Panel 1: What are areas of highest needs?
Objective: Panel of 4 to 5 practitioners will discuss pressing needs from federal, state, and local perspectives. Panelists will lead breakouts which will capture key issues and major challenges to practitioners.
Panelist 1: Shari Shaftlein (FHWA)
Panelist 2: Claiborne Barnwell (MDOT)
Panelist 3: Lynn Malbrough (AHTD)
Panelist 4: Martha Lott (Memphis MPO)
Panelist 5: Kim McDonough (TDOT)

Panel 2: How do we address those needs?
Objective: Panel of 4 to 5 practitioners will discuss area where NCRST-SEPP research must provide results to address needs. Panelists will lead breakouts to outline vital areas where and how needs must be addressed.
Panelist 1: Bill Shaw (ITD)
Panelist 2: Kevin Moody (FHWA)
Panelist 3: Adam Johnson (MDOT)
Panelist 4: Mitch Wine (USFWS)
Panelist 5: Robert Fuhler (AHTD)

Panel 3: What national applications benefit?
Objective: Panel of 4 to 5 practitioners will discuss applications of national importance that may benefit from NCRST-SEPP research. Panelist will lead breakouts to capture insights about key relevant applications of significance.
Panelist 1: Mary Gray (FHWA)
Panelist 2: Beth Hobbs (MN DOT)
Panelist 3: Keith Moore (FHWA)
Panelist 4: Matt Hanks (Desoto County)
Panelist 5: Kit Carson (AHTD)

Panel 4: How do we best structure products?
Objective: Panel of 4 to 5 practitioners will discuss how best approaches for preparing deliverables to reach intended audiences. Panelists will lead breakouts focusing on key audiences and structure of deliverables.
Panelist 1: Caesar Singh (DOT RITA)
Panelist 2: Shari Shaftlein (FHWA)
Panelist 3: Claiborne Barnwell (MDOT)
Panelist 4: Bill Shaw (ITD)
Panelist 5: Patti Caswell (OR DOT)
Panel 1: What are areas of highest needs?

Panelist 1: Shari Shaftlein (FHWA)
  Breakout Scribe: Sal
  Breakout Member 1: Keith
  Breakout Member 2: Caesar
  Breakout Member 3: Ho-Ling
  Breakout Member 4: Traci
  Breakout Member 5: Oscar

Panelist 2: Claiborne Barnwell (MDOT)
  Breakout Scribe: Raviraj
  Breakout Member 1: Colin Brooks
  Breakout Member 2: Jody Holland
  Breakout Member 3: Adam Johnson
  Breakout Member 4: Mary Gray
  Breakout Member 5: Chuck O’Hara

Panelist 3: Lynn Malbrough (AHTD)
  Breakout Scribe: Vladimir
  Breakout Member 1: Beth Hobbs
  Breakout Member 2: Bethany
  Breakout Member 3: Bill Shaw
  Breakout Member 4: Robert Fuhler
  Breakout Member 5: Carlos McCloud

Panelist 4: Pragati Srivastava (Memphis MPO)
  Breakout Scribe: Preeti Mali
  Breakout Member 1: Kevin Moody
  Breakout Member 2: Linda Pearson
  Breakout Member 3: Kit Carson
  Breakout Member 4: Patty Caswell

Panelist 5: Kim McDonough (TDOT)
  Breakout Scribe: Bijay
  Breakout Member 1: Sajid
  Breakout Member 2: Mitch Wine
  Breakout Member 3: Chin
  Breakout Member 4: Shawn
Key Topics: Priority Issues and Needs
Panel 1
Need 1: How to set ranges and weights for MCDM?
Need 2: Clarify what part is the state of the practice
Need 3: How do Info+methods inform transportation solutions?
Need 4: How/can results will add public awareness?
Need 5: How demonstrate success w/ streamlining?

