious Injuries	187.5	207.3	209.8	212.5	159.6

Safety Performance Target – Serious Injuries

Using the forecasted serious injuries values for the above scenario, five-year averages were developed. **Figure E9** shows the forecasted five-year averages for serious injuries in the Des Moines Area MPO Planning Area for 2015-2019.

FIGURE E9: 2019 CRASH SCENARIO FORECASTS, 5-YR AVERAGE (BY PREDICTION INTERVAL)

	50TH PERCENTILE	75TH PERCENTILE	85TH PERCENTILE	90TH PERCENTILE	STRAIGHT LINE PROJECTION
Serious Injuries	175.9	179.9	180.4	180.9	170.3

After reviewing the five-year averages for the three scenarios and the linear trendline projection, the Des Moines Area MPO determined that to continue to achieve improvement toward the goal set in Mobilizing Tomorrow a 2015-2019 safety performance target should follow the linear trendline while recognizing that serious injuries in 2018 are projected to be below the 50th percentile of historic crashes. **Figure E10** provided the five-year average serious injury target.

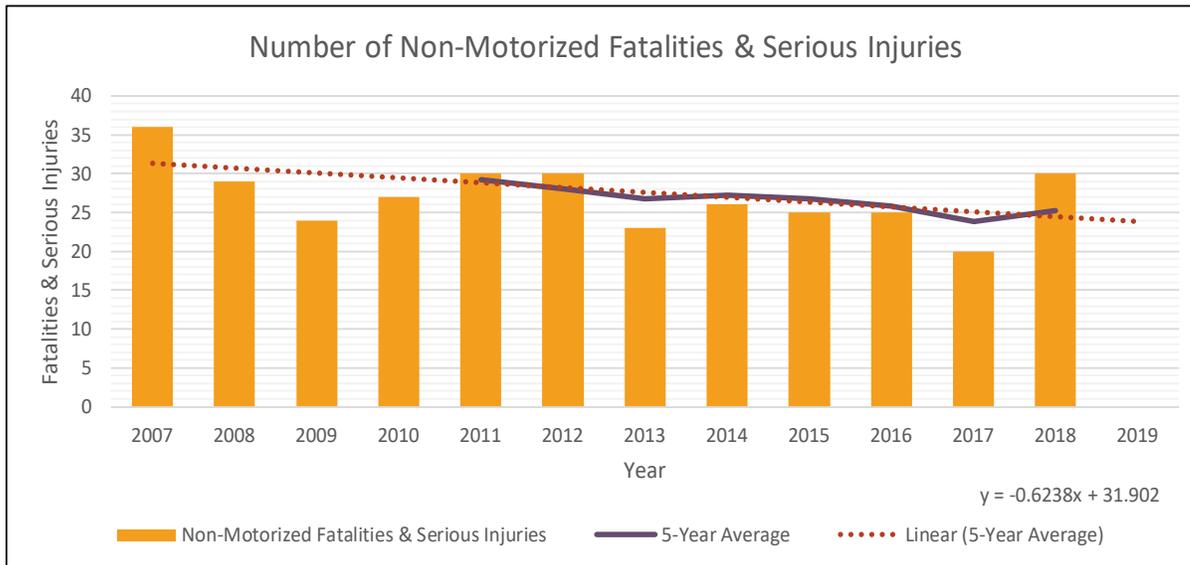
FIGURE E10: 2015-2019 NUMBER AND RATE OF SERIOUS INJURIES TARGET (5-YR ROLLING)

PERFORMANCE MEASURE	2013-2017 BASELINE	2015-2019 TARGET
Number of Serious Injuries	185.0	170.3
Serious Injuries Rate	3.967	3.505

Safety Performance Forecast – Non-Motorized Fatalities and Serious Injuries

To understand the current trend in the five-year rolling average for Non-Motorized Fatalities and Serious Injuries within the Des Moines Area MPO planning area, the number of Non-Motorized Fatalities and Serious Injuries per year and rolling five-year average were graphed (**Figure E11**). A linear trendline was then applied to the five-year rolling average and forecasted out two years.

