Southwest Region Planning Commission
37 Ashuelot Street, Keene, NH 03431 603-357-0557 Voice 603-357-7440 Fax

Transportation Advisory Committee

October 3, 2022
2:00 p.m.

Southwest Region Planning Commission
37 Ashuelot Street, Keene, NH

Agenda

I. Welcome and Introductions

II. Minutes of September 12, 2022

III. 2025-2034 Ten Year Plan Project Review Process

IV. Next Meeting: October 31, 2022

VII. Adjourn

TDD Access: Relay NH 1-800-735-2964
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Southwest Region Planning Commission

Transportation Advisory Committee

Minutes

September 12, 2022

Present: Kendall Lane, Chairman, *City of Keene;* Frank Sterling, Vice Chairman, *Town of Jaffrey;* Susan Ashworth, *Home Healthcare, Hospice and Community Services;* Brian Barden, *Town of Dublin;* Leslie Casey, *Town of Sullivan;* William Faulkner, *Pathways for Keene;* Leandra MacDonald, *Town of Peterborough;* Cheryl Mayberry, *Town of Walpole;* Ed Smith, *Town of Hinsdale;* Ruth Ward, *Town of Stoddard;* John Kallfelz (ex officio) *NH Department of Transportation (NHDOT).*

Staff members present: Tim Murphy, Executive Director; J. B. Mack, Principal Planner; Rebecca Baldwin, Office Manager; Henry Underwood, *GIS Specialist/Planner;* Rich Clough, *Office Support Specialist.*

Guests present: Kürt Blomquist, Don Lussier, *City of Keene*; Michael Branley, Sara Bollinger, *Town of Swanzey*; Jodi Scanlan, John Snowdon, *Town of Westmoreland*; John Byatt, *Beta Engineering* (remote).

I. Welcome and Introductions

Chairman Lane called the meeting to order at 2:03 p.m. and welcomed those in attendance. He acknowledged that a quorum of the membership was attending in-person.

II. Minutes of June 6, 2022

Motion: To approve the minutes of June 6, 2022 as presented.

Motion by Frank Sterling, seconded by Ed Smith. Minutes were approved by unanimous vote.

III. 2025-2034 Ten Year Plan Project Review Process

J. B. Mack announced that today's TAC meeting will be dedicated to a review of the role of SWRPC and TAC in the 2025-2034 Ten Year Plan (TYP) review process. The meeting will also provide a review of the projects that have been nominated for inclusion in the TYP.

J. B. Mack explained that SWRPC through it's TAC has been asked by NHDOT to prioritize regional projects for the TYP keeping within the budget that has been allocated to this region. He noted that he was waiting for confirmation on the budget amount, but expects it to be $5.12 million. He reviewed the timeline and milestones for the project that has been broken into three phases. The first phase includes the development of a preliminary list of priority projects that need to be submitted to NHDOT by November 10, 2022. Phase two includes screening of the projects by NHDOT that will take into consideration cost estimates, feasibility, strength of projects, and potential for other funding sources. Feedback from NHDOT

will be received sometime in January or February 2023. TAC's final recommendation for the prioritization of projects is due back to NHDOT by March 31, 2023. Phase three takes place in the Fall of 2023 and includes GACIT hearings and potential TAC testimony before the NH legislature.

Regarding the process to-date, J. B. Mack explained that July 29th was SWRPC's deadline for the submittal of project nominations. Projects were reviewed and sponsors of the nominations were contacted to provide additional information as needed. Seven nominations were received from Hinsdale, Keene, a joint project from Keene and Swanzey, Swanzey, Westmoreland, Temple, and Richmond. He reminded the TAC that NHDOT requires that a NH registered professional engineer screen the scope of each project and provide a cost estimate. SWRPC set aside $20,000 in transportation planning funds to obtain engineering services for towns that do not have their own engineering resources. Among the project nominations that were submitted, only the City of Keene's project nominations were developed by a professional engineer. Given the limitations to SWRPC's engineering budget and the short timeline for processing nominations, staff were obligated to pre-screen the five project nominations that were not prepared by engineers. He reported that staff determined that the Temple and Richmond projects were unlikely to score well against the criteria and were dropped from consideration. Chairman Lane asked if both towns had been notified and J. B. Mack responded they have been in touch with the towns, and SWRPC plans to assist those towns in seeking other funding opportunities.

Following an engineering services procurement process with a subcommittee of TAC, SWRPC has chosen BETA Engineering to perform these services. They were given the Hinsdale, Swanzey and Westmoreland projects to work on. Since the City of Keene has a NH licensed engineer on staff, NHDOT agreed that their projects did not need further review. BETA Engineering will begin working on the three projects assigned to them today and will have four weeks to complete their work.

At a proposed TAC meeting on October 3, 2022 members will receive a review of the scoring process and criteria that will be used to individually rank nominated projects. Staff will make scoring packets available to TAC members on October 14th that will include project information, scoring criteria and input from nomination sponsors. TAC will have one and a half weeks to complete their scoring assignments and will meet on October 31st to reach a consensus on the project ranking that will be submitted to NHDOT by the November 10th deadline. Tim Murphy acknowledged that this will be a tight timeline and expressed appreciation to TAC for their willingness to meet the deadline. Chairman Lane noted that having the engineering input for the projects will be helpful to the process.

Henry Underwood provided an in-depth description on each of the five projects that were nominated for inclusion in the 2025-2034 TYP. Information was provided including the purpose/need and scope/description of each project as follows. (See Attached)

- Hinsdale Fort Hill Branch Rail Trail Bridge Improvements

Chairman Lane asked if the bridge has been inspected and J. B. Mack responded that BETA Engineering will be doing a site visit as part of their scope of work. Chairman Lane asked what is close to the bridge and Ed Smith noted this will help connect access to trails on both sides of the river.

- Keene NH 12 & 32 Intersection Improvements

It was noted that this intersection is part of our National Highway System. Don Lussier pointed-out that this project includes estimates for either a signal or roundabout option and will have an effect on one private property. Chairman Lane asked how many accidents have occurred in this area since work was last done on it and Don Lussier replied that he based his calculations on a ten year period. Frank Sterling noted that a previous project that involved constructing a roundabout at the intersection of NH 12, Lake Street and

Swanzey Factory Road was in part designed to help decrease traffic flow on NH 32 and asked if that has worked. Kürt Blomquist replied that it has helped going northbound but not southbound. J. B. Mack noted that we will be taking a closer look at this and providing more information in the scoring information packet.

- Keene-Swanzey Base Hill Road Improvements

Don Lussier explained that Base Hill Road was not designed and built for the volume of traffic that uses it on a daily basis. The lack of drainage makes the road base stay saturated at all times. Work was done in this area over the summer and will need to be redone in 2-3 years. Chairman Lane noted that the installation of the roundabout has increased traffic on this road. Kürt Blomquist noted that this is a regional issue.

