Southeast Pavement Preservation Partnership 2014

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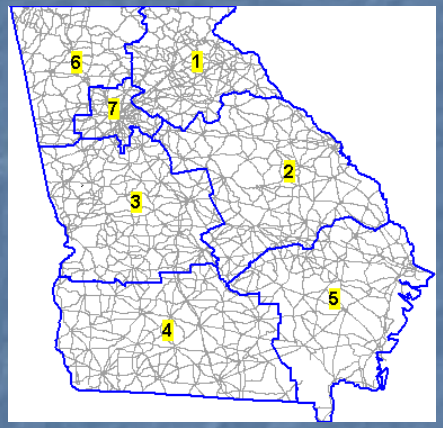
GDOT Pavement Management System

PMS in GDOT

- 18, 000 centerline miles.
- 159 counties -7 Districts.
- Pavement surveyed annually with about 60 engineers.
- 10 different types of distresses surveyed (e.g. load cracking)
- Project rating is between 0 and 100.
- Survey data used to determine suitable maintenance and rehabilitation strategies.
- Total miles of projects treated are subject to budget availability.
- More than 27 years of survey data (1986 – 2014)



PAVEMENT CONDITION EVALUATION SYSTEM (P.A.C.E.S.)

P.A.C.E.S. RATING SYSTEM

- RATING SYSTEM FROM 0 TO 100
- RATINGS BASED ON ROADWAY DEFICIENCIES
- RATINGS PERFORMED YEARLY BETWEEN OCTOBER 1ST AND DECEMBER 31st BY AREA ASSISTANT FOR ENTIRE STATE HIGHWAY SYSTEM

P.A.C.E.S. (cont.)

- ROADWAY SECTIONS WITH RATINGS OF 75 AND BELOW BY THE AREA WILL BE RATED BY THE DISTRICT AND GENERAL OFFICE
- RATINGS OF 70 AND BELOW WARRANT RESURFACING
- RATINGS ABOVE 70 MAY WARRANT OTHER TYPES OF TREATMENTS

P.A.C.E.S. (cont.)

- SAFETY CONCERNS, SUCH AS, ACCIDENT HISTORY OR SKID RESISTANCE CAN OVERRIDE ROADWAY RATING AS JUSTIFICATION FOR RESURFACING

DEFICIENCIES CONSIDERED

- Load Cracking
- Block Cracking
- Rutting
- Raveling
- Reflective Cracking
- Loss of Section
- Bleeding
- Corrugation
- Edge Distress
- Patched Areas

Field Data Acquisition

Field data acquisition is performed through COPACES module in GPAM.

ESTABLISHING REHABILITATION PROGRAM

- EACH DISTRICT SUBMITS PRIORITIES TO STATE MAINTENANCE OFFICE
  - Priorities are based on PACES Rating, AADT, Safety History
  - District Maintenance Assistant and State Maintenance Liaison establishes the District's priorities
- STATE MAINTNENANCE OFFICE REVIEWS EACH DISTRICT'S PRIORITY LISTING AND ESTABLISHES A STATE WIDE PRIORITY LISTING
  - Priorities are based on available funding as well as the items used at the district level

ESTABLISHING REHABILITATION PROGRAM (cont.)

