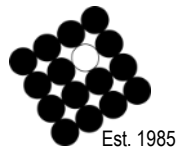


MS4 Inspections Is your Municipality ready?

Presented by:

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Engineering, Inc.

Civil Engineers and Surveyors



MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

● What is a MS4?

- Municipal Separate Storm Sewer System
- Any conveyance that is:
 - Used for collecting and/or conveying stormwater
 - Owned by a municipality or any other public body
 - Not used as a combined sewer
 - Not part of Publically Owned Treatment Works
- Current Permit is 5-Year Permit
- Goal for DEP: To inspect each MS4 within the 5-Year Permit term
- DEP – Southwest began inspections in 2015 and will complete by 2017



DEP INSPECTIONS

- **Plan for full day with DEP Inspector**

- First half of the day spent in the office reviewing the documentation related to each MCM
- Second half of day in the field inspecting public works facilities, BMPs, outfalls, etc.

- **The appropriate staff are available**

- Key personnel such as:
 - Manager
 - MS4 Coordinator/Administrative Staff responsible for documentation
 - Code Enforcement Official
 - Public works Director/Supervisor
 - Municipal Engineer



INSPECTIONS BY DEP

- To ensure that all the required inspection goals are met DEP requests that the following materials are to be pulled from the municipal files, separated, and placed on a table prior to the DEP Inspector's arrival
- It is recommended each MCM be placed in its own binder for a more organized review
- DEP will review the municipality's written plan and use the following checklist:



MS4 COMPLIANCE INSPECTION REPORT

OFFICE INSPECTION				
Most Recent Annual/Progress Report Due Date:				
Date Most Recent Annual/Progress Report Submitted:				
List all deficiencies identified in the most recent Annual/Progress Report Review:				
Describe the permittee's progress with addressing deficiencies, if applicable:				
Verify the presence of the following documentation; check "Yes" if available, "No" if not available, and "NA" if not applicable.				
MCM	Item	Yes	No	NA
1	Public Education and Outreach Program (PEOP) (written plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lists of target audience groups	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Published stormwater educational materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Two methods of distributing educational materials in past year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Public Involvement and Participation Program (PIPP) (written plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Public notice prior to adoption of any ordinance (municipal) or SOP (non-municipal)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	At least one public meeting in past year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Illicit Discharge Detection and Elimination (IDD&E) Program (written plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Outfall inspection and illicit discharge tracking system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Complaint tracking system for illicit discharges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Map of all outfalls, receiving waters, stormwater collection system, swales, basins, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Stormwater sampling and monitoring records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Ordinance (municipal) or SOP (non-municipal) prohibiting non-stormwater discharges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	If not relying on PA's program, a written stormwater associated with construction activities program (written plan)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	If not relying on PA's program, an ordinance (municipal) or SOP (non-municipal) requiring implementation of erosion and sediment control BMPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	If not relying on PA's program, written procedures for managing public inquiries of local construction activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	If not relying on PA's program, a written post-construction stormwater management plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	If not relying on PA's program, a tracking system containing post-construction BMPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	If not relying on PA's program, inspection results of post-construction BMPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	An ordinance (municipal) or SOP (non-municipal) to enforce post-construction BMPs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	An inspection program ensuring stormwater BMPs are properly operated and maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Inventory of municipal facilities and land uses that contribute to stormwater runoff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Written Operation & Maintenance Plan for municipal facilities addressing housekeeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Written employee training program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THE MCM'S WHICH WILL BE REVIEWED ARE:

- MCM #1 - Public Education and Outreach on Stormwater Impacts
- MCM #2 - Public Involvement/Participation
- MCM #3 - Illicit Discharge Detection and Elimination
- MCM #4 - Construction Site Stormwater Runoff Control
- MCM #5 - Post-Construction Stormwater Management (PCSM) in New and Re-Development Activities
- MCM #6 - Pollution Prevention/Good Housekeeping



MCM No. 1

- **Public Education and Outreach on Stormwater Impacts**
 - BMP No. 1: Develop, Implement and Maintain a Written Public Education and Outreach Program
 - BMP No. 2: List of Target Audiences – Need to be specific
 - BMP No. 3 and 4: Distribute Stormwater Educational Materials A Minimum of Three Different Ways
 - Need a flow diagram on what staff is responsible for each element of the Plan



MCM No. 2

● Public Involvement/Participation

- BMP No. 1: Develop and Implement Public Involvement Participation Program
 - Who, What, When and Where!
- BMP No. 2: Provide Public Notice for Public Review, Input, and Feedback
 - Who, What, When and Where!
- BMP No. 3: Regularly Solicit Public Involvement from Target Audience Groups (MCM No. 1)
 - How! And Who will do it!



