



# New England Transportation Consortium

## MINUTES - NETC ADVISORY COMMITTEE MEETING

**DATE/TIME:** March 13, 2019 - 9:00am – 2:00pm

**LOCATION:** NHDOT - Room 205 of Materials & Research building at 5 Hazen Drive, Concord

**ATTENDEES:**

Dee Nash, NHDOT	Ann Scholz, NHDOT
Lily Oliver, MassDOT	Kirsten Seeber, CTC & Associates
Emily Parkany, VTrans	Deane Van Dusen, MaineDOT
Dale Peabody, MaineDOT	Nicholas Zavolas, MassDOT
Flavia Pereira, ConnDOT – via WebEx	

**Implementation Discussion – All**

- How much should implementation be considered in project selection? It is important to discuss implementation now so the AC can address questions such as:
  - ~ Will the results of the project be implementable?
  - ~ Will there be deliverables the states can use immediately?
  - ~ Is there a possibility of a follow up implementation project?
- **Action item:** Kirsten will add a blurb on implementation to the Research Problem Statement next year to help the project proposers think about implementation, and the deliverables they might want, while they are scoping their projects.
- For the projects selected for 2019 funding, the TACs will come up with the deliverables and how they will be used in their states. These will go into the RFP for the project.
  - ~ The AC should review the suggested deliverables to see if they agree with the TAC. The AC will review the SOW while ME is doing their work on the RFP.
- We will provide the TACs with guidelines on implementation, so they know what the AC is expecting from them. The Technology Transfer Strategy section in the NETC SOW template talks about implementation and that an implementation plan is required for a project, as part of the final report. Do we need to provide an implementation plan template for the TACs?
  - ~ **Action items:** Emily will share the Proposal Template that VT uses for their TACs, which contains an implementation section. Ann will share a document NH uses called “Planning for the Implementation of Results.” The AC can review both documents and comment.

**Ranking Process: 2019 Research Problem Statements – Ann Scholz**

- Yes/No Votes
  - ~ Group will first provide a yes or no for each project. If a project receives three yeses, it goes to the next round of discussion and rating. The rating provided by the states are added to determine the highest ranked projects based on those scores.

- ~ The overall rating sheet has a scale of 0-3 while the individual project evaluation sheet has a scale of 0-5. **Action item:** Kirsten will change the overall rating sheet to 0-5 to match the individual evaluation sheet.

**2019 NETC Research Problem Statements – Yes count for all projects/Scores for top six projects**

RPS #	Value	Length	Project Title	CT	MA	ME	NH	RI	VT	Total Yes	CT	MA	ME	NH	RI	VT	Total Score	Decision
				Y/N	Y/N	Y/N	Y/N	Y/N	Y/N		Y/N	Y/N	Y/N	Y/N	Y/N			
N19MA6	\$200k	18 months	Experimental Validation of New Improved Load Rating Procedures for Deteriorated Steel Beam Ends	Y	Y	Y	Y		Y	5	3	2.5	3	2.4		2	12.9	Discuss at 2019 NETC Symp.
N19ME1	\$150k	27 months	Development of a Performance Specification for Bridge Deck Membranes	Y	Y	Y	N		Y	4	3	2.6	3	2.1		2	12.7	Discuss at 2019 NETC Symp.
N19ME2	\$150k	24 months	Performance Engineered Mixes for Structural Concrete	Y	Y	Y	N		Y	4	3	2.7	3	2		2	12.7	Discuss at 2019 NETC Symp.
N19MA2	\$150k	24 months	Curved Integral Abutment Bridge Design	Y	Y	Y	Y		Y	5	2	2.6	2	2.3		3	11.9	Fund
N19NH2	\$150k	24 months	Multi-Scale Multi-Season Land-Based Erosion Modeling and Monitoring for Infrastructure Management	N	Y	Y	Y		Y	4	0	2.85	2	2.4		3	10.25	Fund
N19MA5	\$250k	24 months	Characterizing Asphalt Binders with Warm Mix Asphalt Technologies for use in New England	N	Y	Y	Y		Y	4	0	3	2	2.9		2	9.9	Discuss at 2019 NETC Symp.
N19MA1	\$200k	24 months	Development of a LiDAR-Based Pavement Marking Inventory and Condition Assessment Method for Enabling Connected and Autonomous Vehicles	N	Y	N	Y		Y	3								
N19MA3	\$280k	24 months	Validate and Compare the Performance of Traveler Information from Different Sources for Recurring and Nonrecurring Traffic Conditions	N	N	Y	Y		Y	3								
N19ME3	\$175k	24 months	Ground Penetrating Radar for Roadway Structural Evaluation During Spring Thaw and Flood Events	Y	N	Y	N		Y	3								
N19NH1	\$180k	24 months	Signing Alternatives for Improving Traffic Operations and Safety in Lane-Reduction Transition Areas	Y	N	Y	Y		N	3								
N19VT1	\$185k	24 months	Durability Testing of Closure Pour Materials	N	Y	N	Y		Y	3								
N19VT2	\$200k	24 months	Adaption of the Semi-Circular Bend Test for New England Conditions	Y	Y	N	N		Y	3								
N19MA4	\$150k	12 months	Case Studies of Successful Tree Planting for Separated Bike Lanes	Y	N	N	Y		N	2								
N19NH3	\$180k	24 months	Transportation Data Analytics: Where Are We and Future Directions	N	N	N	Y		Y	2								

