

# Baltimore City Department of Public Works



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SALTIMORE CITY

**DPW**

DEPARTMENT OF PUBLIC WORKS

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# The Real World: Asset Management of Stormwater – Baltimore City’s Perspective



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**City of Baltimore**

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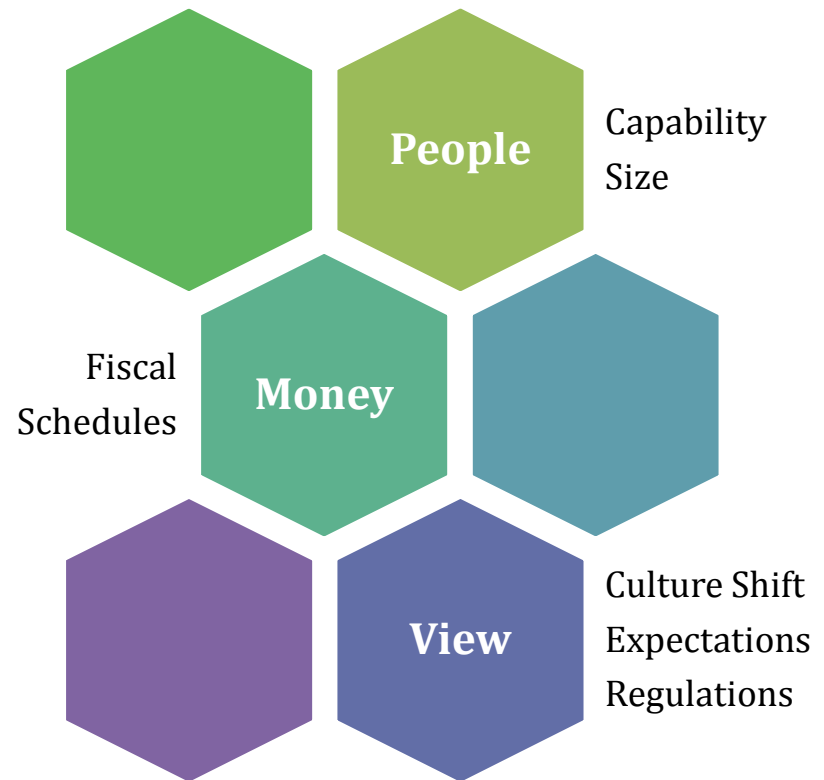
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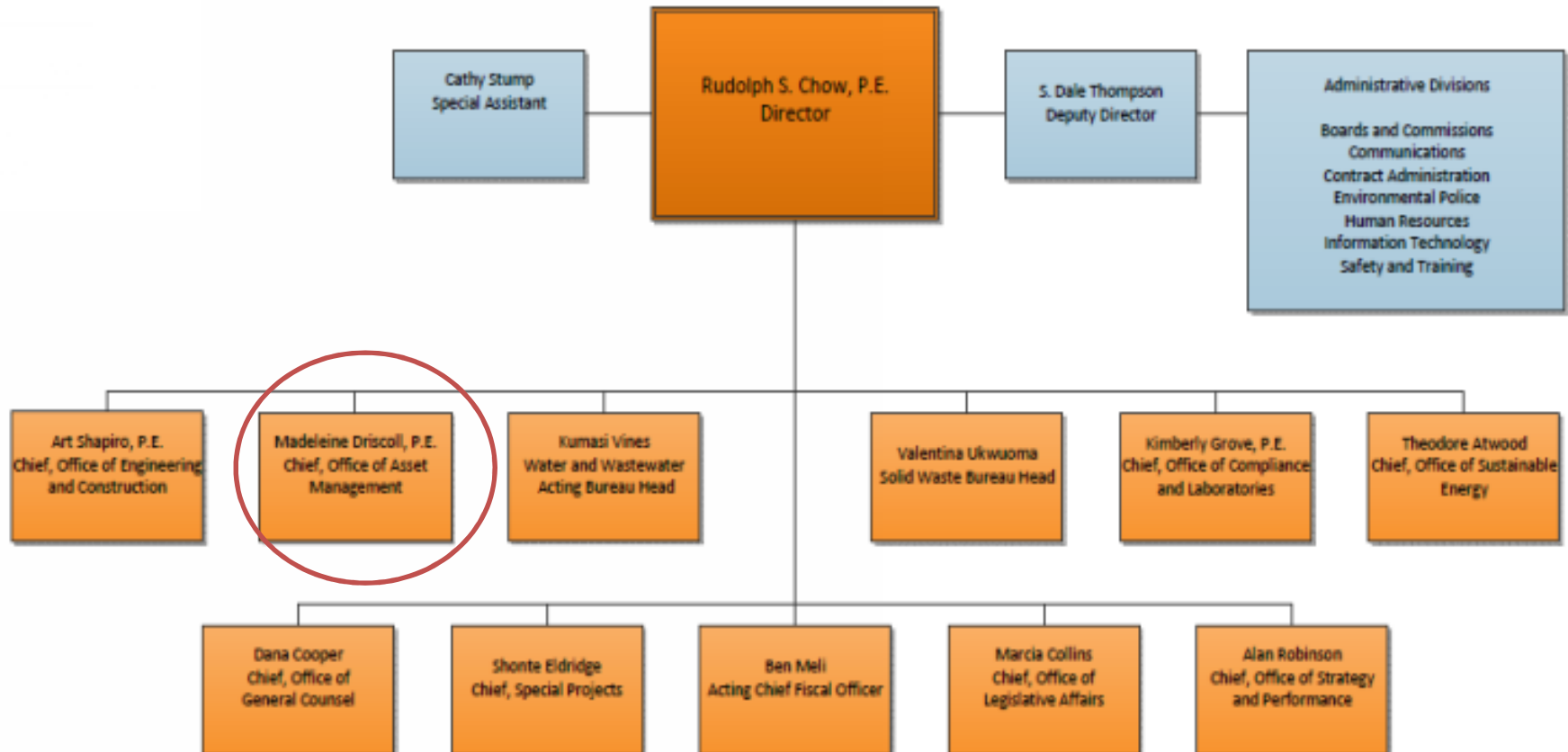
# Why this presentation?

