



TOWN OF
NEWMARKET
NEW HAMPSHIRE

Long-Range Planning Subcommittee Agenda

Monday, August 3, 2026 at 5:00 PM

Town Hall, Council Chambers

Agenda Item #1 – Pledge of Allegiance

Agenda Item #2 – Regular Business

- a) Organization
 - Election of Chair/Vice-Chair
- b) Stormwater Asset Management Program Presentation & Discussion

Agenda Item #3 – Adjourn



Newmarket Stormwater Asset Management Program (AMP) Development and Implementation

Town of Newmarket, New Hampshire

August 2026

Lyndsay Butler, PE
Owen Chaplin, PE
Miranda Pierre, EIT



WRIGHT-PIERCE 
Engineering a Better Environment

Presentation Overview

Introductions
Project Overview
Project Initiation
Asset Inventory and Needs Analysis
Prioritization of Assets
Life Cycle Cost and Funding Strategy
User Manual
Next Steps
Questions

Introductions



Lyndsay Butler, PE
Town Engineer
Town of Newmarket



Owen Chaplin, PE
Project Manager
Wright-Pierce



Miranda Pierre, EIT
Project Engineer
Wright-Pierce

Project Overview

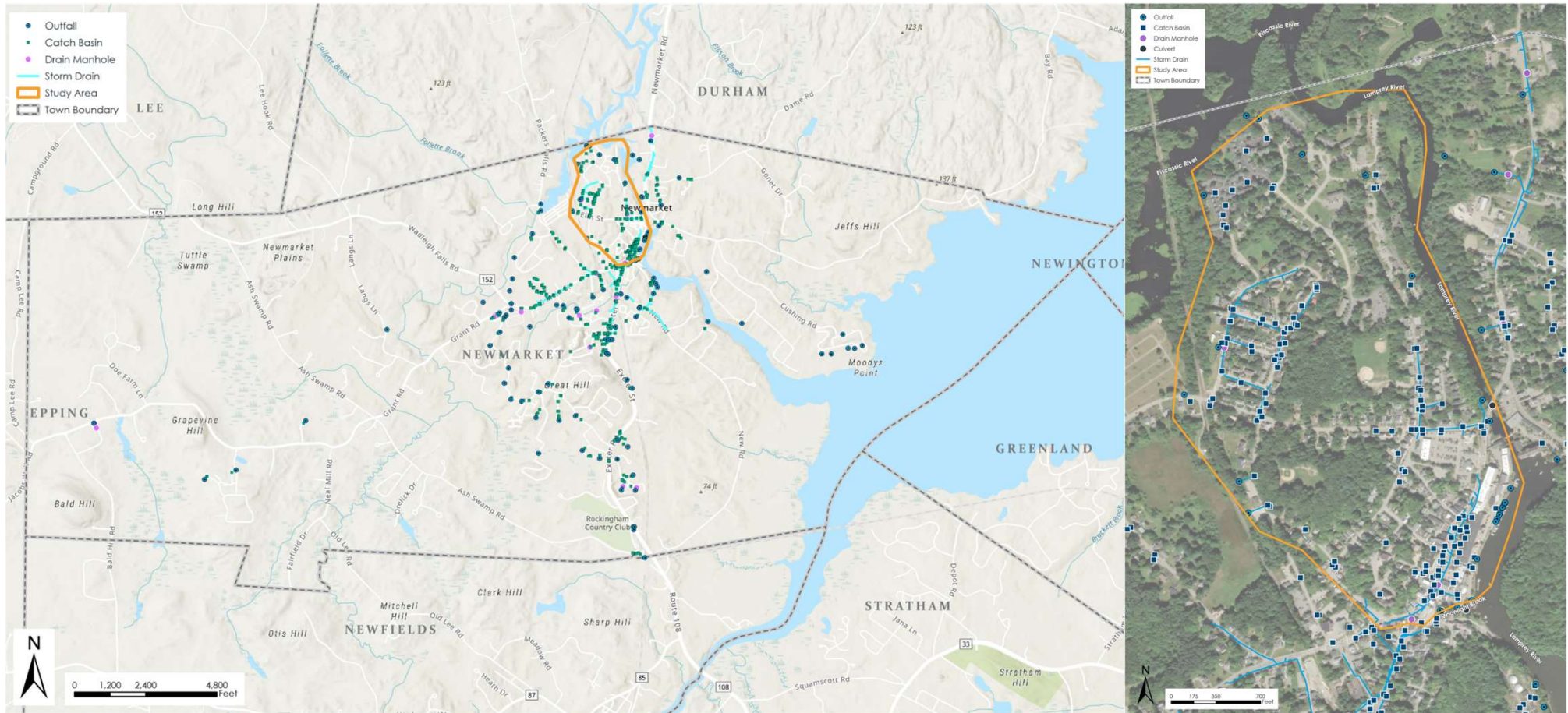
Background

- Town awarded a Sustainability Grant from NHDES through the CWSRF program
- Partnered with Wright-Pierce to develop the program (began in August 2023)
- AMP limited to downtown Study Area (next slide), due to data availability
 - Almost 10,000 LF of storm drains
 - Town intends to implement town-wide in the future as the asset inventory expands

Tasks

1. Project Initiation
 - Stakeholder Identification
 - Vision Statement
 - Level of Service (LOS) Workshop
2. Asset Inventory & Needs Analysis
3. Prioritization of Assets
 - Criticality Analysis
 - Capacity Analysis
4. Life Cycle Cost & Funding Strategy
5. User Manual
 - Implementation Plan
 - Communication Plan
 - Wrap-up Presentation

Downtown Study Area



Project Initiation

Stakeholder Groups

- **Internal Stakeholders:**
 - DPW / Engineering
 - Planning & Community Development
- **Identified External Stakeholders:**
 - Planning Board
 - Conservation Commission
 - Riverfront Advisory Committee
 - Public Transportation Advisory Committee
 - Newmarket Business Association
 - NH Department of Environmental Services
 - NH Department of Transportation
 - NH Fish & Game Department

Vision Statement

- ***“To provide reliable, sustainable, high-quality stormwater service to the community while protecting public health, safety, and the environment.”***

