

WSDOT Aviation Division: Airport Pavement Management Study

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WSDOT Aviation Statewide Workshops
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What Is Pavement Management?

- Pavement management is a tool to
 - Maintain pavement inventory
 - Monitor pavement condition
 - Identify pavement-related needs
 - Prioritize pavement-related work
 - Select most cost-effective repair strategy
 - Communicate pavement-related needs

WSDOT APMS

- Established in 2000 (83 airports)
- Updated in 2005 and 2012/2013
 - 95 airports inspected and analyzed
 - 5 airports had APMS data that were incorporated into WSDOT's APMS
 - Boeing Field, Seattle-Tacoma Int'l, Spokane Int'l, Tri-Cities, and Yakima Air Terminal
 - Data used to calculate overall inventory and condition statistics

Project Scope

- Pavement Inventory and Condition Data Collection
- PAVER™ Update & Calibration
- Data Analysis
- Pavement Management Program Compendium and Outreach
- Data Access Program



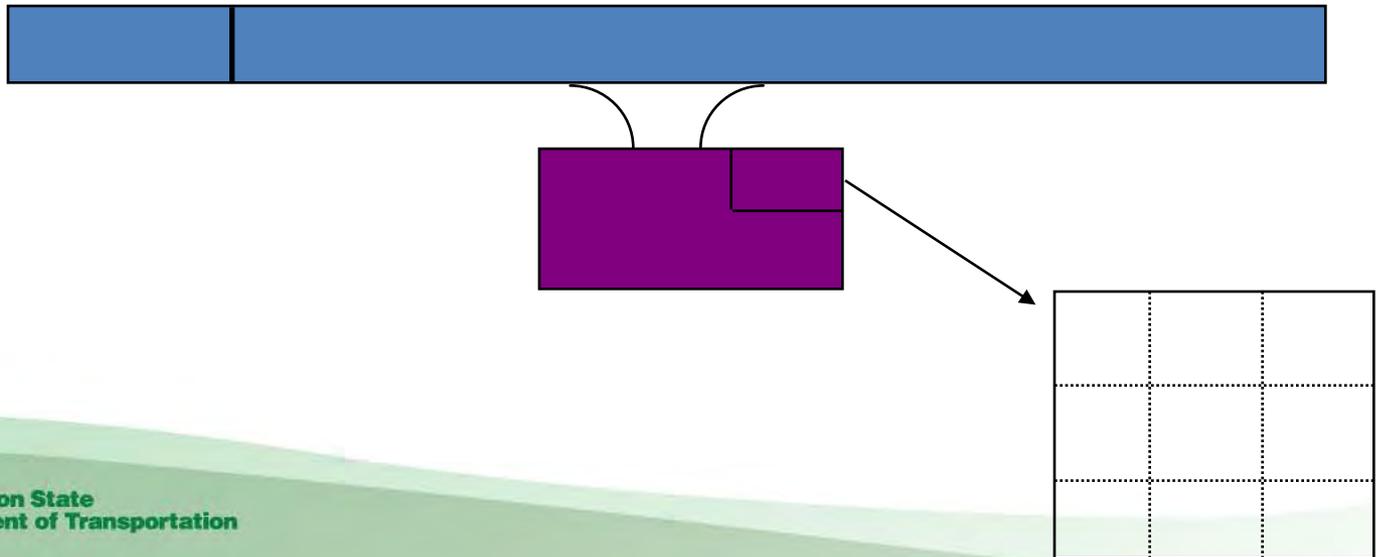
Systems Inventory

- Identify pavement work completed since last update
 - Where was work conducted (physical location)?
 - What work was conducted (cross-section)?
 - When was work completed?