MCM No. 3

Typical Question asked:

● What is an Outfall?

- “The Point Where a MS4 Discharges Stormwater to Other Surface Water of this Commonwealth”
- BMP No. 4: Conduct Outfall Screening
- Outfall Types
 - Pipe Outfall
 - Catch Basin
 - Curb and Gutter
 - Roadside Ditch
 - Swale

● Where do we test?



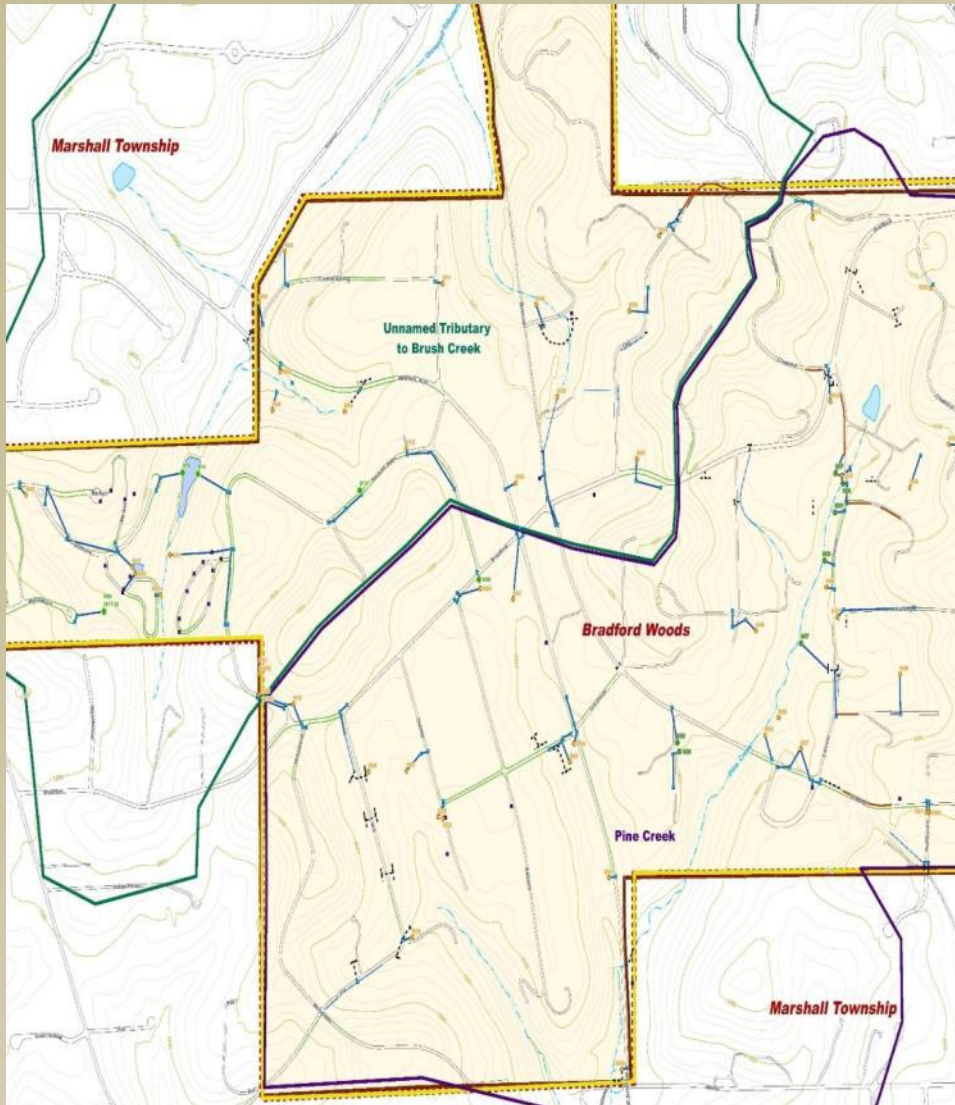
MCM No. 3

● Outfall Testing

- 20% of outfalls shall be tested each year of the five (5) year permit cycle
- Outfalls are visually inspected 48 hours after a precipitation event
- If dry weather flow is evident, two grab samples must be taken



MCM No. 3



- **Illicit Discharge Detection and Elimination**
 - BMP No. 1: Develop Written Program
 - BMP No. 2: Develop and Maintain a Map of Regulated Small MS4 Outfalls
 - BMP No. 3: Map of Storm Sewer Collection and Conveyance Systems
 - Follow Up
 - Documentation

