

Catch Basin Cleaning

Adequate drainage protects highway structures. It also safeguards the lives of people who use highways. On urban roads, curbs and gutters carry water into inlet structures connected with pipes. On some rural roads, inlet structures receive water for flow in culverts. Catch basins are particular types of inlet structures. This article describes their function, and best practices for cleaning them.

Design and Maintenance

Drainage system designers assume that system components will have little if any debris. That is, they assume highway agencies will clean material from all components.

Designers also consider pollution impacts. Drainage systems can discharge large volumes of water into water bodies. The drained water can carry contaminants, also in large amounts. Some devices, such as catch basins, remove contaminants before they pollute receiving waters.

Catch basins have a basin below the outlet pipe. They remove solids best when basins have no retained material. As basins fill with sediment, solids tend to flow into connecting pipes. Ultimately, solids flow into receiving waters. Therefore, cities and towns must periodically clean catch basins.

Catch Basin Cleaning Practices

Special trucks remove solids from catch basins. Modern trucks use high-pressure water to loosen compacted material. They use vacuum hoses to remove solids.

Because these trucks are expensive, many cities and towns use contractors. They charge from \$75 to \$100 per catch basin. Their fees increase for large quantities or compact material. Inspectors should accompany contractors.

Cities and towns should apply the following best practices.

Cleaning Periods and Scheduling. Cities and towns should establish cleaning periods to minimize contaminants reaching receiving waters. Scheduling should also consider that goal.

4. Have maps that show all catch basins.

5. Have a database that describes cleaning periods and schedules.
6. Base periods on recorded amounts of removed material, and the percent of the sump filled. Cities and towns should clean catch basins before basins are half full.
7. Cleaning schedules should reflect when solids are most likely to enter catch basins. Cities and towns that sand streets should schedule cleaning in early spring. They should schedule cleaning in late fall to remove leaves and other debris.

Operations. The following best practices contribute to effective and efficient cleaning operations.

1. If municipal crews clean catch basins, longer shifts, such as four 10-hour days, increase efficiency.
2. If crews or inspectors see evidence of oil or other chemicals, they should stop cleaning. The municipality should test the material. NHDES rules govern hazardous waste removal and disposal.
3. Cleaning crews should also record catch basin, gutter, and road surface conditions.
4. Supervisors should train crews and/or contract inspectors. Training should include record keeping to define cleaning periods and conditions.

DrainMS

The UNH T² Center has developed the Drainage Management System (DrainMS). Its products include multiyear maintenance plans and budgets. With DrainMS, users can apply many best practices described above. Users can also apply many street sweeping best practices described in another article.

DrainMS workshops are scheduled for February 27 in Manchester and March 13 in Portsmouth. Call or email the UNH T² Center to register.