Project Initiation

Level of Service Workshop

- **Attended by Internal Stakeholders, NHDES, and Wright-Pierce**
- **Developed level of service (LOS) goals that are specific, measurable, attainable, relevant, and time bound “SMART”**
- **LOS goals and matrix provide a way for the Town to track performance, show success and failures, and revise for improvement as needed**

Table 3-1 Storm Drain System Level of Service

Category	Objective	Measure	Units per Year	Goal
System Reliability & Performance	Visually Inspect and Clean catch basins with known maintenance issues	% of catch basins	%	100%
	Visually Inspect and Clean culverts with known maintenance issues	% of culverts	%	100%
	CCTV Inspect & Jet storm drains	LF inspect	LF	1,600 LF
	Update GIS System with existing storm drain infrastructure	# catchments	#	10 per year
	Visually Inspect and Maintain Town-Owned BMP's	% BMP's	%	100%
	Visually Inspect and Maintain Town-Owned Outfalls	# of outfalls	#	100%
	Obtain easements	# easements	#	1 per year
Regulatory Compliance	NH Small MS4 GP Compliance	% compliance	%	100%
	Great Bay Total Nitrogen GP Compliance	% compliance	%	100%
	Dam Safety Compliance (municipally owned dams #D177001 & #D177002)	% compliance	%	100%
	Review Proposed Designs for new development/redevelopment stormwater systems	% review	%	100%
Climate Adaptation & Resilience	Develop/Update list of priority projects	# of updates	#	1 per year
	Assess Level of Service for systems receiving discharge from proposed development/re-development	# of systems	#	1 per year
Customer Service	Respond to and assess "high priority" calls within 1 hour	% calls	%	100%
	Respond to and assess "low priority" calls within 48 hours	% calls	%	100%
	Update stormwater webpage	# updates	#	1 per year

Asset Inventory and Needs Analysis

Stormwater Asset Inventory

- Town worked with Wright-Pierce to collect stormwater asset data in GIS format
- Inventory and analysis focused on storm drains (pipes), not structures (catch basins, manholes)
- Gap analysis
 - Available data collected from GIS and record drawings included:
 - Location (street name)
 - Pipe sizes
 - Pipe materials (partial)
 - Pipe depths (partial)
 - Installation dates
 - Missing data included:
 - Condition
 - Service history
 - Pipe materials (partial)
 - Pipe depths (partial)

