

Integrating Preventive Maintenance into Pavement Management

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Presentation Approach

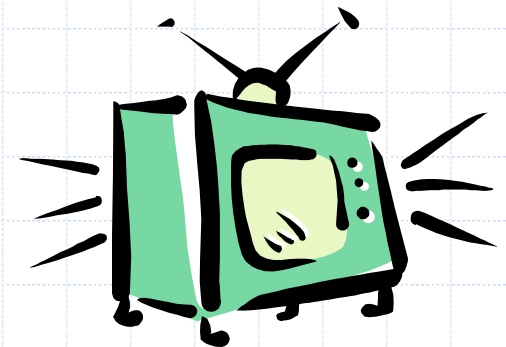
- ◆ Review the use of pavement management to support agency decisions
- ◆ Identify gaps that exist in supporting preventive maintenance programs
- ◆ Identify steps that can be taken to integrate these programs

But First...

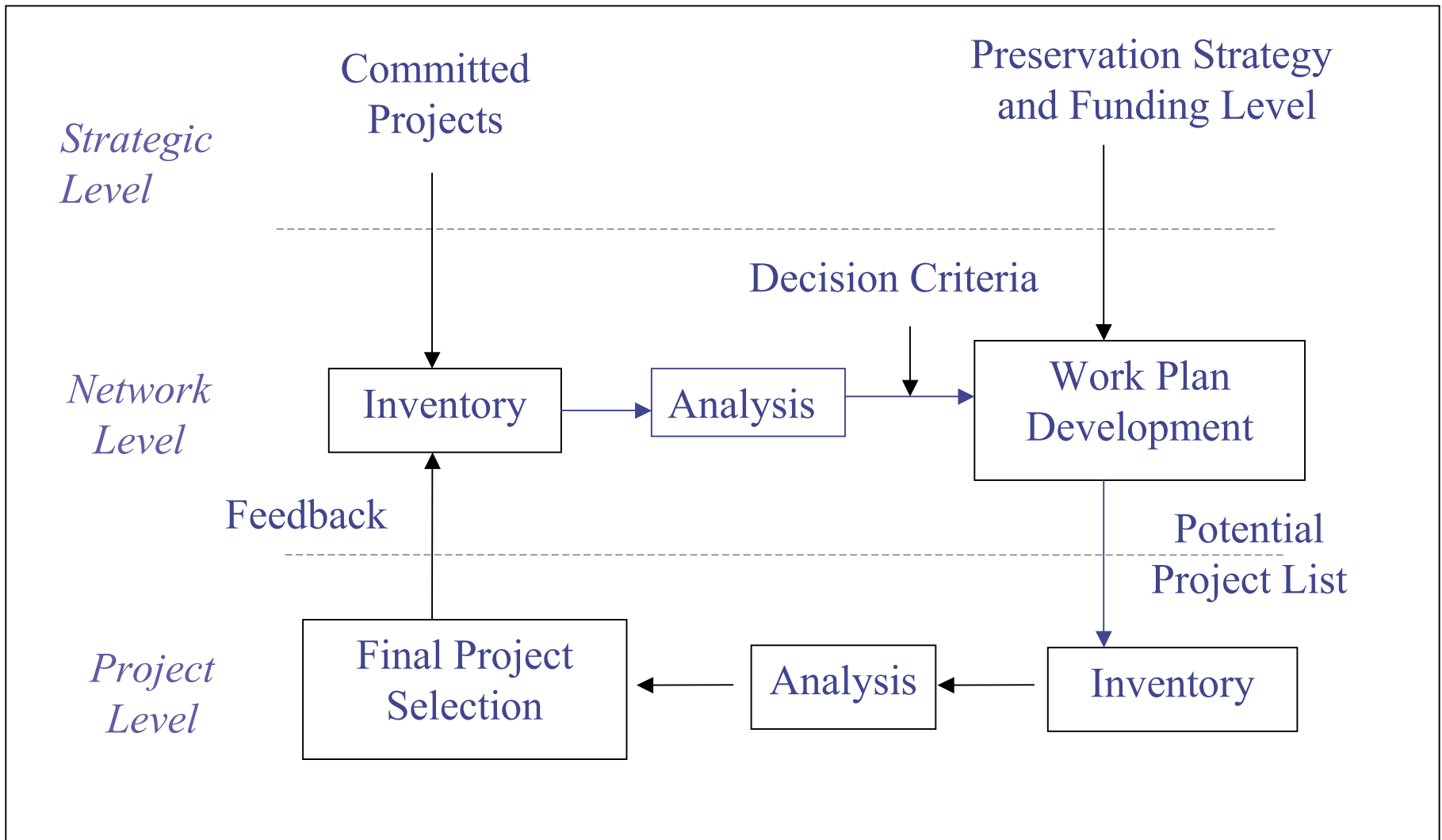
◆ A message from your sponsor...

