



North Carolina's Transportation Reform: Prioritization, Outreach, and Reality

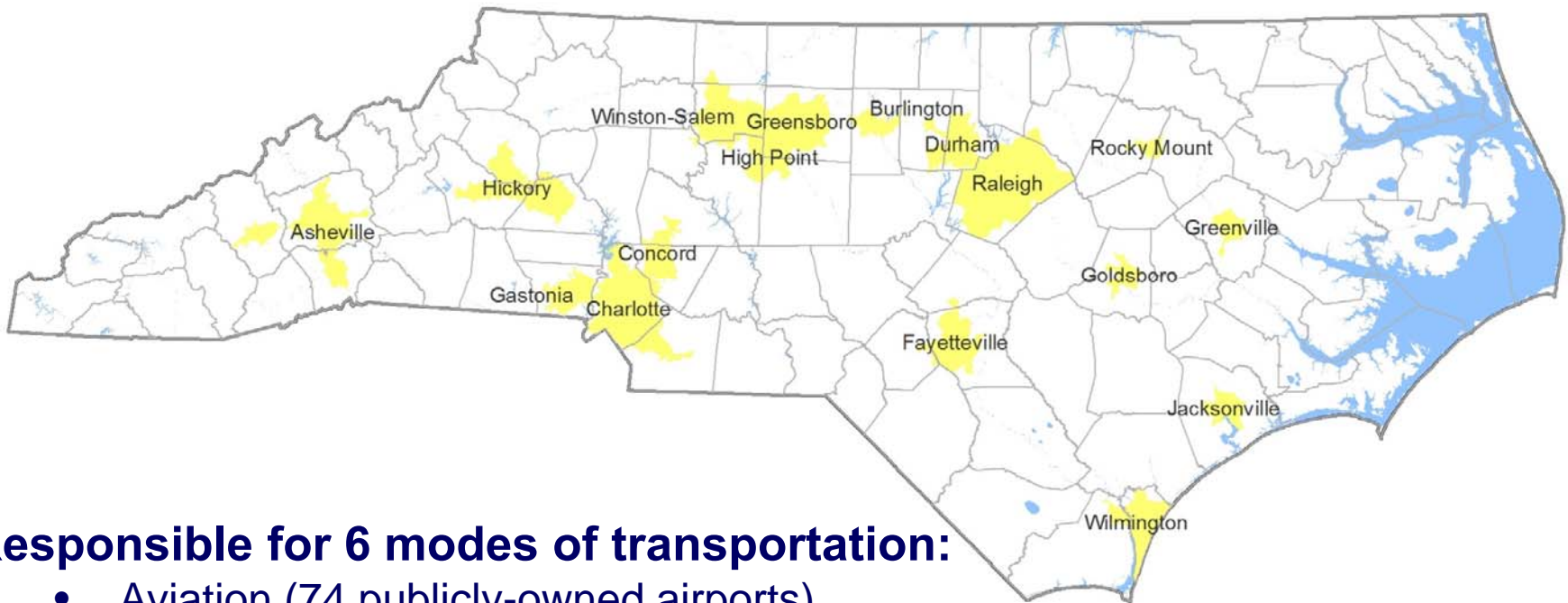
David Wasserman, P.E.

NCDOT Strategic Planning Office

May 2012 at TRB Planning & Programming Conference in Denver



North Carolina Department of Transportation



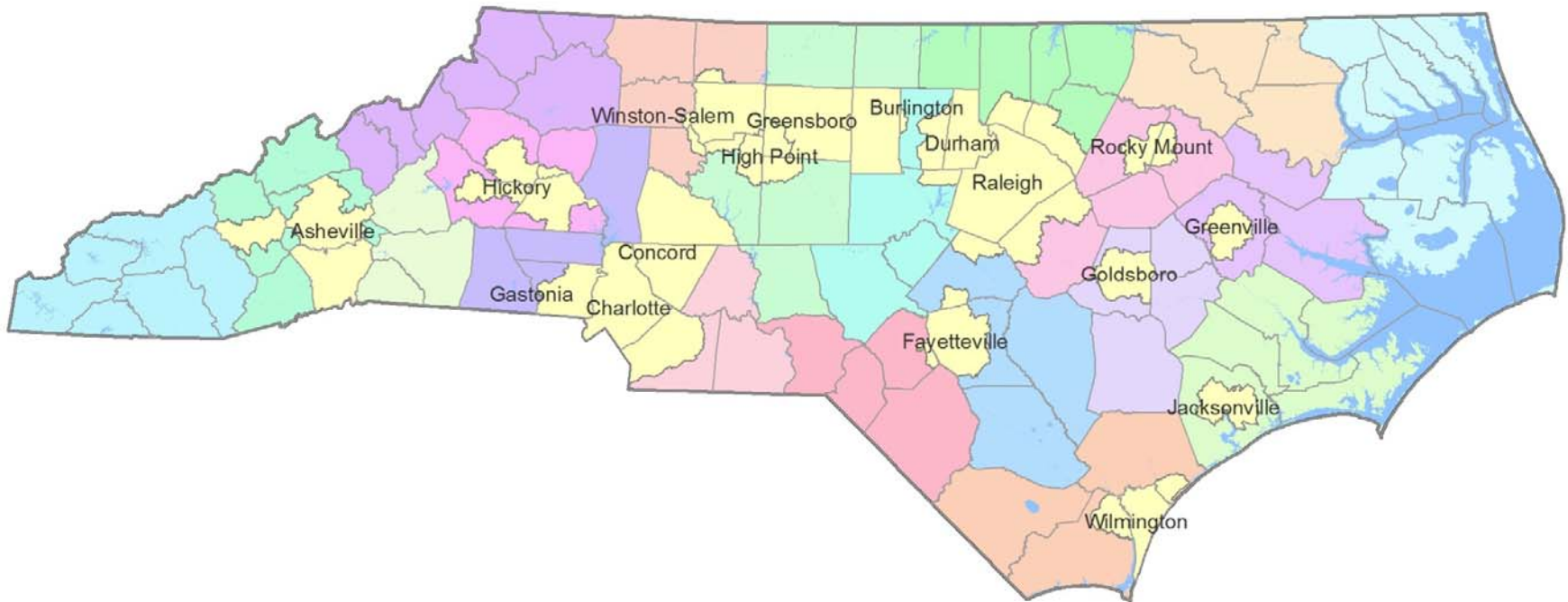
Responsible for 6 modes of transportation:

- Aviation (74 publicly-owned airports)
- Bicycle and Pedestrian
- Ferries – 2nd largest system in US (behind Washington)
- Highways – Maintains 80,000 miles of highways (2nd only to Texas)
- Public Transportation
- Rail





North Carolina Department of Transportation



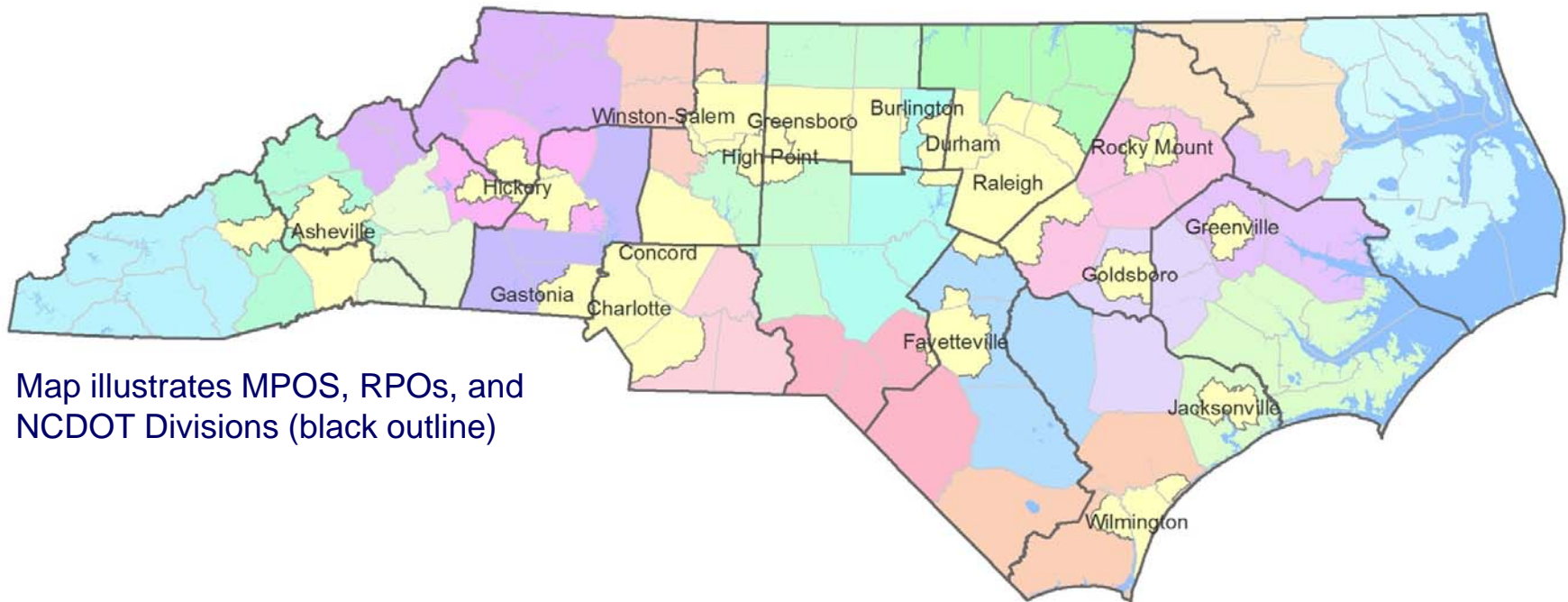
Annual Budget of ~\$4.1 B

- Federal dollars account for ~25% of budget





North Carolina Department of Transportation



Map illustrates MPOS, RPOs, and NCDOT Divisions (black outline)

Key Partners

- 17 Metropolitan Planning Organizations (MPOs)
- 20 Rural Planning Organizations (RPOs)
- 14 Field Offices (Divisions)





Transportation Reform

Public wanted politics removed from transportation decision-making

Governor Purdue issued Executive Order #2

“The Secretary of the Department of Transportation shall implement throughout the Department a professional approval process for all highway construction programs, highway construction contracts, highway construction projects, and plans for the construction of projects.”

