THE CITY RECORD

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THE CITY RECORD

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Mayor

DAWN M. PINNOCK
Commissioner, Department of Citywide Administrative Services

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PUBLIC HEARINGS AND MEETINGS

See Also: Procurement; Agency Rules

BOROUGH PRESIDENT - BRONX

■ NOTICE

A VIRTUAL PUBLIC HEARING, is being called by the President of the Borough of The Bronx, Honorable Vanessa Gibson. This hearing will be held, on Wednesday, February 23, 2022, commencing at 11:00 A.M. Those wishing to attend, may do so via WEBX as noted:

Office of The Bronx Borough President - ULURP Hearing, 2/23/22

https://nycbp.webex.com/nycbp/j.php?MTID=m9af577085ead72d1b01bb15671f5ecc2

Wednesday, February 23rd, 2022, 11:00 A.M. | 2 hours | (UTC-05:00) Eastern Time (US & Canada)
Meeting number: 2345 136 8615
Password: bxulurp223

Join by video system
Dial 23451368615@nycbp.webex.com
You can also dial 173.243.2.68 and enter your meeting number.

Join by phone
+1-646-992-2010 United States Toll (New York City)
+1-408-418-9388 United States Toll

Access code: 234 513 68615

The following matters will be heard:

CD #4-ULURP APPLICATION NO: C 210293 PSX-EMS STATION 17 FACILITY

IN THE MATTER OF an application submitted by the New York City Fire Department and the Department of Citywide Administrative Services, pursuant to Section 197-c of the New York City Charter, for the site selection of property, located at 1257 Morris Avenue (Block 2450, Lot 42) for use as an ambulance station, Borough of The Bronx, Community District 4.

CD #12-ULURP APPLICATION NO: C 210391 ZMX-1930 ADEE AVENUE REZONING

IN THE MATTER OF an application submitted by Cernterland Realty LLC, pursuant to Sections 197-c and 201 of the New York City Charter for an amendment of the Zoning Map, Section Numbers 2b and 4a, by changing from an R4 District to an R6B District property, bounded by Adee Avenue, Edson Avenue, a line 75 feet southeasterly of Adee Avenue, and Grace Avenue, Borough of The Bronx, Community District 12, as shown on a diagram (for illustrative purposes only) dated December 13, 2021.

CD #12-ULURP APPLICATION NO: C 200228 ZMX-4541 FURMAN AVENUE REZONING

IN THE MATTER OF an application submitted by Markland 4551 LLC, pursuant to Sections 197c and 201 of the New York City Charter for an amendment of the Zoning Map, Section No. 2a:

1. Changing from an M1-1 District to an R7D District property, bounded by White Plains Road, East 240th Street, Furman Avenue, and a line 300 feet northeasterly of East 239th Street; and
2. Establishing within the proposed R7D District a C2-4 District, bounded by White Plains Road and Furman Avenue, and a line 300 feet northeasterly of East 239th Street.

Borough of The Bronx, Community District 12 as shown on a diagram (for illustrative purposes only) dated January 3, 2022, and subject, to the conditions of CEQR Declaration E-656.

PLEASE DIRECT ANY QUESTIONS CONCERNING THIS HEARING TO THE OFFICE OF THE BOROUGH PRESIDENT, (718) 590-6124.

Accessibility questions: Sam Goodman (718) 590-6124, by: Wednesday, February 23, 2022, 10:00 A.M.

☛ **f15-22**

BOROUGH PRESIDENT - BROOKLYN

■ **PUBLIC HEARINGS**

NOTICE IS HEREBY GIVEN that, pursuant to Section 201 of the New York City Charter, the Brooklyn Borough President will hold a remote ULURP public hearing on the matters listed below, commencing at 6:00 P.M., on Thursday, February 17, 2022.

The hearing will be conducted through the Webex video conferencing system.
Members of the public may join and testify using the following information:

Event Address:
https://nycbp.webex.com/nycbp/onstage/g.php?MTID=e49f4ed266940c31969d38af93b7ab871

Event Number: 2348 664 1509
Event Password: ulurp

Those wishing to call in without video may do so using the following information:

Audio Conference: +1-408-418-9388
Access Code: 2348 664 1509

To testify, members of the public joining through the Webex video conferencing system shall write their name in that system's chat box and note the item on which they wish to testify. For members of the public joining by telephone, when prompted by the Facilitator, please state your name and agenda item on which you wish to testify. Testimony is limited to 2 minutes, unless extended by the Chair..

Written public testimony is welcome and encouraged. Comments will be considered after the public hearing on each item listed below. Written comments or statements must be submitted to the Brooklyn Borough President at the email address, testimony@brooklynbp.nyc.gov, no later than Tuesday, February 22, 2022, at 5:00 P.M.

The following Agenda items will be heard:

Roundtable Senior Center (220212 PQK)
An application submitted by the Department for the Aging (DFTA) and the Department of Citywide Administrative Services (DCAS) to secure continued use of a senior center occupying approximately 17,600 square feet (sf) in a privately-owned building located at 1175 Gates Avenue in Brooklyn Community District 4 (CD 4).

