



# NCDOT – Prioritization 3.0

## *Workgroup Meeting #7*

February 13, 2013



## Agenda

**Welcome and Opening Remarks**

**Public Transit Scoring Model – discussion**

**Cost Estimation Tool – Status**

**Potential Revised P3.0 Scoring Criteria – discussion**

**Implementation of Strategic Prioritization Law – Status**

**P3.0 Schedule Reminder**

**Future Meetings**





# Public Transportation Scoring Model – Discussion





## Public Transportation Prioritization

### Customers:

- Urban transit systems (CATS, CAT, DATA, Greensboro, etc.)
- Regional transit systems (Triangle Transit, PART, etc.)
- Small urban systems (Wayne County, Jacksonville Transit, etc.)
- Rural transit systems (Transylvania, Wilson, Onslow, etc.)
- Human service transportation – serves clients only





## Public Transportation Prioritization

**Insufficient state funds to meet funding requests for federal programs**

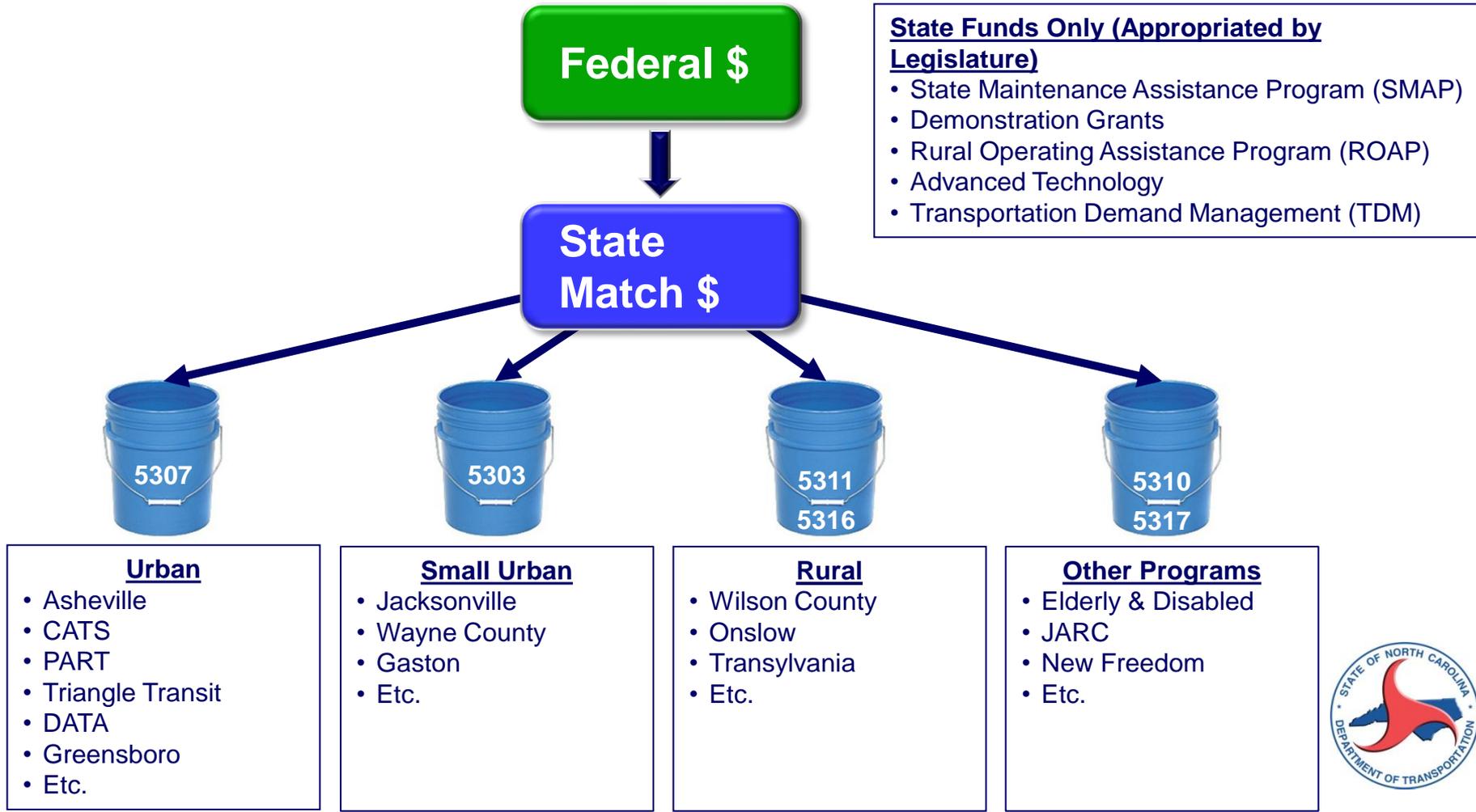
**Results from the survey indicated the P 2.0 Transit Scoring Model needed clarification**

