



Public Facilities Committee Report

City of Newton In City Council

Wednesday, December 8, 2021

Present: Councilors Leary (Chair), Norton, Kalis, Danberg, Gentile, Kelley and Crossley

Absent: Councilor Laredo

City Staff Present: Associate City Engineer John Daghlian, Commissioner of Public Works Jim McGonagle and Sustainable Materials Management Director Waneta Trabert

#437-21 Request for a grant of location in Rachel Road, Mosley Road, Countryside Road, Buff Circle and Pattern Circle

NATIONAL GRID petition for a grant of location to install and maintain gas main in Rachel Road, Mosley Road, Countryside Road, Buff Circle and Pattern Circle as follows:

- 345' ± of 4" plastic main in Rachel Road from the existing 4" main at Upland Ave to Mosley Road
- 230' ± of 4" plastic main in Mosley Road from Rachel Road to #11 Mosley Road
- 175' ± 4" plastic main in Mosley Road from #11 Mosley Road to Countryside to replace 175' ± of 4" coated steel main
- 1880' ± 4" plastic main in Countryside Road from Dedham Street to the end of the main at #160 Countryside Road to replace 1555' ± 6" coated steel main and 325' ± of 4" plastic main
- 175' ± 2" plastic main in Buff Circle from Countryside Road to the end of main at #20 Buff Circle to replace 175' ± of 4" coated steel main
- 35" ± 2" plastic main in the intersection of Pattern Circle and Countryside Road to replace 35" ± of 6" coated steel main
- 275" ± 2" plastic main in Pattern Circle from Countryside Road to the end of the main at #20 Patten Circle to replace 275" ± 4" coated steel main

Action: Public Facilities Approved 7-0

Note: Mary Mulrone, National Grid Representative presented the request for a grant of location in Rachel Road, Mosley Road, Countryside Road, Buff Circle and Pattern Circle.

Councilors asked the following questions:

Q: How does increasing the pressure help with water intrusion?

A: Ms. Mulroney explained that increased pressure helps to prevent water infiltration.

Q: Have there been problems in this area with water intrusion and the freezing of service?

A: John Daghlian, Associate City Engineer explained that yes there have been issues. There is a high-water table and the material in the area is porous so water does get in.

Q: Why does the pressure need to be increased?

A: Ms. Mulroney explained that it is for the integrity of the system. This way there will not be a pressure issue when connecting to surrounding pipes. Mr. Daghlian explained that the increase in pressure will help with the distribution in National Grid's system.

Q: Is there a concern that the increase in pressure will cause issues in the older pipes that are connected to the proposed new pipes?

A: Ms. Mulroney explained that there are no leaks in those sections now and that National Grid would not propose a project that could cause leaks.

The public hearing was opened and with no member of the public wishing to speak, the public hearing was closed.

Councilor Kalis motioned to approve which passed unanimously.

#117-20 Acceptance of a sewer extension and easement on Farwell Street

HER HONOR THE MAYOR requesting the acceptance of 40 linear feet of sewer pipe as a public sewer and the acceptance of a 20' x 40' easement in property known as the Farwell Street Subdivision (Ward 3). The developer shall pay all costs associated with the construction of the sewer pipe and the direct connection to the MWRA trunk interceptor sewer line.

Public Facilities Held 6-0, Public Hearing Continued on 02/19/20

Public Facilities Held 8-0, Public Hearing Continued on 03/18/20

Action: Public Facilities Approved 7-0

Note: John Daghlian, Associate City Engineer presented the request for a sewer extension and easement on Farwell Street. He explained that the subdivision will be connecting the main sewer line to a trunk line and then that will connect to the MWRA line. The MWRA required that City has control over this line to ensure maintenance for the pipe.

Councilors asked the following questions:

Q: Is there an efficient stormwater system?

A: Mr. Daghlian explained that there will be a stormwater collection system connected to each home and the complete system is built to the 100-year storm standards.

Councilors made the following comment:

There was concern raised about a connected project at Turtle Lane that the developer has not made many improvements on.

The Committee voted to close the public hearing which passed unanimously.

Councilor Kelley motioned to approve which passed unanimously.

#438-21 Discussion on the Sustainable Materials Management Division

DEPARTMENT OF PUBLIC WORKS requesting to provide an update to the Public Facilities Committee on the Sustainable Materials Management Division.

Action: Public Facilities Held 7-0

Note: Waneta Trabert, Sustainable Materials Management Director presented the attached presentation regarding the Sustainable Materials Management Division.

Councilors asked the following questions:

Q: Have you reviewed the Sustainable Materials Management Commission and what is your opinion on their plan?

A: Ms. Trabert explained the Commission has put together an excellent report. She further explained that the report that she is working on will build off of theirs. The capacity issues in this state are a concern that is raised in their report and their recommendations for this issue seem to be straightforward. An issue that can be dealt with first is getting food waste out of the trash. The City can also continue to make goals to help with climate change.

Q: Are you seeing there is more recycling centers being built?

A: Ms. Trabert explained that there are more centers being built throughout the United States.

Q: Are there different ways to improve awareness of the programs run by the City, including composting? Also, how are other cities disposing of food waste at a better rate than Newton?

A: Ms. Trabert explained that Newton is a leader in this state but the West Coast has made more improvements to help with climate change. The West Coast has cities and towns that have their residents pay for their trash as a utility, their trash is collected every other week and their organic waste is picked up every week. Additionally, Ms. Trabert explained that there is more that the City can do and they are working on what the next steps will be once current waste management contracts are up.

Q: Is it better to only put your trash out when it is full?

A: Ms. Trabert explained that for this issue it would be drastic to pick-up trash every other week but they could consider reducing the size of the cart. Currently, since the trash is being picked up every week it does not make a difference how full the cart is.

Q: Has the City thought about subsidizing Black Earth compost?

A: Ms. Trabert explained that this isn't part of the discussion yet but this will be something that she will be investigating.

Councilors made the following comments:

Councilors thanked Ms. Trabert for her work on this presentation and in the Sustainable Materials Management Division.

It was noted that it will be important for the state to be involved so that there can be incentives for trash and recycling. The cost for trash and recycling has been increasing, which is a concern.

The Chair noted that the Sustainable Materials Management Commission has also submitted their report which will be discussed in the new term.

The City needs to be driving awareness and education so that more residents can adopt programs like composting. There should be more funds allocated to this division so that they are able to put more time on this issue.

There was concern raised about having to ship trash out of the state.

Councilor Crossley motioned to hold which passed unanimously.

Referred to Public Facilities and Finance Committees

#442-21

Request to allocate \$330,000 from the Sewer Surplus Fund

HER HONOR THE MAYOR requesting the allocation of three hundred and thirty thousand dollars (\$330,000) from the Sewer Surplus Fund for the replacement of the existing 6" cast iron Islington Road Wastewater Force Main.

Action:

Public Facilities Approved 6-0 (Councilor Kalis not voting)

Note: Jim McGonagle, Commissioner of DPW presented the request to allocate \$330,000 from the Sewer Surplus Fund. Commissioner McGonagle explained that this is to replace approximately 880 ft of cast iron main that runs through Lyons Field. There have been some leaks here and with it going through a field this does need to be repaired. Commissioner McGonagle further explained that this project is ready to go out to bid if the funds are allocated.

Have there been any recent leaks?

Commissioner McGonagle explained that there haven't been any recent leaks but there is a high-water table in that area. They are also replacing the main with plastic main which will help with leakage.

Councilor Gentile motioned to approve which passed 6-0 with Councilor Kalis not voting.

Chair's Note: *The Department of Public Works will introduce the stormwater ordinance.*

Note: The Chair noted that this will be an introduction to the proposed stormwater ordinance that the committee will be discussing next term. Commissioner McGonagle provided the attached memo, rules & regulations and a draft ordinance. He also explained that this ordinance is a part of the City's NPDES permit to achieve stormwater management in new development and redevelopment.

The Committee adjourned at 8:31 p.m.

Respectfully Submitted,

Alison Leary, Chair

Sustainable Materials Management Division Update



Public Facilities Committee Meeting
December 8, 2021

Waneta Trabert
Sustainable Materials Management Director
City of Newton DPW



Sustainable Materials Management Division

- Residential Service
 - Curbside collections
 - Permanent drop-off site – RRC
 - Multi-family properties (some, not all)
- Municipal Service
 - City buildings, including public schools
 - City operations
 - Public spaces (operated by PRC, waste managed by SMM)
- Non-Profit Service
 - Curbside (optional, for a fee)



Residential Curbside Collection Services

- Weekly trash – 64gal blue cart
 - Overflow bags or additional cart available for a fee
- Weekly single stream recycling – 64gal green cart
- Yard waste – 38 weeks per year
- Bulky waste pickup (\$20/item)
- Appliance/E-waste/ scrap metal item (\$25/item)
- Organics Subscription Program
 - 2,484 households subscribing
 - Preferred vendor: Black Earth Compost



Where is “away”?