- Swanzey NH 10 West Swanzey Improvements

Michael Branley explained that the idea for this nomination came from the Route 10 Corridor Study that was completed last year. Leandra MacDonald asked if any crash records have been gathered for this are and Henry Underwood replied that they were calculated during the Route 10 Corridor Study. J. B. Mack noted that this section of road is quite wide and there is a lot of speeding on it. It is possible that traffic calming efforts could improve the situation. Frank Sterling asked how far this would be from Base Hill Road and Michael Branley responded that it is about two miles south of Base Hill Road.

- Westmoreland River Road Bridge Replacement

It was noted that there are no cost estimates for this nomination and they will be developed by BETA Engineering. Chairman Lane suggested that the County might have some engineering records on this project since it is near Maplewood Nursing Home. John Snowdon reported that the bridge was built in 1937 and is the only one left in NH with this type of construction. He noted the Town road agent has expressed concern about how he will plow the road if the bridge is closed and added that the Town of Westmoreland provides all emergency services to the Maplewood facility. John Snowdon reported that the County Administrator has concurred that the bridge provides important access to the facility as well. John Snowdon noted that employees at Maplewood would need to travel on Partridge Brook Road if the bridge were closed and this road has flooded six times in the past several years. Ruth Ward asked if since this is a historic bridge is there any way it can be preserved. J. B. Mack noted this would be looked into as part of the project evaluation process.

Tim Murphy commended those who put forward nominations for the 2025-2034 TYP. He expressed concern that some of these projects might not be able to wait that long. Kürt Blomquist agreed noting that if a project is listed in the TYP it gets recognized as a need and might be eligible for funding from other sources.

J. B. Mack noted that additional information will be provided on each of these projects when the scoring packets are distributed to TAC.

IV. Transportation Program Updates

J. B. Mack drew attention to the list of transportation program updates that was included in the agenda packet and encouraged members to contact staff with any questions.

V. Next Meeting

Chairman Lane announced that the next meeting of TAC is scheduled to take place on October 3, 2022.

VI. Adjourn

The meeting adjourned at 3:35 p.m.

Respectfully submitted,

Rebecca I. Baldwin

Rebecca I. Baldwin
Office Manager

2025-2034
NEW HAMPSHIRE TEN YEAR PLAN
TRANSPORTATION PROJECT NOMINATIONS
IN SWRPC PLANNING DISTRICT

PROJECT OVERVIEWS

CONTENTS

PROJECT 1 – HINSDALE FORT HILL BRANCH RAIL TRAIL TRESTLE BRIDGE IMPROVEMENTS

LOCATION

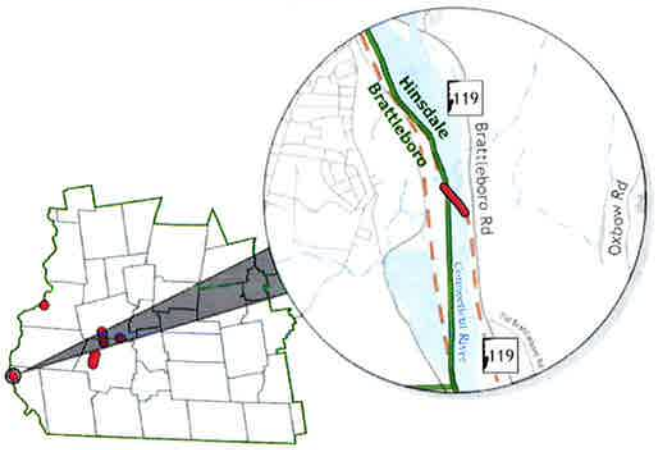

Figure 1 - Photo by Henry Underwood (November, 2020)

PROJECT TYPE(S)

Bicycle and Pedestrian Improvements (sidewalks, bike trails, multi-use paths, traffic calming improvements)

PURPOSE

The purpose of this project is to support connection of the New Hampshire and Vermont rail trail systems.

NEED

In Hinsdale there are few low stress places to walk or bicycle safely. The rail trail system is a great option, but it isn't connected to Brattleboro, VT. Route 119 is a high traffic area. Many people commute to Brattleboro VT for work and if they chose to walk or bicycle they have no other means except to utilize the road. Currently the rail road trestle bridge crossing the Connecticut River is not accessible to pedestrians or bicyclists. If the bridge was decked and safe, it would allow pedestrians, bicyclists and even fishermen to use the bridge. The NH rail system stretches to Keene NH. With Hinsdale as a border town to Brattleboro, VT, this bridge would open up opportunity to travel on to the West River Rail Trail System in Brattleboro, VT as well.

DESCRIPTION OF SCOPE

The proposed improvements would involve re-decking the bridge, improvements to the trail surface in the vicinity of the abutments, and the creation of a combination parking area and connection between the trail and NH 119. Cost information was not provided with the nomination.

PROJECT 2 – KEENE NH 12 & 32 INTERSECTION IMPROVEMENTS

LOCATION

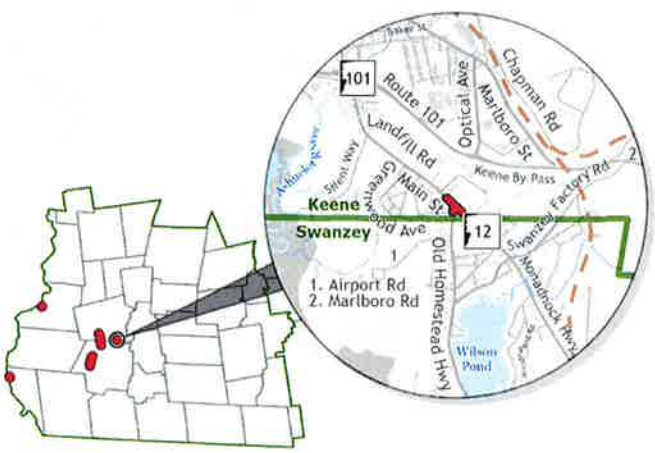

Figure 2 - Photo by Google (November, 2019)

PROJECT TYPE(S)

Highway Improvements (operational improvements, access management, intelligent transportation systems, widening, technology operation improvements)

PURPOSE

The purpose of this project is to create a safe, efficient intersection at the Junction of Rt. 32 (Old Homestead Highway) with Rt. 12 (Main Street).