**Subgroup and stakeholders assisted in updating the scoring model**





# Public Transportation Funding Resources





## Operating Efficiency

Operating Efficiency (20% or 20 points maximum) – This is the key scoring criteria. Those transit systems/projects having the better operating efficiency should receive higher points. The measure used in the scoring is the annual ridership divided by the revenue miles. A scoring scale will be developed whereby there will be a maximum of 20 points.





## Service Hours

Service Hours (15% or 15 points maximum) – The measure used in the scoring is the percent increase in new service hours added to the service area as a result of the proposed project. The base year will be 2011 to be used in the calculation of percent increase. In other words, this measure is the number of service hours in the service area after completion of the project divided by the service hours in the service area in 2011. The higher the increase, the more points up to a maximum of 15 points.





## Age of Fleet

Age of Fleet (15% or 15 points maximum) – The measure used in the scoring is the reduction in the age of the fleet of the revenue producing vehicles. The base year will be 2011. In other words, this measure is the average age of the revenue producing vehicles following completion of the project divided by the average age of the revenue producing vehicles in 2011. The greater the reduction in the age of the fleet, the more points up to a maximum of 15 points.





## Increase in Volume (Vehicles and Routes)

Increase in Volume (Vehicles and Routes) (10% or 10 points) for Urban and Small Urban tiered projects only – Addressing ridership needs on congested transit routes is a key desire. The measure used in the scoring is whether the candidate project will increase their fleet and/or increase vehicle capacity on those transit routes that are already congested. The greater the increase in the ability to carry more passengers on congested routes will result in scoring up to a maximum of 10 points





## Improving the Vehicle Utilization Data (VUD)

Improving the Vehicle Utilization Ratio (VUR) (10% or 10 points) for Rural tiered projects only – this measure is well known by the rural transit systems and essentially is an indicator of how well the transit system is managing its vehicle usage. The rating will be based on the latest VUD analysis available for the transit system. The maximum of 10 points is awarded for those systems that show a level of usage during peak time plus a 20% spare ratio that equals the total fleet size. A fleet size that exceeds the number of vehicles used during peak time plus a 20% spare ratio will result in fewer points.





## Age of Vehicles

Age of Vehicles in Project (40% or 40 points) – The measure used in the scoring is the reduction in the age of the revenue producing vehicles in the project application for only those vehicles that exceed the minimum Federal standards for replacement. The base year will be 2011. In other words, this measure is the average age of those revenue producing vehicles (which exceed the minimum Federal standards for replacement) following completion of the project divided by the average age of these revenue producing vehicles in 2011. The greater the reduction in the age of these vehicles, the more points up to a maximum of 40 points.





## Age of Facility

Age of Facility (30% or 30 points) – If the project (facility) is greater than 40 years old, the project receives 30 points. If the facility is between 30 and 40 years old, the project receives 20 points and if the facility is less than 30 years old, the project receives 10 points.





## Benefit/Cost

Benefit Cost (30% or 30 points) – A benefit-cost analysis of owning a facility vs. renting the facility must accompany the candidate project application. The higher the benefit-cost of owning compared to renting will result in the project receiving more points up to a maximum of 30 points.





