



Regional Performance Measures

Setting Targets: Why and How

Prepared by



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1. Introduction

The NJTPA has developed a set of regional performance measures that address important goals and issues for Northern New Jersey. These measures complement the array of federally defined measures and targets that the NJTPA has adopted in coordination with the New Jersey Department of Transportation (NJDOT) and other partners. Under the Federal requirements, each metropolitan planning organization (MPO) must establish targets related to safety, pavement condition, bridge condition, reliability, and freight by either: 1) Agreeing to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT target for that performance measure; or 2) committing to a quantifiable target for that performance measure for the metropolitan planning area.¹

To date, except for the Congestion Mitigation and Air Quality Improvement (CMAQ) program emissions reduction measure, under which the NJTPA is required to establish its own targets, the NJTPA has not established its own quantifiable targets. NJTPA has committed to contribute toward achieving the New Jersey DOT targets. This report discusses the potential value of setting regional targets for the national performance measures, as well as for the regional performance measures that have been developed to support regional goals.

The report is one of a series of documents developed for the Regional Performance Measures initiative. It is intended as a briefing to help the NJTPA's officials, staff, stakeholders, and the public to understand:

- the purpose and value of setting targets as part of performance-based transportation planning and programming;
- examples of MPOs that have set their own targets; and
- a potential process for establishing targets specific to the NJTPA area.

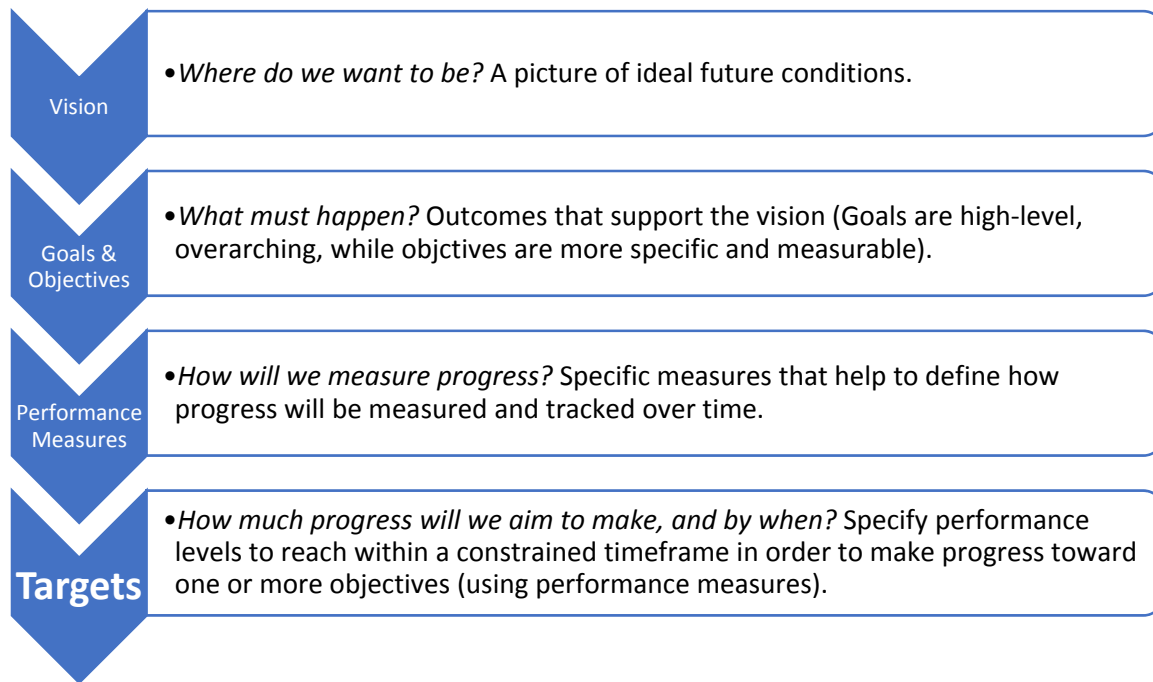
The information from this report will help the NJTPA to consider working with stakeholders to develop regional performance targets that can guide the agency in aligning its actions and investment priorities with its goals and objectives and potentially strengthen the agency's overall performance-based decision-making process.

2. What is a Target?

As shown in Figure 1, a target is a specific level of performance that the agency intends to achieve within a specific timeframe to make progress toward one or more objectives. Targets are a specific, fine-grained element of a performance based planning process, flowing down from broad vision and goal statements and more clearly defined objectives and performance measures.

¹ The exception is that for the two traffic congestion measures (annual hours of peak-hour excessive delay per capita and percent of non-single occupancy vehicle travel), the applicable MPOs must work with the State DOT(s) to develop unified 2-year and 4-year targets for the urbanized area. The State DOT(s) and MPO(s) must report identical targets for each urbanized area. See the Federal Highway Administration's Transportation Performance Management Frequently Asked Questions available at: <https://www.fhwa.dot.gov/tpm/faq.cfm>.

Figure 1: Relationship of Vision, Goals and Objectives, Performance Measures, and Targets

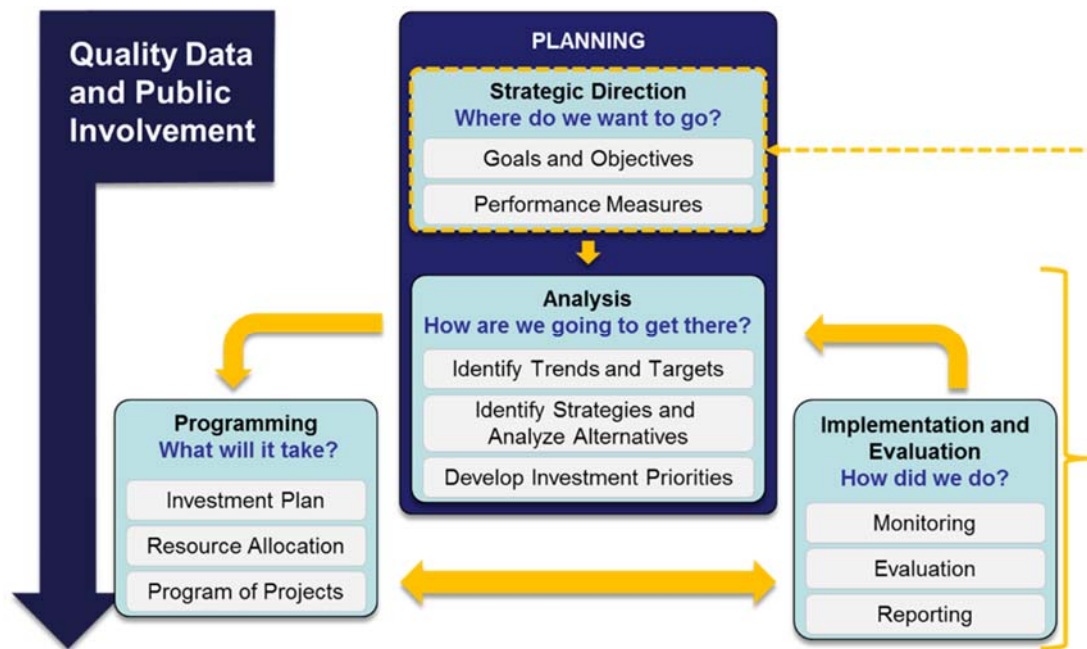


Source: Adapted from NHI Course 138012

Transportation performance management is a strategic approach that uses system information to make investment and policy decisions to achieve performance goals. An agency that practices performance management to the fullest extent should set goals and objectives that include well-defined performance measures, make those objectives real by setting performance targets, and use that information to make smart decisions.

