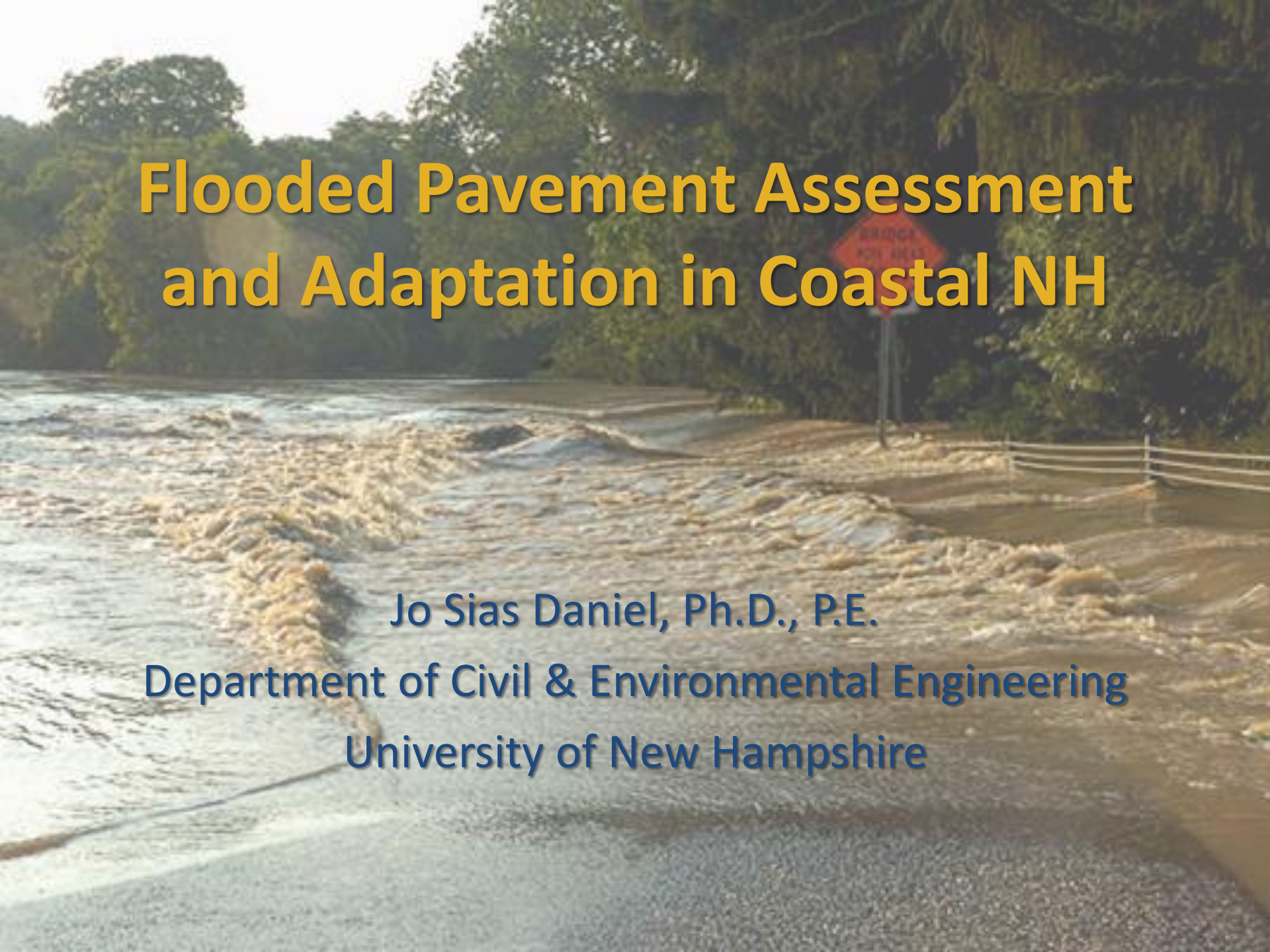


Flooded Pavement Assessment and Adaptation in Coastal NH

Jo Sias Daniel, Ph.D., P.E.
Department of Civil & Environmental Engineering
University of New Hampshire