- Solid waste goes to Wheelabrator Millbury
 - 18,690 tons in 2020
- Single stream recycling is processed at WM Avon Materials Recovery Facility
 - 9,711 tons in 2020
- Yard waste is staged at the RRC, then hauled to Black Earth Compost, Hidden Acres Farm, or Agresource
- All other material streams have independent vendors



Dwindling Disposal Capacity in MA

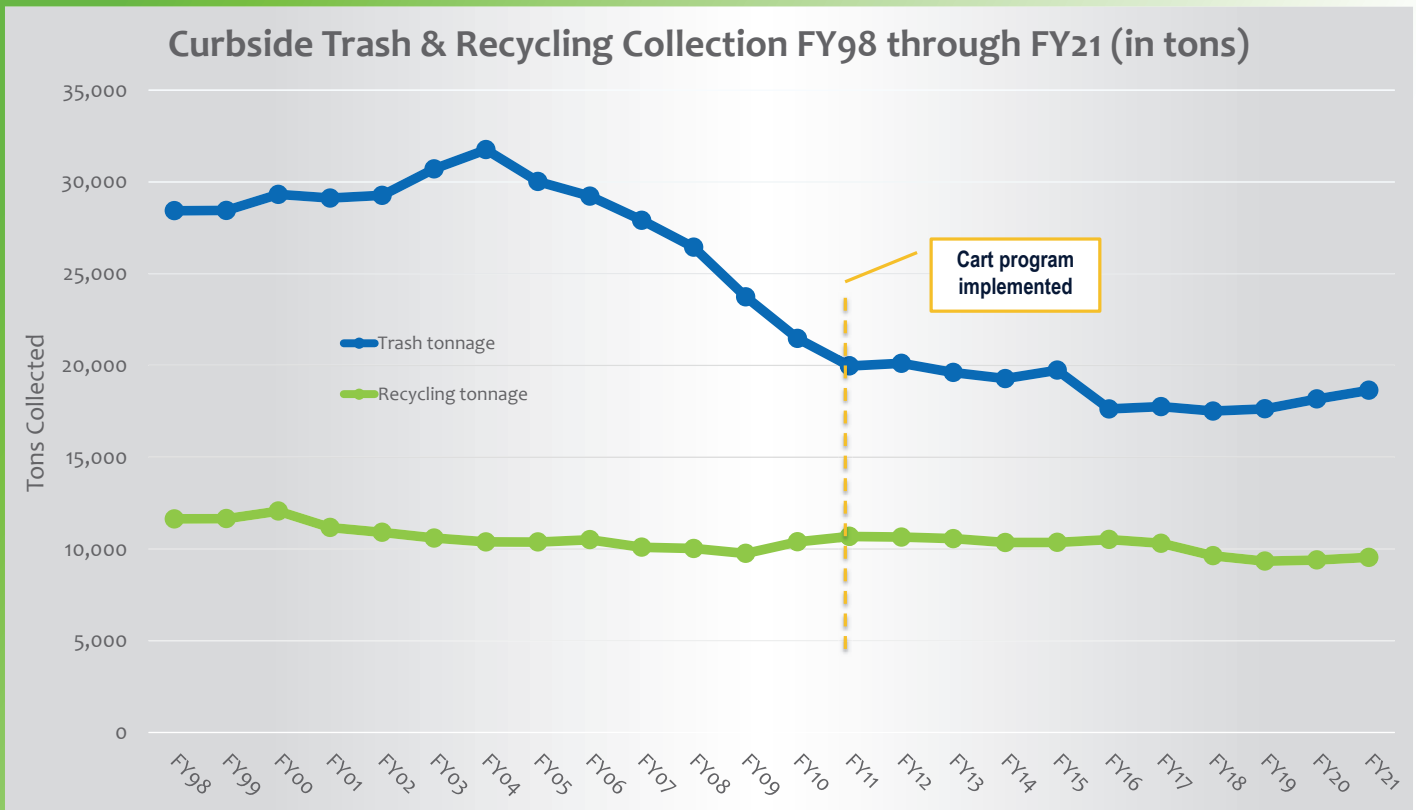
- MassDEP Solid Waste Master Plans 2020 & 2030
 - 2010-2020: Goal to reduce trash disposal by 30% → actual = 16%
 - 2020-2030: Goal to reduce trash disposal by 30% by 2030, 90% by 2050 (from 2018 baseline)
- MassDEP 2019 Waste Capacity Study
- Study conclusions:
 - Limited and decreasing solid waste management capacity
 - Municipal solid waste combustion capacity is being fully utilized on an annual basis and, as these facilities age, they may experience increased down time and maintenance needs
 - Landfill capacity for municipal solid waste and construction and demolition debris (C&D) is projected to decline to virtually zero by the end of the next decade



Disposal Capacity Shortfall Impacts for Newton

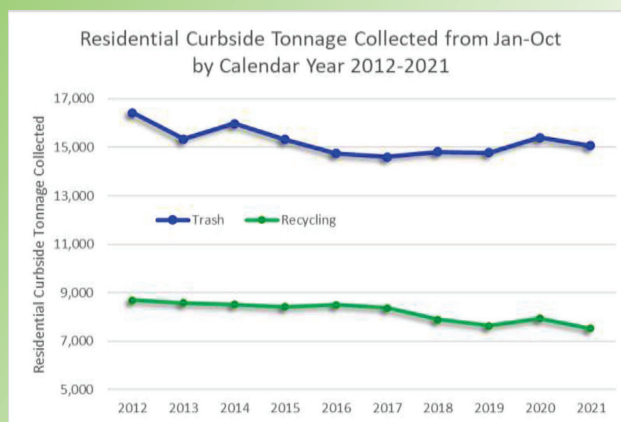
- Long lines and wait times at disposal facilities
 - DOT hours limited to 70, as drivers run out of hours, routes could possibly not get finished
 - This is not a hauler issue – we have the contract with the disposal site
 - This has happened in some Northshore towns this year with increasing frequency
- Newton's 20-year disposal contract ends June 30, 2028
- Longest contract terms now are 5 years
- Disposal costs in other municipalities have increased by 40% following long term contracts ending





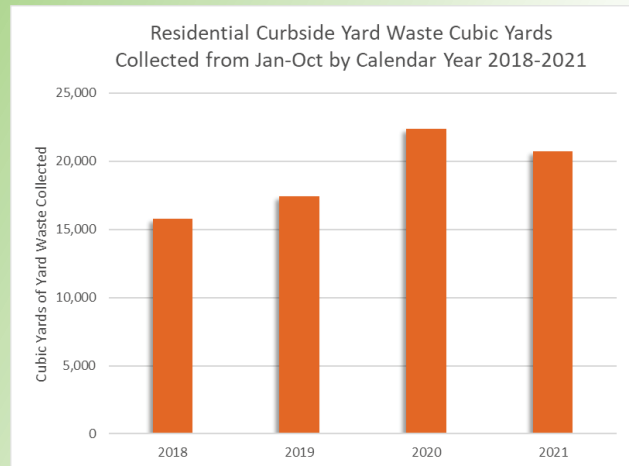
Pandemic Impacts – Trash & Recycling

- Increase in trash/recycling generation last year of 3-5%
- Tonnage has leveled out this year, blip on the radar in grand scheme



Pandemic Impacts – Yard Waste

- Significant increase year over year
- Caused budget shortfall in FY21
- Anticipated collection increase in FY22 budget
- Staffing shortage has caused service disruptions
- DPW/PRC performing supplemental yard waste collection
 - WM reimbursing City



Recycling Markets Update

- Beware the mainstream narratives that recycling is broken
- Recycling system is flawed, but functioning
 - Not going to get us to zero waste, but much better than disposal
- Commodity values fluctuate... municipal budgets don't
- 2018 supply/demand shift caused by China import ban
- Recycling markets have been improving during the pandemic – domestic demand is up
- Demand up = value up
- Newton recycling values:
 - July-Oct 2020 cost of \$105,000
 - July-Oct 2021 rebate of \$36,000

Newton trash value:

- July-Oct 2020 cost of \$436,000
- July-Oct 2021 cost of \$450,000



Organics Collection

Curbside Subscription Preferred Vendor

- Current cost: \$59.99 per 6 months of weekly collection + one-time cost of \$34 for starter kit
 - 5,000 subscriber threshold pricing will drop to \$49.99 per 6 months
- As of 12/6/21 we have 2,487 participants (7.9% of total hh)
- BEC has diverted 1,016 tons of food waste in Newton (cumulatively)



Drop-off Collection

- 3 carts x 1 pickup per week
- Nearly 1 ton per month average
- Expansion plan
 - 3 locations with secure drop boxes
 - 24hr access
 - 3x per week collection



MassDEP Waste Disposal Ban Update

- Effective November 1, 2022
 - Textiles
 - Mattresses
 - Commercial organics generator threshold reduction from 1 ton per week to ½ ton per week



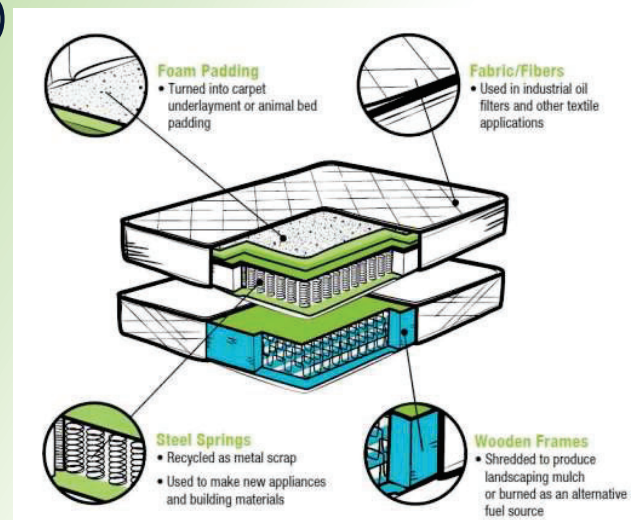
MassDEP Waste Disposal -Textile Recycling Plan

- Free curbside collection by appointment through Helpsy
- 6 collection bins at RRC
- Helpsy bins coming soon to some school locations
- Education campaign in spring/summer



MassDEP Waste Disposal -Mattress Recycling Plan

- 1870 mattresses in 2020
- Collection at RRC
- Fee for recycling (drop-off & curbside)
 - \$TBD, likely around \$10/piece
- Curbside collection fee \$25/piece
 - Fits into our existing “whitegoods” collection in our WM contract
- Requires ordinance edit for fee
- Education campaign when program launches



MassDEP Waste Disposal - Commercial Organics

- Universities, grocery stores, schools and municipal buildings are included in this ban if they generate more than ½ ton of food waste per week
- Newton North is the closest to falling within this threshold
 - NNHS student population doesn't fall within the threshold
 - However, NNHS preps all food for all 15 elementary schools & has the Tiger's Loft Bistro
 - DPW to consult with DEP on final determination



MassDEP Grant Funds

- Recycling Dividend Program
- \$68,000 awarded in 2021
- Eligible expenses:
 - Education & outreach
 - Project-based temporary staffing
 - Sellable compost bins
 - Improving school recycling/food waste diversion
- This program is changing in 2022, may reduce the grant award



MassDEP Technical Assistance Grant

- Nov 2020: DPW awarded a technical assistance grant (80 hours of staff time) to assess curbside services and develop recommendations to reduce trash, maximize environmental protection, and reduce costs
- Potential for increased costs
 - Next hauling contract expires June 2025
 - Long-term trash disposal contract expires in June 2028