NEED

The junction of Rt. 12 and 32 is currently configured as a "Y", with an angle of approximately 45°. This makes it very difficult for north-bound motorists on Rt. 32 to appreciate north-bound traffic on Rt. 12. In addition, the volume of traffic on Rt. 12 makes it challenging for vehicles to enter during peak hours. As part of the project, the intersection will be evaluated to determine if a signalized intersection or some other type of control would improve overall efficiency. The project will also alleviate a significant safety concern. In the last ten years, Keene Police have recorded approximately 20 motor vehicle accidents resulting in 5 injuries at this location.

DESCRIPTION OF SCOPE

Re-align the intersection to create a 90° Tee. If warranted, install efficiency improvements (e.g., traffic signal, roundabout, etc.). Reconstruct the roadway for approximately 300 feet in each direction. Cost information was provided with the nomination and was estimated to be $2,190,000 in 2034 dollars based on a 3% annual inflation rate without a signal. The City of Keene is also developing a separate cost estimate for a roundabout, which it intends to submit to SWRPC in the coming days.

PROJECT 3 – KEENE-SWANZEY BASE HILL ROAD IMPROVEMENTS

LOCATION

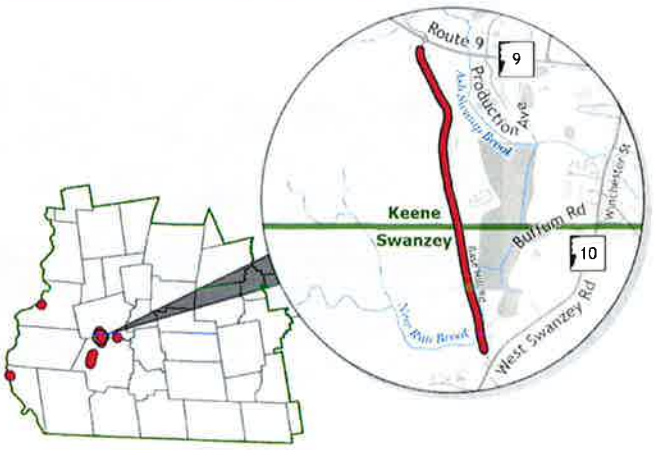

Figure 3 - Photo by Google (November, 2019)

PROJECT TYPE(S)

Highway Improvements (operational improvements, access management, intelligent transportation systems, widening, technology operation improvements)

PURPOSE

The purpose of this project is to improve the alignment, width, drainage and safety of Base Hill Road, between Rt. 9 and Rt. 10, to handle the increased traffic and heavier loads that it has carried in recent years.

NEED

Over the last several years, the City of Keene and Town of Swanzey has observed increasing traffic counts on Base Hill Road. In particular, heavy truck traffic has become routine. Most of this increase appears to be due to increases in through traffic traveling between Rt. 10 and Rt. 9, rather than development along Base Hill Rd. itself. Base Hill Road was not constructed with adequate structural fill or drainage features to handle these heavy loads. As a result, the pavement is in a poor state of repair and municipal maintenance efforts offer only short-lived relief. In addition, the narrow width of the roadway leaves no safe accommodation for pedestrians or bicyclists. Over the past 10 years, Keene Police have recorded over 80 motor vehicle accidents resulting in 29 injuries.

DESCRIPTION OF SCOPE

This project proposes to widen approximately 1.5 miles of Class V highway to a consistent cross section of 32 feet. This will allow for 12 foot travel lanes and 4 foot shoulders on each side. It is believed that most of the existing road base is not constructed with adequate structure. Therefore, existing base will be improved or replaced with property specified gravels. Design alternatives will evaluate the use of imported virgin material, full depth reclamation with soil amendment and/or the use of reinforcement geotextiles. In addition, roadside drainage ditches and culverts will be constructed to prevent saturation of the base material.

PROJECT 4 – SWANZEY NH 10 WEST SWANZEY IMPROVEMENTS

LOCATION

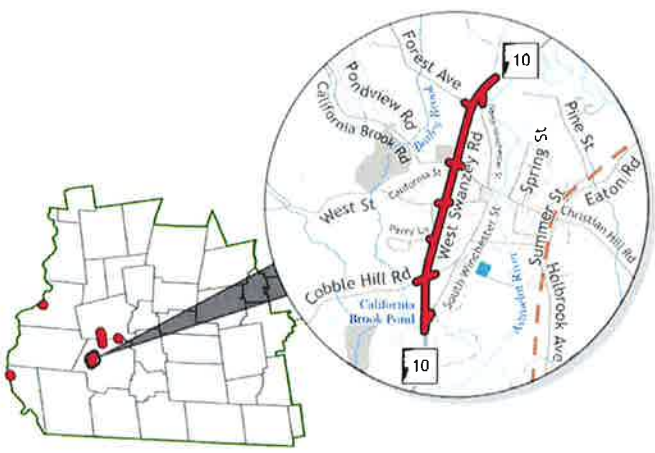

Figure 4 - Photo by Google (November, 2021)

PROJECT TYPE(S)

- Highway Improvements (operational improvements, access management, intelligent transportation systems, widening, technology operation improvements)
- Bicycle and Pedestrian Improvements (sidewalks, bike trails, multi-use paths, traffic calming improvements)

PURPOSE

The purpose of this project is to provide access management, traffic calming, intersection improvements, and complete streets improvements to increase non-motorized activity and protections for pedestrians on West Swanzey Road (NH 10) between North and South Winchester Street. There are three existing, one under construction, and one proposed multi-family developments within the proposed project area. These improvements will accommodate safety measures for the increased population density and serve existing and future economic development.

NEED

This section NH 10 bifurcates the community resulting in unsafe conditions for cars, pedestrians, and other non-motorized travel. It is an area of mixed development with several multi-family housing developments and a concentration of commercial and community activity. This portion of the corridor represents the heart of West Swanzey Village, home to the highest population density along the RT 10 corridor between Keene and Winchester. Introducing traffic calming measures and improving pedestrian safety would increase resident access to local community and recreational assets and will increase economic activity along the corridor. The Swanzey NH RT 10 Corridor Study identified 86% of traffic exceeded the posted 40 mph speed limit at the West St intersection with NH 10. There are limited, unconnected sections of sidewalk in the proposed project area and there are no crosswalks providing safe passage for pedestrians across NH 10.

DESCRIPTION OF SCOPE

Install crosswalks with rapid flashing beacons at the intersections with California St, West St, Cobble Hill Rd, and South Winchester St. Install a vegetative median with left turn pockets in place of the existing two-way left turn lane between California St and Cobble Hill Road. Install other streetscaping and traffic calming infrastructure. Make improvements to intersections. Extend / install sidewalks south to the Evergreen Knoll development and north to California Street on east and west sides of NH 10. Cost information was not provided with the nomination.