Strategic Planning Office created (3 founding members)





Prioritization is Born

In collaboration with our partners, we developed a prioritization process based on the Department's three primary goals of :

Safety

Mobility

Infrastructure Health

NCDOT

OUR MISSION

Connecting people and places in North Carolina – safely and efficiently, with accountability and environmental sensitivity

OUR GOALS

- Make our transportation network **safer**
- Make our transportation network move people and goods more **efficiently**
- Make our infrastructure **last longer**
- Make our organization a place that **works well**
- Make our organization a **great place to work**





Prioritization Buckets



Infrastructure Health





Prioritization Buckets



Aviation



Bike &
Ped



Transit



Ferry



Rail

Projects in washed out buckets prioritized by NCDOT experts using data and local knowledge

New physical or
operating capacity



Mobility

Highway



Safety

Highway



Bridges

Highway



Pavement

Highway

Upgrade roadway to latest
design standards

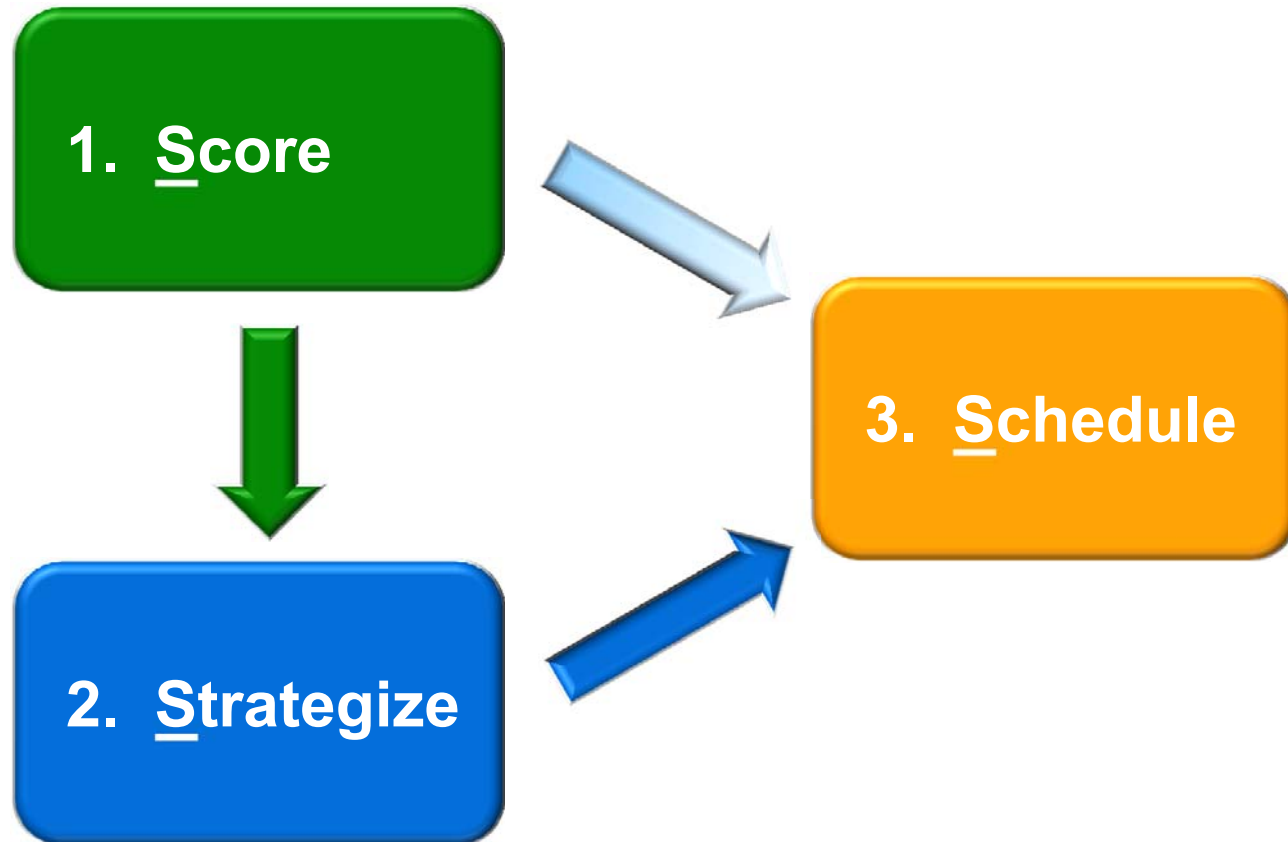


**Modern-
ization**

Highway

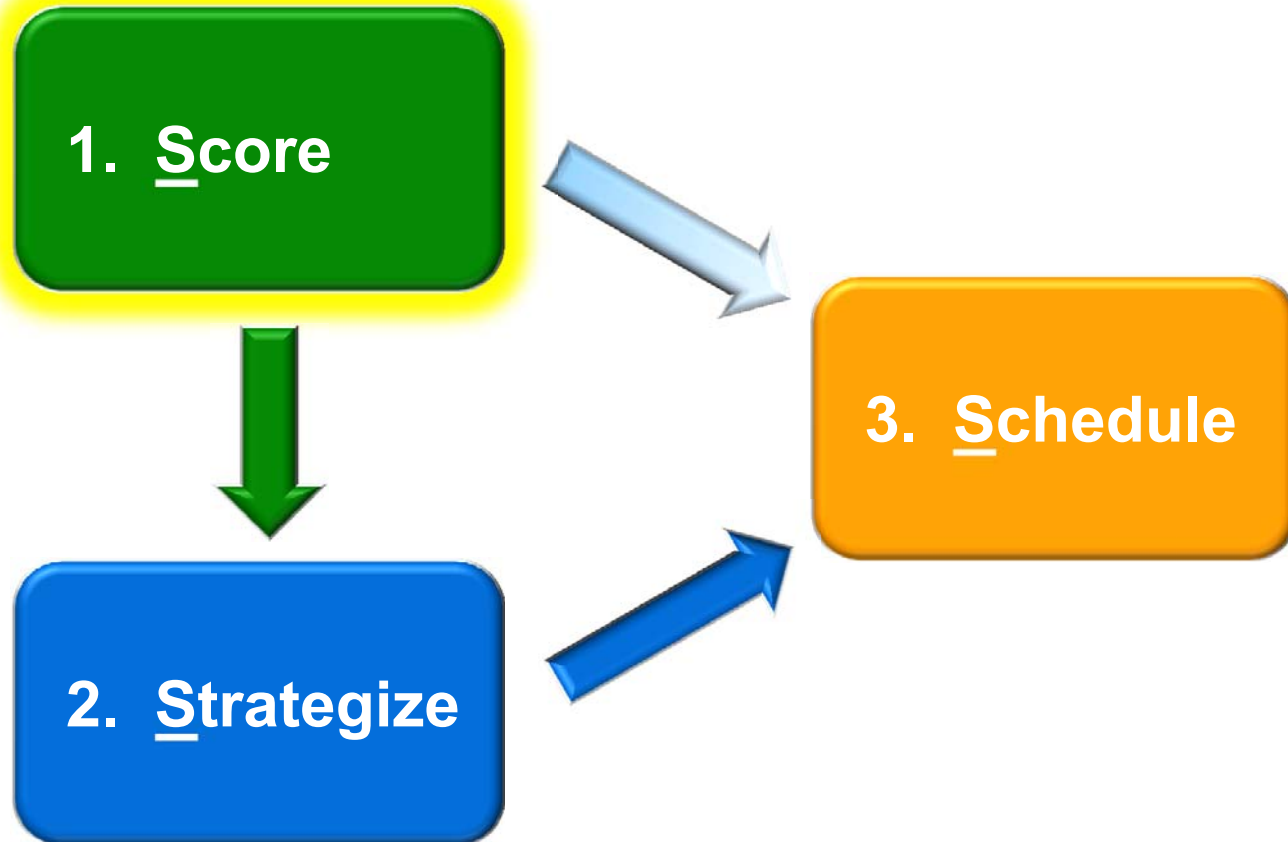


Strategic Prioritization and Programming Process





Strategic Prioritization and Programming Process





Highway Scoring

Total Score = Quantitative Data + Local Input + Multimodal Pts



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Total Score = Quantitative Data + Local Input + Multimodal Pts

Criteria

- **Congestion** (Volume/Capacity Ratio + AADT)
- **Safety Score** (Critical Crash Rates, Density, Severity)
- **Pavement Score** (Pavement Condition Rating)
- **Benefit/Cost** (Travel Time Savings / Project Cost)
- **Economic Competitiveness** (Value Added in \$)
- **Lane Width** (Existing Width vs. Standard Width)
- **Shoulder Width** (Existing Width vs. Standard Width)

Mobility

Modernization





Highway Scoring

Total Score = Quantitative Data + Local Input + Multimodal Pts

MPO/RPO & Division each rank projects



Top 25	OR	Control Total
#1 = 100		Can rank projects as desired