Historic Curbside Waste Reduction Efforts

- 2008-2009 pilot program introducing automated cart system for trash and single stream recycling
- October 2009 city-wide implementation of automated cart system
 - Introduced a trash limit of 64gal with overflow bags available for purchase
- February 2020 collection fee implemented for bulky waste and whitegoods



Project Steps

- Bi-weekly meetings with MassDEP Municipal Assistance Coordinator
- Assess current services and existing data
- Research waste reduction methods and case studies
- Understand best practices in use by other local governments
- Gather data on weekly cart volume utilization
- Analyze data from state municipal waste survey



Curbside Recycling Education/Data Project

- 1 staff person and a crew of 25 volunteers
- Daily routes, weather permitting
- 5,724 addresses visited
- 4,713 cart-top decals applied
- 29% of households had recycling contamination
 - 19% of these households had high contamination, 66% had low
 - 53% of contamination was plastic bags/film
- Cart volume
 - Trash: 49% of residents set out carts less than 60% full
 - Recycling: 32% of residents set out carts less than 60% full



Anticipated Report Components

- Assessment of existing services
- Data analyses of MA communities and case studies of waste reduction policies/programs in practice
 - Organics diversion
 - Different rate systems & collection schemes
- Climate change impacts of service
- Review on contracting strategies and best practices
- Final report with detailed recommendations to be issued to City
- City will then begin process of determining next steps



Waneta Trabert

Director of Sustainable Materials Management

Newton DPW

wtrabert@newtonma.gov

www.newtonma.gov/recycling

Recycle Right Newton app



City of Newton
Department of Public Works
Memorandum

To: City of Newton City Council

From: James McGonagle, Commissioner of Public Works

Date: December 3, 2021

Subject: Proposed Stormwater Management and Erosion Control Ordinance

Pursuant to the requirements of the United States Environmental Protection Agency's NPDES MS4 General Permit, the City of Newton is required to have in place an ordinance or regulatory mechanism that achieves the "Stormwater Management in New Development and Redevelopment" objective described below.

Stormwater Management in New Development and Redevelopment: The objective of this post-construction requirement is to minimize the discharge of pollutants in stormwater runoff from new or redeveloped sites through infiltration, retention and/or treatment. Specific requirements include:

1. Implement Low Impact Development (LID) strategies.
2. Design Stormwater Management (SWM) systems to be consistent with, or more stringent than, the current MA Stormwater Handbook.
3. Achieve prescribed pollutant removal efficiencies with stormwater management systems for new development and redevelopment projects.
4. Require submission of SWM as-built drawings (construction plans) upon project completion.
5. Establish procedures for long-term operations and maintenance of installed SWM systems.

In addition to these specific post-construction requirements, communities must also have regulatory procedures for site plan reviews to ensure project completeness, construction-period site inspections and enforcement to minimize or eliminate soil erosion and muddy water from leaving construction sites and entering City streets and storm drains.

The proposed mechanism to achieve these requirements is a new stormwater management permit established by the proposed stormwater ordinance along with detailed rules and regulations which accompany the ordinance.

The proposed draft ordinance along with draft rules and regulations are included for your review prior to meetings with the Public Facilities and Finance Committees early in 2022.

STORMWATER MANAGEMENT AND EROSION CONTROL ORDINANCE
DRAFT 09-13-21

Article VI.
STORMWATER MANAGEMENT AND EROSION CONTROL

§29-148 General provisions (*Section 5.3 of Zoning will need to be deleted/updated concurrent with this ordinance adoption*)

(a) Purpose

The purpose of this ordinance is to protect, maintain, and enhance public safety, environmental health, and general public welfare by controlling the volume and rate of stormwater runoff resulting from land disturbing activities (during and after such activities), managing stormwater at its source and directing it into the ground rather than sending it into a system of storm drain pipes and channels.

This ordinance establishes a permit system to ensure that all applicable projects are reviewed and comply with established standards, the city's legal authority to ensure compliance with the provisions of this ordinance through inspection, monitoring and enforcement and a mechanism by which the City can meet the requirements of its National Pollutant Discharge Elimination System (NPDES) general permit.

(b) Definitions. Definitions. For the purposes of this ordinance the following words and phrases shall have the meanings respectively ascribed to them by this section:

Alter or alteration: Any activity on an area of land that changes the water quality, or the force, quantity, direction, timing, or location of runoff flowing from the area. Such changes include change from distributed runoff to confined, discrete discharge; change in the volume of runoff from the area; change in the peak rate of runoff from the area; and change in the recharge to groundwater on the area. Alter may also be referred to as “alteration of drainage characteristics,” and “conducting land disturbance activities.”

Best management practice (BMP): A structural or nonstructural activity, procedure, restraint, or structural improvement that helps to reduce the quantity of or improve the quality of stormwater runoff. A structural stormwater best management practice may include a basin, discharge outlet, swale, rain garden, filter, or other stormwater treatment practice or measure either alone or in combination, including without limitation any overflow pipe, conduit, weir control structure that: (a) is not naturally occurring; (b) is not designed as a wetland replication area; and (c) has been designed, constructed, and installed for the purpose of conveying, collecting, storing, discharging, recharging, or treating stormwater. Nonstructural stormwater best management practices may include source control and pollution prevention measures.

Conveyance: Any structure or device, including, but not limited to, pipes, drains, culverts, curb breaks, paved swales and man-made swales, natural and man-made channels, and ditches, designed or utilized to move or direct stormwater runoff or existing water flow; any impervious

surface/sheet flow utilized to remove rainfall (for example, a parking lot) which drains directly onto a vegetated surface or public road without any curbing or stormwater system to intercept the flow.

Erosion and sedimentation control plan: A document containing a narrative, drawings and details developed by a registered professional civil engineer (PE), which includes best management practices, or equivalent measures designed to control surface runoff, erosion and sedimentation during pre-construction and construction related land disturbance activities.

Impervious Surface or Area: Any material or structure in, on or above the ground that prevents water from infiltrating through the underlying soil. Impervious surface is defined to include, without limitation: paved surfaces (parking lots, sidewalks, driveways, etc.), roof tops, swimming pools, stone patios/pavers, gravel, and compacted dirt surfaces such as driveways and roads.

Land disturbance: Any activity that causes a change in the position or location of soil, sand, rock, gravel, or similar earth material. Examples include, but are not limited to, demolition, construction (of buildings or retaining walls), site preparation, grading, paving, tree cutting, and earth moving.

Low impact development (LID): A site design strategy for managing stormwater by maintaining or replicating the predevelopment hydrologic functions using design techniques to create a functionally equivalent hydrologic landscape.

Municipal Storm Drain System or Municipal Separate Storm Sewer System (MS4): The system of conveyances designed or used for collecting or conveying stormwater, including any road with a stormwater management system, street, gutter, curb, inlet, piped storm drain, pumping facility, retention or detention basin, natural or man-made or altered drainage channel, reservoir, or other drainage structure(s) that together comprise the storm drainage system owned or operated by the city.

Person Aggrieved: all record owners of the subject property or an owner of property directly abutting the subject property.

Stormwater Management and Erosion Control Permit: A permit issued by the Engineering Division of the Department of Public Works, after review of an application, plans, calculations, and other supporting documents, in accordance with the provisions of this ordinance.

Stormwater management plan: A plan submitted as part of an application for a stormwater management and erosion control permit, as required by Section 29-150(A) of this ordinance. A document containing narrative, drawings and details prepared by a registered professional civil engineer (PE), which includes structural and non-structural best management practices to manage and treat stormwater runoff generated from regulated development activity. A stormwater management plan also includes an operation and maintenance plan describing the maintenance requirements for structural best management practices.

Stormwater management system: the collective system for conveying, collecting, storing, discharging, recharging, or treating stormwater on-site, including stormwater best management practices, and any pipes and outlets intended to transport and discharge stormwater to the groundwater, a surface water, or a municipal separate storm sewer system.

(c) Applicability

This ordinance shall apply to all land-disturbing activities over the thresholds below, within the jurisdiction of the city. A stormwater management permit shall be required prior to undertaking any alteration or land disturbing activity as follows:

(1) Land disturbance

- (a) Projects that will or could disturb over 5,000 square feet (SF) of land (i.e., the limit of work line encompasses >5,000 SF of land).

(2) Minor stormwater management

- (a) Any residential development or redevelopment with four or fewer units, provided the land disturbance is less than 0.5-acre (or 21,780 SF) .
- (b) Any residential, commercial, industrial, institutional, or municipal alteration, development or redevelopment creating 401 to 1,000 SF of new impervious area.
- (c) The construction of any new retaining wall required due to proposed changes in grade, unless already approved by Special Permit (per Chapter 30 Sec. 5.4.2).
- (d) Trench excavation requiring dewatering.

(3) Major stormwater management

- (a) Any alteration, disturbance, development, or redevelopment exceeding the thresholds listed in § 29-148(C)(1) and (2) above.

(d) Exemptions

The commissioner of public works may establish exemptions from the requirements of this ordinance, which exemptions shall be set forth in the city of Newton stormwater management and erosion control rules and regulations.

§29-149 Administration

(a) Administration

The commissioner of public works or his or her designee shall administer, implement, and

enforce this ordinance.

(b) Rules and regulations

The commissioner of public works shall adopt, and periodically amend as deemed necessary, rules and regulations relating to the detailed requirements, procedures, and administration of this ordinance.

§29-150 Permit procedures

(a) Permit required

No land disturbing activity that meets the criteria specified in Section 29-148(c) may commence prior to the issuance of a stormwater management and erosion control permit as set forth in this ordinance.

(b) Procedures and Requirements

The commissioner of public works shall set forth the application procedures and requirements - including but not limited to content of applications, stormwater management plan and operations and maintenance plan contents, technical requirements, inspections, and project closeout process in the rules and regulations promulgated under section §29-149(b) of this ordinance.

(c) Deadline for Action

Failure of the commissioner of public works or his or her designee to take action within sixty (60) days of receipt of a complete stormwater management and erosion control permit shall be deemed approval of said application, unless extension of the sixty (60) days is agreed upon, in writing, by the applicant.