FIGURE E11: HISTORIC NON-MOTORIZED FATALITIES & SERIOUS INJURIES 2007-2018



Upon reviewing historic crash data for the Des Moines Area MPO planning area, it is apparent that Non-Motorized Fatalities and Serious Injuries fluctuate from year to year. To provide multiple scenarios for target setting, MPO staff began tracking reported Non-Motorized Fatalities and Serious Injuries using Iowa DOT SAVER throughout 2018 to provide a year to date estimate for forecasting Non-Motorized Fatalities and Serious Injuries of 30.

MPO staff then developed a scenario to forecast the Non-Motorized Fatalities and Serious Injuries for the year 2019 using the 50th, 75th, 85th, and 90th percentiles of prediction intervals based on historic crash data and the 2018 value. The Iowa DOT utilizes prediction intervals analysis when setting their required targets. The Des Moines Area MPO also analyzes data with prediction intervals to maintain consistency with Iowa DOT analysis.

Figure E12 provides the forecasted Non-Motorized Fatalities and Serious Injuries for 2019.

FIGURE E12: 2019 CRASH SCENARIO FORECASTS (BY PREDICTION INTERVAL)

	50TH PERCENTILE	75TH PERCENTILE	85TH PERCENTILE	90TH PERCENTILE	STRAIGHT LINE PROJECTION
Non-Motorized Fatalities & Serious Injuries	25.5	30.0	30.0	30.0	23.8

Safety Performance Target – Non-Motorized Fatalities and Serious Injuries

Using the forecasted Non-Motorized Fatalities and Serious Injuries values for the above scenario, five-year averages were developed. **Figure E13** shows the forecasted five-year averages for Non-Motorized Fatalities and Serious Injuries in the Des Moines Area MPO Planning Area for 2015-2019.

FIGURE E13: 2019 CRASH SCENARIO FORECASTS, 5-YR AVERAGE (BY PREDICTION INTERVAL)

	50TH PERCENTILE	75TH PERCENTILE	85TH PERCENTILE	90TH PERCENTILE	STRAIGHT LINE PROJECTION
Non-Motorized Fatalities & Serious Injuries	25.1	26.0	26.0	26.0	24.8

After reviewing the five-year averages for the three scenarios and the linear trendline projection, the Des Moines Area MPO determined that to continue to achieve improvement toward the goal set in Mobilizing Tomorrow, a 2015-2019 safety performance target should follow the linear trendline while recognizing that the projected Non-Motorized Fatalities and Serious Injuries in 2018 are above the 90th percentile of historic crashes. **Figure E14** provided the five-year average Non-Motorized Fatalities and Serious Injuries target.

FIGURE E14: 2015-2019 NUMBER OF NON-MOTORIZED FATALITIES & SERIOUS INJURIES TARGET (5-YR ROLLING AVG)

PERFORMANCE MEASURE	2013-2017 BASELINE	2015-2019 TARGET
Non-Motorized Fatalities & Serious Injuries	23.8	24.8

Vehicle Miles Traveled Forecasting

Vehicle miles traveled (VMT) forecasting was completed using historic traffic count data provided in the Iowa DOT GIMS dataset through 2016. Using historic traffic count data, the MPO was able to calculate the VMT for each year of crash data used in the analysis period. Based on the historic VMT between 2014 and 2016, the Des Moines Area MPO saw approximately 2 percent VMT growth per year. As the Des Moines Area MPO planning area has continued to increase in population in that time-period and future growth projections are consistent with the 2 percent growth per year, the forecasted VMT for 2017, 2018, and 2019 followed that growth assumption. **Figure E15** shows VMT forecasts for 2017, 2018, 2019.