Research Projects

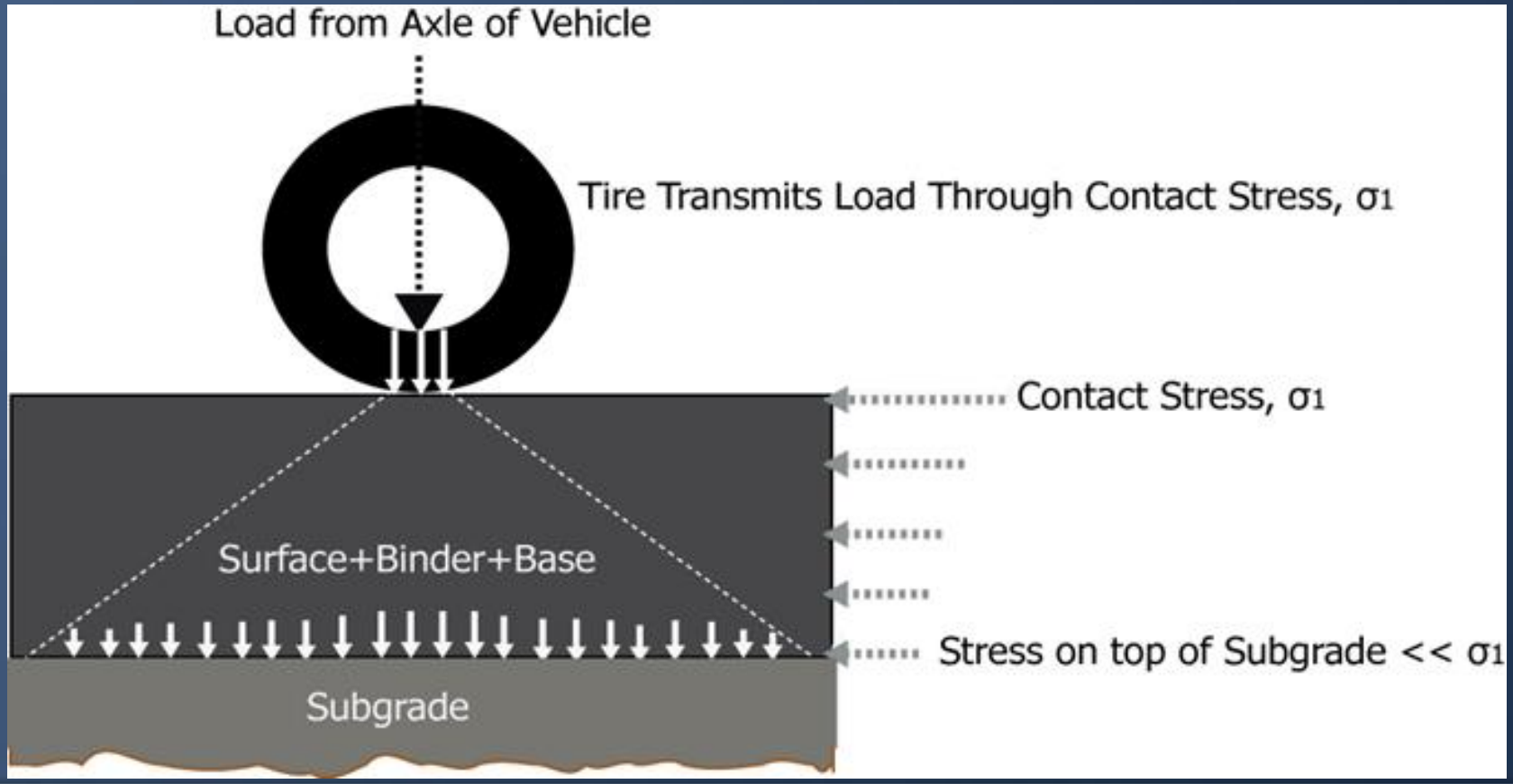
FHWA: Flooded Pavement Assessment

NH Sea Grant: Climate