§29-151 Entry, inspections and close-out

To the extent permitted by law, the commissioner of public works or his or her designee may enter upon privately owned property for the purpose of performing their duties under this ordinance and may make or cause to be made such examinations, surveys or sampling as the commissioner of public works or his or her designee deems reasonably necessary to determine compliance with the permit

§29-152 Final report and certificate of compliance

Upon completion of the work done pursuant to a permit issued for a minor or major stormwater land disturbing activity, the permittee shall request a final inspection and submit the following: (Note: Land disturbance only permits do not require a certificate of compliance)

- (1) Certified as-built construction plans from a Massachusetts Registered Professional Engineer (P.E.) and/or Registered Professional Land Surveyor (P.L.S) depicting all final grade changes, water, sewer and stormwater utilities and any BMPs installed.
- (2.) A note on the As-built plan from the Engineer of Record indicating that the stormwater management system(s) have been constructed in accordance with, and meet the requirements of, the Stormwater Management Permit, including compliance with performance standards for Best Management Practices (BMPs) as noted in manufacturer's literature and/or Environmental Protection Agency's performance curves in the NPDES Small MS4 Permit. Any discrepancies between the approved plan and the as-built plan shall be noted.
- (3.) Proof of recording the Operations and Maintenance Plan at the South Middlesex County Registry of Deeds.

The city engineer will issue a certificate of compliance upon receipt of these items and upon determination that all work of the permit has been satisfactorily completed and is in conformance with this ordinance. the commissioner of inspectional services shall not issue a certificate of occupancy for any property subject to this Sec. 29 prior to receipt of such certificate of compliance.

§29-153 Enforcement

The commissioner of public works shall have authority to enforce this ordinance and the associated rules and regulations; issue orders, violation notices, and enforcement orders as necessary; and may pursue all available civil and criminal remedies for such violations.

(a) Violation notices and enforcement orders

- (1) The commissioner of public works may issue a written order to enforce the provisions of the stormwater management and erosion control ordinance or the rules and regulations, which may include demands to:
 - (a) Cease and desist from further alterations or land disturbance activity until there is compliance with the stormwater management and erosion control ordinance and/or the stormwater management and erosion control permit.
 - (b) Maintain, install or perform additional erosion and sedimentation control measures.
 - (c) Remediate erosion and sedimentation resulting directly or indirectly from land-disturbing activity.
 - (d) Remediate adverse impacts resulting directly or indirectly from malfunction of the stormwater management system.
 - (e) Eliminate discharges, directly or indirectly, into a watercourse or into the waters of the Commonwealth.

- (2) If the commissioner of public works determines that abatement or remediation of adverse impacts is required, the order shall set forth a deadline by which such abatement or remediation must be completed.
- (3) If a person violates the provisions of this ordinance, regulations, permit, notice, or order issued thereunder, the commissioner of public works may seek injunctive relief in a court of competent jurisdiction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

(b) Penalties

Pursuant to Section 17-21 of the City Ordinances, any person who violates any provision of the Stormwater Management and Erosion Control Ordinance, or order or permit issued thereunder, may be ordered to correct the violation and/or shall be punished by a fine of not more than \$300.00 per violation, excluding the cost of damages. Each day or part thereof that such violation occurs or continues shall constitute a separate violation.

(C) Non-Criminal Disposition

As an alternative to criminal prosecution, the commissioner of public works may elect to utilize the non-criminal disposition procedure set forth in M.G.L. c. 40, § 21D.

(D) Appeals

Judicial review. Any person aggrieved by the grant or denial of a permit may seek relief therefrom by a civil action in any court of competent jurisdiction as provided by the laws of the Commonwealth of Massachusetts.

§29-154 Severability

Any finding of the invalidity of any section, provision, paragraph, sentence, or clause of this ordinance shall not invalidate any other section, provision, sentence, or clause thereof, nor shall it invalidate any permit or determination that has been previously issued under this ordinance.

CITY OF NEWTON
Stormwater Management and Erosion Control Rules & Regulations
Draft 9/23/21 Adopted xx, 2021

SECTION 1: AUTHORITY

- A. These Rules and Regulations have been adopted by the Commissioner of the Department of Public Works in accordance with Chapter 29 of the Revised Ordinances of the City of Newton, Massachusetts, and will be administered by the City Engineer through the Engineering Division.
- B. Nothing in these Rules and Regulations is intended to replace or be in derogation of the requirements of the City of Newton's Floodplain/Watershed Ordinance (Ch. 22, Article II Sec. 22), the City of Newton's Zoning Ordinance (Ch. 30), or any other ordinance adopted by the City of the Newton. Any project or activity subject to the provisions of the above-cited Ordinances or related Rules and Regulations must comply with the specifications of each.
- C. These Rules and Regulations may be periodically amended by the Commissioner of the Department of Public Works in accordance with the procedures outlined in Ch. 29-149 of Newton's Stormwater Management and Erosion Control Ordinance, hereinafter referenced as the Stormwater Management Ordinance.
- D. Waivers. The Commissioner of Public Works, as delegated to the City Engineer may waive strict compliance with any of the requirements of the City of Newton Stormwater Management and Erosion Control Rules and Regulations (hereinafter referenced as the Stormwater Management Rules and Regulations), if it finds that strict application of some of the requirements is unnecessary or impracticable because of the size or character of the development project or because of the natural conditions at the site. Waivers may only be granted for projects disturbing less than 1 acre of land. Any Applicant requesting a waiver must submit a written request for such a waiver. Such a request shall be accompanied by an explanation and documentation supporting the waiver request.

SECTION 2: PURPOSE

- A. The City's stormwater management system is strained by increased volumes of runoff from more frequent and higher intensity storms. Compounding the issue is a trend of increasing impervious areas and elevated grades around new structures limiting natural infiltration. Further, stormwater runoff from impervious surfaces is the greatest source of pollution to Newton's ponds, lake and waterways. Development proposals provide an inconsistent level of detail, making review and analysis challenging.
- B. The purpose of these regulations is to clarify administration of Newton's Stormwater Management Ordinance, in order to achieve its objectives to:
 - 1. Limit land clearing and alteration of natural topography prior to (re)development.
 - 2. Prevent soil erosion and sedimentation resulting from construction.
 - 3. Promote filtration, infiltration and the recharge of groundwater, and limit additional stormwater flow into the City's drainage system.
 - 4. Minimize flooding.
 - 5. Improve water quality.
 - 6. Prevent alteration or destruction of aquatic resources and wildlife habitat.
 - 7. Prevent clogging and pollution entering municipal catch basins and storm drainage systems.
 - 8. Establish a mechanism by which the City can meet the requirements of its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer (Drainage) System (MS4) permit.

SECTION 3: DEFINITIONS

- A. All definitions are provided in Appendix A of these Rules and Regulations.
- B. These definitions apply to the Stormwater Management Ordinance and these Rules and Regulations.
- C. Terms not defined in the Stormwater Management Ordinance or Appendix A of these Rules and Regulations shall be construed according to their customary and usual meaning unless the context indicates a special or technical meaning.

SECTION 4: APPLICABILITY

These Rules and Regulations apply to all projects or activities subject to Ch. 29-148(c) the Applicability Section of the Stormwater Management Ordinance. All projects or activities referenced in Ch. 29-148 and not falling under an exception listed in Ch 29-148(d) shall require a Stormwater Management Permit in accordance with the Stormwater Management Ordinance.

Projects and/or activities within the jurisdiction of the Stormwater Management Ordinance must obtain a Stormwater Management Permit (SMP) from the City Engineer in accordance with the permit procedures and requirements defined in Sections 5 through 9 of these Rules and Regulations.

No work on a project within the jurisdiction of the City's Stormwater Management Ordinance may commence without a SMP or waiver from the City Engineer. Work commenced without an approved permit or waiver can result in an enforcement action and/or fines.

- A. Exemptions. Notwithstanding Section 4.B, no SMP shall be required by the City Engineer for:
 - 1) Normal maintenance and improvement of land for the primary purpose of agriculture, horticulture, floriculture, or viticulture, or the use, expansion, or reconstruction of existing structures for the primary purpose of agriculture, horticulture, floriculture, or viticulture, to the extent protected under the Zoning Act, M.G.L Chapter 40A, Section 3.
 - 2) Normal maintenance of existing landscaping, gardens, or lawn areas.
 - 3) Milling, excavating and replacement (but not enlargement) of lawfully located, existing pavement (bituminous concrete or concrete) provided the existing drainage patterns are not altered.
 - 4) Overlaying of existing pavement, with no increase in impervious area.
 - 5) Construction of a fence that does not alter the existing terrain or drainage patterns.
 - 6) Drain connections declared necessary by the Commissioner to remove groundwater and stormwater inflow from the sanitary sewer.
 - 7) Emergency activities necessary for the protection of the health and safety of the public, provided that: (a) the work is to be performed by or has been ordered by an agency of the Commonwealth of Massachusetts or a political subdivision thereof, (b) advance notice, oral or written, has been given to the Commissioner prior to commencement of work or within 24 hours after commencement, (c) the Commissioner certifies the work as an emergency activity, and (d) the work is performed only for the time and place certified by the Commissioner for the limited purposes necessary to abate the emergency.
 - 8) Maintenance, repair or replacement of an existing and lawfully located structure or facility used in the service of the public to provide electric, gas, water, telephone, telegraph or other

telecommunication services, provided that applicable permits are obtained and there is no alteration in the terrain, ground cover or drainage patterns.

- 9) Maintenance, repair or replacement of existing stormwater infrastructure or stormwater Best Management Practices (BMPs) provided that: (a) there is no alteration of the existing terrain or drainage patterns; (b) there is no increase in the size or capacity of over 25%; (c) there is no change in the drainage area contributing to the system; and (d) best practical measures are utilized to avoid any negative impacts on stormwater quality or runoff rate or volume.
- 10) Normal maintenance of City-owned public land, rights-of-way, public utilities, and appurtenances, including roadway reconstruction.
- 11) Any work or projects for which all necessary approvals and permits, including building permits, have been issued before the effective date of the City of Newton's Stormwater Management Ordinance.
- 12) Activities that are temporary in nature, have negligible impacts, and are necessary for planning and design purposes (e.g., installation of monitoring wells, exploratory borings, sediment sampling, surveying and percolation tests).