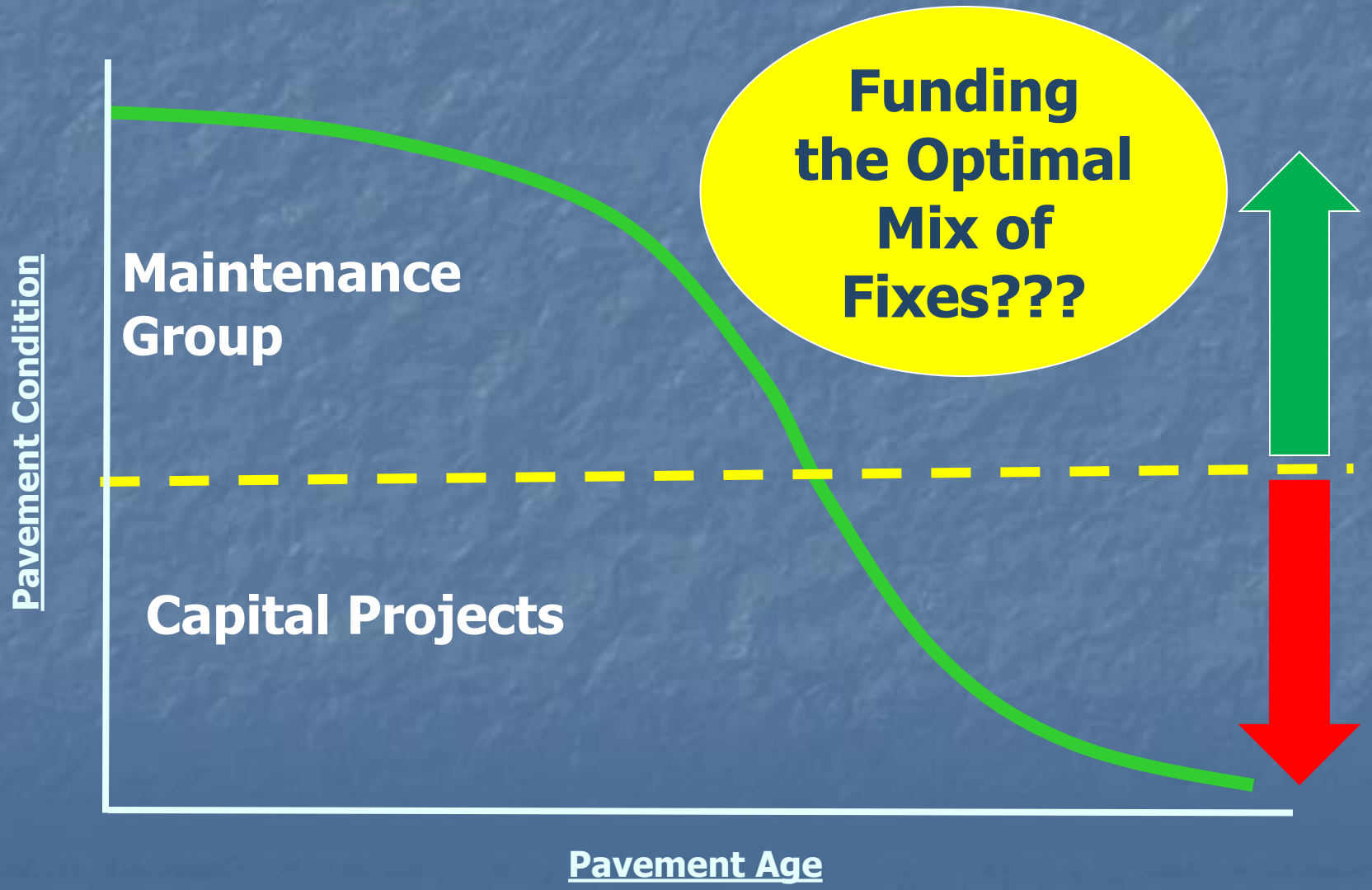
- FOR INTERSTATES OR OTHER STATE ROUTES WITH MAJOR DISTRESSES
  - The State Maintenance Office requests detailed pavement and/or base evaluation from the Office of Materials and Research – Pavement Design Section

