



# Dundalk Marine Terminal Remediation Update Turner Station Conservation Team

**Honeywell**

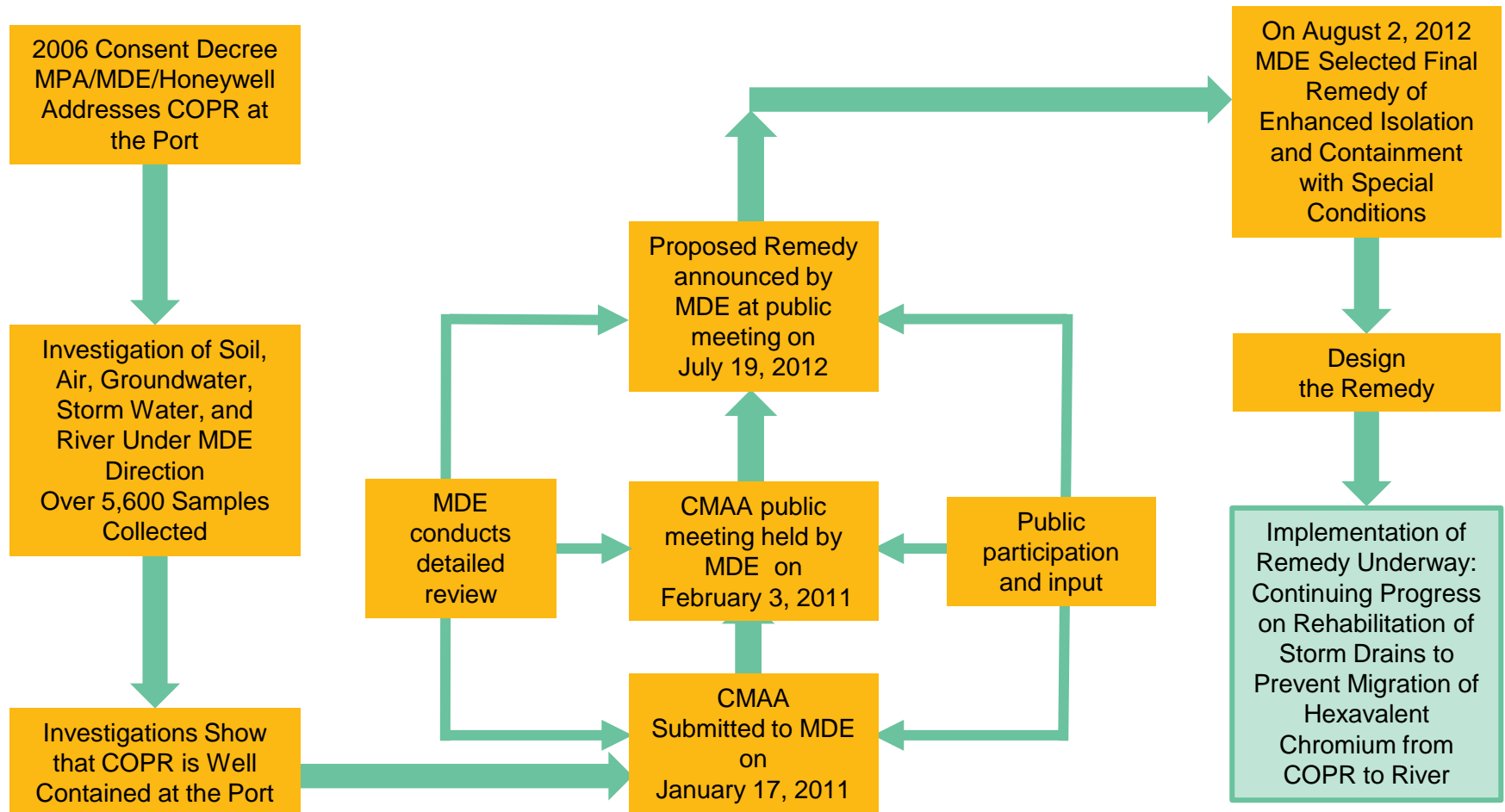
October 27, 2014



# Progress Update

- Background/Overview
- MDE Remedy – July 2012
- Progress to date
  - Storm Drain Rehabilitation
  - Surface Cover Maintenance
  - Construction Projects
- MDE Reports
- Next Steps and Ongoing Work