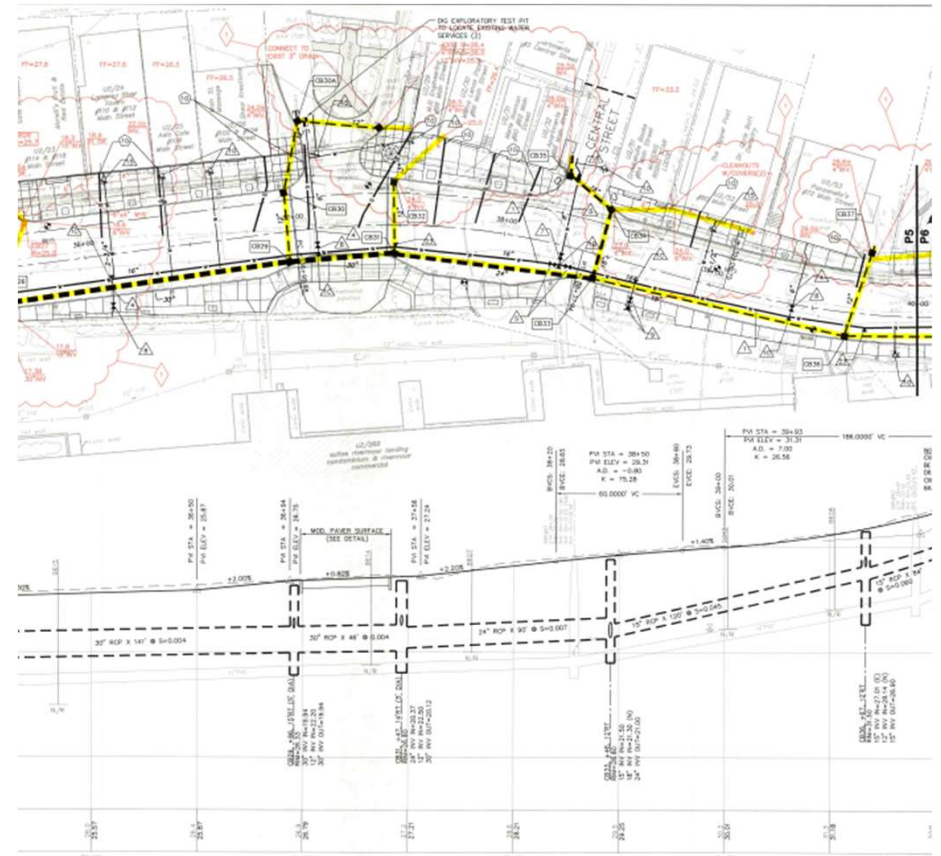
Table 4-1 Storm Drains Breakdown by Material

Material	Linear Footage of Storm Drains	Percentage of System
Asbestos Cement (AC)	175'	2%
Concrete	74'	1%
Corrugated Metal Pipe (CMP)	1,475'	15%
Chlorinated Polyethylene (CPE)	40'	0%
High Density Polyethylene (HDPE)	4,974'	52%
Metal	56'	1%
Plastic	156'	2%
Polyvinyl Chloride (PVC)	285'	3%
Reinforced Concrete Pipe (RCP)	1,552'	16%
Unknown	644'	7%
Vitrified Clay (VC)	157'	2%
Total	9,588'	100%

Asset Inventory and Needs Analysis

Additional Data Collection

- **As-Built/Record Drawings**
 - Nichols Ave Utility Improvements
 - Main St Utility Improvements
 - New Village Utility Improvements
- **NHDOT SADES geodatabase**
- **Town Survey**
 - Pipe depth measurements
 - Pipe connection verification
 - Outfall Inspection



Prioritization of Assets

Quantitative Risk Assessment

- **Likelihood of Failure (LoF)**
 - 1 – 5 rating
 - Factors include age, condition, service history, and construction material
- **Consequence of Failure (CoF)**
 - 1 – 5 rating
 - Factors include social, economic, and environmental costs of an asset failing
- **Criticality “Risk” Score**
 - Derived from LoF and CoF Scores
 - Used to identify management actions (i.e. maintenance and renewal)
 - Developed prioritization list based on management action identified for each asset

