



**East Lampeter Township**

Herbert, Rowland & Grubic, Inc.

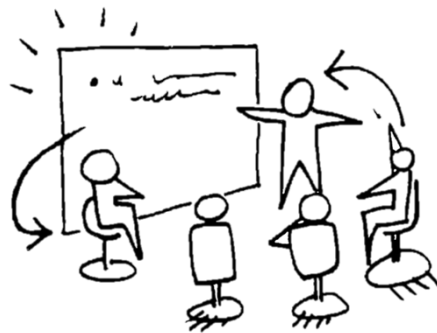
## Stormwater Stakeholder Advisory Meeting #2



March 8, 2019

## Agenda

- 1) Regulatory Requirements
- 2) Level of Service (LOS)
- 3) Current Stormwater Program
- 4) Stormwater Program Needs



**HRG**  
Herbert, Rowland & Grubic, Inc.  
Engineering & Related Services

## MS4 (Municipal Separate Storm Sewer Systems)

Chesapeake Bay Agreement:

- ☐ Executed in 1983
- ☐ Signed:
  - Governors - Maryland, Virginia, Pennsylvania
  - Mayor of D.C.
  - Administrator of E.P.A.
- ☐ 2000 set new goals
  - Delaware, New York and West Virginia joined
- ☐ **2023 set goal to reduce 10%**
  - Municipalities required to meet goals



**Federal  
Unfunded  
Mandate**

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## MS4 Permit Requirements

### Stormwater Management Programs (SWMP)

- 6 Minimum Control Measures (MCMs)
- **Complete full system mapping**

### Pollutant Reduction Plans (PRPs)

- Develop PRP
- ~~Show Incremental Progress~~
- **Plan, design and implement BMPs to reduce pollutants:**
  - 10% Sediment
  - 5% Phosphorus
  - 3% Nitrogen

### Pollutant Control Measure (PCMs)

- **Mapping, testing, analysis related to:**
  - AMD
  - Priority organic compounds
  - PCBs
- **Funding and staffing to fully comply**



(Bolded text are new requirements of the 2018 Permit)

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## MS4 Minimum Control Measures (MCMs)

- Public education (MCM 1)
  - Raise awareness about Best Management Practices (BMPs) via advertising, municipalities and website
  - Passive education
- Public outreach (MCM 2)
  - Promotional events and advertising materials
  - Active education
- Illicit discharge (MCM 3)
  - Mapping
  - Outfall inspections (wet/dry)
  - Illicit discharge reporting
- Construction (MCM 4)
  - Stormwater management /constructed properties
  - E & S concerns, etc.
- Post-construction (MCM 5)
  - BMP maintenance and inspection
- Good housekeeping (MCM 6)
  - Document completion and retention
  - In-house issues



## New Permit Term Started March 2018

### • Chesapeake Bay Pollutant Reduction Plan

- 10% Sediment load reduction
- 5% total nitrogen, 3% total phosphorus reductions
- Identifies specific projects to achieve reduction goal
- Was submitted w/ NOI in September 2017
- Approved in July 2018
- 5 Years to complete.

### • Additional Pollution Reduction Plans (PRPs)

- Address runoff to impaired receiving waters
- Conestoga River – Pathogens, Organics, Siltation, Chlorine
- Stauffer Run - Siltation
- Mill Creek – Nutrients, Siltation
- Pequea Creek – Nutrients, Organics, Siltation





Figure A: eMapPA Impaired Watersheds Map

East Lampeter Township Stream Impairments:

1. Conestoga River: Pathogens, Organic Enrichment/Low Dissolved Oxygen, Siltation, Chlorine
2. Stauffer Run: Siltation
3. Unnamed Tributaries to Conestoga River: Nutrients, Flow Alterations
4. Mill Creek: Nutrients, Siltation
5. Pequea Creek: Nutrients, Organic Enrichment/Low Dissolved Oxygen, Siltation



## BMPs for Improving Local Stormwater Quality

Highest  
Permit Credit

### • Stream Restoration Projects

- Reduce streambank erosion
- Floodplain reconnection
- Improve habitat
- Cost per linear foot = ~ \$250-\$500

Lowest  
Permit Credit

### • Riparian Buffer Projects

- Reduce rate of runoff
- Provide plant uptake of pollutants
- Capture sediment before entering streams
- Reduce thermal impacts
- Improve habitat
- Cost per acre = ~ \$2,000- \$3,000

