Federal Aviation Administration

FAA PAVEAIR

FAA PAVEAIR Workshop

Milestones for 2012

- FAAPAVEAIR 2.0 released on June 1, 2012.
- Second User's Group meeting held on Wednesday September 12, 2012 in Salt Lake City, Utah.

New for 2012

- Updated help file
- Added News and Change Log pages
- FAA PAVEAIR User Forum
- Improved Interfaces
  - Inventory, Work, and Inventory data entry
  - Additional Validation
- Enhanced Logic
  - Adding a new pavement section automatically creates a “New construction” work item and a “Q&A” inspection item.
  - Pavement age is calculated based on the last Major M&R

New for 2012

- Improved Modules
  - Maintenance & Rehabilitation (M&R)
  - Prediction Modeling
  - Pavement Condition
  - Inventory
- Improve Database Import
  - Support for MicroPAVER e65 files
- New Functionality
  - Life Cycle Cost Analysis (LCCA)
  - Leverages the AirCost application

M&R New Improvements

- A user can only view his or her own M&R
- An M&R can only be built on the owner's databases
- Delete/edit/new functions
- Selects M&R scope by Branch Use/Surface Type
- Allows users to configure budgets for each year
- More detailed M&R results are displayed
- User configured M&R tables can be used for all M&R model for this user
- User configured M&R tables can be copied to another table
- Family curves will be used for M&R calculation

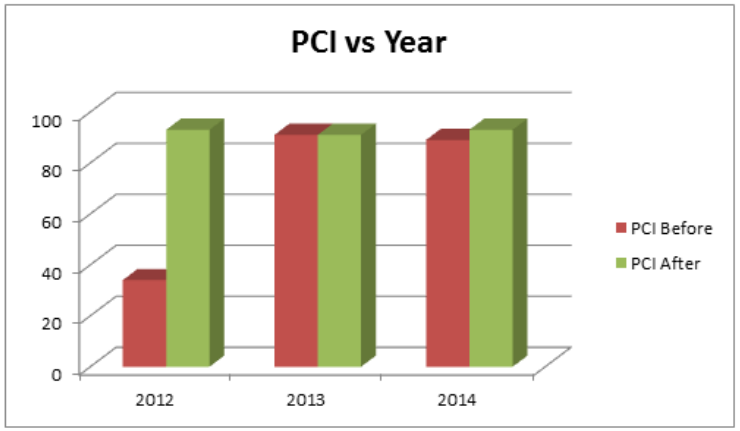
M&R New Improvements

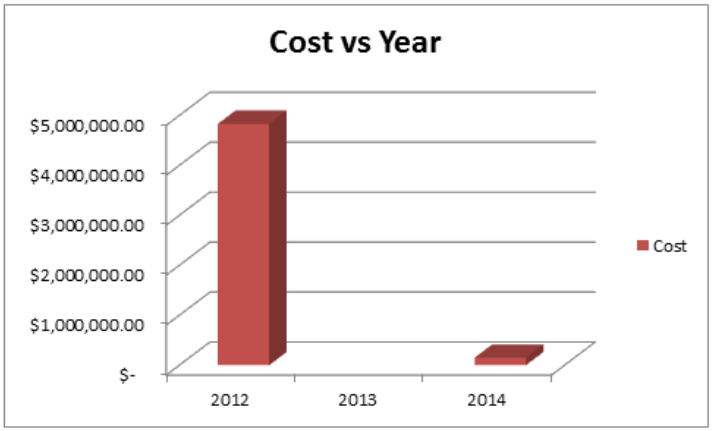
- Database
  - Creates a dedicated database to support M&R calculation and data storage
- Calculation
  - Two mathematical algorithms were improved to calculate M&R
- Performance
  - Faster Calculations

M&R Improvements – Export Data

- Data is exportable to Microsoft Excel for further analysis and charting

Branch Minimum Condition Sumary





Year	Network	Branch	PCI Before	Cost	PCI After
2012	Mansfield -	TAXIWAY	34	$ 4,832,778.87	93
2013	Mansfield -	TAXIWAY	91		91
2014	Mansfield -	TAXIWAY	89	$ 150,575.24	93

Prediction Modeling Improvements

- Multi-database support
  - Builds prediction modeling on multiple inventories
- Builds several sample curves on large scaled inventories
  - Large Airport/Major runway
  - Runway/Concrete pavement
  - Above sample curves can be used for registered users as family curves

PCI Inspections – Rapid Data Entry

Select Sample Unit

Samples for Inspection Date 5/24/2002

	Sample Number	Sample Type	Sample Size	Size Unit	Comment	No Distress		
Select	05	R	465	m²		☐	Edit	Delete
Select	14	R	465	m²		☐	Edit	Delete
Select	12	R	465	m²		☐	Edit	Delete
Select	02	R	386	m²		☐	Edit	Delete
Select	10	R	567	m²		☐	Edit	Delete
		Random		m²			Add New	

Distresses for Sample Number 12

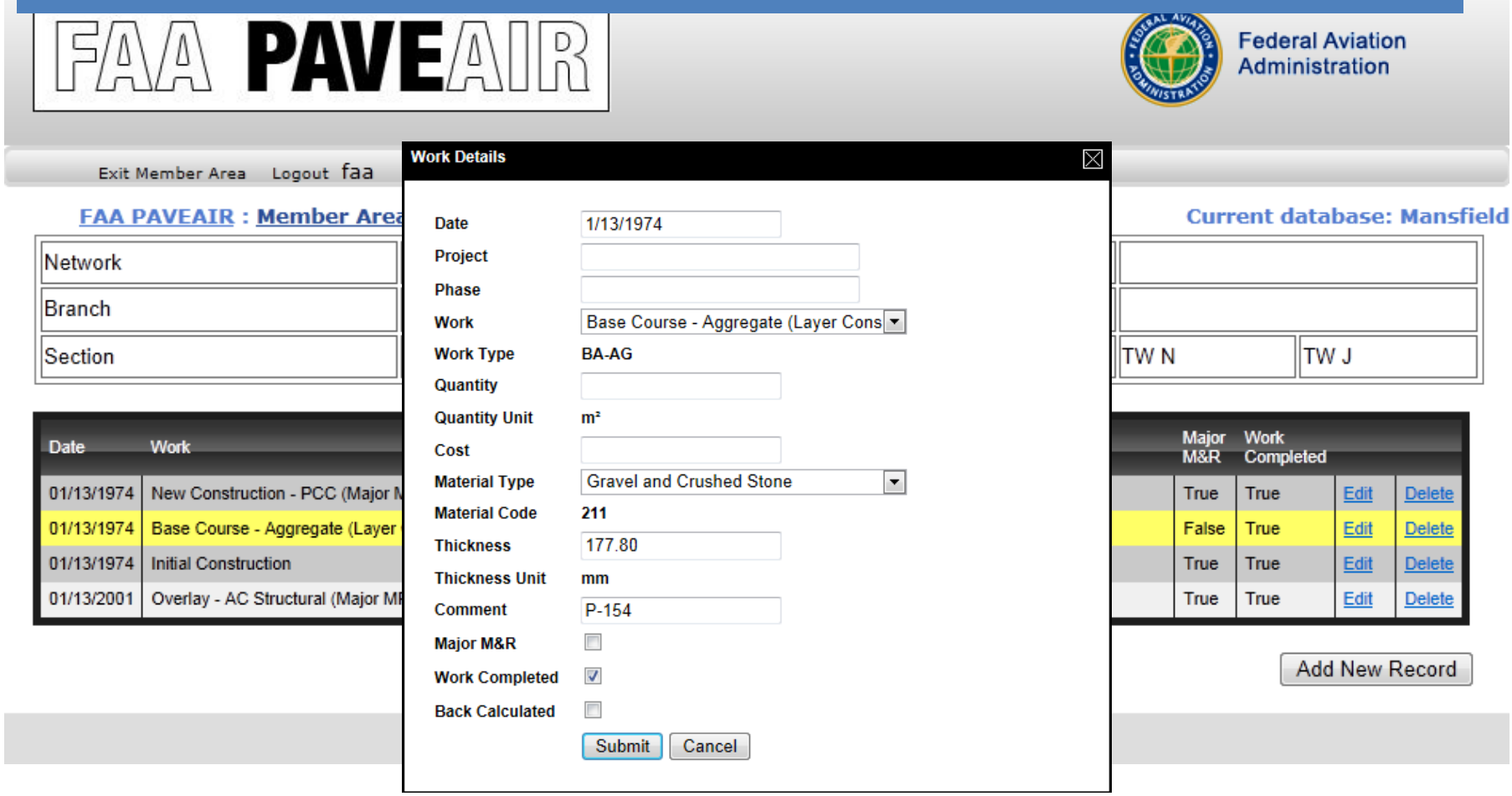
ASTM Code	Severity	Comment	Quantity	Quantity Unit		
8 Long. & Trans. Cracking	M		36.59	m	Edit	Delete
8 Long. & Trans. Cracking	M		45.73	m	Edit	Delete
1 Alligator Cracking	M		3.72	m²	Edit	Delete
1 Alligator Cracking	High			m²	Add New	

Type: ASTM Number + <TAB> + (H, M, L) + <TAB> . . . . + TAB <ENTER>

Inventory & Work Module Improvements

- Improved User Interface (UI)
- Additional Logic and Validation
- Show all Work for a Section (Table)
- Adding a Section; Creates an “Initial Construction” Work Record and “New Construction” Inspection Record
- Adding “Major M&R” work creates a “Construction/Major M&R” Inspection Record

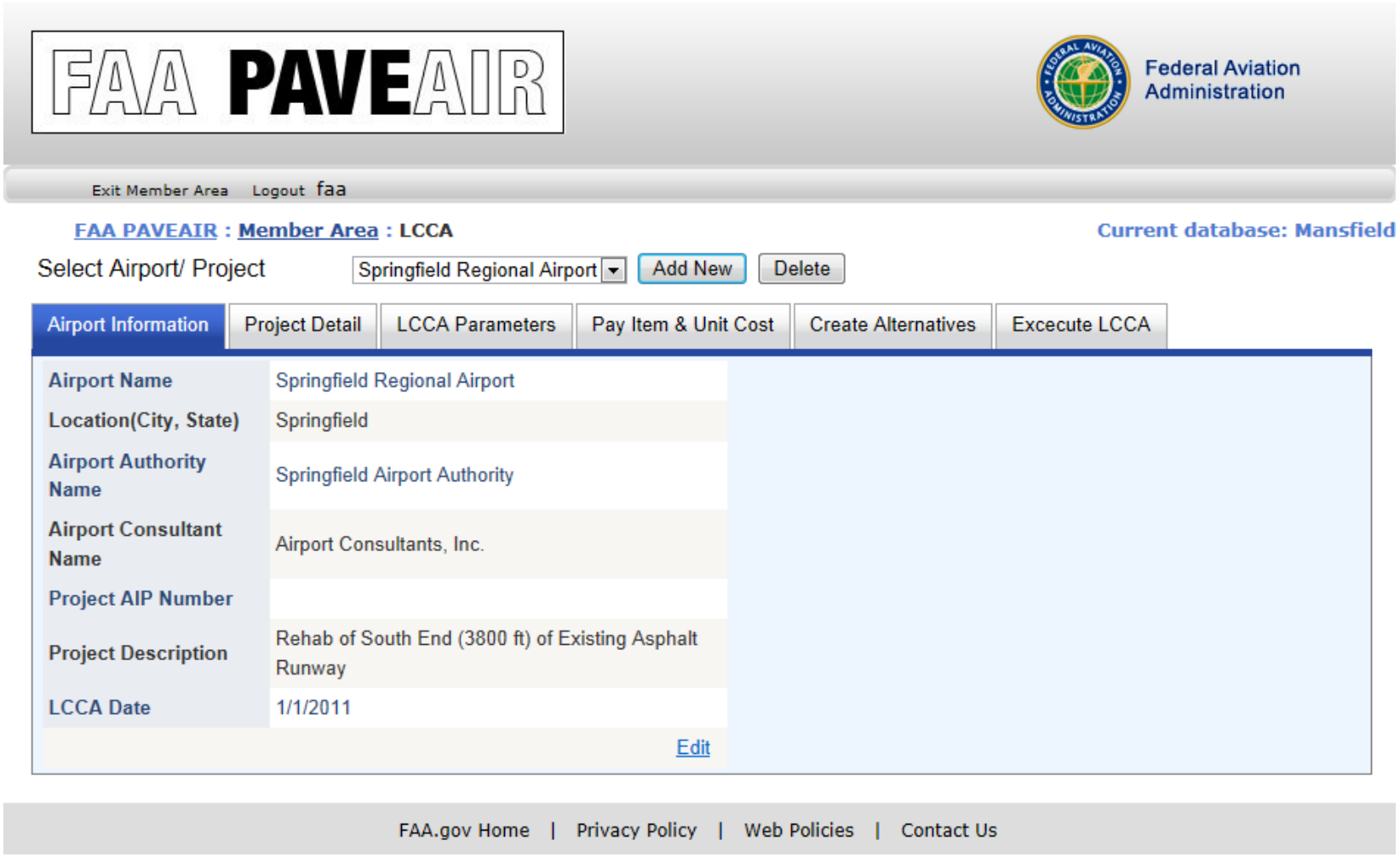
Work Module – New User Interface



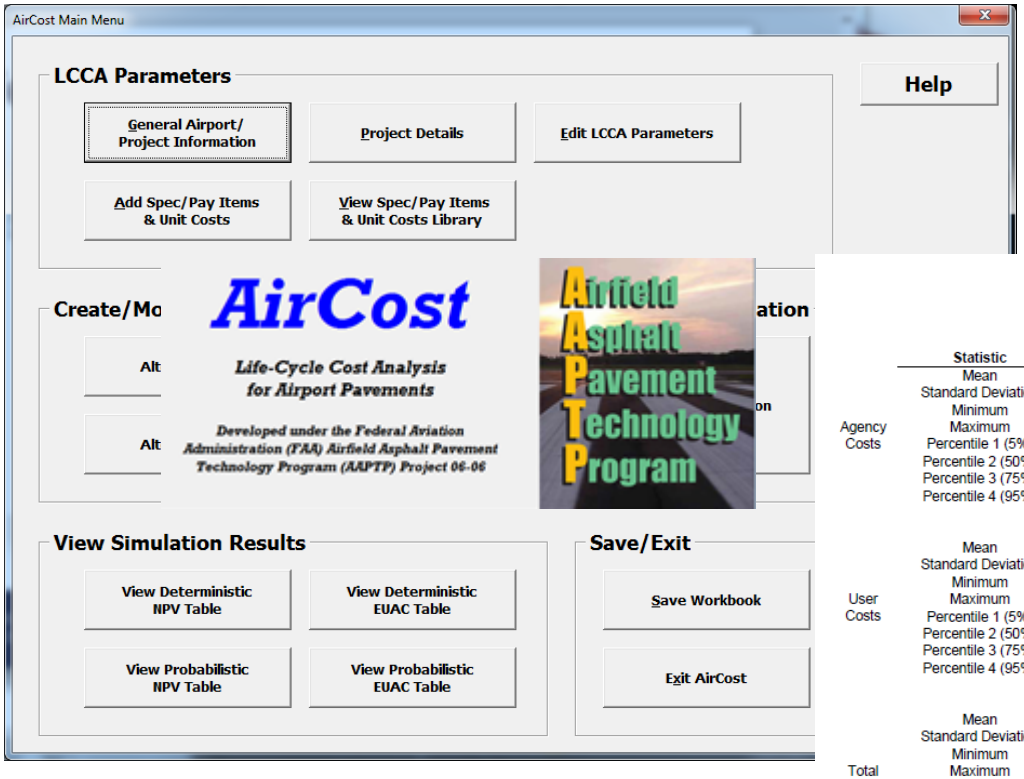
Life Cycle Cost Analysis (LCCA)

- Identify the most cost-effective pavement management strategies
- AirCost - Airfield Asphalt Pavement Technology Program (AAPTP) Integrated with FAA PAVEAIR
- LCCA data stored in FAA PAVEAIR database

Life Cycle Cost Analysis (LCCA)



Life Cycle Cost Analysis (LCCA)



PROBABILISTIC NPV RESULTS

Total NPV (in $1,000's)

	Statistic	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Agency Costs	Mean	$1,124			
	Standard Deviation	$99			
	Minimum	$833			
	Maximum	$1,515			
	Percentile 1 (5%)	$973			
	Percentile 2 (50%)	$1,124			
	Percentile 3 (75%)	$1,186			
	Percentile 4 (95%)	$1,293			
User Costs	Mean	$1,049			
	Standard Deviation	$185			
	Minimum	$894			
	Maximum	$1,642			
	Percentile 1 (5%)	$923			
	Percentile 2 (50%)	$975			
	Percentile 3 (75%)	$1,008			
	Percentile 4 (95%)	$1,486			
Total Costs	Mean	$2,173			
	Standard Deviation	$260			
	Minimum	$1,737			
	Maximum	$3,011			
	Percentile 1 (5%)	$1,933			
	Percentile 2 (50%)	$2,095			
	Percentile 3 (75%)	$2,165			
	Percentile 4 (95%)	$2,785			
	Convergence Reached?	1000			
	Iterations with repeated events?	166			

Other Updates

- Form input
  - Intensive error checking on user input
  - Allows multiple lines of data entry

WorkCode	Name	WorkUnit	Application Interval	Life Increase	Cost
NONE	No Global MR	ft²	0	0	0
OL-AT	Overlay - AC Thin (Global)	ft²	10	8	0.4
SS-CT	Surface Seal - Coal Tar	ft²	5	2	0.05
SS-FS	Surface Seal - Fog Seal	ft²	5	2	0.05
SS-RE	Surface Seal - Rejuvenating	ft²	5	3	0.05
ST-SB	Surface Treatment - Single Bitum.	ft²	5	3	0.1
ST-SS	Surface Treatment - Slurry Seal	ft²	5	3	0.1
ST-ST	Surface Treatment - Sand Tar	ft²	5	2	0.1
ST-CS	Surface Treatment - Cape Seal	ft²	0	0	0.6
ST-MS	Surface Treatment - Micro Surface	ft²	6	4	0.6

Future Developments

- Field Data Acquisition
  - Import inspection data from field devices
- Pavement Distress Guide
- Offline Inspection Module
- Traffic Module
- Climate Module
- Integration of FAA applications

Unit 1

What is a Pavement Management System?

What is a Pavement Management Program?

- Defined in FAA Advisory Circular 150/5380-6B Appendix A
  - Specifies the procedures to be followed to assure that proper preventative and remedial pavement maintenance is performed
- Public Law 103-305, section 107, amended Title 49, Section 47105 of the United States Code
  - To be eligible for federal funding, an airport agency must implement an effective pavement maintenance management program

Pavement Management Programs Must Include:

- Pavement Inventory
  - Location, type of pavement, dimensions, construction date
- Inspection Schedule
  - Detailed inspection must be performed at least once a year
  - Drive-by inspection must be performed a minimum of once per month
- Record Keeping
  - Inspection date, location, distress types, maintenance scheduled or performed
- Information Retrieval
- Program Funding

What is an Airport Pavement Management System?

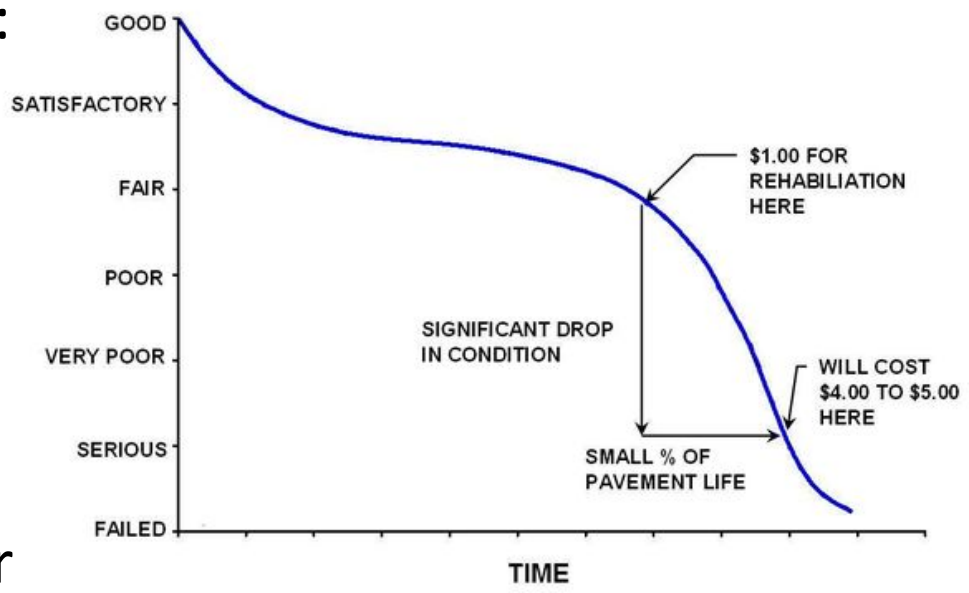
- Discussed in FAA Advisory Circular 150/5380-7A
  - A system which identifies optimum strategies to maintain pavements at an adequate level of serviceability
  - Includes systematic procedures for scheduling maintenance and rehabilitation activities
  - Optimizes benefits while minimizing cost

Benefits of an Airport Pavement Management System

Provides	Identifies
Objective and consistent evaluation of pavement conditions	Budget requirements necessary to maintain pavements at various levels of serviceability
Systematic and documentable engineering basis for determining maintenance and rehabilitation needs	Impact on the pavement network as a result of performing no major repairs
Documentation on the present and future condition of the pavements in a network	Life-cycle costs for various maintenance and rehabilitation alternatives

Pavement Life Cycle Curve

- First several years of life: low deterioration
- At a certain point in time: deterioration accelerates
- Preventive maintenance early in pavement life is more cost effective than major maintenance later in life
- Determine the optimum time to effectively apply funds



Typical Pavement Life Cycle Curve

History of FAA PAVEAIR

PAVER PMS

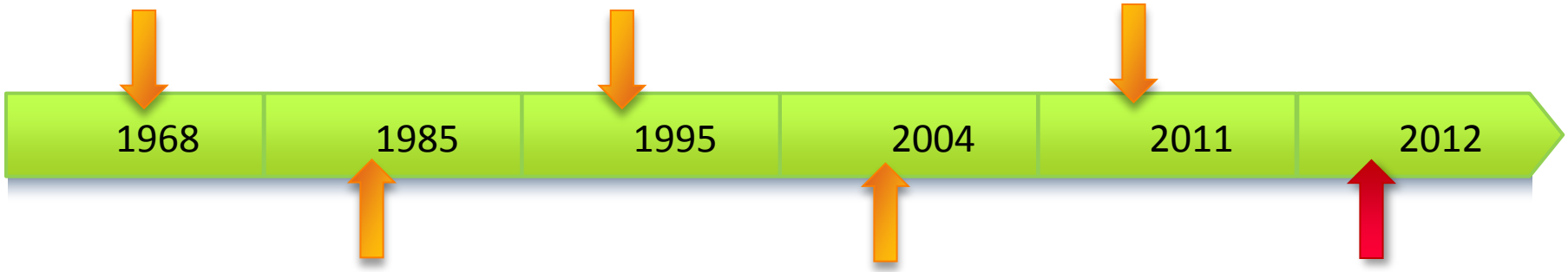
In 1968, CERL begins development of a mainframe PMS for the DOD. The first version is completed in 1972.

Public Law 103-305

Requires an airport agency to show that it has an effecteve PMS in place to be eligible for federal funding.

FAA PAVEAIR

February 2011, FAA releases a public beta of FAA PAVEAIR, a public web-based Airport Pavement Management System (APMS)



MicroPAVER

In 1985, the FAA funds CERL to develop a microcomputer version of PAVER, named MicroPAVER. The first version is released in 1987.

APMS Systems in Use

By 2004, 84% of state aviation agencies in the US use an APMS.

FAA PAVEAIR

June 2012, FAA releases FAA PAVEAIR 2.0.

** CERL (U.S. Army Construction Engineering Research Laboratory)*

Student Lab 1a
Connect to the Workshop Lab Network

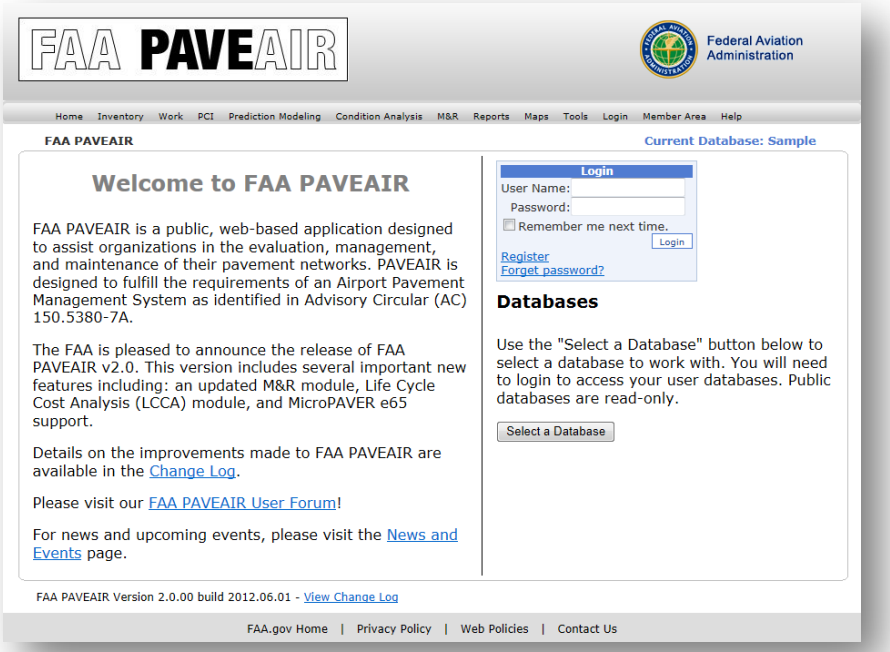
- Purpose
  - Connect to the Workshop Lab Network
- FAA PAVEAIR Workshop Wireless Network
  - SID: FAAPAVEAIR
  - Key: FAAPAVEAIR
- FAA PAVEAIR Workshop Site
  - http://faapaveair

Please let your instructor know if you are having difficulties connecting to the Workshop network.

Unit 2
FAA PAVEAIR Basics

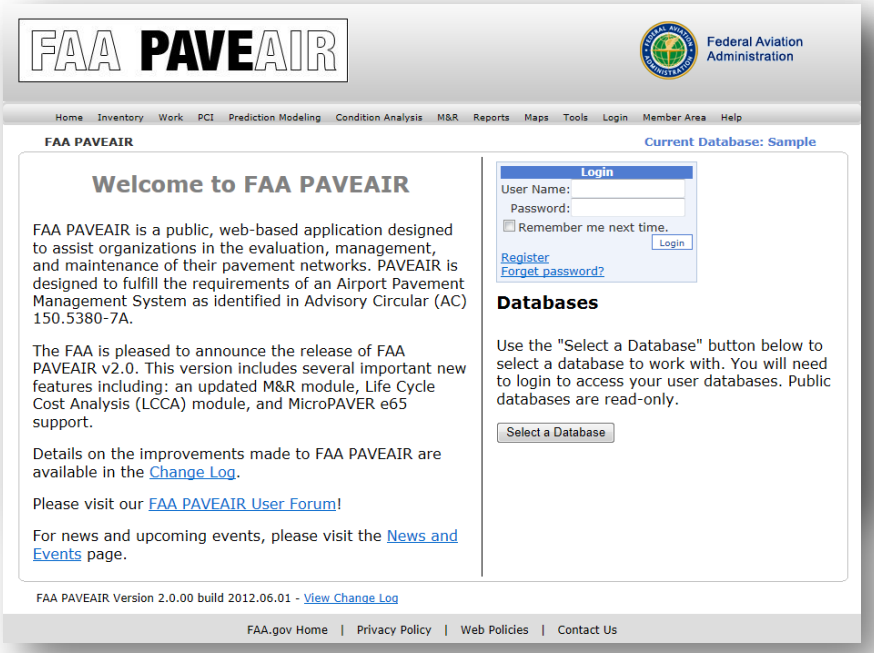
About FAA PAVEAIR

- Airport Pavement Management System
  - Publicly available and free to use (source code available)
  - Data can be made “public” or “private”
  - Includes similar functionality found in MicroPAVER version 5.3
- Web-based
  - Access though the Internet, company Intranet, or a stand-alone PC
- Regional Settings
  - English / Metric



Primary Functions

- Inventory
  - Manage Pavement Inventories
- Work
  - Record Pavement Work Histories
- PCI / Update Inspections
  - Calculate PCI / SCI / FOD
  - Record Condition Surveys
- Prediction Modeling
  - Predict future pavement conditions
  - Plot PCI vs. Age
- Condition Analysis
  - Provides projections about the viability of pavements
- Maintenance and Repair Planning
- Reports / Maps
  - Generate reports
  - Mapping support with shapefiles
- Compatibility
  - Import data from MicroPAVER (e60 files)
  - Export data to XML



Versions

- Three supported configurations
  - FAA Hosted version (http://faapaveair.faa.gov)
  - Intranet Version
  - Locally Installed version

- National Airport Pavement Test Facility
  - http://www.airporttech.tc.faa.gov
  - Additional information
  - Setup files
  - Source code

User Accounts / Databases

- Registered Users
  - Create Database
    - Multiple databases supported
    - New database or import from MicroPAVER
    - Choose to make data “Public” or “Private”
  - Manage Database
    - Delete database
    - Change between “Public” and “Private”
    - Assign permissions to other registered users

Student Lab 2a
Create a User Account and Pavement Database

- Purpose
  - Create a user account
  - Create a new blank database
  - Set English / Metric unit preferences

Instructor Demonstration 2a
Importing MicroPAVER Data

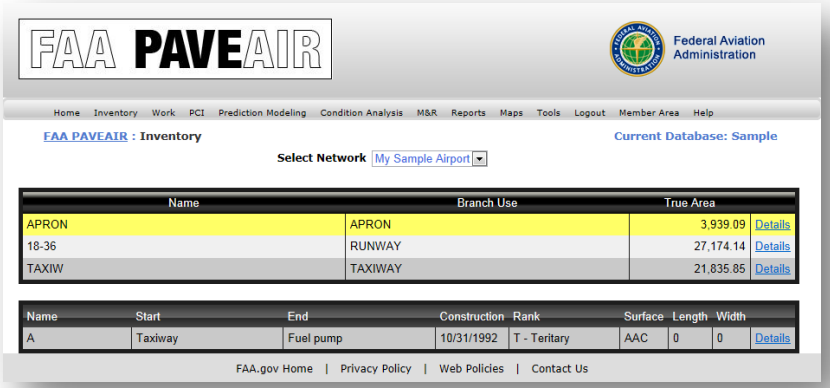
- Importing MicroPAVER Data
  - Create an e60 file in MicroPAVER
    - Paver Database Tools
  - Create a new FAA PAVEAIR database
    - Choose to import database from a MicroPAVER e60 file

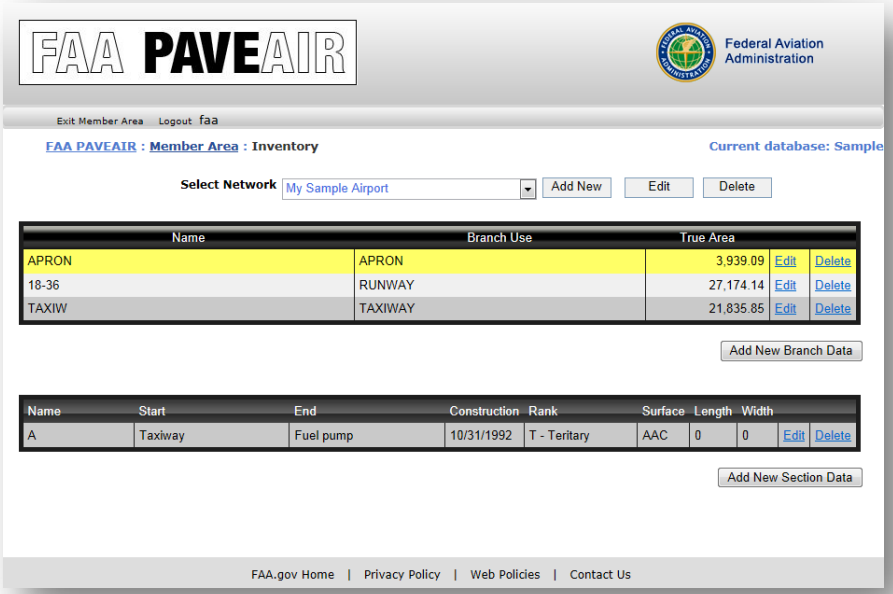
Pavement Hierarchy

- Pavement Network
  - High-level grouping of an organization's pavements for the purposes of maintenance and repair planning
  - Examples: Ohio State University Airport, JFK Airport
- Pavement Branch
  - Identifiable area of a pavement network having a distinct function
  - Examples: Runway 9L, Taxiway D, Apron
- Pavement Section
  - Subdivision of a branch with uniform construction, maintenance, usage, condition, traffic volume, and load intensity conditions
  - Example: Section A (Runway 32 end to 3,013' west)

Pavement Inventory

- View Pavement Inventories
  - "Inventory"
- Manage Pavement Inventories
  - Member Area "Inventory Update"



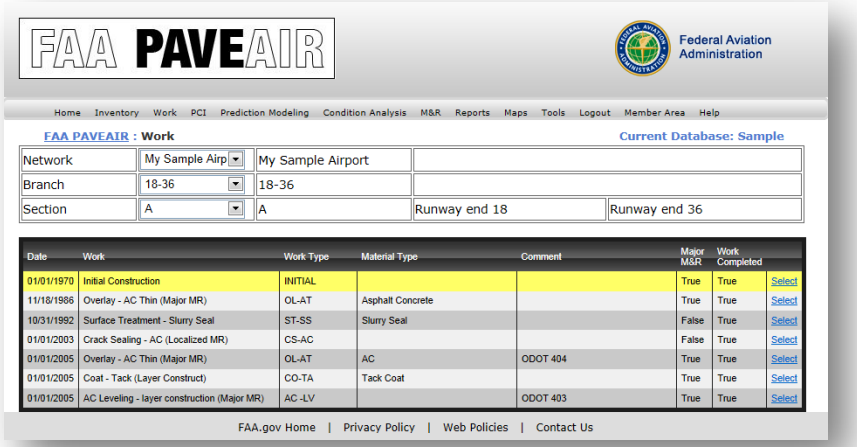


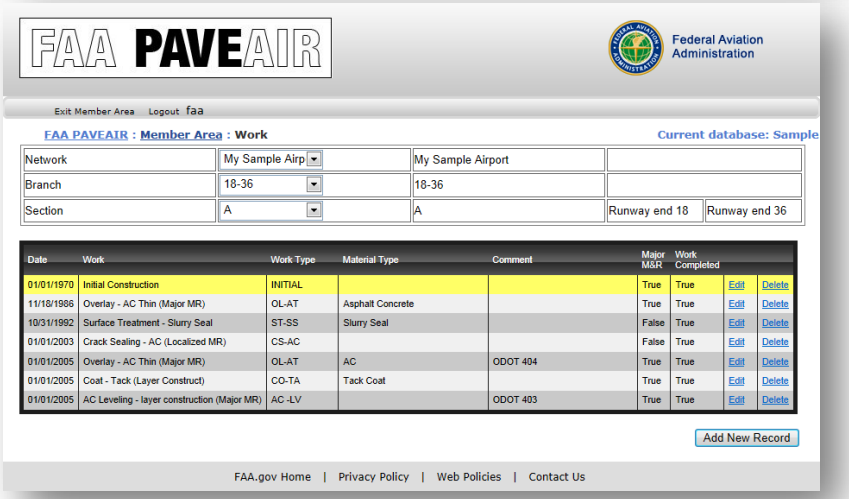
Student Lab 2b
Pavement Inventory

- Purpose
  - Add Pavement Inventories
  - Update Pavement Inventories

Pavement Work History

- View Work History
  - "Work"
- Manage Work History
  - Member Area "Work Update" module
- Accurate Work History is essential





Student Lab 2c
Pavement Work History

- Purpose
  - Add Pavement Work History
  - Update Pavement Work History

Unit 3
Assessing Pavement Condition

Pavement Condition Surveys
Inspection Process

- ASTM D 5340-10 and ASTM D 6433-09
  - Provides step-by-step process for identifying distresses, filling out survey forms, and calculating section PCI
- Create Sample Units
  - Divide pavement sections into Sample Units for Inspection
- Determine the Number of Sample Units
  - Calculate the minimum number of sample units that must be inspected
- Record Distresses
  - Condition Survey Forms
- Enter Inspection Data
  - Enter inspection data into FAA PAVEAIR's Update Inspection module

Updated ASTM Standards

ASTM D5340-10 and ASTM D6433-09 identify new distresses and their deduct curves. FAA PAVEAIR has been updated to reflect these changes.

ASTM D6433-09 - Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys

Surface Type	Old Distress	New Distress
Asphalt	19. Weathering / Raveling	19. Raveling
		20. Weathering

ASTM D5340-10 - Standard Test Method for Airport Pavement Condition Index Surveys

Surface Type	Old Distress	New Distress
Asphalt	12. Weathering / Raveling	12. Raveling
		17. Weathering

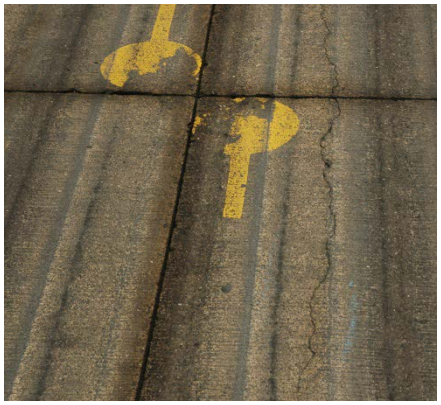
Surface Type	Old Distress	New Distress
Concrete	10. Scaling / Map Crack / Crazing	10. Scaling / Map Crack / Crazing
		16. Alkali Silica Reaction (ASR)

Types of Distresses

Distress Codes (AC)
1. Alligator Cracking
2. Bleeding
3. Block Cracking
4. Corrugation
5. Depression
6. Jet Blast
7. Joint Reflection (PCC)
8. Long. & Trans. Cracking
9. Oil Spillage
10 Patching
11. Polished Aggregate
12. Raveling
13. Rutting
14. Shoving from PCC
15. Slippage Cracking
16. Swell
17. Weathering

Distress Codes (PCC)
1. Blow up
2. Corner Break
3. Long / Trans / Diagonal Crack
4. Durability "D" Crack
5. Joint Seal Damage
6. Patching (Small)
7. Patching (Large) and Utility Cut
8. Popouts
9. Pumping
10. Scaling / Map Crack / Crazing
11. Settlement / Fault
12. Shattered Slab
13. Shrinkage Crack
14. Spalling-Joints
15. Spalling-Corner
16. Alkali Silica Reaction (ASR)

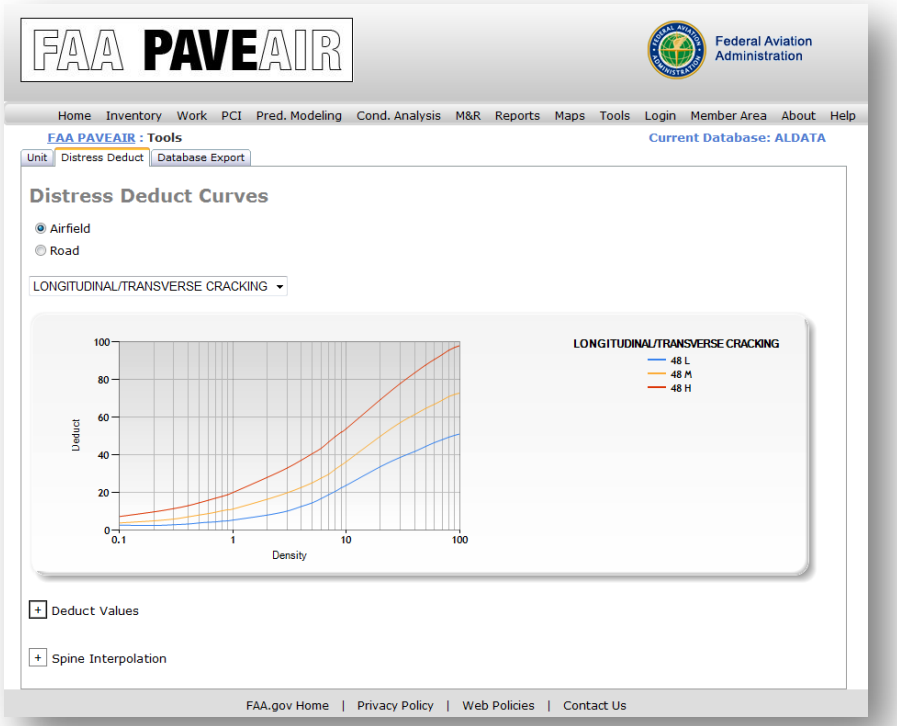
Rutting



Longitudinal Cracking

Instructor Demonstration 3a
Distress Deduct Curves

- Distress Deduct Curves
  - View deduct curves for each distress
  - Deduct value details
  - Spine interpolation equation



Create Sample Units

- Divide pavement sections into sample units for inspection
  - Asphalt
    - Subdivide into sample units consisting of 5,000 ft^2 of contiguous area (± 2,000 ft^2)
  - Concrete
    - Subdivide into sample units consisting of 20 contiguous slabs (± 8 slabs)

Determine Number of Sample Units

- Total Sampling
  - Total sampling is desirable for project analysis
  - May not be feasible for routing management due to manpower, funds, and time required
- Partial Sampling
  - Calculate the minimum number of random sample units *n* that must be surveyed to obtain a 95% confidence level

$$n = \frac{Ns^2}{\left(\left(\frac{e^2}{4}\right)(N-1) + s^2\right)}$$

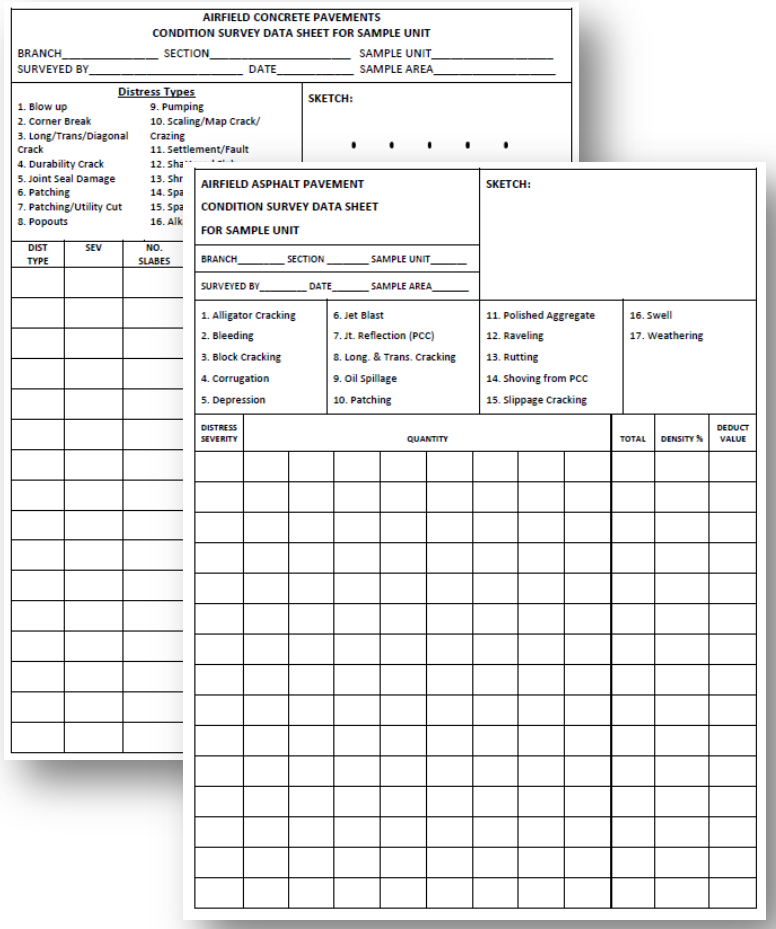
e = acceptable error in estimating the section PCI; ± 5 PCI points

s = standard deviation of the PCI from one sample unit to another; assumed to be 10 for AC pavements and 15 for PCC pavements

N = total number of sample units in the section

Record Distresses

- Record distresses using the procedures documented in ASTM D5340-10 and ASTM D 6433-09
  - Divide pavements into sample units
  - Perform condition survey of sample units
  - Record distresses, severity, and quantity on survey data sheets
- Print survey data sheets from FAA PAVEAIR's Update Inspections Module
  - Distresses for Asphalt Pavements
  - Distresses for Concrete Pavements



AIRFIELD CONCRETE PAVEMENTS
CONDITION SURVEY DATA SHEET FOR SAMPLE UNIT

BRANCH_____ SECTION_____ SAMPLE UNIT_____
SURVEYED BY_____ DATE_____ SAMPLE AREA_____

Distress Types

1. Blow up
2. Corner Break
3. Long/Trans/Diagonal Crack
4. Durability Crack
5. Joint Seal Damage
6. Patching
7. Patching/Utility Cut
8. Popouts
9. Pumping
10. Scaling/Map Crack/ Crazing
11. Settlement/Fault

SKETCH:

DIST TYPE	SEV	NO. SLABES

AIRFIELD ASPHALT PAVEMENT
CONDITION SURVEY DATA SHEET
FOR SAMPLE UNIT

BRANCH_____ SECTION _____ SAMPLE UNIT_____
SURVEYED BY_____ DATE_____ SAMPLE AREA_____

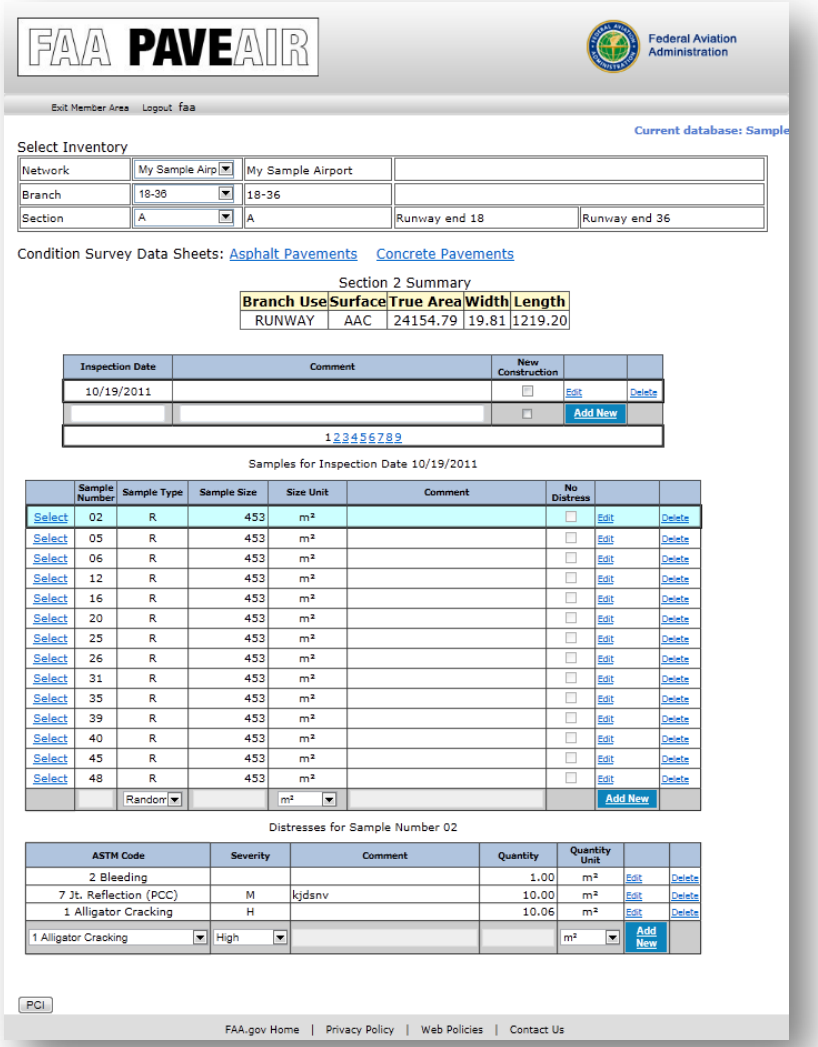
SKETCH:

1. Alligator Cracking
2. Bleeding
3. Block Cracking
4. Corrugation
5. Depression
6. Jet Blast
7. Jt. Reflection (PCC)
8. Long. & Trans. Cracking
9. Oil Spillage
10. Patching
11. Polished Aggregate
12. Raveling
13. Rutting
14. Shoving from PCC
15. Slippage Cracking
16. Swell
17. Weathering

DISTRESS SEVERITY	QUANTITY									TOTAL	DENSITY %	DEDUCT VALUE

Enter Inspection Data
Update Inspection

- Input / update inspection data from Condition Surveys
- PCI button
  - Calculates section condition (PCI)
  - Displays distress, deduct, and PCI details

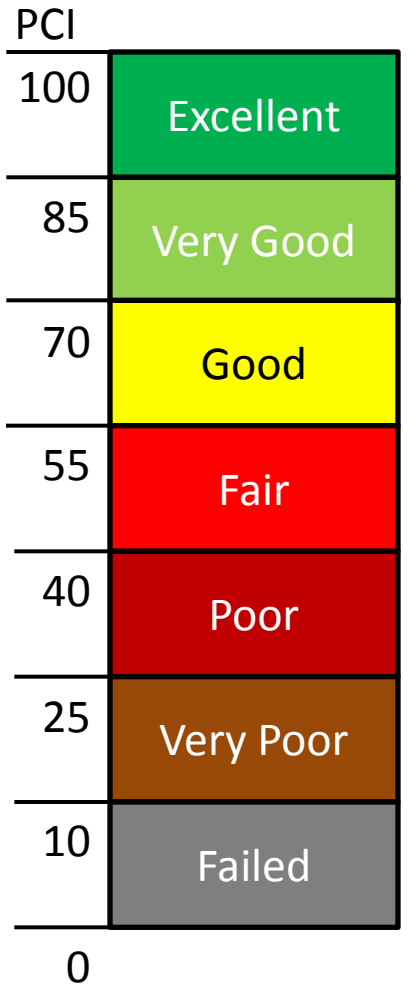


Student Lab 3a
Condition Surveys

- Purpose
  - Add Pavement Condition Surveys
  - Update Pavement Condition Surveys

Pavement Condition Index (PCI)

- FAA PAVEAIR uses the procedures documented in ASTM D5340-10 to calculate PCI
- Developed by the US Army Corps of Engineers
- Quantify Airport Pavement Condition
- Numerical rating of the pavement condition



PCI Calculation
Calculate the PCI of an Inspected Section

- Start by calculating the PCI of the surveyed sample units
  - Determine the maximum corrected deduct value (CDV) of the sample unit
  - Sample PCI = (100 – Max CDV)
  - Determine the Area Weighted PCI of the Sample Units

Student Lab 3b
Corrected Deduct Values for Asphalt Pavements

- Purpose
  - Manually determine the maximum corrected deduct value (CDV) of a sample unit
  - Manually determine the PCI of a sample unit

Student Lab 3c

Corrected Deduct Values for Concrete Pavements

- Purpose
  - Manually determine the maximum corrected deduct value (CDV) of a sample unit
  - Manually determine the PCI of a sample unit

PCI Calculation
Area Weighted PCI of Random Sample Units

The area weighted PCI of your random sample units are calculated as:

$$\overline{PCI}_r = \frac{\sum_{i=1}^{n}(PCI_{ri} \times A_{ri})}{\sum_{i=1}^{n} A_{ri}}$$

$\overline{PCI}_r$	=	The area weighted PCI of the randomly surveyed sample units.
PCI_{ri}	=	PCI of random sample unit i.
A_{ri}	=	Area of random sample unit i.
n	=	Number of random sample units surveyed.

PCI Calculation
Area Weighted PCI of Additional Sample Units

The area weighted PCI of your additional sample units are calculated as:

$$\overline{PCI}_a = \frac{\sum_{i=1}^{m}(PCI_{ai} \times A_{ai})}{\sum_{i=1}^{m} A_{ai}}$$

$\overline{PCI}_a$	=	The area weighted PCI of the additional surveyed sample units.
PCI_{ai}	=	PCI of additional sample unit i.
A_{ai}	=	Area of additional sample unit i.
m	=	Number of additional sample units surveyed.

PCI Calculation
Area Weighted Section PCI

If all sample units are random, then:

$$PCI_s = \overline{PCI}_R$$

If there are additional sample units, then:

$$PCI_S = \frac{\overline{PCI}_R(A - \sum_{i=1}^{m} A_{ai}) + \overline{PCI}_a(\sum_{i=1}^{m} A_{ai})}{A}$$

$\overline{PCI}_S$ = The area weighted PCI of the pavement section

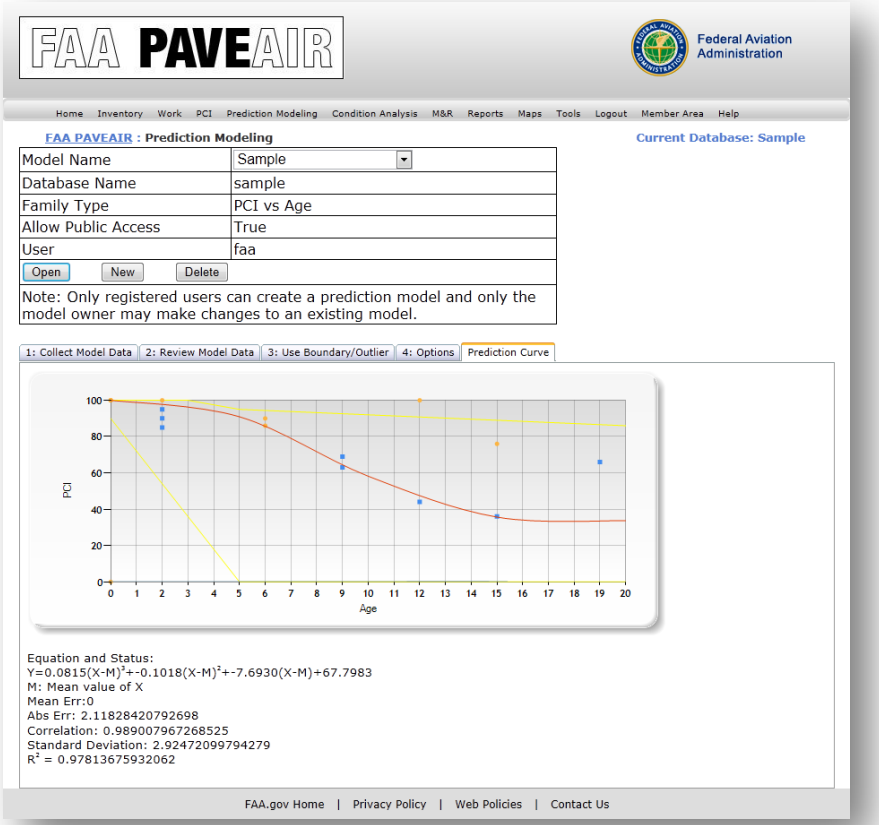
Student Lab 3d
Pavement Condition Index

- Purpose
  - View PCI / SCI / FOD information in FAA PAVEAIR

Unit 4
Predicting Pavement Performance

Prediction Modeling

- Collect Model Data
  - Group pavement sections of similar construction and with similar traffic patterns
- Review Model Data
- Use Boundary / Outlier
  - Filter out erroneous data points
- Options
- Prediction Curve
  - Plot predicted PCI vs. Age

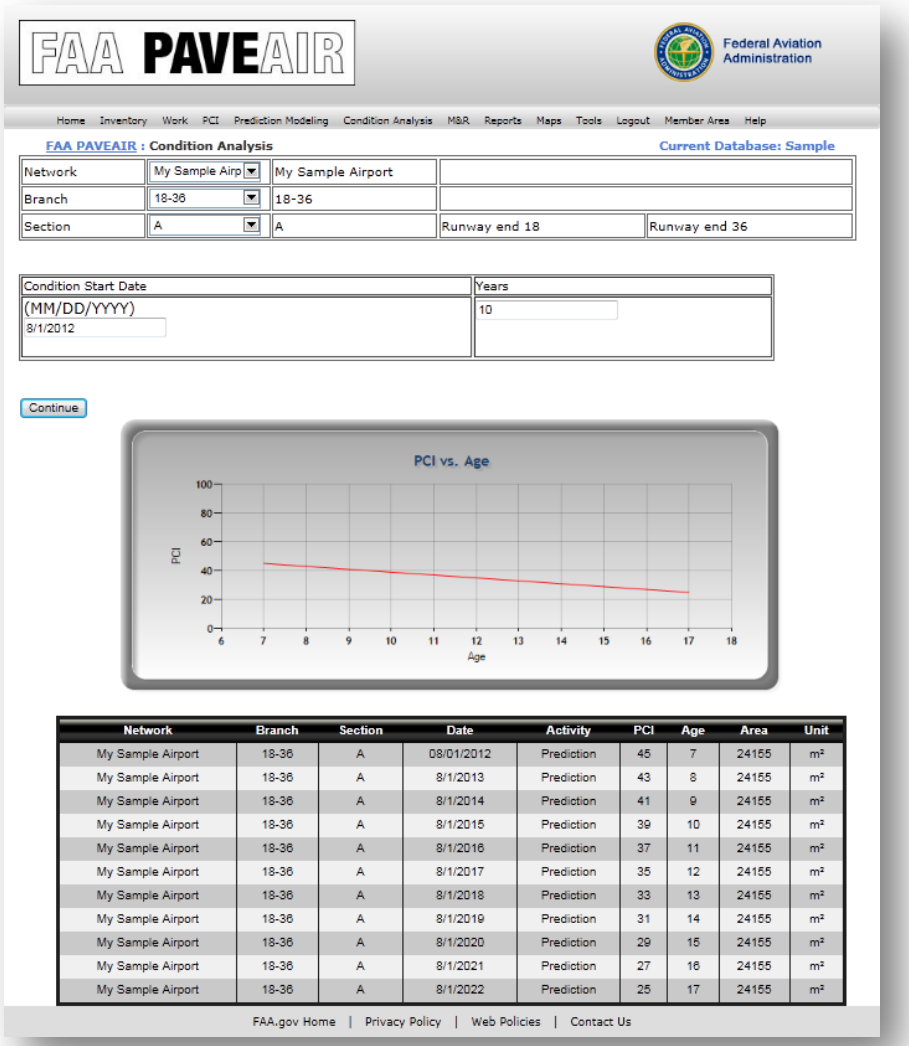


Instructor Demonstration 4a
Prediction Modeling

- Purpose
  - Create a Prediction Model
  - View PCI Prediction Curve

Condition Analysis

- Provides projections about the viability of pavements
- Analysis based upon:
  - Prior inspection data
  - Comparison of values between previous inspections
  - Projected conditions
- Graph PCI vs. Age



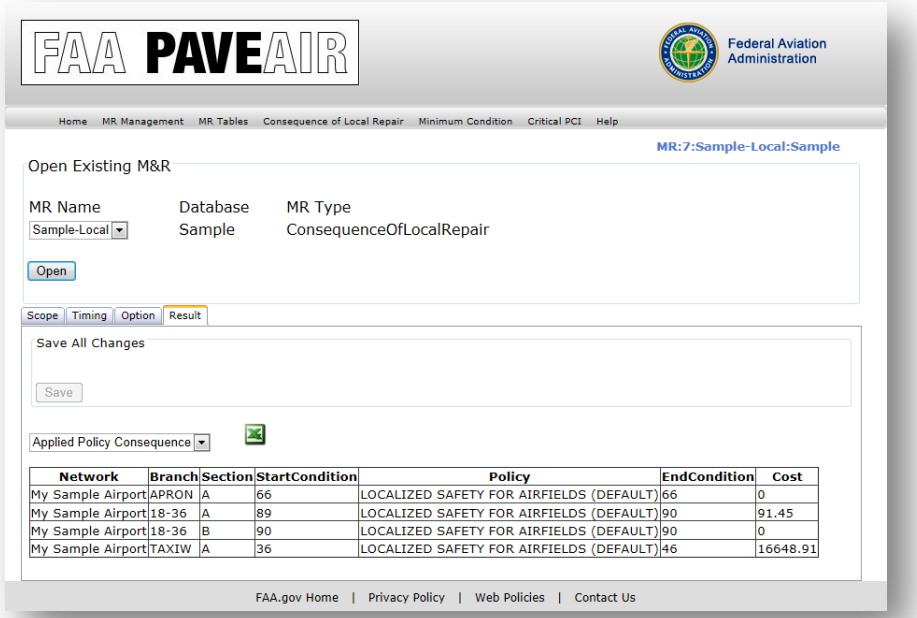
Student Lab 4a
Condition Analysis

- Purpose
  - Predict pavement performance for a section out to 10 years

Unit 5
Maintenance and Repair Planning

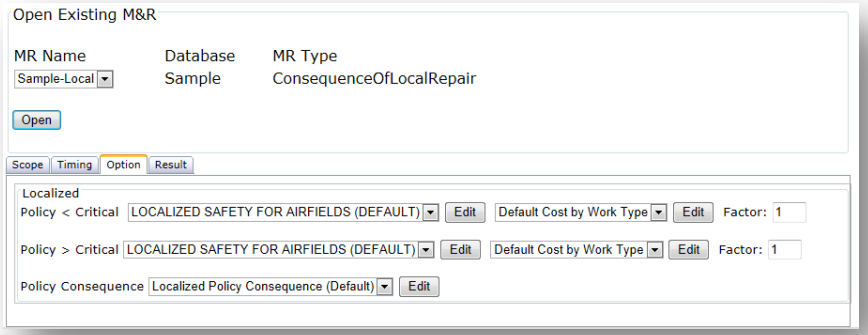
Maintenance and Repair Planning

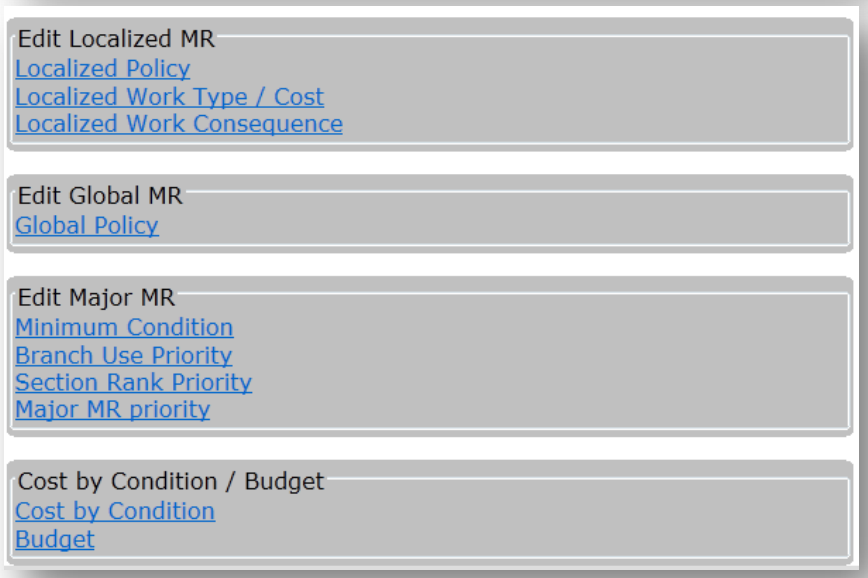
- Scope
- Timing
- Plan Mode
  - Critical PCI Method
  - Minimum Condition
  - Consequence of Local Repair
- Policies
  - Apply Inflation Rate
  - Apply Policy in First Year
  - Global
- M&R Data
  - Applied Policy Consequence
  - Applied Policy Details
  - Inventory Info



Customizable M&R Settings

- Localized M&R
  - Policy
  - Work Type / Cost
  - Work Consequence
- Global M&R
  - Policy
- Major M&R
  - Minimum Condition
  - Branch Use Priority
  - Section Rank Priority
  - Major M&R Priority
- Cost by Condition
  - Cost by Condition
  - Budget



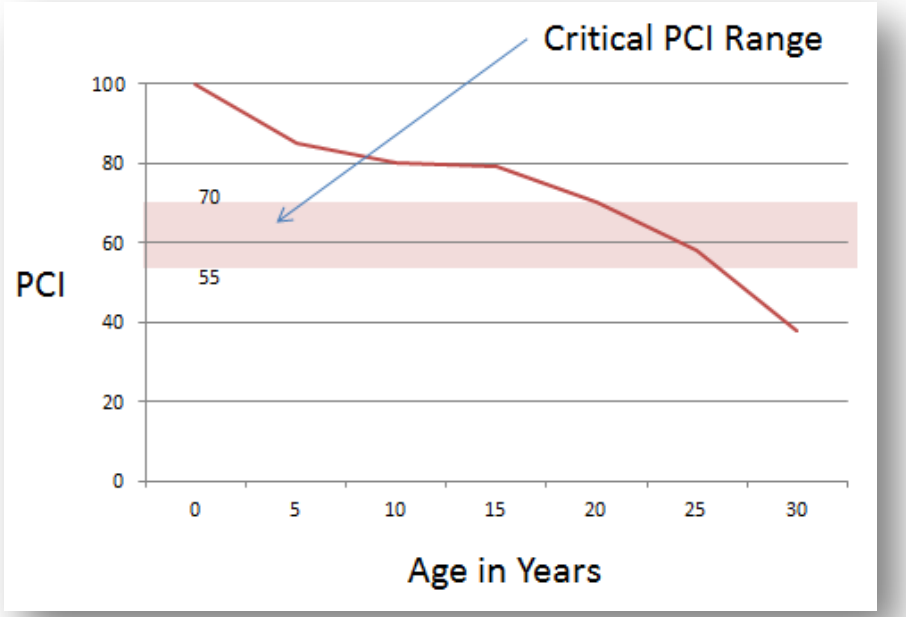


Instructor Demonstration 5a
Edit M&R Tables

- Purpose
  - To demonstrate how to customize your M&R plans.

Critical PCI Method

- Critical PCI
  - PCI value after which a pavement rapidly deteriorates
  - Usually between a PCI number of 70 and 55
- More economical to maintain pavements above rather than below the Critical PCI
  - The cost of applying localized preventive maintenance increases significantly



Instructor Demonstration 5b
Critical PCI

- Purpose
  - Create a 5 year M&R Plan with a $500,000/Year budget and a 3% inflation rate
  - Determine the budget required to eliminate the backlog of maintenance over 5 years.
- Critical PCI Method
  - The PCI after which the pavement begins to rapidly deteriorate
  - Determine Budget Consequence or Determine Budget Requirements

Minimum Condition

- Minimum Condition
  - Only concerned with the Major M&R required to maintain a minimum PCI
    - Major M&R: Any overlay or other major work that results in a PCI of 100
  - Select the lowest pavement condition that is allowed for each pavement rank
  - Prioritize the Maintenance and Repair plan to reflect the choice of “Minimum Condition” as the variable for decision making in regard to future work

Instructor Demonstration 5c
Minimum Condition

- Purpose
  - Create a 5 year M&R plan to determine the budget required to maintain a minimum PCI condition.
- Minimum Condition
  - Set the lowest PCI condition allowed for per year

Consequence of Local Repair

- Consequence of Local Repair
  - Calculates the cost and resulting condition from the immediate implementation of local maintenance and repair.
  - M&R actions are based on current distresses and their severity.
  - Consider this plan mode for pavements above Critical PCI.

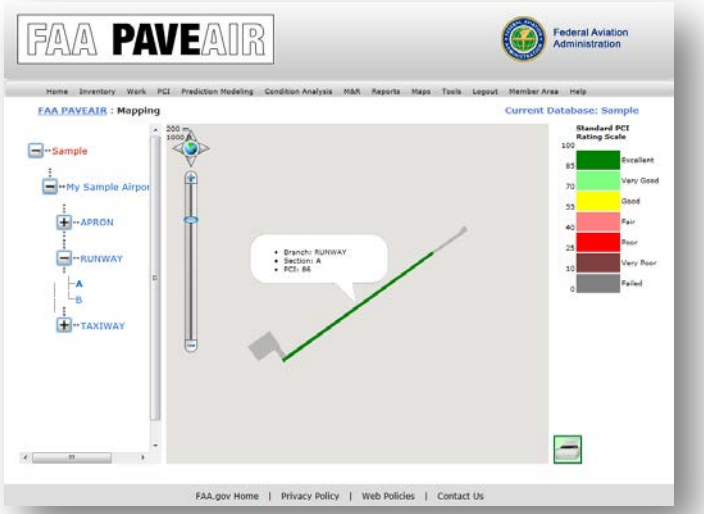
Instructor Demonstration 5d
Consequence of Local Repair

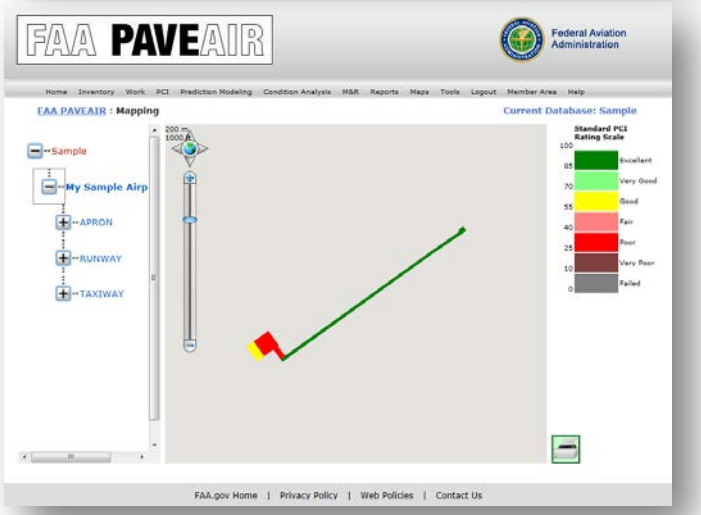
- Purpose
  - Calculate M&R using the “Consequence of Local Repair” plan mode
- Consequence of Local Repair
  - Cost and consequence of immediately applying local M&R
  - Plan is run for one year

Unit 6
Additional Functions

Mapping

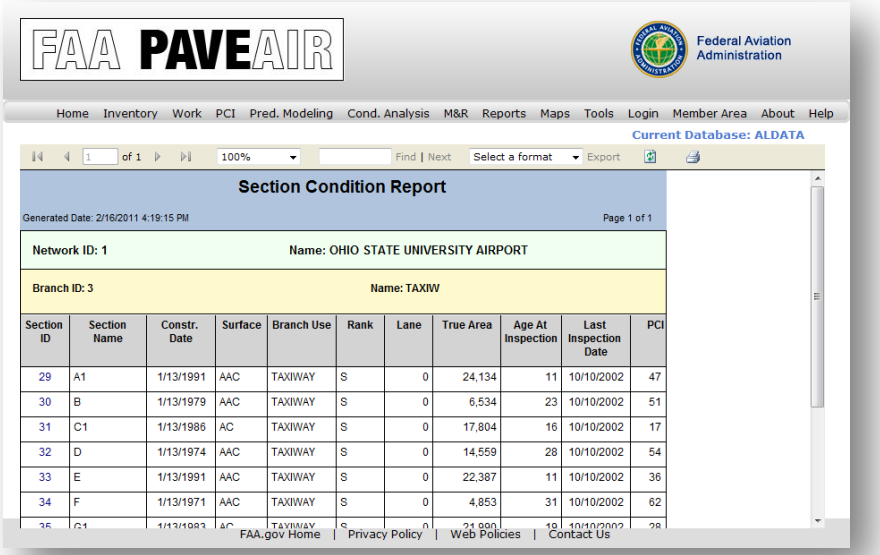
- Add a shape file to the current database
  - Use the “Upload Shapefiles to Current DB” tool
- Import a shape file from MicroPAVER
  - Shapefiles are imported with MicroPAVER data
- Shape file assignment tool
  - Allows the assignment of pavement sections to shape file objects





Reporting

- Available Reports
  - Branch Listing Report
  - Work History Report
  - Branch Condition Report
  - Section Condition Report
  - Re-Inspection Report
- View, print, or export in Adobe PDF or Microsoft Excel format
- Condition Reports support additional mapping features



Student Lab 6a
Mapping and Reporting

- Purpose
  - To demonstrate the mapping abilities of FAA PAVEAIR
  - To familiarize the student with running the various reports

Life Cycle Cost Analysis

- Shares data with the AAPTP AirCost LCCA application
- Economic Analysis
  - Evaluate the long-term economic efficiency between different pavement design strategies
- Procedures
  - Establish alternative pavement design strategies
  - Determine the performance period and activity timing
  - Estimate costs
  - Compute Net Present Value (NPV)
  - Analyze results
  - Re-evaluate pavement design strategies

Student Lab 6b
Life Cycle Cost Analysis

- Purpose
  - To demonstrate how to work with LCCA plans
  - Show how FAA PAVEAIR links with the AirCost application

Sharing Data

- Importing Data
  - MicroPAVER e60 or e65 files
  - Existing shapefiles will be imported
- Exporting Data
  - Tools: Database Export
  - Export to XML

Questions and Answers