Partnering for Performance NH

Bringing decision makers and stakeholders together to promote a more collaborative decision making process.

Source: SRPC

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NH DHHS Division of Public Health Services
NH DOS Bureau of Emergency Medical Services
NH DOS Division of State Police
NH DOS/DMV Fatal Crash & FARS Units
NH DOT Bureau of Aeronautics
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Abbreviations

AMPS..... Asset Management, Performance, and Strategies

DOT..... Department of Transportation

FAST..... Fixing America's Surface Transportation

FHWA..... Federal Highway Administration

FTA..... Federal Transit Administration

KACTS..... Kittery Area Comprehensive Transportation System

MAP-21..... Moving Ahead for Progress in the 21st Century

MPO..... Metropolitan Planning Organization

NHDES..... New Hampshire Department of Environmental Services

NHDOS..... New Hampshire Department of Safety

NHDOT..... New Hampshire Department of Transportation

PFPNH..... Partnering for Performance NH

RPC..... Regional Planning Commission

SHRP2.....Strategic Highway Research Program, Round 2

STIP..... Statewide Transportation Improvement Plan

TIP..... Transportation Improvement Plan

UZA..... Urbanized Area

VMT..... Vehicle Miles Traveled

Partnering for Performance NH: Introduction

Source: SRPC

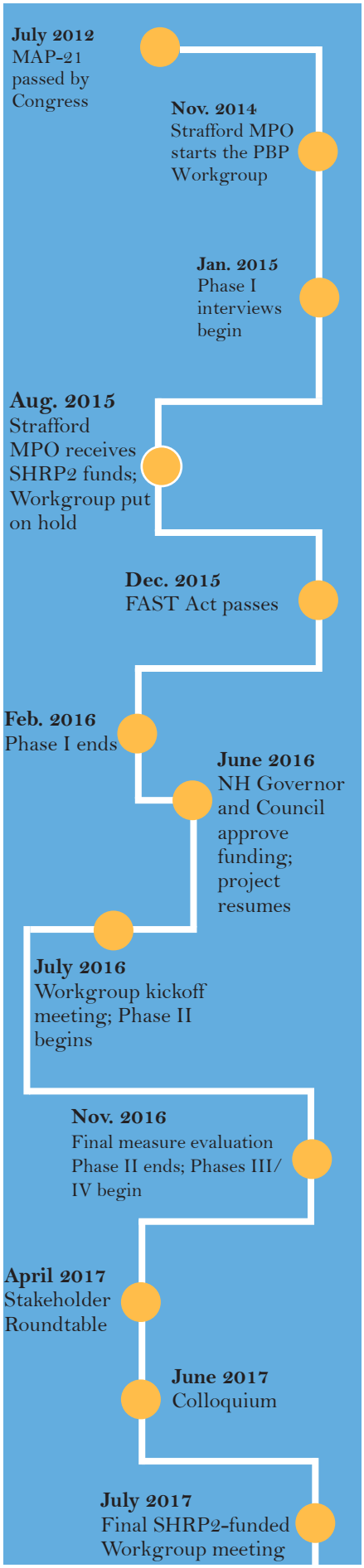


Figure 1. Partnering for Performance NH Timeline

Introduction

In 2012, Congress passed the Moving Ahead for Progress in the 21st Century Act (MAP-21), the funding and reauthorization bill for the U.S. Department of Transportation (DOT). A key component of MAP-21 was the establishment of performance based transportation planning. This approach uses performance measures to track the efficacy of planning efforts, identify needed transportation-related improvements, and ensure that funding and resources are used most effectively. MAP-21 required state DOTs and metropolitan planning organizations (MPOs) to use performance measures for federally funded transportation projects. In 2015, the Fixing America's Surface Transportation (FAST) Act replaced MAP-21 to provide long-term funding stability and, among other policies, preserve the performance measures requirements.

MAP-21 established seven national performance goal areas with the purpose of having "states invest resources in projects to achieve individual targets that collectively will make progress toward national goals."[1] The national performance areas to be tracked by states and MPOs are shown in Fig. 2.

MAP-21 National Performance Goals

Safety
Achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

System reliability
Improve the efficiency of the surface transportation system.

Freight movement and economic vitality
Improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.

Infrastructure condition
Maintain the highway infrastructure asset system in a state of good repair.

Congestion reduction
Achieve a significant reduction in congestion on the NHS.

Reduced project delivery delays
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.

Environmental sustainability
Enhance the performance of the transportation system while protecting and enhancing the natural environment.

Figure 2. MAP-21 Performance Goals

1"Moving Ahead for Progress in the 21st Century Act (MAP-21)." U.S. Department of Transportation Federal Highway Administration, last modified on August 17, 2012, https://www.fhwa.dot.gov/map21/summaryinfo.cfm

As a result of MAP-21, state DOTs and MPOs are responsible for setting targets for mandated performance measures as outlined in 23 CFR Part 490[2] and tracking progress toward meeting those targets. Failure to meet or make progress toward these targets would result in state-level restrictions on how funding may be used.

After the passage of MAP-21, state DOTs and MPOs across the country began preparing to shift toward performance based planning. In 2014, Strafford MPO facilitated the creation of a performance based planning workgroup that eventually consisted of representatives from the four New Hampshire MPOs, the New Hampshire Department of Transportation (NHDOT), the Federal Highways Administration New Hampshire Division (FHWA), the Federal Transit Administration Region 1 (FTA), the New Hampshire Department of Environmental Services (NHDES), and a New Hampshire rural planning commission.

Instead of taking the more traditional approach of working independently, Strafford MPO wanted to bring all decision makers to the table to promote a collaborative process—especially between the four MPOs and NHDOT. The *Performance Measurement Framework for Highway Capacity Decision Making* had a major impact on this project. The report's emphasis on "non-traditional" measures and stakeholders inspired our workgroup. We used the report to plan the project scope, timeline, and deliverables. Our stakeholder engagement and context assessment in Phase I was modeled after the interviews described in the report. The outcomes of our engagement were similar. Strafford MPO modeled the approach to performance based planning after the successful Granite State Future project, the first statewide collaborative effort in New Hampshire

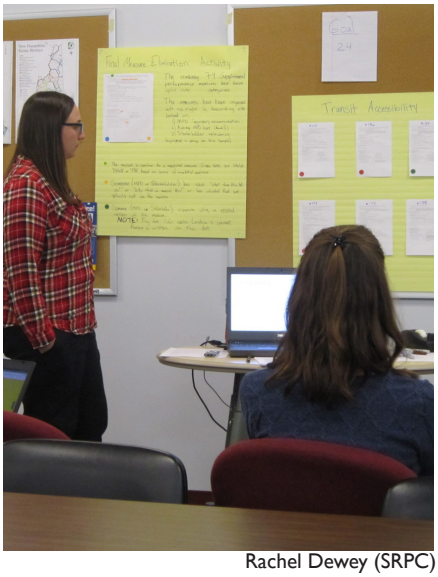
The Workgroup at Work

The workgroup was originally formed around the Piscataqua - Salmon Falls watershed and consisted of Strafford MPO, Rockingham MPO, and the Kittery Area Comprehensive Transportation System (KACTS), the MPO representing southern Maine. In 2016, the two remaining NH MPOs joined the workgroup while KACTS opted to be a stakeholder.

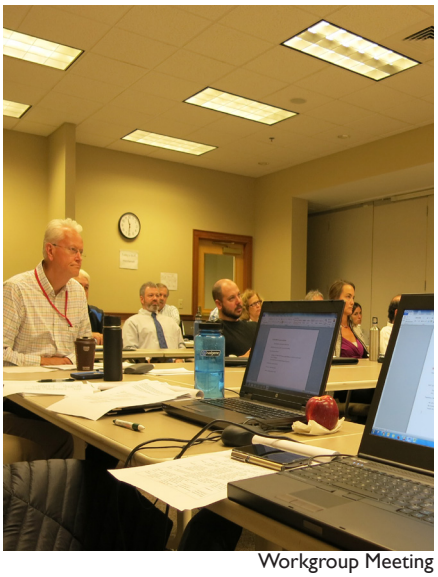
The workgroup completed a stakeholder and context assessment (Phase I) of this project using UPWP funds. Strafford MPO conducted 25 stakeholder interviews involving 86 stakeholders. The interviews and associated analysis, from January 2015 to January 2016, were funded through Strafford MPO's UPWP funding.

Source: SRPC

2 Code of Federal Regulations, National Performance Management Measures, title 23, sec. 490.



Rachel Dewey (SRPC)
Source: SRPC



Workgroup Meeting
Source: SRPC

Julie Chizmas (NRPC) and Colin Lentz (SRPC)
Source: SRPC

that brought together all nine regional planning commissions to prepare individual regional master plans with shared metrics, vision, and policy framework based on New Hampshire's Livability Principles.[3]

To maintain the collaborative efforts of the new group, Strafford MPO applied for a grant from the FHWA Strategic Highway Research Program (SHRP2) Implementation Assistance Program as a lead adopter of PlanWorks. Strafford MPO determined that PlanWorks, "a web resource that supports collaborative decision-making in transportation planning and project development," would be an ideal tool to reinforce and formalize the workgroup's efforts. In August 2015, Strafford MPO's application was selected by FHWA, and the project was put on hold while contracts were finalized and approved. Funding was approved by the New Hampshire Governor and Council in June 2016 and the project resumed in July 2016

The workgroup recognized that, while its initial objective was to create a common framework to address the federal performance measures, there was a valuable opportunity to look more closely at issues in our regions that were not covered by the federal approach. The group agreed to work on creating "supplemental measures" that address New Hampshire's unique transportation needs.

Who We Are

The Partnering for Performance NH project consists of a workgroup comprising NHDOT's Bureau of Planning and Community Assistance, Rockingham MPO, Nashua MPO, Southern NH MPO, Strafford MPO, Southwest Regional Planning Commission, NHDES, FHWA, and FTA. Each agency is categorized as either a decision maker or an advisor. The decision makers are mandated to take an action and implement performance

Our Workgroup

Decision makers

New Hampshire Department of Transportation

Rockingham Planning Commission

Nashua Regional Planning Commission

Southern New Hampshire Planning Commission

Strafford Regional Planning Commission

Advisors

Federal Highway Administration

Federal Transit Administration

Southwest Region Planning Commission

New Hampshire Department of Environmental Services

Funder

SHRP2 Solutions

Figure 3. Workgroup Members

3 "Granite State Future," last modified 2012, http://www.granitestatefuture.org/.

based planning. The advisors provide guidance and advice to the decision makers, bringing their expertise and unique perspectives to the process to ensure the project work complies with all regulations. Since New Hampshire is largely rural, a non-metropolitan planning commission, Southwest Regional Planning Commission, was invited to participate and provide feedback on where our work could be relevant and scalable to other entities in the future.

Transportation Planning in New Hampshire

There are four MPOs in New Hampshire. Each MPO is coterminous with a regional planning commission (RPC) and has three to six transportation staff members. Transportation planning in the non-metropolitan areas is coordinated between NHDOT and the five rural RPCs. The rural RPCs receive state planning and research funds to assist NHDOT in carrying out the state's responsibilities for the improvement and maintenance of New Hampshire's surface transportation system.

In New Hampshire, MPOs act as a link between municipalities, regional agencies, and the state on transportation planning and project development. They facilitate a bottom-up approach that ensures local perspectives and needs are considered in the planning of critical transportation infrastructure. MPOs assist municipalities in developing projects that are eligible for federal transportation funding programs.

MPOs in New Hampshire work with NHDOT in the development and management of the two primary statewide documents that organize transportation projects and funding sources: the Statewide Ten Year Transportation Improvement Plan (known as the Ten Year Plan), and the Statewide Transportation Improvement Program (STIP). Both plans contain individual transportation improvement projects and are fiscally constrained so that projects are planned based on reasonable estimates of future funding availability. MPOs participate in the development of the Ten Year Plan and the STIP on a two-year cycle by working with municipalities to develop and propose new projects for inclusion in the Metropolitan Transportation Plan and the Transportation Improvement Program (TIP).

To meet federal requirements, states and MPOs must set targets for specific performance measures. The mandated measures are important to track and improve, but they are centered on large-scale issues. Some apply only to MPOs serving urbanized areas (UZAs) with populations over 200,000. Others focus on the national highway system. As a result, the measures do not accurately represent New Hampshire. For instance, New Hampshire MPOs have very little national highway system in their networks and almost no UZAs with 200,000 people.

To better account for the needs of the state, the workgroup developed supplemental performance measures that are more representative of regional transportation needs, and a framework for implementing them.

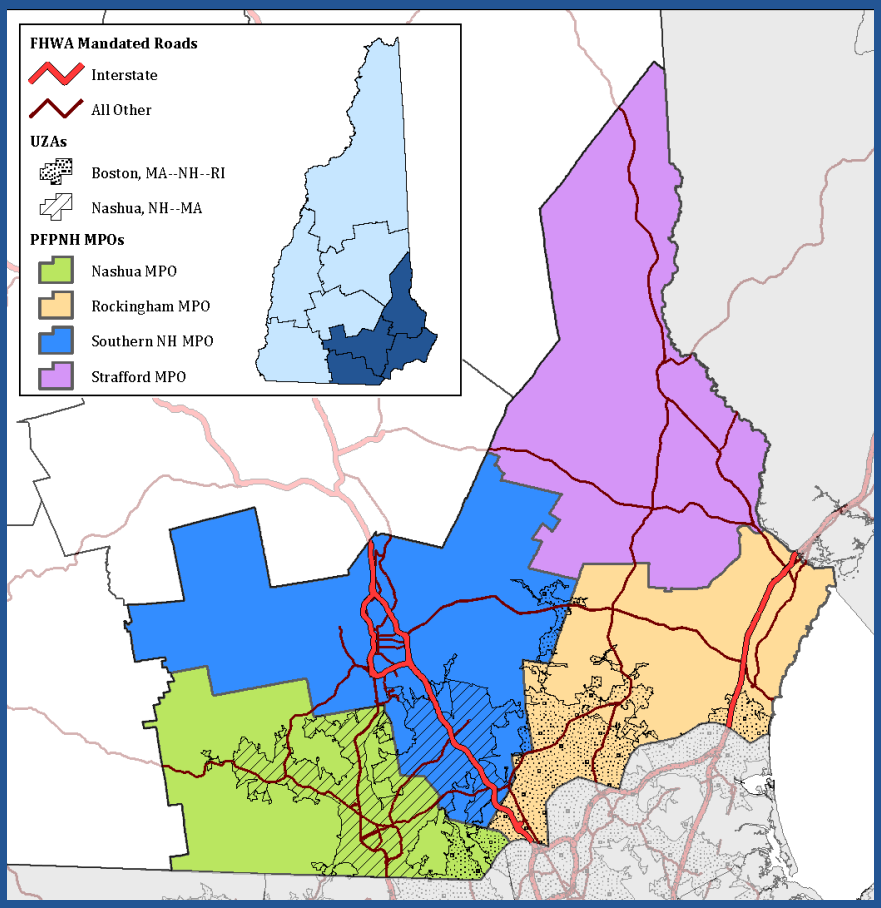
What is Performance Based Planning?

It is an approach to management of the transportation system that monitors quantifiable information to accurately and effectively match investment with needs. It allows agencies to show whether resources are being used for the most effective return on investment.

How Does Performance Based Planning Help Me?

It improves transparency between agencies responsible for the management of the transportation system and the citizens who rely on it. It helps State agencies, partner agencies, and municipalities collaborate to develop plans and projects based on quantifiable, unbiased information

Applicability of FHWA Mandated Measures



- New Hampshire has an average of 113 traffic fatalities per year, 49% of those occur in MPO regions.
- The bridge measures apply to the 1038 bridges that carry the NHS, roughly 26% of the bridges in the state. 454 are in the MPOs' regions
- The pavement and travel time reliability measures apply to the 1256 miles of NHS in the state, about 6% of the roads in the state. 6.5% of the roads in MPOs
- The congestion measures apply to NHS in large urbanized areas. There are 48 miles in Boston UZA and 120.6 miles in Nashua UZA.

Figure 4. Applicability of FHWA Mandated Measures

The Project Phases

As noted, the purpose of the workgroup was to foster collaboration between the New Hampshire MPOs and NHDOT to assess the current scope of performance based planning among the transportation agencies and stakeholders in the state as well as to develop an inter-regional list of common transportation performance measures and objectives to begin implementing performance based planning into transportation planning policies. In order to do so, the project was organized into five phases that guided the workgroup through an integrated, cohesive process.

Phase I: Stakeholder and Context Assessment

Phase I focused on ensuring that the measures were of interest and need to stakeholders, and that stakeholder voices were directly incorporated into the research and decision-making process. A major outcome of Phase I, which included an extensive stakeholder and context assessment, was the generation of an additional 121 potential performance measures to be added to the MPOs' existing list of 531 measures. For more information about Phase I, see "Collaborative MPO Approach to Performance Based Planning in New Hampshire" (the Synthesis Report).[4]

Phase II: Evaluation Criteria and Measure Selection

Phase II of the project was the selection of performance measures through the establishment of evaluation criteria, which were used to narrow the working list of potential performance measures. Results of the qualitative analysis of the stakeholder and context assessment fed into the establishment of the evaluation criteria. The Phase I results helped ensure that NHDOT and the MPOs considered stakeholder priorities. Phase II spanned three months, from the end of July to November 2, 2016. Through this phase, the workgroup evaluated 652 potential performance measures and narrowed the list to 24.

Phase III: Methodology and Assessment, Review and Selection

Phase III was devoted to the research, review, assessment, and selection of the methodology, protocols, and techniques to be used for measure calculation. It was closely aligned with Phase II, because the evaluation criteria aided the acquisition of information used in the methodologies. Methodologies were drafted by the workgroup and reviewed by a data subgroup that consisted of data-savvy staff members from each MPO and NHDOT. In addition to writing methodologies for its supplemental performance measures, the workgroup wrote easy-to-read methodologies for the federally mandated performance measures.

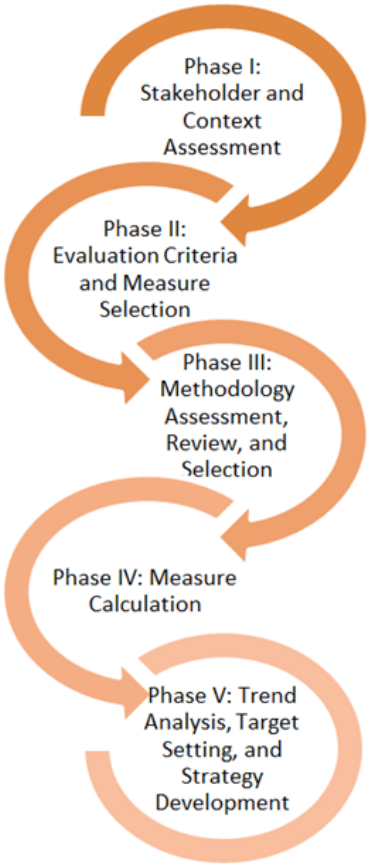


Figure 5. Project Phases

4 Strafford Regional Planning Commission. The Collaborative MPO Approach to Performance Based Planning in New Hampshire. (Rochester: Strafford Regional Planning Commission. 2016) http://www.strafford.org/cmsAdmin/uploads/synthesis-report_final.pdf.

Phase IV: Measure Calculation

Phase IV included the calculation of measures to determine baseline conditions, as well as current and historical performance of a particular measure. The tasks in this phase were crucial to the development of targets and goals during Phase V.

Phase V: Trend Analysis, Target Setting, and Strategy Development

In Phase V, the workgroup analyzed baseline conditions and historic trends from Phase IV to determine desired trends and set targets for the measures. The target-setting process involved considering and integrating a number of variables, such as financial resources, technical and policy-based considerations, and economic factors. This phase included a discussion of strategies in which the workgroup identified a series of transportation project types that could help achieve state and MPO targets for each measure.

Beyond Year One

Performance based planning is a continual process. DOTs and MPOs are required to set new targets for the mandated measures every two years. The New Hampshire MPOs have elected to set new targets for the supplemental measures on the same schedule. Some of the potential measures discarded in Phase II were eliminated due to the lack of accurate and consistent data. As data becomes available, however, the workgroup may decide to implement additional supplemental measures to create a more comprehensive picture of transportation issues statewide.

The MPOs found that working together works for us. We have common areas of work that we each approach differently, and we want to find best practices to streamline our processes. Among these topics are project selection and prioritization, TIP revision procedures, congestion management, UPWP coordination, and development of MPO best practices manual. The MPOs will meet monthly to continue work on performance measures and to begin streamlining these MPO processes. This smaller group will continue to self-assess, but will most likely adapt the PlanWorks questions to a Google form and allow for some open-ended responses. This approach will help the group gain more insights into why questions receive the responses they do. Another open-ended field could collect strategies to consider for improving in weaker areas.

Phase I: Stakeholder and Context Assessment

Source: SRPC

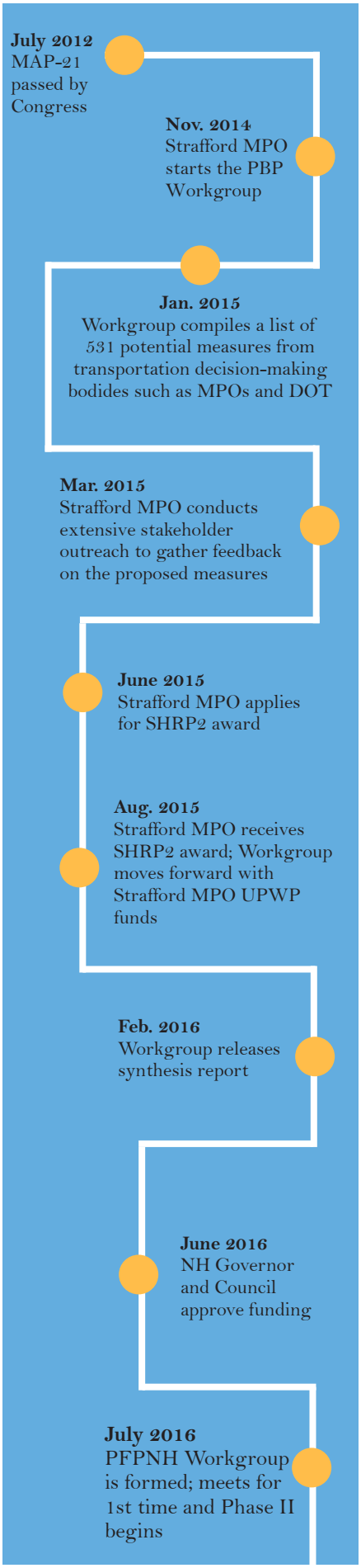


Figure 6. Phase I Timeline

Phase I: Stakeholder and Context Assessment

"Prior to selecting potential measures from a long list of candidates, the Workgroup agreed that it needed to assess the current context, which includes the identification of potential stakeholders, interests, priorities, concerns, barriers, available data, and other information needed for decision-making. This stage of the … process was defined as Phase I (Stakeholder and Context Assessment)."[5]

— Excerpt from the Synthesis Report

The workgroup compiled a list of 531 potential performance measures from a variety of sources including transportation decision-making bodies such as MPOs and DOT. The workgroup decided it would be beneficial to provide regional transportation stakeholders an opportunity to contribute to the process.

Strafford MPO reached out to stakeholders for their feedback on the proposed measures, on current transportation planning practices, and on their transportation needs. The stakeholders included other state agencies, rural planning commissions, transit agencies, freight companies, advocacy groups, and conservation organizations. A qualitative analysis was performed on their input using software called Nvivo. Nvivo enabled Strafford MPO to make sense of verbatim transcriptions of 25 stakeholder interviews. Using the software ensured that the analysis did not alter the meaning of what was said in the interviews. The results of this analysis are in the Synthesis Report.

The workgroup incorporated the stakeholders' suggestions into the list of potential performance measures, bringing the list up to 652 measures. In addition to this list of performance measures, the workgroup developed a list of primary evaluation criteria to be tested in the early stages of Phase II. These criteria were used to determine the relevance and feasibility of the potential measures. Measures determined to be irrelevant were eliminated or rephrased to make them relevant. Measures that were not feasible were either eliminated or set aside as possible future measures that could be revisited at a later date. The primary evaluation criteria were 14 questions that addressed such topics as federal mandates and guidelines, consistency with other transportation planning processes, stakeholder priorities and concerns, data availability, and technical feasibility (See Appendix A).

5 Strafford Regional Planning Commission. The Collaborative MPO Approach to Performance Based Planning in New Hampshire. (Rochester: Strafford Regional Planning Commission. 2016) http://www.strafford.org/cmsAdmin/uploads/synthesis-report_final.pdf.

Phase II: Measure Evaluation and Criteria

Source: SRPC

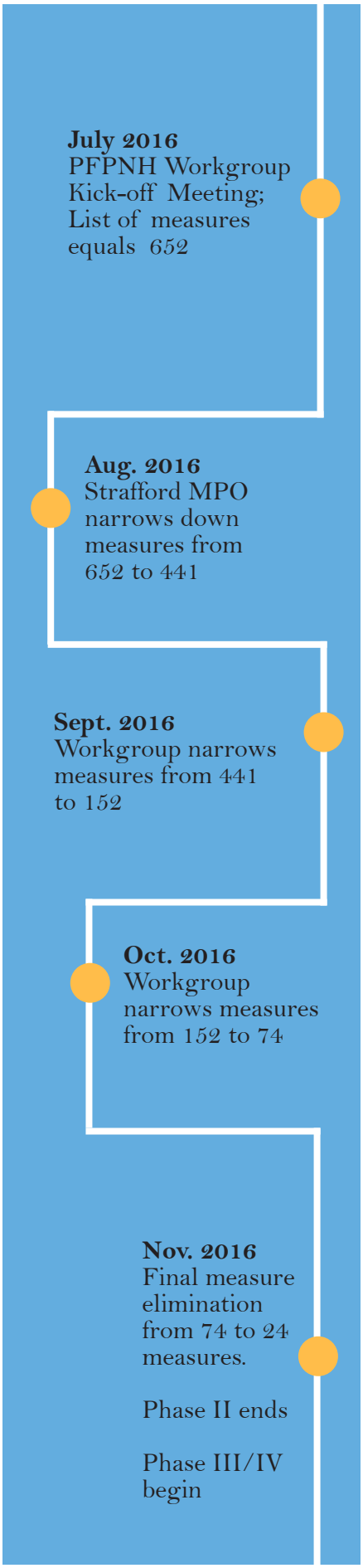


Figure 7. Phase II Timeline

Phase II: Measure Evaluation and Criteria

"Phase II of the project is the establishment of evaluation criteria which will be used to select and narrow the working list of candidate performance measures. While there is a specific project phase for establishing criteria and selecting measures, this task will be ongoing throughout the project and will be revised as the Workgroup develops a better understanding of data and methodology related needs. *It is imperative to state that this phase is closely tied to Phase I of the project. Results from the qualitative analysis of the Stakeholder and Context Assessment will feed into the establishment of the evaluation criteria. Results will also help ensure that the NHDOT and MPOs consider stakeholder priorities and their use of intended performance measures."* [6]

— Excerpt from the Synthesis Report

The project resumed in July 2016 after a 10-month hiatus, and, despite MPO staff turnover, all of the partners were at the table.

