NORTH CAROLINA
Department of Transportation

P8 Highway Modernization
Subcommittee Meeting #7

NCDOT SPOT Office

March 13, 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

- Additional Analysis
  - Scenario F Variations
- Discussion
  - Inclusion of congestion weight at Division Needs level
  - Criteria weights for Modernization
  - Road Diets scoring improvements
- 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.

Meeting Goals

- ***Desire to reach agreement*** on the following items:
  - Including a Congestion weight at the Division Needs level
  - Revised criteria weights for Modernization
- Begin discussion on ***Road Diet scoring improvements***
  - Identify issues, implications, and next steps

Additional Analysis

Reference Slide : P7 Score Analysis without Pavement Condition Criterion

- **Scenario F**: Distribute Pavement Condition weight (10%) to Safety and Freight. Combine Shoulder and Lane Widths and distribute weights: 25% SM, 10% RI, and 5% DN

	Existing Weights				Scenario F 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%	10%	10%
Safety	25%	25%	20%	Safety	35%	30%	25%
Freight	25%	10%	5%	Freight	30%	20%	10%
Lane Width	10%	10%	5%	Lane Width & [Paved] Shoulder	25%	10%	5%
[Paved] Shoulder Width	20%	10%	10%	[Paved] Shoulder Width	-	-	-
Pavement Condition	10%	10%	10%	Pavement Condition	-	-	-

P7 Score Analysis without Pavement Condition Criterion

- **Scenario F-1**: Reduce Freight and Increase Lane/Shoulder by 5% at SM. Reduce Congestion to 5% at RI & DN. Increase Safety at RI and Lane/Shoulder at DN by 5%.

	Existing Weights				Scenario F-1 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%	5%
Safety	25%	25%	20%	Safety	35%	35%	25%
Freight	25%	10%	5%	Freight	25%	20%	10%
Lane Width	10%	10%	5%	Lane Width & [Paved] Shoulder	30%	10%	10%
[Paved] Shoulder Width	20%	10%	10%	[Paved] Shoulder Width	-	-	-
Pavement Condition	10%	10%	10%	Pavement Condition	-	-	-

P7 High Scoring Modernization Projects – Scenario F-1

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 F-1 Results

	Statewide Mobility	Regional Impact	Division Needs
Average Score	59.75	28.80	15.85
Median Score	**60.39**	**29.07**	**16.13**
Top Quartile	**71.04**	**34.28**	**20.59**
Bottom Quartile	52.01	23.96	10.24

P7 Score Analysis without Pavement Condition Criterion

- **Scenario F-2**: Same weights as F-1 at SM. Reduce Congestion to 5% at RI & DN. Retain Freight weights at all Levels and increase Safety and Lane/Shoulder at RI & DN.

	Existing Weights				Scenario F-2 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%	5%
Safety	25%	25%	20%	Safety	35%	35%	30%
Freight	25%	10%	5%	Freight	25%	10%	5%
Lane Width	10%	10%	5%	Lane Width & [Paved] Shoulder	30%	20%	10%
[Paved] Shoulder Width	20%	10%	10%	[Paved] Shoulder Width	-	-	-
Pavement Condition	10%	10%	10%	Pavement Condition	-	-	-

P7 High Scoring Modernization Projects – Scenario F-2

Existing Stats

	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 F-2

	Statewide Mobility	Regional Impact	Division Needs
Average Score	59.75	26.22	16.23
Median Score	**60.39**	**26.17**	**16.80**
Top Quartile	**71.04**	**31.32**	**22.04**
Bottom Quartile	52.01	22.10	9.35

P7 Score Analysis without Pavement Condition Criterion

- **Scenario F-3**: Same weights as F-1 at SM. Same weights as F-1 at RI. Same weights as F-2 at DN.

	Existing Weights				Scenario F-3 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%	5%
Safety	25%	25%	20%	Safety	35%	35%	30%
Freight	25%	10%	5%	Freight	25%	20%	5%
Lane Width	10%	10%	5%	Lane Width & [Paved] Shoulder	30%	10%	10%
[Paved] Shoulder Width	20%	10%	10%	[Paved] Shoulder Width	-	-	-
Pavement Condition	10%	10%	10%	Pavement Condition	-	-	-

P7 High Scoring Modernization Projects – Scenario F-3

Existing Stats

	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 F-3

	Statewide Mobility	Regional Impact	Division Needs
Average Score	59.75	28.80	16.23
Median Score	**60.39**	**29.07**	**16.80**
Top Quartile	**71.04**	**34.28**	**22.04**
Bottom Quartile	52.01	23.96	9.35

P7 Score Analysis without Pavement Condition Criterion

- **Scenario F-4**: Same weights as F-1 at SM. Reduce Congestion to 5% at RI & DN. Keep Safety the same weight (35%) at all categories. Reduce Freight and Increase Lane/Shoulder at RI by 5%.