The Federal Highway Administration (FHWA) describes a performance-based planning and programming process, illustrated in Figure 2, which includes the identification of trends and targets as an important part of the process. After setting strategic direction (Where do we want to go?) – including goals, objectives, and performance measures – transportation agencies conduct analysis (How are we going to get there?) to support the development of investment priorities. Identifying trends and targets is an important part of this process, as the analysis of historical trends and process of forecasting future performance and setting targets helps in the identification and analysis of strategies. The investment priorities in plans then are carried into programming (What will it take?) resulting in an investment plan or Transportation Improvement Program (TIP). As a final step, the agency conducts ongoing monitoring, evaluation, and reporting in relation to the targets. These steps of analysis, programming, and implementation/ evaluation are a continuous cycle, periodically circling back to the top component—strategic direction — when agencies update their strategic goals, objectives, and measures.

Figure 2: Target Setting Within the Performance Based Planning and Programming Process



Source: NHI Course 138012

3. What are the Advantages and Disadvantages of Setting Numerical Targets?

An agency can track progress toward goals using the performance measures it has defined by simply looking at the direction of progress. For instance, the NJTPA can look at its performance measures and consider: Are the number of fatalities and serious injuries declining? Is transit ridership increasing? Are on-road greenhouse gas emissions declining? And so on. Essentially, such an approach involves identifying the desired direction of progress and assessing if the region is moving in that direction or not.

There are advantages, however, to moving beyond a directional focus to set numerical targets.

Target Setting Provides Multiple Benefits

Target setting can be a valuable exercise that helps transportation agencies, their partners, stakeholders, and decision makers to clarify their goals and objectives, and to focus their energy on identifying and implementing meaningful actions designed to advance toward goals. Setting numerical targets has several key benefits:

- Clarifies desired outcomes and manages expectations:** Without a clearly stated definition of success, it is difficult to determine whether good or sufficient progress in being made toward a goal. The target setting process – examining historical data, trends, and forecasts, and then setting a numerical target – helps to clarify reasonable expectations. For instance, it likely is not feasible to achieve an 80% non-SOV mode share, but is 35% a feasible target, or 45%? Setting a reasonable and attainable target can help to clarify what will be viewed as a successful outcome. Gaining agreement on the target level can help stakeholders to be “on the same page” in regard to what is attainable and what progress is being made. In some cases, a target may actually be

set that shows a decline in performance, perhaps due to factors outside of the control of transportation agencies. For instance, an increase in population and economic activity could be leading toward more vehicle travel, in turn leading to more traffic congestion. Limited funding may constrain the ability to improve infrastructure condition. Setting a target that recognizes these forces helps to put the performance in context and set expectations for what is a reasonable outcome to achieve.

- **Helps in assessing tradeoffs and making decisions regarding allocation of resources.** Making decisions about how to spend limited resources is never easy. It is helpful to be able to weigh the pros, cons, and tradeoffs of investment or policy scenarios with information about how each scenario performs with respect to established goals, objectives and targets. During the ongoing process of monitoring progress toward targets, agencies can use the data on performance in relation to targets to help determine when and how they should consider redirecting resources or adjust tactics. Working within this type of performance-oriented framework, the agency can foster productive conversations with stakeholders about addressing challenges and optimizing opportunities to make investments and policy decisions that will support desired outcomes.
- **Helps communicate.** Stakeholders want to know what they can expect in terms of transportation performance given the funding that is available and external factors. Setting targets can help to communicate more clearly how the region is doing in relation to goals. In performance reports, showing a numeric target can make it easier for the public and stakeholders to see visually how past and current performance relates to a desired target, particularly in charts or other visuals.
- **Supports accountability.** State DOTs, MPOs, and local transportation agencies are the stewards of the public's investment in transportation. Because the target setting process establishes a publicly stated, desired level of performance, when targets are established at a regional level, it can help an MPO to motivate and promote accountability among partner agencies. It can help in identifying and developing consensus on where additional actions need to be taken in order to achieve or make progress towards the strategic objectives. Informing and engaging the public, key stakeholders, and elected officials in the process of setting, evaluating, and reporting on progress toward targets is a valuable way to communicate about stewardship of the community's resources. In addition, a regional target can help an MPO highlight its role and authority in the planning process, separate out the MPO region's distinct characteristics with its own trends and context, and potentially note any uniquely relevant MPO policy issues.
- **Supports collaborative decision making.** The process of target setting involves considering a wide array of influencing factors, such as funding constraints and external trends, as well as performance trade-offs given different investment strategies. Communicating with stakeholders about the realities of these factors and trade-offs can help them to engage more meaningfully in the planning process. By examining the relationship between performance, agency expectations, and resources, the process of setting targets can help agencies to have more in-depth conversations about what it would take to reach different levels of performance, and roles and responsibilities of different stakeholders. For instance, in setting a target for a performance measure such as the share of jobs located within a half-mile of regional transit, the NJTPA could engage stakeholders including transit agencies (NJ TRANSIT, PATH), local

governments, developers, others in the private sector, as well as neighborhood groups in conversations about what level is attainable, and what policies and incentives would be valuable to support increasing the share to the target level. This could lead to new partnerships and recognition about the roles of different partners in performance. In some cases, the process of setting targets might be a useful impetus for stakeholders in disciplines such as public health, community groups, the business community, and others to collaborate on pilots, programs, or funding initiatives that include sources other than transportation funds, such as “active living” grants.

Target Setting Also Entails Some Challenges

While setting a numerical target provides benefits, it is important to recognize that target setting is a challenging exercise that includes some risks.

- **Risks associated with setting a target too high or too low.** In setting targets, the NJTPA needs to consider: what is the right level to set for each target? A target that is too “low” (i.e., easy to meet) may suggest that the region’s partners do not care a lot about the issue, are not willing to prioritize it, or are resigned to a level of performance that the public may feel is not acceptable. On the other hand, a target that is too “high” (too hard to meet) runs the risk of leading to an appearance of failure or a sense of disappointment if the target is not attained. The risks associated with setting the “right” target can be a barrier to undertaking the exercise of setting targets and may create challenges to developing agreement on targets.
- **Lack of sufficient trend data or forecasts.** A lack of sufficient historical data on some performance measures can create a difficulty in assessing trends. Moreover, a lack of robust models or forecasting tools to predict future performance (or uncertainty as to the impact of potential future projects or technologies) can make it difficult for specialists to determine what would be a realistic or attainable target. However, forecasts are likely to improve over time with availability of more relevant data and trends, thus allowing NJTPA to establish realistic and meaningful targets.
- **Unpredictable external factors.** As noted above, external factors beyond the control of transportation agencies often have significant effects on aspects of transportation system performance. For instance, changes in the economy, fuel prices, and technology affect travel demand, and these changes are difficult to predict. While setting targets can help to engage discussion about these trends and issues and their important role in relation to transportation system performance, the uncertainty of these factors often contributes to a hesitancy of agencies to want to set numerical targets.

These challenges or risks, while important for the NJTPA to consider, can be managed if the process of setting targets is clearly designed, explained, and understood by stakeholders. Using an approach that defines long-term aspirational targets also can help to mitigate some of the risks, and recommended approaches are discussed further below.

4. What are Other MPOs doing to Set Regional Targets?

A number of other MPOs around the country have set regional targets in relation to performance measures, and these agencies provide some possible lessons for the NJTPA. Generally, the target setting falls into two primary categories: 1) establishing short-term regional targets for the Federal performance measures; or 2) establishing mid-term or long-term regional targets in relation to MPO-specific performance measures that were selected to support regional goals.