### • Infiltration BMPs/Basin Retrofits

- Reduce volume of runoff
- Groundwater recharge
- Natural filtration of pollutants
- Reduce thermal impacts
- Reduce flood impacts
- Cost per acre = ~ \$170,000



## Funding Implications: *Budget Preparation*

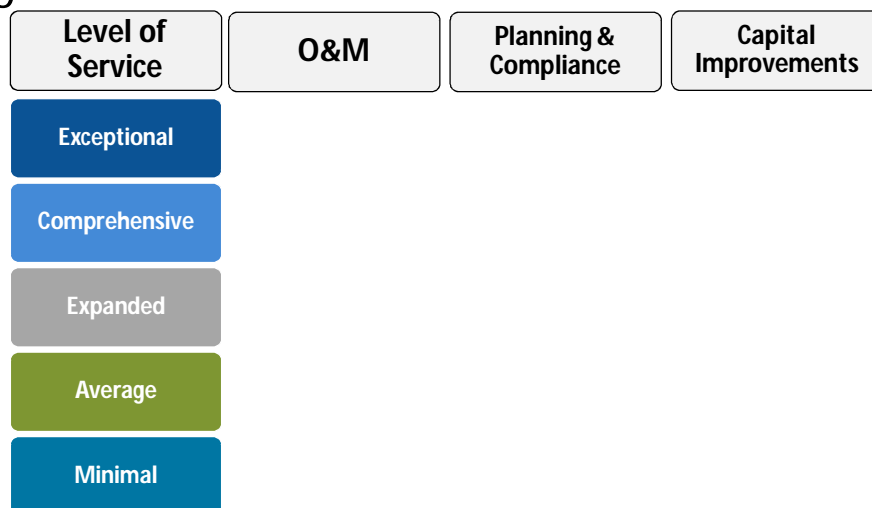


- Permit application submittal
  - Plans need to be fully implemented and documented
  - DEP updated through annual reports
- Budget for additional municipal staff time for required inspections and document review
- Lack of funding to cover unfunded mandate is not an acceptable reason to not comply

E. The permittee shall develop and maintain adequate legal authorities and shall maintain adequate funding and staffing to implement this General Permit, including the SWMP contained in Part C I of this General Permit.



## Program Level of Service



## Program Level of Service

Level of Service	O&M	Planning & Compliance	Capital Improvements
Exceptional	Fully Preventative/ 100% Routine	Comp planning, NPDES compliance	Prioritized/Fully Funded
Comprehensive	Mix of routine & inspection based	Priority Planning	Phased/allocated budgets
Expanded	Inspection based	Reactionary Planning	Inspection- based/moderate budget
Average	Responsive only	Emergency	Critical needs only/minimal budget
Minimal	Non-Responsive	No Planning	No planning/No budget

## Current Level of Service

Level of Service	O&M	Planning & Compliance	Capital Improvements
Exceptional	Fully Preventative/ 100% Routine	Comp planning, NPDES compliance	Prioritized/Fully Funded
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## Current Stormwater Program

- Township crews spend approximately:
  - 12 week per year cleaning inlets
  - 12 days per year cleaning up after storm events
- Each street swept as needed
- \$100k of drainage improvements completed over past 3 years (includes both in-house and contracted work).



## Budget – Average/Expanded LOS

- Estimated annual budget

Function	Average Cost Years 1-5
Operation & Maintenance	\$100,000
MS4 Compliance	\$590,000
Capital Improvements	\$510,000
Administrative/General	\$130,000
<b>Total Annual Budget</b>	<b>\$1,330,000</b>



## Deficiencies of Current Program

- System consists of roughly 455,000 LF of pipe and 4,200 structures.
- Roughly 50% of pipe is CMP with an average age of 30-35 Years.
- Majority of pipe reaching useful life in next 10-20 years.
- Condition of pipes largely unknown.
- Privately owned infrastructure is not routinely inspected.
  - Stormwater Management Program requires this on an annual basis.
- Funding not available to:
  - complete additional capital improvements
  - perform more routine maintenance,
  - meet increasing MS4 requirements.