# Background/Overview



***Remedy protects health and environment***

## MDE Remedy – Enhanced Isolation and Containment July 2012

- Repair/reline storm drains located in COPR to mitigate impacts to storm water
- Install vaults to monitor storm water; ongoing inspection and repair
- Implement Performance Management program
  - Maintain containment
  - Monitor effectiveness
  - Routine reporting
- Maintain data on inspections and maintenance in electronic database
- Upgrade monitoring well network



***Remedy prevents storm water contamination;  
only significant movement of chromium is to storm drains***

# Summary of Progress

| Years     | Activity  | Progress  |
|-----------|---|---|
| 2008-2014 | Storm Drains Rehabilitated (13 <sup>th</sup> and 13.5 <sup>th</sup> Streets complete; 14 <sup>th</sup> and 15 <sup>th</sup> Streets assessment and rehabilitation underway) | 2.3 miles                                       |
| 2008-2014 | Inlets Relined  | 81<br>[approx. 60% complete]                    |
| 2008-2014 | Manholes Relined  | 37<br>[approx. 60% complete]                    |
| 2008-2014 | Tidal Exclusion Vaults Installed (12 <sup>th</sup> , 12.5 <sup>th</sup> , 13 <sup>th</sup> , 13.5 <sup>th</sup> Streets)  | 4<br>[100 % Complete]                           |
| 2005-2014 | Surface Cover Areas Paved   | 32 acres paved                                  |
| 2008-2014 | Crack Repairs Sealed  | 81,000 linear feet                              |
| 1995-2014 | Storm Water Treated   | 369 million gallons                             |
| 2009-2014 | 13 <sup>th</sup> Street Pilot Program – relining preventing infiltration of impacted groundwater into storm drains  | Demonstrates effectiveness of relining          |
| 2006-2014 | Air monitoring: no detected elevated chromium levels at site perimeter  | Hexavalent chromium from COPR not impacting air |

***Storm drains relined, water treated, surface cover maintained***

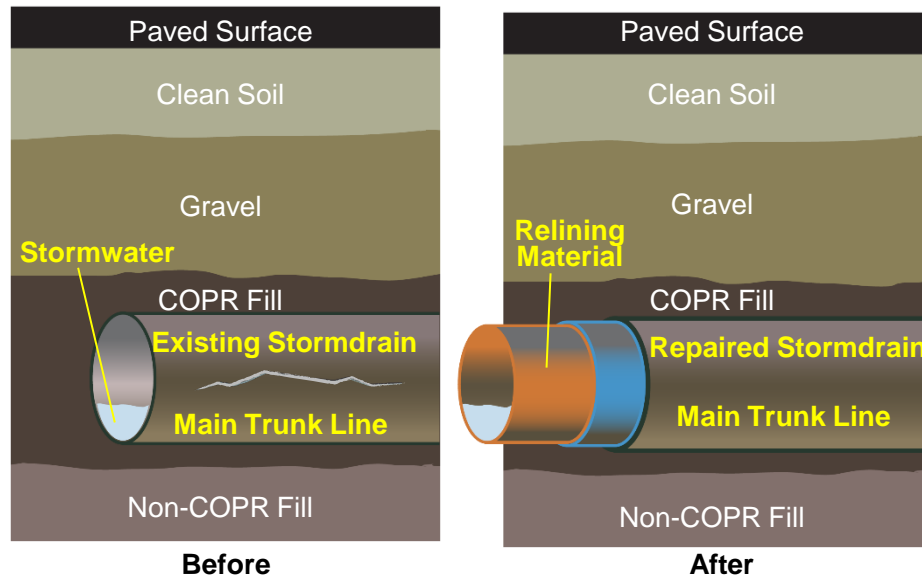




## Storm Drain Rehabilitation

More than **two miles** of storm drains relined at 13<sup>th</sup> and 13.5<sup>th</sup> Streets