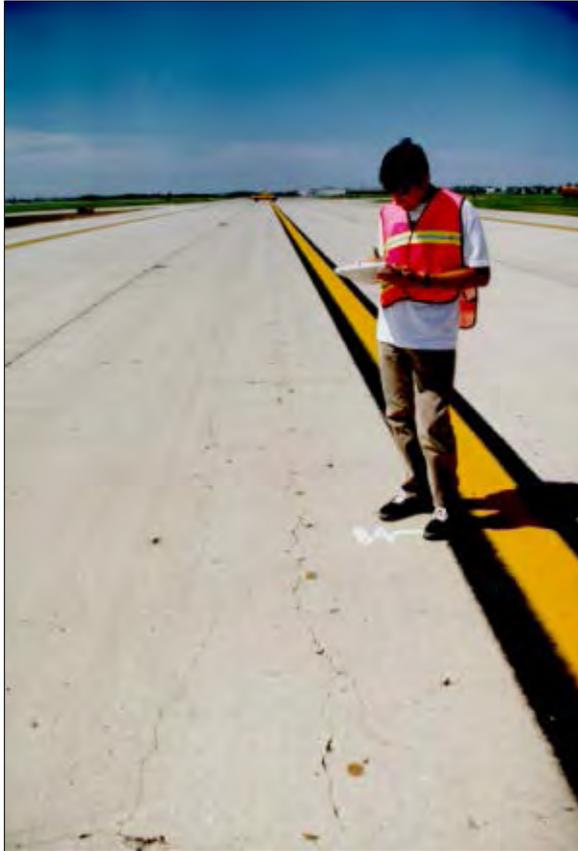


Network Definition

- Network (individual airport)
- Branches (facilities)
- Sections (features)
- Sample Units



Pavement Evaluation Using Pavement Condition Index (PCI) Procedure

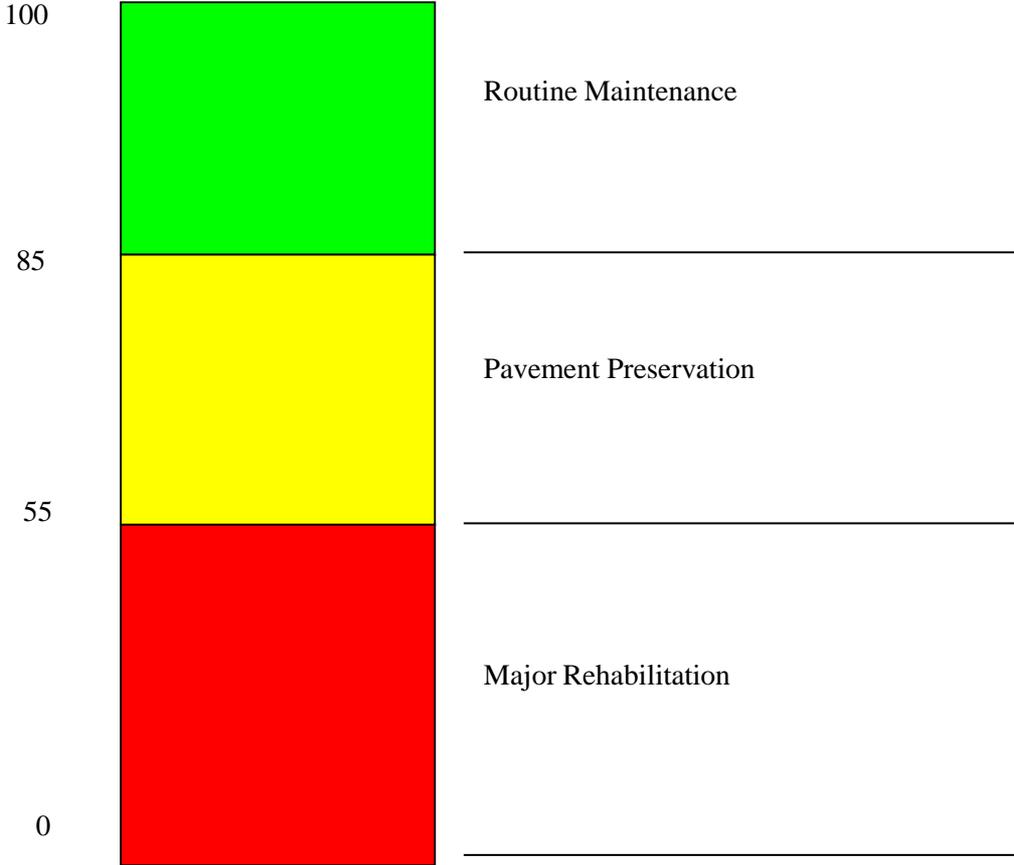


- Visual signs of distress are identified and measured.
- Documented in AC 150/5380-6B and ASTM D5340.