Panel 2
Need 1: Collaborative data sets accepted for use by jurisdictional resource agencies —vetting—
Need 2: User-friendly websites that “enable” data sharing analysis.
Need 3: Simple & effective visualization
Need 4: Everyone has competing missions & many consider their issue a ‘show stopper’
Need 5: Up-to-date, accurate and accessible, and low cost data

Panel 3
Need 1: Lack of consideration of economic cost
Need 2: Where is the indirect analysis
Need 3: Standard scope of work in contract
Need 4: Quality of data availability/management

Panel 4
Need 1: Data quality
Need 2: Relationship/communication within agencies. Standards.

Panel 5
Need 1: Comparison of new method Vs traditional?
Need 2: Transportation concepts
Need 3: Consistency
Need 4: Facilitate greater interaction between stakeholders.
Need 5: Better evaluation
Need 6: Better interaction
Summary Notes: Priority Issues & Needs

Panel 1
- Use websites/reports/capture research brainstorm to date
- How study advances state of the practice (2)
- How info/methods informs the transportation solution (3)
- Can/how results aid public awareness + inputs to planning + project development impacts & benefits (4)
- Obstacles research team found in performing research; obstacles owners MDOT, TNDOT see in applying findings (2)
- Recommendations on how to set weight ranges (e.g., experts panel) & the social science at managing groups to set range (MCDM) (1)
- How plan to demonstrate success w/streamlining (5)
- "Plenty of data" – researchers perspective time to write papers
- Anything to help inform emerging issues climate change: impacts + adaptation
- Expectations that "we"should be further along w/these tools academically + process-wise

Panel 2
- Summary Notes: Priority Issues & Needs
- Acceptable data, enabling technologies, & effective presentations and visualization are priority needs

Panel 3
- What is the engineering cost of alignment as well as environmental cost.
- Indirect analysis: direct analysis will get same answers; but if we look at indirect effect and the cumulative; then we will get it to be applicable to other regions. Related to probabilistic analysis.
- The methodology described should be able to be used nationally, however there are different systems at work; therefore we need to come up with a language to coordinate better.

Panel 4
- Data quality: define, metrics, reporting, accuracy, Feedback loop for data dictionary,
- Standard metrics, standards developed for the use of data.
- Standards for re-use of data in a GIS decision assisted analysis environment.

Panel 5
- Head to head comparison between previous process a) what is different b) is it better? Why? How?
- How remote sensing streamlining helps in the transportation concept? How does it help in decision making? b) Alternative form of transportation – quantify?
- Consistency of definition + concept
- Facilitate greater public participation a) identify + engage all stakeholders. Get back only as much as you put in originally.
- Better evaluate secondary + cumulative impacts a) Who is in charge?
- Better interaction between local transportation + resource agencies.
- Performance measures + metrics
Panel 2: How do we address those needs?

Panel 1: Bill Shaw
Breakout Scribe: Sal
Member 1: Chuck
Member 2: Claiborne
Member 3: Kit Carson
Member 4: Beth Hobbs
Member 5: Keith

Panel 2: Kevin Moody
Breakout Scribe: Ravi R Sadasivuni
Member 1: Colin Brooks
Member 2: Lynn Malbrough
Member 3: Traci Dajos
Member 4: Caesar Singh

Panel 3: Adam Johnson
Breakout Scribe: Vladimir
Member 1: Oscar Franzese
Member 2: Kim McDonough
Member 3: Shawn Johnson
Member 4: Patti Caswell

Panel 4: Mitch Wine
Breakout Scribe: Preeti Mali
Member 1: Linda Pearson
Member 2: Mary Gray
Member 3: Claiborne Barnwell
Member 4: Shari Shaftlein

Panel 5: Robert Fuhler
Breakout Scribe: Bijay
Member 1: Sajid
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**Key Topics: Addressing Needs**