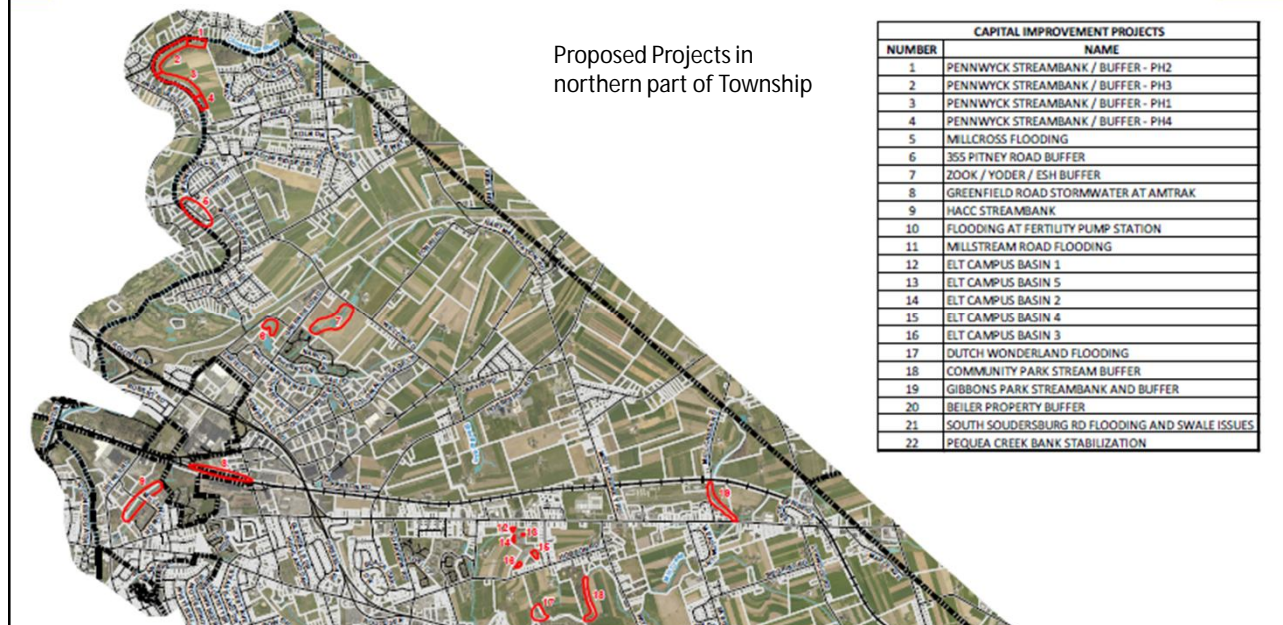
## Capital Improvements in A/E LOS

- Proposed Capital Improvement Projects (2019-2023)

Capital Projects	Total Project Cost
Pequea Creek Bank Stabilization	Grant/Contribution
Pennwyck Streambank/Buffer	\$ 302,800
ELT Campus Basins	Grant/Contribution
Gibbons Park Streambank/Buffer	\$ 318,760
HACC Streambank	\$ 423,000
Community Park Streambank/Buffer	\$ 357,500
355 Pitney Rd Buffer	Grant/Contribution
Zook/Yoder/Esh Buffer	Grant/Contribution
Beiler Property Buffer	Grant/Contribution
Greenfield Rd Stormwater at Amtrak	\$ 131,000
Farmer Outreach for E&S, MSSPs	\$ 20,000
GIS/Related Equipment & Engineering Services	\$ 30,000
Emergency Repairs	\$ 300,000
<b>Estimated Total 5 – Year Cost</b>	<b>\$ 1,883,060</b>



