



## **North Carolina's Strategic Transportation Investments Law Bonus Allocation Provision and the Capital Area Metropolitan Project Prioritization Process**

The Strategic Transportation Investments (STI) law, passed in 2013, includes a provision to provide incentives for local governments to contribute funding to transportation projects and to support tolling for highway projects. The incentive is an allocation of funding, referred to as Bonus Allocation (BA), that can be used to fund the construction of other eligible highway projects. Whether the Bonus Allocation funds are generated by tolling or by local contribution, the projects programmed with these funds must be included in the Transportation Improvement Program (TIP). Therefore, the North Carolina Capital Area Metropolitan Planning Organization (CAMPO) plays a critical role in the selection of these projects and ultimately has the final decision on whether to include them in the TIP. This document describes the methodologies used by the MPO to identify candidate projects, the coordination with other organizations regarding BA programming, the prioritization of candidate projects, and the final selection and programming of projects with Bonus Allocation funds in the TIP.

### ***Guiding Principles***

The MPO's Executive Board has adopted the following four guiding principles for the selection and programming of projects with Bonus Allocation funds.

#### **Inclusion in the Metropolitan Transportation Plan (MTP)**

One of the core responsibilities of any MPO is to develop and implement a long-range transportation plan. For CAMPO, the adopted MTP serves as the region's long-range transportation plan with a thirty-year planning vision. As such, the Executive Board agreed that projects must be included within the first three decades of the MTP to be considered eligible for programming with Bonus Allocations funds. Operational Improvements as well as safety improvements are included in the MTP and eligible for Bonus Allocation programming.

#### **Logical Nexus to the Generating Source of Bonus Allocation Funds**

The second guiding principle is that any project programmed with Bonus Allocation funds must demonstrate some logical nexus with the project that generated the Bonus Allocation funds. For Bonus Allocations funds generated through tolling, the MPO will identify the area of influence where the tolled project has an overall impact on the surrounding Build/No Build network. Within this area of influence, the MPO will identify all eligible projects included within the adopted MTP for consideration of programming with Bonus Allocation funds. For Bonus Allocation funds generated through local contribution, the MPO will assist the local government with identifying MTP projects that benefit the contributing local government.

#### **Recognition of Funding Challenges with Strategic Transportation Investments law**

The Strategic Transportation Investments law makes clear that the higher order facilities are prioritized over lower order highways and secondary roads. This is demonstrated in the higher funding for the Statewide Mobility category (40%), the cascading policy included in STI

prioritization, and the fact that federal funds dedicated to the MPO (STPDA, TAP) are counted towards the Division Needs category. The impact of these issues with STI is that there is considerably less funding available through prioritization for secondary roads in the Triangle Region. The STI prioritization process also relies heavily on quantitative criteria developed by the SPOT Workgroup and approved by the North Carolina Board of Transportation. In several instances the NCDOT uses less refined data and less sophisticated analysis than the MPO for the sake of consistency across the state. This sometimes leads to MPO projects being prioritized through the NCDOT criteria in an order that is inconsistent with MPO priorities in the MTP. The Executive Board recognizes these two challenges with STI prioritization and takes this into consideration when selecting projects for programming with Bonus Allocation funds.

### **Recognition of Funding Opportunities with Strategic Transportation Investments law**

The last guiding principle is the recognition that there are some transportation projects that are competitive in the STI prioritization process and have a high likelihood of being programmed in the TIP/STIP through the regular scoring process. The Executive Board recognizes this and takes it into consideration when selecting projects for programming with Bonus Allocation funds.

### ***CAMPO Bonus Allocation Programming Overview***

Bonus Allocation is only generated for projects that go through the STI prioritization process and are included in the adopted TIP/STIP. Furthermore, the Bonus Allocation is only awarded once the generating project is programmed within the Deliverable Program portion of the STIP and classified as committed. Upon receiving notification from NCDOT of a Bonus Allocation award, the MPO initiates the prioritization process described below. The MPO first confirms with the NCDOT STIP Unit on: the bonus allocation award amount, the programming timeline including obligation deadlines, the STI funding category caps, as well as any NCDOT Division or county programming caps. Once this information is obtained, the MPO begins coordination with the appropriate NCDOT Division Engineer offices to determine what non-STI projects may be planned or underway that might impact project selection as well as any project management responsibilities and capacity. The MPO then begins the internal analysis for project prioritization. Throughout the process, the MPO's MTP/TIP subcommittee is presented information for review and comment related to candidate project determination, prioritization analysis, and final project recommendations.