Initial Changes to the List of Measures (July 28 - August 16, 2016)

After the first workgroup meeting, in July, the MPOs were tasked with testing the primary evaluation criteria developed in Phase I. While reviewing the list, an MPO partner found that the ID numbers on the June 2015 list did not match those on the July 2016 list. After investigating, Strafford MPO determined that the original ID numbering system was lost in the creation of the most recent version of the list. To correct the problem, Strafford MPO identified the June 2015 measures and created a new "Old ID" field (O_ID in the spreadsheet).

During this effort, it was noted that some measures contained the same wording but differed in capitalization, spelling, or spacing. Some of these duplicate measures had minor differences, like "10000" vs. "10,000" and "Redlist" vs. "Red List."

While piloting the primary evaluation criteria, Strafford MPO noted there was still significant redundancy, as well as "measures" that could not be measured. As a result, Strafford MPO made the following changes to the list of measures:

- Combined similar measures such as "Commute to work – Bicycle," "Commute to work -- Drove alone," "Commute to work – Carpool," "Commute to work -- Walked," and "Commute to work -- Other" into "Commute to work, by mode."

- Finished removing duplicate measures. Exact matches were removed

6 Strafford Regional Planning Commission. *The Collaborative MPO Approach to Performance Based Planning in New Hampshire.* (Rochester: Strafford Regional Planning Commission. 2016) http://www.strafford.org/cmsAdmin/uploads/synthesis-report_final.pdf.

in the first cut, but duplicates that differed in spelling such as "Number of…" vs. "# of…" or wording such as "Airport Runway Condition (FAA Runway Condition)" vs. "FAA (Federal Aviation Administration) Runway Condition" were eliminated in this cut.

- Rephrased measures that were location specific.
  - o "SRPC communities that…" to "MPO communities that…"
  - o "Fatalities on Route 101…" to "Fatalities…"
- Added any of the final or proposed federally mandated measures that were not already on the list.
- Added a "Relevance or Source" column.
  - o Identified FHWA measures and cited the corresponding Notice of Proposed Rulemaking or Final Rule for each.
  - o Identified Phase I stakeholders' top priorities as noted in the Synthesis Report.
  - o Identified measures in NHDOT's Balanced Scorecard.[7]

The result was a list of 441 measures, 21 of which did not have a number in either ID system. The final step in this second cut was to create a third and final ID number that was used for the remainder of the project (see Fig. 8 for details on the three ID systems).

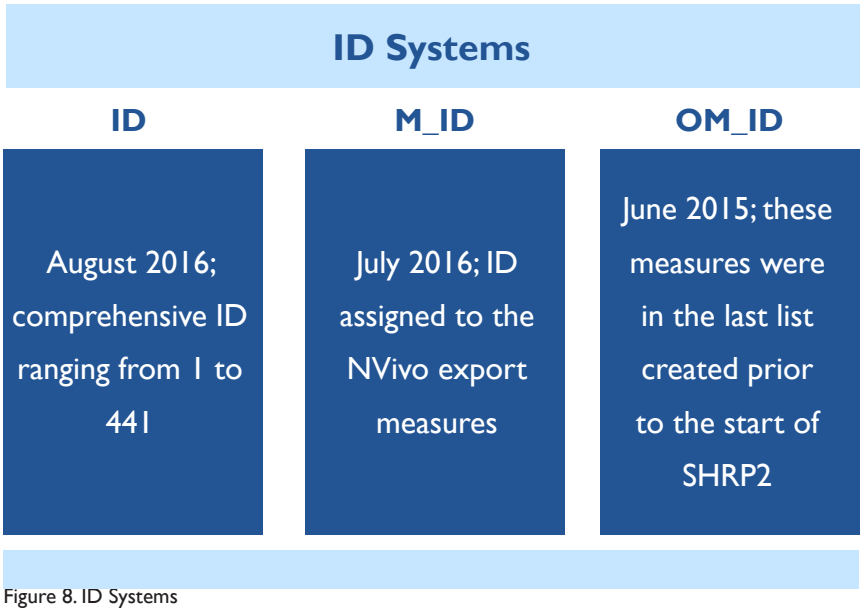


Figure 8. ID Systems

46% of the measures that were removed were duplicates

26% were statements of goals or desired trends

11% were combined with similar measures

17% were either too vague (unclear what would be measured) or too specific (focused on an issue only at one location)

7 "Department Scorecard," https://www.nh.gov/dot/org/commissioner/balanced-scorecard/department/index.htm

Figure 9. SMART Framework

Changes to the Evaluation Criteria (August 4 - 16, 2016)

Developed by the original work group in 2015, the evaluation criteria were based on the SMART (Specific, Measurable, Attainable, Relevant, and Timely) framework. These evaluation criteria addressed whether a measure was specific to transportation, whether data existed, the general feasibility of the measure, the measure's relevance to the MPO's goals and stakeholder's priorities, and whether a measure could be calculated now and frequently enough to be useful.

During the first two weeks of the project, the four MPOs each tested the draft primary evaluation criteria on 10 measures. The measure evaluations throughout this project used Excel spreadsheets that included the criteria and drop-down lists for answers to each question (See Work Group at Work).

At the August 18, 2016, meeting, the workgroup discussed the draft primary evaluation criteria and modified them to better meet the needs of the group. The workgroup decided to make the following changes to the criteria and the drop-down lists:

- Added "unknown" as an option to all of the drop-down lists.
- Changed drop-down list options for the criterion "Geographic Planning Area Relevance" to clarify its meaning.
- Changed the criterion "Relevant/Consistent with One Other Transportation Plan" to "Is the Metric Directly Related to Transportation?"
    - o Determined that if the answer to this question is "No," the evaluator should skip to the criterion "Preliminary MPO Recommendation" and select "Not recommended."
- Deleted the criterion regarding Phase I Stakeholders. (Strafford MPO completed this criterion by adding a column to the spreadsheet for "Relevance or Source" and identifying the Synthesis Report's top-ranked measures.)
- Deleted the criterion regarding composite measures. (Strafford MPO completed this criterion during the second cut of measures.)
- Moved the criterion "Is there Data Readily Available/Accessible?" ahead of all other data related questions.
    - o Changed the drop-down list to provide options for data that is not currently available but easily collected OR is available but not easy to access.
- Added a criterion for "Data Scale for Reliable Data." There are now two data-scale criteria: one tracks the smallest data scale available, the other the smallest data scale for reliable data sources.
- Added "Varies" to the drop-down list for "Data Update Frequency."

- Moved "Technical Feasibility" to after "Cost to Prepare."
- Changed the name of the criterion "Summary Rank/Final Recommendation" to "Preliminary Recommendation."
    - o Added "Potential Future Measure" to the drop-down list.
    - o Split "Preliminary Recommendation" into "Preliminary Recommendation for MPOs" and "Preliminary Recommendation for DOT."
- Added space for links to more information about the measure.

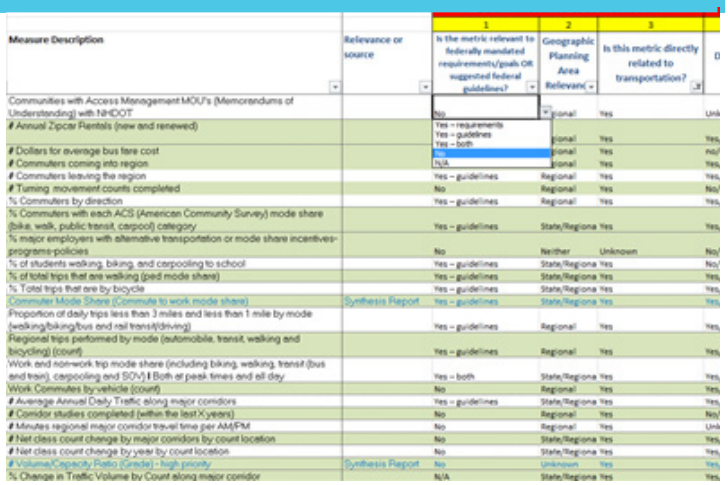
To ensure consistency during the evaluation process, the workgroup agreed upon these three assumptions:

- If a measure is not directly related to transportation, the evaluator should skip all further criteria and mark the measure as "Not Recommended" for both "Preliminary Recommendation for MPOs" and "Preliminary Recommendation for DOT."
- When discussing "Time to Prepare," the evaluator should assume that time refers to the amount of time an MPO needs to calculate the measure.
- When discussing "Cost to Prepare," the evaluator should assume that cost refers to the purchase of the data, as well as staff time for data collection and measure calculations.

Through the above changes to the list of performance measures, Strafford MPO eliminated the need for two of the original primary evaluation criteria and decreased the number of performance measures each MPO needed to evaluate. Doing so gave each MPO more time to collect additional details on a smaller set of measures. The MPOs used this revised list of evaluation criteria (see Appendix A) to evaluate the remaining 441 performance measures.

The Workgroup at Work

The workgroup evaluated measures in an Excel spreadsheet using drop-down lists to provide answers for each evaluation criterion. These drop-down lists ensured that answers were consistent across all of the measures during the evaluation process, allowing the workgroup to easily sort and filter measures based on the various evaluation criteria. This was useful in the first round of measure elimination when the workgroup filtered the 441 measures that had been evaluated and eliminated measures based on answers to the different criteria.



Source: SRPC

34% of the measures eliminated in this round were not related to transportation

53% of the measures eliminated in this round did not have a clear and readily available data source

Round I

The process was spread across three months because of the sheer number of potential performance measures the workgroup was dealing with. From mid-August to the conclusion of Phase II in October 2016, the workgroup conducted three rounds of eliminations to winnow down 441 measures to a more manageable set that the MPOs could track given current resources.

To prepare for the September 2016 meeting, each MPO evaluated approximately 110 measures. At the September meeting, the MPOs discussed, reviewed, and eliminated performance measures. During this exercise, the workgroup eliminated any measure not directly related to transportation (criterion 3: "Is the measure directly related to transportation?") and discussed measures marked "Unknown." The workgroup then eliminated measures that were marked "Not Recommended" in both the "Preliminary Recommendation for MPOs" and the "Preliminary Recommendation for DOT" criteria. Next, the workgroup discussed measures that were marked "Not Yet Determined" for the MPO recommendation criterion. The list below outlines the process used by the workgroup.

1. Filtered the list by evaluation criterion 3 ("Is the measure directly related to transportation?") where the answer was "No" or "N/A."
   a. Discussed "N/A" measures and changed those answers to either "Yes" or "No."
   b. Deleted measures marked "No."
2. Filtered the list by evaluation criterion 3 ("Is the measure directly related to transportation?") where the answer was "Unknown."
   a. Discussed "Unknown" measures and changed those answers to either "Yes" or "No."
   b. Deleted measures marked "No."
3. Filtered the remaining measures by evaluation criteria 12 and 13 ("Preliminary MPO Recommendation" and "Preliminary DOT Recommendation") where both were "Not Recommended."
   a. Corrected measures that should be considered further.
   b. Deleted the others.
4. Filtered the list by evaluation criterion 12 ("Preliminary MPO Recommendation") where the answer was "Not Yet Determined."
   a. Corrected measures that should be considered further.
   b. Deleted the others.

This process eliminated 289 measures, dropping the total from 441 to 152.

Round II

The workgroup made significant progress in eliminating measures in the first round, but 152 measures were still too many. Therefore, the MPOs conducted a second round of evaluations, which consisted of categorizing the measures and assigning a secondary recommendation. In making the secondary recommendation, the workgroup considered the criteria relating to data and feasibility from the primary evaluation results. Rockingham MPO suggested adding a criterion that categorized each measure as an outcome, process, or output measure based on the criteria established in "NCHRP Report 708: a Guidebook for Sustainability Performance Measurement for Transportation Agencies."[8] The MPOs then made a secondary recommendation for each measure. MPOs could choose recommendations from a drop-down list of the following options: Primary Recommendation, Secondary-High Priority, Secondary-Medium Priority, Secondary-Low Priority, Possible Future Metric, Not Yet Determined, and Not Recommended.

Each MPO had approximately 38 measures to re-evaluate prior to the October workgroup meeting, where the second elimination discussion took place. The list was filtered using the secondary recommendation for measures marked "Not Yet Determined." These measures were discussed and the recommendations changed. Measures that were marked "Not Recommended" were eliminated. Measures marked as "Possible Future Metric" were set aside for future consideration as data, technology, goals, or funding allows. 75% of the measures considered in Round Two had existing data. This second round of eliminations brought the list of measures down from 152 to 93.

Round III

The 10-month delay in the start of Phase II, plus the turnover in MPO staff, weakened the workgroup's stakeholder relationships. As a result, getting the needed stakeholder feedback in a timely manner was challenging. The workgroup wanted to use the information from these interviews to facilitate the final performance measure elimination discussion, in November, and to prioritize possible future measures. Possible future measures are ones the MPOs would like to implement, but cannot due to the lack of resources or data. The Stakeholder Engagement Strategy in Appendix B outlines the steps taken in this round of stakeholder engagement. The process began during the last week in September and ended on November 18, 2016.

The final measure elimination discussion on November 2, 2016, incorporated some of the stakeholder feedback, the information collected by the MPOs in the primary evaluation, the secondary evaluation recommendation, and four criteria developed as part of the tertiary evaluation. The 93 performance measures that survived the second elimination included the 19 proposed FHWA-mandated measures. These mandated measures are not optional, so they were not evaluated in this round. Instead, the MPOs discussed the 74 supplemental measures.

8 Ramani et al., "A Guidebook for Sustainability Performance Measurement for Transportation Agencies." (Washington, D.C.: Transportation Research Board, 2006), 22–24.

MPO Evaluation

In the third and final round of evaluation, the workgroup used criteria from "NCHRP Report 551: Performance Measures and Targets for Transportation Asset Management"[9] to score the remaining 74 supplemental measures.

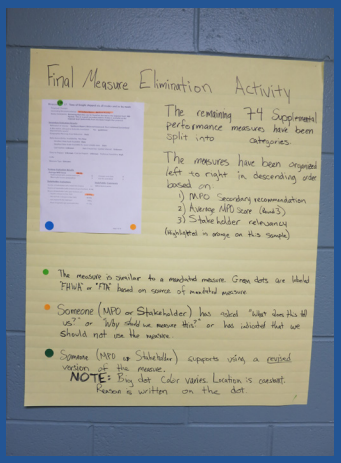
Each of the 13 criteria was set up with a drop-down list containing "Yes," "No," and "Maybe." "Yes" answers received three points, "Maybe" answers received two points, and "No" answers received one point. The highest score a supplemental measure could receive was 39 points. (The FHWA-mandated and proposed measures automatically received 40 points each because MPOs are required to implement them.) After the measures were evaluated, Strafford MPO compiled and calculated the average of the four MPO scores for each measure.

The purpose of this activity was to prioritize the final set of performance measures. While evaluating the measures with the tertiary criteria, the workgroup noted that, even this late in the process, the criteria were redundant and the scoring did not achieve the intended outcome. Sixty-five of the 74 measures received scores that were too similar. This clustering of scores

9 "Performance Measures and Targets for Transportation Asset Management" (Washington, D.C.: Transportation Research Board, 2006), 26.

The Workgroup at Work

Workgroup members evaluated measures hands on through meeting activities held at monthly meetings. On the right, Nathan Miller, Deputy Executive Director at Southern New Hampshire Planning Commission, points out information in the elimination activity. Below, David Walker, Transportation Program Manager at Rockingham Planning Commission, reviews the supplemental measures.



Source: SRPC

prohibited the workgroup from effectively prioritizing the measures based on their evaluation scores alone. The workgroup determined that, in future efforts, these criteria would be better used early on to eliminate measures that were unlikely to be implemented.

During the calculation, Strafford MPO found that the individual scores for some of the tertiary criteria were more useful than the average of all the scores received. For example, criteria such as "Can be implemented with current resources" or "Can be controlled" helped determine the feasibility and utility of a measure. The bolded criteria in the box to the right as well as criteria from the first round of MPO evaluation and the stakeholder spreadsheets, were considered in the final elimination.

Final Measure Evaluation Criteria

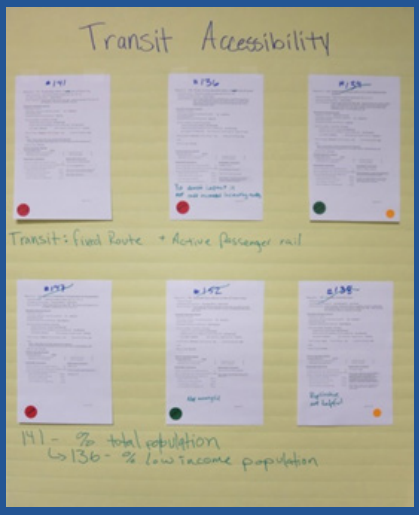
The 74 measures were grouped into these 13 categories:

- Transit accessibility
- Transit ridership
- Community accessibility
- Environment
- Alternative fuels
- Safety
- Infrastructure inventories
- Travel
- Housing and transportation costs
- Number of communities that have adopted a policy or have benefited from non-municipal funding
- Projects in the Ten Year Plan or State Transportation Improvement Plan
- Internal measures
- Funding sources for projects

To determine which measures were most representative of regional transportation needs and feasible to implement at this time, the workgroup discussed small batches of two to seven performance measures at a time. During this three-and-a-half-hour discussion, the MPOs defined common terms, edited the text of some measures, and identified topics that required further research to identify better measures. By the end, the list was reduced from 74 measures to 24: 12 finalized measures, nine that needed further revision or discussion, and three that needed further research.

These 13 criteria address whether each measure

- Is easy to understand
- Is well-defined
- Describes an existing condition
- Can be predicted
- **Can be implemented with current resources**
- Can be implemented with accuracy
- Can be implemented with precision
- Is applicable to multiple modes
- **Changes over time**
- **Can be controlled**
- Supports goals
- Has reliable data
- **Is meaningful across geographies**



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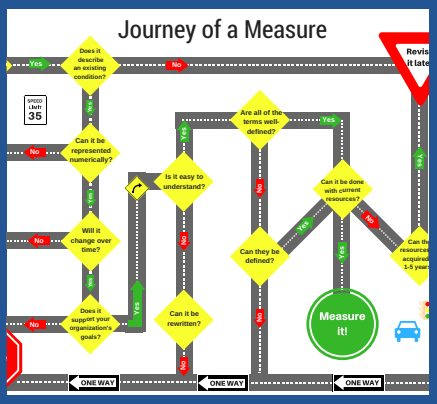
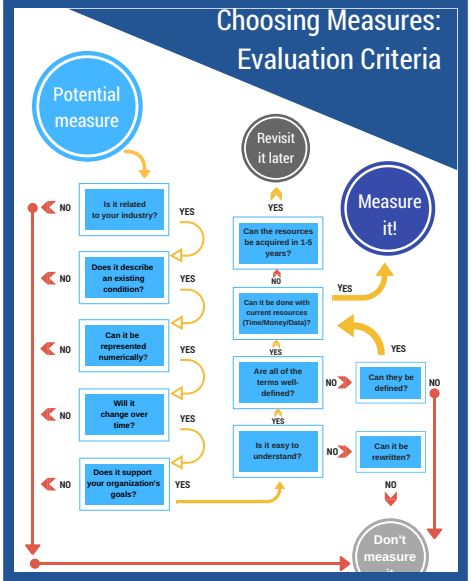




Source: SRPC

During the third and final elimination of measures, the group identified three topics that should be measured: **climate resiliency, bicycle infrastructure and accessibility, and pedestrian infrastructure** and **accessibility**.

Lessons Learned

At the end of Phase II, the workgroup evaluated the work conducted during the phase, focusing specifically on the process for evaluating and eliminating performance measures. Workgroup partners identified several areas that could be improved, especially the evaluation process, stakeholder engagement, and alignment of MPO regional goals with the supplemental measures.

Improving the Process

The workgroup agreed that the preliminary evaluation should be shorter. Too much time was spent on evaluating measures with 14 complex criteria when a smaller set of more effective questions could have been used. Nashua MPO recommended that the workgroup use a "straight face test" to determine potential feasibility based on a few simple questions:

- What transportation projects can I program in my TIP to move the needle on this?
- Is the measure reasonable?
- Is it related to transportation?
- Is it potentially feasible?

The workgroup noted that many of the measures could have been eliminated, with much less time and effort, if these questions had been used as the primary evaluation criteria.

There was agreement that assumptions, evaluation criteria, and drop-down list options should be better defined. The lack of clearly defined assumptions led to inconsistencies in how each MPO evaluated measures. During the second round of evaluations, MPOs were unable to categorize measures as outcome, output, or process because the definitions provided were unclear. The workgroup revisited this criterion in Phase III as part of the methodology development.

The workgroup continued to refine the criteria, determined how best to approach a preliminary "straight face test," and selected the most effective criteria from all three rounds to use in the future. These final criteria were discussed in greater depth during strategy development in Phase V.

Filling the Gaps

During the third and final elimination of measures, at the November workgroup meeting, the group identified three topics that should be measured: climate resiliency, bicycle infrastructure and accessibility, and pedestrian infrastructure and accessibility. Each had multiple measures early in this phase, but was eliminated during the three months of measure evaluations due to a lack of reliable data, scalability, feasibility, or for other reasons. However, these topics are very important to the MPOs and to the Phase I stakeholders (see the Synthesis Report).

The workgroup discussed a parallel timeline for these topics. Instead of quickly selecting arbitrary measures to immediately fill the gaps, the workgroup researched performance measures for each topic, re-connected with stakeholders who have expertise in these areas, determined the data needs of each measure, created a data collection plan and schedule, and planned to implement the measures within an agreed-upon timeframe. These performance measures were discussed in greater depth during Phase V.

Future Stakeholder Engagement

After Phase II, Stakeholder Engagement, Strafford MPO distributed the PlanWorks Stakeholder Assessment to stakeholders who provided feedback. A preliminary analysis indicated several specific areas for improvement: stakeholder understanding of the project process, understanding of stakeholder roles in the project, consistency of engagement, and networking opportunities for stakeholders in the project. Strafford MPO will develop and implement a Stakeholder Action Plan (Appendix C) incorporating suggestions from the PlanWorks Stakeholder Supporting Strategies document and creating additional strategies to improve stakeholder engagement for the remainder of the project.

Conclusion

Phase II was an intensive learning process for the workgroup. Through trial and error, the workgroup simplified and streamlined the evaluation criteria and much of the evaluation process. The experiences from Phase II enabled the workgroup to develop a more effective framework for performance based planning. This framework can be used after the project's completion and can serve as a model for others seeking to undertake similar efforts. As the workgroup moved into the next phase of the project, members were tasked with fine-tuning the 24 supplemental measures into SMART measures. SMART measures are Specific, Measurable, Achievable, Realistic, and Time-bound to ensure that feasible targets can be set by the MPOs for each region.

Phases III & IV: Methodology Development, Calculations and Trend Analysis

Source: SRPC

Dec. 2016
Workgroup begins to draft methodologies and creates a data subgroup

Jan. 2017
Workgroup reviews data subgroup recommendations, approves methodologies, and applies to measure calculations

Feb. 2017
Workgroup refines methodologies; uses approved methodologies to calculate and analyze trends

Mar. 2017
While reviewing methodologies, workgroup narrows measures from 24 to 7

April 2017
End of Phase III; continuation of Phase IV -- calculations and trends

Figure 10. Phase III/IV Timeline

Phases III/IV: Methodology Development, Calculations and Trend Analysis

"Phase III is the research, review, assessment, and selection of the methodology, protocols, and techniques to be used for measure calculation. This phase is closely aligned with Phase II, as the evaluation criteria will include an investigation of available data and analyses."[10]

"Phase IV includes the calculation of the measures to determine baseline conditions, as well as current and historic performance of a particular measure. The tasks in this Phase are crucial to the development of targets and goals during Phase V."[11]

-Excerpt from the Synthesis Report

Phases III and IV are symbiotic and overlap on the project timeline. To reduce redundancy in this document, they are combined here as well.

Background

During Phase II, the workgroup narrowed its list of 652 performance measures down to 24 supplemental measures. At the end of the November workgroup meeting, the 24 supplemental measures consisted of 12 finalized measures, nine measures that needed further editing, and three topics that needed further research. Throughout Phase III, the workgroup finalized the text for the measures, identified each measure as an indicator or performance measure, and developed methodologies for 21 measures. At the end of Phase III, seven supplemental measures were ready for Phase IV, while another three draft methods were set aside for further revision.

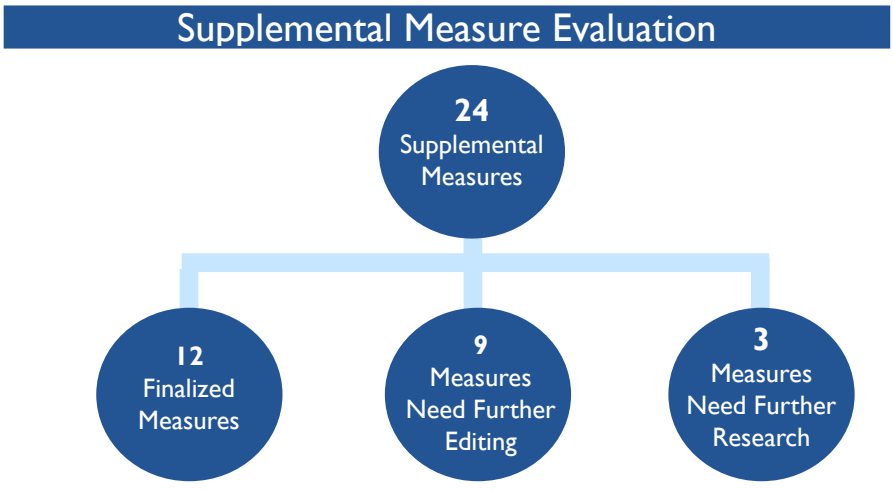


Figure 11. Supplemental Measure Evaluation

10 Strafford MPO. (2016). *The Collaborative MPO Approach to Performance Based Planning in New Hampshire.* Strafford Regional Planning Commission, 2016. Strafford Regional Planning Commission. http://www.strafford.org/cmsAdmin/uploads/synthesis-report_final.pdf.
11 IBID

In addition to the 24 supplemental measures, the workgroup wrote methodologies for the 17 FHWA-mandated measures and four FTA-mandated measures. These methodologies translated the text of the final rules into the same easy-to-read format as the supplemental measures.

Each MPO developed methodologies for up to six supplemental measures. The workgroup's data subgroup—consisting of staffers with data expertise from each MPO—reviewed the draft methodologies and recommended changes. After the data subgroup reviewed the methodology, the workgroup reviewed the recommendations and approved the methodologies. Once a methodology was approved, the workgroup began calculations and trend analyses. Final edits and revisions were made to the methodologies after calculations were completed. These final edits clarified the instructions, elaborated on information provided, and clearly defined the terms used in the methodology.

