

# Two – Lift Construction KS Demonstration Project

National Concrete Pavement  
Technology Center



# Two-lift

- Concept is not new
  - MI - 1993
  - KS - 1998
  - FL - 2001
- In this case
  - Proof of concept
  - Improved life



# Why Bother

- Lower cost system below
- Improved system above
- Changing demands on mixture
- Improved life cycle cost
- Improved environmental impact



# Sustainability

The use of practices and materials in concrete pavement that provides a durable pavement, and that

- minimizes the use of energy and non-renewable resources
- while generating a minimum of pollutants
- in the most cost effective manner possible
- while maximizing the benefits to society.



# Sustainability Track

- A Track Leadership Group has been Identified
  - Includes 24 people from:
    - PCA, ACPA, WCPA, ACAA, SCA, NMRCA
    - APWA, AASHTO, CAC, FHWA, EPA, CalTrans, MnDOT, KSDOT, VDOT),
    - Lafarge, Holcim, Duit Construction),
    - Consultants (ReVisions, The Right Environment),
    - Academia (UNH, MTU)
- First meeting was held on July 23, 2008



# Track Vision

To identify, quantify and implement characteristics of concrete pavements that lead to greater sustainability in terms of economic, environmental, and societal needs.



# Track Objective

Use research to improve:

- Materials and processes
- Quantification
- Decision making process
- Condition monitoring
- Innovative designs
- Innovative restoration, and rehabilitation



# What the Track is NOT

- Rating Systems are not a focus
- Activities generic to all types of pavements are not a focus
- Bashing the other party is not a focus



# Tools-Quantifying Gaps

We need

- To figure out what to measure
- And how to measure it
  - w.r.t. construction, operation and removal
  - In terms of
    - Life cycle cost
    - Life cycle analysis
    - Technical acceptability
  - For changes in design, materials and construction

# Environmental Assessment

Use internationally recognized approach (ISO) to assess environmental impact

- LCA approach that includes emissions, energy and other factors (water, particulate, etc.)
- Must be honest, factual, and transparent
- Requires long-term commitment
- Likely not a single tool but a toolkit
- Not a rating system

# Some Low Hanging Fruit

- Briefing document
- Best Practices manual
- Filling research gaps
- Conference
- Demonstration projects

# Desktop Study

- To compare “sustainability” of different hypothetical cases
- Theoretical
- Similar serviceability
- Addressing some local issues
- Work conducted by Tom VanDam and Joep Meijer