

**The Strategic Mobility Formula (SMF) is contained in the Strategic Transportation Investments (STI) Legislation (SL 2013-185). The following Quick Reference Sheets outline how different components of STI will be implemented.**

**STI Quick Reference Sheets – Project Rating Criteria**

The following are explanations of the quantitative transportation criteria that are to be used to rank highway projects. For details of how each will be applied to each mode, see the Strategic Transportation Investments Implementation Report.

- Congestion – Based on existing traffic volume and capacity of roadway. Congestion data will be obtained from existing department databases until the statewide travel demand model is sufficiently developed to allow use of its outputs.
- Benefit/Cost - Travel time savings over 30 years divided by costs of the project (ROW, Utilities, and Construction). Local funding will be subtracted from the cost prior to calculation.
- Safety - Critical crash rate, crash density, severity index over last 3 years.
- Economic Development (Economic Competitiveness) - Travel time savings as a result of the project is input to TREDIS with output being change in productivity in the Division brought about by constructing the project and the number of long-term jobs created. These benefits are realized over a 30-year period.
- Pavement Condition - Data from latest pavement condition survey.
- Lane width and (paved) shoulder width - Data from existing department databases on existing conditions.
- Multi-modal - Existing traffic volume, capacity of roadway, direct connection to a transportation terminal, truck volume.

## STI Quick Reference Sheets – Local Input

Each MPO and RPO will develop a local methodology to prioritize and assign local input. The P3.0 workgroup is working on suggested criteria and methodologies to guide this effort. In accordance with SL 2012-84 passed last year, each area's methodology will need to be approved by the Department. Division Engineers will develop a methodology to determine how to assign their local input. Public hearings and comments will be part of both processes in determining how those points will be assigned.

Identified project segments will be ranked separately and will receive a score that is appropriate for that segment. An exception would be that project segments for new location projects will receive the same score because the benefits accrue to the entire project being constructed.

MPOs/RPOs and Division Engineers are each given a separate set of points to assign to their top priority Regional Impact and Division Needs projects in their geographical areas. NCDOT can provide information about projects, but should not be involved in the assignment of local MPO and RPO points. The points count the same regardless of area; larger areas have more points to assign. The law requires that highway projects be scored on a 0-100 point scale. Non-highway project scoring scale is to be up to 100 points, according to the law. The points for an MPO/RPO or Division are based on a minimum of 1000 points plus an additional 100 points for every 100,000 people in that area. A maximum of 100 points can be assigned to any one project (regardless of mode). In the Regional Impact category, the MPO/RPO's local input is worth 15% of the project's total score and the Division Engineer's local input is worth 15%. In the Division Needs category, the MPO/RPO's local input is worth 25% of the project's total score and the Division Engineer's local input is worth 25%. Local input will be assigned after each project's quantitative score is known.

	QUANTITATIVE	LOCAL INPUT	
Funding Category	Data	Division Rank	MPO/RPO Rank
Statewide Mobility	100%	-	-
Regional Impact	70%	15%	15%
Division Needs	50%	25%	25%

Highway Project Scoring Overview			
	Statewide Mobility	Regional Impact	Division Needs
Eligible Projects:	<ul style="list-style-type: none"> <li>• Statewide</li> </ul>	<ul style="list-style-type: none"> <li>• Statewide</li> <li>• Regional</li> </ul>	<ul style="list-style-type: none"> <li>• Statewide</li> <li>• Regional</li> <li>• Division</li> </ul>
Overall Weights:	100% Quantitative Data	70% Quantitative Data / 30% Local Input	50% Quantitative Data / 50% Local Input
Quant. Criteria	<ul style="list-style-type: none"> <li>• Benefit-Cost</li> <li>• Congestion</li> <li>• Economic Comp.</li> <li>• Safety</li> <li>• Freight</li> <li>• Multimodal</li> <li>• Pavement Condition</li> <li>• Lane Width</li> <li>• Shoulder Width</li> </ul>	<ul style="list-style-type: none"> <li>• Benefit-cost</li> <li>• Congestion</li> <li>• Safety</li> <li>• Freight</li> <li>• Multimodal</li> <li>• Pavement Condition</li> <li>• Lane Width</li> <li>• Shoulder Width</li> <li>• Accessibility and connectivity to employment centers, tourist destinations, or military installations</li> </ul>	<ul style="list-style-type: none"> <li>• Benefit-cost</li> <li>• Congestion</li> <li>• Safety</li> <li>• Freight</li> <li>• Multimodal</li> <li>• Pavement Condition</li> <li>• Lane Width</li> <li>• Shoulder Width</li> <li>• Accessibility and connectivity to employment centers, tourist destinations, or military installations</li> </ul>
Notes:	Projects Selected Prior to Local Input	Quant. Criteria can be different for each Region	Quant. Criteria can be different for each Division