Adaptation for Road Infrastructure in Coastal NH

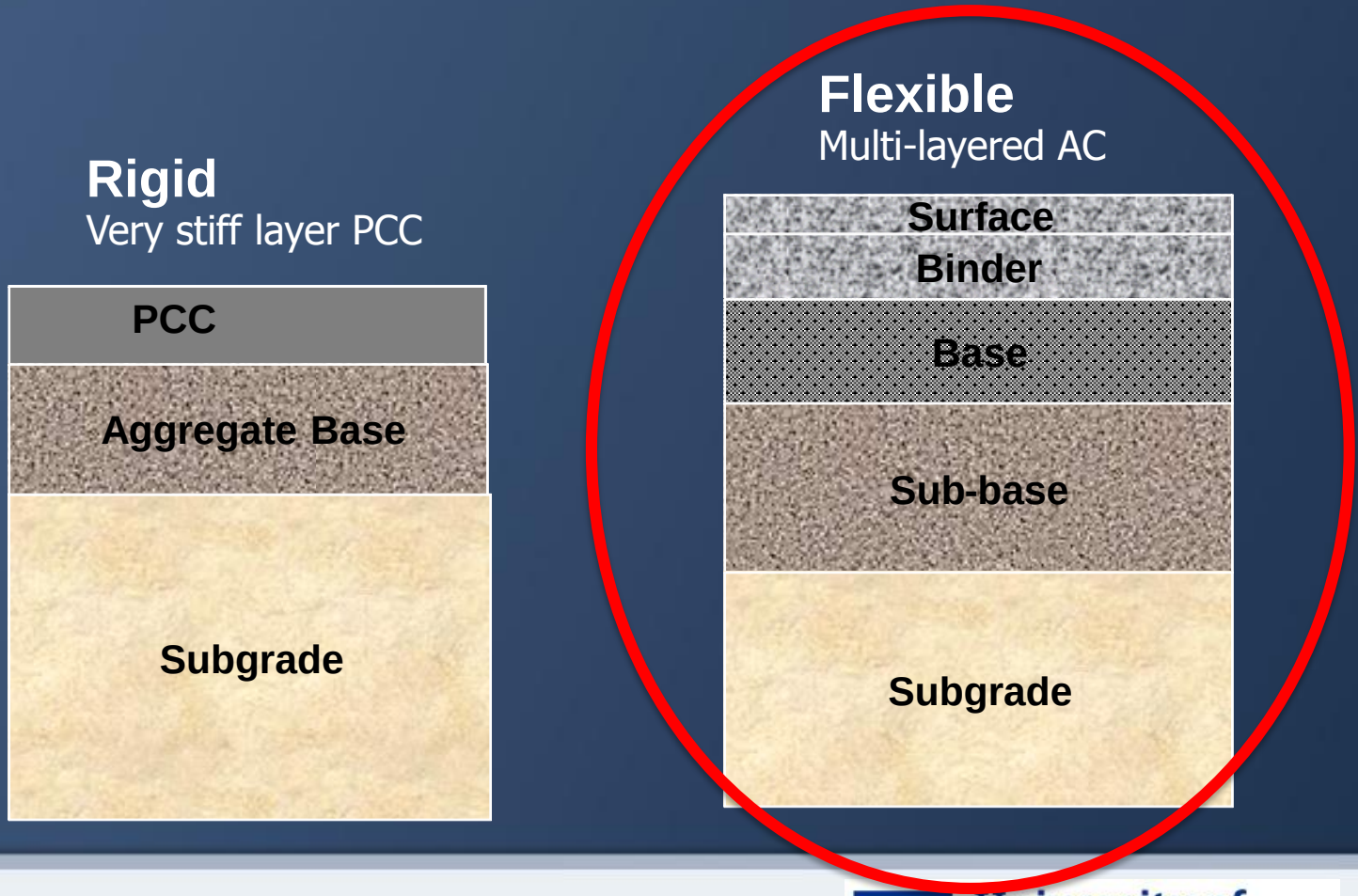
Why do we need pavements?