**Discussion**

N19MA6 – Experimental Validation of New Improved Load Rating Procedures for Deteriorated Steel Beam Ends - \$200,000

- Lily – MA is currently funding this same study using MA bridges. UMass Amherst is the PI. This proposed project will do the same validation on bridges in the other states.
  - ~ They bring the samples to the lab, conduct testing, put the information into the model and use the results to update their current procedures.

- ~ They did a lit search for similar research but did not find anything.
- ~ MA's current project ends in July and the second project will begin soon.
- Flavia – CT has two similar projects. One project is using a 3D scanner to scan the deteriorated ends, create a 3D model and develop a load rating directly from the 3D model. They are trying to make it an automated process. This project ends in December.
  - ~ This is a topic that is of high interest to CT, but parts of the project are already being worked on in CT.
- Emily – This has not been a prob in VT, but it is an issue in NE states.
- Ann – This project would help them develop a rating method, which they spend a lot of time and energy on.
- Dale – Their bridge folks rated this one highly.
- Nicholas – Is there a significant value add to look at bridges in other states or can other states use MA's results and apply them to their own bridges?
- The committee discussed making this a quick response project that would look at the results from the MA and CT studies. The QRP project could be guided by the discussion on this at the Symposium. This study would also fit in the infrastructure topic the new UTC is doing. They could possibly put money towards the study.
  - ~ ME will have to figure out the contracting for a QRP.
- **Decision: This project will be added to the NETC Symposium as a topic for the bridge folks to discuss.**

N19ME1 – Development of a Performance Specification for Bridge Deck Membranes - \$150,000

- Ann – Her guys voted no on this one. They have not had luck with the spray-on membranes and don't feel they will get anything out of it.
- Emily – VT uses these systems, but research validation would be good.
- Lily – They specify spray-on membranes for all new construction so this project will provide answers to questions they have.
- Flavia – Her folks have requests for some things the project should cover. More money should be added to adequately cover the scope of the project.
- RI would be interested in this project. They recently sent a survey to the RAC asking if other states use spray-on membranes.
- Dale – The sprays cost twice as much as the torch-applied systems ME uses. They feel they are getting more bang for the buck with their current applications.
- This was on the NTPEP list, but it fell off.
- **Decision: This project will be added to the NETC Symposium as a topic for the bridge folks to discuss.**

N19ME2 – Performance Engineered Mixes for Structural Concrete - \$150,000

- Ann – NH gave this one a no because they don't have a problem with their concrete mix designs. The smart air testing uses ABA testing which is not valid for NH.
- Dale – There is an effort nationally to look at pavement concrete. This project is looking at structural pavement.
- Flavia – Not a lot of comments from her folks. A formal presentation should be made at NESMEA.
- Lily – MA feels this is a valuable project because it would expand their testing. \$150k is not enough given the number of mixes, suppliers, aggregates, etc. They feel \$300k is needed. Emily feels a lot could be done with the \$150k.