<table>
<thead>
<tr>
<th>Panel 1</th>
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<tbody>
<tr>
<td>• Addressing Needs 1: Granular documents (typical &amp; targeted)</td>
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<tr>
<td>• Addressing Needs 2: How to assign objective metrics to subjective values (like 10 hard avoidance criteria)</td>
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<td>• Addressing Needs 3: Interactive &amp; collaborative methodology</td>
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<td>• Addressing Needs 4: Lego toolkit (ex Google Sketchup tool)</td>
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<td>• Addressing Needs 5: Acknowledge fuzziness</td>
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<tr>
<td>• Addressing Needs 1: Encourage common platform / data &amp; make organization structure &amp; efficient</td>
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<tr>
<td>• Addressing Needs 2: Business case (Fiduciary Responsibility &amp; Cost effective) / champion – Better job.</td>
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<tr>
<td>• Addressing Needs 4: Don’t miss forest for trees</td>
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<tr>
<td>-- Big message – Key</td>
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<tr>
<td>-- Local details – Case study</td>
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<tr>
<td>• Addressing Needs 5: Look outside the agency for data &amp; guidance</td>
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<tr>
<td>• Addressing Needs 1: Documenting process, background info, minimum data requirement</td>
</tr>
<tr>
<td>• Addressing Needs 2: Define and name the tool</td>
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<td>• Addressing Needs 3: Explain how this tool will help us meet requirements (agency-wise)</td>
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<td>• Addressing Needs 4: High-level stake-holder buy-in</td>
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<tr>
<td>• Addressing Needs 1: Assessment of the capabilities and needs of state dots; what they currently have and what tools they lack.</td>
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<tr>
<td>• Addressing Needs 2: Produce a clear set of performance measures- demonstrate the success of the project</td>
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<td>• Addressing Needs 3: Look at comparable applications for non highway related constructions – don’t re-invent the wheel</td>
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<td>• Addressing Needs 4: Offer ideas on how to use existing tools such as NEPA assist/IPAC / CRS&amp;CI in SCOPING</td>
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<td>• Addressing Needs 5: Boiler plate language on deliverables /methods /methods- mainly for consultations.</td>
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<tr>
<td>• Addressing needs 6: Results should be summarized in relation to the specific states (MS and TN) involved. W/ applicability to the national level.</td>
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<tr>
<td>• Addressing Needs 1: Agency Coordination, consensus among participating agencies</td>
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<tr>
<td>• Addressing Needs 2: National data repository (NSGIC coordinates) - National data directory (Where are those data?)</td>
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<td>• Addressing Needs 3: Needs to be replicated Nationally to be more interoperable.</td>
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<td>• Addressing Needs 4: Illustrate a reduction in operating costs using technologies Vs traditional methods</td>
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<td>• Addressing Needs 5: Insure stakeholders know the technologies will change AND will require further funding</td>
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</table>
Panel 1
- "this is not a democratic consensus"
- There is a real need to make transp. Pracit., private companies, consultants and agencies on working close and speak the same language
- "the methodology has 20+ years and has results in academia so, the point is how to assign objective metrics to subjective values, as suggested to construct the scenarios
- "be flexible but also consistency"
- distribute something like google sketch up
- how/what to do when data is not available?
- discussion about fuzzy solutions

Panel 2
- Guidelines & Business case

Panel 3
- geopdf?
- Define what kind of product

Panel 4
- Look at current state DOTs and environmental DOT's: what tools are they using; what are they reluctant to use, some type of data testing.
- Clear performance measures: where did we go with the first phase and did we meet; second phase and expected results; this will demonstrates how successful the project was
- Any other type of transportation project should also be looked at
- Scoping: help in the scoping process
- Project group response: MCDM used for flood protection;
- Deliverables and methods should have boiler plate language:
- Tailoring the results to the audience and understanding that it is for the two states involved but also understanding that it should be for national applicability.