How pavements work

Withstand load from vehicle without excessive deformation



Rigid & Flexible Pavements



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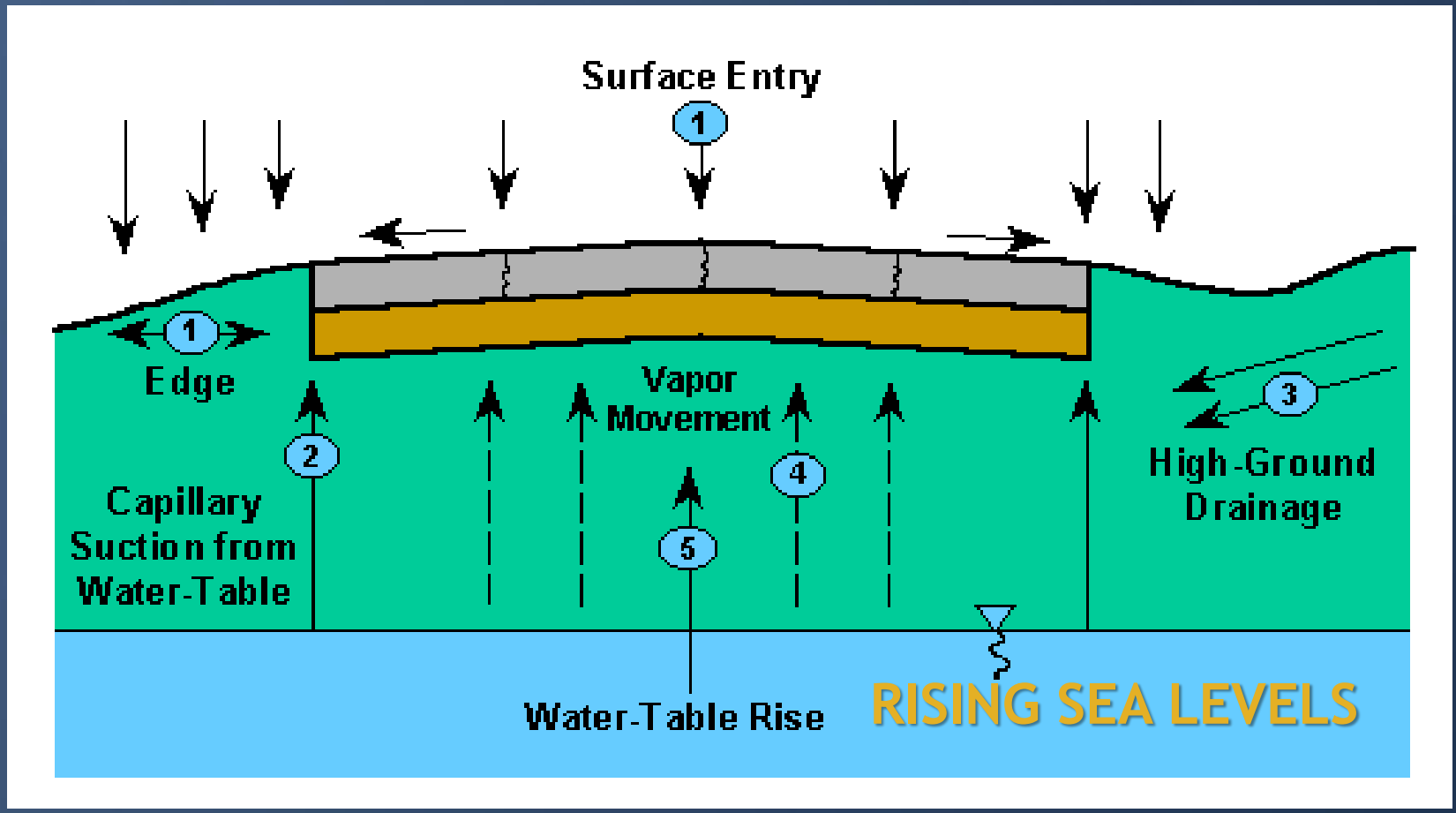
During a Flooding Event



