

# Waukesha County DPW

## Highway Operations Sweeping Program



# What We Sweep

- Sweep all Urban Sections of 985 County Highway Lane Miles
- Sweep all Urban Sections of 1069 State Highway Lane Miles
- Sweep approximately 2 times per year.
- Some sections swept more often. Such as:
  - Interstate along median wall
  - Areas that are required to be swept more based on Storm Water Management Permits



# Why We Sweep It



- Keep the dirt and debris out of the catch basins.
- Remove hazards (nails, screws, small pieces of glass, plastic) from roadway surface.
- Sweep Medians to keep dirt and debris from catch basins.

# Regenerative Sweeping

Spray water in advance of and with broom and vacuum to reduce amount of airborne dust.



# Catch Basins

Clean catch basins to prevent debris from clogging storm sewers and detention ponds.

Clean catch basins for routine structure integrity inspections.

Each basin takes approximately  $\frac{1}{2}$  hour to clean.



# How long does it take?

- Goal is to sweep all sections twice per season. Some sections of roadway require more due to high volumes of traffic. (I-94, I-43, Moorland Road, Bluemound Rd.)
- Sweeping speed is approximately 1.5 Miles Per Hour.  
2-3 Sweeper loads per day. On average the sweeper operates 4-5 hours per day.
- Daily, one hour of operator maintenance cleaning filter screens, cleaning dump box, greasing moving parts, couplers and wheels.

# What Works for Highway Operations

- Using a follow truck with arrow boards and lights to direct and watch traffic.
- Lead patrol truck to pick up big trash items (boxes, furniture, car parts coolers, etc.).
- Lead patrol truck with front mounted broom and water spray to Pre-Sweep edge line debris to curb so that one pass completes the sweeping.

# What Doesn't Work

- Not pre-wetting debris. (Creates more airborne dust.)
- Sweeping in heavier rainfall events.



# Cost of Our Equipment

- 2007 Sweeper Cost \$204,000 with a life cycle of 10 years.
- Vacuum costs \$29,500 in 2009 to maintain.
- Truck chassis cost \$4,000 in 2009 to maintain.



# Cost of Sweeping

The cost per hour of operation for parts and labor on the vacuum unit is \$29.65.

The cost of operation for parts and labor on the truck chassis is 47 cents per mile.

This does not include the cost of the operator replacing the brooms.



# Most Expensive Replacement Part Costs

- \$525 to replace center broom. – 8-9 times per season.
- \$180 to replace both gutter brooms. – 9-10 times per season.
- \$1100 to replace catch basin suction hose. – Once per season.
- \*Included in previous cost info.



# Disposal Costs

\$55 per ton to  
landfill.

\$8 per load  
environmental fee.

Last year we land  
filled 663 tons at a  
cost of \$37,000.