National Highway Institute (NHI) Course 131104,
*PAVEMENT PRESERVATION: INTEGRATING
PAVEMENT PRESERVATION PRACTICES AND
PAVEMENT MANAGEMENT*

Delivery expected in 2004



Use of Pavement Management



Support for Strategic Decisions

- ◆ Set performance standards or goals
- ◆ Distribute funds among districts or programs
- ◆ Establish a preventive maintenance program

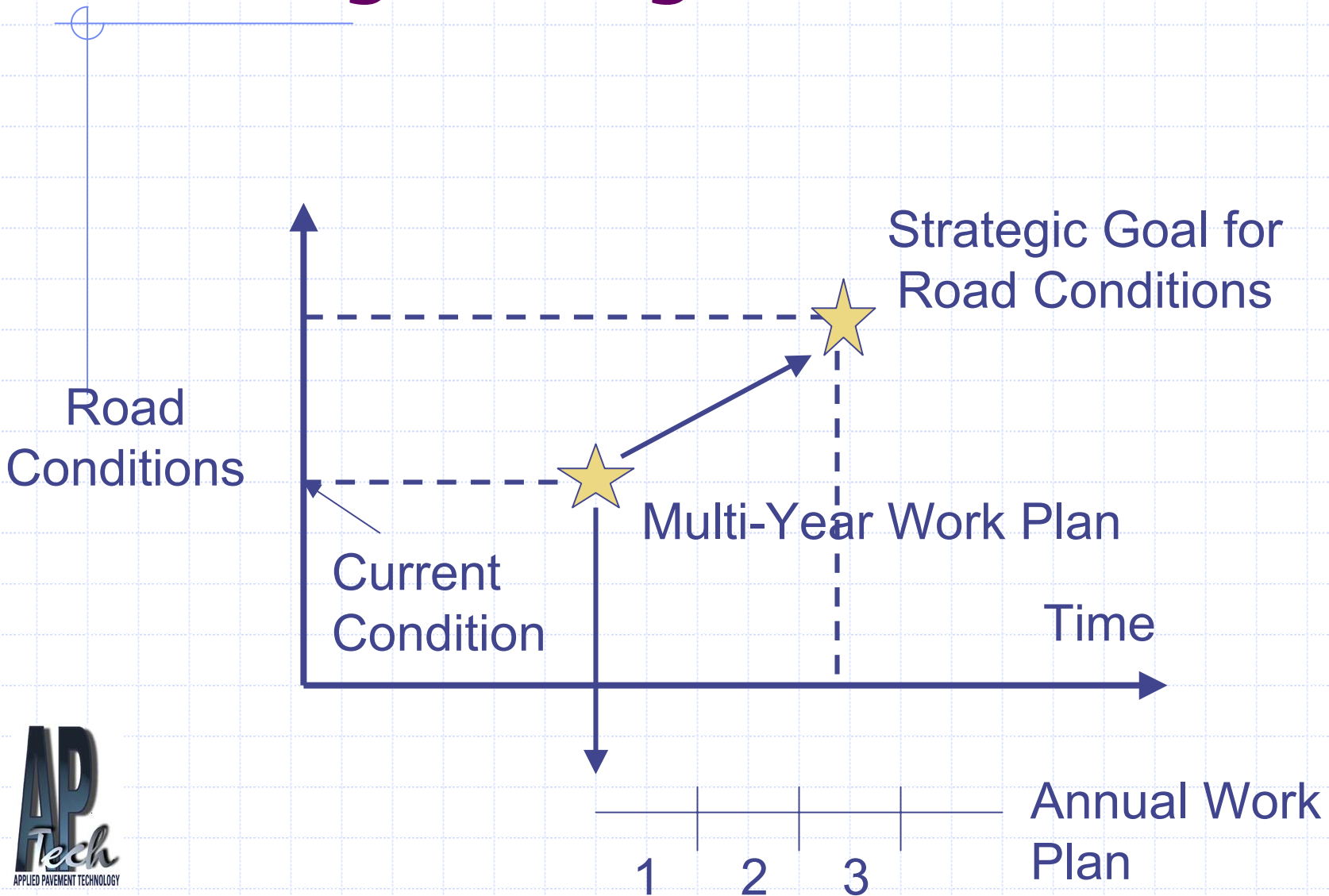
Support for Network Decisions

- ◆ Identify treatment needs
- ◆ Prioritize needs
- ◆ Recommend projects within budget constraints
- ◆ Illustrate the long-term impacts under various scenarios

Support for Project-Level Decisions

- ◆ Finalize treatment selection
- ◆ Design the selected treatment
- ◆ Finalize project cost estimates

Linking Management Levels



The primary focus of these activities has been on resurfacing activities...

