

Evolving Solutions for Pollution Prevention within Municipal Operations

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Why focus on operations?



Excerpts from the North Carolina DEQ NPDES MS4 Phase I Permit:

- **Inventory:** Maintain an inventory of municipal facilities and operations owned and operated by the permittee ... have significant potential for generating polluted stormwater runoff.
- **Inspection Program:** Implement an inspection and maintenance program for facilities and operations owned and operated by the permittee... aimed at reducing pollutants generated from municipal facilities and operations.
- **Spill Response:** Maintain spill response procedures for municipal facilities and operations...

**Municipal operations also includes
municipal contractors and subcontractors**

Why focus on operations?

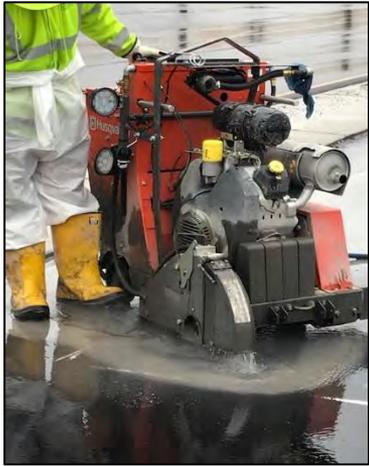
- Street cutting
- Water main breaks
- Street sweeping
- Leaky trucks
- Concrete waste water
- Geotech drilling
- Power washing
- Parking lot sealcoating
- Erosion control on construction sites less than 1 acre
- Landscaping Practices
- The list goes on and on ...



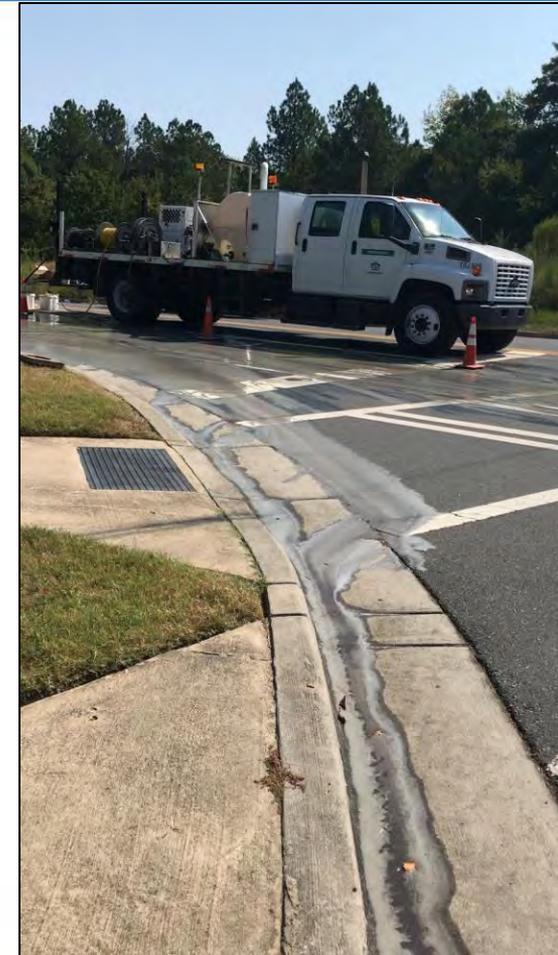
**Provide an
example for
the public**



Street Cutting - Challenge



- ▶ 2018 OSHA regulations require all cuts to be wet. This increased the amount of wastewater and highlighted a long standing concern.
- ▶ Today, there are 2 loop line crews doing 8-10 cuts per day across the city. Each cut produces approximately 50 gallons of wastewater. ...



Street Cutting - Solution

► Collaboration

- Meetings with field crews and leadership

► Research

- Sampling?
- Do other municipalities have BMPs specific to this operation?

► Experiment

- Protect storm drains?
- Vacu-booms? Shop vacs? Sweeping?
- Flocculants?

► Solution

- Plan to purchase 2 vacuum trailers in FY20
- Training



Water Main Breaks - Challenge

- Slurry from Excavation pits
- Clean up after a break is controlled
- Limited resources are focused on reducing sewage overflows

LandUseMatters
rgbargoil 21 hours ago

What's going on with Little Sugar Creek At Freedom Park? @MeckParkRec



Water Main Breaks - Solution

► Collaboration

- Meetings with field crews and leadership

► Research

- Is it a problem? Sampling?
- Do other municipalities have BMPs specific to this operation?