	Existing Weights				Scenario F-4 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%	5%
Safety	25%	25%	20%	Safety	35%	35%	35%
Freight	25%	10%	5%	Freight	25%	15%	5%
Lane Width	10%	10%	5%	Lane Width & [Paved] Shoulder	30%	15%	5%
[Paved] Shoulder Width	20%	10%	10%	[Paved] Shoulder Width	-	-	-
Pavement Condition	10%	10%	10%	Pavement Condition	-	-	-

P7 High Scoring Modernization Projects – Scenario F-4

Existing Stats

	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 F-4

	Statewide Mobility	Regional Impact	Division Needs
Average Score	59.75	27.51	17.90
Median Score	**60.39**	**27.70**	**18.85**
Top Quartile	**71.04**	**32.65**	**24.77**
Bottom Quartile	52.01	23.27	10.46

P7 Score Analysis without Pavement Condition Criterion

- **Scenario F-5**: Same as F-4 at SM & RI. Reduce Congestion back to 0% and increase Lane/Shoulder by 5% at DN

	Existing Weights				Scenario F-5 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	35%	35%	35%
Freight	25%	10%	5%	Freight	25%	15%	5%
Lane Width	10%	10%	5%	Lane Width & [Paved] Shoulder	30%	15%	10%
[Paved] Shoulder Width	20%	10%	10%	[Paved] Shoulder Width	-	-	-
Pavement Condition	10%	10%	10%	Pavement Condition	-	-	-

