



NORTH CAROLINA
Department of Transportation

STI Training

NCDOT SPOT Office

May – June 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



NORTH CAROLINA
Department of Transportation

Introduction

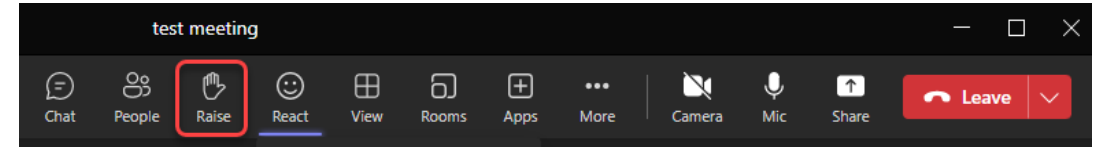
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Housekeeping

- Virtual etiquette:
 - When you are not speaking, please mute yourself
 - Keep cameras off
 - For questions, use the “Raise Hand” feature or type “Q” in the chat
 - If you have technical issues, message “**Drew Finley**” directly
- Participation is encouraged throughout training
 - Experienced partners are welcome to provide knowledge
- Training is being recorded
 - Will be posted along with slides as future resources
- Breaks and Lunch
- Parking Lot



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Training Goals

1. Gain a **basic understanding** of the Prioritization, scoring, and programming process
2. Leave with a practicable and applicable understanding of how the process works and **your role in the process**
3. Understand what additional **training and resources** are ahead
 - SPOT@ncdot.gov – best place to go if you don't know where to go

Training Reminders

- This is a LOT of information → **focus on the foundation, takeaways, and who to ask**
- Further training opportunities are coming
- Further documentation and guidance will be available
- It frequently **takes a full cycle** before a person has a working understanding of the process
- Slides and recordings of this session will be posted

Presentation Notes

- These slides contain references to previous Prioritization cycles where applicable as informational or reference material
- All P8 Workgroup recommendations shown here are final but not yet approved by the Board of Transportation – approval is expected in July, and these slides will be updated accordingly

Agenda – Session #3 (VIRTUAL)

Day 1	Day 2
Begin 9:30am	Begin 9:30am
Introduction	Day 1 Recap
Session 1 – STI Legislation	Session 6 – Scoring Process
Lunch	Session 7 – Scoring Tools and Resources
Session 2 – Prioritization and Programming Basics	Lunch
Session 3 – Prioritization and Programming Process	Session 8 – Submitting Good Candidate Highway Projects
Session 4 – Non-Highway Scoring Details	Session 9 – Select Advanced Scoring Details
Session 5 – Highway Scoring Details	Session 10 – Resources, Upcoming Items, and Takeaways
End by 3:30pm	End by 3:30pm (or earlier)



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Session 1: STI Legislation

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Background



Project Life Cycle



Prioritization and Programming

Article 14B.

Strategic Prioritization Funding Plan for Transportation Investments.

§ 136-189.10. Definitions.

The following definitions apply in this Article...



Priorities

- ①
- ②
- ③



Prioritization and Programming

★★ Fifty Years of STIP • Since 1973 ★★



**STATE TRANSPORTATION
IMPROVEMENT PROGRAM (STIP)**
Current STIP



2024 - 2033

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

April 2025

*Adopted in 2023

Terminology

- Prioritization = assigning data and scores to projects
- STIP = State Transportation Improvement Program
= 10-year document of project funding and schedules
- Programming = process of assigning funding and schedule to projects

Project Selection Reform

Previous perception:

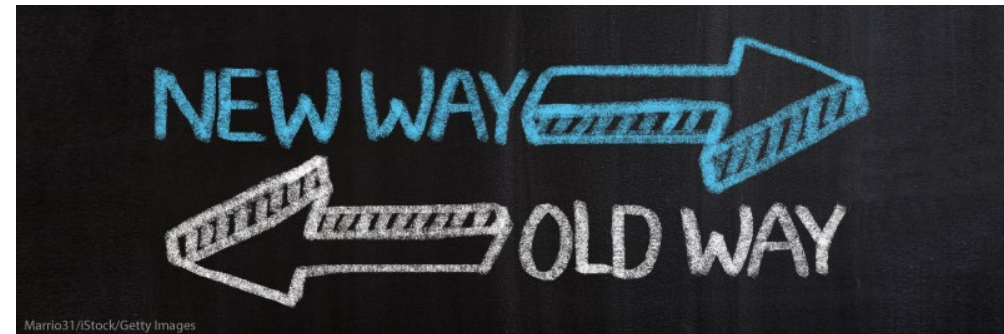
I'll agree to your project if you agree to mine...



Public wanted politics removed from decision-making

NCDOT needed transparency in project selection

This led to Transportation Reform...



2011 - 2012

Prioritization Process is now in Law

*“The Department shall develop and utilize a **process for selection of transportation projects** that is based on professional standards in order to most efficiently use limited resources to benefit all citizens of the State.*

*The strategic prioritization process should be a **systematic, data-driven process** that includes a **combination of quantitative data, qualitative input, and multimodal characteristics, and should include local input.***

The Department shall develop a process for standardizing or approving local methodology used in Metropolitan Planning Organization and Rural Transportation Planning Organization prioritization.” - S.L. 2012-84



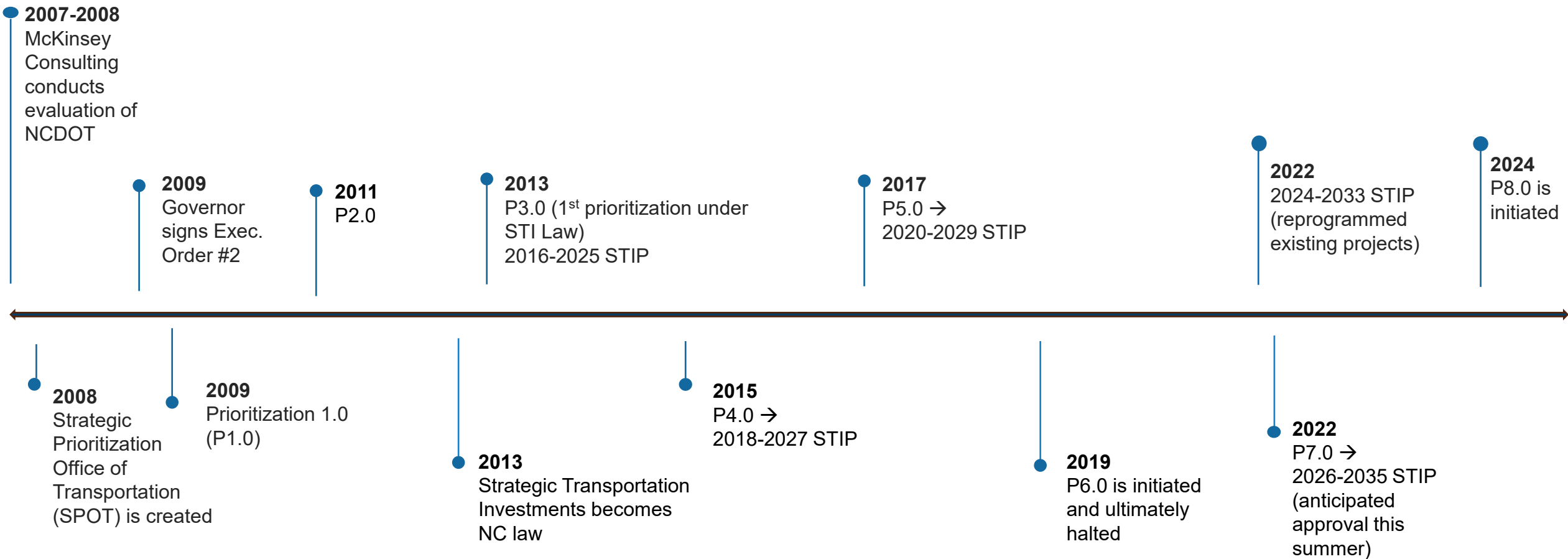
**STRATEGIC
TRANSPORTATION
INVESTMENTS**

Smart decisions to keep North Carolina moving.

STI Education

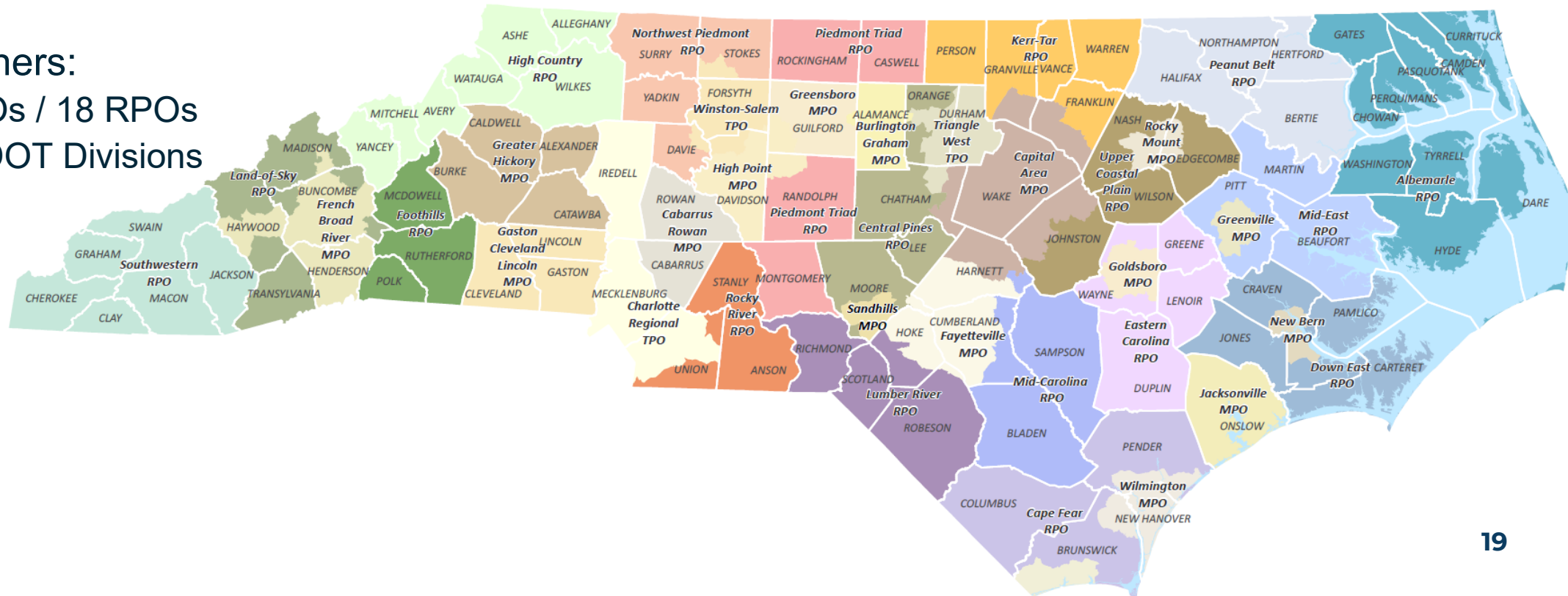


History of Prioritization



STI Background

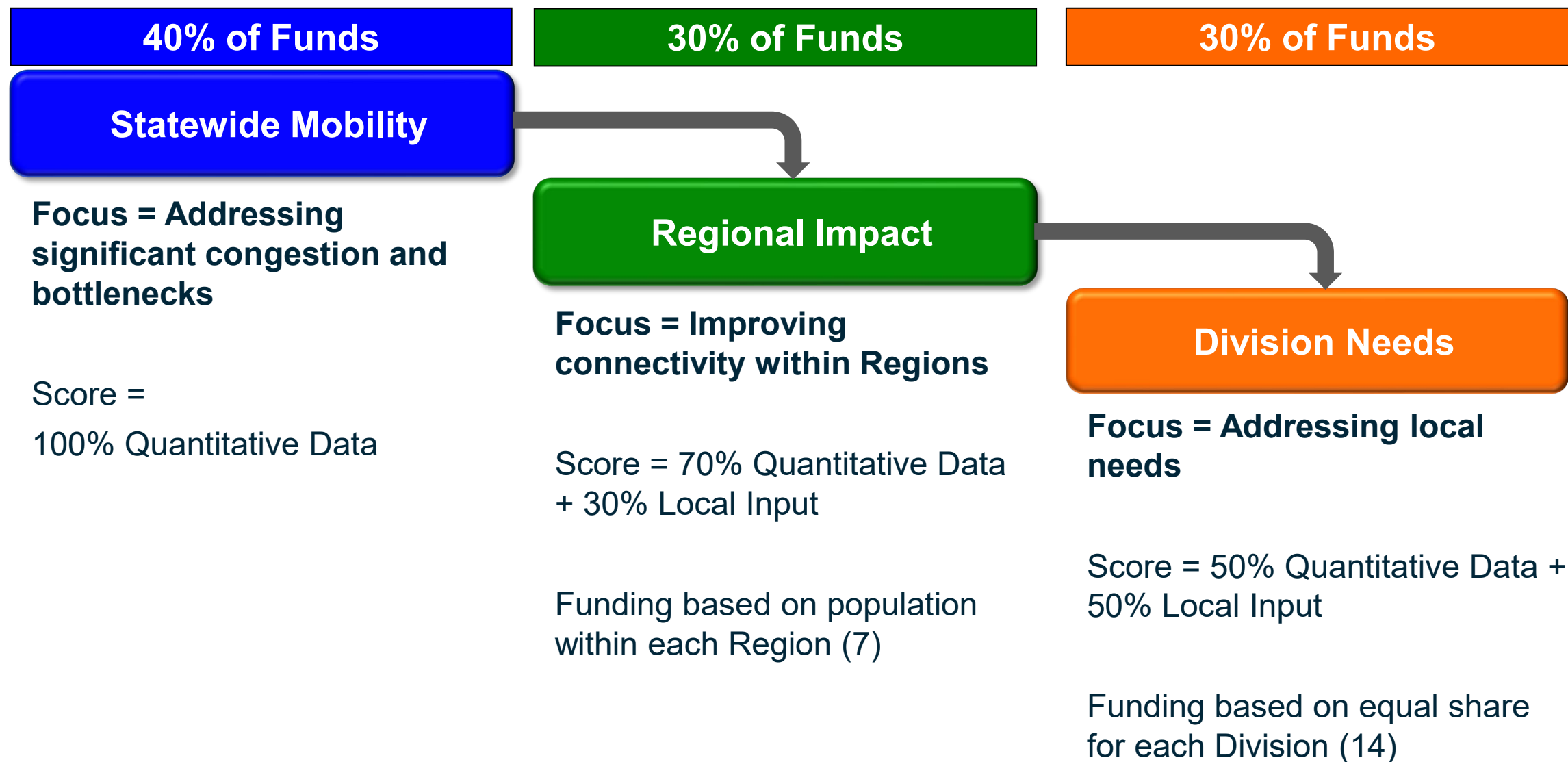
- NCDOT funds six modes of transportation
 - Highway, Aviation, Bicycle/Pedestrian, Ferry, Public Transportation, Rail
- NCDOT Annual Budget of approx. \$7.3B (\$3.9B for STI)
- Key Partners:
 - 20 MPOs / 18 RPOs
 - 14 NCDOT Divisions



Strategic Transportation Investments (STI) Law

- Prioritizes **capital** expenditures across all modes (Mobility/Expansion + Modernization)
- Needs-based, data-driven
- Directly ties funding to Prioritization results
- Funding comes from Highway Trust Fund and Federal Aid Program
- Workgroup used every cycle for improvement

How STI Works



STI Law Definitions

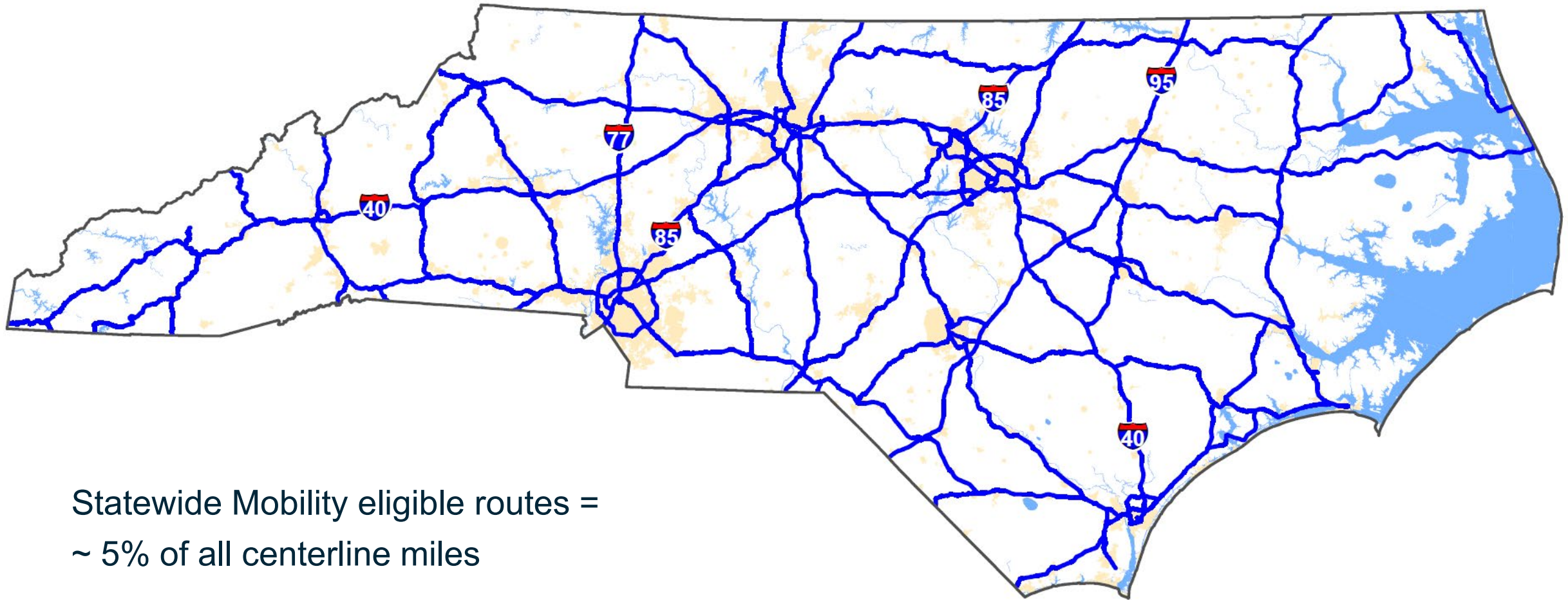
- STI Law defines:
 - Funding Categories and Percentages
 - Project Eligibility
 - Highway Scoring Criteria Names
 - Funding Constraints
- Workgroup recommends and NCDOT Board of Transportation (BOT) approves:
 - Scoring Process (timeframe, submittals, carryovers, etc.)
 - Highway Measures and Weights
 - Non-Highway Criteria, Measures, and Weights
 - Local Input Process

STI Categories & Eligibility Definitions

Mode	Statewide Mobility	Regional Impact	Division Needs
Highway	<ul style="list-style-type: none"> Interstates (existing & future) National Highway System routes (as of 2013) STRAHNET ¹ Designated Toll Facilities 	<ul style="list-style-type: none"> Other US and NC Routes 	<ul style="list-style-type: none"> All Secondary Roads (SR) Federal-Aid Eligible Local Roads
Aviation	<ul style="list-style-type: none"> Large Commercial Service Airports 	<ul style="list-style-type: none"> Other Commercial Service Airports not in Statewide 	<ul style="list-style-type: none"> All Airports without Commercial Service (General Aviation)
Bicycle-Pedestrian	Not eligible	Not eligible	<ul style="list-style-type: none"> All projects (\$0 State Highway Trust Funds)
Public Transportation	Not eligible	<ul style="list-style-type: none"> Service spanning two or more counties 	<ul style="list-style-type: none"> All other service, including terminals and stations
Ferry	Not eligible	<ul style="list-style-type: none"> Vessel or infrastructure expansion 	<ul style="list-style-type: none"> Replacement vessels
Rail	<ul style="list-style-type: none"> Freight Service on Class-I Railroad Corridors 	<ul style="list-style-type: none"> Rail service spanning two or more counties not in Statewide 	<ul style="list-style-type: none"> All other service, including terminals and stations (no short lines)

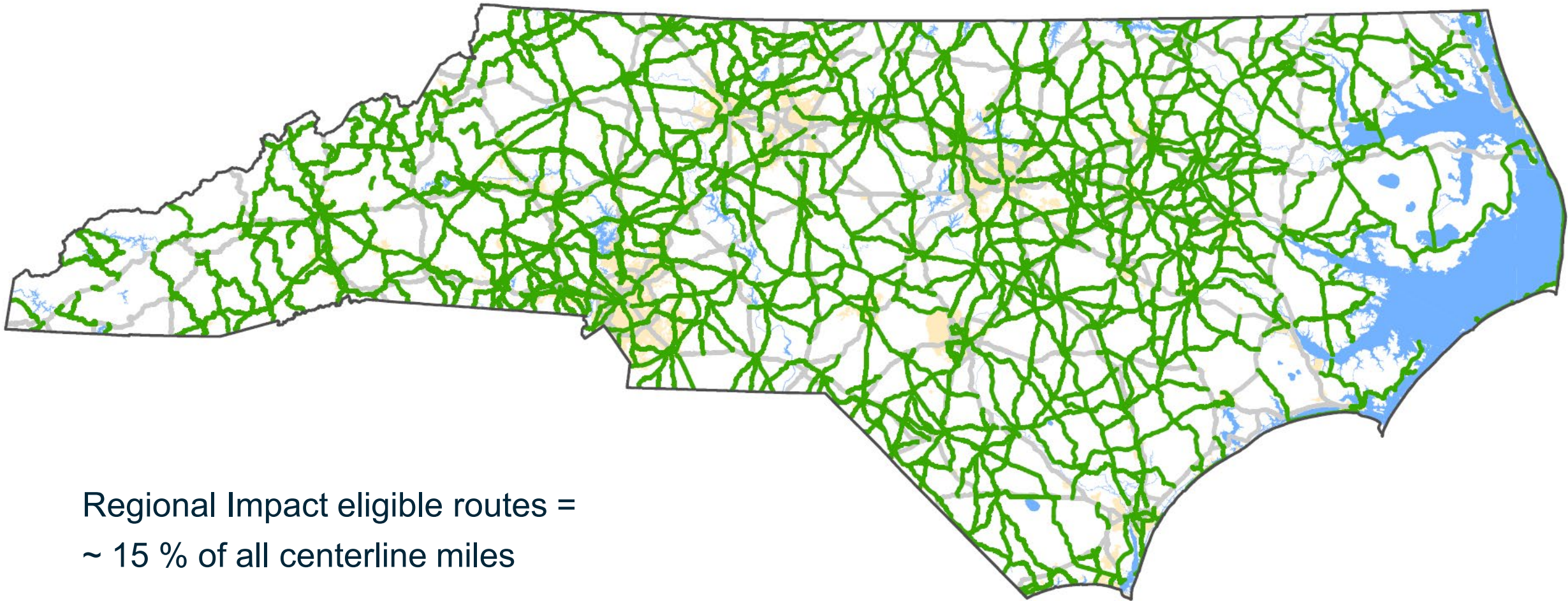
¹ STRAHNET – Strategic Highway Network, system of roads deemed necessary for emergency mobilization and peacetime movement of personnel and equipment to support U.S. military operations

Project Eligibility: Highway – Statewide Mobility



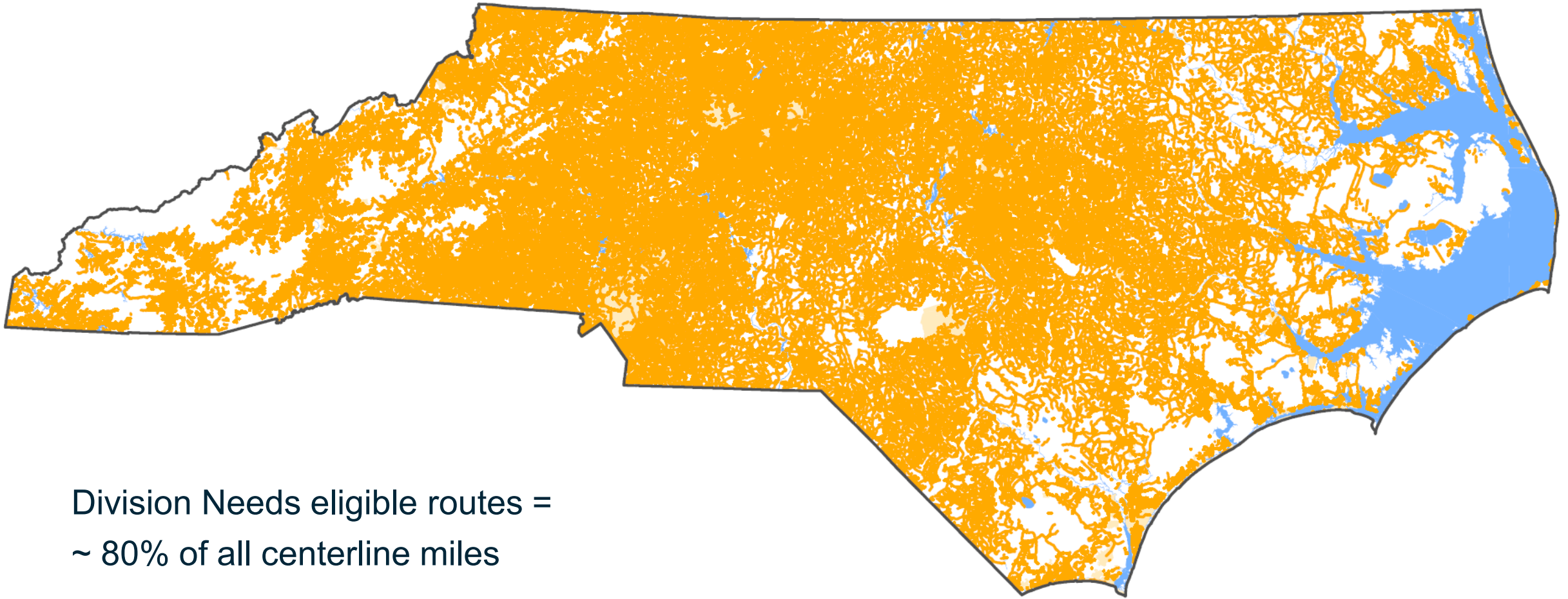
Statewide Mobility eligible routes =
~ 5% of all centerline miles

Project Eligibility: Highway – Regional Impact



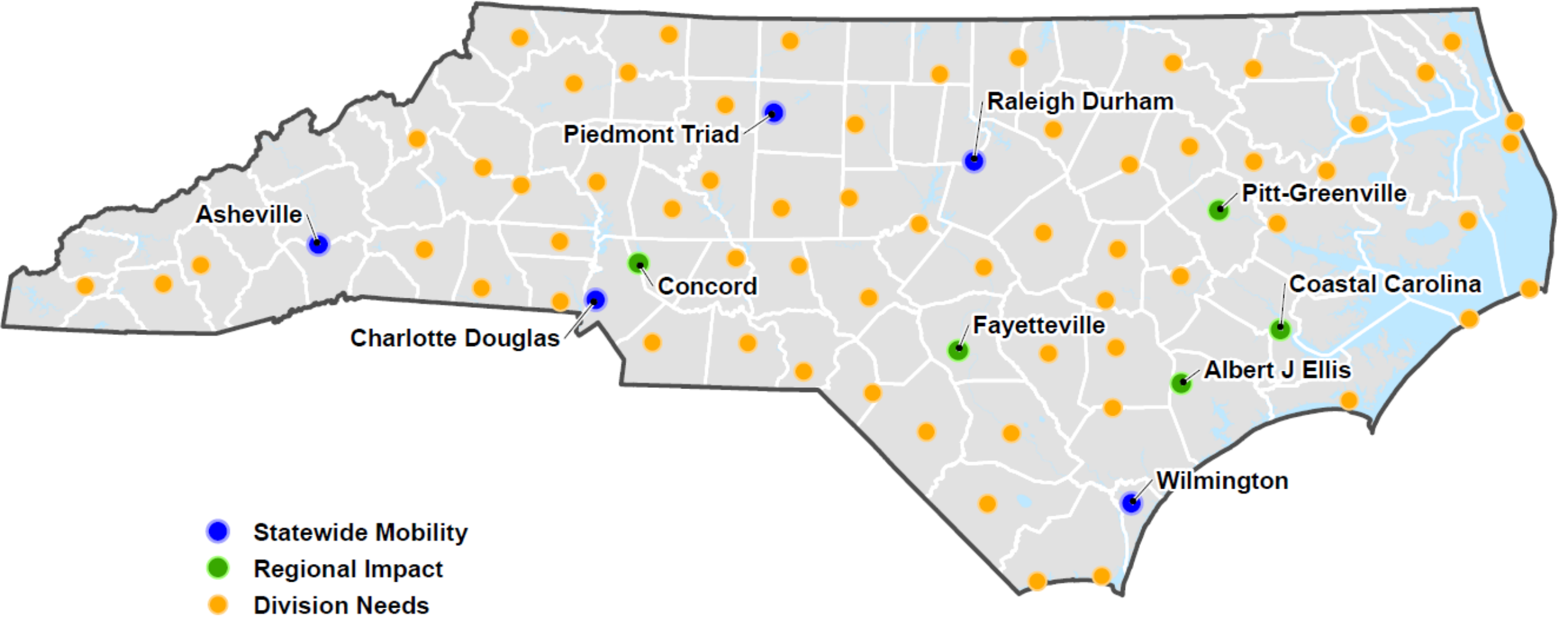
Regional Impact eligible routes =
~ 15 % of all centerline miles

Project Eligibility: Highway – Division Needs

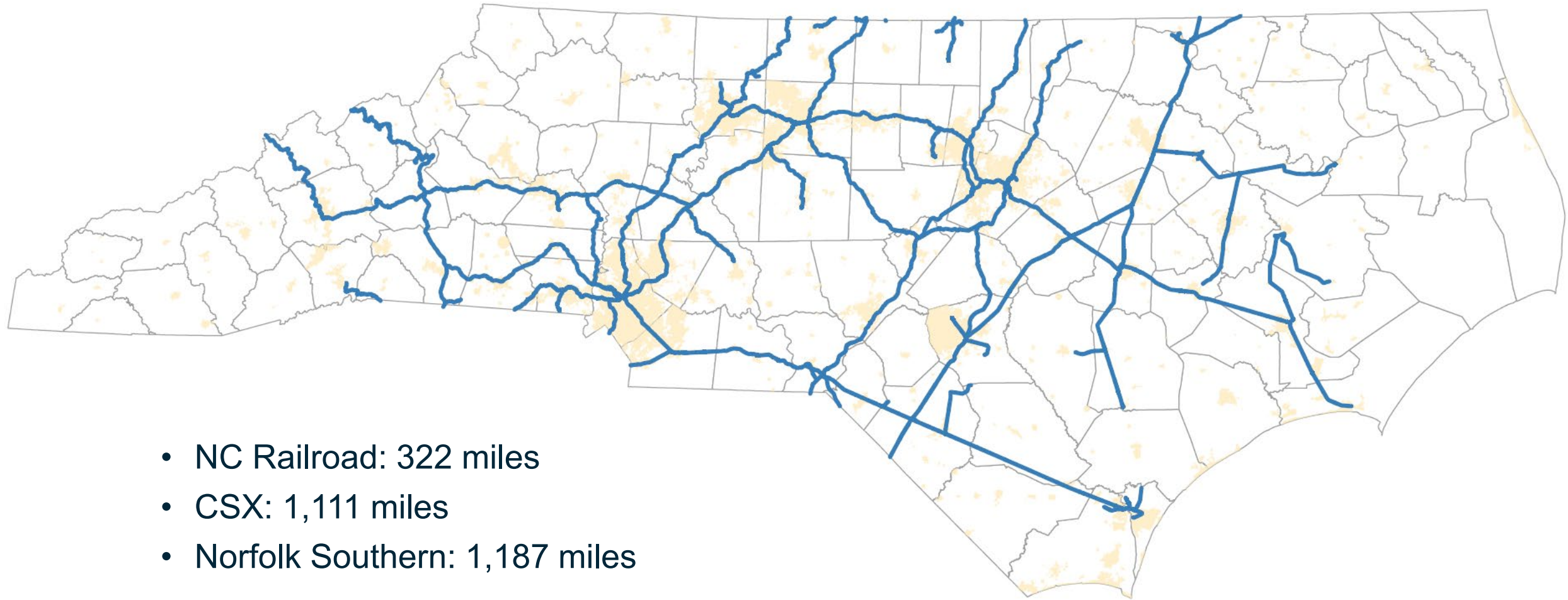


Division Needs eligible routes =
~ 80% of all centerline miles

Project Eligibility: Aviation – All Categories

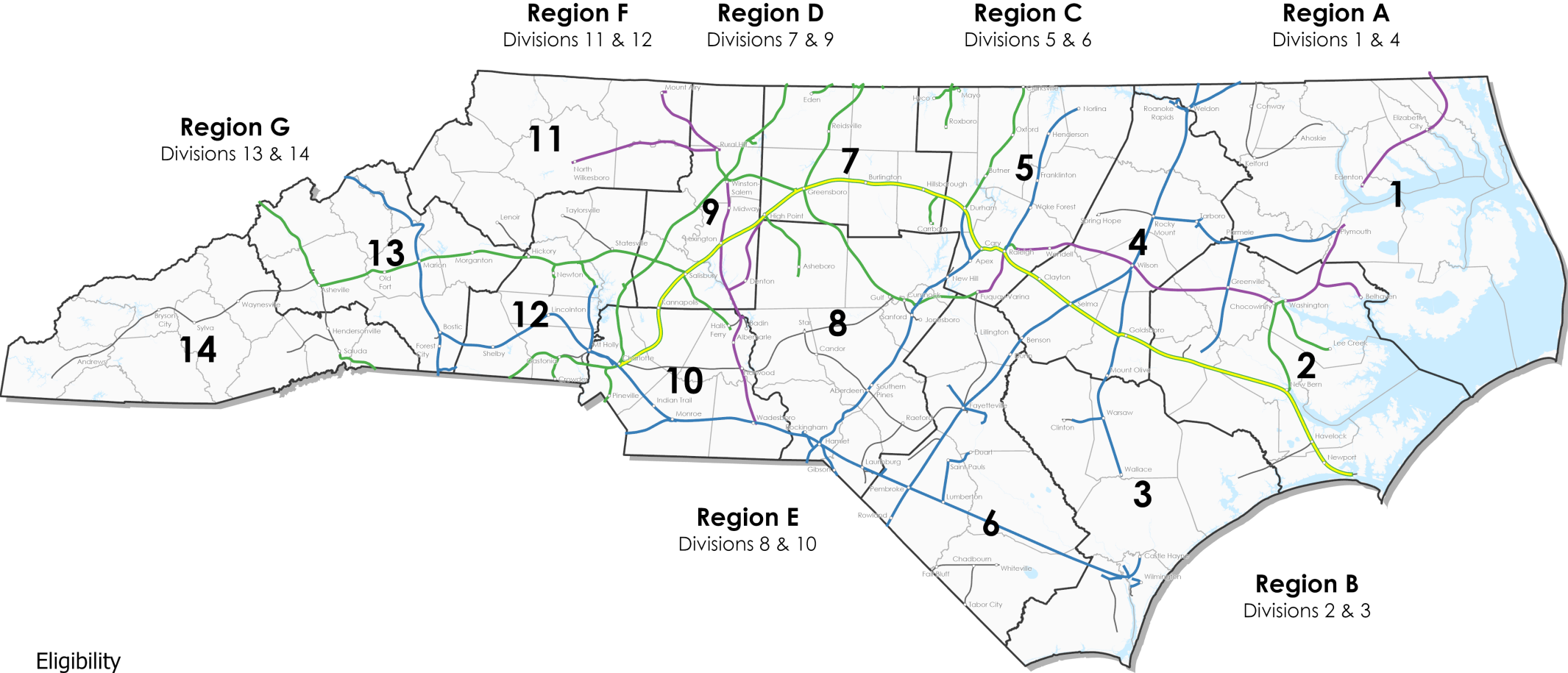


Project Eligibility: Rail – Statewide Mobility



Rail Corridors Eligible for Funding

Under the Strategic Transportation Investment Law in NC



STI Law Scoring

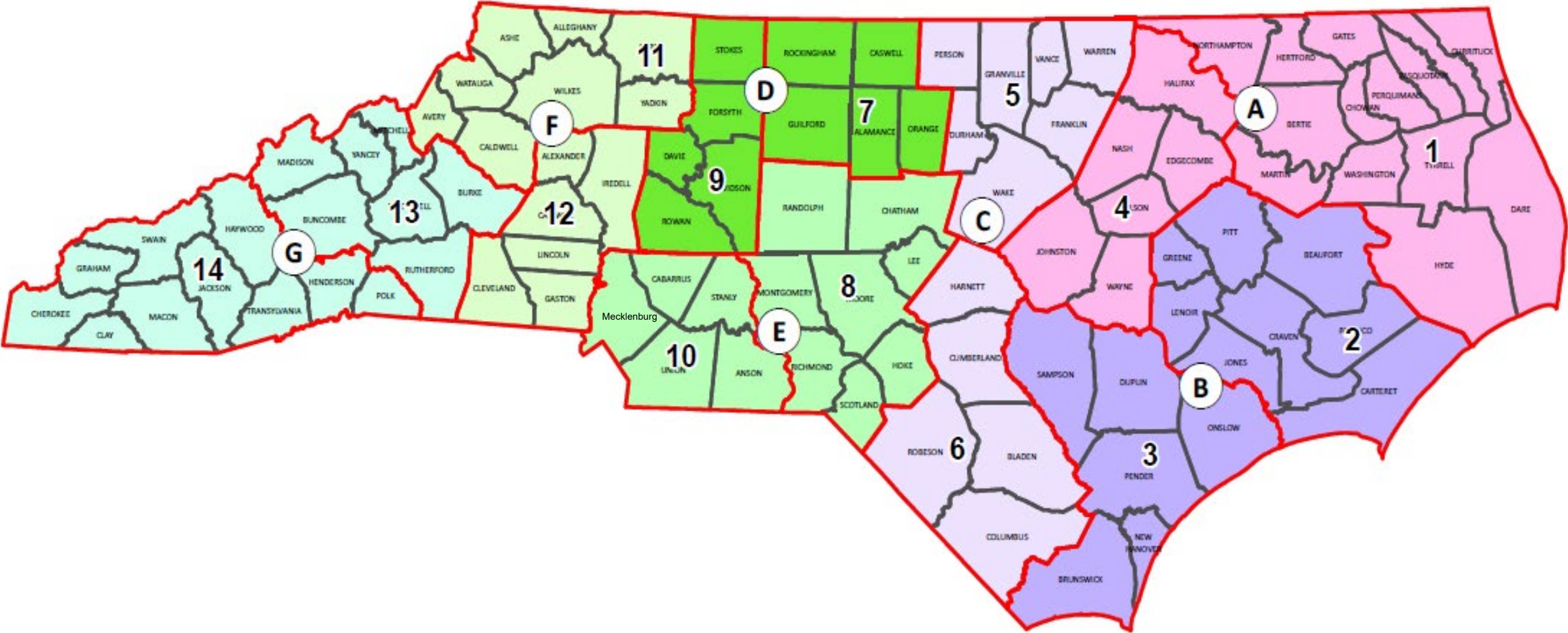
- Criteria:
 - Quantitative criteria (data-driven) – all categories
 - Qualitative criteria (Local Input Points) – Regional Impact and Division Needs categories
- 0 to 100 scale
- Selection of projects in ranked order
- Legislation provides the names of Highway quantitative criteria:

Congestion	Benefit/Cost	Safety	Freight	Economic Competitiveness ¹
Accessibility/Connectivity ²	Multimodal	Lane Width	Shoulder Width	Pavement Score

¹ Statewide Mobility only; ² Regional Impact & Division Needs only

- Workgroup flexibility in determining the methodology used to calculate criteria
- Non-Highway Modes must have a minimum of 4 quantitative criteria

STI Regions and Divisions



STI Funding Caps and Restrictions Impacting Programming



Corridor Cap:
Statewide Mobility



Funding limits:
Light rail and commuter
rail projects



Funding limits:
Regional Impact
Transit projects



Funding limits:
Airport projects in all
categories



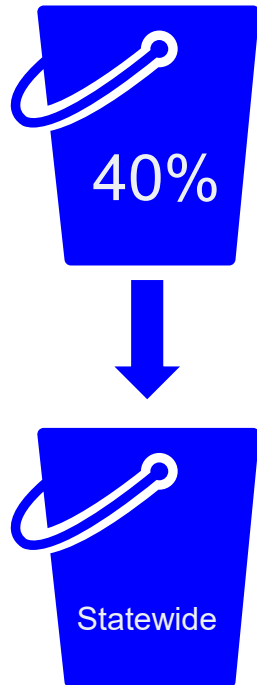
Prohibition:
Using state funds to fund independent
bicycle and pedestrian projects

State Transportation Improvement Program (STIP)

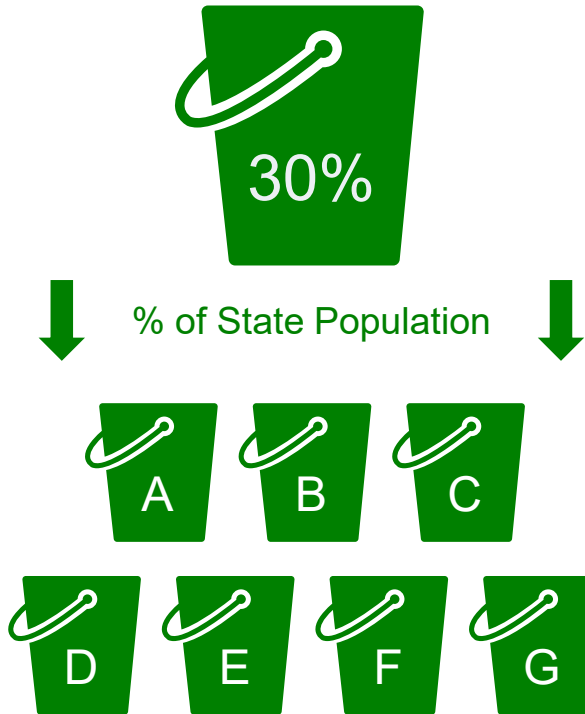
- STIP identifies funding and scheduling of projects in NCDOT's capital program (~54% of DOT Budget) and projects utilizing federal funding
- STIP contains different project types:
 - Highway & Non-Highway capital projects (Prioritization)
 - Bridges, safety, Interstate Maintenance, CMAQ (programs exempt from Prioritization)
- 10 Year Program (currently 2024-2033, 2026-2035 to be adopted in July)
- Projects selected through Prioritization are categorized based on which year they are programmed in the STIP
 - First half is "Delivery STIP" – projects "scheduled for delivery"
 - Second half is "Developmental STIP" – projects in early scoping and environmental development stage ("scheduled for PE Only")
- Updated approximately every 2 years

STI Funding Distribution

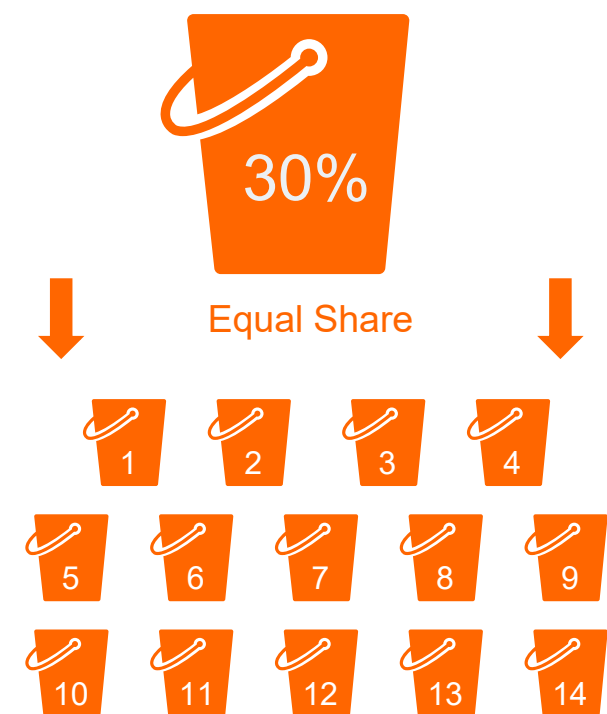
Statewide Mobility



Regional Impact



Division Needs



Iterative Scoring & Programming Process

Projects Submitted by MPOs, RPOs, & Divisions

SPOT Review

1. Reviewed for eligibility
2. Data screened & developed
3. Quantitative scores calculated

Statewide Mobility
40% of Funds

1. Projects programmed
2. Projects not programmed cascade to next category

Regional Impact
30% of Funds

1. Local input points assigned
2. Total scores calculated
3. Projects programmed
4. Projects not programmed cascade to next category

Division Needs
30% of Funds

1. Local input points assigned
2. Total scores calculated
3. Projects programmed

Statewide Mobility Score =
100% Quantitative

Regional Impact Score =
70% Quantitative +
30% Local Input

Division Needs Score =
50% Quantitative +
50% Local Input

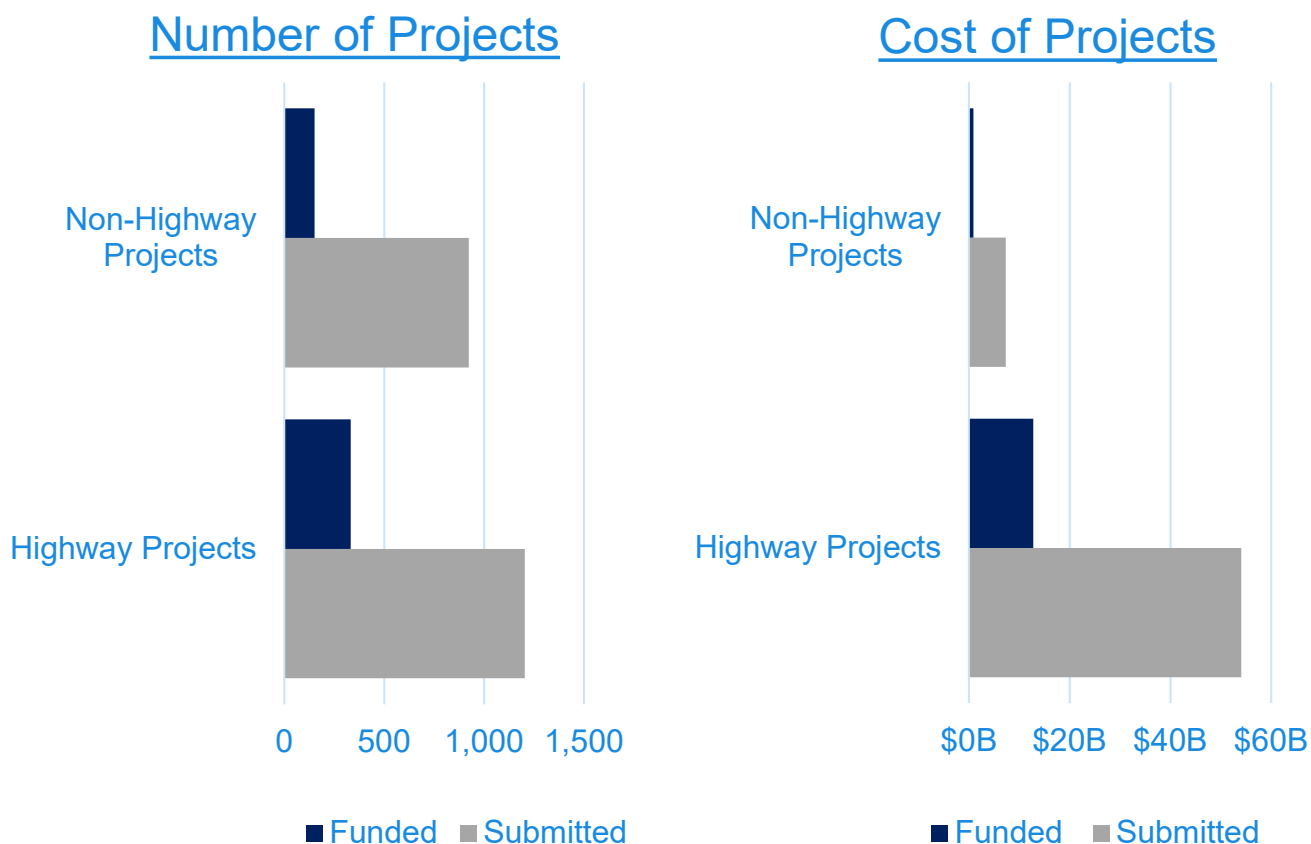
Example Prioritization Results – P5 and 2020-2029 STIP

Evaluated 2,127 Projects (\$61.4 B)

- 1204 Highway (\$54.05 B)
- 923 Non-Highway (\$7.35 B)

484 project funded (\$13.64 B) → 23% funded

- 333 Highway (\$12.76 B)
- 151 Non-Highway (\$0.88 B)



Workgroup Process

§ 136-189.11. Transportation Investment Strategy Formula

(h) Improvement of Prioritization Process. –

The Department shall endeavor to **continually improve the methodology and criteria** used to score highway and non-highway projects pursuant to this Article, including the use of normalization techniques, and methods to strengthen the data collection process.

The Department is directed to continue the **use of a workgroup process** to develop improvements to the prioritization process.

Workgroup Process

Members (26)				Advisory / SME	
MPO Representatives (4)		RPO Representatives (4)		Modal Representatives	
Advocacy Groups: • Association of County Commissioners • League of Municipalities • Metro Mayors Coalition • Regional Council of Governments • Rural Center		NCDOT Division Engineers (4)		Legislative Staff	
		NCDOT SPOT Office (3)		FHWA	
		NCDOT Subject Matter Experts (STIP, Multi-Modal, Freight, Planning, etc.) (6)		Other Support Staff	

- Per legislation, NCDOT participants in the Workgroup shall not exceed half of the total Workgroup

Workgroup Default Recommendation Points

- Prioritization Cycle Schedule
- Carryover Project Definition
- Number of Submittals
- Method of Local Input (ex. Number of Local Input Points)
- Criteria Names (Non-Highway)
- Measures and Weights (all modes)

All Workgroup recommendations are ultimately considered and enacted through approval of NCDOT's Board of Transportation, typically prior to the submittal process

End of Session 1





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Session 2: Prioritization and Programming Basics

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Project Database



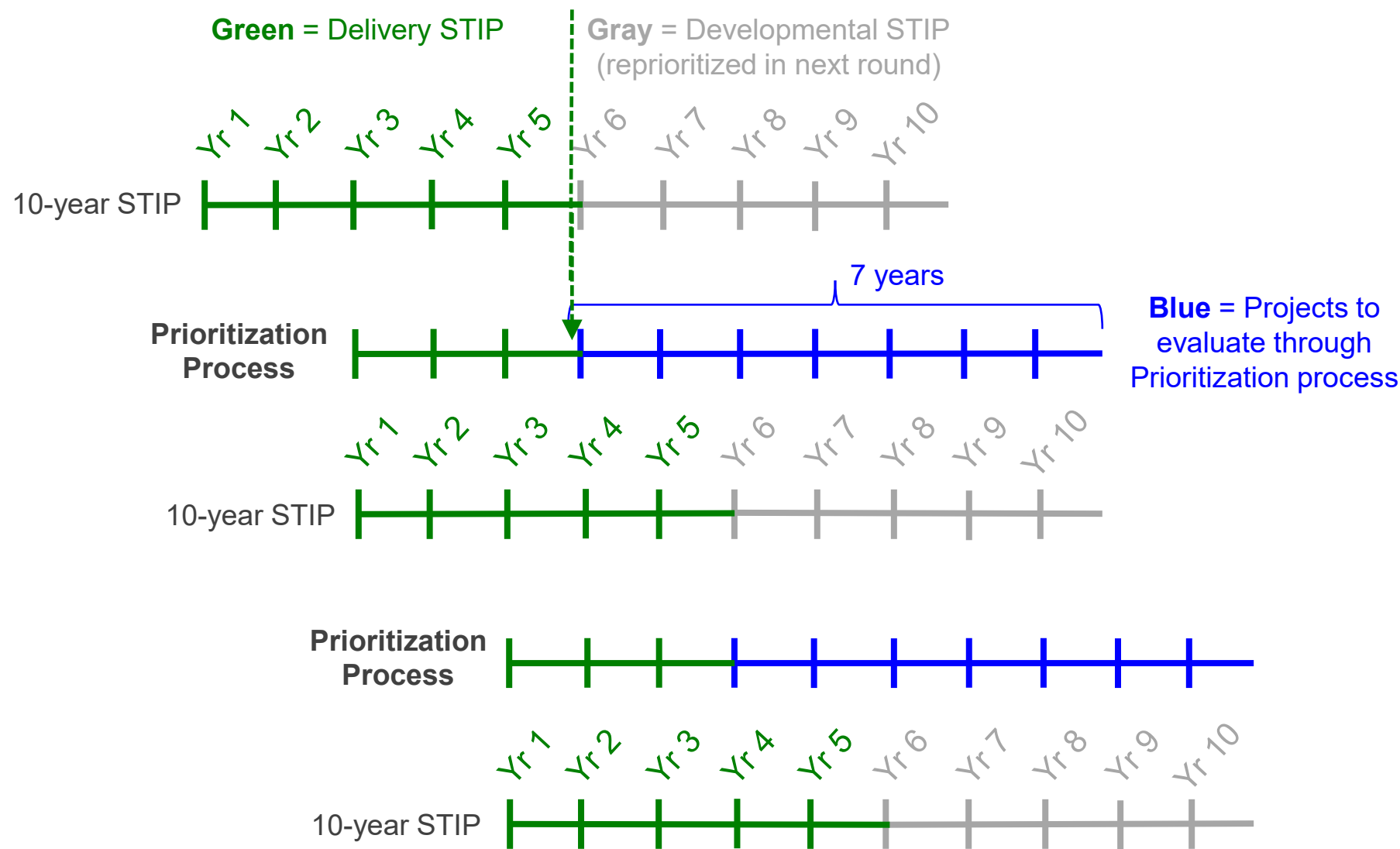
Prioritization feeds the STIP

- Prioritization 1.0 and 2.0 prior to STI Law passing
- Prioritization 3.0 (P3) → 2016-2025 STIP
- P4 → 2018-2027 STIP
- P5 → 2020-2029 STIP
- P6 halted after quantitative scoring; 2024-2033 STIP reprogrammed existing projects (Current STIP)
- P7 → 2026-2035 STIP to be adopted in July 2025
- P8 → 2028-2037

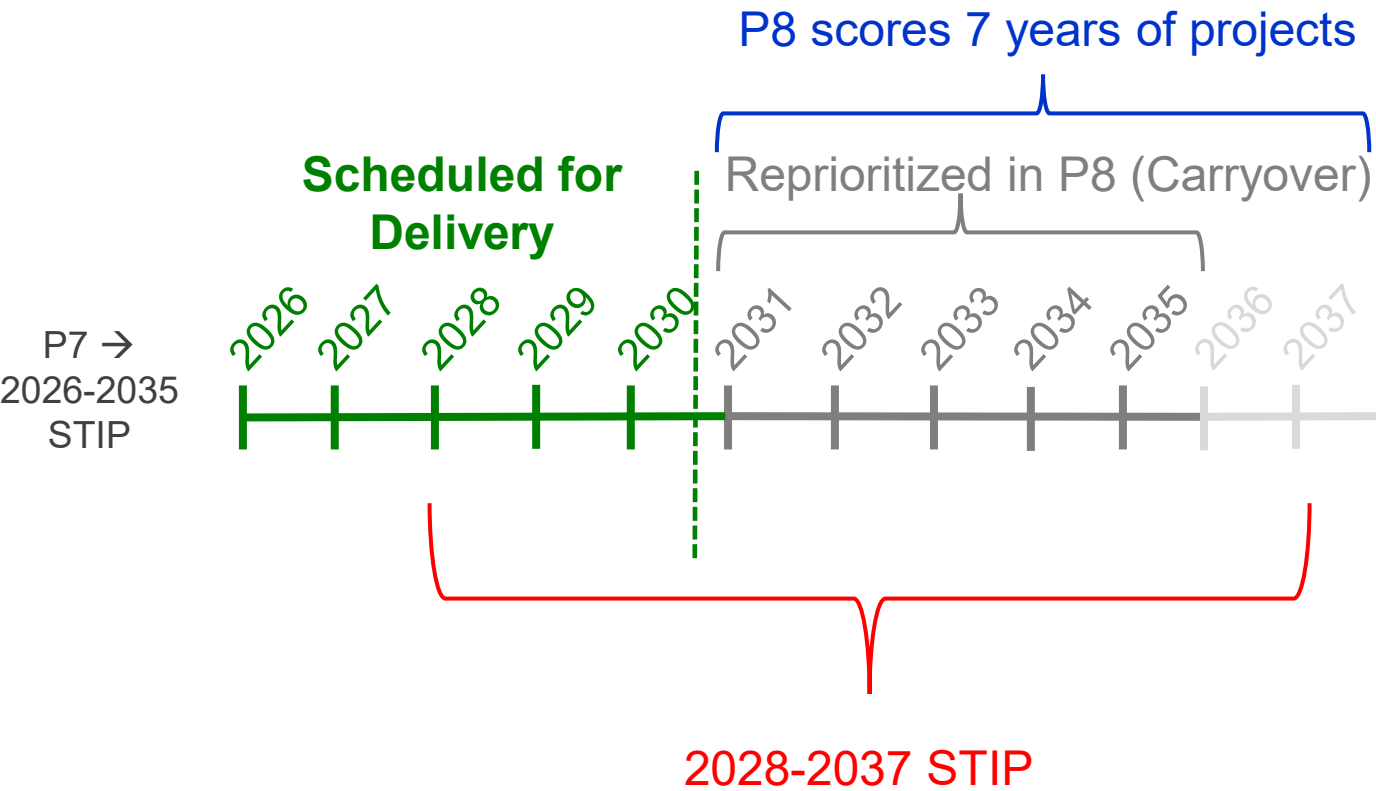
Projects Scheduled for Delivery

- Definition: Projects NOT subject to re-evaluation in the next round of Prioritization
 - Previously known as “Committed” projects
- Applies to projects in Delivery STIP (first 5 years of programming)
 - Defined by a project’s first year of programming (ROW or CON)
 - Note: ties up future funds from later years in STIP
- Applies to projects of all modes
- Example: in the 2026-2035 STIP, projects programmed for ROW or CON between 2026 and 2030 are “scheduled for delivery” and therefore not subject to reprioritization

Projects Scheduled for Delivery / Years Subject to Reprioritization



Projects Scheduled for Delivery: Current Cycle



Carryover Projects

- Carryover projects are automatically evaluated in the next round of Prioritization
 - Do not count toward an organization's submittal allotments
- P8 Carryover project definition:
 - In the 26-35 STIP (currently draft) and scheduled for PE Only
 - Have completed or active environmental documents (active within the last 6 months)
 - Sibling of a project programmed in the 26-35 STIP (currently draft)
 - Any other projects scheduled for delivery in the 2024-2033 STIP as of Jan. 1, 2025
- Modifications:
 - Segmenting counts as additional submittal slot
 - Scope changes do not count as additional submittal slot
 - 1 out / 1 in allowed with partner agreement
- All other projects from the previous cycle are available for resubmittal [Holding Tank]

Project Submittals

- Use P7 formula for number of submittals for P8
- Reduce total allotments by 30% for P8 only

MPOs and RPOs

- Base of 12 submittals, plus:
 - + 1 submittal for every 50,000 in population
 - + 1 submittal for every 500 centerline miles
- (No maximum number of submittals)

Divisions

- 14 submittals
- Formula applies to each mode
- 1 out / 1 in (with Carryover projects) allowed with partner agreement (same mode)

P8 Number of Submittals

MPO/RPO Name	P8 Population	P8 Pop rounded to nearest 50K	P8 Add'l Submittals Based on Population	2024 Centerline Miles	Centerline Miles rounded to nearest 500	P8 Add'l Projects based on Centerline Miles	INITIAL P8 Submittal Allotment	Submittal Allotment (30% reduction, unrounded)	P8 Submittal Allotment (per mode)
Albemarle RPO	174,219	150,000	3	2,942	3,000	6	21	14.70	15
Burlington-Graham MPO	176,195	200,000	4	1,043	1,000	2	18	12.60	13
Cabarrus-Rowan MPO	352,583	350,000	7	1,994	2,000	4	23	16.10	16
Cape Fear RPO	133,153	150,000	3	2,172	2,000	4	19	13.30	13
Capital Area MPO	1,345,849	1,350,000	27	4,715	4,500	9	48	33.60	34
Central Pines RPO	163,547	150,000	3	2,503	2,500	5	20	14.00	14
Charlotte Regional TPO	1,494,627	1,500,000	30	3,690	3,500	7	49	34.30	34
Down East RPO	94,026	100,000	2	1,567	1,500	3	17	11.90	12
Eastern Carolina RPO	169,863	150,000	3	2,967	3,000	6	21	14.70	15
Fayetteville Area MPO	440,763	450,000	9	1,873	2,000	4	25	17.50	18
Foothills RPO	132,825	150,000	3	2,078	2,000	4	19	13.30	13
French Broad River MPO	426,072	450,000	9	2,383	2,500	5	26	18.20	18
Gaston-Cleveland-Lincoln MPO	404,464	400,000	8	3,012	3,000	6	26	18.20	18
Goldsboro Urban Area MPO	90,276	100,000	2	599	500	1	15	10.50	11
Grand Strand Area Transportation Study	55,658	50,000	1	337	500	1	14	9.80	10
Greater Hickory MPO	367,982	350,000	7	3,174	3,000	6	25	17.50	18
Greensboro Urban Area MPO	406,916	400,000	8	1,606	1,500	3	23	16.10	16
Greenville Urban Area MPO	140,982	150,000	3	468	500	1	16	11.20	11
High Country RPO	212,443	200,000	4	4,157	4,000	8	24	16.80	17