#2 = 96		Max 100 pts per project
#3 = 92		Min 4 pts per project
...		
#25 = 4		Can transfer points to other areas



Scoring for Highway Mobility Projects

Tier	<u>QUANTITATIVE</u>	<u>LOCAL INPUT</u>	
	Data	Division Rank	MPO/RPO Rank
Statewide (Interstates and Major US and NC Routes)	Congestion = 20% Benefit/Cost = 20% Safety = 10% Pavement Condition = 10% <u>Economic Competitiveness = 10%</u> Total = 70%	20%	10%
Regional (Other US and NC Routes)	Congestion = 20% Benefit/Cost = 15% Safety = 5% Pavement Condition = 5% <u>Economic Competitiveness = 5%</u> Total = 50%	25%	25%
Subregional (County Routes)	Congestion = 20% Safety = 5% <u>Pavement Condition = 5%</u> Total = 30%	30%	40%



Scoring for Highway Modernization Projects

Tier	<u>QUANTITATIVE</u>	<u>LOCAL INPUT</u>	
	Data	Division Rank	MPO/RPO Rank
Statewide (Interstates and Major US and NC Routes)	Lane Width = 20% Shoulder Width = 20% Safety = 10% Congestion = 10% <u>Pavement Condition = 10%</u> Total = 70%	20%	10%
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Subregional (County Routes)	Lane Width = 10% Shoulder Width = 10% <u>Safety = 10%</u> Total = 30%	30%	40%



Highway Scoring

Total Score = Quantitative Data + Local Input + Multimodal Pts

Bonus Points (extra credit)

Multimodal Options → 8 points:

HOV / HOT, light rail, bus rapid transit, or bus-on-shoulder w/in the highway ROW

Multimodal Connections → 5 points:

Direct connection (property line) to a transportation terminal (airport, seaport, rail depot, ferry terminal, transit terminal, freight intermodal terminal, major military base, or park and ride lot)

Military Base or Seaport Connections → 5 points:

Direct connection to a major military base or seaport. These projects receive an extra 5 points in addition to the 5 points for Multimodal Connections

Multimodal Design Features → 3 points:

Sidewalks, pedestrian crossings, striped bicycle lanes, wide outside shoulders, bus pullouts, transit bypass lanes, transit signal prioritization, bus shelters



Bicycle and Pedestrian - Scoring

Same scoring for Bicycle or Pedestrian Projects

18 pts max.

