

# Outdoor Paving (Parking Area)

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Ann M. Johnson (2000) gives the following guidelines. To keep outdoor pavement in good shape for a long time, we have to focus on preserving the surface while it is still in good condition. This is known as preventive maintenance, and it is basically a strategy of using different surface treatments to stop the road from falling apart and to reduce the need for big repairs later. It is a very smart move because being proactive is actually six to ten times more cost effective than doing nothing until the road needs to be totally replaced. The most important goal is to keep water and other stuff from getting into the pavement structure. Moisture is a huge problem because it weakens the layers underneath the asphalt and is a main cause of the road deteriorating. We also have to deal with the weather and sun making the asphalt brittle, which is called oxidation.

## Maintenance Program

For a maintenance program to work, we need to follow the rule of doing the right repair on the right road at the right time. This means we should not wait for a total failure to happen because that is not cost effective. Instead, we should use a system like a pavement management system to track the condition of the road and pick the best treatments based on things like the type of cracks, the amount of traffic, and the environment. Practical maintenance includes a few main steps like selecting the right roadway, figuring out what is causing the problems, and then applying the correct treatment.

One of the most practical things we can do is crack treatment. Sealing cracks when they are still narrow keeps water out and is very effective at making the pavement last longer. We can use methods like clean and seal, where we blow out debris with compressed air and then fill the crack with a sealant. Another practical category is surface treatments. For example, a seal coat is a layer of asphalt followed by small rocks that waterproofs the surface and helps the road shed water so it does not soak into the base. If a road gets a bad pothole, we have to use patching to fix it quickly for safety. Permanent patches are best because they involve cutting a neat rectangle around the hole and filling it with fresh asphalt that is compacted tightly to stay in place.

## Maintenance Schedule

The following table shows a schedule of common tasks and how often they generally need to be done based on their average life span.

Maintenance Task	Interval in Years
Clean and seal cracks	3
Saw and seal cracks	7 to 10
Rout and seal cracks	3
Crack filling	2 to 3
Full depth crack repair	5
Fog seal surface treatment	1 to 2
Seal coat surface treatment	3 to 6
Double chip seal	7 to 10
Slurry seal	3 to 5
Microsurfacing	5 to 8
Thin hot mix overlay	5 to 8
Cold mix asphalt pothole patching	1
Spray injection patching	1 to 3
Hot mix asphalt patching	3 to 6
Patching with slurry or microsurfacing	1 to 3

These intervals help us plan when to go back and check on the pavement to make sure the treatments are still working. By staying on top of this schedule, we can extend the life of the pavement and save a lot of money. It is also important to remember that these treatments should be based on time rather than just how many cars drive on the road because weather damage happens consistently every year. Always make sure the road is dry and clean before starting any of these jobs so the materials stick properly.

## **References**

Ann M. Johnson, P. E. (2000). *I3ES'I I'RAC'ICES HANDBOOK ON ASPHALT PAVEMENT MAINTENANCE*. <https://pages.mtu.edu/~balkire/CE5403/AsphaltPaveMaint.pdf>