P8 Number of Submittals

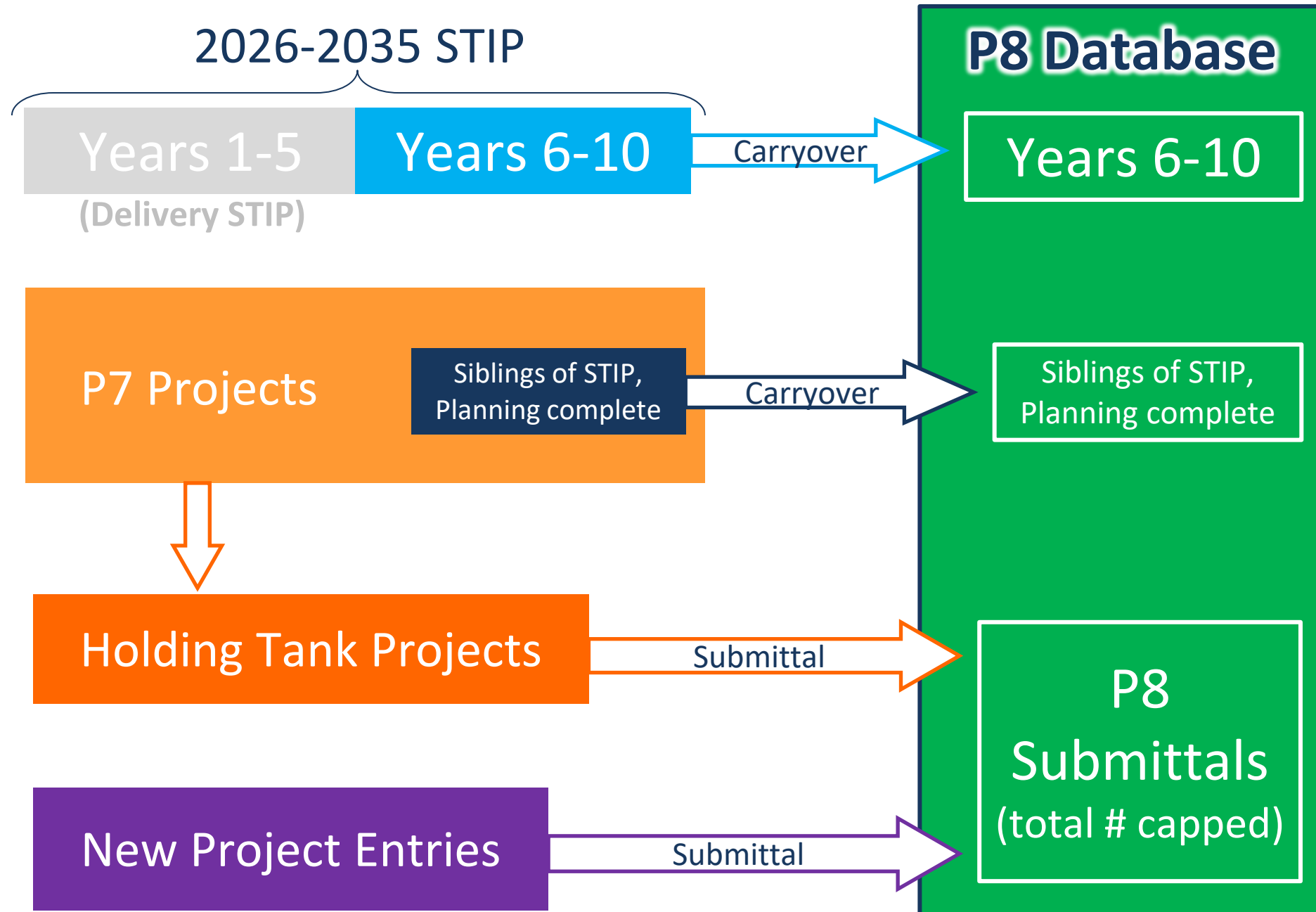
MPO/RPO Name	P8 Population	P8 Pop rounded to nearest 50K	P8 Add'l Submittals Based on Population	2024 Centerline Miles	Centerline Miles rounded to nearest 500	P8 Add'l Projects based on Centerline Miles	INITIAL P8 Submittal Allotment	Submittal Allotment (30% reduction, unrounded)	P8 Submittal Allotment (per mode)
High Point Urban Area MPO	291,390	300,000	6	1,835	2,000	4	22	15.40	15
Jacksonville Urban Area MPO	198,377	200,000	4	912	1,000	2	18	12.60	13
Kerr-Tar RPO	165,829	150,000	3	2,839	3,000	6	21	14.70	15
Land-of-Sky RPO	68,566	50,000	1	1,374	1,500	3	16	11.20	11
Lumber River RPO	221,710	200,000	4	3,348	3,500	7	23	16.10	16
Mid-Carolina RPO	125,588	150,000	3	2,760	3,000	6	21	14.70	15
Mid-East RPO	110,738	100,000	2	2,140	2,000	4	18	12.60	13
New Bern Area MPO	54,294	50,000	1	255	500	1	14	9.80	10
Northwest Piedmont RPO	166,565	150,000	3	2,987	3,000	6	21	14.70	15
Peanut Belt RPO	113,183	100,000	2	2,630	2,500	5	19	13.30	13
Piedmont Triad RPO	260,674	250,000	5	3,977	4,000	8	25	17.50	18
Rocky Mount Urban Area MPO	77,662	100,000	2	488	500	1	15	10.50	11
Rocky River RPO	103,648	100,000	2	2,104	2,000	4	18	12.60	13
Sandhills MPO	57,707	50,000	1	242	0	0	13	9.10	9
Southwestern RPO	143,270	150,000	3	2,617	2,500	5	20	14.00	14
Triangle West TPO	458,128	450,000	9	1,358	1,500	3	24	16.80	17
Upper Coastal Plain RPO	227,569	250,000	5	3,049	3,000	6	23	16.10	16
Wilmington Urban Area MPO	296,302	300,000	6	836	1,000	2	20	14.00	14
Winston-Salem Area TPO	449,926	450,000	9	1,490	1,500	3	24	16.80	17

P8 Number of Submittals

Division	INITIAL P8 Submittal Allotment	Submittal Allotment (30% reduction, unrounded)	P8 Submittal Allotment (per mode)
01	14	9.80	10
02	14	9.80	10
03	14	9.80	10
04	14	9.80	10
05	14	9.80	10
06	14	9.80	10
07	14	9.80	10
08	14	9.80	10
09	14	9.80	10
10	14	9.80	10
11	14	9.80	10
12	14	9.80	10
13	14	9.80	10
14	14	9.80	10
Total	196		140

Building the Project Database

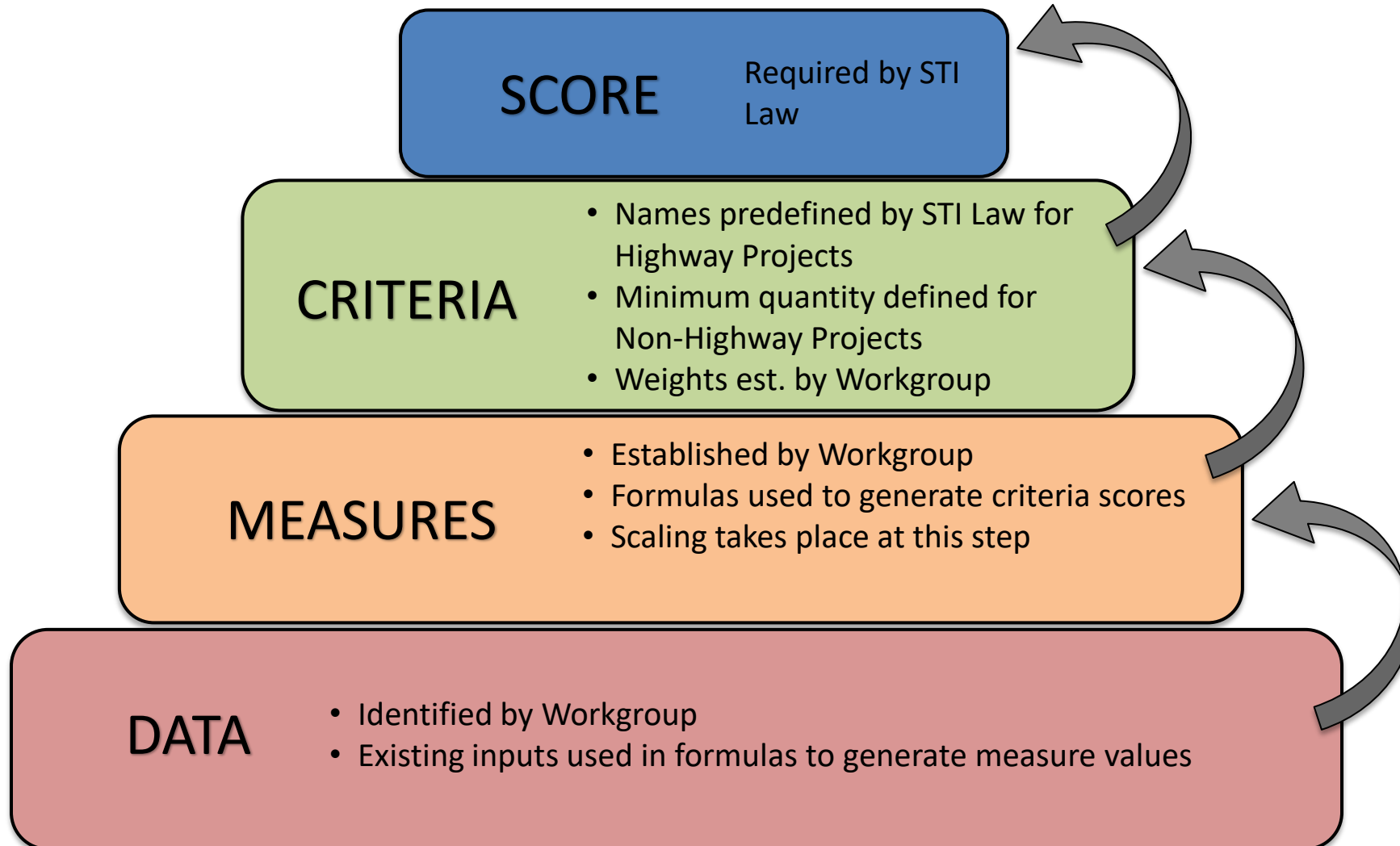
Prioritization and Programming Basics



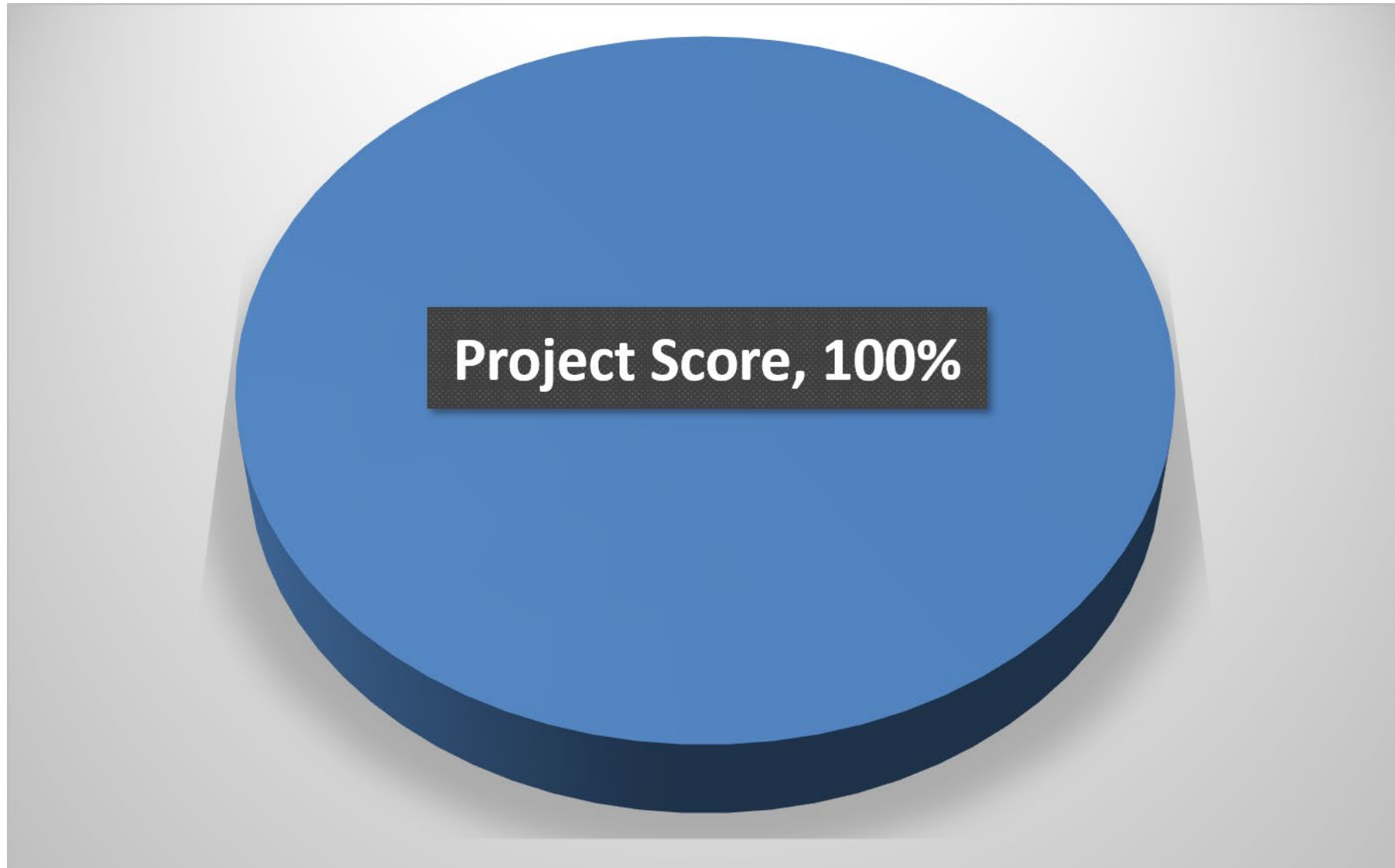
Building a Score



Quantitative Score Building Blocks

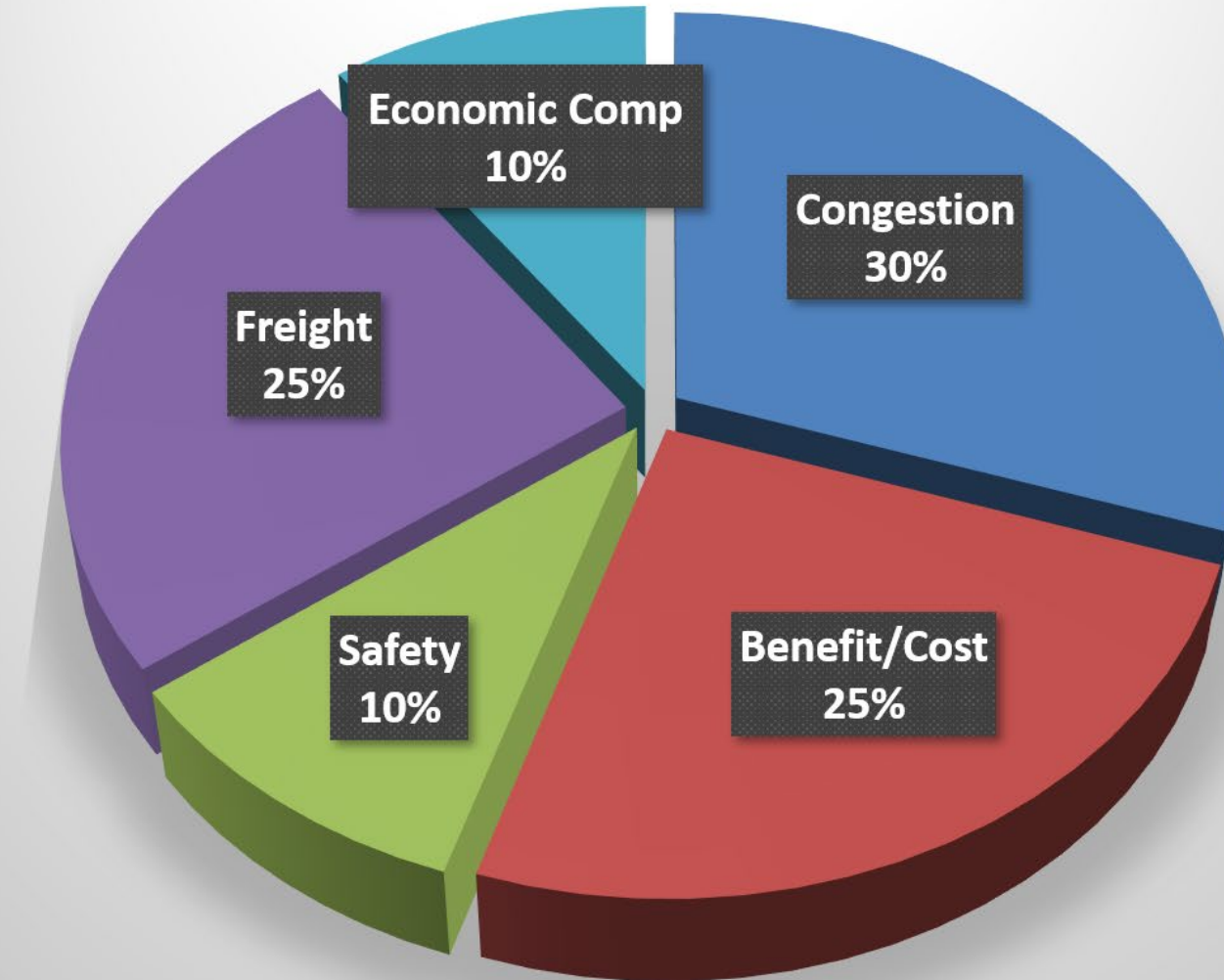


Building Block Level: Quantitative Score



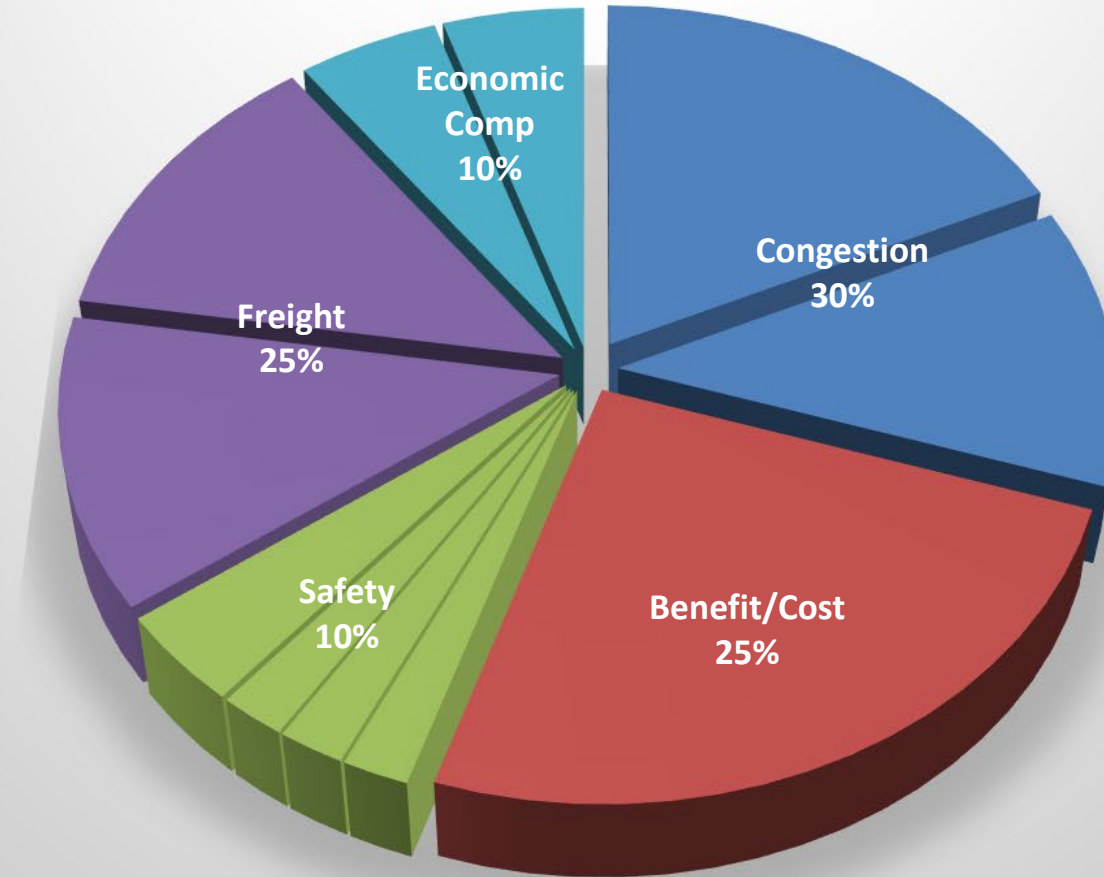
Building Block Level: Criteria

(Statewide Highway Mobility Segment Example)

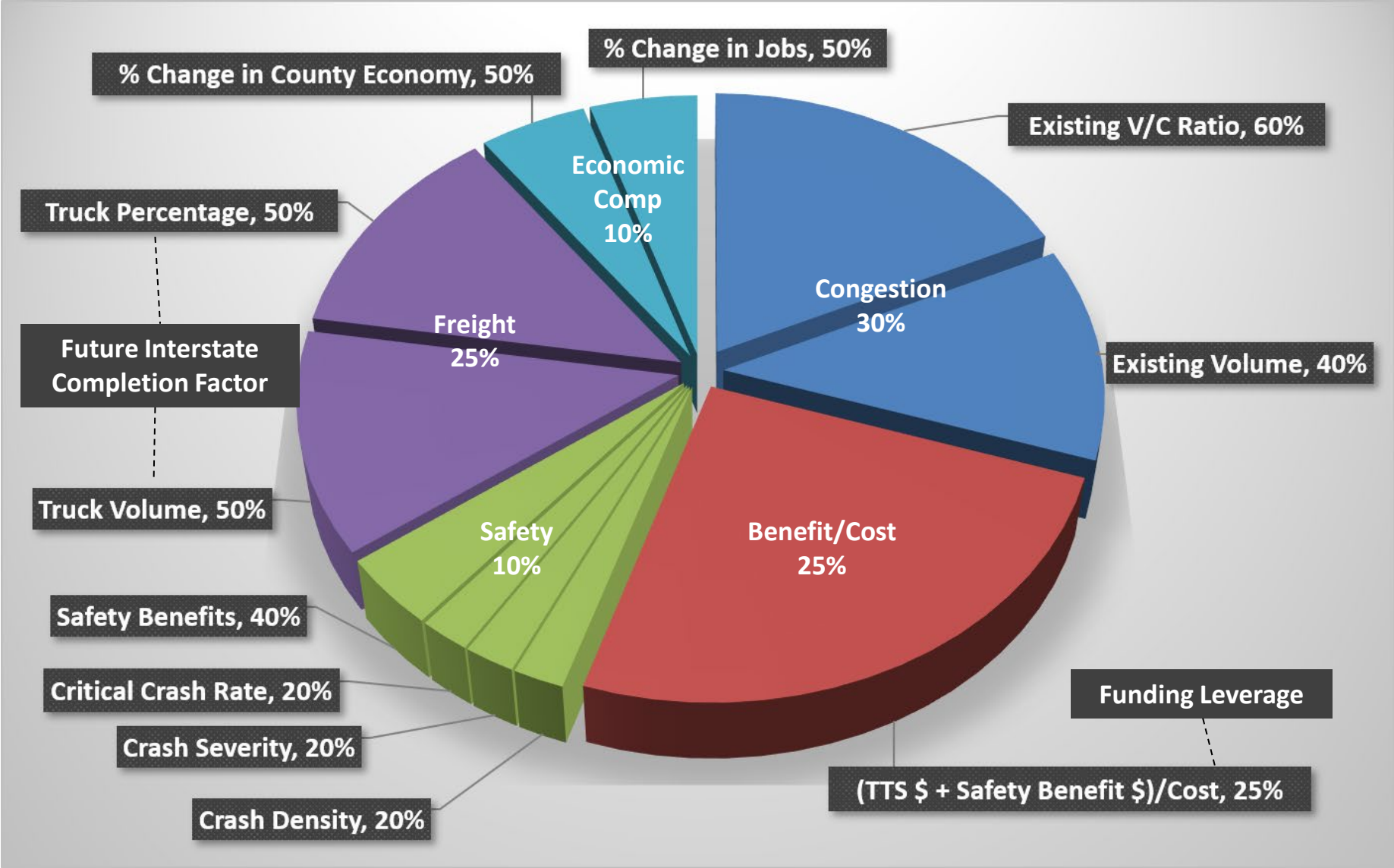


Building Block Level: Measure

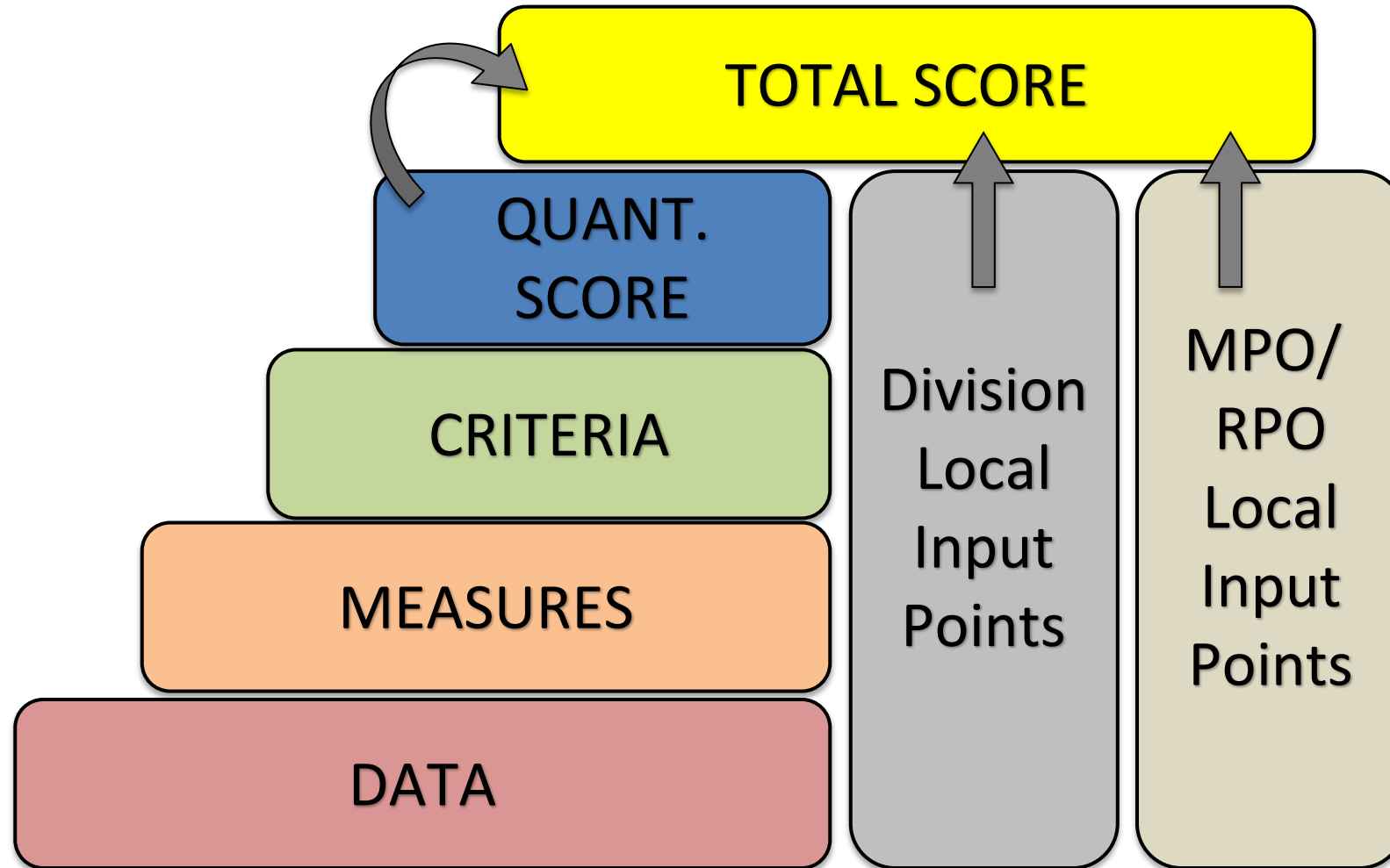
(Statewide Highway Mobility Segment Example)



Building Block Level: Measure
(Statewide Highway Mobility Segment Example)

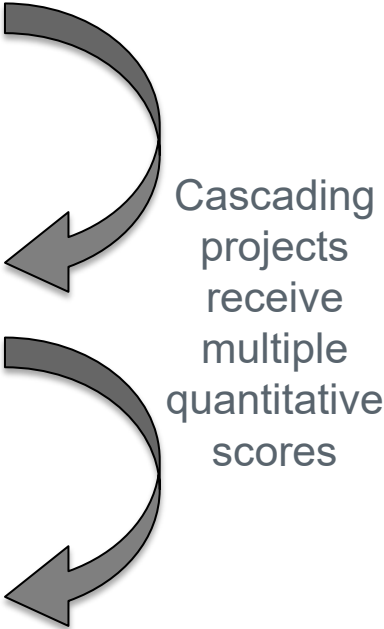


Total Score Building Blocks



Quantitative Score vs. Local Input

Funding Category	<u>QUANTITATIVE</u>		<u>LOCAL INPUT</u>	
		Data	Division	MPO/RPO
Statewide Mobility	Criteria 1 = 30%	100%	--	--
	Criteria 2 = 25%			
	Criteria 3 = 15%			
	Criteria 4 = 10%			
	Criteria 5 = 15%			
	Criteria 6 = 5%			
Regional Impact	Criteria 1 = 20%	70%	15%	15%
	Criteria 2 = 20%			
	Criteria 3 = 10%			
	Criteria 4 = 10%			
	Criteria 5 = 10%			
Division Needs	Criteria 1 = 15%	50%	25%	25%
	Criteria 2 = 15%			
	Criteria 3 = 10%			
	Criteria 4 = 5%			
	Criteria 5 = 5%			



Local Input Points



P8 Number of Local Input Points

- Use P7 formula for number of local input points for P8

Number of Points per Area

- Base of 1,000 points
 - + 100 additional points for every 50,000 (rounding up to next) in population
- Max 2,500 points per area
- Same allocation for Regional Impact and Division Needs categories
 - Spread across all modes within each category
- 100 points max per project per category
- (Optional Flex Policy – see Session 9)

P8 Number of Local Input Points

Prioritization and Programming Basics

MPO/RPO Name	P8 Population	P8 Pop rounded to next 50K	P8 Local Input Point Allotment
Albemarle RPO	174,219	200,000	1,400
Burlington-Graham MPO	176,195	200,000	1,400
Cabarrus-Rowan MPO	352,583	400,000	1,800
Cape Fear RPO	133,153	150,000	1,300
Capital Area MPO	1,345,849	1,350,000	2,500
Central Pines RPO	163,547	200,000	1,400
Charlotte Regional TPO	1,494,627	1,500,000	2,500
Down East RPO	94,026	100,000	1,200
Triangle West TPO	458,128	500,000	2,000
Eastern Carolina RPO	169,863	200,000	1,400
Fayetteville Area MPO	440,763	450,000	1,900
Foothills RPO	132,825	150,000	1,300
French Broad River MPO	426,072	450,000	1,900
Gaston-Cleveland-Lincoln MPO	404,464	450,000	1,900
Goldsboro Urban Area MPO	90,276	100,000	1,200
Grand Strand Area Transportation Study	55,658	100,000	1,200
Greater Hickory MPO	367,982	400,000	1,800
Greensboro Urban Area MPO	406,916	450,000	1,900
Greenville Urban Area MPO	140,982	150,000	1,300
High Country RPO	212,443	250,000	1,500

MPO/RPO Name	P8 Population	P8 Pop rounded to next 50K	P8 Local Input Point Allotment
High Point Urban Area MPO	291,390	300,000	1,600
Jacksonville Urban Area MPO	198,377	200,000	1,400
Kerr-Tar RPO	165,829	200,000	1,400
Land-of-Sky RPO	68,566	100,000	1,200
Lumber River RPO	221,710	250,000	1,500
Mid-Carolina RPO	125,588	150,000	1,300
Mid-East RPO	110,738	150,000	1,300
New Bern Area MPO	54,294	100,000	1,200
Northwest Piedmont RPO	166,565	200,000	1,400
Peanut Belt RPO	113,183	150,000	1,300
Piedmont Triad RPO	260,674	300,000	1,600
Rocky Mount Urban Area MPO	77,662	100,000	1,200
Rocky River RPO	103,648	150,000	1,300
Sandhills MPO	57,707	100,000	1,200
Southwestern RPO	143,270	150,000	1,300
Upper Coastal Plain RPO	227,569	250,000	1,500
Wilmington Urban Area MPO	296,302	300,000	1,600
Winston-Salem Area TPO	449,926	450,000	1,900

Prioritization Data page: <https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>

P8 Number of Local Input Points

Division	P8 Population	P8 Pop rounded to next 50K	P8 Local Input Point Allotment
01	259,368	300,000	1,600
02	498,175	500,000	2,000
03	751,268	800,000	2,500
04	605,706	650,000	2,300
05	1,642,369	1,650,000	2,500
06	689,414	700,000	2,400
07	959,124	1,000,000	2,500
08	538,152	550,000	2,100
09	774,545	800,000	2,500
10	1,629,022	1,650,000	2,500
11	371,163	400,000	1,800
12	779,095	800,000	2,500
13	516,304	550,000	2,100
14	373,793	400,000	1,800
Total			31,100

Scoring Overview





P8 Aviation Scoring

Criteria		Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
NCDOA Project Rating		NCDOA Project Rating	40%	30%	25%
FAA ACIP Rating	FAA Airport Capital Improvement Plan (ACIP) rating		30%	15%	10%
Constructability Index	Sum of metrics rating project constructability		10%	10%	5%
Benefit/Cost	(Total Economic Contribution / Cost to NCDOT)	+ Funding Leverage	20%	15%	10%



P8 Bicycle and Pedestrian Scoring

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Safety	(Number of crashes x 40%) + (Crash severity x 20%) + (Safety / crash risk x 20%) + (Project safety benefit x 20%)	N/A	N/A	20%
Accessibility/ Connectivity	Points of Interest pts + Connections pts + Route pts	N/A	N/A	15%
Demand/Density	# of households and employees per square mile near facility	N/A	N/A	10%
Cost Effectiveness	(Safety + Accessibility/Connectivity + Demand/Density) / Cost to NCDOT	N/A	N/A	5%



P8 Ferry Scoring – Replacement Vessels and Facilities

(New for P8)

Non-Highway Scoring Details

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Availability	Percent full	N/A	20%	15%
Age	Obsolescence	N/A	15%	10%
Asset Condition Rating	Condition	N/A	20%	15%
Asset Efficiency	Maintenance cost vs. replacement cost	N/A	15%	10%

Applies to SITs 1-4:

- *Replace Support Vessel*
- *Replace Vehicle Vessel*
- *Replace Passenger Vessel*
- *Replace Facility*



P8 Ferry Scoring – Expansion Vessels and Facilities

(New for P8)

Non-Highway Scoring Details

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Availability	Percent full in 10 years	N/A	20%	15%
Benefits	Trips	N/A	15%	10%
Capacity/ Congestion	Percent full today	N/A	20%	15%
Cost Effectiveness	Annualized cost to NCDOT per trip	N/A	15%	10%

Applies to SITs 5-8:

- *Expand Support Vessel*
- *Expand Vehicle Vessel*
- *Expand Passenger Vessel*
- *Expand Facility*



P8 Public Transportation Scoring – Mobility

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Impact	Number of trips generated by project	N/A	15%	10%
Demand/ Density	Total Trips / Service population	N/A	20%	10%
Efficiency	Total trips / Total revenue seat hours	N/A	10%	10%
Cost Effectiveness	Additional trips / (Cost to NCDOT / Lifespan of project)	N/A	25%	20%

Project Types:

- Route-specific vehicles (new or expansion only)
 - Fixed guideway vehicles, fixed route vehicles, deviated fixed route vehicles
- Corridors
 - Fixed guideway (commuter rail, intercity rail, light rail)
 - Bundle of vehicle + other (ex. stops / shelters, park and rides, bus pullouts)
 - Bus Rapid Transit (BRT)
 - Bus on Shoulder System (BOSS) / Busway



P8 Public Transportation Scoring – Demand Response

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Impact	Number of trips affected by project	N/A	10%	10%
Demand/ Density	Total hours with the project in place / Service population	N/A	20%	15%
Efficiency	Vehicle Utilization Ratio	N/A	15%	10%
Cost Effectiveness	Additional trips / (Cost to NCDOT / Lifespan of project)	N/A	25%	15%

Project Types:

- Demand Response vehicles (expansion only)
 - No facilities – either submit Demand Response facilities under Facility category or under Mobility category if bundled with a vehicle
 - Includes MicroTransit service purchases (vehicles and software)



P8 Public Transportation Scoring – Facility

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Impact	Number of trips affected by project	N/A	N/A	15%
Demand/ Density	Ridership Growth Trend for the Previous 5 Years	N/A	N/A	10%
Efficiency	Efficiency Score	N/A	N/A	10%
Cost Effectiveness	Additional trips / (Cost to NCDOT / Lifespan of project)	N/A	N/A	15%

Project Types:

- Passenger stations
 - Includes Mobility Hubs with Transit service
- Individual or bundled stops/shelters
- Individual or bundled park and ride lots
- Administration/Maintenance buildings



P8 Rail Scoring

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Benefit-Cost	Benefit-Cost score	35%	25%	10%
System Opportunities	(Accessibility/Connectivity score x 50%) + (Multimodal score x 50%)	15%	10%	15%
Safety	Safety score	30%	15%	10%
Capacity and Diversion	(Volume/Capacity score x 75%) + (Highway Diversion score x 25%)	10%	10%	10%
Economic Competitiveness	Economic Competitiveness score	10%	10%	5%

- Only Class I Freight projects eligible in Statewide Mobility
- Passenger Rail only eligible for Regional Impact and Division Needs



P8 Highway – Mobility

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Congestion	[Volume] and [Volume/Capacity]	30%	20%	15%
Benefit/Cost	[10-year Travel Time Savings benefit] + [10-year Safety Benefit] / [Cost to NCDOT]	25%	20%	15%
Safety	SEG: Crash Density, Crash Severity, Crash Rate, Safety Benefits INT: Crash Frequency, Crash Severity, Safety Benefits	10%	10%	10%
Freight	[Truck Volumes] and [Truck Percentage]	25%	10%	5%
Economic Competitiveness	TREDIS Model Output: [% Change in Long-Term Jobs] and [% Change in County Economy over 10 years]	10%	-	-
Accessibility / Connectivity	[Measurement of county economic distress indicators] and [degree the project upgrades mobility of the roadway]	-	10%	5%

Project Types: Widening, Intersection/Interchange Improvements, Access Management, and other capacity additions



P8 Highway – Modernization

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Congestion	[Volume] and [Volume/Capacity]	10%	5%	5%
Safety	SEG: Crash Density, Crash Severity, Crash Rate, Safety Benefits INT: Crash Frequency, Crash Severity, Safety Benefits	35%	35%	35%
Freight	[Truck Volumes] and [Truck Percentage]	25%	15%	5%
Lane Width/[Paved] Shoulder Width	Existing lane and shoulder widths vs. DOT design standards	30%	15%	5%

Project Types: Modernize Roadway and Upgrade Freeway to Interstate Standards

End of Session 2





NORTH CAROLINA
Department of Transportation

Day 1	Day 2
Begin 9:30am	Begin 9:30am
Introduction	Day 1 Recap
Session 1 – STI Legislation	Session 6 – Scoring Process
Lunch	Session 7 – Scoring Tools and Resources
Session 2 – Prioritization and Programming Basics	Lunch
Session 3 – Prioritization and Programming Process	Session 8 – Submitting Good Candidate Highway Projects
Session 4 – Non-Highway Scoring Details	Session 9 – Select Advanced Scoring Details
Session 5 – Highway Scoring Details	Session 10 – Resources, Upcoming Items, and Takeaways
End by 3:30pm	End by 3:30pm (or earlier)

Session 3: Prioritization and Programming Process

STI Training

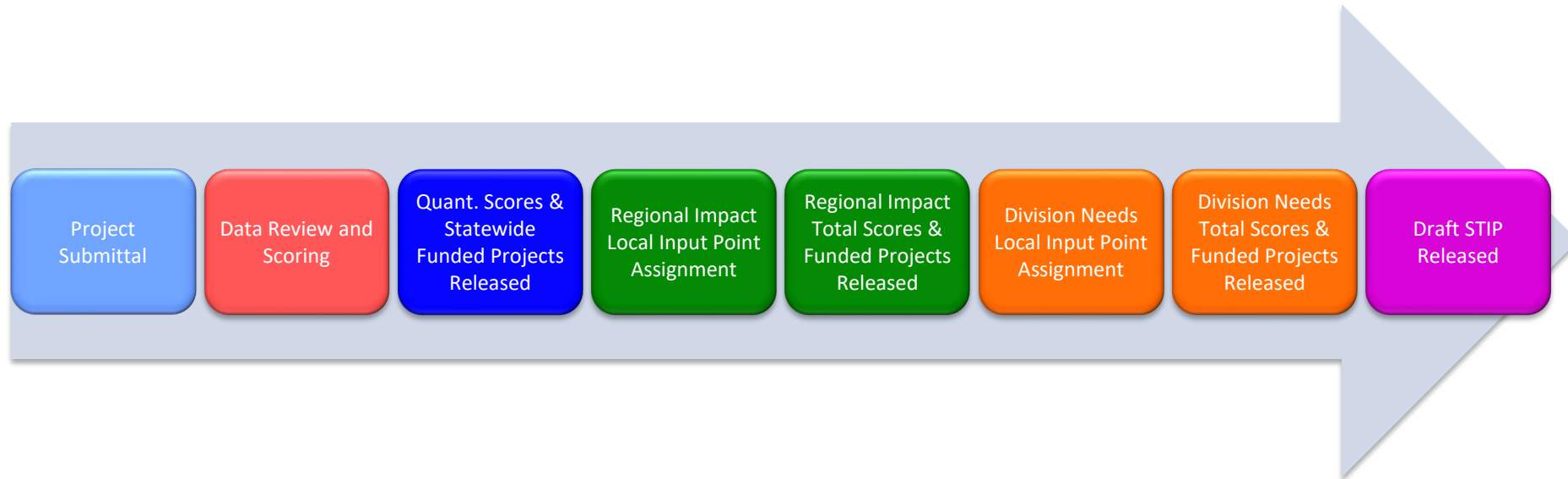
NCDOT SPOT Office

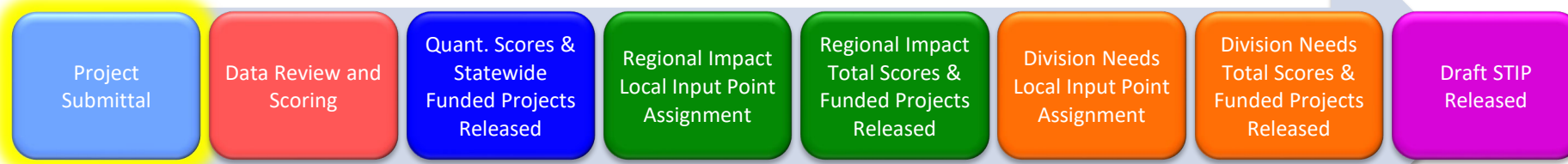
Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina

Scoring Process



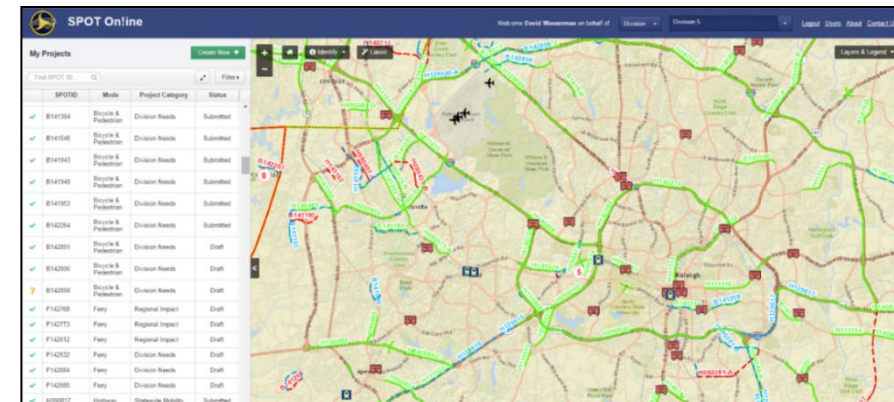
Scoring Process





Project Submittal

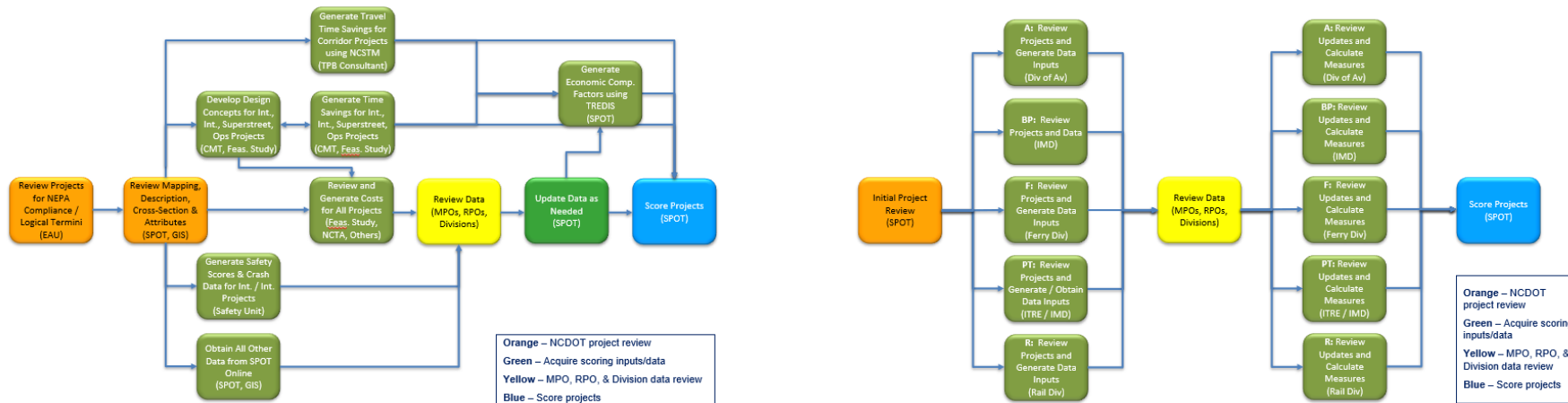
- Preparing for submittals:
 - Pre-submittal process
 - Modifications and deletions
 - Public input on draft project lists
 - Testing projects in SPOT Online and spreadsheets
 - **Coordination is vital** between MPOs, RPOs, and Divisions
- MPOs, RPOs, and Divisions enter and submit New and/or Holding Tank projects in SPOT Online
- SPOT processes Carryover projects in SPOT Online



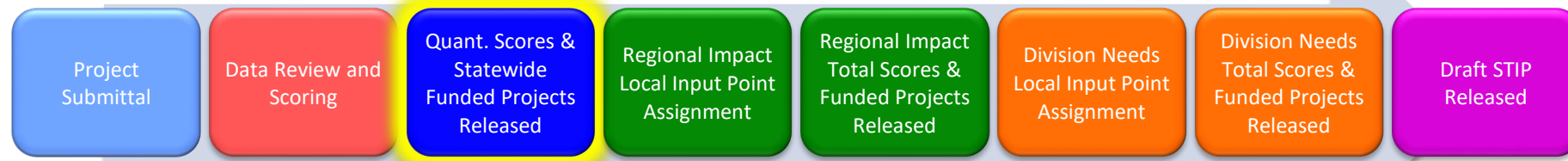


Data Review and Scoring

- Complex scoring process – SPOT works with many units



- All data and measures distributed to submitters – opportunity to review and correct
- (More details in Highway and Non-Highway scoring sessions)



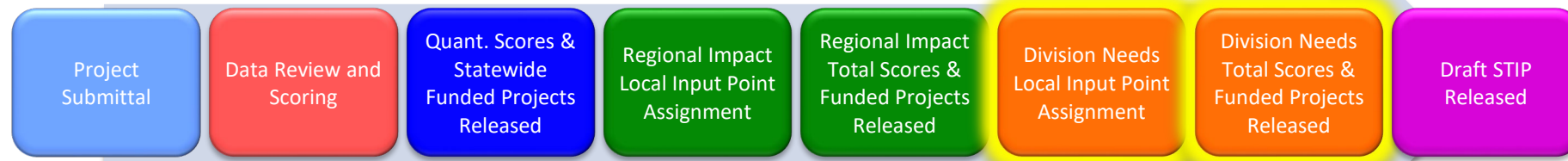
Quant. Scores & SW Funded Projects

- SPOT calculates quantitative scores for all projects (SW, REG, and DIV)
- SW project total scores = 100% data-driven (quantitative score)
- STIP unit programs projects based on total score
 - Schedule based on expected delivery
 - Corridor and Aviation caps



Regional Impact LIPs, Total Scores, & Funded Projects

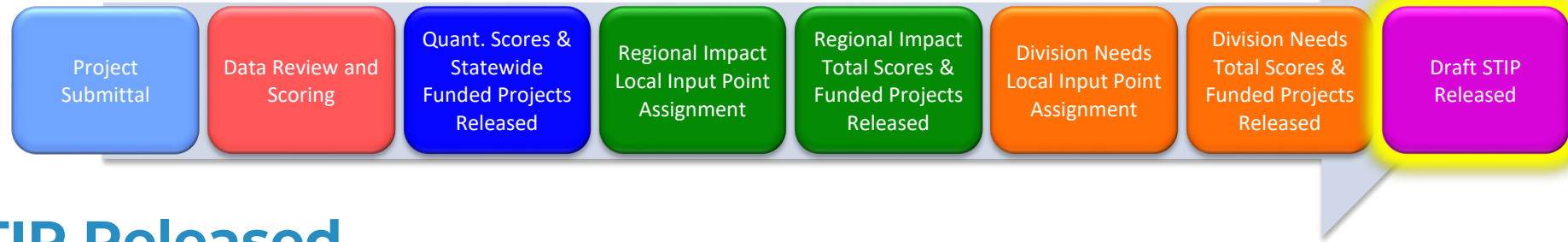
- MPOs, RPOs, and Divisions assign LIPs to all modes
 - Use an Approved Methodology
 - Preliminary assignment receives public input
 - Final points entered in SPOT Online
- SPOT totals project scores
- STIP unit programs projects based on total score
 - Schedule based on expected delivery
 - Modal Allocation
 - Aviation and transit caps



Division Needs LIPs, Total Scores, & Funded Projects

- MPOs, RPOs, and Divisions assign LIPs to all modes
 - Use an Approved Methodology
 - Preliminary assignment receives public input
 - Final points entered in SPOT Online
- SPOT totals project scores
- STIP unit programs projects based on total score
 - Schedule based on expected delivery
 - Modal allocation
 - Aviation caps; Bike/Ped fund restrictions

Prioritization and Programming Process

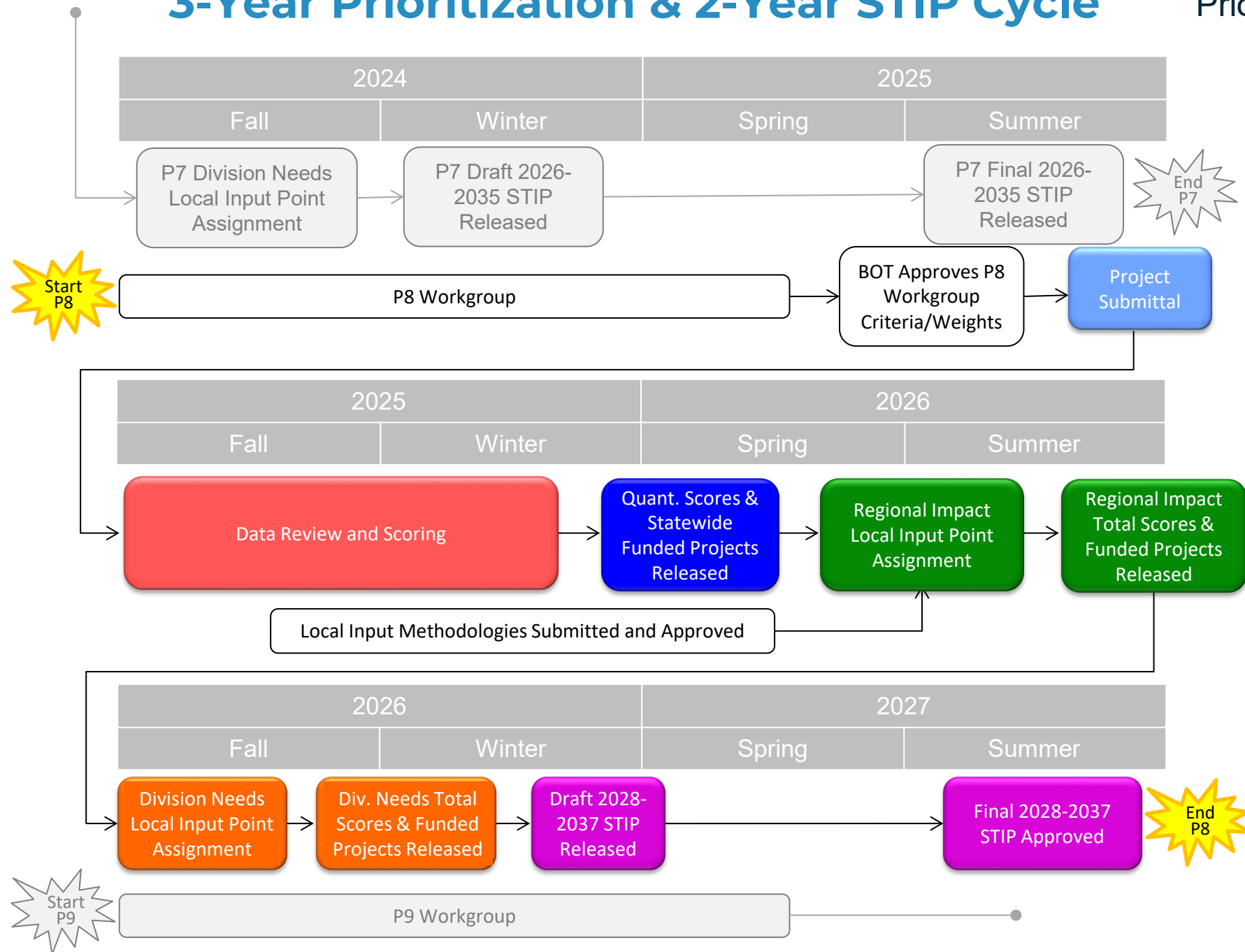


Draft STIP Released

- 10-year document that programs projects (assigns funding and schedules)
 - \$28B+ of projects (>54% of DOT Budget)
- Draft STIP released for public comment
- Final STIP approved by BOT approximately 6 months later (incorporates changes)
- Projects in STIP:
 - Funded Statewide, Regional, and Division projects (includes projects scheduled for delivery)
 - Alternate Criteria projects
 - Exempt and Transition projects



3-Year Prioritization & 2-Year STIP Cycle

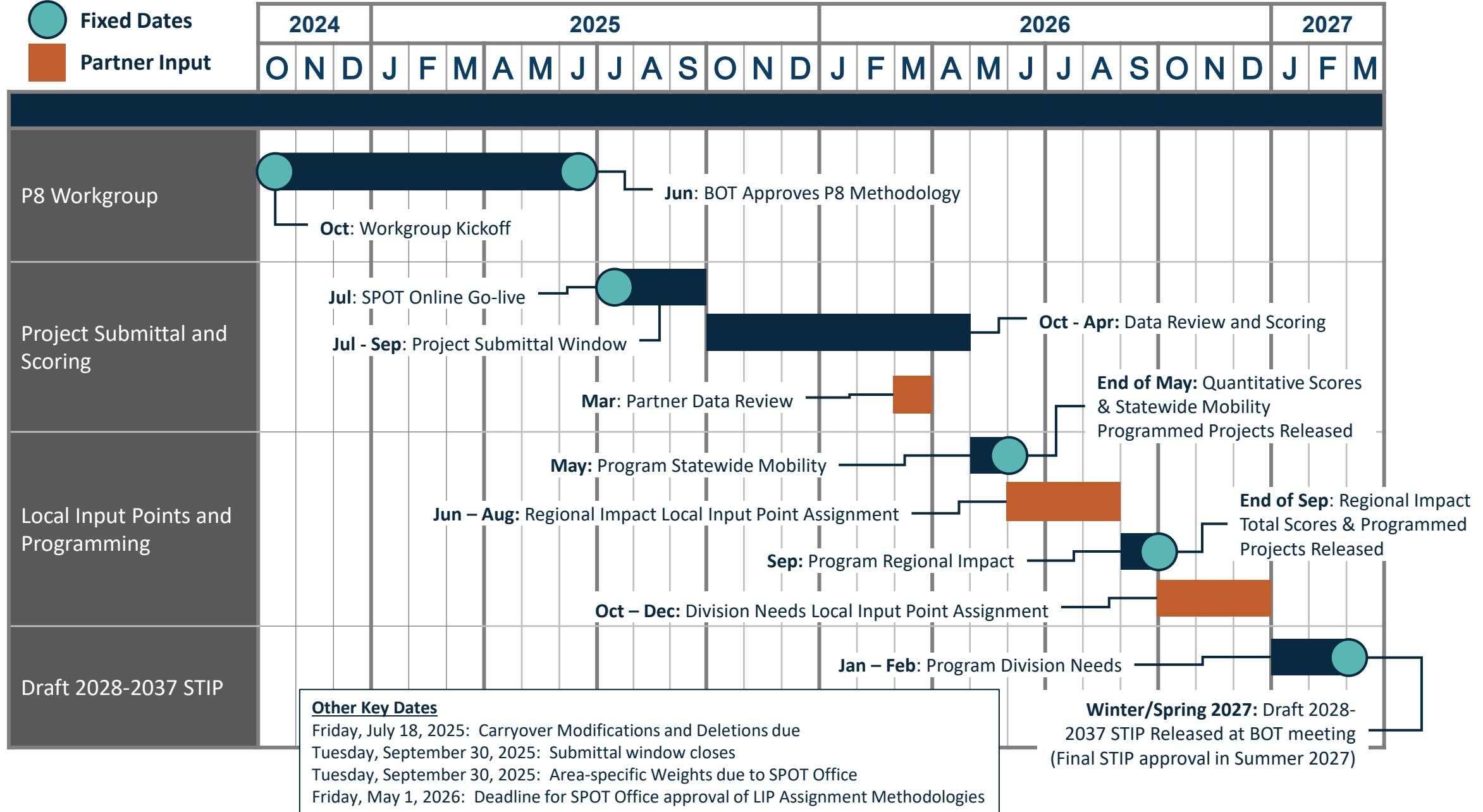
Prioritization and
Programming
Process



P8 Schedule

October 2024

-  Fixed Dates
-  Partner Input



Funding and Programming



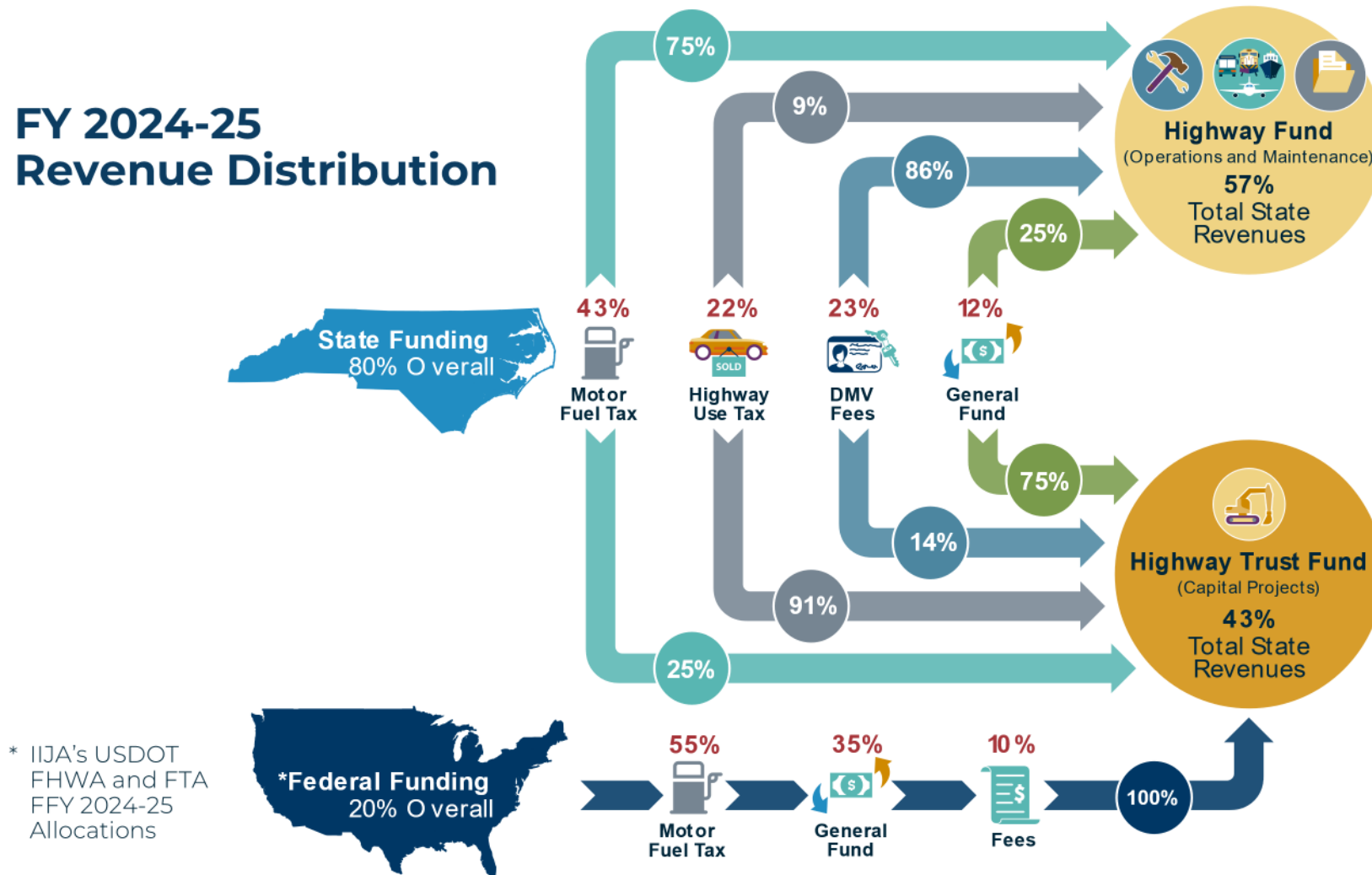
Iterative Programming Process

Projects Submitted

- SPOT Online
- Data reviewed
- Quantitative scores calculated

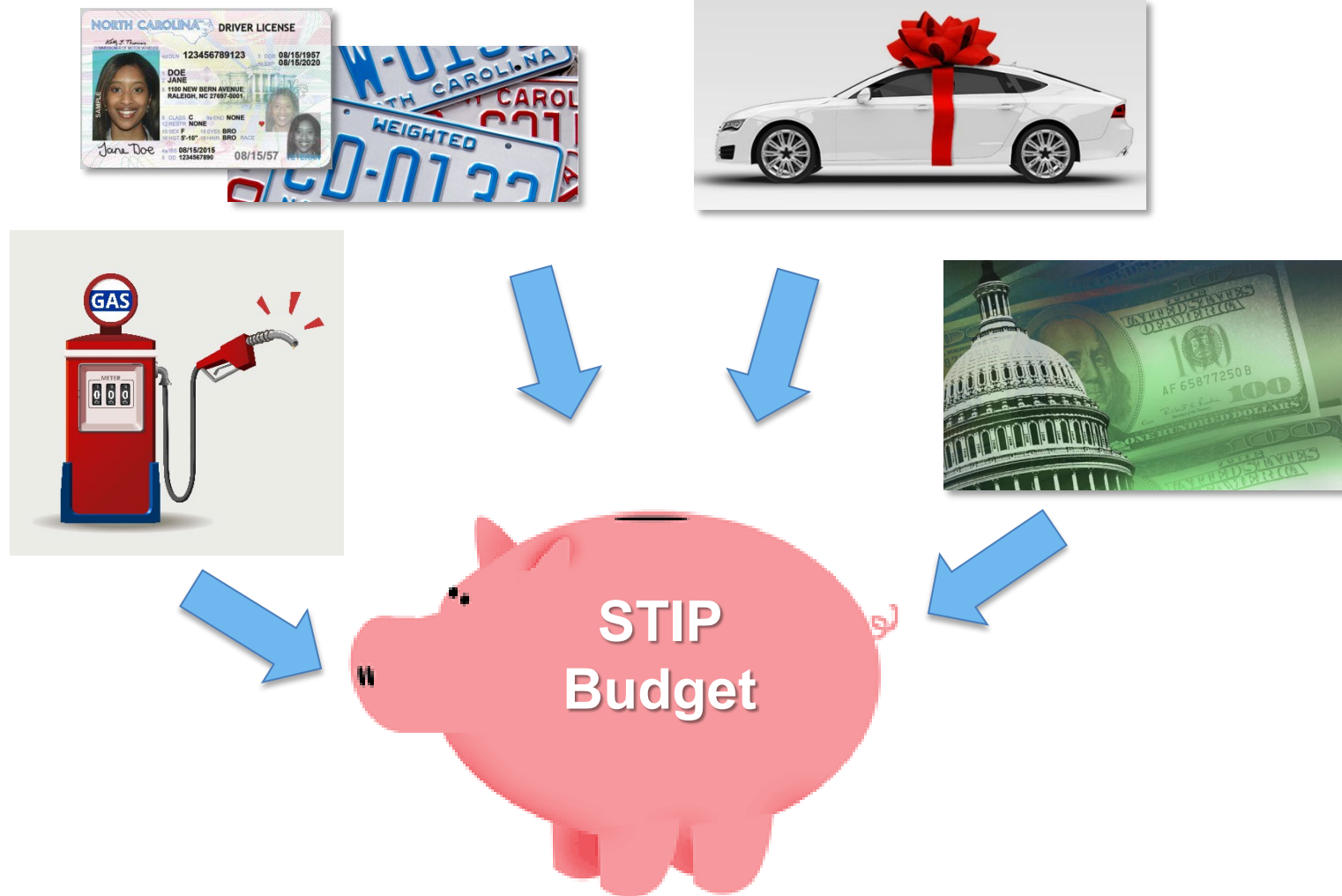
DOT Funding Sources

FY 2024-25 Revenue Distribution



* IJA's USDOT
FHWA and FTA
FFY 2024-25
Allocations

STIP Revenues

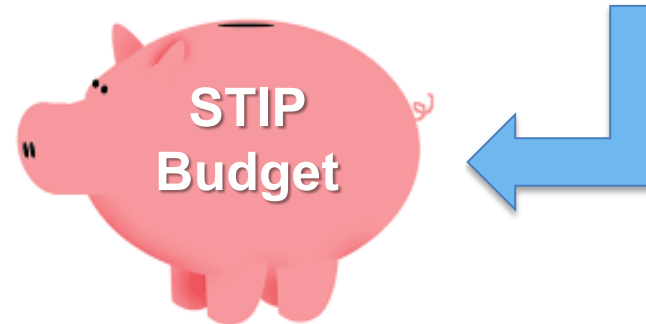


STIP Expenditures



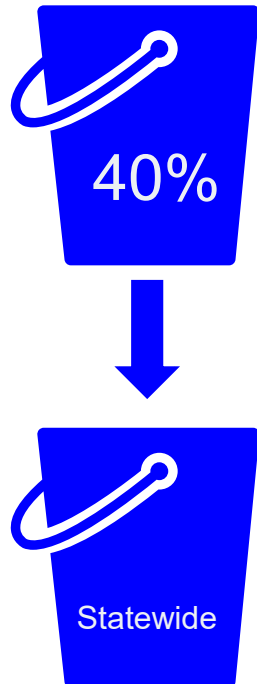
Examples off the top prior to allocation to buckets (exempt from STI formula):