Table 5-5 Performance Criteria Weighing Factors

Criteria	Category	Selected Risk Factor	Relative Weight
Likelihood of Failure (LoF) Criteria	Asset Age	Remaining Useful Life (RUL)	40%
	*Condition	Steel Corrosion	0%
		Concrete Corrosion	0%
	Service History	Service History	25%
	Construction Material	Pipe Material	35%
Consequence of Failure (CoF) Criteria	Economic Costs	Operational Significance/Size	15%
		Road Classification	15%
		Utility Presence	10%
		Pipe Depth	10%
	Social Costs	Critical Locations	30%
	Environmental Costs	Wildlife Habitat	10%
		Wetlands & Waterbodies	10%

*Note: Asset conditions were not available at the time of prioritization assessment.

Prioritization of Assets

Criticality “Risk” Results

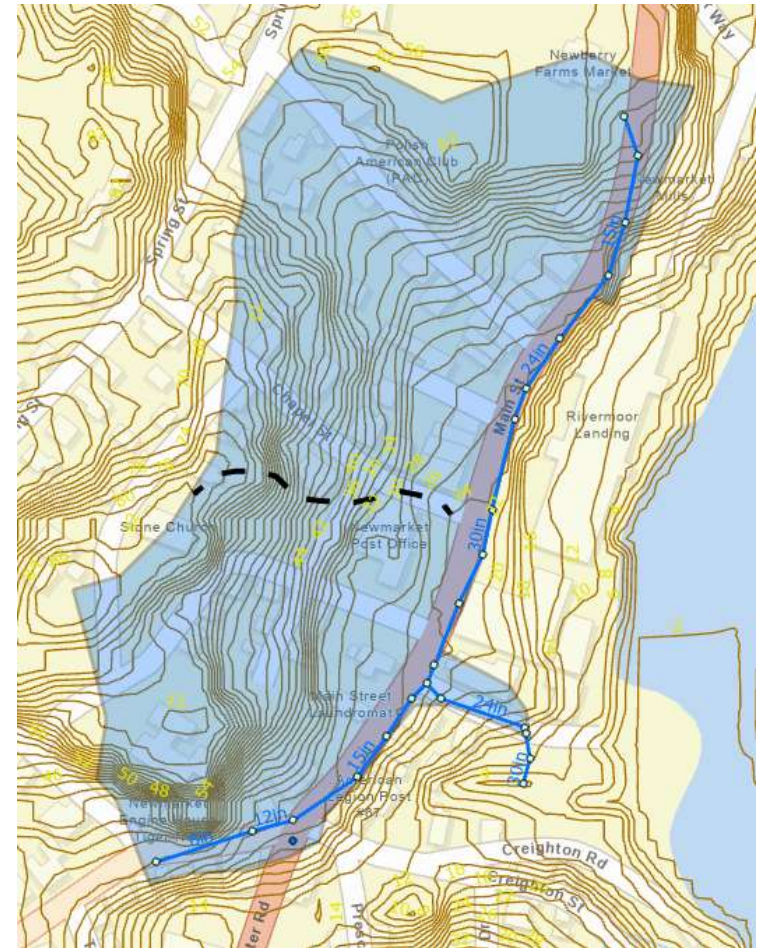
Group	Priority Ranking	Linear Footage of Storm Drains	Percentage
A	Immediate	0’	0.0%
B	High	2,401’	25.0%
C	Medium	3,014’	31.5%
D	Low	4,173’	43.5%

- Group A “Immediate” Risk – review for renewal within next 5 years
- Group B “High” Risk – review for renewal within next 10 years
- Group C “Medium” Risk – inspect/monitor more frequently
- Group D “Low” Risk – inspect/monitor routinely

Prioritization of Assets

Capacity Analysis

- High-level assessment for stormwater assets (storm drains, outfalls, and minor span culverts)
- Hydrology Analysis
 - Rational Method
 - Peak Flow only (no volume)
- Hydraulic Analysis
 - Manning's Equation
- Target Level of Service = 10-yr design storm
- Both systems assessed meet 10-yr LOS
- Training Session held on November 10, 2025