Development of Methodologies

After the November meeting, Strafford MPO sent to the other MPOs a spreadsheet with the 24 measures and the revisions that the workgroup members had agreed on. The MPOs were asked to answer two questions on this spreadsheet: "Is this measure revised correctly?" and "Are you willing to draft a methodology for this measure?" With these two questions Strafford MPO sought to ensure that the correct revisions had been made and that the MPOs had an opportunity to decline working on a measure if they lacked the subject matter expertise needed to develop the methodology. The MPOs filled in their answers, provided any additional comments, and returned the spreadsheet to Strafford MPO. Measures that were approved by all four MPOs were distributed evenly based on MPO willingness and ability to draft the method.

At its December meeting, the workgroup discussed the remaining measures that required further revision. Once a measure was agreed upon by the group, one of the MPOs would volunteer to work on it. If no one volunteered, the measure was assigned to the MPO that seemed to be most knowledgeable.

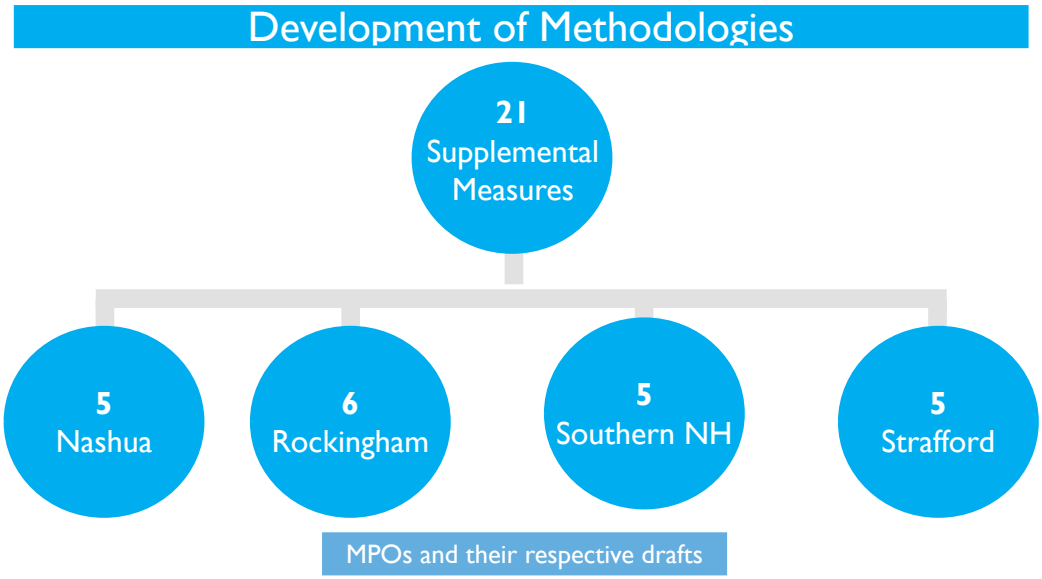


Figure 12. Development of Methodologies

Table 2. Methodology Comparison

Methodology Comparison		
	GSF Methodologies	SHRP2 Methodologies
Measure	●	●
Measure ID	●	●
Description	●	●
Goals		●
Type (input/output/ outcome)		●
Application/ Use		●
Scalability		●
Data Source Name	●	●
Data Source Owner		●
Data Source Last Update	●	●
Data Source Update Frequency		●
Data Source Download Date		●
Data Source URL	●	●
Data Source Metadata URL		●
Minimal Mapping Unit	●	●
Extent Used		●
Methodology	●	●
Author	●	●

Draft Methods

Strafford MPO developed a template for the methodologies based on a prior three-year statewide planning effort, Granite State Future.[12] The Granite State Future project took place from 2012 through 2014 and involved all nine New Hampshire regional planning commissions and other state and non-profit agencies. The SHRP2 workgroup considered some of the measures that Granite State Future used. The workgroup also adopted the Granite State Future methodology template, which is simple and easy to complete, and added several items to get more information about each measure's scalability and details about the data sources.

The methodologies include a brief description of each measure and its purpose; its type; the reasons for tracking it; the goals that it addresses; scalability up to NHDOT and down to project level; data source information including dataset names, owners, update schedules, geographic scale, and links to access the data and metadata; and step-by-step instructions for calculating the measure. The methodology template can be found in Appendix D. Final methodologies and definitions of common terms are in the Methodology attachment to the System Performance Report.

The workgroup agreed on a process for developing the methodologies. To ensure that best practices were used, the workgroup also agreed that MPOs should research and consider existing methodologies before drafting new ones. In addition, the MPOs should consider information gathered throughout the measure evaluations in Phase II and the feedback from Phase II stakeholders.

The MPOs developed draft methodologies over three months. Each month, the newly drafted methodologies were passed on to the data subgroup for QA/QC review, and then returned to the MPOs for final review and approval.

12 "Core Metrics Methodologies for Regional Comprehensive Plans," last modified 2012, http://www.granitestatefuture.org/files/7614/2184/8175/CoreMetricsMethodologies.pdf

Review of Methodologies

Draft methodologies were first reviewed by the data subgroup. Then, the workgroup discussed the feedback from the data subgroup, made additional changes, and came to a final decision on whether the measure should be calculated and targets set. Strafford MPO made final revisions as discussed by the workgroup and sent any methodologies that would be used for calculations to NHDOT for additional review. The final quality control check occurred during calculations. Occasionally, issues arose during calculations that the MPOs and data subgroup did not catch. These were adjusted in the final methodologies.

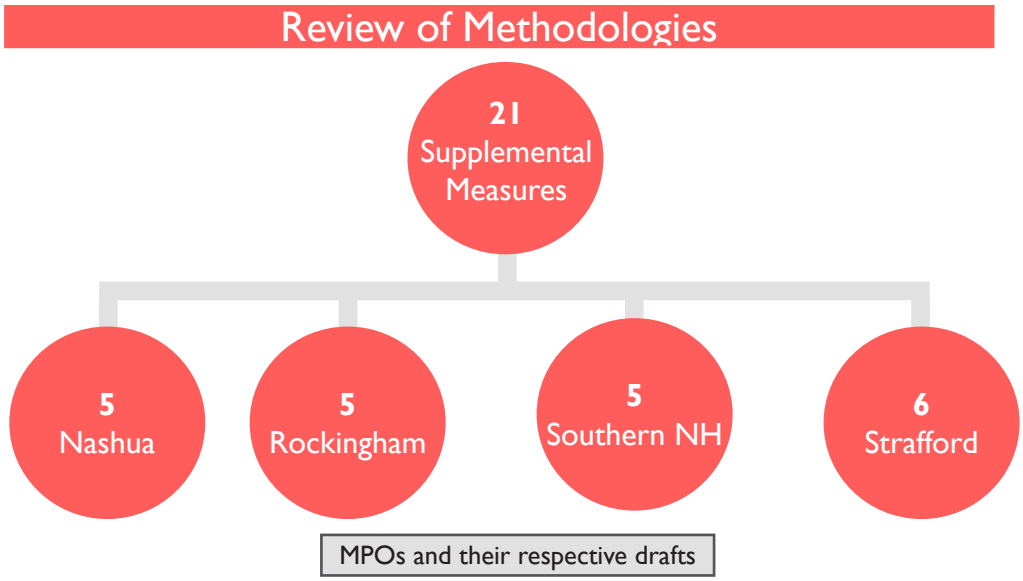


Figure 13. Review of Methodologies

Data Subgroup

At the July 2016 kick-off meeting, the workgroup decided it would be beneficial to create a data subgroup composed of MPO and NHDOT staff members who had data expertise. The subgroup's task was to ensure that the data used in this project was sound and the methodologies that were developed followed best practices. In December, January, and February, the data subgroup reviewed, revised, and commented on the draft methodologies that the workgroup developed.

Each month, Strafford MPO randomly assigned methodologies to the data subgroup members using a formula in Excel. The formula was set up so that the MPOs were not selected to review methodologies their organization developed. In this way, the two data subgroup members who were responsible for drafting their MPO's methodologies did not have to review their own work. Feedback from the data subgroup helped the workgroup determine that some measures were not ready to be implemented because they required more research or because the data used did not appropriately represent the topic being measured.

Approval of Methodologies

The workgroup discussed at its January, February, and March meetings the data subgroup's changes, comments, and recommendations pertaining to the methodologies. By the end of its March meeting, the workgroup had seven final methodologies and seven that were not ready to be calculated (see Tables 3 and 4).

Table 3. Pending Measure Explanation

ID	Pending Measures	Reasons for waiting
38	Number of publically accessible alternative fueling stations by fuel type	Alternative fuels are not widely available. The workgroup will revisit if and when these fueling stations are in higher demand.
227	Number of Communities served by Demand Response Transit or Volunteer Driver Programs that are active at least two days per week	The workgroup discussed this measure in depth, but has yet to determine the most effective way to track demand response and volunteer driver programs. This topic will require more research, and some measures addressing it will be finalized later.
228	Intercity bus and rail ridership	The workgroup does not wish to proceed with this measure because intercity bus ridership data belongs to private companies and may be challenging to access. The workgroup will pay attention to the upcoming Statewide Strategic Transit Assessment (SSTA) process to see if any measures result from that assessment.
242	Park and Ride utilization by facility	The workgroup has not determined the most effective way to address utilization, so this measure requires more research.
285	Percent of non-NHS federal aid system and non-NHS non- federal aid system that is in good vs. poor condition	This measure will be modelled after the FHWA- mandated pavement condition measures and the FHWA definitions of "good" and "poor" condition. The measure will apply these definitions to non-NHS roads to better represent the needs of NH roads. The workgroup has until the effective date of the PM2 Final Rule to seek guidance from FHWA in the development of this methodology.
399	Condition of rail lines and speeds allowed	Current state rail data provided to the MPOs lacks information regarding the Federal Railroad Administration classification. This information would enable the MPOs to better track this measure. The workgroup will discuss how best to get this information to the MPOs.
409	Red Listed Bridges (Total, State, Municipal)	Current bridge data provided to MPOs has some inconsistencies that NHDOT is working to resolve. In addition, this methodology is expanded to replicate the FHWA- mandated bridge condition measures and the FHWA definitions of "good" and "poor" condition. The measure will apply these definitions to non-NHS bridges to better represent the needs of NH roads and bridges. The workgroup has until the effective date of the PM2 Final Rule to seek guidance from FHWA in developing this methodology.

Table 4. PFPNH Final Measures

ID	PFPNH Final Measures
24	Transportation-related GHG emissions
39	Percent of transit fleet powered by alternative fuels
128	Percent of major employers served by public transit
141	Percent of total population within 0.25 miles of a transit stop and Percent of low-income population within 0.25 miles of a transit stop
229	Number of rides provided by fixed-route bus services
415	Remaining useful life of public transit fleet (Vehicle life remaining)
446	Number of motorcycle fatalities(five-year rolling average)

Calculations

Each MPO calculated the measures independently using the methodologies developed by the group. These calculations required the use of software including Esri's ArcGIS, Microsoft Access, and Microsoft Excel (see Table 5).

Rockingham MPO developed two specialized tools to calculate the measures. One was a Python script and ArcGIS tool to simplify the calculation of measure 141 (Percent of total population within 0.25 miles of a transit stop and the percent of low-income population within 0.25 miles of transit). The other was a modified version of an Excel tool—originally developed by the NHDOT Asset Management, Performance, and Strategies (AMPS) section—to calculate measure 415 (Remaining useful life of transit vehicles).

Table 5. Final Measure Calculation Software

ID	Final Measures	Excel	Access	ArcGIS	Python
24	Transportation GHG Emissions per Capita	•	•		
39	Percent of Transit Fleet using Alternative Fuels	•	•		
128	Percent of major employers served by transit			•	
141	Percent of population and low income population served by transit			•	•
229	Fixed Route Transit Ridership	•	•		
415	Remaining useful life for transit fleet		•		
446	Motorcycle fatalities	•			

The ArcGIS tool for measure 141 requires four inputs: a file geodatabase containing the files needed for the analysis, the area to be analyzed, the most recent ACS data, and the most recent census data. The tool calculates the total population and the population living in poverty for the area that is being analyzed. It is run once on the total area (community, MPO, state, etc.) and once on the area served by transit. The resulting output table reports three figures: total population, population residing in group quarters (for whom poverty status has not been determined), and population for whom poverty status has been determined and who are living below the poverty level.

The modified Excel tool for measure 415 extends NHDOT AMPS's tool, which is used to examine various transit assets, to enable the workgroup to calculate the remaining useful life of the assets. This measure complements the FTA performance measure "percentage of vehicles met or exceeding useful life benchmark" by providing a warning for vehicles that are about to exceed their useful life.

The remaining measures calculated in Excel use fairly simple formulas, pivot tables, or simply require reading a number out of a specified cell. The measures that are calculated using Access have the necessary queries written in the methodologies.

Trend Analysis

The workgroup discussed how best to address trend analysis, given inconsistent data availability for the supplemental measures. The workgroup determined that trend analysis ideally should consist of five iterations, but due to the varied schedules for updating the data sources, the number of iterations should depend on the frequency of the updates. For data updated annually or more frequently, the workgroup decided to calculate a minimum of five iterations. For less frequently released data, the workgroup determined that a minimum of three iterations should be used to determine trends. For measures where historical data has not been made available, trend analysis was not completed this year and the MPOs noted that the initial calculation is the baseline data. Table 6 lists the calculation frequency and the number of iterations used to establish current trend lines.

Table 6. Calculation Frequency and Iterations

ID	Measure	Calculation Frequency	Number of Iterations Years used
24	Transportation GHG Emissions per Capita	Every three years	Three: 2008, 2011, 2014
39	Percent of Transit Fleet using Alternative Fuels	Annual	Five: 2011-2015
128	Percent of major employers served by transit	Annual	Baseline: 2015
141	Percent of population and low income population served by transit	Annual	Baseline: 2015 (ACS and transit), 2010 (Census)
229	Fixed Route Transit Ridership	Annual	Five: 2011-2015
415	Remaining useful life for transit fleet	Annual	Baseline
446	Motorcycle fatalities	Annual	Five: 2011-2015

Conclusion

The current trend lines—and occasional lack thereof—affected target setting and strategy development in Phase V. For the five measures with historical data, the targets can be driven by recent trends as well as the strategies that will be implemented. For the two measures that use 2015 data as a baseline, the targets this year are not based on recent trends, but on ideal direction and expected impact of the strategies that are in place.

Phase V: Target Setting and Strategy Development

Source: SRPC

Figure 14. Phase V Timeline

Phase V: Target Setting and Strategy Development

"A follow-up to the Phase IV calculation of baseline conditions and historic trends is Phase V, where these trends are then analyzed and used in conjunction of other variables to determine desired trends and targets for the measures. The target-setting process involves consideration and integration of multiple factors, such as financial resources, technical considerations, policy-based considerations, and economic factors. This Phase will connect back to the work accomplished in Phase I, where identified stakeholders will provide additional input and participate in the target-setting process. Finally, this Phase will involve the identification of strategies needed to achieve the set targets. The project team and stakeholders will identify a series of alternative strategies to determine which strategy or combination of strategies will help the regions and the state achieve their desired targets."[13]

-Excerpt from the Synthesis Report

Background

In Phase IV, the workgroup calculated the seven supplemental measures and analyzed trends. These calculations and trends were used in Phase V to set targets and identify strategies. In addition, the workgroup developed long- term strategies for collaborative performance based planning efforts in New Hampshire. These long-term strategies address how best to work with NHDOT on the mandated measures and how to support the workgroup in the future, finalizing the remaining supplemental measures, addressing regional goals with the addition of supplemental measures, and addressing stakeholder values.

Target Setting

In this phase, the workgroup worked on setting targets for FHWA's safety measures, FTA's state of good repair measures, and the workgroup's seven supplemental measures. It also coordinated with NHDOT to set targets for the FHWA-mandated measures, and worked with the transit agencies to set targets for the FTA-mandated measures.

Target Setting for the Mandated Measures

By September 2017, the MPOs had set targets for the FTA state of good repair measures. In addition, the workgroup had participated in a workshop with NHDOT on setting safety targets and was preparing to calculate and set targets for the safety measures.

13 Strafford Regional Planning Commission. The Collaborative MPO Approach to Performance Based Planning in New Hampshire. (Rochester: Strafford Regional Planning Commission. 2016) http://strafford.org/cmsadmin/uploads/synthesis-report final.pdf

The MPOs determined, after much discussion, that it did not seem to make sense for them to simply adopt regionally the same targets NHDOT adopted statewide. The primary reason is the trend in a region could run counter to the state trend for a particular target. Instead, the MPOs determined, the best approach would be to develop targets using the same methods as NHDOT, so that the MPO targets represent each region's portion of the statewide trends. Simplicity and consistency in setting targets are key concerns of the workgroup, so the MPOs will work with NHDOT to ensure that they replicate the state's process.

The MPOs determined that two- or four-year targets should be used and aligned with existing schedules such as the TIP or metropolitan (long-range) plan updates. In general, the MPOs need to have their targets approved by their respective Policy Committees. Consequently, the MPOs will set targets in the quarter prior to the mandated due dates, in an effort to have time to gain the approval of their Policy Committees.

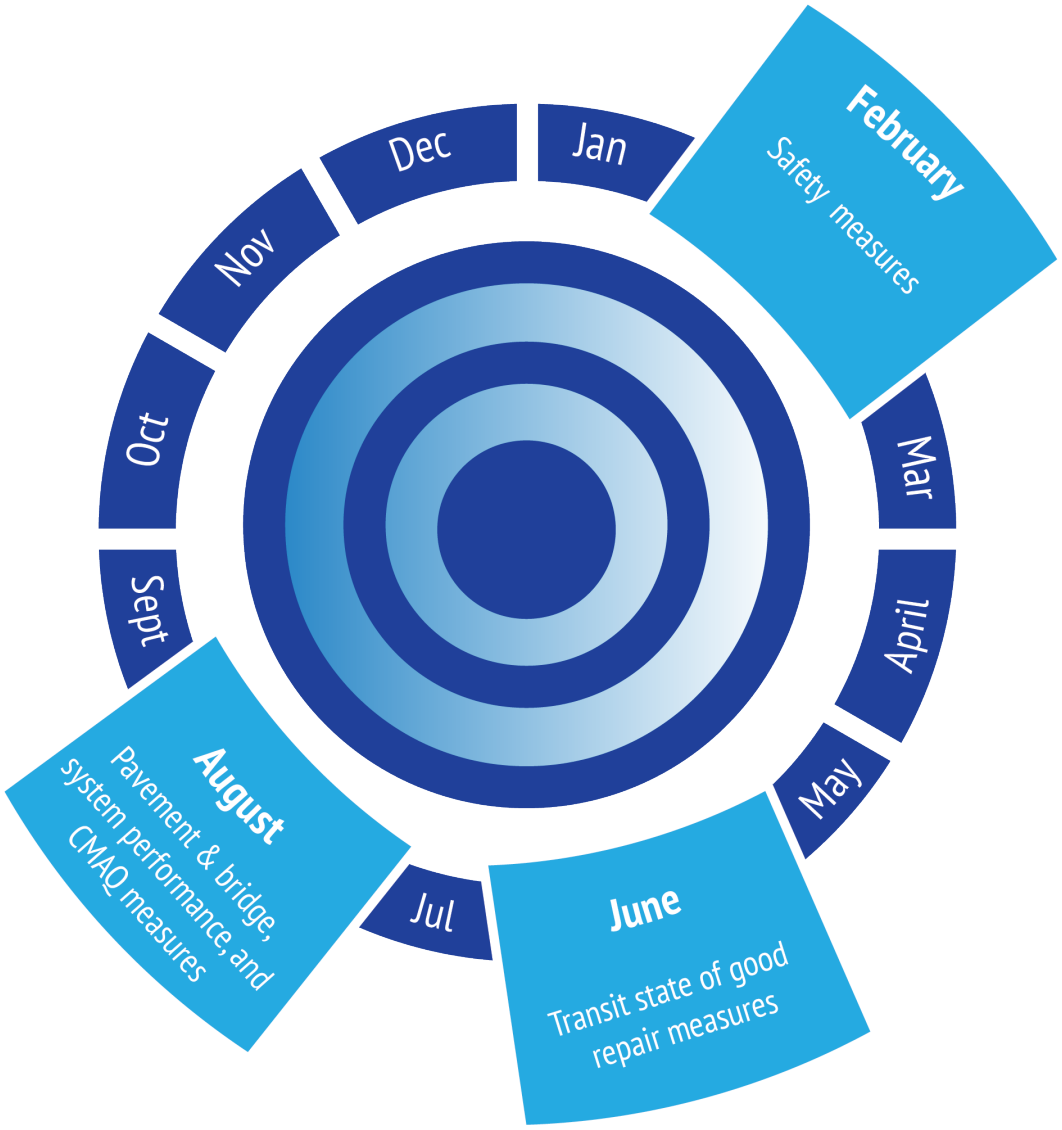


Figure 15. Mandated Measures MPO Target Deadlines

Through the safety target setting group, Strafford MPO has brought data improvement issues to the attention of state agencies. The state crash data, as provided to the MPOs, does not clearly or consistently mark crashes that involve bicyclists or motorcyclists. Therefore, it is difficult to accurately distinguish non-motorized serious injuries within the data.

Strafford MPO has developed a complex query to try to distinguish between bicyclists and motorcyclists. The query looks at any crash with a serious injury that is not marked as a pedestrian crash, where the data indicates that the injured person was or was not wearing a helmet or dark clothing. It assumes that anyone under the age of 16 was on a bicycle and that any vehicle whose make is null is a bicycle.

Source: SRPC

FTA State of Good Repair Measures

The FTA state of good repair measures address whether transit agencies' assets are in good condition. Assets include rolling stock (revenue-generating vehicles that are used for transportation), equipment (non-revenue-generating vehicles such as plows), facilities (garages), and infrastructure (rail tracks). Each transit agency is responsible for its own assets, and MPOs are responsible for all of the transit agencies serving their regions.

One New Hampshire MPO has only a single transit agency. This MPO was able to simply agree to the same targets as its transit agency. The other three MPOs needed to consider multiple transit agencies' assets, including the current condition of the various agencies and the targets they had set.

FHWA Safety Measures

On January 11, 2017, NHDOT hosted an FHWA Safety Target Setting Workshop. All the workgroup members except the FTA representative attended. A major outcome of this workshop was the development of a safety target setting group consisting of staffers from the New Hampshire Department of Safety (NHDOS) Office of Highway Safety, NHDOT Asset Management, Performance, and Strategies (AMPS) office, the NHDOT Bureau of Highway Design's state highway safety engineer, and a Strafford MPO SHRP2 staff member. This group met every two weeks for several months to discuss the state's target-setting process and the MPOs' data needs.

Participating in this group provided a valuable opportunity for Strafford MPO to voice concerns about the quality of the data on crashes and on vehicle miles traveled (VMT) to which the MPOs have access. If a motor vehicle accident in New Hampshire results in serious injury, it does not matter to the state in what municipality the crash happened; NHDOS and NHDOT must count it in their calculations. But MPOs must know the municipality in order to know in which MPO region the accident occurred. The MPOs also need to use VMT data for their regions, and NHDOT has developed regional factors for the MPOs to use in determining regional VMT based on the state totals reported to FHWA. Strafford MPO raised other concerns to this group about the accuracy of the data shared with the MPOs.

While participation in this group did not affect the MPOs' target-setting process, it was beneficial to meet with the state employees responsible for the state-level calculations and targets. It was also valuable to voice concerns about the data and to learn how the state is addressing the mandated safety performance measures.

Target Setting for the Supplemental Measures

At the conclusion of Phase II, the workgroup had a list of 21 supplemental measures and three placeholders for measures that would be selected in Phase V (see the section on Future Measures, below). During Phase III, the workgroup discussed which of these "measures" really tracked the workgroup's regional transportation performance and which were simply indicators of current trends. The workgroup can calculate and analyze trends for any indicator, but setting targets for them is not always realistic. In the end, the workgroup set targets for seven supplemental performance measures. Table 7 shows the desired direction for each one.

Since several of these measures use the same or similar data as some of the mandated measures, the MPOs decided to group the supplemental measure calculations and target setting with the most similar mandated measures.

Table 7. Desired Measure Targets

ID	Measure	Target
24	Transportation related GHG emissions per capita	
39	Percent of transit fleet using alternative fuels	
128	Percent of major employers served by transit	
141	Percent of population and low income population served by transit	
229	Fixed route transit ridership	
415	Remaining useful life for transit fleet	
446	Motorcycle fatalities	

Strategy Development for Achieving Targets

At one of the workgroup meetings, the MPOs discussed what could be done to affect each supplemental and mandated measure. Table 8 summarizes the types of projects or outreach that could be undertaken in a region to help achieve the targets that are set.

Table 8. Measure Strategies

PFPNH Measure	Strategies to achieve targets
Transportation Related GHG Emissions per Capita	• Congestion Mitigation and Air Quality Improvement Program (CMAQ) projects • Bike and pedestrian commuter-related projects • Transportation alternatives projects • Electric charging and other alternative fueling stations • Transit capital improvements (alternative fuel buses, hybrid fuel buses) • Improved freight • Transit-oriented development • Idle-reduction projects • Educational outreach
Percentage of transit fleet powered by alternative fuels, Remaining useful life of transit fleet	• Congestion Mitigation and Air Quality Improvement Program (CMAQ) projects • Transit capital improvements (alternative fuel buses, hybrid fuel buses)
Percentage of major employers served by public transit, Percentage of total population within 0.25 miles of a public transit stop and percentage of low-income population within 0.25 miles of public transit	• Transit-oriented development • Transit expansion • Complete streets projects • Stop location studies • Employer transit subsidies • Travel demand modeling • Educational outreach
Fixed-route-transit ridership	• Transit-oriented development • Transit expansion • Complete streets projects • Travel demand modeling • Congestion Mitigation and Air Quality Improvement Program (CMAQ) projects • Educational outreach
Motorcycle Fatalities	• High-friction pavement • Highway Safety Improvement Program projects • Improved pavement condition • Educational outreach

Future Implementation

Source: SRPC

Future Implementation

Performance based planning is a cyclical process on which the Partnering for Performance NH (PFPNH) workgroup must work continuously and collaboratively. The workgroup has already set targets for supplemental measures beyond the federally mandates that will benefit the region. As new data is collected and new technology is adopted, the workgroup can continue working on mandated and supplemental measures. The group's priorities are incorporating new data collection efforts into UPWP plans, continuing to work with stakeholders to identify existing data sources, improving coordination with NHDOT, and building on current resources especially time, money, and expertise.