## **STI Quick Reference Sheets – System Identification**

NCMIN and STI are different. NCMIN is used for planning purposes and STI determines funding categories. The Tiers in NCMIN (Statewide, Regional and Sub-regional) and the funding categories in STI (Statewide Mobility, Regional Impact and Division Needs) are not meant to be synonymous. Program Development is developing funding eligibility maps for all modes. If there is a disagreement with elements on the system maps, the MPO and RPO should coordinate with Program Development through their Division.

### **Highway**

Statewide Mobility and Regional Impact categories are specified in STI. The Division Needs category covers all other roads that are not specifically listed in the Statewide Mobility and Regional Input categories. Secondary routes are eligible under Division Needs category and will compete with Statewide Mobility and Regional Impact projects not selected for funding in those categories. As with any project, the project scores are one factor in determining which projects move from prioritization to programming.

### **Transit**

Only new transit vehicles, new facilities/major renovations, and fixed guideway are eligible for STI funding. Replacement vehicles and other maintenance and operations projects are not eligible for STI funding as prescribed in the legislation. The difference between the Regional Impact and Divisional Needs categories are reflected in the percentage weights assigned to the specific criteria and the public transportation service associated with the respective transit systems.

Regional Impact projects are defined by the legislation as, "Public transportation service that spans two or more counties and that serves more than one municipality. Expenditures pursuant to this subdivision shall not exceed ten percent (10%) of any distribution region allocation." There are approximately 11 transit systems serving multiple counties whose projects could be considered at the regional impact level.

### **Ferry**

Ferry vessels are only eligible for funding under the Division Needs category. Ferry Vessel replacements have been historically funded through the TIP. This is mainly because Ferry operational/maintenance funds usually run between \$36-\$39M per fiscal year. It takes this amount of funding to continue the operation of the ferry system at its current operational level. A single vessel replacement ranges from \$12M (River Class Vessel) to \$15M (Sound Class), therefore there is no way under the current funding levels received from the General Assembly that vessel replacements could be addressed in the operational budget. Ferry Maintenance factors into the "Asset Efficiency" criteria.

### **Aviation**

Only the four largest public airports are eligible for Statewide Mobility category funding. Those, plus the next 5 largest airports are eligible for Regional Impact category funding and all remaining airports are eligible for Division Needs category funding. If any of those airports want State funds for eligible projects, they will have to compete with other eligible projects in the appropriate category.

### **Bike and Pedestrian**

Incidental bike and pedestrian projects are funded as part of the highway project and will be funded if selected based on the funding category of the project. Independent bike and pedestrian projects have a minimum cost threshold of \$100,000 and can only compete in the Division Needs category. State funds may not be used to match federally funded projects. Only Powell Bill or local funds can be used as match for bike and pedestrian projects starting in FY 16 (July 1, 2015).