Broadway Triangle – Bartlett Crossing (220209 HAK)
An application submitted by the Department of Housing Preservation and Development (HPD) pursuant to Article 16 of the General Municipal Law of New York State and Section 197-c of the New York City Charter affecting a vacant, City-owned lot at 29-31 Bartlett Street in Brooklyn Community District 1 (CD 1). HPD is requesting Urban Development Action Area (UDAA) designation, Urban Development Action Area Project (UDAAP) approval, and property disposition to the selected developer. These actions would enable a nine-story residential building with 29 affordable rental units with a portion reserved for the formerly homeless and 20 percent affordable through the Voluntary Inclusionary Housing (VIH) program.

2300 Cropsey Avenue Rezoning (200358 ZMK)
An application submitted by Cropsey Partners LLC, pursuant to sections 197-c and 201 of the New York City Charter affecting three properties in the middle of a block bounded by 24th Avenue and Bay Parkway, the Belt Parkway and Cropsey Avenue. The requested zoning map amendment would establish a C2-4 overlay within an existing R6 district and permit commercial uses at a 23-story, as-of-right residential and community facility building at 2300 Cropsey Avenue in Brooklyn Community District 11 (CD 11). This action would enable approximately 35,227 sf of commercial zoning floor area, to be occupied by a supermarket and local retail uses.

98 Third Avenue Rezoning (200335 ZMK, N 200336 ZRK)
Applications submitted by 98 Third Avenue Realty LLC, pursuant to Sections 197-c and 201 of the New York City Charter affecting ten properties on a block of Third Avenue bounded by Bergen, Nevins, and Wyckoff streets. The requested zoning map amendment would change the project area from M1-2 to R6B and R7D/C2-4 districts. The zoning text amendment would establish a Mandatory Inclusionary Housing (MIH) area coterminous with the rezoning area. These actions would facilitate an 8-story, 27,910 sf mixed-use development at 98 Third Avenue in Brooklyn Community District 2 (CD 2). The building would contain 24 apartments and 3,523 sf of ground-floor commercial space. Approximately 8 units would be affordable to households earning on average, 80 percent AMI pursuant to MIH Option 2.

840 Lorimer Street Rezoning (210299 ZMK, N 210300 ZRK)
Applications submitted by Zucker Enterprises LLC, pursuant to Sections 197-c and 201 of the New York City Charter affecting the entire north blockfront of Driggs Avenue between Lorimer Street and Manhattan Avenues. The requested zoning map amendment would change the project area from M1-2/R6 (MX-8) and R6/C2-4 to a C4-5D district. The zoning text amendment would establish an (MIH) area coterminous with the rezoning area. These actions would facilitate a 10-story 83,748 square feet (sf) mixed development at 840 Lorimer Street in CD 1. The building would contain 74 apartments and 25,049 sf of commercial space spread over three floors. Approximately 19 units would be affordable to households earning on average, 60 percent of Area Median Income (AMI) pursuant to MIH Option 1. The development would also provide 28 off-street accessory parking spaces in the cellar.

Please note that this remote hearing will be recorded for public transparency.

Note: For further information on accessibility or to make a request for accommodations, such as sign language interpretation services, please contact Inna Guzenfeld, at inna.guzenfeld@brooklynbp.nyc.gov, *at least five (5) business days in advance to ensure availability.*

Accessibility questions: Inna Guzenfeld, (718) 802-3754, inna.guzenfeld@brooklynbp.nyc.gov, by: Thursday, February 10, 2022, 5:00 P.M.

f9-17

CITY COUNCIL

■ **PUBLIC HEARINGS**

NOTICE IS HEREBY GIVEN that the Council has scheduled the following public hearing, on the matter indicated below:

The Subcommittee on Landmarks, Public Sitings, and Dispositions, will hold a public hearing on the following matters, accessible remotely, commencing at 10:00 A.M., on February 16, 2022. The hearing will be live-streamed on the Council's website, at https://council.nyc.gov/live/. Please visit, https://council.nyc.gov/land-use/, in advance for information about how to testify and how to submit written testimony.

CASTLE III 107-111 EAST 123RD STREET
MANHATTAN CB – 11 C 220059 ZSM

Application submitted by the Department of Housing Preservation and Development, pursuant to Sections 197-c and 201 of the New York City Charter, for the grant of a special permit, pursuant to Section 74-903 of the Zoning Resolution, to modify the requirements of Section 24-111 (Maximum floor area ratio for certain community facility uses), to permit the allowable community facility floor area ratio of Section 24-11 (Maximum Floor Area Ration and Percentage of Lot Coverage), to apply to a non-profit institution with sleeping accommodations, in connection with a proposed 15-story building on property located, at 107-111 East 123rd Street (Block 1772, Lots 4, 7 and 8), in an R7-2 District.

Plans for this proposal are on file with the City Planning Commission and may be seen, at 120 Broadway, 31st Floor, New York, NY 10271-0001.