Prioritization of Assets

Standard Operating Procedures (SOP)

- SOP provided in appendices of User Manual
- Town to reference SOP during implementation of AMP

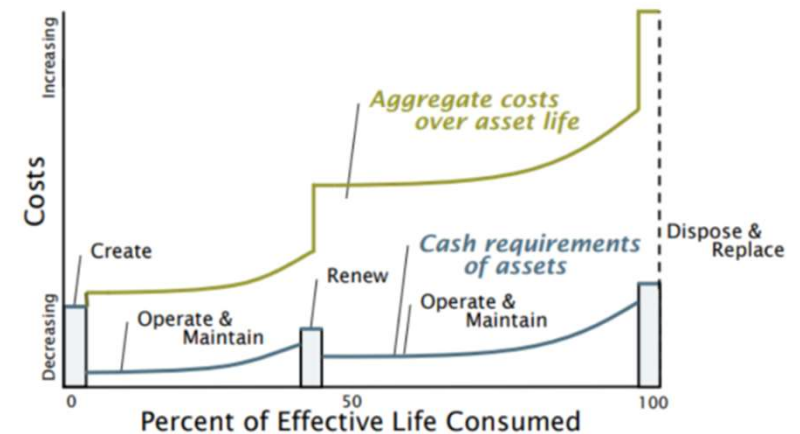
LoF Factors						100
Condition	Age		History	Construction Material		
0	40		25	35		
Pipe Condition	Remaining Useful Life (YR)	Remaining Useful Life (%)	RUL Score	Service History	Pipe Material2	LoF Score
0	0	0%	5	1	3	3.3
0	0	0%	5	1	3	3.3
0	0	0%	5	1	3	3.3
0	0	0%	5	1	3	3.3
0	0	0%	5	1	1	2.6
0	0	0%	5	1	1	2.6
5	5	10%	5	1	3	3.3
5	5	10%	5	1	3	3.3
5	5	10%	5	1	3	3.3
5	5	10%	5	1	3	3.3
0	0	0%	5	1	3	3.3
0	0	0%	5	1	3	3.3
34	34	68%	2	1	3	2.1
0	0	0%	5	1	3	3.3
0	0	0%	5	1	1	2.6
34	34	68%	2	1	3	2.1
34	34	68%	2	1	3	2.1
5	5	10%	5	1	3	3.3

- A. Category for likelihood of failure factors.
- B. Relative Weight assigned to each selected risk factor.
- C. Remaining Useful Life expressed in years and percent remaining.
- D. Selected Risk Factors displayed with a score 1 to 5 based on likelihood of failure criteria.
- E. LOF Score is a product of each LoF Factor and its associated weight.

Life Cycle Cost and Funding Strategy

Life Cycle Cost Analysis (LCCA)

- LCAA is a comprehensive financial assessment evaluating total cost of owning, operating and maintaining an asset throughout its life
- Types of costs include:
 - Capital costs: incurred during installation, rehabilitation, and replacement
 - Operational costs: incurred during typical use (labor and material costs)
 - Maintenance costs: incurred during routine maintenance, inspection, and responding to faults or failures
 - Risk costs: incurred due to adverse risk events



Capital Cost

Operational Cost

Maintenance Cost

+ Risk Cost

= Life Cycle Cost

Life Cycle Cost and Funding Strategy

Funding Strategy

- Identified funding options and opportunities to support long-term management of stormwater assets
 - Grants
 - Low-interest loans / bonds
 - Congressional Direct Spending “Earmark”
 - Explore Stormwater Utility

Table 7-1 Expenditure Planning

Expenditure Type	Description	Funding Source
Operational	Expenses which have no effect on the asset condition but are necessary to keep the asset utilized appropriately.	Annual Budget, Rates, Revenue
Maintenance	The ongoing day-to-day work required to keep assets operating at required service levels.	Annual Budget, Rates, Revenue
Renewal	Significant work that restores or replaces an existing asset towards its original size, condition or capacity.	Annual Budget, Rates, Revenue, Reserve funds, Grants, Loans, Bonds
New Work, Development, Capital Projects	Works to create a new asset, or to upgrade or improve an existing asset beyond its original capacity or performance, in response to changes in usage, customer expectations, or anticipated future need.	Annual Budget, Rates, Revenue, Reserve funds, Grants, Loans
Disposal	Any costs associated with the disposal of a decommissioned asset.	Annual Budget, Rates, Revenue, Reserve funds, Grants, Loans