B. A Land Disturbance Stormwater Management Permit is required for the following activity, as stated in Ch. 29-148(c).

1. Projects that will or could disturb over 5,000 square feet (SF) of land (i.e., the limit of work line encompasses over 5,000 SF of land).

C. A Minor Stormwater Management Permit is required for any one or more of the following activities, as stated in Ch.29-148(c):

1. Any residential development or redevelopment up to 4 units, provided the land disturbance is less than 0.5-acre.
2. Any residential, commercial, industrial, institutional, or municipal alteration, development or redevelopment creating 401 to 1,000 SF of new impervious area.
3. The construction of any new retaining wall required due to proposed changes in grade, unless already approved by Special Permit (per Zoning Sec. 5.4.2).
4. Trench excavation that requires dewatering.

D. A Major Stormwater Management Permit is required for any alteration, disturbance, development, or redevelopment exceeding the thresholds listed above for Land Disturbance or Minor Stormwater, as stated in Ch. 29-148(c).

SECTION 5: DESIGN STANDARDS

A. All SMP applications must clearly illustrate compliance with the following standards.

1. Calculate and depict prominently on the plans: the existing and proposed impervious surface areas. This information shall be included as a table with other zoning information.
2. Grading. Topographic contours shall be shown at 1-foot intervals on plans. Changes in grading of the land must demonstrate to the City Engineer's satisfaction that there will be no net increase in stormwater runoff to abutting properties or the City's stormwater drainage system. Changes to

landforms (i.e., ledge removal, blasting) shall be avoided and where necessary conducted to minimize land disturbance and avoid negative impacts to adjacent properties.

3. Retaining walls. In order to prevent potential flooding caused by the construction of a retaining wall, any proposed retaining wall shall be designed and constructed so as not to block or exacerbate any existing stormwater or groundwater flow patterns to or from abutting properties, as well as to or from the city's right of way.
4. Tree removal. Preserving healthy trees is encouraged due to the many benefits trees provide. Existing condition plans shall identify and note the sizes of all trees eight (8) inches dbh and larger on the subject property. Trees 8 inches dbh and larger that are proposed for cutting shall be clearly identified as such on a plan sheet. A clearly illustrated replacement planting plan shall be provided on a proposed condition plan sheet. Protected trees shall be replaced with an appropriate quantity of trees equaling the caliper inches lost due to development, in accordance with the City's Tree Preservation Ordinance¹, unless the project is exempt from compliance with the Tree Ordinance. If unable to meet this replacement policy the applicant may contribute to the City's tree fund.
5. Groundwater Intrusion: The bottom of the lowest foundation footing for habitable space must be 1-foot above the seasonal high groundwater elevation as determined by a Soil Evaluator licensed in Massachusetts or determine the seasonal high groundwater table using Frimpter Method².
6. Erosion and Sedimentation Control. Sediment that washes off construction sites and into the City's catch basins, ponds, lake, and wetlands has considerable cost and ecological implications for the City. Runoff, erosion and sediment control are important at every phase of the construction process. Implementing and maintaining the right control practice saves money, time and the environment. The application will be evaluated on the following criteria.
 - a) Minimize disturbance of natural vegetation wherever possible. This is the best and most economical control measure.
 - b) Control stormwater runoff and minimize soil erosion potential during construction. Divert flows around exposed soils, material stockpiles and slow down stormwater flows.
 - c) Control soil movement and retain sediment within the 'limits of work' during and after construction. These measures may include but are not limited to perimeter controls such as straw wattles and silt fence, stabilized construction entrances/exits, sediment basins, catch basin silt sacks, proper dewatering practices (as needed).
 - d) Stabilize disturbed soils, particularly unvegetated slopes, during any lapse in construction and immediately post-construction.
 - e) Include a note (on the plans) for the contractor to regularly inspect and maintain the erosion and sediment controls measures. See additional note requirement in Section 6.B.
 - f) Construction phasing or sequencing is encouraged for larger projects (e.g., ≥ 2 acres).

B. Minor Stormwater Management Permits. In addition to Section 5.A above, all projects subject to a Minor Stormwater Management Permit shall be designed to the following standards.

¹ Newton's [Tree Preservation Ordinance](#)

² Frimpter Method: https://www.usgs.gov/centers/new-england-water/science/updating-a-method-estimate-probable-high-groundwater-levels?qt-science_center_objects=0#qt-science_center_objects

1. Stormwater management systems for new development and redevelopment sites shall be designed to retain the volume of runoff equivalent to, or greater than, two (2) inches multiplied by the *net increase* in impervious surface area on the site.
2. There must be a minimum two-foot separation between bottom of structure and seasonal high groundwater.
3. Stormwater infiltration systems shall be design with the following setbacks:
 - a) A minimum of 10 feet from any building.
 - b) A minimum of 50 feet from any slope greater than 15%. A variance may be allowed if an impermeable barrier is installed.
4. Proposals must analyze, propose, and implement Low Impact Development (LID) Best Management Practices (BMPs), unless PROVEN IN WRITING TO THE SATISFACTION OF THE City Engineer to be infeasible. See Appendix B for LID BMPs. If infeasible, Applicants shall demonstrate reasons why LID BMPs are infeasible and demonstrate compliance with design standards through generally accepted methods.
5. Soils tests must be conducted by a Soil Evaluator licensed in Massachusetts and must be performed within 25 feet of the location of every proposed infiltration BMPs and LID technique, to clearly identify soil descriptions, depth to estimated seasonal high groundwater, depth to bedrock, and soil texture. Any soil test conducted between the months of June and February must also be accompanied by a determination of the seasonal high groundwater table using Frimpter Method³.
6. Drainage Design: Drainage calculations shall be performed for existing site conditions (pre-development) and proposed site conditions (post-development) based on proposed site plans. Storms of 2, 10, 25, and 100-year frequency events shall be analyzed to demonstrate no net increase in stormwater runoff volume or peak flow for any storm event. The rainfall amounts used shall be based on the 1998 Cornell University Study, NOAA Atlas 14 Volume 10 Point Precipitation Frequency Estimates for Newton.

Note: the 100-year design storm is based on 8.78 inches of precipitation in 24 hours. For purposes of choosing a Runoff Curve Number, all pervious lands on the Site shall be assumed prior to development to be in “good” hydrologic condition regardless of conditions existing at the time of computation. All drainage calculations shall be stamped by a Registered Professional Civil Engineer.
7. Infiltration systems shall be designed to drain fully within 72 hours.
8. Plan submission requirements are detailed in Section 6 – Application Requirements and Procedures.

C. Major Stormwater Management Permits. In addition to Section 5.A. and 5.B., above, all projects subject to a Major Stormwater Management Permit shall be designed to meet the following additional standards.

1. All projects triggering the thresholds for a Major Stormwater Permit must meet the minimum pollutant removal requirements and on-site stormwater volume retention requirements identified

³ Frimpter Method: https://www.usgs.gov/centers/new-england-water/science/updating-a-method-estimate-probable-high-groundwater-levels?qt-science_center_objects=0#qt-science_center_objects

in C.3 and C.4 below; if due to site conditions this is technically infeasible, then the Applicant may request a waiver (waivers are only applicable for projects less than 1 acre).

2. Projects shall comply with the Stormwater Standards of the most recent version of Massachusetts Stormwater Management Handbook (Handbook)⁴, and the City of Newton General Construction Detail Book and Streets Design Guide except that our requirement for the volume of stormwater runoff to be stored (retained on-site) is higher than the Handbook.
3. Stormwater management systems on **new development** sites shall be designed to:
 - a) Retain the volume of runoff equivalent to, or greater than, two (2) inches multiplied by the total post-construction impervious surface area on the site; and
 - b) Remove 90% of the average annual load of Total Suspended Solids generated from the total post-construction impervious area on the site; and
 - c) Remove 60% of the average annual load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on the site; and
 - d) Whenever feasible exceed the above minimum phosphorus removal⁵ requirement. Infiltration BMPs, bioretention areas, constructed stormwater wetlands, and filter systems are recommended ways to reduce phosphorus in stormwater discharges.
4. Stormwater management systems on **redevelopment** sites shall be designed to improve existing conditions by:
 - a) Retain the volume of runoff equivalent to, or greater than, two (2) inches multiplied by the total post-construction impervious surface area on the site; and
 - b) Remove 80% of the average annual load of Total Suspended Solids generated from the total post-construction impervious area on the site; and
 - c) Remove 50% of the average annual load of Total Phosphorus (TP) generated from the total post-construction impervious surface area on the site; and
 - d) Whenever feasible exceed the minimum total phosphorus removal² requirement. Infiltration BMPs, bioretention areas, constructed stormwater wetlands, and filter systems are recommended ways to reduce phosphorus in stormwater discharges.
5. To support compliance with the City's MS4 Permit, all new stormwater management BMPs located on commercial and industrial property shall incorporate shutdown and containment in the design to isolate the drainage system in the event of an emergency spill or other unexpected event.

⁴ Massachusetts Stormwater Handbook, as most recently updated.

<http://www.mass.gov/eea/agencies/massdep/water/regulations/massachusetts-stormwater-handbook.html>

⁵ The required removal percentages are not required for each storm, it is the average removal over a year that is required. Pollutant removal shall be calculated consistent with EPA Region 1's Opti-Tool found here;

<https://www.epa.gov/tmdl/opti-tool-epa-region-1s-stormwater-management-optimization-tool>, Or use the performance curves in the MS4 Permit, Appendix F, Attachment 3, found here:

<https://www3.epa.gov/region1/npdes/stormwater/ma/2016fpd/appendix-f-attach-3-2016-ma-sms4-gp-mod.pdf>.

SECTION 6: APPLICATION REQUIREMENTS AND PROCEDURES FOR STORMWATER MANAGEMENT PERMITS

A. All Stormwater Management Permits (SMP) Applications

1. One (1) completed Stormwater Management Permit Application Form with the following:
 - a) Name, contact information, and original signatures of owner(s), Applicant(s), and, if applicable, representative.
 - b) Address of property and parcel ID.
 - c) Project description.
 - d) Site plan reference(s).
 - e) Signature of Applicant, property owner (if different), and representative, if applicable.
 - f) Payment of the Application fee.
2. Supporting engineering plans for a SMP shall include the materials as specified in this section.

