

# **MAINTENANCE GUIDEBOOK III - PAVEMENT MAINTENANCE**

## **CHAPTER ONE - GENERAL**

### **SECTION A INTRODUCTION**

The purpose of this Guidebook is to assist public housing agencies and Indian housing authorities (jointly referred to as HAs) in keeping all paved areas of their developments in good condition in order to prevent or delay major repair expenses. References to paved areas or pavements include, but are not necessarily limited to, streets, alleys, drives, parking areas, walks, drying yards, recreation and play areas, and other paved surfaces which HAs maintain.

Pavement maintenance includes, but is not limited to, keeping the paved surfaces clean, attractive in appearance, and free from surface irregularities such as small cracks and joint defects, which normally lead to greater deterioration. Efficient and timely maintenance repairs are economical and will do much to keep the paved surfaces attractive and in a safe condition.

Water and frost are the most frequent causes of serious pavement failure. Once the pavement surface has cracked or otherwise failed, permitting the entry of water into the sub-base, deterioration is greatly accelerated. Neglecting the repair of such defects invites progressive damage resulting in expensive repairs at a later date. HAs, therefore, should take preventive measures to repair the defects promptly in order to minimize future maintenance expenses. Shoddy maintenance is almost as bad as none at all, and will prove costly in the long run.

The preventive maintenance and related repair methods discussed in this Guidebook include sealing and repairing pavement damage and correcting drainage failures. These activities can be carried out by an HA's maintenance personnel. Extraordinary repairs of large paved areas, or complex drainage problems requiring specially trained crews and heavy equipment, should be done by contract or, where possible, by arrangements with the local governmental (city, county, or state) maintenance departments.

### **SECTION B GENERAL STANDARDS AND REFERENCES**

The general standards and references which relate to the maintenance of paved areas include an assortment of national and local standards which may be used for specific material requirements as well as detailed work methods and general equipment requirements. National standards include:

- ASTM - American Society of Testing and Materials, 1916 Race Street, Philadelphia, PA 19103;
- ACI - American Concrete Institute, PO Box 19150, Detroit, MI 48219;
- Asphalt Institute Publications - Research Park Drive, PO Box 14052, Lexington, KY 40512-4052;

- BOCA - Building Officials and Code Administrators, 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795;
- ANSI - American National Standards Institute, 11 West 42nd Street, New York, New York 10036.

The above references are national in scope. However, it is better to use local references which include state and municipal standards developed for bituminous and concrete pavement construction, ranging from resurfacing to emergency concrete repairs. These local standards will include:

- State Highway Department specifications;
- City, county, or municipal specifications.

In most cases, where actual mix designs or substantial quantities of materials are required (for instance, for large overlays or slurry projects), the appropriate local material specifications should be used, where possible, since the concrete and bituminous material supplier will be familiar with the applicable mix design requirements.

## **SECTION C SAFETY**

Key aspects of ensuring safety during maintenance activities include:

- Protecting pedestrians;
- Maintaining vehicular traffic;
- Avoiding utilities.

### **1. PEDESTRIANS**

Work areas should be adequately marked to keep pedestrians out of areas where maintenance work is done. Special care should be exercised in areas of open excavation or abrupt changes in surfaces to direct pedestrians away from these hazards.

### **2. VEHICLES**

A "Manual of Uniform Traffic Control Devices" (MUTCD) has been published for many years and is the official traffic-control document for practically all jurisdictions for maintaining safe traffic flow within work zones. The manual, which is updated periodically, deals with the signing and marking of construction projects exposed to traffic. This manual should be available in the HA's reference library, and may be ordered from the Superintendent of Documents, US Government Printing Office, Washington, DC 20402.

### **3. UTILITY NOTIFICATIONS**

If a maintenance activity requires excavation in areas where utilities are known or suspected to exist, the local utility companies or the local utility coordinator (such as Miss Utility) should be called before scheduling the work. Telephone and cable TV cables are installed at shallow depths and are easily cut or damaged. Gas and water connections to residences are also sometimes very close to the surface.

### **SECTION D PERMITS**

There may be times when the boundaries of the pavement being maintained are not clearly defined. Most public streets and alleys in and around a development are owned and maintained by the local governing body such as the city, county, or state. Check with the local roadway or highway agency if you have any questions as to the ownership of paved areas for which the HA is responsible.

Sometimes a permit or other approval is required to do certain types of work, but this is rare in maintenance work. Where the pavement to be repaired is located beyond the property line or adjacent to pavement owned by others (state and local highway departments), a permit may be required before work can commence. This permit is designated as a "temporary access permit" and can be acquired within a very short time.

### **SECTION E ENVIRONMENTAL ISSUES**

In planning maintenance for pavement repairs, two key environmental issues must be reviewed and addressed when applicable. These environmental issues are:

- Sediment and erosion control;
- Removal and disposal of potentially hazardous materials.

#### **1. SEDIMENT AND EROSION CONTROL**

When pavement maintenance and repairs require excavation and exposing soils which are subject to erosion, the sediment and erosion should be controlled by silt fences, berms, straw bales, and temporary sediment-control traps or ponds where large disturbed areas are involved. The state or local soil-conservation service provides standard details and specifications for acceptable methods of controlling sediments and erosion. Check with the local soil service or bureau for specific details or other requirements which may apply to the maintenance work.

## **2. HAZARDOUS MATERIALS (HYDROCARBONS AND PETROLEUM PRODUCTS)**

Hydrocarbons and petroleum products, the basic components of bituminous pavement, are classified as hazardous materials. The disposal of asphalt paving materials or soils contaminated with hydrocarbons must be accomplished in a manner which complies with federal and state regulations. These potentially hazardous materials may be encountered while removing or repairing underground tanks.

**END OF CHAPTER ONE**