Establishing Regional Targets for the Federal Performance Measures

Federal requirements under 23 CFR 490, 49 U.S.C. 5326(c), and 49 U.S.C. 5329(d) mandate that MPOs establish targets that address the national performance measures in coordination with the State and public transportation providers. As noted earlier, MPOs can either support the statewide (and/or public transit agency) performance targets (by agreeing to plan and program targets that help the state/transit agency meet its targets), or establish quantifiable targets specific to their region in coordination with the State/transit agency. Some MPOs have decided to set specific regional targets for the national performance measures, generally in close coordination with their State DOT.

The **Baltimore Regional Transportation Board (BRTB)**, the MPO for the Baltimore region, for instance, has established region-specific 2-year (2018-2019) and 4-year (2018-2021) targets for system condition, reliability, and congestion measures, and also adopted yearly highway safety targets for the region, in coordination with Maryland Department of Transportation (MDOT). Consistent with MDOT, BRTB also set a longer-term target to achieving zero deaths on the region's highways.

For the regional safety targets, BRTB coordinated with MDOT on a methodology using crash data to develop regional targets, consistent with the approach used by MDOT for statewide target setting. Fatality data was obtained from NHTSA's Fatality Analysis Reporting System (FARS) and serious injury data was obtained through the state's crash data system. BRTB, in coordination with MDOT, utilized 5-year rolling averages for each of the safety measures to develop short-term yearly highway safety targets. The MPO developed a 2030 long-term "Toward Zero Deaths" or "TZD" performance targets, which involve reducing the number of fatalities and serious injuries by half of the 2008 baseline by 2030, as presented in Figure 3.² For each of the safety performance measures, an exponential trend line connecting the historical (2008) data to the long-term (2030) goal was used, and targets for each interim year were taken from the midpoint of the five-year average. This approach is consistent with MDOT's annual target setting and TZD targets.³

² Baltimore Regional Transportation Board, Baltimore Metro Council. Maximize2045: A Performance-Based Transportation Plan. <https://baltometro.org/transportation/plans/long-range-transportation-plan/maximize2045>.

³ Maryland Department of Transportation. 2040 Maryland Transportation Plan. January 2019. http://www.mdot.maryland.gov/newMDOT/Planning/Maryland_Transportation_Plan/Documents/2040_MTP_Document_2019-01-31_WebSinglePages.pdf

Figure 3: BRTB Highway Safety Targets (Source: Maximize 2045—A Performance-Based Transportation Plan).

Measures related to funding under the Highway Safety Improvement Program (HSIP)					
Measure	2008 Baseline	2016 Actual	2017 Actual	2015-2019 Target	2030 TZD Target
Number of fatalities	242	228	230	184	121
Number of serious injuries	1,868	1,432	1,678	1,211	934
Fatality rate per 100 million VMT	0.93	0.83	0.83	0.70	0.47
Serious injury rate per 100 million VMT	7.21	5.23	6.05	4.62	3.60
Number of non-motorized (ped/bike) fatalities and serious injuries	286	342	366	222	143

The National Capital Region Transportation Planning Board (TPB), whose planning area includes the District of Columbia and 23 surrounding counties and cities in suburban Maryland and Northern Virginia, established regional targets in coordination with state and transit agencies. The targets are reported in a series of reports on each set of targets and were incorporated in its recently completed long-range transportation plan (LRTP) called *Visualize 2045*. Since TPB's planning area lies within three different jurisdictions: The District of Columbia, Maryland, and Virginia, the agency established regional targets by identifying sub-targets for the District of Columbia, Maryland, and Virginia portions of the region, applying each state's target setting approach to their respective portion of the region, and mathematically combining the three sub-targets into an overall target for the region.

For instance, for the safety measures, the TPB used the member states' target setting methodology:

- **Maryland:** For each performance measure an exponential trend line connecting the historical (2008) data to the long-term (2030) goal which was set to 50 percent of the 2008 value. Five-year averages were used to calculate projections, and targets for each interim year were taken from the midpoint of the five-year average (e.g., 2018 annual interim target = midpoint of the 2016-2020 average). TPB staff applied this same process to the data for the Maryland portion of the MPO.
- **Virginia:** Virginia used linear regression of annual safety data to make 2018 and 2019 projections for each of the numeric performance measures and used them to calculate the 2015-2019 statewide targets. TPB staff applied this same process to the data for the Northern Virginia portion of the MPO.
- **District of Columbia:** The District of Columbia analyzed their safety data using a combination of annual and 5-year average data and polynomial trend lines to determine their targets. TPB staff directly incorporated the District of Columbia targets.

The TPB targets for the number of fatalities, number of serious injuries, and number of nonmotorist fatalities and serious injuries were calculated by summing the sub-targets for the Suburban Maryland, Northern Virginia, and District of Columbia portions of the region. As a final step, the calculated

numerical targets were compared to the corresponding targets adopted by the TPB last year and the lower (more aggressive) target for each performance measure was selected.⁴

Similarly, for the pavement and bridge condition measures, the TPB established its own regional targets for both measures, building on information provided by the states as well as information obtained from the Highway Performance Monitoring System (HPMS) and the National Bridge Inventory (NBI). For instance, for forecasting the four-year target for bridge condition within the TPB region, TPB staff collected data from the NBI, analyzing the bridge structure condition using condition rating and deck area as the applicable metric. Next, the deck areas of bridges within the District of Columbia and the portions of Maryland and Virginia that are within the TPB planning area were calculated. Finally, the statewide targets were applied to the respective deck areas in order to calculate the four-year target for the region.⁵

TPB also set regional targets for the system performance and freight measures, which relate to travel time reliability. The regional system performance target setting approach involved (i) extrapolating measured performance using data from the National Performance Management Research Data Set (NPMRDS), via polynomial regression, through the year 2021 in order to develop two and four-year targets; and (ii) adopting TPB's own methodology to forecast future performance by applying outputs from the region's travel demand model on congestion (e.g., percentage of congested AM peak hour VMT), and applying the percentage changes to measured travel time reliability performance to forecast future performance for the region. The TPB then took the average of both the extrapolation of measured performance and the results of the analysis using the travel demand model to establish the regional targets for Interstate Travel Time Reliability (TTR), Non-interstate National Highway System TTR, and Truck TTR Index (see Figure 4).⁶

⁴ National Capital Region Transportation Planning Board, Metropolitan Washington Council of Governments. Performance-Based Planning and Programming: Regional Highway Safety Targets. January 16, 2019.

<https://www.mwcog.org/documents/2019/01/16/performance-based-planning-and-programming-regional-highway-safety-targets-highways--roads-tpb-traffic-safety/>

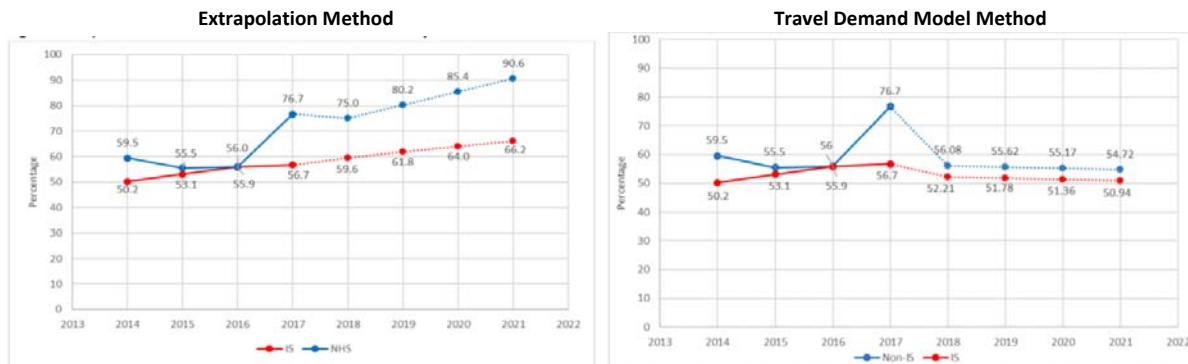
⁵ National Capital Region Transportation Planning Board, Metropolitan Washington Council of Governments. Performance-Based Planning and Programming: Regional Pavement and Bridge Condition, July 18, 2018.