B. Land Disturbance Permit Submission Requirements

1. In addition to the signed, completed application, the Applicant shall provide a brief narrative explaining the purpose of the proposed land disturbance.
2. A Site Plan denoting property lines, existing buildings, existing and proposed trees (clearly noting any trees to be cut), existing and proposed edge of lawn and ground cover materials and existing and proposed topographic contours. This plan shall be stamped and signed by a Professional Civil Engineer (PE) licensed in the Commonwealth of Massachusetts and/or Professional Land Surveyor (PLS).
3. Methods to minimize the potential for soil erosion and control soil / sediment from leaving the property shall be depicted on the Site Plan.

C. Minor Permit Submission Requirements

1. In addition to the signed, completed permit application, the Applicant shall provide: one (1) set of full-size plans, stapled and rolled; plus, an electronic copy (pdf) provided on a flash drive. Additional copies may be requested by the City Engineer.
2. A Stormwater Management Site Plan that may be prepared by drafting or hand sketching, depending on project size and complexity, at the discretion of the City Engineer, to include:
 - a) General Information:
 - (1) Sheet size: Sheets shall have a maximum dimension of 24" x 36" and formatted for landscape layout. Large plans should be rolled rather than folded. If more than one sheet is needed to describe the proposed work, a key sheet is required showing a general composite of all work proposed.
 - (2) Scale: Not more than 1" = 50' (the Engineering Division routinely accepts plans at 1" = 20' or 1" = 40'). If project sites are large, an overall site plan at 1" = 100' is acceptable, but detailed plans must be at or less than 1" = 50'. Include graphical scales on all plans.

Coordinate system shall be 1983 North American Datum, Massachusetts State Plane, feet, and North American Vertical Datum (NAVD) of 1988.

- (3) Title Block: A title block shall be included on all plans, located at the lower right-hand corner, oriented to be read from the bottom when bound at the left margin. Include:
 - (a) Plan title.
 - (b) Original date plus additional space to reference the title and dates of all plan revisions.
 - (c) Name and address of record owner and engineer and/or surveyor.
 - (d) Address of property, Assessor Map and Parcel ID.
- (4) Legend: Include legend identifying line types and symbols used in plan set
- (5) Locus Map.
- b) An Existing Conditions Plan containing the following:
 - (1) Property lines.
 - (2) The existing zoning, and land use at the site and abutting properties.
 - (3) The location(s) of existing easements.
 - (4) The location of existing utilities.
 - (5) Existing contours at 1-foot minimum vertical increments.
 - (6) Existing landscaping and vegetation including all existing trees within 25 feet of the work area that are over 8 inches in diameter breast height (dbh) and major vegetative cover types, including wooded areas defined by tree line drip line, shrub communities, limits of lawn, and edge of tree canopy.
 - (7) Locations of existing structures, pipes, swales and detention ponds.
 - (8) Locations of bodies of water, including wetlands.
 - (9) A delineation of FEMA Special Flood Hazard areas and calculation of FEMA flood elevation, if applicable. Floodplain elevation data shall be based on 1988 NAVD (North American Vertical Datum) and reference the appropriate National Flood Insurance Rate Map and/or Flood Study.
 - (10) Location of existing septic systems, monitoring and private wells, if present.
 - (11) The location(s) of soil tests and description of soil from test pits performed at the location of proposed stormwater management facilities, including but not limited to soil description, depth to seasonal high groundwater table (SHGWT), depth to bedrock, and percolation rates. Soils and the SHGWT elevation shall be based on site test pits logged by a Soil Evaluator licensed in Massachusetts
 - (12) The existing vegetation (e.g., lawn area, mature trees, etc.) and ground surfaces with runoff coefficients for each.
 - (13) Stamp and signature of a Professional Civil Engineer (PE) licensed in the Commonwealth of Massachusetts and/or Professional Land Surveyor (PLS).

- c) A Proposed Conditions Plan containing the following:
- (1) Property lines, building envelope restrictions and/or easement areas, including areas affected by conservation restrictions, if applicable.
 - (2) Proposed improvements including location of buildings or other structures, utilities, easements, etc., if applicable, and impervious surfaces. For single family homes plans shall show, at a minimum, house footprint, decks, garages, sheds, roof drainage and stormwater drainage structures, as applicable) and all areas of existing and proposed impervious areas: including tennis courts, patios, and driveways, etc.
 - (3) **Proposed total impervious surface areas in square feet**, shown as a table with comparison to existing impervious surface area conditions.
 - (4) FEMA Flood Hazard areas and Newton Floodplain Ordinance areas, if applicable.
 - (5) Limit of work.
 - (6) Proposed grading for work area. Proposed contours at 1-foot vertical increments.
 - (7) Locations for storage of materials, equipment, soil, snow and other potential pollutants.
 - (8) A note on the plan indicating the Contractor shall sequence construction activities to avoid stockpiling materials and soil compaction where proposed stormwater BMPs will be located.
 - (9) Location(s) and description of existing stormwater conveyances, impoundments, wetlands, drinking water resource areas, or other critical environmental resource areas on or adjacent to the site or into which stormwater flows.
 - (10) Proposed drainage facilities (plan view and details) including drawings of all components of the proposed stormwater management system including:
 1. Locations, cross sections, and profiles of all brooks, streams, drainage swales and their method of stabilization.
 2. All measures for the detention, retention or infiltration of water.
 3. All measures for the protection of water quality.
 4. For engineered systems designed to provide drainage or stormwater management including, but not limited to, culverts, drainage outfalls, catch basins and pervious pavement 'systems'; provide an appropriate plan detail with notes on drawings specifying materials to be used, and construction specifications.
 5. Notes indicating the required inspections for the site and the stormwater drainage facilities during construction.
 - (11) Proposed landscaping, vegetation, and ground surfaces. When trees 8-inches dbh and larger are proposed for cutting, a clearly illustrated planting plan shall be provided. The replacement planting plan shall comply with the City's Tree Preservation Ordinance (see footnote 1). If it is not feasible to plant the required number of trees, an applicant may propose a combination of trees and shrubs for approval.

- (12) Locations where stormwater discharges to surface water (include all roads, drains and other structures that could carry stormwater to a wetland or other water body, on or offsite).
 - (13) A general construction note stating the Engineering Division Inspector shall be notified 48 hours prior to any site work in accordance with project permits.
 - (14) Stamp and signature of a Professional Civil Engineer (PE) licensed in the Commonwealth of Massachusetts to certify that the Stormwater Management Plan is in accordance with the criteria established in the Stormwater Regulations; a stamp and signature of a Professional Land Surveyor (PLS) is acceptable if no drainage facilities are proposed and they have the experience and capability to prepare the required Site Plan and to provide the required existing and proposed grading and erosion control provisions.
4. The Erosion and Sediment Control Plan shall demonstrate that erosion will be minimized, and sediment contained. The plan shall include, at a minimum, the following:
- c) Estimates of the total area expected to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas.
 - d) Location and design of all proposed soil erosion and sediment control measures.
 - e) Pollution control measures to be implemented during construction to mitigate pollutants from entering the public right of way and storm drains. Consider construction and waste materials expected to be stored on-site, describe source control and storage methods to minimize exposure of the materials to stormwater.
 - f) Location of anti-tracking area at each construction entrance or other means to minimize off-site tracking of soil and sediment onto paved surfaces
 - g) Means to protect all existing drainage infrastructure (i.e., catch basins) and proposed drainage infrastructure from clogging during construction. For projects anticipated to encounter or manage groundwater, show proposed dewatering operations, including proposed locations of discharge and related details.
 - h) Location of proposed construction stockpiling areas with appropriate erosion and sediment control measures.
 - i) The intended sequence and timing of activities that disturb soils at the site and the general sequence during the construction process in which the erosion and sediment control measures will be implemented. Or include this note on the plan: "The contractor shall sequence construction activities to minimize the potential for soil, stone or sediment to migrate off-site; divert flows around bare soils, to the maximum extent practicable; stabilize unvegetated areas as soon as practical, and prevent pollutants from entering the City's storm drainage system"
 - j) Measures to control wastes, including discarded building materials, concrete truck wash-out, chemicals, litter, and sanitary wastes during construction and prevent the discharge of these and any solid material to Newton's MS4 or waters of the United States, unless authorized by a permit issued under Section 404 of the Clean Water Act.
 - k) Where a site is located in whole or in part within the floodplain, a Floodplain Contingency Plan shall be included with the Erosion and Sediment Control Plan. This Plan shall describe the steps necessary to stabilize the site during construction in the event of a possible flood. A possible flood shall be defined as period when a flood watch is declared for the Charles River by the National Weather Service.

5. A Stormwater Management Report shall be prepared in conformance with the Design Standards contained in Section 5 and contain the following elements:
 - a) The existing site hydrology.
 - a) A drainage area map showing pre- and post-construction watershed boundaries, drainage area and stormwater time of concentration (Tc) flow paths, including drainage system flows.
 - b) Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in this Regulation. Such calculations shall include:
 - (i) Description of the design storm frequency, intensity and duration.
 - (ii) Time of concentration.
 - (iii) Soil Runoff Curve Number (CN) based on land use and soil hydrologic group.
 - (iv) Peak runoff rates and total runoff volumes for each watershed area.
 - (v) Infiltration rates, where applicable.
 - (vi) Culvert capacities, where applicable.
 - (vii) Flow velocities.
 - (viii) Data on the rate and volume of runoff for the specified design storms.
 - (ix) Documentation of sources for all computation methods and field test results.
 - c) If a project requires a Stormwater Pollution Prevention Plan (SWPPP) per the NPDES General Permit for Storm Water Discharges from Construction Activities (applicable to construction sites that disturb one or more acres of land), then the Applicant is required to submit a complete copy of the SWPPP (including the signed Notice of Intent and approval letter) as part of its Application for a SMP.
6. Post Construction Operation and Maintenance Plan (O&M)
 - a) The Post-Construction O&M Plan shall be designed to ensure compliance with the SMP, the Stormwater Management Ordinance and these Rules and Regulations and that the Massachusetts Surface Water Quality Standards, 314, CMR 4.00 are met in all seasons and throughout the life of the system. The O&M Plan shall be a stand-alone document and shall remain on file with the Engineering Division and shall be an ongoing requirement.
 - b) The Post-Construction O&M Plan shall include, at a minimum:
 - i. The name(s) of the owner(s) for all components of the system and emergency contact information.
 - ii. The signature(s) of the owner(s).
 - iii. The names and addresses of the person(s) currently responsible for O&M.
 - iv. An Inspection and Maintenance Schedule for all stormwater management facilities including routine and non-routine maintenance tasks to be performed.