FIGURE E15: VEHICLE MILES TRAVELED 2014-2016

YEAR	VMT
2014	4,558,909
2015	4,666,797
2016	4,764,701
2017 Forecast	4,859,996
2018 Forecast	4,957,195
2019 Forecast	5,056,339

Safety Performance in Mobilizing Tomorrow

Goal 4 in Mobilizing Tomorrow seeks to “further the health, safety, and well-being of all residents in the region” and includes the five measures required by federal rulemaking. The federal guidelines require the MPO to establish a five-year average as the baseline and then forecast another five-year average set two years from the baseline. The values shown as “current” for the safety measures in Chapter 2 are the 2013-2017 Baseline measures discussed previously in this section. While the same methodology described in this section was also used for Mobilizing Tomorrow, the targets in Chapter 2 are different given that Mobilizing Tomorrow sets targets for five years out and for 2050 instead of for 2015-2019.

Road and Bridge Condition

In April 2016, the Federal Highway Administration (FHWA) released the final rulemaking for pavement condition of the Interstate and non-Interstate National Highway System (NHS) and bridge condition of the NHS performance measures. Included in the rulemaking are definitions of key terms, the applicability of the rule, and guidance on how to establish performance targets, determine if progress is achieved, and reporting targets for the NHS.

The condition measures required to be reported include:

1. Percentage of pavements of the Interstate System in Good condition
2. Percentage of pavements of the Interstate System in Poor condition
3. Percentage of pavements of the non-Interstate NHS in Good condition
4. Percentage of pavements of the non-Interstate NHS in Poor condition
5. Percentage of NHS bridge deck area classified as in Good condition
6. Percentage of NHS bridge deck area classified as in Poor condition

Performance targets were established by states beginning in May 2018. The Des Moines Area Metropolitan Planning Organization (MPO) has 180 days after the state sets its targets to either:

1. Agree to support the Iowa Department of Transportation (DOT) target.
2. Establish target for each of the five performance measures specific to the MPO planning area.

Statewide Targets

In May 2018, the Iowa DOT established statewide performance targets for the 2018-2021 time-period as shown in **Figure E16**.

FIGURE E16: IOWA DOT 2018-2021 CONDITION PERFORMANCE TARGETS

PERFORMANCE MEASURES	2-YEAR FORECAST	2-YEAR TARGET	4-YEAR FORECAST	4-YEAR TARGET
Percentage of pavements of the Interstate System in Good condition	51.1%	N/A*	52.1%	49.4%
Percentage of pavements of the Interstate System in Poor condition	1.8%	N/A*	2.2%	2.7%
Percentage of pavements of the non-Interstate NHS in Good condition	49.0%	48.8%	47.1%	46.9%
Percentage of pavements of the non-Interstate NHS in Poor condition	13.0%	13.2%	14.3%	14.5%
Percentage of NHS bridge deck area classified as in Good condition	47.0%	45.7%	46.5%	44.6%
Percentage of NHS bridge deck area classified as in Poor condition	2.7%	3.7%	1.7%	3.2%

* A 2-year target was not required for non-Interstate NHS reliability

Per 23 CFR § 490, the Des Moines Area MPO must establish condition targets within 180 days of the statewide targets being established, by November 16, 2018. The Des Moines Area MPO maintains two options for setting regional performance targets:

1. Support the State's targets by agreeing to plan and program projects so that they contribute toward the accomplishment of the Iowa DOT condition target for that performance measure
2. Set a quantifiable target for that performance measure for the MPO

The Des Moines Area MPO presented and discussed the statewide targets with the MPO Technical Committee and the Planning and Engineering Subcommittees in October 2018 to gather feedback on making the decision to support the State's targets or set targets for the Des Moines Area MPO planning area.

Based on discussion with the MPO Committees and the condition performance targets established for 2050 in *Mobilizing Tomorrow*, the MPO determined setting condition targets for the Des Moines Area MPO planning area was the appropriate action for the 2018-2021 time-period.

