

Executive Summary

In 1999, the Oregon Legislature authorized the Airport Pavement Preservation Program, designating funds for the Pavement Maintenance Program (PMP). The authorization increased aviation fuel taxes for aviation gasoline (“av gas”) and jet fuel sold within Oregon, creating a funding source dedicated to preserving and maintaining airfield pavements on public-use airports. This fuel sales tax has generated approximately \$1 million annually, and the fund is administered and coordinated through the Oregon Department of Aviation (ODA).

The PMP is a multi-year program aimed at assisting Oregon public-use airports throughout the state with maintenance and preservation of their existing pavement infrastructure. To reduce contractor mobilization expenses, the state’s airports are divided into three geographic regions (**Figure 1**). The Pavement Evaluation Program (PEP) is an accessory project to the PMP; its purpose is to inventory the airports’ pavement condition. The PEP and PMP occur at each eligible airport once every three years, with the PEP occurring at each airport one year prior to the implementation of the PMP.

Four overall goals of the PMP have been identified:

1. **Asset Management** – Maintain airfield pavements to a minimum condition standard
2. **Economy of Scale** – Create a single program to benefit numerous airports
3. **Maximize Funding** – Create a federal, state, and local partnership to maximize airport pavement improvement funds
4. **Grant Compliance** – Create a program that gives airport sponsors an avenue to comply with FAA Airport Sponsor Grant Assurance #11

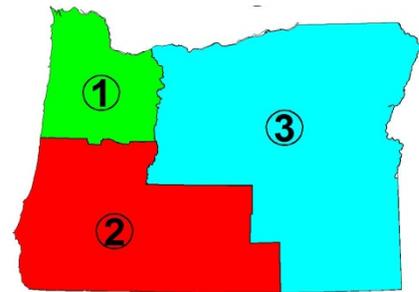


FIGURE 1. PMP GEOGRAPHIC REGIONS

This study evaluates the effectiveness of the PMP from its inception to the present – a total of ten years – with the aim of assessing the program’s strengths and weaknesses and recommending necessary improvements.

Program Funding

PEP Funding. PEP’s annual budget of \$100,000 comes from an FAA statewide planning grant awarded to ODA, with remaining funds from ODA. The FAA Modernization and Reform Act of 2012 changed the ODA’s share on grants to 90%/10%; therefore future FAA grants will be valued at approx. \$90,000, with ODA’s share at \$10,000.

PMP Funding. ODA’s contribution to the PMP is generated by fuel taxes. The majority of airport sponsors use locally derived funds for the PMP match or federal Airport Improvement Program (AIP) funds. Public-use non-federally funded and privately-owned airports must utilize other funding to provide the PMP match, as they are not eligible for FAA funding. Generally their funding comes from operating budgets.

PMP Analysis

Summary of the program’s first nine years (the period for which complete information is available):

- Total cost of maintenance work performed: \$8,788,202
- Annual average: \$976,466
- Number of airport projects undertaken: 126
- Average number of airport projects per year: 14
- Average amount spent at each airport per year: \$69,747

A study sample of PMP airports was selected based on a variety of criteria, climatic diversity being the most valuable since pavement condition tends to depend more on climate than geographical location. Where the PMP organizes the state into three regions based on geographic location, our analysis grouped pavements by climate region (see **Figure 2**), a grouping that provides a better representation of pavement condition index (PCI) trends.

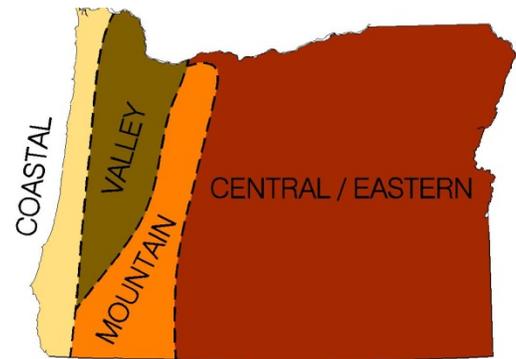
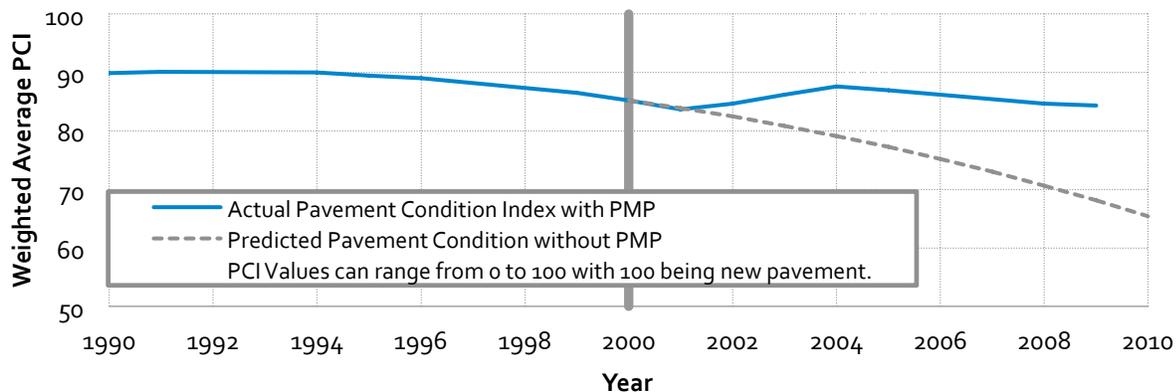


FIGURE 2. PMP CLIMATIC REGIONS

For each climate region, parabolic trend lines were added, projecting the PCI values past 2000 using data points from the 10 years prior to the PMP. These trend lines are a prediction of what the PCI would have been for each region had there not been any pavement maintenance inputs. A sample result of this analysis is shown in **Figure 3**.

3. All trend lines by climatic regions show similarities, with PCI values decreasing more quickly in the central/east region as a result of climatic influences.

FIGURE 3. COMBINED COASTAL FOCUS AREAS



Cost Effectiveness

The study found unmaintained pavement life is 20 years, versus 40.88 years for maintained pavements – a 104.4% increase in pavement life. The cost per year for unmaintained pavement is \$2,590 per square yard and \$1,974 per square yard for maintained pavement, which equates to a cost avoidance of \$0.617 per square yards or 23.8%. Oregon airports have approximately of 8,015,817 square yards of total maintainable pavements. Using the cost avoidance of \$0.617 per square yard per year, there is a total cost avoidance of approximately \$5 million annually associated with the PMP, which amounts to \$50 million in cost avoidance due to pavement maintenance inputs over the 10 year study life.

Recommendations

This report found that all four of the program’s initial goals have been met. As a result of data and experience gathered from ten years of the ODA’s PEP/PMP program, many recommendations have been developed for these programs’ future. Some are the result of lessons learned through the execution of the program; many others are continuations of ongoing improvements. The most valuable recommendations are funding enhancements through fund redistribution and increased revenue, and shifting the focus of maintenance efforts as part of the PMP shift toward surface sealants to increase PCI values.

By continuing to support the program and implementing the recommendations included in this report, the performance metrics will only improve the return on investment for the next decade.