<https://www.mwcog.org/documents/2018/07/18/performance-based-planning-and-programming-regional-pavement-and-bridge-condition--federal-performance-measures-highways--roads-tpb/>

⁶ National Capital Region Transportation Planning Board, Metropolitan Washington Council of Governments. Performance-Based Planning and Programming: Regional System Performance Targets. July 18, 2018.

<https://www.mwcog.org/documents/2018/07/18/performance-based-planning-and-programming-regional-system-performance-targets-congestion-federal-performance-measures-highways--roads-tpb/>

Figure 4: National Capital Region TPB Methods for Setting Interstate and Non-Interstate TTR (Source: Performance-Based Planning and Programming: Regional System Performance Targets).



Developing Long-term and/or Mid-term Targets for Supplemental Measures

In addition to focusing on developing region-specific targets for the national performance measures, several MPOs have developed targets to support other regional performance measures, often specifying a long-range target that corresponds to the end date of the long-range transportation plan, as well as an interim point or points.

The **Rogue Valley Metropolitan Planning Organization (RVMPO)**, a Federally designated MPO for the Rogue Valley region of southwest Oregon, which includes Jackson County and seven cities, has set goals and implemented policies based on a State-mandated goal of five percent per capita VMT reduction within 20 years of adoption of the regional transportation plan. Instead of translating the State's VMT reduction goal to a local target, RVMPO developed a set of seven alternative regional measures (e.g., percentage of total daily trips by transit and bicycle/pedestrian mode, percentage of dwelling units within ¼ mile of transit service, ratio of new employment in transit-oriented development (TOD) areas to total regional employment) that can work within the Rogue Valley region to achieve the desired outcomes. For each of the alternative measures, the RVMPO set five-year benchmarks and has recorded progress on these benchmarks in the regional transportation plan.⁷ These benchmarks and targets were approved in 2002, and have been incorporated into regional transportation plan updates, including the most recent 2017-2042 plan (see Figure 5).⁸

⁷ Peckett, H. and Duffy, C. Best planning practices: Metropolitan transportation plans. US Department of Transportation/Volpe Center. 2012.

⁸ Rouge Valley MPO. 2017-2042 Regional Transportation Plan. March 2017. Appendix B.
<https://www.rvmopo.org/index.php/ct-menu-item-13/regional-transportation-plan-rtp>

Figure 5: RVMPO Adopted Alternative Measures, Five-Year Benchmarks, and 20-Year Targets (Source: 2017 - 2042 Regional Transportation Plan).

Measure	How Measured	2000 Base Year	Benchmark 2005	Benchmark 2010	Benchmark 2015	Target 2020
Measure 1: Transit and bicycle/pedestrian mode share	The percent of total daily trips taken by transit and the combination of bicycle and walking (non-motorized) modes. Determined from best available data (e.g., model output and/or transportation survey data).	% daily trips transit: 1.0 bike/ped: 8.2	% daily trips transit: 1.2 bike/ped: 8.4	% daily trips transit: 1.6 bike/ped: 8.4	% daily trips transit: .2 bike/ped: 9.8	% daily trips transit: 3.0 bike/ped: 11
Measure 2: % Dwelling Units (DUs) w/in ¼ mile walk to 30-min. transit service	Determined through GIS mapping.	12%	20%	30%	40%	50%
Measure 3: % Collectors and arterials w/ bicycle facilities	Determined through GIS mapping.	21%	28%	37%	48%	60%
Measure 4: % Collectors and arterials in TOD areas w/ sidewalks	Determined through GIS mapping.	47%	50%	56%	64%	75%
Measure 5: % New DUs in Activity Centers	Determined by tracking building permits - the ratio between new DUs in Activity Centers and total new DUs in the region.	0%	9%	26%	41%	49%
Measure 6: % New employment in Activity Centers	Estimated from annual employment files from State - represents the ratio of new employment in Activity Centers over total regional employment.	0%	9%	23%	36%	44%
Measure 7: Alternative Transportation Funding	Funding committed to transit or bicycle/pedestrian/TOD projects. Amounts shown represent ½ of the MPO's estimated accumulation of discretionary funding (STP).	N/A	\$950,000	\$2.5 Million	\$4.3 Million	\$6.4 Million

To account for potential changes in development patterns or mobility over time, **Chicago Metropolitan Agency for Planning (CMAP)**, the Chicago region's official comprehensive planning organization, in its 2050 comprehensive regional plan has designated both near-term and long-term performance measure/indicator targets for 2025 and 2050, respectively, to quantify actual plan progress and to track how well the region is achieving its goals.

CMAP's 2050 plan includes indicators in the categories of: community, environment, prosperity, mobility, and governance. It also includes a set of "Secondary Kindred Indicators", which address issues such as unemployment by race and ethnicity and access to parks in economically disconnected areas. These secondary kindred indicators do not have target values, but CMAP adopted the same review process as the core indicators.

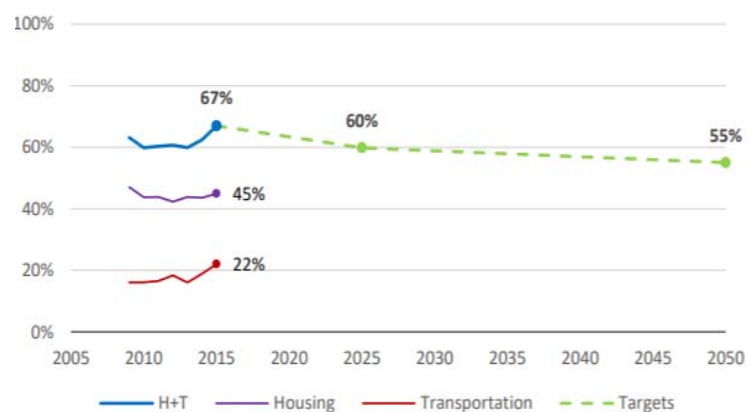
CMAP's target-setting process for the core indicators involved calculating baseline indicator values using the most recent datasets, including utilization of several years' worth of historical data to determine recent trends for several indicators. CMAP utilized its existing indicators, which had established targets for 2020 and 2040, and the updated baseline data to inform their targets for 2025 and 2050. CMAP's

overarching goal of the target-setting process was to set ambitious, but plausible targets contingent on a holistic region-wide implementation of the 2050 plan's policy recommendations.

For community indicators such as 'Share of New Development Occurring in Highly and Partially Infill Supportive Areas', CMAP developed separate target values and units of measurement to track the progress of residential and non-residential development to account for disparate nature of development. CMAP also developed two sets of targets for select indicators such as water demand—one target was on measuring total daily water demand, and another target focused on measuring daily residential water demand on a per capita basis (to account for increase in total demand due to population or industrial growth).