Regional Targets

Des Moines Area MPO 2017 Baseline

In the previous report prepared by the MPO titled “Des Moines Area MPO Safety Performance Targets and Methodology” an analytical based approach was used to determine a Des Moines Area MPO specific baseline and set targets. The safety performance methodology utilized data going back to 2006. However, for the PM2 pavement and bridge condition targets, there is only one data point available for the MPO Planning Area. The Iowa DOT provided 2017 pavement and bridge data in June of 2018; however, previous years’ data are not available. Accordingly, it is not possible to determine any sort of trend or forecast due to a lack of sufficient data.

Figure E17 presents the 2017 data that was provided to the MPO by the Iowa DOT.

FIGURE E17: DES MOINES AREA MPO CONDITION PERFORMANCE BASELINES

PERFORMANCE MEASURES	DES MOINES AREA MPO 2017 PAVEMENT AND BRIDGE DATA
Percentage of pavements of the Interstate System in Good condition	47.5%
Percentage of pavements of the Interstate System in Poor condition	0.9%
Percentage of pavements of the non-Interstate NHS in Good condition	32.5%
Percentage of pavements of the non-Interstate NHS in Poor condition	22.4%
Percentage of NHS bridge deck area classified as in Good condition	72.3%
Percentage of NHS bridge deck area classified as in Poor condition	1.1%

2018-2021 Condition Targets

Due to the limited data available for the Des Moines region and with the targets identified in Mobilizing Tomorrow, the 2018-2021 condition performance targets will be set to maintain the identified transportation system. Therefore, the Des Moines Area MPO specific final 4 year targets for PM-2 identified in **Figure E18** are recommended for the 2018-2021 time-period.

FIGURE E18:2018-2021 CONDITION PERFORMANCE TARGETS

PERFORMANCE MEASURES	2018-2021 TARGET
Percentage of pavements of the Interstate System in Good condition	47.5%
Percentage of pavements of the Interstate System in Poor condition	0.9%
Percentage of pavements of the non-Interstate NHS in Good condition	32.5%
Percentage of pavements of the non-Interstate NHS in Poor condition	22.4%
Percentage of NHS bridge deck area classified as in Good condition	72.3%
Percentage of NHS bridge deck area classified as in Poor condition	1.1%

It should be noted that calculations of good and poor condition for pavements and bridges are calculated based on FHW-required definitions, which may not align with other condition tracking that the MPO or State utilizes.

Moving forward, as additional data points for the Des Moines Area MPO becomes available the above targets will be reviewed utilizing a more analytical approach. After review they will be adjusted given the results of additional baseline forecasting in a similar manner to which the Safety Performance Targets were set.

Pavement and Bridge Condition in Mobilizing Tomorrow

Goal 1 in Mobilizing Tomorrow seeks to “manage and optimize transportation infrastructure and services” and includes the four measures related to pavement required by federal rulemaking as well as measures similar to, though not exactly the same as, the two bridge deck measures required by federal rulemaking. The values shown as “current” for the four pavement measures are the same as the 2017 measures shown in Figure E17. In addition to these four measures, the MPO also chose to add a measure for the percent of pavement on local roads in poor condition as well as the average Pavement Condition Index (PCI) on local roads. Targets for the four required measures are also similar to those set previously by the MPO according to the federal methodology. As noted in Figure E18, the targets for 2018-2021 for the four pavement measures are the same as the current conditions in 2017. In Chapter 2, the five-year targets are simply to maintain current conditions.

Bridge condition measures in Chapter 2 are slightly different than those required by US DOT. The US DOT specifies measures related to NHS bridge decks, which are reported in figures E17 and E18. However, for the purposed of Mobilizing Tomorrow the MPO was interested in the condition of all bridge decks, not just those on the NHS. Therefore, while the same methodology described in this section was used, the current condition figures and targets are for all bridges.

