



## NORTH CAROLINA

Department of Transportation



# AASHTO LRFD MSE Rewrite

Scott Hidden, P.E.

NCDOT Geotechnical Engineering Unit

# Overview of MSE Rewrite

- Draft Document:
  - As currently written, presumes overall stability is moved to Strength Limit (incl in current agenda items)
  - Significant revisions related to reinforcement load prediction methods and internal stability design
  - Revisions related to determining long-term reinforcement and connection strength, primarily updating and clarifying things
- Anticipated Presentation and Schedule:
  - MSE rewrite will most likely be broken into separate agenda items
  - Agenda items voted on at 2019 Annual Meeting

# Summary of Major Changes

- Load factors will be dependent on reinforcement load prediction method
- Load and resistance factors will be calibrated if work is completed in time
- Simplified Stiffness and Limit Equilibrium Methods (LEM) added for internal stability
- LEM for overall and compound stability is already in code but compound stability is improved
- Language added to address wall batter, reinforcement type, strain limitations and limit state design

# Summary of Major Changes (Cont.)

- Soil failure limit state added
- $T_{\max}$  prediction methods are clearly separated
- Terminology and variable naming cleaned up in equations, especially with regard to factored and nominal values
- Long term geosynthetic strengths and commentary updated for consistency with AASHTO R 69 and NTPEP
- Geosynthetic connection language improved and clarified

# Issues to Consider

- New Simplified Stiffness and Limit Equilibrium methods:
  - Under what conditions should each method be used?
  - Any comments about how extensibility, facing batter and reinforcement types are defined?
  - Are the methods organized clearly? Is the separation of the methods sufficient?
- Any issues with different load factors based on reinforcement load prediction method?
- Any concerns with how the soil failure limit state is addressed?

## Issues to Consider (Cont.)

- Is the guidance for each  $T_{\max}$  prediction method adequate and understood?
- Compound stability requirements are still not very well defined, suggestions for improvement?
- Is the reorganization of surcharge loading, reinforcement spacing characterization and  $k_a$  and  $k_0$  calculation in order to provide specific guidance ok?
- Is the LEM design approach as written acceptable and clear?



# Additional Comments?



# T-15 Appreciates Your Input!