PROJECT 5 – WESTMORELAND RIVER ROAD BRIDGE REPLACEMENT

LOCATION

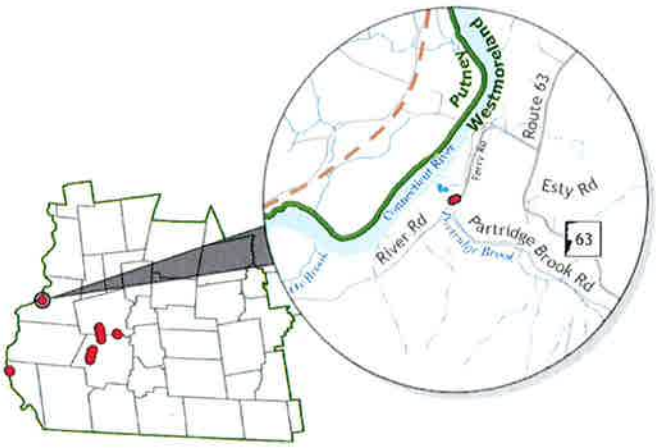

Figure 5 - Photo by NHDOT (July, 2011)

PROJECT TYPE(S)

Asset Management (bridge rehabilitation, bridge replacement, pavement repair/replacement)

PURPOSE

The purpose of this project is to replace bridge 89/100 that was placed on the NHDOT red list in 1996.

NEED

Bridge 089/100 is a major access route to the Cheshire County Nursing Home (Maplewood Nursing Home) and River Rd. NHDOT red listed the bridge in 1996. The Westmoreland Board of Selectmen placed a 10-ton weight restriction in 2013.

DESCRIPTION OF SCOPE

The bridge needs replacing to once again be safe for commercial traffic and for access to the Cheshire County Nursing Home. Cost information was not provided with the nomination.

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Agenda Item III

Date: October 3, 2022
To: Transportation Advisory Committee
From: Staff

RE: 2025-2034 Ten Year Plan Project Review Process

Background

In order to prepare for the TAC's scoring of the five 2025-2034 Ten Year Plan project nominations that were described at the September 12th TAC meeting, staff have prepared an interactive presentation to discuss the scoring criteria. The purpose of the discussion will be to refresh memories of TAC members that had experience scoring projects during the 2023-2032 TYP cycle, and to provide training to TAC members that have not yet gone through the scoring process. A copy of the TYP criteria is attached to this memo.

Recommendation

For your information.

NH TEN YEAR PLAN: *Regional Project Review*

NEW HAMPSHIRE'S "TEN YEAR PLAN"

The *New Hampshire 10-Year Transportation Improvement Plan* ("*Ten Year Plan*") is a fiscally-constrained program of state– and federal-funded transportation projects. The *Ten Year Plan* is updated biennially, pursuant to the requirements of New Hampshire RSA 240.

The *Ten Year Plan* includes projects related to roadway improvements, bicycle and pedestrian travel, public transportation, aviation, and natural hazard resiliency.

REGIONAL PROJECT REVIEW PROCESS

As part of the biennial update of the *Ten Year Plan*, each of the nine New Hampshire Regional Planning Commissions (RPCs) leads a process to identify and prioritize transportation projects in their respective regions for inclusion in the *Plan*.

Projects eligible for consideration through the regional review process:

- ⇒ ***Asset management projects*** (e.g., bridge rehabilitation, bridge replacement, pavement/base/subbase repair/replacement);
- ⇒ ***Bicycle and pedestrian improvements*** (e.g., sidewalks, bike trails, multi-use paths; traffic calming improvements);
- ⇒ ***Infrastructure-related travel demand management projects*** (e.g., park and ride lots, transit or HOV lanes, priority signalization, bus shelters, intermodal transportation centers);
- ⇒ ***Planning studies*** assessing the need for future projects;
- ⇒ ***Roadway improvements*** (e.g., operational improvements, access management, intelligent transportation systems, widening, technology operation improvements).

FEDERAL HIGHWAY SYSTEM PERFORMANCE MEASURES

Under the *Fixing America's Surface Transportation Act* (FAST Act), state DOTs and Metropolitan Planning Organizations (MPOs) are required to use **performance measures** to work toward specific targets in support of **national goals for transportation management** in all federally-funded projects and programs.

The Ten-Year Plan Criteria detailed in this packet reflect these federal performance measures. Relevant federal performance measures are noted with each criterion.

PROJECT REVIEW CRITERIA

The criteria included in this packet are intended to help RPC's prioritize projects in their respective regions. A list of criteria is provided in the table to the right.

Each RPC may assign weights to different criteria to reflect regional priorities. Weights should be assigned to criteria prior to scoring projects.

For each project, a score should be assigned for each criterion in order to develop an overall project score. **Detailed scoring procedures are provided on page 2 of this packet.**

Each RPC should clearly define the specific scoring process that will be used prior to scoring projects.

CRITERION	SUB-CRITERIA
Economic Development	Local & Regional; Freight Movement
Equity, Environmental Justice, & Accessibility	Equity & Environmental Justice; Accessibility
Mobility	Mobility Need & Performance; Mobility Intervention
Natural Hazard Resiliency	Hazard Risk; Hazard Mitigation
Network Significance	Traffic Volume; Facility Importance
Safety	Safety Performance; Safety Measures
State of Repair	State of Repair; Maintenance
Support	n/a

For each criterion, the following reference table is provided in order to standardize & guide project reviews:

REGIONAL EVALUATION CONSIDERATIONS	POTENTIAL RESOURCES & DATA SOURCES
This column includes the factors that should be considered in order to evaluate and rank proposed Ten Year Plan projects. *Depending on data availability, some considerations may not be evaluated for all projects.*	This column includes data and established resources for best practices that can be used to justify project rankings. *Not all sources of data will be available for each project. It is left to the discretion of each RPC as to which sources to consult.*

Note: project review criteria and associated scores are intended to inform the regional project prioritization process. RPCs may consider other factors, such as project costs and timelines, when deciding final regional priorities.

PROJECT SCORING PROCEDURES

A score shall be assigned for each criterion. Criteria scores should then be multiplied by criteria weights. The weighted criteria scores should then be summed to develop the final project score.

RPCs should make reasonable attempts to assign a defensible score to each project for each criterion. *Criteria shall not be skipped when scoring a project.* If a defensible score cannot be developed for a particular criterion due to data/information limitations, RPCs should 1) use their best judgement to assign a score; and 2) record any relevant data/information limitations.

If a criterion is irrelevant to the project, a score of 1 out of 10 should be assigned for that criterion.