Typical asset management presentations:

- Inventory tracking
- Data management
- Risk analysis
- Prioritization
- Case studies of excellence



# Asset Management Within DPW



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# Asset Management for Stormwater

## Inventory

Connections

Capacity

Condition

Illicit  
Discharges

**BMPs**

Land Use

**Quantity  
Controls**

Base Flow

**Risk**



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# Asset Inventory (Grey)

## Drinking Water

~1,600 mi (City)  
~2,200 mi  
(County)  
~ 40,000 valves  
~22,000 FH

## Wastewater

~1,400 mi of  
pipe  
~ 4,000 MH  
~ 250,000  
connect

## Stormwater

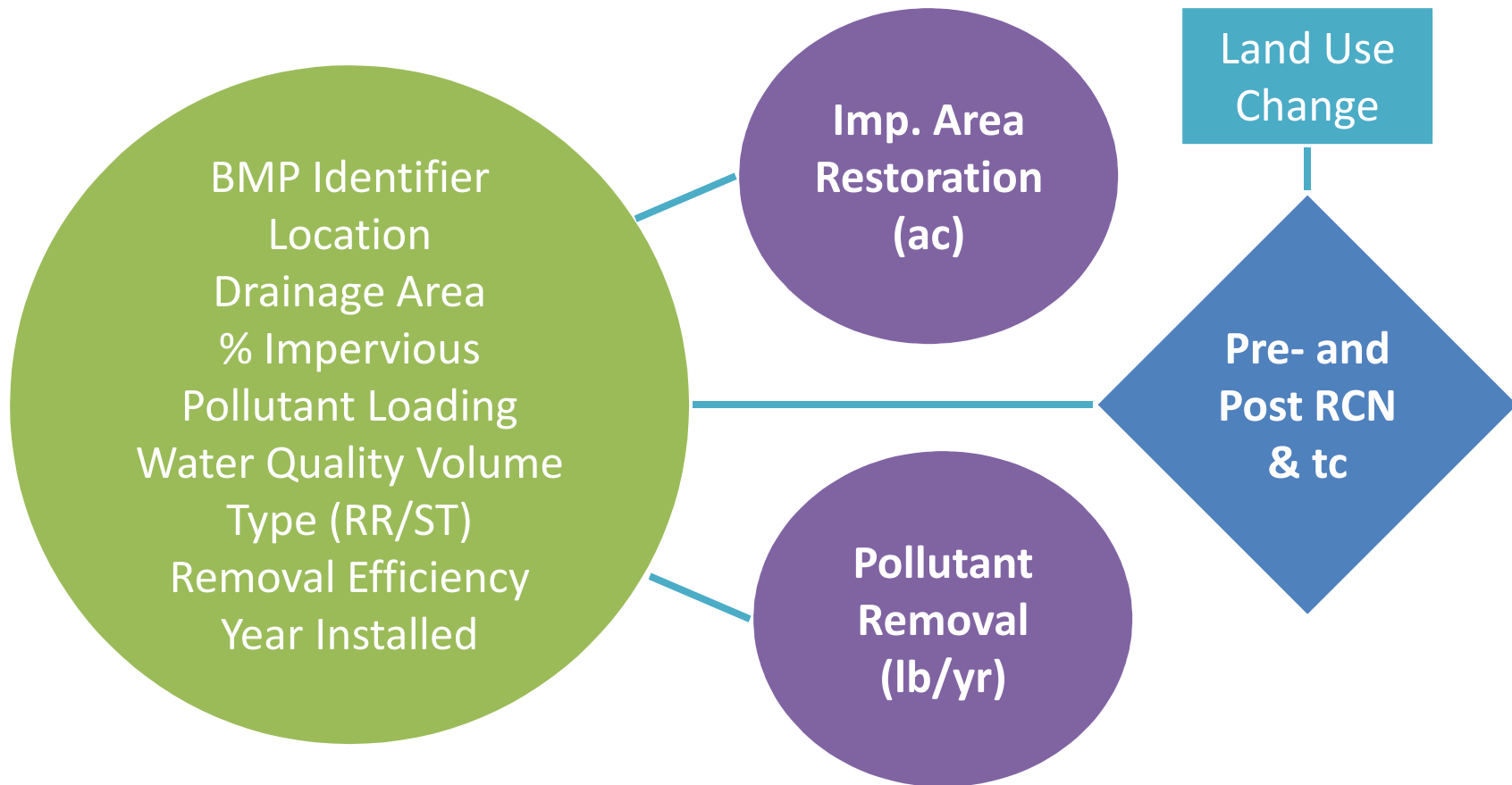
~1,100 mi of  
pipe  
~27,000 MH  
~ 52,000 inlets

GIS for Storm Drain Pipes:

ID	Location	Size	Length	Material	Install Date	Inverts	Base flow
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# Asset Inventory (Green)





# Planning for People



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# Stormwater PM Programs

- Increase in BMPs
  - More in right – of- way and vacant lots
  - Educated public paying a stormwater fee
  - Potential coordination with other agencies
- Preventive inlet cleaning program
  - Credit for several TMDLs
  - Flood reduction



# ER 4069 Modified Inlets

- Modified Inlets: 414 (Aug. 2015)

- Carrolton Ridge – 58
- Franklin Square – 49
- McElderry Park – 140
- Oliver – 80
- Baltimore-Linwood – 87

## Pilot

1. Compatibility with street sweepers.
2. Public perception.
3. Actual preventive cleaning effort.

- Total Inlets in Neighborhoods: 1,092

- SOP for cleaning:

- Modified Inlets: monthly and after 1 inch storm (25 / year)
- Non-modified: quarterly (min.)
- Champion to estimate capture rate & monitor compliance



# Preventive Inlet Cleaning (Pilot)

- Worst case scenario: \$1,652 / mod. inlet/ yr
  - Hand crew: 3 person
  - Dump truck
  - Production: 120 inlets / qtr / crew = 4 crews
- Best case scenario: \$331/ mod. inlet /yr
  - Pilot truck crew: 2 person
  - Combination pick-up / vac truck
  - Production: 530 inlets / qtr / crew = 1 crew



