INDOT Pavement Management

Road School
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What is Pavement Management?

"You will have a Pavement Management System when it effects your program.

In other words, when you do something and it determines your program."

Lou Papet FHWA

9/26/91 (Chicago,Illinois)

What is Pavement Management?

A systematic approach to maintaining the highway network

Pavement Management Goal

Maintain the Existing Network at the Highest Level of Service for the Least Cost.

Pavement Management Components

- Data Collection
  - Condition Data, Road Inventory, Contract Data, Video Log
- Needs Analysis
  - What and where is pavement work needed
- Condition Reports
  - How are our roads doing

Pavement Condition

- Data Collected by Pathway Services, Inc.
  - IRI, Rut, PCR, & Video Log Collected
    - Interstate Routes Collected Annually
    - All US & State Routes collected biannually
  - Data is distributed using PC workstations
- Data Collected by Research Division
  - Pavement Structure Data
    - Network Level Data Effort that is starting this year
    - In addition to project level data collection
    - On a 5 year cycle
  - Friction/Skid testing
    - Interstate Routes Collected Annually
    - All US & State Routes Collected Triennially

Pavement Condition

- Pavement Condition Rating (PCR)
  - 100-0 Scale (100=excellent)
  - Based on surface distresses such as cracks, pumping, etc.
- IRI (International Roughness Index)
  - Measure of "bumpiness" of road
  - Measured in inches/mile using a Laser Profilometer

Pavement Condition

- Rutting
  - Measured by Laser Rutbar
  - Average Depth of Ruts per mile
- Pavement Quality Index (PQI)
  - Composite index based on IRI, PCR, & Rut
  - A measure of the "health" of the highway network
- Structural Index
  - Needed to indicate structural condition of pavement
  - Be developed based on FWD Data

Road Inventory

- Based on the inventory data maintained by Program Development Division
- Contains information such as:
  - Road Width
  - # of Lanes
  - Functional Class
  - Mileage
- It is continually updated & maintained

Contract Data

- Last pavement work on a road section
- Establishes:
  - Pavement age
  - Last work type
  - Location
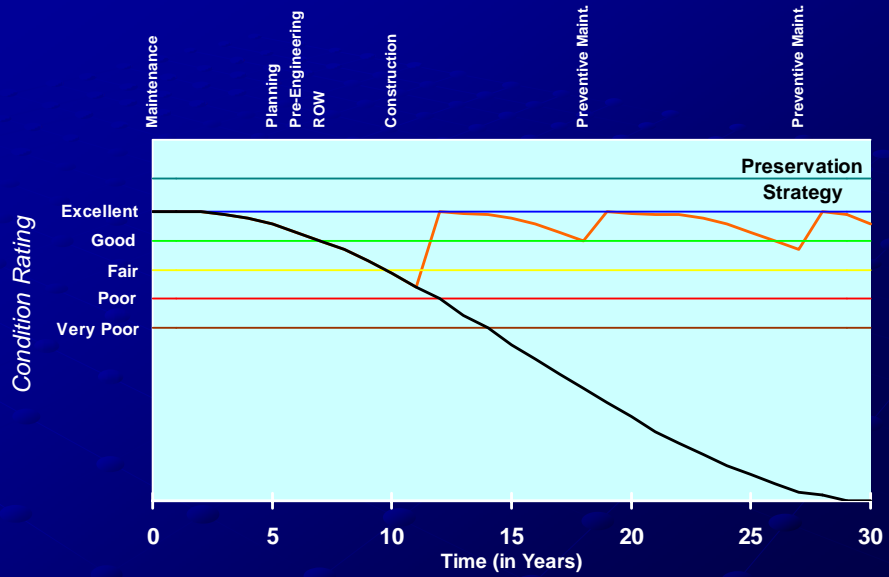- May be contract work or major In-house maintenance work

Needs Analysis

THE NEW YORKER

"If we're going to prioritize, we're going to need some priorities."

