



SAMPLE PAVEMENT MAINTENANCE PROGRAM

We are providing this sample PMP to assist an airport Sponsor with the development of pavement maintenance program (PMP) specific to their airport. This sample **does not** establish complete program the Sponsor can immediately apply to their airport. This Sponsor may use this sample as a starting point for developing their customized PMP

Each airport should customize the collected information to best fit the needs, conditions, and resources of the airport. This information should allow an airport to develop an initial program that can evolve over time. As with all successful endeavors, the maintenance program must be provided with sufficient resources and commitment if it is to succeed.

Airfield Pavement Maintenance Program

Anywhere Municipal Airport
Anywhere, USA

1. GENERAL INFORMATION

The Anywhere Municipal Airport was originally opened in 1966 as a private landing strip and consisted of a turf runway with ample parking space. The City of Anywhere purchased the airport in 1974 and major improvements were completed during the summer of 1975. Improvements, funded in part through a grant from the Federal Aviation Administration (FAA) consisted of the construction of a 4000' X 75' runway, 20,000 square yard apron, and a partial parallel taxiway. Through a second grant from the FAA, the runway was extended 1,000 feet to the South in 1995 and the remainder of the parallel taxiway was constructed. The original runway and taxiway were overlaid with 3 inches of Hot Mix Asphalt to increase the load carrying capacity required by increased usage of the airport.

The airport is located Northeast of the City of Anywhere and is just South of the Lottawater River. The airport is located near the perimeter of the river's flood plain in a area protected for a 100 year flood. An oxford bow from a previous alignment of the river is located just north of the runway and taxiway. This area experiences high water tables and medium to severe frost damage. The average frost penetration is 32 inches. The general soils in the area are lean clays with pockets of silty sand. Frost damage is isolated to the pockets of silty sand.

2. INSPECTION SCHEDULE

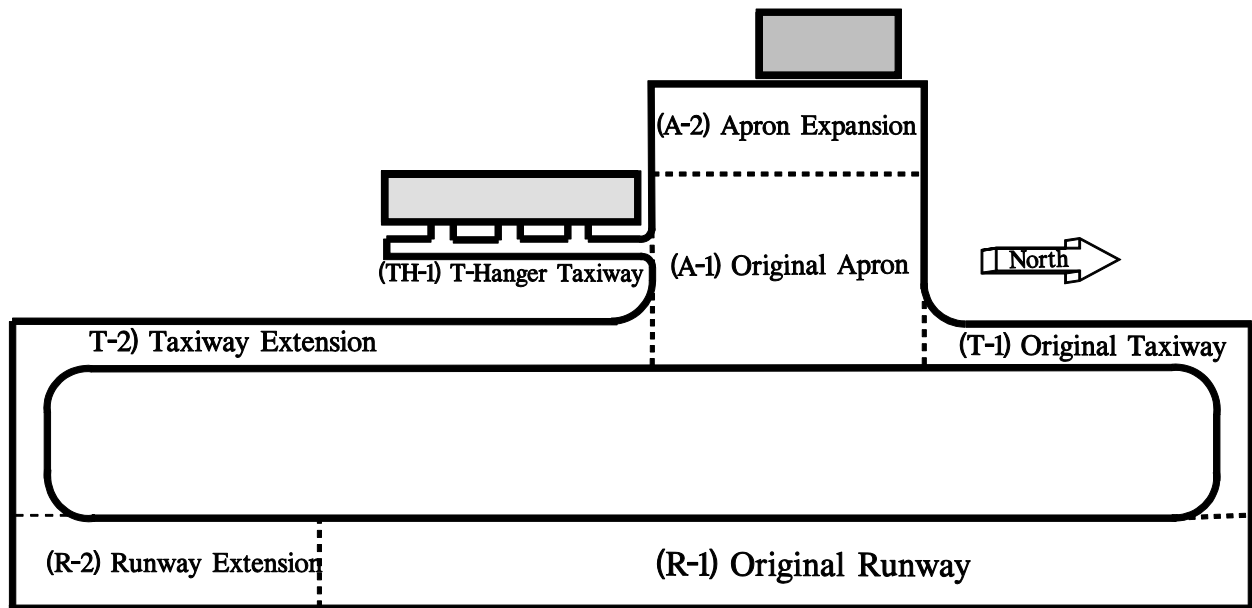
The Anywhere Airport pavement inspections will be completed at the noted frequencies by the Airport Manager, Airport Maintenance Staff, or other qualified personnel as approved by the airport manager. Copies of the completed inspection reports will be kept on file with the airport manager's office.