Integrating Preservation Into the New Pavement Management System

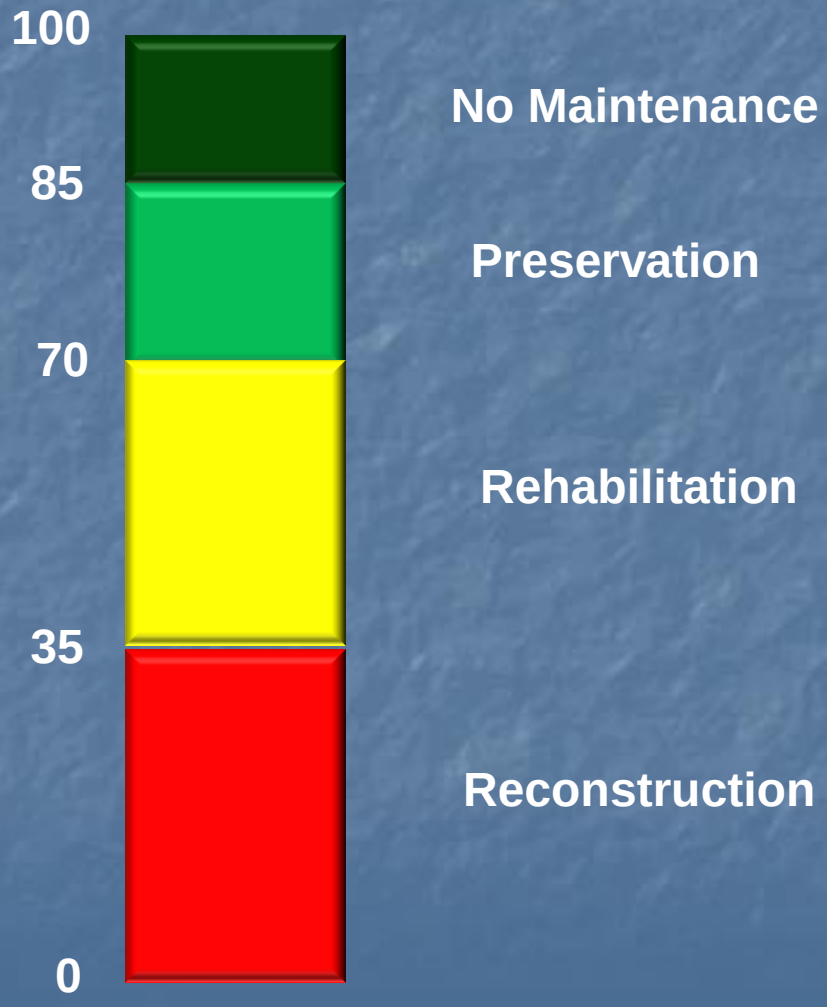
Benefits of New System

- Integrating Maintenance & Capital Projects
  - In-House vs. Contracts
- Increased Flexibility
  - Integrate PP into Pavement Management
    - Utilize More Intelligent Condition Indices
- Powerful Analytical Tools
  - Multi-Constraint Optimization
    - Performance Measures
- Integrate with Other Assets

The Great Divide Between Maintenance & Capital Projects



"Overall" Pavement Condition Index



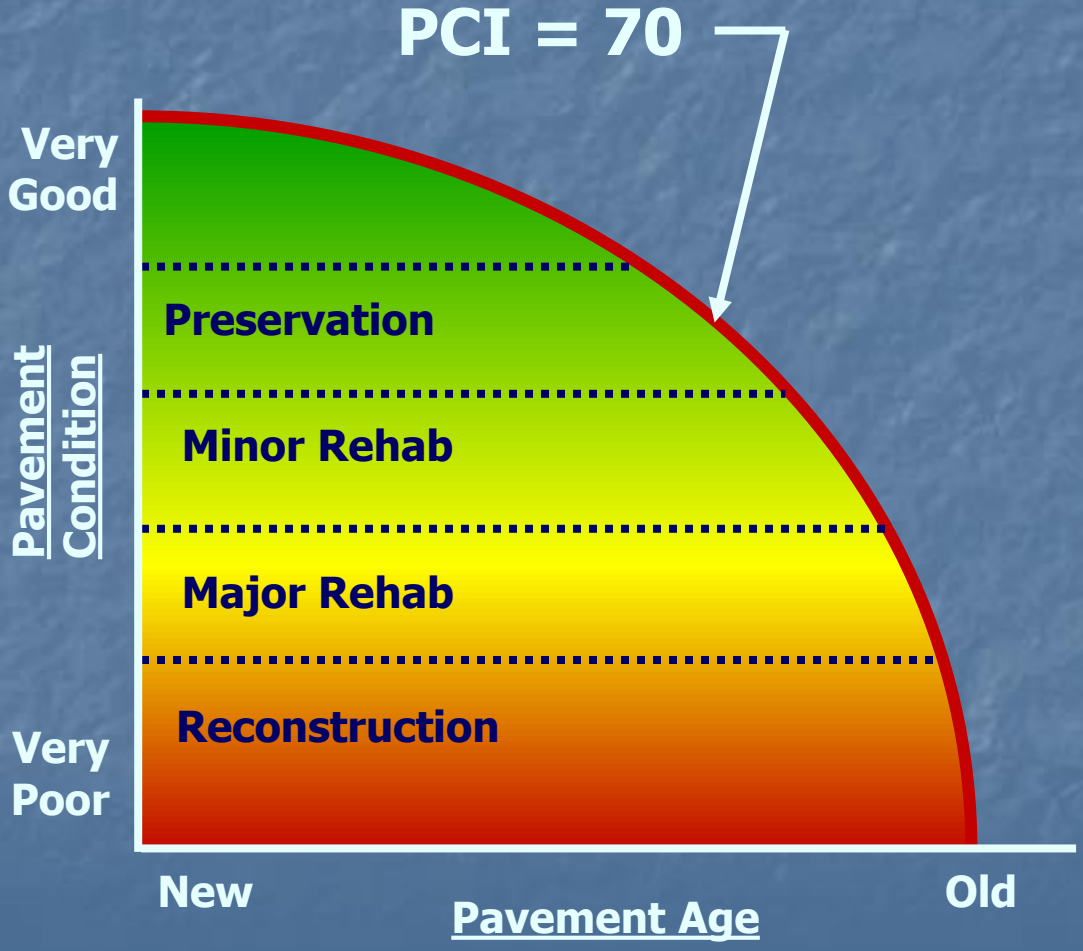
Problem:

- **Only Provides a General Indicator of Overall Health**

Questions:

- **What Distresses are Present?**
  - **Severities and Extents?**
- **What Repair(s) Is Required?**
- **Reasonable Cost of Repair?**

Shortfall of Using a Single PCI for Treatment Selection



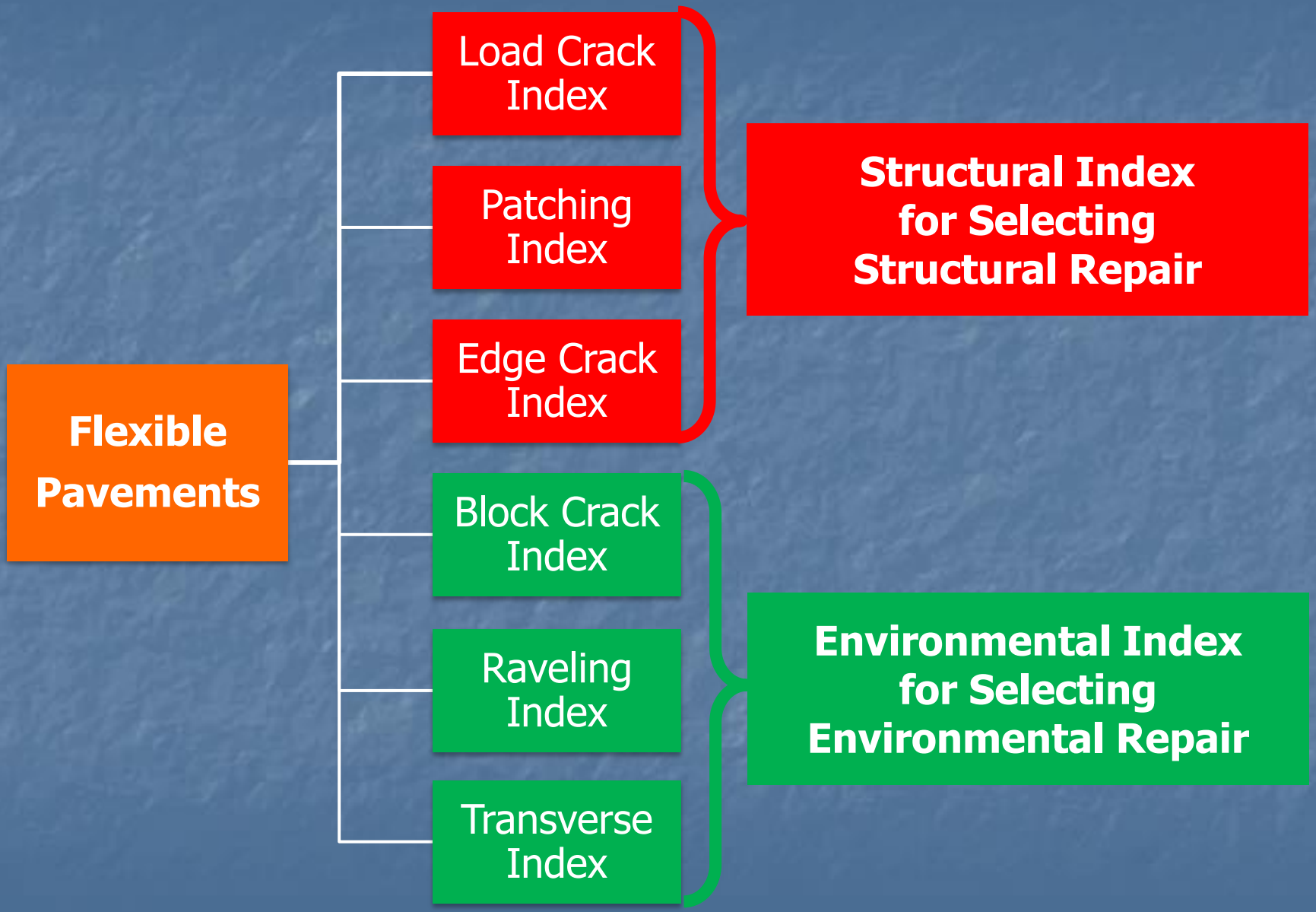
What is the Most Cost-effective Treatment?