The MPO creates a draft recommendation of prioritized candidate projects and presents the recommendation to the MPO Technical Coordinating Committee (TCC) for review followed by the MPO's Executive Board (TAC). The Executive Board may choose to revise the candidate list prior to releasing the list for public review and comment for at least 30 days (see Public Participation Plan). Following the public comment period, the TCC reviews all public comments received and forwards a recommendation to the Executive Board. The Executive Board also reviews all public comments received, conducts a public hearing, and then approves the candidate project list with possible revisions for programming in the TIP. The final action taken is when the Executive Board programs the projects in the Transportation Improvement Program (TIP).

### ***Bonus Allocation from Local Contribution***

In order for a project with a local contribution to generate Bonus Allocation funding, that contribution commitment must be included when the project is first submitted and scored through the STI prioritization process. Furthermore, the local contribution must be non-State, non-federal funds. Given this requirement, the MPO strongly encourages all members considering local transportation

bonds to discuss those potential transportation projects with the MPO for consideration of submission to the NCDOT prioritization process. Once the MPO receives notification from NCDOT regarding a bonus allocation award, the MPO staff works with the local government staff to identify existing MTP projects that may be eligible for programming with Bonus Allocation funds. The local government then makes a request to the MPO to program identified projects in the TIP with the Bonus Allocation funds. The requested projects will be reviewed and analyzed by the MPO and a recommendation given to the Executive Board for approval and programming into the TIP.

### ***Bonus Allocation from Tolling***

CAMPO utilizes a four-phase methodology for analyzing candidate projects for programming with bonus allocation funds generated by tolling highways. This methodology was developed to balance several competing criteria and identify the best candidate projects to maximize benefits and help implement the existing MTP. The approach includes benefit-cost analysis (BCA) with respect to vehicle hours delay savings, change in vehicle-miles of travel (VMT), along with an evaluation of feasibility of construction within the timeframes established in STI, affordability based on planning level cost estimates, and planning level evaluation of human and natural environmental impacts. The methodology is consistent with the STI law with an emphasis on congestion and benefit cost analysis. The four phases consist of determining a study area or area of influence for the subject project, analysis using the Triangle Regional Model (TRM), analysis of operational improvements through microsimulation modeling, and a comparison of top candidate projects in a common platform along with supplement project information including safety concerns. The four phases are described below in more detail.

#### **Phase I – Area of Influence**

The first step in the methodology is to define the area of influence for the tolled subject project. The purpose of doing so is to limit the candidate projects to those most likely impacted by the tolling of the highway project, and to provide benefit to those most likely generating the tolled revenue and thus the bonus allocation funding. The area of influence is determined by comparing various metrics such as vehicle-miles of travel (VMT), vehicle-hours of travel (VHT), and vehicle-hours of delay (VHD) between Build and No Build model runs of the subject project using the Triangle Regional Model (TRM). Once the area of influence is determined, this creates a study area within which all candidate projects must be contained.

#### **Phase II – Triangle Regional Model**

The second step in the methodology is to evaluate all existing MTP projects within the area of influence with the Triangle Regional Model (TRM). Model runs are performed to calculate the various benefits of each candidate project in terms of travel times savings. Figure 1 shows the area of influence calculated for the NC 540 project along with the existing MTP projects.

