Nothing Compares
NORTH CAROLINA

Asset Management Plan

Risk Analysis at Varying Levels of the Organization

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Goal

- The goal of this presentation is to show the types of risks identified by Executive Leaders, middle level managers and county maintenance engineers to give a broader picture of the risks facing NCDOT.

Presentation Outline

- Risk Analysis Introduction
- Pavement Work Group Risk Identification
- Risk Identification by County Maintenance Engineers
- Risk Identification at the Executive Level
- Comparison
- Conclusions

What is Risk?

- Risk is uncertainty that impacts our operations.
- What types of risks can we face?
  1. Manpower
  2. Funding
  3. Weather
  4. Materials
  5. Policies
  6. Equipment


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"This year, I resolve to stay away from unnecessary risks."

Risk Analysis

- MAP-21 requires that Asset Management Plans be “risk based.
- Since we had no particular background, we began with the NHI course on Risk Analysis to kick off the process.
- Began with 2 work groups: Pavement and Bridge.
- I am reporting on Pavement only.

Pavement Work Group

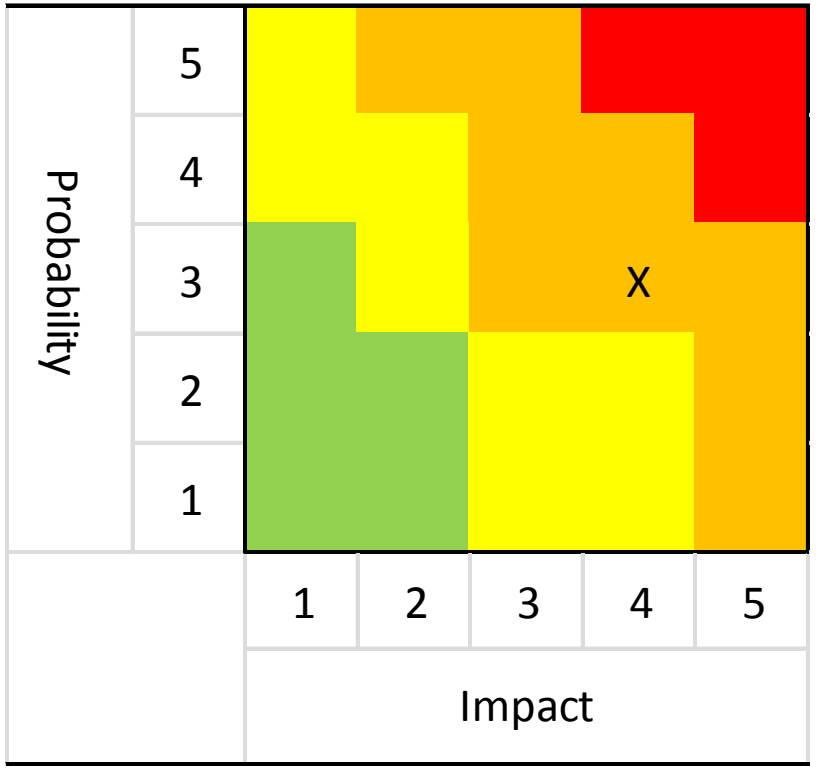
- Included representatives from Pavement Management, Planning, Division Maintenance, Asset Analytics, Operations Program Management, IT, Disaster Recovery, FHWA, MPO and RPO.
- Had work group brainstorming sessions to identify risks, their impacts, and their likelihoods. Also defined actions in the event the risks occur.
- Team made up of middle level management.

Mid-level Management View

- Identified risks to the pavement infrastructure including funding, IT issues, population growth, material defects or shortages and climate change.
- For each risk, identified effect, the likelihood, the impact and responses in a risk register. Identified responsible parties.

Other parts of the Risk Register

- Each risk was assigned a category, failure cause, effect, threat or opportunity, probability, impact, response, contingency response plan, actions, responsibility and necessary resources.



What risks were identified?