Should any inspection reveal the need for repair, the inspector document the distress and notify the airport manager who will make arrangements for repair. Routine repairs will be performed as soon as possible or deferred to regular cyclic repair schedules where appropriate. Emergency repairs will be performed within 24 hours with confirmation by the airport manager.

- A. Daily Inspections - All pavements will be inspected daily for FOD and obvious damage to the pavement. These inspections will be drive-by inspections to detect unexpected changes in the pavement condition or any situation creating an unsafe condition
- B. Bi-monthly Inspections - Each element of pavement will be subdivided into 3 sections. Stagger inspection of sections so that each element is fully inspected every 6 months.
- C. 6-Month Inspections - All pavements will be inspected for follow-up on required maintenance items. Obvious distresses, not previously identified, should be noted. The 6-month inspection will be in the spring and fall after adverse seasonal weather conditions have ended.
- D. Annual Inspection - All pavements are to be visually observed for general performance and condition. Review and revise the maintenance program, as necessary, at this time. Pavements that show increase in deterioration should be identified for inclusion in capital improvement plan. Preventive maintenance should be identified and recommended for budgeting. Annual inspections will be performed in the spring to provide support data for City FY budgeting.
- E. 3-year Inspection - All pavements will be inspected and evaluated in accordance with ASTM D 5340, Test Method for Airport Pavement Condition Surveys. A professional consultant will typically perform this inspection; however, qualified City or State personnel may also perform this inspection.

3. PAVEMENT INVENTORY

Anywhere Municipal Airport Pavement Inventory



Pavement Element Information

PAVEMENT ELEMENT:	<u>R-1 (Original Runway - North 4000 feet 75' wide)</u>
Pavement Structure Type:	Rigid With Asphalt Overlay
Pavement Surface Material:	Asphalt
Pavement Structure:	<ol style="list-style-type: none"> 1) 3 inch ACC (Item P-401) (1995) 2) 6 inch PCC (Item P-501) (1975) 3) 4 inch aggregate subbase (Item P-154) 1975 4) 6 inch subgrade preparation (Item P-152) * 95% ASTM D698 Lean clay, PI = 23-28 (1975 previously used as turf rwy)
Drainage Features:	No subsurface drains system - Surface drainage only
Pavement Use:	Heavy usage - 50-65 ops per day, average weight 45 Kips DWG Use has increased dramatically in the past 5 years.
Pavement Strength:	60,000 DWG
Priority:	1 (scale of 1-6, 1 highest)
Miscellaneous:	North end (250') constructed near old river channel, appears to have excessive subsurface moisture.

PAVEMENT ELEMENT:	<u>R-2 (Runway Extension - South 1200 feet 75' wide)</u>
Pavement Structure Type:	Rigid
Pavement Surface Material:	Concrete
Pavement Structure:	1) 7 inch PCC (Item P-501) (1995) 2) 6 inch aggregate subbase (Item P-154) (1995) 3) 6 inch subgrade preparation (Item P-152) * 95% ASTM D698 Lean clay, PI = 23-28 (1995 previously used as turf rwy)
Drainage Features:	No subsurface drains system - Surface drainage only
Pavement Use:	Heavy usage - 50-65 ops per day, average weight 45 Kips DWG Use has increased dramatically in the past 5 years.
Pavement Strength:	60,000 DWG
Priority:	1 (scale of 1-6, 1 highest)
Miscellaneous:	High end of runway - No obvious problems

PAVEMENT ELEMENT:	<u>T-1 (Original Taxiway - North 1350 feet 35' wide)</u>
Pavement Structure Type:	Rigid With Asphalt Overlay
Pavement Surface Material:	Asphalt
Pavement Structure:	1) 3 inch ACC (Item P-401) (1995) 2) 6 inch PCC (Item P-501) (1975) 3) 4 inch aggregate subbase (Item P-154) (1975) 4) 6 inch subgrade preparation (Item P-152) * 95% ASTM D698 Lean clay, PI = 23-28 (1975 previously used as turf rwy)
Drainage Features:	No subsurface drains system - Surface drainage only
Pavement Use:	low usage - 15-20 ops per day, average weight 45 Kips DWG The majority of traffic lands to the south and uses T-2 for apron access.
Pavement Strength:	60,000 DWG
Priority:	2 (scale of 1-6, 1 highest)
Miscellaneous:	North end (250') constructed near old river channel, appears to have excessive subsurface moisture.