# Learning from other AM Programs

- Previous inspection: sewershed studies
  - 75% manholes inspected (2006-2011)
  - More than 5 years ago
- Unknown stream course changes or erosion
- Average SSO in wooded areas = 22/year
- Water quality concerns in City streams
- Need of assessment in a planned proactive manner



# Sanitary Sewer Trunk Walk

## Wooded Areas:

- Proximity to streams
- 2 ac. or more of contiguous vegetation

## Assets:

- Trunk Sewers  $\geq 10''$
- Feeders: outfall sewers 6'' and 8''
- Associated Manholes



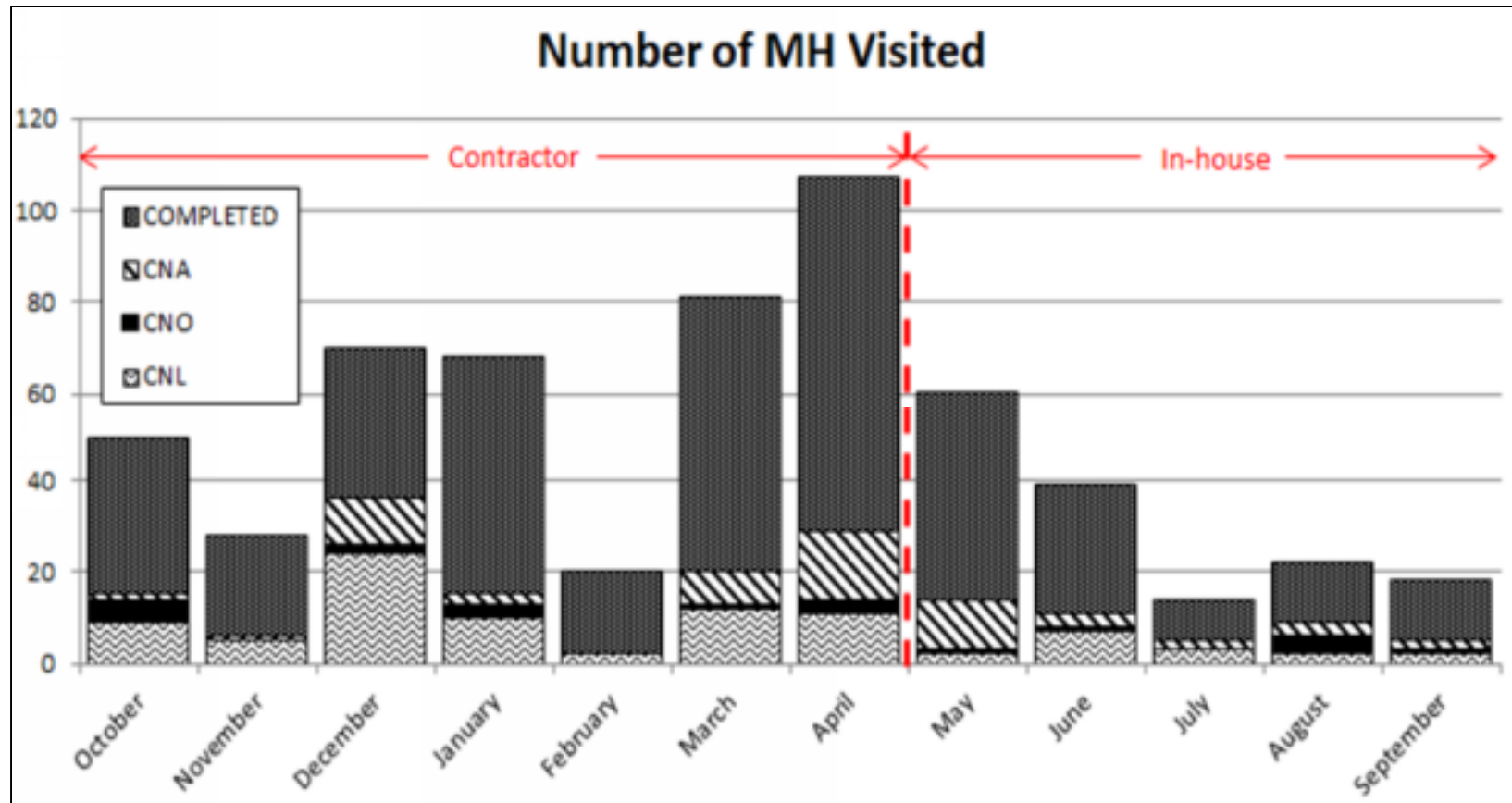
# Trunk Walk Findings

- Inaccessible MHs
- Collapsed mains
- SSOs and surcharged MHs





# Transition Contracted to In-house



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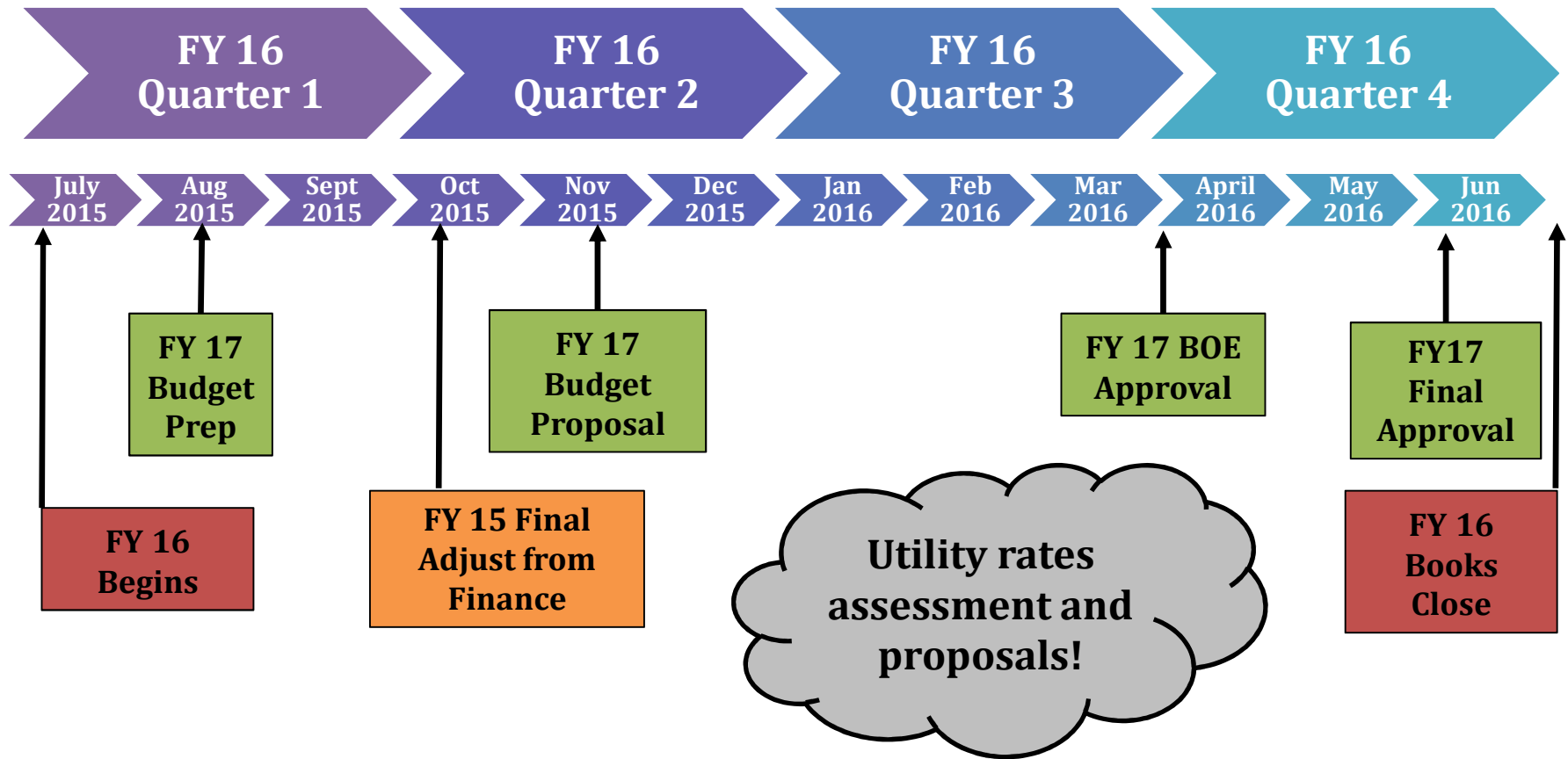
# Money Matters