Needs Analysis

- Compile data into analysis sections
  - Condition, Inventory, Contract data
- Network Level Analysis
  - Selects pavement treatments/strategies based on pavement models
  - Optimizes the strategies based on:
    - Budget
    - State/District needs and requirements
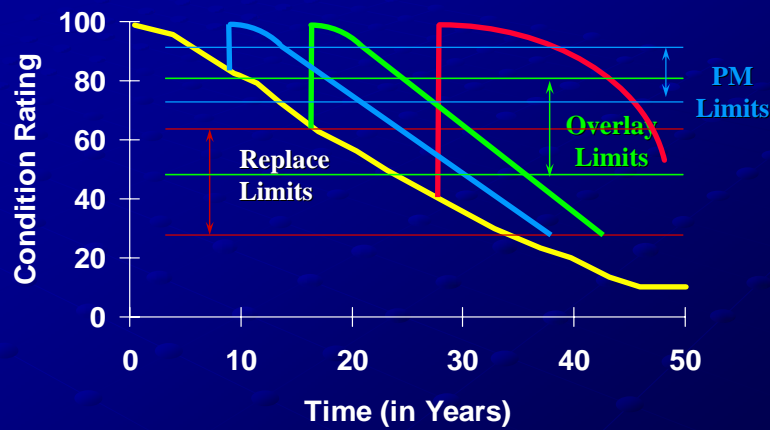- This produces a pavement needs list

Needs Analysis

- Project Level Analysis
  - The pavement needs list is field checked
    - Verification of the need for work
    - Other projects may be added
    - Input of operations/field personnel is considered
  - Projects may be modified or drop based on the field review
  - The selected projects are proposed in SPMS and reviewed by the appropriate PMG
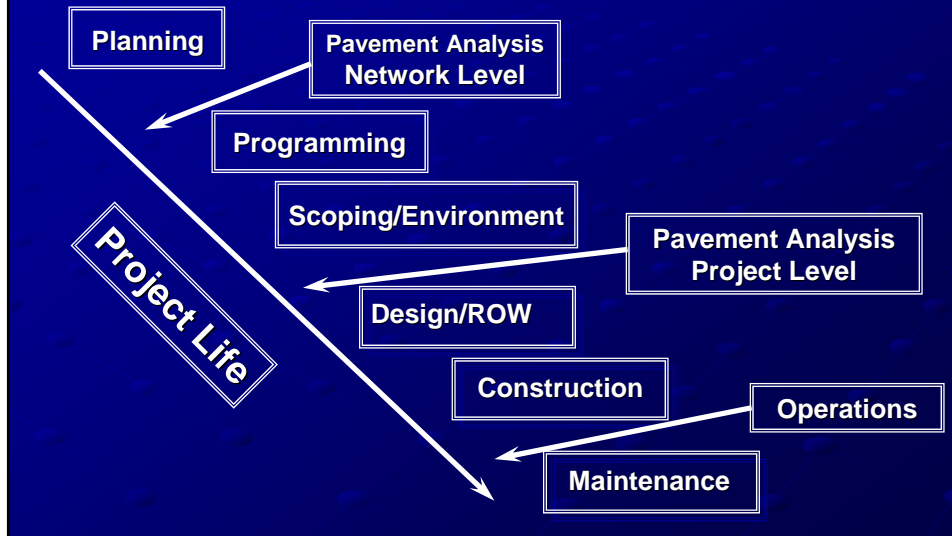 - The final product is the Pavement Program

Pavement Management Strategy

Typical Treatment Selection

INDOT Plan Development Process

Planning	Pavement Analysis Network Level

Programming

Scoping/Environment

Pavement Analysis Project Level

Design/ROW

Construction

Operations

Maintenance

Project Life

INDOT Treatment Levels

- Preventive Maintenance Treatments
  - Crack Sealing, Chip & Seal, Mill & 1.5" HMA Overlay, Seal Joints, Patch & Repair Pavement
  - May be contracted or Maintenance Forces
- Functional Treatments
  - HMA Intermediate & Surface Overlay with or without Milling, Concrete Pavement Restoration
  - All contract work

INDOT Treatment Levels

- Structural/Rehabilitation Treatments
  - HMA Base, Intermediate & Surface Overlay with or without Milling, Crack & Seat Concrete Pavement and HMA Overlay
  - All contract work
- Reconstruction/Replacement Treatments
  - Rubblize, Concrete Pavement and HMA Overlay, Replace Pavement with new Concrete or HMA Pavement
  - All contract work

Pavement Management Software

- INDOT uses dTIMS CT by Deighton Associates, Ltd
- Customized for INDOT's business practices and processes
- Reports can be viewed using INDOT's intranet
- Demonstration of PM Software and Intranet Site