North Carolina Department of Transportation
Work Zone Safety & Mobility Final Rule Committee
June 1, 2006
Traffic Control Conference Room, Century Center B2

Committee Members attending:

Name	*Representing*	*Sub-Committee*
Stuart Bourne, PE - Chair	NCDOT Work Zone Traffic Control Unit	Policy
Jimmy Travis, PE	NCDOT Construction Unit (Public Information)	Policy
Wendi Johnson, PE	NCDOT Division Construction	Significant Projects
Nicole Hackler	NCDOT Feasibility Studies Unit	
Kelly Damron, PE	NCDOT ITS Operations Unit	Significant Projects
Charles Cox, PE	NCDOT Project Development & Environmental Analysis	Policy
Terry Hopkins, PE	NCDOT Traffic Safety Unit	Policy
Joseph Ishak, PE	NCDOT Work Zone Traffic Control Unit	Policy (Lead)
Lawrence Gettier, PE	NCDOT Work Zone Traffic Control Unit	Policy
Steve Kite, PE	NCDOT Work Zone Traffic Control Unit	Significant Projects

Committee Members not present:

Gus Jordi, PE	Charlotte Department of Transportation (CDOT)	Policy
Joe Geigle	Federal Highway Administration (FHWA)	Significant Projects
Max Tate, PE	Federal Highway Administration (FHWA)	Policy
Joey Hopkins, PE	NCDOT Division Maintenance	Significant Projects
Derrick Lewis, PE	NCDOT Feasibility Studies Unit	Policy
Greg Fuller, PE	NCDOT ITS & Signals Unit	Significant Projects
Burt Tasaico	NCDOT Program Analysis Unit	Significant Projects
DeWayne Sykes, PE	NCDOT Roadway Branch	Policy
Scott Capps, PE	NCDOT State Road Maintenance Unit	Significant Projects
David Wasserman, PE	NCDOT Systems Planning Group	Significant Projects
Deborah Hutchings, PE	NCDOT Systems Planning Group	Significant Projects
Kevin Lacy, PE	NCDOT Traffic Engineering Branch	Policy
Mike Bruff, PE	NCDOT Transportation Planning Branch	Policy
Meredith McDiarmid, PE	NCDOT Work Zone Traffic Control Unit	Significant Projects (Lead)

Others attending:

Rodger Rochelle, PE	NCDOT Alternate Delivery Unit	
Michelle Long, PE	NCDOT Construction Unit (Public Information)	Significant Projects
Susan Webb	NCDOT ITS Operations Unit	
Jennifer Portanova, PE	NCDOT Work Zone Traffic Control Unit	Policy
Jessica Kuse, PE	NCDOT Work Zone Traffic Control Unit	Significant Projects

The Committee met on June 1, 2006 to discuss the timeline and the reports from the sub-committees. The following timeline was presented:

June 1 **Full Committee Meeting**: Sub-committees present Draft Goal and Objectives and Draft Criteria for Significant Projects to the Committee.

June 8 **Committee Members will send comments on the drafts by June 8, 2006.**

June 22 **Sub-Committee Meetings**: Sub-committees will work through the Committee comments that were received on June 8th and finalize a first draft.

July 6 Final First Draft will be emailed to the Committee for review and prepared for the July 13th Committee Meeting.

July 13 **Full Committee Meeting**: Committee will finalize the First Draft that will be presented to Len Sanderson.

July 14 First Draft will be sent to Len Sanderson along with Committee questions, proposed timeline, and a list of what is left to do.

July 19 Stuart and Staff meet with Len Sanderson to discuss the First Draft of Goals & Objectives and Significant Project Criteria.

The Policy Sub-Committee presented the draft Goals and Objectives and the Significant Projects Sub-Committee presented the draft Criteria for Significant Projects to the Committee. The complete documents are attached at the end of these minutes with comments that were expressed during the meeting in red.

The Committee will review the drafts and provide comments to Jennifer Portanova and Jessica Kuse by June 8th. The Committee was encouraged to spend time reviewing the drafts. This is the opportunity to determine what may need to be added/deleted and raise concerns with what is presented in the documents.

The comments will be compiled and discussed at the next Sub-Committee Meeting on June 22nd. After the June 22nd meeting, the two documents will reformatted into one document. This single document will be sent to the Committee for a final review on July 6th and will be discussed and finalized at the July 13th Committee Meeting.

