



## Diocese of Cleveland Facilities Services Corporation

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### **PAVEMENT MAINTENANCE and SERVICING**

The climate in Northeast Ohio can be particularly damaging to asphalt pavements due to the significant temperature changes between winter and summer (freeze/thaw cycle). Environmental factors accelerate deterioration by degrading the asphalt, making it susceptible to cracking, weathering away of the asphalt binder, and potholes. Maintenance for asphalt pavements varies depending upon the parish's budget and preferences. However, a typical schedule for asphalt pavement maintenance for the Northeast Ohio area should include the following:

#### **PAVEMENT MAINTENANCE** (Annually)

1. Visual pavement evaluations performed each spring or fall.
2. Documentation of deterioration (a plan).
3. Typical preventive treatments include:
  - a. Cleaning
  - b. Crack Sealing

#### **PROTECTIVE MAINTENANCE** (Three-to-Five-Years)

Budgeting for a protective treatment (approximate intervals of three to five years) will help to protect against oxidation and spills while making the asphalt visibly attractive. This protective application will prolong the life of pavement indefinitely at a fraction of the replacement cost.

1. Typical protective treatments include:
  - a. Chip Seals
  - b. Seal Coating
  - c. Fog Seals
  - d. Crack Sealing

#### **CORRECTIVE MAINTENANCE** (Five to Ten Years)

Corrective maintenance may be necessary, as dictated by the pavement condition, to correct rutting, cracking and structurally failed areas.

1. Typical corrective maintenance treatments include:
  - a. Full Depth Patching
  - b. Milling and Patching
  - c. Overlays (at least one major corrective overlay can be expected in 20-year life cycle.)

#### **EMERGENCY MAINTENANCE** (As Needed to Manage Safety/Risk)

Emergency maintenance is performed to temporarily correct the failed areas to make safe a severe hazard.

1. Typical emergency maintenance treatments include:
  - a. Pothole Patching and Repair
    - Cold-Mix Asphalt
    - Hot- Mix Asphalt

If implemented correctly, a preventive maintenance program should extend the life of asphalt pavements, improve its overall serviceability and reduce general maintenance costs. If maintenance isn't provided, asphalt pavements can be expected to deteriorate prematurely.

## **Preventive Treatments**

### **Crack Treatments**

Cracks are usually caused by either a failure of the base, water damage or excessive weight on the pavement surface. Installing a hot pour mix to fill them can easily repair cracks. The crack sealer provides a waterproof bond and is rubberized to give support while the pavement expands and contracts in changing temperatures. Cracks that go unsealed will continue to allow water into the base structure, causing severe damage to the pavement as the base deteriorates. A pavement crack inspection and correction should be done annually.

### **Surface Treatments**

To maintain its visible impact and protect against the other effects of weather, you should have a protective surface coating applied to your pavement every few years in accordance with weather, and traffic conditions. Many different types of seal coats are available. Each one works well for some applications and less well for others. Using the lowest priced seal coat is not necessarily the best investment for your parking lot or your long-term budget. Seal coats do not stop cracks. They do not add strength to an asphalt pavement surface. They do reduce the impacts of sunlight on the parking lot. They help the pavement hold onto its oils and aggregate. The parking lot should be swept clean of any dirt. Oil spots must be heated and scraped clean.

### **Pothole Patching and Repair**

The following technique applies for the majority of the problems described in this section including potholes. The only difference for potholes is that instead of cutting the edges, you need them cleaned up vertically to remove all loose material from the edge. If your parking lot's problems are of sufficient magnitude and appearance is valued, you should consider having a new pavement surface lay over the repaired pavement areas. Drainage performance will be superior on a new, smooth overlay.

**When the areas needing repair** total less than 15% of the overall parking lot, spot repair should be your approach. If the entire parking lot suffers from structural design flaws or poor installation, you may need to consider replacement of the base and pavement surface. If more than 15% of the pavement area requires repair, you may need to consider replacement of the pavement surface combined with spot repair of the base.

**For maximum longevity, the edges** of the deteriorated pavement areas should be saw cut to ensure the crack left by the patch minimizes water penetration. Once the patch perimeter has been marked and cut, all loose asphalt material and debris should be removed down to a solid base. All

dust should be swept out and blown out of the hole. Tack oil should be applied and asphaltic material installed in lifts to ensure proper compaction (slightly convex to avoid ponding). A 4 inch band of tack material should be applied around the edge of the patch to ensure against moisture intrusion. A roller or compaction plate is used to compact to the proper density.

**All paving projects vary in scope, it is highly recommended to consult with a pre-qualified paving technician to determine site specific needs. Several vendors have been pre-qualified by DCFS, and can be furnished upon request.**