Further division of elements in this example such as connecting taxiways will most likely be required. Final division of airfield pavement will depend upon several factor as listed in the narrative regarding pavement inventory.

4. DISTRESS IDENTIFICATION INDEX

For guidance on distress identification see:

- ASTM D 5340, Test Method for Airport Pavement Condition Surveys
- FAA Advisory Circular 150/5380-6, Guidelines and Procedures for Maintenance of Airport Pavements
- Strategic Highway Research Program SHRP-P-338, SHRP-H-349 & SHRP-H-348
- Asphalt Institute, Manual Series No. 16, Asphalt in Pavement Maintenance

Copies of these references are available from the City Engineer or the Airport Manager.

5 . INSPECTION REPORT

PAVEMENT INSPECTION REPORT

Pavement Element R-1

Inspected By: Joe Maintenance

Date Inspected: Dec. XX, 19XX

Inspection Record		Maintenance Action		
Location	Distress Description/Dimensions/Severity/Features Recommended Action	Description of Repair	Date Performed	Cost
North 50' West Edge	Numerous reflective cracks. Concrete panels beneath ACC overlay appear to have shattered. 7 or 8 panels affected. Seal cracks in ACC a.s.a. weather permits, seek funds to repair concrete slabs summer 19XX.	Cracks in ACC overlay sealed with AXZ sealant (Concrete repair delayed till Sept. 19XX)	Mar. X, 19XX	\$1.25/Lf total \$375
Overall in Element	Reflective cracking in ACC overlay. 5 full length longitudinal and 320 full width transverse. Seal cracks in ACC a.s.a. weather permits.	Cracks in ACC overlay sealed with AXZ sealant Total of 44,000 LF	Mar. X, 19XX	\$1.25/Lf Total \$55,000
1200 feet S of N end West edge	Ponding along edge of runway pavement. Appears to be due to excessive vegetation along west edge. Area approximately 300' long. Remove vegetation by grading area to drain. Wait till Spring for seeding.	Area bladed to remove high ground and permit drainage. Area seeded as required.	Mar. X, 19XX	Airport Forces \$1,200
South end	Snow plow damage at end of ACC overlay. Remove FOD and loose material. No repairs necessary at this time. Advise equipment operators of potential problems.			

6. ECONOMIC ANALYSIS

A life cycle cost analysis will be used to determine the best use of airport funds. The analysis shall consider the effects of no maintenance versus the recommended maintenance for a give element of pavement. The analysis shall also consider the overall condition of the airport and each element of pavement requiring funds. In addition to the life cycle cost analysis, priority for funding shall be given to the airfield pavement in the following order.

1. R-1 and R-2
2. T-1
3. A-1
4. T-2
5. A-2
6. TH-1

7. PROGRAM FUNDING AND PROGRAMMING

The airport is funded by user fees and taxes collected by the City of Anywhere. Anticipated funds available for maintenance each year are limited. Previous funding has been on the order of \$XXX per year. This amount is not sufficient to fund the maintenance requirements and additional funds must be procured from the City of Anywhere until additional revenue can be generated by the airport. Expansion of the airport property in 19XX, should provide \$XXX for airport operations. This amount will support the current maintenance needs including programmed preventive maintenance items.

With joint cooperation from the City Maintenance Department, the airport seals cracks in the asphalt surfaces each fall. A protective surface treatment is anticipated for 19XX and will require additional funds. Rehabilitation of the joint sealant in the Portland Cement Concrete surfaces is anticipated in the year 20XX. Funding for this work will be generated from the 19XX, 19XX and 20XX budget years. The following table identifies anticipated maintenance cost for the next 5 years

Anticipated Pavement Maintenance Cost			
Year/Maintenance item	Cost	Anticipated repair date	Notes
19XX			
Crack Sealing ACC	\$XX	Fall	Assistance by City crews
Grading RWY Edge	\$XX	Mar. 19XX	Airport Forces
PCC Joint Rehab	\$XX	20XX	Program for 20XX
19XX			
Crack Sealing ACC	\$XX	Fall	Assistance by City crews
PCC Joint Rehab.	\$XX	20XX	Program for 20XX
20XX			
PCC Joint Rehab	\$XX	June, 20XX	Multi-year funds
20XX			