MCM No. 3

● Follow up - Illicit Discharges

- Identify the source of the illicit discharge
 - Pollutant source can be determined based on the pollutants found during grab sample analysis
- Use storm sewer maps to pinpoint source by inspecting storm sewer structures
- Smoke and dye testing can also be implemented
- Televise sewer system to detect sanitary cross connections or other prohibited discharge connections
- Documentation – If it is not documented it did not happen



MCM No. 3

● **Once Identified Illicit Discharge Correction -**

- Determine if flow is from illegal dumping or improper connections
- Take appropriate action to correct discharge
 - If a violation is found, notify the property owner and set a timeframe for correction of violation.
- Document all measures taken to correct illicit discharge
- Notification of Entity responsible and follow up on if its been done
- Board may need to create policy for how to handle non-compliant entities, i.e. Homeowners Associations, residents, etc. Staff will need direction on path to take.
 - Notice of Violation
 - Take to Magistrate
 - Complete work and lien property



MCM No. 3

- **Ordinances – Has yours been updated?**
 - BMP No. 5: Need to Enact a Stormwater Management Ordinances
 - Stormwater Management Ordinance
 - Prohibited Discharge Ordinance
 - Small Project Application
 - BMP No. 6: Need to Provide Educational Material to Target Audiences



MCM No. 4

- **Documentation of Compliance with Construction Site Stormwater Runoff Control**
 - BMP No. 1: Develop a Program Containing All Procedures Necessary to Comply
 - BMP No. 2: Erosion and Sediment Control BMPs
 - BMP No. 3: Construction Site Operators to Control Site Waste
 - BMP No. 4: Record Tracking System



MCM No. 4

● Reliance on Pennsylvania's Program

- Most municipalities should have a Memorandum of Understanding with their County Conservation District that outlines the services that the Conservation District provides to the municipality
- Typically this includes review and approval of Erosion and Sedimentation Control Plans and issuance of NPDES Permits
- Reliance on the Conservation District does not alleviate the Municipality from compliance with the requirements of MCM No. 4



MCM No. 4

● Municipal Responsibilities

- Keep a copy of your Memorandum of Understanding with your MS4 documentation
- Develop and implement a system for routine inspection of erosion and sedimentation controls at all active construction sites
 - May be completed along with current inspections, i.e. footer inspections, framing inspection
 - Procedures for issuance of notices of violation and enforcement must developed
- Develop and implement a system for tracking and resolving complaints associated with construction site runoff



MCM No. 5

- **Post-Construction Stormwater Management (PCSM) in New and Re-Development Activities**
 - BMP No. 1: Written Program
 - BMP No. 2: Tracking System to Record Qualifying Projects
 - BMP No. 3: Controls to Ensure Minimal Water Quality Impacts
 - BMP No. 4: Enforce an Ordinance to Address PCSM BMPs
 - BMP No. 5: Encourage Low Impact Development (LID)
 - BMP No. 6: Ensure Operation and Maintenance of All PCSM BMPs Installed After March 2003



MCM No. 5

● Inspection Program for PCSM BMPs

- All PCSM BMPs, including those privately owned, must be inspected by the municipality annually
- MS4 Documentation should include an inventory of all facilities, including inspection records, notifications sent and follow up inspections for each facility
- Inspections must be completed annually based on the approved plans for the facility. If the original plans are not available, an inspection based on general standards should be conducted to review:
 - Sediment should be removed from detention areas
 - Embankments should be free of erosion, burrow holes, etc.
 - Vegetation should be mowed regularly
 - Outlet structure and outfall should be free of debris



MCM No. 6

● Vehicle Maintenance, Fueling, and Washing

- Municipal Owned Fuel Site
 - Discourage “Topping-Off” , Spills Controlled Immediately
- Vehicle Maintenance
 - Fluids Stored in a Proper Manner
 - Commercial Car Washes for Police and Smaller Vehicles
 - Phosphate-Free Soaps and Detergents
 - Vehicles Washed in Designated Area, Storm Connections Blocked Off Using Inserts and Drain Onto Permeable Area



MCM No. 6

● Pollution Prevention/Good Housekeeping

- BMP No. 1: Maintain a List of All Operations That Could Contribute to Stormwater Runoff
- BMP No. 2: Implement Operation and Maintenance Program
 - Reduce/Eliminating Discharges to Storm Drains
 - Reduce Discharge form Streets, Roads, Highways, Parking Lots, etc.
- Update Standard Operating Procedures for every item of work and Facilities completed by Public Works



