



NORTH CAROLINA
Department of Transportation

P8 Highway Modernization Subcommittee Meeting #4

NCDOT SPOT Office

January 28, 2025

Connecting people, products and places safely and efficiently with customer focus, accountability
and environmental sensitivity to enhance the economy and vitality of North Carolina

Agenda

- Requested Information
 - Additional Score Analysis without Pavement Condition Weight
- Discussion Follow-Up
 - Definition of Modernization projects and improvements to the current scoring criteria
 - Road Diet projects and scoring improvements
- Next Steps
- Adjourn

Housekeeping

- Virtual etiquette:
 - When you are not speaking, please mute yourself. This limits disruption from background noise.
 - Feel free to use the “Raise Hand” feature if you have a question. You can also type “Q” in the chat.

Requested Information



P7 Score Analysis without Pavement Condition Criterion

- **Scenario C:** Distribute Pavement Condition weight (10%) to Safety and Freight

Existing Weights

Scenario C Weights

Criteria	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)	Criteria	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Congestion	10%	5%	-	Congestion	10%	5%	-
Safety	25%	25%	20%	Safety	30%	30%	25%
Freight	25%	10%	5%	Freight	30%	15%	10%
Lane Width	10%	10%	5%	Lane Width	10%	10%	5%
[Paved] Shoulder Width	20%	10%	10%	[Paved] Shoulder Width	20%	10%	10%
Pavement Condition	10%	10%	10%	Pavement Condition	-	-	-

P7 High Scoring Modernization Projects – Scenario C

SPOT ID	Statewide Mobility Quantitative Score (Out of 100)
H141265	80.71
H191794	71.82
H170851	69.63
H172311-B	68.98
H141905	66.74
H184836	66.09
H191792	65.75
H090013-B	62.12
H149001-E	57.98
H230876	57.52
H231780	56.31
H231288	55.04
H230635	54.46
H193290	53.07
H090002-AB	51.79
H090002-AC	51.24
H231170	50.83

SPOT ID	Regional Impact Quantitative Score (Out of 70)
H090514-B	45.44
H230818	42.24
H230331	39.62
H090147-A	39.09
H171105	39.06
H170622	38.08
H090514-A	36.88
H171192	35.87
H192987	35.79
H090090	34.29
H090846	32.92
H111251	32.57
H150297	32.54
H191677	32.27
H230766	32.01
H090805	31.80
H170606	31.70

SPOT ID	Division Needs Quantitative Score (Out of 50)
H231566	33.73
H231599	31.66
H231584	30.93
H230527	28.58
H190034	28.04
H230638	25.22
H191110	25.18
H230326	23.69
H231404	23.60
H090782	23.22
H191119	23.17
H231515	22.72
H111308	22.72
H230123	22.47
H185154	20.99
H190107	20.94
H185159	20.69

P7 High Scoring Modernization Projects – Scenario C

Existing Results

	Statewide Mobility	Regional Impact	Division Needs
Average Score	53.89	25.52	15.82
Median Score	52.28	26.03	14.18
Top Quartile	61.65	29.77	20.37
Bottom Quartile	50.25	21.46	11.28

VS

Scenario C Results

	Statewide Mobility	Regional Impact	Division Needs
Average Score	55.74	25.53	14.47
Median Score	55.04	26.21	13.40
Top Quartile	65.92	29.96	19.34
Bottom Quartile	50.09	21.85	9.28

P7 Score Analysis without Pavement Condition Criterion

- **Scenario C Plus:** Scenario C plus add 5% from Paved Shoulder Width to Freight at Division Category and distribute (10%) from Paved Shoulder Width to Safety and Freight at Statewide Category

<u>Existing Weights</u>				<u>Scenario C Plus Weights</u>			
Criteria	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)	Criteria	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Congestion	10%	5%	-	Congestion	10%	5%	-
Safety	25%	25%	20%	Safety	35%	30%	25%
Freight	25%	10%	5%	Freight	35%	15%	15%
Lane Width	10%	10%	5%	Lane Width	10%	10%	5%
[Paved] Shoulder Width	20%	10%	10%	[Paved] Shoulder Width	10%	10%	5%
Pavement Condition	10%	10%	10%	Pavement Condition	-	-	-