User Manual

Implementation Plan

- Developed a plan for the Town to routinely review/update and use the Stormwater AMP in the future
 - Town Engineer "Champion" and AMP team will grow over time
 - AMP Team, led by Town Engineer, will oversee and implement the Stormwater AMP
- 10-year outlook developed from the asset prioritization
 - 3 projects for maintenance and renewal of stormwater assets
 - Developed planning level costs for each project

Table 1-2 Phased Projects Summary

Project	Phase	Streets Included	Cost
1	0-3 Years	Elm, Spring, and Washington Streets and Lincoln and Nicholas Avenues	\$635,000
2	3-7 Years	Main and Water Streets	\$1,814,000
3	7-10 Years	Beech, Cedar, Elder, Forest, and Grape Streets	\$1,846,000
Total			\$3,295,000

User Manual

Communication Plan

- **Internal Stakeholders**
 - Conduct annual (or bi-annual) meetings to review LOS goals and update as needed
- **Training**
 - Conduct training seminars to maintain staff understanding to ensure AMP is maintained and updated
- **Public Updates**
 - Provide AMP updates to Public Works, community leaders/decision makers, and external stakeholders
 - Provide regular annual summary updates on AMP

User Manual

AMP User Manual – Process

- Draft User Manual submitted to Town
September 2025
- User Manual submitted to NHDES
October 2025
- Final User Manual submitted to NHDES
December 2025



TOWN OF NEWMARKET, NH

User Manual

DECEMBER 2025

Newmarket Asset Management Program
Community User Manual - Stormwater



Next Steps

Recent Work

- Packers Falls Drainage Replacement
- Renewing or replacing infrastructure when road reconstruction occurs
- Additional Data Collection
 - Outside downtown area
 - Focused on storm drains (pipes) and outfalls
- Long-Range Planning Subcommittee
 - Integrating asset management into capital planning



Next Steps

Future Work

- Continue renewing or replacing infrastructure with road reconstruction
- Continue Data Collection
- Continue to review/update the AMP to ensure alignment with Master Plan goals
- Start building reserves for future capital projects
- Explore opportunities for more reliable infrastructure funding



QUESTIONS?

Lyndsay R. Butler, Town Engineer – lbutler@newmarketnh.gov | 603.659.3617

THANK YOU



ABBREVIATIONS AND ACRONYMS

303(d) List – List of Impaired Waters (Section 303(d) of the CWA)

AMP – Asset Management Program

BMP – Best Management Practice

CoF – Consequence of Failure

CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)

DCIA – Directly Connected Impervious Area

EPA – U. S. Environmental Protection Agency

FWPCA – Federal Water Pollution Control Act

GIS – Geographic Information System

IA – Impervious Area

IDDE – Illicit Discharge Detection and Elimination

I/I – Infiltration / Inflow

LoF – Likelihood of Failure

LOS – Level of Service

MCM – Minimum Control Measure

MS4 – Municipal Separate Storm Sewer System

NCP – Nitrogen Control Plan

NHDES – New Hampshire Department of Environmental Services

NPDES – National Pollutant Discharge Elimination System

NPS – Non-Point Source

O&M – Operation and Maintenance

PTAP – Pollutant Tracking and Accounting Program

SCM – Stormwater Control Measure

SPCC – Spill Prevention, Control, and Countermeasure

SSO – Sanitary Sewer Overflow

SVF – System Vulnerability Factor

SWMP – Stormwater Management Program

SWPPP – Stormwater Pollution Prevention Plan

TMDL – Total Maximum Daily Load

TSS – Total Suspended Solids

UA – Urbanized Area

USFWS – U. S. Fish and Wildlife Service

WLA – Wasteload Allocation

WQS – Water Quality Standard

WWTF – Wastewater Treatment Facility