EVALUATING PROJECT NEED & PROJECT IMPACT

There are two types of project evaluation criteria: 1) criteria that assess the *need* for a project; and 2) criteria that assess the *impact* of a project. For example, looking at the history of crashes at an intersection can help evaluate the *need* for a safety improvement project, while looking at Crash Modification Factors for the proposed improvements can help evaluate the *impact* that the project will have on safety.

The table below presents the project scoring scales for evaluating project *need* and project *impact*. Additionally, each criterion in this packet is labeled to indicate if it is evaluating *need* or *impact*.

PROJECT SCORING SCALES

SCORE	PROJECT NEED		PROJECT IMPACT		CRITERION RELEVANCY
10	There is a **very high need** for the project under this criterion.	**OR**	The proposed project would deliver a **significant improvement** under this criterion.	-	- - -
5	There is a **moderate need** for the project under this criterion.	**OR**	The proposed project would deliver a **moderate improvement** under this criterion.	-	- - -
1	There is **minimal/no need** for the project under this criterion.	**OR**	The proposed project would deliver **minimal/no improvement** under this criterion.	**OR**	The proposed project is **not relevant** to this criterion.
0	- - -	-	The proposed project would result in a **negative impact** under this criterion.	-	- - -

Safety

Definition: 1) a historical analysis of the **safety performance** (i.e. crash history) of a location over the past five (5) year period for all modes, and; 2) a forward-looking analysis of how the **countermeasures** proposed as part of a project would improve safety performance for all modes.

REGIONAL EVALUATION CONSIDERATIONS

Safety Performance **NEED**

Crash data considerations (past 5 years):

- What is the number of passenger vehicle crashes at the location?
- What is the severity of passenger vehicle crashes at the location?
- What is the crash rate at the location?
- What is the number of non-motorized (pedestrian and bicycle) crashes at the location?
- What is the severity of non-motorized (pedestrian and bicycle) crashes at the location?
- What is the number of transit vehicle crashes at the location?
- What is the severity of transit vehicle crashes at the location?

Additional safety performance considerations:

- Was the location identified through local, regional, or statewide network screening?
- Was the location the subject of a previous Road Safety Audit due to crash history?
- Was the project referred to the TYP from the HSIP program due to scope/cost?
- Were improvements implemented over the past five-year period that have changed (or could change) the safety performance of the location?

POTENTIAL RESOURCES & DATA SOURCES

Resources:

Crash data

- State (NHDOS) Crash Database
- Fatality Analysis Reporting System (FARS) Database
- Crash Reports from Local Police Departments
- Crash Data from Local Transit Agencies

Additional safety considerations

- Network Screening Summaries from the NHDOT Bureau of Highway Design
- Completed and Pending Road Safety Audit (RSA) Reports
- HSIP Program Summaries from the NHDOT Bureau of Highway Design

Federal Performance Measures Addressed

Federal Highway Administration (FHWA) Safety Performance Measures: 1) number of fatalities; 2) rate of fatalities; 3) number of serious injuries; 4) rate of serious injuries; 5) number of non-motorized fatalities and serious injuries.

Federal Transit Administration (FTA) Performance Measures: 1) number of reportable public transportation fatalities and public transportation fatality rate per total vehicle revenue miles by mode; 2) number of reportable public transportation injuries and public transportation injury rate per total vehicle revenue miles by mode; 3) number of reportable public transportation events and public transportation event rate per total vehicle revenue miles by mode; 4) mean distance between major public transportation mechanical failures by mode.

Safety (continued)

Definition: 1) a historical analysis of the **safety performance** (i.e. crash history) of a location over the past five (5) year period for all modes, and; 2) a forward-looking analysis of how the **countermeasures** proposed as part of a project would improve safety performance for all modes.

REGIONAL EVALUATION CONSIDERATIONS

Safety Measures **IMPACT**

Highway and Bridge Safety Measures:

- How significant/effective are the Crash Modification Factors (CMFs) for key project design elements?
- Has a Benefit-Cost analysis been developed as part of a Road Safety Audit or other special study? If so, how compelling is the Benefit-Cost ratio?
- Are Proven Safety Countermeasures (as sanctioned by the FHWA Office of Safety) included in the project's design?

Rail & Transit Safety Measures:

- Does the project involve safety improvements to an existing at-grade Railway-Highway crossing?
- Does the project eliminate an existing at-grade Railway-Highway crossing?
- Does the project implement improvements identified in a local or statewide Public Transit Agency Safety Plan (PTASP)?

Pedestrian Safety Measures:

- Are Safe Transportation for Every Pedestrian (STEP) countermeasures (as sanctioned by the FHWA Office of Safety) included in the project's design?
- How significant/effective are the pedestrian-related Crash Modification Factors (CMFs) for key project design elements?

Bicycle Safety Measures

- Would the project improve Bicycle Level of Traffic Stress (LTS) from a Level 3 or 4 to at least Level 2?
- How significant/effective are the bicycle-related Crash Modification Factors (CMFs) for key project design elements?

POTENTIAL RESOURCES & DATA SOURCES

Resources:

Highway and Bridge Safety Measures:

- Crash Modification Factor Clearinghouse (www.cmfclearinghouse.org/)
- AASHTO Highway Safety Manual (www.highwaysafetymanual.org/)
- Completed or pending Road Safety Audits
- FHWA Proven Safety Countermeasures (www.safety.fhwa.dot.gov/provencountermeasures/)

Rail & Transit Safety Measures:

- NHDOT Bureau of Highway Design Railway-Highway Crossing Improvement Priorities
- Local or Statewide Public Transit Agency Safety Plans (PTASPs)

Pedestrian Safety Measures:

- FHWA Safe Transportation for Every Pedestrian (STEP) Countermeasures (https://safety.fhwa.dot.gov/ped_bike/step/resources/)
- Crash Modification Factor Clearinghouse (www.cmfclearinghouse.org/)

Bicycle Safety Measures

- Bicycle LTS Model Data (as developed by MPOs or as developed for rural areas in the NH Statewide Pedestrian and Bicycle Transportation Plan).
- Crash Modification Factor Clearinghouse (www.cmfclearinghouse.org/)

Federal Performance Measures Addressed

Federal Highway Administration Safety Measures: 1) number of fatalities; 2) rate of fatalities; 3) number of serious injuries; 4) rate of serious injuries; 5) number of non-motorized fatalities & serious injuries.

Federal Transit Administration Safety Measures: 1) number of reportable public transportation fatalities and public transportation fatality rate per total vehicle revenue miles by mode; 2) number of reportable public transportation injuries and public transportation injury rate per total vehicle revenue miles by mode; 3) number of reportable public transportation events and public transportation event rate per total vehicle revenue miles by mode; 4) mean distance between major public transportation mechanical failures by mode.