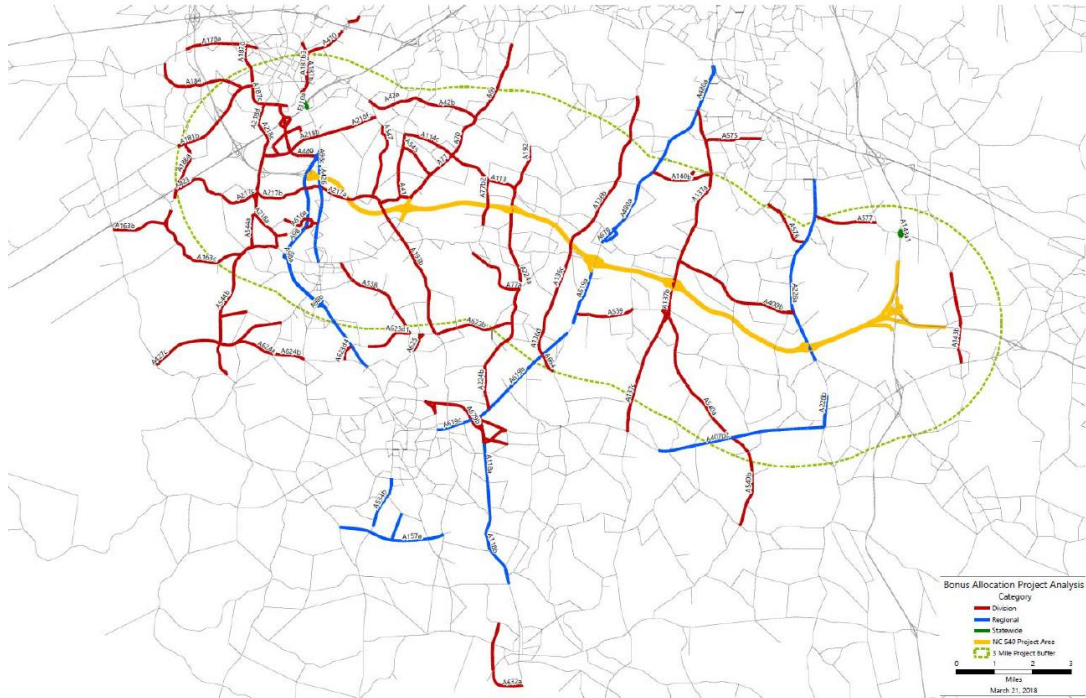


Figure 1. Area of Influence for NC 540 Bonus Allocation

The output from Phase II is a prioritized list of MTP projects based on benefit-cost analysis using travel times savings generated by the TRM and planning level costs included in the MTP. An example from the NC 540 Bonus Allocation analysis is shown in Figure 2.

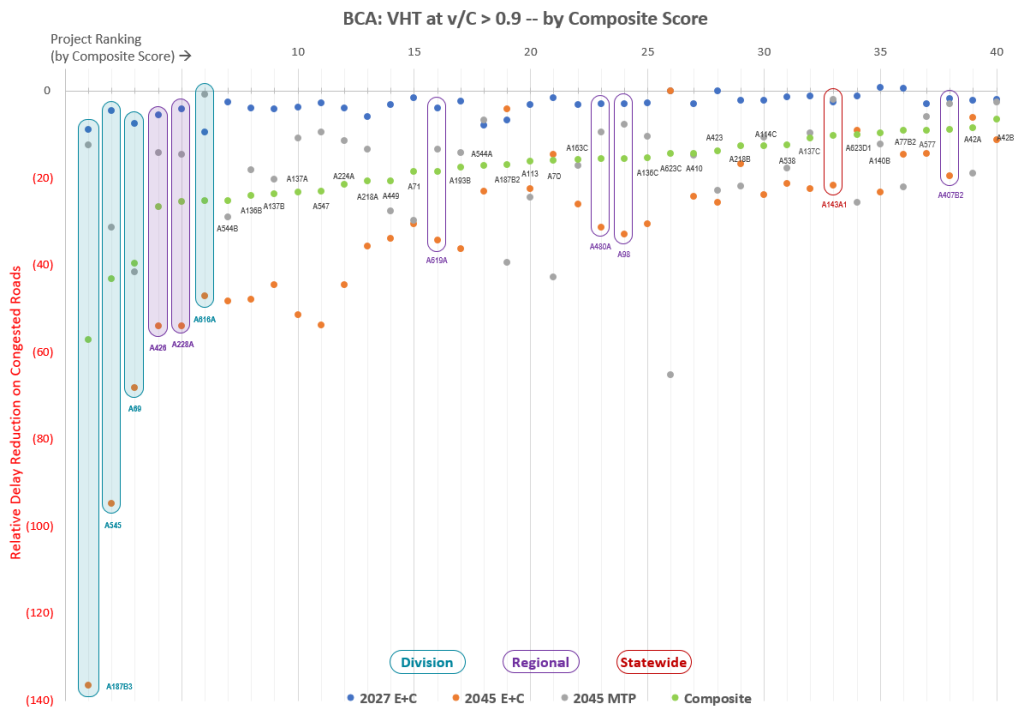


Figure 2. Prioritized List of MTP projects based on TRM analysis



### Phase III – Operational Improvements

The purpose of Phase III is to analyze those projects within the area of influence that are not suitable to be measured using the Triangle Regional Model. The Triangle Regional Model is a macroscopic model and is best suited for analyzing larger capacity projects such as widenings and new location projects. In order to analyze smaller improvement projects, such as intersection and other operational improvements, Phase III incorporates the use of big data through mobile-based data sources along with traffic analytics. This allows for measuring delay at intersections throughout the study area and ranking those projects based on metrics such as annual hours of delay. The outcome of Phase III is a prioritized list of smaller improvement projects ranked by hours of delay. Figure 3 below shows a map of intersection and operational improvements analyzed for the NC 540 Bonus Allocation funding.