For affordability (housing + transportation) targets, CMAP staff reviewed regional affordability (H+T) trends since 2009, along with trends in overall housing affordability since 2000, and considered the lowest computed value of H+T metric since 2009 to develop near-term 2025 target. The 2050 affordability target was developed based on the range in which this metric has historically fluctuated, the policies outlined in the 2050 regional plan, and the share of households expected to live outside of highly infill supportive areas (see Figure 6). For 2050 plan indicators on which CMAP's policy goals remained unchanged from its 2040 plan and no new data were available, older targets were extrapolated based on available trends.⁹

Figure 6: CMAP Graph Showing Affordability Indicator Trends and Targets of the Chicago Region

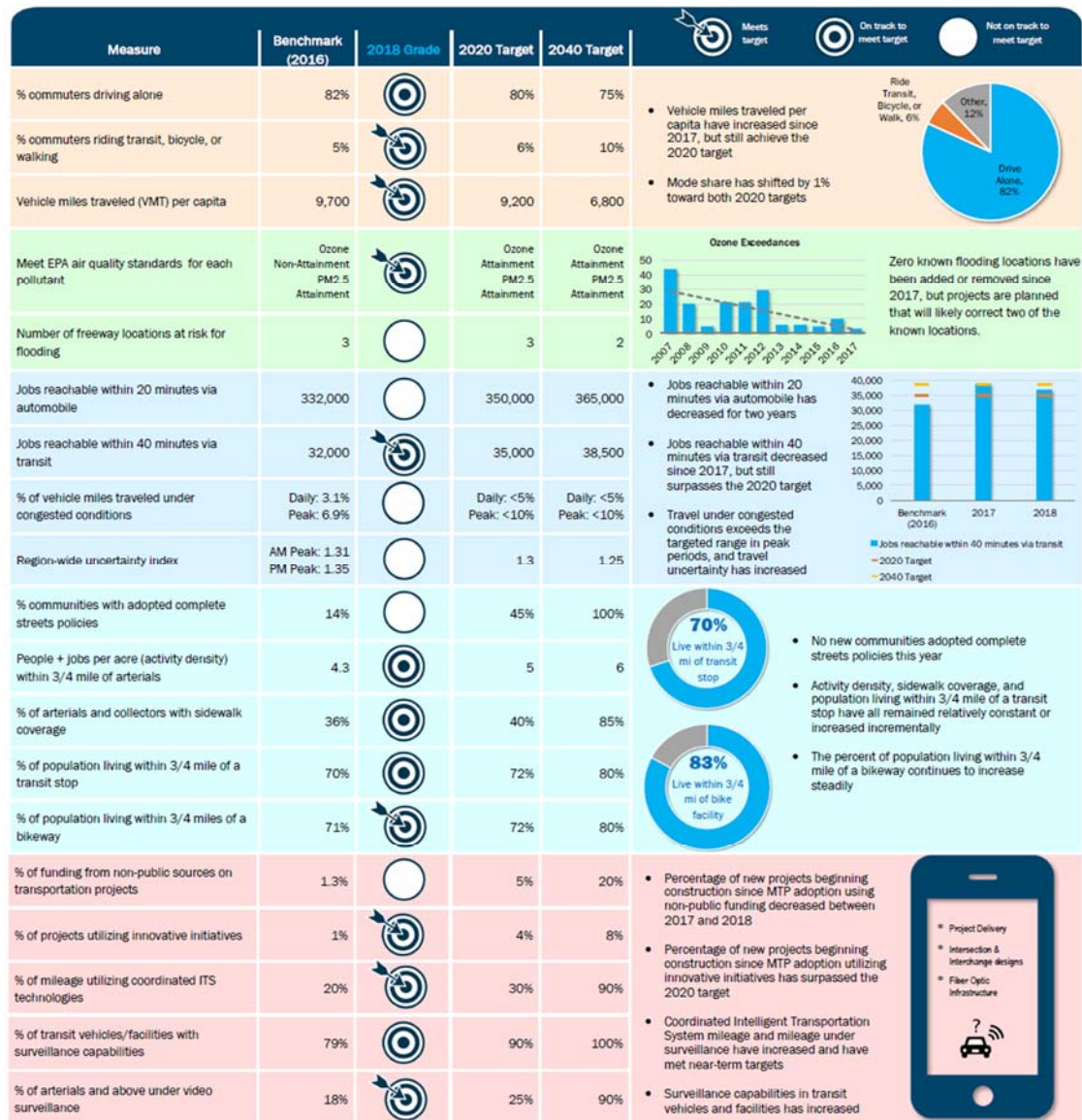


The **Mid-Ohio Regional Planning Commission (MORPC)** has had targets as part of its long-range transportation planning for several years and has regularly reported on progress toward those targets. Figure 7 presents a portion of the 2018 report card that MORPC developed to support targets in its 2016-2040 Metropolitan Transportation Plan (MTP), showing targets for each measure established for 2020 and 2040.¹⁰

⁹ Chicago Metropolitan Agency for Planning. On To 2050 Indicators Appendix. <https://www.cmap.illinois.gov/documents/10180/905585/FINAL+Indicators+Appendix.pdf/ae234d88-74c0-7a94-f70d-ea350c999810>.

¹⁰ Mid-Ohio Regional Planning Commission. 2016-2040 Columbus Area Metropolitan Transportation Plan: 2018 Report Card. http://www.morpc.org/wordpress/wp-content/uploads/2017/12/20180430_CAC_FINAL-Report-Card.pdf

Figure 7: MORPC 2018 Report Card for 2016-2040 Metropolitan Transportation Plan (Portion).



In developing its 2020-2050 MTP, which is expected to be adopted by 2020, MORPC has identified regional goals along with associated objectives, measures, and targets. MORPC has proposed to measure progress of each regional goal using two to five objectives, which are selected to measure impacts of transportation or the transportation system on certain aspects of the goals and are based on data availability and measurability. For each objective, MORPC has documented the existing condition (or benchmark for 2020) to help establish short- and long-term targets for 2025 and 2050, respectively, and plans to annually report on the region's progress toward reaching these targets.¹¹ Following goals that were adopted in September 2018 as part of the metropolitan transportation planning process, MORPC sought public input on objectives and targets for the 2050 MTP through October 2018. A portion

¹¹ Mid-Ohio Regional Planning Commission. 2020-2050 Metropolitan Transportation Plan. <http://www.morpc.org/mtp2050/>.

of the objectives and targets that were put out for public comment are shown below in Figure 8.¹² The MTP also identifies 2-year and 4-year targets for the national performance measures.