CASTLE III 107-111 EAST 123RD STREET / ARTICLE XI UDAAP
MANHATTAN CB – 11 C 220060 HAM

Application submitted by the Department of Housing Preservation and Development (HPD)

1. pursuant to Article 16 of the General Municipal Law of New York State for:
   a. the designation of property located, at 107-111 East 123rd Street (Block 1772, Lots 4, 7 and 8) as an Urban Development Action Area; and
   b. an Urban Development Action Area Project for such area; and
2. pursuant to Section 197-c of the New York City Charter, for the disposition of such property, to a developer, to be selected by HPD;

to facilitate the development of a 15-story building containing approximately 81 supportive and affordable housing units.

ENY/URP 5TH AMENDMENT
BROOKLYN CB – 5 C 220102 HUK

Application submitted by the Department of Housing Preservation and Development (HPD), pursuant to Section 505 of Article 15 of the General Municipal (Urban Renewal) Law of New York State and Section 197-c of the New York City Charter, for the fifth amendment to the East New York I Urban Renewal Plan for the East New York I Urban Renewal Area.

For questions about accessibility and requests for additional accommodations, please contact swerts@council.nyc.gov, or nbenjamin@council.nyc.gov, or (212) 788-6936, at least three (3) business days before the hearing.

Accessibility questions: Kaitlin Greer, kgreer@council.nyc.gov, by: Friday, February 11, 2022, 3:00 P.M.

f10-16

CITY PLANNING COMMISSION

■ **PUBLIC HEARINGS**

In support of the City's efforts to contain the spread of COVID-19, the City Planning Commission will hold a remote public hearing, via the teleconferencing application Zoom, at 10:00 A.M. Eastern Daylight Time, on Wednesday, February 16, 2022, regarding the calendar items listed below.

The meeting will be live streamed through Department of City Planning's (DCP's) website, and accessible from the following webpage, which contains specific instructions on how to observe and participate, as well as materials relating to the meeting: https://www1.nyc.gov/site/nycengage/events/city-planning-commission-public-meeting/331544/1.

Members of the public should observe the meeting through DCP's website.

Testimony can be provided verbally by joining the meeting using either Zoom or by calling the following number and entering the information listed below:

877 853 5247 US Toll-free
888 788 0099 US Toll-free

253 215 8782 US Toll Number

213 338 8477 US Toll Number

Meeting ID: **618 237 7396**
[Press # to skip the Participation ID]
Password: 1

To provide verbal testimony via Zoom please follow the instructions available through the above webpage (link above).

Written comments will also be accepted until 11:59 P.M., one week before the date of vote. Please use the CPC Comments form that is accessible through the above webpage.

Please inform the Department of City Planning if you need a reasonable accommodation, such as a sign language interpreter, in order to participate in the meeting. The submission of testimony, verbal or written, in a language other than English, will be accepted, and real time interpretation services will be provided based on available resources. Requests for a reasonable accommodation or foreign language assistance during the meeting should be emailed to *[AccessibilityInfo@planning.nyc.gov]* or made by calling *[212-720-3508]*. Requests must be submitted at least five business days before the meeting.

BOROUGH OF THE BRONX
Nos. 1 & 2
OUR LADY OF PITY - 272 EAST 151ST STREET REZONING
No. 1

CD 1 C 210321 ZMX

IN THE MATTER OF an application submitted by Our Lady of Pity Apartments LLC, pursuant to Sections 197-c and 201 of the New York City Charter for an amendment of the Zoning Map, Section No. 6a, by changing from an R6 District to an R7A District property bounded by East 151st Street, a line 220 feet southeasterly of Morris Avenue, a line midway between East 150th Street and East 151st Street, a line 270 feet southeasterly of Morris Avenue, East 150th Street, and Morris Avenue, as shown on a diagram (for illustrative purposes only) dated November 1, 2021, and subject to the conditions of CEQR Declaration E-652.

No. 2

CD1 N 210322 ZRX

IN THE MATTER OF an application submitted by Our Lady of Pity Apartments LLC, pursuant to Section 201 of the New York City Charter, for an amendment of the Zoning Resolution of the City of New York, modifying APPENDIX F for the purpose of establishing a Mandatory Inclusionary Housing area.

Matter underlined is new, to be added;
Matter ~~struck out~~ is to be deleted;
Matter within # # is defined in Section 12-10;
* * * indicates where unchanged text appears in the Zoning Resolution.

* * *

APPENDIX F
Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas

THE BRONX

The Bronx Community District 1

* * *

Map 10 - (date of adoption)

[PROPOSED MAP]

Mandatory Inclusionary Housing Area *(see Section 23-154(d)(3))*

Area **4** — [date of adoption] — MIH Program Option 1 and Option 2

Portion of Community District 1, The Bronx

* * *

BOROUGH OF BROOKLYN
Nos. 3 & 4
3285 FULTON STREET REZONING
No. 3

CD 5 C 220111 ZMK

IN THE MATTER OF an application submitted by MHANY Management, Inc. and Cypress Hills Local Development Corporation, pursuant to Sections 197-c and 201 of the New York City Charter for an amendment of the Zoning Map, Section No. 17c:

1. eliminating from within an existing R5 District a C2-3 District bounded by a line 150 feet northerly of Fulton Street, Pine Street, Fulton Street, and Euclid Avenue - Father John Kreg Place;
2. changing from an R5 District to an R7A District property bounded by a line 100 feet northerly of Fulton Street, Pine Street, Fulton Street, and Euclid Avenue - Father John Kreg Place;

3. establishing within the proposed R7A District a C2-4 District bounded by a line 100 feet northerly of Fulton Street, Pine Street, Fulton Street, and Euclid Avenue - Father John Kreg Place; and

4. establishing a Special Enhanced Commercial District (EC-6) bounded by a line 100 feet northerly of Fulton Street, Pine Street, Fulton Street, and Euclid Avenue – Father John Kreg Place

as shown on a diagram (for illustrative purposes only) dated November 1, 2021, and subject to the conditions of CEQR Declaration E-654.