## Transit Scoring Model for Mobility (expansion) – New Vehicles

	Quantitative	Local Input		
Tier	Data - 60%	Public Transportation Division Rank	Division Engineer Rank	MPO/RPO Rank
Urban	Operating Efficiency- 20% Service Hours- 15% Age of Fleet- 15% Increase in Volume (Vehicles and Routes) – 10%	10%	10%	20%
Small Urban	Operating Efficiency- 20% Service Hours- 15% Age of Fleet- 15% Increase in Volume (Vehicles and Routes) – 10%	10%	10%	20%
Rural	Operating Efficiency- 20% Service Hours- 15% Age of Fleet- 15% Improving the VUD - 10%	10%	10%	20%





# Transit Scoring Model for Infrastructure Health – Replacement Vehicles

	Quantitative	Local Input		
Tier	Data – 60%	Public Transportation Division Rank	Division Engineer Rank	MPO/RPO Rank
Urban	Operating Efficiency-20% Age of Vehicles- 40%	10%	10%	20%
Small Urban	Operating Efficiency-20% Age of Vehicles- 40%	10%	10%	20%
Rural	Operating Efficiency- 20% Age of Vehicles- 40%	10%	10%	20%





## Transit Scoring Model for Mobility and Infrastructure – Facilities

	Quantitative	Local Input		
All Systems/Tiers	Data – 60%	Public Transportation Division Rank	Division Engineer Rank	MPO/RPO Rank
ALL	Age of Facility- 30% Benefit/Cost- 30%	10%	10%	20%





## Public Transportation – Bonus Points

**Alternative Fueled Vehicles – 1 point/overall 3 points max.** Encourage use of go green concept

**Alternative Fueled Vehicle Fleet – 2 points max.** System should have more than 33% of the revenue producing fleet using alternative fuels.

**Regionalism – 2 points max.** Support the concept for transit systems to consolidate and continue efforts to be part of a larger regional system.

**Technology/Safety – 3 points max.** Systems would equip their fleet with surveillance cameras, security measures, real time info on bus arrival time, and/or GPS technology.