- STIP Project cost increases
- CMAQ
- Bonus Allocation
- Program Administration
- Preliminary Engineering
- State Planning & Research (SPR)



STI Funding Distribution

Statewide Mobility

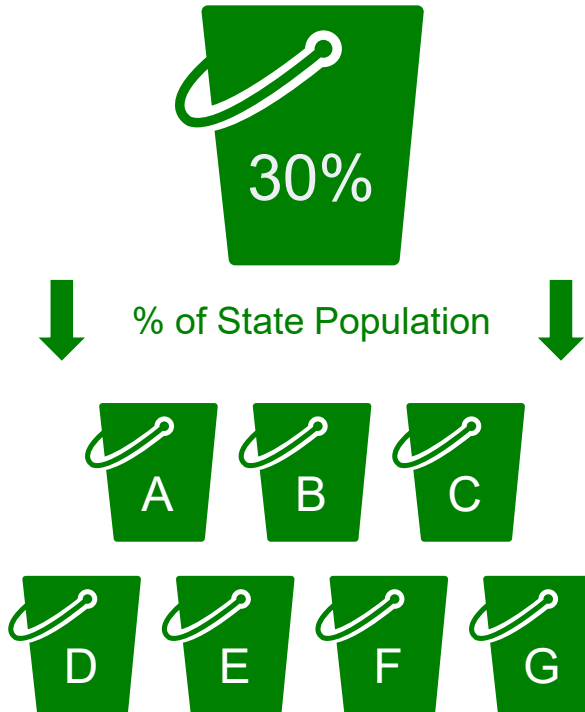


Programmed First

Interstate Maintenance
 Bridge Replacement
 Bridge Rehabilitation
 Highway Safety

Projects Scheduled for Delivery

Regional Impact

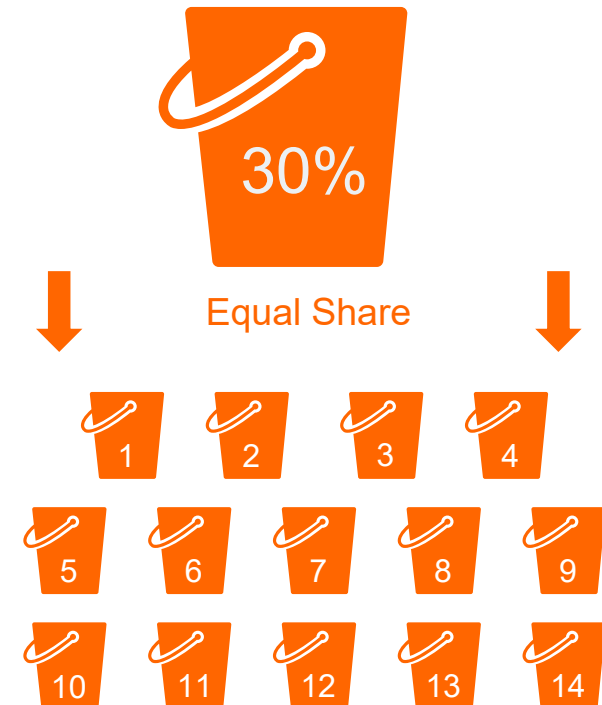


Programmed First (per bucket)

Bridge Replacement
 Bridge Rehabilitation
 Highway Safety

Projects Scheduled for Delivery

Division Needs



Programmed First (per bucket)

Bridge Replacement
 Bridge Rehabilitation
 Highway Safety
 MPO Direct Attributable

Transportation Alternatives
 Highway-Rail Crossing
 Economic Development

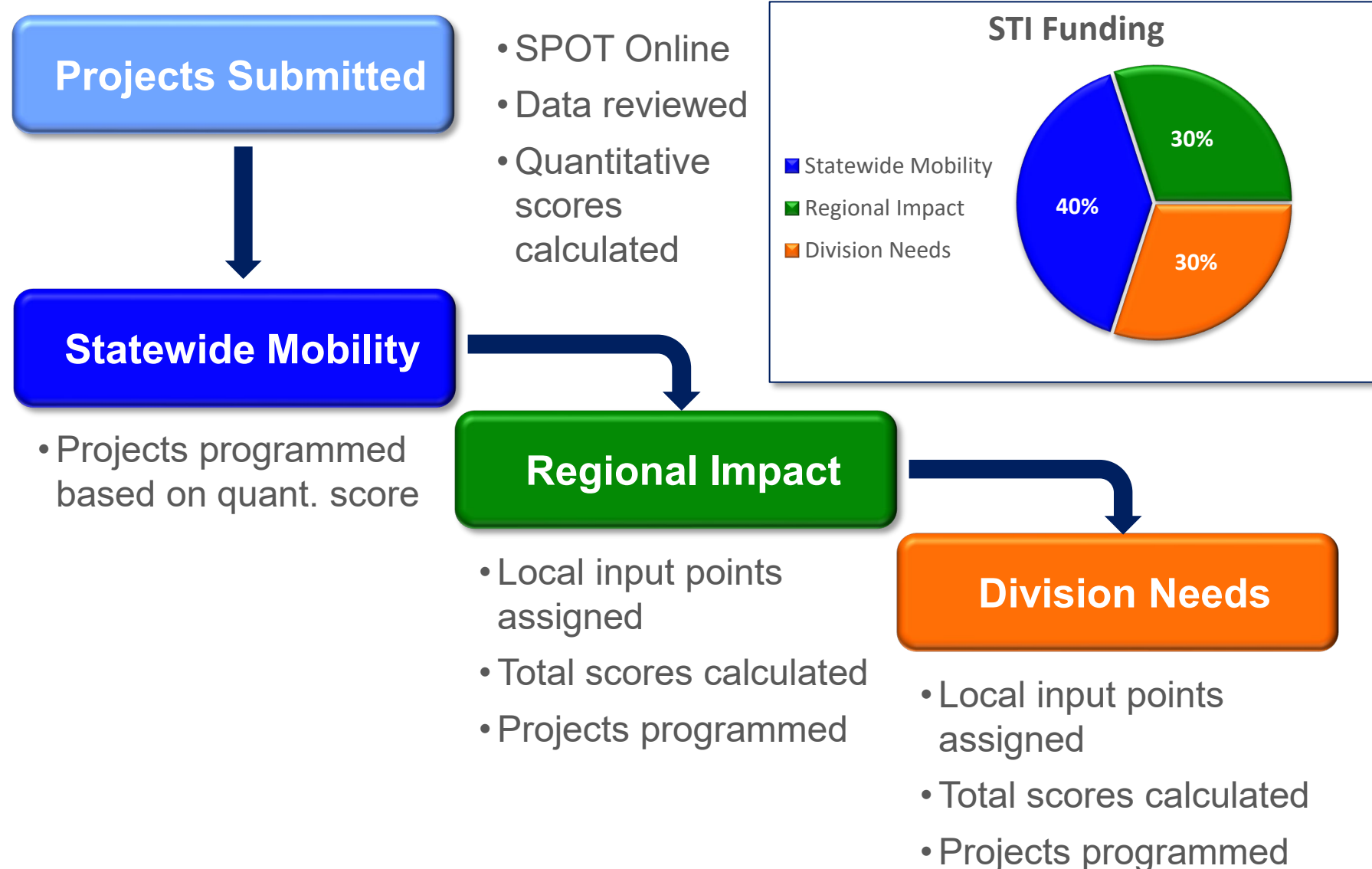
Projects Scheduled for Delivery

2024-2033 STIP Budget

NORTH CAROLINA TRANSPORTATION REVENUE PROJECTIONS FISCAL YEARS 2024-2033											
(Dollars in Millions)											
CATEGORY	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2024 THRU 2033
Total State Highway Trust Fund Revenues	\$ 2,197.00	\$ 2,442.10	\$ 2,490.10	\$ 2,517.70	\$ 2,655.85	\$ 2,731.11	\$ 2,774.82	\$ 2,806.18	\$ 2,836.62	\$ 2,887.53	\$ 26,339.01
Less Transfers for NCTA GAP Funding	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(490.00)
Less Transfer to Highway Fund	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(4.00)
Less Program Administration	(51.01)	(56.71)	(57.82)	(58.46)	(61.67)	(63.42)	(64.43)	(65.16)	(65.87)	(67.05)	(611.59)
Less Transfer to State Ports	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(450.00)
Less PE	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(2,500.00)
Less State Match for SPR Funds	(9.17)	(9.35)	(9.53)	(9.53)	(9.53)	(9.53)	(9.53)	(9.53)	(9.53)	(9.53)	(94.78)
Net State Trust Fund Revenues	1,792.42	2,031.64	2,078.35	2,105.31	2,240.25	2,313.76	2,356.45	2,387.09	2,416.82	2,466.55	22,188.64
Less Bonus Alloc. for Tolling & Local Participation	\$ (79.43)	\$ (84.22)	\$ (41.87)	\$ (40.16)	\$ (41.22)	\$ (23.84)	\$ (0.20)	\$ (0.20)	\$ (0.20)	\$ -	\$ (311.34)
Subtotal	1,712.98	1,947.43	2,036.48	2,065.14	2,199.03	2,289.92	2,356.25	2,386.89	2,416.62	2,466.55	21,877.29
Less Inflation	(25.69)	(88.51)	(156.43)	(225.34)	(313.12)	(326.07)	(335.51)	(339.87)	(344.11)	(351.22)	(2,505.87)
Total Available State Trust Funds for Programming	1,687.29	1,858.92	1,880.05	1,839.80	1,885.91	1,963.86	2,020.74	2,047.01	2,072.51	2,115.34	\$ 19,371.42
Total Available State Trust Funds for Programming (1000s)	1,687,289	1,858,916	1,880,048	1,839,798	1,885,907	1,963,859	2,020,742	2,047,015	2,072,512	2,115,336	19,371,424
Federal Aid	1,497.30	1,522.40	1,525.00	1,525.00	1,525.00	1,525.00	1,525.00	1,525.00	1,525.00	1,525.00	15,219.70
Less SPR Funds	(36.68)	(37.41)	(38.13)	(38.13)	(38.13)	(38.13)	(38.13)	(38.13)	(38.13)	(38.13)	(379.13)
Less CMAQ	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(300.00)
Less ADHS	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(16.10)	(161.00)
Less CARBON Reduction	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(200.00)
Net Federal Aid Revenues	1,394.52	1,418.89	1,420.77	1,420.77	1,420.77	1,420.77	1,420.77	1,420.77	1,420.77	1,420.77	14,179.57
Less Inflation	(20.92)	(64.49)	(109.13)	(155.03)	(202.31)	(202.31)	(202.31)	(202.31)	(202.31)	(202.31)	(1,563.41)
Total Available Federal-Aid for Programming	1,373.60	1,354.40	1,311.64	1,265.74	1,218.46	1,218.46	1,218.46	1,218.46	1,218.46	1,218.46	\$ 12,616.16
Total Available Federal-Aid for Programming (1000s)	1,373,602	1,354,401	1,311,636	1,265,739	1,218,465	1,218,465	1,218,465	1,218,465	1,218,465	1,218,465	12,616,165
Total Available for Programming (State + Federal)	3,060.89	3,213.32	3,191.68	3,105.54	3,104.37	3,182.32	3,239.21	3,265.48	3,290.98	3,333.80	31,987.59
Check Total Subtotals (State + Federal)	3,186.94	3,450.53	3,499.12	3,526.08	3,661.02	3,734.53	3,777.22	3,807.86	3,837.59	3,887.32	36,368.21
Check Total Less Bonus Allocation	(79.43)	(84.22)	(41.87)	(40.16)	(41.22)	(23.84)	(0.20)	(0.20)	(0.20)	-	(311.34)
Check Total Less Inflation	(46.61)	(153.00)	(265.56)	(380.38)	(515.43)	(528.37)	(537.82)	(542.18)	(546.41)	(553.52)	(4,069.28)
Check Total Available for Programming	3,060.89	3,213.32	3,191.68	3,105.54	3,104.37	3,182.32	3,239.21	3,265.48	3,290.98	3,333.80	31,987.59
Less Transition Funding	(47.78)	(17.86)	(10.36)	-	-	-	-	-	-	-	(76.00)
Funds Available to Allocate to Categories	\$ 3,013.11	\$ 3,195.46	\$ 3,181.32	\$ 3,105.54	\$ 3,104.37	\$ 3,182.32	\$ 3,239.21	\$ 3,265.48	\$ 3,290.98	\$ 3,333.80	\$ 31,911.59
STATEWIDE	1,205.25	1,278.18	1,272.53	1,242.21	1,241.75	1,272.93	1,295.68	1,306.19	1,316.39	1,333.52	12,764.64
REGIONAL	903.93	958.64	954.40	931.66	931.31	954.70	971.76	979.64	987.29	1,000.14	9,573.48
LESS STBGDA ON REGIONAL AND STATEWIDE ROUTES	(22.64)	(15.73)	(9.77)	(12.69)	(4.84)	(1.38)	(0.31)	0.00	0.00	0.00	(67.36)
REGIONAL TOTAL REVISED	881.29	942.91	944.62	918.97	926.47	953.32	971.45	979.64	987.29	1,000.14	9,506.12
DIVISION	903.93	958.64	954.40	931.66	931.31	954.70	971.76	979.64	987.29	1,000.14	9,573.48

(Dollars in Millions)

Iterative Programming Process



→ Holding Tank

Factors in STIP Development

- Prioritization scores
- Modal allocation (Highway vs. Non-Highway)
- Funding category allocations (40% vs. 30% vs. 30%)
 - \$ already reserved for projects scheduled for delivery
- Project development schedules
- STI funding caps and restrictions

STI Funding Caps and Restrictions Impacting Programming



Corridor Cap:
Statewide Mobility



Funding limits:
Light rail and commuter
rail projects



Funding limits:
Regional Impact
Transit projects



Funding limits:
Airport projects in all
categories


















Prohibition:
Using state funds to fund independent
bicycle and pedestrian projects




Scheduling Impacts to Programming

SPOT Project Ranking	Expected Project Delivery Time (Yr.)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
1	9	Planning			Design				ROW		CON
2	4	Design		ROW		CON					
3	1	CON									
4	5	Design		ROW		CON					
5	8	Planning			Design			ROW		CON	

- Regardless of priority, projects cannot be programmed for Right of Way (ROW) or Construction prior to completion of planning/environmental (NEPA) and design work
- A lower scoring project that can be delivered soon may get scheduled prior to a higher ranking project that still needs extensive work

Annual Funding Balance

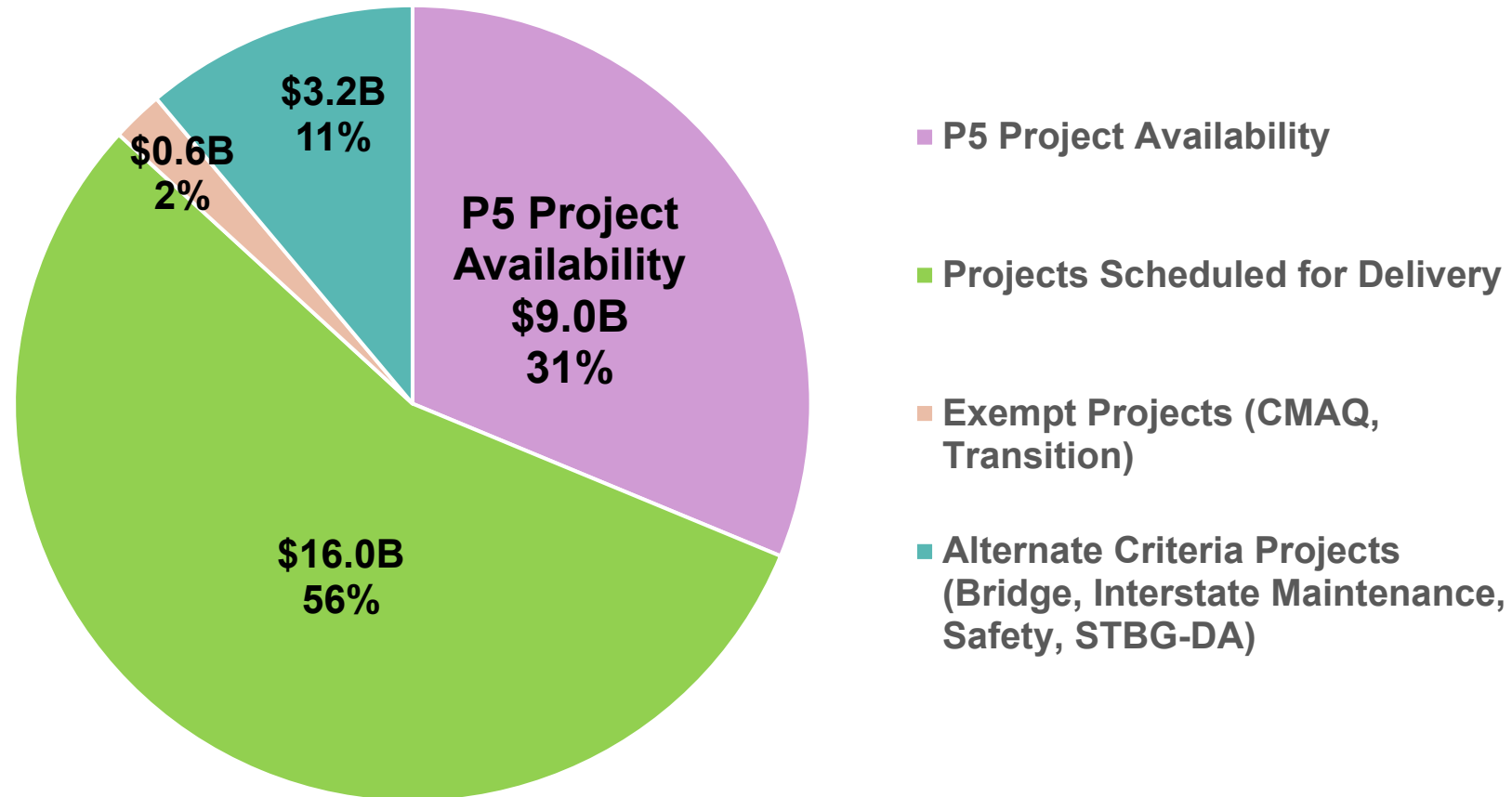
Category	2024	2025	2026	2027	2028	Total
Statewide						Budget Target
Regional						Budget Target
Division						Budget Target
	Annual Budget	Annual Budget	Annual Budget	Annual Budget	Annual Budget	

Test	Key	Level	Testing	Threshold
Annual Budget Test		Federal	Annual amount programmed vs annual budget	Per FHWA guidance
Limitation on Variance – 5 year		State	5-year programmed amounts vs budget targets set by law Per statewide, regional and division categories	+/- 15 %
Limitation on Variance – 10 year		State	10-year programmed amounts vs budget targets set by law Per statewide, regional and division categories	+/- 10 %

Available Funding Projections (Example)

[Key takeaway: Magnitude comparisons of allocated funding]

Total STIP Funding for ROW & CON = \$28.8B



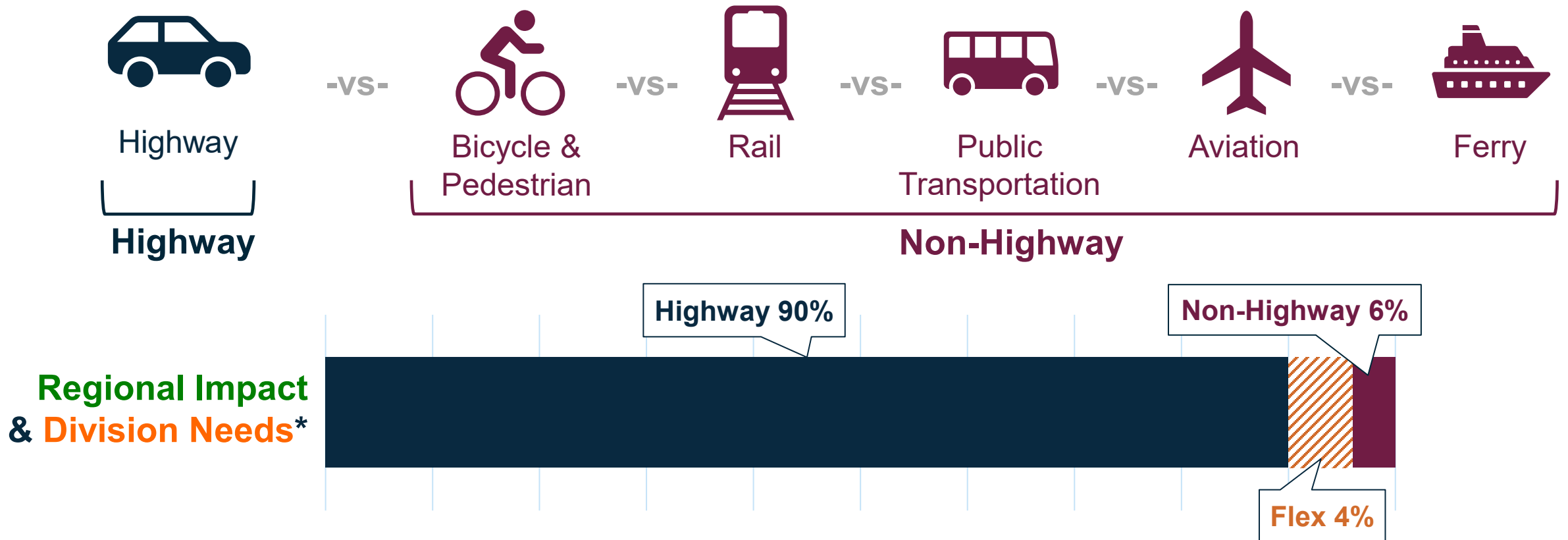
Source: P5 expected funding availability (for 2020-2029 STIP)

Modal Allocation



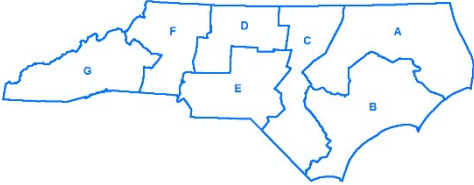
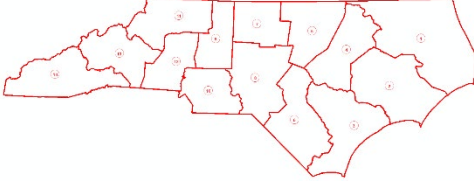
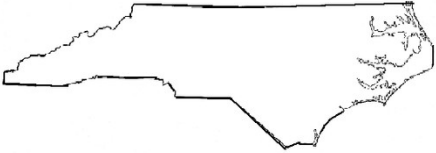
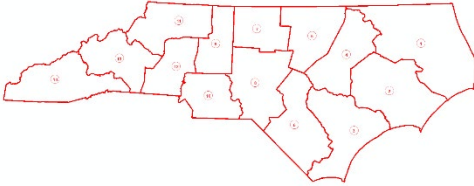
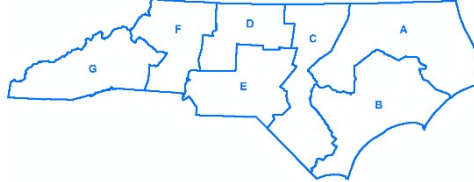
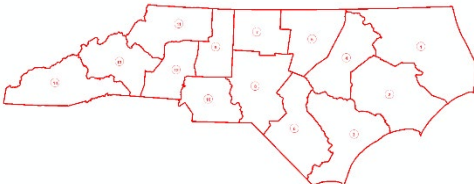
Current Modal Allocation

- Challenge: Intent of STI legislation is to fund best transportation projects, regardless of mode; but different criteria and weights are used in each mode
- Modal Allocation** = Allocation of funds between Highway & Non-Highway Projects



***Statewide Mobility** – No modal allocation, competition based only on quantitative scores

Current Modal Allocation

	Regional Impact	Division Needs
Highway	<p>90% (Region competition)</p> 	<p>90% (Division competition)</p> 
Non-Highway	<p>6% (Statewide competition)</p> 	<p>6% (Division competition)</p> 
Flex	<p>4% (Region competition)</p> 	<p>4% (Division competition)</p> 

Begin Reference Slides

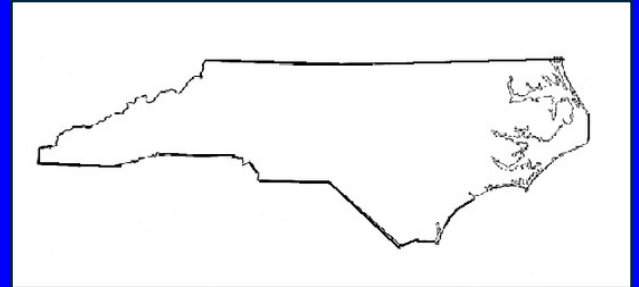


Applying Modal Allocation – Statewide Mobility

1. Statewide Competition

- Determine how much is already spoken for; amount remaining is available for projects in Prioritization
- Sort eligible Highway, Rail, and Aviation projects by score in descending order
- Select projects until available funding is allocated

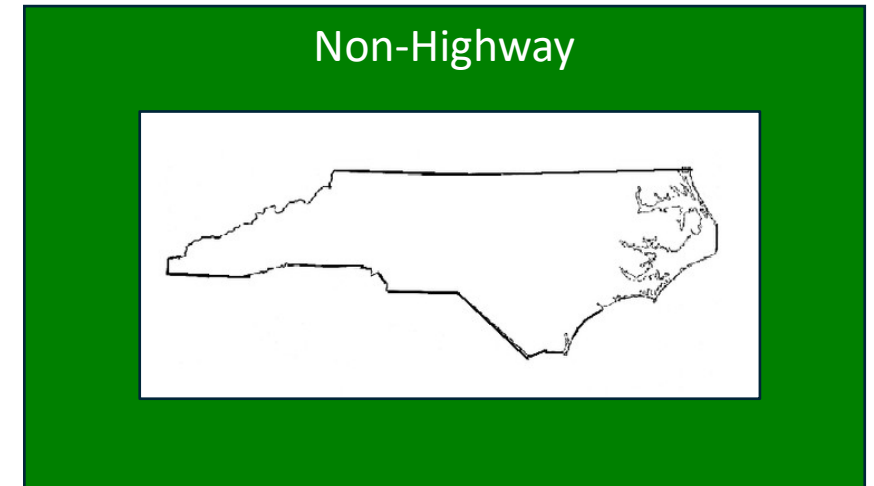
Highway, Aviation, & Rail



Applying Modal Allocation – Regional Impact

1. Non-Highway Only (Statewide Competition)

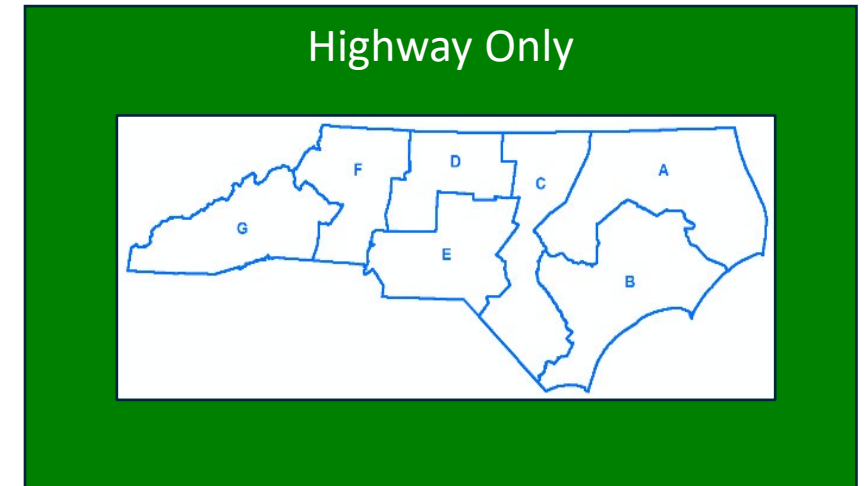
- Determine 6% of total Revised Regional Impact Budget (10-year, adjusted budget based on lookback law)
 - REG budget revised after subtracting DA funds used on SW and REG eligible projects
- Determine how much in 6% Non-Highway is already spoken for (includes projects scheduled for delivery); amount remaining is available for projects in Prioritization
 - Projects funded with STBG-DA and exempt funds (e.g. CMAQ, CRP) are NOT included in the 6% Non-Highway calculation.
- Sort eligible Non-Highway projects by prioritization cycle and score in descending order
- Select projects until available funding is allocated



Applying Modal Allocation – Regional Impact

2. Highway Only (Regional Competition)

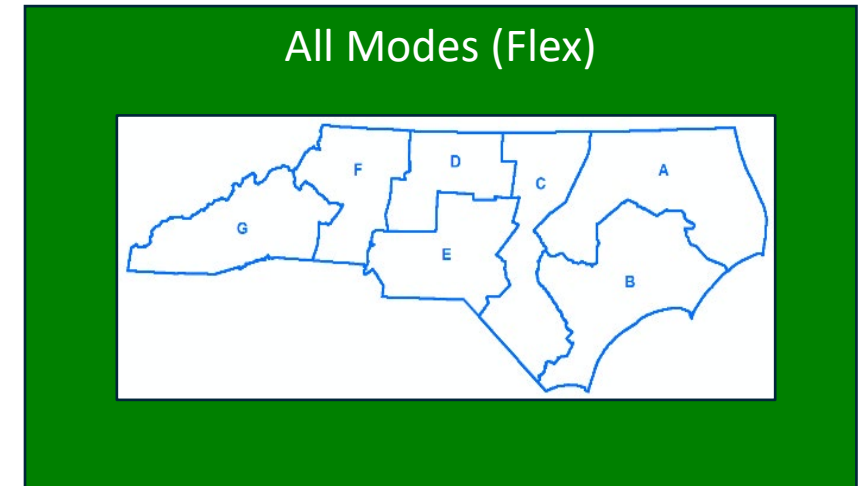
- Set aside 4% of each Region's allocation (10-year, adjusted budget based on lookback law)
 - 4% set aside is for 4% flex competition (see next slide)
- Within each region, subtract amount of Non-Highway programmed (over 10 years)
- Determine how much of remaining is already spoken for (includes projects scheduled for delivery); amount remaining is available for projects in Prioritization
 - Includes Bridge and Safety projects
- Within each Region, sort eligible Highway projects by score in descending order
- Select projects until available funding is allocated



Applying Modal Allocation – Regional Impact

3. All-Modes Flex (Regional Competition)

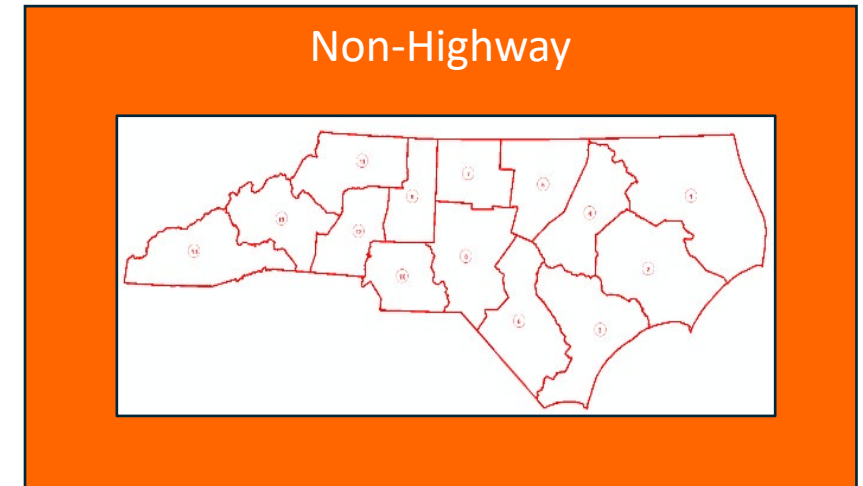
- Determine 4% set aside (10-year, adjusted from step 2)
- Within each Region, sort eligible Highway and Non-Highway projects by prioritization cycle and score in descending order
- Select projects until available funding is allocated



Applying Modal Allocation – Division Needs

1. Non-Highway Only (Division Competition)

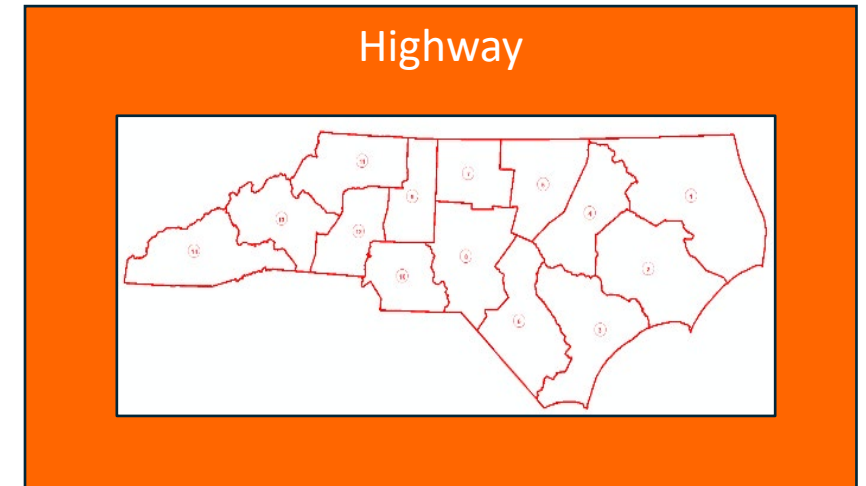
- Determine 6% of individual Division Needs Budgets (10-year, adjusted based on lookback law)
- Determine how much is already spoken for (includes projects scheduled for delivery); amount remaining is available for projects in Prioritization
 - STBG-DA and TAP-DA funds are NOT included in the calculation of Non-Hwy projects scheduled for delivery
- Within each Division, sort Non-Highway projects by prioritization cycle and score in descending order
- Select projects until available funding is allocated



Applying Modal Allocation – Division Needs

2. Highway Only (Division Competition)

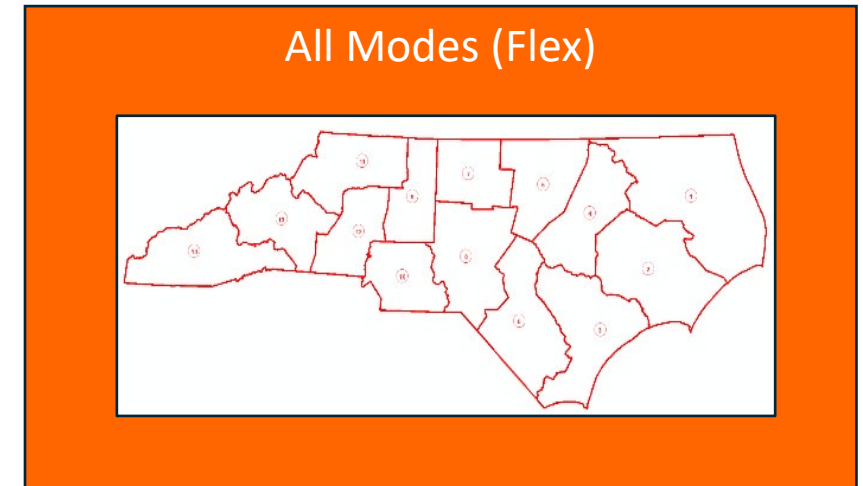
- Set aside 4% of each Division's allocation (10-year, adjusted based on lookback law)
 - 4% set aside is for 4% flex competition (see next slide)
- Within each Division, subtract amount of Non-Highway programmed (over 10 years)
- Determine how much of remaining is already spoken for
 - Includes projects scheduled for delivery, bridge, safety, & economic development
 - Does not include STBG-DA projects
 - Amount remaining is available for projects for Prioritization
- Within each Division, sort Highway projects by score in descending order
- Select projects until available funding is allocated



Applying Modal Allocation – Division Needs

3. All-Modes Flex (Division Competition)

- Determine 4% set aside (10-year, adjusted from step 3)
- Within each Division, sort Highway and Non-Highway projects by prioritization cycle and score in descending order
- Select projects until available funding is allocated



End Reference Slides



End of Session 3





NORTH CAROLINA
Department of Transportation

Day 1	Day 2
Begin 9:30am	Begin 9:30am
Introduction	Day 1 Recap
Session 1 – STI Legislation	Session 6 – Scoring Process
Lunch	Session 7 – Scoring Tools and Resources
Session 2 – Prioritization and Programming Basics	Lunch
Session 3 – Prioritization and Programming Process	Session 8 – Submitting Good Candidate Highway Projects
Session 4 – Non-Highway Scoring Details	Session 9 – Select Advanced Scoring Details
Session 5 – Highway Scoring Details	Session 10 – Resources, Upcoming Items, and Takeaways
End by 3:30pm	End by 3:30pm (or earlier)

Session 4: Non-Highway Scoring Details

STI Training

NCDOT SPOT Office

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

Contact Information



Reminders

- MPOs, RPOs, and Divisions are the only project submitters
- Communicate, communicate, communicate!

Mode:	Coordinate on project needs with:
Aviation	Airport sponsor NCDOT Division of Aviation
Bicycle/Pedestrian	Local governments
Ferry	NCDOT Ferry Division
Public Transportation	ITRE Transit systems
Rail	NCDOT Rail Division

NCDOT Modal Contacts

Sarah Lee, SPOT Office

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Aviation

- Wasan Alkaissi, NCDOT Division of Aviation

walkaissi@ncdot.gov

- Airport Project Managers (Regional), NCDOT Division of Aviation

<https://apps.ncdot.gov/dot/directory/authenticated/UnitPage.aspx?id=14276> (directory)

NCDOT Modal Contacts

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- Brennon Fuqua, NCDOT Integrated Mobility Division (IMD)
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- Michael R. Stafford, NCDOT Integrated Mobility Division (IMD)
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Ferry

- Cat Peele, NCDOT Ferry Division
cdpeelee@ncdot.gov

NCDOT Modal Contacts

Public Transportation

- Brennon Fuqua, NCDOT Integrated Mobility Division (IMD)
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- Kai Monast, NCSU ITRE
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Rail

- STI Rail Team
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- Neil Perry, NCDOT Rail Division
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- Alix Demers, NCDOT Rail Division
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Aviation

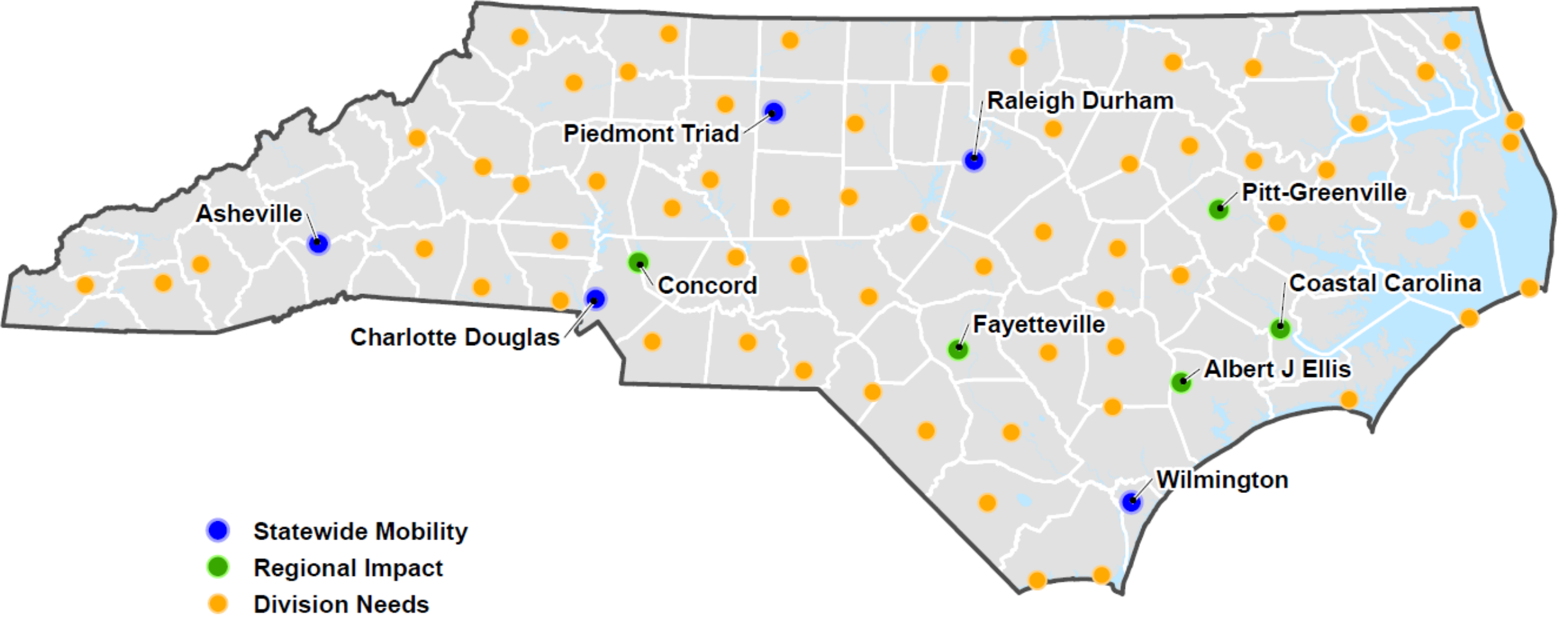


Project Eligibility

Statewide	Regional	Division
<ul style="list-style-type: none">• Large Commercial Service airports (375,000 or more enplanements annually)• Funding cap: \$500k / project / year<ul style="list-style-type: none">• Up to 3 years per NCDOT policy	<ul style="list-style-type: none">• Commercial Service airports not included in Statewide• Funding cap: \$300k / project / year<ul style="list-style-type: none">• Up to 3 years per NCDOT policy	<ul style="list-style-type: none">• General Aviation airports• Funding cap: \$18.5M annually over entire category



Project Eligibility



P8 Specific Improvement Types

- 400 - Pavement Condition*
- 500 - Runway Length & Width
- 600 - Pavement Strength (Runway / Taxiway / Apron)
- 700 - Visual Navigational Aids*
- 800 - Runway Edge Lighting
- 900 - Weather Reporting Capability*
- 1000 - Standard Instrument Approach Procedures*
- 1100 - Taxiway Requirement
- 1200 - Aircraft Apron / Helipad (Expansion/New Con)
- 1300 - General Aviation Terminal Building
- 1400 - Taxiway and Apron Edge Lighting
- 1500 - Airfield Signage

Also remember the PRN!

This is the 4-digit Project Request Number from the NCDOT Division of Aviation's Partner Connect system

- 1700 - Approach Lighting
- 1800 - Aircraft Rescue & Fire Fighting Equipment*
- 1900 - Hangars
- 2000 - Airfield Maintenance and Storage Building*
- 2100 - Perimeter Fencing
- 2200 - Fuel Facilities
- 3000 - Other

Removed from P7 to P8:

- 100 - Runway Approach
- 200 - Runway Safety Area
- 300 - Runway Protection Zones

These projects have 2 options:

1. Will be included in a SIT 500 (Runway Project)
2. If needed as a standalone project, Div of Aviation will identify quicker funding source. FAA requires airports to address safety needs before or with capital improvement projects.



P8 Aviation Scoring

Non-Highway Scoring Details

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
NCDOA Project Rating	NCDOA Project Rating	40%	30%	25%
FAA ACIP Rating	FAA Airport Capital Improvement Plan (ACIP) rating	30%	15%	10%
Constructability Index	Sum of metrics rating project constructability	10%	10%	5%
Benefit/Cost	(Total Economic Contribution / Cost to NCDOT) + Funding Leverage	20%	15%	10%

Criteria: NCDOA Project Rating

Funding Category	Criteria Weight
Statewide Mobility	40%
Regional Impact	30%
Division Needs	25%

- **Purpose:** Assigns point values based on priority and need of the project. Utilizes the North Carolina Division of Aviation (DOA) Master Project Categories from the Statewide Airports System Plan.
- **Measure:** NCDOA Project Rating

Criteria: FAA ACIP Rating

Funding Category	Criteria Weight
Statewide Mobility	30%
Regional Impact	25%
Division Needs	10%

- **Purpose:** The Airport Capital Improvement Plan (ACIP) rating serves as the primary planning tool for the FAA for systematically identifying, prioritizing and assigning funds to critical airport development and associated capital needs for the National Airspace System (NAS)
- **Measure:** Federal Aviation Administration (FAA) Airport Capital Improvement Plan (ACIP) rating

Criteria: Constructability Index

Funding Category	Criteria Weight
Statewide Mobility	10%
Regional Impact	10%
Division Needs	5%

- **Purpose:** Measures project’s readiness for construction
- **Measure:** Sum of the scores that each project receives for the 7 metrics
 - Project has 90% design complete at project submission
 - Project has final environmental document complete at project submission
 - Land acquisition requirement
 - Project meets system plan goals
 - Airport DoA Financial Risk Factor Rating
 - Airport has clear approach for each end of primary runway
 - Airport has a legally enforceable protection zone

Constructability Index – Details (Updated for P8)

FINAL WG RECOMMENDATION
Non-Highway Scoring Details

Metric	Score		% of Total Criteria Score (Informational)
	Subtotal	Max # of Points	
Project design complete (90% complete at submission of project)		100	30%
Project final environmental document complete at submission of project		80	24%
Land acquisition		60	18%
Construction project and requires land acquisition	0		
Construction project and does not require land acquisition	60		
Land acquisition only project	60		
Project meets system plan goals		40	12%
Not a System Plan goal or objective	0		
Exceeds Only	10		
Partially Meets	20		
Meets and Exceeds	30		
Meets	40		
Airport DoA Financial Risk Factor Rating (25 points - the rating score)		25	7%
Airport has clear approach for <u>each</u> end of primary runway		20	6%
Has “close in” obstructions	0		
No “close in” obstructions	3		
No obstructions within RSA, including FAA compliant measures	7		
No obstructions within threshold siting surface	9		
No obstructions within Federal Aviation Regulation (FAR) Part 77	10		
Airport has a legally enforceable protection zone		10	3%
Does not have a legally enforceable protection zone	0		
Has a legally enforceable protection zone but does not meet Part 77	5		
Legally enforceable protection zone meets Part 77	10		
Total		335	100%

P8 Expansion of Inputs for “Meets System Plan Goals” Metric

NOTE: No impact to scoring. Provides clarification to staff to identify project metrics during scoring.

Inputs	Example	Updated Values
Not a System Plan goal or objective	Airport requests to build airport control tower	0
Exceeds only	Airport does not need hangars and requests to build additional hangars	10
Partially meets	Airport needs 18 hangars and requests to build 10 hangars	20
Meets and exceeds	Airport needs 18 hangars and requests to build 24 hangars	30
Meets	Airport needs 18 hangars and requests to build 18 hangars	40

Criteria: Benefit/Cost

Funding Category	Criteria Weight
Statewide Mobility	20%
Regional Impact	15%
Division Needs	10%

- Purpose:** Measures total economic contribution as a ratio of benefit vs. cost
Includes additional funding leverage component (total criteria score not to exceed 100 points)

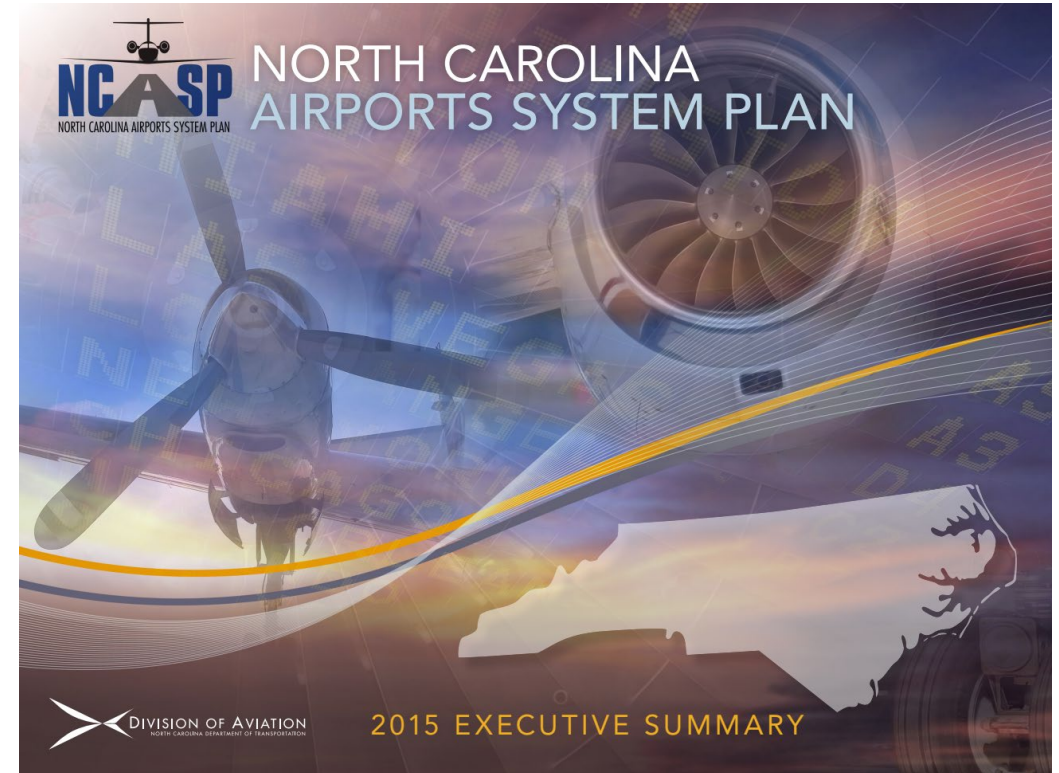
Measure:
$$\left(\frac{\left(\frac{\$ \text{ Econ. Contribution of Airport}}{\text{Total \# of IFR Ops of Airport}} \right) * \text{NCDOA Capital Project Rating}}{\text{Cost to NCDOT}} \right) + \left(\frac{\left(\frac{\text{Other Funds}}{\text{Total Project Cost}} \right) \times 100}{\text{Cost}} \right)$$

Begin Reference Slides



Airports System Plan

FAA definition: The purpose of airport system planning is to study the performance and interaction of an entire aviation system to understand the inter-relationship of the member airports. The system evaluated in the plan can be the airports of a metropolitan area, a state, or several bordering states. The effort involves examining the interaction of the airports with the aviation user requirements, economy, population, and surface transportation of a specific geographic area.



NCDOT Aviation (NC specific system plan): Division of Aviation developed the North Carolina Airports System Plan (NCASP) in 2015 to understand the condition of the current system and plan for its future needs. The NCASP is a tool for the Division of Aviation and FAA to facilitate continued, successful development of the system, with an emphasis on planning for the airport system as a whole. The plan evaluates the existing system and trends in the industry and provides recommendations for how the North Carolina airport system can be developed to respond to future challenges and promote system sustainability over the next 20 years.

TARBORO-EDGECOMBE AIRPORT

Airport Development Plan Facility Objectives/Recommendations

For each airport grouping/role, a series of facility objectives were established to make sure that every airport is meeting the standards and serving the needs of the surrounding communities and the statewide aviation system. The NCASP identifies recommended projects the airport should consider in order to meet Airport Development Plan objectives. The following table summarizes the categories, the airport's existing condition, the objective, and identifies whether the airport meets the objective.