No. 4

CD 5 **N 220112 ZRK**

IN THE MATTER OF an application submitted by MHANY Management, Inc., and Cypress Hills Local Development Corporation, pursuant to Section 201 of the New York City Charter, for an amendment of the Zoning Resolution of the City of New York, modifying Article XIII, Chapter 2 (Special Enhanced Commercial District), and modifying APPENDIX F for the purpose of establishing a Mandatory Inclusionary Housing area.

Matter underlined is new, to be added;
Matter ~~struck out~~ is to be deleted;
Matter within # # is defined in Section 12-10;
* * * indicates where unchanged text appears in the Zoning Resolution

ARTICLE XIII
SPECIAL PURPOSE DISTRICTS

Chapter 2
Special Enhanced Commercial District (EC)

* * *

132-10
GENERAL PROVISIONS

* * *

132-11
Special Enhanced Commercial Districts Specified

The #Special Enhanced Commercial District# is mapped in the following areas:

* * *

(f) #Special Enhanced Commercial District# 6

The #Special Enhanced Commercial District# 6 (EC-6) is established on April 20, 2016, on the following #designated commercial streets# as indicated on zoning map 17c:

(1) Fulton Street, in the Borough of Brooklyn, between Sheffield Avenue and ~~Euclid Avenue~~ Pine Street.

* * *

APPENDIX F

Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas

* * *

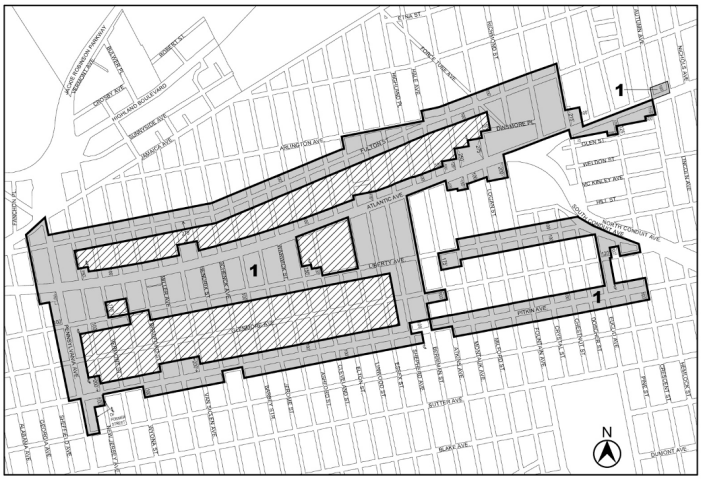
BROOKLYN

* * *

Brooklyn Community District 5

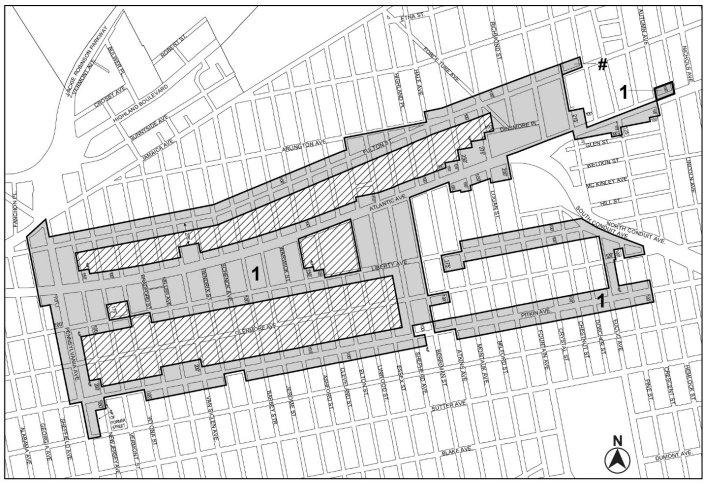
Map 1 [date of adoption]

[EXISTING MAP]



Mandatory Inclusionary Housing Program Area *see Section 23-154(d)(3)*
Area **1** — 4/20/16 MIH Program Option 1 and Deep Affordability Option
Excluded area

[PROPOSED MAP]



Mandatory Inclusionary Housing Program Area *see Section 23-154(d)(3)*
Area **1** – 4/20/16 MIH Program Option 1 and Deep Affordability Option
Area **#** – [date of adoption] MIH Program Options 1 and 2
Excluded area

Portion of Community District 5, Brooklyn

* * *

Nos. 5 & 6
1220 AVENUE P REZONING
No. 5

CD 15 **C 210098 ZMK**

IN THE MATTER OF an application submitted by Omni Enterprises, LLC, pursuant to Sections 197-c and 201 of the New York City Charter for an amendment of the Zoning Map, Section No. 22d, by changing from an R5B District to an R7A District property bounded by Avenue P, East 13th Street, a line 140 feet southerly of Avenue P, East 12th Street, a line 100 feet southerly of Avenue P, and a line midway between Coney Island Avenue and East 12th Street, as shown on a diagram (for illustrative purposes only) dated November 1, 2021, and subject to the conditions of CEQR Declaration E-653.