## Prioritization 3.0 Timeline

**August, 2013 – Call for Projects**

**October – Application Deadline Submission to PTD- 10/31/2013**

**November - PTD Application Review and Quantitative Scoring**

**December – January, 2014 - MPO/RPO/Division Point Assignment**

**February – BOT Agenda Due**

**March – BOT Handout**

**April – BOT Approval; FTA grant submission (DOL Review)**

**May - June – FTA Review and Approval;**

**DOT/PTD Application/Contract Process**

**July, 1, 2014 – Contract Award for Fiscal Year 2015 projects (July 1, 2014 – June 30, 2015).**





# Cost Estimation Tool

**Background**

**Purpose and Objectives**

**Potential Uses**

**Components**

**Inputs**



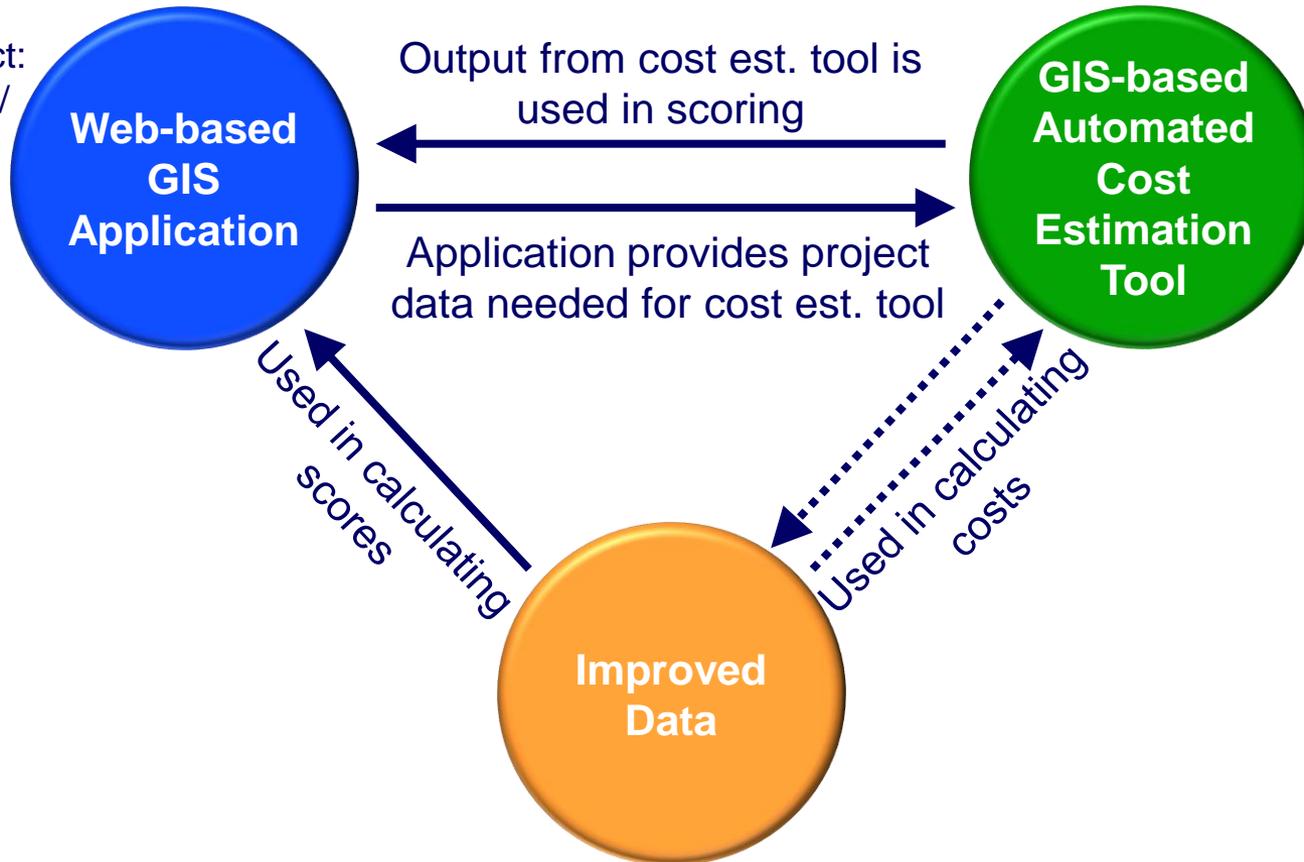


## P3.0 Technology Improvements

### Three main focus areas:

Used for project:

- Submitting / Testing
- Editing
- Reviewing
- Scoring





## Cost Estimation Tool Background

**In Prioritization 2.0, project cost was incorporated into the scoring as part of the benefit-cost criteria**

**Preliminary Estimates Section (Doug Lane) spent over 500 hours developing or updating construction costs for over 1250 projects**

**Will need to continue to update/develop costs in P3.0 and beyond (every two years)**

**Historically, PEU has provided construction cost per mile estimates in spreadsheet format each year**





## Tool Purpose and Objectives

### Purpose:

To provide preliminary, planning-level cost estimates which can be automatically calculated with planning-level user-entered inputs

### Objectives:

- Create automated web-based tool
- Use GIS data
- Require planning-level user-entered inputs
- Calculate construction, right-of-way, and utility costs
- Integrate with prioritization application for use in P3.0

### Output:

High-level, order-of-magnitude, planning-level project cost estimate

**Tool is NOT intended to replace feasibility study estimates and other detailed estimates provided by PES**





## Cost Estimation Tool Potential Uses

**Prioritization 3.0 project scoring – requirement**

**MPO long-range transportation plans**

**Comprehensive transportation plans**

**Quick high-level, order of magnitude project estimates for Program Development, Divisions, other internal units, and external partners**

**Others?**





## Cost Components

**Total Cost = Construction Cost + Right-of-Way Cost + Utility Cost**

### Construction Cost

- Calculated using per mile estimates
- Includes interchange additions/improvements and/or intersection enhancements
- Evaluates bridge conditions; connects directly to bridge database
- Can analyze projects on existing roadways and/or on new location