Storm drain assessment and rehabilitation **on-going** at 14<sup>th</sup> and 15<sup>th</sup> Streets including inlets and manholes



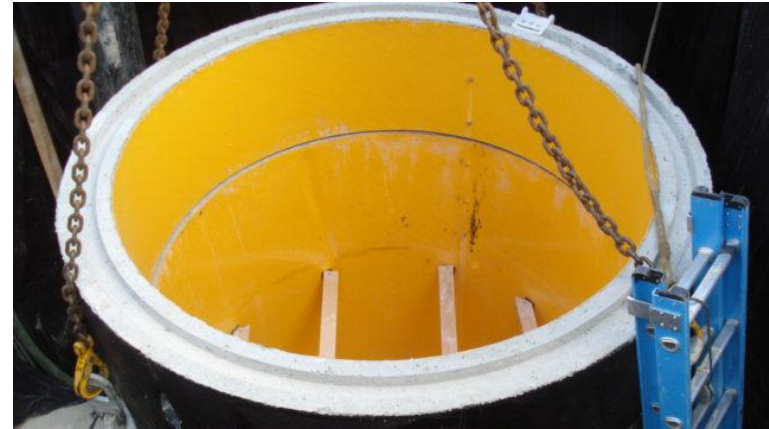
***Relining technology demonstrates effectiveness of remedy***



# Storm Drain Rehabilitation

**81**

*Inlets  
Relined or  
Replaced*



**Example of manhole installation**

**37**

*Manholes  
Relined or  
Replaced*



***Extensive rehabilitation prevents contamination of storm water***



## Surface Cover Maintenance

Asphalt surface cover being placed at Area 1300

- 32 acres of surface paved since 2005
- 81,000 linear feet of asphalt repairs since 2005

Isolates COPR beneath ground surface and mitigates infiltration of water.



***Surface maintenance critical component of remedy***

# Construction Projects



Permanent 20,000 gallon tank installed to replace temporary storage

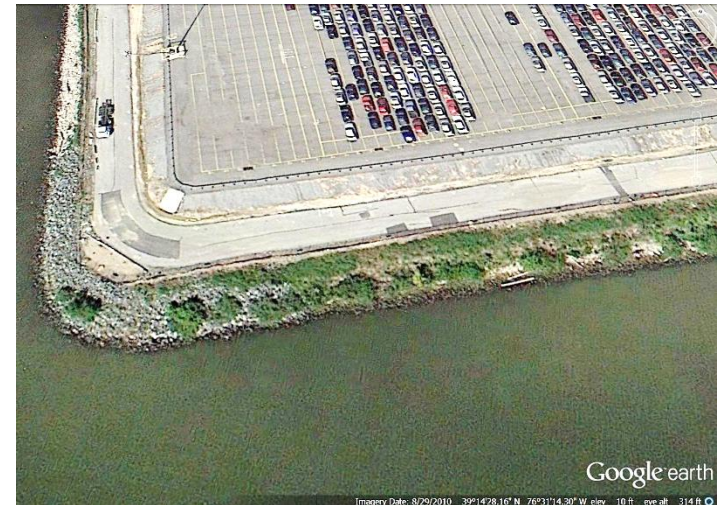


Construction of decontamination area to efficiently collect and treat truck wash

***Additional steps taken to store storm water and ensure health and safety***

## Next Steps

- Storm Drain rehabilitation
  - ◆ 2014-2015: 14<sup>th</sup> and 15<sup>th</sup> Streets
  - ◆ 2016 and beyond: 12<sup>th</sup> and 12.5<sup>th</sup> Streets
- Draft (NPDES) Permit
  - ◆ Renewed every five years
- Area 1501/1602 (southeast corner of DMT) investigation
- Groundwater Monitoring Upgrades
- 2015 Large Area Paving Repair