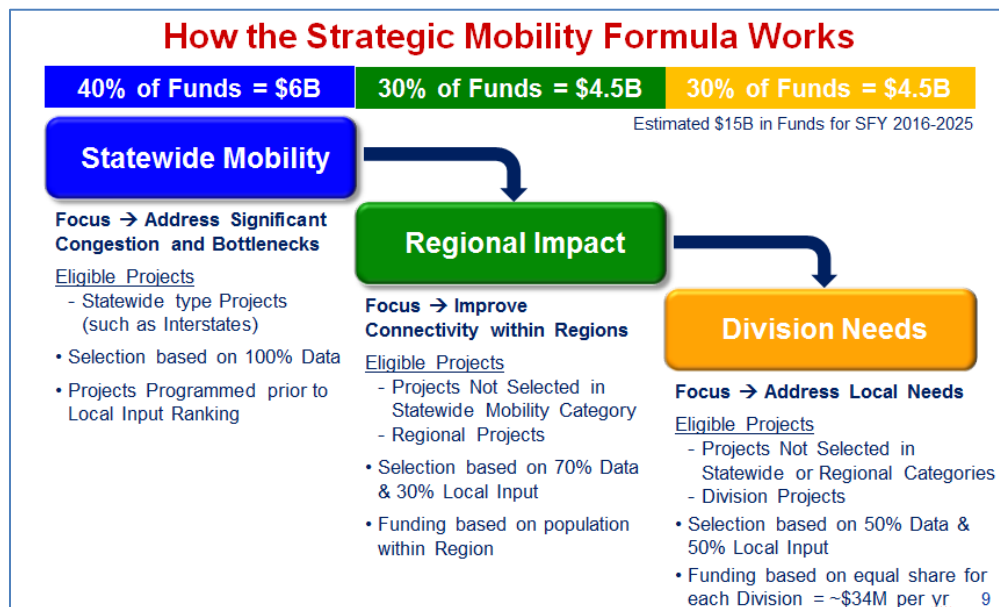
## STI Quick Reference Sheets - Cascading

Project categories are determined by STI. Project scores will be given for every category for which a project qualifies.

Statewide Mobility projects will have three separate scores: Statewide Mobility, Regional Impact, and Division Needs. Statewide Mobility projects will be programmed by Program Development based on the quantitative score as local input is not a part of the project score.

Remaining Statewide Mobility projects will be eligible for local input scoring and will have a different quantitative score in the Regional Impact and Division Needs categories. Regional Impact projects will have two quantitative scores: Regional Impact and Division Needs.

Remaining Regional Impact projects will be eligible for the Division Needs category and will have a different quantitative score in the Division Needs Category. Division Needs projects will have one quantitative score for the Division Needs category. A projects' final score will be evaluated within the respective categories.



### **STI Quick Reference Sheets – Normalization Across Modes**

Normalization is used to evaluate and compare project scores from one transportation mode to another during the development of the STIP. In P3.0, each mode uses different quantitative scoring criteria, different measures for those criteria and then assigns different weights to those criteria. Therefore, a variety of quantitative scores are generated and a methodology should be used to effectively compare the project score in one mode against the project scores in another mode. Since more than one mode can compete for the same funding, a normalization methodology is also needed to help determine which projects move from prioritization to programming.

The interim solution is to use a normalization methodology based on historical spending. The minimums established in the normalization approach will be applied as projects are being selected for funding in the draft STIP.

For Prioritization 3.0 only (Initial Implementation of Strategic Transportation Investments):

- **Statewide Mobility (only)** – No normalization will be used since so few modes compete for these funds. Scores are stand-alone for comparison (highway, aviation, freight rail). Since scores for projects eligible in this category are 100% data driven, the quantitative scores of a highway project vs. freight rail (class 1) project vs. international commercial service airport project (4 such airports in NC) would be directly compared against each other. Score comparisons and available funds in the Statewide Mobility category would form the basis for programming those projects.
- **Regional Impact and Division Needs** – Allocate funds to Highway and Non-Highway modes based on minimum floor, or percentages. For Regional Impact and Division Needs categories, NCDOT would program projects based on historical transportation spending patterns. Recent history has shown that approximately 93% of the construction budget went to highway projects and 7% went to non-highway projects. However, the actual expenditures (e.g, projects in some stage of delivery) is closer to 96% for highway and 4% for non-highway (see table below). Therefore it was decided to use a minimum percentage (or floor) of funding to guide programming process in these remaining 2 categories.