AIRPORT DEVELOPMENT PLAN CATEGORY	ACTUAL (2021)	OBJECTIVE	MEETS OBJECTIVE?
Airport Layout Plan (ALP)	2006 (Pending update)	ALP Completed/Updated Within Last 10 Years	No
Runway Safety Area (RSA)	240 FT	240 FT	Yes
Runway Protection Zone (RPZ) Ownership	Partial	Fee Simple	No
Pavement Condition Index (PCI) - Primary RWY	83 (as of 2019)	PCI \geq 75	Yes
Pavement Condition Index (PCI) - Apron	82 (as of 2019)	PCI \geq 75	Yes
Pavement Condition Index (PCI) - Taxiways	90 (as of 2019)	PCI \geq 75	Yes
Runway Length	3,999 FT	4,200 FT	No
Runway Width	60 FT	75 FT	No
Pavement Strength	12,500lbs SW	< 30,000lbs SW or DW and > 12,500lbs SW or DW	Yes
Visual Navigational Aids	RB, LWS, PAPI-2	Rotating Beacon (RB), Lighted Wind Stock (LWS), PAPI-2	Yes
Runway Edge Lighting	MIRL	Medium Intensity Runway Lighting (MIRL)	Yes
Weather Reporting Capability	AWOS IIIP	AWOS III	Yes
Standard Instrument Approach	Non-Precision, 710', 1 mile	Instrument Approach with Vertical Guidance (APV), 400', 1m	No
Parallel Taxiway	Turnaround and Connector Ends	Full Parallel	No
Aircraft Apron	9 spaces	50% Based Aircraft + 20% Busy Day Transient = 2 spaces	Yes
General Aviation Terminal Building	300 SF	3,200 SF	No
Taxiway & Apron Edge Lighting	None	Reflective Markers	No
Airfield Signage	L, G	Runway Hold Position (RHP), Location (L), Guidance (G)	No
Ground Communication	Common Traffic Advisory Frequency (CTAF)	UNICOM, Remote Communications Outlet (RCO) or Ground Communications Outlet (GCO)	No
Approach Lighting	None	Approach Lighting System (ALS)	No
Aircraft Rescue and Firefighting (ARFF) Equipment	No	Case by Case	N/A
Hangars	3 hangars	50% Based Aircraft = 1 hangar	Yes
Airfield Maintenance Equipment/Storage Bldg.	None	Approved Tractor/Building	No
Perimeter Fencing	Partial, 8'	8' Perimeter	No
Fuel Facilities	None	Based on Demand	N/A

NCASP Individual Airport Objectives:

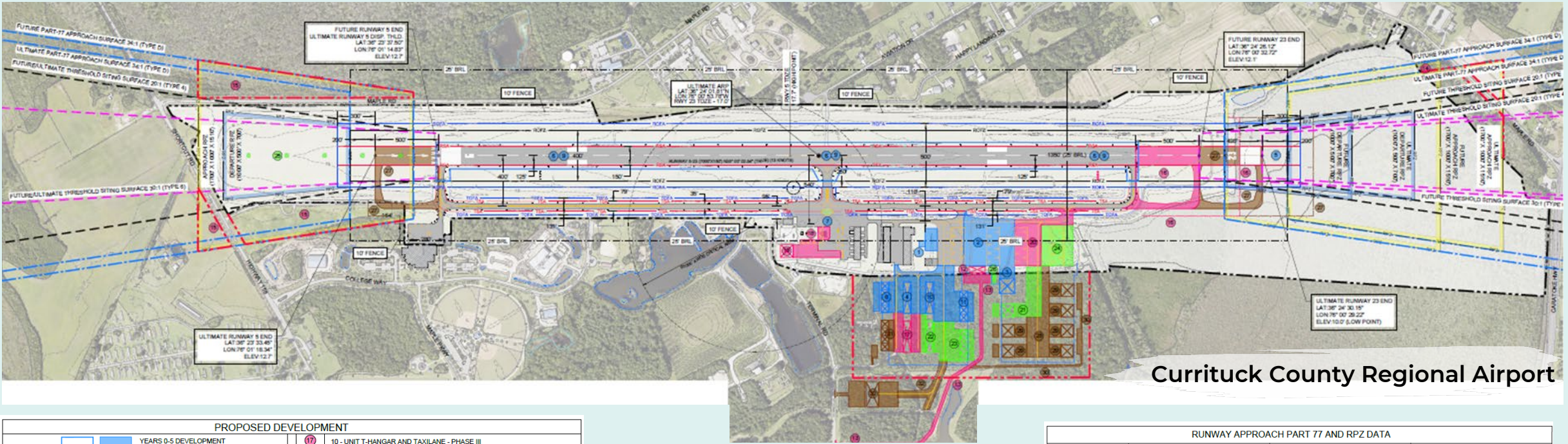
- Updates are provided to the document as the actual conditions change at each airport
- Conditions and growth plans are compared with the intent to meet NCASP objectives
- Helps with prioritization of projects at Division of Aviation and aid in justification for FAA of federal grant funding

Airport Master Plan: Airport Layout Plan (ALP)

- Critical planning tool that depicts the location and nature of both existing facilities and planned development for an airport
- Protects airspace for future growth
- FAA requires capital improvements to be shown on the ALP in order to complete any expansion regardless of funding source
- Boundaries and proposed additions to all areas owned or controlled by the sponsor for airport purposes
- Identification of critical aircraft (regular use or 500 ops per year) and aviation activity forecasting

A-I  Approach Speed Less than 90 knots Wingspan to 48 feet	B-I Less than 12,500 lbs.  Approach Speed 91-120 knots Wingspan to 48 feet	B-II  Approach Speed 91-120 knots Wingspan to 49-78 feet
B-I, B-II Over 12,500 lbs.  Approach Speed 91-120 knots Wingspan to 48 feet (I), 49-78 ft. (II)	C-I, D-I  Approach Speed 121-140 (C), 141-165 (D) Wingspan to 48 feet	C-II, D-II  Approach Speed 121-140 (C), 141-165 (D) Wingspan 49-78 feet
A-III, B-III  Approach Speed < 90 knots (A), 91-120 (B) Wingspan 79-117 feet	C-III, D-III  Approach Speed 121-140 knots (C), 141-165 (D). Wingspan 79-117 feet	C-IV, D-IV  Approach Speed 121-140 knots (C), 141-165 (D). Wingspan 118-170 feet
D-V  Approach Speed 141-161 knots Wingspan 171-213 feet	D-VI  Approach Speed 141-161 knots Wingspan 214-262 feet	E  Approach Speed 166 knots or more

Airport Master Plan: Airport Layout Plan (ALP)



Currituck County Regional Airport

PROPOSED DEVELOPMENT	
<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	YEARS 0-5 DEVELOPMENT
	10 - UNIT T-HANGAR AND TAXILANE - PHASE III
	GENERAL AVIATION APRON EXPANSION
	100' X 100' CORPORATE HANGAR - PHASE I
	CORPORATE APRON EXPANSION - PHASE II
	YEARS 11-20 DEVELOPMENT
	100' X 100' CORPORATE HANGAR PHASE II, TAXILANE, AND APRON
	10 - UNIT T-HANGAR AND TAXILANE - PHASE IV
	4 - UNIT CORPORATE BOX HANGARS AND TAXILANE - PHASE III
	CORPORATE APRON EXPANSION - PHASE III
	RUNWAY 5 ODALS INSTALLATION
<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	ULTIMATE OR ON-DEMAND DEVELOPMENT
	ULTIMATE RUNWAY EXTENSION TO 7000'
	CORPORATE TAXILANE EXTENSION
	100' X 100' CORPORATE HANGARS AND APRON - PHASE III
	ACCESS ROAD EXTENSION AND PARKING
	4-UNIT CORPORATE BOX HANGARS AND TAXILANE - PHASE IV
	COMMERCE PARK TAXILANE EXTENSION, APRON AND HANGAR
	YEARS 6-10 DEVELOPMENT
	NEW TERMINAL BUILDING
	NEW TERMINAL ACCESS ROAD AND PARKING
	RUNWAY 23 RPZ LAND ACQUISITION FOR 3/4 VISIBILITY MINIMUM
	RUNWAY 5 RPZ LAND ACQUISITION FOR 3/4 VISIBILITY MINIMUM
	RUNWAY 23 500' EXTENSION AND PAPI REPLACEMENT

RUNWAY DATA						
ITEM	EXISTING		FUTURE		ULTIMATE	
	5	23	5	23	5	23
RUNWAY	B-II		B-II		B-II	
RUNWAY DESIGN CODE (RDC)	B/II/5000		B/II/4000		B/II/4000	
RUNWAY REFERENCE CODE (RRC)	5502' X 150'		6002' X 150'		7000' X 150'	
LENGTH X WIDTH	5502' X 150'		6002' X 150'		7000' X 150'	
EFFECTIVE GRADIENT *	0.08%		0.08%		0.11%	
PAVEMENT SURFACE	ASPHALT-CONCRETE					
SURFACE TREATMENT	NONE					
GROSS WEIGHT (IN THOUSANDS POUNDS)	SW 35, DW 47.5		> 60		> 60	
STRENGTH BY PCN	NOT AVAILABLE		NOT AVAILABLE			
MARKING	NPI		NPI		NPI	NPI
LIGHTING	MIRLSIGNAGE		MIRLSIGNAGE		MIRLSIGNAGE	
VISUAL GLIDE SLOPE INDICATOR (VGS) **	PAPI 4R	PAPI 2L	PAPI 4R	PAPI 4L	PAPI 4R	PAPI 4L
AERONAUTICAL SURVEY REQUIRED	NVGS	NVGS	VGS	VGS	VGS	VGS
APPROACH LIGHTS **	REILS	REILS	ODALS	REILS	ODALS	REILS
RUNWAY DECLARED DISTANCES						
TAKE OFF RUN AVAILABLE (TORA)	5502'	5502'	6002'	6002'	7000'	7000'
TAKE OFF DISTANCE AVAILABLE (TODA)	5502'	5502'	6002'	6002'	7000'	7000'
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)	5502'	5502'	6002'	6002'	7000'	7000'
LANDING DISTANCE AVAILABLE (LDA)	5502'	5502'	6002'	6002'	6502'	7000'

RUNWAY APPROACH PART 77 AND RPZ DATA			
RUNWAY END	EXISTING	FUTURE	ULTIMATE
	NON-PRECISION APPROACH - RNAV (GPS) SURFACE VISIBILITY MINIMUMS NOT LOWER THAN 1 MILE 500' X 1000' X 3500' 1000' @ 34:1 SLOPE RUNWAY PROTECTION ZONE (LENGTH X INNER WIDTH X OUTER WIDTH) APPROACH - 1000' X 500' X 700' DEPARTURE - 1000' X 500' X 700'	NON-PRECISION APPROACH - RNAV (GPS) SURFACE VISIBILITY MINIMUMS NOT LOWER THAN 3/4 MILE 500' X 1000' X 4000' 1000' @ 34:1 SLOPE RUNWAY PROTECTION ZONE (LENGTH X INNER WIDTH X OUTER WIDTH) APPROACH - 1700' X 1000' X 1510' DEPARTURE - 1000' X 500' X 700'	NON-PRECISION APPROACH - RNAV (GPS) SURFACE VISIBILITY MINIMUMS NOT LOWER THAN 3/4 MILE 1000' X 1000' X 4000' 1000' @ 34:1 SLOPE RUNWAY PROTECTION ZONE (LENGTH X INNER WIDTH X OUTER WIDTH) APPROACH - 1700' X 1000' X 1510' DEPARTURE - 1000' X 500' X 700'
5			
23			

End Reference Slides



Bicycle & Pedestrian



Project Eligibility and Requirements

- Minimum total project cost = \$100,000
- Eligible costs include preliminary engineering, right-of-way, utilities, and construction
- 20% of total project cost is currently required as non-federal match by local governments
- Project must be included in an adopted plan
 - Includes adopted bicycle plans, greenway plans, pedestrian plans, Safe Routes to School action plans, comprehensive transportation plans (CTPs), and long-range transportation plans
- P7 BikePed Cost Estimation Tool is available on Prioritization Data Page:
<https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>

P6 Specific Improvement Types

- 1 - Grade-Separated Bicycle Facility (Bicycle)
- 2 - Off-Road/Separated Linear Bicycle Facility (Bicycle)
- 3 - On-Road; Designated Bicycle Facility (Bicycle)
- 4 - On-Road Bicycle Facility (Bicycle)
- 5 - Multi-Site Bicycle Facility (Bicycle)
- 6 - Grade-Separated Pedestrian Facility (Pedestrian)
- 7 - Protected Linear Pedestrian Facility (Pedestrian)
- 8 - Multi-Site Pedestrian Facility (Pedestrian)
- 9 - Improved Pedestrian Facility (Pedestrian)



P8 Bicycle and Pedestrian Scoring

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Safety	(Number of crashes x 40%) + (Crash severity x 20%) + (Safety / crash risk x 20%) + (Project safety benefit x 20%)	N/A	N/A	20%
Accessibility/ Connectivity	Points of Interest pts + Connections pts + Route pts	N/A	N/A	15%
Demand/Density	# of households and employees per square mile near facility	N/A	N/A	10%
Cost Effectiveness	(Safety + Accessibility/Connectivity + Demand/Density) / Cost to NCDOT	N/A	N/A	5%

Criteria: Safety

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	N/A
Division Needs	20%

- **Purpose:** Identify projects that provide improved or alternative traveling options that reduce the risk of vehicle and bicycle/pedestrian crashes and create a safer transportation environment for users

- **Measure:** Number of crashes * 40% +
Crash severity * 20% +
Safety / crash risk * 20% +
Safety benefit * 20%

Safety Measures

- **Number of Crashes: 40% weight:**
 - Bicycle and pedestrian crashes within last 5 years along the corridor
- **Crash Severity: 20% weight**
 - Average of severity rating among number of crashes
- **Safety / Crash Risk: 20% weight**
 - Utilizes crash locations to identify risk factors and scores for each roadway segment (see following slide and table)
- **Safety Benefit: 20% weight**
 - Score for each project type (see following lookup table)

Safety Measures: Safety / Crash Risk

- Methodology update for P8
- Developed as part of NCDOT Research project
- Uses crash locations to identify risk factors
 - Focus on fatal and serious injury crashes
 - Risk factors vary by functional classification (excluding access-controlled roads)
- Statistical models used to “weight” the importance of risk factors
 - Weighting based on statistical relationship to crashes
- Based on urban areas, but mappable to rural areas
- Updated methodology is a refined version but consistent intent of previous approach
 - Easier to update over time
 - More effective at capturing (near) future risk
 - Precedence of already being used by NCDOT

Factor	Direction of Effect
Natural Log of AADT	+
5+ Lane Roadway	+
Speed Limit 40 or 45 mph	+
Speed Limit 50 mph or Above	+
Median Present	-
Block Length between 0.1-0.25 mi	-
Block Length between 0.25-0.5 mi	-
Block Length greater than 0.5 mi	-
High Intensity Development within 100 ft	+
Alcohol Sales Density	+
Bus Route Present	+
Population Density	+
K12 Enrollment Density	+
Median Household Income	-
Proportion of Non-Motorized Commuters	+
Proportion of the Population with a Disability	+

Safety Measures: Safety Benefit

Bicycle	SIT	Pedestrian	SIT	Score
New Bicycle/Pedestrian Bridge, New Bicycle/Pedestrian Tunnel, Rail-Trail, Shared-Use Path / Multi-Use Path	1, 2	New Pedestrian Bridge, New Pedestrian Tunnel, Rail-Trail, Shared-Use Path / Multi-Use Path	6, 7	7
Buffered Bicycle Lane, Contra-Flow Bicycle Lanes, Separated Bike Lane, Sidepath	2	Sidepath, Sidewalk	7	6
Bicycle Lane	3	Sidewalk Widening, Trail Improvement	9	5
Paved Shoulder	4	Crossing Island, Curb Extensions, Streetscape / Corridor Improvements	8,9	4
Bicycle Detection / Actuation, Bicycle Signal, Curb Raddi Revisions, Hybrid Beacon, Intersection Markings / Signage, Lighting, Mid-Block Crossing	5	Accessible Pedestrian Signals, Curb Ramp, Lighting, Marked Crosswalk, Mid-Block Crossing, Pedestrian Hybrid Beacon, Pedestrian Signal, Rectangular Rapid Flashing Beacon	8	3
Shared Lane Marking ("Sharrow"), Signage	4			2
Bicycle Corral, Bicycle Parking, Bicycle Share / Micro-Mobility Share, Bicycle Wheel Channel, Wayfinding	5	Wayfinding	8	1

Criteria: Accessibility/Connectivity

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	N/A
Division Needs	15%

- **Purpose:** Identify projects that:
 - Provide access to nearby points of interest
 - Improve connectivity between destinations
 - Improve connectivity of bicycle/pedestrian network
 - Improve access and continuity of designated bicycle routes
- **Measure:** $\left(\begin{array}{l} \text{POI \# total} \\ \text{(no cap)} \end{array} + \begin{array}{l} \text{Connection \# total} \\ \text{(no cap/average)} \end{array} + \begin{array}{l} \text{Route \# total} \end{array} \right)$

Accessibility/Connectivity Measures: Points of Interest (POI)

(Updated for P8)

- **Utilizes various data layers to measure number of points of interest within project buffer**
 - Buffer = **1.5 miles** for bicycle (SITs 1-5), **0.5 miles** for pedestrian (SITs 6-9)

POI categories (automated within SPOT Online):

Attractor POIs:

- Government buildings
- Fire/EMS
- Transit routes
- Schools (K-12, public/private), universities, colleges
- Parks (national, state, local)
- Tourist destinations (historic districts, **downtowns/CBDs**, major sports)

- Medical (hospitals and public/private clinics)
- Places of worship
- Adult education centers
- Grocery stores, convenience stores, and pharmacies
- Tourist destinations (museums, theaters, auditoriums, historic landmarks) *
- Shelters *

Employment POIs:

- **Locations with employees of 5 or more ***

* automated for P8

Points of Interest (POI): Updates for P8

- Automate employment POIs using Data Axle
 - Will include two-phase approach to data validation (before and after scoring)
- Continue double (triple) counting employment
 - Continue double counting POIs with multiple purposes (attractor vs. employer)
 - Continue double counting employment in POIs (Acc/Conn) and Demand/Density
- Threshold of 5 employees for a POI to count as “Employment POI”
- Do not pursue weighting Employment POIs based on size (for P8)
- Automate other manual POI categories (remaining tourist destinations, shelters) using Data Axle
- Add “downtowns/CBDs” to definition of “Tourist Destinations” category
 - Allows for manual addition by submitters of any downtowns/CBDs that are not already included

Accessibility/Connectivity Measures: Connectivity

- **Points totaled for connections made by project to various degrees of bicycle/pedestrian infrastructure/projects**
 - Connections allowed at either end of project or anywhere along project
 - Not required to have connection at endpoints
 - 1 point per each connection to Existing bike/ped infrastructure or bike/ped projects scheduled for delivery
 - Scheduled for delivery = in STIP or with local funds
 - 1 point (max) for any connections to bike/ped projects in a plan
- **Connections to be entered manually by project submitters**
- **ATLAS PBIN (Pedestrian Bicycle Infrastructure Network)** to be utilized as reference layer
 - Displays existing and planned infrastructure

Accessibility/Connectivity Measures: Designated Routes

- **Points assigned if project is improving National/State/Regional bike route or designated state/federal trails**
 - 2 points if project is on/improves a designated route
 - 1 point if project connects to a designated route

Criteria: Demand / Density

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	N/A
Division Needs	10%

- **Purpose:** Identify projects in areas where the presence of higher concentrations of residents and employees can potentially benefit a higher number of users
- **Measure:** Population per square mile * 50% +
Employees per square mile * 50%
- **Notes:**
 - Population and employees measured within 1.5 mi for bicycle projects
 - Population and employees measured within 0.5 mi for pedestrian projects
 - Population includes factor for unoccupied housing units (second homes) + group housing, excluding prisons

Criteria: Cost Effectiveness

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	N/A
Division Needs	5%

- **Purpose:** Measures other criteria scores combined to generate a user benefit compared to the cost to NCDOT
- **Measure:**
$$\left(\frac{(\text{Safety} + \text{Accessibility/Connectivity} + \text{Demand/Density})}{\text{Cost to NCDOT}} \right)$$

Ferry



Project Eligibility

Statewide	Regional	Division
Not Eligible	<p>“The State maintained ferry system, excluding passenger vessel replacement”:</p> <ul style="list-style-type: none">• New (Capacity Expansion) Ferry (River or Sound Class)• New Installation of Ramp & Gantry (Capacity Expansion)• Bulkhead Expansion (associated with Capacity Expansion)• Additional Mooring Slips (to accommodate Capacity Expansion)	<p>“Replacement of State maintained ferry vessels”:</p> <ul style="list-style-type: none">• Replacement of Ferry Vessels (River, Hatteras, or Sound Class)• Replacement of Support Vessels (Barges, Tugs, etc.)



Ferry Routes

- Southport - Ft Fisher
- Cherry Branch - Minnesott
- Aurora - Bayview
- Currituck - Knotts Island
- Hatteras - Ocracoke (South Dock) - vehicle
- Cedar Island – Ocracoke (Silver Lake)
- Swan Quarter – Ocracoke (Silver Lake)
- Statewide: Support Vessel
- Hatteras – Ocracoke (Silver Lake) – passenger
- New Route

Note: List of routes is not complete due to IT restrictions – project entries will be updated with correct routes by Ferry Division during scoring phase

Ferry Specific Improvement Types (SITs)

(New for P8)

1. Replace Support Vessel
2. Replace Vehicle Vessel
3. Replace Passenger Vessel
4. Replace Facility
5. Expand Support Vessel
6. Expand Vehicle Vessel
7. Expand Passenger Vessel
8. Expand Facility

Project Categories

(New for P8)

- Projects are scored in 2 separate categories:
 - Replacement Vessels and Facilities
 - Expansion Vessels and Facilities
- Project measures will be scaled within each criteria, separately within each project category

	<u>Replacement</u>		<u>Expansion</u>
Availability	Scale	Availability	Scale
Age	Scale	Benefits	Scale
Asset Condition Rating	Scale	Capacity/ Congestion	Scale
Asset Efficiency	Scale	Cost Effectiveness	Scale



P8 Ferry Scoring – Replacement Vessels and Facilities

(New for P8)

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Availability	Percent full	N/A	20%	15%
Age	Obsolescence	N/A	15%	10%
Asset Condition Rating	Condition	N/A	20%	15%
Asset Efficiency	Maintenance cost vs. replacement cost	N/A	15%	10%

Applies to SITs 1-4:

- Replace Support Vessel
- Replace Vehicle Vessel
- Replace Passenger Vessel
- Replace Facility

Measures (Replacement Vessels and Facilities)

(New for P8)

Criteria	Measure Description	SIT 1: Replace Support Vessel	SIT 2: Replace Vehicle Vessel	SIT 3: Replace Passenger Vessel	SIT 4: Replace Facility
Availability	Percent full	Annual Vessel Down Days / 365	Missed Sailings / Scheduled Sailings		(1 / (Used Capacity / Total Capacity)) - 1
Age	Obsolescence	Age / Useful Life			
Asset Condition Rating	Condition	Condition Score			
Asset Efficiency	Maintenance cost vs. replacement cost	6 Year Planned and Corrective Maintenance Cost / (New Vessel and Facility Cost to NCDOT / Useful Life)			



P8 Ferry Scoring – Expansion Vessels and Facilities

(New for P8)

Non-Highway Scoring Details

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Availability	Percent full in 10 years	N/A	20%	15%
Benefits	Trips	N/A	15%	10%
Capacity/ Congestion	Percent full today	N/A	20%	15%
Cost Effectiveness	Annualized cost to NCDOT per trip	N/A	15%	10%

Applies to SITs 5-8:

- *Expand Support Vessel*
- *Expand Vehicle Vessel*
- *Expand Passenger Vessel*
- *Expand Facility*

Measures (Expansion Vessels and Facilities)

(New for P8)

Criteria	Measure Description	SIT 5: Expand Support Vessel	SIT 6: Expand Vehicle Vessel	SIT 7: Expand Passenger Vessel	SIT 8: Expand Facility
Availability	Percent full in 10 years	New Trips [10 Years] / Existing Capacity			
Benefits	Trips	New Trips [10 Years]			
Capacity/ Congestion	Percent full today	Key Unit of Demand at 85 th Percentile / Key Unit of Supply	Vehicle Demand at 85 th Percentile / Vessel Capacity	Passenger Demand at 85 th Percentile / Vessel Capacity	Key Unit of Demand at 85 th Percentile / Key Unit of Supply
Cost Effectiveness	Annualized cost to NCDOT per trip	(Cost to NCDOT / Useful Life) / New Trips [10 Years]			

Public Transportation



Project Eligibility and Requirements

- Project eligibility based on STI law

	Statewide	Regional	Division
Public Transportation	N/A	“Service spanning two or more counties and serving more than one municipality” (based on route and not provider)	“Service not included in Regional”; “Multimodal terminals and stations serving passenger transit systems” (includes <u>all facilities</u>)

- Minimum total project cost = \$40,000
- Replacement vehicles funded through other methods
- Allowed to request between 10% and 90% of total project cost (up to legislative cap)

Project Categories

- Projects are scored in 3 separate categories:
 1. Mobility (Route-Specific)
 2. Demand-Response
 3. Facility
- Project measures will be scaled within each criteria, separately within each project category

	<u>Mobility</u>	<u>Demand Response</u>	<u>Facility</u>
Impact	Scale	Scale	Scale
Demand / Density	Scale	Scale	Scale
Efficiency	Scale	Scale	Scale
Cost Effectiveness	Scale	Scale	Scale

Specific Improvement Types

- 1 - Mobility (route-specific) - New Service
- 2 - Mobility (route-specific) - Headway Reduction
- 3 - Mobility (route-specific) - Extension
- 4 - Demand Response
- 5 - Facility - Passenger Station
- 6 - Facility - Stop/Shelter
- 7 - Facility - Park and Ride
- 8 - Facility - Administrative
- 9 - Facility - Maintenance



P8 Public Transportation Scoring – Mobility

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Impact	Number of trips generated by project	N/A	15%	10%
Demand/ Density	Total Trips / Service population	N/A	20%	10%
Efficiency	Total trips / Total revenue seat hours	N/A	10%	10%
Cost Effectiveness	Additional trips / (Cost to NCDOT / Lifespan of project)	N/A	25%	20%

Project Types:

- Route-specific vehicles (new or expansion only)
 - Fixed guideway vehicles, fixed route vehicles, deviated fixed route vehicles
- Corridors
 - Fixed guideway (commuter rail, intercity rail, light rail)
 - Bundle of vehicle + other (ex. stops / shelters, park and rides, bus pullouts)
 - Bus Rapid Transit (BRT)
 - Bus on Shoulder System (BOSS) / Busway

Criteria: Impact

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	15%
Division Needs	10%

Purpose: Measure the number of trips generated by the project

Measure: New routes: $\left(\begin{array}{c} \text{Additional annual trips} \\ \text{[project]} \end{array} \right)$

Headway Reduction: $\left(\begin{array}{cc} \text{Additional annual trips} & + & \text{Relieved existing annual trips} \\ \text{[project]} & & \text{[route]} \end{array} \right)$

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)

Criteria: Demand / Density

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	20%
Division Needs	10%

Purpose: Measure the total trips on the route compared to the population serviced by the route

Measure:

$$\left(\frac{\begin{array}{cc} \text{Existing annual trips} & + & \text{Additional annual trips} \\ \text{[route]} & & \text{[project]} \end{array}}{\begin{array}{c} \text{Service population} \\ \text{[route]} \end{array}} \right)$$

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)

Criteria: Efficiency

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	10%
Division Needs	10%

Purpose: Measure the total trips on the route with the project in place compared to the total revenue-seat-hours on the route with the project in place

Measure:

$$\left(\frac{\text{Existing annual trips [route]} + \text{Additional annual trips [project]}}{\left(\text{Existing annual revenue hours [route]} + \text{Additional annual revenue hours [project]} \right) \times \left(\text{Existing seats [route SUM]} + \text{Additional seats [project SUM]} \right)} \right)$$

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)

Criteria: Cost Effectiveness

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	25%
Division Needs	20%

Purpose: Measure the additional trips generated by the project compared to the annualized cost to NCDOT

Measure:
$$\left(\frac{\text{Additional annual trips [project]}}{\text{Cost to NCDOT / Lifespan of project}} \right)$$

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)



P8 Public Transportation Scoring – Demand Response

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Impact	Number of trips affected by project	N/A	10%	10%
Demand/ Density	Total hours with the project in place / Service population	N/A	20%	15%
Efficiency	Vehicle Utilization Ratio	N/A	15%	10%
Cost Effectiveness	Additional trips / (Cost to NCDOT / Lifespan of project)	N/A	25%	15%

Project Types:

- Demand Response vehicles (expansion only)
 - No facilities – either submit Demand Response facilities under Facility category or under Mobility category if bundled with a vehicle
 - Includes MicroTransit service purchases (vehicles and software)

Criteria: Impact

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	10%
Division Needs	10%

Purpose: Measure the number of trips generated by the project

Measure: $\left(\begin{array}{c} \text{Additional annual trips} \\ \text{[project]} \end{array} \right)$

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)

Criteria: Demand / Density

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	20%
Division Needs	15%

Purpose: Measure the total hours of the system compared to the population serviced by the system

Measure:

$$\left(\frac{\text{Existing annual hours [system]} + \text{Additional annual hours [project]}}{\text{Service population [system]}} \right)$$

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)
Service Population = county areas not served by fixed routes (3/4 mile within fixed route)

Criteria: Efficiency

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	15%
Division Needs	10%

Purpose: Measure the utilization ratio of the system

Measure:
$$\left(\frac{\text{Number of vehicles in maximum service}}{\text{Number of vehicles in total fleet}} \right)$$

Criteria: Cost Effectiveness

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	25%
Division Needs	15%

Purpose: Measure the additional trips generated by the project compared to the annualized cost to NCDOT

Measure:
$$\left(\frac{\text{Additional annual trips [project]}}{\text{Cost to NCDOT / Lifespan of project}} \right)$$

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)



P8 Public Transportation Scoring – Facility

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Impact	Number of trips affected by project	N/A	N/A	15%
Demand/ Density	Ridership Growth Trend for the Previous 5 Years	N/A	N/A	10%
Efficiency	Efficiency Score	N/A	N/A	10%
Cost Effectiveness	Additional trips / (Cost to NCDOT / Lifespan of project)	N/A	N/A	15%

Project Types:

- Passenger stations
 - Includes Mobility Hubs with Transit service
- Individual or bundled stops/shelters
- Individual or bundled park and ride lots
- Administration/Maintenance buildings

Criteria: Impact

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	20%
Division Needs	15%

Purpose: Measure the number of trips generated by the project

Measure: $\left(\begin{array}{c} \text{Additional annual trips} \\ \text{[project]} \end{array} \right)$

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)
Administrative / Maintenance Facilities: facility data is converted into trips

Criteria: Demand / Density

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	10%
Division Needs	10%

Purpose: Measure the growth in ridership for the system over the previous 5 years

Measure: $\left(\begin{array}{c} \text{Ridership Growth Trend for} \\ \text{the Previous 5 Years} \\ \text{[system]} \end{array} \right)$

Criteria: Efficiency

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	15%
Division Needs	10%

Purpose: Measure the efficiency of the result of the project

Measure: Utilizes lookup table

Passenger stations, stops/shelters, park and rides: Total annual trips at the facility with the project in place

$$\left(\begin{array}{c} \text{Existing annual trips} \\ \text{[facility]} \end{array} + \begin{array}{c} \text{Additional annual trips} \\ \text{[project]} \end{array} \right)$$

Administrative facilities: Square footage per total FTE (includes operators)

Maintenance facilities: Number of vehicles per bay at planned fleet size

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)

Efficiency Score (Passenger Facilities)

<u>Stops/Shelters</u>	<u>NEW</u> <u>Station or Park and Ride</u>	<u>EXPANSION</u> <u>Station or Park and Ride</u>	<u>Points</u>
Total Annual Trips with project (per shelter) [facility(ies)]	Total Annual Trips with project [facility]	Total Annual Trips with project [facility]	
>20,000	>50,000	>100,000	6
15,001 - 20,000	37,501 - 50,000	75,001 - 100,000	5
10,001 - 15,000	25,001 - 37,500	50,001 - 75,000	4
5,001 - 10,000	12,501 - 25,000	25,001 - 50,000	3
1 - 5000	1 - 12,500	1 - 25,000	2
0	0	0	1

- Higher trips = higher points
- Values based on future conditions with project in place

Efficiency Score (Administrative or Maintenance Facilities)

<u>Administrative Facility</u>	<u>Maintenance Facility</u>	<u>Points</u>
Sq.Ft. per total FTE (includes operators) [facility]	Vehicles per bay at planned fleet size [facility]	
150 - 350	8 - 10	6
75 - 149 or 351 - 425	6 - 7.9 or 10.1 - 12	4
<75 or >425	<6 or >12	2

- Highest score is based on optimum facility values
- Values based on future conditions with project in place

Criteria: Cost Effectiveness

Funding Category	Criteria Weight
Statewide Mobility	N/A
Regional Impact	25%
Division Needs	15%

Purpose: Measure the additional trips generated by the project compared to the annualized cost to NCDOT

Measure:
$$\left(\frac{\text{Additional annual trips [project]}}{\text{Cost to NCDOT / Lifespan of project}} \right)$$

Notes: Additional Trips = 10 years in the future with new/expanded service (2029)
Administrative / Maintenance Facilities: facility data is converted into trips

Rail



Rail Project Eligibility

Rules of Thumb

- Class I railroad is the owner and/or operator → project is likely **eligible** under the Rail mode

OR

- The project is to benefit intercity passenger rail → project is likely **eligible** under the Rail mode

AND

- Project's primary purpose is to improve railroad operations → project **fits** under the Rail mode

Rail Project Eligibility

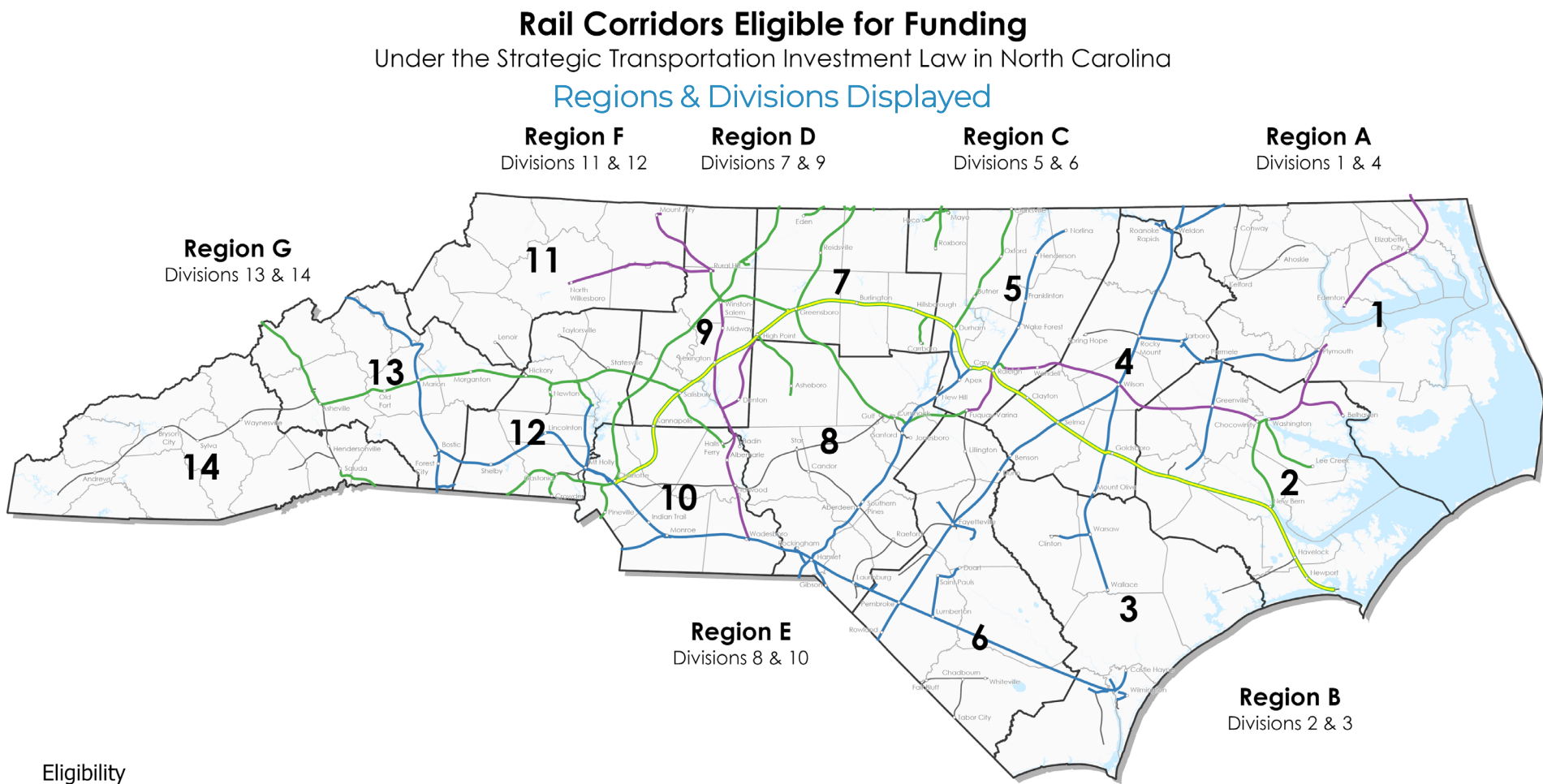
Owner of Rail Corridor	Operator on Rail Corridor	Combo Likely?	STI Eligible?
Class I Freight (NS, CSX)	Both Class I Freight & Passenger	common (CSX A Line)	✓
	Class I Freight (NS, CSX)	common	✓
	Class I Passenger (Amtrak)	rare	✓
	Other Intercity Passenger Operator	rare	✓
	Short Line	common (CLNA on NS Line)	✓
	No Operator	rare	✓
Class I Passenger (Amtrak)	Both Class I Freight & Passenger	rare	✓
	Class I Freight (NS, CSX)	rare	✓
	Class I Passenger (Amtrak)	common (NEC)	✓
	Other Intercity Passenger Operator	rare	✓
	Short Line	no	✓
	No Operator	no	✓
NCRR (real estate holding, not a Class I RR) = SHORTLINE	Both Class I Freight & Passenger	common (GRO-CLT)	✓
	Class I Freight (NS, CSX)	common (EC Branch)	✓
	Class I Passenger (Amtrak)	common (RGH-GRO)	✓
	Other Intercity Passenger Operator	rare	✓
	Short Line	rare	✗
	No Operator	rare	✗*

* Note: Project eligibility will depend upon who the operator will be with service in place.

Rail Project Eligibility

Owner of Rail Corridor	Operator on Rail Corridor	Combo Likely?	STI Eligible?
State-owned non-NCRR (NCDOT, NCSPA)	Both Class I Freight & Passenger	no	✓
	Class I Freight (NS, CSX)	no	✓
	Class I Passenger (Amtrak)	no	✓
	Other Intercity Passenger Operator	rare	✓
	Short Line	common (ABA Line & Ports w CLNA/WTRY)	✗
	No Operator (preserved corridor)	common (Wallace-Castle Hayne, SFF, HG)	✗*
Short Line	Both Class I Freight & Passenger	no	✓
	Class I Freight (NS, CSX)	rare	✓
	Class I Passenger (Amtrak)	no	✓
	Other Intercity Passenger Operator	rare	✓
	Short Line (includes DoD)	common	✗
	No Operator	common (sections out-of-service)	✗

* Note: Project eligibility will depend upon who the operator will be with service in place.

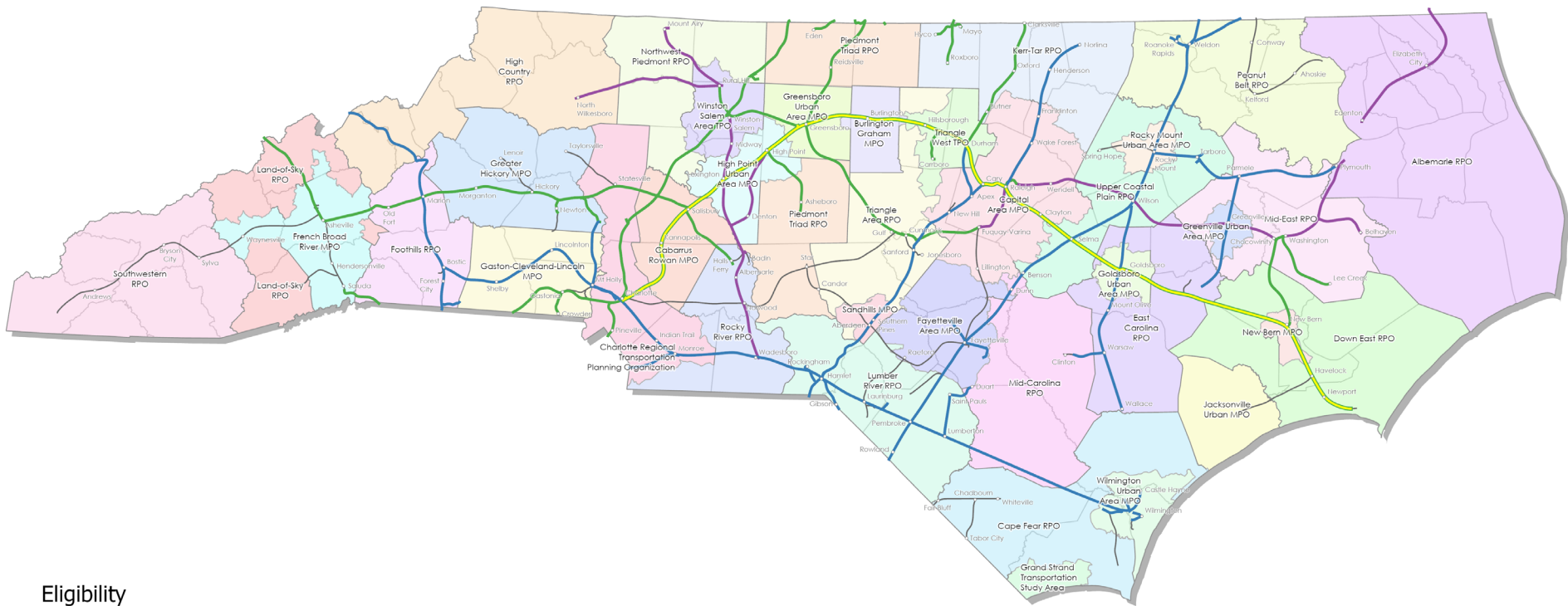


- Eligibility
- CSX Owned and Operated - Eligible
 - NS Owned and Operated - Eligible
 - NCCR Owned, Class I Operated - Eligible
 - Class I Owned, Short Line Operated - Eligible
 - State Owned, or Short Line Owned and Operated - Not Eligible

*Note: Projects to benefit intercity passenger rail may make a line eligible.



Rail Corridors Eligible for Funding
Under the Strategic Transportation Investment Law in North Carolina
MPOs & RPOs Displayed



- Eligibility
- CSX Owned and Operated - Eligible
 - NS Owned and Operated - Eligible
 - NCRR Owned, Class I Operated - Eligible
 - Class I Owned, Short Line Operated - Eligible
 - State Owned, or Short Line Owned and Operated - Not Eligible

* Note: Project eligibility will depend upon who the operator will be with service in place.



NEW FOR P8 → Rail Project Decision Tree

- A new tool to help submitters determine what qualifies as an eligible rail project and what SIT code it goes under.
- If desired, can set up Teams meetings to spend more time on this tool.
- To be posted as a submittal resource at Prioritization Data Page:
<https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Fo rms/AllItems.aspx>

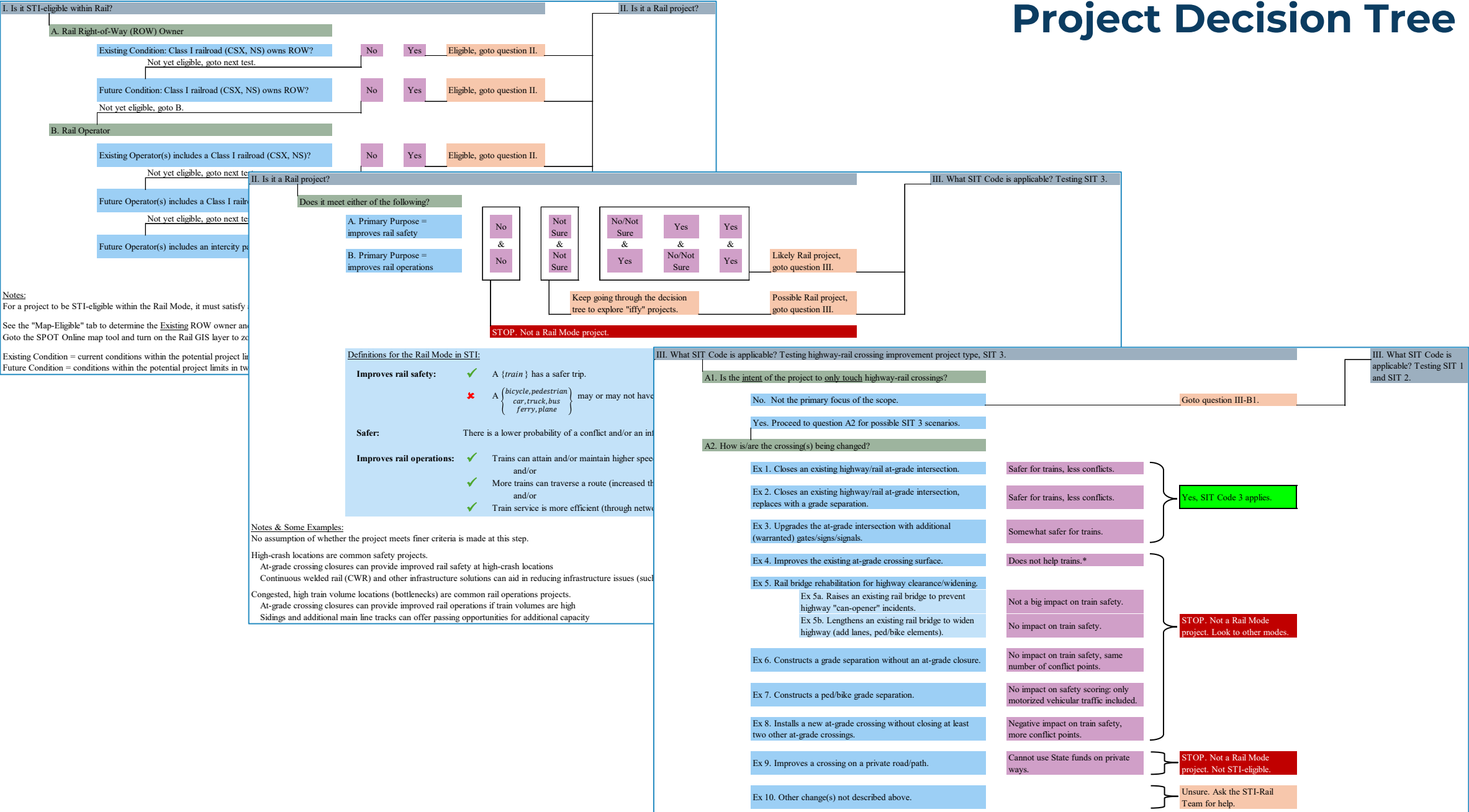
Rail Mode Project Decision Tree

Welcome to the Rail Mode Project Decision Tree.
This tool has been created to assist submitters in determining if a project is eligible for STI funding, fits within the Rail Mode, and if so, then what project type it is.

To use this Decision Tree, proceed through the tabs in order, as shown below.
The tabs have been organized to most efficiently walk through the decision process.
This means the tabs do not go in order of the SIT Codes, but more in how quickly/easily a SIT Code can be assigned or eliminated.

This is a brand new tool as of January 2025; therefore, please expect some glitches/errors, but we did our best to create a clean and elegant process.

Tab Name	Description
Instructions	Overview with table of contents and instructions on how to use this tool.
I-Eligible	Questions regarding the STI-eligibility of a project based on the legislation.
II-Rail2	Questions regarding whether a project fits under the Rail Mode for STI based on its primary purpose.
III-A SIT3	Questions to determine if a project fits under Highway-Rail Crossing Improvements (SIT Code 3).
III-B Fgt	Questions to determine if a project fits under one of the Freight SIT Codes (1 or 2).
III-C Pax4	Questions to determine if a project fits under Passenger Stations (SIT Code 4).
III-D Pax6	Questions to determine if a project fits under Passenger Rail Other Infrastructure (SIT Code 6).
III-E Pax5	Questions to determine if a project fits under Passenger Rail Service (SIT Code 5).
III-F Mod	Questions to determine if a project fits under Modernization (SIT Code 7).
Map-Eligible	Map tab showing the ownership and operators of rail corridors throughout the state. Use with tab I-Eligible.
Map-Fgt	Map tab showing which freight rail corridors in the state are considered growth corridors. Use with tab III-B Fgt.
Map-Pax	Map tab showing all existing and future passenger rail corridors traversing the state as of 2025. Use with tabs III-C Pax4, III-D Pax6, and III-E Pax5.
Terms-Diagram	Key railroad terminology definitions with a diagram.
Terms-Images	Helpful images representing a selection of railroad terms.

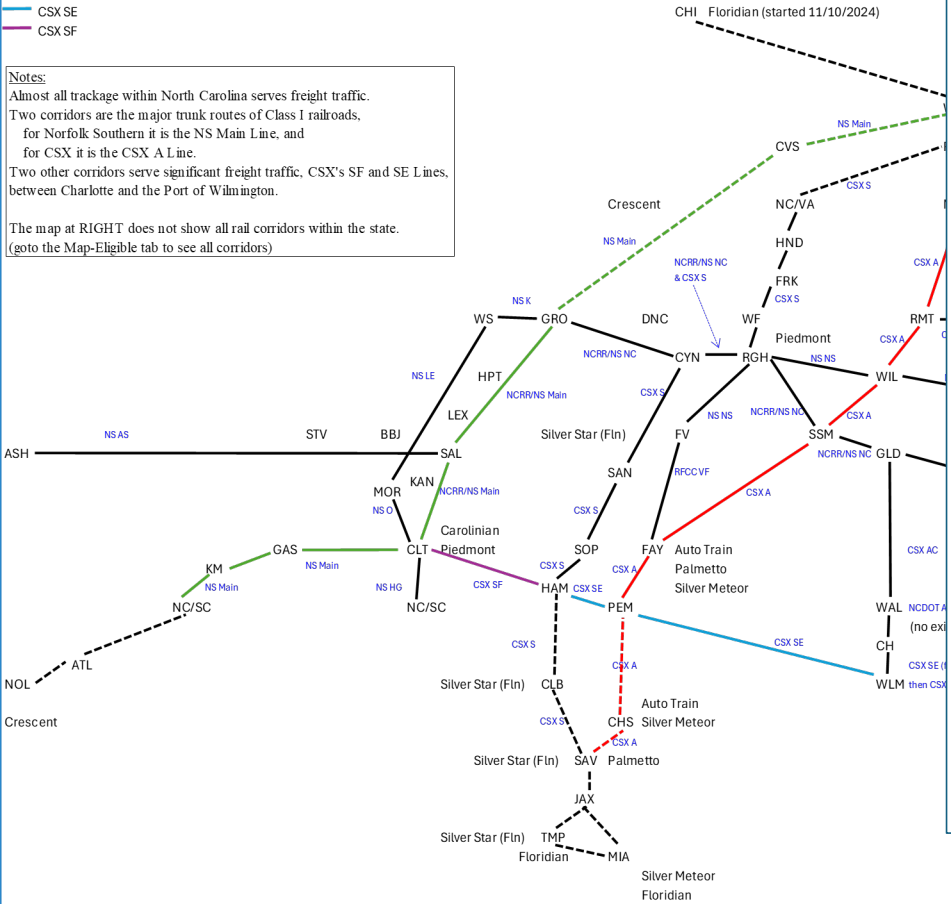


Project Decision Tree: Maps

Congested and/or Growth Freight Routes

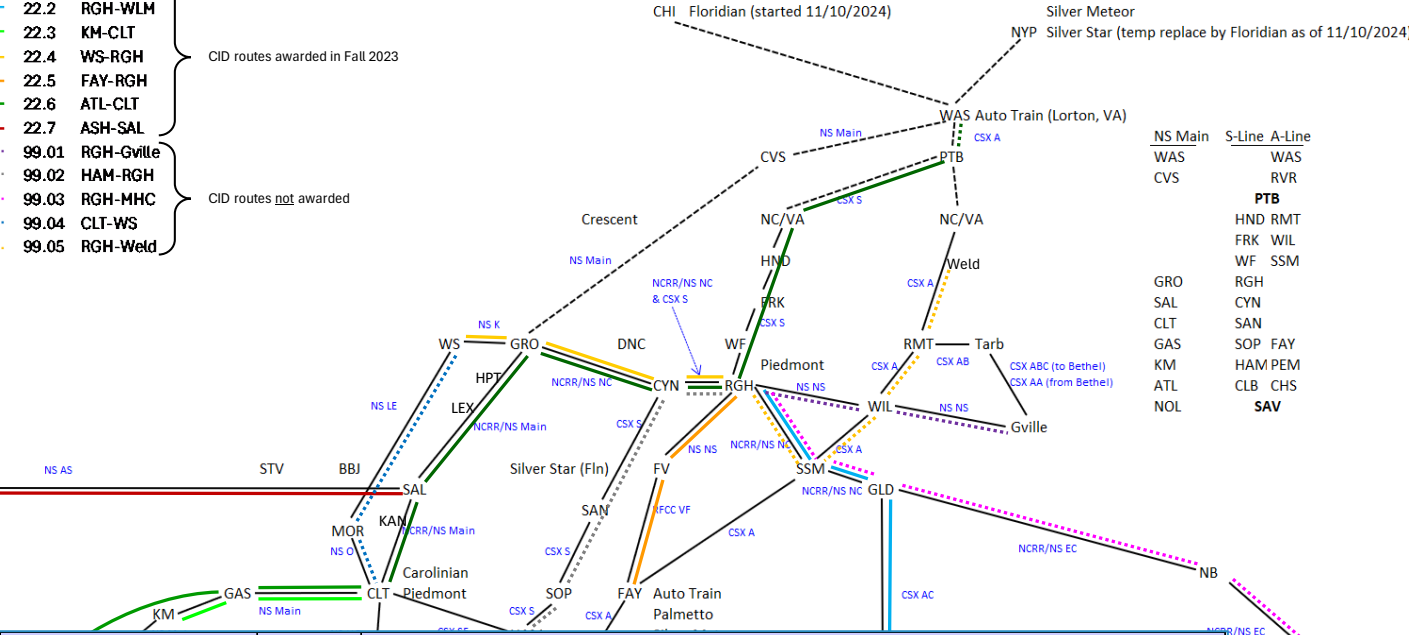
Legend for freight routes: NS Main (green), CSX A (red), CSX SE (blue), CSX SF (purple).

Notes:
Almost all trackage within North Carolina serves freight traffic.
Two corridors are the major trunk routes of Class I railroads, for Norfolk Southern it is the NS Main Line, and for CSX it is the CSX A Line.
Two other corridors serve significant freight traffic, CSX's SF and SE Lines, between Charlotte and the Port of Wilmington.
The map at RIGHT does not show all rail corridors within the state. (goto the Map-Eligible tab to see all corridors)



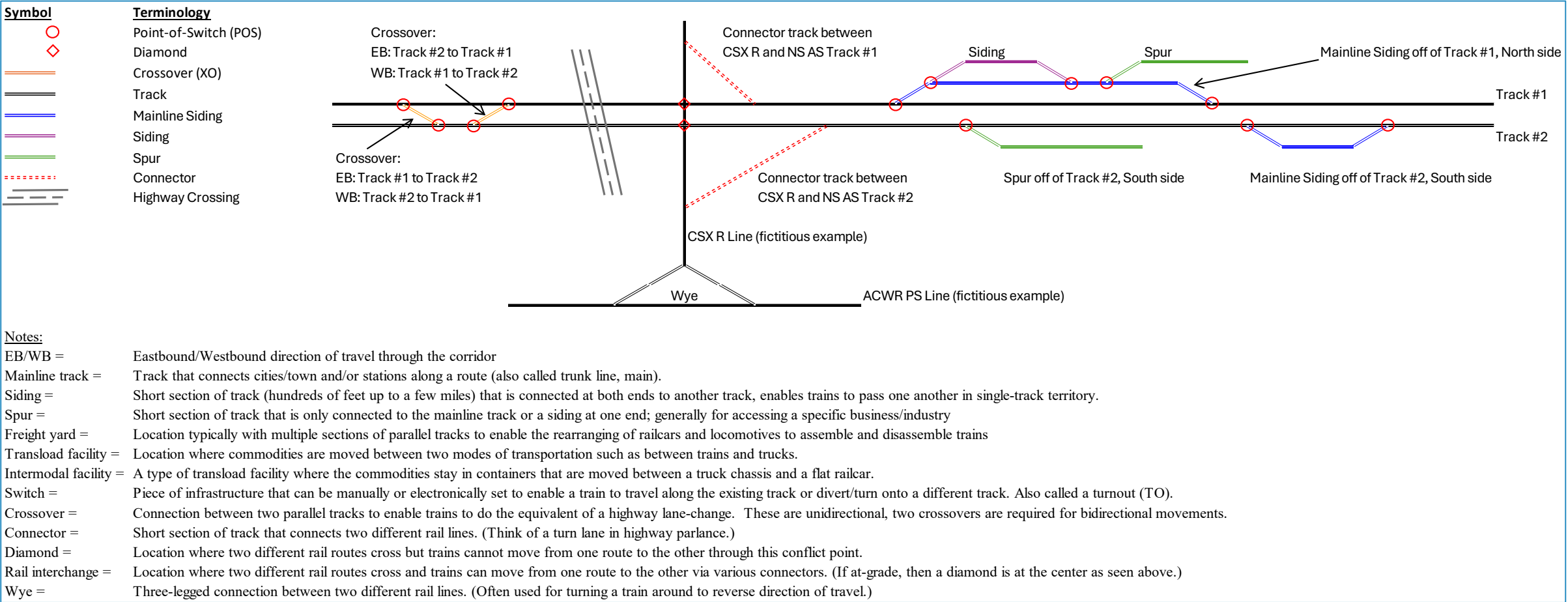
Symbol	CID#	Corridor
Green line	22.1	CLT-WAS
Blue line	22.2	RGH-WLM
Red line	22.3	KM-CLT
Yellow line	22.4	WS-RGH
Orange line	22.5	FAY-RGH
Light green line	22.6	ATL-CLT
Dark red line	22.7	ASH-SAL
Dotted purple line	99.01	RGH-Gville
Dotted blue line	99.02	HAM-RGH
Dotted orange line	99.03	RGH-MHC
Dotted light blue line	99.04	CLT-WS
Dotted yellow line	99.05	RGH-Weld

Existing & Potential Future Passenger Routes



Condition	Corridor	Description
Existing (State-supported by NC)	Piedmont	Charlotte to Greensboro via NCRR/NS Main Line, then onto Raleigh via NCRR/NS NC Line
Existing (State-supported by NC)	Carolinian	Piedmont corridor, then onto Selma and up the CSX A Line to New York
Existing (other Amtrak routes)	Auto Train	Virginia to Florida via the CSX A Line (limited stops)
Existing (other Amtrak routes)	Crescent	New York to New Orleans via the NS Main Line in North Carolina
Existing (other Amtrak routes)	Floridian	Chicago to Miami; in NC: CSX A Line to Selma, NCRR/NS NC Line to Cary, CSX S Line to Hamlet
Existing (other Amtrak routes)	Palmetto	New York to Savannah via the CSX A Line
Existing (other Amtrak routes)	Silver Meteor	New York to Miami via the CSX A Line
Existing (other Amtrak routes)	Silver Star	New York to Tampa; in NC: CSX A Line to Selma, NCRR/NS NC Line to Cary, CSX S Line to Hamlet
Future Known (funded)	S Line (R2R)	Raleigh to Richmond via S Line
Future Proposed (awarded CID)	CLT-WAS	Charlotte to Raleigh via Piedmont corridor, then S Line to Richmond, VA
Future Proposed (awarded CID)	RGH-WLM	Raleigh to Goldsboro via the NCRR/NS NC Line, then Wilmington via the AC Line
Future Proposed (awarded CID)	KM-CLT	Kings Mountain to Charlotte via the NS Main Line
Future Proposed (awarded CID)	WS-RGH	Winston-Salem to Greensboro via NS K Line, then Piedmont corridor to Raleigh
Future Proposed (awarded CID)	FAY-RGH	Fayetteville to Fuquay-Varina on the RFCC VF Line, then NS NS Line to Raleigh
Future Proposed (awarded CID)	ATL-CLT	Atlanta to Charlotte via the NS Main Line in NC
Future Proposed (awarded CID)	ASH-SAL	Asheville to Salisbury via the NS AS Line
Future Proposed (no grant)	RGH-Gville	Raleigh to Greenville via the NS NS Line
Future Proposed (no grant)	HAM-RGH	Hamlet to Cary via the CSX S Line, then NCRR/NS NC to Raleigh
Future Proposed (no grant)	RGH-MHC	Raleigh to Goldsboro via the NCRR/NS NC Line, then Morehead City via the NCRR/NS EC Line
Future Proposed (no grant)	CLT-WS	Charlotte to Mooresville via the NS O Line, then Winston-Salem via the NS LE Line
Future Proposed (no grant)	RGH-Weld	Raleigh to Selma via the NCRR/NS NC Line, then Weldon via the CSX A Line
Future Proposed (no grant)	CLT-WLM	Charlotte to Hamlet via the CSX SF Line, then Wilmington via the CSX SE Line

Project Decision Tree: Terminology

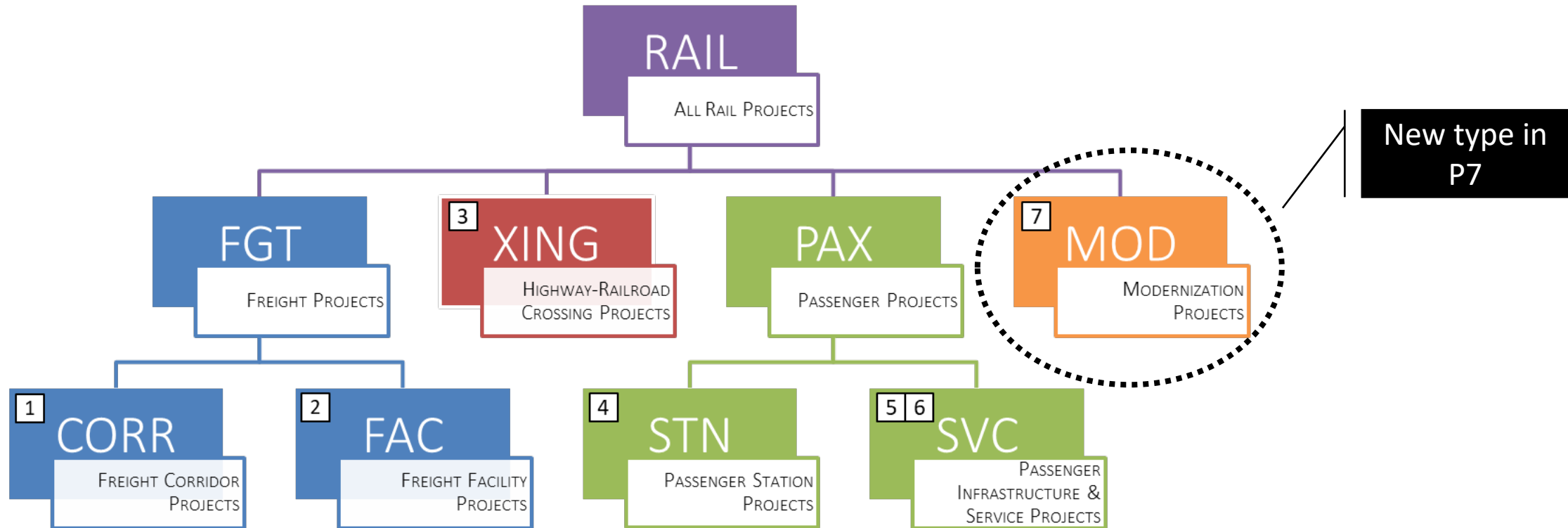


NEW FOR P8 → Project Description Template

- Templates have been developed to aid and assist in writing project descriptions
- Broken down by SIT
- To be posted as a submittal resource at Prioritization Data Page:
<https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>

SIT Code #1	Freight rail corridor improvement or construction (line)		
Project Type	Description Template	Description Example	Notes:
Siding	Construction [OR EXTENSION] of siding in/near MP [INSERT MILE POST] on the [INSERT RAIL LINE] Line in/near [INSERT NEARBY CITY, TOWN, OR COUNTY] to accommodate freight traffic. [INSERT ADDITIONAL DETAILS REGARDING NECESSARY PROJECT IMPROVEMENTS AND ADDITIONS]	Construction of a siding near MP EM 15 on the NS EM Line in Sophia to accommodate freight traffic.	
New Parallel Mainline Track	Construction of a new parallel mainline track between MP [INSERT STARTING MILE POST] and [INSERT ENDING MILE POST] ^[a] on the [INSERT RAIL LINE] Line in/near [INSERT NEARBY CITY, TOWN, OR COUNTY]. [INSERT ADDITIONAL DETAILS REGARDING NECESSARY PROJECT IMPROVEMENTS AND ADDITIONS]	Construction of a new parallel main track between MP AS 8.5 and AS 13.5 on the NS AS Line near Cleveland.	[a] If a single project is improving multiple sections of track, add all track sections using the same format as the template.
Existing Mainline Track Improvement	Improvement to existing mainline between MP [INSERT STARTING MILE POST] and [INSERT ENDING MILE POST] ^[a] on the [INSERT RAIL LINE] Line in/near [INSERT NEARBY CITY, TOWN, OR COUNTY]. [INSERT ADDITIONAL DETAILS REGARDING NECESSARY PROJECT IMPROVEMENTS AND ADDITIONS]	Construction of a new parallel main track between MP MAIN 404.8 and MAIN 407.2 on the NS MAIN Line near Bessemer City.	[a] If a single project is improving multiple sections of track, add all track sections using the same format as the template.
Freight Line Extension	Construction of rail line extension from MP [INSERT MILE POST NUMBER] in/near [INSERT NEARBY CITY, TOWN, OR COUNTY] to support new rail volumes to [FREIGHT LOCATION WHERE FREIGHT ACCESS IS NEEDED]. [INSERT ADDITIONAL DETAILS REGARDING NECESSARY PROJECT IMPROVEMENTS AND ADDITIONS]	Construction of rail line extension from MP AF 286.60 near Invista to support new rail volumes from Pender Commerce Park. Project includes at-grade crossing improvements to US 421 (Crossing # 629 171T).	
Crossover(s) on Parallel Tracks	Construction of [OR IMPROVEMENT TO] crossover(s) in/near MP [INSERT MILE POST] on [INSERT RAIL LINE] in/near [INSERT NEARBY CITY, TOWN, OR COUNTY] [INSERT ADDITIONAL DETAILS REGARDING NECESSARY PROJECT IMPROVEMENTS AND ADDITIONS]	Construction of a universal crossover near MP NC 77 on the NS NC Line in Raleigh. Location dependent upon Powell Dr and Blue Ridge Rd constraints.	

Rail Project Types for STI



Specific Improvement Type (SIT) Legend

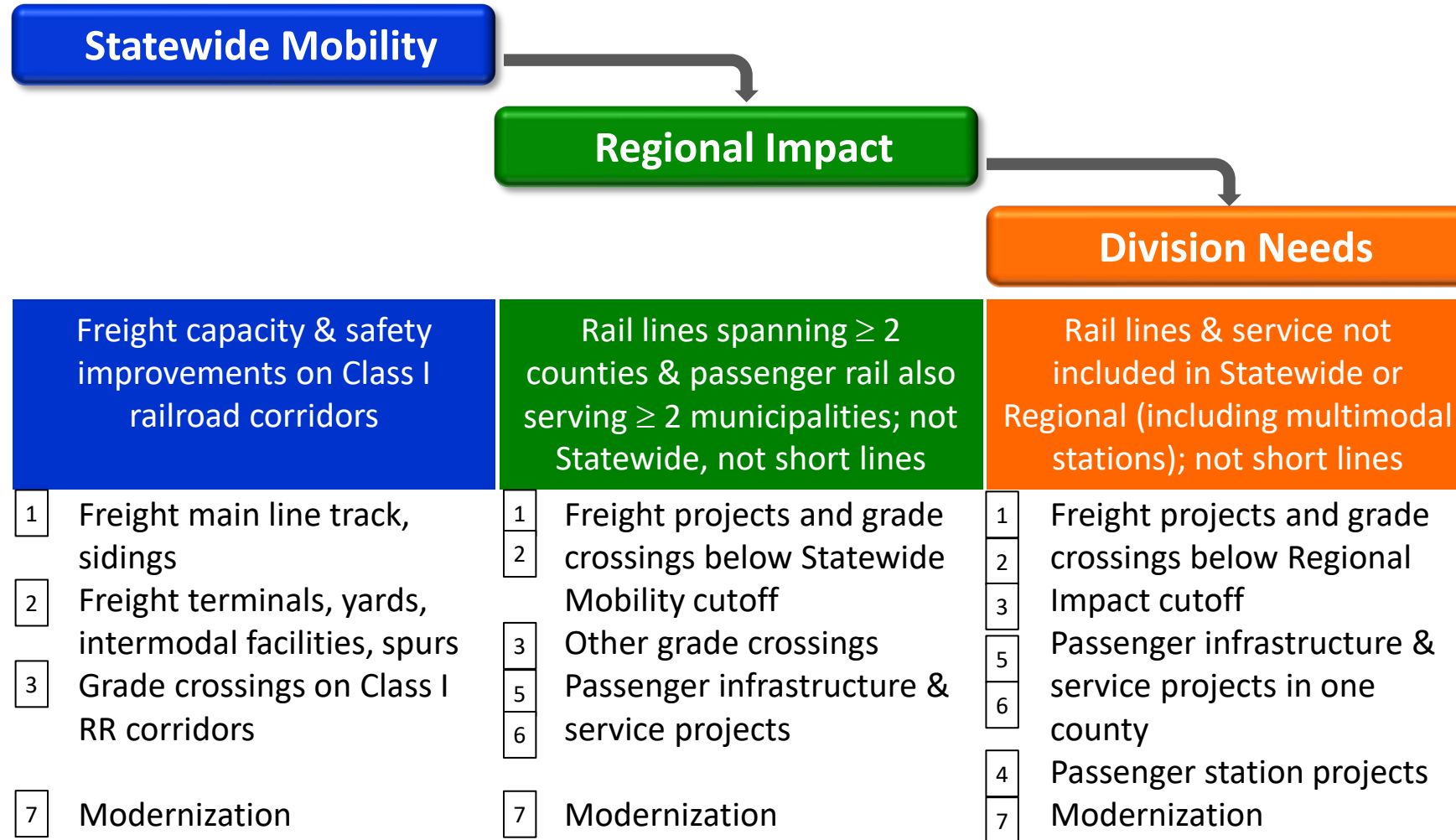
- | | |
|---|--|
| 1 | = Freight rail corridor improvement or construction (line) |
| 2 | = Freight rail facility improvement or construction (point) |
| 3 | = Highway-rail crossing improvement (point) |
| 4 | = Passenger rail station improvement or construction (point) |
| 5 | = Passenger rail service (line) |
| 6 | = Other passenger rail improvements (point) |
| 7 | = Modernization project (line) |

Rail Project Types

SIT Codes – Specific Improvement Types

1	Line	Freight rail corridor improvement or construction (main line track, sidings)
2	Point	Freight rail facility improvement or construction (terminals, yards, intermodal facilities, spurs)
3	Point	Highway-rail crossing improvement
4	Point	Passenger rail station improvement or construction
5	Line	Passenger rail service
6	Line	Passenger rail other infrastructure
7	Line	Modernization (freight or passenger)

STI Law Eligibility – Rail Projects



P8 Rail Scoring

Criteria	Measure	Statewide Mobility* (100%)	Regional Impact (70%)	Division Needs (50%)
Benefit-Cost	Benefit-Cost score	35%	25%	10%
System Opportunities	(Accessibility/Connectivity score x 50%) + (Multimodal score x 50%)	15%	10%	15%
Safety	Safety score	30%	15%	10%
Capacity & Diversion	(Volume/Capacity score x 75%) + (Highway Diversion score x 25%)	10%	10%	10%
Economic Competitiveness	Economic Competitiveness score	10%	10%	5%

*Only Class I Freight projects are eligible in Statewide Mobility Category

Passenger projects are only eligible at Regional Impact and Division Needs Categories

Key Data Inputs by Rail Project Type

P8 Methodology

Criteria	XING	FGT	PAX SVC	PAX STN	MOD
• Raw Measure					
Benefit-Cost					Travel Times
	Crash Data				Energy Used
	Delay		Vehicle Miles Traveled		Pollutants Emitted
	Project Costs, Vehicle Hours Traveled				
System Opportunities					
• Accessibility/Connectivity	Employee-based	Mile-based	Point-of-Interest-based		N/A in P7.0
• Multimodal	Lookup Table				
Safety	Investigative Index	Investigative Index*			
Capacity & Diversion					
• Volume/Capacity	AADT/Capacity	Trains/Track Capacity	Riders vs. Seats	Riders vs. Sq Ft	Operational Capacity
• Highway Diversion	N/A	Truck Vol Reduction/ Diversion Distance	Passenger-Miles		N/A in P7.0
Economic Competitiveness	Year 20 Full-Time Jobs & Weighted Unemployment				

* If submitted project has improved crossings, they will be scored.