### Right-of-Way Cost

- Calculated using GIS county parcel data and tax values
- Rules for determining costs for partial property needs (partial takes)

### Utility Cost

- Calculated using a percentage of right-of-way costs
- GIS data currently not available for utility infrastructure





## Data Sources

### Data needed to determine cost will be from:

- User Entry
- Data tables with per-mile and per intersection feature costs
- GIS data
- NCDOT maintained data
- Business rules

Currently finalizing requirements for the cost estimation tool, then design will be completed

Design for P3.0 in process

Remaining slides are “proposed” based on what we know today and are subject to change as we move forward with design activities





## User Entered Inputs

### Inputs entered using Web-based GIS Prioritization Application:

- Specific Improvement Type – examples:
  - Widen existing roadway
  - Construction roadway on new location
  - Upgrade at-grade intersection to interchange
  
- Project location – mapped using GIS interface
  
- Project information
 

<ul style="list-style-type: none"> <li>◦ Number of lanes</li> <li>◦ Median type</li> <li>◦ Bike lanes</li> <li>◦ Access control</li> <li>◦ Terrain type</li> </ul>	<ul style="list-style-type: none"> <li>◦ Sidewalks</li> <li>◦ Outside treatment</li> <li>◦ Speed limit</li> </ul>	}	<p>TBD: Enter values separately or choose cross section and values populated</p>
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- New/modified intersection/interchanges (both existing and proposed treatments)
  - Interchanges, grade separations, superstreets, railroad crossings
  - Not at-grade intersection improvements unless standalone project (i.e., add turn lanes)





## GIS-Prioritization Application Generated Inputs

### After user maps project, application provides:

- Existing roadway data:
  - Speed limit (to aid user-input)
  - Terrain type (to aid user-input)
  - Number of lanes
  - Median type
  - Access control
  - Bridge # (if applicable)
  - Lane width (modernization projects)
  - Paved shoulder width (modernization projects)
- Project length (on existing roadway and on new location)
- Crossing width of FEMA Floodway
- Parcel Data
  - Total parcel area
  - Area type (urban or rural)
  - Amount of area needed for project
  - Total parcel value in 2012 dollars
  - County





## Cost Estimation Tool

Questions?

Comments?





## **P3.0 - Revised Scoring Criteria**

### **McCrorry Administration - New Emphasis Areas Within NCDOT**

- Leverage infrastructure to create jobs and build an environment for businesses and families
- Instill a culture of customer service
- Look for redundancies in organization to ensure an efficient organization

### **How does this impact Prioritization 3.0 Process?**

- Latter two areas are primarily internal to the Department





## P3.0 - Revised Scoring Criteria

**Secretary requests that the model/process be more sophisticated to consider:**

- The primary and secondary tier job affects
- Conversely, what are the impacts if projects are not built?
- Quantify lost productivity and job impacts when there are unforeseen “events” such as bridges closed in Cherokee County during a recent storm.
- Calculate new job totals a developer is promising.
- Additional bonus points for projects that create large number of jobs i.e. (define a threshold like 1,000 plus)
- Adding an economist to the Workgroup
- Your suggestions?





# Economic Competitiveness

## NEXT STEPS:

**SPOT has begun researching other potential economic models and State's practices.**

**Contact other State's and the NC Department of Commerce to seek information on their economic models and use of economists**