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# Fiscal Planning Timeline



# Major Stormwater Capital Projects

**MS4  
WIP  
Projects**

**Race  
Street**

**Highland-  
town PS**

**Patapsco  
Hwy**

**Harris  
Street  
Study**

**Seamon  
Avenue**



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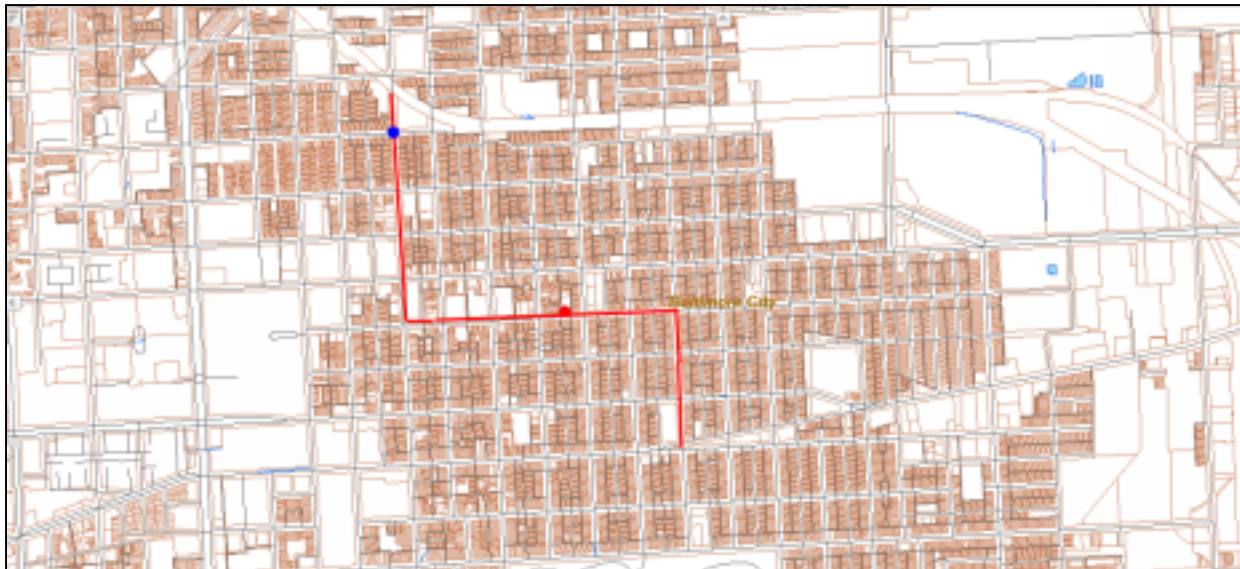
# Monument Street 2012



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# Harris Creek Drainage Area



Study: \$ 300,000 (Year 1)– Assessment of 1 mile of storm drain  
Design: \$600,000 (Year 2) – Prioritized based on assessment  
Construction: \$4M over 3 years