...preventive maintenance programs require a focus on ALL preservation activities

Desired Support for Preventive Maintenance

- ◆ Demonstrate the benefits associated with preventive maintenance
- ◆ Estimate funding needs to achieve specific targets or goals
- ◆ Allocate available funding cost-effectively
- ◆ Identify and prioritize treatment needs

Existing Gaps

◆ Data collection activities

- Are the triggers for preventive maintenance being collected?
- Is the data collection frequency sufficient to identify preventive maintenance treatments on a timely basis?

Existing Gaps

◆ Condition indexes

- Do the condition indices provide the information necessary to trigger preventive maintenance treatments?

Composite Indexes

Versus

Individual Indexes

Existing Gaps

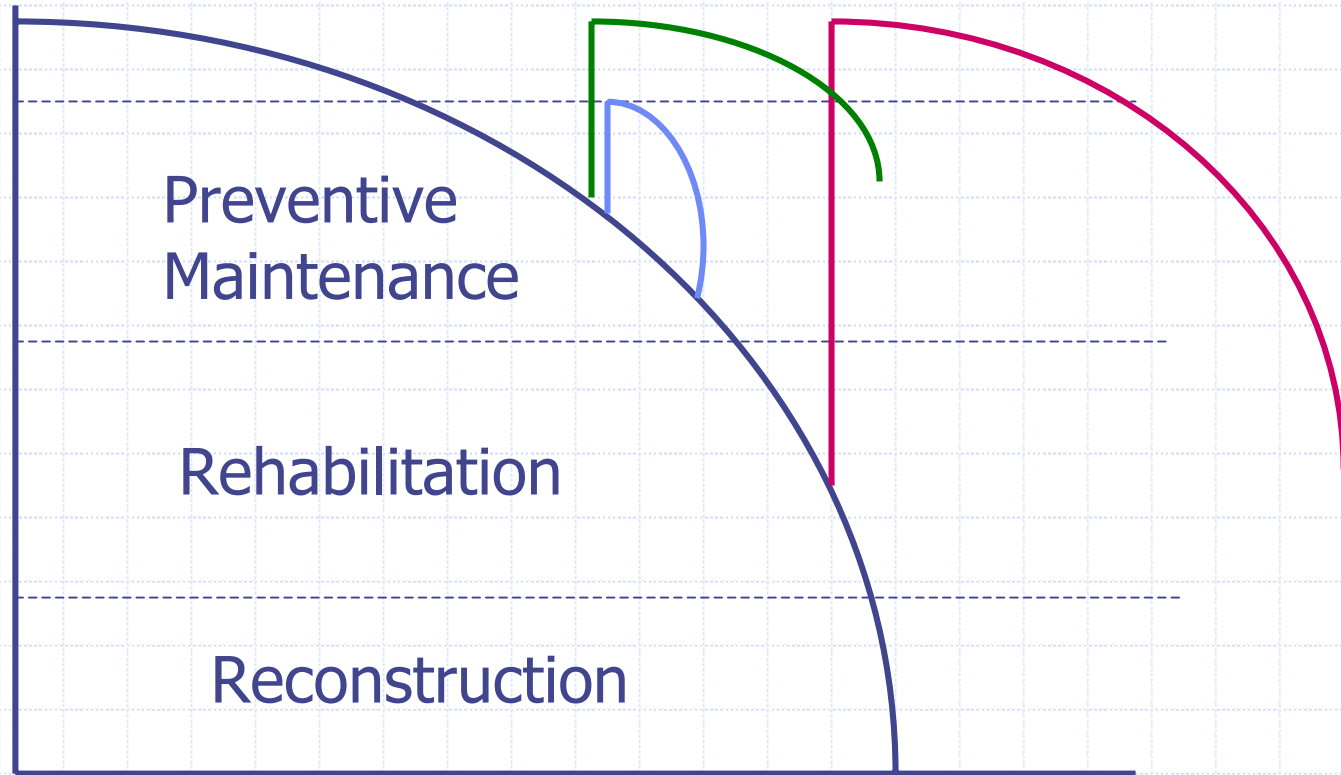
◆ Performance models

- Do we have the information necessary to develop performance models for preventive maintenance treatments?