Performance based planning also requires PFPNH workgroup members to be in contact with stakeholders not only to improve the process but also to address performance areas that are not covered by existing measures. In addition to maintaining a website that contains the performance measures developed in this project and updates on work completed by the workgroup, PFPNH will reach out to interested stakeholders to establish a framework of contact to move forward. The workgroup will meet one-on-one with stakeholders that have been involved in the project to assess weaknesses and strengths in terms of engagement and to map a path for the future. The workgroup also hopes to build solid relationships with stakeholders from all phases of the project and all rounds of engagement. The workgroup members realize that consistent communication is important for holding the attention and enthusiasm of stakeholders and hopes to improve on past efforts to be more immediate and regular in their communications. The group also will make a concerted effort to reach out and engage closely with experts in areas where the group had trouble garnering interest.

Other priorities of the workgroup are working with NHDOT on the mandated measures and improving data quality and availability. The system performance measures use a dataset called the National Performance Management Research Data Set (NPMRDS), which uses road segments that must be conflated with another system of road segments. The MPOs will work with NHDOT to ensure the conflated segments make sense. The quality of the safety data in the database currently shared with the MPOs is severely lacking. The MPOs will continue to work with the state to improve this data and will educate local police departments on the importance of accurately reporting crashes to the state.

The workgroup will track progress toward goals for the mandated and supplemental performance measures over the next several years, making note of how projects affect various measures and determining how better to reach these goals.

During the past year, the workgroup realized that the four MPOs are stronger when they work together. The workgroup is developing long-term strategies for continued collaboration to strengthen a number of MPO processes. Some of the high-priority issues are developing consistent Transportation Improvement Program (TIP) revision procedures, enhancing communication and understanding between the MPOs and NHDOT in regard to data quality and consistency, coordination of aspects of long-range plans, and developing an MPO guidebook for New Hampshire.

Stakeholder Priorities

By the end of Phase II, Strafford MPO had conducted two rounds of stakeholder engagement. Phase I stakeholder engagement was qualitative in nature. Strafford MPO conducted 25 individual and group interviews with a total of 86 participants. These interviews were recorded and transcribed. The verbatim transcriptions were analyzed using qualitative data analysis software called NVivo. This analysis enabled Strafford MPO to identify additional measures to consider in Phase II.

Phase II stakeholder engagement took place during the middle of the workgroup's measure elimination process. MPOs identified their regional stakeholders, and Strafford MPO conducted the engagement. This round was a mix of quantitative and qualitative techniques. The quantitative portion had stakeholders review relevant lists of performance measures to help the workgroup assess what is being tracked and what data may be available. The qualitative portion consisted of one-on-one interviews, which were transcribed and analyzed much like the Phase I interviews.

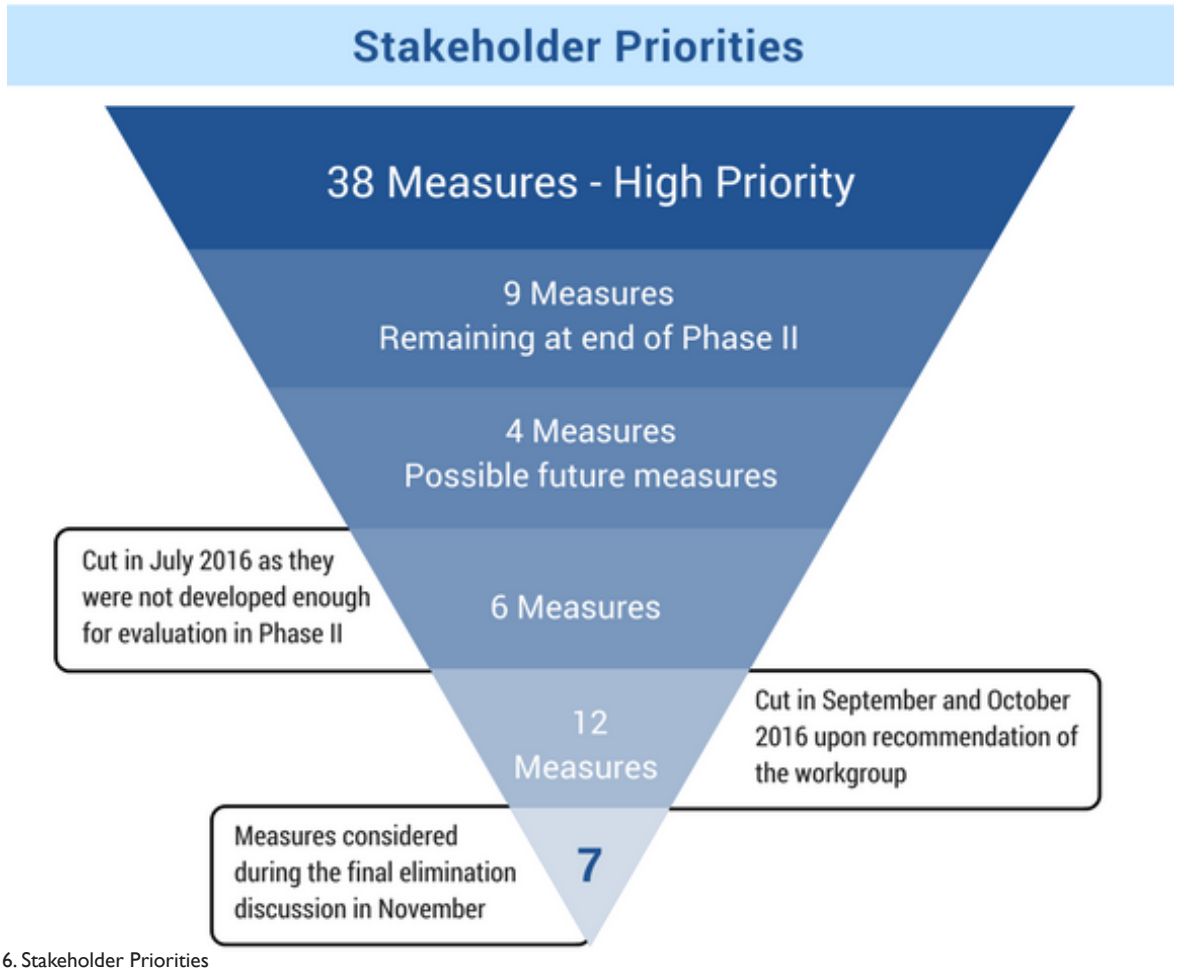


Figure 16. Stakeholder Priorities

Activity at June Colloquium
Source: SRPC


Stakeholders at the June Colloquium
Source: SRPC

The key take-away from the Phase I stakeholders was a list of priorities—measures that were mentioned by more than one stakeholder during the interviews. Of the 38 measures identified as high priority, nine remained on the list at the end of Phase II, four were marked as possible future measures, six were cut in July 2016 because they were not developed enough for evaluation in Phase II, 12 were cut in September and October 2016 upon recommendation of the workgroup, and seven were considered during the final elimination discussion in November. One measure eliminated in July, one eliminated in September, and one eliminated in November were very similar to measures that were kept. Table 9 shows the Phase I priorities and what the workgroup decided for each measure.

The key take-away from Phase II engagement was that, although interest in the project remained for some stakeholders, the long delay between Phase I engagement and the beginning of Phase II caused significant attrition. Some stakeholders still maintained interest, energy, and were happy to re-engage and give feedback. Their feedback had a considerable impact on the workgroup's selection of measures to proceed with. Stakeholder priorities and areas of interest also influenced our process.

A strong takeaway from this engagement was that the workgroup had allowed too much time to pass between stakeholder contacts. The project had lost relevance and context for some. The re-introduction and explanation of the project was met with less enthusiasm. The workgroup learned a valuable lesson from this experience. Acknowledging that engagement had not been overseen or conducted effectively, the workgroup members set out to make up lost ground with stakeholders. They sent update communications and organized a colloquium aimed at returning stakeholders to the fold and engaging them in the process the workgroup had gone through.

Colloquium

The end-of-project colloquium, held in June 2017, focused on the stakeholders' impact on the group's decision process. The workgroup did not want those who had given their time, help, and expertise to feel as though their input had gone to waste. It hadn't! Four out of the seven supplemental measures that are ready to implement were priorities from the stakeholder interviews.

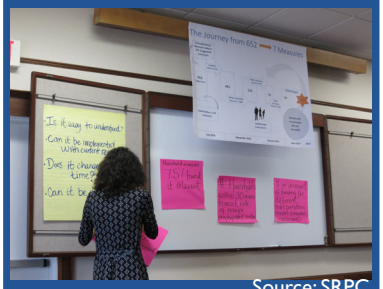

Source: SRPC

Table 9. Phase I Priorities and Decisions

Phase I Priority Measures	What happened to it (in 2016)
• Mixed land use patterns that are walkable and bikeable • Miles of road by pavement conditions (NHS, state, local) • Performance measure related to finance of highway trust fund • Performance measure related to finance of infrastructure & system preservation • Performance measure related to finance of transit • Performance measure related to sprawl and development density-related performance measure	Eliminated in July
• Access to healthcare (by education and income) • Congestion/operational level of service on key corridors • Bicycle level of service (LOS) • Level of traffic stress (bicycles) • Pedestrian level of service (LOS) • User experience & perception of safety, per mode • # CO2 emissions per capita	Eliminated in September
• Miles of rail lines capable of 40mph speed • Transportation emissions (ozone or particulate matter) • # volume/capacity ratio (grade) • Traffic volume • # of complete streets projects	Eliminated in October
• Electric charging stations (# of stations or # of vehicles) • Regulatory revisions adopted to promote bike-ped friendly development (# of ordinances or land use regulations) • % population with access to multi-modal transportation • Access to community anchor institutions • Commute to work mode share • # and severity of accidents • # of injuries by mode share	Eliminated in November
• Percentage of population with access to public transportation • Local transit ridership (Fixed-Rate) • # of red list bridges (state and local) • Tons of freight shipped via all modes	Methodology drafted
• Elderly/disabled ridership (# of riders)	Methodology drafted; Combined with demand response and volunteer driver programs
• Intercity transit ridership (# of stations) (# of vehicles)	Methodology drafted; combined with passenger rail
• Volunteer driver program ridership (# of riders)	Methodology drafted; Combined with demand response, elderly, and ADA ridership
• Passenger rail ridership (# of boardings and alightings)	Methodology drafted; Combined with Intercity Transportation
• # of highway fatalities (5-year)	Methodology drafted; Rephrased to match FHWA Mandated measure
• #VMT per capita • Access to employment • Pedestrian infrastructure (miles or percentage) • Bike infrastructure (lane miles per capita)	Flagged as a possible future measure

Future Measures

Throughout this project, hundreds of measures were discarded or set aside for various reasons, including relevancy and data availability. Over 40 measures were flagged in Phase II as "possible future measures," which may be revisited once data is more available or technology changes. Many of these measures were flagged due to a lack of reliable data. Some were flagged due to their vague wording (e.g., "Access to employment" needs more defining before the workgroup can do anything with it.). The workgroup identified topics it would like to address, but for which there are no feasible measures. To aid in addressing these issues, attendees at the end-of-project colloquium were asked to help brainstorm measures for key topics the workgroup would like to cover in the future. The workgroup will conduct more research and start a data collection and management plan to ensure that the MPOs use consistent data collection processes to work toward building databases to address these additional measures. The suggested measures from the June 2017 colloquium attendees can be found in Table 10.

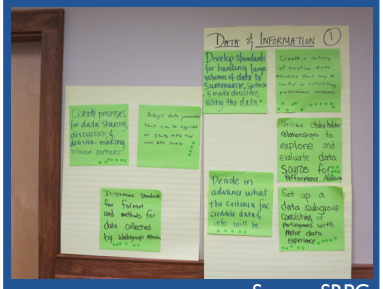


Source: SRPC

Implementing Future Measures

55% of the possible future measures did not have readily available data

The workgroup will need to collect data for many of the measures in these gap areas. To do so, the group will develop a data collection and management plan to ensure that each MPO collects the same data the same way. There are three inventories that, once collected, will give the workgroup options for which measures could be implemented: culverts, sidewalks, and some sort of bicycle infrastructure inventory. The workgroup will work with subject matter experts in the development of this plan and will likely adopt the statewide asset data exchange system (SADES) culvert and sidewalk inventory protocols and a pilot program for the level of traffic stress put on bicyclists. While the group will not be able to implement any new measures immediately, its goal is to be able to implement new measures in these areas within the next five years.



Source: SRPC

Whether the workgroup chooses to implement any of these, or other, measures in the future, it is important that there is a framework to verify that a measure is ready to be calculated, that it tells something meaningful, that it can be affected by MPO efforts, and that it considers potential targets.

At the conclusion of Phase II, the workgroup discussed the evaluation criteria used throughout the phase. The workgroup concluded that potential measures should be passed through few simple screening questions first to determine whether further research and evaluation are necessary. These preliminary questions could be:

- Is this measure directly related to transportation? If not, stop here.
- Does the measure change over time? If not, stop here.
- Can the measure be controlled by an MPO? If not, it is an indicator. It can be tracked, but it is not a measure of performance.
- Is there likely to be reliable data available now and in the future? If not, the measure should be considered again in the future.
- Does the measure address a transportation goal? If not, consider first what benefit there is in measuring it.

Table 10. Possible Future Measures

Topic	Possible Future Measures
Economic Development	• Number of jobs within proximity to transit • Other density measures related to economic development • Number of Complete Streets policies • Commute times and/or commute distances • Cost of transportation (fuel, transit, wages, etc.) • Miles of Trails • Vacant store fronts (from last work group meeting, not colloquium) • Number of new building permits • Revenues from Meals and Rooms Taxes (supports FAST Act "enhance travel and tourism" goal)
Bicycles and pedestrians	• Level of Traffic Stress • Miles of sidewalk/bike lane meeting AASHTO standards • Ratio of sidewalks/bike lanes to motor vehicle infrastructure • Connectivity • Barriers • Signal control (Traffic signals that can be triggered by bikes/ pedestrians) • Line painting • Communities with Complete Streets policies • Crosswalks at bus stops • Percent of transit fleet that can carry bikes • Percent of fatalities per capita that are non-motorized • New bike sales vs new car sales • Ridership via Strava and similar apps • Percent of projects incorporating AASHTO accommodation • Bike parking at transit stops • Traffic signals
Resilience	• The number of bridges rated as "critical" for scour. • The cost of infrastructure reconstruction following federally -declared disasters. • The number of riverine corridors with fluvial erosion hazard studies completed that identify threatened infrastructure. • The number of culverts inventoried according to the NH SADES data collection framework. • FEMA-related infrastructure reconstruction costs (and associated local match)
Freight	• Freight reliability • Efficiency • Negative Externalities • Emissions per ton of freight by mode • Limitations of freight movement

The workgroup should strive to use the lessons learned throughout this process when seeking new measures to implement. This will ensure not only that the new measures are SMART, but that they help to create a more complete picture of transportation in New Hampshire.

Conclusion

To say that collaboration was vital in accomplishing the project is an understatement. The value of collaboration between decision makers and stakeholders to establish a framework for performance based planning was immeasurable.

By collaborating with various agencies and valued stakeholders, regional needs that might have been overlooked were brought to the forefront. Six hundred and fifty two measures were identified at the beginning of this project. In less than six months, those measures were analyzed and narrowed down to seven clear and well-defined measures that represent the current condition of transportation in New Hampshire. From infrastructure to safety, these supplemental measures bind the workgroup members to a commitment to work together toward common goals. If any single agency in the state had attempted to complete this work alone, it would have taken much longer with less chance for success. Working together was efficient, smart, and fun. This interagency collaboration led to better communication, shared resources, efficient timelines, and well-established practices for future regional projects.

This project was an immense success. The unprecedented collaboration forged between group members has led them to decide to continue working together. They will operate as "Partnering for Performance NH—Working Together for New Hampshire's Transportation Future." The group will maintain a website that will give updates on their progress toward goals as well as ongoing advice on project prioritization, methodology refinement, reporting, target-setting, and so on.

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Appendices

Source: SRPC

Appendix A. Primary Evaluation Criteria for Selecting Measures

Partnering for Performance NH
Primary Evaluation Criteria for Selecting Measures

Key Evaluation Categories (EC)	
Evaluation Category 1	Relevance & Coordination
Evaluation Category 2	Data Accessibility, Availability, and Quality
Evaluation Category 3	Feasibility
Evaluation Category 4	Other

Fields by Categories

Evaluation Category 1: Relevance & Coordination

1. **Field:** ***Is the metric relevant to federally mandated requirements/goals OR suggested federal guidelines?***
    - Definition: Is the metric relevant to federal requirements, such as FHWA/FTA Requirements, National Performance Goals? Is the metric relevant to suggested federal guidelines, such as Federal Planning Factors and NH FHWA Planning Emphasis Areas? Refer to the table below for some of the key federal requirements and guidelines.

MAP-21 National Goals (Requirements)	Federal Planning Factors (Guidelines)	NH FHWA Planning Emphasis Areas (Guidelines)
• Safety • Infrastructure condition • Congestion reduction • System reliability • Freight movement and economic vitality • Environmental sustainability • Reduced project delivery delays	• Economic vitality • Safety • Security • Accessibility and mobility options • Environment • Modal integration and connectivity • Efficient management and operation • Preservation • Resiliency and reliability • Travel and tourism	• MAP-21 Implementation • Regional Models of Cooperation • Ladders of Opportunity

Pick List
Yes – requirements
Yes – guidelines
Yes – both
No
N/A

2. Field: *Geographic Planning Area Relevance*

Definition: Is the metric relevant for geography and scale of MPO /RPC regions (regional), or relevant to only the state DOT (state)?*

**Keep in mind that just because a metric is relevant at the state scale, does not mean it is also relevant at the regional scale*

Pick List
Regional
State
State/Regional
Neither
Unknown
N/A

3. Field: *Is this metric directly related to transportation?*

Definition: Is the metric directly related to transportation planning? Some of the measures that were suggest in the Phase I interviews may not directly relate to transportation planning. For example, a metric for school lunch programs and obesity would not be directly related to transportation planning. If an immediate transportation connection cannot be made from the suggested measure, the measure would not be recommended.

Pick List
Yes
No
Unknown
N/A

Evaluation Category 2: Data Accessibility, Availability, and Quality

4. Field: *Data Accessibility/Availability*

Definition: This criterion asks two questions: Is the data already available (Yes/No) and how easy is it to obtain the data (Easy/Difficult)?*

**Keep in mind that some data is available but difficult to access. Alternatively, data may not be available currently but would be quick and/or easy to collect.*

Pick List
Yes/Easy
Yes/Difficult
No/Easy
No/Difficult
Unknown
N/A

5. Field: *Smallest Data Scale Available*

Definition: Smallest (most detailed or granular) geographic unit available.

Pick List
Federal
State
Regional
County
Municipal
Sub-Municipal
Unknown
N/A

6. Field: *Smallest Data Scale Available for Most Reliable Data*

Definition: Smallest (most detailed or granular) geographic unit for the highest quality data available.

Pick List
Federal
State
Regional
County
Municipal
Sub-Municipal*
Unknown
N/A

**Elaborate in the Notes. I.E.: Neighborhood, transit.*

7. Field: *Last Update*

Definition: When was the dataset last updated?

Pick List
< 1 year ago
1-5 years ago
5-10 years ago
10-15 years ago
15+ years ago
Unknown
N/A

8. Field: *Data Frequency/Update Interval*

Definition: What is the frequency of data generation and/or release? Use the most frequently updated (and available) dataset.

Pick List
Annual (or more frequent)
Every 2-4 years
Every 5+ years
Every 10+ years
Varies*
Unknown
Other*
N/A

** Elaborate in the Notes*

Evaluation Category 3: Feasibility

9. Field: *Time to Prepare*

Definition: Time to access, prepare, & calculate data (relative amount and base from workgroup lens perspective). If data is available for the measure, how long will it take members of the Workgroup to perform a calculation? Is the measure quick or slow to calculate?

- Quick (will take a reasonable time to prepare data and calculate the measure)
- Moderate
- Slow (will take an unreasonable amount of time to prepare data and calculate measure)

Pick List
Quick
Moderate
Slow
N/A

10. Field: *Cost to Prepare*

Definition: Cost to access, prepare, and calculate data and measures. If data is accessible, how expensive (in relative terms) would it be to retrieve the data, prepare it for calculations, and use it to calculate the measures?

Pick List
High
Moderate
Low
N/A

11. Field: *Technical Feasibility*

Definition: Technical feasibility to access, prepare, and calculate data and measures.
What is the feasibility of obtaining this measure for the entire state (including rurals)? What is the feasibility of generating this metric using existing resources? Include MPO/DOT specific info in notes if needed. *Refer to Fields # 4 - 10.*

- High
  - Data available at adequate frequency/easy to access AND calculation time is quick
- Moderate
  - Data available at adequate frequency /easy to access BUT calculation time is slow to moderate
  - Calculation time would be quick to moderate, BUT data is difficult to access
- Low
  - Data not available at all (or at adequate frequency)/difficult to access
  - Calculation time is slow or moderate

Pick List
High
Moderate
Low
N/A

Evaluation Category 4: Other

12. Field: *Preliminary Recommendation to MPOs*

Definition: Preliminary recommendation for the MPOs. After evaluating the metric via each of the criteria, this was the final [subjective] recommendation of the individual reviewer. This recommendation should make it clear whether the measure is one of the following: Primary Metric, Secondary Metric, Potential Future Metric, Not Recommended, or Not Yet Determined. The Workgroup will go through the list of recommendations to refine each one (as in the GSF process).

- Primary Metric
  - MAP-21 Required Metrics go here
- Secondary Metric
  - Elective measure
- Possible Future Metric
  - May not have the capacity to measure now but is tied to a regional issue and may be possible to measure better in the future
- Not Recommended
- Not Yet Determined

Pick List
Primary Metric
Secondary Metric
Possible Future Metric
Not Recommended
Not Yet Determined

13. Field: *Preliminary Recommendation to DOT*

Definition: Preliminary recommendation for DOT. After evaluating the metric via each of the criteria, this was the final [subjective] recommendation of the DOT. This recommendation should make it clear whether the measure is one of the following: Primary Metric, Secondary Metric, Potential Future Metric, Not Recommended, or Not Yet Determined. The Workgroup will go through the list of recommendations to refine each one (as in the GSF process).

- Primary Metric
  - MAP-21 Required Metrics go here
- Secondary Metric
  - Elective measure
- Possible Future Metric
  - May not have the capacity to measure now but is tied to a regional issue and may be possible to measure better in the future
- Not Recommended
- Not Yet Determined

Pick List
Primary Metric
Secondary Metric
Possible Future Metric

Not Recommended
Not Yet Determined

14. Field: *Notes/Comments*

Definition: Any additional information on the metric that is not covered in the criteria (but that is relevant to final recommendation) goes in this field. This field should also contain details for any criteria that need elaboration.

15. Field: *Links*

Definition: Any links to more information, potential data sources, etc.

Stakeholder Engagement Strategy for Performance Measure Selection

During this phase of the project, stakeholder engagement will be conducted to gain feedback on the list of potential performance measures to help further narrow the final list. The MPOs will identify regional stakeholders and introduce them via email to SRPC. SRPC will conduct outreach with the MPO identified stakeholders along with statewide stakeholders—like NH DOT, NH DES, and the rural RPCs—and any remaining interviewed stakeholders from Phase I.

The following is an outline of the engagement process:

1) Stakeholder groups were based on areas of interest from the elective measures list
   a) IE: Transit, Freight, Municipalities (TAC & Policy), Public Health, Environment, Air Quality, Equity, Safety, Infrastructure, and Bike/Ped
2) Type of engagement will be dependent upon strength of current working relationship
   a) IE: Strong working relationships, engagement could be conducted via email. Weaker to nonexistent working relationships would require either in-person or phone conversations
3) The purpose of engagement is to determine measure feasibility, find existing data sources, and gauge stakeholder willingness to help with strategy development
4) The engagement message will be framed in a way that stakeholders will see value in participating in this outreach effort
5) The Workgroup will identify stakeholders for SRPC to conduct the engagement specifically in areas of interest in which they have networks. Areas where the Workgroup does not have networks will be engaged by SRPC
6) Stakeholders will receive the measures that are relevant to their areas of interest along with abbreviated stakeholder criteria
7) Stakeholder feedback will be incorporated into the development of the final list of measures before October 31, 2017
   a) Further engagement dependent upon what measures make the final list. Relevant stakeholders are to be asked if they would be willing to be involved in strategy development

Example: SRPC's Regional Stakeholders

Area of Interest	Example Stakeholder
Transit	COAST, UNH's Wildcat, Amtrak Downeaster
Freight	New Hampshire Northcoast, S&J Trucking
Public Health	Frisbee Memorial, Wentworth-Douglass
Environment & Air Quality	Conservation Law Foundation, UNH Sustainability Institute, Piscataqua River Estuaries Partnership (PREP)
Equity	Alliance for Community Transportation (ACT), Avis Goodwin Community Health
Safety	Strafford County Sheriff's Dept., Traffic Incident Management Group (SMRPC)
Infrastructure	DOT Districts, UNH Planning
Bike/Ped	Seacoast Area Bike Riders (SABR), CommuteSmart Seacoast

All feedback counts. This engagement is opinion based and our messaging is key. There is a need to convey that stakeholder input will go towards the creation of a greater regional transportation vision

Process:

1. MPOs conduct introductory emails by September 21, 2016
2. SRPC will email instructions and Excel sheets with topic-area specific measures and the pick list questions*
3. SRPC will receive responses from stakeholders
4. SRPC will hold phone call or in-person meetings to ask follow-up questions
5. Results will be compiled and reviewed by the Workgroup to determine the final list of measures

* The email to stakeholders (#2 above) will include instructions for the stakeholders. These instructions will request that they review the measures in the spreadsheet and answer yes or no to three questions per measure. It will include clarification on two of the questions. After they have evaluated the measures and returned them to SRPC, we will schedule phone or in-person meetings to ask open-ended follow-up questions to gain more information. The pick list questions, clarification to the questions, and the follow-up questions are as follows:

Pick List Questions:

1. Is it relevant to your industry? (If no, skip other questions)
2. Are you required to track this?
3. Is there manageable and sustainable data available for this metric?

Key for Pick List:

Q. What does "required" mean?
A. The federal and/or state government requires that your organization track and report on this information.

Q. What is "Manageable and sustainable" data?
A. The data is measurable. It is updated consistently. The margin of error is minimal. It will be held to the same standards in the future.

Phone call or In-Person Conversation with responsive Stakeholders - Follow-Up Questions:

What did you like about the measures that you listed as relevant?

For the measures that were not relevant, could you tell us why they are not relevant?

Could any of the measures be changed so that they are more relevant to you or your area of interest?

For the measures that you are required to track, what are the rules/laws that require them?

Do you collect data for any of the measures on the list? If so, are you able to share the data that you collect?

For measures that you do not collect data on, would you know of available data sources for these measures?

Is your organization required to collect data or calculate any transportation related performance measures that were not covered in the list? If so, what are they?