Area 1501/1602



Large Area Paving

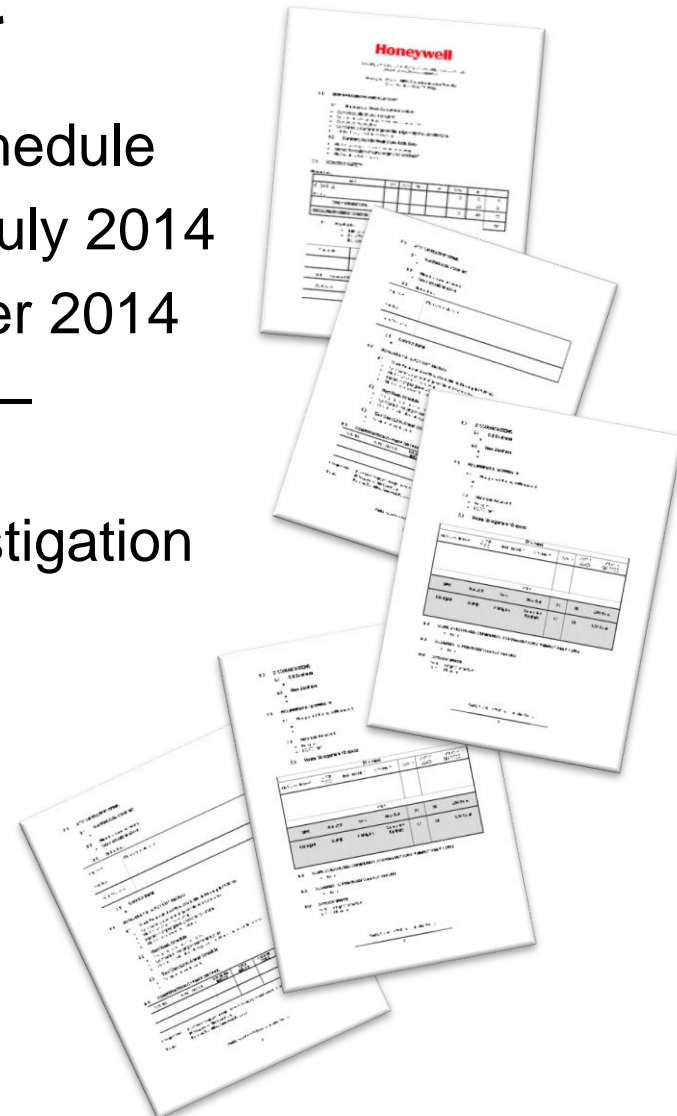
***Progress continues; remediation on schedule***



| 2014   | 2015   | 2016                            | 2017           | 2018 |
|--|--|---------------------------------|----------------|------|
| 15 <sup>th</sup> Street Rehab                            |  |                                 |                |      |
| Inspection   | 14 <sup>th</sup> Street Rehab  |                                 |                |      |
| 1501/1602 Repairs and Monitoring                         |  |                                 |                |      |
|  | Inspection & Design  | 12 <sup>th</sup> Street Rehab   |                |      |
|  | Inspection & Design  | 12.5 <sup>th</sup> Street Rehab | Sentinel Wells |      |
|  | Submit and Implement PMP Plan(s) (GW, SW, DW, & inclinometer monitoring) |                                 |                |      |
| Surface Cover Inspection & Maintenance & WWTP Operations |  |                                 |                |      |
|  |  |                                 |                |      |

## MDE Oversight

- Quarterly Storm Drain Rehabilitation Schedule
- 2013 Surface Cover Repairs to Date – July 2014
- 2014 Surface Cover Inspection – October 2014
- First Half 2014 Groundwater Monitoring – August 2014
- Supplemental Data Report, Heave Investigation and Minimization Study – April 2014
- 13.5th Street Construction Completion – February 2014
- Weekly Construction Summary Reports



***Comprehensive reporting and data on file with MDE***