Figure 8. MORPC Proposed Objectives, Measures, and Targets for 2050 MTP (portion)

OBJECTIVE: Reduce the percentage of commuters driving alone, and increase the percentage of commuters riding transit, bicycle, or walking			
<i>Rationale</i>	<i>2020 MTP Benchmark</i>	<i>2025 Target</i>	<i>2050 Target</i>
Reducing single occupancy auto commutes and increasing commuters using alternative transportation modes will reduce per capita fuel and energy consumption.	82% of commuters drive alone 6% of commuters ride transit, bicycle, or walk 2012-2016 American Community Survey	80% of commuters drive alone 7% of commuters ride transit, bicycle, or walk	75% of commuters drive alone 10% of commuters ride transit, bicycle, or walk
OBJECTIVE: Reduce vehicle miles traveled (VMT) per capita			
<i>Rationale</i>	<i>2020 MTP Benchmark</i>	<i>2025 Target</i>	<i>2050 Target</i>
Reducing vehicle miles traveled per person for any trip purpose will reduce per capita fuel and energy consumption.	9,300 vmt per capita 2017 ODOT VMT, 2018 MORPC Population Estimates	8,800 vmt per capita (5% reduction)	6,500 vmt per capita (30% reduction)
OBJECTIVE: Increase the percentage of vehicles using alternative fuels			
<i>Rationale</i>	<i>2020 MTP Benchmark</i>	<i>2025 Target</i>	<i>2050 Target</i>
Increased use of alternative fuel vehicles is a direct measurement of alternative fuel usage.	XX% of registered vehicles use alternative fuels* 0.23% of registered vehicles are electric vehicles SmartColumbus, 7-county area	5% of registered vehicles use alternative fuels 4% of registered vehicles are electric vehicles	40% of registered vehicles use alternative fuels 30% of registered vehicles are electric vehicles

5. What is the Target Setting Process?

The process of setting a numerical target generally includes five key steps, as laid out in the National Highway Institute's course on Steps to Effective Target Setting:

1. Define Purpose
2. Set Target Parameters
3. Assemble Baseline Data and Analyze Trends
4. Identify and Assess Influencing Factors
5. Establish a Target

Each of these steps is briefly described below in the context of the NJTPA to consider future development of targets for either the national performance measures or its own supplemental measures.

¹² Mid-Ohio Regional Planning Commission. 2020-2050 Metropolitan Transportation Plan. Proposed Objectives, Measures & Targets. <http://www.morpc.org/wordpress/wp-content/uploads/2018/10/Objectives-Pkg.pdf>

Step 1: Define Purpose

The purpose of the target provides the foundation for all other steps. In order to set a meaningful target, it is critical to understand why you are setting it, who will use it, and how it will be used. There are two primary ways to develop a numerical target that relate to its purpose:

- **Aspirational** – An aspirational target is designed to inspire or set a broad direction for the future, and often is used in long-range planning; a common example is Vision Zero (moving toward zero fatalities on the highway system).
- **Realistic** – A realistic target is set based on analysis of what is achievable based on historical trends, anticipated issues and trends, available funding, and other factors. FHWA has directed that targets set in relation to the national performance measures should be realistic. FHWA notes: “Targets should be reasonable, based on analysis of trends and projections of future efforts. Targets established in accordance with FHWA’s performance measures rules should be considered as interim condition/performance levels that lead toward the accomplishment of longer-term performance expectations in the State DOTs’ and MPOs’ transportation plans.”¹³

In some cases, a target may be set to support a policy directive or target set as part of a planning process that extends beyond transportation. For instance, New Jersey has set a statewide target to reduce greenhouse gas (GHG) emissions by 80% from the 2006 baseline by 2050. The NJTPA could adopt a similar target and consider what achieving that overall target would mean in terms of an on-road mobile source emissions target. In this case, the purpose of the on-road GHG emissions target would be to support a broader statewide target for overall GHG reduction.

Step 2: Set Target Parameters, including Time Horizon

The specific elements needed to define targets include the scope, target portrayal, and time horizon,. Each of these is discussed briefly below. However, many parameters for the target will stem from the parameters that were established for the performance measure. For example, defining a target scope of “all bridges” will drive bridge management policy differently than a target scope of “Interstate bridges.” These scope parameters generally are defined within the performance measure, but are important to recognize when collecting and analyzing data in order to set a target.

Portrayal

Portrayal refers to the way in which the target is structured and reported. Below is a list of typical portrayals used by transportation agencies to set targets and document progress.

- **Absolute (or numeric) change:** What was the total change in the number of fatalities in 2018 compared to 2017?
- **Percentage change:** How much higher or lower was the number of fatalities in 2018 compared to 2017 in terms of percentage?
- **Indexed levels of change, such as per capita:** How has the number of per capita fatalities changed over time in each of the state’s cities and towns?

¹³ Federal Highway Administration. Transportation Performance Management Frequently Asked Questions. <https://www.fhwa.dot.gov/tpm/faq.cfm#targ>

- Return to x year value/level: How does the three-year average number of fatalities during the period 2015-2108 compare to the historically lowest three-year average from the period 2007-2010?
- Absolute value: What is the desired target level (numeric or percentage) for the measure? For example, 15 percent transit mode share, zero roadway fatalities, etc.

While some of the characteristics of portrayal may be defined within the performance measure itself, the way in which a target is set may be selected in order to help clearly communicate the target to stakeholders involved in the process. For instance, it may be easier to explain a target of a 50% increase in transit riders, rather than to indicate an increase of 175 million annual riders. Even if these are equivalent figures, the portrayal of the target as a percentage increase may be easier for the public and stakeholders to comprehend.

Depending on the indicator, the desired direction may be down (decreasing numbers of fatalities) or up (increasing numbers of drivers with excellent safety records). It is good practice to state the desired direction whenever presenting data on progress toward targets. In some cases, due to funding constraints or external factors, a target might be set that shows declining performance in the near-term, yet it will be valuable to clearly indicate the “desired” direction for improvement.

Moreover, some targets do not seek to improve through increases or decreases but rather remain consistent or reduce volatility over time. Delivering projects on time or on budget may be something an agency is doing well today. A target could be to deliver 90% of projects on or under budget, and this target could be static over time.

Time Horizon

The time horizon pinpoints the year or date by which the target is expected to be achieved. The national performance measures are specified to include annual, two-year, and/or four-year targets. However, other types of regional performance measures, such as those relating to land use-transportation connections (e.g., share of jobs and households within ½ mile of regional transit) are slow to change and are ideally designed for long-term targets.

Progress can be made more quickly on some types of initiatives than others. For example, an agency could expect to see reductions in crashes within a year or two of implementing countermeasures, or upticks in transit ridership after launching incentive programs. It would take a few more years of monitoring to make sure the improved level of performance is sustainable. Investments in pavement or bridge conditions may take several years to yield significant changes in regionwide or statewide performance. And some types of projects may have positive (or negative) impacts initially, but reverse direction over time.

For long-range targets, it can be helpful to establish an interim target (or targets) as well to help in assessing progress. For example, the NJTPA could set of long-range targets associated with the end date of its next Long Range Transportation Plan update (for instance, 2050), and in this case also set an interim target, such as 2030.

Setting appropriate time horizons for targets involves considering several factors, such as:

- The time it will take for the results of a new investment or program to be observable—to “move the needle.”

- External variables that influence performance over the course of the time horizon.
- The interests and needs of stakeholders who will use the target to make decisions. Agency managers may focus on multi-year periods for the purpose of long-term planning and programming; traffic operations and travel demand management providers may want to track near-term activity; and elected officials will be most concerned about progress made during their term in office.

Step 3: Assemble Baseline Data and Analyze Trends

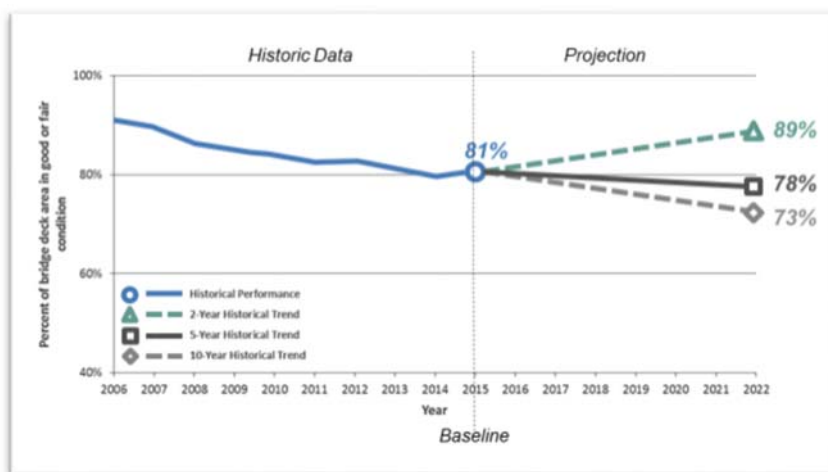
Building on the analysis conducted as part of the state's target setting, and the data collected and analyzed for the regional performance measures as part of this Regional Performance Measures initiative, this step involves collecting and plotting historic performance data and conducting statistical analyses to generate one or more potential future trendline(s). This information, along with the considerations described in Step 4, provides an informed basis for setting a target.