Stakeholder Action Plan

	Issues Raised by Stakeholders	Improvement Strategies	September 2017 Update	New Strategies
Communication *Stakeholders' perceived ability to inform the decision makers	• General communication should be improved • Communication has not been consistent • Stakeholders specifically want to understand how their time and input has impacted the project	• Send an update "postcard" once a month highlighting how input from stakeholders has helped • Create a decision making flow chart and send out with update • Invite stakeholders to our colloquium • Use a section of group website to clearly document and outline the decision making progression and "story" • Increase Social Media presence to engage stakeholders • Invite to comment and participate in our blog	• While we have not sent a monthly postcard, there has been an event or an extensive e-mail update sent out in each of the subsequent months • The decision flow chart has worked well in terms of illustrating our process and increasing comprehension • Social media presence is slow and steady • There have not been further PFPNH blog posts yet • Northern New England Chapter of the American Planning Association (NNECAPA) presentation • Website	• Improve graphics and infographics describing who we are and what we do • Marketing materials • Website updating • Send out an end of project update highlighting that 4 of final 7 measures came directly from stakeholders and how their concerns about gap areas are being addressed
Understanding *Measures the flow of information from Workgroup to stakeholders	• There is a lack of clear and timely communication • Stakeholders expressed a desire to have a stronger understanding of the decision making process	• Send update e-mails and offer one-on-one phone calls to hear project updates • Create and share a clear outline or diagram of what decisions have been made and how they were made (e.g. Transit feedback and how it changed the measure)	• While we have not sent an email update each month, there has been an event or extensive e-mail update sent out in each subsequent month • Some of the graphics and diagrams we made for resources for the end of project colloquium did a lot to clarify some of this to stakeholders	• Create better graphics and infographics describing who we are and what we do (marketing materials) • Website updating • NNECAPA presentation: record and market • Send out an end of project update explaining the role of stakeholders' feedback in the decision-making process
Commitment *Represents the stakeholders' "buy-in" and loyalty to the process	• A lack of consistency in stakeholder involvement and engagement • Stakeholders have no access to or communication with other parties involved in this project and therefore a lack of networking opportunities • Absence of clarity as to the role of stakeholders in this round of engagement	• Organize a public meeting for all stakeholders: Round table-April 27 • Create a clear diagram of each role and the relationship between roles • Hold an end of project Colloquium	• We held these public events and they clearly increased engagement with stakeholders. Walking them through the process that has been undertaken by the group was useful for stakeholders • These public events also allowed stakeholders to network with each other • The final stakeholder assessment went largely ignored	• Possibly create a stakeholder oversight committee to monitor integration of performance measures in our regions • Coordinate with Metropolitan Planning Organizations their concerns and advice • Acknowledge stakeholder contributions on the website • Create a survey that educates people and gauges understanding

*These are PlanWorks' definitions of these topic areas

Appendix D. Methodology Template Draft

RATE OF FATALITIES

Measure:
#339: Rate of fatalities (per 100 million VMT)

Description:
The ratio of total number of fatalities to the number of vehicle miles traveled (VMT, in 100 Million VMT) in a calendar year

Applicable plans:
Metropolitan Transportation Plan/Long Range Transportation Plan, Transportation Improvement Plan, Corridor Studies, Project Selection, Highway Safety Improvement Program project selection

Scalable to NHDOT:
Yes

Data sources:

#1

Source 1: FARS
Dataset Name: Fatality Analysis Reporting System
Dataset author/owner: National Highway Traffic Safety Administration
Update schedule: Annual
Dataset Link: ftp://ftp.nhtsa.dot.gov/fars/
Metadata Link:
Geography
Minimal mapping unit of the data: point
Extent used: point

#2

Source 2: GLC
Dataset Name: Geographic Locator Codes
Dataset author/owner: US General Services Administration
Update schedule: Unknown
Dataset Link: www.gsa.gov/glc
Metadata Link: www.gsa.gov/glc
Geography
Minimal mapping unit of the data: sub-municipal
Extent used: sub-municipal

#3

Source 3: FARS
Dataset Name: Fatality Analysis Reporting System
Dataset author/owner: National Highway Traffic Safety Administration
Last update: 8/29/2016
Update schedule: Annual
Downloaded on: 12/20/2016
Dataset Link: ftp://ftp.nhtsa.dot.gov/fars/
Metadata Link:
Geography
Minimal mapping unit of the data: point
Extent used: point

Step by step instructions:

1. Use GLC dataset to determine city codes for MPO communities (not needed for statewide or county-wide analyses).
2. Download 5 years of FARS Data
3. Load FARS accident table for each year into an Access database (2015 data is available as CSV, earlier years are available as DBF)
4. For each year of data use the following SQL query to get the total number of fatalities
SELECT Sum([20##_acc].FATALS) AS FatalitiesFROM 20##_acc
WHERE [FARS WHERE Clause (see below)])
FARS WHERE clauses for each MPO and NHDOT:
Southern NH MPO
[STATE]=33 AND (([COUNTY] = 11 AND [CITY] IN (18, 143, 160, 174, 310, 353, 509)) OR
([COUNTY] = 13 AND [CITY] = 236) OR
([COUNTY] = 15 AND [CITY] IN (13, 32, 45, 82, 85, 105, 107, 305, 551)))
Strafford MPO
[STATE]=33 AND ([COUNTY] = 17 OR
([COUNTY] = 3 AND [CITY] IN (52, 116, 465, 501, 510)) OR
([COUNTY] = 15 AND [CITY] IN (370, 392, 393, 523)))
Nashua MPO
[STATE]=33 AND ([COUNTY] = 11 AND [CITY] IN (11, 31, 234, 240, 299, 307, 324, 334, 340, 344, 350, 401, 540))
Rockingham MPO
[STATE]=33 AND ([COUNTY] = 15 AND [CITY] NOT IN (370, 392, 393, 523))
NHDOT
[STATE]=33

5. Calculate 5-Year average

Author:
Julie Chizmas (NRPC)

Appendix E. Supporting Documentation

For Performance Based Planning

1. 5 Essential Questions to Write a Great Performance Measure Blog Post
2. Performance Based Planning Chart
3. PFPNH SMART Framework
4. Phase II Comprehensive List of Performance Measures Considered
5. PFPNH Supplemental Measures
6. Decision Tree
    a. Choosing Measures: Evaluation Criteria
    b. Journey of a Measure
7. Measure Selection Process
    a. Measure Selection
    b. Journey of PFPNH Measures
8. Performance Measurement Insider Tips
9. Example System Performance Report

For Stakeholder Engagement

1. Establishing Stakeholders Diagram
2. Best Practices for Stakeholder Engagement
3. Stakeholder Communication Strategies
4. Phase I Interview Questions
5. Public Engagement Tracking

For Collaboration

1. PFPNH SMART CollaborationFramework
2. Tools for Collaboration

5 Essential Questions to Write a Great Performance Measure

What are **Performance Measures** and why are we hearing about them in transportation planning these days?

Strafford Metropolitan Planning Organization (MPO), along with transportation planning agencies across the country, has been mandated by the federal government to start implementing "Performance Based Planning" processes in our transportation planning. Ok! Great; now what does that mean?

It means that by 2018 we are required to have measurable targets for a range of goals, and these targets must be included in our Metropolitan Transportation Plan, which we will have to report on.

Transportation planners talk about balanced scorecards, indicators, targets, strategies, metrics, TIPs, TYPs, LRTPs, MOVES, SADES, modal integration, secondary metrics, buffers.... It's a secret "planner's language" and will make your head **SPIN!**

So let's break it down. What is a performance measure? Seems kind of obvious, right? Something that measures how well you are doing? In simple terms: "A Performance Measure is the monitoring of ongoing progress toward pre-established goals."[i]

But how do you measure, for instance, how to make a stretch of road safer? What can tell us how beneficial a bus route is to the people who live along that route? And why is this information needed or useful? Why do we need to measure performance?

Performance-based planning allows us to look at data, past and present, and create measures that tell us how we are doing. It gives us measurable targets that enable us to make more-informed decisions and to adjust our expectations and priorities. If we spend $2million on safety improvements at a dangerous intersection, for example, but the same number of fatalities still occur after that investment, what did we do wrong?

In our process of trying to figure out meaningful measurements for our region, we have determined **5 major questions** that assist us in creating a successful measure. Here they are!

1. Where do we want to go?

First, we look at a broad goal or issue area. Let's use **safety** for this example. We need to narrow it down to something tangible. Let's pick **reducing the number of fatalities on road X**. Safety is a complicated area because a lot of issues arise from operator behavior which we do not have the power to affect, so in thinking about measurement we need to be very clear about our limitations. What are the things we **CAN** change? There is little point in setting a goal for ourselves that is outside the realm of our control.

2. How can we get there?

Once we've chosen our goal, in this case **reducing the number of fatalities on road X,** we need to start thinking about data, trends, targets, and strategies. Is there data available that we can measure from? How has this issue changed over time? Infrastructure, signage, visibility, and traffic-calming are strategies that are somewhat in our control, so what is a realistic and achievable target?

3. What will it take?

Ok! We've got a target, and we know how to measure our progress toward it. Now what do we have to do to hit it? This is where programming and planning come in. We can prioritize programs that will help us reach our target. We have context in which to make decisions. When we are communicating to our boards and Department of Transportation (DOT), we can show how we will monitor our goals and how we plan to reach them. This is pretty helpful!

4. How did we do?

Now it's time to put this into practice; to see our strategies at work and track their effectiveness. Depending on the measure, this can be a lengthy process. Some reporting may happen only every year or every two years or five. So, we have to be patient. Once the reports and data come in, we can really see how well our strategies worked. Did they make a difference? Did we reach our goal? Most important, did our plans **reduce the number of fatalities on road X?**

5. What do we need to change?

The end of this loop or iterative course of creating a performance measure is looking back to the beginning, looking back at our goal and evaluating our processes and decision making and figuring out ways we can change or do better. If we have met our goal, perhaps we can set an even higher one. If we have not met our goal, we can look at what did not work and make adjustments.

The beauty of performance-based planning is that it allows money, energy, and time to be spent effectively, addressing real problems, and it allows for a much more sensitive and responsive planning

process. Rather than guess how something has worked, we can look at the data and the objective, and if it is clear that something is not reaching its target, we can go back to the drawing board!

Strafford MPO is currently working on a collaborative project with the three other MPOs in New Hampshire along with DOT to create these targets and some supplemental regional measures for New Hampshire. The project is called SHRP2; we will provide updates and further details on our process here on the blog and on social media. Check out our website for further details!
http://strafford.org/transportation/perfmeasures.php

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[i] https://www.lib.noaa.gov/about/news/PerformanceMeasures101Tutorial.pdf_

Performance based Planning

Performance Measures
Data
SMART Framework

Stakeholder
Engagement

Prioritization
of Projects

+

Resources
and Funding

Project Implementation




Partnering for Performance NH SMART Framework

What is a SMART framework?

SMART stands for **S**pecific, **M**easurable, **A**ttainable, **R**elevant, and **T**imely. When coming up with supplemental measures that address needs in your region, it is useful to have a framework to ensure manageable targets can be set.

Questions to ask!

- **Specific**: Is the measure easy to understand? Is the outcome well-defined?
- **Measurable**: Is the outcome quantitative? Can it be calculated with reasonable accuracy?
- **Attainable**: Can the outcome be achieved with current resources? Is this something you can affect?
- **Relevant**: Is the outcome directly related to your industry? Does it support your goals?
- **Timely**: Can it be accomplished within the target time frame?

Specific

Measurable

Attainable

Relevant

Timely

Phase II Comprehensive list of performance measures considered

Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
1	353	Community growth patterns & demographic trends	✓	✓	✗		
2	349	Commercial and/or industrial developments on infill or redevelopment sites (# of approved applications)	✓	✓	✗		
3	392	Estimated new jobs created (# of jobs)	✓	✓	!		
4	448	major employers, by business type (%)	✓	✓	!		
5	466	New commercial and/or industrial development (# of building permits)	✓	✓	✗		
6	134	# of people living below the poverty level in NCC community Population living below the poverty level in [MPO] community	✓	✓	!		
7	141	# of projects that improve access to businesses	✓	✓	✗		
8	477	New public infrastructure constructed (projects) Projects: New public infrastructure constructed	✓	✓	✗		
9	478	New public infrastructure planned (projects) Projects: New public infrastructure planned	✓	✓	✗		
10	603	tax rates over time	✓	✓	✗		
11	55	$ avg fees paid by freight companies to state	✓	✓	✗		
12	58	$ cost per shipment mile/mode	✓	✓	!		
13	66	# dollars lost due to freight travel delay	✓	✓	✗		
14	105	# Miles of rail lines capable of 40MPH Miles of rail lines in region capable of 40MPH	✓	✓	✓	✗	
15	107	# Miles of regional and short line trackage with 286,000 Miles of regional and short line trackage with 286,000-lb rating	✓	✓	✓	✗	
16	161	# Projects with Freight focus (e.g. updating a rail road bridge) Projects with Freight focus (e.g. updating a rail road bridge)	✓	✓	✓	✗	
17	195	# Tons freight shipped by mode (total? Via all modes?) Tons of freight shipped via all modes and/or by mode Tons of freight shipped by mode	✓	✓	✓	✓	✓
18	634	Truck stops-rest areas (staff operated)	✓	✓	!		
19	NULL	2- and 4-year Total Emission Reductions for each applicable criteria pollutant and precursor		✓	✓	✓	
20	320	Average CO's per project Average CO's EMISSIONS per TRANSPORTATION project	✓	✓	!		
21	342	Carbon Emissions (MMTCO2e~yr) (2009)	✓	✓	✗		
22	35	CO2 emissions per capita	✓	✓	✗		
23	36	CO2 heavy-duty vehicle emissions per capita	✓	✓	✓	✗	
24	37	CO2 passenger transportation CO2 emissions per capita Total on-road transportation-related GHG emissions per capita	✓	✓	✓	✓	✓
25	345	CO2, NO2, CH4 per capita	✓	✓	✗		
26	346	CO2, NO2, CH4 per vehicles	✓	✓	✓	✗	
27	375	Daily levels of NAAQS in NH	✓	✓	✗		
28	409	GHG emissions attributed to transportation (%)	✓	✓	✓	✗	
29	444	Level of greenhouse gases	✓	✓	✗		
30	482	Non-Attainment Days (number)	✓	✓	✗		
31	487	Number of days exceeding 8-hour ozone NAAQS	✓	✓	✗		
32	527	Pollutants generated by travel (CO, NOx, PM2.5, PM10, Sox, VOC, ozone, diesel emissions)	✓	✓	✓	✗	
33	630	Transportation emissions (ozone or particulate matter)	✓	✓	✓	✗	
34	528	Population exposed to ambient noise >55dB (WHO community standard)	✓	✓	✗		
35	242	% miles of abandoned railroad under DOT & DRED that are in 4-season use (rail trails)	✓	✓	✓	✗	
36	110	Miles of road designated as scenic byway	✓	✓	✓	✓	✗
37	140	# of projects that focus on historical/cultural preservation TRANSPORTATION Projects that focus on historical/cultural preservation	✓	✓	✓	✗	
38	34	# CNG stations (and location) Alternative fueling stations by fuel type	✓	✓	✓	✓	✓
39	282	% Transit fleet powered by Natural Gas (CNG)/Hybrid Electric Percent of transit fleet powered by alternative fuels	✓	✓	✓	✓	✓
40	338	BTUs per person of energy expenditures for transportation	✓	✓	✗		
41	343	City Fleet/Gas Mileage	✓	✓	!		

✗ Remove ! Possible Future Metric ✓ Proceed

Note: Cells containing two measures denote changes in wording.

Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
42	463	Communities that have adopted local land use regulations to promote energy efficient development (2014)	✓	✓	✗		
43	385	Electric Charging Stations (# of stations) (#vehicles)	✓	✓	✓	✓	✗
44	391	Energy efficiency techniques employed in site plans of (# of approved applications)	✓	✓	✗		
45	406	Gallons gasoline, diesel, CNG, LPG, electricity used for transportation per capita Gallons gasoline, diesel, CNG, LPG, electricity used for FLEET transportation per capita	✓	✓	✗		
46	407	gasoline and diesel consumption (% change over time) Gasoline and Diesel Consumption (% change over time) FOR TRANSPORTATION	✓	✓	✗		
47	408	Gasoline and Diesel Consumption (gallons) Gasoline and Diesel Consumption (gallons) FOR TRANSPORTATION	✓	✓	✗		
48	410	Green Certifications	✓	✓	✗		
49		**LEED and Energy Star certified projects (residential units, non-residential units) (Combines 555:558)**		✓	✗		
50	578	Renewable Energy Installations (# of approved applications)	✓	✓	✗		
51	2	# % Roads adjacent (specify max distance) to wetland or water body Buffer Zones (Vegetative undeveloped land designated for erosion and stormwater runoff control)	✓	✓	✓	✗	
52	192	# Stream crossings ranked for geomorphic compatibility	✓	✓	✓	✓	✗
53	278	% Stream crossings ranked for AOP (Aquatic Organism Passage) by NHGS	✓	✓	✓	✓	✗
54	304	Acres of agriculture land preserved (# of acres)	✓	✓	✗		
55	6	# Acreage of conservation land within .25 miles of major transportation corridor	✓	✓	✓	✓	✗
56	305	Acres of drinking water supply lands permanently protect	✓	✓	✗		
57	7	# Acreage of known aquifer area within .25 miles of major transportation corridor	✓	✓	✓	✓	✗
58	306	Acres of open space permanently protected (# of acres)	✓	✓	✗		
59	307	Acres of protected and conserved lands	✓	✓	✗		
60	308	Acres of significant wildlife habitat lands permanently protected (# of acres)	✓	✓	✗		
61	8	# Acreage of WAP(Wildlife Action Plan) categorized land	✓	✓	✗		
62	648	water bodies impaired for chloride (acres, total #) Acres of water bodies impaired for chloride (acres, total # of water bodies)	✓	✓	✓	✓	✗
63	649	Wetlands protected from development (# of acres in approved applications) Acres of Wetlands protected from development (# of acres in approved applications)	✓	✓	✗		
64	9	# Acreage of wetlands within .25 miles of major transportation corridor	✓	✓	✓	✓	✗
65		**Dam Removals (completed projects, planned projects, projects under consideration) (Combine 587:589)**		✓	✗		
66	382	Ecological health of systems near roadways (linked to infrastructure resilience)	✓	✓	!		
67	411	habitat connectivity & fragmentation along [major] roadways	✓	✓	!		
68	172	# Road Miles within Conservation Focus Areas Miles of road within Conservation Focus Areas	✓	✓	!		
69	531	Projects designed to avoid adverse environmental impacts TRANSPORTATION Projects designed to avoid adverse environmental impacts	✓	✓	✓	✗	
70	139	# of projects that focus on environmental conservation or preservation TRANSPORTATION Projects that focus on environmental conservation or preservation	✓	✓	✓	✗	
71	537	Projects that promote resilience and health of natural systems TRANSPORTATION Projects that promote resilience and health of natural systems	✓	✓	✓	✗	

✗ Remove ! Possible Future Metric ✓ Proceed

Note: Cells containing two measures denote changes in wording.

Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
72	113	# Municipal building permits granted within 1-2 miles of a major transportation corridor	✓	✓	✓	✗	
73	114	# Municipal building permits granted within agricultural and natural resource lands	✓	✓	✗		
74	166	# Ratio of Jobs to housing (ratio of 1 preferable)	✓	✓	✗		
75	167	# Ratio of jobs to population (Ratio of 1 preferable)	✓	✓	✗		
76	223	% Building permits within 1~4 mile of major corridors	✓	✓	✓	✗	
77	513	Percentage of New Homes Built Near Transit % of New Homes Built Near Transit	✓	✓	✓	✗	
78	10	# Acres of land per single-family dwelling/residential unit	✓	✓	✗		
79	318	Approvals to construct fewer parking spaces than required (# of approved applications)	✓	✓	✗		
80	323	Average density of new residential developments (# of dwelling units/acres in approved applications)	✓	✓	✗		
81	325	Average lot size in new residential developments (# of acres in approved applications)	✓	✓	✗		
82	339	Building permits within major corridors	✓	✓	✓	✗	
83	340	Buildings that included street level commercial with residential above (# of building permits)	✓	✓	✗		
84	348	Commercial and/or industrial development density (square feet of structures/total square feet of land area as included in approved applications)	✓	✓	✗		
85	350	Communities that have adopted a pedestrian oriented development ordinance (2014)	✓	✓	✓	✓	✗
86	352	Communities that have adopted a transit oriented development ordinance (2014)	✓	✓	✓	✓	✗
87	435	Infill sites utilized for new residential development (# of approved applications)	✓	✓	✗		
88	439	Intersection Density	✓	✓	✗		
89	106	Miles of recreational trails	✓	✓	✓	✗	
90	624	Trails (miles/capita) Miles of Trails per capita	✓	✓	✓	✓	✗
91	461	Minimum lot size (square feet - smallest lot of approved applications)	✓	✓	✗		
92	467	New dwelling units within 1 mile of employment centers (# of dwelling units as included in approved applications)	✓	✓	✗		
93	468	New dwelling units within 1 mile of grocery store (# of dwelling units as included in approved applications)	✓	✓	✗		
94	469	New dwelling units within 1 mile of parks or open space (# of dwelling units as included in approved applications)	✓	✓	✗		
95	470	New dwelling units within 1 mile of services such as health care, education, or other community resources (# of dwelling units as included in approved applications)	✓	✓	✗		
96	471	New dwelling units within 1 mile of the community or town center (# of dwelling units as included in approved applications)	✓	✓	✗		
97	472	New dwelling units within 1 mile of transit (# of dwelling units as included in approved applications)	✓	✓	✓	✓	✗
98	475	New multi-family residential units approved (# of building permits for multi-family)	✓	✓	✗		
99	476	New multi-family residential units built (# of multi-family units as included in approved applications)	✓	✓	✗		
100	535	Projects that create mixed uses development within buildings, sites, and/or districts (# of approved applications)	✓	✓	✗		
101	574	Regulatory revisions adopted to promote bike-ped friendly development (# of ordinances or land use regulations)	✓	✓	✓	✓	✗
102	575	Regulatory revisions identified during the planning process to promote bike-ped friendly development (# of ordinance or land use regulation changes identified)	✓	✓	✓	✗	
103	583	Road density/distribution over landscape (lane miles/acre)	✓	✓	✓	✓	✗
104	592	Sites redeveloped for new residential development (# of approved applications)	✓	✓	✗		

✗ Remove ! Possible Future Metric ✓ Proceed

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Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
105	613	Total new residential units approved (# of dwelling units as included in approved)	✓	✓	✗		
106	614	Total new residential units built (# of building permits)	✓	✓	✗		
107	256	% of persons that are obese (3rd grade, HS, adults)	✓	✓	✗		
108	374	Daily amount (in minutes) of work-trip and non-work trip related physical activity	✓	✓	✗		
109	1	# % Commercial Parking Lots adjacent (specify max distance) to wetland or water body Buffer Zones (Vegetative undeveloped land designated for erosion and stormwater runoff control)	✓	✓	✗		
110	151	# ongoing~completed Stormwater/LID projects	✓	✓	✗		
111	236	% Impervious Surface Change	✓	✓	✗		
112	266	% Pervious concrete pavement AND Porous Asphalt Pavement	✓	✓	✗		
113	330	Best management practices incorporated into approved developments (# of approved applications)	✓	✓	✗		
114	351	Communities that have adopted a post construction stormwater management ordinance	✓	✓	✗		
115	378	Developments with stormwater systems designed consistent with the New Hampshire Stormwater Manual (# of approved applications)	✓	✓	✗		
116	417	Impervious area within all newly developed sites (% of total site area within approved applications)	✓	✓	✗		
117	447	Low impact development techniques employed in project plans and developments (# of approved applications)	✓	✓	✗		
118	584	Road Salt Usage (5-yr moving average salt use by DOT)	✓	✓	✗		
119	NULL	Annual Hours of Excessive Delay Per Capita		✓	✓	✓	
120	97	# Light-duty VMT (Vehicle Miles Traveled) per capita	✓	✓	!		
121	615	Total number of miles traveled by all personal motor vehicles	✓	✓	!		
122	620	Total VMT	✓	✓	!		
123	642	Vehicle Miles Traveled per capita (VMT)	✓	✓	!		
124	25	# Average vehicle occupancy during peak periods along major corridors or region-wide	✓	✓	!		
125	62	# Dollars for average cost of car ownership	✓	✓	✗		
126	203	# Vehicles per capita	✓	✓	✓	✓	✗
127	204	# Vehicles per household	✓	✓	✓	✗	
128	85	# Households within 30 minutes transit ride of major employment centers Percent of major employers served by transit	✓	✓	✓	✓	✓
129	86	# Households within 5 miles of park and rides	✓	✓	✗		
130	90	# jobs within 15 min of every TAZ or town for the region	✓	✓	✗		
131	100	# medical trips (based on volunteer, elderly, disabled, etc. driver programs)	✓	✓	✗		
132	170	# requests for unmet need (in transit service)	✓	✓	✗		
133	237	% Jobs within .5 miles of designated bike route	✓	✓	✗		
134	253	% of jobs within walking distance of transit service	✓	✓	✗		
135	288	Access to a Grocery Store within 1-Mile (% of low-income households) % Low-income households within 1 mile of a Grocery Store	✓	✓	✓	✓	✗
136	239	% Low-income population within .25-.40 miles of transit Percent of low income population served by transit	✓	✓	✓	✓	✓
137	254	% of missed medical appointments due to lack of transportation	✓	✓	✗		
138	511	Percent of state served by transit	✓	✓	✓	✓	✗
139	509	Percent of population located within 0.25 miles of multimodal facilities	✓	✓	✓	✓	✗
140	510	% Population that lives within .25 miles of a bike lane or trai	✓	✓	!		
141	269	% Population within .25-.40 mile of transit stop Percent of population served by transit	✓	✓	✓	✓	✓
142	289	Access to Community Anchor Institutions % Population within .25-.40 miles of community anchor institutions (Access to Community Anchor Institutions)	✓	✓	✓	✓	✗
143	267	% Population with .5 miles of designated bike route	✓	✓	✓	✓	✗

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Master List of Measures from Phase II