P7 High Scoring Modernization Projects – Scenario F-5

Existing Stats

	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

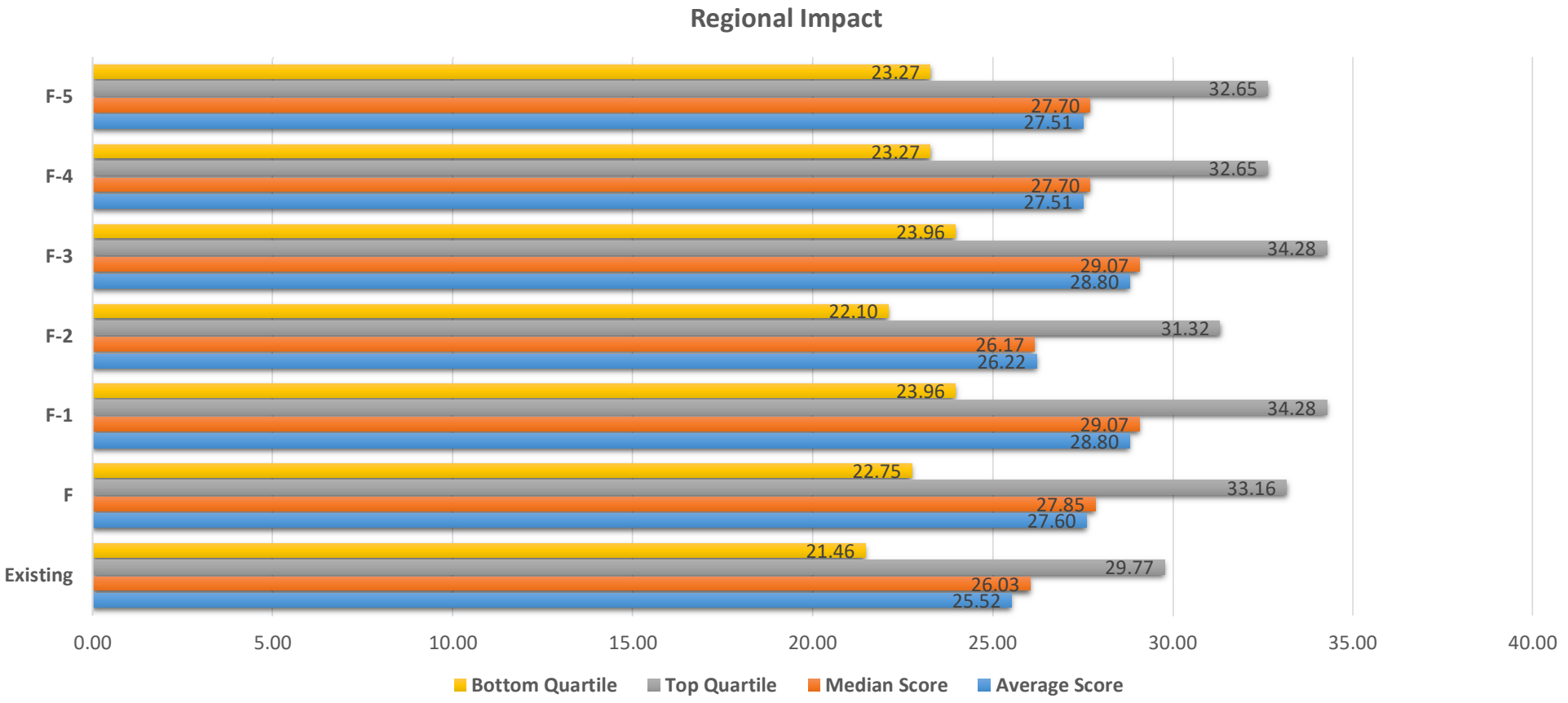
VS

Scenario F-5

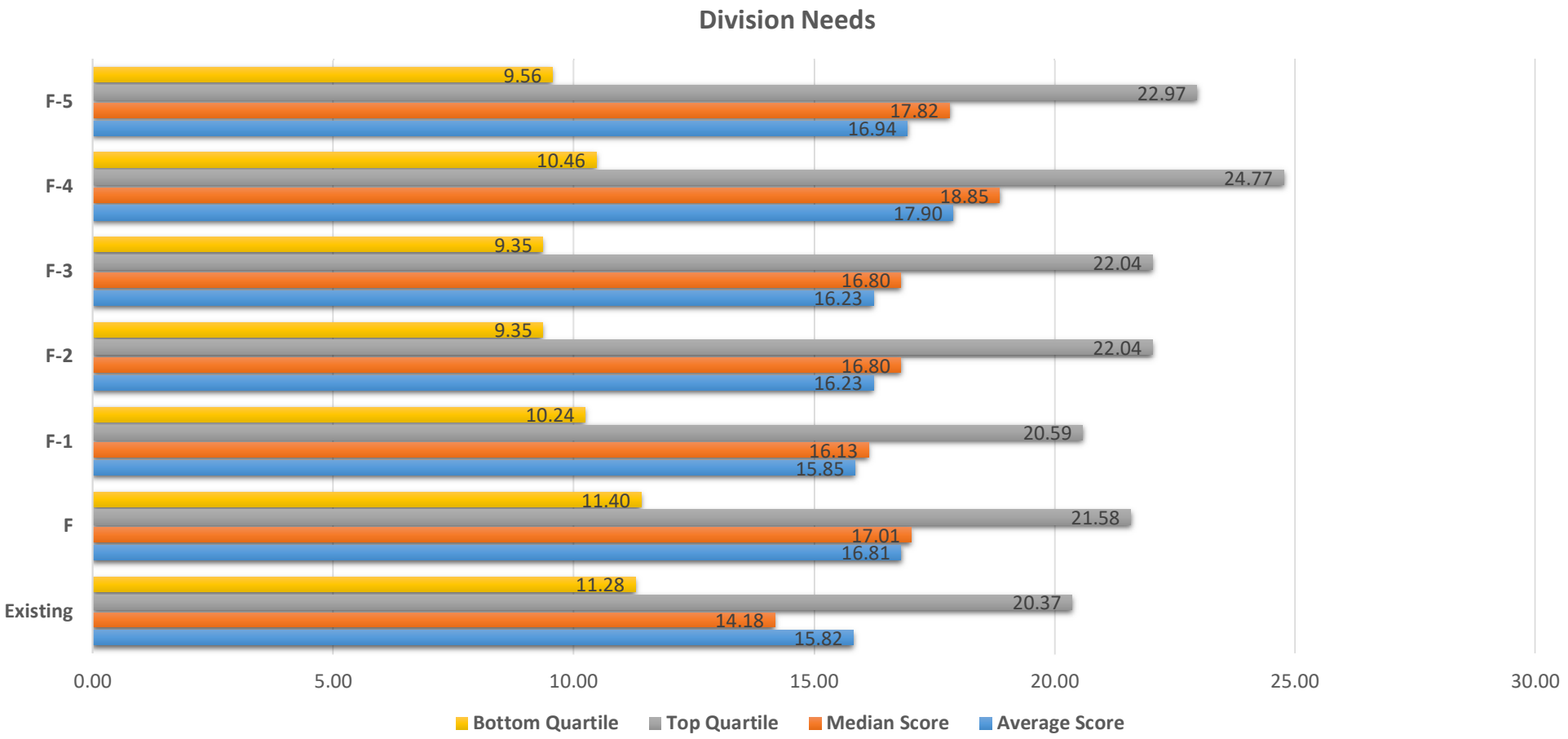
	Statewide Mobility	Regional Impact	Division Needs
Average Score	59.75	27.51	16.94
Median Score	**60.39**	**27.70**	**17.82**
Top Quartile	**71.04**	**32.65**	**22.97**
Bottom Quartile	52.01	23.27	9.56