- v. A reduced size plan or map clearly showing the location of the systems and facilities including easements, catch basins, manholes/access lids, main, and stormwater devices.
- vi. If applicable, a list of easements necessary for the construction and O&M of the stormwater system, with the purpose and location of each. Easements shall be recorded with the South Middlesex County Registry of Deeds prior to issuance of a Stormwater Management Certificate of Compliance by the Engineering Division.
- vii. O&M inspection schedule and log form.
- viii. Provisions for the, City Engineer or his/her designee to enter the property at reasonable times and in a reasonable manner for the purpose of inspection.

D. Major Permit Submission Requirements

In addition to all the requirements for a Minor Stormwater Permit, provide:

1. A Project Narrative that includes a description of the proposed project and a description of how and where stormwater will be controlled and erosion and sedimentation controls implemented, and an explanation of how the proposed project:
 - a) Meets the Design Standards enumerated in Section 5C.
 - b) Meets the Stormwater Standards outlined in the Massachusetts Stormwater Handbook⁶;
 - c) Attempt to reproduce natural hydrologic conditions with respect to groundwater and surface water.⁷
 - d) Include square footage summaries indicating square footage of work area as well as existing, proposed and net changes in impervious surface areas.

SECTION 7: ADMINISTRATION

A. Administration of Rules and Regulations. The City Engineer through its Engineering Division shall administer, implement, and enforce these Rules and Regulations.

B. Stormwater Management Permit Application Approval Process

Actions by the City Engineer / Engineering Division:

1. Determination of Completeness: The City Engineer shall review the Stormwater Management Permit Application for completeness with the requirements and standards of Sections 5 through 8 within fifteen (15) business days of receipt.
2. Incomplete Applications: If the City Engineer determines the Application is incomplete, including, but not limited to, insufficient information to describe the site, the work, or the effect

⁶ Massachusetts Stormwater Handbook, as most recently updated.
<http://www.mass.gov/eea/agencies/massdep/water/regulations/massachusetts-stormwater-handbook.html>

⁷Guidance on these practices is provided in Appendix C of these Regulations and the MA Stormwater Management Handbook.

that work has on water quality and runoff volume, the Engineering Division may reject the application, require the submission of additional information, or deny the Permit.

3. Complete Applications. Each Application for a Stormwater Management Permit Application that is determined to be a complete Application shall be reviewed by the City Engineer. The Application shall be acted upon within fifteen (15) business days of the date that the Engineering Division determines that the Application is complete unless such Application has been withdrawn from consideration. The Engineering Division may:
 - a) Approve the Permit Application upon finding that the proposed project will meet the objectives of the Stormwater Management Ordinance and the Design Standards.
 - b) Approve the Permit Application with conditions, modifications and/or restrictions that are required to ensure that the project will protect water resources and meets the objectives of the Stormwater Management Ordinance and the Design Standards.
 - c) Deny the Permit Application due to non-compliance with Design Standards (in Section 5) or insufficient information to make a determination.

C. Plan Changes

The Applicant must notify the City Engineer, in writing, of any proposed change to or alteration of the site plans and details authorized in any Stormwater Management Permit before any change or alteration is made. Proposed changes are only considered approved by the Engineering Division if the changes are *noted in writing by the Engineering Division and/or revised plans / documents are stamped approved by the Engineering Division*. If the Engineering Division determines that a proposed change or alteration is significant, based on the Design Standards in Section 5 of these Rules and Regulations and accepted construction practices, it may require an amended Application be filed.

D. Expiration of Permits and Permit Extensions

1. Should a land-disturbing project or activity associated with an approved plan in accordance with this City Ordinance not begin within one (1) year following permit issuance, the permit shall lapse and should the Applicant wish to continue with the previously approved plan, the Applicant must re-apply for a new permit.
2. If the project associated with an approved Stormwater Management Permit granted under the Ordinance has not been completed within three (3) years of permit issuance, a new permit or a permit extension will be required by the Engineering Division. The Engineering Division may require revisions to the project to comply with current regulations and standards as a condition of the permit extension.
3. Applicants may request permit extensions in one (1) year increments.

- E. Project Completion. A Stormwater Management Certificate of Compliance (SMCC) is required for completion of all Minor and Major Stormwater Management Permits. Upon request by the permittee and following review and approval that all work of the permit has been satisfactorily completed in conformance with the Stormwater Management Ordinance and Permit, the Engineering Division will issue a Stormwater Management Certificate of Compliance. (See Section 10 for details.)

SECTION 8: PRE-CONSTRUCTION NOTICE and CONSTRUCTION INSPECTIONS

A. Pre-Construction Meetings and Site Inspections

1. Pre-Construction Meeting: Once a permit has been approved, the Engineering Division may require a pre-construction meeting prior to starting any clearing, excavation, construction or land-disturbing activity by the Applicant. The Applicant's technical representative, the general contractor or any other person with authority to make changes to the project, shall meet with the Engineering Division or its representative to review construction sequencing and the permitted plans and their implementation.
2. Notice of Construction Commencement: The Applicant must notify the Engineering Division City Engineer two (2) business days prior to the commencement of any construction or land disturbance activities. In addition, the Applicant must notify the assigned Engineering Division inspector two business (2) days prior to construction of any stormwater management structural Best Management Practices (BMPs).
3. Initial Site Inspection: An inspection may be made of erosion and sedimentation controls prior to any land-disturbance to assess overall effectiveness and functioning to protect resources

B. Construction-Period Inspections

1. Upon issuance of any Stormwater Management Permit, and until issuance of a SMCC, representatives from the Engineering Division and their designees shall be granted the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection.
2. The Engineering Division may, at a minimum, inspect the project site at the following stages:
 - a) Prior to any vegetation clearing and upon installation of all soil erosion and sediment control measures. Periodic inspections will be made thereafter to ensure the durability and function of these measures.
 - b) Stormwater Management System Excavation Inspection: The Engineer of Record shall inspect the excavation of the stormwater management system(s) to ensure adequate separation of the stormwater system from ground water. This is required for Major Stormwater Permits and highly encouraged for Minor Stormwater Permits.
 - c) Stormwater Management System Inspection: An inspection will be made prior to backfilling of any underground drainage or stormwater conveyance structures and management
 - d) The City Engineer may require the submission of periodic inspections and reporting by the Applicant as dictated by site conditions. Inspections must be completed by qualified persons approved by the Engineering Division.

- C. Post-Construction Inspection.** The Engineering Division shall inspect the site and all stormwater infrastructure / BMPs to confirm its "as-built" features and full compliance with all approved plans and permit conditions, including final site stabilization.

SECTION 8: STANDARD CONDITIONS

- A.** A copy of the approved and signed plans and permits shall always be kept on the construction site.
- B.** Notes indicating the required inspections must appear on the final approved Site Plan(s).
- C.** Post-Construction Annual Reporting on O&M of Stormwater Management System for Major Stormwater Permits only. Annual stormwater management systems inspection reports shall be

submitted to the Engineering Division by January 15th of the following year. Inspection reports *including photographs or videos* (as appropriate) for stormwater management systems shall include:

1. The date of inspection.
2. Name of inspector.
3. The condition of each BMP including components such as:
 - a) Pretreatment devices.
 - b) Vegetation or filter media.
 - c) Spillways, valves, or other control structures.
 - d) Embankments and slopes.
 - e) Inlet and outlet channels and structures.
 - f) Underground drainage.
 - g) Sediment and debris accumulation in storage and forebay areas (including catch basins).
 - h) Any nonstructural practices.
 - i) Any other item that could affect the proper function of the stormwater management system.
4. Description of the need for maintenance.
5. Observations of any physical changes to system in comparison with the approved as-built plan.

SECTION 9: STORMWATER MANAGEMENT CERTIFICATE OF COMPLIANCE (SMCC)

- A. Upon completion of the work done under any minor or major stormwater management activity, the permittee shall request a final inspection and submit the following: Note: Land disturbance only permits do not require a certificate of compliance.

The permittee shall submit:

1. A written request for a Stormwater Management Certificate of Compliance from the Engineering Division.
2. As-built plans detailing all aspects of the construction project including the stormwater management systems, structures and devices, as installed. As-built plans shall be stamped by a Registered Professional Engineer.
3. A letter from the Engineer of Record indicating that the constructed facility(s) have been constructed in accordance with, and meet the requirements of, the Stormwater Management Permit, including compliance with performance standards for Best Management Practices (BMPs) as noted in manufacturer's literature and/or EPA's performance curves in the NPDES Small MS4 Permit.
4. Proof of recording the Operations and Maintenance Plan at the South Middlesex Registry of Deeds.

- B.** After receipt of a written request for a Stormwater Management Certificate of Compliance, as-built plans, and a letter from the Engineer of Record, the Engineering Division shall inspect the stormwater management system to confirm its “as-built” features, determine if the site has been stabilized and determine whether to issue a Stormwater Management Certificate of Compliance.
1. The Engineering Division shall issue a Stormwater Management Certificate of Compliance upon finding that the permit and all its conditions have been complied with.
 2. The Engineering Division shall not issue a Stormwater Management Certificate of Compliance upon physical evidence of operational failure, even though it was built as called for the Engineering Plans. In such a case, the Engineering Division shall have the right to require corrections or improvements to the “as-built” system before issuing a Stormwater Management Certificate of Compliance.