Transverse Cracks 30’ to 50’ c-c and Raveling

Localized Severe Alligator Cracks

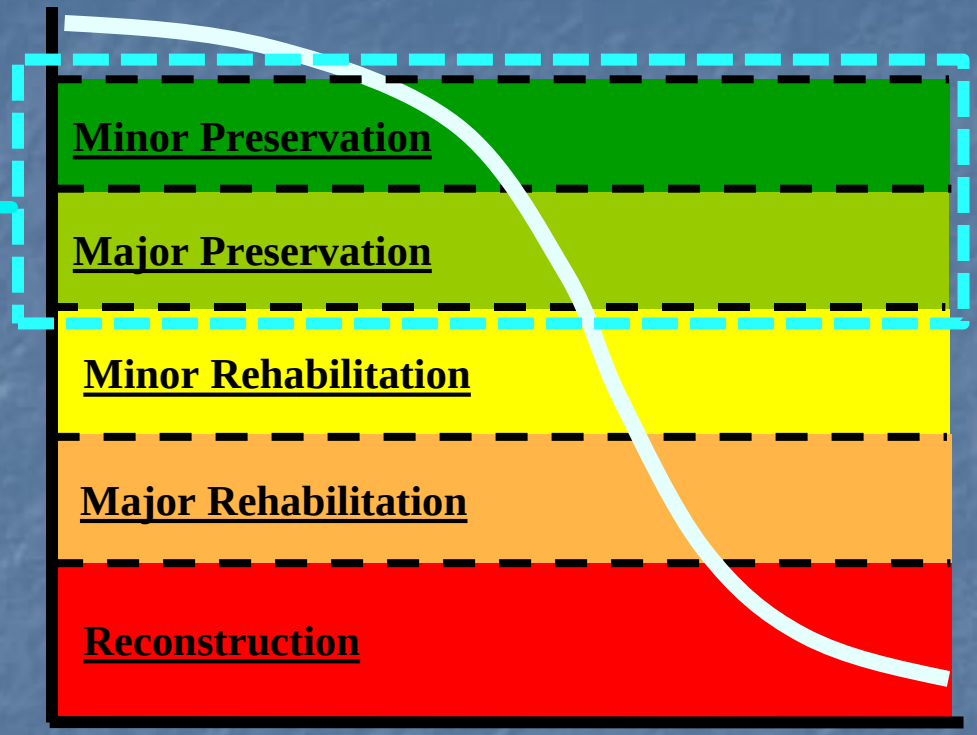
Corrugations

Typical "Combined" Condition Index