PCI Scale



Pavement Condition Index (PCI)

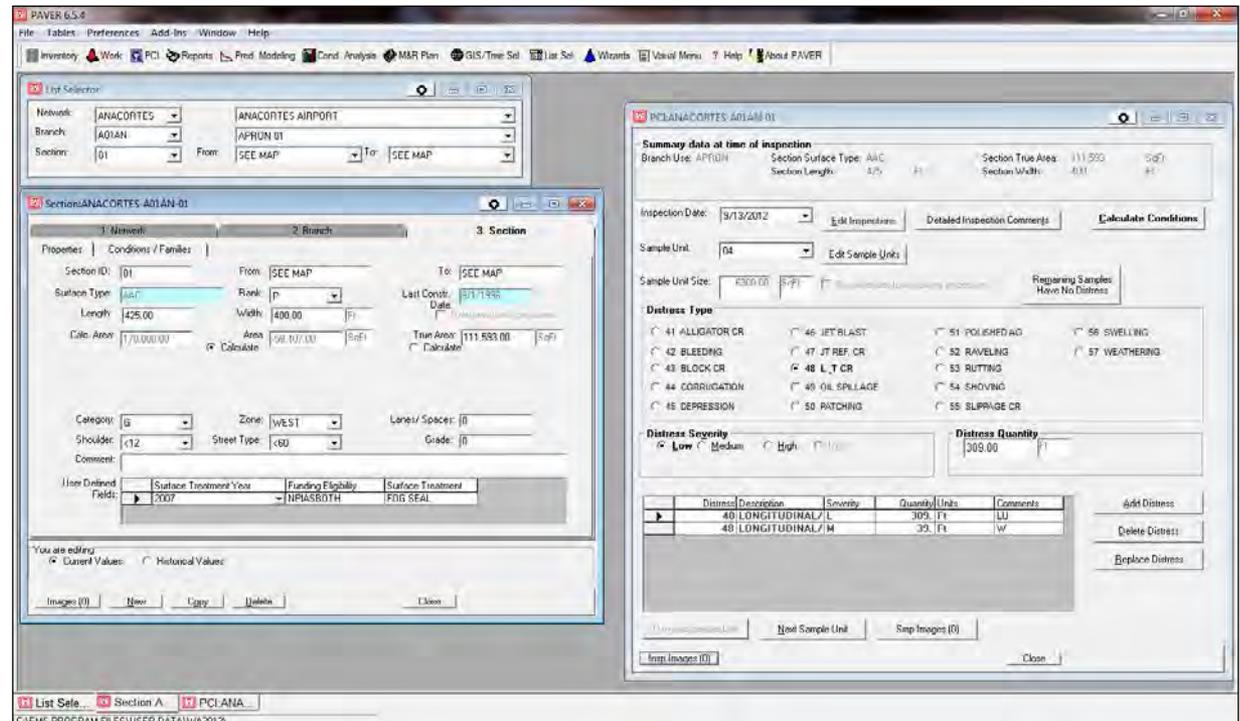


Type of Deterioration



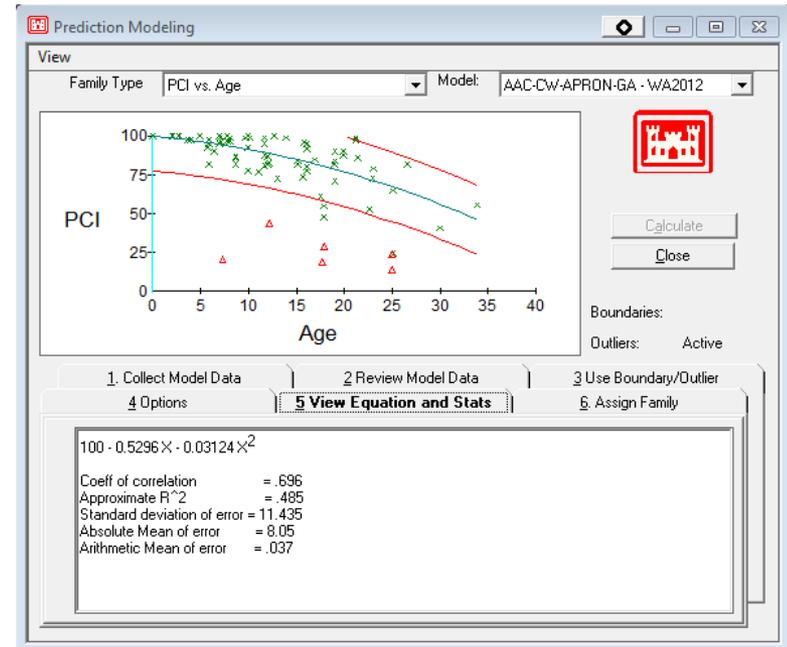
PAVER™ Database Update

- Inventory
- Condition



System Customization

- Database User Fields
- Performance Models
- Prioritization Rules
- Repair Alternatives
- Unit Costs



Data Analysis

- Inventory Statistics
- Condition Assessment
- Needs Assessment
- Localized Maintenance Projects
- Major Rehabilitation Projects

Report Generation

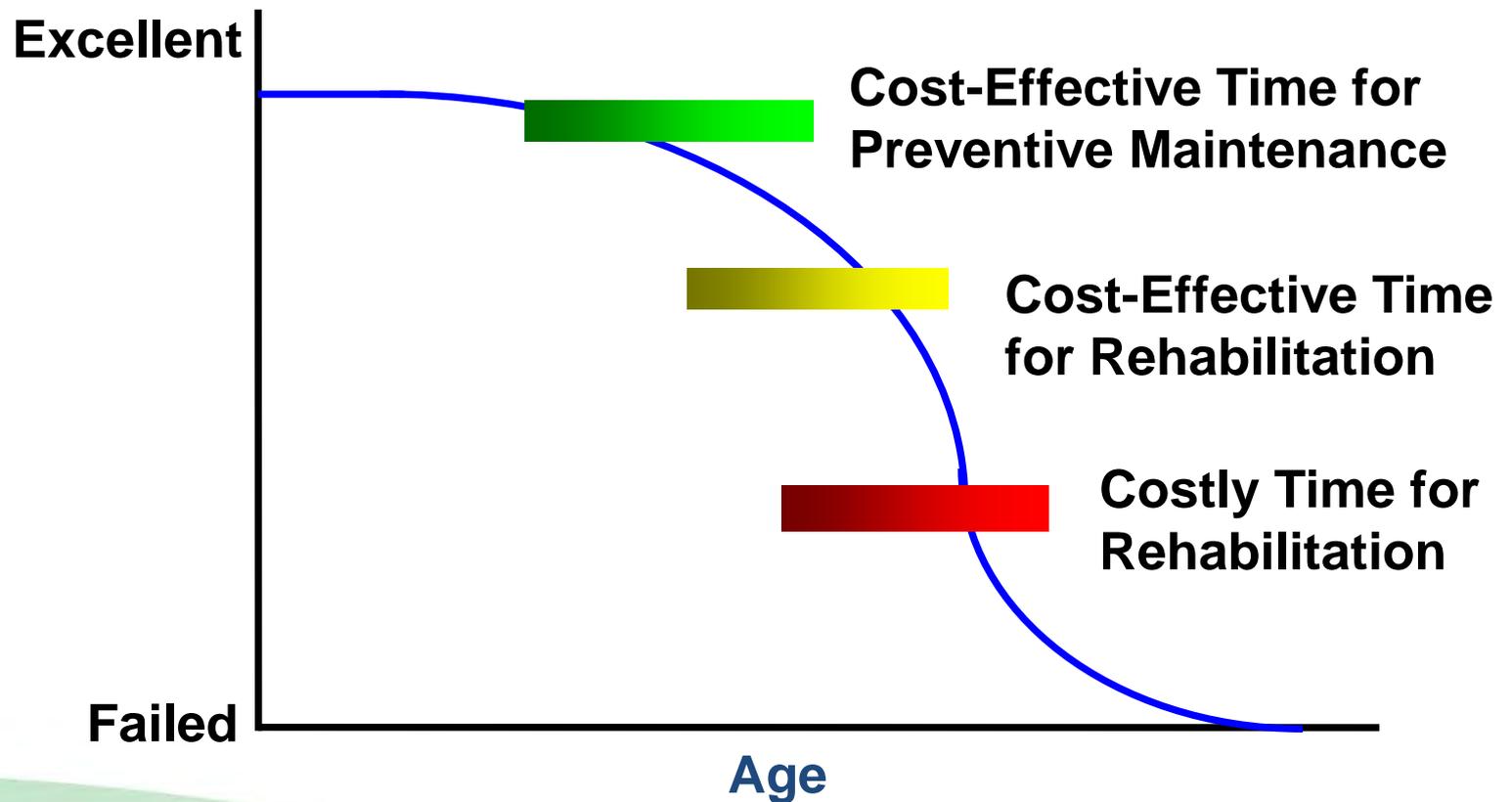
- Statewide Detailed Report
- Executive Summary
- Pavement Management Manual

Why Bother?

- Investment
- Safety
- Compliance



Investment Issues



Safety Issues

- Hydroplaning
- Loss of friction
- FOD
- Tire damage potential
- Loss of steering control
- Pavement drop-offs



Compliance Issues

- Safety (FAA Grant Assurance 19)
- Pavement Maintenance Management (FAA Grant Assurance 11)
- Sponsor fund availability (WSDOT Grant Assurance 4)
- Pavement Preventive Maintenance (WSDOT Grant Assurance 12)
- Operation and Maintenance (WSDOT Grant Assurance 21)



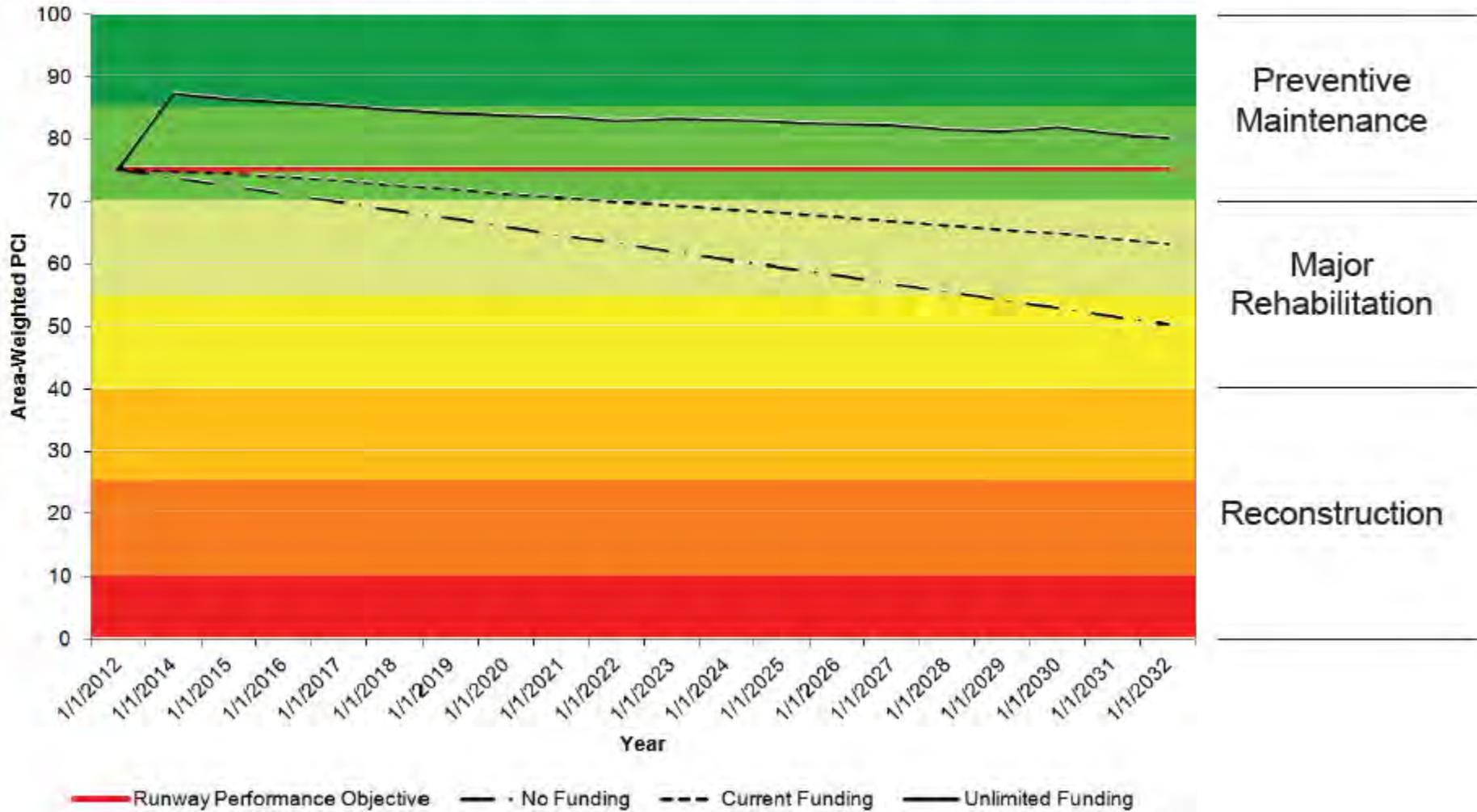
Project Findings



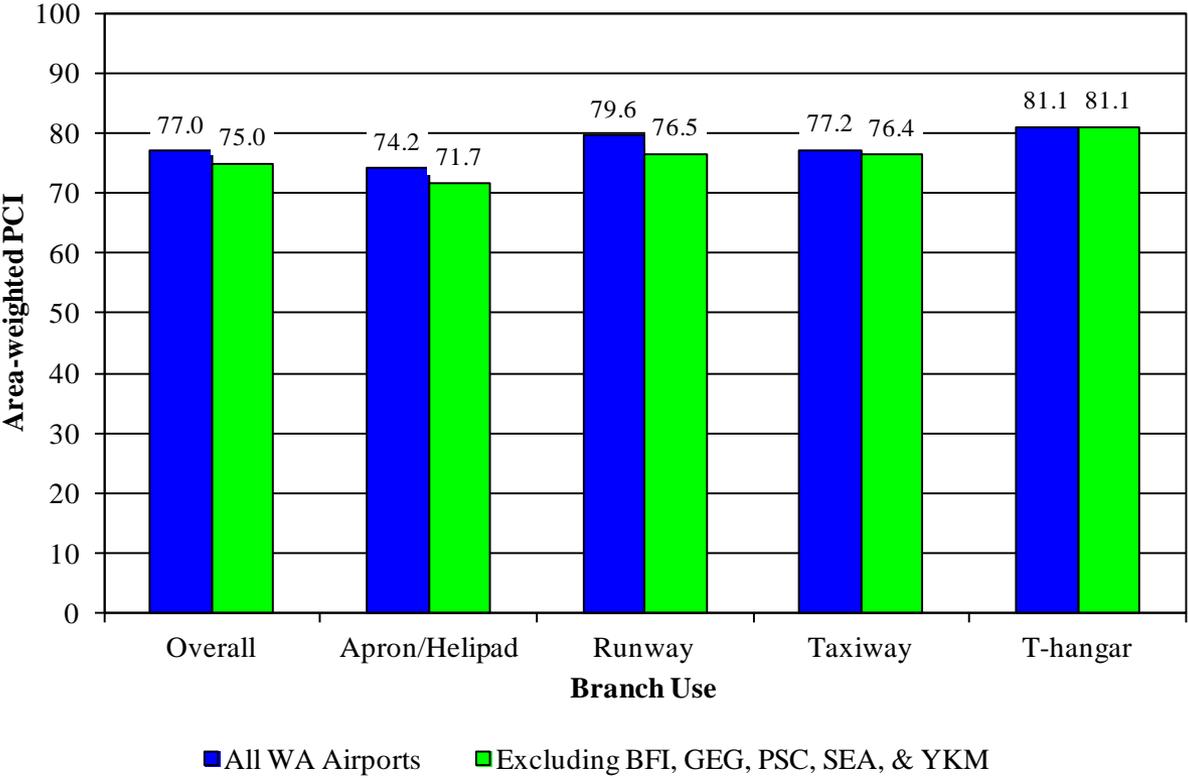
Non-Primary Airports Funding Analysis

- No funding
 - PCI drops to 66 by 2020 (from 75)
- Unlimited budget analysis
 - 2014 to 2020: \$217 million of need
 - Projected PCI of 84 by 2020
- Constrained budget analysis
 - Maintains current funding level of \$4.5 million annually (\$31.5 million total)
 - Yields a backlog of \$257 million in pavement projects by 2020
 - PCI drops to 71 by 2020

20 Year Projected PCI Comparison by Funding Level

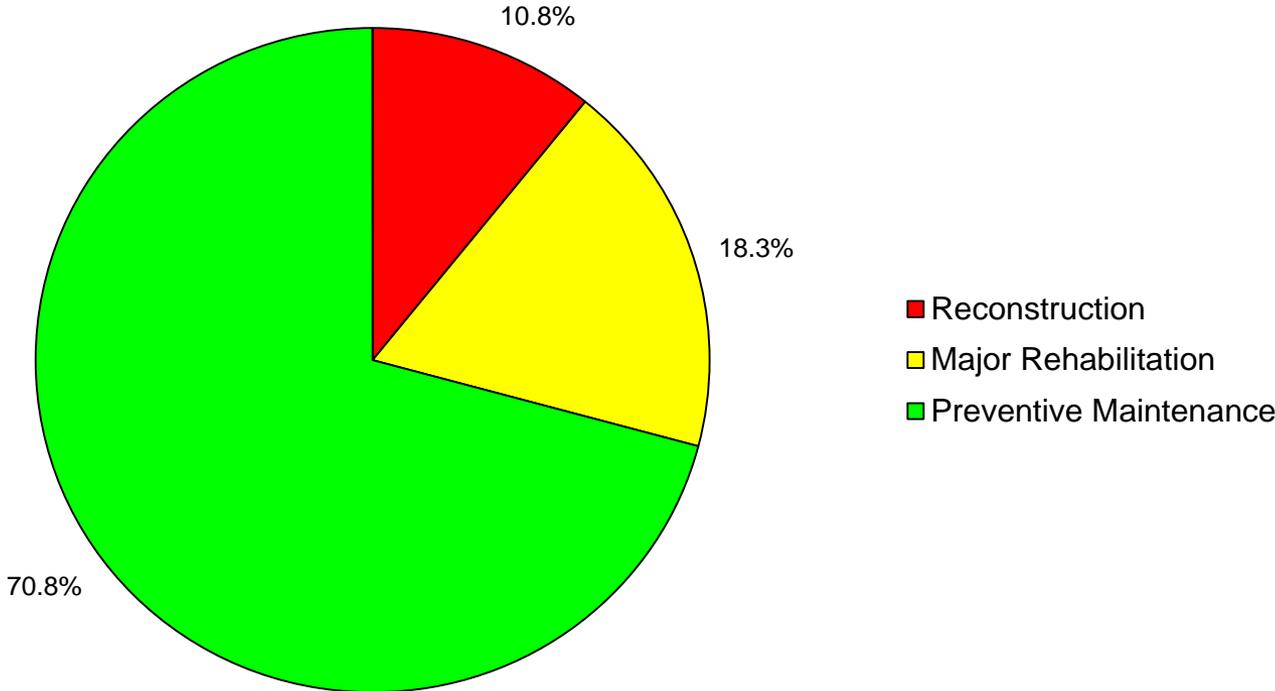


Overall Condition by Use



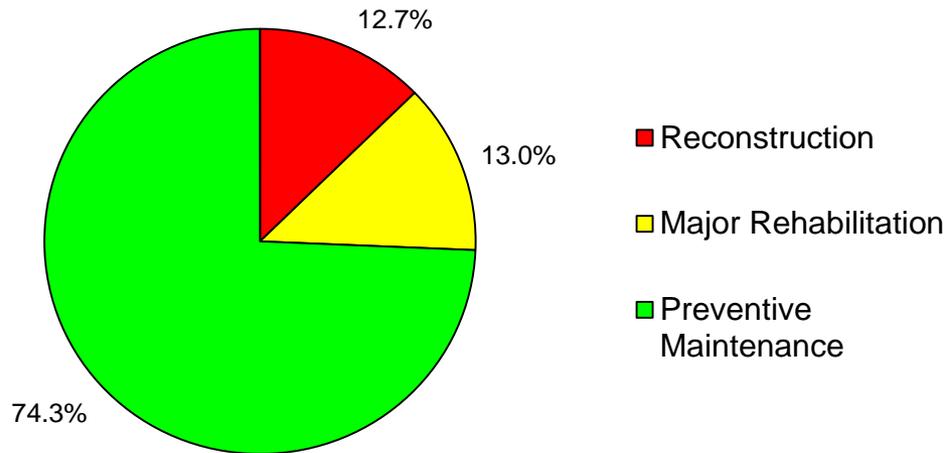
2012 Condition Distribution

All Airports

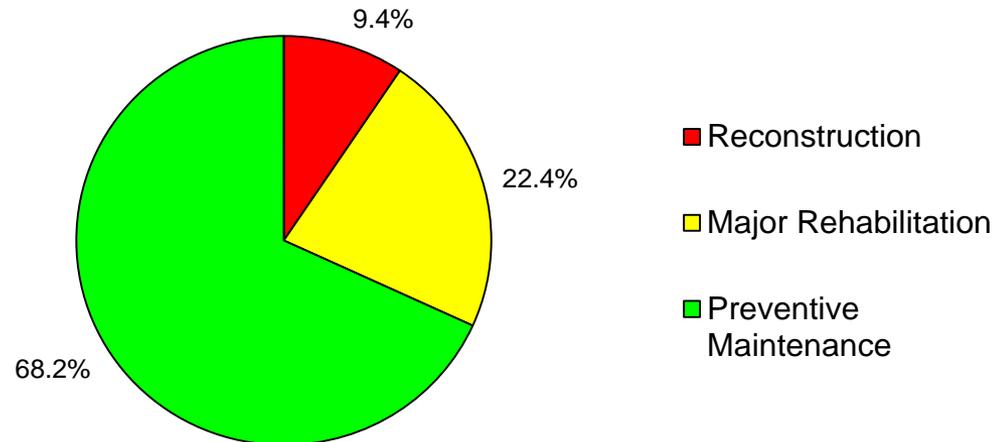


2012 Condition Distribution

Primary Airports



Non-Primary Airports



Pavement Condition Trend

Year	All Airports Area- Weighted PCI	Primary Airports Area-Weighted PCI	Non-Primary Airports Area-Weighted PCI
2005	77	72	80
2012	77	80	75

Interactive Data Exchange Application - *IDEA*

Washington State Department of Transportation

Washington State Department of Transportation Aviation 2012 Pavement Management Program Update

Home Summary Information Airport Details Maintenance Guidelines Pavement Inspection General Info

Approximately every five years, Washington State Department of Transportation (WSDOT) Aviation conducts a system-wide study of pavement to assess the relative condition of pavements for selected Washington airports. The program serves as a tool to identify system pavement needs, shape programming decisions for federal and state grant aid, provide information for legislative decision making, and assist airport sponsors in making informed planning decisions. The program also develops accurate pavement inventories and identifies necessary maintenance, repair, rehabilitation, and reconstruction projects.

This interactive data exchange application (IDEA) presents the results of the 2012 update of the WSDOT Aviation pavement management system. During this project, the runway, taxiway, apron/heli-pad, and T-hangar pavements at ninety-five selected airports in Washington were assessed by Applied Pavement Technology, Inc. (APTech). The pavement condition data collected as part of independent APMS projects for five additional National Plan of Integrated Airport Systems (NPIAS) airports (Boeing Field [BFI], Seattle-Tacoma International Airport [SEA], Spokane International Airport [GEG], Tri-Cities Airport [PSC], and Yakima Air Terminal [YKM]) were also incorporated into the database. Information on these five airports is only shown in the 'Summary Information' section of the IDEA.

This IDEA is organized into the following modules accessible from the tabs above:

- Summary Information**
View a summary of pavement area, age, and condition information at the statewide level.
- Airport Details**
View detailed inventory information, condition data, work history information, photographs, and the proposed 8-year maintenance and rehabilitation plan for individual airports.
- Maintenance Guidelines**
View general recommendations for pavement maintenance at Washington airports as well as FAA guidelines for pavement maintenance.
- Pavement Inspection**
Review background information on the PCI survey method used to assess pavement condition, and access the Washington pavement inspection report form.
- General Info**
View definitions of abbreviations used throughout the IDEA, and learn about this program as well as Applied Pavement Technology.



Questions?

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