<b>Mode</b>	<b>Board of Transportation Recommendation</b>	<b>Historical Budgeted</b>	<b>Historical Expenditures</b>
<b>Highway</b>	<b>90% (minimum)</b>	93%	96%
<b>Non-Highway</b>	<b>4% (minimum)</b>	7%	4%

*Note: The Department will continue to research and seek recommendations on the topic of Normalization with national experts. The Department will also request the assistance of an outside agency to conduct a statistical analysis of project scores after all quantitative scores are completed in 2014. Any conclusive findings from this research and analysis will be incorporated into Prioritization 4.0.*

## **STI Quick Reference Sheets - Project Submittal/Grandfathering**

### **New Projects**

MPO/RPOs and Divisions may submit up to 20 new projects. Up to five additional projects may be submitted, but one existing project must be deleted for each new project submitted. Quantitative scores for all existing database projects in all modes will be available by January 2014. New candidate projects can then be submitted and projects will be scored quantitatively; all scores will be known by the time local input points are assigned. Statewide Mobility projects may be considered for removal from the project database if the MPO/RPO, and Division where the project is located all agree.

- Highways – Highway projects already in the P2.0 database today will not need to be resubmitted. Up to 20 new projects can be submitted.
- Aviation – An unlimited number of projects may be submitted.
- Bike and Pedestrian - All Bike/Pedestrian projects will be removed from the P2.0 database. Up to 20 projects may be submitted.
- Ferry - Up to 10 projects may be submitted.
- Public Transportation - Existing Public Transportation projects will be removed from the P2.0 database and there is no limit on the number of new public transportation projects that can be submitted.
- Rail - Up to 5 projects may be submitted.

### **Grandfathering**

Program Development will know by October 1, 2013 which projects are on the grandfathered list. The remaining projects will be subject to P3.0/STI prioritization. Grandfathered projects must be shown on a Schedule Management Office approved let list as of October 1, 2013 and have to be scheduled for construction prior to July 1, 2015. Projects scheduled for construction after July 1, 2015 are subject to prioritization, regardless of NEPA status. For bike and pedestrian projects, the law allows the Department to decide between now and Oct. 1, 2013, which projects will be grandfathered, thus would and not be subject to P3.0/STI prioritization. In order to meet the deadline of October 1, 2013, projects had to be presented to the BOT in August for approval in September.

#### **New Project Submittals (Maximum #)**

**Highway = minimum of 10; areas receives additional submittal for every 100,000 in population, up to a maximum up 20 new submittals.**

- Option to swap up to 5 existing projects in the Prioritization system for 5 new highway projects (in addition to the maximum of new projects)