F Variation Scenarios

F Variation Scenarios



F Variation Scenarios



Discussion

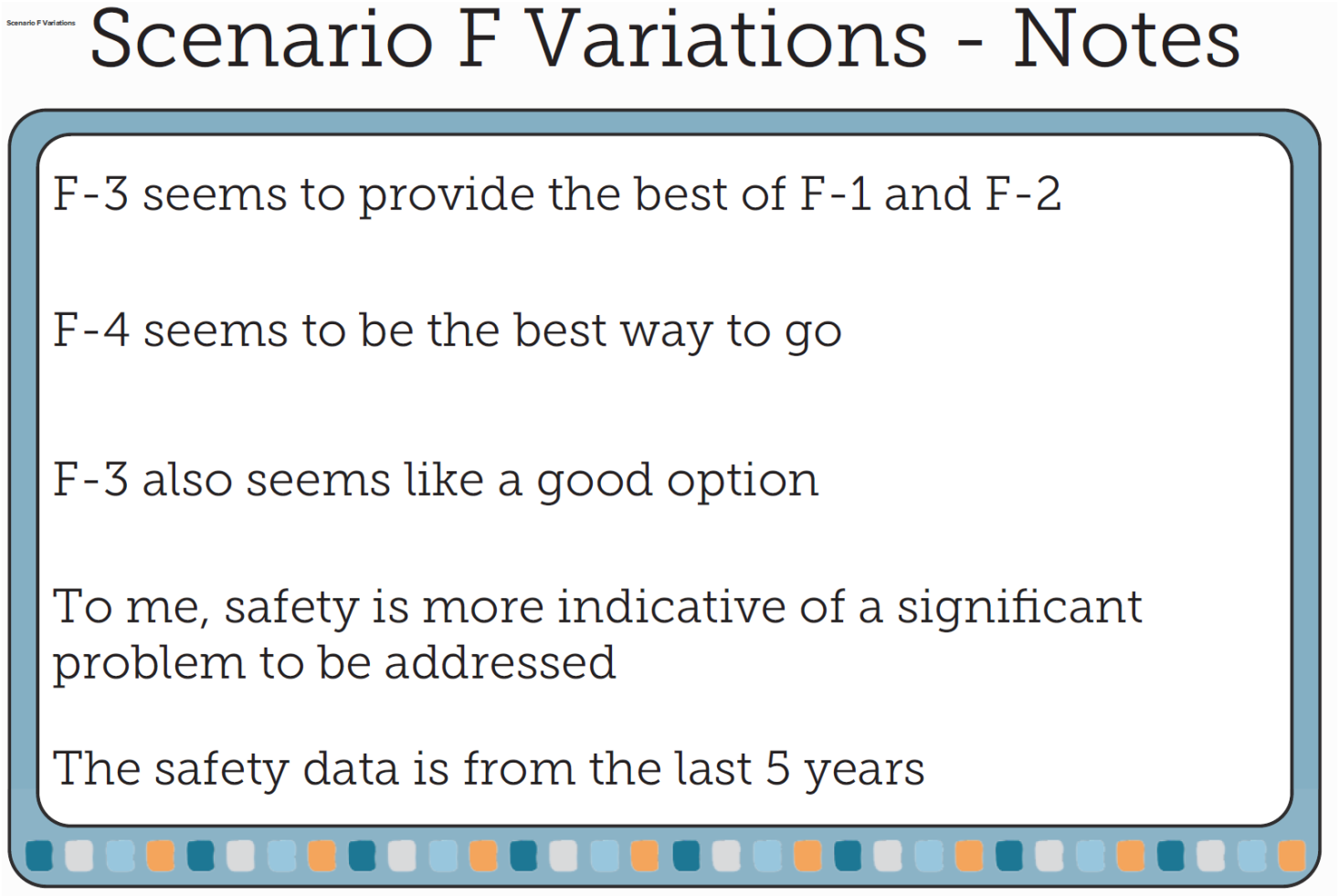








Mural Discussion Notes



Mural Discussion Notes

Scenario F Variations - Notes

Crashes can vary from year to year within that 5-year period, whereas lane width is a fixed width and would therefore provide more stability

F-3 would provide more stability

F-4 puts a better foot forward for Modernization projects overall

F-3 is a big improvement over what we have now

We ultimately want to be directing and prioritizing where safety is already an issue, so I lean towards F-4

Congestion Criterion Weight

- ***Desire to reach agreement*** on including a Congestion weight at the Division Needs level for Modernization criteria

- Notes
  - The goal is not to determine highly congested roadways as in Mobility
  - The goal is to help differentiate the usage level for each roadway

Mural Discussion Notes

Congestion Weight

Agreement

Include a Congestion weight at the Division Needs level for Modernization criteria

Yes ☑ No ☐

Revised Modernization Criteria Weights

- ***Desire to reach agreement*** on the new criteria weights for Modernization
  - Need to decide one set of weights for the criteria based on the scenarios we have reviewed

Mural Discussion Notes

New Criteria Weights

Modernization - New Criteria Weights

Recommend Scenario F-4 to the Workgroup, and also offer Scenario F-3 as a viable backup alternative if the Workgroup has concerns with Scenario F-4

Parking Lot: Explore if roundabout projects should be able to compete using Modernization weights

- List of projects may be larger than roundabouts, but plan to start with roundabouts first

Road Diet Scoring Improvements

- What implications would creating a new set of criteria weights for a single SIT have?
  - How do we ensure that the creation of a set of weights for a single SIT would not prompt other SITs to seek their own weights?
  - How will this affect the equal and fair competition for all highway projects?

- What is the magnitude of the existing issue?
  - P7 projects submitted: 20 (2 Statewide Mobility, 12 Regional Impact and 6 Division Needs)

- What would be the benefits of creating a separate Road Diet Criteria?

Question: With this in mind, what would a right-sized approach look like?

Mural Discussion Notes

RD1

Road Diet Scoring Improvements

What implications would creating a new set of criteria weights for a single SIT have?

Right now, we don't have a set of criteria weights for a single SIT

I would not want every SIT to have its own set of weights

But, this question is not really what we are talking about - we are not proposing to have a set of criteria weights for all SITs

Mural Discussion Notes

RD 2

Road Diet Scoring Improvements

What implications would creating a new set of criteria weights for a single SIT have?

Both those who want road diets and have concerns about them should care about the issues with how we currently score road diets

A cost-sharing component would be restrictive and disadvantage smaller towns in particular

We are setting ourselves up for missing out on implementing effective safety counter-measures

There are resurfacing and construction road diets

Mural Discussion Notes

RD 3

Road Diet Scoring Improvements

What implications would creating a new set of criteria weights for a single SIT have?

If Modernization and Mobility do not cover the issues that road diets are intended to address, then it may make sense to create a new set of weights

F-4 would make Modernization more responsive to road diets

Perhaps a new set of criteria weights is less needed given that we are recommending F-4

Mural Discussion Notes

RD 4

Road Diet Scoring Improvements

What implications would creating a new set of criteria weights for a single SIT have?

The lane width could work both ways (excess and deficiency)

We do not want to do road diets on projects with a high V/C

Mobility and Safety is working on a form to be completed prior to doing a road diet project

Mural Discussion Notes

RD 5

Road Diet Scoring Improvements

What implications would creating a new set of criteria weights for a single SIT have?