Repair Categories

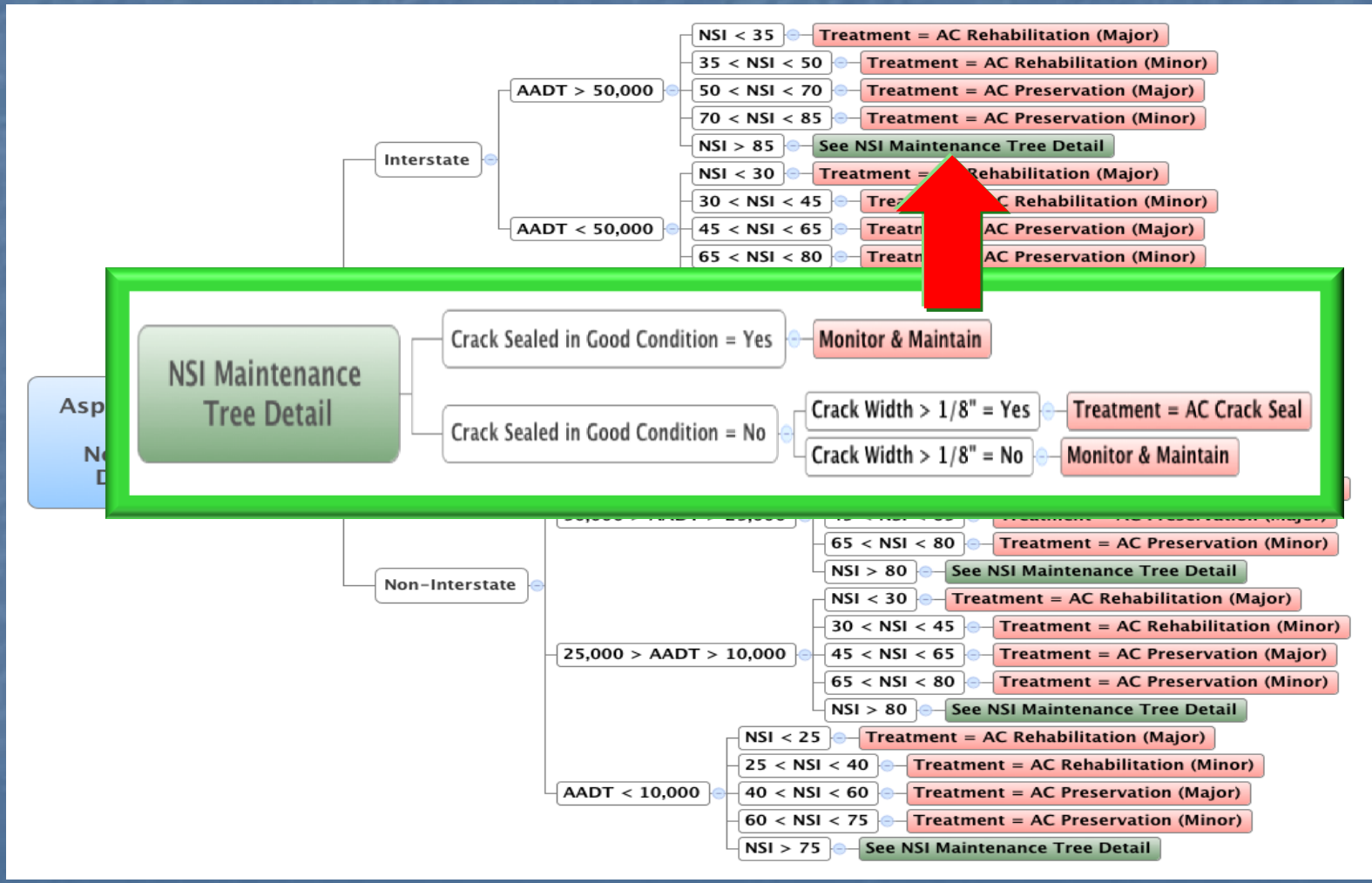
- Minor Preservation
- Major Preservation
- Minor Rehabilitation
- Major Rehabilitation
- Reconstruction