- Funding Shortfall
- Hurricanes or Flooding
- Rock Slides
- Population growth
- IT threats to PMS where system no longer operates
- Must change PMS vender

Identified Risks (continued)

- Must change data storage amount or modernize data storage
- Data collection equipment becomes obsolete
- Shortage of necessary building materials
- Material defects (like ASR)
- Climate change affects temperature or level of ground water table


CERTIFIED PROJECT MANAGEMENT ZOMBIE
LET'S REVIEW OUR ASSUMPTIONS, RISKS, AND CONSTRAINTS.
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YOUR PROJECT MANAGEMENT STYLE IS PUTTING MY JOIE DE VIVRE AT RISK.
2-10-06 © 2006 Scott Adams, Inc./Dist. by UFS, Inc.
IT'S FUNNY BECAUSE I DON'T HAVE ANY.

Risks by County Maintenance Engineers

- Zoning practice is not uniform. Lack of coordination between local planning and zoning and NCDOT.
- Adequate manpower to do the day to day work.
- Having manpower to address hurricanes or snow and ice.
- Legislative requirements for maintenance actions interrupt planned activities.

CME Identified Risks

- Going to contract work for preservation has performance risks because contractors don’t have experience.
- Managing workforce across county lines.
- Funding.

Risk Assessment from the Executive Level

- Conducted one on one interviews with the Chief Engineer and the Administrator of Technical Services.
- Major risk facing the agency: human resources
  - Retention of qualified trained personnel
  - Increased outsourcing; consultants may not know our processes
  - Loss of people with 10 to 18 years of experience.

Risks due to loss of Institutional Knowledge

- Risk of skipping steps without realizing impacts.
- Need to train remaining employees; training will reduce speed of decision making.
- Agency may not be able to provide non-core functions.

Risks to Agency Funding

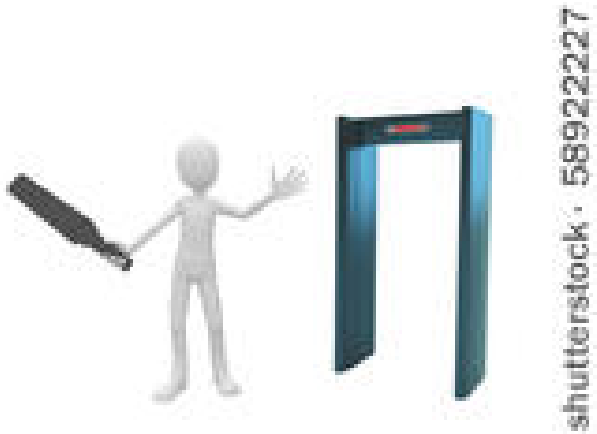
- Federal funding via gas tax is not sustainable long-term.
- Need a mechanism to fund mega projects.

Major Risk to Infrastructure Health?

- Need dependable, consistent funding to allow preservation and maintenance at the right time.
- How legislature values maintenance and operations versus capital program expansion.
- Funding will never keep up with growth, making flexibility more critical.

Other Risks?

- Security Risks: Need to harden some infrastructure. Can get on a train without going through a metal detector… and the train may pass over a critical bridge.
- Morale of Employees: employees need to have a sense of urgency, but this is hampered by the current atmosphere of uncertainty.



Comparison

- All levels had concerns about manpower: County engineers about doing local repairs, Executives about delivering programs.
- All levels concerned about funding: County engineers need adequate budgets to pay workforce, purchase materials and equipment, and provide LOS.

Executive level concerned with having consistent and dependable funding to allow planning. Need funding flexibility. Need a sustainable federal fund mechanism.

Comparison (continued)

- Middle managers risk register reflects timing of our risk brainstorming as well as level within agency. The brainstorming was completed prior to announcement of a Reduction in Force… group did not reflect manpower risks.
- Mid-level managers focused on infrastructure management, data collection, PMS, as well as materials.
- Surprises: CME's focus on zoning issues.
    - Middle managers identified climate change impacts.
    - Executive identified security threats.

Conclusions

- Risk analysis does change as you address risk with different levels in the organization.
- County Maintenance Engineers were focused on manpower and funding to do the local work.
- Middle managers were focused on tools and methods of maintaining infrastructure in the longer term.
- Executives focused on manpower agency wide and funding at the highest level.

Conclusions

- Considering all levels gives the broadest picture of agency risk.
- NCDOT also benefited from our broad involvement across the agency in the pavement work group. We added risks associated with emergency preparedness, finance, IT, equipment as well as threats to PMS.

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Thank you for your attention.

Are there any questions?