P7 High Scoring Modernization Projects – Scenario C Plus

SPOT ID	Statewide Mobility Quantitative Score (Out of 100)
H141265	81.26
H191794	72.44
H191792	72.43
H170851	69.83
H172311-B	69.16
H141905	66.72
H184836	65.66
H231780	63.17
H090013-B	61.24
H231170	58.36
H149001-E	55.64
H190898	55.60
H230876	55.57
H231288	53.29
H230635	52.27
H193290	50.84
H141863	46.51

SPOT ID	Regional Impact Quantitative Score (Out of 70)
H090514-B	45.44
H230818	42.24
H230331	39.62
H090147-A	39.09
H171105	39.06
H170622	38.08
H090514-A	36.88
H171192	35.87
H192987	35.79
H090090	34.29
H090846	32.92
H111251	32.57
H150297	32.54
H191677	32.27
H230766	32.01
H090805	31.80
H170606	31.70

SPOT ID	Division Needs Quantitative Score (Out of 50)
H231566	32.07
H231599	29.92
H231584	28.46
H230527	28.42
H191110	27.69
H231404	25.98
H190034	25.75
H191119	25.61
H090782	25.55
H111308	25.29
H230123	24.33
H231515	24.01
H185159	23.25
H185154	23.19
H111162	22.69
H192727	22.45
H231168	22.19

P7 High Scoring Modernization Projects – Scenario C Plus

Existing Results

	Statewide Mobility	Regional Impact	Division Needs
Average Score	53.89	25.52	15.82
Median Score	52.28	26.03	14.18
Top Quartile	61.65	29.77	20.37
Bottom Quartile	50.25	21.46	11.28

VS

Scenario C Plus Results

	Statewide Mobility	Regional Impact	Division Needs
Average Score	56.62	25.53	16.23
Median Score	55.60	26.21	16.69
Top Quartile	66.19	29.96	21.01
Bottom Quartile	46.34	21.85	11.65

Discussion



Reference Slide: P7 Modernization and Road Diet SITs

- SIT 16 – Modernize Roadway: Improve current roadways with deficient/historical design standards to modern roadway design standards
 - Improving a roadway to current design standards primarily by increasing the lane and/or shoulder width. Could also include improving the horizontal or vertical geometry. Could also include adding turn lanes at intersections to help improve mobility on the through route.
- SIT 17 - Upgrade Freeway to Interstate Standards: Improve an existing freeway to Interstate design standards
 - Improving an existing freeway to interstate design standards primarily by increasing shoulder width and/or bridge clearances.
- SIT 24 - Implement Road Diet to Improve Safety (segment)
 - Enhancing the safety of a roadway by reducing the lanes within the cross-section

Modernization & Road Diet Discussion Questions

- What changes/improvements (if any) would this Subcommittee make for Modernization projects?
 - Guiding Questions
 - What aspects of modernization projects that are not being measured currently could be measured under the existing criteria?
 - What changes could be made to the criteria and to the weights?
 - Could Lane Width and Shoulder Width be combined to measure the total deficiency?
 - What is the current meaning/understanding of Roadway Modernization?
 - Could other improvement types qualify for Modernization?
- What changes/improvements (if any) would this Subcommittee make for Road Diet Projects?
 - Guiding Questions
 - What is the best way to score these projects? Modernization or Mobility criteria?
 - Could the creation of a new Modernization Road Diet SIT be an improvement for submitters?

Mural Discussion Notes

- Next few slides shows discussion notes taken on Mural

Scenario C - Comments

Does not seem to yield dramatic changes from existing results

Could we see Existing, A, B, and C, and C Plus scenario plotted on a graph so it is easier to compare?

It would also be nice to have a spreadsheet with the existing, A, B, C, and C Plus values plus delta A, B, C, and C Plus for all projects. Then look at the largest deltas whether it's positive or negative.

For Next Meeting



Scenario C Plus - Comments

Seems to be the best option available



Modernization

What changes/improvements (if any) would this Subcommittee make for Modernization projects?

Usage level is not being measured, except for freight - include ADT component (for Division Needs) x2

Modernization projects can include congestion improvements at intersections

Crash rates, especially on lower volume roads, led to massive score changes (up/down) x2

Removing pavement condition criteria (and redistribute that 10%)

What changes/improvements (if any) would this Subcommittee make for Modernization projects?

Removing pavement condition criteria makes sense and is consistent with legislation

Could we use volume as opposed to volume to capacity for congestion criteria?

Consider including measure for accessibility/connectivity - get at distressed/economic need areas

What changes/improvements (if any) would this Subcommittee make for Modernization projects?