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144	284	% Transit stops within .25-.40 miles of community anchor institution	✓	✓	✓	✓	✗
145	290	Access to employment	✓	✓	!		
146	291	Access to enable aging in place	✓	✓	!		
147	292	Access to Fixed Route Transportation (% of population)	✓	✓	✓	✓	✗
148	293	Access to healthcare (by education and income)	✓	✓	✗		
149	294	Access to Healthy Food Options	✓	✓	✗		
150	295	Access to Safe Parks & Recreation Areas/% of Residents within Walking Distance of Recreation Land	✓	✓	✓	✓	✗
151	297	Access to transit~/Percentage of jobs within walking distance of transit service	✓	✓	✗		
152	299	Accessible Buses/Routes (number of transit routes)	✓	✓	✓	✓	✗
153	379	distance to full service grocery stores	✓	✓	✓	✓	✗
154	101	Miles for average proximity of major regional employers to major transportation corridors	✓	✓	✗		
155	111	Minutes average drive time to large supermarket (consider urban or rural)	✓	✓	✓	✓	✗
156	115	Municipalities served by public transportation - split into fixed transit routes & on-call service routes	✓	✓	✓	✓	✗
157	159	Population within 1 mile access of 'limited access' highway	✓	✓	✓	✓	✗
158	544	Proportion of households that can walk or bike (10 minutes) to meet at least 50 % of their daily needs	✓	✓	✓	✓	✗
159	61	# Dollars for average bus fare cost	✓	✓	✓	✓	✗
160	199	# Transportation Cost Index	✓	✓	✓	✓	✗
161	235	% Household income spent on Housing and-or Transportation	✓	✓	✓	✓	✗
162	311	affordable housing within closer proximity to employment and transit centers	✓	✓	✗		
163	347	Combined Housing & Transportation Costs	✓	✓	✓	✓	✗
164	434	Individual or household transportation costs (total dollars)	✓	✓	✓	✓	✗
165	540	Proportion household income spent on housing	✓	✓	✗		
166		**Proportion of households that experience housing cost burden (30% of income, 50% of income) (combines 268,231,256)**		✓	✗		
167	587	Share of household income spent on combined housing and transportation costs (2010)	✓	✓	✓	✓	✗
168	484	Number of completed Contract Compliance reviews	✓	✓	✗		
169	485	Number of completed sub recipient ADA/Section 504 review	✓	✓	✗		
170	486	Number of completed sub recipient Title VI reviews	✓	✓	✗		
171	490	Number of graduated OJT Program trainees	✓	✓	✗		
172	493	Number of PROW deficiencies corrected	✓	✓	✗		
173	232	% DBE goal met for all completed Federal-aid construction projects	✓	✓	✗		
174	505	pedestrian infrastructure (miles or percentage) Miles of Pedestrian Infrastructure	✓	✓	!		
175	4	# Access points by corridor (possible definition of segments)	✓	✓	✗		
176	5	# Access points per state road mile (Municipal)	✓	✓	✗		
177	118	# New driveway permits	✓	✓	✗		
178	160	# Projects with Access Management elements	✓	✓	✗		
179	287	Access management techniques employed in new site design	✓	✓	✗		
180	298	Accessibility of Transit infrastructure	✓	✓	✗		
181	46	Communities with Access Management design standards (more strict than DOT standards) - need further defining	✓	✓	✗		
182	47	Communities with Access Management MOU's (Memorandums of Understanding) with NHDOT	✓	✓	✗		
183	18	# Annual Zipcar Rentals (new and renewed)	✓	✓	✗		
184	49	# Commuters coming into region	✓	✓	✓	✗	
185	50	# Commuters leaving the region	✓	✓	✓	✗	
186	202	# Turning movement counts completed	✓	✓	✗		
187	228	% Commuters by direction	✓	✓	✓	✗	
188	229	% Commuters with each ACS (American Community Survey) mode share (bike, walk, public transit, carpool) category	✓	✓	✓	✗	
189	241	% major employers with alternative transportation or mode share incentives-programs-policies	✓	✓	✗		

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Master List of Measures from Phase II

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190	512	% of students walking, biking, and carpooling to school	✓	✓	✓	✗	
191	260	% of total trips that are walking (ped mode share)	✓	✓	✗		
192	279	% Telecommuting jobs of total jobs	✓	✓	✗		
193	281	% Total trips that are by bicycle	✓	✓	✗		
194	367	Commuter Mode Share Commuter Mode Share (Commute to work mode share)	✓	✓	✓	✓	✗
195	541	Proportion of daily trips less than 3 miles and less than 1 mile by mode (walking/biking/bus and rail transit/driving)	✓	✓	✗		
196	548	Proportion of trips taken by various means of transp.	✓	✓	✗		
197	573	Regional trips performed by mode (automobile, transit, walking and bicycling) (count)	✓	✓	✗		
198	650	Work and non-work trip mode share (including biking, walking, transit (bus and train), carpooling and SOV) – Both at peak times and all day	✓	✓	✗		
199	651	Work Commutes by vehicle (count)	✓	✓	✗		
200	20	# Average Annual Daily Traffic along major corridors	✓	✓	✓	✗	
201	51	# Corridor studies completed (within the last X years)	✓	✓	✗		
202	112	# Minutes regional major corridor travel time per AM/PM	✓	✓	✓	✓	✗
203	116	# Net class count change by major corridors by count location	✓	✓	✓	✗	
204	117	# Net class count change by year by count location	✓	✓	✓	✗	
205	208	# Volume/Capacity Ratio (Grade) - high priority	✓	✓	✓	✗	
206	227	% Change in Traffic Volume by Count along major corridor	✓	✓	✓	✗	
207	280	% time of road congestion	✓	✓	✓	✓	✗
208	322	Average Daily Traffic - AND/OR - VMT	✓	✓	✓	✗	
209	370	Congestion/Operational Level of Service on Key Corridors	✓	✓	✗		
210	371	Congestion/Operational Level of Service on key East-West	✓	✓	✗		
211	623	Traffic volumes	✓	✓	✓	✗	
212	122	# of Complete Streets projects	✓	✓	✓	✗	
213	193	# Street Connectivity Index	✓	✓	!		
214	285	% trips between 0.5 and 6 mi that can be done on Level of Traffic 1 and 2 streets	✓	✓	!		
215	44	Communities that adopted Complete Streets projects	✓	✓	✓	✗	
216	438	Intermodal connectivity	✓	✓	✗		
217		**Level of Service/Stress (by mode: Bicycle, Pedestrian, vehicle)(low income populations) (Combines 228, 377, 397, 399, 400, 402)**		✓	✗		
218	480	New road connections created (must provide a new through connection, not merely a new intersection) (# of road connections as included in approved applications)	✓	✓	✗		
219	533	Projects that connected to other bike-ped paths, lanes, or sidewalks (# of approved applications)	✓	✓			
220	14	# Annual Alightings/boardings (ridership) (Amtrak Downeaaster) # Annual Alightings/boardings (ridership) (Rail in the MPO Region)	✓	✓	✓	✗	
221	15	# Annual C&J ridership to local Metro areas (Boston, NYC) # Annual intercity bus ridership from [MPO] to local Metro areas (Boston, NYC)	✓	✓	✓	✗	
222	21	# Average daily bicycle volume per peak hour	✓	✓	✗		
223	22	# Average daily pedestrian volume per peak hour	✓	✓	✗		
224	150	# of trips that are non-motorized trips	✓	✓	✗		
225	264	% Passenger source by community for Amtrak Downeaster % Passenger Rail source by community	✓	✓	✗		
226	309	ADA Transit Ridership (# of Riders Provided)	✓	✓	✓	✗	
227	384	Elderly/Disabled Transportation Ridership (# of Rides Provided) Number of Communities served by Demand Response Transit or Volunteer Ridership Programs that are active at least two days per week	✓	✓	✓	✓	✓
228	437	Intercity Transit Ridership (# of Riders)	✓	✓	✓	✗	
229	446	Local Transit Ridership (Fixed-Route) Number of rides provided for fixed route bus	✓	✓	✓	✓	✓

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230	500	Passenger Air Ridership (# of Enplanements and Deplanements)	✓	✓	✓	✗	
231	501	Passenger Rail Ridership (# of Boardings and Alightings)	✓	✓	✓	✓	✗
232	586	Rural transit Ridership	✓	✓	✓	✗	
233	626	Transit Ridership - NTS Fixed Route (# of riders/year)	✓	✓	✓	✗	
234	38	# COAST rides Annually Transit Rides Annually (per transit provider in MPO)	✓	✓	✓	✗	
235	602	SVTC Service Area (# of communities) Transit Service Area (# of communities per transit provider in the MPO)	✓	✓	✓	✗	
236	629	Transit, Rail, and Air Ridership (rider count)	✓	✓	✓	✗	
237	635	Unique & unduplicated transit riders	✓	✓	✗		
238	643	Volunteer Driver Program (# Drivers)	✓	✓	✗		
239	645	Volunteer Driver Program Ridership (# of Rides Provided)	✓	✓	✓	✓	✓
240	646	Walk Score Index	✓	✓	✗		
241	153	# Park and ride facilities	✓	✓	✓	✓	✗
242	154	# Park and ride parking spaces Park and Ride utilization by facility	✓	✓	✓	✓	✓
243	40	Communities implementing local option fee for transportation	✓	✓	✗		
244	479	New public parking spaces (# of new parking spaces constructed)	✓	✓	✗		
245	498	Parking availability	✓	✓	✗		
246	499	Park-n-Ride Lot Utilization (average number of occupied spaces)	✓	✓	✗		
247	16	# annual SRPC website clicks	✓	✓	✗		
248	152	# Outreach events SRPC was involved in (Annual) # Outreach events [MPO] was involved in (Annual)	✓	✓	✗		
249	162	# public events attended~held annually by SMPO # Public events attended/held annually by [MPO]	✓	✓	✗		
250	163	# public events attended~held annually that focus on connection with Title VI and Environmental Justice populations # Public events attended/held annually that focus on connection with Title VI and Environmental Justice populations	✓	✓	✗		
251	179	# social media comments/tweets (Facebook/Twitter)	✓	✓	✗		
252	198	# transit marketing events or products	✓	✓	✗		
253	200	# truck driver recruitment-retention programs and or initiatives	✓	✓	✗		
254	201	# truck related safety events & opportunities (coordinated by NHMTA)	✓	✓	✗		
255	164	# public-private partnerships	✓	✓	✗		
256	68	$ per mile cost of construction & reconstruction	✓	✓	!		
257	69	$ used by DOT for construction, by region or geography	✓	✓	✓	✓	✗
258	222	% Avg dollars difference from Construction Costs vs Engineering Audits (less fuel or asphalt adjustment)	✓	✓	✗		
259	245	% of advertised projects/$1million that are within ±10	✓	✓	✗		
260	248	% of construction projects (including Grouped Projects) % of construction projects (including Grouped Projects) listed in the FY baseline Statewide Transportation Improvement Program (STIP) which is advanced.	✓	✓	✓	✓	✗
261	251	% of Federal-aid construction projects with clear R/W certifications at time of construction authorization.	✓	✓	✗		
262	252	% of Federal-aid construction projects with work complete	✓	✓	✗		
263	272	% Projects with Final Construction Cost within 5% of Construction Bid	✓	✓	✓	!	
264	327	Avg Engineering Audit Score of CA records	✓	✓	✗		
265	488	Number of days from substantial completion to final voucher	✓	✓	✗		
266	183	# Staff that are members of the APA and/or NNECAPA	✓	✓	✗		
267	381	Driver training program evaluation review (bus operators)	✓	✓	✗		
268		**Staff certifiactions (AICP, GISP, LEED) (Combines 326, 340, 347)**		✓	✗		
269		**Staff training (SADES, Synchro, Regional Transportation Model, Emergency Management modeling software) (Combines 318:320, 323)**		✓	✗		
270	386	employee injuries (per hour)	✓	✓	✗		

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271	70	$ true cost of infrastructure maintenance vs. $ currently invested annually	✓	✓	✗		
272	57	$ cost per passenger mile per mode of travel	✓	✓	!		
273	59	# Dollars dedicated by State for transit operations	✓	✓	✓	✓	✗
274	60	# Dollars difference in life cycle cost vs. capital cost of assets	✓	✓	✗		
275	64	# Dollars invested in marketing Transit	✓	✓	✗		
276	65	# dollars invested in NH transportation (state and federal)	✓	✓	✓	✗	
277	89	# Investment dollars in projects that address safety on corridor, regional, or local level - high priority	✓	✓	!		
278	67	$ per capita contribution to the Highway Trust Fund over time	✓	✓	!		
279	221	% Annual transportation funding need that is met with revenue	✓	✓	!		
280	230	% Contract money and time used on Land use and Environmental linkages	✓	✓	!		
281	231	% contribution to transportation budget, by source (federal, state, local)	✓	✓	!		
282	243	% money and time spent on each UPWP category (or Planning Emphasis Area)	✓	✓	✓	✗	
283	247	% of communities with projects in the TIP	✓	✓	✓	✓	✗
284	255	% of obligated but unexpended balance for all inactive projects compared to total annual apportionments	✓	✓	✗		
285	259	% of Total Program dollars authorized for System Preservation projects on the Interstate Percent of non-NHS federal aid system and non-NHS non federal aid system that is in good vs poor condition	✓	✓	✓	✓	✓
286	263	% or amount of funding for different transportation modes (Modal Investment)	✓	✓	✓	✓	✓
287	380	Distribution of Expenditures by Lane Miles-Highway Fund	✓	✓	✓	✓	✗
288	451	Match Funds Committed ($/fiscal year)	✓	✓	✗		
289	462	modal investment vs. cost per passenger mile for each mode	✓	✓	!		
290	496	on-budget performance (efficiency of use of funds)	✓	✓	✗		
291	127	# of items implemented from Coordinated Transit Plan	✓	✓	✗		
292	128	# of items implemented from Regional Transportation Plan	✓	✓	✗		
293	129	# of items implemented in CCRCC and GCRCC work plans	✓	✓	✗		
294	136	# of projects implemented from Road Safety Audits	✓	✓	✗		
295	137	# of projects implemented from Scenic Byways Corridor Management plans (under development)	✓	✓	✗		
296	508	Percent of NEPA documents approved within the anticipated completion date	✓	✓	✗		
297	273	% regional priorities consistent with available federal and state funding	✓	✓	✗		
298	274	% regional project selection criteria consistent with state and federal goals	✓	✓	✗		
299	98	# local Master Plan Transportation chapters that address natural resource functions and quality	✓	✓	✗		
300	135	# of plans written for towns or other groups/committees	✓	✓	✗		
301	138	# of projects NCC assists in getting into the TYP, funded by TA, 5310, or other funds # of projects [MPO] assists in getting into the TYP, funded by TA, 5310, or other funds	✓	✓	✓	✓	✓
302	146	# of successful Transportation Alternative Program (TAP) project proposals	✓	✓	✗		
303	217	# Years average project is on TIP (Transportation Improvement Program) before securing funding	✓	✓	✓	✓	✓
304	234	% GIS datasets with maintenance and update schedule	✓	✓	✗		
305	257	% of projects from LRTP list that make to the STIP list	✓	✓	✗		
306	258	% of projects on the STIP implemented during target year	✓	✓	✗		
307	324	Average length of time a project is on the NCC TIP Average length of time a project is on the [MPO] TIP	✓	✓	✓	✓	✓
308	520	Projects: planned capital improvement projects	✓	✓	✗		
309	39	# Comments on public plans or average # comments per plan	✓	✓	✗		
310	121	# of broad groups approached to participate in public meetings and committees (low-income, elderly, disabled, etc.)	✓	✓	✗		

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314	132	# of members of active TAC members and # of towns with active TAC members	✓	✓	✓	✓	✗
315	145	# of Scenic Byways Council meetings held each year and # of members present	✓	✓	✗		
316	147	# of TAC meetings each year and # of TAC members present	✓	✓	✗		
317	149	*# of towns that participate (or request to participate, # of towns that participate (or request to participate) in Asset Inventory programs (RSMS and Culvert Inventories)*	✓	✓	✗		
318	194	# TAC meetings per year & % of TAC members-towns attend	✓	✓	✗		
319	168	# Regional buildouts conducted	✓	✓	✗		
320	13	# and severity of accidents	✓	✓	✓	✓	✗
321	92	# large truck accident involvements (per year)	✓	✓	✗		
322	126	# of injuries, by mode share	✓	✓	✓	✓	✗
323	155	# passenger injuries	✓	✓	✗		
324	165	# rail crossing (or other rail related) accidents	✓	✓	✗		
325	220	% accidents, by cause-fault (e.g. road conditions, DUI)	✓	✓	✗		
326	286	% truck accidents, by cause-fault	✓	✓	✗		
327	302	Accidents Involving a Bicyclist or Pedestrian (# of collisions per year)	✓	✓	!		
328	216	# wildlife related accidents Accidents involving Wildlife	✓	✓	✗		
329	449	Map annual number of pedestrian and bicycle collisions (and severity of injury per fatality) - per capita, per geographic area, by daytime population	✓	✓	✗		
330	NULL	Number of non-motorized fatalities and non-motorized serious injuries involving a motor vehicle (5 year rolling average)		✓	✓	✓	
331	177	# serious injuries (MAP-21; Safety) Number of serious injuries (five year rolling average)	✓	✓	✓	✓	
332	178	# serious injuries per VMT (rate) (MAP-21; Safety) Number of serious injuries per 100 Million VMT (five year rolling average)	✓	✓	✓	✓	
333	530	preventable accidents per million miles (in bus intercity or local transit)	✓	✓	✗		
334	74	# fatalities, by mode share	✓	✓	✗		
335	82	# Highway fatalities by contributing factor (maybe use)	✓	✓	!		
336	84	# Highway truck crash fatalities	✓	✓	✗		
337	133	# of Motorcycle Crash Fatalities per year. (5 year rolling average)	✓	✓	!		
338	81	# Highway fatalities (5-year) (MAP-21; Safety) Number of fatalities (five year rolling average)	✓	✓	✓	✓	
339	83	# Highway fatalities per VMT (rate) (MAP-21; Safety) Number of fatalities per 100 Million VMT (five year rolling average)	✓	✓	✓	✓	
340	585	Roadway departure fatalities per 100 million vehicle miles traveled. (5 year rolling average)	✓	✓	✗		
341	638	User experience & perception of safety of trucking industry	✓	✓	✗		
342	24	# Average truck speed along major freight corridors	✓	✓	✗		
343	277	% seat belt use (could divide by all drivers, fatalities, accidents)	✓	✓	✗		
344	315	alcohol testing (% compliant)	✓	✓	✗		
345	271	% Projects implementing AASHTO Highway Safety Manual	✓	✓	✗		
346	42	Communities or schools with Safe Routes to School programs	✓	✓	✗		
347	538	Projects with a stated objective of increased safety (# of approved applications)	✓	✓	✗		
348	636	User experience & perception of safety of bicycling	✓	✓	✗		
349	637	User experience & perception of safety of public transit	✓	✓	✗		
350	639	User experience & perception of safety, per mode	✓	✓	✗		
351	88	# Intersections modeled	✓	✓	✗		
352	56	$ cost of environmental or disaster damage repairs	✓	✓	✗		
353	316	amount of property damage/loss	✓	✓	✗		
354	576	Reliability of power of rail operations	✓	✓	✗		
355	63	# Dollars invested in disaster/incident response and management	✓	✓	✓	✗	

✗ Remove ! Possible Future Metric ✓ Proceed

Note: Cells containing two measures denote changes in wording.

Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
356	41	# Communities inventoried under SRPC Stream Crossing program (Culverts) Communities inventoried under [MPO] Stream Crossing program (Culverts)	✓	✓	✓	✓	✗
357	79	# Hazard Mitigation Plans adopted within the last 5 year Communities that have adopted Hazard Mitigation Plans within the last 5 year	✓	✓	✓	✗	
358	45	# communities that incorporated Culvert Assessment data Communities that incorporated Culvert Assessment data	✓	✓	✗		
359	436	infrastructure vulnerability	✓	✓	✗		
360	54	# days of roadway segment flooding per year (frequency of road flooding)	✓	✓	✗		
361	87	# hrs, duration of road inundation due to a flooding event (duration of road flooding)	✓	✓	✗		
362	171	# road miles that are flood proofed or elevated	✓	✓	✗		
363	173	# Road miles within floodplain (could separate into 1% and 0.2% floods)	✓	✓	✓	✗	
364	175	# Road miles within SLR affected areas (Sea-Level Rise), per town or region	✓	✓	✓	✗	
365	211	# Water body crossings along public roads	✓	✓	✓	✗	
366	212	# Water body crossings within delineated floodplain (divide into 1% or 0.2% annual floods)	✓	✓	✓	✗	
367	238	% key assett (e.g. bridges) repairs within SLR and flood prone zones	✓	✓	✓	✓	✗
368	249	% of culverts acceptable vs. culverts in need of replacement # of communities that have completed SADES inventories in the past 10 years (now), and % of culverts inventoried that are acceptable vs. in need of replacement (future implementation)	✓	✓	✓	✓	✓
369	276	% roadway culverts sized appropriately per BMPs	✓	✓	✗		
370	464	Communities, districts and precincts that have adopted local floodplain development regulations	✓	✓	✓	✗	
371	32	# Bus Shelters	✓	✓	!		
372	78	# fleet (capital assets)	✓	✓	✗		
373	91	# Lane Miles per Acre	✓	✓	✗		
374	336	Bike Parking per Capita (or # approved bike infrastructure project applications)	✓	✓	✗		
375	442	Length of new sidewalks, bike lanes, and/or multi-use paths (feet)	✓	✓	!		
376	319	Arterial Roads with bike lanes Miles Arterial Roads with bike lanes	✓	✓	✗		
377	331	Bicycle and Pedestrian Infrastructure (miles) Miles of Bicycle and Pedestrian Infrastructure	✓	✓	✗		
378	453	Miles of bicycle infrastructure within compact development	✓	✓	✗		
379	335	Bike infrastructure (lane miles per capita) Miles of Bike infrastructure (lane miles per capita)	✓	✓	!		
380		**Miles of bike lanes (dedicated bike lanes, vs Sharrows/Share-the-road) (Combines Measures 127:128)**		✓	✗		
381	400	Fixed Route Transportation Service (miles) Miles of Fixed Route Transportation Service (miles)	✓	✓	✗		
382	119	Miles of New road	✓	✓	✗		
383	108	Miles of road	✓	✓	✗		
384	109	Miles of road by Class (NHDOT or FHA classes?)	✓	✓	✗		
385	591	Sidewalk infrastructure (miles/capita) Miles of Sidewalk infrastructure per capita (miles/capita)	✓	✓	!		
386	458	Miles of sidewalk infrastructure within compact development	✓	✓	✗		
387	536	Projects that include bicycle racks and/or other bicycling features (# of approved applications)	✓	✓	✗		
388	539	Projects with pedestrian features such as sidewalks and and trails (# of approved applications)	✓	✓	✗		
389	19	# At-grade and Separated Rail Crossings	✓	✓	✗		
390	28	# Bridge Improvements on Red List (clarify)	✓	✓	✗		
391	218	# Years for average lifespan of bridge infrastructure	✓	✓	✗		

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Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
392	219	# Years for average lifespan of pavement infrastructure	✓	✓	✗		
393	244	% municipally owned bridges undergone preventative maintenance (e.g. cleaning, painting)	✓	✓	✗		
394	246	% of bridge inspection reports entered in state inventory in 90 days for state bridges and 180 days for non-state bridges	✓	✓	✗		
395	250	% of deficient bridges (State)	✓	✓	✗		
396	312	Age of transportation infrastructure	✓	✓	✗		
397	314	Airport Runway Condition (FAA Runway Condition)	✓	✓	✓	✗	
398	43	Communities sidewalks inventoried under SADES program	✓	✓	!		
399	369	Condition of rail lines and speeds allowed	✓	✓	✓	✓	✓
400	398	Feet of sidewalk by condition	✓	✓	!		
401	491	Number of lane miles per year receiving a preservation treatment both inclusive and exclusive of crack sealing.	✓	✓	!		
402	492	Number of past due bridge inspections at 8, 12, and 24 month frequencies	✓	✓	✗		
403	NULL	Percentage of Interstate pavement in Good condition		✓	✓	✓	
404	NULL	Percentage of Interstate pavement in Poor condition		✓	✓	✓	
405	NULL	Percentage of NHS Bridges in Good condition		✓	✓	✓	
406	NULL	Percentage of NHS Bridges in Poor condition		✓	✓	✓	
407	NULL	Percentage of Non-Interstate pavement in Good condition		✓	✓	✓	
408	NULL	Percentage of Non-Interstate pavement in Poor condition		✓	✓	✓	
409	144	# of red-listed bridges Red Listed Bridges (Total, State, Municipal) Percent of non-NHS bridges that are in good vs poor condition	✓	✓	✓	✓	✓
410	579	Ride Comfort Index by roadway system	✓	✓	✗		
411	588	Short span, red listed bridges in need of replacement	✓	✓	✗		
412	224	% bus stops with adequate signage	✓	✓	✗		
413	225	% bus stops with weather protection or shelter	✓	✓	!		
414	341	Bus stop and shelter quality	✓	✓	✗		
415	483	NRPC - Remaining Useful Life of Public Transit Fleet (vehicle life remaining) Remaining Useful Life of Public Transit Fleet (vehicle life remaining)	✓	✓	✓	✓	✓
416	NULL	Percent of the Interstate System Mileage providing for Reliable Truck Travel Times		✓	✓	✓	
417	NULL	Percent of the Interstate System Mileage Uncongested		✓	✓	✓	
418	71	# Dynamic signage installations (?)	✓	✓	✗		
419	72	# Dynamic speed limit signs (not many in the region currently)	✓	✓	✗		
420	80	# High Speed Tolling Stations (0 now?)	✓	✓	✗		
421	275	% Regional Toll Lanes equipped with EZ-Pass (100%)	✓	✓	✗		
422	377	Deployment of Real-Time ITS Data (new systems installed)	✓	✓	✗		
423	621	Traffic Signal Pre-Emption Capabilities For Emergency Responders (# of communities with service)	✓	✓	!		
424	17	# Annual transit boardings per route mile	✓	✓	✓	✗	
425	156	# Passenger miles traveled per vehicle revenue mile	✓	✓	✓	✗	
426	213	# Weekly bus transit boardings per hour	✓	✓	✓	✗	
427	214	# Weekly COAST bus transit boardings per route mile (maybe Wildcat too) # Weekly transit boardings per route mile (per transit provider in MPO)	✓	✓	✓	✗	
428	376	Deadhead miles for transit	✓	✓	✓	✗	
429	394	Farebox recovery as affiliated with Subsidy rates	✓	✓	✓	✗	
430	413	Headway and service times of mass transit (55 minutes, or 1 pick-up-stop-hour)	✓	✓	✗		
431	33	# cancelled transit trips	✓	✓	✓	✗	
432	326	Average time to achieve bare lanes (hours)	✓	✓	✗		
433	497	On-time performance for transit	✓	✓	✓	✓	✗
434	23	Average Non-Work Commute Time	✓	✓	✗		
435	26	Average Work Commute Time	✓	✓	!		
436	NULL	Percent of the Interstate System providing for Reliable Travel Times		✓	✓	✓	

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Master List of Measures from Phase II