- Ann – Do all the states use the same mixes for structural concrete? What is the outcome of the project? Dale – This method helps you develop the performance specs for different areas/environments (coastal/inland).
- **Decision: This project will be added to the NETC Symposium as a topic for the materials folks to discuss.**

N19MA2 – Curved Integral Abutment Bridge Design - \$130,000

- Ann – They should be doing more of this in NH.
- Emily – They wanted to sponsor this but are excited that MA stepped forward. This would help validate what they are already doing and provide guidance for their bridge engineers.
- Dale – This is not a high priority because ME doesn't have curved bridges. They may not do a lot of curved bridges because there are no design criteria. ME supports this project because design criteria could be an outcome.
- Lily – This project could open options in bridge design.
- Flavia – Could this be an NCHRP study since the design issues are of national concern? Dale – He would want to submit projects to NCHRP that have strong support from NETC.
- Dale – Is \$130k enough?
- **Action: Fund this project at \$150,000.**

N19NH2 – Multi-Scale Multi-Season Land-Based Erosion Modeling and Monitoring for Infrastructure Management - \$200,000

- Ann – NH folks feel the tool would be useful in the field.
- Emily – Her folks like it but there is concern about what the deliverable would be.
- Flavia – CT did not rate this project high enough. The problem statement has multiple research needs, which are too much for the budget, time, and objectives. The problem statement is not clear, and they are not sure how the objectives would be achieved. A possibility would be to break the study down into smaller chunks.
- Lily – MA is very supportive of this project. They want a deployable tool they can use to understand where landslides are likely to happen.
- Dale – This is an issue in ME and feel they will have more issues with this type of erosion over time.
- Ann – Everyone talked to different areas within their DOTs.
  - ~ Flavia will reach out to her asset management folks to get their reaction. She will share the ACOE fact sheet that Ann provided.
- Emily – Can we reduce the budget to \$150,000 and ask for a landslide tool?
- **Action: Fund this project at \$150,000.**

N19MA5 – Characterizing Asphalt Binders with Warm Mix Asphalt Technologies for use in New England - \$250,000

- ~ Emily – VT doesn't use WMA additives, so they are skeptical about the implementation prospects for VT.
- ~ Ann – NH feel it's a concern and that binder performance properties are important. They are concerned with the effect on low temperature properties.
- ~ Dale – ME also scored this project low. They would like it expanded to include anti-strip agents.
- ~ Lily – Their Materials Lab person is a strong proponent of this project. It will help MA moving forward with WMA.
- ~ Flavia – How is the variability of the binders used in the state accounted for in the project? Is the study going to requalify 20 WMA additives? CT gave this project a 0.

~ **Decision: This project will be added to the NETC Symposium as a topic for the materials folks to discuss.**

- Lily – If the materials folks consider this a good project, would the project move to the next year’s projects? Dale – it would have to. Emily – Or it could then be submitted as an NCHRP project this fall.

**Motions:**

- Emily: N19MA2 – Fund that at \$150k. Dale: Seconded. Discussion: None. Ayes have it. Motion passes.
- Emily: N19NH2 – Fund at \$150k and specify an objective as a landslide tool. Second – Lily. Discussion: None. Ayes have it.
- Emily: N19ME1, N19ME2, N19MA5 and N19MA6 will be discussed at the Symposium to ascertain interest from the six states. Then will have a better idea of funding for the projects. Second – Ann. Discussion: See below. Ayes have it.
  - ~ The ME submitted projects were written by ME folks. MA submitted projects were submitted by universities with the endorsement of MA SMEs. Will the university folks be at the Symposium? Dale – He feels the Research Problem Statements should stand on their own against the DOT statements without the researcher there promoting it. Nicholas – Ask the SMEs at the Symposium to pick which the most important project from each category – bridges and materials.
  - ~ The AC will vote on the four projects that will be talked about at the Symposium.
- TACs – The AC members will identify folks from their DOTs to sit on the TACs of the two funded projects.
- Identify potential quantifiable metrics for the selected projects