Modernization SITs should be modified (i.e. SIT 16)

Modernization should not exclude traffic flow improvements (currently they are being excluded)

Currently no cross-section options in SPOT Online, but there may need to be some

"By improving lane and shoulder width" is problematic part of SIT 16. Expand the universe of options beyond only these two

SIT 16 – Modernize Roadway:
Improve current roadways with deficient/historical design standards to modern roadway design standards

What changes/improvements (if any) would this Subcommittee make for Road Diet projects?

SIT 24 - Change to "Enhancing the safety of a roadway by reallocating pavement space..."

Generally road diets involve reducing lanes, but not always

Main point is that the footprint is not widened (but minor spot widenings may be permitted)

Change the way we evaluate road diet projects

What changes/improvements (if any) would this Subcommittee make for Road Diet projects?

Score road diets in a way that promotes safety and benefit/cost (split)

The way we score road diets with mobility can put us in bad situations

Include a minimum of 4 criteria - perhaps congestion, multimodal, accessibility/connectivity, and/or freight



What changes/improvements (if any) would this Subcommittee make for Road Diet projects?

Is there a way to reverse the weighting of criteria to make it the opposite of other SITs?

There are some instances where having more lanes does not help a lot (they tend to not do well with safety and congestion)

The improvements should be focused on making the existing pavement work better with the context



Next Steps & Adjourn

- Next Steps
 - Scenarios analysis of Modernization scores based on potential changes/improvements
 - Follow-Up Discussions on potential changes/improvements for Modernization and Road Diet projects
- Adjourn
 - Next Meeting: **February 13th, 2025 @ 2:00 PM to 3:30 PM**

Meeting 4 Summary

- SPOT office shared additional scenarios for P7 Modernization project scores without the Pavement Condition criteria weight
- Subcommittee discussed removing Pavement Condition criterion from the Modernization Criteria and currently reviewing options on redistributing the 10% weight to other criteria
- Discussed if congestion could be incorporated at the Division Needs category to help differentiate projects based on their usage. Modernization projects could include congestion improvements at intersections. A congestion component could also help provide more balance on significant score changes resulting from boosted safety (crash rates) especially on lower volume roads
- Discussed potential consideration of the Accessibility and Connectivity criterion if it is redefined in a way that is conducive for Modernization projects. Could be more meaningful than Pavement Condition

Meeting 4 Summary-Cont.

- Discussed potentially including cross-sections in SPOT Online for Modernization projects to help with generating better cost estimates – perhaps one with paved shoulder and another with curb and gutter
- Discussed revising Modernization SIT-16 definition to expand the options beyond widening the Lane and Shoulder widths. Use verbiage to include minor capacity and traffic flow improvements that currently appear to be excluded.
- Discussed that road diets are primarily safety projects and should be scored in a way that promotes safety and potentially benefit cost. Some projects may not best be evaluated under either criteria, Mobility or Modernization
- Scoring Road Diets under Mobility could be harder for implementation as the focus is congestion. For Modernization, the issues evaluated are not likely the problems addressed by a Road Diet project
- Road Diets may score better under Modernization without the Pavement Condition criterion and perhaps a consolidated Shoulder and Lane widths criterion

Meeting 4 Summary-Cont.

- Potential Subcommittee Recommendations
 - Removal of the Pavement Condition criterion from the Modernization criteria
 - Combine Lane Width and Shoulder Width to measure total deficiency
 - Incorporate Congestion at the Division Needs category for Modernization projects
 - Revise Modernization SIT-16 definition to expand options beyond bringing shoulder width and lane width to design standards
 - Revise Road Diet SIT-24 definition to clarify that lanes are not always reduced for these projects
 - Include cross-sections in SPOT Online for Modernization projects

Thank you!

Meeting Attendance – Virtual

Name	Organization
Andy Bailey *	NCDOT
Benard Chola *	NCDOT
Brian Murphy *	NCDOT
Tyler Meyer *	Greensboro MPO
David Graham *	High County RPO
Deanna Trebil *	New Bern Area MPO
Drew Finley	Fountainworks
Fredrick D. Haith	NCDOT
Janet Robertson *	Lumber River RPO
Rose Bauguess	Southwestern RPO
Saman Jeffers *	NCDOT
Sarah Lee *	NCDOT
Scott Miller	NCDOT
Stephen Sparks	NCDOT
Tristan Winkler *	French Broad River MPO

*Workgroup Participant, Alternate, or Advisory