ACTION ITEMS:

- **Committee Members will provide comments on the draft Goals and Objectives and draft Criteria for Significant Projects to Jennifer and Jessica by June 8th.**
- Policy Sub-Committee will meet on June 22nd at 1pm in the Traffic Control Conference Room to discuss the comments from the Committee on the draft Goals and Objectives.
- Significant Projects Sub-Committee will meet on June 22nd at 1pm in the Signing Conference Room to discuss the comments from the Committee on the draft Criteria for Significant Projects.
- Committee will meet on July 13th at 1pm in Traffic Control Conference Room to finalize the First Draft.

WZ Safety & Mobility Policy Sub-Committee
DRAFT GOALS &OBJECTIVES

Goal: To develop an agency culture committed to the Work Zone Safety and Mobility Policy

Objective 1: Educate employees on how their decisions affect work zone safety and mobility (T.Hopkins)
- Develop a program or method to educate employees

Objective 2: Be national leaders in work zone safety (T.Hopkins)
- Participate in national committees (Gettier)

Objective 3: Increase project coordination between Department Units and External Agencies (Bourne) **(Explain what this means)**

Goal: To provide a safe work zone for all workers and road users

Objective 1: Utilize ITS and enforcement strategies to enhance safety
- Use Smart Work Zone Technology to monitor traffic flow and adjust traffic strategies (Bourne)
- Establish Enforcement guidelines for matching enforcement strategy to type of work zone (Bourne)

Objective 2: Monitor work zone for major incidents **(Does this mean after the fact?)**
- Conduct investigations on major incidents, implement improvements where appropriate (Bourne) **(This strategy was used recently on I-306. A crash analysis and speed study was conducted to make safety improvements while the project was under construction.)**

Objective 3: Provide safe design with the work zone in mind
- Establish criteria for the use of positive separation for temporary and final alignment (Sykes)
- Design safe and user friendly roadway alignments (Sykes)
- Use innovative methods and devices such as, temporary lighting, brighter/larger sheeting, better retroflectivity, rumble stripes, delineation, and enforcement (Ishak)

Objective 4: Provide a continuous safe work zone environment
- Monitor and maintain work zone devices (Ishak) **(Possible FHWA SAFETEA-LU money to fund some initiative in this area.)**
- Follow guidelines for speed limit reduction in work zones (Ishak)
- Establish procedures for speed limit in work zones (Ishak)
- Continue to conduct safety meetings (tailgate meetings) (Portanova)

Objective 5: Reduce crashes in work zone
- Improve method of collecting work zone crash data (T.Hopkins)
- Evaluate and consider pre-work zone crash data in TMP design (T.Hopkins)

Goal: ***To consider mobility and access in work zones***

Objective 1: Utilize innovative technology in work zones
- Use ITS (dynamic lane merge, Smart Work Zone) (T.Hopkins, Bourne)
- Establish guidelines to match technology with work zone strategy (Bourne)

Objective 2: Implement requirements of the Work Zone Safety and Mobility Policy
- Include Incident Management (IM) Plan as part of TMP (Bourne)
- Coordinate work zone activities with IM during planning, design, and construction (T.Hopkins)
- Develop TMP for all Significant Projects (Bourne, Lewis/Cox)
- Develop selection criteria for the significant project process (Ishak)
- Develop selection process for significant projects (Ishak)
- Minimize impacts of construction on community and business (Sykes)

Objective 3: Minimize motorist delays and reduce congestion in work zones (T.Hopkins, Ishak)
- Monitor work zones (speed, volume, queue, lengths) (T.Hopkins)
- Establish a process for collecting data (T.Hopkins)
- Establish and verify criteria for delays (thresholds) (T.Hopkins)

Goal: ***To plan, design, and construct projects in an economical and timely manner*** **(Need to clarify, possibly reword to "To plan, design, and construct projects so that the project is delivered in an economical and timely manner.")**

Objective 1: Consider work zone impact during planning (Lewis/Cox)
- Revise existing planning and feasibility processes to account for work zone impacts, such as network impacts and environmental resources (Ishak) **(Clarify how the work zone impacts effect the environmental resources)**
- Establish standard work zone strategies per project type based on impact (Lewis/Cox)
- Consider funding for work zone strategies early in the process (Lewis/Cox)
- Consider contract times at the scoping stage (Ishak) **(Feasibility Studies may be too early to consider contract times. However, WZTCU and Feasibility Studies could work together to determine percentages of cost per project type.)**

Objective 2: Consider work zone impact during design
- Establish a process during design to follow up on work zone strategies that were determined in the planning process (Lewis/Cox)
- Establish design standards for temporary alignment during construction (Sykes)
- Consider impacts of geometric design in temporary and final alignment (Sykes)
- Incorporate value engineering earlier in design (Kuse)
- Design for future needs (Kuse)