## Proposed Capital Improvements



## Proposed Capital Improvements



## Examples of Other Identified Capital Improvement Needs

**Millcross Flooding Study**  
\$25,000



## Examples of Other Identified Capital Improvement Needs

**Study of Flooding at Fertility Pump Station**  
\$25,000



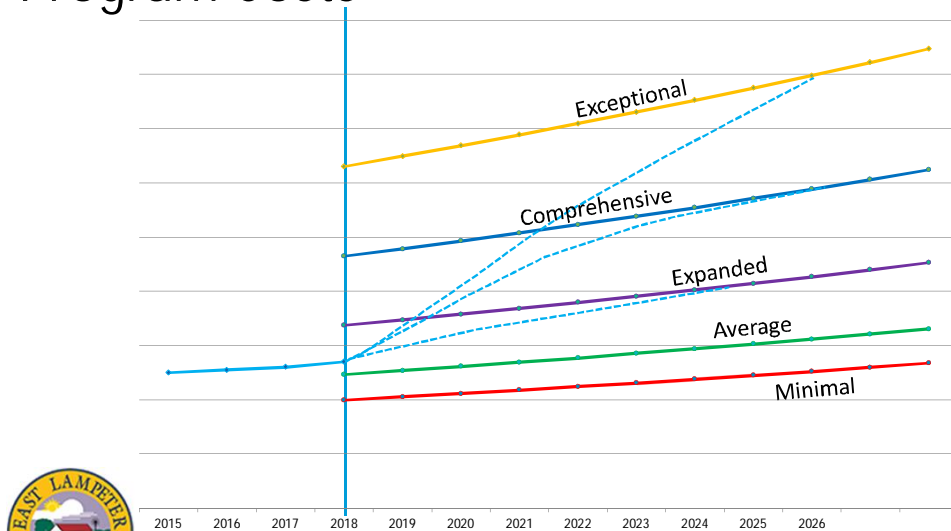
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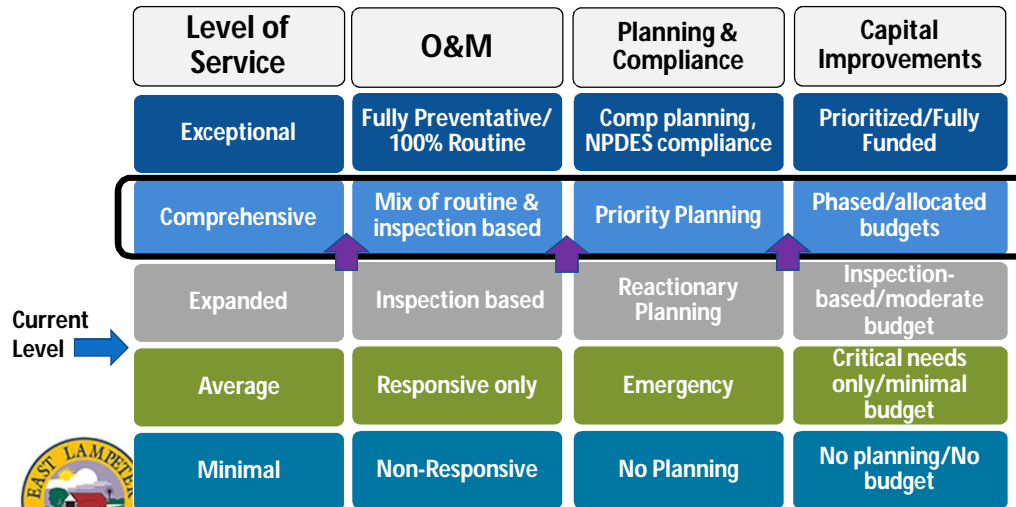
**Asphalt Removal**  
Cost TBD



## Program Costs



## Moving to a Higher Level of Service



## Additional Capital Improvements in Comprehensive LOS

Capital Projects	Total Project Cost
Millcross Flooding	\$ 25,000
Dutch Wonderland/ Island Flooding	\$ 25,000
Mill Stream at Stream Crossing	\$ 25,000
Flooding @ Fertility Pump Station	\$ 25,000
South Soudersburg Rd Flooding/Swale Issue	Charity/Charlie to Provide
Asphalt Removal	Charlie to Provide
Infrastructure Maintenance/Repair	\$ 2,000,000
<b>Estimated Additional 5 – Year Cost</b>	<b>\$ 2,100,000</b>

(Minimum amount recommended)

Other Budgetary Costs included in COMP LOS:

- Condition Assessment of Infrastructure (\$100,000)
- Impervious Surface Development (\$275,000)



## Comparison of LOS Costs

Average Cost Years 1-5		
	A/E LOS	Comp LOS
Operation & Maintenance	\$100,000	\$170,000
MS4 Compliance	\$590,000	\$670,000
Capital Improvements	\$380,000	\$870,000
Administrative/General	\$130,000	\$160,000
<b>Total Annual Budget</b>	<b>\$1,200,000</b>	<b>\$2,900,000</b>

- Above costs are estimated annual expenditures.
- Capital Costs may be financed over 20 – 30 years, but shown above as total expense incurred.



## Future Stormwater Stakeholder Advisory Committee Meetings

### Meeting # 3: April 2019

- Benefits of a Stormwater Utility
- Benefits and Costs of Expansion to Higher LOS
- Capital Improvements, Budget, Funding Options
- Public Education & Outreach

### Meeting # 4: May 2019

- Stormwater Fee
- Fee Impacts

### Meeting # 5: June 2019

- Implementation of Fee
- Appeal Process / Credit Options

### Meeting # 6: July 2019

- Credit options
- Implementation schedule



Feedback from Committee on date for April SAC Meeting.