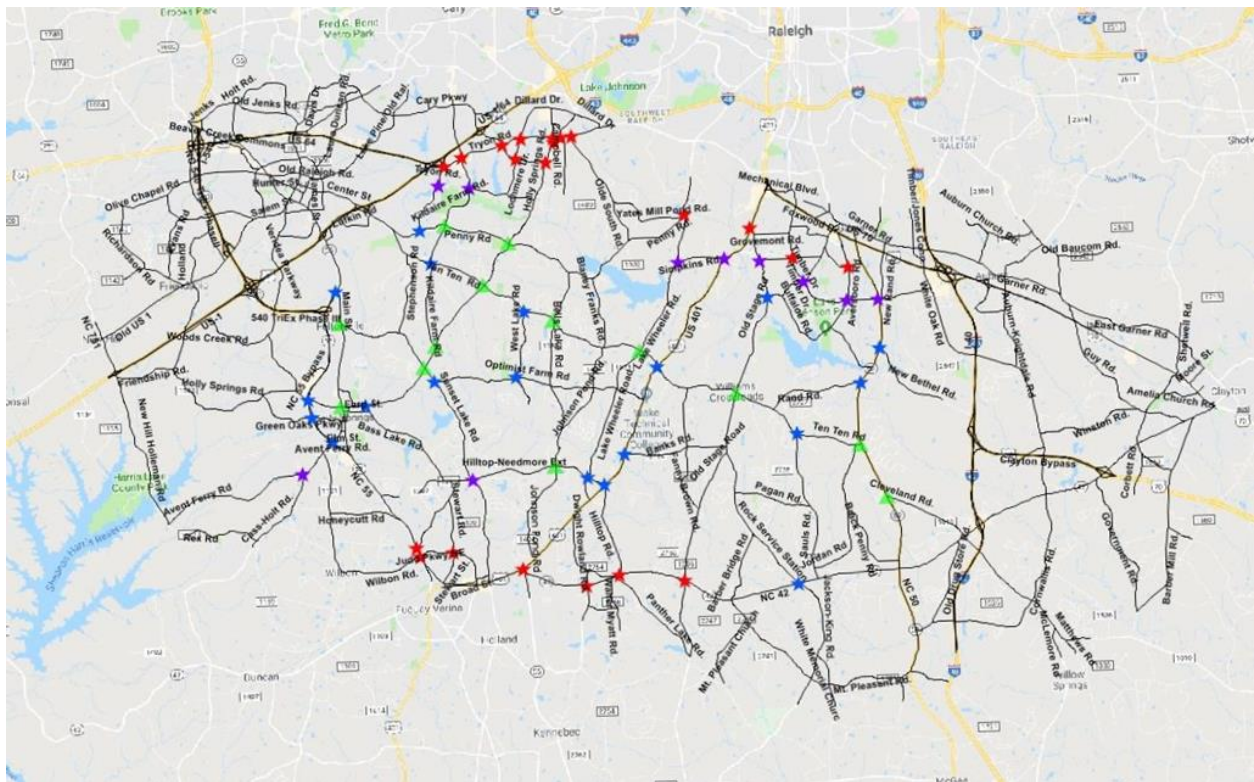


Figure 3. Intersection & Operational Improvements analyzed for NC 540 Bonus Allocation

### Phase IV – Comparison of Phase II & III Results

The fourth and final step in the methodology is to compare the benefits of projects analyzed in Phase II with those analyzed in Phase III. To do this, the MPO analyzes both improvements through microsimulation modeling. This type of analysis is well-suited for both large capacity projects as well as smaller intersection improvements. Time constraints prevent using microsimulation modeling for all prioritization analysis. Instead, benefit-cost analysis is conducted on the top candidates in both Phase II and Phase III through microsimulation modeling. A review of safety data, such as crash locations, number of crashes, and crash severity is completed and cross-referenced with the travel time savings and mobility data results. The outcome of Phase IV is a prioritized list of projects that form the basis for the recommendation for programming projects with Bonus Allocation funds. Adjustments are made based on the four guiding principles adopted by the Executive Board.

As stated in the Overview, the candidate projects list is reviewed by the TCC and made available to the public for commenting before the Executive Board takes action to approve the list. The final action taken is when the Executive Board programs the projects in the Transportation Improvement Program (TIP).

***Additional Information and Materials Sharing***

All MPO materials related to the Bonus Allocation Process, CAMPO methodology, draft and final project lists, and the Public Participation Plan are posted to the MPO's website: [www.campo-nc.us](http://www.campo-nc.us)

Additional information regarding the NCDOT Strategic Prioritization process and the Strategic Transportation Investments Law can be found here

<http://www.ncdot.gov/strategictransportationinvestments/>.

For questions or comments related to the MPO's Methodology or specific project information please contact CAMPO staff at (919) 996-4400 or [comments@campo-nc.us](mailto:comments@campo-nc.us)