MCM No. 6

- **Operation, Maintenance, and Inspection Program**
 - Catch Basin/Inlets
 - All Municipal Owned Catch Basins / Inlets Annually
 - Document Inspections, Cleaning, and Repairs
 - Stormwater Detention / Retention Facilities
 - Inspect Annually, Document Inspection and Repair



MCM No. 6

- Waste material must be disposed of in a sealed dumpster. This includes material collected from:
 - Street sweeping
 - Inlet cleaning
- Spill cleanup waste, including that from police and fire operations, must be properly disposed of in sealed container
- Document disposal method of all material



MCM No. 6

- BMP 3: Develop and Implement A Training Program for Municipal Staff, Elected Officials, and Emergency Response Personnel



MS4 TRACKING SYSTEM

MS4 BINDER

How to get Prepared!

- **Build a Binder System and utilize GIS**
- **Binder Contains: All Items listed in MCM's 1-6**
 - All Ordinances and Plans
 - Replace Drafts with Adopted
 - Current Up-To-Date Maps
 - All Edits Turned In To LSSE
 - Testing Results
 - Recommendations for Findings
 - Track/Document the Following:
 - Newsletters/Pamphlets, Public Involvement, Inspections, Complaints, Field Screening, Training, and Qualifying PCSM BMPs
 - GIS System with MS4 Module

WHAT'S NEXT?

- **Complete follow up from your Audit**
- **Year 3 Annual Report and Year 5 Annual Report**
- **TMDL Existing Permit**
 - TMDL Strategy with NOI/application “2012”
 - TMDL Design Details due 1 year after permit issuance
 - TMDL Plan required for all pollutants with an “applicable WLA” – caused confusion
 - MS4s eligible for PAG-13 or individual permit
 - Address DEP comments
- **TMDL Future Permit**
 - One TMDL Plan
 - **TMDL Plans required only for nutrients and sediment**
 - WLA is established for nutrients and/or sediment, and individual permit is required.

PUBLIC PARTICIPATION

- **Existing Permit**

- TMDL Plans and Bay PRPs are not required by the existing permit to undergo public participation prior to submission to DEP

- **Future Permit**

- As part of MCM #2, MS4 Permittees will need to publicly advertise TMDL Plans and PRPs prior to submission to DEP



WHAT'S NEXT?

- **Finalize, Refine and Continue Implementation of your Stormwater Management Program (SWMP)**
 - This includes the Six MCM's addressed in the current permit
- **Development and Implementation of Pollutant Control Measures (PCMs)**
 - Required for all General Permits that discharge to impaired waters, regardless of whether a TMDL has been approved
 - Causes of impairments are:
 - Metals and Acid Mine Drainage (AMD) – Permit Appendix A
 - Pathogens (Fecal Coliform) – Permit Appendix B
 - Priority Organic Compounds (PCBs or Pesticides) – Permit Appendix C

WHAT'S NEXT?

● **Development and Implementation of Pollutant Control Measures (PCMs) - Continued**

- PRPs must be developed for each applicable impairment conforming to the requirement in each noted Appendix
- Within Permit Year 1 develop mapping and an inventory identifying all known and suspected pollutant sources for each impairment
- Prior to the end of Permit Year 4, investigate each known and suspected pollutant source through stormwater sampling
- Notify DEP of all Industrial Site contributors to Metals, AMD or Priority Organic Compound impairments
- Remove all illicit and illegal discharges of sewage into the MS4 contributing to the Pathogen impairment. Enact an Ordinance requiring proper disposal of animal waste on permittee owned property by the end of Permit Year 3
- Document the progress of the PCM in each Annual MS4 Status Report.

TMDL PLANS / PRPs

● Future Permit – Pollutant Reduction Plans (PRPs)

- All permittees that discharge to impaired waters for the following require PRP:
 - Nutrients (Nitrogen and Phosphorus)
 - Sediment
- Impaired waters without an established Waste Load Allocation are to follow procedures in Appendix E of the Permit:
 - Achieve 10% reduction in pollutant loading of sediment
 - Achieve 5% reduction in pollutant loading of total phosphorus
- PRPs are due with the NOI submission
- Pollutant reductions must be achieved within the 5 year permit period.