Assembling historical data and defining a baseline for a measure is the starting point upon which the NJTPA can estimate the trend of future performance. If there is reliable historic performance data, the baseline is usually established from the value(s) that reflect typical performance trends over the long term. It is important to select the time period for the baseline value carefully, because it affects the trajectory of the expected trend.

In Figure 9, the decision about which historic time period to use plays a major role in the resulting projection. This example displays the percent of bridge deck area in good condition over a 10-year period. Using a two-year historical period as a basis for estimating the future trend produces an increasing trend and a higher overall level of anticipated performance, from 81% today to 89% in the year 2022. Basing the projection on the previous five-year or ten-year periods, however, generates a decreasing trend and anticipated drops in performance to as low as 73% by the year 2022.

Figure 9: Projections Based on Different Baselines

Source: NHI Course 138012



Selecting an appropriate target, therefore, requires a thoughtful consideration of why the outcomes are so different depending upon which baseline time period is used to set the pattern. Was there a

permanent increase in bridge funding within the past year, or within the past 5 years? Did the agency invest in new bridge management software? Was there a change in strategy between “preservation” and “worst-first”? These slight differences in trend development could lead to significant differences in investment decisions, exemplifying the importance of the decisions made in developing baselines and trend lines to project future performance.

Trend analysis could be conducted using a wide array of statistics techniques. Commonly used analytical tools for analyzing trends and forecasting anticipated future performance are illustrated in Figure 10.

Figure 10: Tools for Modeling Performance and Estimating Targets

Source: NCHRP Report 666 - Target-Setting Methods and Data Management to Support Performance-Based Resource Allocation by Transportation Agencies, Volume II: Guide for Target-Setting and Data Management, Table 1.2

Type of Tool	Sample Tools	Advantage	Disadvantage	Type of Outputs
Historical data	Microsoft Excel spreadsheets, Enterprise Resource Planning (ERP) systems.	Easy to use.	Static. Does not consider future growth and change.	Line plots.
Projected trends	Microsoft Excel spreadsheets, SAS, STATA.	Easy to use.	Static. Based almost entirely on historical performance.	Regressions.
Travel demand model	–	Dynamic and allows for testing of projects and scenarios.	Data and resource-intensive. Can be over-relied upon.	Link and system volumes, speeds.
Postprocessors	IDAS, TREDIS.	Provide numerous metrics that are normally difficult to calculate at system level.	Require a travel demand model.	Travel time, delay, crashes, emissions, employment, GDP, Value-added.
Economic	HERS/ST, AssetManager NT.	Input data already required by states Tradeoffs.	Static. Relies entirely on HPMS input.	B/C, delay, crashes, highway deficiencies.
Economic impact tool	REMI, IMPLAN.	Broader, societal measures understood by all.	Requires reliable inputs. Easily misinterpreted.	Employment, GDP, Value-added.
Research	Microsoft Excel, Access, or similar Financial Model.	Emerging areas.	May not be based on actual practice.	Benchmarks.
Management systems	PMS, BMS (PONTIS, Arivu, StreetSaver).	Tradeoffs. Database.	Siloed.	Prioritization, needs.

Step 4: Identify and Assess Influencing Factors

During this step, which is tied closely to the forecasting in Step 3, the NJTPA and partners should identify all the possible factors that could influence success toward achieving a target and considering strategies to address those factors they can control, and those they cannot. The full consideration of influencing factors can make the difference in selecting a target that is both meaningful and realistic. This means

identifying the array of possible influencing factors, acknowledging their potential impacts on performance, assessing the related tradeoffs or risks involved in achieving that target over time, and developing strategies to anticipate and manage potential challenges. Scenario analysis can incorporate risk probabilities into projecting future performance. Although this is more common in some performance areas than others, it is one approach to assess future risk and include risk components in setting the target.

Perhaps most importantly, the agency should carefully document the results of its consideration of influencing factors, and state the resulting assumptions upon which each target is based. Having a well-documented “risk assessment” for each target will help to pay attention to key factors during the monitoring process, flag critical trends or events, and pivot tactics appropriately. The assessments can help the agency to create meaningful reports about the reasons progress may or may not be made towards a target. At key milestones, the NJTPA can compare the assumptions listed in the initial target-setting documentation to the actual results in order to understand why the target was or was not achieved, and to inform adjustments to the target or associated strategies.

Influencing factors occur both within the agency and externally, and may change over time. External factors may be associated with different levels of risk and certainty. As discussed below, factors that influence performance levels generally fall into several categories.

Agency Decision Making

New policy directives issued by elected officials or high-level leaders can trigger policy decisions and priorities that should influence a target. It is important to consider the potential impacts to each target, positive and negative, of changing priorities and levels of resources, and to adjust the target and/or the implementation plan accordingly.

Funding/Existing Commitments

Budget constraints will have an impact on the ability to invest in strategies to improve performance. When developing investment strategies to achieve targets, agencies need to take into account the issues and opportunities presented by existing capital project commitments and planned operational activities. For example, a new roadway project may provide an opportunity to increase bicycle and pedestrian connectivity, which could boost targets for linear feet of sidewalks and bike routes. Meanwhile, a major bridge replacement could cause congestion for many months, affecting targets to reduce commuter travel time.

At times, agencies may set competing (or even conflicting) targets and priorities. The conflict may become evident when the agency must make a tradeoff between allocating finite resources to one performance area at the expense of another. Alternatively, the agency might not have a dedicated source of funding for the performance area, forcing it to compete with other projects for the same funding program. Acknowledging existing commitments and competing priorities in the target setting process helps agencies to make the target more realistic instead of unachievable.

External Factors

External factors are outside of the agency’s control and may be highly variable. For example, weather trends can influence some performance areas, and the impact of forecasted weather trends can be included when setting associated targets. However, it is also necessary to consider whether the risk

unpredictable events (e.g., a “100-year storm”) should influence the target. Below are a few examples of potential external factors that could influence the NJTPA’s ability to achieve a target, and therefore may impact how that target is set:

- External traffic patterns such as freight movement through a region;
- Weather events or long-term trends;
- Gas prices and related traveler expenses such as tolls, fares, and fees;
- Economic shifts at regional, statewide, national or global scales;
- Population and demographic shifts, such as growth in overall numbers of people and/or changes in the composition of a region by key factors that are often associated with travel patterns such as age cohorts, workforce characteristics, school enrollment, and income levels;
- Vehicle characteristics, such as changes in the share of electric or connected vehicles; and vehicle registration trends that indicate growing or declining rates of vehicle ownership;
- Traveler behavior, such as increasing rates of distracted driving and walking by people using mobile calling, texting, email, or navigation apps.

Step 5: Establish Target

Based upon the information generated through steps 1-4, the NJTPA can assess the feasibility of different possible targets, decide upon an appropriate target, establish a regular feedback loop for studying and acting upon progress reports, and document the rationale behind setting the target.

