

**City of Lakewood NPDES Phase II Permit  
Stormwater Monitoring  
March 2011**

**Question #1 Monitoring Plan**

*Question #1: Are our inspections of local businesses effective in improving the implementation of source control BMP's at targeted businesses?*

Currently the targeted business sector that question #1 pertains to is the auto industry, vehicle detail shops, auto repair shops, and auto sales lots. The media that would be addressed could be any one of the ones stated in the *Department of Ecology's (DOE) Monitoring and Guidance Manual* those being; stormwater, sediment and receiving waters. The determining factor, as to what media will be addressed, is the location of the business and surrounding infrastructure. Within the City of Lakewood, most businesses infiltrate on site, drain into privately owned catch basins or infiltrate in bio-swales, which would make sediment (solids) and stormwater in privately owned catch basins and bio-swales our primary media.

The specific parameters to be measured in the sediment and stormwater would be chemical, specifically looking for high concentrations of metals and phosphates. If there were any indication that there was an accidental spill from business operational practices, illicit discharge, or vehicle washing was occurring near unprotected catch basins, the City of Lakewood would take samples of the sediment and/or stormwater within the privately owned catch basins and/or bio-swales and pursue further action with the property owner, to include clean-up and additional BMP education if needed.

The hypothesis is:

*During inspections, focusing on educating owners and operators of targeted businesses on using source control BMP's will help improve water quality.*

If it were apparent that inspections are increasing business owner's and operator's awareness and increasing the implementation of source control BMP's, the City of Lakewood would continue as is with inspections of targeted business sectors and continue with educating owners/operators.

However, if it is determined that water quality does not show improvement with education and awareness of source control BMP's the City of Lakewood would evaluate its current inspection and education methods.

Why this issue is significant to our jurisdiction:

Educating business owners and operators is an opportunity to improve water quality. Lakewood businesses include people from many diverse cultures, and people with

different educational backgrounds and knowledge. Many of these people have different understandings of what are and are not acceptable BMPs. The City of Lakewood has written BMP fact sheets pertaining to good cleaning practices for the automotive and restaurant industries in several different languages to meet the needs of our city's diversity. These fact sheets are handed out to business owners during inspections. By doing regular inspections, meeting these owner/operators face to face has been pertinent in our attempt to improve our city's water quality. Our inspection logs consistently show that with each additional inspection, there is proof of positive change in behavior. Sharing our results with other MS4's could be significant, as Lakewood is not the only city with diversity and employers with the lack of knowledge of acceptable BMP's.

## **Question #2 Monitoring Plan**

*Question #2: Does periodic stormwater system cleaning and street sweeping produce a measurable improvement in the quality of stormwater discharges?*

The media that question #2 addresses could be any of the ones stated in the *D.O.E.'s Monitoring and Guidance Manual*, those being; stormwater, sediment and receiving waters. The media addressed would be dependant on the location of the structures cleaned and roads swept.

The specific parameters to be measured in the sediment, stormwater and receiving waters would be physical, chemical and biological. Structures and streets cleaned near outfalls to streams, creeks, ponds and other bodies of water could be tested for all three media, physical, chemical and biological. The focus could be on turbidity, heavy metals, phosphates, or fecal coliform. Structures and streets cleaned near infiltration systems could be tested for physical and chemical media, mostly focusing on sediment, turbidity, heavy metals and phosphates.

The hypothesis is:

*Periodic stormwater system cleaning and street sweeping will produce a measurable improvement in the quality of stormwater discharges.*

If it were apparent that periodic system cleaning and street sweeping produces measurable improvement in the quality of stormwater discharges, then the City of Lakewood would continue with current practices.

However, if it is determined that water quality does not show improvement with periodic system cleaning and street sweeping, the City of Lakewood would evaluate current practices to determine if more frequency of both BMP's is recommended; or if other measures should be taken to show improvement.

Why this issue is significant to our jurisdiction:

Periodic stormwater system cleaning and street sweeping is significant to our jurisdiction for many reasons, not just to produce measurable improvement in the quality of stormwater discharges, but also to keep our streets safe and passable. In addition to keeping our stormwater system in good working order, keeping it clean allows us to more easily inspect the condition of the system.

Sharing monitoring results with other jurisdictions could be useful in determining how often system cleaning and street sweeping should be done. Other jurisdictions may have different needs and/or ideas on how often this should be done. Comparing monitoring results could be helpful in determining frequency of stormwater system cleaning and street sweeping.