NCDOT Rail Division Team

- STI Rail Team as a whole: RailDivisionSTIteam@ncdot.gov
- How can they help?
 - Refining project descriptions
 - Finding the best project type fit for a submission
 - Estimating project costs
 - Conversing with Class I railroads (CSX, NS)

Components of Each Criterion by Project Type

- For each criterion, the following information will now be shared:
 - Definition and purpose
 - Highlights (important notes and/or results)
 - Criterion calculation
- Note, the criteria are shown from easiest to most complex to calculate
- Note, the following details are available upon request
 - Calculations and tools to yield the Raw Measure Score
 - Necessary data inputs

CRITERION: SafetyDescription**Definition**

- Measurement of crash potential at highway-rail crossings based on the NCDOT Rail Division's FHWA-approved SARAHI Investigative Index.
- All rail projects with crossing improvements receive safety points.

Highlights

- Projects with solely highway-rail crossing improvements rise to the top in this criterion.

CRITERION: SafetyCriterion

Safety = SCALED Measure Safety Score

CRITERION: SafetyRaw Measure

$$Safety = \sum_{k=1}^K \left[\left(\begin{matrix} SARAH \\ Investigative \\ Index \end{matrix} \right)_k \times \left(\begin{matrix} Mitigation \\ Factor \end{matrix} \right)_k \right]$$

for all highway–rail crossings k being improved in project

CRITERION: SafetyInputs**Where:**

- SARAH Investigative Index = an integer ranking of hazard-potential; derived from level of crossing protection, highway traffic volume, train volume & speed, track parameters, crash history, and sight distance
- Mitigation Factor:
 - 1.0 = Grade separation (eliminates risk)
 - 0.5 = At-grade improvements (reduces risk)

CRITERION: System OpportunitiesDescription**Definition**

- Measurement of the project's degree of access to industrial/commercial development or nearby points of interest, and the degree of interaction between Rail and other modes (multimodal benefits).

Highlights

- Criterion has been satisfactory/working effectively.

CRITERION: System Opportunities

Criterion


System Opportunities =

$$0.50 \left(\frac{\text{Accessibility / Connectivity}}{\text{SCALED Measure Score}} \right) + 0.50 \left(\frac{\text{Multimodal}}{\text{SCALED Measure Score}} \right)$$

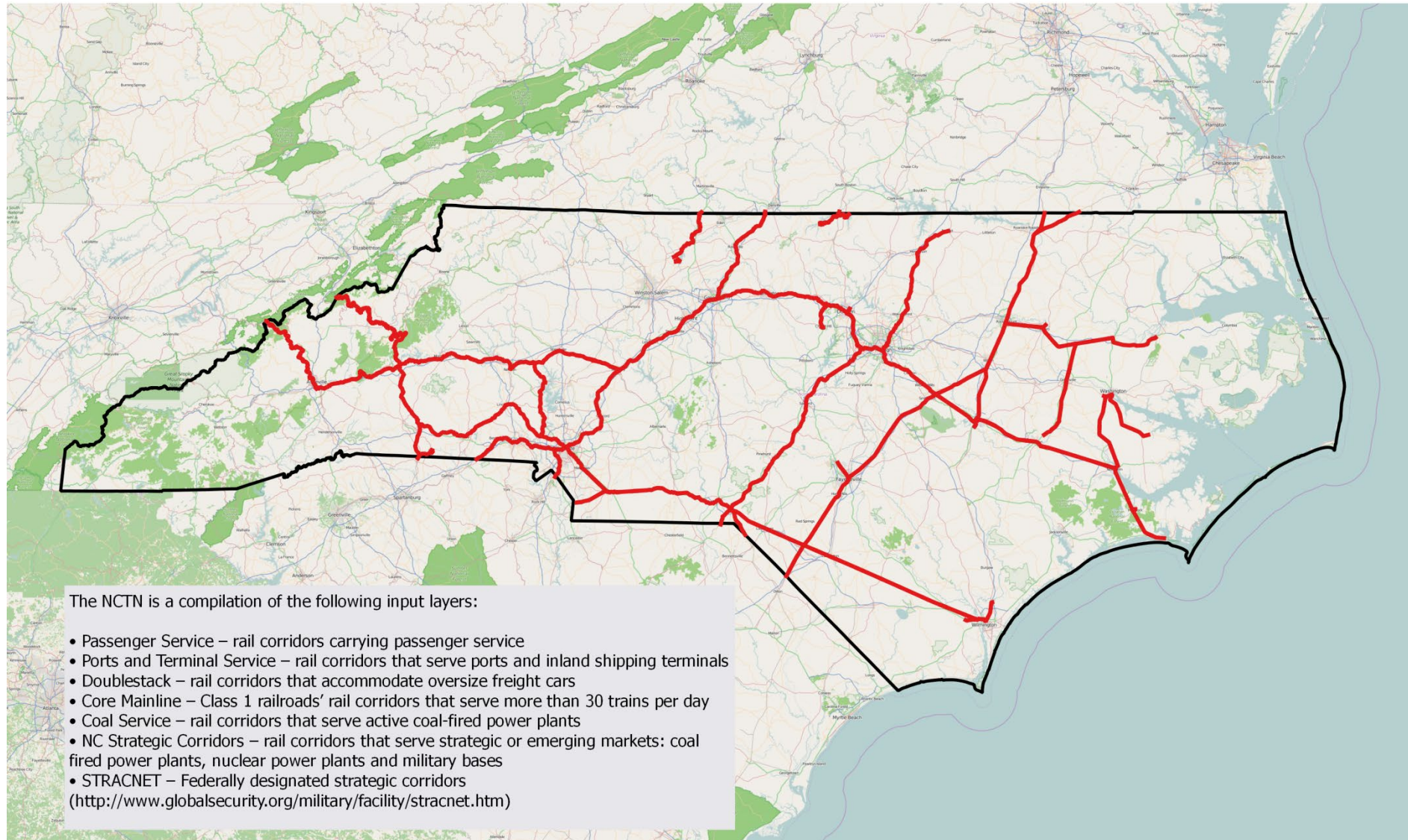
CRITERION: System Opportunities

Raw Measure

Accessibility/Connectivity

XING	
FGT	$= \left(\frac{\text{Percentage of project that improves the NC Transportation Network statewide rail system}}{\text{}} \right)$
PAX	$= \left(\frac{\text{POIs within 10 miles of new station}}{\text{Average POIs within 10 miles of existing state – supported stations}} \right)$

North Carolina Transportation Network (Rail Corridors)



CRITERION: System OpportunitiesRaw Measure
Multimodal

Score based on:

- potential for benefit of projects in other modes
- relative degree of interaction between Rail and other modes

XING	<ul style="list-style-type: none">• Benefits: Highway, Bike/Ped• Projects occur more frequently and have highest exposure to other modes due to use of crossings by all trains	100
FGT	<ul style="list-style-type: none">• Benefits: Highway• Projects at next level of frequency; allows for reduced trucks on highway therefore increasing capacity	66
PAX SVC	<ul style="list-style-type: none">• Benefits: Public Transportation, Bike/Ped• Exposure to other modes is limited to time of day and ridership	33
PAX STN	<ul style="list-style-type: none">• No currently recognized benefit to other modes	0

CRITERION: System OpportunitiesRaw Measure
Multimodal

- Score based on potential for benefit of projects in other modes
- And on relative degree of interaction between Rail and other modes

XING	<ul style="list-style-type: none"> • Benefits: Highway, Bike/Ped • Projects occur more frequently and have highest exposure to other modes due to use of crossings by all trains 	100
FGT	<ul style="list-style-type: none"> • Benefits: Highway • Projects at next level of frequency; allows for reduced trucks on highway therefore increasing capacity 	66
PAX SVC	<ul style="list-style-type: none"> • Benefits: Public Transportation, Bike/Ped • Exposure to other modes is limited to time of day and ridership 	33
PAX STN	<ul style="list-style-type: none"> • No currently recognized benefit to other modes 	0
MOD	<ul style="list-style-type: none"> • No currently recognized benefits to other modes 	0

CRITERION: Capacity & DiversionDescription**Definition**

- Measurement of train volume compared to track capacity, and the amount of freight and/or passenger volumes diverted off highways by the project.

Highlights

- Criterion has been satisfactory/working effectively.
- Freight project types rise to the top.

CRITERION: Capacity & DiversionCriterion

$$\left(\begin{array}{c} \text{Capacity \& Diversion} \\ \text{Criteria Score} \end{array} \right) = 0.75 \left(\begin{array}{c} \text{Volume/Capacity} \\ \text{SCALED Measure Score} \end{array} \right) + 0.25 \left(\begin{array}{c} \text{Highway Diversion} \\ \text{SCALED Measure Score} \end{array} \right)$$

CRITERION: Capacity & DiversionRaw Measure
Volume/Capacity

XING	<ul style="list-style-type: none"> based on peak average daily traffic (highway), roadway capacity, and the State Authoritative Rail and Highway database $= MAX \left(\frac{AADT_k}{Highway Capacity_k} \right) \text{ for all improved sites } k \text{ in project}$
FGT	<ul style="list-style-type: none"> based on track charts, reported rail volumes, and capacity modeling $= \frac{Total Daily Trains}{Typical Corridor Capacity}$
PAX SVC	$= \frac{Daily Riders}{Daily Seats}$
PAX STN	<ul style="list-style-type: none"> based on Amtrak station design standards, track charts, and equipment specifications Includes seating and standing space and peak hour traffic

CRITERION: Capacity & DiversionRaw Measure
Volume/Capacity

XING	<ul style="list-style-type: none"> based on peak average daily traffic (highway), roadway capacity, and the State Authoritative Rail and Highway database $= MAX \left(\frac{AADT_k}{Highway Capacity_k} \right) \text{ for all improved sites } k \text{ in project}$
FGT	<ul style="list-style-type: none"> based on track charts, reported rail volumes, and capacity modeling $= \frac{Total Daily Trains}{Typical Corridor Capacity}$
PAX SVC	$= \frac{Daily Riders}{Daily Seats}$
PAX STN	<ul style="list-style-type: none"> based on Amtrak station design standards, track charts, and equipment specifications Includes seating and standing space and peak hour traffic
MOD	<ul style="list-style-type: none"> Based on railroad timetables, reported rail volumes, and rail operations applied $= Operational Capacity_{Before} - Operational Capacity_{After}$

CRITERION: Capacity & Diversion

Raw Measure

Highway Diversion

XING	$= 0$
FGT	$= \textit{Annual Volume Reduction} \times \textit{Diversion Distance}$
PAX	$= \textit{CarShare} \times \textit{PaxMiles}$

CRITERION: Benefit-CostDescription**Definition**

- Measurement of monetized benefits compared to the cost of the project to NCDOT, and the amount of other/local funds compared to the total project cost.

Highlights

- Criterion has been satisfactory/working effectively.
- Inputs strongly vary from project type to project type.
- Highway-railway crossing project types rise to the top.

CRITERION: Benefit-CostCriterion

$$\left(\begin{array}{c} \text{Benefit-Cost} \\ \text{Criteria Score} \end{array} \right) = \left(\begin{array}{c} \text{Benefit-Cost} \\ \text{SCALED Measure Score} \end{array} \right) + \left(\begin{array}{c} \text{Funding Leverage} \\ \text{Additional Points} \end{array} \right)$$

With:

$$\left(\begin{array}{c} \text{Funding Leverage} \\ \text{Additional Points} \end{array} \right) = \left[100 \times \frac{\text{Other Funds}}{\left(\begin{array}{c} \text{Estimated Total} \\ \text{Project Cost[CON \& ROW]} \end{array} \right)} \right]$$

CRITERION: Benefit-CostRaw Measure

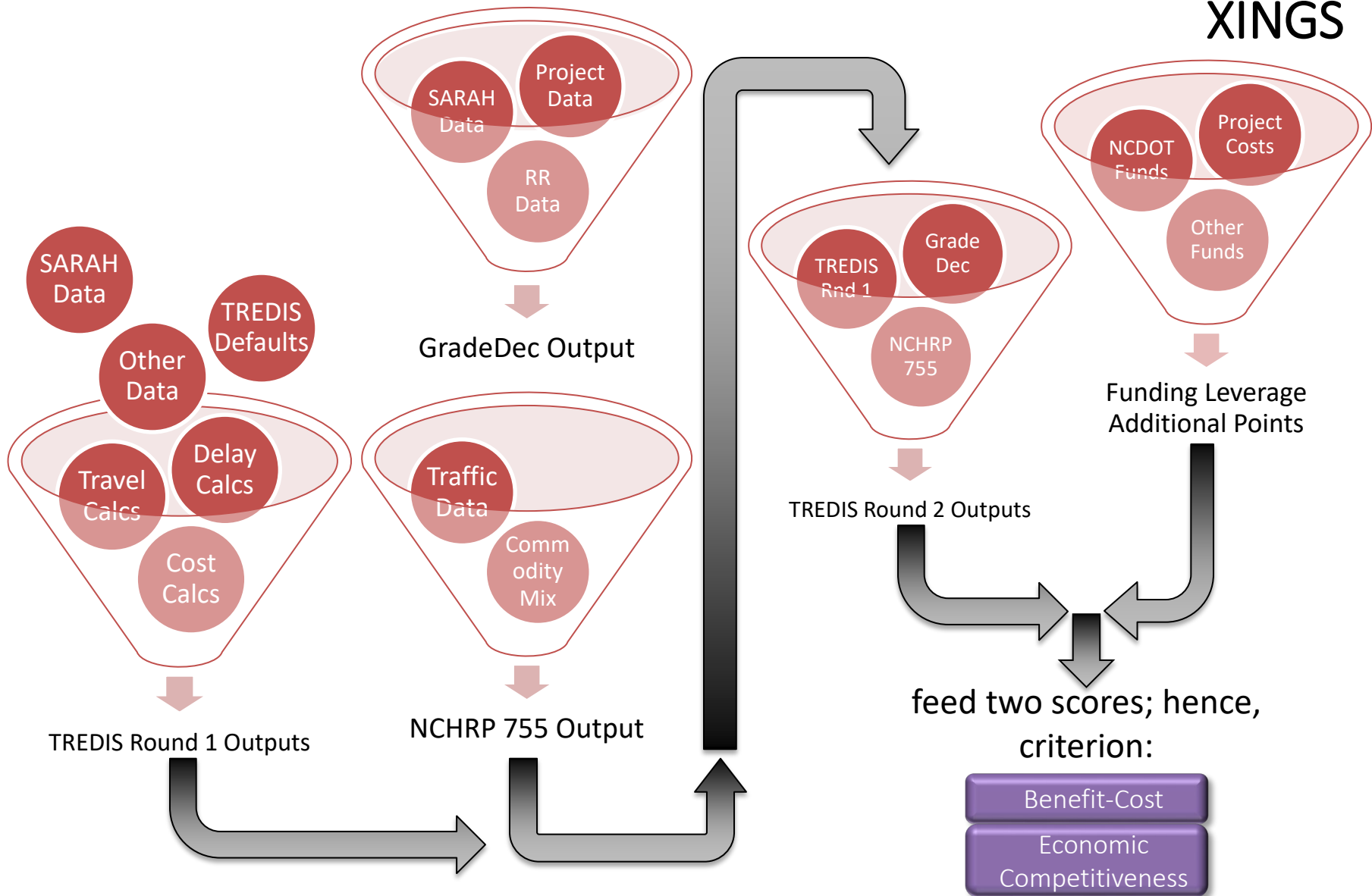
$$\left(\begin{array}{c} \text{Benefit-Cost} \\ \text{RAW} \end{array} \right) = \frac{\left(\begin{array}{c} \text{Rail Monetized} \\ \text{Benefits[adjusted]} \end{array} \right)}{(\text{Cost to NCDOT})}$$

Where:

- Rail Monetized Benefits = $\left(\begin{array}{c} \text{Benefit Cost Ratio} \\ \text{Full Societal BCA} \\ \text{All Benefit Categories} \end{array} \right)$ **TREDIS Output**

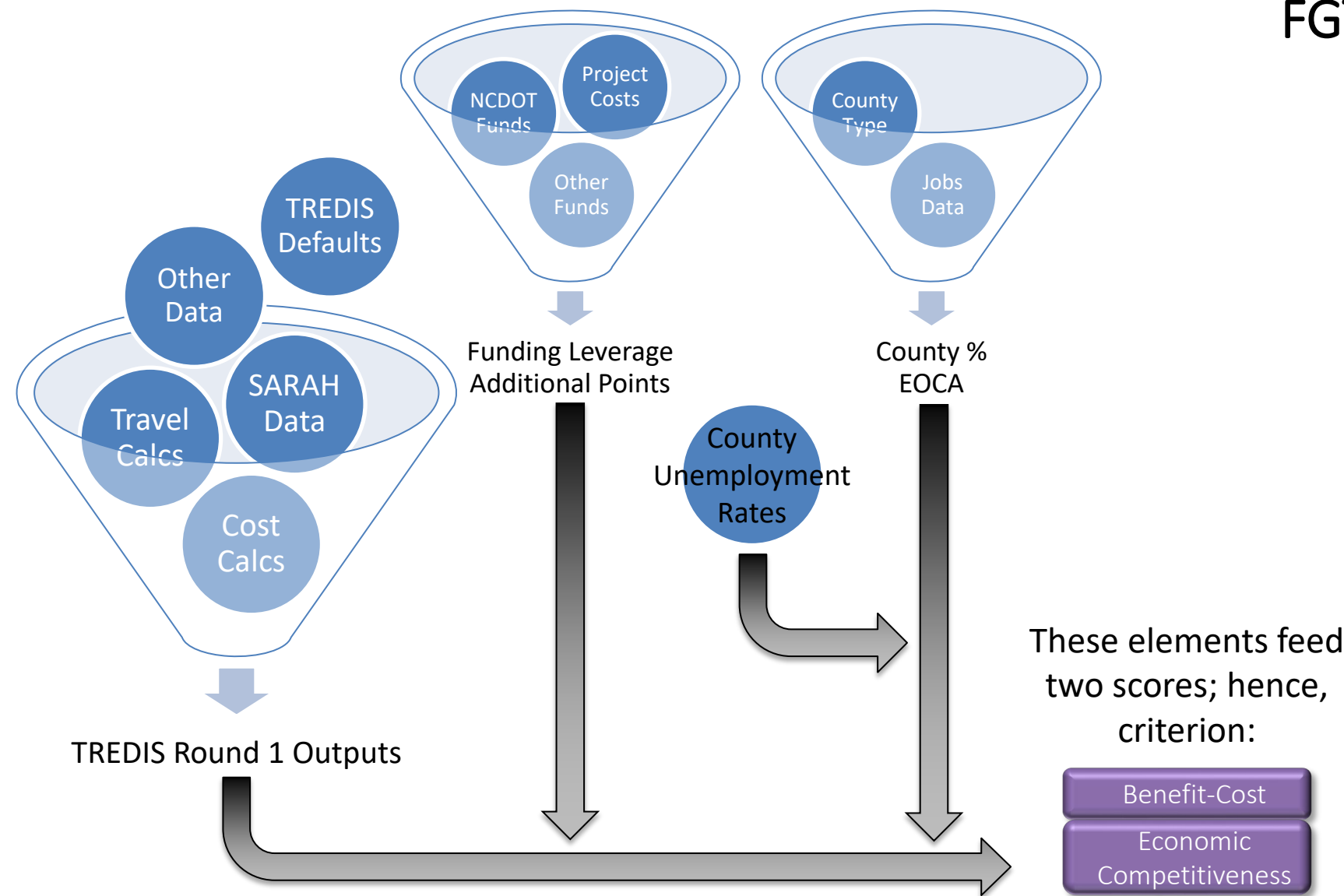
CRITERION: Benefit-Cost

Inputs
XINGS



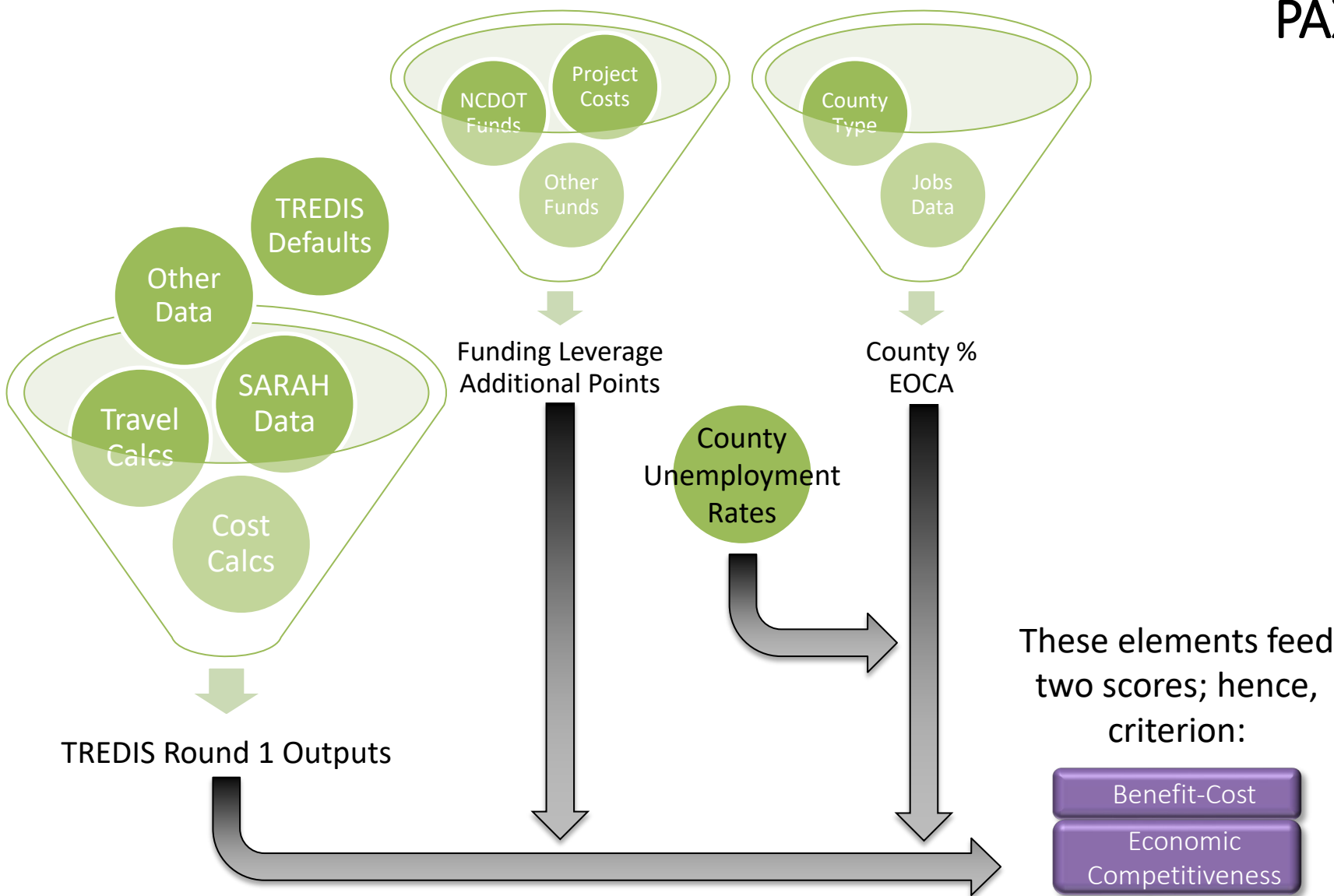
CRITERION: Benefit-Cost

Inputs
FGT



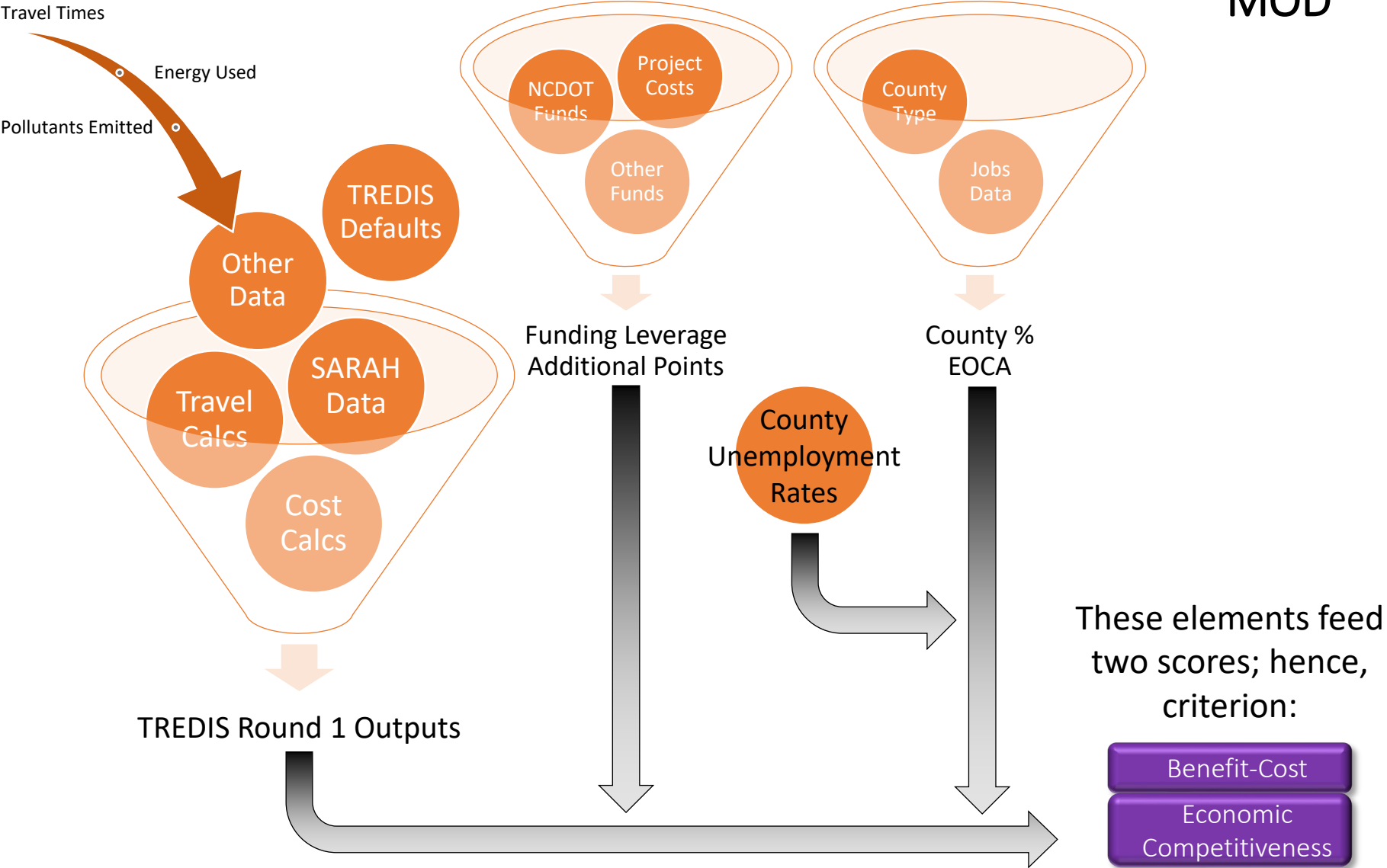
CRITERION: Benefit-Cost

Inputs
PAX



CRITERION: Benefit-Cost

Inputs
MOD



CRITERION: Economic CompetitivenessDescription**Definition**

- Measurement of the estimated number of full-time jobs created in 20 years.

Highlights

- Requires complex set of inputs, intermediate calculations, and software runs.
- Criterion has been satisfactory/working effectively.
- Freight project types rise to the top.

CRITERION: Economic Competitiveness Criterion

$$\left(\begin{array}{c} \text{Economic Competitiveness} \\ \text{Criteria Score} \end{array} \right) = \left(\begin{array}{c} \text{Economic Competitiveness} \\ \text{SCALED Measure Score} \end{array} \right)$$

CRITERION: Economic Competitiveness Raw Measure

$$\left(\begin{array}{c} \text{Economic Competitiveness} \\ \text{RAW} \end{array} \right) = \overbrace{\left(\begin{array}{c} \text{Year 20} \\ \text{Full-time Jobs} \end{array} \right)}^{\text{TREDIS Output}} \times \left(\begin{array}{c} \text{Weighted Unemployment} \\ \text{Rate Across Counties } j \end{array} \right)$$

CRITERION: Economic Competitiveness Inputs

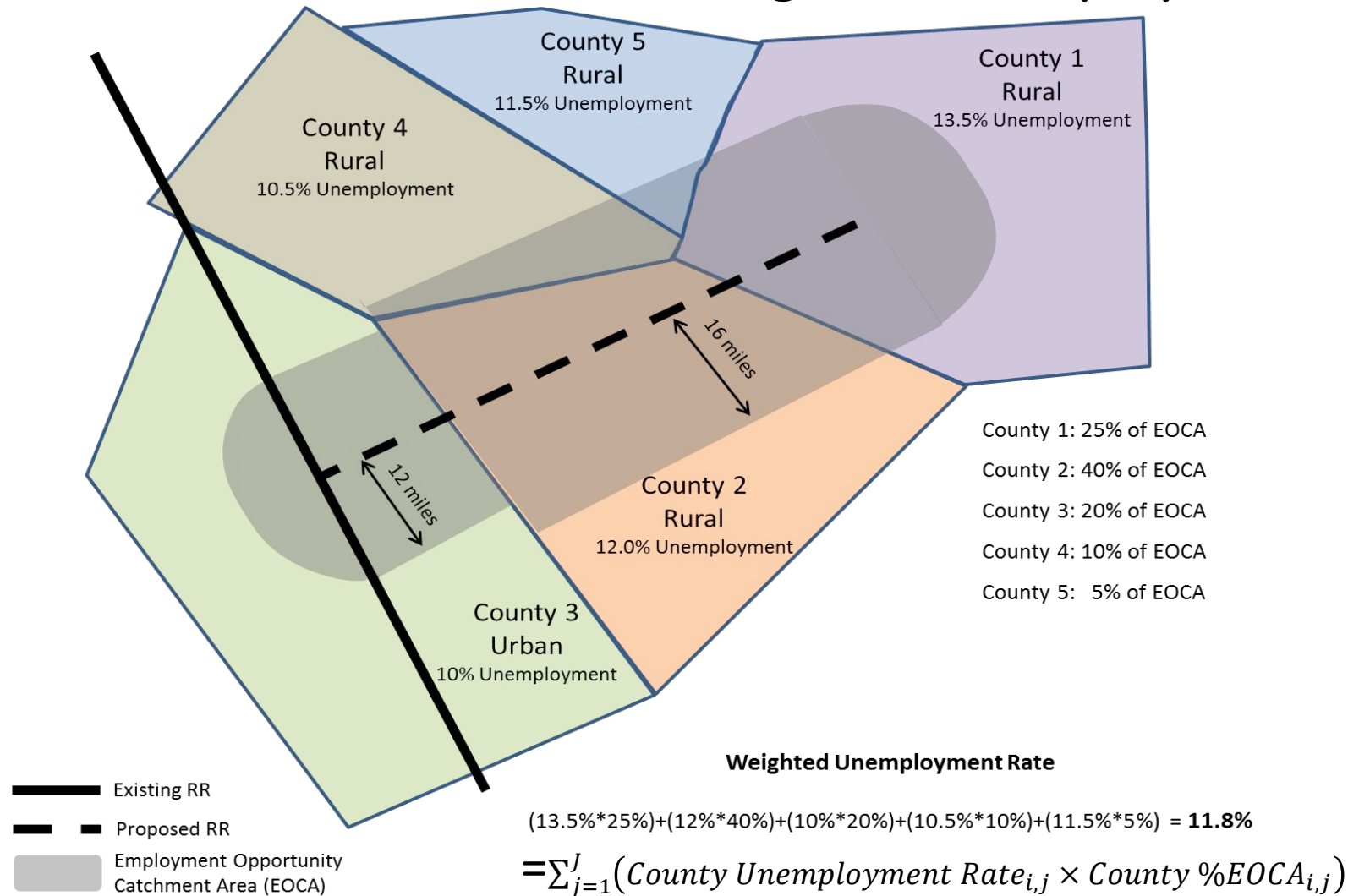
Weighted Unemployment Rate

$$\left(\begin{array}{c} \text{Weighted Unemployment Rate} \\ \text{across all touched counties} \end{array} \right)$$

CRITERION: Economic Competitiveness

Inputs

Weighted Unemployment Rate



End of Session 4





NORTH CAROLINA
Department of Transportation

Day 1	Day 2
Begin 9:30am	Begin 9:30am
Introduction	Day 1 Recap
Session 1 – STI Legislation	Session 6 – Scoring Process
Lunch	Session 7 – Scoring Tools and Resources
Session 2 – Prioritization and Programming Basics	Lunch
Session 3 – Prioritization and Programming Process	Session 8 – Submitting Good Candidate Highway Projects
Session 4 – Non-Highway Scoring Details	Session 9 – Select Advanced Scoring Details
Session 5 – Highway Scoring Details	Session 10 – Resources, Upcoming Items, and Takeaways
End by 3:30pm	End by 3:30pm (or earlier)









Session 5: Highway Scoring Details

STI Training

NCDOT SPOT Office

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

Highway Criteria and Measures

<u>Criteria</u>	<u>Measure(s)</u>	<u>Existing Conditions</u>	<u>Project Benefits (Future Conditions)</u>
Congestion	Volume/Capacity + Volume		
Benefit / Cost	(Travel Time Savings + Safety Benefits) / Cost to NCDOT		
Safety Score	Critical Crash Rate, Density, Severity, Safety Benefits		
Economic Competitiveness	% Change in Jobs + % Change in County Economy		
Accessibility / Connectivity	County Economic Indicator, Improve Mobility		
Freight	Truck Volume, Truck %, Future Interstate Completion		
Multimodal	Multimodal Benefits		
Lane Width	Existing Width vs. Standard Width		
Shoulder Width	Existing Width vs. Standard Width		
Pavement Score	Pavement Condition Rating		

Highway Mobility vs. Modernization

Splitting out Mobility and Modernization Highway Specific Improvement Types (SITs)

Modernization

- Updating roadway to current standards
- SIT 16 – Modernize Roadway
- SIT 17 – Upgrade Freeway to Interstate Standards
- WG has recommended new weights for P8 and plans to revisit in P9

Mobility

- Adding capacity to roadway
- SITs (1-15, 18-26)
- WG has recommended Road Diets (SIT 24) to score as either Modernization or Mobility
 - Scored as Modernization by Default
- WG has recommended P7 criteria weights for P8

Highway Specific Improvement Types (SITs)

Highway Specific Improvement Types	
1 - Widen Existing Roadway	14 - Closed Loop Signal System
2 - Upgrade Arterial to Freeway/Expressway	15 - Install Cameras and DMS
3 - Upgrade Expressway to Freeway	16 - Modernize Roadway
4 - Upgrade Arterial to Superstreet	17 - Upgrade Freeway to Interstate Standards
5 - Construct Roadway on New Location	18 – Widen Existing or Construct New Local (Non-State) Roadway
6 - Widen Existing Roadway and Construct Part on New Location	19 – Improve Intersection on Local (Non-State) Roadway
7 - Upgrade At-grade Intersection to Interchange or Grade Separation	20 – Convert Grade Separation to Interchange to Relieve Existing Congested Interchange
8 - Improve Interchange	21 – Realign Multiple Intersections
9 - Convert Grade Separation to Interchange	22 – Construct Auxiliary Lanes or Other Operational Improvements
10 - Improve Intersection	23 - Construct Grade Separation at Highway / Railroad Crossing
11 - Access Management	24 – Implement Road Diet to Improve Safety
12 - Ramp Metering	25 – Upgrade Multiple Intersections
13 - Citywide Signal System	26 – Upgrade Roadway



P8 Highway – Mobility

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Congestion	[Volume] and [Volume/Capacity]	30%	20%	15%
Benefit/Cost	[10-year Travel Time Savings benefit] + [10-year Safety Benefit] / [Cost to NCDOT]	25%	20%	15%
Safety	SEG: Crash Density, Crash Severity, Crash Rate, Safety Benefits INT: Crash Frequency, Crash Severity, Safety Benefits	10%	10%	10%
Freight	[Truck Volumes] and [Truck Percentage]	25%	10%	5%
Economic Competitiveness	TREDIS Model Output: [% Change in Long-Term Jobs] and [% Change in County Economy over 10 years]	10%	-	-
Accessibility / Connectivity	[Measurement of county economic distress indicators] and [degree the project upgrades mobility of the roadway]	-	10%	5%

Project Types: Widening, Intersection/Interchange Improvements, Access Management, and other capacity additions

Highway – Modernization Updates for P8

P7 Criteria / Weights

P8 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 & [Paved] Shoulder Width	30%	15%	5%
[Paved] Shoulder Width	20%	10%	10%	-	-	-	-
Pavement Condition	10%	10%	10%	-	-	-	-



P8 Highway – Modernization

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Congestion	[Volume] and [Volume/Capacity]	10%	5%	5%
Safety	SEG: Crash Density, Crash Severity, Crash Rate, Safety Benefits INT: Crash Frequency, Crash Severity, Safety Benefits	35%	35%	35%
Freight	[Truck Volumes] and [Truck Percentage]	25%	15%	5%
Lane Width / [Paved] Shoulder Width	Existing lane and shoulder widths vs. DOT design standards	30%	15%	5%

Project Types: Modernize Roadway and Upgrade Freeway to Interstate Standards

Highway – Congestion

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	30%	10%
Regional Impact	20%	5%
Division Needs	15%	5%

Purpose – Measure existing level of mobility along roadways by indicating congested locations and bottlenecks

Statewide Mobility 60% - Existing Volume/Capacity Ratio
40% - Existing Volume

Regional Impact 80% - Existing Volume/Capacity Ratio
20% - Existing Volume

Division Needs 100% - Existing Volume/Capacity Ratio

Peak ADT will be used as the Existing Volume

Peak Average Daily Traffic

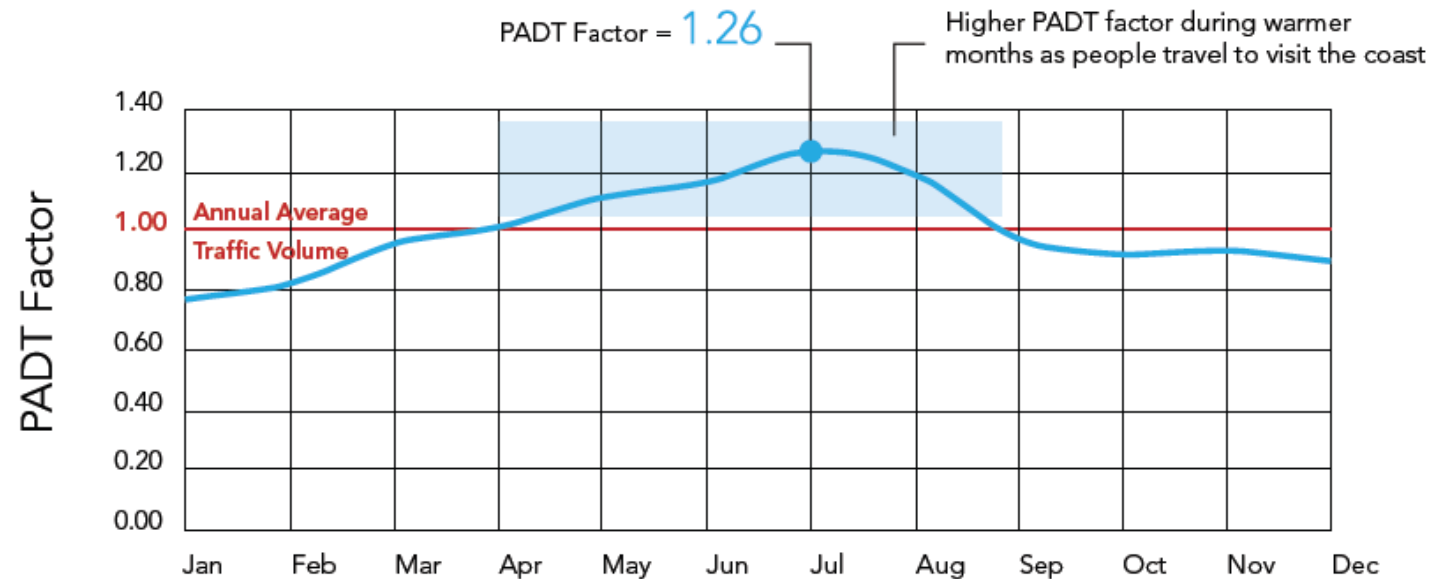
PADT = ADT occurring in peak month (includes weekday & weekend)

Estimated by factoring AADT to the peak month:

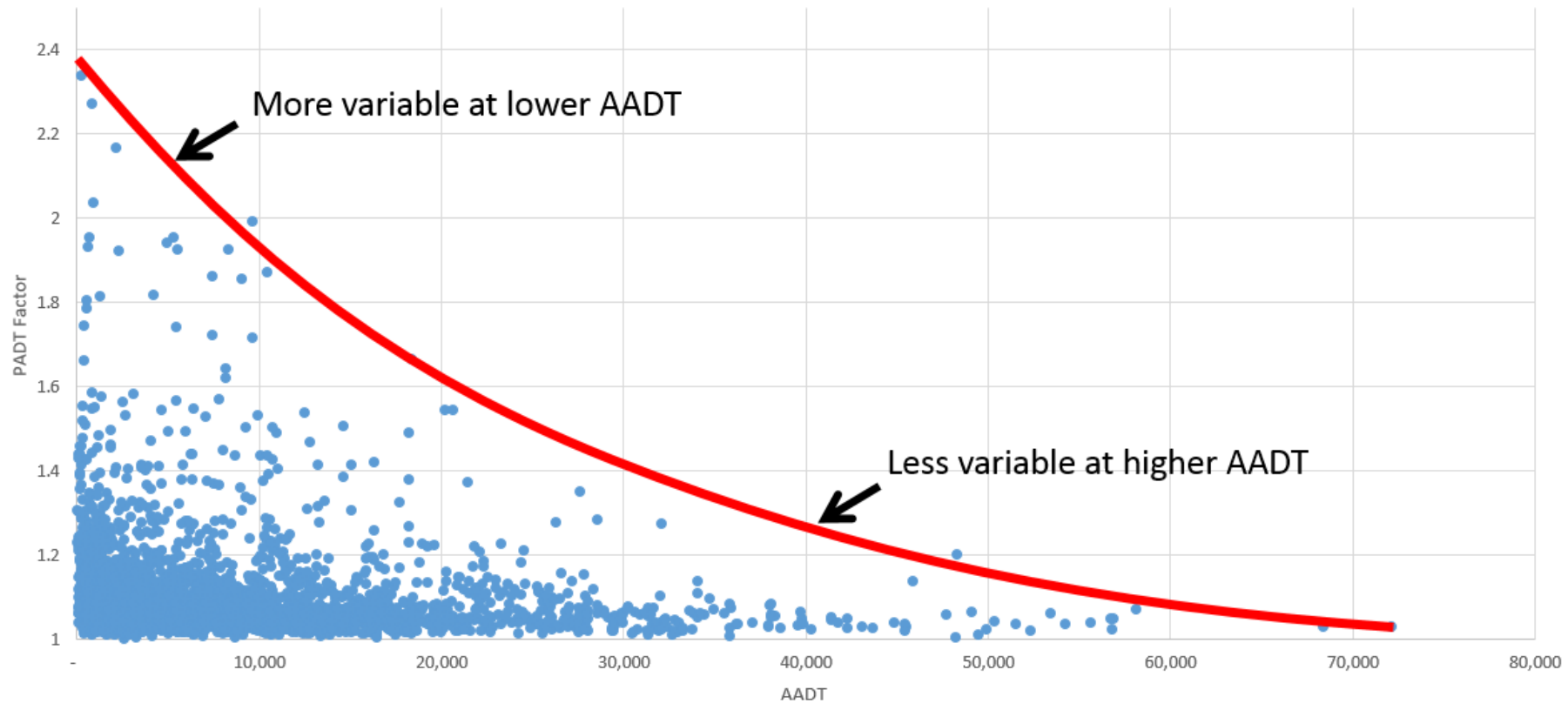
$$\text{PADT} = \text{AADT} \times \text{PADT Factor}$$

Based on seasonal and continuous counts if available

◆ An example for I-40 near Wilmington:



Peak Average Daily Traffic



Highway – Benefit-Cost

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	25%	-
Regional Impact	20%	-
Division Needs	15%	-

Purpose – measure the expected benefits of the project over a 10-year period against the estimated project cost to NCDOT

$$\left[\frac{(\text{Travel Time Savings over 10 years in \$} + \text{Safety Benefits over 10 years in \$})}{\text{Project Cost to NCDOT at time of submittal}} \right] + \left[\left[\frac{\text{Other Funds}}{\text{Total Project Cost}} \right] \times 100 \right]$$

Cost can be lowered and score increased if other funds (non-federal or non-state funds) are designated towards the projects

- *Includes Toll Revenue minus financing costs*

Highway – Benefit-Cost

Benefits Calculations

Travel Time Savings

Multiple approaches for calculating:

- NCSTM – SW & REG corridor projects
- CMT – Intersection / Interchange / Superstreet / Operational projects
- CALC – Others

- Input to TREDIS

Safety benefits

Safety benefit factor X existing # of crashes by monetized severity

Costs - Construction, Right-of-Way, and Utilities

Highway – Economic Competitiveness

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	10%	-
Regional Impact	N/A	N/A
Division Needs	N/A	N/A

Purpose – measure the economic benefits the transportation project is expected to provide in economic activity (GDP) and jobs over 10 years

Score based on Output from **TREDIS[®] (Economic Impact Model)**

50% - % change in County Economy

50% - % change in Long-Term Job Creation

Does NOT include contingent (prospective) development

Criteria is not intended to evaluate projects for recruiting purposes

Highway – Safety

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	10%	35%
Regional Impact	10%	35%
Division Needs	10%	35%

Purpose – measure existing crashes along/at the project location and calculate future safety benefits

SEGMENTS	INTERSECTIONS
20% Crash Density	30% Crash Frequency
20% Crash Severity	30% Severity Index
20% Critical Crash Rate	40% Safety Benefits
40% Safety Benefits	

Based on NCDOT 5-Year mileposted crash data 2020-2024

Highway – Freight

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	25%	25%
Regional Impact	10%	15%
Division Needs	5%	5%

Purpose – Account for key indicators of freight movement

50% (Truck Volume) + 50% (Truck %) + Future Interstate Completion Factor

Future Interstate Completion Factor [Modernization Projects] = $((\text{Project Length} / \text{Miles Needed to Complete Future Interstate Corridor between NHS Routes}) \times 100) / 2$

Future Interstate Completion Factor [All Other Projects] = $((\text{Project Length} / \text{Miles Needed to Complete Future Interstate Corridor between NHS Routes}) \times 100)$

Max Future Interstate Completion Factor = 25

Highway – Accessibility / Connectivity

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	N/A	N/A
Regional Impact	10%	-
Division Needs	5%	-

P8 Goal Statement: Improving accessibility and connectivity to employment centers, tourist destinations and military installations, with a focus on disadvantaged areas

50% - County Economic Indicator – Points are based on economic distress indicators:

- property tax base per capita
- population growth
- median household income
- unemployment rate

50% - Improve Mobility – Projects receive score based on travel time savings per user (P8)

Highway – Multimodal

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	-	-
Regional Impact	-	-
Division Needs	-	-

Purpose – measure degree the highway project benefits other modes

Score based on sum of benefits to other modes

Benefit points awarded based on:

- Proximity to airports, ferry terminals, ports, intermodal terminals, passenger bus or rail stations, park & ride lots, military bases
- If project includes bicycle and/or pedestrian accommodations, transit roadway components (bus-on-shoulder, pullouts, signal prioritization, etc), managed lanes

Highway – Multimodal Benefits Table

Mode	Benefit
Aviation	Within 1 mile of commercial service airport (passenger & freight access points)
Aviation	Within 1 mile of red & blue general aviation airport
Bike/Ped	Includes sidewalks, pedestrian crossings, striped bicycle lanes, wide outside lanes (greater than or equal to 14 feet), OR 4ft paved shoulder
Ferry	Within 1 mile of ferry terminal access point
Port	Within 1 mile of Port of Morehead City OR Port of Wilmington access points
Rail	Within 1 mile of NHS truck / rail intermodal terminal
Rail	Within 1 mile of Amtrak Station access point
Rail	Includes new highway-rail grade separation (primary purpose of project is highway)
Transit	Includes bus pullouts, transit bypass lanes, OR transit signal prioritization
Transit	Includes bus-on-shoulder-system (BOSS) OR managed lanes
Transit	Within 1 mile of major passenger station access points
Transit	Within 1 mile of standalone park and ride lot (minimum # spaces)
Military	Within 1 mile of access point to major military base on STRAHNET / defense access roads

Each row in table is worth 1 point. Project score = sum of points.

Highway – Lane Width

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	-	30% (w/ Shoulder Width)
Regional Impact	-	15% (w/ Shoulder Width)
Division Needs	-	5% (w/ Shoulder Width)

Purpose – measure the existing lane width vs. DOT design standard

Existing Lane Width – DOT design standard Lane Width

- Greater the difference (deficiency), the higher points the project receives

Highway – [Paved] Shoulder Width

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	-	30% (w/ Lane Width)
Regional Impact	-	15% (w/ Lane Width)
Division Needs	-	5% (w/ Lane Width)

Purpose – measure the existing paved shoulder width vs. DOT design standard

Existing Paved Shoulder Width – DOT design standard Paved Shoulder Width

- Greater the difference (deficiency), the higher points the project receives

Highway – Pavement Condition

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	-	-
Regional Impact	-	-
Division Needs	-	-

Purpose – measure the existing pavement condition along the project

100 – Pavement Condition Rating

- Pavement Condition Rating is on a 0 to 100-point scale
 - 100 points reflects brand new pavement
 - 0 points reflects highly degraded pavement
- Greater the difference (deficiency), the higher the criteria score

End of Session 5





NORTH CAROLINA
Department of Transportation

Day 1	Day 2
Begin 9:30am	Begin 9:30am
Introduction	Day 1 Recap
Session 1 – STI Legislation	Session 6 – Scoring Process
Lunch	Session 7 – Scoring Tools and Resources
Session 2 – Prioritization and Programming Basics	Lunch
Session 3 – Prioritization and Programming Process	Session 8 – Submitting Good Candidate Highway Projects
Session 4 – Non-Highway Scoring Details	Session 9 – Select Advanced Scoring Details
Session 5 – Highway Scoring Details	Session 10 – Resources, Upcoming Items, and Takeaways
End by 3:30pm	End by 3:30pm (or earlier)

Day 1 Recap

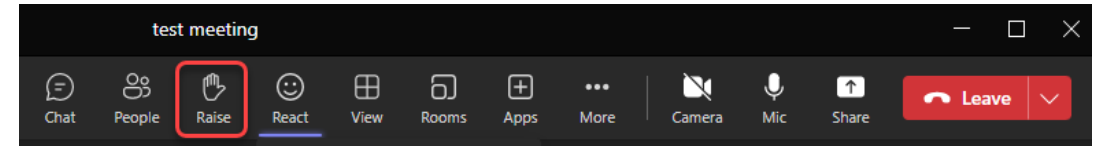
STI Training

NCDOT SPOT Office

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

Housekeeping

- Virtual etiquette:
 - When you are not speaking, please mute yourself
 - Keep cameras off
 - For questions, use the “Raise Hand” feature or type “Q” in the chat
 - If you have technical issues, message “**Drew Finley**” directly
- Participation is encouraged throughout training
 - Experienced partners are welcome to provide knowledge
- Training is being recorded
 - Will be posted along with slides as future resources
- Breaks and Lunch
- Parking Lot



Training Day 2

- Day 1 was theoretical
- Day 2 will focus on practical application
- Takeaways = your role in the process
 - = available resources
 - = SPOT will guide you along the way → guidance & training throughout

Day 1 Recap

- Responses to Day 1 Wrap-Up
- Any other questions from Day 1?