No. 6

CD 15 **N 210099 ZRK**

IN THE MATTER OF an application submitted by Omni Enterprises, LLC, pursuant to Section 201 of the New York City Charter, for an amendment of the Zoning Resolution of the City of New York, modifying APPENDIX F for the purpose of establishing a Mandatory Inclusionary Housing area.

Matter underlined is new, to be added;
Matter ~~struck out~~ is to be deleted;
Matter within # # is defined in Section 12-10;

* * * indicates where unchanged text appears in the Zoning Resolution.

* * *

APPENDIX F
Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas

* * *

BROOKLYN

* * *

Brooklyn Community District 15

* * *

Map 1 – [date of adoption]

[PROPOSED MAP]

Mandatory Inclusionary Housing Program Area *(see Section 23-154(d)(3))*

Area **1** — [date of adoption] — MIH Program Option 1 and Option 2

Portion of Community District 15, Brooklyn

* * *

Nos. 7 & 8
103 LEE AVENUE
No. 7

CD 1 **C 210312 ZMK**

IN THE MATTER OF an application submitted by Sbeny Holdings LLC, pursuant to Sections 197-c and 201 of the New York City Charter for an amendment of the Zoning Map, Section No. 12d:

1. eliminating from within an existing R6 District a C1-3 District bounded by Williamsburg Street East, Lee Avenue, and the southwesterly prolongation of a line midway between Keap Street and Hooper Street;
2. changing from an R6 District to an R7X District property bounded by Williamsburg Street East, Keap Street and its southwesterly centerline prolongation, a line 100 feet northeasterly of Lee Avenue, and a line midway between Keap Street and Hooper Street and its southwesterly prolongation; and
3. establishing within the proposed R7X District a C2-4 District bounded by Williamsburg Street East, Keap Street and its southwesterly centerline prolongation, a line 100 feet northeasterly of Lee Avenue, and a line midway between Keap Street and Hooper Street and its southwesterly prolongation;

as shown on a diagram (for illustrative purposes only) dated November 15, 2021.

No. 8

CD 1 **N 210313 ZRK**

IN THE MATTER OF an application submitted by Sbeny Holdings LLC, pursuant to Section 201 of the New York City Charter, for an amendment of the Zoning Resolution of the City of New York, modifying APPENDIX F for the purpose of establishing a Mandatory Inclusionary Housing area.

Matter underlined is new, to be added;
Matter ~~struck out~~ is to be deleted;
Matter within # # is defined in Section 12-10;
* * * indicates where unchanged text appears in the Zoning Resolution.

* * *

APPENDIX F
Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas

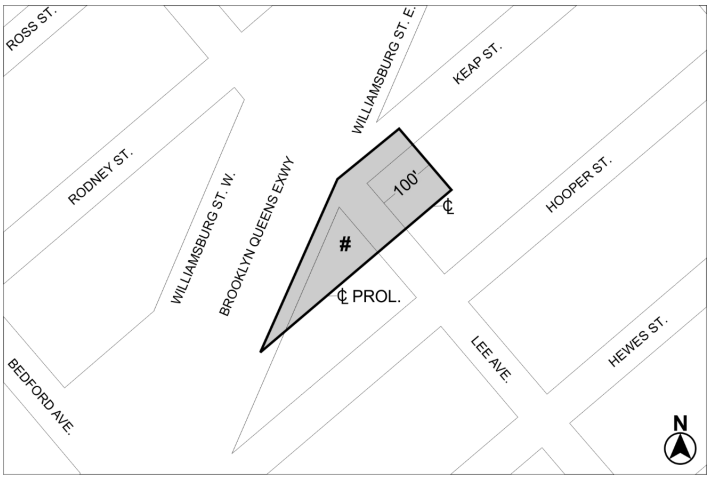
* * *

BROOKLYN

Brooklyn Community District 1

* * *

Map 5 – [date of adoption]



Mandatory Inclusionary Housing Area *see Section 23-154(d)(3)*

Area **#** — [date of adoption] — MIH Program Option 1 and Option 2

Portion of Community District 1, Brooklyn

* * *

BOROUGH OF QUEENS
Nos. 9 & 10
146-93 GUY BREWER BLVD REZONING
No. 9

CD 13 **C 200246 ZMQ**

IN THE MATTER OF an application submitted by Ranbir LLC, pursuant to Sections 197-c and 201 of the New York City Charter for an amendment of the Zoning Map, Section No. 19b:

1. changing from an R3-2 District to an R6A District property bounded by 146th Terrace, a line 100 feet easterly of Guy R. Brewer Boulevard, 147th Avenue, and Guy R. Brewer Boulevard; and
2. establishing within the proposed R6A District a C2-2 District bounded by 146th Terrace, a line 100 feet easterly of Guy R. Brewer Boulevard, 147th Avenue, and Guy R. Brewer Boulevard;

as shown on a diagram (for illustrative purposes only), dated November 1, 2021, and subject to the conditions of CEQR Declaration E-646.