System Performance and Freight Measures

The Iowa Department of Transportation set targets for system performance (also known as “PM3”) on May 20, 2018. The Des Moines Area MPO agree to support the Iowa DOT’s PM3 targets. The measure include in PM3 are as follows:

- Percent of the person-miles traveled on the Interstate that are reliable (referred to as the Interstate Travel Time Reliability measure);
- Percent of the person-miles traveled on the non-Interstate NHS that are reliable (referred to as the Non-Interstate Travel Time Reliability measure); and,
- Freight movement on the Interstate System - the Truck Travel Time Reliability (TTTR) Index (referred to as the Freight Reliability measure).

The complete methodology set by the Iowa DOT is located in the *System Performance and Freight Measures report* which is available on the Iowa DOT Federal Performance Management and Asset Management webpage.

Statewide Targets

Figure E19 show the sytem performance and freight measures set by the Iowa DOT and supported by the Des Moines Area MPO. The Iowa DOT set targets at the 75 percent confidence interval.

FIGURE E19: IOWA DOT 2-YR AND 4-YR SYSTEM RELIABILITY AND FREIGHT PERFORMANCE MESAURES & TARGETS

PERFORMANCE MEASURE	2017 BASELINE	2-YEAR TARGET	4-YEAR TARGET
Percent of the person-miles traveled on the Interstate that are reliable	100.0%	99.5%	99.5%
Percent of the person-miles traveled on the non-Interstate NHS that are reliable*	95.6%	N/A*	95.0%
Truck Travel Time Reliability (TTTR) Index	1.12	1.14	1.14

* A 2-year target was not required for non-Interstate NHS reliability

System Performance and Freight Measures in Mobilizing Tomorrow

Goal 1 in Mobilizing Tomorrow seeks to “manage and optimize transportation infrastructure and services” and includes measures related to reliability of travel for both persons and freight. These measures are the same as those required by federal rulemaking. Unlike the other measure mentioned previously the Des Moines Area MPO chose to set targets that differed from the Iowa DOT, the Des Moines Area MPO chose to accept the Iowa DOT’s measures for system performance and freight measures. In Chapter 2 the five-year target for the percent of person miles traveled on interstates that are reliable is to maintain existing conditions. Because this metric is currently 100 percent, the five-year target to maintain exceeds the Iowa DOT’s two and four-year target of 99.5 percent. For the percent of person miles traveled on non-interstate NHS that are reliable, the Des Moines Area MPO’s target is five-year target is to again maintain the current condition of 66 percent. While the current conditions are different for the Iowa DOT give the statewide view of its metrics, their two and four-year target also is to maintain current levels. With freight reliability, the Des Moines Area MPO’s five-year target to maintain conditions exceeds the Iowa DOT’s two and four-year target which forecasts a slight decrease in reliability.

Transit Asset Management

The Des Moines Area Regional Transit Authority (DART) is required to set its own performance measures related to transit asset management. These measures relate to the age of equipment and rolling stock, as well as the condition of facilities based on a TERM. DART approved its measures and targets and forwarded them to the Des Moines Area MPO. These same measures and targets have been incorporated into the measures found in Goal 1.

FIGURE E20: TRANSIT PERFORMANCE TARGETS

CATEGORY	CLASS	PERFORMANCE TARGET
Rolling Stock	35' to 60' Heavy-Duty Buses	10% of fleet exceeds ULB of 13 years
	30' to 34' Heavy-Duty Buses	10% of fleet exceeds ULB of 11 years
	27' to 31' Medium-Duty Buses	10% of fleet exceeds ULB of 8 years
	25' Light-Duty Buses	10% of fleet exceeds ULB of 5 years
	Vans	10% of fleet exceeds ULB of 5 years
Equipment	Support Vehicles- Trucks, Autos, Vans, & SUV's	10% of fleet exceeds ULB of 7 years
Facilities	Administration & Passenger Facility- DCS	10% of facility rated under 3.0 on TERM Scale
	Maintenance & Operations Facility- DW	10% of facility rated under 3.0 on TERM Scale
	Parking Facility- N/A at this time	10% of facility rated under 3.0 on TERM Scale