35 pts max. Rank Top 5

Projects:

- #1 = 35 pts
- #2 = 28 pts
- #3 = 21 pts
- #4 = 14 pts
- #5 = 7 pts

5 pts max. Three or more bicycle/vehicle or pedestrian/vehicle crashes within last 5 years



15 pts max. Direct access to transit / school / CBD / high-density residential or linkage to a large system of interconnected bicycle / multiuse facilities

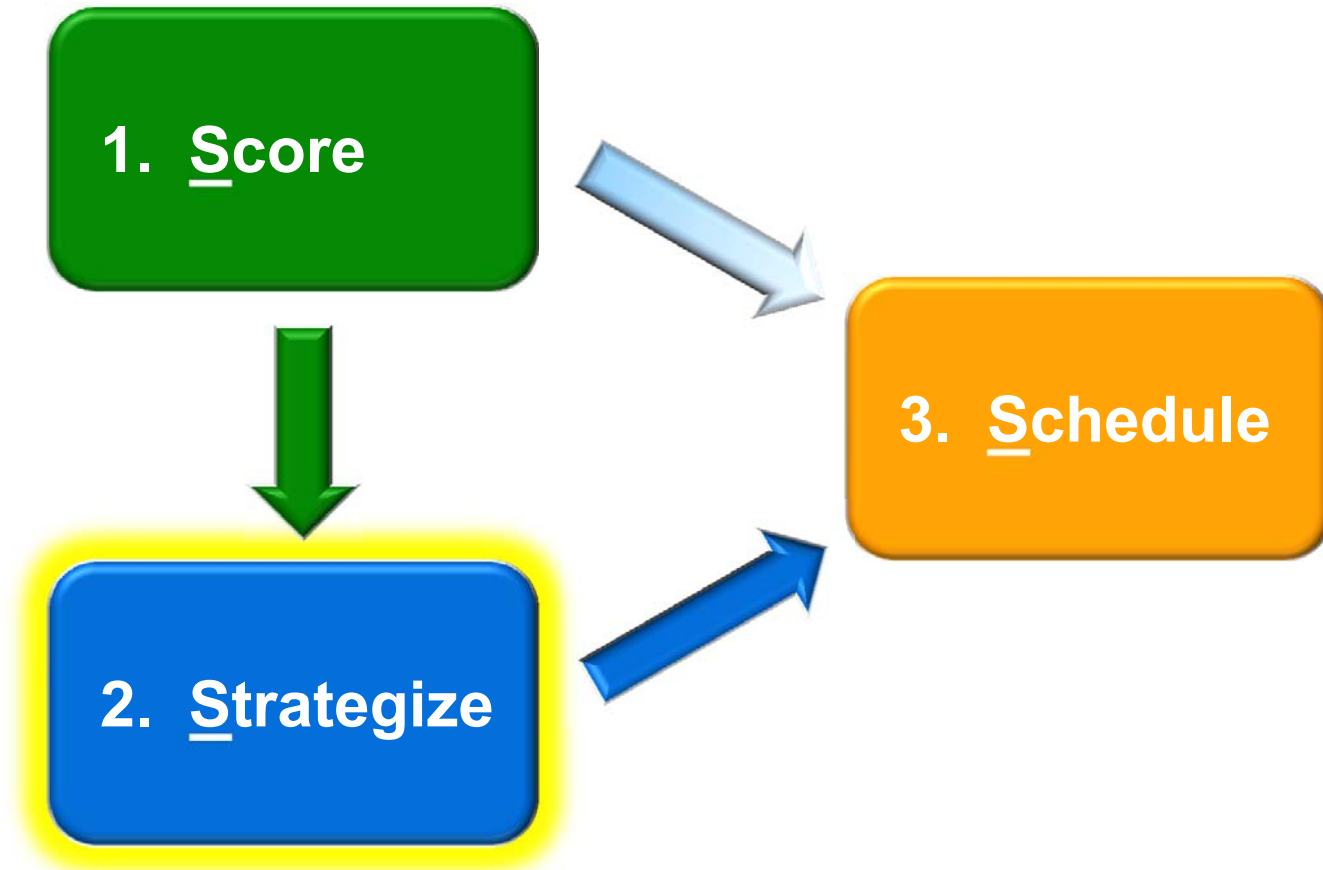
15 pts max. Recognition of a project in an adopted bicycle / pedestrian plan