**Fund Balance and Transfers – Kirsten Seeber/Dale Peabody**

- TPF-5(222)
  - ~ CT and RI have left over travel funds, \$19,021.02 and \$12,593.53 respectively.
  - ~ NETC “unallocated” balance as of February 22, 2019 - \$115,057.
- TPF-5(373)
  - ~ Funds Avail: \$762,256 - \$100k from each state and money transferred from the VT pooled fund.
  - ~ Three contracts – CTC and the two active 18-series proj. The contract for the last 18-series project will come this week.
  - ~ Total contracted = \$607,387
  - ~ Unallocated funds – Difference between what is available and what is contracted = \$154,869
  - ~ Expenditures – Pace will pick up because of projects getting underway.
  - ~ NETC – Administration – ME can modify the CTC contract up to \$250,000 on the CTC contract. Dale will discuss with CTC to see how far an additional \$120,000 will get them.
  - ~ What is available for the next program of projects?
    - Subtract \$120,000 for CTC contract.
    - The FFY19 contributions have not been included in Dale’s numbers. His numbers are from 1/31/19.
    - \$37k extra coming from MA, which is what was transferred back from TPF-5(222).
    - Question – Will RI contribute? Dale will follow up with RI.
  - ~ Funded projects and CTC contract = \$630,000 plus \$120,000 = \$750,000. We don’t have any QRPs factored in the contract.
  - ~ Unallocated (\$154,869) plus FFY2019 contributions (\$600,00) = \$754,869.

### Timeline for 2019 RFPs

- The AC members will tell their folks the status of the projects – Funded, will be discussed, or not funded.
  - ~ **Action item:** Kirsten will create a list that shows outcome of the projects and send to the full group.
- April – Form TACs to develop Scopes of Work.
  - ~ The person who signed the Research Problem Statement will be the TAC chair.
  - ~ **Action item:** Other states need to identify the TAC member from their state for both funded projects. Kirsten will send an email to the AC to remind them.
    - One risk for funding too many similar projects is we run through the same folks at the DOTs. Alex Barstow at MA will be tapped a lot, but he can delegate his place on the TAC. Someone else can chair the TAC, if needed.
- May - Convene the TACs to create the SOW.
  - ~ Once TACs identified, then have a TAC meeting to develop a SOW.
  - ~ The AC will provide the implementation guidance. **Action item:** Emily will draft it and AC will provide feedback.
  - ~ The sponsoring state will draft a SOW using the NETC form to give the TAC something to start with.
    - CTC can create a preliminary SOW by cutting and pasting from the problem statement. CTC will send to the TAC chair and AC liaison for review and comment. CTC will incorporate those comments and that version will be given to the TAC at the SOW review meeting.
    - The TAC will be asked to focus on implementation when revising the SOW being as specific as possible on what they want from the project. The PI will include an implementation plan as a chapter in the final report.
      - MA2 – The TAC should provide guidance on what they want to include in their bridge manual. There needs to be at least one deliverable that is implementable.
  - ~ CTC do the TAC administration to help schedule the meeting and take notes.
  - ~ The SOW will be distributed to the AC while Kim (ME) is doing her RFP work. If there are significant changes to the SOW, then it will slow down the process. Will go back to the TAC for review. The AC review will be looking at implementation specifically.
  - ~ CTC will help the TACs with implementation.
- Dale – The new projects need to be under contract by the end of the year, at the latest.

### Quick Response Project Update – Kirsten Seeber

17-2: Quick Response: Quantification of Research Benefits – All final docs are on the website.

### 18-4: ICNet Workshop

- The Workshop will be held at the Portsmouth Library. It begins at 11am on day one so no one needs stay the night before. Goes through a dinner meeting. Day two runs from 9am-4pm.
- Agenda – Updates from FHWA, NOAA. DOT roundtable discussion. Panels that look at specific topics.
- Ann – ICNet will talk about how to continue funding for the workshop. NETC provided \$30,000 for this year but is not looking to fund the workshop moving forward. The topic is too specific. NETC would rather fund the Symposium that will cover multiple topics.
- Ann is doing a NETC presentation at the workshop. Several of the breakout groups will talk about research needs. We will see if we can get any NETC projects out of it.