Mobility

NH TEN YEAR PLAN
Regional Project Review

Definition: 1) an historical analysis of the mobility **need** and **performance** of a location for all modes, and 2) a forward-looking analysis of how **interventions** proposed as part of a project would improve the mobility performance for all modes.

REGIONAL EVALUATION CONSIDERATIONS

Mobility Need & Performance **NEED**

Facility Purpose

- What is the federal functional classification of the project area (i.e., is high mobility an underlying function of the facility)?
- Is the facility a local, regional, or statewide connection?

Planning

- Are the mobility needs in the project area defined in a local, regional, or state plan?

Motor Vehicles

- For projects addressing mobility need for vehicle travel, what is the project area's performance relative to congestion or delay, and if available, what is person throughput for a defined time period?

Rail and Transit

- For projects addressing mobility need for rail and transit, what is transit's performance relative to congestion or delay, and if available, what is ridership for a defined time period (throughput)?

Bicycle and Pedestrian

- For projects addressing mobility need for bicycle and pedestrian travel, what is project area's performance relative to delay, and if available, what is traffic for defined time period (throughput)?

POTENTIAL RESOURCES & DATA SOURCES

Resources:

Functional Classification

- Federal Functional Classification (NHDOT GIS Roads Layer)
- FHWA Highway Functional Classification Guidance: https://www.fhwa.dot.gov/planning/processes/statewide/related/highway_functional_classifications/section00.cfm

Planning

- Master Plans, Corridor Studies, Long Range Transportation Plans, MPO Congestion Management Process, etc.

Motor Vehicles

- Level of Travel Time Reliability (LOTTR) based on FHWA's National Performance Management Research Data Set (NPMRDS).
- Level of Service (LOS) related measures such as volume to capacity ratio, average travel speeds, average vehicle spacing, average delay at signal, field observation of traffic flow characteristics based on Highway Capacity Manual guidance.
- Throughput analyses based on local average vehicle occupancy data, regional model vehicle occupancy data or National Highway Travel Survey vehicle occupancy data multiplied by traffic data for defined time period.
- Regional and Statewide ITS architectures

Rail and Transit

- For projects addressing rail & transit mobility: Rail or transit operator report regarding on-time performance, ridership data, passenger surveys.

Bicycle and Pedestrian

- For projects addressing bicycle & pedestrian mobility: pedestrian/bicyclist intercept surveys, pedestrian signal timing data, pedestrian/bicyclist activity through project area for defined time period; bicyclist level of traffic stress.

Federal Performance Measures Addressed

Federal Highway Administration (FHWA) System Performance Measures: 1) reliable person-miles traveled on the Interstate System; 2) reliable person-miles traveled on the non-Interstate National Highway System.

Mobility (continued)

Definition: 1) an historical analysis of the mobility **need** and **performance** of a location for all modes, and 2) a forward-looking analysis of how **interventions** proposed as part of a project would improve the mobility performance for all modes.

REGIONAL EVALUATION CONSIDERATIONS

Mobility Intervention **IMPACT**

Motor Vehicles

- For projects addressing motor vehicle mobility, to what extent will the project provide congestion relief or mobility benefits?

Rail and Transit

- For projects addressing transit mobility, to what extent will the project impact a transit service's on time performance and/or improve transit user throughput (ie. the number of transit users moving through the project area in a given time period)?

Bicycle and Pedestrian

- For projects addressing bicycle or pedestrian mobility, to what extent will the project reduce bicyclist/pedestrian delay and/or improve bicyclist/pedestrian throughput (ie. the number of bicyclists/pedestrians moving through the project area in a given time period)?

Federal Performance Measures Addressed

Federal Highway Administration (FHWA) System Performance Measures: 1) reliable person-miles traveled on the Interstate System; 2) reliable person-miles traveled on the non-Interstate National Highway System.

POTENTIAL RESOURCES & DATA SOURCES

Resources:

RPC/MPO, NHDOT or independent evaluation of mobility interventions expressed in scope of work and project purpose. Including but not limited to the interventions listed below.

Motor Vehicles. Including but not limited to:

- *Intersection improvements*: signal optimization, roundabouts, addition of turning lanes, etc.
- *Road improvements*: HOV lanes, addition of breakdown lanes or shoulder widening, add lanes in merge areas, widen ramps, add exit lanes, ITS speed harmonization, ramp metering, etc.
- *Mode shift measures*: transit, park and ride lots, bike lanes, etc.
- *Capacity improvements*: adding lanes, access management measures [curb cut consolidation, left turn lanes, two way left turn lanes, medians, etc.]

Rail & Transit. Including but not limited to:

- Transit signal priority; dedicated transit lanes; improvement to sidewalk or bicycle connectivity to transit stops; transit stop improvements.

Bicycle and Pedestrian. Including but not limited to:

- *Bicycling interventions*:
  - ♦ New/improved bike lane
  - ♦ Widening of outside lane/shoulder
  - ♦ New off-street or parallel facility
  - ♦ Access management improvements (medians, elimination/consolidation of curb cuts)
  - ♦ Sight distance improvements
  - ♦ Intersection improvements for bicyclist
  - ♦ Improvements to speed differential between on street bicyclists and vehicles
  - ♦ Signage and road markings
- *Pedestrian interventions*:
  - ♦ New/improved sidewalk
  - ♦ New/improved off-street or parallel facility
  - ♦ Intersection improvements for pedestrians (new or improved crosswalks, medians/pedestrian refuges, new or improved pedestrian signals)
  - ♦ Access management (medians, limitation of curb cuts)
  - ♦ Removal of pedestrian conflicts (utility poles, etc.)
  - ♦ New or improved buffer between road and pedestrian facility (green buffer, on-street parking, trees, etc).

Network Significance

NH TEN YEAR PLAN
Regional Project Review

Definition: the extent to which the project area is regionally-significant based on 1) **traffic volume**; and 2) the **importance of the facility** to the local and the regional transportation system.

REGIONAL EVALUATION CONSIDERATIONS

Traffic Volume — NEED

Vehicular volume

- What is the present-day traffic volume in or near the project area?
- How does the traffic volume in the project area compare to other traffic volumes in the region?
- Have traffic volumes increased, decreased, or stayed about the same over time?

Bicycle & pedestrian volume

- What is the measured or estimated present-day bicycle and pedestrian volume on or near the impacted facility?
- What is the relative demand for pedestrian and bicycle trips based on development density, presence/lack of current ped-bike facilities, etc.?

Facility Importance — NEED

Origins and Destinations

- Does the facility move people or goods between major locations/destinations?
- Is the project area proximate to key transportation facilities, such as airports or transit/intermodal facilities?

Network Centrality

- To what degree is the project area "central" to the local and regional transportation network?
- Would traffic increase on other areas of the transportation network if the project is not implemented (e.g., would more drivers use alternate routes)?