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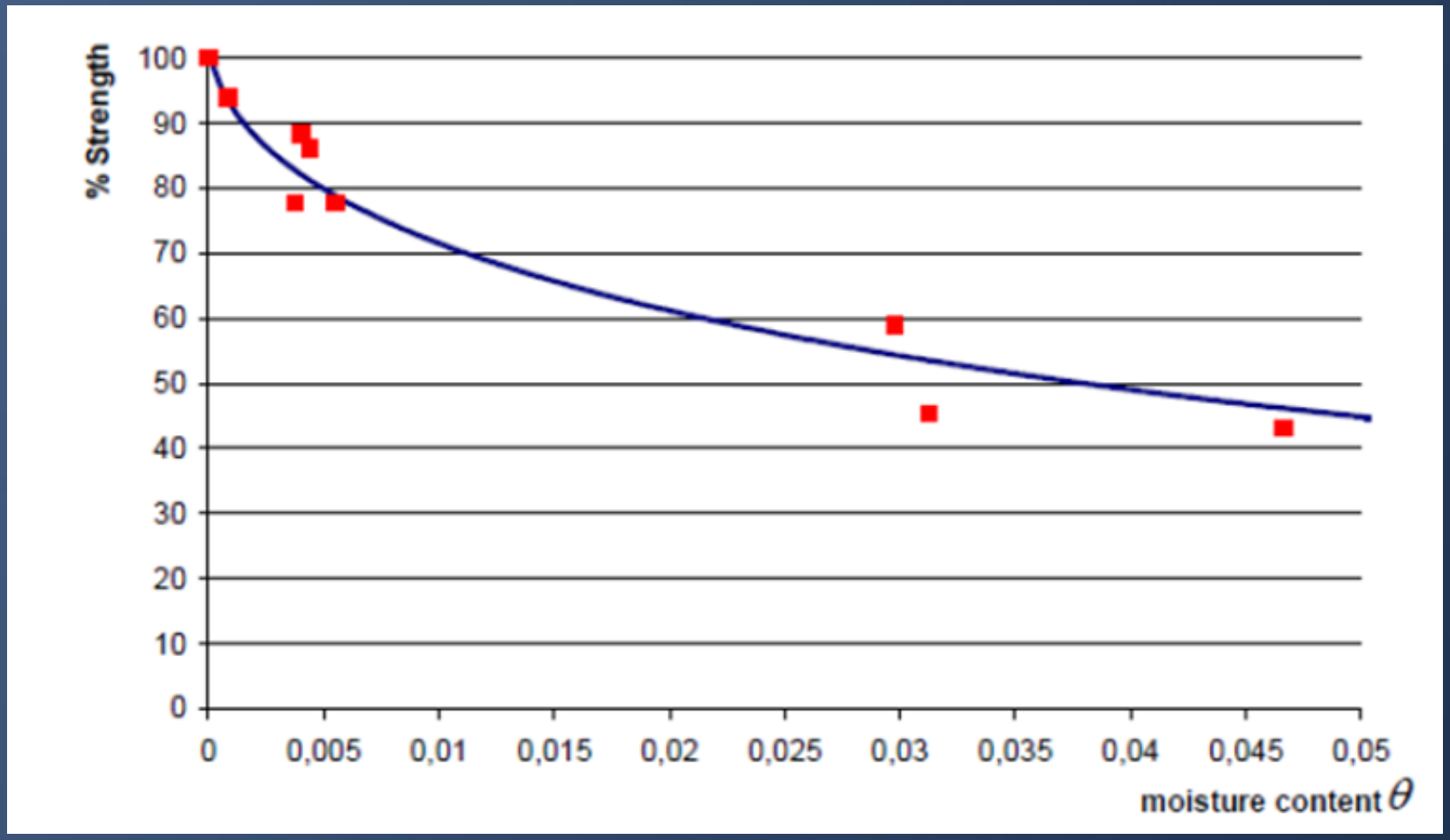
Strength/Stiffness and moisture