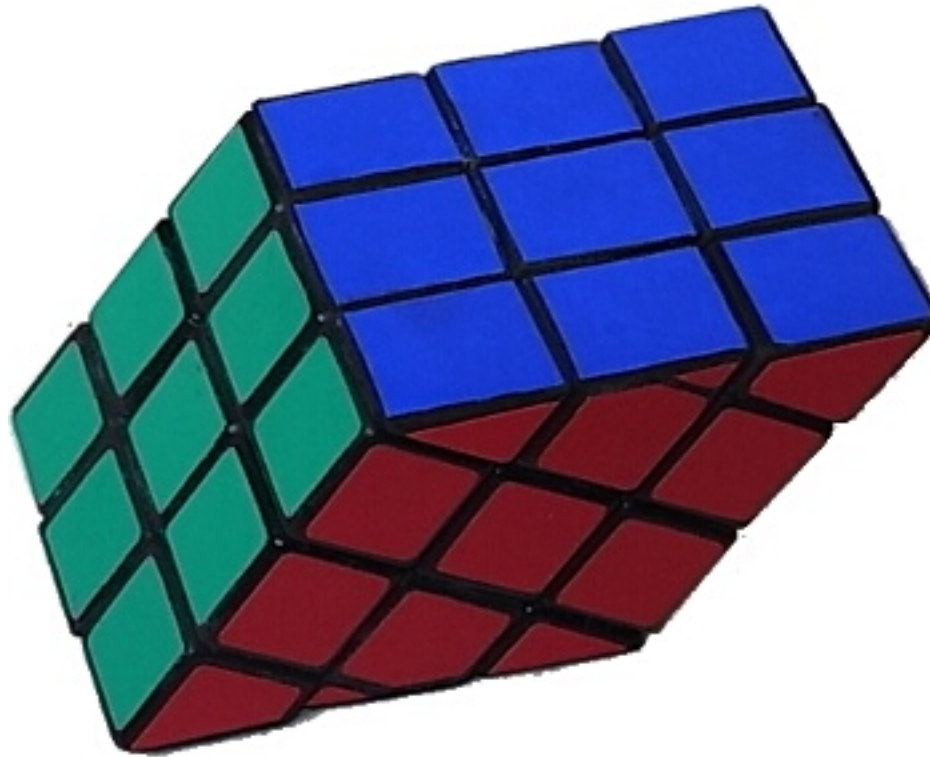


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# A Skewed View

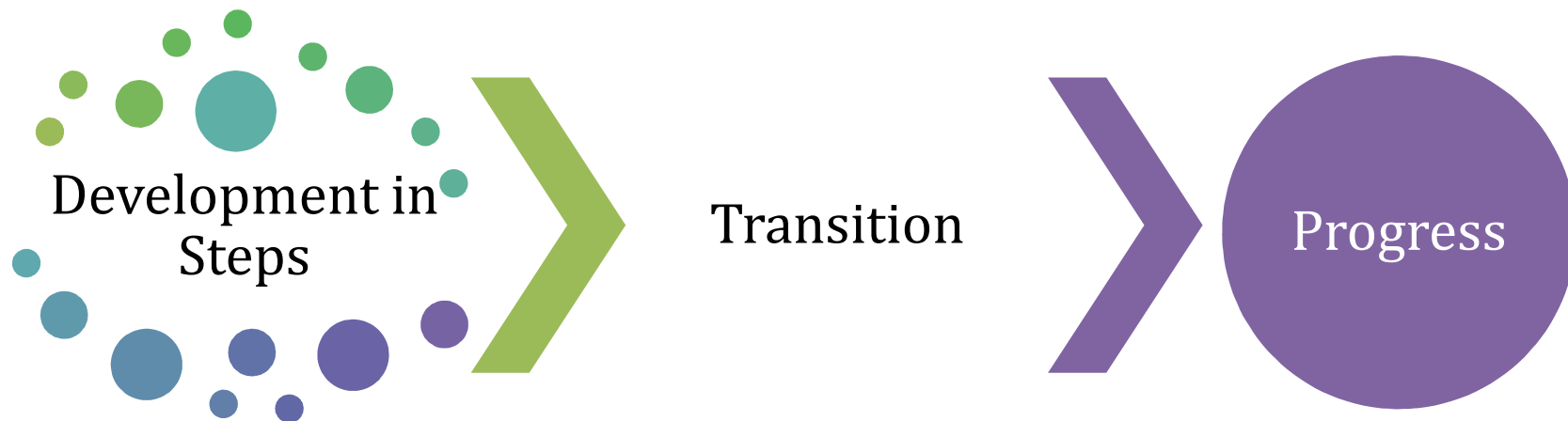


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# Pattern of the New and Shiny

- Culture shock
- Lingo bingo
- “Mikey” Syndrome
- High expectations
- Integration in regulatory mandates





# Lessons Learned

1. Understand your resources– now and tomorrow.
2. Transitions from contracted resources will have some bumps.
3. You will find problems to fix, but they will not be on your timeline or within your timeline.
4. Plan in feasible steps.



**Thank you for your time.**

**Department of Public Works  
Office of Compliance and Laboratories**

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