Alternate Routes

- What would be the increase in travel time if travelers were detoured around the project area?
- Is the proposed project located on a defined or obvious evacuation route?

POTENTIAL RESOURCES & DATA SOURCES

Resources:

Vehicular volume

- NHDOT Transportation Data Management System https://nhdot.ms2soft.com/tcds/tsearch.asp?loc=nhdot
- Regional Planning Commission traffic count databases

Bicycle & pedestrian volume

- Regional Planning Commission bicycle & pedestrian count databases
- Pedestrian & Bicycle Information Center; Counting & Estimating Volumes http://www.pedbikeinfo.org/topics/countingestimating.cfm
- Congestion Mitigation & Air Quality (CMAQ) analysis tools
- Strava data

Resources:

Origins and Destinations

- Local, regional and statewide transportation planning documents
- Priority pedestrian and bicycle transportation corridors identified in the *Statewide Pedestrian and Bicycle Transportation Plan*
- Transit system maps
- Bicycle network/route maps
- Sidewalk network maps
- Online isochrone tools

Network Centrality

- Regional Planning Commission transportation model (if available)
- RPC review of road networks
- GIS database with "Network Analyst" license/module

Alternate Routes

- Google Maps Travel Time calculator
- RPC travel time analysis (if available)
- Documentation of evacuation route designation or other connectivity-related metric in statewide, local or municipal plans

State of Repair

Definition: 1) the degree to which the project improves infrastructure condition in the project area (**state of repair**); and 2) the degree to which the project impacts NHDOT and/or municipal **maintenance**.

REGIONAL EVALUATION CONSIDERATIONS	POTENTIAL RESOURCES & DATA SOURCES
State of Repair **NEED** • What is the condition of the infrastructure that is being addressed? For roadways, this includes pavement, sub-base, and base materials. • Does the project address the underlying causes of current infrastructure conditions?	***Resources:*** • NHDOT Pavement Condition Index (if current) • SADES assessment data • Geotechnical studies/reports • Information requests from NHDOT offices: District Engineers, Bridge Maintenance Bureau, etc • *NHDOT Transportation Asset Management Plan*
Maintenance Considerations **IMPACT** • Does the project address an infrastructure issue that currently requires increased maintenance activity/costs due to poor or dangerous infrastructure conditions? • Does the project propose significant new/expanded transportation assets that will add significant new/ additional maintenance liabilities for NHDOT (e.g., new roadway/bridge construction)? • Are there buried utilities (water, sewer, drainage) in the project area? If so, are any needed upgrades/ maintenance incorporated into the overall project scope? *Note: buried utility improvements are typically not Ten Year Plan-eligible (funded locally).*	***Resources:*** • NHDOT Pavement Condition Index (if current) • SADES assessment data • Geotechnical studies/reports • Information requests from NHDOT offices: District Engineers, Bridge Maintenance Bureau, etc. • Narrative from applicant • Utility capacity/condition studies • Capital Improvements Plans

Federal Performance Measures Addressed

Federal Highway Administration State of Repair Measures: 1) percentage of pavement on the Interstate System in good condition; 2) percentage of pavement on the Interstate System in poor condition; 3) percentage of pavement on the non-Interstate National Highway System (NHS) in good condition; 4) percentage of pavement on the non-Interstate National Highway System (NHS) in poor condition; 5) percentage of bridges on the National Highway System (NHS) in good condition; 6) percentage of bridges on the National Highway System (NHS) in poor condition.

Federal Transit Administration Transit Asset Management Measures: 1) percentage of rolling stock revenue vehicles meeting or exceeding their useful life benchmark; 2) percentage of non-revenue service vehicles meeting or exceeding their useful life benchmark; 3) percentage of facilities rated below 3.0 on the Transit Economic Requirements Model (TERM) scale; 4) percentage of track segments with performance restrictions.

Natural Hazard Resiliency | NH TEN YEAR PLAN *Regional Project Review*

Definition: 1) an analysis of the **natural hazard risks** (i.e. flood history) to a transportation facility, and; 2) a forward-looking analysis of how the **natural hazard mitigation** measures proposed as part of a project would reduce hazard risks.

REGIONAL EVALUATION CONSIDERATIONS

Natural Hazard Risk — NEED

Hazard Risk

- Are natural hazards in the project area documented in a plan, study, or database?
- Have natural hazards previously impacted transportation infrastructure and/or mobility in the project area? How frequently?
- Are natural hazard risks anticipated to increase in severity/impact (for example, due to anticipated impacts of climate change)?

Natural Hazard Mitigation — IMPACT

Hazard Mitigation - All Projects

To what extent does the project mitigate or adapt to known natural hazards in the project area? Does the project propose in-kind replacement of hazard-prone infrastructure?

- Mitigate (highest score): project eliminates or substantially reduces risk from known natural hazard (e.g., relocates infrastructure away from flood hazard area).
- Adapt (moderate score): project addresses known natural hazard but does not entirely mitigate risk (e.g., reinforces infrastructure in place).
- In-kind (lower score): project simply replaces hazard -prone with same/similar infrastructure (e.g., replace stream culvert with culvert of same dimensions).

Hazard Mitigation - Additional Stream Culvert & Bridge Project Considerations

- Is the project responsive to stream characteristics, such as flood propensity, slope, bankfull width, and orientation to roadway?

POTENTIAL RESOURCES & DATA SOURCES

Resources:

Hazard Risk

- Local plans: Hazard Mitigation Plans, Master Plans, Capital Improvement Plans, Emergency Operations Plans, etc.
- Regional plans: Regional Transportation Plan, Corridor Studies, River Corridor Management Plans, Watershed-Based Plans, Regional Plan, Comprehensive Economic Development Strategy, etc.
- Local and Regional Vulnerability Assessments
- Results of studies or assessments, such as geotechnical studies, fluvial geomorphology studies, SADES-based assessments, etc
- Hydraulic capacity modeling results/reports
- FEMA Flood Hazard Maps
- Regional studies on anticipated impacts of climate change on natural hazard risk

Resources:

Hazard Mitigation - All Projects

- RPC review of project scope
- Section 6.4 of FHWA's *HEC 17: Highways in the River Environment - Floodplains, Extreme Events, Risk, and Resilience, 2nd* Edition https://www.fhwa.dot.gov/engineering/hydraulics/pubs/hif16018.pdf
- Section 3.4 FHWA's *HEC 25: Highways in the Coastal Environment: Assessing Extreme Events: Volume 2 - 1st Edition* https://www.fhwa.dot.gov/engineering/hydraulics/pubs/nhi14006/nhi14006.pdf

Hazard Mitigation - Stream Culvert & Bridge Projects

- NH SADES stream crossing assessment data
- Hydraulic capacity modeling results/reports
- North Country Council *Stream Crossings for Flood Resiliency & Ecological Health*: http://www.nccouncil.org/wp-content/uploads/2019/08/NCC-Stream-Crossing-Guide_FINAL.pdf

Equity, Environmental Justice, & Accessibility

Definition: the degree to which 1) a project benefits traditionally-underserved populations (**equity** & **environmental justice**; and 2) ensures **accessibility** by all potential users.