No. 10

CD 13 **N 200247 ZRQ**

IN THE MATTER OF an application submitted by Ranbir LLC, pursuant to Section 201 of the New York City Charter, for an amendment of the Zoning Resolution of the City of New York, modifying APPENDIX F for the purpose of establishing a Mandatory Inclusionary Housing area.

Matter underlined is new, to be added;
Matter ~~struck out~~ is to be deleted;
Matter within # # is defined in Section 12-10;
* * * indicates where unchanged text appears in the Zoning Resolution.

* * *

APPENDIX F
Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas

* * *

QUEENS

* * *

Queens Community District 13

* * *

Map 1 – [date of adoption]

[PROPOSED MAP]

Portion of Community District 13, Queens

* * *

EDWIN MARSHALL, Calendar Officer
City Planning Commission
120 Broadway, 31st Floor, New York, NY 10271
Telephone (212) 720-3560

Accessibility questions: (212) 720-3508, AccessibilityInfo@planning.nyc.gov, by: Friday, February 11, 2022, 5:00 P.M.

♿

f2-16

In support of the City's efforts to contain the spread of COVID-19, the City Planning Commission will hold a remote public hearing, via the teleconferencing application Zoom, at 10:00 A.M. Eastern Daylight Time, on Wednesday, March 2, 2022, regarding the calendar items listed below.

The meeting will be live streamed through Department of City Planning's (DCP's) website and accessible from the following webpage, which contains specific instructions on how to observe and participate, as well as materials relating, to the meeting: https://www1.nyc.gov/site/nycengage/events/city-planning-commission-public-meeting/331545/1

Members of the public should observe the meeting through DCP's website.

Testimony can be provided verbally by joining the meeting using either Zoom or by calling the following number and entering the information listed below:

877 853 5247 US Toll-free
888 788 0099 US Toll-free

253 215 8782 US Toll Number

213 338 8477 US Toll Number

Meeting ID: **618 237 7396**

[Press # to skip the Participation ID]
Password: 1

To provide verbal testimony via Zoom please follow the instructions available through the above webpage (link above).

Written comments will also be accepted until 11:59 PM, one week before the date of vote. Please use the CPC Comments form that is accessible through the above webpage.

Please inform the Department of City Planning if you need a reasonable accommodation, such as a sign language interpreter, in order to participate in the meeting. The submission of testimony, verbal or written, in a language other than English, will be accepted, and real time interpretation services will be provided based on available resources. Requests for a reasonable accommodation or foreign language assistance during the meeting should be emailed to *[AccessibilityInfo@planning.nyc.gov]* or made by calling *[212-720-3508]*. Requests must be submitted, at least five business days before the meeting.

BOROUGH OF MANHATTAN
Nos. 1 - 6
ONE 45 / MUSEUM OF CIVIL RIGHTS
No. 1

CD 10 **C 220134 ZMM**

IN THE MATTER OF an application submitted by One45 Lenox LLC, pursuant to Sections 197-c and 201 of the New York City Charter for an amendment of the Zoning Map, Section No. 6a:

1. eliminating from an existing R7-2 District a C1-4 District, bounded by a line midway between West 144th Street and West 145th Street, Lenox Avenue – Malcolm X. Boulevard, West 144th Street, and a line 100 feet northwesterly of Lenox Avenue – Malcolm X. Boulevard;
2. changing from an R7-2 District to a C4-6 District property, bounded by a line midway between West 144th Street and West 145th Street, Lenox Avenue – Malcolm X. Boulevard, West 144th Street, and a line 100 feet northwesterly of Lenox Avenue – Malcolm X. Boulevard; and
3. changing from a C8-3 District to a C4-6 District property, bounded by West 145th Street, Lenox Avenue – Malcolm X. Boulevard, a line midway between West 144th Street and West 145th Street, and a line 160 feet southeasterly of Adam Clayton Powell Jr. Boulevard;

as shown on a diagram (for illustrative purposes only) dated November 15, 2021, and subject, to the conditions of CEQR Declaration E-651.

No. 2

CD 10 **N 220135 ZRM**

IN THE MATTER OF an application submitted by One45 Lenox LLC, pursuant to Section 201 of the New York City Charter, for an amendment of the Zoning Resolution of the City of New York, modifying Article VII, Chapter 4 for the purpose of amending location of commercial use regulations, and modifying APPENDIX F for the purpose of establishing a Mandatory Inclusionary Housing area.

Matter underlined is new, to be added;
Matter ~~struck out~~ is to be deleted;
Matter within # # is defined in Section 12-10;
* * * indicates where unchanged text appears in the Zoning Resolution.