Pavement Damage

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FHWA Project Objectives

Identify when vehicles can safely be allowed on the road after flood events

U.S. Department of Transportation
Federal Highway Administration

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FHWA Project Objectives

Consider tradeoffs between costs of road closures, damage, safety

U.S. Department of Transportation
Federal Highway Administration

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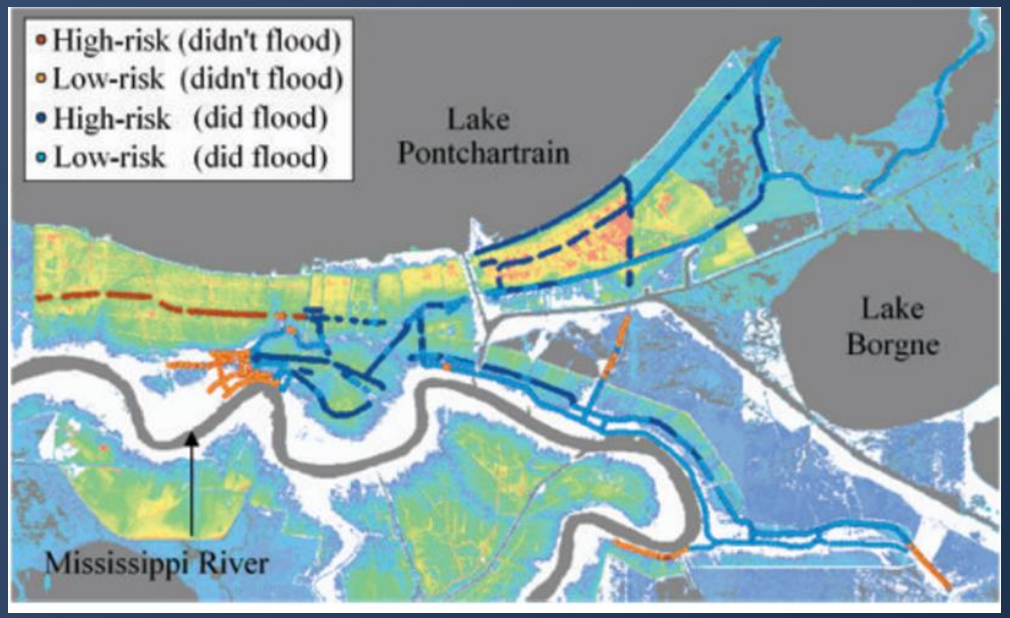
Current Practice

- Survey of FHWA Division Offices
- 95% use visual inspection
- Quantitative pavement condition inspection
- Non Destructive Testing

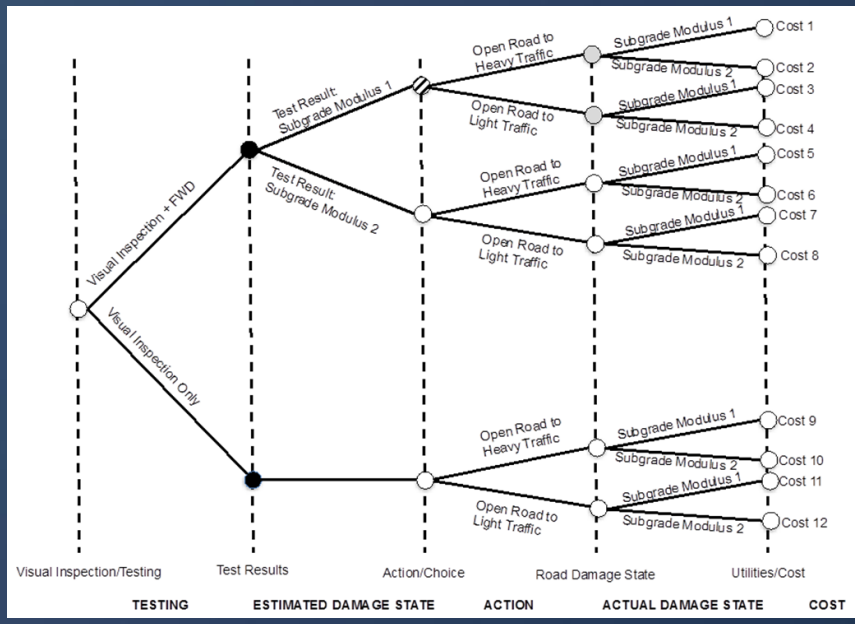
When is it worth doing testing?

- Cost of testing
- Value of test information
- Practicality
- Timing
- Risk assessment

Post Katrina Testing



Final Product



- User friendly decision tree
- Can be updated after events
- Agencies can run analysis to evaluate whether or not additional testing may be valuable *before* a flooding event occurs

NH SeaGrant Objectives

1. NH Transportation Climate Change Working Group
2. Impacts from climate and sea level changes on pavements
3. Demonstrate the value of adaptation through case study

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Pavement Assessment

1. Road classification
2. Groundwater Model
3. GIS Mapping
4. Pavement performance evaluation under different scenarios

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NH Transportation Climate Change Working Group

- Engage stakeholders
- Integrate different perspectives and needs
- Effective communication and dissemination

Contact Jayne Knott:
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Overall Goals

Better tools for agencies to make decisions and plan for pavement design, operation, and maintenance considering impact of climate changes, sea level rise, and flooding

Questions?