Existing Gaps

- ◆ Treatment triggers and impact models
 - Does the pavement management system have access to the information that triggers preventive maintenance activities?
 - Can the pavement management system model the impacts associated with the application of a preventive maintenance treatment?

Sample Impact Model



Approaches To Integration - 1

- ◆ Pavement sections that are NOT candidates for rehabilitation or reconstruction are identified as candidates for preventive maintenance

Rehabilitation and
Reconstruction

OR

Preventive
Maintenance
Candidate

Approaches to Integration - 2

- ◆ Preventive maintenance treatments are considered collectively as a treatment and the specific treatment is not identified

Treatments Considered:

Preventive Maintenance

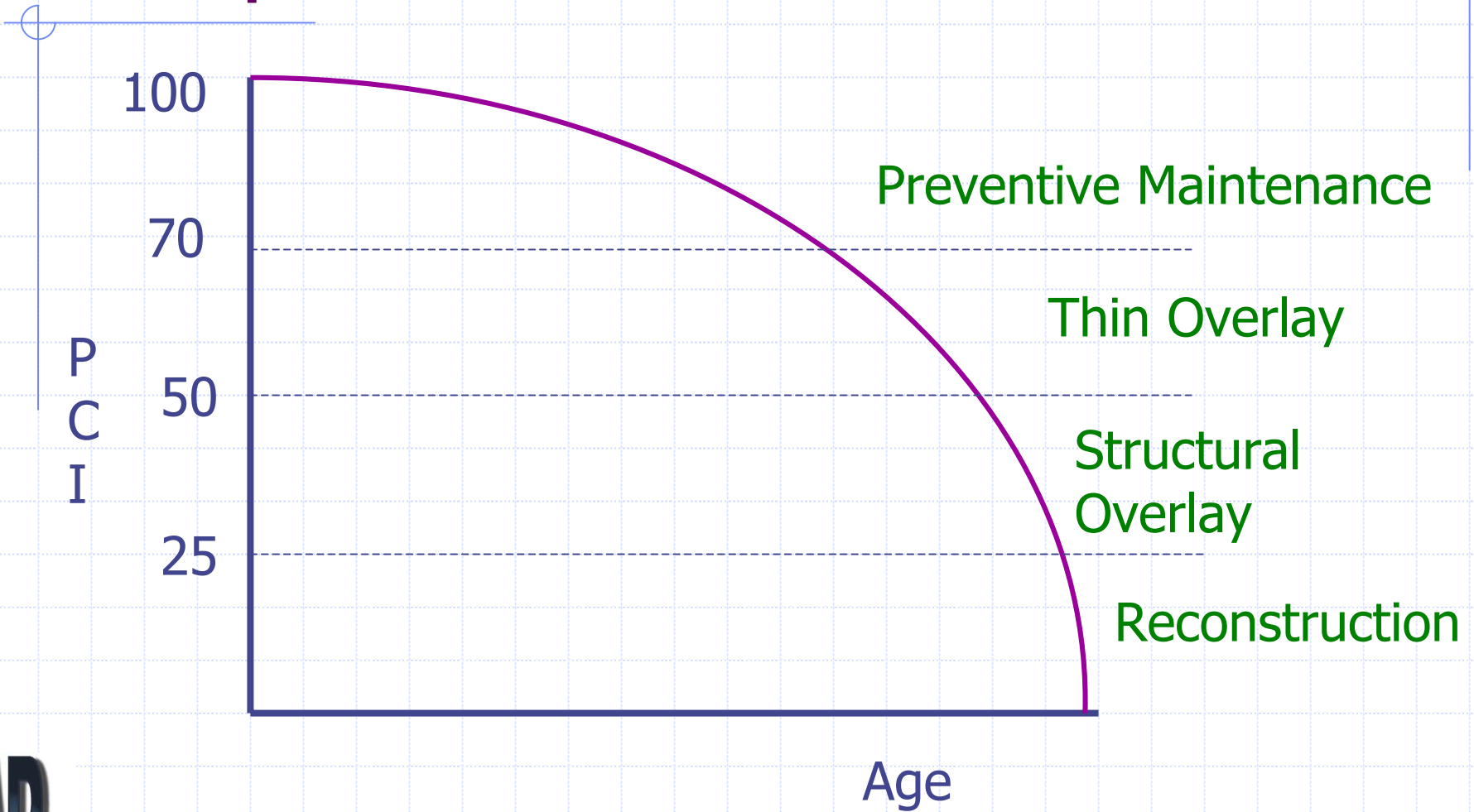
Thin Overlay

Mill and Fill

Structural Overlay

Reconstruction

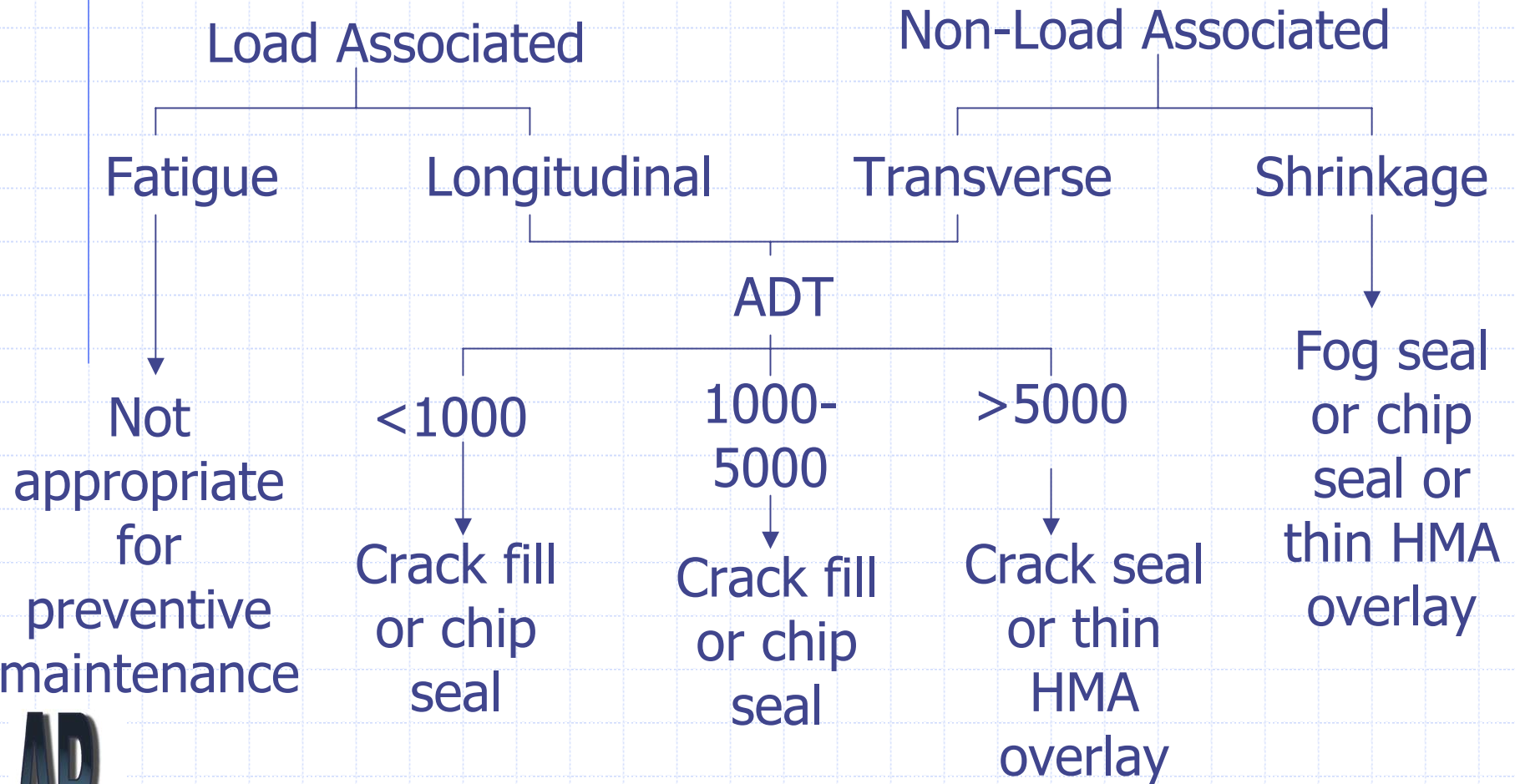
Sample Decision Rules



Approaches to Integration - 3

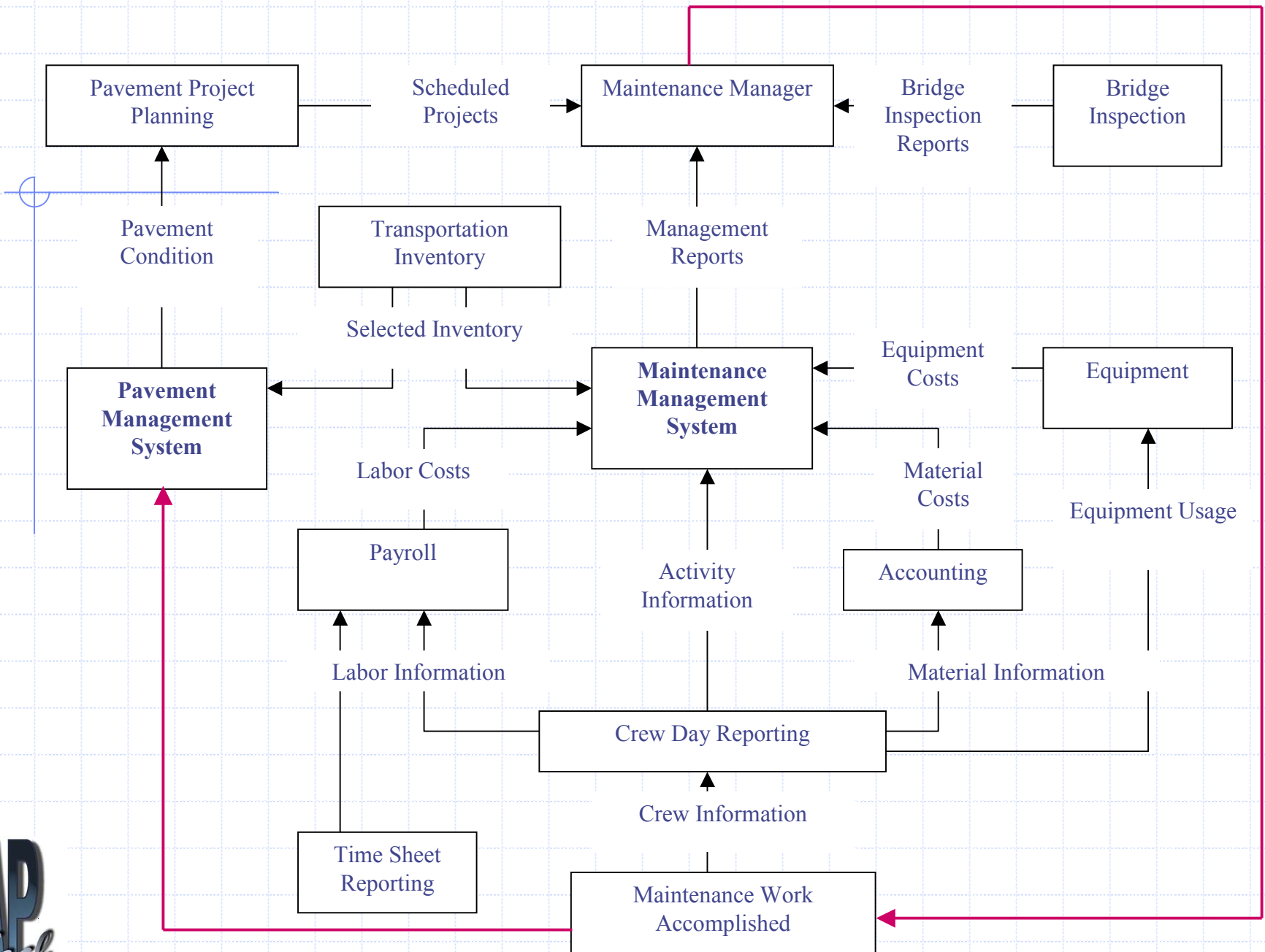
- ◆ Specific preventive maintenance treatments are recommended based on information available in the pavement management system

Sample Decision Tree for Cracking



Steps To Improve Integration

- ◆ Identify your needs
- ◆ Identify the gaps
- ◆ Develop a plan
 - Identify data sources
 - Collect data needed to support analysis
- ◆ Implement the plan



Benefits to Integration

- ◆ More coordinated work plans developed to accomplish agency goals
- ◆ Better able to demonstrate the benefits in using preventive maintenance treatments
- ◆ Better informed to make decisions about treatment needs