► Experiment

- Protect storm drains?
- Scrape and shovel before street flush?

► Solution?

- On-call jet-vac trucks?
- Hold contractors that cause the break responsible for clean up?



Street Sweeping

► Challenge

- Drivers were discharging excessive fluid from their tank directly into storm drains.

► Steps to Solutions:

1) Collaboration

- Met with a supervisor and representative from the truck manufacturer.

2) Research

- Industry standards?
- Other municipalities?

3) Solution

- Drivers are required to return to the yard to decanter
- Training



Leaky Contractor Trucks

► Challenge

- Contractor trucks continually leaking oil at construction sites.

► Steps to Solutions:

1) Collaboration

- Meetings with construction inspectors and leadership.

2) Solutions

- Send trucks off site.
- Notice of Violation to the subcontractor and contractor.
- Inspection of trucking facility.
- Contract requirement for spill response materials on all trucks.
- Training



Concrete Wastewater

➤ Challenge

- Contractors washing concrete equipment in the Right of Way.

➤ Steps to Solutions:

1) Collaboration

- Met w construction staff and supervisors.

2) Solutions

➤ Training

- When is it an illicit discharge?
 - Examples of proper concrete washout containment.
- Specific contract requirement



Geotech Drilling

► Challenge

- Discharge of water and bentonite used during drilling.

► Steps to Solutions:

1) Collaboration

- Meet with Project Manager and contractors

2) Research

- Industry standards

3) Solutions

- Notice of Violations
- Experimenting with containment, recycling and silt bags.
- Training



Power Washing

Challenges

- Waste water from power washing municipal facilities.
- Detergents, graffiti removal, before spin casting of pipes.

Steps to Solutions:

1) Collaboration

- Meet with staff involved.
- Research industry standards and best practices, products used in graffiti removal.

2) Solutions

- Establish best practice guidance document.
- Held workshop for Power Washers.
- Developed template contract language.
- Training



Parking lot sealcoating

► Challenge

- Multiple studies show PAHs (Polycyclic Aromatic Hydrocarbons) from parking lots sealed with coal tar are harmful to aquatic life.

► Steps to Solutions:

1) Guidance

- Recommend facility managers choose an asphalt-based sealant.

2) Research and Collaboration

- Extensive research and local monitoring study.

3) Solutions

- Support for local town to ban coal tar sealants.
- Education for leadership
- Plans to propose a city-wide ban of sealants with PAHs above 0.1%.



Guidance, Documentation, Training and Evaluation - Challenge



Guidance and Documentation

- Good for audit and reference
- Organization?

Training

- Every practice needs some kind of continual training - resource intensive!
- Field operation BMP training currently being provided as part of annual facility Storm Water Pollution Prevention training but that doesn't reach everyone.

Evaluation

- Resource intensive

The collage displays six Stormwater Protection Practices documents from the City of Charlotte:

- Central Business District Operations:** Objective: Prevent negative impacts to stormwater from Central Business District cleaning and maintenance activities. Pollutants of Concern: Sediment, Trash, Debris, Heavy Metals.
- CATS Transit Amenities:** Objective: Prevent negative impacts to stormwater from CATS transit amenities cleaning and maintenance activities.
- Facility Maintenance:** Objective: Prevent negative impacts to stormwater from municipal facility maintenance activities. Pollutants of Concern: Sediment.
- Construction Roads, Sidewalks and Buildings:** Objective: Prevent negative impacts to stormwater from construction of municipal roads, sidewalks and buildings. Pollutants of Concern: Sediment, Nutrients, Toxics, Oil & Grease, pH (Concrete), Trash. Responsible Key Business Units: Engineering & Property Management.
- Street Maintenance:** Objective: Prevent negative impacts to stormwater from street maintenance activities. Pollutants of Concern: Sediment, Petroleum products, Toxics, pH (concrete), Salt/corrosive. Responsible Key Business Units: Charlotte Department of Transportation Engineering & Property Management.
- Street Resurfacing, Curb & Sidewalk Repair, Asphalt Maintenance & Repair, and Winter Preparedness Programs:** Objective: Prevent negative impacts to stormwater from street maintenance activities. Pollutants of Concern: Sediment, Petroleum products, Toxics, pH (concrete), Salt/corrosive. Responsible Key Business Units: Charlotte Department of Transportation Engineering & Property Management.

Closing Remarks and Questions

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