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437	NULL	Percent of the Interstate System where Peak Hour Travel Times meet expectations		✓	✓	✓	
438	NULL	Percent of the non-Interstate NHS providing for Reliable Travel Times		✓	✓	✓	
439	NULL	Percent of the non-Interstate NHS where Peak Hour Travel Times meet expectations		✓	✓	✓	
440	631	Travel Time to Work	✓	✓	✗		
441	632	Travel times and delays	✓	✓	✗		
442	93	# LEED (Leadership in Energy & Environmental Design)Environmental Design) & Energy Star certified transportation related infrastructure projects	✓	✓			
443	NULL	Placeholder for Bicycle measure					✓
444	NULL	Placeholder for Pedestrian measure					✓
445	NULL	Placeholder for Resilience measure					✓
446	NULL	Motorcycle fatalities and serious injuries (5-year rolling average) Number of Motorcycle fatalities (5-year rolling average)					✓
	3	# % Wildcat Rides Annually by non-students	✓	✗			
	11	# Acres water bodies impaired by chloride (or impaired)	✓	✗			
	12	# ADA Rides Annually	✓	✗			
	27	# Bicycle crashes per 1,000 cyclists	✓	✗			
	29	# Bus Shelter of Fair Quality	✓	✗			
	30	# Bus Shelter of Good Quality	✓	✗			
	31	# Bus Shelter of Poor Quality	✓	✗			
	48	# Community Stream Crossing Inventories collected by SRPC	✓	✗			
	52	# Dam removal projects (sponsored by the DOT) completed to date	✓	✗			
	53	# Dams currently (as of 2015) under consideration for removal	✓	✗			
	73	# FAA (Federal Aviation Administration) Runway Condition	✓	✗			
	75	# Feet of sidewalks in fair condition	✓	✗			
	76	# Feet of sidewalks in good condition (can combine with 'fair' - DOT did so with highway pavement on the 2012 Balanced Scorecard	✓	✗			
	77	# Feet of sidewalks in poor condition	✓	✗			
	94	# Level of Service for low-income populations (bike, ped)	✓	✗			
	95	# Level Of Service Index (Bicycle)	✓	✗			
	96	# Level of Service Index (Pedestrian)	✓	✗			
	99	# Locally-owned red list bridges	✓	✗			
	102	# Miles of bike lanes (share-the-road)	✓	✗			
	103	# Miles of bike lanes (dedicated bike lanes)	✓	✗			
	104	# miles of fixed Public transit routes	✓	✗			
	120	# North Bus rides	✓	✗			
	123	# of fatalities	✓	✗			
	124	# of GCRCC and CCRCC meetings each year and # of RCC members present, # new RCC members each year	✓	✗			
	125	# of highway related fatalities (5 year rolling average)	✓	✗			
	130	# of members of active GCRCC and CCRCC members and # of towns/groups/providers with active members	✓	✗			
	131	# of members of active NCSB members and # of towns/group	✓	✗			
	142	# of red list bridges (state and local)	✓	✗			
	143	# of Red Listed bridges (State)	✓	✗			
	148	# of tons of freight shipped	✓	✗			
	157	# Pedestrian accidents per 1,000 pedestrians	✓	✗			
	158	# planned Dam removal projects	✓	✗			
	169	# Regional vehicle charge stations	✓	✗			
	174	# Road miles within SLR affected areas (Sea-Level Rise)	✓	✗			
	176	# Senior/Elderly Rides	✓	✗			
	180	# Staff certified as AICP	✓	✗			
	181	# Staff certified as GISP	✓	✗			
	182	# staff certified in LEED	✓	✗			
	184	# Staff trained in Emergency Management modeling software	✓	✗			
	185	# Staff trained in Regional Transportation Model	✓	✗			

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Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
	186	# Staff trained in Synchro software	✓	✗			
	187	# Staff trained SADES collection standards and protocols	✓	✗			
	188	# State Road Miles in fair condition	✓	✗			
	189	# State Road Miles in good condition	✓	✗			
	190	# State Roads Miles in poor condition	✓	✗			
	191	# State-owned red list bridges	✓	✗			
	196	# Tons Salt Use (5-Year Moving Average)	✓	✗			
	197	# Total Rides	✓	✗			
	205	# VMT commute travel per SRPC employee	✓	✗			
	206	# VMT per capita	✓	✗			
	207	# VMT work-related travel per SRPC employee	✓	✗			
	209	# Walk Score Index	✓	✗			
	210	# Water bodies impaired by chloride	✓	✗			
	215	# Wildcat Rides Annually	✓	✗			
	226	% change in gasoline and diesel consumption over time	✓	✗			
	233	% Employment Close to Transit or Other Modes	✓	✗			
	240	% Low-income population within .25-.40 miles of transit	✗				
	261	% of useful vehicle life remaining in transit buses across the State	✓	✗			
	262	% of workers commuting via walk, bike, carpool, transit	✓	✗			
	265	% Persons that are obese	✓	✗			
	268	% population with access to multi-modal transportation	✓	✗			
	270	% population within walking distance of frequent transit service	✓	✗			
	283	% Transit stops within .25-.40 miles of community anchor	✗				
	296	Access to transit/Percentage of population within walking distance of frequent transit service	✓	✗			
	300	Accidents – Route 101 (collisions/mile/year)	✓	✗			
	301	Accidents – Route 101 and 101A Interchange (collisions/mile/year)	✓	✗			
	303	Accidents Involving a Bicyclist or Pedestrian (# of collisions)	✗				
	310	ADA Transit Ridership (# of riders)	✗				
	313	Air Quality Action Day is declared in regions of New Hampshire when ozone and/or fine particle pollution is forecast to reach unhealthy levels	✓	✗			
	317	Annual # of public transit passengers; annual # of miles	✓	✗			
	321	Average Daily Traffic	✓	✗			
	328	Basic pedestrian and bicycle infrastructure	✗				
	329	Basic pedestrian and bicycle infrastructure	✗				
	332	Bicycle and Pedestrian Infrastructure (miles)	✗				
	333	Bicycle Level of Service (Level of Service)	✗				
	334	Bicycle Level of Service (LOS)	✓	✗			
	337	Boston Express Ridership (passengers per year)	✓	✗			
	344	CO2 Emissions – Hillsborough County (pounds of CO2 per capita)	✓	✗			
	354	Commute to Work – All Other Modes (% of Commuters)	✓	✗			
	355	Commute to Work – Carpool (% of Commuters)	✓	✗			
	356	Commute to Work – Driving Alone (% of Commuters)	✓	✗			
	357	Commute to Work (Bicycle) (% of Commuters)	✓	✗			
	358	Commute to Work (Carpool) (% of Commuters)	✓	✗			
	359	Commute to Work (Driving Alone) (% of Commuters)	✓	✗			
	360	Commute to Work (Motorcycle) (% of Commuters)	✓	✗			
	361	Commute to Work (Other) (% of Commuters)	✓	✗			
	362	Commute to Work (Public Transportation) (% of Commuters)	✓	✗			
	363	Commute to Work (Telecommute) (% of Commuters)	✓	✗			
	364	Commute to Work (Walking) (% of Commuters)	✓	✗			
	365	Commute to Work Mode Share	✓	✗			
	366	Commute to work patterns (car, carpool, bike, walk, transit, etc.)	✓	✗			
	368	Comply with state and local air quality standards	✓	✗			

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Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
	372	Convene partners (e.g., urban planners, architects, engineers) to consider health impacts when making transportation or land use decisions	✓	✗			
	373	Coordinate regional transportation investments with job clusters	✓	✗			
	383	Elderly Disabled Ridership (# of riders)	✓	✗			
	387	Employment change due to transit	✓	✗			
	388	Enact policies to reduce carbon footprints	✓	✗			
	389	Encourage climate change adaptation	✓	✗			
	390	Encourage design standards appropriate to the community context	✓	✗			
	393	Estimated vehicle miles travelled per capita in New Hampshire (2010)	✓	✗			
	395	Fatalities – Bicyclists and Pedestrians (# of fatalities per year)	✓	✗			
	396	Fatalities – Route 101	✓	✗			
	397	Fatalities (# of fatalities/year)	✓	✗			
	399	Five-year moving average of highway fatalities in New Hampshire with a goal of driving towards zero deaths (2012)	✓	✗			
	401	Flooding threshold - type of event needed for road segment to be flooded	✓	✗			
	402	Freight Movement (tons of total freight shipped by all modes)	✗				
	403	Freight Movement (total freight shipped by all modes) (Tons)	✓	✗			
	404	Fuel consumption	✓	✗			
	405	Fuel Consumption/Purchase	✓	✗			
	412	Has the parking provided in approved applications been consistent with pedestrian-scaled urbanism? (yes/no)	✓	✗			
	414	Highway Fatalities (# of Fatalities)(5- Year Moving Avg.	✓	✗			
	415	Highway Fatalities (Five Year Moving Average) (number)	✗	✗			
	416	How many new applications included design for bicycle and pedestrian infrastructure? (# of approved applications)	✓	✗			
	418	Implement traffic engineering strategies that allow pedestrians, bicyclists, motorists, and public transportation users to safely move along and across streets.	✓	✗			
	419	Incorporate pedestrian and bicycle lanes into street development.	✓	✗			
	420	Incorporate physical activity into the planning and design of every physical improvement to the city — from municipal buildings and new parks to streets and sidewalks.	✓	✗			
	421	Increase the # of key transit rail stations verified as accessible and fully compliant from 522 in 2010 to 560 in 2016	✓	✗			
	422	Increase the % of rail stations (where Amtrak is responsible for compliance) compliant with the ADA and Sec. 504 of the Rehabilitation Act of 1973 from 10% in 2010 to 100% in 2016	✓	✗			
	423	Increase the number of States and localities that adopt roadway design policies that accommodate all road users	✓	✗			
	424	Increase the number of transit boardings reported by rural area transit providers from 141 million in 2011 to 160 million in 2016. FTA	✓	✗			
	425	Increase the number of transit boardings reported by urbanized area transit providers from 10.0 billion in 2011 to 10.5 billion in 2016. FTA	✓	✗			
	426	Increase the proportion of adolescents who meet current Federal physical activity guidelines for aerobic physical activity and for muscle-strengthening	✓	✗			
	427	Increase the proportion of adults who meet current Federal physical activity guidelines for aerobic physical activity and for muscle-strengthening	✓	✗			
	428	Increase the proportion of adults who self-report good or better physical health	✓	✗			

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Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
	429	Increase the proportion of the Nation's elementary, middle, and high schools that have official school policies and engage in practices that promote a healthy and safe physical school environment	✓	✗			
	430	Increase the proportion of trips made by bicycle	✓	✗			
	431	Increase the proportion of trips made by walking	✓	✗			
	432	Increase the transit "market share" among commuters to work in at least 10 of the top 50 urbanized areas by population, as compared to 2010 market share levels. FTA	✓	✗			
	433	Increase use of alternative modes of transportation for work	✓	✗			
	440	LEED or other similarly certified green building non-residential structures constructed (# of building permits)	✓	✗			
	441	LEED or other similarly certified green building residential units constructed (# of building permits)	✓	✗			
	443	length of service (Level of service) of highway segment	✓	✗			
	445	Level of Traffic Stress (bicycles)	✓	✗			
	450	Map annual number of pedestrian and bicycle collisions (and severity of injury/fatality): per capita, per geographic area, by daytime population	✓	✗			
	452	Miles of airport runways in good condition	✓	✗			
	454	Miles of rail lines capable of 40 mph speed	✓	✗			
	455	Miles of rail lines capable of 40mph speed	✗				
	456	Miles of rail lines in New Hampshire capable of speeds of 40 miles per hour (2012)	✓	✗			
	457	Miles of road by pavement condition (NHS, state, local)	✓	✗			
	459	Miles of state highway pavement in good or fair condition	✓	✗			
	460	Miles of state highway pavement in good or fair condition	✓	✗			
	465	New commercial & industrial development	✗				
	473	New Energy Star or energy efficient residential units constructed (# of building permits)	✓	✗			
	474	New EnergyStar or energy efficient non-residential structures constructed (# of building permits)	✓	✗			
	481	NH Capital Corridor Project	✓	✗			
	489	Number of East-West Merrimack River Crossings (# of bridges)	✓	✗			
	494	Number of Red Listed state bridges in New Hampshire (2012)	✓	✗			
	495	Number of VMTs reduced as a result of transit.	✓	✗			
	502	Pavement condition (miles)	✓	✗			
	503	Pavement condition of state highways (# and % of miles in good, fair and poor condition)	✓	✗			
	504	Pavement Condition Surveys completed on the entire system every 2 yrs.	✓	✗			
	506	Pedestrian Level of Service (Level of Service)	✗				
	507	Pedestrian Level of Service (LOS)	✓	✗			
	514	Percentage of population served by transit	✓	✗			
	515	Percentage of population served by transit	✗				
	516	Percentage of Population With Access to Public Transport	✓	✗			
	517	Plan for equitable access to health care providers, schools, public safety facilities, and arts and cultural facilities	✓	✗			
	518	Plan for infill development within context of traffic safety	✓	✗			
	519	Plan for mixed land-use patterns that are walkable and bikeable	✓	✗			
	521	PM RELATED TO - Finance of Infrastructure & System Preservation	✓	✗			
	522	PM RELATED TO - Finance of Transit	✓	✗			
	523	PM RELATED TO - Finance of Highway Trust Fund	✓	✗			
	524	PM RELATED TO - Roadway impacts within conservation areas	✓	✗			
	525	PM RELATED TO - Sprawl and development density	✓	✗			
	526	PM related to tourism desired	✓	✗			
	529	Prevent inappropriate weight gain in youth and adults	✓	✗			
	532	Projects that connected to other bike-ped paths, lanes,	✗				
	534	Projects that connected to other bike-ped paths, lanes, or sidewalks (# of approved applications)	✓	✗			

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Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
	542	Proportion of households and proportion of jobs within 0.25 mile of local public transit (including both bus and rail) or 0.5 mile of a regional public transit, that has less than 15 minute frequencies	✓	✗			
	543	Proportion of households and proportion of jobs within 1/4 mile of local public transit (including both bus and rail) or 1/2 mile of a regional public transit, that has less than 15 minute frequencies	✗				
	545	Proportion of households that experience housing cost burden	✓	✗			
	546	Proportion of households that spend more than 30% of income on housing	✓	✗			
	547	Proportion of households that spend more than 50% of income on housing	✓	✗			
	549	Provide accessible parks, recreation, facilities, green	✓	✗			
	550	Provide accessible public facilities and spaces	✓	✗			
	551	Provide complete streets serving multiple functions	✓	✗			
	552	Public Transportation Ridership	✓	✗			
	553	Rail Lines Capable of 40 mph speed (miles)	✗				
	554	Rail Lines Capable of Speeds of 40 MPH (miles)	✗	✗			
	555	Rail Lines Capable of Speeds of 40 MPH (Miles) - uvlsrpc	✗				
	556	Red Listed Bridges - Municipally-Owned (number and percent)	✓	✗			
	557	Red Listed Bridges - State-Owned (number and percent)	✓	✗			
	558	Red Listed Bridges (Municipally-owned) (Number)	✗				
	559	Red Listed Bridges (Number)	✗				
	560	Red Listed Bridges (State-owned) (Number)	✗				
	561	Reduce motor vehicle crash-related deaths	✓	✗			
	562	Reduce nonfatal motor vehicle crash-related injuries	✓	✗			
	563	Reduce nonfatal pedestrian injuries on public roads	✓	✗			
	564	Reduce non-occupant (pedestrian and bicycle) fatalities	✓	✗			
	565	Reduce pedalcyclist deaths on public roads	✓	✗			
	566	Reduce pedestrian deaths on public roads	✓	✗			
	567	Reduce the number of days the Air Quality Index (AQI) exceeds 100, weighted by population and AQI	✓	✗			
	568	Reduce the number of hazardous materials transportation incidents involving death or major injury	✓	✗			
	569	Reduce the proportion of adults who are obese	✓	✗			
	570	Reduce the proportion of adults who engage in no leisure	✓	✗			
	571	Reduce the proportion of children and adolescents who are considered obese	✓	✗			
	572	Reduce the rate of rail-related accidents and incidents	✓	✗			
	577	Remaining Useful Life of Public Transit Fleet (Vehicle Life Remaining)	✓	✗			
	580	Ridership (public transit, senior/human services, volunteer driver programs, etc.)	✗	✗			
	581	Ridership (public transit, senior/human services, volunteer driver programs, etc.)	✗	✗			
	582	Ridership (public transit, senior/human services, volunteer driver programs, etc.)	✓	✗			
	589	Shows Sprawl versus Smart Growth/Sustainable Communities - denser development favors transit & multi-modal choices (Development Within Designated Growth Areas)	✓	✗			
	590	Sidewalk Availability (# of miles/1,000 population)	✓	✗			
	593	State Highway in Fair Condition (Miles)	✓	✗			
	594	State Highway in Fair Condition (miles)	✗	✗			
	595	State Highway in Good Condition (Miles)	✓	✗			
	596	State Highway in Good Condition (miles)	✗	✗			
	597	State Highway in Poor Condition (Miles)	✓	✗			
	598	State Highway in Poor Condition (miles)	✗	✗			
	599	State population with access to multi-modal transportation (2012)	✓	✗			
	600	Support schools and early learning centers in meeting physical activity guidelines	✓	✗			

✗ Remove ! Possible Future Metric ✓ Proceed

Note: Cells containing two measures denote changes in wording.

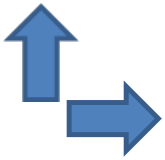
Master List of Measures from Phase II

ID	Measure ID	Measure Description	First sweep for duplication	Second Sweep for duplication	Round 1 Evaluation	Round 2 Evaluation	Round 3 Evaluation
	601	SVTC Ridership (# of riders/year)	✓	✗			
	604	To achieve a significant reduction in congestion on the National Highway System	✓	✗			
	605	To achieve a significant reduction in traffic fatalities (MAP-21)	✓	✗			
	606	To enhance the performance of the transportation system while protecting and enhancing the natural environment	✓	✗			
	607	To improve the efficiency of the surface transportation system	✓	✗			
	608	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development	✓	✗			
	609	To maintain the highway infrastructure asset system in a state of good repair	✓	✗			
	610	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.	✓	✗			
	611	Tons of freight shipped via all modes	✗				
	612	Total freight shipped via all modes (tons)	✓	✗			
	616	Total number of riders using public transit (2012)	✓	✗			
	617	Total number of vehicle, bike and pedestrian collisions	✓	✗			
	618	Total number of vehicle, bike and pedestrian collisions	✗				
	619	Total number of vehicle, bike and pedestrian collisions	✗				
	622	Traffic Volume	✗				
	625	Transit coordination with business, healthcare, and other services	✓	✗			
	627	Transit, Rail, and Air Ridership (rider count)	✗				
	628	Transit, Rail, and Air Ridership (rider count)	✗				
	633	Truck driver recruitment-retention	✓	✗			
	640	Vehicle Miles Traveled – Hillsborough County (miles travelled per capita per year)	✓	✗			
	641	Vehicle Miles Traveled Per Capita	✗				
	644	Volunteer Driver Program (# of rides provided)	✓	✗			
	647	Walkability	✓	✗			
	652	Workers that commute to work via bike, walk, transit or other means than single occupancy vehicle (2010)	✓	✗			

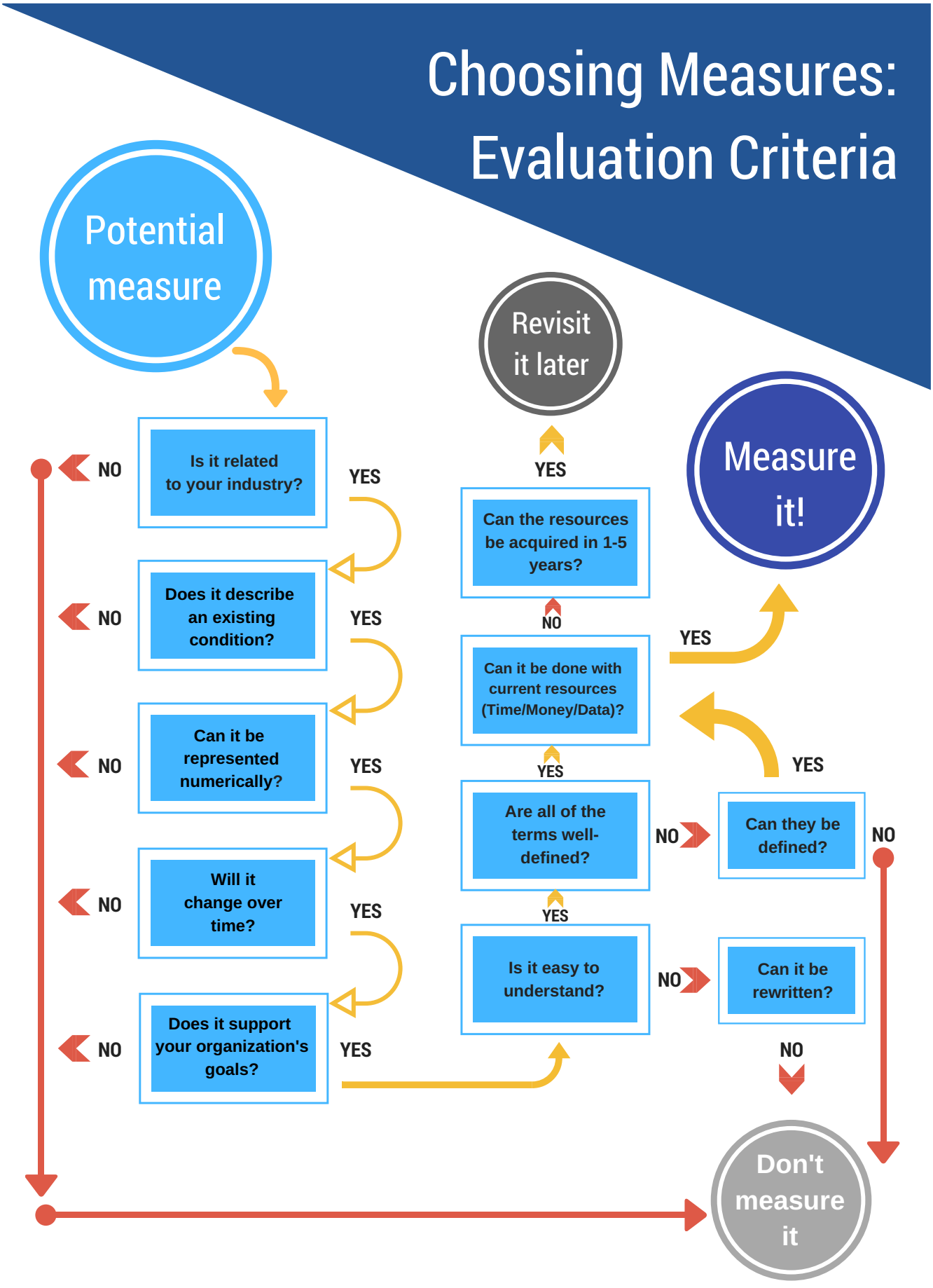
✗ Remove ! Possible Future Metric ✓ Proceed

Note: Cells containing two measures denote changes in wording.

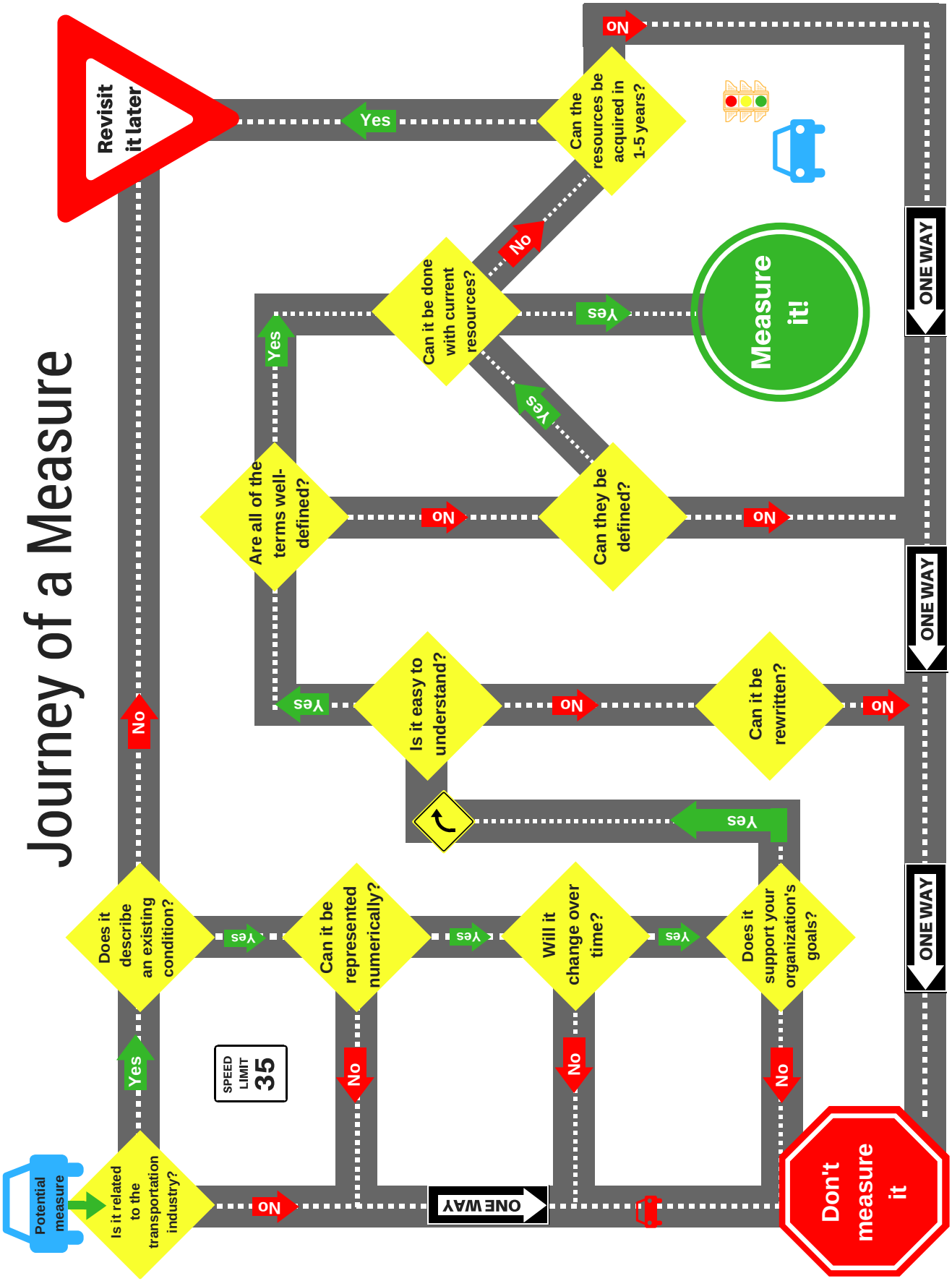
Partnering for Performance NH Supplemental Measures

Goal	Target	Measure	Desired Direction
Safety 	Reduce the number of motorcycle fatalities	Number of Motorcycle Fatalities	
Mobility 	Maintain or increase the useful life left in transit fleet	Remaining Useful Life for Transit Fleet	
Mobility 	Increase fixed route transit ridership	Fixed Route Transit Ridership	
Mobility 	Increase % of population with access to transit	% of General and Low Income Population Served by Transit	
Economic Vitality 	Increase the number of employers that are served by public transportation	% of Major Employers Served by Transit	
Environment 	Increase the number of transit vehicles that use alternative fuels	% of Transit Fleet Using Alternative Fuels	
Environment 	Decrease greenhouse gas (GHG) emissions in NH	Transportation-related GHG Emissions Per Capita	