Training Goals

1. Gain a **basic understanding** of the Prioritization, scoring, and programming process
2. Leave with a practicable and applicable understanding of how the process works and **your role in the process**
3. Understand what additional **training and resources** are ahead
 - SPOT@ncdot.gov – best place to go if you don't know where to go

Training Reminders

- This is a LOT of information → **focus on the foundation, takeaways, and who to ask**
- Further training opportunities are coming
- Further documentation and guidance will be available
- It frequently **takes a full cycle** before a person has a working understanding of the process
- Slides and recordings of this session will be posted



NORTH CAROLINA
Department of Transportation

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Introduction	Day 1 Recap
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End by 3:30pm	End by 3:30pm (or earlier)

Session 6: Scoring Process

STI Training

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Intro & Background



Iterative Scoring & Programming Process

Scoring Process

Projects Submitted by MPOs, RPOs, & Divisions

SPOT Review

1. Reviewed for eligibility
2. Data screened & developed
3. Quantitative scores calculated

Statewide Mobility
40% of Funds

1. Projects programmed
2. Projects not programmed cascade to next category

Regional Impact
30% of Funds

1. Local input points assigned
2. Total scores calculated
3. Projects programmed
4. Projects not programmed cascade to next category

Division Needs
30% of Funds

1. Local input points assigned
2. Total scores calculated
3. Projects programmed



Statewide Mobility Score =
100% Quantitative

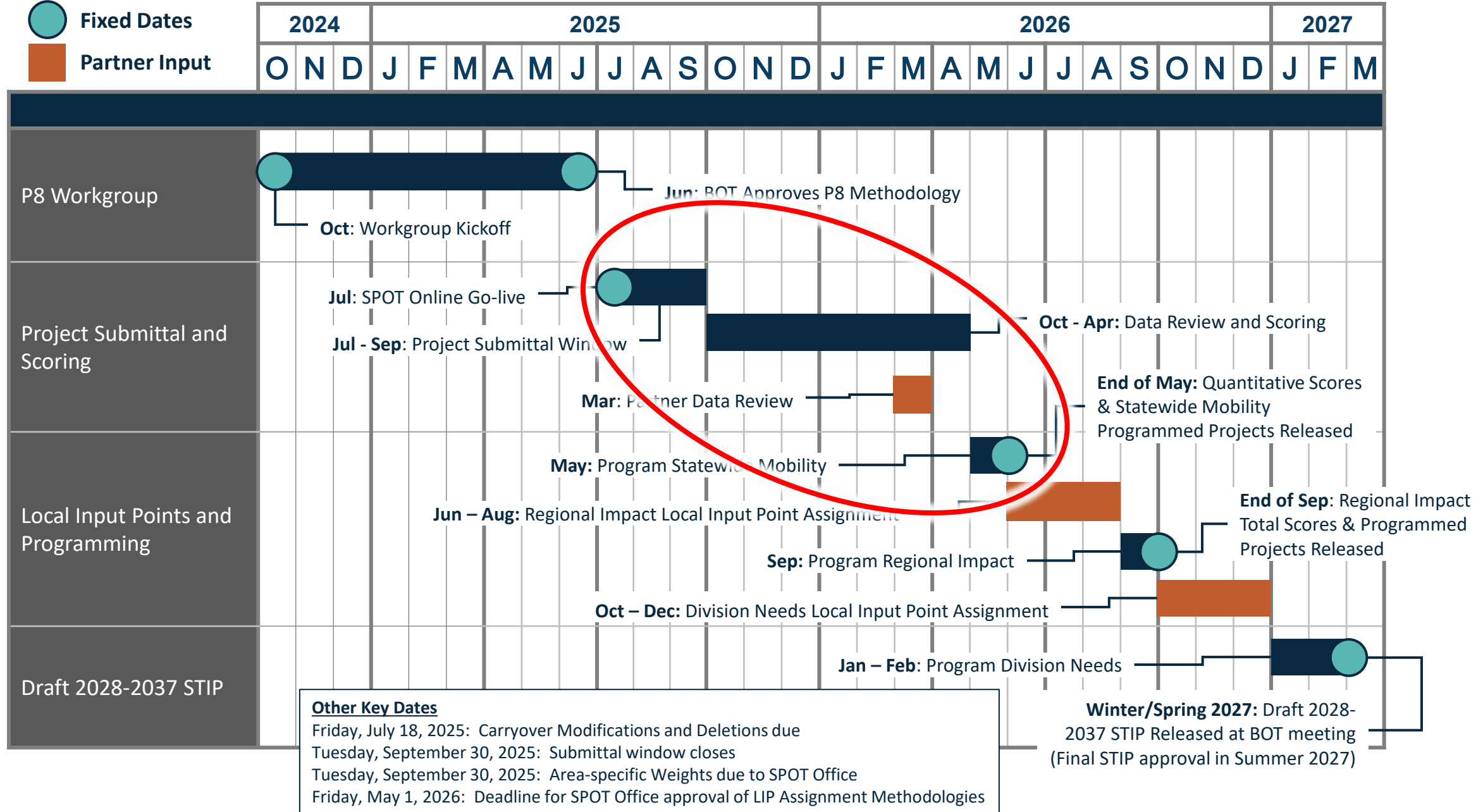
Regional Impact Score =
70% Quantitative +
30% Local Input

Division Needs Score =
50% Quantitative +
50% Local Input

P8 Schedule

October 2024

-  Fixed Dates
-  Partner Input



P8 Timeline

- July – September 2025: MPOs, RPOs, and Divisions submit projects
- October 2025 – April 2026: SPOT / Prioritization Team scores projects
- May 2026: P8 quantitative scores released



Scoring Coordination

- Complex process
- Many different NCDOT business units and external partners involved

Highway Projects	Non-Highway Projects
Congestion Management Unit	Division of Aviation
Technical Services Unit	Integrated Mobility Division / ITRE
Traffic Safety Unit	Ferry Division
North Carolina Turnpike Authority (NCTA)	Rail Division
STIP Unit	SPOT
Feasibility Studies Unit / Central Corridor Engineers	
ITS and Signals Unit	
Transportation Planning Division (TPD)	
GIS Unit	
Consultants	
SPOT	

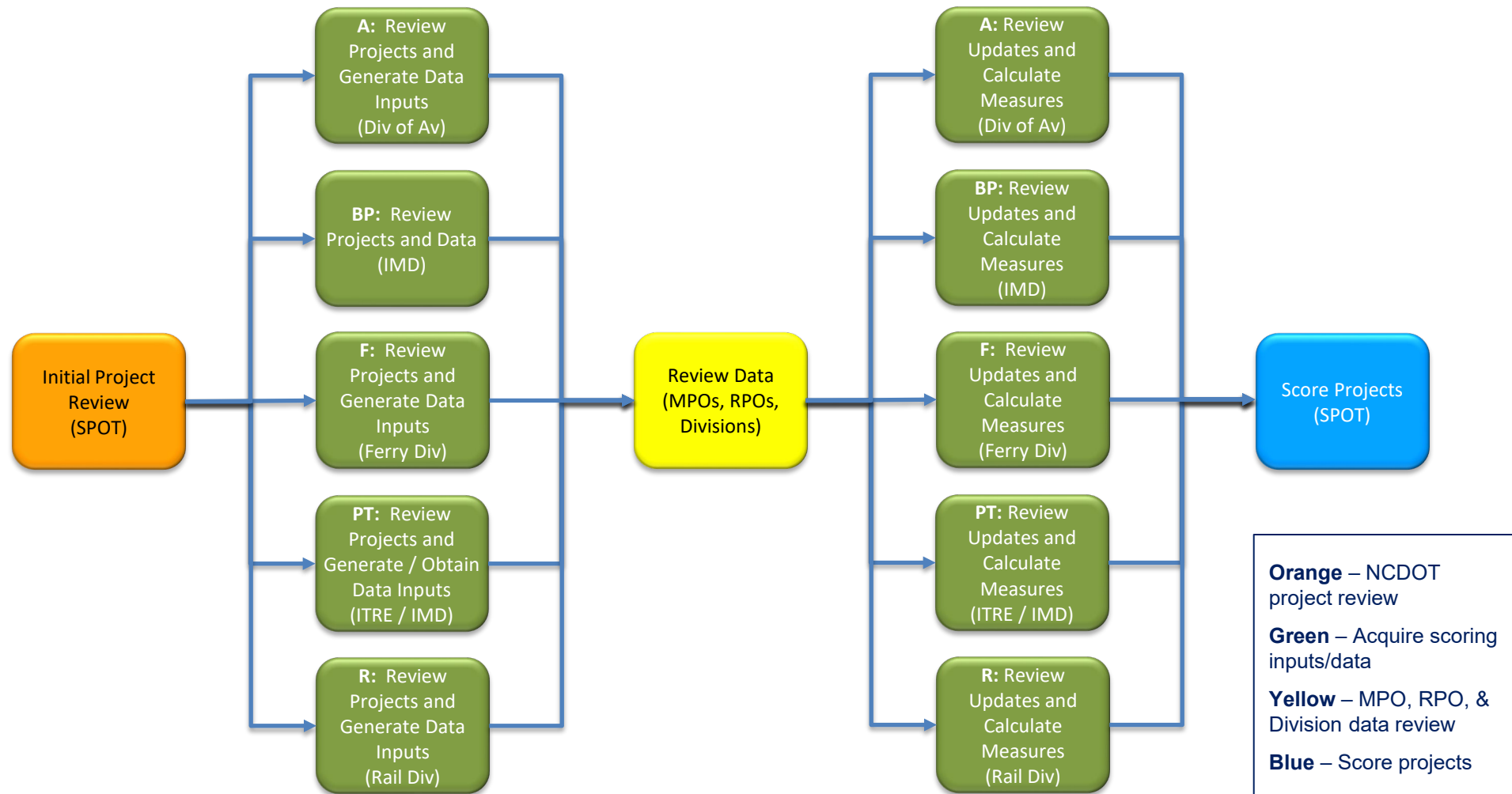
Overall Scoring Process

1. SPOT reviews number of submitted projects for all modes
 - Follow up with each MPO, RPO, and Division if number of submittals was greater or less than the maximum allotment to ensure all approved projects were submitted
2. SPOT reviews eligibility categories of submitted projects
3. Split projects into 6 modal spreadsheets

Non-Highway Process



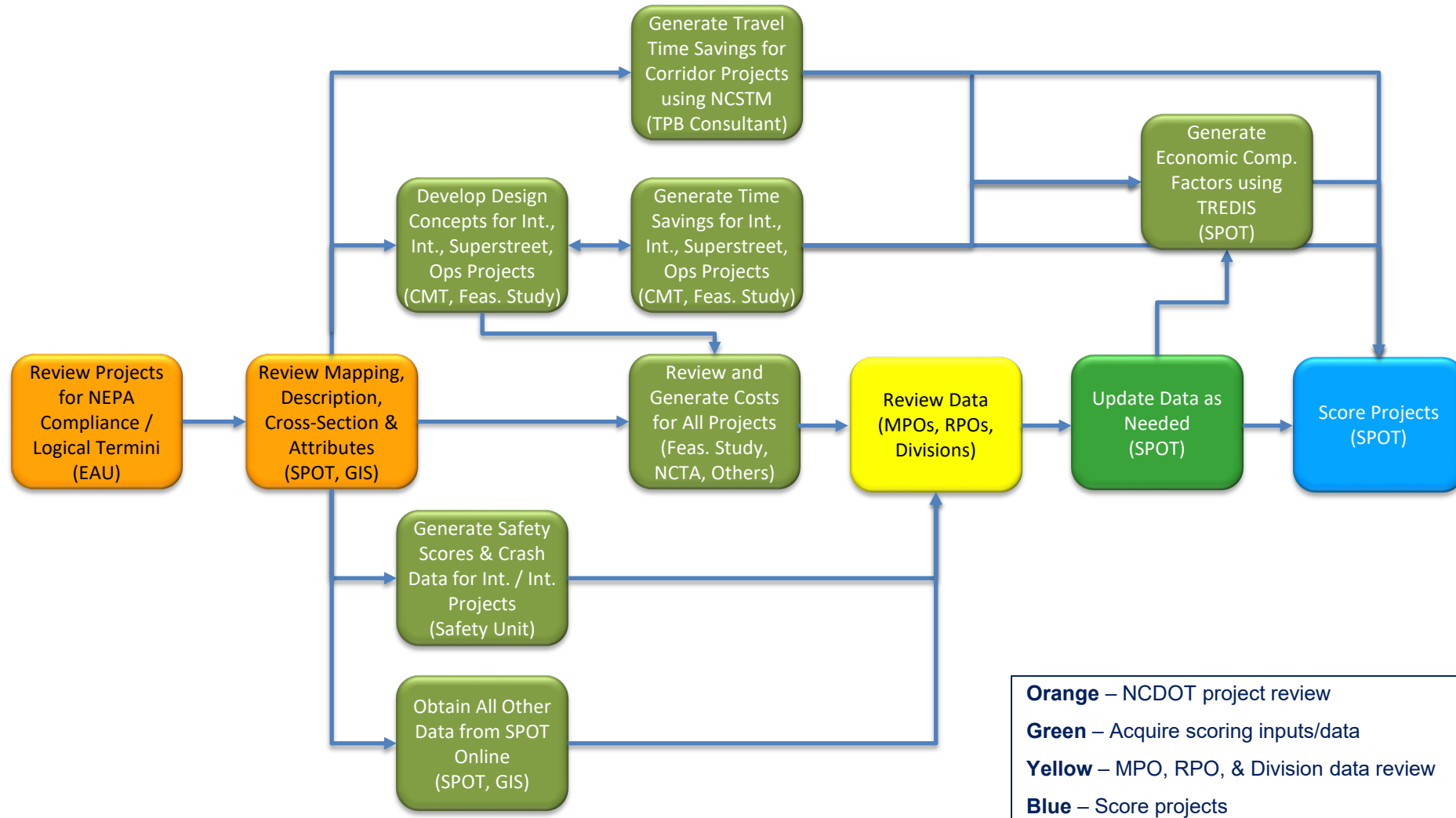
Non-Highway Quantitative Scoring Process



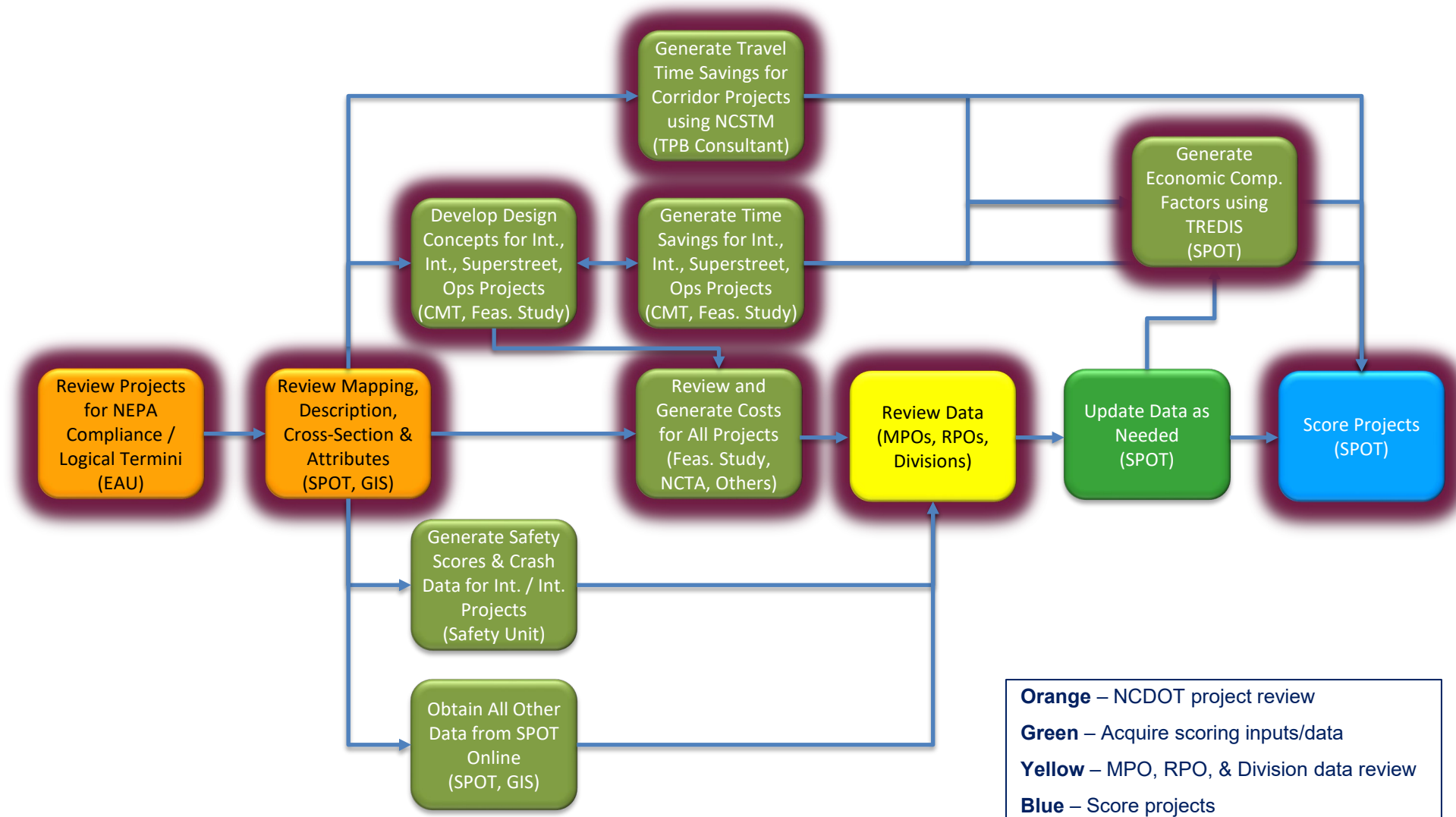
Highway Process



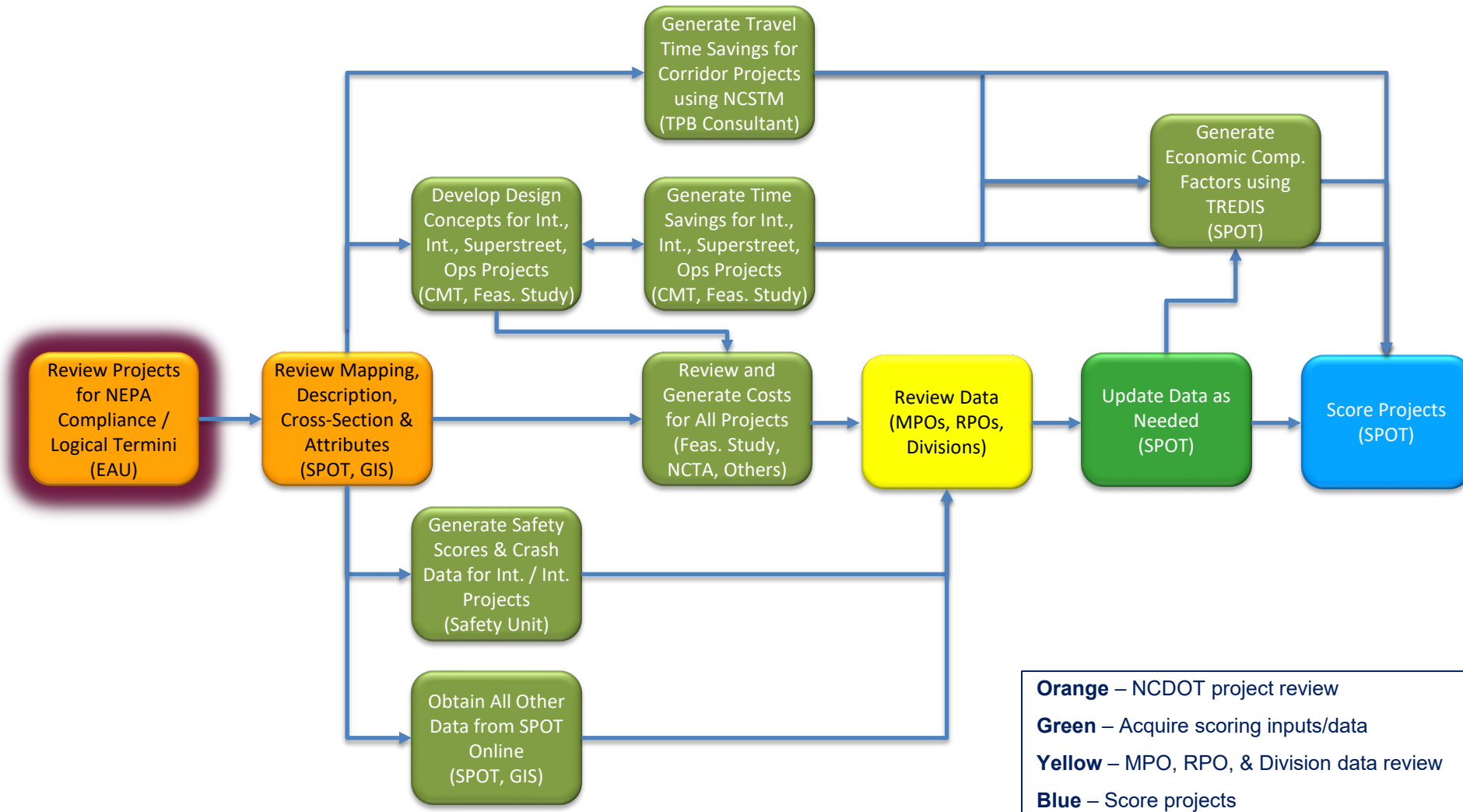
Highway Quantitative Scoring Process



Highway Quantitative Scoring Process



Highway Quantitative Scoring Process

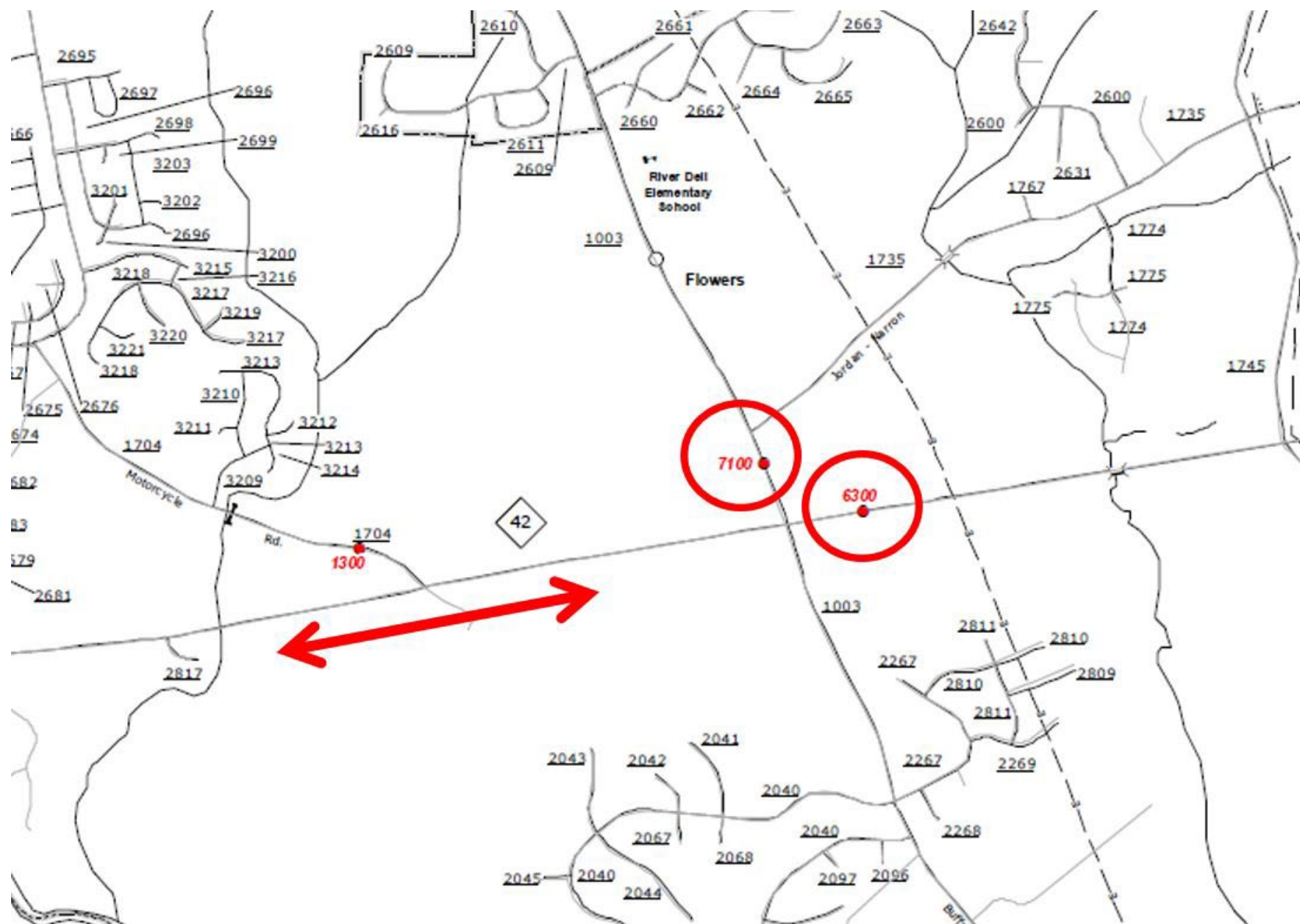


NEPA / Logical Termini Review

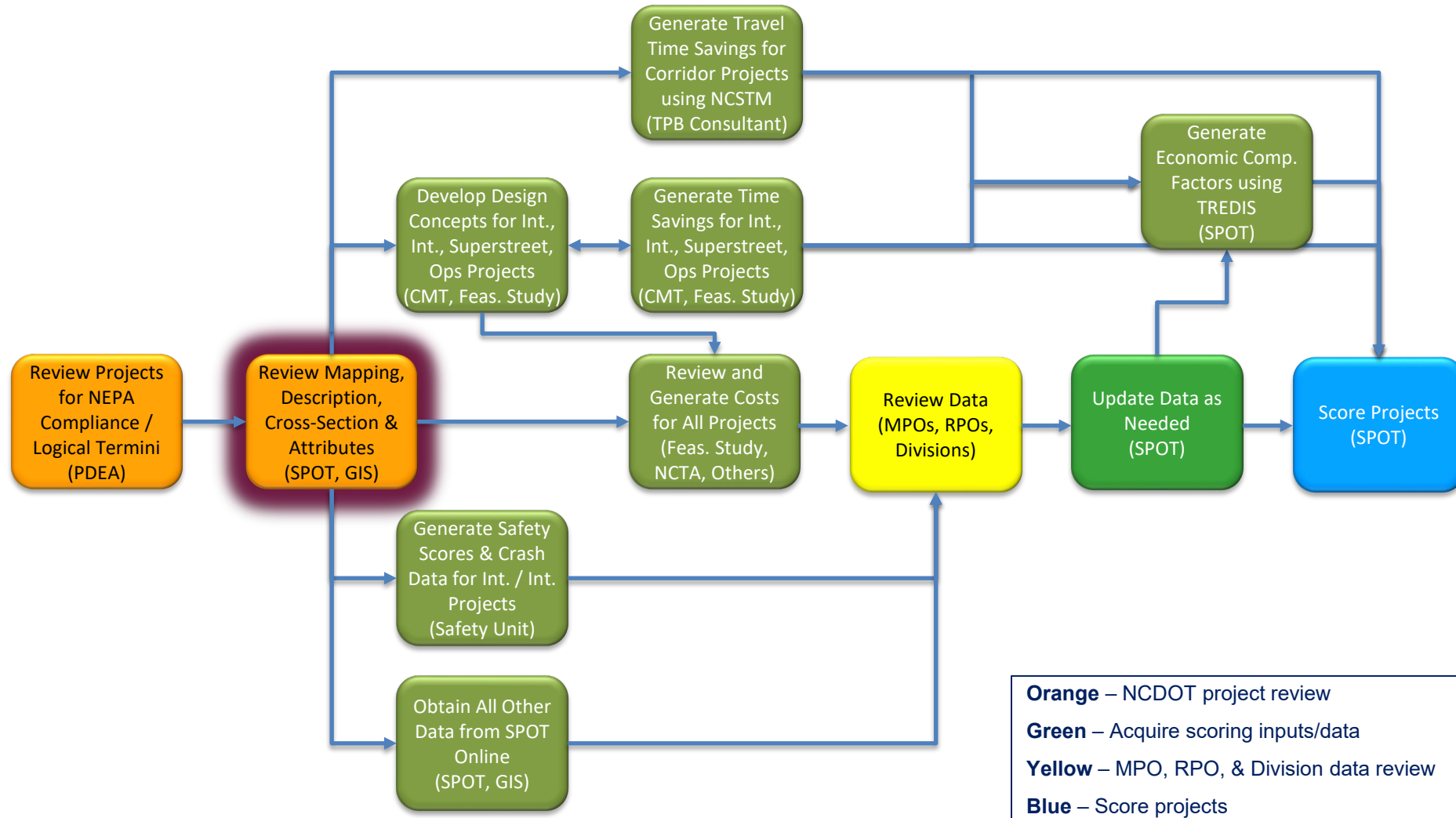
- Why review?
 - NEPA [and lawsuits]
- What are typically not logical termini?
 - Political/geographic boundaries
(unless the road changes here)
 - Streams, rivers, etc.

The screenshot shows the 'Environmental Review Toolkit' page for 'NEPA and Project Development'. The left sidebar contains a navigation menu with items like 'Program Overview', 'NEPA Implementation', 'NEPA and Transportation Decisionmaking' (highlighted), 'NEPA Documentation', 'Environmental Justice', 'Safety and NEPA', 'Interim Guidance on the Application of Travel and Land Use Forecasting in NEPA', 'Bridge Case Study', and 'Active & Inactive Environmental Impact Statements'. The main content area is titled 'NEPA and Transportation Decisionmaking' and includes the sub-header 'The Development of Logical Project Termini' dated November 5, 1993. It begins with an 'I. Introduction' section, explaining that in developing a project concept, the project sponsor needs to consider a 'whole' or integrated project. It then lists three principles from 23 CFR 771.111(f) and discusses the aim of the paper to discuss criteria for selecting logical termini (project limits) for development of a project.

<https://www.environment.fhwa.dot.gov/projdev/tdmtermini.asp>



Highway Quantitative Scoring Process

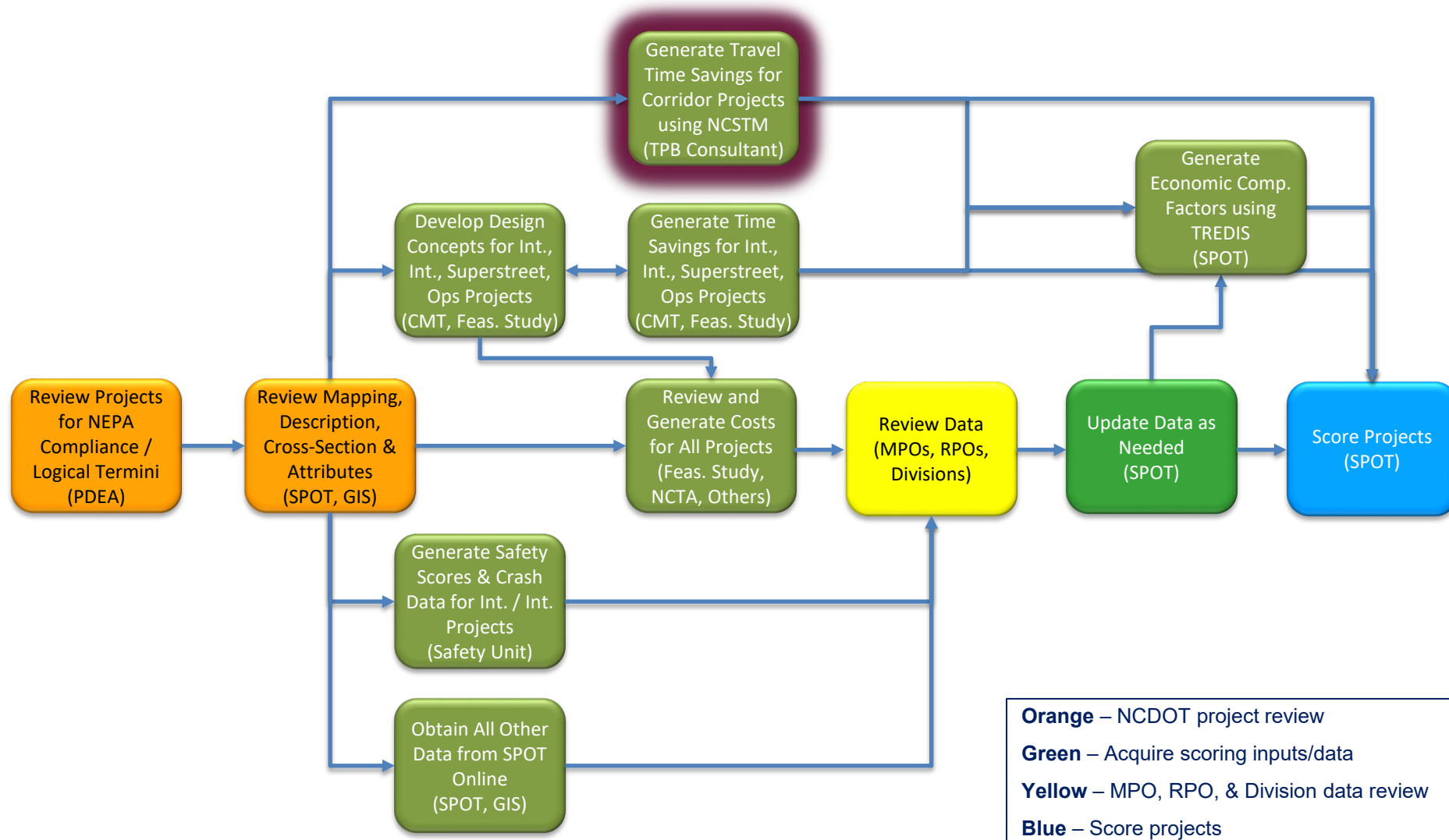


Review Mapping, Description & Attributes

SPOT and GIS Unit thoroughly review each project:

- Mapping to ensure it matches project description, including projects on local roadways
- Proposed cross-section to ensure it matches project description
- Overlapping projects
- Parallel routes for all new location projects
- Project attributes to ensure they are correct (such as STI category, facility type, functional classification, etc.)

Highway Quantitative Scoring Process



Travel Time Savings

Multiple criteria:

- Benefit / Cost
- Economic Competitiveness
- Accessibility / Connectivity

Multiple ways to calculate:

- NCSTM
- CMT
- CALC

All approaches account for growth over 10-year analysis period

Travel Time Savings – NCSTM

North Carolina Statewide Travel Demand Model

- Developed over 6-year period in TransCAD
- Includes all Primary Routes
- Embedded national truck model
- Originally 2010 Base Year, 2040 Future Year
 - Continuously updated to stay current
- MPOs and RPOs reviewed initial socio-economic data (control totals)

Use:

- Network-wide analysis for each project (independently) in BY and FY (FY = BY + 10 yrs)
- E+C Network includes projects scheduled for delivery (same for each)
- Tested for P3; First used in P4 (Statewide Mobility)
- P5 → Statewide Mobility and Regional Impact

Travel Time Savings – NCSTM

Managed and run by consultant

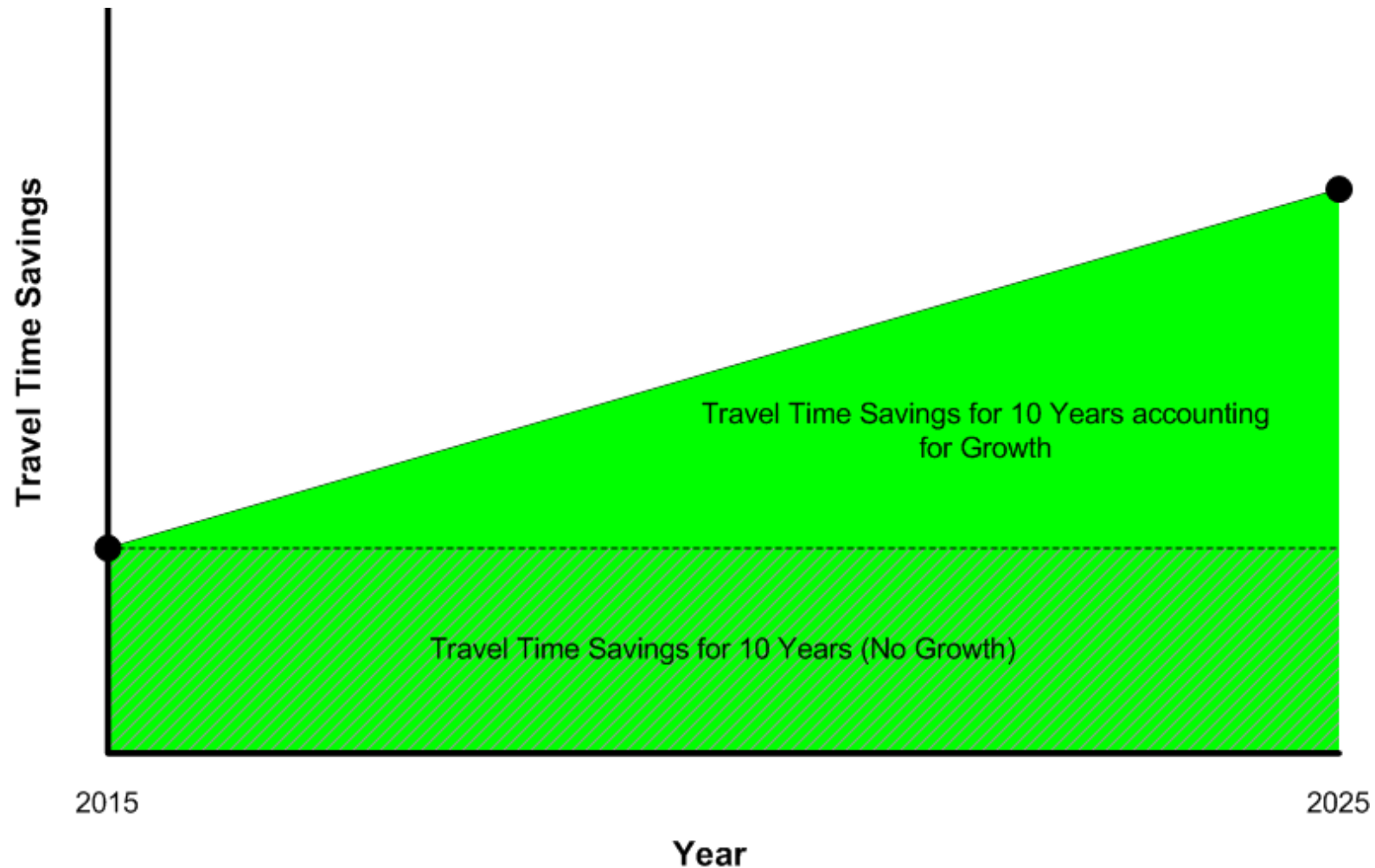
Outputs:

- Based Year Travel Time Savings – Autos
- Based Year Travel Time Savings – Trucks
- Future Year Travel Time Savings – Autos
- Future Year Travel Time Savings – Trucks

Inputs to TREDIS

Travel Time Savings – NCSTM

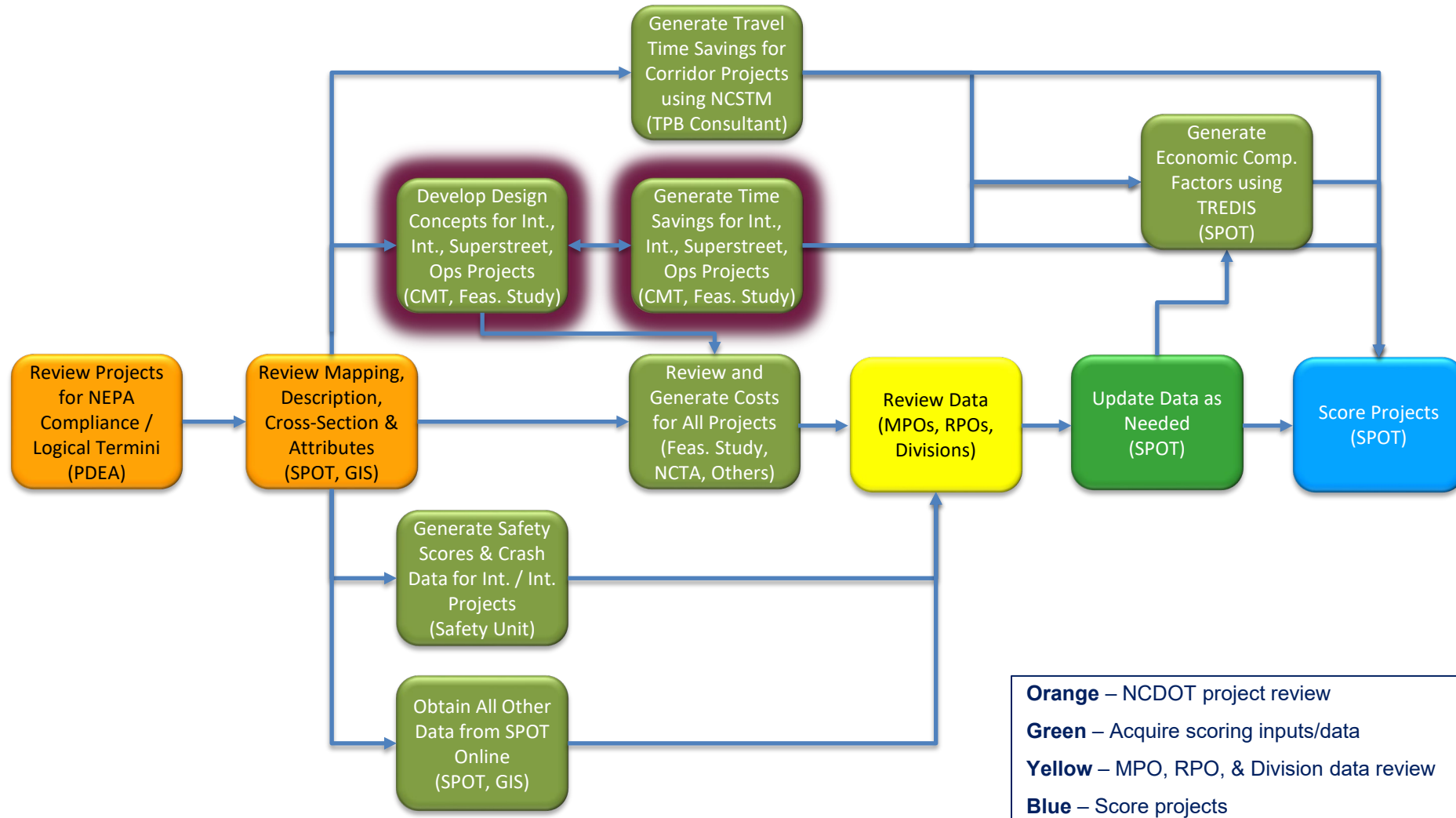
Calculate the entire area under the line for total TTS (x2)



Travel Time Savings – NCSTM

- Multiply TTS over 10 years – Autos by VOT (\$12.75/HR)
- Multiply TTS over 10 years – Trucks by VOT (\$50.00/HR)
- Total TTS over 10 years = Sum of above

Highway Quantitative Scoring Process



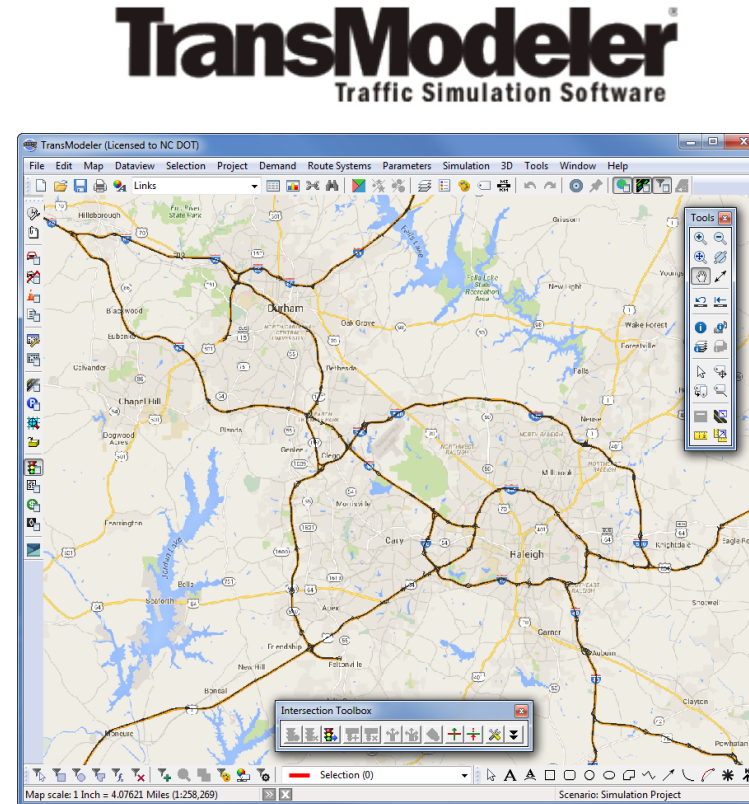
Travel Time Savings – CMT

Congestion Management Team:

- Microsimulations in TransModeler
 - Intersection
 - Interchange
 - Superstreet
 - Auxiliary Lane
 - Operational Projects
- Incorporates traffic growth

Use:

- Location-specific analysis per project (independently) in 2015 & 2025
- P2, P3, P4, P5 → All STI Categories



Travel Time Savings – CMT

Eight Models – BY and FY, No-Build & Build, AM & PM

Inputs

- Existing Volumes, Turning Movements, Actual K and D values
- Growth rates derived (NCSTM and other sources)

Outputs

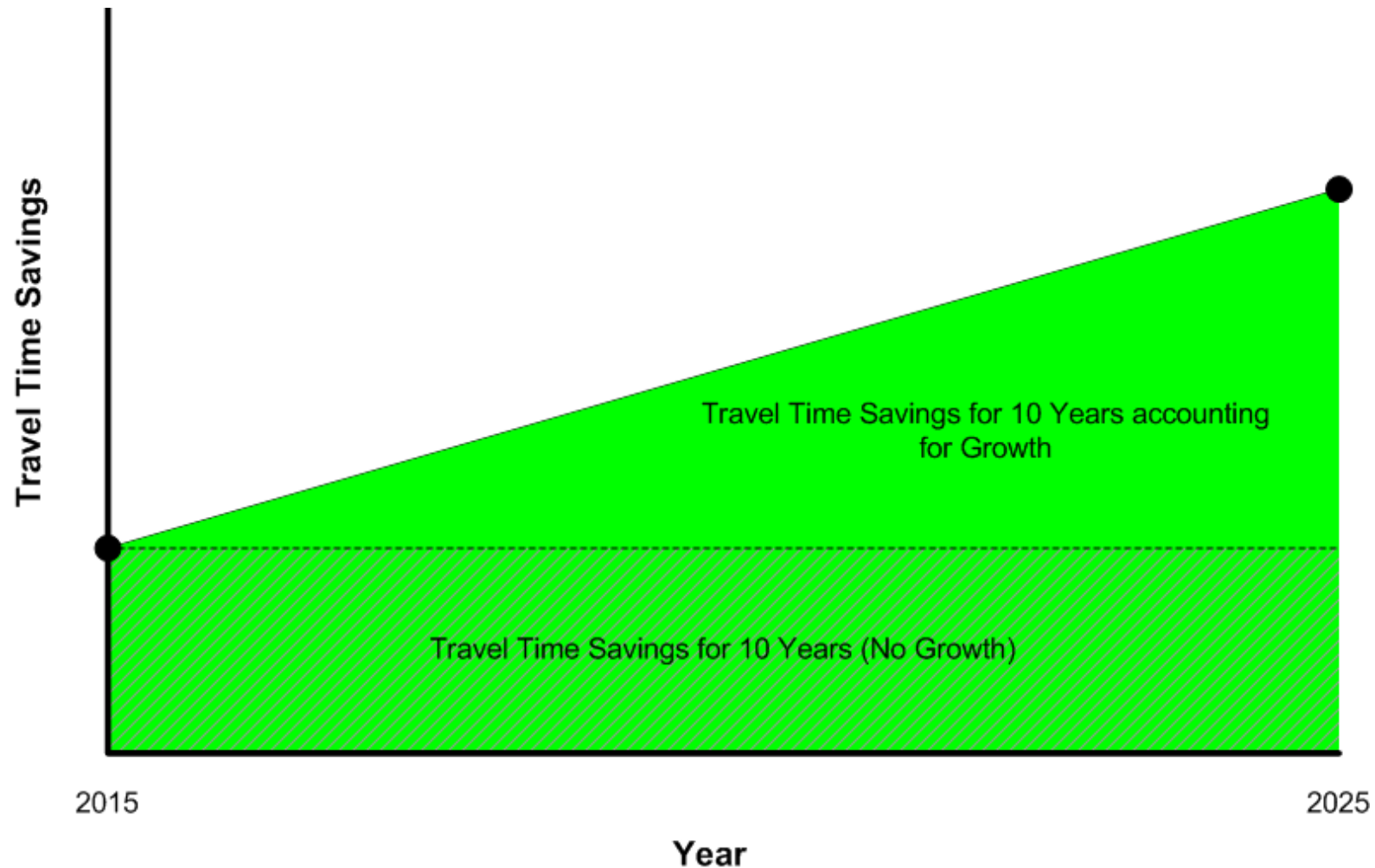
- Base Year Travel Time Savings
- Future Year Travel Time Savings

Formula

1) TTS 10 YR = entire area under the line (similar to NCSTM) → (hrs)

Travel Time Savings – CMT

Calculate the entire area under the line for total TTS



Travel Time Savings – CMT

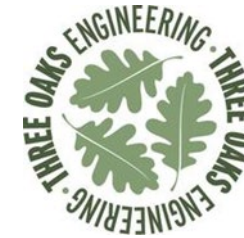
Formula (cont'd)

2) Separate TTS 10 YR → TTS 10 Years (Auto) & TTS 10 Years (Trucks)

- Based on existing auto and truck %s

3) **TTS 10 Years (\$)** = Multiply TTS 10 Years (Auto) & TTS 10 Years (Trucks) by values of time

Project Managers



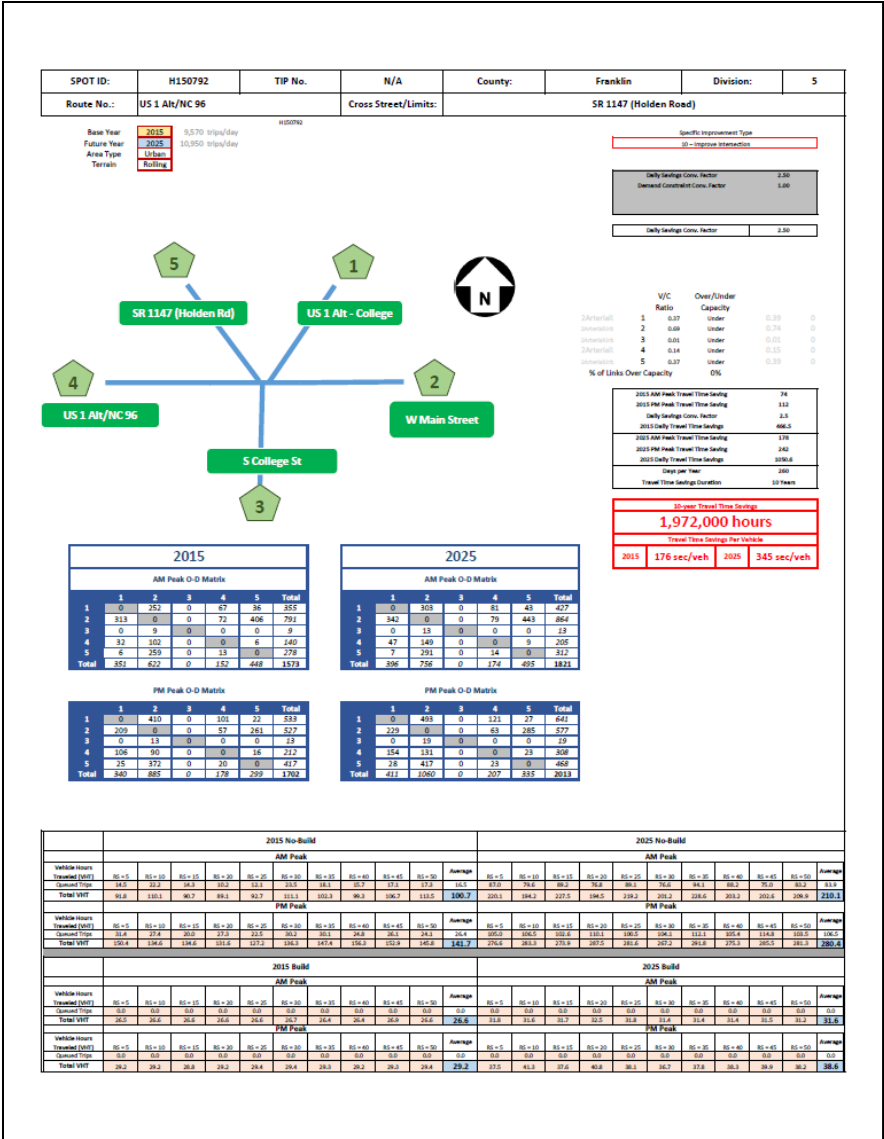
Select Project Modeling and Analysis



CMT – Alternative Development

- Reviews each project individually
 - Coordinates with design team (includes Feasibility Studies Unit)
- If improvement concept provided, it was analyzed unless problems were identified (operational issues, constructability, etc.)
- If no concept submitted, team develops concept using high tech methods...

CMT – Summary Reports

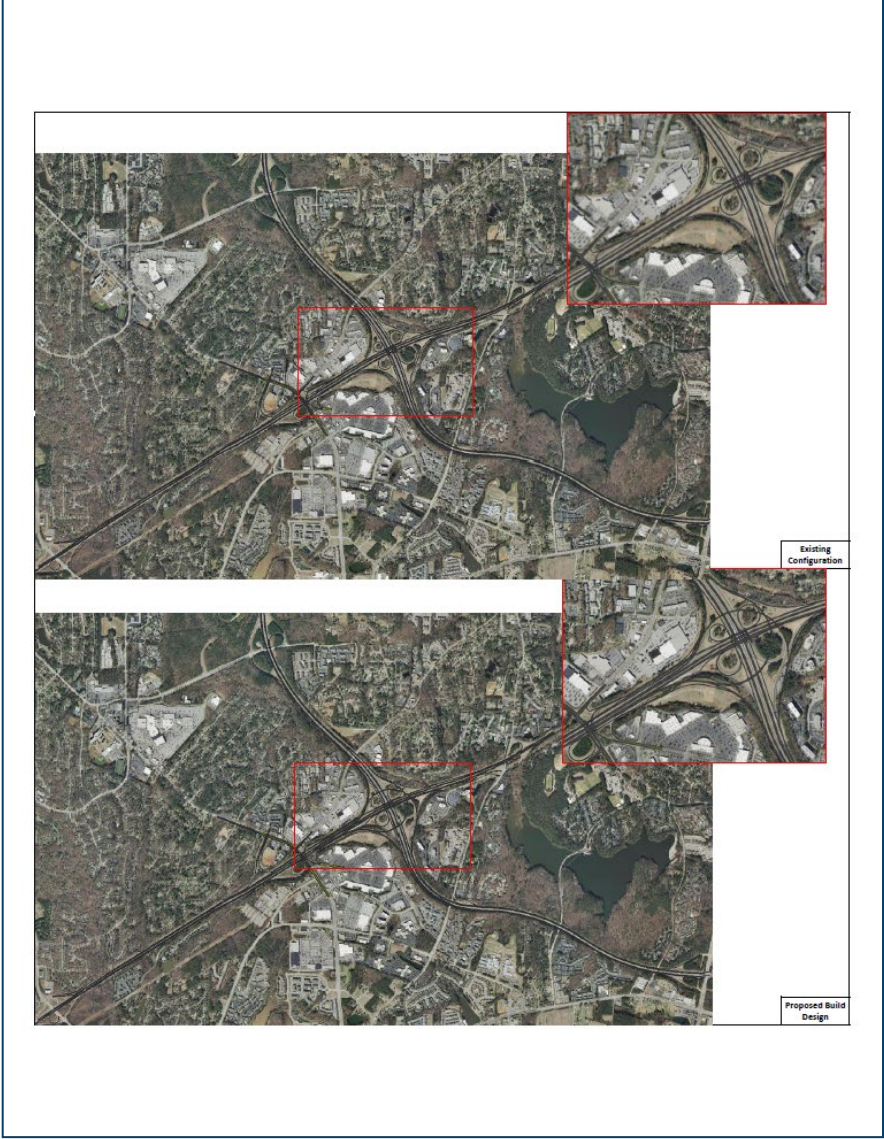
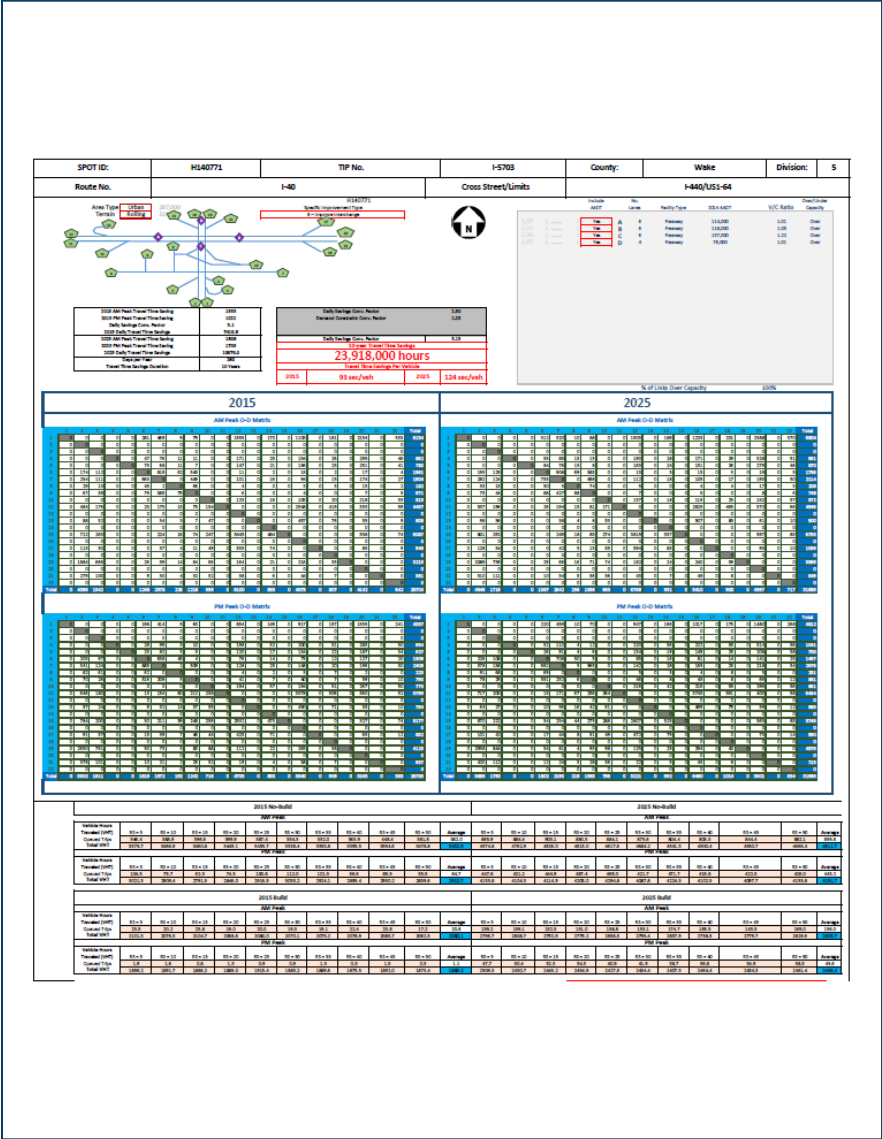


Existing Configuration



Proposed Build Design

CMT – Summary Reports



Travel Time Savings – CALC

Calculation:

- Simple before & after analysis for just the segment
- Accounts for existing congestion
- Incorporates traffic growth
- Based on Speed-Delay curves to calculate TTS.
 - V/C ratio will likely change between existing and with project in place
- New location projects → parallel route used for existing TT, new route used for project TT

Use:

- P2, P3, P4 (Regional Impact, Division Needs)
- P5 → Projects not evaluated in NCSTM or CMT; Division Needs
 - Access management, signal systems, other ITS projects

Travel Time Savings – CALC

Formula

1) Calculate TTS in Base Year

a) Calculate TT along existing facility

$$TT \text{ (Existing)} = (\text{Length/Speed Limit}) \times \text{Congestion Factor}$$

a) Calculate TT along existing facility if project was open to traffic today

$$TT \text{ (Project)} = (\text{Length/Speed Limit}) \times \text{Congestion Factor}$$

a) Calculate TTS for Base Year for all users

$$TTS \text{ BY} = (TT \text{ (Existing)} - TT \text{ (Project)}) \times AADT \times 260 \text{ days/yr} \times \text{Peak-to-Daily}$$

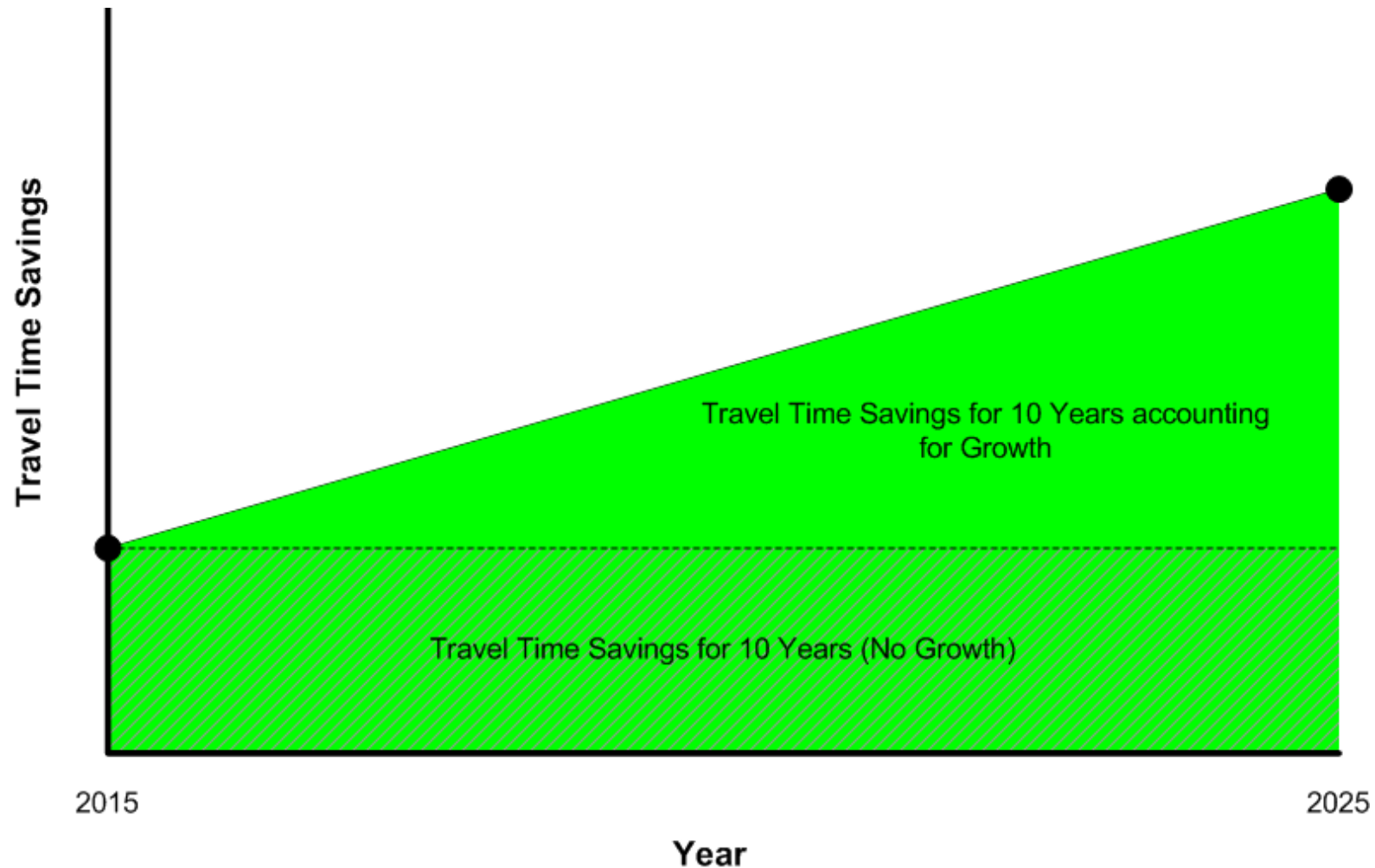
2) Repeat above calculation except grow volume for 10 years → TTS FY

- Growth rates derived from NCSTM and other sources

3) TTS 10 YR = entire area under the line (similar to NCSTM & CMT)

Travel Time Savings – CALC

Calculate the entire area under the line for total TTS



Travel Time Savings – CALC

Formula (cont'd)

4) Separate TTS 10 YR → TTS 10 Years (Auto) & TTS 10 Years (Trucks)

- Based on existing auto and truck %s

5) **TTS 10 Years (\$)** = Multiply TTS 10 Years (Auto) & TTS 10 Years (Trucks) by VOT

- Growth rates derived from NCSTM and other sources

Congestion Factor Notes:

- Accounts for effect of congestion on travel time, using v/c ratio
- Based on volume/delay curves in models
- V/C ratio will likely change between existing and with project in place
- With project, travel time, length, and speed could change
- New location projects → parallel route used for existing TT, new route used for project TT

Travel Time Savings – Accessibility / Connectivity Criterion

50% – Improve Mobility measure

- Points based on travel time savings per user (updated for P8)

TTS Per User

- Use CMT for all Int/Int/SS/Ops projects
- Use CALC for all other projects

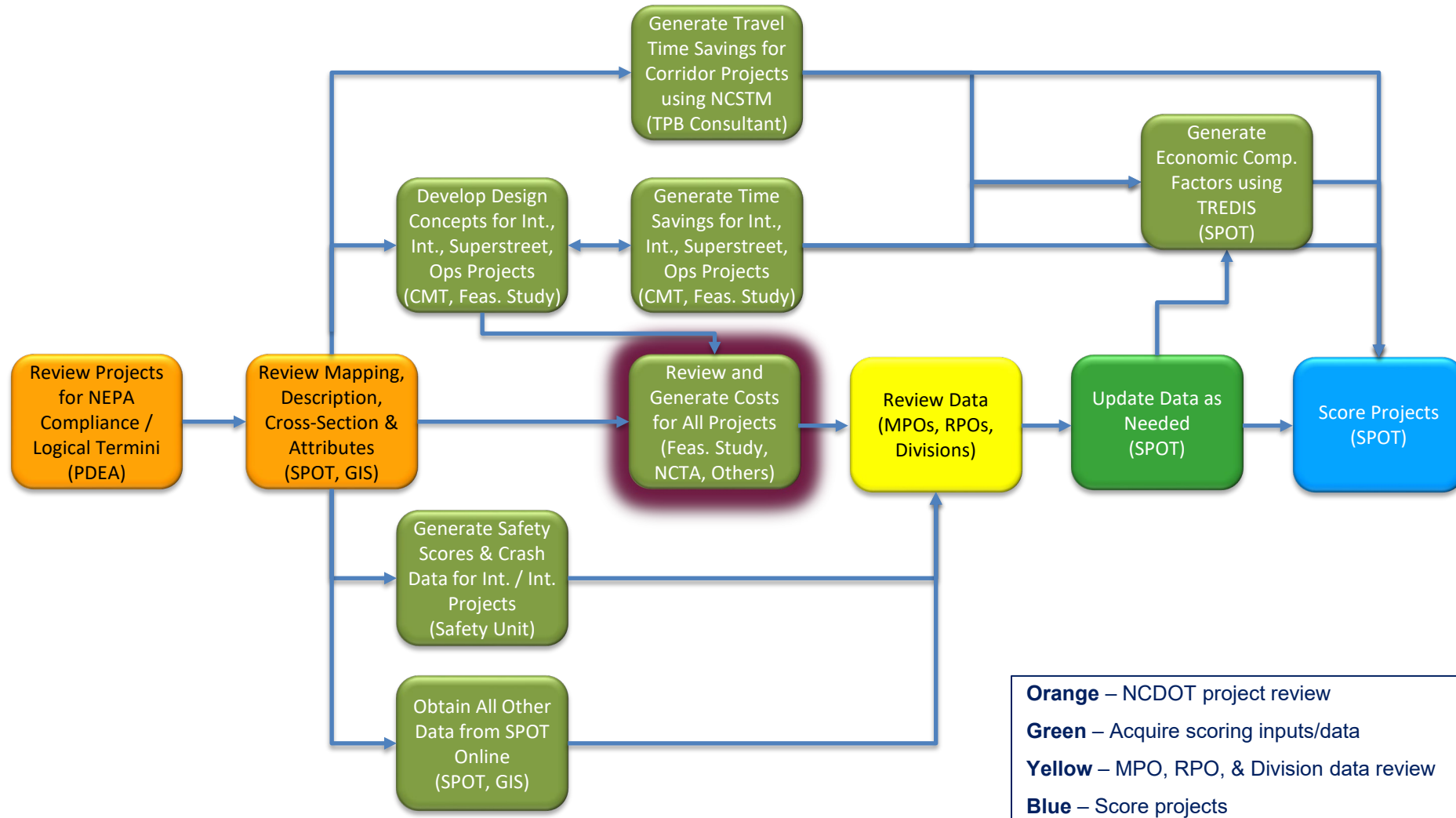
Travel Time Savings Methods

Project Eligibility	Type (Based on SIT)	Statewide Mobility Scoring	Regional Impact Scoring	Division Needs Scoring
Statewide Mobility	Segment	NCSTM	NCSTM	CALC
	Int/Int/SS/Ops	CMT	CMT	CMT
	Other	CALC	CALC	CALC
Regional Impact	Segment		NCSTM	CALC
	Int/Int/SS/Ops		CMT	CMT
	Other		CALC	CALC
Division Needs	Segment			CALC
	Int/Int/SS/Ops			CMT
	Other			CALC