- Consider maintenance needs (Ishak)

Objective 3: Consider work zone impact during construction
- Provide the most accurate contract time estimate (T.Hopkins)
- Use internal and external constructibility reviews on all significant projects (Ishak/Portanova)
- Allow more flexibility to the contractor to increase productivity (Ishak)

Objective 4: Consider innovative techniques
- Develop procedures to use during the planning and design process for the use of innovative materials and techniques during construction (Sykes)
- Establish a process for the use of innovative construction methods (Ishak/Portanova)
- Establish a program to provide the contractor incentives for the use of innovative techniques (Ishak/Portanova)
- Establish a process to select innovative contracting methods for significant projects, such as lane rental, complete road closure, A+B, design-build. (Ishak/Portanova)

Objective 5: Minimize third party delay on delivery of projects (T.Hopkins)
- Update current Utility and Rail policies, procedures, specifications, and design manuals (T.Hopkins)
- Include Utility, Rail, Municipality coordination early in the planning process (T.Hopkins)
- Include **Subsurface Utility Exploration** (SUE) on all significant projects (T.Hopkins)
- **(There are many other third party delays to consider, such as historic issues)**

Goal: To provide credibility in work zones

Objective 1: Continue to provide and disseminate useful and essential information
- Work with local media (T.Hopkins)
- Utilize ITS (Smart Work Zone Technology, permanent DMS) (Bourne, T.Hopkins)
- Include Public Information (PI) component into Transportation Management Plan (TMP) (Bourne)
- **(Coordinate work zone activities by using the)** ~~Establish a~~ statewide database that captures on going construction activities on Interstates and US Highways (Ishak) **(TIMS already exists along with the Construction Progress Database. The intent of this strategy is to coordinate maintenance and construction work zones better.)**

Objective 2: Provide consistency for construction and maintenance (Ishak)
- Require Contractor Certification (T.Hopkins)
- Establish uniform standards of traffic control devices (T.Hopkins)
- Establish a statewide database that includes predetermined time restrictions on Interstates and US Highways based on location (Portanova) **(Maryland issues**

permits to close a lane. Ohio uses an online database. There is also a need to establish some consistency in time restriction determinations.)

Objective 3: Ensure Contractor's Compliance with work zone policies and regulations
- Require the Contractor to provide a Traffic Control Inspector (T.Hopkins)
- Penalize contractors for non compliance (new, need criteria) (T.Hopkins)

Goal: To continuously assess and improve work zone strategies, practices, and procedures

Objective 1: Assess, document, and implement significant successes
- Evaluate work zone crash data to establish new and proven work zone strategies and procedures that reduce crashes in work zones (T.Hopkins)

Objective 2: Conduct work zone reviews
- Conduct a bi-annual process review to assess wide scale performance of work zones with the goal of improving work zone processes and procedures. Appropriate personnel who represent the project development stages and the different offices within the department, and the FHWA should participate in this in this review. (Tate)
- Conduct "Windshield Reviews" on a four-month cycle of active construction project work zones. Appropriate personnel from the department and the FHWA should participate in these reviews. (Tate)
- Conduct safety inspections/audits as needed to address specific problems that occur (Tate)
- Create an assessment checklist and/or work with Roadway Construction Engineers, Division Safety Engineers, and Regional Traffic Engineer to add the items that need to be assessed in their audits (Kuse)
- **Enforce compliance (T. Hopkins)**

Objective 3: Provide and disseminate essential temporary traffic control design information to traffic control professionals (T.Hopkins)
- Set up Communication Web for Traffic Control Professionals (T.Hopkins)
- Provide training for Traffic Control Professional (T.Hopkins)
- Develop Traffic Control Design Manual and standards
- Continue to host Work Zone Traffic Control Rodeo (T.Hopkins)
- Provide training on updates, industry practices, NCDOT policies and procedures (Ishak)

SIGNIFICANT PROJECTS

I. Definition:

A 'Significant Project' is one that alone or in conjunction with other projects is anticipated to cause sustained work zone impacts to the motoring public, businesses, or local communities during it's construction or will substantially relieve existing congestion on the highway network upon its completion. Additionally, all Interstate projects within the boundaries of a Transportation Management Area (Populations greater than 200,000) that occupy a location for more than three days with either intermittent or continuous lane closures shall be considered a 'Significant Project'. Projects located on a Strategic Highway Corridor and/or the National Highway System (NHS) may also be designated as 'Significant'.