**Bicycle & Pedestrian = 20 (all existing projects in system removed)**

- Combined total of both bicycle and pedestrian projects

**Aviation = No limit**

**Ferry = 10**

**Public Trans. = No limit (all existing projects in system removed)**

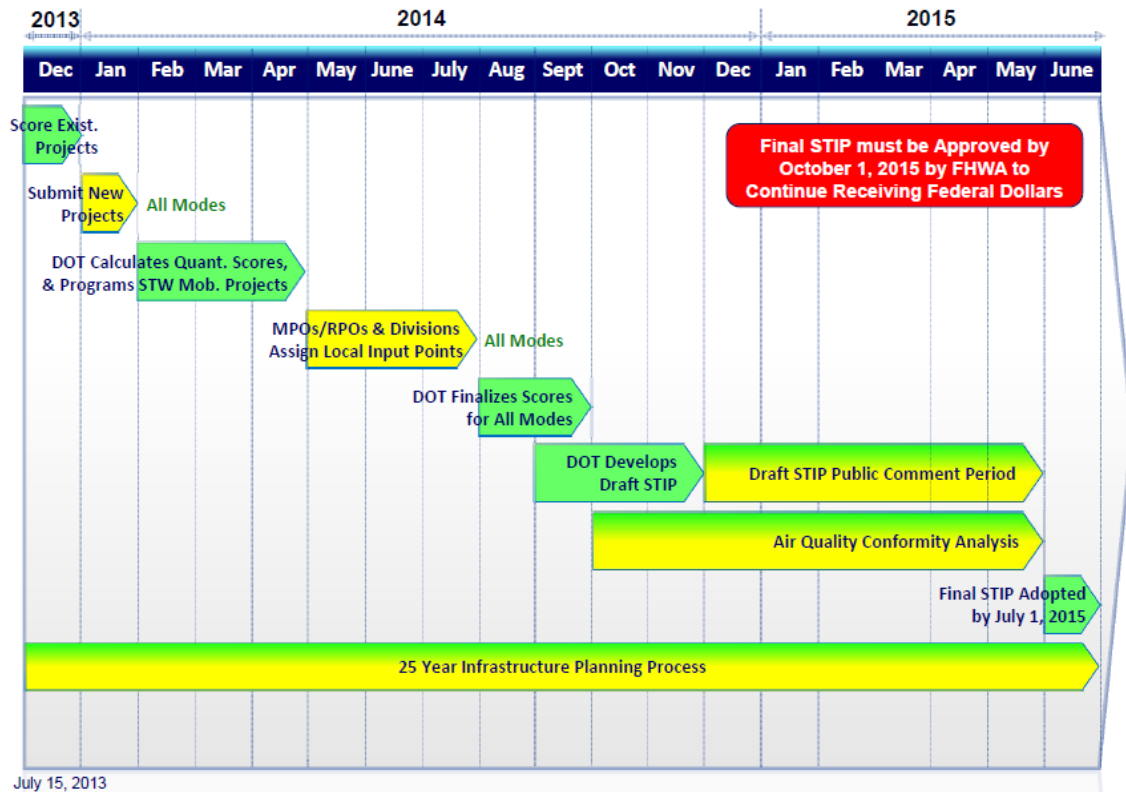
**Rail = 5**

## STI Quick Reference Sheets – Implementation Schedule

Below is the expected schedule for implementation of STI/P3.0. It may change as more information is available.

- |                          |   |
|--------------------------|---|
| ➤ Jan 1, 2014            | Quantitative Scores for existing projects released.                   |
| ➤ Jan 1-31, 2014         | New projects may be submitted   |
| ➤ Feb 1 - April 30, 2014 | Quantitative Scoring of new projects                                  |
| ➤ May 1, 2014            | Release of Quantitative scores for new projects.                      |
| ➤ May 1, 2014            | Release of Programmed Statewide Mobility projects                     |
| ➤ May 1 - July 31, 2014  | Local Input submitted for Regional Impact and Division Needs projects |
| ➤ Aug 1 - Sept 30, 2014  | Final scores for all modes developed.                                 |
| ➤ Sep 1 – Nov 30, 2013   | Program Development develops Draft STIP                               |
| ➤ Oct 15, 2014           | Draft STIP information available for non-attainment areas             |
| ➤ Dec 3, 2014            | Draft STIP released for Public Comment                                |
| ➤ Dec 3, 2014            | May 1, 2015 Public Comment Period for Draft STIP                      |
| ➤ June 4, 2015           | NC Board of Transportation expected approval                          |
| ➤ July 1, 2015           | Legislative Approval of new STIP.                                     |
| ➤ September 30, 2015     | Deadline for approval of MPOs TIP                                     |