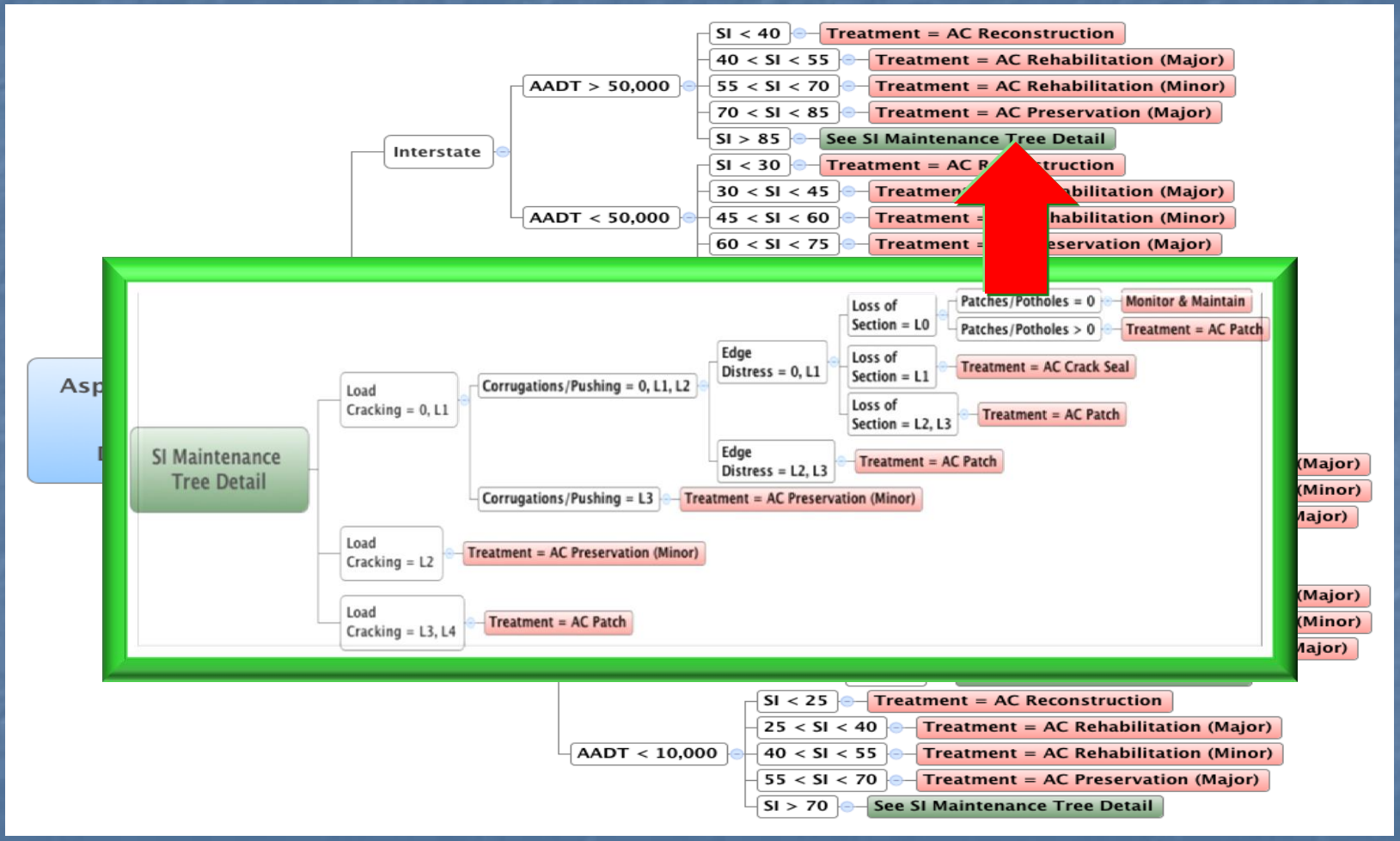
Minor Preservation – Surface Coats

Major Preservation – HMA < 2” Depth

Asphalt/Composite Pavement
Non-Structural Decision Tree

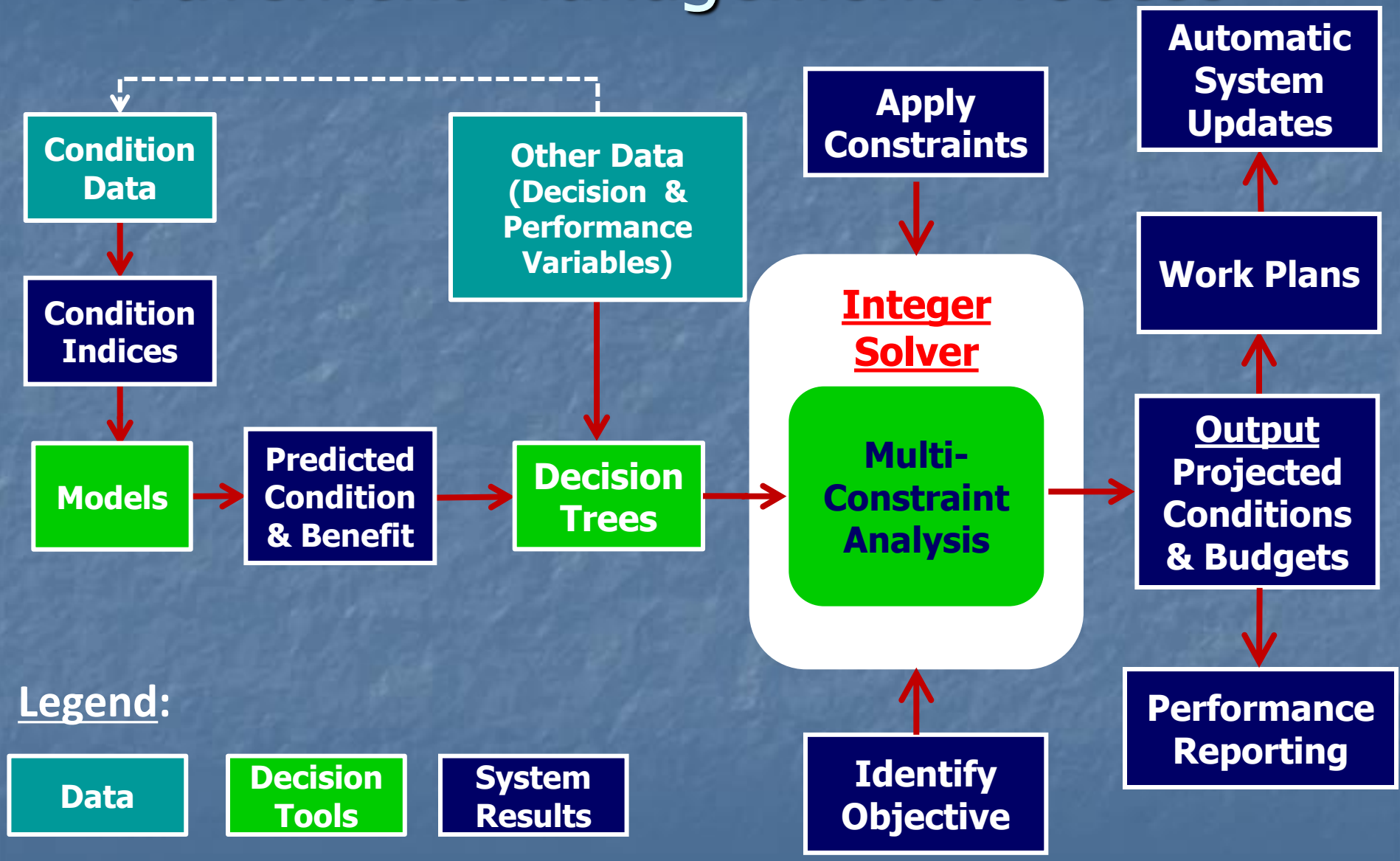


Asphalt/Composite Pavement
Structural Decision Tree



Refine Decision Trees

- Initial Configuration
  - For Non-Structural (Preservation Focused)
    - Interstate vs Non-Interstate
    - AADT
    - NSI Combined Index
- Future Enhancements
  - Refine Trees based on Additional Decision Variables
    - E.g. – Rural vs. Urban
  - Develop District-Specific Configuration
  - Integrate with Other Assets

Questions?

Pavement Management Process