Sustained work zone impacts refer to work zone-induced deviations from the normal range of transportation system safety and mobility. The extent of the work zone impacts may vary based on factors such as, road classification, area type (urban, suburban and rural), traffic and travel characteristics, type of work being performed, time of day/night, and complexity of the project. These impacts may extend beyond the physical location of the work zone itself, and may occur on the roadway on which the work is being performed, as well as other highway corridors or other modes of transportation.

II. Criteria:

Projects that meet either Level 1 and Level 2 criteria as defined below will be identified as "Significant". These projects will receive additional scrutiny and have additional measures implemented in an effort to reduce their overall impacts to the greatest extent possible. Actions such as planned/coordinated letting schedules, accelerated construction practices, innovative contracting techniques, monetary incentives, direct public input and public information strategies, etc. are methods to help achieve the desired result of reducing sustained work zone impacts on North Carolina's transportation network. Below are the descriptions and criteria that identify the 4 Levels of projects and differentiate the impacts that projects have on the motoring public, local communities, and commerce in North Carolina.

Level 1 Projects- <u>These represent 'Significant Projects'</u> and are anticipated to have an adverse network impact to the traveling public at the National and Regional levels to include the Interstate and Intrastate system, and have a High Level of Public Interest

Criteria: Level 1 Projects meet **<u>ANY</u>** of the below criteria:

1) Either Existing or Anticipated ADT per lane > 15,000
   Examples as follows:
   - 60,000 ADT for a 4 lane road
   - 90,000 ADT for a 6 lane road
   - 120,000 ADT for a 8 lane road

2) Total Truck Traffic <u>≥</u> 20%

3) Duration of Construction using conventional estimating/letting methods <u>≥</u> 3 Years

4) User Value <u>≥</u> $50,000/day and/or User Cost <u>≥</u> $50,000/day **(User value is under development. Contact Steve Kite if you have any ideas on determining user value.)**

5) Anticipated Additional Travel Times exceeding 15 minutes

6) Anticipated High Adverse Impacts to existing transportation infrastructure (mass transit, rail, pedestrian traffic)

7) Anticipated High Adverse Impacts to high volume traffic generators such as stadiums, large shopping centers, tourist destinations, etc.

Level 2 Projects- These represent 'Significant Projects' and are anticipated to have an adverse impacts to the traveling public at the Regional, Metropolitan and Local levels, and have a perceived High Level of Public Interest

Criteria: Level 2 Projects meet at least 2 of the below criteria

1) Either Existing or Anticipated ADT per lane ≥ 10,000 but < 15,000
Examples as follows:
- 40,000 ADT for a 4 lane road
- 60,000 ADT for a 6 lane road
- 80,000 ADT for a 8 lane road

2) Total Truck Traffic ≥ 15% < 20%

3) Duration of Construction using conventional estimating/letting methods ≥ 2 Years but less than 3 Years

4) User Value and/or User Cost ≥ $25,000/day but less than $50,000/day

5) Anticipated Additional Travel Times > 10 minutes ≤ 15 minutes

6) Anticipated Moderate Adverse Impacts to existing transportation infrastructure (mass transit, rail, pedestrian traffic)

7) Anticipated Moderate Adverse Impacts to high volume traffic generators such as stadiums, large shopping centers, tourist destinations, etc.

Level 3 Projects- Anticipated Low Impacts to the traveling public at the Regional, Metropolitan and Local levels, and have a perceived Moderate Level of Public Interest

Criteria: Level 3 Projects meet at least 2 of the below criteria

1) Either Existing or Anticipated ADT per lane ≥ 7,500 but < 10,000

Examples as follows:
- 30,000 ADT for a 4 lane road
- 45,000 ADT for a 6 lane road
- 60,000 ADT for a 8 lane road

2) Total Truck Traffic ≥ 15% < 20%

3) Duration of Construction using conventional estimating/letting methods ≥ 1 Year but less than 2 Years

4) User Value and/or User Cost ≥ $12,500/day but less than $25,000/day

5) Anticipated Additional Travel Times > 5 minutes ≤ 10 minutes

6) Anticipated Low Impacts to existing transportation infrastructure (mass transit, rail, pedestrian traffic)

7) Anticipated Low Impacts to high volume traffic generators such as stadiums, large shopping centers, tourist destinations, etc.