SECTION 10: SECURITY

- A.** As part of any Minor or Major Stormwater Management Permit issued, in addition to any security required by another municipal or state board, agency or official, the Engineering Division may require that the performance and observance of the conditions imposed hereunder be secured wholly or in part by a proper bond or deposit of money or negotiable securities or the undertaking of financial responsibility sufficient in the opinion of the Engineering Division, to be released in whole or in part upon issuance of a SMCC for work performed pursuant to the Permit.

SECTION 12: SEVERABILITY

The invalidity of any section, provision, paragraph, sentence, or clause of these Rules and Regulations shall not invalidate any other section, provision, paragraph, sentence, or clause thereof, nor shall it invalidate any permit or determination that previously has been issued.

END OF NEWTON’S STORMWATER MANAGEMENT ORDINANCE RULES AND REGULATIONS

APPENDICES FOLLOW

APPENDIX A: DEFINITIONS SUPPLEMENTING THOSE IN THE ORDINANCE

The following definitions supplement those included in the City of Newton Stormwater Management Ordinance (**Chapter 29**).

1. ABUTTER -Any property owner whose land directly abuts the land upon which work is being proposed.
2. APPLICANT -Any "person", as defined in the ordinance, who has filed an application for a Stormwater Management and Erosion Control Permit.
3. CONVEYANCE
 - A. Any structure or device, including pipes, drains, culverts, curb breaks, paved swales or man-made swales of all types designed or utilized to move or direct stormwater runoff or existing water flow.
 - B. Any impervious surface, including pavement, where surface/sheet flow is utilized to remove rainfall.
4. ENGINEER OF RECORD – is the professional engineer who seals drawings, reports, or documents for a project. The seal shall acknowledge that the professional engineer prepared, coordinated, or had subordinates prepare under the direct supervision of the professional engineer, drawings, reports, or documents for a project.
5. ESTIMATED SEASONAL HIGH GROUNDWATER – the shallowest depth to free water that stands in an unlined borehole or test pit.
6. EROSION CONTROL - The prevention or reduction of the movement of soil particles or rock fragments.
7. EROSION CONTROL PLAN

A document containing narrative, drawings and details developed by a registered professional engineer (PE) or a registered professional land surveyor (PLS), which includes best management practices, or equivalent measures designed to control surface runoff, erosion and sedimentation during pre-construction and construction related land disturbance activities.
8. EXISTING LAWN: Grass area which has been maintained and mowed in the previous two years.
9. FILL: The placement or deposit of any material that raises, either temporarily or permanently, the elevation of any area subject to the Ordinance.
10. FLOODING - A local and temporary inundation or a rise in the surface of a body of water, such that it covers land not usually under water.
11. GENERAL CONSTRUCTION DETAIL BOOK – The latest version of general construction details promulgated by the City of Newton’s Department of Public Works, which is available from the Engineering Division.
12. GROUNDWATER - All water beneath any land surface including water in the soil and bedrock beneath water bodies.

13. HOODED CATCH BASIN - A catch basin that is fitted with an inverted elbow over its outlet pipe or similar structure that is designed to retain oils and other floatables within the catch basin sump and prevent them from flowing into the drainage system.

14. IMPERVIOUS AREA or IMPERVIOUS SURFACES: Any material or structure in, on or above the ground that prevents water from infiltrating through the underlying soil. Impervious surface is defined to include, without limitation: paved surfaces (parking lots, sidewalks, driveways, etc.), roof tops, swimming pools, stone patios, gravel, and compacted dirt surfaces such as driveways and roads.

15. NEW DEVELOPMENT

Any construction or disturbance of land that is currently in a natural vegetated state. New development also includes any disturbance beyond existing impervious and disturbed areas that is contiguous to redevelopment projects.

16. PERVIOUS MATERIAL

Soil Types that are listed as Class I, II and III soils as defined in 310 CMR 15.243 and 15.244 based upon the general soil classification used by the U.S. Department of Agriculture and depicted in the Soil Textural Triangle

17. POINT SOURCE

Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, or container from which pollutants are or may be discharged.

18. REDEVELOPMENT

Any construction, land alteration, demolition or improvement of impervious surfaces that does not meet the definition of new development. The following activity is excluded from this definition:

- a. Maintenance and improvement of existing roadways, including widening less than a single lane, adding shoulders, and correcting substandard intersections and drainage, and repaving.

19. RESOURCE AREA

Any area protected under including without limitation: the Massachusetts Wetlands Protection Act, Massachusetts Rivers Act, or City of Newton General Wetlands Protection Ordinance.

20. SEDIMENTATION

A process of depositing material that has been suspended and transported in water.

21. SLOPE

The incline of a ground surface expressed as a ratio of horizontal distance to vertical distance (e.g., a 4:1 slope). It can also be expressed as a percentage of the vertical rise divided by the horizontal distance (e.g., a twenty-five (25) percent slope).

22. STORMWATER MANAGEMENT CERTIFICATE OF COMPLIANCE (SMCC)

A document issued by the Engineering Division after all construction activities have been completed which states that all conditions of an issued Stormwater Management Permit (SMP)

have been met and that a project has been completed in compliance with the conditions set forth in a SMP.

23. TOTAL PHOSPHORUS (TP) – phosphorus is a nutrient commonly contaminating stormwater, derived from the natural decay of plant material and human activities. Total phosphorus is a measure of all forms of phosphorus, dissolved and suspended particulate found in a sample.
24. TOTAL SUSPENDED SOLIDS (TSS) -Total Suspended Solids. Material, including but not limited to trash, debris, and sand suspended in stormwater runoff.

APPENDIX B: LOW IMPACT DEVELOPMENT PRACTICES

Low Impact Development (LID) strategies use careful site design and decentralized stormwater management to reduce the environmental footprint of new growth and redevelopment. This approach improves water quality, minimizes the need for expensive pipe and pond stormwater systems, and creates more attractive developments. The following are LID strategies and various benefits of implementation.

1. Bioretention cells, commonly known as rain gardens, are relatively small-scale, landscaped depressions containing plants and a soil mixture that absorbs and filters runoff.

Management Objectives:

- Provide quality treatment.
- Remove suspended solids, metals, nutrients.
- Increase groundwater recharge through infiltration.
- Reduce peak discharge rates and total runoff volume.

2. Permeable and porous pavements allow water to soak through the paved surface into the ground beneath. Permeable pavement encompasses a variety of mediums including porous concrete and asphalt, plastic grid systems and interlocking paving bricks.

Management Objectives:

- Reduce stormwater runoff volume from paved surfaces.
- Reduce peak discharge through infiltration.
- Reduce pollutant transport through direct infiltration.
- Improve site landscaping benefits (grass pavers).

3. Grass swales are broad, open channels sown with erosion resistant and flood tolerant grasses.

Management Objectives:

- Provide water quality treatment; remove suspended solids; heavy metals, trash.
- Reduce peak discharge rate and total runoff volume.
- Infiltrate water into the ground.
- Provide a location for snow storage.

4. Infiltration Trenches and Dry Wells These are standard stormwater management structures that store water in the void space between crushed stone or gravel; the water slowly percolates downward into the subsoil.

Management Objectives:

- Remove suspended solids, heavy metals trash, oil, and grease.
- Reduce peak discharge rate and total runoff volume.
- Provide modest infiltration and recharge.
- Provide snow storage areas.

5. Grass Filter Strips are low-angle vegetated slopes designed to treat sheet flow runoff from adjacent impervious areas.

Management Objectives:

- Remove suspended solids, heavy metals, trash, oil and grease.

Reduce peak discharge rate and total runoff volume.
Provide modest infiltration and recharge.
Provide snow storage areas.

6. Roadway and Parking Lot Design:

Management Objectives:

Remove suspended solids, heavy metals trash, oil, and grease.
Reduce peak discharge rate and total runoff volume.
Provide modest infiltration and recharge.
Provide snow storage areas.

7. Cisterns and rain barrels harvest and store rainwater collected from roofs [Note: not to be used as part of measures to meet minimum recharge volumes]

Management Objectives:

Storing and diverting runoff.
Reduce flooding and erosion caused by stormwater runoff.
They contain no salts or sediment which provides "soft" chemical-free water for garden or lawn irrigation, reducing water bills and conserving municipal water supplies.

8. Other LID Implementations

Shared Driveways

Green Roofs

Tree box filters

Eliminating curbs and gutters or minimizing in new construction.

Soil Amendments.

Creating long flow paths over landscaped areas.

Creating terraces and check dams.

Pervious pavers.

Infiltration, Filtration

- Rain gardens.
- Disconnected downspouts (not on hills).
- Filter Mitts.

9. Low Impact Landscaping

- Native, drought tolerant species.
- Turf area conversion (shrubs, etc.).
- Encouraging longer grass length.
- Planting wildflower meadows rather than turf along medians.

Conservation Development

Like LID, Conservation Development tries to mitigate the effects of urbanization, but it places additional emphasis on protecting aquatic habitat and other natural resources. Conservation Development subdivisions are characterized by compact clustered lots surrounding a common open space. Conservation Development's goal is to disturb as little land area as possible while simultaneously allowing for the maximum number of residences permitted under zoning laws.

Prior to new construction, conservation developers evaluate natural topography, natural drainage patterns, soils and vegetation. They deploy stormwater Best Management Practices to help prevent flooding and protect natural hydrology. By maintaining natural hydrological processes, Conservation Development creates conditions that slow, absorb, and filter stormwater runoff onsite.

Because future development threatens valuable natural features, Conservation Development provides specific provisions for long-term and permanent resource protection. Conservation easements, transfer of development rights, and other "in perpetuity" mechanisms ensure that protective measures are more than just temporary.

Effective Site Design

The goals of Effective (or Better) Site Design are to reduce impervious cover, preserve natural lands, and capture stormwater onsite. To meet these goals, designers employ a variety of methods. To reduce impervious cover, they narrow streets and sidewalks, minimize cul-de-sacs, tighten parking spaces, and reduce the size of driveways and housing lots.

To reduce stormwater runoff, designers preserve natural lands, using them as buffer zones along streams, wetlands and steep slopes. They employ landscaping techniques that flatten slopes and preserve native vegetation and clusters of trees. They create bio-retention areas - open channels, filter strips and vegetated swales - to increase stormwater infiltration, helping to protect streams, lakes, and wetlands.