12 pts max. Greater densities = higher points



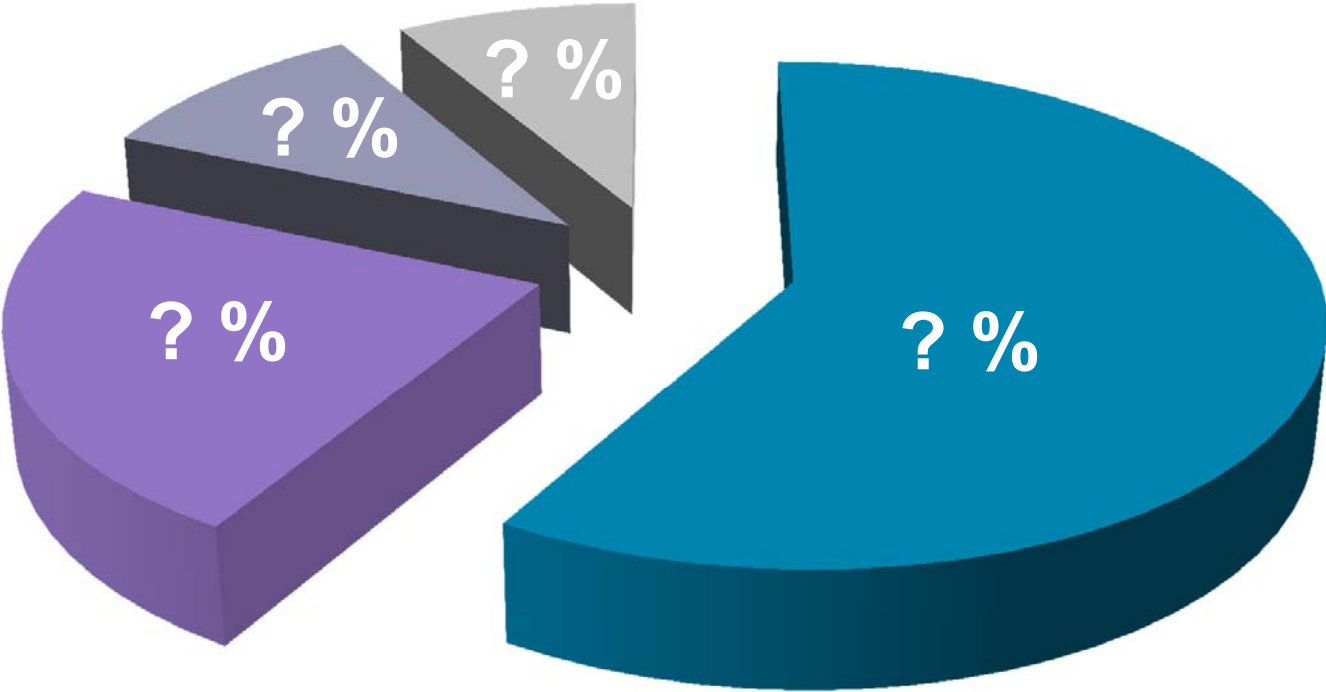


Strategic Prioritization and Programming Process





How to Divide the Pie? - Determining the Investment Strategy





Prioritization Buckets



Infrastructure Health





Performance Level of Service (LOS)

Measure of Quality of service provided to the user

Different than Highway Capacity Manual

Criteria for determining LOS

- Measures are reliable, repeatable, and affordable
- Graded on A-F scale

Translate LOS into \$\$ needed to maintain and improve performance

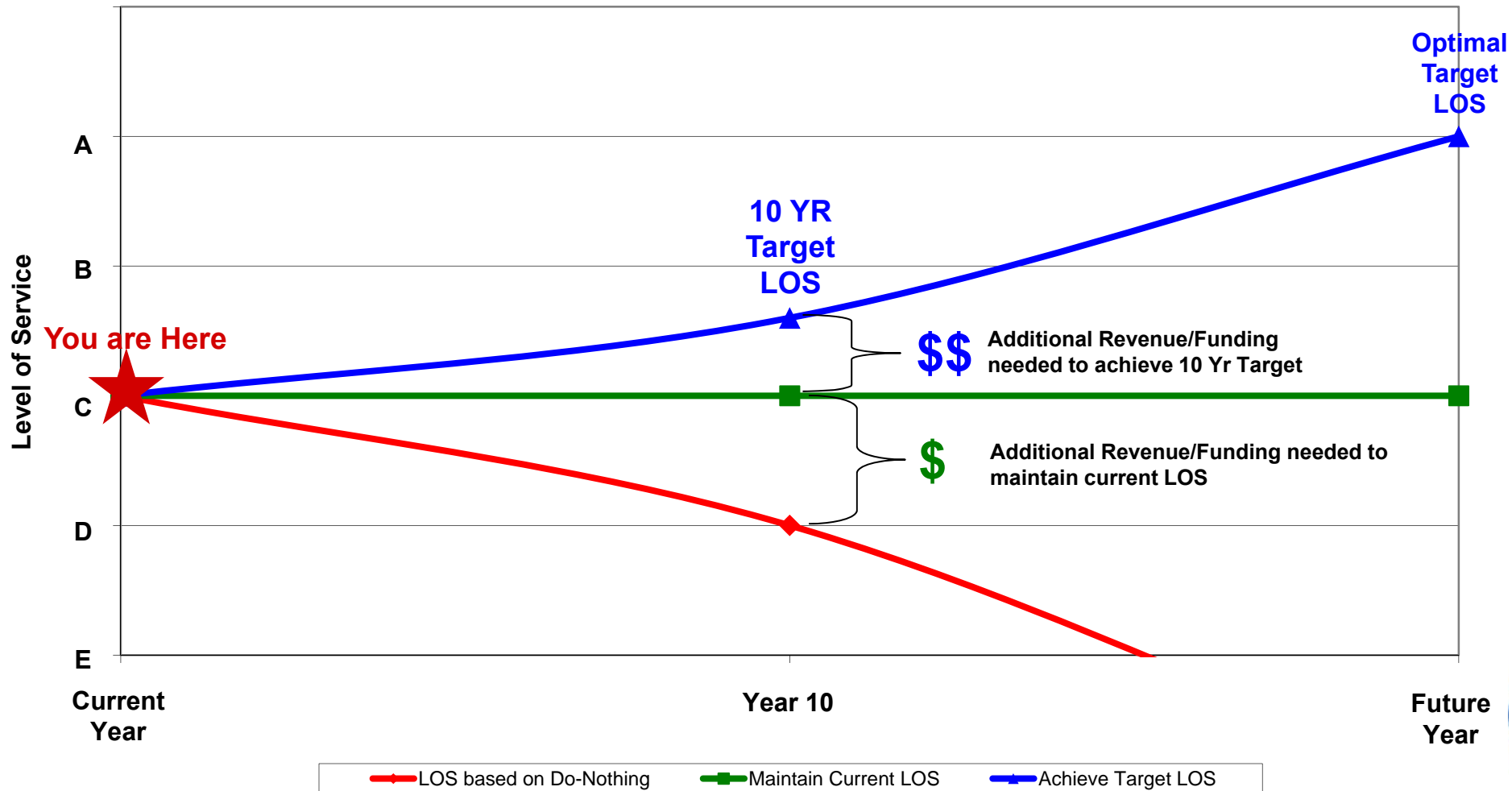
Example measures:

- Miles of uncongested roadways
- Miles of good pavement
- # Bridges in good condition
- Bicycle-pedestrian index





Performance Level of Service (LOS)





Outreach → Investment Strategy Summits

14 Summits throughout NC

- Partner and public input opportunity

Purpose is to provide analysis of where to apply expected revenue

- What are the high-level priorities?
- What is the investment needed to achieve those priorities?
- Revenue is based on expected 10 Year total, unconstrained

Participants allocate \$ (from 10 Year total) to Prioritization Buckets

Use LOS to determine return on investment

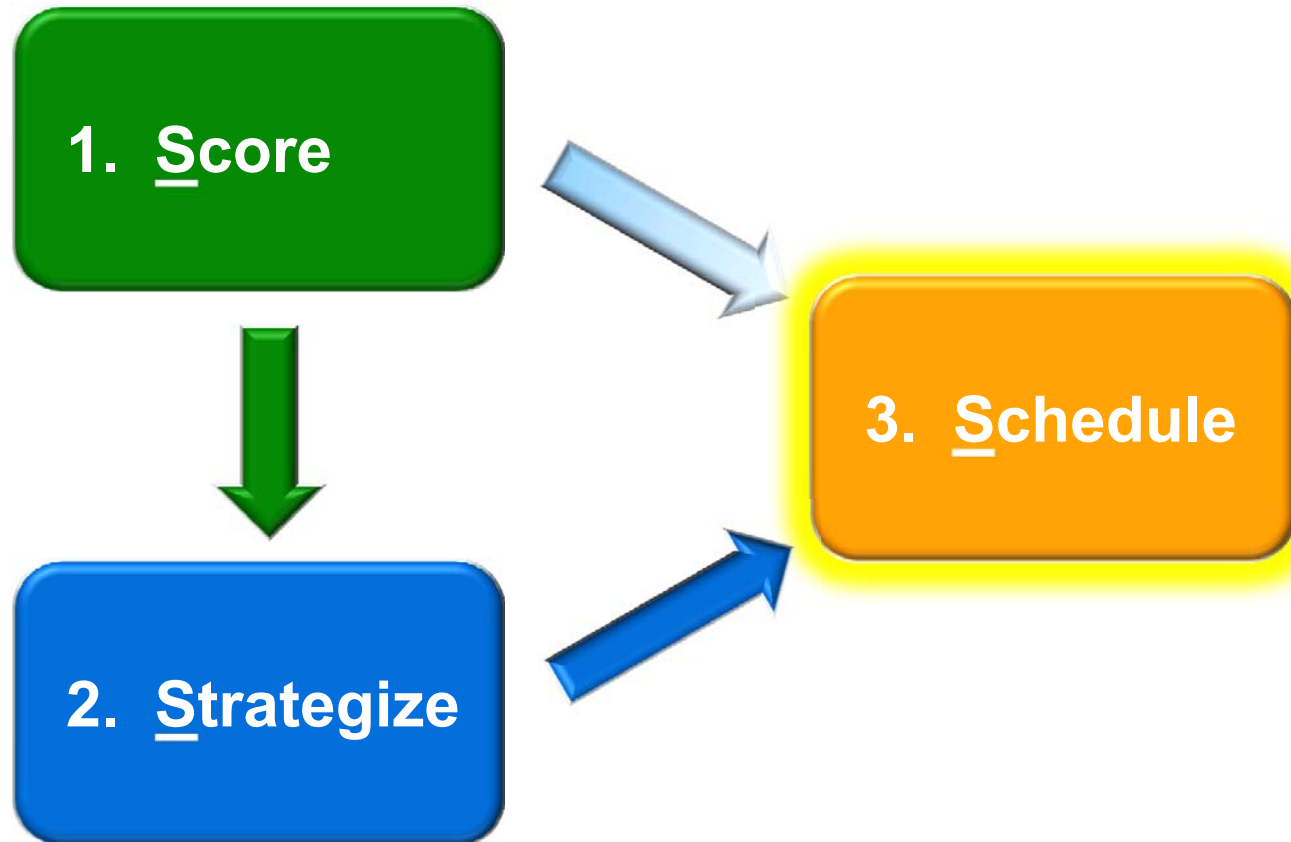
(i.e., if \$X are allocated to Bucket “Y”, expected 10 Year LOS is “Z”)