Subject matter experts review results to ensure fair comparison

Segment / Point Location	Highway Specific Improvement Type (SIT)	HWY SIT #	Safety Benefit Factor (% Reduction)	Travel Time Savings Method		
				Statewide	Regional	Division
Segment	1 - Widen Existing Roadway	1.0	0	NCSTM	NCSTM	CALC
Segment	1A - Widen Existing Roadway - Add lane to Freeway	1.1	10	NCSTM	NCSTM	CALC
Segment	1B - Widen Existing Roadway - Widen 2 lane roadway to 4 lane divided - Rural	1.2	55	NCSTM	NCSTM	CALC
Segment	1C - Widen Existing Roadway - Install two-way left turn lane on a two lane roadway	1.3	20	NCSTM	NCSTM	CALC
Segment	1D - Widen Existing Roadway - Widen 2 lane roadway to 4 lane divided Superstreet with Partial Control of Access - Urban	1.4	15	NCSTM	NCSTM	CALC
Segment	1E - Widen Existing Roadway - Widen 2 lane roadway to 4 lane divided with Partial Control of Access - Urban	1.5	10	NCSTM	NCSTM	CALC
Segment	1F - Widen Existing Roadway - Widen 4 lane divided roadway to 6 lane divided - Urban	1.6	15	NCSTM	NCSTM	CALC
Segment	2 - Upgrade Arterial to Freeway/Expressway	2.0	40	NCSTM	NCSTM	CALC
Segment	3 - Upgrade Expressway to Freeway	3.0	25	NCSTM	NCSTM	CALC
Segment	4 - Upgrade Arterial to Superstreet	4.0	35	CMT	CMT	CMT
Segment	5 - Construct Roadway on New Location	5.0	0	NCSTM	NCSTM	CALC
Segment	5A - Construct Roadway on New Location - Freeway Bypass	5.1	10	NCSTM	NCSTM	CALC
Segment	5B - Construct Roadway on New Location - Superstreet Bypass	5.2	5	NCSTM	NCSTM	CALC
Segment	5C - Construct Roadway on New Location - Multi-Lane Highway Bypass	5.3	5	NCSTM	NCSTM	CALC
Segment	6 - Widen Existing Roadway and Construct Part on New Location	6.0	0	NCSTM	NCSTM	CALC
Segment	6A - Construct Roadway on New Location - Freeway Bypass	6.1	10	NCSTM	NCSTM	CALC
Segment	6B - Construct Roadway on New Location - Superstreet Bypass	6.2	5	NCSTM	NCSTM	CALC
Segment	6C - Construct Roadway on New Location - Multi-Lane Highway Bypass	6.3	5	NCSTM	NCSTM	CALC
Point	7 - Upgrade At-grade Intersection to Interchange or Grade Separation	7.0	40	CMT	CMT	CMT
Point	8 - Improve Interchange	8.0	10	CMT	CMT	CMT
Point	9 - Convert Grade Separation to Interchange	9.0	0	CALC	CALC	CALC
Point	10 - Improve Intersection	10.0	25	CMT	CMT	CMT
Point	10A - Improve Intersection - Roundabout	10.1	40	CMT	CMT	CMT
Segment	11 - Access Management	11.0	25	CALC	CALC	CALC
Segment	12 - Ramp Metering	12.0	5	CALC	CALC	CALC
Segment	13 - Citywide Signal System	13.0	5	CALC	CALC	CALC
Segment	14 - Closed Loop Signal System	14.0	15	CALC	CALC	CALC
Segment	15 - Install Cameras and DMS	15.0	0	CALC	CALC	CALC
Segment	16 - Modernize Roadway	16.0	20	CALC	CALC	CALC
Segment	17 - Upgrade Freeway to Interstate Standards	17.0	10	CALC	CALC	CALC
Segment	18 - Widen Existing Local (Non-State) Roadway	18.0	0	CALC	CALC	CALC
Point	19 - Improve Intersection on Local (Non-State) Roadway	19.0	25	CMT	CMT	CMT
Point	20 - Convert Grade Separation to Interchange to Relieve Existing Congested Interchange	20.0	0	CMT	CMT	CMT
Point	21 - Realign Multiple Intersections	21.0	15	CMT	CMT	CMT
Segment	22 - Construct Auxiliary Lanes or Other Operational Improvements	22.0	10	CMT	CMT	CMT
Point	23 - Construct Grade Separation at Highway / Railroad Crossing	23.0	90	CALC	CALC	CALC
Segment	24 - Implement Road Diet to Improve Safety	24.0	25	CALC	CALC	CALC
Segment	25 - Improve Multiple Intersections along Corridor	25.0	25	CALC	CALC	CALC
Segment	26 - Upgrade Roadway	26.0	20	CALC	CALC	CALC

Highway Quantitative Scoring Process



Highway Costs for Scoring

More
Detailed
↓

Source	Notes
Cost Estimation Tool	Built into SPOT Online
Express Design	All projects should have Express Design costs, at a minimum, before being programmed in STIP
Verified Estimate	By Right-of-Way, Utilities, and Construction Units

Other Possible Sources
NC Turnpike Authority
MPO/RPO/Division Guidance & Studies
Mobility & Safety Division ITS Cost Estimates

Costs

CET automatically generates – only used if nothing else available

More accurate estimates:

- STIP Unit – verified costs
- NCTA – costs and toll revenues for toll and managed lane projects
- Mobility and Safety – costs for signal system, ITS, and OPs projects
- Feasibility Studies Unit – reviews estimates for other projects

Costs – Feasibility Studies Unit

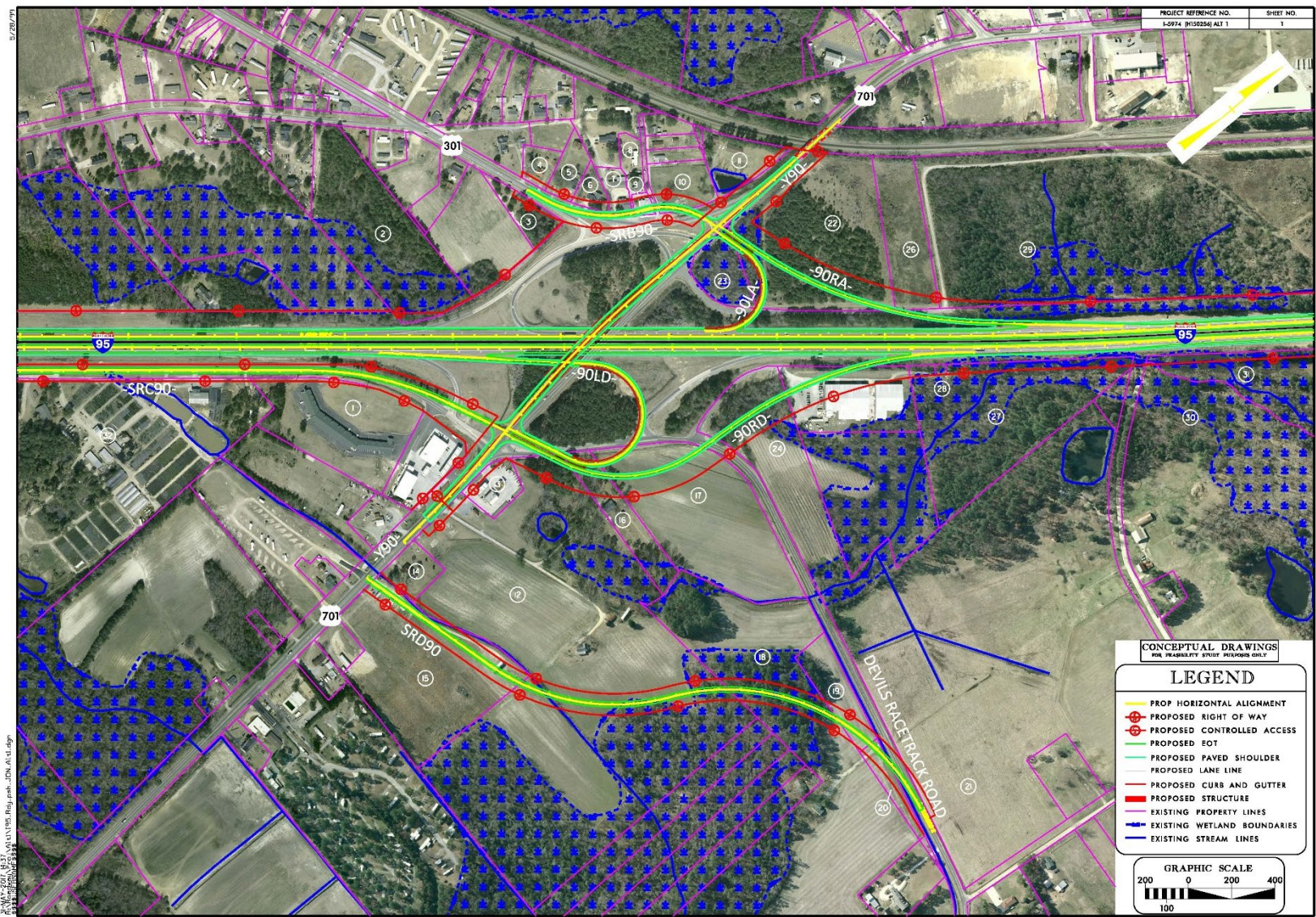
Use recent feasibility study / express design if available

If no existing Express Design is available, FSU focuses on:

- All projects with interchanges
 - Intersection improvements with potential for high R/W cost
 - Modernization projects in mountainous and very wet areas
 - Superstreets
- Conduct Express Design (Cost) – Consultant Teams
- Environ. Screening, Conceptual Design (Quantities and R/W Footprint)

Other estimates from CET are reviewed and updated as appropriate using engineering judgement

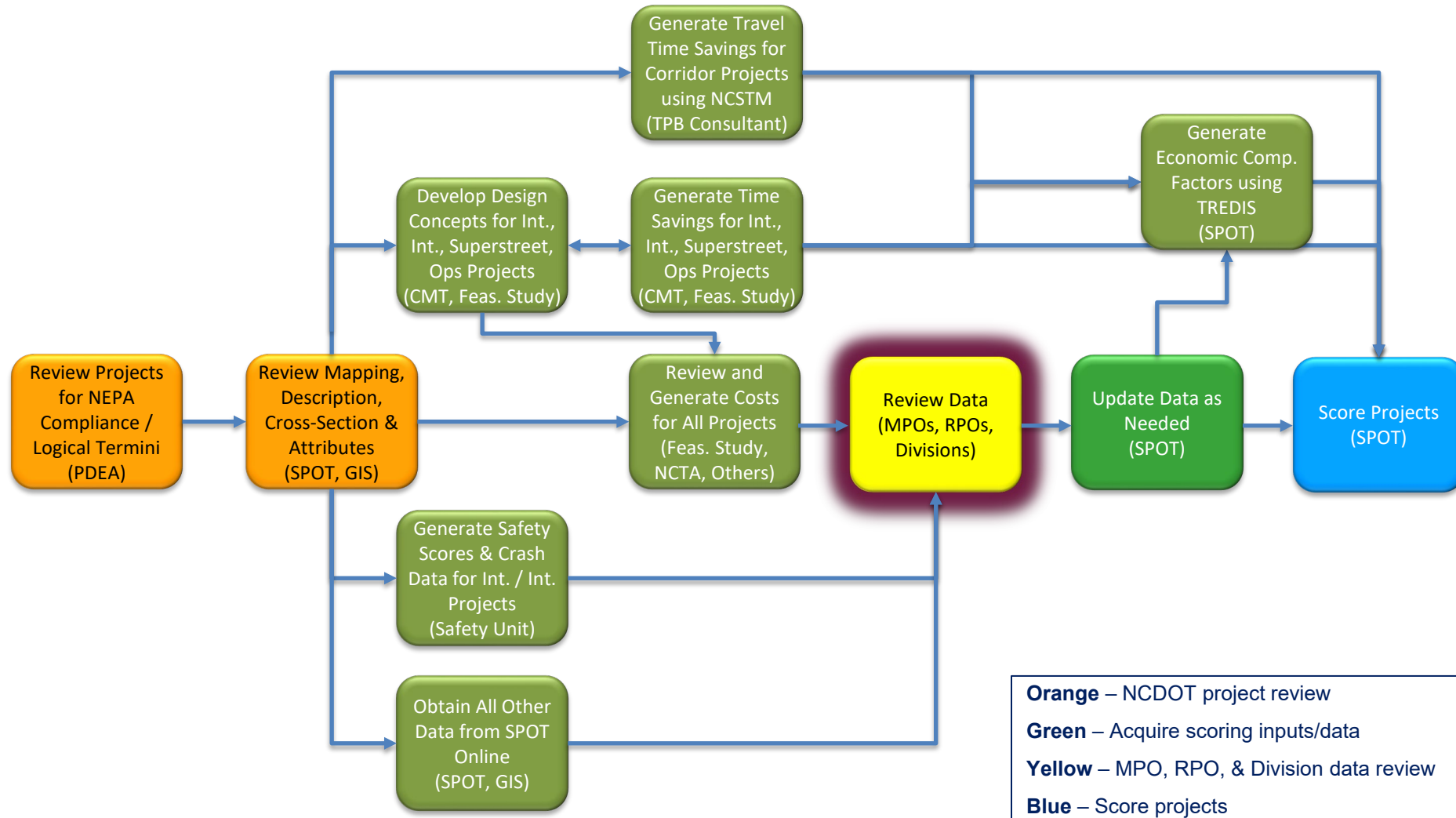
Costs – Feasibility Studies Unit



Costs – P9 submittals

- Express Design Requirements for P9 Highway projects will begin to be implemented during the P8 submittal window
- Starting in P9, most projects will need an Express Design before they can be submitted to Prioritization
- Separate guidance will be provided by NCDOT Feasibility Studies Unit
- Additional training and information will come in the near term

Highway Quantitative Scoring Process



Data Review

- MPOs, RPOs & Divisions (multiple weeks)
- Key Opportunity
 - Confirm data is correct and identify possible errors
 - Data spreadsheet, GIS data provided by SPOT, local knowledge
 - Prior to scoring
- SPOT reviews all possible errors and updates as appropriate

GIS Data Sources

- AADT, PADT, Truck Data – Traffic Survey Unit
 - Truck data only available on NHS Routes
- Capacities – NCLOS
- Pavement Data – PMS (Pavement Mgmt Unit)
- Crash Data, Speed Limit – TEAAS (Mobility & Safety)
- # Lanes, Median – Road Characteristics

GIS Data

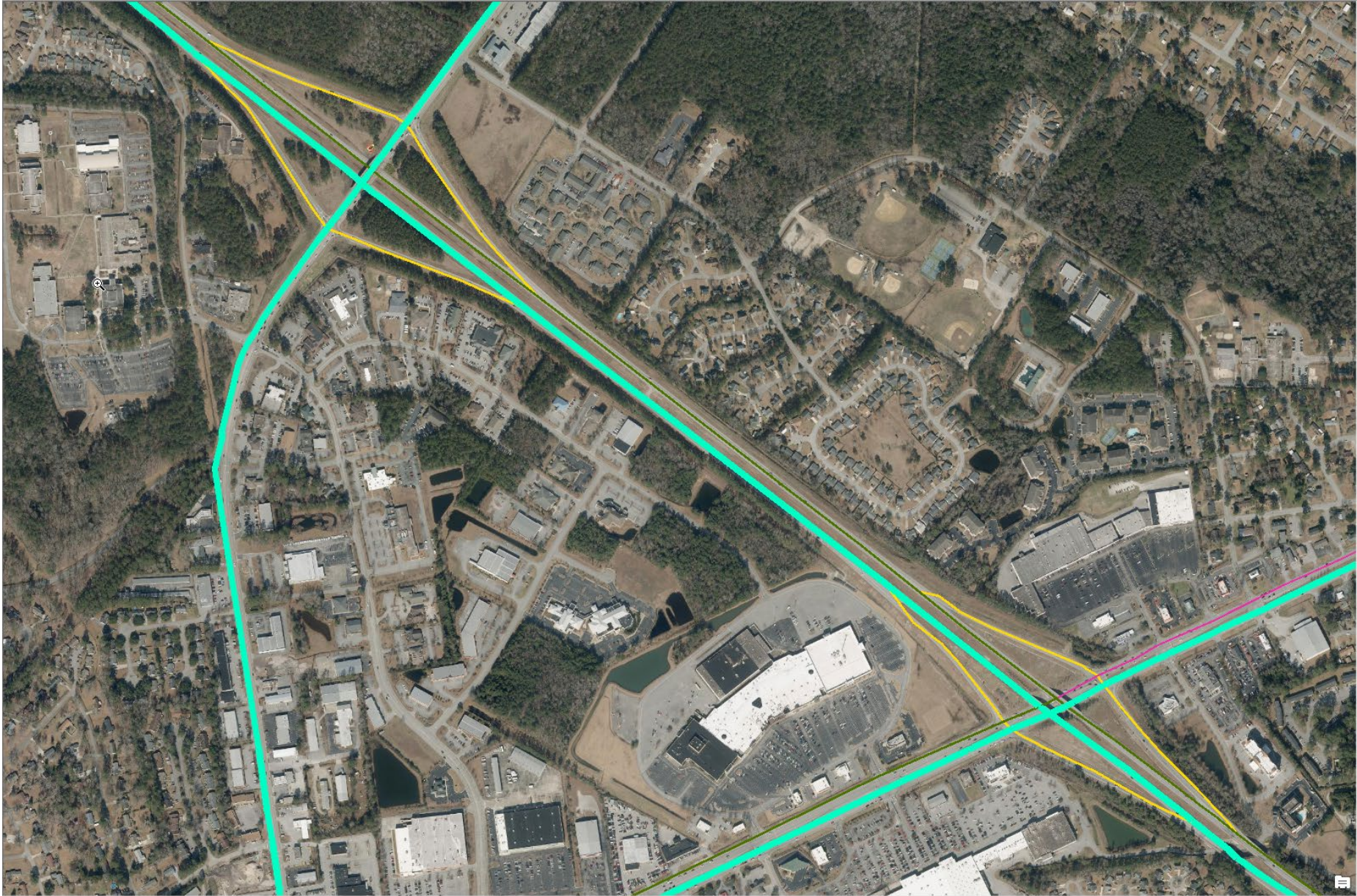




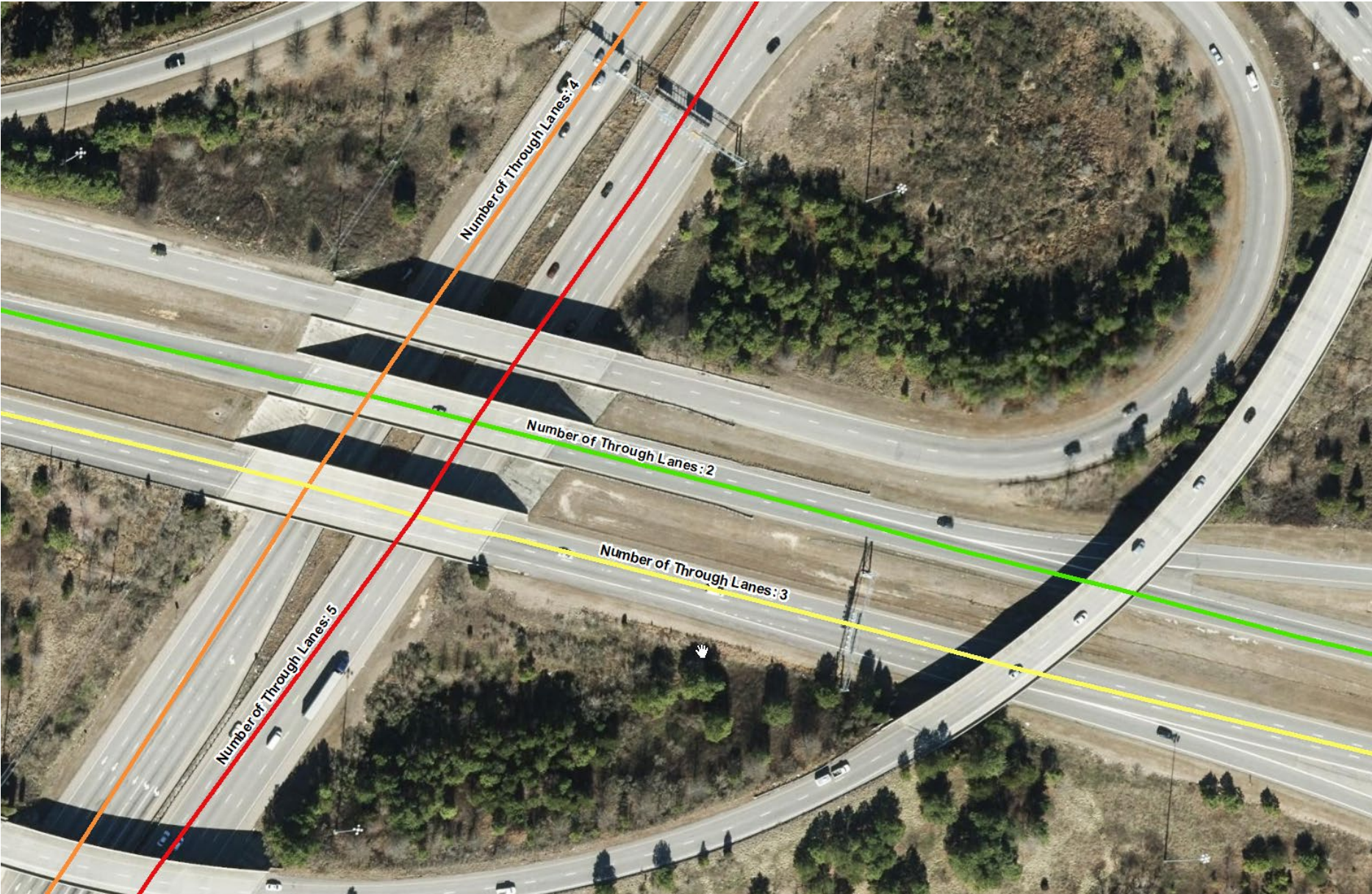
State Maintained Roads



Local Roads

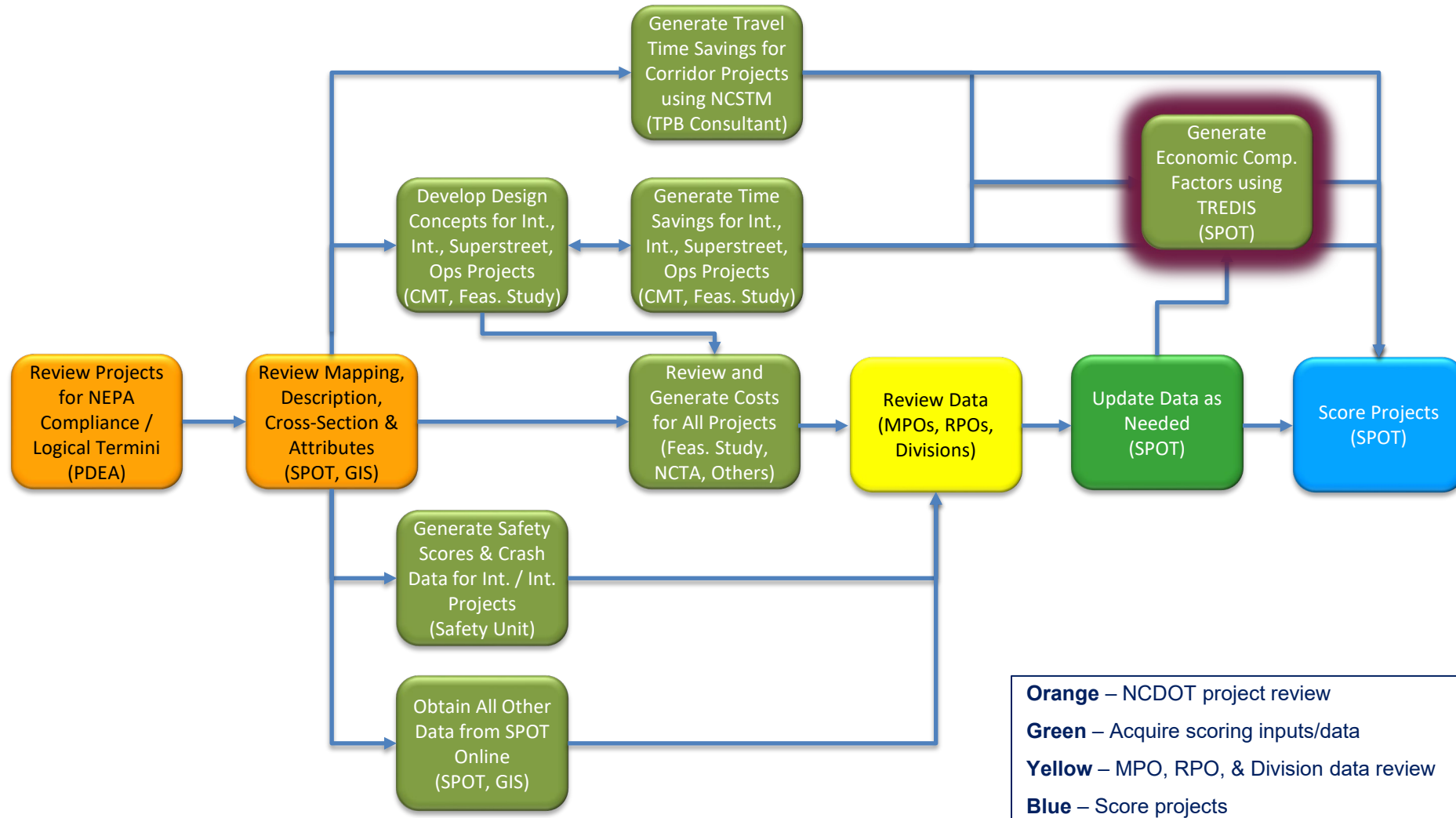


Inventory Side Only





Highway Quantitative Scoring Process



What is TREDIS?

TREDIS® is a robust and flexible **decision support system** that connects transportation and economics.



Widely used for economic evaluation of transportation plans, programs and projects across the US, Canada and Australia.

A key component of state level prioritization in Idaho, Kansas, Ohio, Nebraska, Wisconsin, and others.

TREDIS

Inputs

- Annual Trips
- Annual Veh-Miles Traveled
- Annual Veh-Hours Traveled
- For each of:
 - Baseline and Project-Build cases
 - Passenger Vehicles and Trucks

Outputs

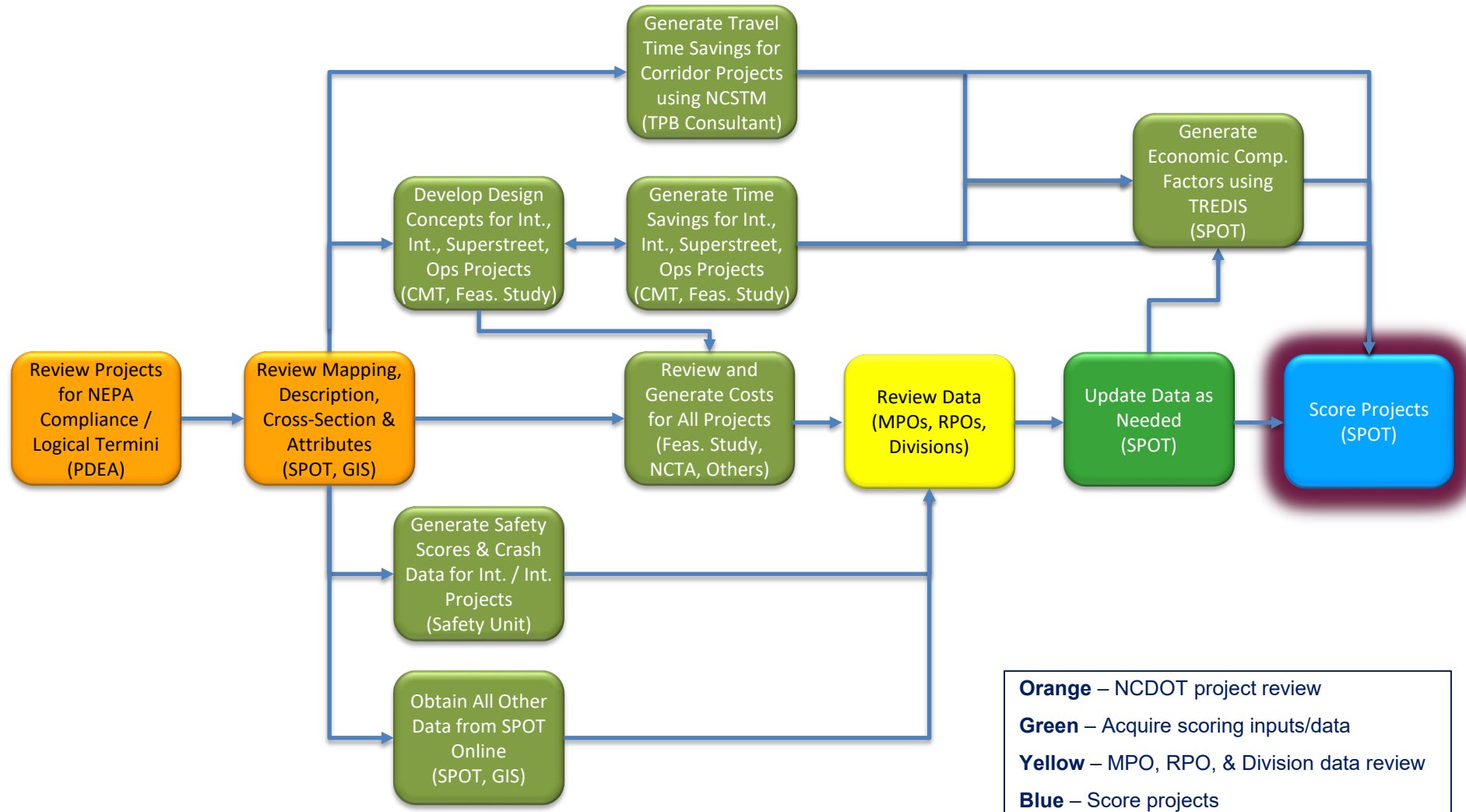
- Future year percentage change in employment
- Future year percentage change in county economy
 - 10-year GDP added by the project, divided by the 10-year level of value in the baseline economy

TREDIS


must match a Project Name on the "Project" tab		Must be set to "Base" or "Project"	must match a Region Name on the "Regions" tab that also matches "Project"	must match a Region Name on the "Periods" tab that also matches "Project"	Only drop-down options allowed	Annual		
Project Name	Year	Scenario	Region Name	Period	Default ModelPurpose	Period Veh or Pax-Trips	Period VMT or PMT	Period VHT or PHT
H090001-A	2016	Base	Default Region	Annual	All Trucks/Freight	114,886	2,722,796	48,209
H090001-A	2016	Base	Default Region	Annual	Passenger Car/All	1,183,260	28,043,259	496,524
H090001-A	2016	Project	Default Region	Annual	All Trucks/Freight	114,886	2,129,985	45,954
H090001-A	2016	Project	Default Region	Annual	Passenger Car/All	1,183,260	21,937,638	473,304
H090001-A	2025	Base	Default Region	Annual	All Trucks/Freight	126,906	3,007,661	53,253
H090001-A	2025	Base	Default Region	Annual	Passenger Car/All	1,307,055	30,977,205	548,472
H090001-A	2025	Project	Default Region	Annual	All Trucks/Freight	126,906	2,352,828	50,762
H090001-A	2025	Project	Default Region	Annual	Passenger Car/All	1,307,055	24,232,801	522,822
H090001-B	2016	Base	Default Region	Annual	All Trucks/Freight	114,886	2,722,796	48,209
H090001-B	2016	Base	Default Region	Annual	Passenger Car/All	1,183,260	28,043,259	496,524
H090001-B	2016	Project	Default Region	Annual	All Trucks/Freight	114,886	2,129,985	45,954
H090001-B	2016	Project	Default Region	Annual	Passenger Car/All	1,183,260	21,937,638	473,304
H090001-B	2025	Base	Default Region	Annual	All Trucks/Freight	126,906	3,007,661	53,253
H090001-B	2025	Base	Default Region	Annual	Passenger Car/All	1,307,055	30,977,205	548,472
H090001-B	2025	Project	Default Region	Annual	All Trucks/Freight	126,906	2,352,828	50,762
H090001-B	2025	Project	Default Region	Annual	Passenger Car/All	1,307,055	24,232,801	522,822
H090001-C	2016	Base	Default Region	Annual	All Trucks/Freight	114,886	2,722,796	48,209
H090001-C	2016	Base	Default Region	Annual	Passenger Car/All	1,183,260	28,043,259	496,524

			Project Information					Current Economic Patterns				Baseline Economic Patterns Data		
Group Name	Project ID	Project Name	Project Owner	Study Region	Results Year	Discount Rate	Industry	Employment	Output (mil. \$2017)	Value Added (mil. \$2017)	Personal Income (mil. \$2017)	Employment	Output (mil. \$2017)	Value Added (mil. \$2017)
								2017	2017	2017	2017	2025	2025	2025
P4 Projects Batch1		H090001-A	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		3,520	437	209	120	3,398	496	240
P4 Projects Batch1		H090001-B	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		3,520	437	209	120	3,398	496	240
P4 Projects Batch1		H090001-C	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		3,520	437	209	120	3,398	496	240
P4 Projects Batch1		H090002-AB	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		179,010	23,812	12,175	7,598	193,058	29,871	15,071
P4 Projects Batch1		H090002-AC	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		179,010	23,812	12,175	7,598	193,058	29,871	15,071
P4 Projects Batch1		H090005-D	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		3,950	401	181	106	3,999	475	211
P4 Projects Batch1		H090010-AA	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		87,697	11,811	8,144	5,205	92,336	14,876	10,116
P4 Projects Batch1		H090010-AB	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		87,697	11,811	8,144	5,205	92,336	14,876	10,116
P4 Projects Batch1		H090010-AC	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		87,697	11,811	8,144	5,205	92,336	14,876	10,116
P4 Projects Batch1		H090013-A	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		15,273	2,454	1,041	648	14,063	2,750	1,163
P4 Projects Batch1		H090013-B	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		15,273	2,454	1,041	648	14,063	2,750	1,163
P4 Projects Batch1		H090017	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		18,586	2,711	1,235	747	17,578	3,056	1,399
P4 Projects Batch1		H090019-A	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		51,997	7,376	3,493	2,143	56,011	9,522	4,476
P4 Projects Batch1		H090019-B	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		51,997	7,376	3,493	2,143	56,011	9,522	4,476
P4 Projects Batch1		H090019-BA	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		51,997	7,376	3,493	2,143	56,011	9,522	4,476
P4 Projects Batch1		H090022	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		38,710	5,413	2,507	1,496	36,139	6,162	2,875
P4 Projects Batch1		H090023-A	dswasserman	Default Region	2025	3.00% TOTAL - All Indust		12,114	2,229	906	547	11,406	2,630	1,101

Highway Quantitative Scoring Process



Scoring Projects

Data = 



SPOT ID	TIP	Project Category	Route	From / Cross Street	To	Description	Specific Improvement Type	Cost to NCDOT	Statewide Mobility Quantitative Score (Out of 100)	Regional Impact Quantitative Score (Out of 70)	Division Needs Quantitative Score (Out of 50)
H090001-A	A-0009A	Statewide Mobility	US 74 (New Route Corridor K)	US 19 Business in Andrews	US 129	Construct Multi-Lanes, on New Location.	5 - Construct Roadway on New Location	\$ 381,225,000	37.31	23.86	15.10
H090001-B	A-0009B	Statewide Mobility	US 74 (New Route Corridor K)	US 129	NC 143 North of Cheoah	Construct Multi-Lanes, on New Location.	5 - Construct Roadway on New Location	\$ 95,200,000	37.31	23.86	15.10
H090001-C	A-0009C	Statewide Mobility	US 74 (New Route Corridor K)	NC 143 North of Cheoah	NC 28 at Stecoah	Construct Multi-Lanes, on New Location	5 - Construct Roadway on New Location	\$ 44,040,000	58.72	40.99	27.95
H090002-AB	A-0010AB	Statewide Mobility	I-26 , US 19 , US 23	US 25	SR 2207	Upgrade Roadway to interstate Standards and Add Additional Lanes.	1 - Widen Existing Roadway	\$ 73,000,000	46.11	26.92	17.94
H090002-AC	A-0010AC	Statewide Mobility	I-26 , US 19 , US 23	SR 2207	South of SR 2148	Upgrade Roadway to interstate Standards and Add Additional Lanes	17 - Upgrade Freeway to Interstate Standards	\$ 27,600,000	46.94	31.08	21.20
H090005-D	A-0011D	Statewide Mobility	US 64	East of the Hiwassee River	East of NC 175	Widen to Multi-Lanes.	1 - Widen Existing Roadway	\$ 31,727,000	28.01	21.66	16.18
H090010-AA	I-3306AA	Statewide Mobility	I-40	I-85	NC 86	Add Additional Lanes.	1 - Widen Existing Roadway	\$ 97,300,000	75.84	44.61	32.07
H090010-AB	I-3306AB	Statewide Mobility	I-40	NC 86	US 19501	Add Additional Lanes.	1 - Widen Existing Roadway	\$ 47,400,000	75.06	47.01	33.79
H090013-A	I-5899A	Statewide Mobility	I-74	US 74 Business east of Hamlet	US 74 Business west of Laurinburg	Upgrade Roadway to Interstate	2 - Upgrade Arterial to Freeway/Expressway	\$ 225,200,000	63.52	37.17	23.25
H090013-B	I-5899B	Statewide Mobility	I-74	US 74 Business west of Laurinburg	US 74 Business east of Maxton	Upgrade Freeway to Interstate Standards	17 - Upgrade Freeway to Interstate Standards	\$ 112,900,000	51.78	30.92	19.28
H090017		Statewide Mobility	I-85	US 1		Provide Additional Traffic Movements	8 - Improve Interchange	\$ 45,100,000	42.31	24.76	13.95
H090019-A	I-4400A	Statewide Mobility	I-26	US 25	US 64	Add Additional Lanes.	1 - Widen Existing Roadway	\$ 80,000,000	75.07	39.68	27.87
H090019-B	I-4400B	Statewide Mobility	I-26	US 64	US 25 Business	Add Additional Lanes.	1 - Widen Existing Roadway	\$ 80,000,000	81.34	38.38	26.59

End of Session 6





NORTH CAROLINA
Department of Transportation

Day 1	Day 2
Begin 9:30am	Begin 9:30am
Introduction	Day 1 Recap
Session 1 – STI Legislation	Session 6 – Scoring Process
Lunch	Session 7 – Scoring Tools and Resources
Session 2 – Prioritization and Programming Basics	Lunch
Session 3 – Prioritization and Programming Process	Session 8 – Submitting Good Candidate Highway Projects
Session 4 – Non-Highway Scoring Details	Session 9 – Select Advanced Scoring Details
Session 5 – Highway Scoring Details	Session 10 – Resources, Upcoming Items, and Takeaways
End by 3:30pm	End by 3:30pm (or earlier)

Session 7: Scoring Tools and Resources

STI Training

NCDOT SPOT Office

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

Summary of Available Tools

- Scoring Spreadsheets
 - SPOT Online
- Submittal resources
- Testing Spreadsheets
 - Highway
 - BikePed (future)

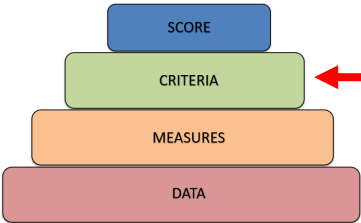
Scoring Spreadsheet – Overview

Scoring Tools and Resources

Basic Information and Scores

SPOT ID	Mode	TIP	Project Category	Route / Facility Name	From / Cross Street	To	Description	Specific Improvement Type	Cost in MCDOT	Statewide Mobility Quantification Score [0-10]	Regional Quantification Score [0-10]	Division Quantification Score [0-10]	Primary Funding Source	Division(s)	MP(s) / RPO(s)	Countdown	Primary Purpose
D140893	Bike/Ped		Division Needs	SR 9742 Hwy 51	Princeton Lane	Widewater Drive	Concrete sidewalk, concrete associated signing and marking work and other street improvements where needed in order to facilitate sidewalk construction, orange and concrete curbs for future use	2 - Parallel Linear Pedestrian Facility [Pedestrian]	\$ 89,526	N/A	N/A	28.15	D	82	Greenville Urban Area MPO	P-III	To provide pedestrian facilities in a residential area near a school.
D140892	Bike/Ped		Division Needs	S. Tar River Greenway Phase 2	Green Mill / South Tar Connector Greenway	Near Crawleys HC93 [Crawleys Park]	Phase 2 from existing Green Mill / South Tar Connector Greenway to City property [Crawleys Park] over an existing HC93 including Tar River to Tar River Creek and both multi-use and single-family housing units. Multi-family housing units include: The Oasis, East 55, Market Pointe	2 - Off-Road/Separated Linear Bicycle Facility [Bicycle]	\$ 1,467,284	N/A	N/A	22.65	D	82	Greenville Urban Area MPO	P-III	To safely increase access to the Tar River to residents across multiple neighborhoods
D140787	Bike/Ped		Division Needs	Coralina Thread Trail Segment 04	Belmont Leaf Road	Darkeale Road	Concrete greenway parallel to future Southside bypass from Belmont Leaf Road to new intersection of Darkeale/US24/Oakleaf-Holly Road.	2 - Off-Road/Separated Linear Bicycle Facility [Bicycle]	\$ 2,425,488	N/A	N/A	15.54	F	12	Charlotte-Regional Transportation Planning Organization	Indefinite	Provide a sustainable transportation system that improves the quality of life for residents, promotes healthy living and is sensitive to significant features of the natural and human environment. Encourage designing transportation systems and facilities that preserve and complement the area's natural features.

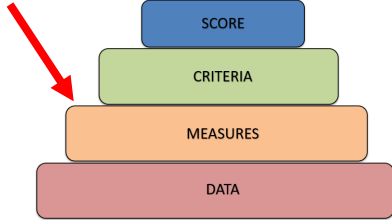
Criteria Scores



Safety	Accessibility & Convenience	Demand / Benefit	Cost Effectiveness
25.14	35.78	48.22	58.14
18.58	57.15	58.55	5.81
22.74	55.15	21.52	16.87

Measure Values (Raw and Scaled)

Number of Crashes Rd	Number of Crashes SCA	Average Crash Severity - Rd	Average Crash Severity - SCA	Safety Risk Rd	Safety Risk SCA	Project Safety Benefit - Rd	Project Safety Benefit - SCA	Accessibiliy & Convenience - Rd	Accessibiliy & Convenience - SCA	Person Per Square Mile - Rd	Person Per Square Mile - SCA	Employee Per Square Mile - Rd	Employee Per Square Mile - SCA	Cost Effectiveness - Rd	Cost Effectiveness - SCA
1	1.00	1	1.00	0.3554	52.81	6	71.51	23	35.78	1,318.55	61.88	251.23	35.36	0.88421815	38.14
1	1.00	1	1.00	0.4292	55.48	7	100.00	42	57.15	1,755.48	72.76	563.55	44.33	0.88895888	5.81
1	1.00	1	1.00	0.3558	55.71	7	100.00	37	55.15	325.37	21.66	124.42	22.17	0.88884858	16.87



Cost and Data

Preliminary Engineering & Design Cost	RPO Cost	Highway Cost	Construction Cost	Total Project Cost	Total Project Cost - Indirect	Source of Cost Estimate	Other Funds - Source	Other Funds - Amount	Other Funds - Source	Other Funds - Amount	Other Funds - Total Amount	Cost To MCDOT
\$ 66,421	\$ 5,000	\$ -	\$ 118,815	\$ 167,434	\$ 123,815	Construction of Bike/Ped Cost Estimate Tool and local match	Town of Walhalla	\$ 35,487			\$ 35,487	\$ 89,526
\$ 1,354,353	\$ 58,888	\$ 178,888	\$ 6,782,854	\$ 8,877,854	\$ 6,322,854	Construction of Bike/Ped Cost Estimate Tool and local match	City of Greenville	\$ 1,775,574			\$ 1,775,574	\$ 1,467,284
\$ 258,888	\$ 1,425,888	\$ -	\$ 1,675,888	\$ 3,358,888	\$ 3,100,888	CRTP-0 State	Town of Travelers	\$ 678,888			\$ 678,888	\$ 2,425,488

Facility Type	Project Location	Include in Plan	Name of Plan	Within 2mi of E-Bul	Local Governmental or MHA Name	Is RPO Request	Is Preliminary Engineering & Design Complete	Environmental or Permitting Status
Sidewalk	8.15	Y	Bike/Ped Pedestrian Plan	Y	Widewater	1	1	Categorical Exclusion Type I/II
Shared-Use Path / Multi-Use Path	5.85	Y	SR15-2845 GDMPO Metropolitan Transportation Plan	Y	City of Greenville	1	1	Categorical Exclusion Type I/II
Shared-Use Path / Multi-Use Path	5.22	Y	Travelers Pedestrian Plan [2018], Coralina Thread Trail Master Plan [2019]	Y	Town of Travelers, Indefinite County	1	1	Categorical Exclusion Type I/II

Bike/Ped Cor.	Pedestrian Cor.	Bike/Ped Pedestrian Cor.	Average Crash Severity	Safety Risk	Safety Risk SCA
1	1	1	1	0.3554	6
1	1	1	1	0.4292	7
1	1	1	1	0.3558	7

Buffer	Person Within Buffer	Person Sq. Mi	Employee Within Buffer	Employee Sq. Mi
0.57	1,288.88	1,318.55	243.88	251.23
18.85	15,852.88	1,755.48	4,814.88	563.55
18.78	3,475.88	325.37	1,354.88	124.42

Number Buffers [0-10]	Number Manual	Total Number POC - na	Construction	Cost in M
6	15	15	1	Y
33	1	33	1	F
21	12	33	1	Y

Highway – Congestion

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	30%	10%
Regional Impact	20%	5%
Division Needs	15%	-

Purpose – Measure existing level of mobility along roadways by indicating congested locations and bottlenecks

Statewide Mobility 60% - Existing Volume/Capacity Ratio
40% - Existing Volume

Regional Impact 80% - Existing Volume/Capacity Ratio
20% - Existing Volume

Division Needs 100% - Existing Volume/Capacity Ratio

Peak ADT will be used as the Existing Volume

Scoring Spreadsheet – How to View

- Prioritization Data page:

<https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>

Folder = P7 / Results



- Explore the spreadsheet yourself, become familiar with it
- Learn to use tools such as filter, sort, etc. to make the data digestible and easier to analyze/review
- Examples:
 - Filter to your organization as the Submitter
 - Filter to your organization as the MPO/RPO/Division (location section) – USE TEXT FILTERS!
 - Hide columns you're temporarily not using
 - Sort data columns to find outliers
 - Whatever works for you!

SPOT Online

Scoring Tools and Resources

4 –
Create
New


3b –
Identify

2 –
Map

3a –
Layers &
Legend

1 –
Project
Grid

5 – Grid
buttons

**SPOT Online**

4

3b

3a

Welcome Sarah Lee (SPOT Office) [Logout](#) [Contact Us](#)

My Projects

Create New +

Find SPOT ID...

Filter ▾

Flag	SPOT ID	Mode	Project Category	Status
✓	H190061	Highway	Statewide Mobility	Draft
✓	H190063	Highway	Statewide Mobility	Draft
✓	H190064	Highway	Statewide Mobility	Draft
✓	H190069	Highway	Statewide Mobility	Draft
?	H190070	Highway	Statewide Mobility	Draft
✓	H190071	Highway	Statewide Mobility	Draft
✓	H190073	Highway	Statewide Mobility	Draft
?	H190142	Highway	Statewide Mobility	Draft
✓	H190189	Highway	Statewide Mobility	Draft
✓	H190190	Highway	Statewide Mobility	Draft
✓	H190194	Highway	Statewide Mobility	Draft
✓	H190237	Highway	Statewide Mobility	Draft
✓	H190246	Highway	Statewide Mobility	Draft
?	H190250	Highway	Statewide Mobility	Draft
?	H190253	Highway	Statewide Mobility	Draft

Submit

Export

Edit

Delete

2

1

3

4

5

6

7

8

Basemaps ▾

Layers & Legend ▾

0

10

20mi

Identify ▾

Lasso

Submittal Resources

- Prioritization Data page:

<https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>

Folder = P7 / Submittal Guidance



- Submittal guidance documents (to be updated for P8)
- PDFs of cross sections and intersection/interchange designs
- Tools:
 - Testing spreadsheet (next slide)
 - BikePed POI correction documentation
 - GIS data from SPOT Online

Testing Spreadsheet(s)

- Prioritization Data page:

<https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>

Folder = P7 / Training Tools



End of Session 7





NORTH CAROLINA
Department of Transportation

Day 1	Day 2
Begin 9:30am	Begin 9:30am
Introduction	Day 1 Recap
Session 1 – STI Legislation	Session 6 – Scoring Process
Lunch	Session 7 – Scoring Tools and Resources
Session 2 – Prioritization and Programming Basics	Lunch
Session 3 – Prioritization and Programming Process	Session 8 – Submitting Good Candidate Highway Projects
Session 4 – Non-Highway Scoring Details	Session 9 – Select Advanced Scoring Details
Session 5 – Highway Scoring Details	Session 10 – Resources, Upcoming Items, and Takeaways
End by 3:30pm	End by 3:30pm (or earlier)

Session 8: Submitting Good Candidate Highway Projects

STI Training

NCDOT SPOT Office

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

Good Scoring Projects



Good Scoring Projects

What makes a good [quantitative] scoring project?

- Depends on criteria
- Volume likely has the biggest influence
 - Embedded in multiple criteria
 - Volume/Capacity is generally more critical than just volume
 - Scaling can minimize the impact of raw volumes
 - In P6, volumes of 30,000 had a scaled score of 80 or greater
- Safety benefits can still carry a project score

Submitting Competitive Projects

Segmenting Projects

- Help or hurt?
- Why not try both?

Project limits

- Make sure they're appropriate for problem you're trying to solve

Intersection vs Corridor Projects

Intersection/Interchange Projects

- Typically lower cost
- Volume and capacity data averaged then doubled

Corridor Projects

- SW and REG evaluated in NCSTM – system-wide benefits
- Longer projects likely yields more benefits, but higher cost
- Test data for segments vs. longer project

For corridor project w/ interchange/intersection improvements, submit both (if possible)

- Gives int./int. projects twice the opportunity

Data is Your Friend

Use data to help determine submittals

- SPOT Online
- GIS layers available

Talk to experts

- Corridor Development Engineers
- SPOT
- Mobility & Safety (Congestion Mgmt and Traffic System Operations)
- Division staff

Don't wait!

- Submittal window is July through September 2025
- Testing spreadsheet
- Enter projects into SPOT Online anytime (don't wait until TAC approval)

Red Flags

Low volume, low safety scores, minimal safety benefit

High cost

- Corridor cap

Lack of support

COMMUNICATE, COMMUNICATE, COMMUNICATE

P7 Scoring Spreadsheet

Prioritization Data page:

<https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>

Folder = P7 / Results



~ GROUP EXERCISE / PROJECT ANALYSIS ~

Exports & Testing Spreadsheet



SPOT Online Exports

Export function in SPOT Online:

?	H190253	Highway	Statewide Mobility	Draft
Submit	Export	Edit	Delete	

Export

☒ Project Grid

☐ Project Summary - Map and Scores Only (2 page)

☐ Project Details - Map, Scores, and Project Data (4 page)

☐ Project Data to Spreadsheet

☐ Project Data to File Geodatabase

☐ Project Cost Report (Highway only)

☐ Identified Needs

☐ BikePed Location of Interests (BikePed only)

Export All (Current Group)

Export 1 Project

Cancel

Refresh Generated Reports List

Generated Reports (Last 24 Hours Only)

SPOT Online Exports

4-page PDF exports (project detail summaries, great for elected officials):



NCDOT Prioritization 6.0 Project Summary

SPOT ID: B170484 **Mode:** Bicycle & Pedestrian **Status:** Submitted

US 15/501 Business (Durham-Chapel Hill Boulevard)

From/Cross Street: Nation Avenue

Specific Improvement Type: 7 - Protected Linear Pedestrian Facility (Pedestrian)

To: US 15/501 Business (University Drive)

Project Category: Division Needs

Length: 0.7

TIP#:

Fully Funded in Draft STIP? No

Cost to NCDOT: \$1,841,000

Description:

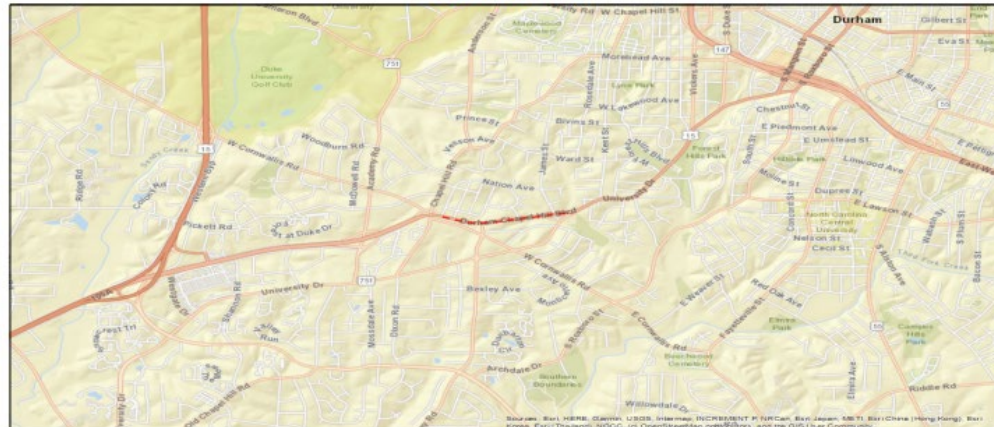
Construct sidewalks improve bicycle lanes and install intersection improvements.

Division(s): Division 5

County(s): Durham

MPOS(s)/RPO(s): Durham-Chapel Hill-Carrboro MPO

Project Location



Statewide Mobility Total Score: N/A		
Quantitative Score	Division Engineer Points	MPO/RPO Points
N/A		

Regional Impact Total Score: N/A		
Quantitative Score	Division Engineer Points	MPO/RPO Points
N/A		

Division Needs Total Score: 40.87		
Quantitative Score	Division Engineer Points	MPO/RPO Points
Cost Effectiveness (5%)	56.01	Percent: 25%
Accessibility/Connectivity (15%)	82.74	Points:
Demand/Density (10%)	87.48	Percent: 25%
Safety (20%)	84.53	Points:
Totals: Weight: 50% Weighted Score: 40.87		

Criteria Measures

Criteria	Measure	Raw Value	Scaled Value
Safety	Number of Crashes (40%)	3	82
	Crash Severity (20%)	31	94.59
	Safety Risk (20%)	0	92.05
	Project Safety Benefit (20%)	6	71.91
Accessibility / Connectivity	Accessibility / Connectivity (100%)	130	82.74
Demand/Density	Persons per Square Mile (50%)	3,921	95.77
	Employees Per Square Mile (50%)	1,248	79.19
Cost Effectiveness	Cost Effectiveness Value (100%)	0.000138	56.01

Project Data

Data:		Project Cost:	
Project Local ID:		Preliminary Engineering / Design Cost:	\$615,000
Included in Plan?	Yes	Right-of-Way Cost:	\$85,000
Name and Year of Plan:	2006 Durham/Walks! Pedestrian Plan 2017 DCHC MPO CTP	Utilities Cost:	\$135,000
Within 2 mi. of K-8 School?	Yes	Construction Cost:	\$2,235,000
Local Government(s) where project is located:	City of Durham	Total Project Cost (including PE/Design) - used for required match:	\$3,070,000
Right-of-Way % Acquired:	25	Total Project Cost (without PE/Design) - used for scoring:	\$2,455,000
PE / Design % Completed:	0	Other Funding:	\$614,000
Facility Type:	Sidewalk	Other Funding Source(s):	
Bicycle and Pedestrian Crashes:	3	Cost to NCDOT:	\$1,841,000
Average Crash Severity:	31	Source of Cost Estimation:	NCDOT Bike-Ped Cost Estimation Tool
Safety Risk Score:	0.42		
Number of Automatic POI:	17		
Number of Manual POI:	109		
Number of Existing or Committed Connections:	2		
Planned Connections?	Yes		
Improves or Connects to Designated Route:	Project connects to a designated route		
Name of Designated Route:	DCHC MPO MTP Regional Route - Connection between Durham and Chapel Hill (University Drive)		
Population Within Buffer Area:	5830		
Employees Within Buffer Area:	1855		
Project Sponsor (Organization):	City of Durham		
Submitted by:	Durham-Chapel Hill-Carrboro MPO		

SPOT Online Exports

Export to spreadsheet provides a .csv file of the selected project(s) (or all your projects)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
1		Draft or Submitted					From	To			Yes/No		SW Quant	Reg Quant	Reg Total	Reg Total	Div Quant	Div Total	Div Total	Score (Quant	
2	SpotID	ProjectSta	Mode	ProjectCat	TIP	RouteFaci	FromCross	ToCrossStr	Description	SpecificIm	FundedSta	FundedCat	Statewide	RegImpact	RegImpact	RegImpact	DivisionNe	DivNeedsL	DivNeedsT	FundingRe	Al
3	B190608	Draft	Bicycle & F	Division Needs		W Lebanon	Church Str	Manning A	5' wide	7 - Protected Linear Pedestrian F			0	0			0			D	Bi
4	B192401	Submitted	Bicycle & F	Division Needs		Midway Pa	NC 24	Piney Gree	Construct	2 - Off-Road/Separated Linear B			0	0			0			B	Ja
5	B172099	Draft	Bicycle & F	Division Needs		W. Fleming	Burkemon	S. College	Construct	2 - Off-Road/Separated Linear Bicycle Facility (Bicycle)										G	G
6	B141411	Draft	Bicycle & F	Division Needs		Adams Dri	Spencer Av	SR 2466 (V	Construct	7 - Protected Linear Pedestrian Facility (Pedestrian)											
7	B192324	Submitted	Bicycle & F	Division Needs		W.T. Harri	W.T. Harri	Campbell C	Construct	7 - Protected Linear Pedestrian F			0	0			0			E	Cl
8	B141030	Submitted	Bicycle & F	Division Ne	EB-5729	NC 97 (Atl	US 64	E. Raleigh	Convert fo	2 - Off-Road/Separated Linear B			0	0			0			A	R
9	B192119	Submitted	Bicycle & F	Division Needs		NC 74	Anson HS F	NC 74	Improved	8 - Multi-Site Pedestrian Facility			0	0			0			E	R
10	B190389	Submitted	Bicycle & F	Division Needs		NC 12	Buxton Ba	Frisco Batl	This projec	7 - Protected Linear Pedestrian F			0	0			0			A	Al
11	B191871	Submitted	Bicycle & F	Division Needs		US 64 (W I	I-73/I-74 I	S Park St/C	Construct	7 - Protected Linear Pedestrian F			0	0			0			E	Pi
12	B190473	Draft	Bicycle & F	Division Needs		Four Oaks	SR 1178 (B	Four Oaks	Construct	2 - Off-Road/Separated Linear Bicycle Facility (Bicycle)										A	U

Can save the .csv as Excel file for your own use

Or, simply use the data directly for testing (Highway only)...

Highway Testing Spreadsheet

Can transfer data
from export files to
testing spreadsheet:

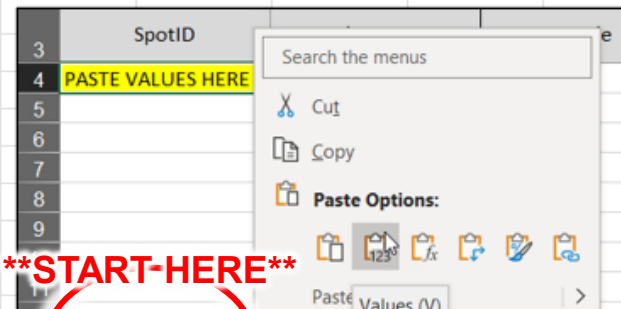
INSTRUCTIONS TO USE TESTING SPREADSHEET:

Step 1: Export the desired projects from SPOT Online to the spreadsheet export option.

Step 2: From the spreadsheet export, highlight the **PROJECT ROWS ONLY** (not the two title rows) - as shown below.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1		Draft or Submitted			STI Category									Primary (r
2	SpotID	ProjectSta	Mode	TIP	ProjectCat	ROUTENA	FromCross	ToCrossSt	Description	SpecificIm	PrimaryPu	OriginalSul	Comments	FundingRe
3	H230011	Draft	Highway	U-5007	Regional Ir	NC 51 (NC	Lebanon R	Lawyers R	Widen NC	1 - Widen	Provide, m	CRTPO		E
4	H230032	Draft	Highway	R-2553 A	Statewide	US 70	NC 903	SR 1522	Interchang	17 - Upgra	US 70 has	ECRPO		B
5	H230005	Draft	Highway		Regional Ir	NC 10 (NC	NC 10	NC 16	Construct	5 - Constr	To reduce	TBD	Test scorir	F
6	H230008	Draft	Highway		Regional Ir	NC 197	US 19E	SR 1416 (C	Modernize	16 - Mode	Improve n	High Country	RPO	G
7	H230013	Draft	Highway		Regional Ir	NC 211	NC 906 (M	SR 1112 (S	Description	1 - Widen	Purpose	CFRPO	Comments	B
8	H230012	Draft	Highway		Regional Ir	NC 197	US 19E	SR 1113 (C	Modernize	16 - Mode	Upgrade tl	Sparks		G
9	H230188	Draft	Highway		Regional Ir	US 158 (US	US 220	Freeway D	Widen exis	1 - Widen	Continuati	PTRPO	This is a he	D
10	H230015	Draft	Highway		Regional Ir	NC 211	US 17	SR 1112 (S	Description	1 - Widen	Purpose	CFRPO	Comments	B
11	H230017	Draft	Highway		Regional Ir	NC 226	NC 197	NC 261	Upgrade N	16 - Mode	Improve n	Sparks		G
12	H230016	Draft	Highway		Statewide	NC 211	US 17	SR 1112 (S	Description	1 - Widen	Purpose	CFRPO	Comments	B
13														

Step 3: Copy the highlighted rows in the spreadsheet export, then in the "**PASTE EXPORT DATA HERE**" tab of this file, right-click in cell A4 ('



****START-HERE****

READ ME

Highway Projects - MASTER

PASTE EXPORT DATA HERE

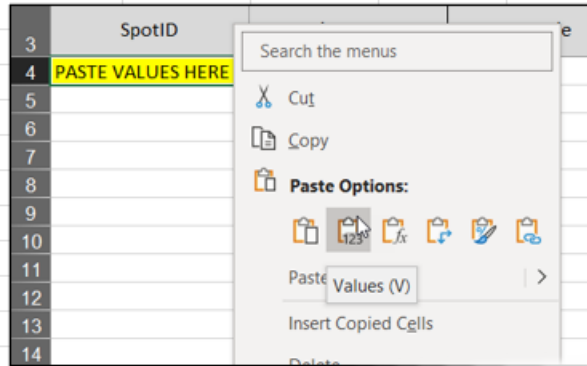
Mobility%

Modernization%

Drc **

Highway Testing Spreadsheet

Step 3: Copy the highlighted rows in the spreadsheet export, then in the "PASTE EXPORT DATA HERE" tab of this file, right-click in cell A4 ("PASTE VALUES HERE") and choose **PASTE VALUES** option.



Step 4: In the "Highway Projects - MASTER" tab (the testing spreadsheet), SPOT IDs and most data will be automatically populated. User must populate project data for the **YELLOW columns (8 total, must scroll through entire sheet)** in order to receive a score. **Applicable scores will populate in columns J - L.**

Step 5: (Optional) Check if **ORANGE columns need custom editing**.

CAVEATS / RISKS:

Testing spreadsheet should not be the sole source of decision-making for P7 project lists.

Testing spreadsheet is most useful for comparing different versions of similar projects. Caution should be used when comparing different types of projects.

Testing spreadsheet uses CALC method for calculating all Travel Time Savings. Projects using CMT or NCSTM in P7 scoring will not use those methods here.