Apply One or More Target-setting Methods

Several methods may be appropriate for setting a target, going back to the issue of defining the purpose of the target. Two primary methods are below:

- **Policy-driven** targets are established by executive management or a legislative body, and often may be quite ambitious, such as reducing annual fatalities from 200 to zero within ten years.
- **Analysis-driven** targets are based on models or other tools that equip the agency to study historic trends and to forecast expected future levels of performance.

Techniques that can be used to support setting the target include:

- **Consensus-based approaches** that are established through a collaborative planning process with input from a variety of stakeholders, such as by using interagency discussion forums.
- **Public and stakeholder engagement** methods that draw upon input from customers, the public, interest groups, and others through surveys and outreach methods designed to help define targets.
- **Benchmarking** using comparative data from peer agencies or regions. This can be a helpful method when the agency does not have much historical data on which to base a customized target. It can select a target and develop some investment strategies by drawing upon the experience of an agency responsible for a similar region.

The NJTPA may benefit from using multiple techniques to inform the target setting process. For example, analysis-driven models might need to work in conjunction with policy-driven statewide priorities or legislative requirements. Data from a travel demand model or historical trendline analysis may not be enough to fully support a decision about setting or changing a target. The NJTPA can engage

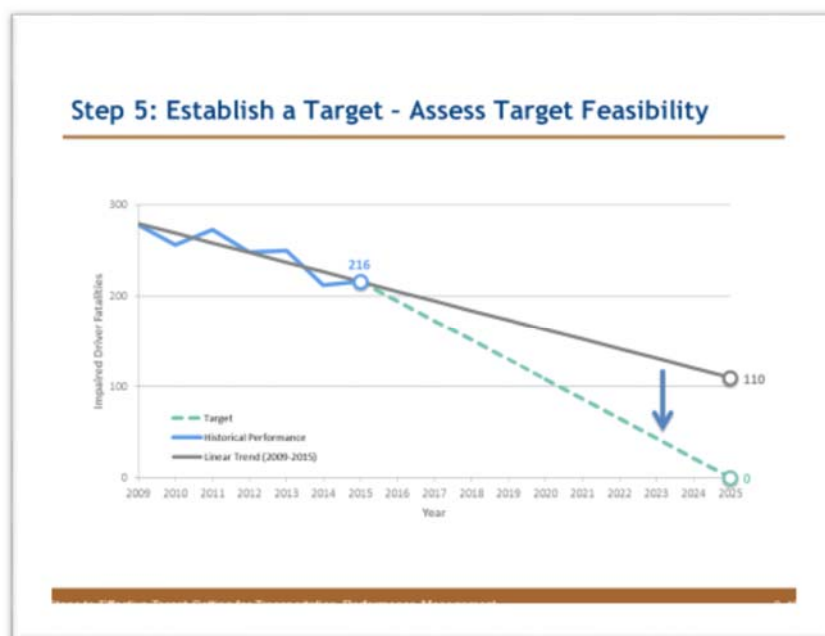
policy makers, partner agencies, stakeholders, customers, and the public in different ways to identify appropriate targets that reflect the priorities, concerns, and resources of all involved.

Assess Feasibility and Choose Target

Based on the historical trends studied in Step 3, the NJTPA can discern the feasibility of achieving a given performance within the chosen time horizon. Figure 11 provides an example of a linear trend analysis of impaired driver fatalities. The agency set a target of zero fatalities by the year 2025. During the period between 2009 and 2015, the total number of fatalities had dropped from around 280 to 216. Year-over-year changes fluctuated between increases and decreases, but overall the agency could identify an average rate of reduction that served as the basis for a linear projection to the year 2025. By that year—assuming progress continues as before with no significant changes in programs, investments, or external factors—the agency would expect to see the total number of fatalities drop to 110. The gap between that figure and the zero target is 110. Therefore, during the ten years between the baseline of 2015 and the target horizon of 2025, the agency must not only continue to make the same level of progress as it has since 2009, it must reduce the number of fatalities by an additional 11 per year to make up the gap and reach zero.

Figure 11: Assessing Target Feasibility

Source: NHI Course 138012



Establish Cyclical Feedback Loops to Inform Adjustments

The NJTPA can set up a “feedback loop” for tracking progress toward targets. This reporting and evaluation may occur annually for near-term targets, such as 2-year and 4-year targets, or may be less frequent for long-range targets. For instance, the NJTPA could report progress in relation to long-range targets on each Transportation Improvement Program (TIP) update cycle, or may report progress as part of each Long Range Transportation Plan update. If the data show higher or lower than expected results, the NJTPA and partners can decide whether to change tactics (e.g., allocate more resources) or to adjust the target. Given the up-and-down nature of past performance, the agency could also defend a choice

to continue with its current program despite an uptick or downturn in any given year, since the overall progress may well even out over time. The cycle of the feedback loop depends largely upon the nature of the target: short-term or long-term, and how long the agency estimates it will take to see some sort of discernible change in patterns that provide reasonable information to assess progress.

Define Target-related Roles and Responsibilities

Another key element to define while setting the target is the agency's framework for maintaining and updating the target. This involves identifying the roles that specific divisions, personnel, or partners will play in establishing and updating the target, planning and programming performance-based investments and strategies, implementing the funded initiatives, monitoring progress, adjusting tactics, and updating the target. Each agency, department, and office must understand its role and allocate appropriate staff time and resources toward coordinating and documenting analyses, decisions, actions, and everyday business operations that contribute to achieving the target.

6. Potential Paths Forward for the NJTPA

As the NJTPA explores the potential for setting regional targets, two primary pathways are recommended for consideration:

Setting Near-term Targets for the National Performance Measures

First, the NJTPA could work with NJDOT to establish regional targets for some of the national performance measures. This approach could apply for the safety, infrastructure condition, system performance, and freight targets. Building on the data collected as part of this Regional Performance Measures initiative, much of the historical data on the NJTPA region's performance in relation to these measures has been collected and compiled. The NJTPA could use these data, and updated data provided by NJDOT and other sources to set its own regional target. These data, however, will need to focus precisely on the federal definitions of the performance measures (In some cases, such as for infrastructure measures, the regional measures selected as part of this project differed from the national measures in order to be more comprehensive; for instance, the regional bridge condition measure being reported by the NJTPA includes all NBIS bridges, not solely NHS bridges).

An initial set of measures for focus could be the safety performance measures, given that the data are readily available for many years in order to explore trends, and the data and methodology used are the same as the federal requirements (but would focus on the 5-year rolling average). The NJTPA could then work with NJDOT in order to determine the most appropriate methodology for setting regional targets, such as applying the percentage changes associated with the statewide target to the NJTPA region, using similar methods to the target setting approach at the state-level, or conducting other specific analyses of the data for the NJTPA region to determine differences in trends. This could be a starting point upon which the NJTPA could develop targets for other national measures after a few years when more historical data at the regional level are available.

Setting Long-term Targets with the Next Long Range Transportation Plan Update

Second, the NJTPA could work with partners and stakeholders as part of the next update of the Long Range Transportation Plan in order to establish long-term (and potentially interim) targets for regional performance measures as part of the overall plan update process. Building on discussions of regional

goals and needs, the stakeholder and public participation process could engage participants in a discussion about performance targets. Building on the steps discussed above, the NJTPA would conduct analyses of data, modeling, or other forecasting, potentially combined with policy discussions, in order to set long-range targets. The approaches used by CMAP in Chicago and MORPC in Columbus, Ohio, could be good models for how to incorporate targets into the long range plan, and then conduct on-going tracking of performance in relation to these targets.