### High Value Research submissions of NETC projects

- Emily - 17-1; Flavia -17-2; Dale – 13-3 phase I and II.
- Which states claim these? Each region can only have their top four (for the Sweet 16) from different states.
- All submitted projects get some promotion. They are in the full compilation of submitted projects. Dale – The NETC states shouldn't vote on a NETC project for the Sweet Sixteen. It can't win without them voting but will still be in the compilation.
- Emily likes submitting QPRs to show that lower funded projects can have impact.

### Open Projects – Kirsten Seeber

#### 18-1: MASH

- Budget: \$199,936.20
- Start date: 10/9/18 – End date: 6/1/2020
- Maria Drozd, Bridge Engineer with the FHWA Maine Division Office joined the TAC. RI requested that an FHWA bridge person join the TAC.
- Task 1 is complete; Task 2a is complete; Tasks 2b is complete except for final documentation; and Task 3 is 75% complete.
- Work to be completed during next reporting period:
  - ~ Task 2b will be completed (i.e., Validation of NETC transition)
  - ~ Task 3 will be completed (i.e., MASH evaluation of NETC 3-Bar Bridge Rail)
  - ~ Task 4 will be in progress (i.e., MASH evaluation of NETC 3-Bar Transition)
- Dale – This project is focused on modeling. ME's folks feel the models will provide the information they need to develop a spec. This applies to any new bridges; no retrofitting needed.
- ME has a guardrail garden and YouTube videos on guardrail installations. MA folks visit the garden to learn how the guardrails are supposed to be installed. **Action item:** Dale will send everyone the links.

#### 18-2: Framework of Asphalt Balanced Mix Design for New England Agencies

- Budget: \$127,499
- Start date: 2/5/2019 - End date: 6/30/2020
- Maina is scheduling the kickoff meeting.
- TAC members:

CT – Eliana Carlson

RI – Michael Byrne

MA – Ed Naras

ME – Derek Nener-Plante

NH - Joe Blair (co-chair) and Matt Courser

VT – Aaron Schwartz

AC Liaison – Ann Scholz (co-chair)

#### 18-3: Integration of Unmanned Aircraft Systems (UAS) into Operations Conducted by State Departments of Transportation

- ME is working on final contract with WSP. Contract should be done this week 3/11.
- Maina will work on scheduling a kickoff meeting with TAC and PI.

#### NETC Symposium:

- Contract with the Grappone Center has been signed and returned with the \$800 deposit.
- Session titles renamed to: Project Highlights, Focus Topic Discussion and Future Needs Ideas
- Topic Leaders:

- ~ Bridges: Dale Peabody (ME)
- ~ Environment: Chris Slesar (VT)
- ~ Materials: John Grieco (MA)
- Topic leader responsibilities include:
  - ~ Recruit attendees.
  - ~ Help find three projects to present at first session.
  - ~ Help form agenda for second session by gathering discussion ideas/issues/topics from SMEs from all the states.
- Dale will work with his bridges group and Emily will work with Chris S. John G. is familiar with NEREM meetings and has a good handle on what to do. Maina and Emily will work with him.
- The WG plans to have the project presenters selected by end of March so that presenters can be contacted and asked about their availability for the symposium.
- The goal is to have the discussion items/issues formed by end of April (or earlier) so that an agenda can be released to help people decide if they want to attend or not (mainly bridges and environment.)
- Emily – Environment will have a draft agenda by mid-April. They will contact the five other states to work out the ideas.
- First hour of Symposium (Project Highlights) – Each topic area can decide what they want to do in that hour.
- Focus Group Discussion – Will talk about the 8-10 hot topics they are facing in their topic area.
- Future Needs Discussion – Bridge and Materials will each discuss the two tabled projects for their topic. Also talk about potential research topics. An AC member will be there to facilitate the discussion.

#### **Other Business**

- CTC creating an NETC poster for the summer RAC meeting.
- AC chair should be elected annually. Ann will be the chair it through 6/30/20.