Outcome is a “picture of where transportation \$ should be spent”



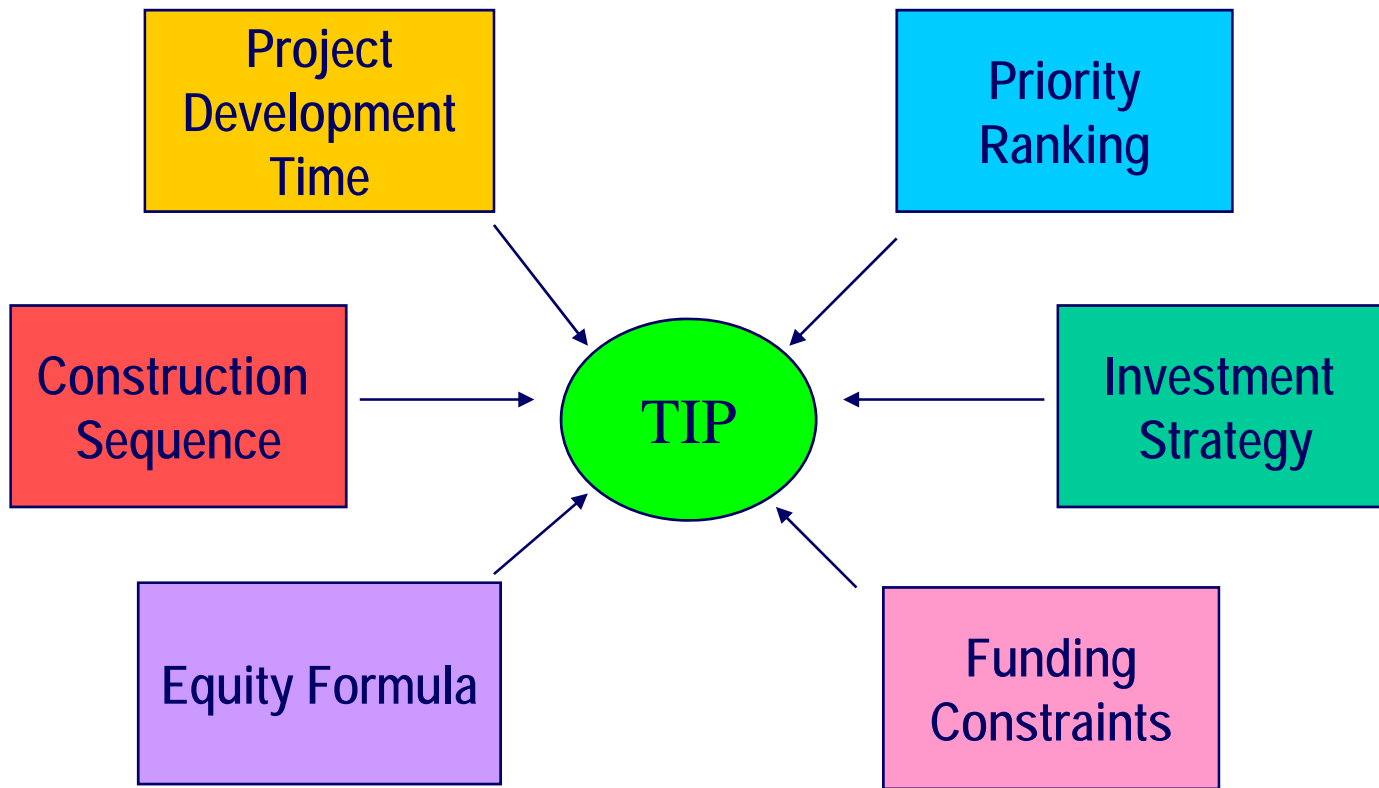


Strategic Prioritization and Programming Process





Reality → Factors Influencing TIP



Prioritization Results ≠ Programming



The Prioritization Process Has Been Well Received

Recently completed second Prioritization effort (P2.0)

- Evaluated over 1200 highway projects and 600 bike/ped projects
- Totaled \$45 Billion in needs

Prioritization 3.0 (P3.0) development is underway

- Move to GIS-based environment
- Automated cost-estimation tool
- Update measures as appropriate (such as V/C → travel time index)

Recent survey of MPOs and RPOs by Legislature indicates substantial support of the process

Prioritization process helped quell request to lower gas tax

Legislature is considering codifying Prioritization Process





Contact Information

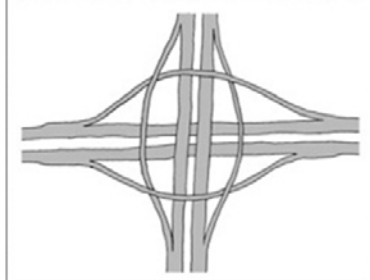
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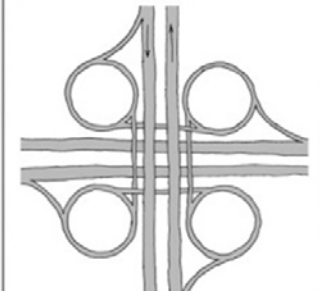
<http://ncdot.gov/performance/reform/prioritization/>

HIGHWAY ENGINEER PRANKS:

THE ZERO-CHOICE INTERCHANGE:



THE INESCAPABLE CLOVERLEAF:



THE ROTARY SUPERCOLLIDER:

