

# Performance Measure Profile

## Runway Pavement Condition

FY 2013 Methodology Report



Federal Aviation  
Administration

### Performance Measure Applicability

**DOT Strategic Plan**

Goal: State of Good Repair

Outcome: Maintain the percentage of airport runways in excellent, good, or fair condition.

Metric: Maintain runway pavement in excellent, good, or fair condition for at least 93 percent of the open, paved runways in the National Plan of Integrated Airport Systems (NPIAS).

**Agency Priority Goal**

**Destination 2025**

Goal: n/a

Outcome: n/a

Metric: n/a

### FY 2013 Performance Target

At least 93% of airport runways are in excellent, good or fair condition.

Lead Organization: Airports (ARP)

|               | FY 2009 | FY 2010 | FY 2011 | FY 2012 | FY 2013 |
|---------------|---------|---------|---------|---------|---------|
| <b>Target</b> | 93.0%   | 93.0%   | 93.0%   | 93.0%   | 93.0%   |
| <b>Actual</b> | 97.0%   | 97.2%   | 97.4%   | 97.5%   | TBD     |

### Definition of Metric

|                           |   |
|---------------------------|---|
| Metric Unit:              | This metric tracks, on an annual basis, the number of open and paved runways at public use airports included in the federal airport system that meet FAA's standard for safe operation of aircraft with runway pavement considered to be in excellent, good, or fair condition. The metric covers all paved runways at federally funded NPIAS airports.   |
| Computation:              | This information is collected through visual inspection of runway pavement, in accordance with Advisory Circular 150/5320-17. The number of paved runways in the National Plan of Integrated Airport Systems (NPIAS) with surface ratings in each of the five conditions (excellent, good, fair, poor, and failed) is totaled. Paved runway ratings are numbered by condition: excellent = 5; good = 4; fair=3; poor=2; failed=1. Landing surfaces that are not paved, including water, dirt, turf, gravel, and permafrost, are not included. The percentage of runways rated excellent, good, and fair is calculated based on the total number of paved runways at NPIAS airports. |
| Formula:                  | $\frac{x \text{ condition 5 runways} + y \text{ condition 4 runways} + z \text{ condition 3 runways}}{\text{total NPIAS paved runways}} * 100$  |
| Scope of Metric:          | The metric covers all open and paved runways at federally funded NPIAS airports.  |
| Method of Setting Target: | Maintaining runway pavement conditions requires careful coordination, often years in advance, of a runway rehabilitation project. Projects must be timed carefully, regardless of whether they involve the phased reconstruction of a single-runway airport or the sequential resurfacing of multiple runways over a period of several years. Some of the   |

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|  | <p>nation's largest airports resurface their runways on an established revolving basis. As a result, at times the FAA is able to exceed the goal. However, this does not necessarily represent a sustainable trend. For major reconstruction, runways must typically be taken out of service for a full construction season or longer. It can be particularly challenging to rehabilitate one runway while keeping intersecting runways operational. FAA works with airports to ensure that the system never has too many runways out of service at any given time.</p> |
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**Why the FAA and/or DOT Choose this Metric**

This metric was chosen because if runway pavement is neglected, severe deterioration can cause damage to airframes, engines, and landing gear, unnecessarily compromising safety, and leading to higher rehabilitation costs.

**Public Benefit**

Periodic maintenance of runways, particularly resurfacing, has proven a cost effective way to delay the need for major runway rehabilitation. The FAA funds a broad range of capital infrastructure development at most NPIAS airports; however, airports are generally responsible for funding periodic and ongoing maintenance. More significant rehabilitation, resurfacing or reconstruction projects may be funded through a variety of funding sources, including AIP grants, PFC revenues, airport revenues and/or other funding sources. Deferred or delayed maintenance creates an increased risk of damage to aircraft and is a safety concern for the travelling public, increasing both the scope and cost of eventual rehabilitation or reconstruction.

**Partners**

FAA's Regional Airports Division and Airports District Offices partner with individual airports to identify poor or failed pavements. Three other FAA offices support this effort: the Air Traffic Organization, which helps evaluate and minimize the capacity and delay impacts resulting from runway reconstruction projects and helps communicate temporary closures; the Aircraft Certification Service, which helps assess the impact of pavement conditions on aircraft; and the William J. Hughes Technical Center, which assists with a broad range of pavement research. External partners include State aeronautical agencies and other aeronautical user groups.

**External Factors Affecting Performance**

Airport infrastructure, particularly airfield facilities at commercial service airports, are exposed to constant heavy use and harsh environmental conditions. Runways, taxiways, and aprons are designed to withstand the heavy equipment that operates on them, but even so these facilities require frequent maintenance and rehabilitation in order to remain in good working condition. Runways and taxiways have to be kept clear of snow, ice, and ponding water that can jeopardize aircraft directional control or braking action. Chemicals and plowing, as well as freeze-thaw cycles, all take a toll on runways, taxiways, and other paved areas. Even at smaller, non-commercial airports, pavement degradation due to meteorological conditions quickly leads to more serious damage if periodic maintenance and resurfacing is not completed in a timely manner. At the same time, limited financial resources can lead airport operators to try to defer needed capital projects, which both increases costs and may impact operational capacity if runways and taxiways require more in-depth reconstruction. Funding constraints may significantly affect when the airport sponsor is able to fund pavement rehabilitation. This is why it is so crucial that the FAA can offer airports financial assistance in the form of Airport Improvement Program (AIP) grants, in order to ensure infrastructure is properly protected and preserved at the lowest possible cost.

**Source of the Data**

Results of the inspections are entered into FAA's National Airspace System Resource.

**Statistical Issues**

None

**Completeness**

The inspection and reporting of conditions are conducted in accordance with existing FAA guidance. The data are publicly available and therefore can be examined and evaluated by any federal auditor.

**Reliability**

N/A