Level 4 Projects- Anticipated Low Impacts to the traveling public at the Local level, and have a perceived Low Level of Public Interest

Criteria: Level 4 Projects meet ANY of the below criteria

1) Either Existing or Anticipated ADT ≤ 7,500

2) Total Truck Traffic < 15%

3) Duration of Construction using conventional estimating/letting methods < 1 Year

4) User Value and/or User Cost <$12,500/day

5) Anticipated Additional Travel Times < 5 minutes

III. Procedure:

TIP Projects:
During the initial scoping and planning for TIP projects, all will be qualitatively evaluated to determine if they are a 'Significant Project'. During the plan delivery and development process, all will be quantitatively re-evaluated based on criteria to either remain or be removed as a 'Significant Project'. Once a project is confirmed as a 'Significant Project', the transportation management strategy as well as the project contractual type, project duration, let schedule and the determination for incentives for early completion will be established. The Transportation Management Plan (TMP) will be developed from these above metrics.

Division Projects:
Projects originated at the Division (ex. Resurfacing, DDL, BPOC) are to be evaluated using the 'Significant' project definitions (Qualitative Analysis) and/or Criteria (Qualitative Analysis) 6 months prior to Letting. Once identified, these are to be communicated to the "Innovative Processes Committee" formerly the Design/Build Executive Committee. The "Innovative Processes Committee" will then review and if necessary request exemptions to FHWA or notify the WZTCU to design a TMP. This Committee will also initiate the appropriate actions such as accelerated construction techniques, scheduling adjustments, project durations, 8 week advertisements etc.

IV. Exceptions

Exceptions may be granted by FHWA on specific projects and/or categories of projects. For such projects that are classified as "Significant" according to the Rule, but in reality, may not have a high level of sustained work zone impacts, an exception may be warranted. Projects that are classified as "Significant" through the application of this provision, but in the judgement of the Department they do not cause sustained work zone impacts, the Department may request an exception from the FHWA Division Office. The Department may use either qualitative or quantitative criteria and methods (or a combination of both) to illustrate that the specific project or categories of projects will not have sustained work zone impacts.
(Joey Hopkins noted in an email that he had concerns about the exception process and wonder how that will affect routine maintenance operations that last more than 3 days (intermittently) or on ones where there is not 6 months of planning time before construction.)
Blanket exceptions for certain categories of projects may be sought by the Department if it is determined these projects will not have sustained impacts, and can demonstrate it to the FHWA. Some examples of Interstate system projects that might qualify for blanket exceptions include:

- Road work on Interstate projects where the capacity far exceeds the demand
- Night work on certain Interstate routes
- Off-Peak and weekend lane-closures on certain Interstate routes
- Short-term, moving operations (e.g. striping) on certain Interstate routes

The process for exception requests include the following:

- Assess the Work Zone impacts of the specific Interstate project or categories of project using appropriate methods (qualitative, quantitative, or combination of both)
- Compare the expected work zone impacts with the Department's Work Zone Policy provisions and verify the project is not expected to have sustained work zone impacts
- If the project or categories of projects appears to meet the conditions for an exception, the State Work Zone Traffic Control Engineer will prepare the exception request and submit it to the FHWA Division Office for their review.
- If the project originates at the Division level, then the Division Engineer will prepare the exception request and submit it to the FHWA Division Office for their review.

Written correspondence to the FHWA Division Office explaining the exception request is required. The main element of an exception request will be the Department's assessment of the expected work zone impacts, and may include a description of the project and local conditions.
V. Selection of Transportation Management Plan (TMP) components

A Transportation Management Plan (TMP) is required for all projects. A TMP lays out a set of coordinated strategies and describes how these strategies will be used to manage the work zone impacts of a project. The scope, content, and level of detail of a TMP will vary based on the Work Zone Policy and the anticipated work zone impacts of the project. The type of TMP needed for a project is based on whether the project is determined to be a "Significant" Project.

The components of the Transportation Management Plan are determined by the Level of project as defined in the Criteria Section above. Listed below are the required components by Project Level.

Level 1: **(This would require more Public Information Staff manpower up front (earlier in the process) to be involved in these projects)**
Temporary Traffic Control Plan (TTC)
Transportation Operations Plan (TO)
Public Information Plan (PI)

Level 2: **(There are concerns with Public Information Staff manpower needed to accomplish this as TIP increases)**
Temporary Traffic Control Plan (TTC)
Traffic Operations Plan (TO)
Public Information Plan (PI)

Level 3:
Temporary Traffic Control Plan (TTC)
Traffic Operations Plan (TO)- As Appropriate
Public Information Plan (PI)- As Appropriate

Level 4:
Temporary Traffic Control Plan (TTC)