74-744
Modification of use regulations

* * *

(b) Location of #commercial# #uses#

For any #large-scale general development#, the Commission may permit #residentialand non-#residential# #uses# to be arranged within a #building# without regard for the regulations set forth in Section 32-42 (Location Within Buildings) provided that the Commission finds that:

(1) the #commercial# #uses# are located in a portion of the #mixed# #building#that has separate access, to the outside with no opening of any kind, to the #residential# portion of the #building#, at any story*;*

(2) the #commercial# #uses# are not located directly over any #story# containing #dwelling units#, except in C4-6 zoning districts within Community District 10 in the Borough of Manhattan, where an acoustical barrier provides sufficient noise abatement; and

(3) the modifications shall not have any adverse effect on the #uses# located withinthe #building#.

* * *

APPENDIX F
Inclusionary Housing Designated Areas and Mandatory Inclusionary Housing Areas

* * *

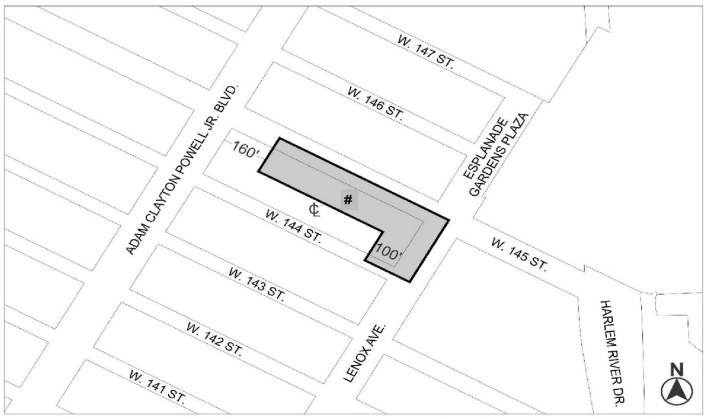
MANHATTAN

* * *

Manhattan Community District 10

* * *

Map 2 – [date of adoption]



Portion of Community District 10, Manhattan

* * *

Portion of Community District 10, Manhattan

* * *

No. 3

CD 10 Q C 220136 ZSM

IN THE MATTER OF an application submitted by One45 Lenox LLC, pursuant to Sections 197-c and 201 of the New York City Charter for the grant of a special permit, pursuant to Section 74-743 of the Zoning Resolution to modify the tower regulations of Section 35-64 (Special Tower Regulations for Mixed Buildings) of a mixed-use building (Building 1), in connection with a proposed mixed-use development, within a large-scale general development, bounded by West 145th Street, Lenox Avenue – Malcolm X. Boulevard, West 144th Street, a line 100 feet northwesterly of Lenox Avenue – Malcolm X. Boulevard, a line midway between West 144th Street and West 145th Street, and a line 160 feet southeasterly of Adam Clayton Powell Jr. Boulevard (Block 2013, Lots 29, 33, 38, 44 and 50), in a C4-6* District.

* Note: This site is proposed to be rezoned by changing existing R7-2/ C1-4 and C8-3 Districts to a C4-6 District, under a concurrent related application for a Zoning Map change (C 220134 ZMM).

Plans for this proposal are on file with the City Planning Commission and may be seen, at 120 Broadway, 31st Floor, New York, NY 10271-0001.

No. 4

CD 10 C 220137 ZSM

IN THE MATTER OF an application submitted by One45 Lenox LLC, pursuant to Sections 197-c and 201 of the New York City Charter for the grant of a special permit, pursuant to Section 74-744* of the Zoning Resolution to modify requirements of Section 32-42 (Location Within Buildings) to allow commercial uses (banquet hall use & office amenity space) to be located above residential use, and to modify the requirements of Section 32-423 (Limitation on ground floor location) to allow Use Group 9 uses (banquet hall use) to be located within 50 feet of the street wall of a mixed-use building (Building 1), in connection with a proposed mixed-use development, within a large-scale general development, bounded by West 145th Street, Lenox Avenue – Malcolm X. Boulevard, West 144th Street, a line 100 feet northwesterly of Lenox Avenue – Malcolm X. Boulevard, a line midway between West 144th Street and West 145th Street, and a line 160 feet southeasterly of Adam Clayton Powell Jr. Boulevard (Block 2013, Lots 29, 33, 38, 44 and 50), in a C4-6* District.

* Note: A zoning text amendment is proposed to Section 74-744 under a concurrent related application for a Zoning Text change (N 220135 ZRM).

** Note: This site is proposed to be rezoned by changing existing R7-2/ C1-4 and C8-3 Districts to a C4-6 District, under a concurrent related application for a Zoning Map change (C 220134 ZMM).

Plans for this proposal are on file with the City Planning Commission and may be seen, at 120 Broadway, 31st Floor, New York, NY 10271-0001.

