

National Road Research Alliance Geotechnical Team Dec Meeting

**Terry Beaudry
Reclamation/Grading Engineer**

Agenda

1. Welcome and Introductions
2. General NRRRA Update – *TRB 2020*
3. NRRRA Geotech Website Update
4. Brief Update Project *Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations*
5. Brief Update Project *Determining Pavement Design Criteria for RAB and LSSB*
6. Draft Agenda *Unsaturated Soil Mechanics Workshop for NRRRA 2020 Meeting.*
7. Questions/Requests

NRRA Geotech Website Update

<http://www.dot.state.mn.us/mnroad/nrra/structure-teams/geotechnical/index.html>

NRRA Geotechnical Efforts

2017 Synthesis

- [Larger Subbase Materials](#) - Complete
- [Subgrade Design for New and Reconstructed](#)

2017 Projects

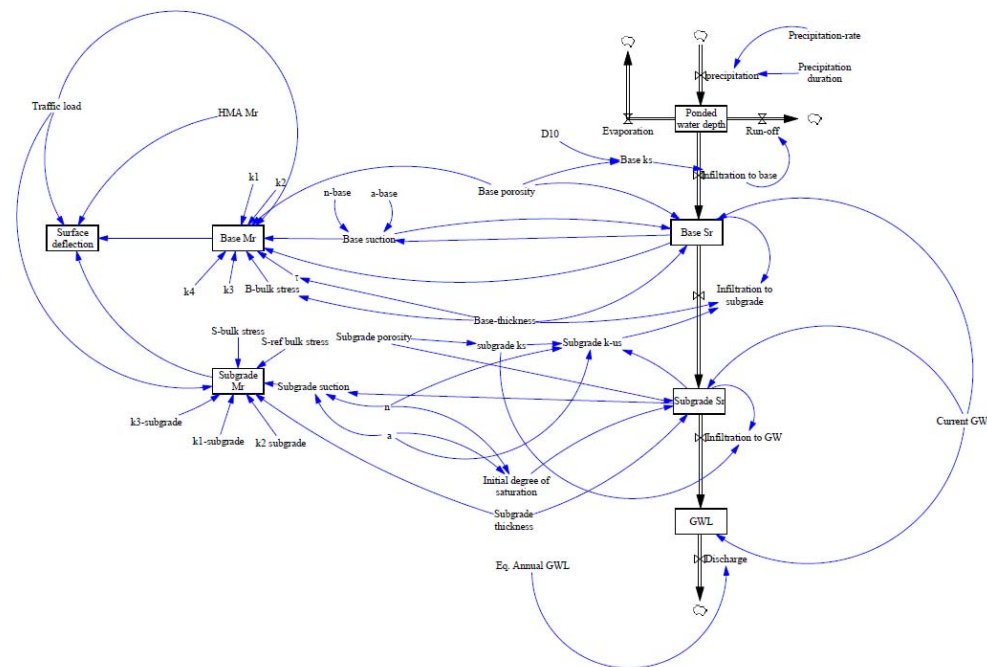
- [Determining Pavement Design Criteria for Recycled Aggregate Base and Large Stone Subbase](#)

2019 Projects

- [Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations](#)
- [Environmental Impacts on the Performance of Pavement Foundation Layers](#)
- [Permeability of Base Aggregate and Sand](#)
- [Improve Material Inputs into Mechanistic Design Properties for Reclaimed HMA Roadways](#)

Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations

1. Task 1 Memo Delivered and Reviewed by TAP
2. Task 2 Literature Review Delivered and Under Review by TAP
3. Task 3 – In Progress – Development of System Dynamics Framework



Determining Pavement Design Criteria for RAB and LSSB

1. Currently working on Task 5 (Performance Monitoring) and Task 6 (Instrumentation)

-Completed analysis of field data up to dates shown below

-MnDOT collecting additional MnROAD data requested by research team

| Field Test/Sensor | Last Data Collection Date |
|---------------------------|---------------------------|
| FWD | 5/7/2019 |
| Thermocouple (TC) | 5/16/2019 |
| Moisture Probe (EC/ET/EW) | 5/19/2019 |
| Frost Monitoring | 3/21/2018 |
| Rutting | 5/17/2018 |
| IRI | 4/25/2018 |

Draft Agenda Unsaturated Soil Mechanics Workshop -NRRA 2020

Date: May 22, 2020

Time: 8 AM to 12 PM

Instructors: William J. Likos, Bora Cetin, John Siekmeier, and Raul Velasquez

1. Fundamentals of Unsaturated Soil Mechanics
2. Unsaturated Properties for Infrastructure (pavement in particular) Design
3. Measurement of Unsaturated Soil/Geomaterial Characteristics
4. Environmental Cycles in Engineering Infrastructure for Unsaturated Soil Engineering
5. Correlation between water content-matric suction-soil/geomaterial stiffness
6. Unsaturated Soil Mechanics Practical Aspects