## Prioritization 3.0 Schedule



### **STI Quick Reference Sheets - Funding**

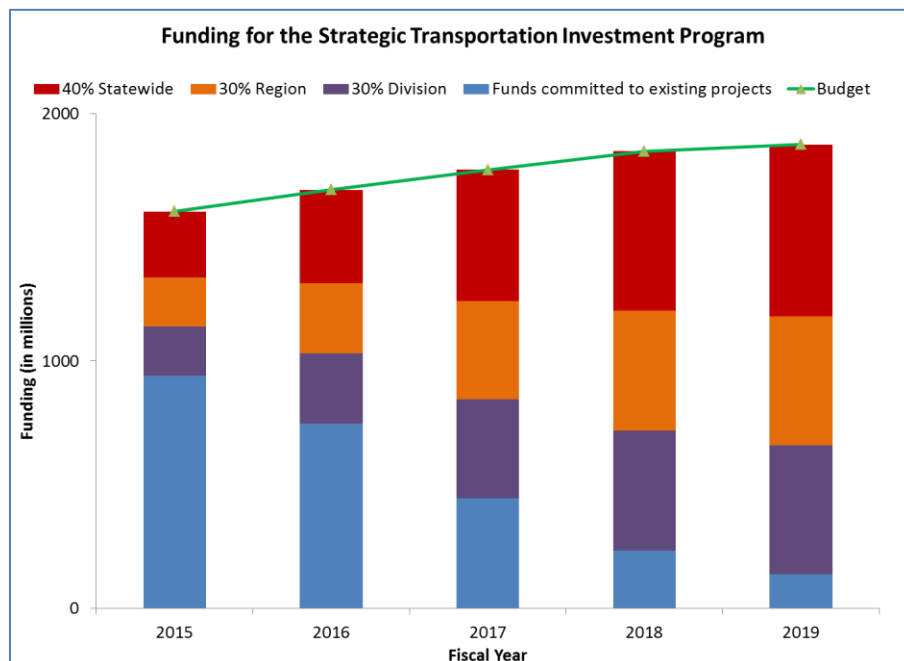
STI funding comes from the Highway Trust Fund. The law specifies how three categories of capital projects will be funded: Statewide Mobility - 40%; Regional Impact – 30%; and Division Needs - 30%. Funds are distributed based on population in the Regional Impact category but not in the Division Needs category. For the Division Needs category, the law specifies that funds are distributed based on equal share.

Bridge replacement, highway safety and interstate maintenance projects are prioritized by their own needs assessment processes, but are included in the appropriate STI category. Ferry maintenance is funded through ferry receipts or from a Highway Fund appropriation. Operations and Maintenance expenditures will be funded from the Highway Fund. CMAQ, Competitive/Discretionary Grants and Appalachian Development Highway Projects are excluded from the appropriate category and will be evaluated through a separate prioritization process.

For highway projects only, if an area chooses to provide local funding for a project, 50% of the locally committed funds (non-State/Federal) will be returned to the local area (municipality or area that provided the local funding) after the project is let for other high scoring, future projects in the area. No funds will be returned as cash. The local area's intent must be clear and definitive, and must indicate that they are contributing local funds to the project when they submit the project through the SPOT Online tool. The amount provided will be calculated into the benefit/cost quantitative score for the project.

Project Cap – No more than 10% of Statewide Mobility funds over 5 years (~\$300M) may be assigned to a single project or contiguous projects in the same corridor in a single Division or adjoining Divisions. The intent is to ensure equitable distribution across the state.

As the Department works through existing projects, the levels of funds available for the STI Program will increase. The table below shows the project funds committed to existing projects and the projected budget for STI projects. NCDOT funds projects on a cash flow basis, so any major project let one year accesses funds from 2 to 4 future years. The projects scheduled to be let by July, 2015, will represent a significant commitment of future STI program dollars. These funds will be taken “off the top” and the remaining funds will be distributed under the 40% Statewide Mobility, 30% Regional Impact, and 30% Division Needs formula.



### **STI Quick Reference Sheets - STP-DA Funding**

STP-DA funds can be used for standalone projects. These projects are not subject to the prioritization process in STI but are selected by the respective TMA areas and are subject to Federal Highway Administration requirements. It is anticipated that any STP-DA funds used for projects in the Statewide Mobility category would be subtracted from the Statewide Mobility funding statewide total. STP-DA funded Regional Impact projects will have those funds taken from the Regional Impact funding total. If STP-DA funded projects are used on projects in the Division Needs category, those funds will be deducted from each Division's Division Needs funding total.

### **STI Quick Reference Sheets - TAP Funding**

Transportation alternative projects are not included in the STI prioritization process but are subject to a "competitive selection process" and funds will be deducted from the Division Needs category. This does not necessarily mean a project prioritization process. A competitive selection process might be as simple as "first come, first served". Match requirements will be determined by project type and project sponsor. FHWA has not issued final guidance on how they expect the Transportation Alternative projects process to be administered; however, MPOs are required to develop their own selection process. While TAP funds have been allocated to the MPO TMAs by FHWA, the Department is still developing its process for administering the remaining 50% of the allocated TAP funds.