TMDL PLANS / PRPs

● Future Permit – Pollutant Reduction Plans (PRPs)

- A table has been published on DEP's website to inform MS4 Permittees on TMDL and PRP-related requirements for the next permit

MS4 Name	NPDES ID	Individual Permit Required?	Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)	Other Cause(s) of Impairment
Allegheny County					
ALEPPO TWP	PAG136348	No	Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)	Dioxins (5)
ASPINWALL BORO	PAG136259	No	Allegheny River	Appendix C-Chlordane, PCB (4a), Appendix B-Pathogens (5)	
AVALON BORO	PAG136151	No	Spruce Run Ohio River	TMDL Plan-Organic Enrichment/Low D.O., Siltation (5) Appendix C-PCB (4a), Appendix B-Pathogens (5)	Dioxins (5)
BALDWIN BORO	PAG136128	Yes	Monongahela River	Appendix C-PCB (4a), Appendix B-Pathogens (5)	
			Glass Run	Appendix A-Metals (4a), TMDL Plan-Siltation (5)	
			Lick Run	Appendix A-Metals (4a), Appendix B-Pathogens (5)	Cause Unknown (5)
			Sawmill Run Nutrients	TMDL Plan-DO/BOD, Nutrients, Organic Enrichment/Low D.O., Siltation (4a)	
			Sawmill Run AMD and Sediment	Appendix A-Metals, pH (4a)	
			Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)	Dioxins (5)
			Peters Creek	Appendix A-Metals (4a), Appendix B-Pathogens (5)	Cause Unknown (5)
			Sawmill Run AMD and Sediment	TMDL Plan-Siltation (4a)	
			Streets Run	Appendix A-Metals (4a), TMDL Plan-Siltation (5)	
BALDWIN TWP		No	Sawmill Run	Appendix A-Metals (4a), TMDL Plan-DO/BOD, Nutrients, Organic Enrichment/Low D.O. (4a)	
			Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)	Dioxins (5)
BELL ACRES BORO	PAI136124	No	Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)	Dioxins (5)
BELLEVUE BORO	PAG136216	No	Spruce Run Ohio River	TMDL Plan-Organic Enrichment/Low D.O., Siltation (5) Appendix C-PCB (4a), Appendix B-Pathogens (5)	Dioxins (5)
BEN AVON BORO	PAG136292	No	Spruce Run	TMDL Plan-Organic Enrichment/Low D.O., Siltation (5)	
			Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)	Dioxins (5)
BEN AVON HEIGHTS BORO	PAG136237	No	Spruce Run	TMDL Plan-Organic Enrichment/Low D.O., Siltation (5)	
			Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)	Dioxins (5)

TMDL PLANS / PRPs

● Future Permit – Pollutant Reduction Plans (PRPs)

- A table has been published on DEP's website to inform MS4 Permittees on TMDL and PRP-related requirements for the next permit

MS4 Name	NPDES ID	Individual Permit Required?
BALDWIN BORO	PAG136128	Yes

Impaired Downstream Waters or Applicable TMDL Name	Requirement(s)	Other Cause(s) of Impairment
Monongahela River	Appendix C-PCB (4a), Appendix B-Pathogens (5)	
Glass Run	Appendix A-Metals (4a), TMDL Plan-Siltation (5)	
Lick Run	Appendix A-Metals (4a), Appendix B-Pathogens (5)	Cause Unknown (5)
Sawmill Run Nutrients	TMDL Plan-DO/BOD, Nutrients, Organic Enrichment/Low D.O., Siltation (4a)	
Sawmill Run AMD and Sediment	Appendix A-Metals, pH (4a)	
Ohio River	Appendix C-PCB (4a), Appendix B-Pathogens (5)	Dioxins (5)
Peters Creek	Appendix A-Metals (4a), Appendix B-Pathogens (5)	Cause Unknown (5)
Sawmill Run AMD and Sediment	TMDL Plan-Siltation (4a)	
Streets Run	Appendix A-Metals (4a), TMDL Plan-Siltation (5)	

PERIODIC REPORTING

● Existing Permit

- First time permittees and MS4s within the Bay Watershed submit annual reports; all others submit progress reports every other year

● Future Permit

- All permittees will submit annual reports; for PAG-13 permittees, the annual report will serve as an ongoing NOI and eliminate need for 5-Year renewal NOIs
- All annual reports will be due the same date for all permittees, typically in June of each year.
- Verification of NOI renewal must be confirmed with DEP



MS4 GENERAL PERMITS

- **Current General Permit became effective for the Commonwealth of Pennsylvania on March 16, 2013 and will expire on March 15, 2018**
 - All General Permit holders, regardless of whether the renewal for General Permit Coverage Approval has been issued, are covered under the existing General permit
- **On March 16, 2018 the next PAG-13 will become effective for all General Permit holders in the Commonwealth of Pennsylvania**
- **During your inspection by the DEP they will indicate when next permit is due – NOI for next permit is Fall 2017**



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