**Department will revise its Mission and Goals.**

**More discussion at future meetings with expectation of revising economic competitiveness factor**





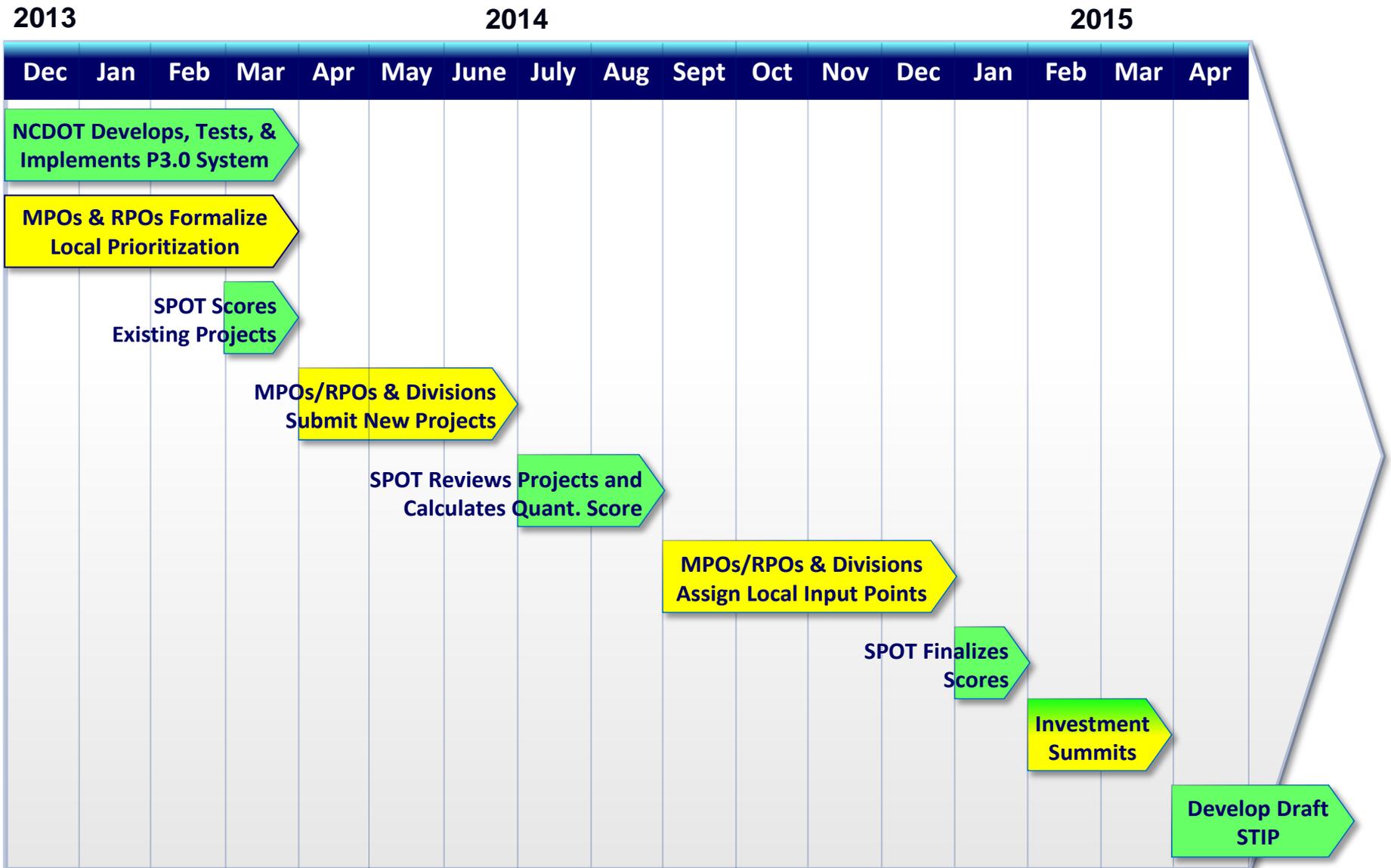
## Strategic Prioritization Law- Status

### Letter to Each MPO and RPO from Jim Trogdon dated Nov. 9, 2012

- Local Methodologies Received
- Being Reviewed
- Provide guidance/instructions later this Spring



# Prioritization 3.0 Tentative Schedule





## Future Workgroup Meeting

### Potential Agenda Items:

- **Finalize Recommendation on Transit Scoring Model**
- **Revised P3.0 Scoring Criteria – Further Discussion**
- **Implementation of Strategic Prioritization Law – Update**
- **Date/Location of Next Meeting**
- **Other Items?**