REGIONAL EVALUATION CONSIDERATIONS

Equity & Environmental Justice — IMPACT

- Would the project provide transportation infrastructure benefits to an identified concentration area for minority population, low-income population, limited English proficiency population, disabled population, or other traditionally-underserved population group as identified in a local, regional, or statewide Title VI or Environmental Justice Program?
- Would the project expand transportation choices or enhance alternative modes of transportation in an identified concentration area for minority population, low-income population, limited English proficiency population, disabled population, or other traditionally-underserved population group?
- Does the project implement transportation-related recommendations resulting from a local, regional, or statewide Community Health Improvement Plan (CHIP) or other comprehensive public health analysis?
- What is the impact of the project on air quality? Are air quality impacts disproportionately affecting traditionally underserved populations?

Accessibility — IMPACT

- Does the project incorporate Universal Design considerations to ensure that all users, including those with mobility impairments, visual impairments, hearing impairments or other disabilities can fully access and utilize the facility?
- Does the project incorporate accessibility upgrades or remove barriers to access?
- Does the project improve coordination between transportation service providers or between modes of transportation to improve access to essential services, particularly for elderly and disabled populations?"

POTENTIAL RESOURCES & DATA SOURCES

Resources:

- Regional and Statewide Title VI and Environmental Justice Programs
- Community Health Improvement Programs
- Region-specific Demographic Analyses
- US 13 CFR Part 301.3 Economic Distress Criteria (https://www.govinfo.gov/content/pkg/CFR-2018-title13-vol1/xml/CFR-2018-title13-vol1-part301.xml#seqnum301.3)
- Northern Border Regional Commission annual distress criteria reports
- CMAQ air quality analysis tools
- MPO regional emissions analyses
- RPC review of project scope

Resources:

- Conceptual Designs for Proposed Projects
- Local, Regional, or Statewide ADA Transition Plans
- Public Transit-Human Service Transportation Coordination Plans

Federal Performance Measures Addressed

Federal Highway Administration System Performance Measures: 1) on-road mobile source emissions reduction.

Economic Development | NH TEN YEAR PLAN *Regional Project Review*

Definition: the degree to which a project supports economic development needs and opportunities at the 1) **local** and 2) **regional** level; and 3) the degree to which the project impacts the movement of goods (**freight**).

REGIONAL EVALUATION CONSIDERATIONS	POTENTIAL RESOURCES & DATA SOURCES
Local & Regional Economic Development **IMPACT** • Does the project directly relate to a documented community revitalization or economic development effort? • Does the project improve mobility and/or accessibility to and from a regional employment hub? • Does the project improve mobility and/or accessibility to and from a regional tourism destination? • Does the project support the implementation of a regional economic development plan?	***Resources:*** • Local, regional and statewide economic development plans and documents • Transit system maps • Bicycle network/route maps • Sidewalk network maps • Online isochrone tools • Regional *Comprehensive Economic Development Strategies* • Economic-related chapters and goals of *Regional Plans*
Freight Movement **IMPACT** • Does the project implement a high priority freight improvement project as identified in the NH State Freight Plan or an adopted Regional Transportation Plan? • Does the project improve a freight bottleneck location as identified in the NH State Freight Plan or an adopted Regional Transportation Plan? • Would the project improve freight transportation on a Critical Urban Freight Corridor (CUFC) or Critical Rural Freight Corridor (CRFC) candidate location as identified in the NH State Freight Plan (or as previously recommended by a MPO/RPC for future inclusion in the NH State Freight Plan)? • Would the project improve Truck Travel Time Reliability on the Interstate system or other National Highway Freight Network Route?	***Resources:*** • State Freight Plan • Regional Long-Range Transportation Plans • Critical Urban Freight Corridor (CUFC) Candidate Location List • Critical Rural Freight Corridor (CRFC) Candidate Location List • Truck Travel Time Reliability (TTTR) Index Data from the National Performance Management Research Data Set (NPMRDS)

Federal Performance Measures Addressed

Federal Highway Administration System Performance Measures: 1) truck time travel reliability on the Interstate System.

Support

Definition: the degree of **support** for the project at the local, regional, and statewide level.

REGIONAL EVALUATION CONSIDERATIONS

Support **NEED**

Local Support

- Does the project support goal(s) of locally-adopted plan? Higher scores given to projects that are specifically defined in plans, and/or address specific plan goals/needs/issues.

Regional Support

- Does the project support goal(s) of a regional plan? Higher scores given to projects that are specifically defined in plans, or address specific plan goals/needs/issues.

Statewide Support

- Does the project support goal(s) of a statewide plan? Higher scores given to projects that are specifically defined in plans, or address specific plan goals/needs/issues.

Emergent Needs

- Does the project address an emergent need(s) (*identified after the previous TYP project solicitation*) that could have significant regional impacts if not addressed?

Public Involvement

- Has there been recent public discussion or input opportunities regarding this project?
- Do recent public input/discussions show support for the project?

POTENTIAL RESOURCES & DATA SOURCES

Resources:

Local Support

- Master Plan
- Capital Improvements Plan
- Hazard Mitigation Plan
- Other local plan (Bike-Ped Plan, Sub-Area Plan, etc)
- NHDOT Road Safety Audit reports

Regional Support

- Long Range Transportation Plan/Regional Transportation Plan
- Corridor Study
- Coordinated Public Transit and Human Services Transportation Plan
- Regional Plan
- Scenic Byway Corridor Management Plan
- Transit Operations Plan
- River Corridor Management Plan
- MPO Congestion Management Process Plans

Statewide Support

- *Statewide Long-Range Transportation Plan*
- *Statewide Strategic Transit Assessment*
- *Statewide Pedestrian and Bicycle Transportation Plan*
- *Strategic Highway Safety Plan*
- *Statewide Freight Plan*
- *Statewide Rail Trail Plan*
- *NHDOT Transportation Asset Management Plan*

Emergent Needs

Emergent issue/need is documented by one or more of the following:

- Letter from NHDOT District Engineer
- Letters from municipal boards or committees
- Letters from subject-area experts
- Results of studies and assessments

Public Involvement

- Minutes and meeting summaries from local board meetings and/or community outreach events
- Other documentation of public involvement