I am reluctant to think that the Modernization criteria will be sufficient

Road diets are a proven safety countermeasure

We found in P7 that none of the proposed Modernization projects would score well

Test Safety, Benefit/Cost, Congestion, and Multimodal?

Mural Discussion Notes

RD 6

Road Diet Scoring Improvements

What implications would creating a new set of criteria weights for a single SIT have?

We should emphasize low-cost projects finding their way into the STIP

We could develop a specific safety benefit factor for road diets - We do that now

SPOT to test P7 Road Diet projects using F-3 and F-4 scenarios to review if proposed criteria weights benefit these projects

The multimodal criteria needs to be revised

Mural Discussion Notes

RD 7

Road Diet Scoring Improvements

What implications would creating a new set of criteria weights for a single SIT have?

At a minimum, adding the Bike/Ped crash risk data would be appropriate for multumodal

Meeting Summary Notes

- The Subcommittee has ***reached agreement*** on the following change/improvement:
  - Include a Congestion weight at the Division Needs level
    - *Rationale for recommendation*: The inclusion of a congestion weight at the Division Needs level helps to identify and differentiate projects based on their usage. A congestion component could also help provide more balance on significant score changes resulting from boosted safety (crash rates) especially on lower volume roads. Modernization projects could also include congestion improvements at intersections.

Meeting Summary Notes - Continued

- The Subcommittee has ***reached agreement*** on the recommendation for Criteria Weights:

Existing Criteria/Weights				Recommended Criteria/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%	5%
Safety	25%	25%	20%	Safety	35%	35%	35%
Freight	25%	10%	5%	Freight	25%	15%	5%
Lane Width	10%	10%	5%	Lane Width & [Paved] Shoulder	30%	15%	5%
[Paved] Shoulder Width	20%	10%	10%	-	-	-	-
Pavement Condition	10%	10%	10%	-	-	-	-

Meeting Summary Notes - Continued

- The Subcommittee has ***reached agreement*** on the recommendation for Criteria Weights:

Existing Criteria/Weights				Alternate Recommended Criteria/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%	5%
Safety	25%	25%	20%	Safety	35%	35%	30%
Freight	25%	10%	5%	Freight	25%	20%	5%
Lane Width	10%	10%	5%	Lane Width & [Paved] Shoulder	30%	10%	10%
[Paved] Shoulder Width	20%	10%	10%	-	-	-	-
Pavement Condition	10%	10%	10%	-	-	-	-

Meeting Summary Notes - Continued

- The Subcommittee has ***reached agreement*** on the proposed Modernization Criteria Weights:
  - Criteria Weights Improvements
    - The 10% weight from Pavement Condition is added to Safety at all levels
    - Combined weight for Lane & Paved Shoulder Widths at Regional Impact is reduced by 5%
    - Freight is increased by 5% at Regional Impact
    - Combined weight for Lane & Paved Shoulder Widths at Division Needs is reduced by 10%
    - Congestion at Division Needs is increased by 5%
    - Safety at Division Needs is further increased by 5% to set 35% at all levels
  - *Rationale for recommendation*:
    - Safety issues are indictive of a significant problem that needs to be addressed. A high safety weight would help prioritize projects with the significant need for safety at all levels
    - The recommended criteria weights produced an overall improvement for project scores at all levels
      - At Division Needs, the median and top quartile scores improved from 14.18 and 20.37 to 18.85 and 24.77 respectively
      - At Regional Impact, the median and top quartile scores improved from 26.03 and 29.77 to 27.70 and 32.65 respectively
      - At Statewide Mobility, the median and top quartile scores improved from 52.28 and 61.65 to 60.39 and 71.04 respectively
    - These new weights improves Modernization scoring in competition with Mobility projects

Next Steps & Adjourn

- Next Steps
  - Follow-Up Analysis /Discussion
    - Test P7 Road Diets using recommended criteria for Modernization projects
- Next Meeting
  - **March 25th, 2025 @ 2:30 PM to 4:00 PM**

Thank you!

Meeting Attendance – Virtual

Name	Organization
Amin Hezaveh	NCDOT
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
Richard Brown *	NCDOT
Rose Bauguess	Southwestern RPO
Saman Jeffers *	NCDOT
Sarah Lee *	NCDOT
Brian Wert *	NCDOT
Scott Miller	NCDOT
Stephen Sparks	NCDOT
Tristan Winkler *	French Broad River MPO

*Workgroup Participant, Alternate, or Advisory