Panel 5
- For Instruction Book: Agency Coordination, consensus among participating agencies (Will take time)
  - core group (executive committee)
- Develop a clear & concise methodology: - National data repository (NSGIC Coord)
  - National data directory (Where are those data?)
- Project accepted Nationally
  - (Methodology, technology, data structure is currently dynamically) Needs to be replicated Nationally to be more interoperable.
- Illustrate a reduction in operating costs using technologies Vs traditional methods
- Remote Sensing – Insure stakeholders know the technologies will change AND will require further funding
<table>
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<th>Parking Lot for Discussion Items – Addressing Needs</th>
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<tbody>
<tr>
<td>• Clarify process, data, format</td>
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<td>• Document business case</td>
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<td>• Don’t just stick to EIS term</td>
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<td>• Minimum technology specs needed.</td>
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<td>• EAST (Environmental And Spatial Technologies) program - <a href="http://en.wikipedia.org/wiki/EAST_Initiative">http://en.wikipedia.org/wiki/EAST_Initiative</a></td>
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<td>• Present more case studies</td>
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<td>• Needs clarity on the level of public level as well as for professional level of clarity</td>
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<td>• Offer ideas how to use these tools in a scoping concept</td>
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<td>• For highest need 3: boiler plate language on deliverables and performance accountability in contract support</td>
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Who is the audience and what are the deliverables?

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Key Topics: Audience and Deliverable Products

Panel 1
Audience and Product 1: content: document methods, data and sources, business case, practitioners guide
Audience and Product 2: format: web-based document, webinars, peer panel
Audience and Product 3: audience: practitioners, public off., DOT off., resources agency, general public

Panel 2
Audience and Product 1: Audience Clarity: DOTs, Resource Agencies, & Products tailored to the needs of audience
Audience and Product 2: Base Reports, summary + graphics, Speak points, Slides → Menu of things the audience can pick up
Audience and Product 3: How to communicate to resource agencies Ambassadors / Champions
Audience and Product 4: Build the list of outreach opportunities/Conf., Newsletters etc., Share’ list
Audience and Product 5: Test drive w/ TN + MS stakeholders I-69
Audience and Product 6: Web-demo user friendly (Eg. Explain MCDM, Overall project)
Audience and Product 7: Next steps docs—scalable to FHWA, MPOS, DOTS....

Panel 3
Audience and Product 1: Objective, meaningful outcome, multiple platforms, simple enough, deliverable, quantifiable
Audience and Product 2: Webinars, Infomercial style for managers/practitioners (grabs attention). Cost time, results (new vs existing)
Audience and Product 3: Easy (immediate) recognition of benefit
Audience and Product 4: Level-2 practitioner, greater details webinar, conferences, meetings.

Panel 4
Audience and Product 1: Big pretty picture
Audience and Product 2: Sales materials
Audience and Product 3: Multiple markets: DOT- HQ Field, MPO, general public, FHWA(across up)
Audience and Product 4: Products should be change drivers: training, workshops, supporting user groups
Audience and Product 5: Applications are wider than the case study: conflict resolution, transportation focus, pathway tool can be used for non motorized vehicle ways (like bicycle).
Audience and Product 6: Do not limit use.

Panel 5
Audience and Product 1: Web based Interactive Data Directory – Federal Agencies, State DOTS
Audience and Product 2: Demo of tools and documentation – As above
Audience and Product 3: Case studies – As above
Audience and Product 4: Support for consulting - As above
Summary Notes: Audience and Deliverable Products
Panel 1
• Webinar: audience & products
• Set of guidelines that practitioners should follow
• Document technology, methodology and areas of application
• Document business case justification focusing and benefits
• Track the way practitioners work in terms of methods, data and tools to make a way to transfer or translate the new technology.
• Need of a real cool name

Panel 2
• Prepping summary out reach products & developing Strategy to key stake holders

Panel 3
• n/a

Panel 4
• Deliverables have to be sales materials with big pretty pictures, and be able to clearly demonstrate how useful it is. Different audiences are going to need different format and different pictures. Should have multiple perspective dealing with respective clients that can use the tools.
• Applications are wider than the case study. When selling it, we need to have broad applicability in mind.
• The project is going to trigger changes and the deliverables will have to identify the drivers that drives the change.
• A baton has to be passed to the next time that can drive the change.

Panel 5
• Change name of Data Dictionary to Data Directory
• Web based interactive Data directory that is region specific (click an area & pull up all available/best data)
• Demo how to determine EA Vs EIS with available data & show output documentation
• Develop case studies to support the demo
• Show how consulting can be successful (obtaining data), provide mechanisms for workaround
• Assumption - Audience of doubters