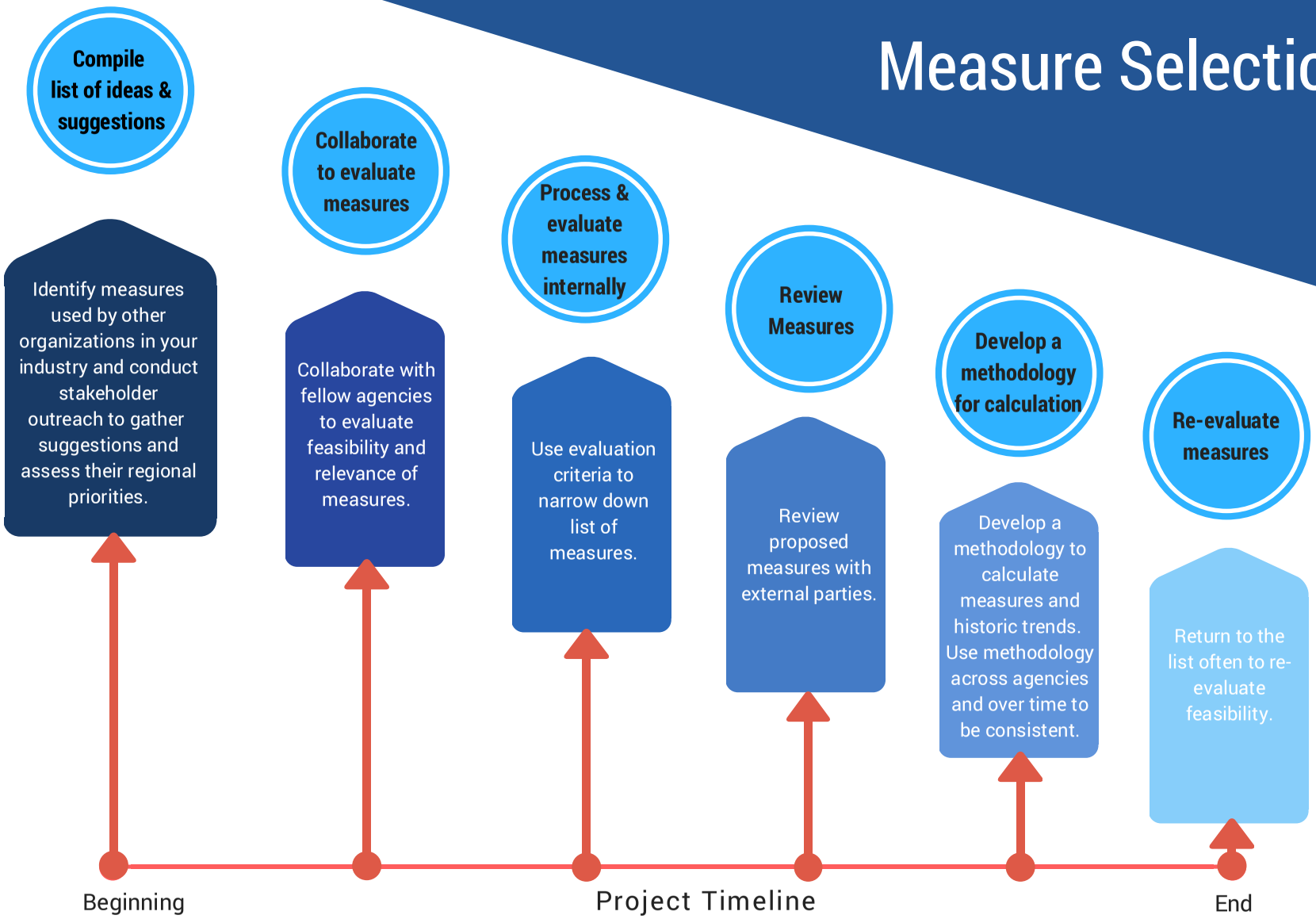
Choosing Measures: Evaluation Criteria



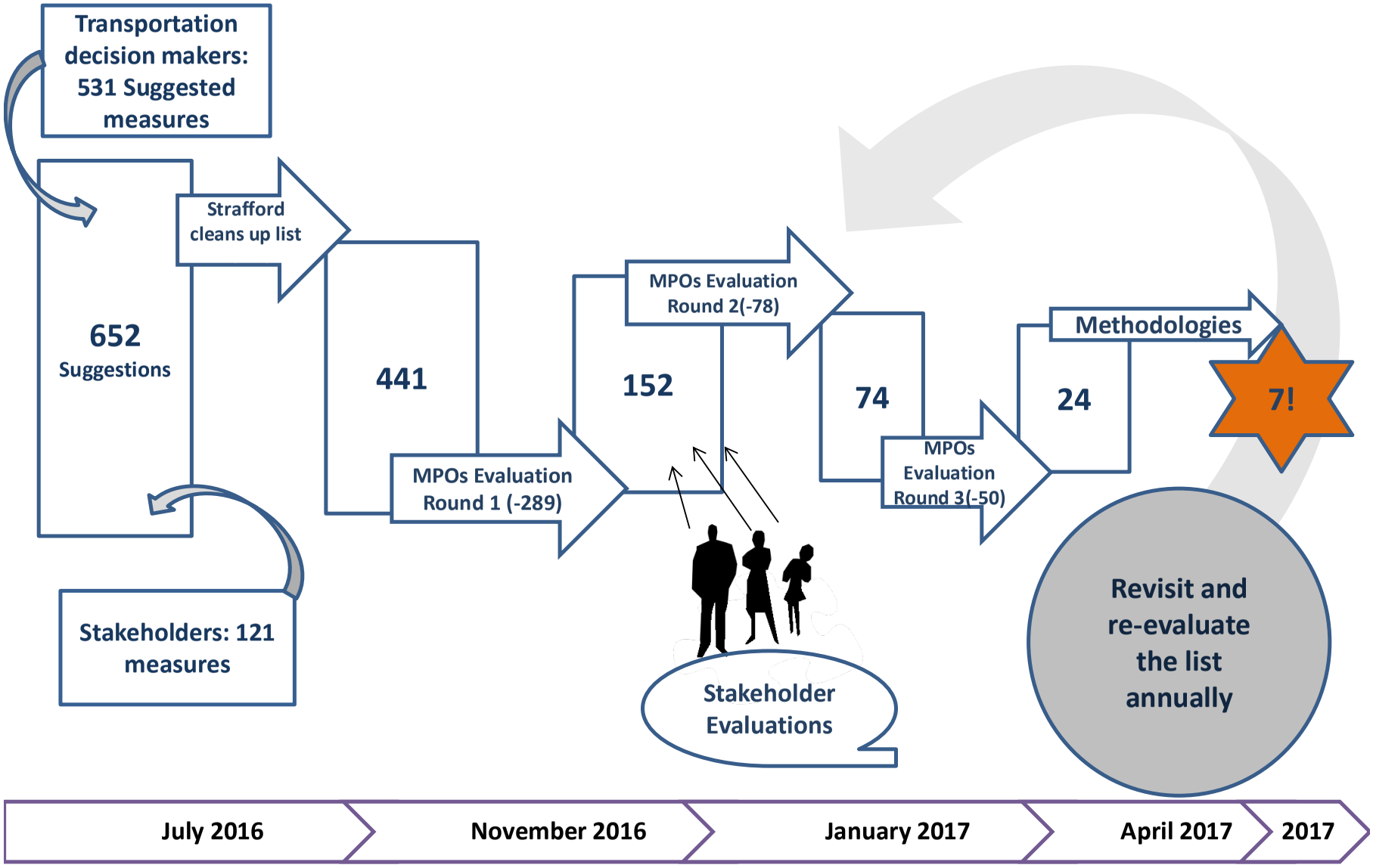
Journey of a Measure



Performance Based Planning: Measure Selection



The Journey from 652 ⟹ 7 Measures



The Journey of Partnering for Performance NH Measures

Performance Measurement Insider Tips

Partnering for Performance NH

Insider Tips for Performance Measurement

Do

- ✔ Use SMART performance measures (Specific, Measurable, Attainable, Relevant, and Timely).
- ✔ Revisit goals throughout the process to ensure consistency with measures.
- ✔ Evaluate feasibility early in the process.
- ✔ Get early input from the agencies that will be providing the data for your measures. Ideally, involve them throughout the process.
- ✔ Document your methodology from data collection through target setting and reporting.
- ✔ Determine early on in your process if you are measuring something that is likely to change AND something that you can affect change upon.
- ✔ Set clear definition of terms; be consistent in use.
- ✔ Start small. You can always add additional measures in future.
- ✔ Plan to revisit measures periodically after implementation to evaluate effectiveness.

Don't

- ✖ Re-invent the wheel. Many agencies have performance measures. Look at your industry for best practices or for ideas of what to measure.
- ✖ Spend time evaluating measures that you can't impact.
- ✖ Take on more measures than you can maintain over time.
- ✖ Set targets for things that you cannot control

Example System Performance Report

SUPPLEMENTAL MEASURE

MOTORCYCLE FATALITIES

DESCRIPTION

Motorcyclist fatalities were 21 percent of all fatalities on New Hampshire roads from 2010 to 2015. New Hampshire does not have a motorcycle helmet law. In 2015, 62 percent of motorcycle riders killed in traffic accidents in New Hampshire were not wearing helmets. The annual Laconia Motorcycle Week each June is a huge tourist attraction for the state, drawing thousands of out-of-state motorcyclists. Improving safety for motorcyclists on our roads is critical not only for New Hampshire residents, but for our tourists as well.

DATABASES & SOURCES

The National Highway Traffic Safety Administration's Fatality Analysis Reporting System contains data for all motor vehicle crashes resulting in the death of an individual within 30 days after the crash. This data can be analyzed at the state, regional, municipal, or corridor level.

TRENDS

These are very small numbers in the region, with a high of three motorcycle fatalities in 2012 and 2013, however the five-year rolling average trend is increasing. Infrastructure improvements such as high-friction pavements, increased signage, guardrails, Highway Safety Improvement Program projects, and improved pavement condition could help to reduce motorcycle fatalities. Our target is to maintain or decrease the number of motorcycle fatalities (2 in 2015).

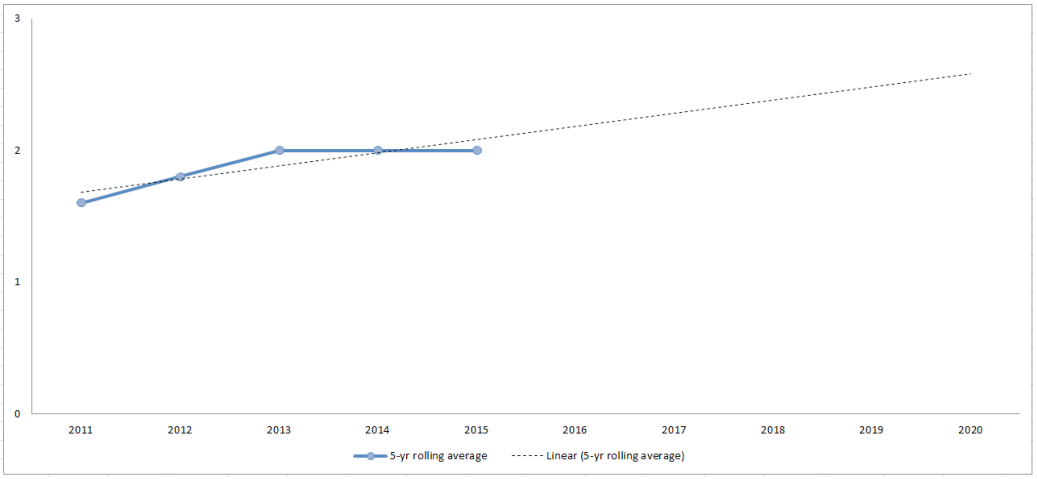
DESIRED TREND

GOALS

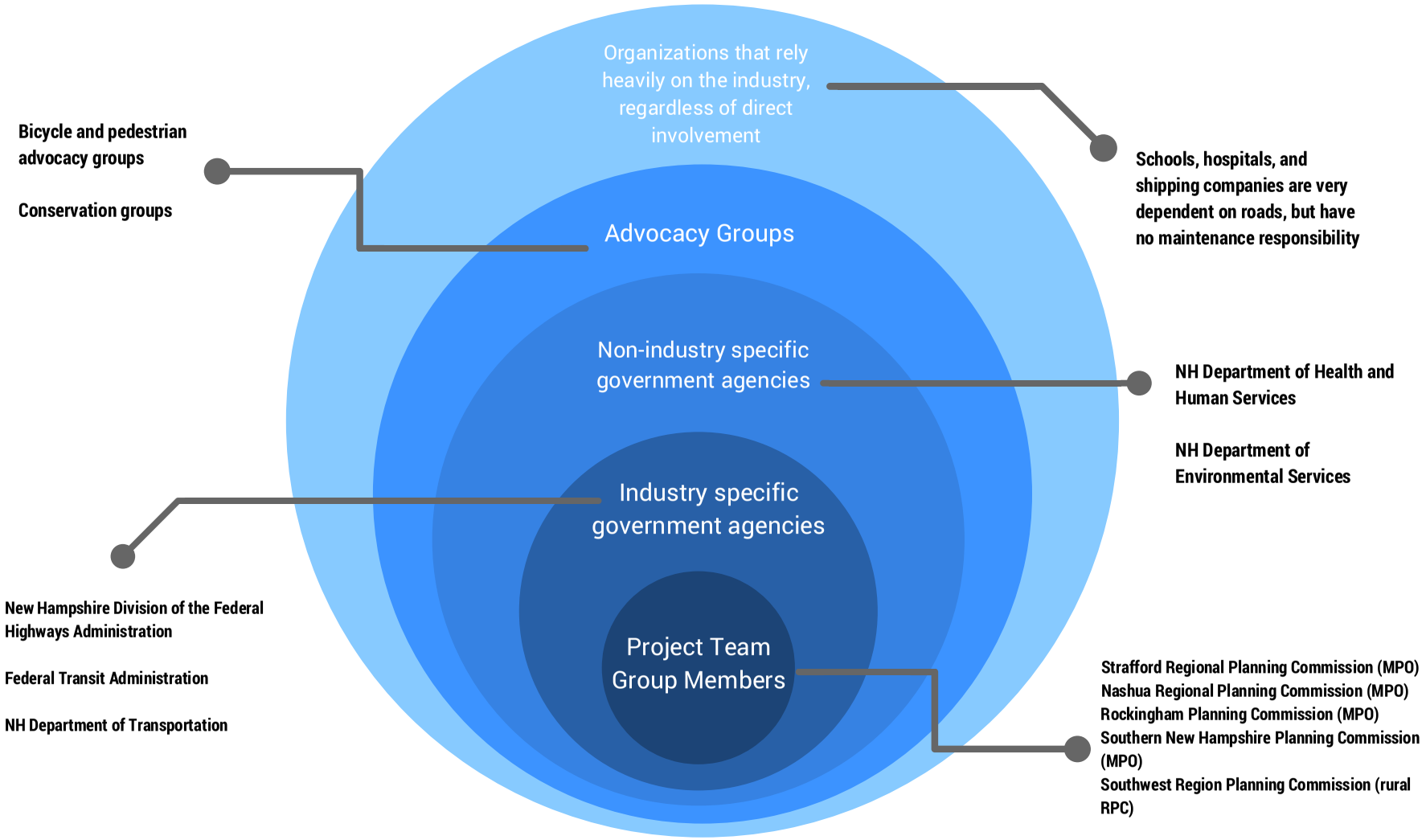
- Safety ■
- Mobility □
- Infrastructure □
- Livability ■
- Economic Vitality □
- Congestion Mitigation ■
- Environment □

APPLIED USES

- Project Selection ■
- MPO Plans ■
- Technical Assistance ■
- Corridor Studies ■



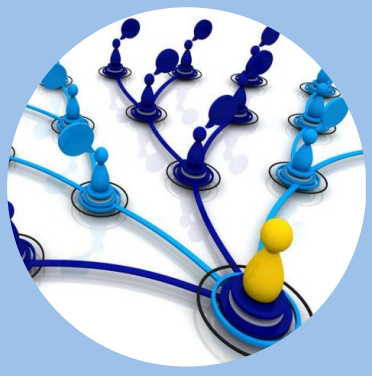
Establishing Stakeholders



Best Practice for Stakeholder Engagement

How to successfully engage stakeholders in your project

Spending a significant amount of time defining, discussing, and refining your project goals and expectations is vital to creating meaningful stakeholder engagement. If your objectives are clear, there will be clarity and purpose in your engagement.



This is a very important part of the engagement process. Lack of clarity and lack of objective within the project team creates murky relationships and expectations with external parties. Having a very well defined and articulated concept of why YOU are invested in your project, and consequently why a stakeholder should be invested, is the key to creating a strong relationship.

Tips

- Be precise about your project goals and able to communicate them plainly.
- Be very clear about your expectations for the role you would like stakeholders to play.
- Be specific and personal—research your stakeholders and their areas of expertise. Preparation before the initial engagement can lead to a much more effective collaboration.
- Implement stakeholders' ideas and collaborate with stakeholders to further your objectives.
- Show stakeholders how their involvement has helped. Prepare to give involved stakeholders frequent updates and feedback to let them know the impact of their time and commitment to the project.


Communication Strategies
Process Map
Create clear demonstration of decision-making processes
Updates
Schedule frequent updates on progress
Social Media
Use social media presence to create opportunities for engagement
Role Clarity
Share clear expectations of roles stakeholders will play in the process/project
Blog & Articles
Invite readers to comment and participate in our posts
Website
Document and outline the decision-making process,"story," and role(s) stakeholders played on website
Events
Include stakeholders in engagement events and activities, and provide networking opportunities

Phase I Interview Questions

Performance Based Transportation Planning in New Hampshire:
Stakeholder Input

Background

Background information on what the MPOs are doing:
New Hampshire Metropolitan Planning Organizations (MPOs) along with the Department of Transportation (NHDOT), Federal Highways Administration (FHWA), and Federal Transit Administration (FTA) have formed a preliminary *Working Group* to establish and implement performance-based transportation planning in New Hampshire, on both regional and state levels.

Federal legislation, *Moving Ahead for Progress in the 21st Century* (MAP-21) requires the MPOs and the DOT to track performance measures in the emphasis areas covered by the 7 National Goals, and align them with Federal Planning Factors (see last page). Performance measures are metrics used to assess progress toward meeting an objective[1]. On behalf of the Working Group, SRPC is conducting focused interviews/discussions with stakeholders to ensure that the MPOs consider all angles and perspectives during the establishment process of additional transportation performance measures (those not covered under MAP-21). As a Working Group, we would like to develop a list of common *inter-regional and/or statewide* measures that all of the MPOs in NH can use collaboratively with the DOT.

SRPC is interviewing representatives from state agencies (e.g. DOT, DES), federal agencies (e.g. FHWA, FTA), advocacy groups (all modes), regional planning commissions and MPOs, freight (rail, truck, port, and air), public and private bus transit providers, passenger rail, expert groups (e.g. Volpe, Boston Region MPO, Coastal Adaptation Workgroup, etc.), and other entities. The Working Group is interested in hearing from *experts* about measures that we should consider related to your specialty area (e.g. stormwater, climate resilience, flooding, economics, etc.) within the context of transportation, as well as other related specialties that may apply to transportation system planning.

For more information on performance based transportation planning efforts, please contact Natallia (Natasha) Leuchanka at nleuchanka@strafford.org or at (603) 994-3500.

[1] US Department of Transportation, Federal Highways Administration. Performance-Based Planning and Programming Guidebook. 2013. Available at: http://www.fhwa.dot.gov/planning/performance_based_planning/pbpp_guidebook/

Interview/Discussion Guide

Guiding Questions:

NOTE: *Bold and numbered questions are leading and primary discussion topics. Bulleted questions/comments are follow-up discussion topics.*

1. **Does your agency have any requirements or mandates to use performance measures or implement performance-based planning? Please explain.**

- If 'YES', what is the requirement and/or mandate?
- If 'NO', do you think you will have any mandates in the future?

2. **How does _____ (insert agency name) plan to use *inter-regional and statewide* measures in the future?**

- How do we (transportation agencies) make *inter-regional and statewide* measures, as well as their associated projects and products useful?
    - How do we (transportation agencies) prevent products (particularly those derived from performance measures) from sitting on the shelf? – Mode of delivery
- How do you see the measures being used in improving the transportation system and regional planning? How do we relate measures and performance into planning?

3. **What measures is _____ (insert agency name) interested in seeing in the *inter-regional and/or statewide* list of performance measures?**

4. **What measures is _____ (insert agency name) currently tracking?**

- What is the data source for the measure(s)?
- How easy is it to compile the measure?
- What is the estimated level of effort for deriving the measure (easy to complex)?
- Who is the reporting agency for the measure?
- Who calculates the measure?
- Does your agency have influence over this measure?

5. **Based on the measures currently being tracked and/or on the measures being proposed by your partners, *are there any particular areas that you have any concerns about*? Describe them.**
    - E.g. data availability, data privacy, topical concerns in certain regions [such as sea level rise in the Rockingham region], staffing/resource costs for performance measures, etc.

6. **What data does _____ (insert agency name) have that can be used by the MPOs and the DOT to track [other] meaningful measures (on regional and/or statewide scales)?**

- Also think about data access via partner organizations that may have a more specific mission (e.g. advocacy groups) or may have expertise/data in areas that you do not.

7. **What other agencies or leaders do you think should be involved in this discussion?**

- Who else do you think we should speak with?
- Are we missing any major transportation stakeholders in the area?
- Currently, we have identified stakeholders in the areas of public and private bus transit, passenger rail, freight, advocacy, MPOs, state departments (NHDOT bureaus; DES), and federal transportation agencies.

National Performance Goals

1. **Safety**—to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
2. **Infrastructure condition**—to maintain the highway infrastructure asset system in a state of good repair.
3. **Congestion reduction**—to achieve a significant reduction in congestion on the NHS.
4. **System reliability**—to improve the efficiency of the surface transportation system.
5. **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.
6. **Environmental sustainability**—to enhance the performance of the transportation system while protecting and enhancing the natural environment.
7. **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.

Federal Planning Factors

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users;
4. Increase the accessibility and mobility of people and for freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation; and
8. Emphasize the preservation of the existing transportation system.

Public Engagement Tracking

Public Engagement - December 2015- September 2017

	Q1 2016* (*includes Dec. 2015)	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017
TAC	2	1	3	3	3	2	1
Policy	2	1	3	3	3	2	1
External Presentation			1	2	2	2	2
Bits 'n Pieces	1		3	1	3	3	2
SRPC Newsletter	3	2	2	1	1	1	2
Stakeholder Emails	1		2	1	1	3	2

Partnering for Performance SMART Collaboration Framework

SMART collaboration

With some minor adjustments, the SMART acronym can be re-purposed to provide a framework for a successful collaborative work effort in any setting.

Questions to Ask!

- **Specific**: Have the project goals and objectives been clearly defined without dictating a single approach? Have participant roles been defined? Have ground rules for conduct been established? How will communications between agencies occur?
- **Measurable**: Are tasks assigned for each objective to indicate progress towards the outcome? Does the project facilitate the use of interim milestones that can signal completion of specific components?
- **Agreed to**: Do participants understand the goal and objectives of the project? Is there consensus on the approach and ground rules? Are all participants committed to completing the work that will be required? Are there opportunities to revisit aspects of the collaboration to address concerns that arise during the project?
- **Realistic**: Is the objective reasonably able to be accomplished within limitations of resources and other demands? Are estimates of the time/resources required for tasks reasonable?
- **Time-bound**: Has a clear timeline for completion been established? Are there regularly scheduled meetings or opportunities to check-in with the group?

Specific

Measurable

Agreed to

Realistic

Time-bound

Partnering for Performance NH
Tools for Collaboration

1. **Dedicated project leadership**
   Having one agency as the dedicated project leader helps to make the day-to-day efforts of the project run smoothly. The project lead handles all of the administrative work, organizes the group, assigns and manages tasks, sets deadlines, and reduces the overall work for the other agencies.

2. **Assessments**
   Self-assessment is crucial to identifying strengths and weaknesses in any process, and collaborative efforts are not an exception. In collaborative efforts, it is important to know how each participant perceives the group. This information can be used to develop strategies to improve on weaknesses.
   The PlanWorks Partner Assessment was used for this project[1]. These assessments address 10 topic areas: process steps, data and information, tools and technology, decision-making authority, organizational support, role clarity, participant stability, shared goals, sense of ownership, and practitioner communication. After taking the assessment, it is important to address weaknesses. If your project scores particularly low in practitioner communication, it may be worthwhile to consider project management software. If participants do not feel as though they have buy-in from their organization, seek ways to increase buy-in at the management level. The ability to target weaknesses with strategies helps to increase the efficacy of the group.

3. **Action Plan**
   An Action Plan helps to keep everyone on track. For this project, our Action Plan was dedicated solely to improving collaboration and was based off the PlanWorks Assessment. Each time the assessment was taken, we revisited the Action Plan to decide if what we were doing had helped, and what needed to be done to improve it.

Strategy	How it helped
Set up a data subgroup consisting of participants with more data experience	The data subgroup helped to write the methodologies for calculating measures, as well as checking the work of other MPOs to ensure that the methodology was clear, easy to replicate, and produced accurate numbers.
Universal portal to access project information	We used an online project management software to serve as a project portal. All project communications were through this application. We also purchased cloud storage that integrated with the application and used this to store all project files. This kept all of our files, conversations, and tasks in one place and helped us to stay on track.
Documentation of decision-making process including end results	All decisions that were made by the group throughout the project were documented and shared via the project management software.
Documentation of meetings	Meeting notes from each meeting were posted in the project management software and available for anyone on the project to view and comment on.
Agency commitment via value in process as well as ownership in the process	We saw great buy-in from each of the MPOs as well as our advisory partners. Representatives from the four MPOs were at every meeting.

[1] While primarily Transportation focused, PlanWorks can be applied to a variety of projects that are not necessarily transportation focused.

4. **Project management software**
   Project management software can be a life-saver in collaborative projects. It serves as a project portal that contains all information one needs to be successful in the project. All file sharing and communication can be done through the software, which makes it easier to find documents and past conversations. Additionally, all of these conversations are open and visible to the entire team. Anyone can go back and reference it. Most project management software have the ability to assign tasks to team members and create Gantt charts that show tasks on a timeline. This makes staying on track easier.

5. **Ground Rules**
   Another useful tool that helps to keep everyone on track is to spend time setting and agreeing upon ground rules. Some that were particularly useful in this project were:
   a. Seek common ground and understanding (not problems and conflict)
   b. Be brief and meaningful when voicing your opinion
   c. Stay out of the weeds and the swamps (when not necessary)
   d. Be back from breaks on time
   e. ELMO ("Enough, Let's Move On")