Highway Testing Spreadsheet

[illegible]

Local Contribution



Local Contribution

- Leverage new dollars (non-state or non-federal)
- 3 opportunities to submit local contribution:
 1. Project submittal
 2. Regional Impact local input point assignment window
 3. Division Needs local input point assignment window
- Scaling creates unknowns; advantages to each option
 - During project submittal, scaling has not happened yet → can see reduction in Cost to NCDOT, but not clear what is over-contributing since scoring is not complete
 - During LIP → quantitative scoring (and scaling) is complete and affect on score can be seen, but Cost to NCDOT was not reduced for the Benefit/Cost score

Highway – Benefit-Cost

Funding Category	Mobility Default Weights	Modernization Defaults
Statewide Mobility	25%	-
Regional Impact	20%	-
Division Needs	15%	-

Purpose – measure the expected benefits of the project over a 10 year period against the estimated project cost to NCDOT

$$\left[\frac{(\text{Travel Time Savings over 10 years in \$} + \text{Safety Benefits over 10 years in \$})}{\text{Project Cost to NCDOT at time of submittal}} \right] + \left[\frac{\text{Other Funds}}{\text{Total Project Cost}} \right] \times 100$$

(Funding Leverage)

- Cost can be lowered and score increased if other funds (non-federal or non-state funds) are committed
- Maximum 100 point score

Local Contribution Opportunity #1 – Project Submittal

- **Required** if other funds are being considered for Statewide Mobility projects
- Also available for Regional Impact and Division Needs projects
- Affects **both parts** of the Benefit/Cost criterion
 1. B/C component (only part that is scaled)
 2. Funding Leverage component
- Contribution is locked in
- Risk = impact is not known due to scaling

Local Contribution Opportunity #2 – REG or DIV LIP

- Affects only one part of the Benefit/Cost criterion
 - B/C component is already locked in
 - Funding Leverage component is the only part to be updated
- Quantitative score will be updated
- Opportunity to see affect of scaling and cascading
- If funds were contributed during submittal, allowed to add more at this stage if desired
- Spreadsheet provided to test impact (*TBD for P8*)

Local Contribution

- Contributing other funds (non-state or non-federal formula) is a non-binding commitment
 - Project score tied to contribution
 - If decrease in contribution occurs, project subject to reprioritization (except estimated toll revenue)
- Requires letter of commitment from donating party when entering local contribution (Highway only)

Bonus Allocation

- Highway only
- 50% of local commitment of non-State/Federal funds will be returned to local area for other high scoring projects in that area
- Capped at \$100m

End of Session 8





NORTH CAROLINA
Department of Transportation

Day 1	Day 2
Begin 9:30am	Begin 9:30am
Introduction	Day 1 Recap
Session 1 – STI Legislation	Session 6 – Scoring Process
Lunch	Session 7 – Scoring Tools and Resources
Session 2 – Prioritization and Programming Basics	Lunch
Session 3 – Prioritization and Programming Process	Session 8 – Submitting Good Candidate Highway Projects
Session 4 – Non-Highway Scoring Details	Session 9 – Select Advanced Scoring Details
Session 5 – Highway Scoring Details	Session 10 – Resources, Upcoming Items, and Takeaways
End by 3:30pm	End by 3:30pm (or earlier)

Session 9: Select Advanced Scoring Details

STI Training
NCDOT SPOT Office

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

Area-Specific Weights



Area-Specific Weights

- Used in P5, P6, and P7
- Applicable to all MPOs, RPOs, and Divisions within a Region or Division that is recommending Area-Specific Weights
 - Highway mode only
 - Available for Regional Impact and Division Needs scoring
 - Alters the criteria weights from the Default Highway Mobility or Modernization weights
 - Area-Specific Weights do not rollover from previous cycle

Requirement:

- Agreement between all applicable MPOs/RPOs/Division Engineers
 - Memo to SPOT from each MPO/RPO/Division Engineer, referencing TAC/Board Chair(s) or Division Engineer agreement

P5 Area-Specific Criteria Weights

Location	Weight Reductions	Weight Additions
Region A	-5% Congestion	+5% Freight
Division 1	-5% Freight -10% Benefit/Cost -10% Congestion	+10% Safety +15% Access/Conn
Division 5	-5% Freight -5% Access/Conn	+5% Benefit/Cost +5% Safety
Divisions 6, 7, 8, 11	-5% Freight	+5% Safety
Division 13	-5% Access/Conn	+5% Safety

P6 & P7 Area-Specific Criteria Weights

Location	Weight Reductions	Weight Additions
Division 5	-5% Freight -5% Accessibility/Connectivity	+10% Safety
Division 6	-5% Freight	+5% Safety
Divisions 7	-5% Freight	+5% Safety

Historic Default Criteria Weights: **Statewide Mobility**

	P3	P4	P5	P6 / P7 Mobility	P6 / P7 Modernization
Congestion	30%	30%	30%	30%	10%
Benefit/Cost	30%	25%	25%	25%	
Safety	10%	15%	10%	10%	25%
Economic Competitiveness	10%	10%	10%	10%	
Freight		15%	25%	25%	25%
Multimodal	20%	5%			
Lane Width					10%
Shoulder Width					20%
Pavement Condition					10%

Note: Statewide Mobility criteria weights total 100%.

Historic Default Criteria Weights: **Regional Impact**

	P3	P4	P5	P6 / P7 Mobility	P6 / P7 Modernization
Congestion	30%	20%	20%	20%	5%
Benefit/Cost	30%	20%	20%	20%	
Safety	10%	10%	10%	10%	25%
Accessibility/Connectivity		10%	10%	10%	
Freight		10%	10%	10%	10%
Multimodal					
Lane Width					10%
Shoulder Width					10%
Pavement Condition					10%

Note: Regional Impact criteria weights total 70%.

Historic Default Criteria Weights: **Division Needs**

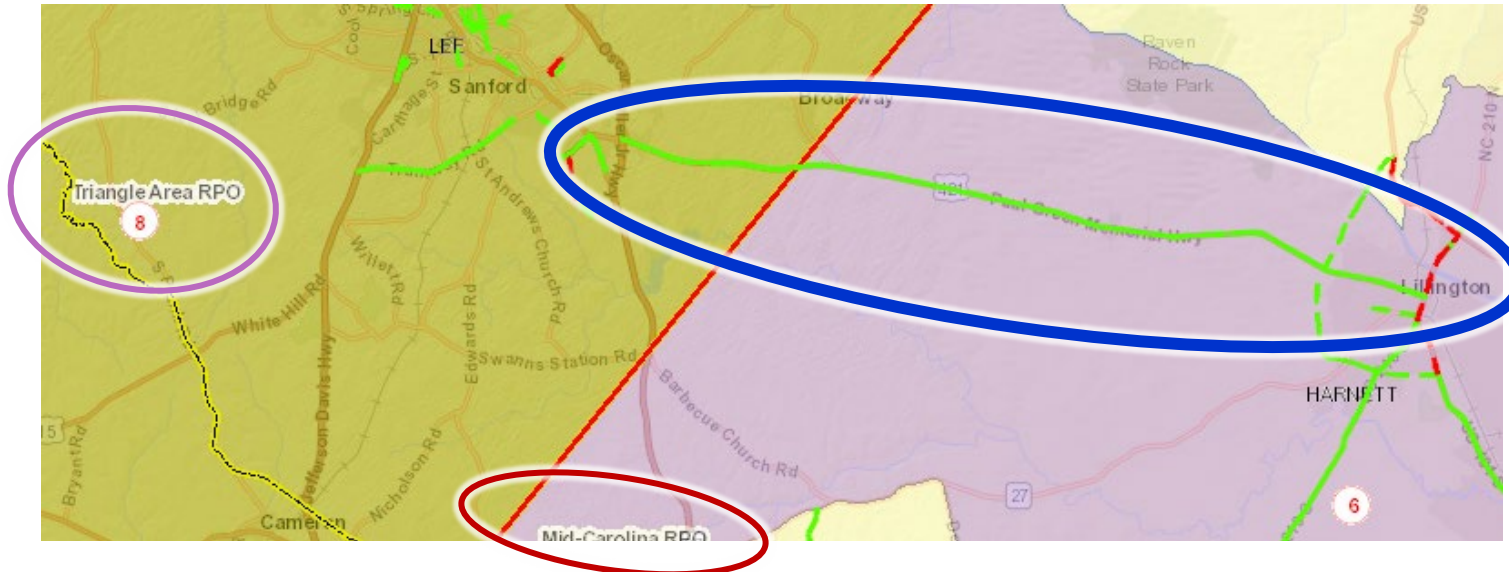
	P3	P4	P5	P6 / P7 Mobility	P6 / P7 Modernization
Congestion	20%	15%	15%	15%	
Benefit/Cost	20%	15%	15%	15%	
Safety	10%	10%	10%	10%	20%
Accessibility/Connectivity		5%	5%	5%	
Freight		5%	5%	5%	5%
Multimodal					
Lane Width					5%
Shoulder Width					10%
Pavement Condition					10%

Note: Division Needs criteria weights total 50%.

Donations



Local Input Points – Donations



What if a project is located in two organizations that have differing priorities on LIP assignment?

First MPO/RPO	First MPO/RPO %	Second MPO/RPO	Second MPO/RPO %
Mid-Carolina RPO	74	Triangle Area RPO	26

Examples of how to apply full 100 points to this project:

Max LIPs Mid-Carolina RPO can assign = 74 → *assign 74 & donate 26 to Triangle Area RPO*

Max LIPs Triangle Area RPO can assign = 26 → *assign 26 & donate 74 to Mid-Carolina RPO*

- Requires coordination and agreement between donating and receiving organizations, as well as documentation to SPOT Office showing agreement, SPOT ID, and number of points donated
- Points may also be donated to projects entirely within another organization

Project Submittals – Donations

- Submittal slot(s) may be donated from one organization to another
 - Between POs
 - Between Divisions
- Just as with LIP donations, requires coordination and agreement between donating and receiving organizations, as well as documentation to SPOT Office showing agreement and SPOT ID(s) being used for each donated submittal slot

Scaling



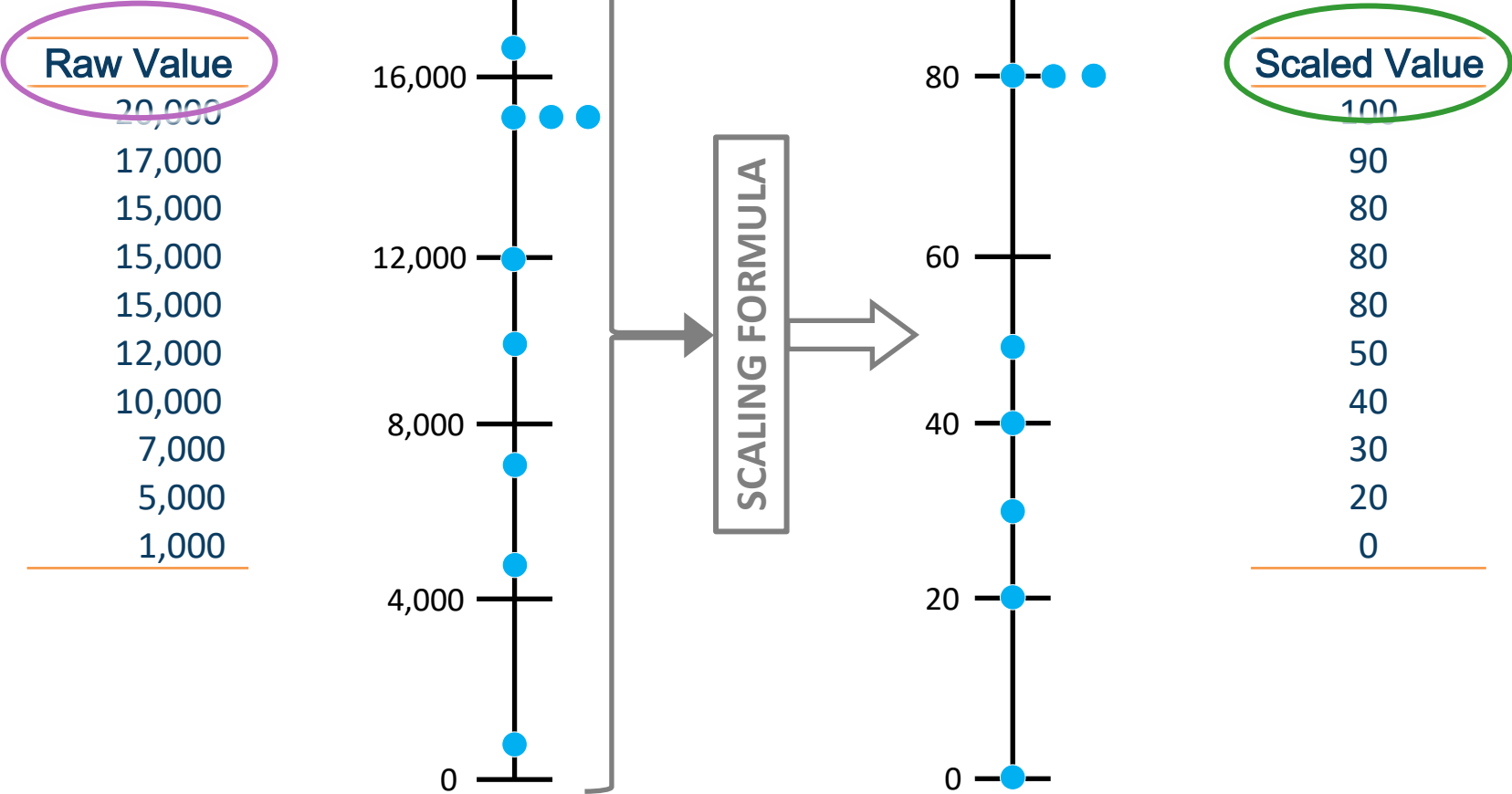
Scaling

- Ranking of an individual raw measure score in comparison to the total project population of that measure
- Incorporated in P4 to address P3 statistical issues
- Uses standardized methodology to produces a more uniform distribution of results within each measure
- **Highest** raw measure value = 100 scaled value
- **Lowest** raw measure value = 0 scaled value
- **All other** values based on percentage of projects less than or equal to that value
- Note: projects that are not eligible in a measure (N/A) are not included in the scale

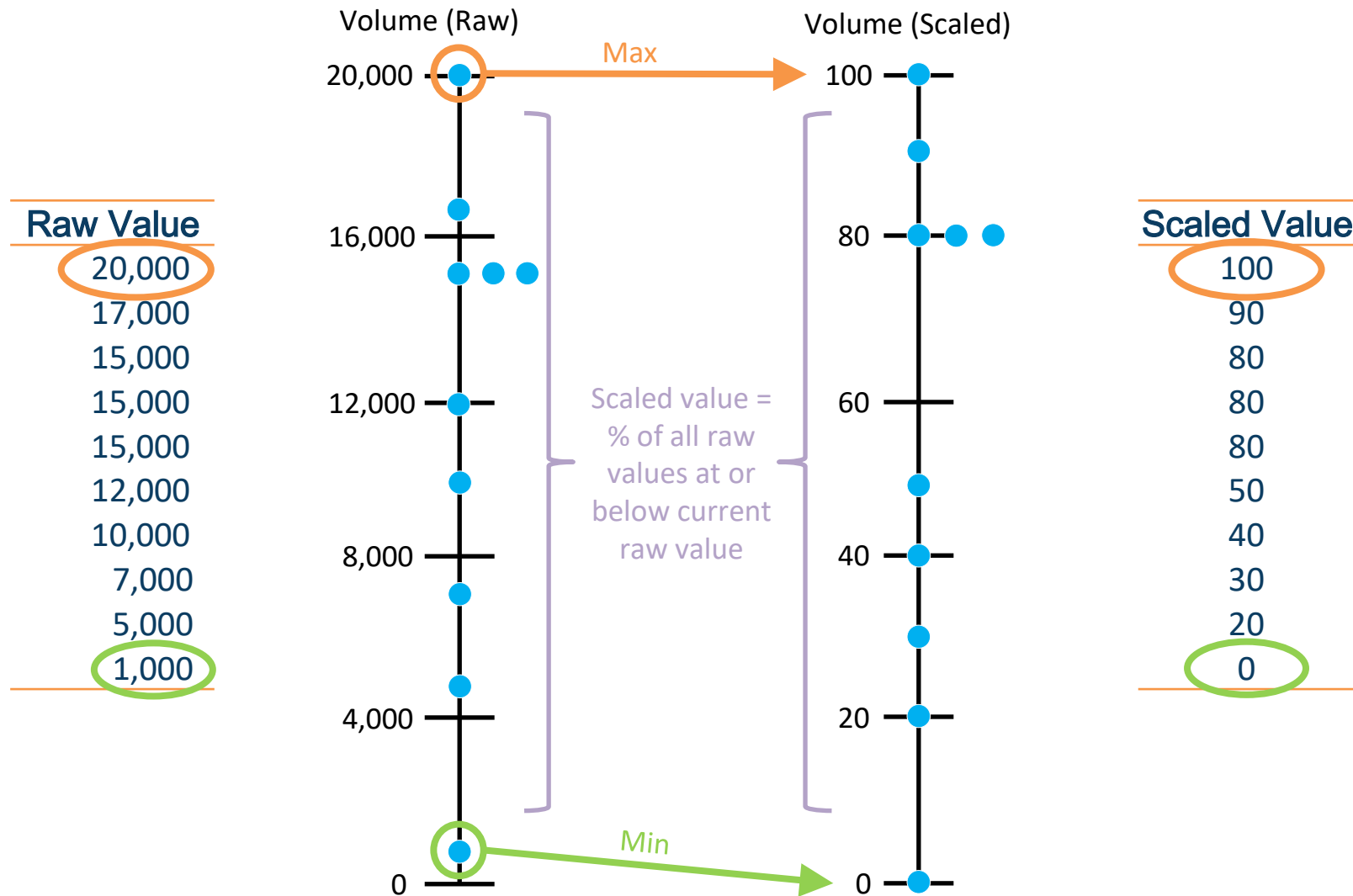
Scaling – Example

Volume / Capacity Ratio Raw	Volume / Capacity Ratio Scaled	Volume Raw	Volume Scaled	Benefit/Cost Raw (SW, REG)	Benefit/Cost Scaled (SW, REG)
0.21	10.15	5,322.22	14.81	0.08	19.88

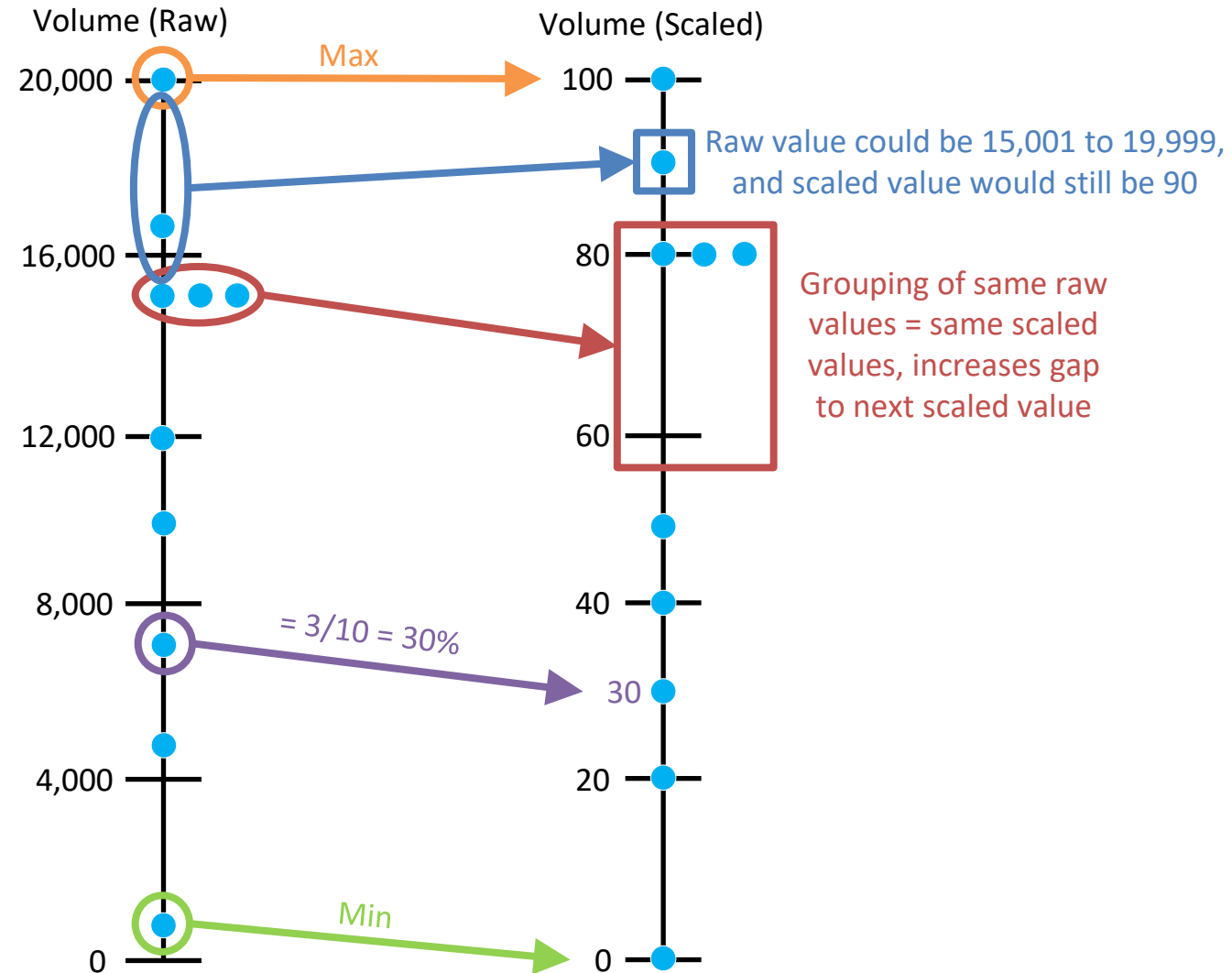
Select Advanced Scoring Details



Scaling – Example



Scaling – Example



Local Input Point Methodologies



2011 – 2012

Prioritization Process is now in Law

“The Department shall develop and utilize a process for selection of transportation projects that is based on professional standards in order to most efficiently use limited resources to benefit all citizens of the State.

The strategic prioritization process should be a systematic, data-driven process that includes a combination of quantitative data, qualitative input, and multimodal characteristics, and should include local input.

The Department shall develop a process for standardizing or approving local methodology used in Metropolitan Planning Organization and Rural Transportation Planning Organization prioritization.” - S.L. 2012-84

Local Input Point Methodologies

Transparency

Minimum requirements:

- 2 Criteria – at least one qualitative criteria
- Understandable to public
- Preliminary point assignments guided by methodology
- Public comment opportunity for preliminary point assignment
- Deviations with final point assignment clearly articulated
- Flexing
- Methodology, point assignment, and deviations (if any) posted on website

Division Engineer Methodology

- Menu of standard criteria for Divisions to choose from

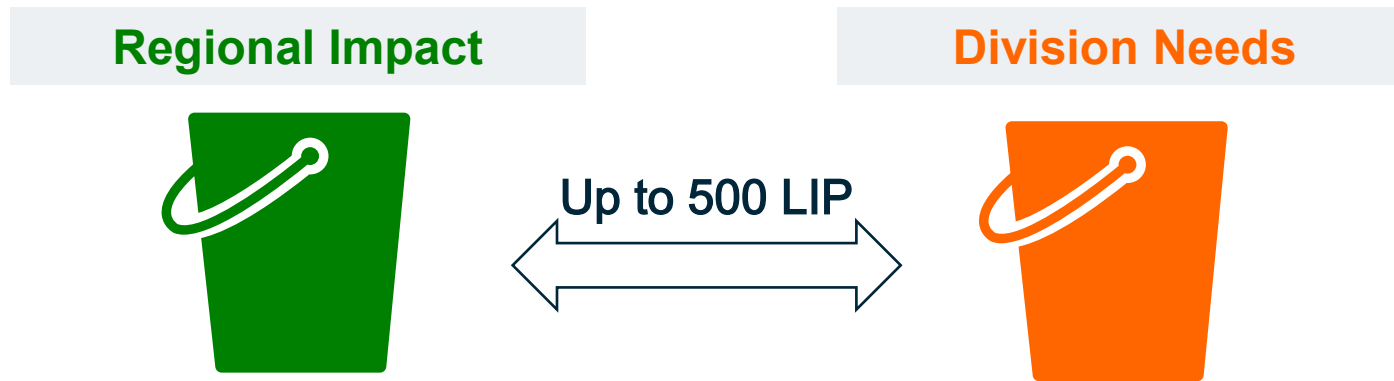
- Each Division selects criteria for:
 - Highway Regional & Division
 - Non-Highway Regional & Division

REGIONAL IMPACT	REGIONAL IMPACT	REGIONAL IMPACT	DIVISION NEEDS	DIVISION NEEDS	DIVISION NEEDS	Comments
Division Engineer Methodology Points (Criteria Points)	PRELIMINARY Division Engineer Local Input Points (out of 100 - 15% of total score)	FINAL Division Engineer Local Input Points (out of 100 - 15% of total score)	Division Engineer Methodology Points (Criteria Points)	PRELIMINARY Division Engineer Local Input Points (out of 100 - 25% of total score)	FINAL Division Engineer Local Input Points (out of 100 - 25% of total score)	(Use this section to note reason if local point assignment does not align with project ranking using methodology points.)

- Posted online with other Local Methodologies. One document with all Divisions' chosen criteria:
<https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>
 Folder = P7 / Local Input Points
- Divisions post their methodology points, input points, and comments

Local Input Points – Flex Policy

- Flex Policy = up to 50% of an organization's base local input points (500 LIPs max) can be flexed between Regional Impact and Division Needs within each MPO/RPO or NCDOT Division



- Use of this policy is optional
- Each organization's choice to potentially use flexing would need to be included in the approved LIP methodology (i.e. "flexing clause")
- Allows for more flexibility in addressing various areas' needs in each category and among the different modes/types of projects

Funding Caps



STI Funding Caps and Restrictions Impacting Programming



Corridor Cap:
Statewide Mobility



Funding limits:
Light rail and commuter
rail projects



Funding limits:
Regional Impact
Transit projects



Funding limits:
Airport projects in all
categories



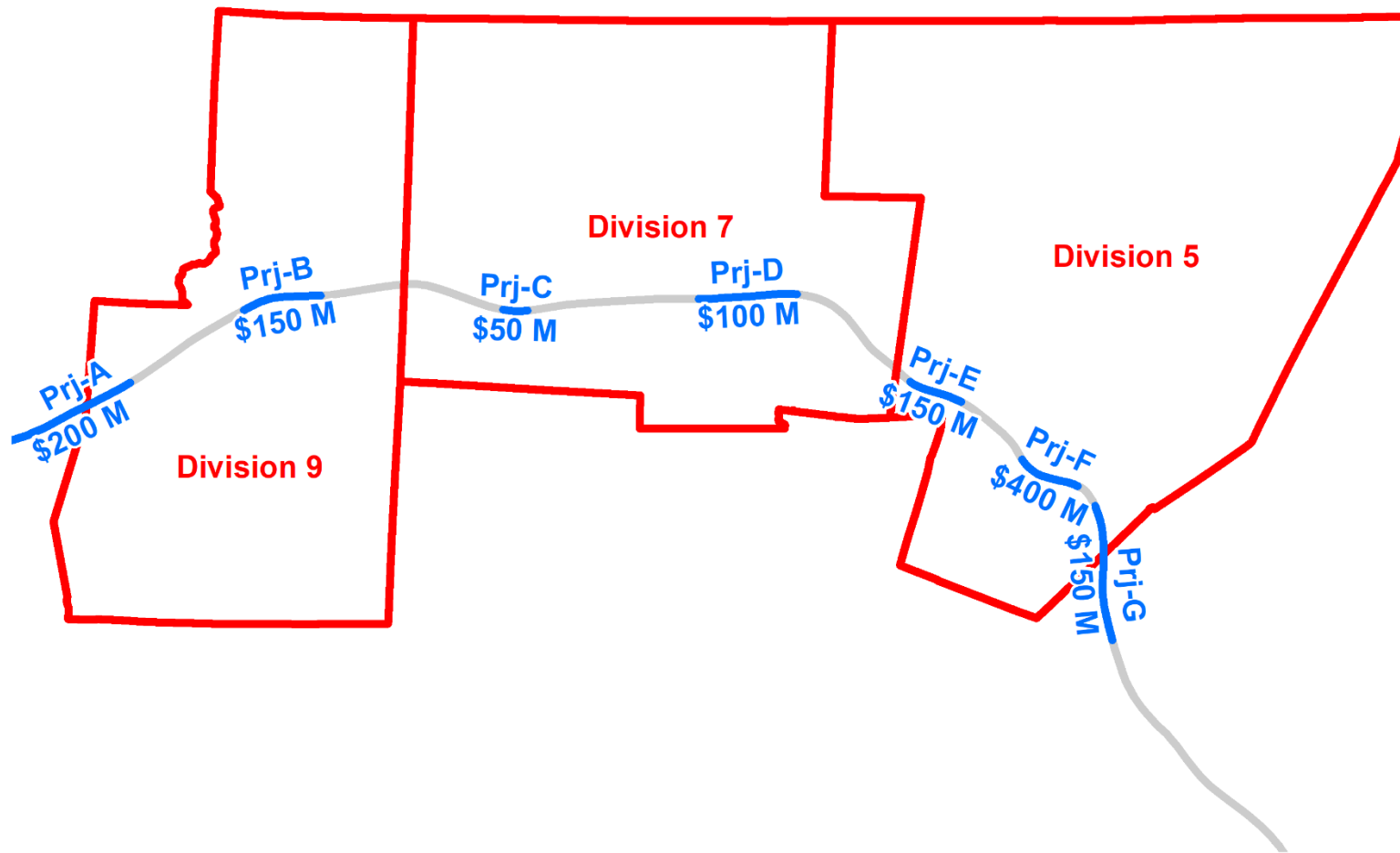
Prohibition:
Using state funds to fund independent
bicycle and pedestrian projects

Corridor Cap

136-189.11, (d), (1), b:

- Project cap. – No more than ten percent (10%) of the funds projected to be allocated to the Statewide Strategic Mobility category over any five-year period may be assigned to any project or group of projects in the same corridor within a Highway Division or within adjoining Highway Divisions.
- Prohibits the spending of a large portion of the Statewide Mobility funds on one corridor in one area

Corridor Cap



Corridor Cap

Divisions 7 & 9

Project	Cost
Prj-A	\$200 M
Prj-B	\$150 M
Prj-C	\$50 M
Prj-D	\$100 M

Total: \$500 Million

Divisions 7 & 5

Project	Cost
Prj-C	\$50 M
Prj-D	\$100 M
Prj-E	\$150 M
Prj-F	\$400 M
Prj-G	\$150 M

Total: \$850 Million

Corridor Cap

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2020 THRU 2029
HIGHWAY TRUST FUND REVENUES												
25% of Gas Tax Revenues	\$ 593.00	\$ 610.00	\$ 625.00	\$ 641.00	\$ 653.00	\$ 665.00	\$ 675.00	\$ 683.00	\$ 693.00	\$ 704.00	\$ 690.00	\$ 6,639.00
DMV Fees & Investment Income	152.00	153.00	165.00	167.00	171.00	176.00	199.00	204.00	209.00	215.00	241.00	\$ 1,900.00
Use Tax	807.00	814.00	815.00	824.00	845.00	871.00	894.00	917.00	941.00	967.00	1,028.00	\$ 8,916.00
Total State Highway Trust Fund Revenues	\$ 1,552.00	\$ 1,577.00	\$ 1,605.00	\$ 1,632.00	\$ 1,669.00	\$ 1,712.00	\$ 1,768.00	\$ 1,804.00	\$ 1,843.00	\$ 1,886.00	\$ 1,959.00	\$ 17,455.00
Less Transfers for NCTA GAP Funding	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	(49.00)	\$ (490.00)
Less GO Debt Service	(50.04)	(59.77)	-	-	-	-	-	-	-	-	-	\$ (59.77)
Less Transfer to Highway Fund	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	\$ (4.00)
Less Program Administration	(36.04)	(36.62)	(37.27)	(37.90)	(38.76)	(39.76)	(41.06)	(41.89)	(42.80)	(43.80)	(45.49)	\$ (405.33)
Less Transfer to State Ports	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	(45.00)	\$ (450.00)
Net State Trust Fund Revenues	1,371.52	1,386.21	1,473.33	1,499.70	1,535.84	1,577.84	1,632.54	1,667.71	1,705.80	1,747.80	1,819.11	\$ 16,045.89
Federal Aid	1,261.00	1,289.00	1,289.00	1,289.00	1,289.00	1,289.00	1,289.00	1,289.00	1,289.00	1,289.00	1,289.00	12,890.00
Less SPR Funds	(34.14)	(34.90)	(34.90)	(34.90)	(34.90)	(34.90)	(34.90)	(34.90)	(34.90)	(34.90)	(34.90)	(348.98)
Less CMAQ	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(30.00)	(300.00)
Less DMS (Formerly EEP)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(20.00)	(200.00)
Less Yadkin River GARVEE debt service	(15.62)	(5.13)	(5.13)	-	-	-	-	-	-	-	-	(10.26)
Net Federal Aid Revenues	1,161.24	1,198.97	1,198.97	1,204.10	1,204.10	1,204.10	1,204.10	1,204.10	1,204.10	1,204.10	1,204.10	12,030.76
Available Subtotal (Trust and Federal-aid)	2,532.76	2,585.18	2,672.30	2,703.80	2,739.95	2,781.95	2,836.65	2,871.81	2,909.90	2,951.91	3,023.21	28,076.65
Less PE	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(250.00)	(2,500.00)
Subtotal	2,282.76	2,335.18	2,422.30	2,453.80	2,489.95	2,531.95	2,586.65	2,621.81	2,659.90	2,701.91	2,773.21	25,576.65
Less Construction Cost Overruns	(58.73)	(60.31)	(62.92)	(63.86)	(64.95)	(66.21)	(67.85)	(68.90)	(70.05)	(71.31)	(73.45)	(669.80)
Less Bonus Alloc. for Tolling & Local Participation	(36.70)	(40.20)	(47.40)	(40.20)	(43.82)	(23.67)	(3.32)	(7.09)	(4.59)	(61.95)	(58.63)	(330.86)
Funds Available for Programming Subtotal	2,187.33	2,234.67	2,311.98	2,349.74	2,381.18	2,442.07	2,515.47	2,545.81	2,585.26	2,568.65	2,641.14	24,575.99
Less Inflation	0.00	(11.17)	(34.80)	(59.21)	(84.41)	(111.85)	(115.21)	(116.60)	(118.41)	(117.64)	(120.96)	(890.26)
Funds Available for Programming	\$ 2,187.33	\$ 2,223.50	\$ 2,277.19	\$ 2,290.53	\$ 2,296.76	\$ 2,330.23	\$ 2,400.27	\$ 2,429.21	\$ 2,466.86	\$ 2,451.01	\$ 2,520.18	23,685.72
Less Transition Funding	(170.41)	(88.89)	(69.14)	(40.90)	(37.39)	(36.29)	(14.98)	(9.85)	-	-	-	(297.44)
Funds Available to Allocate to Categories	\$ 2,016.92	\$ 2,134.61	\$ 2,208.05	\$ 2,249.63	\$ 2,259.37	\$ 2,293.94	\$ 2,385.29	\$ 2,419.36	\$ 2,466.86	\$ 2,451.01	\$ 2,520.18	\$ 23,388.28
STATEWIDE	806.77	853.84	883.22	899.85	903.75	917.57	954.11	967.75	986.74	980.40	1,008.07	9,355.31
REGIONAL	605.08	640.38	662.41	674.89	677.81	688.18	715.59	725.81	740.06	735.30	756.05	7,016.48
LESS STPDA ON REGIONAL AND STATEWIDE ROUTES	(8.84)		(2.80)	(5.14)	(3.58)	(3.20)	(3.20)	(3.20)				(21.13)
REGIONAL TOTAL REVISED	596.24	640.38	659.61	669.74	674.23	684.98	712.39	722.61	740.06	735.30	756.05	6,995.36
DIVISION	605.08	640.38	662.41	674.89	677.81	688.18	715.59	725.81	740.06	735.30	756.05	7,016.48

Statewide Mobility Corridor Cap = 10% of sum highlighted \$
(for each 5 yr period)

(Dollars in Millions)

Corridor Cap

Divisions 7 & 9

Project	Cost
Prj-A	\$200 M
Prj-B	\$150 M
Prj-C	\$50 M
Prj-D	\$100 M

Total: \$500 Million

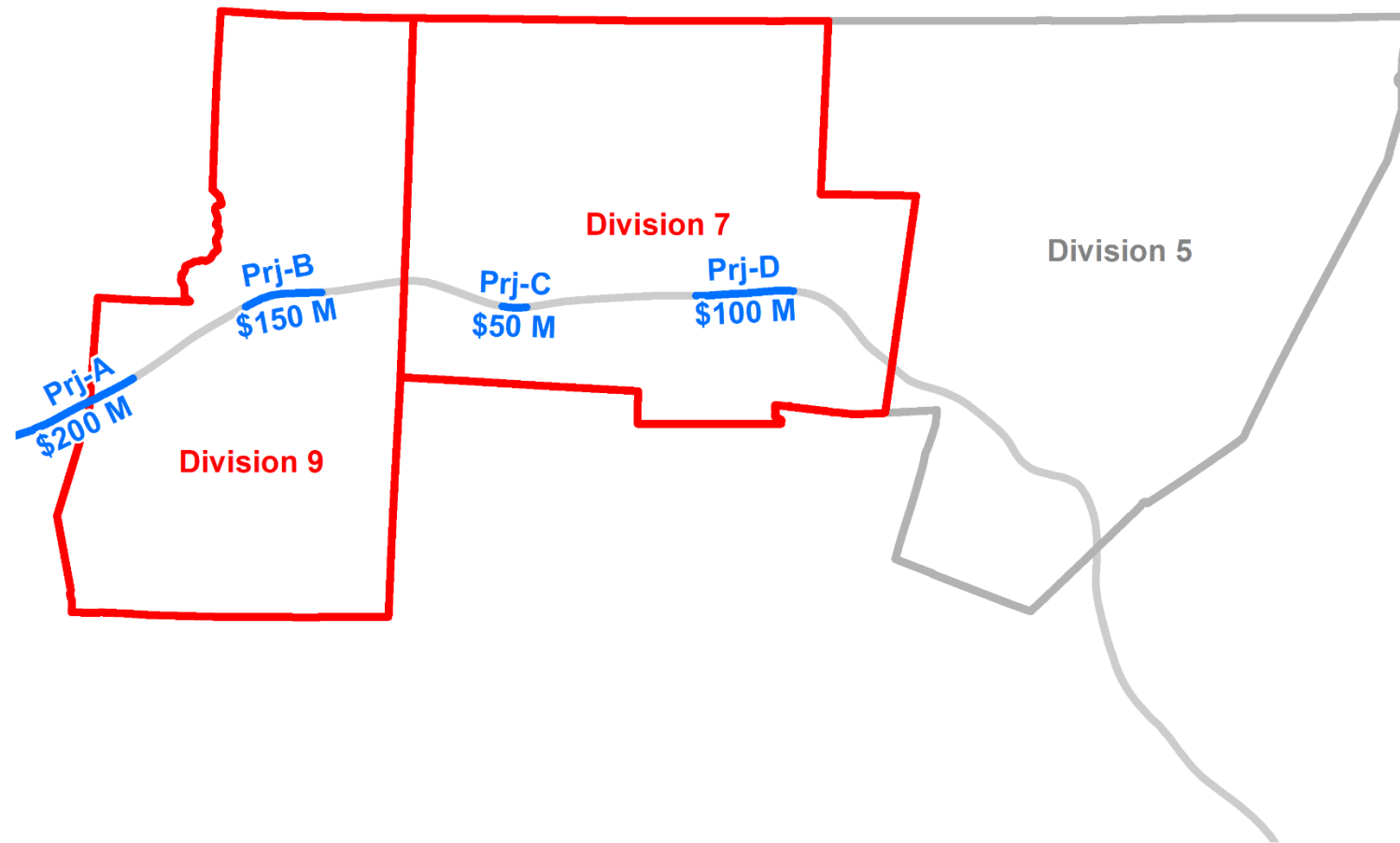
Divisions 7 & 5

Project	Cost
Prj-C	\$50 M
Prj-D	\$100 M
Prj-E	\$150 M
Prj-F	\$400 M
Prj-G	\$150 M

Total: \$850 Million

Cap for 1st 5 Years: \$445,823,000

Corridor Cap



Corridor Cap

Divisions 7 & 9

Project	Cost
Prj-A	\$200 M
Prj-B	\$150 M
Prj-C	\$50 M
Prj-D	\$100 M

Total: \$400 Million

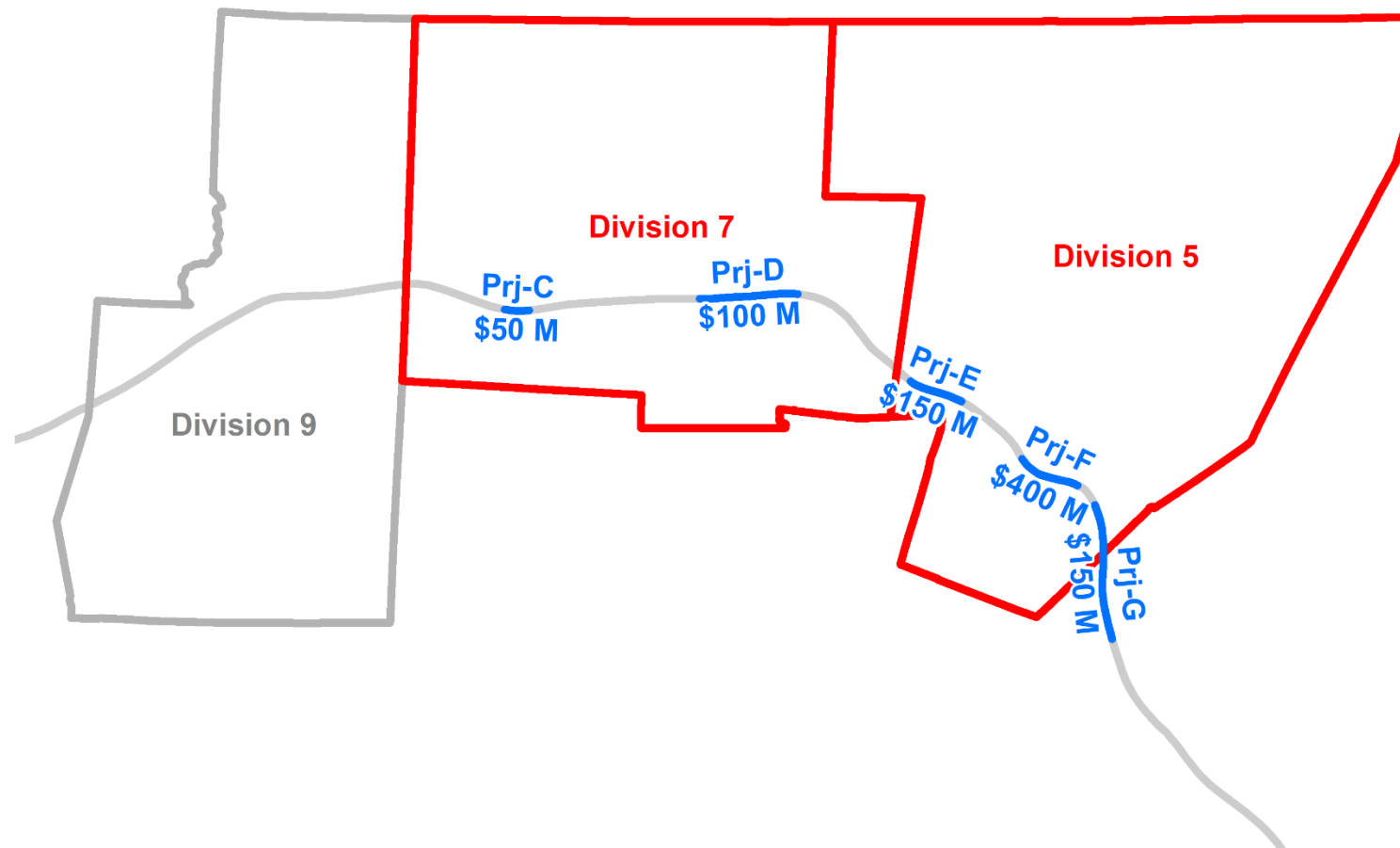
Divisions 7 & 5

Project	Cost
Prj-C	\$50 M
Prj-D	\$100 M
Prj-E	\$150 M
Prj-F	\$400 M
Prj-G	\$150 M

Total: \$750 Million

Cap for 1st 5 Years: \$445,823,000

Corridor Cap



Corridor Cap

Divisions 7 & 9

Project	Cost
Prj-A	\$200 M
Prj-B	\$150 M
Prj-C	\$50 M
Prj-D	\$100 M

Total: \$400 Million

Divisions 7 & 5

Project	Cost
Prj-C	\$50 M
Prj-D	\$100 M
Prj-E	\$150 M
Prj-F	\$400 M
Prj-G	\$150 M

Total: \$350 Million

Cap for 1st 5 Years: \$445,823,000

Programming STI Projects

DRAFT 2020 - 2029 STIP - COMPARISON FOR 10 YEAR PERIOD

STATEWIDE CATEGORY

STATEWIDE REVENUE 10 YEAR PERIOD	STATEWIDE REVENUE ADJUSTMENT	REVISED STATEWIDE REVENUE 10 YEAR PERIOD	STATEWIDE CATEGORY PROGRAMMED	DIFFERENCE	PERCENTAGE DIFFERENCE
\$9,355,310	\$274,522	\$9,629,832	\$10,941,801	(\$1,311,969)	-13.62%

REGIONAL CATEGORY

DISTRIBUTION REGIONS		REGION REVENUE 10 YEAR PERIOD	REGION REVENUE ADJUSTMENT	REVISED REGION REVENUE 10 YEAR	DA FUNDING (HIGHWAY)	DA FUNDING (NON- HIGHWAY)	AMOUNT REMAINING	4% NON- HIGHWAY PROGRAMMED	AMOUNT REMAINING	90% HIGHWAY PROGRAMMED	AMOUNT REMAINING	6% HIGHWAY PROGRAMMED	6% NON- HIGHWAY PROGRAMMED	DIFFERENCE	PERCENT DIFFERENCE	DISTRIBUTION REGIONS
1 & 4	A	\$592,013	(\$17,543)	\$574,470	\$0	\$0	\$574,470	\$429	\$574,041	\$293,733	\$280,308	\$0	\$0	\$280,308	48.79%	1 & 4
2 & 3	B	\$845,591	\$26,753	\$872,344	\$0	\$0	\$872,344	\$1,179	\$871,165	\$595,849	\$275,316	\$19,000	\$0	\$256,316	29.38%	2 & 3
5 & 6	C	\$1,543,626	\$73,236	\$1,616,862	\$0	\$0	\$1,616,862	\$87,837	\$1,529,025	\$1,002,657	\$526,368	\$49,852	\$0	\$476,516	29.47%	5 & 6
7 & 9	D	\$1,171,592	(\$53,431)	\$1,118,161	\$0	\$0	\$1,118,161	\$14,737	\$1,103,423	\$612,905	\$490,518	\$0	\$0	\$490,518	43.87%	7 & 9
8 & 10	E	\$1,445,455	\$167,394	\$1,612,849	\$0	\$0	\$1,612,849	\$5,179	\$1,607,670	\$1,144,814	\$462,856	\$17,500	\$0	\$445,356	27.61%	8 & 10
11 & 12	F	\$784,495	\$40,367	\$824,862	\$0	\$0	\$824,862	\$638	\$824,223	\$525,288	\$298,935	\$0	\$0	\$298,935	36.24%	11 & 12
13 & 14	G	\$612,589	\$65,116	\$677,705	\$0	\$0	\$677,705	\$429	\$677,276	\$415,358	\$261,918	\$17,100	\$0	\$244,818	36.12%	13 & 14
TOTALS		\$6,995,361	\$301,892	\$7,297,253	\$0	\$0	\$7,297,253	\$110,426	\$7,186,823	\$4,590,602	\$2,596,219	\$103,452	\$0	\$2,492,767		TOTALS

Note: Any DA funding applied is a Statewide or Regional Category project will be deducted from Total Regional Budget

Total Percent Difference

34.16%

DIVISION CATEGORY

DIVISION		DIVISION REVENUE 10 YEAR PERIOD	DIVISION REVENUE ADJUSTMENT	REVISED DIVISION REVENUE 10 YEAR	DA FUNDING (HIGHWAY)	DA FUNDING (NON- HIGHWAY)	AMOUNT REMAINING	4% NON- HIGHWAY PROGRAMMED	AMOUNT REMAINING	90% HIGHWAY PROGRAMMED	AMOUNT REMAINING	6% HIGHWAY PROGRAMMED	6% NON- HIGHWAY PROGRAMMED	DIFFERENCE	PERCENT DIFFERENCE	DIVISION
1		\$501,177	\$37,810	\$538,987	\$0	\$0	\$538,987	\$6,393	\$532,594	\$296,136	\$236,457	\$34,472	\$0	\$201,985	37.47%	1
2		\$501,177	\$40,763	\$541,940	\$0	\$0	\$541,940	\$9,669	\$532,271	\$336,295	\$195,975	\$51,328	\$0	\$144,647	26.69%	2
3		\$501,177	\$35,013	\$536,190	\$32,590	\$0	\$503,600	\$8,793	\$494,807	\$350,143	\$144,663	\$0	\$0	\$144,663	26.98%	3
4		\$501,177	(\$5,383)	\$495,794	\$10,096	\$2,070	\$483,628	\$11,516	\$472,112	\$140,721	\$331,390	\$0	\$0	\$331,390	66.84%	4
5		\$501,177	\$41,039	\$542,216	\$99,836	\$55,561	\$386,819	\$42,341	\$344,477	\$222,523	\$121,953	\$0	\$0	\$121,953	22.49%	5
6		\$501,177	(\$1,698)	\$499,479	\$4,144	\$460	\$494,875	\$14,381	\$480,493	\$253,955	\$226,537	\$0	\$0	\$226,537	45.35%	6
7		\$501,177	\$43,327	\$544,504	\$19,340	\$39,042	\$486,121	\$29,298	\$456,822	\$319,514	\$137,307	\$0	\$756	\$136,551	25.08%	7
8		\$501,177	\$56,893	\$558,070	\$100	\$1,967	\$556,002	\$36,302	\$519,699	\$269,415	\$250,284	\$0	\$174	\$250,110	44.82%	8
9		\$501,177	\$5,217	\$506,394	\$63,796	\$3,592	\$439,006	\$24,678	\$414,328	\$214,490	\$199,837	\$0	\$0	\$199,837	39.46%	9
10		\$501,177	\$9,415	\$510,592	\$135,064	\$7,155	\$368,372	\$27,229	\$341,143	\$142,095	\$199,047	\$21,100	\$3,023	\$174,924	34.26%	10
11		\$501,177	\$43,181	\$544,358	\$6,601	\$0	\$537,757	\$6,943	\$530,814	\$283,226	\$247,587	\$0	\$2,700	\$244,887	44.99%	11
12		\$501,177	\$32,959	\$534,136	\$69,835	\$1,467	\$462,834	\$13,012	\$449,822	\$306,221	\$143,600	\$900	\$7,767	\$134,933	25.26%	12
13		\$501,177	\$13,078	\$514,255	\$26,275	\$0	\$487,980	\$8,538	\$479,442	\$384,376	\$95,065	\$39,900	\$5,741	\$49,424	9.61%	13
14		\$501,177	\$20,530	\$521,707	\$19,100	\$0	\$502,607	\$7,698	\$494,909	\$307,251	\$187,657	\$29,000	\$6,342	\$152,315	29.20%	14
TOTALS		\$7,016,478	\$372,144	\$7,388,622	\$486,776	\$111,314	\$6,790,528	\$246,791	\$6,543,733	\$3,826,362	\$2,717,359	\$176,700	\$26,503	\$2,514,156		TOTALS

Total Percent Difference

34.03%

(Dollars in Thousands)

End of Session 9





NORTH CAROLINA
Department of Transportation

Day 1	Day 2
Begin 9:30am	Begin 9:30am
Introduction	Day 1 Recap
Session 1 – STI Legislation	Session 6 – Scoring Process
Lunch	Session 7 – Scoring Tools and Resources
Session 2 – Prioritization and Programming Basics	Lunch
Session 3 – Prioritization and Programming Process	Session 8 – Submitting Good Candidate Highway Projects
Session 4 – Non-Highway Scoring Details	Session 9 – Select Advanced Scoring Details
Session 5 – Highway Scoring Details	Session 10 – Resources, Upcoming Items, and Takeaways
End by 3:30pm	End by 3:30pm (or earlier)

Session 10: Resources, Upcoming Items, and Takeaways

STI Training
NCDOT SPOT Office

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

Takeaways

- Alternative Funding Opportunities
- Websites
- Upcoming training
- Schedule and Final Reminders

Alternative Funding Opportunities



Alternative Funding Opportunities (beyond Prioritization)

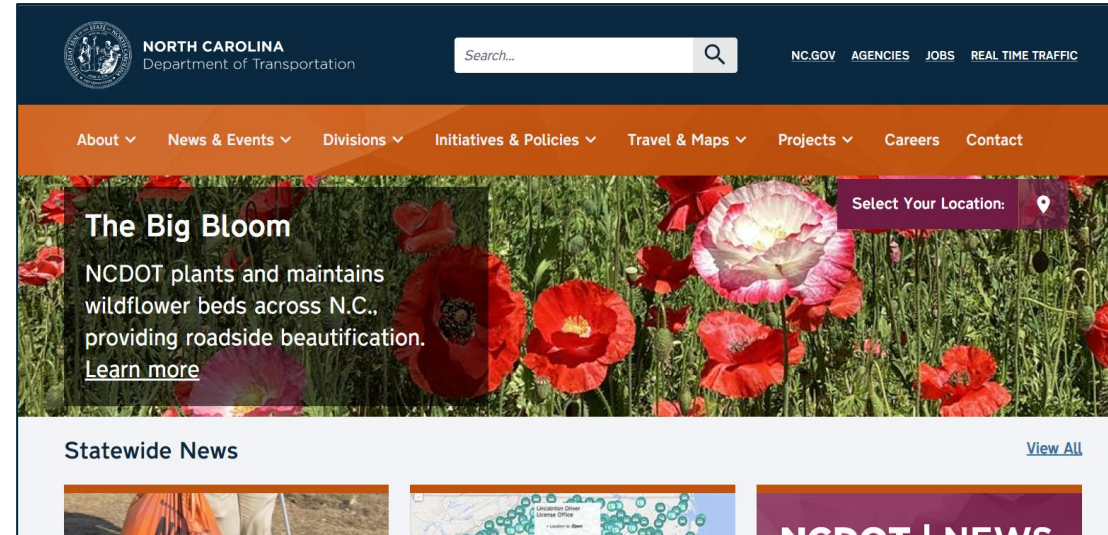
- Spot Safety Funding
 - Max funding per project = \$400,000
 - Typically can be designed and constructed within 18 months of funding approval
 - Contact Mobility and Safety to learn more
- Spot Mobility Funding
 - Maximum funding per project = \$750,000
 - Preference to projects that will improve access to a school
 - Contact Mobility and Safety to learn more
- Economic Development Funding
 - Time-critical job creation opportunities
 - Max \$10M per project
 - Contact the Division office to learn more
- Others...

Websites

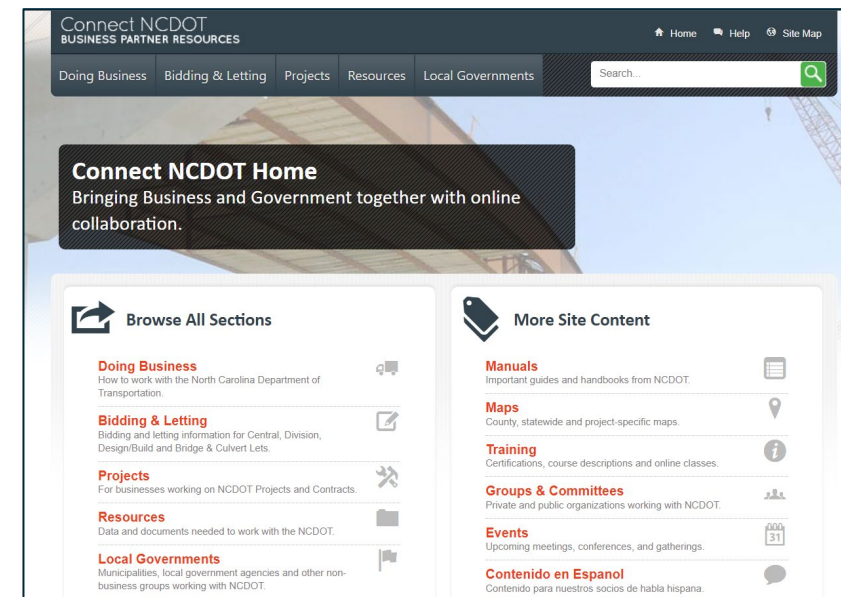


Where can you find _____ ?

- Generally: www.ncdot.gov



- Additional business information and data:
<https://connect.ncdot.gov/Pages/default.aspx>



Where to find the STIP

The screenshot shows the North Carolina Department of Transportation website. The navigation bar includes links for About, News & Events, Divisions, **Initiatives & Policies**, and Travel & Maps. The **Initiatives & Policies** link is circled in red. Below it, the **Initiatives & Policies** section is displayed, with **Improving Transportation** circled in red. A red arrow points from the circled **Initiatives & Policies** link to the circled **Improving Transportation** link. Another red arrow points from the circled **Improving Transportation** link to the **State Transportation Improvement Program** link in the grid below. The grid contains five links: **N.C. Bridges**, **NC Moves 2050 Plan**, **Road Cons**, **State Transportation Improvement Program** (circled in red), and **Strategic Transportation Corridors**.

Where to find the STIP

www.ncdot.gov/sti



State Transportation Improvement Program

Draft STIP 2026-2035

The N.C. Department of Transportation released its draft 10-year transportation plan for 2026-2035 in January.

[Learn More →](#)

2024-2033 Current STIP

[About the STIP](#)[STIP Highlights](#)[STIP Projects Map](#)[STIP Documents & Resources](#)

[Frequently Asked Questions](#)

2026-2035 Draft STIP

[STIP Development Timeline](#)[Draft STIP Resources](#)[News Releases](#)

NORTH CAROLINA
Department of Transportation

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Draft STIP Resources

Draft 2026-2035 STIP Map

[View a more detailed map here.](#)

[Initiatives & Policies](#)[About the 2024-2033 STIP](#)[STIP Highlights](#)[2024-2033 STIP Projects Map](#)[2026-2035 STIP Development](#)[News Releases](#)[Draft STIP Resources](#)[Developing & Updating the STIP](#)[Frequently Asked Questions](#)[Documents & Resources](#)

Draft STIP Document

[2026-2035 Draft STIP](#)
Excel

Prioritization Websites

- Prioritization Resources page:

- <https://connect.ncdot.gov/projects/planning/Pages/PrioritizationResources.aspx>



- Prioritization Data page:

- <https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>



STIP Unit Regions and Staff

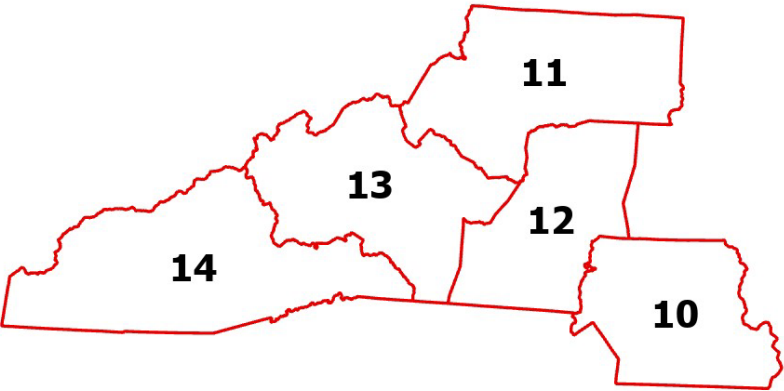
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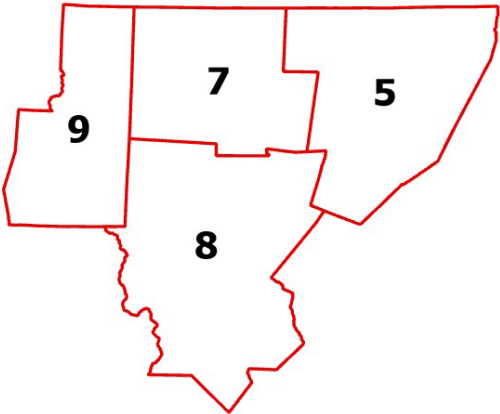
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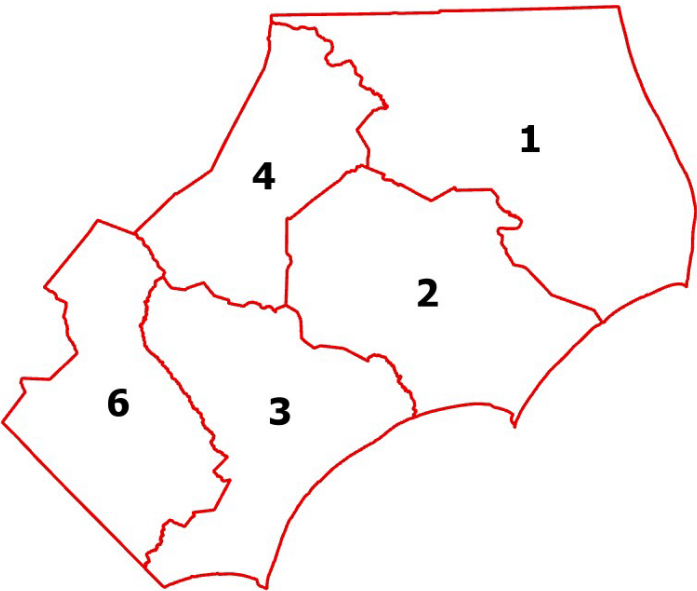
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Upcoming Training



Additional Upcoming Training

Events / Training	Guidance / Information
P8 Scoring Updates: SPOT will hold a virtual session(s) in June to walk through the details of scoring changes for P8.	P8 Contacts and SPOT Online access: SPOT will reach out to sign up new partners and confirm access for existing partners.
SPOT Online Introductory Training: SPOT will offer a virtual session in July for new users to learn the basics of project entry and navigating the system.	Carryovers: Already in process. SPOT will provide the final list of Carryover and Holding Tank projects for P8.
Project Entry / SPOT Online Workshops: SPOT will hold 1-day regional in-person sessions (West, Central, East) in August / September to assist partners with project entry questions and troubleshooting.	Testing spreadsheets: SPOT will provide more information on available tools for testing project scores.
	Deadlines: SPOT will provide due dates for aspects such as Carryover modifications, Carryover deletions, Area-Specific Weights, and Local Input Point Assignment Methodologies.

- Future training opportunities will cover additional topics
- Trainings will be a combination of in-person and virtual
- Stay tuned for final dates in email updates



Costs – P9 submittals

- Express Design Requirements for P9 Highway projects will begin to be implemented during the P8 submittal window
- Starting in P9, most projects will need an Express Design before they can be submitted to Prioritization
- Separate guidance will be provided by NCDOT Feasibility Studies Unit
- Additional training and information will come in the near term

Schedule and Final Reminders



Final Reminders

- Submittal window – July 7 to September 30
- Data review – March 2026 (potentially spread out earlier)
- LIP Methodologies – review committee to begin in 2026 (approve all by April 2026)
- Watch emails for training schedules, SPOT Online user account info, and guidance updates
 - Training slides and recordings will be posted
- Use resources and tools!  **BOOKMARK!** 
- Reach out for help...
 - Utilize Division DPEs / CDEs, experienced peers, and...

End of Session 10



Thank you!