No. 5

CD 10 C 220137 A ZSM

IN THE MATTER OF an application submitted by One45 Lenox LLC pursuant to Sections 197-c and 201 and proposed for modification, pursuant to Section 2-06(c)(1) of the Uniform Land Use Review Procedure of the New York City Charter for the grant of special permits pursuant to:

1. Section 74-744(b)* of the Zoning Resolution to modify requirements of Section 32-42 (Location Within Buildings) to allow commercial uses (banquet hall use & office amenity space) to be located above residential use, and to modify the requirements of Section 32-423 (Limitation on ground floor location) to allow Use Group 9 uses (banquet hall use) to be located within 50 feet of the street wall of a mixed-use building (Building 1); and
2. Section 74-744(c) of the Zoning Resolution to modify the signage regulations of Section 32-641 (Total Surface Area of Signs), 32-642 (Non-Illuminated Signs), 32-644 (Illuminated or Flashing Signs in C4, C5-4, C6 & C7 Districts), Section 32-652 (Permitted Projection in all other Commercial Districts) and Section 32-655 (Height of Signs in all other Commercial Districts);

in connection with a proposed mixed-use development, within a large-scale general development, bounded by West 145th Street, Lenox Avenue – Malcolm X. Boulevard, West 144th Street, a line 100 feet northwesterly of Lenox Avenue – Malcolm X. Boulevard, a line midway between West 144th Street and West 145th Street, and a line 160 feet southeasterly of Adam Clayton Powell Jr. Boulevard (Block 2013, Lots 29, 33, 38, 44 and 50), in a C4-6* District.

* Note: A zoning text amendment is proposed to Section 74-744(b) under a concurrent related application for a Zoning Text change (N 220135 ZRM).

** Note: This site is proposed to be rezoned by changing existing R7-2/ C1-4 and C8-3 Districts to a C4-6 District, under a concurrent related application for a Zoning Map change (C 220134 ZMM).

Plans for this proposal are on file with the City Planning Commission and may be seen, at 120 Broadway, 31st Floor, New York, NY 10271-0001.

No. 6

CD 10 C 220142 ZSM

IN THE MATTER OF an application submitted by One45 Lenox LLC, pursuant to Sections 197-c and 201 of the New York City Charter for the grant of a special permit, pursuant to Section 74-533 of the Zoning Resolution to reduce the required accessory off-street parking spaces to 130 spaces (20%) for dwelling units in a development within a Transit Zone, that includes, at least 20 percent of all dwelling units as income-restricted housing units, in connection with a proposed mixed-use development, within a large-scale general development, bounded by West 145th Street, Lenox Avenue – Malcolm X. Boulevard, West 144th Street, a line 100 feet northwesterly of Lenox Avenue – Malcolm X. Boulevard, a line midway between West 144th Street and West 145th Street, and a line 160 feet southeasterly of Adam Clayton Powell Jr. Boulevard (Block 2013, Lots 29, 33, 38, 44 and 50), in a C4-6* District.

* Note: This site is proposed to be rezoned by changing existing R7-2/ C1-4 and C8-3 Districts to a C4-6 District, under a concurrent related application for a Zoning Map change (C 220134 ZMM).

Plans for this proposal are on file with the City Planning Commission and may be seen, at 120 Broadway, 31st Floor, New York, NY 10271-0001.

NOTICE

On Wednesday, March 2, 2022, a public hearing is being held by the City Planning Commission (CPC), accessible remotely, in conjunction with the above ULURP hearing to receive comments related to a Draft Environmental Impact Statement (DEIS) concerning an application by One45 Lenox, LLC (the Applicant). The Applicant is seeking a series of land use actions including a zoning map amendment, zoning text amendments, special permits and CPC certifications (the Proposed Actions) from the City Planning Commission (CPC) to facilitate the development of two mixed-use buildings with mixed income residential, commercial, community facility uses, and a banquet hall/event space (the "Proposed Development") on the proposed development site comprised of Block 2013, Lots 29, 33, 38, 44, and 50 (the "Proposed Development Site") in the West Harlem neighborhood of Manhattan, Community District (CD) 10.

The Proposed Actions would result in approximately 940,900 gross square feet (gsf) development, comprised of 48,000 gsf of community facility use (intended for a Museum of Civil Rights); between approximately 17,700 gsf and 75,000 gsf of commercial office use (a portion of which is intended for a new replacement headquarters for the National Action Network (NAN), a nationally renowned civil rights organization); approximately 866–939 new dwelling units (DUs), a portion of which would be permanently affordable, pursuant to Mandatory Inclusionary Housing (MIH); approximately 42,000 gsf of ground-floor retail space; and a banquet hall/event space with a 200-person capacity. The proposed buildings would have an approximately 85-foot tall base and two towers each with a height of approximately 363 feet.

The public hearing will also consider a modification, to the Proposed Action (ULURP No C220137 (A) ZSM).

Written comments on the DEIS are requested and will be received and considered by the Lead Agency through 5:00 P.M. on Monday, March 14, 2022.

For instructions on how to submit comments and participate remotely, please refer, to the instructions, at the beginning of this agenda.

This hearing is being held, pursuant to the State Environmental Quality Review Act (SEQRA) and City Environmental Quality Review (CEQR), CEQR No. 21DCP167M.

Sara Avila, Calendar Officer
City Planning Commission
120 Broadway, 31st Floor, New York, NY 10271
Telephone (212) 720-3366

Accessibility questions: (212) 720-3508, AccessibilityInfo@planning.nyc.gov, by: Friday, February 25, 2022, 5:00 P.M.

☞ **f15-m2**

CITYWIDE ADMINISTRATIVE SERVICES

■ **PUBLIC HEARINGS**

DIVISION OF CITYWIDE PERSONNEL SERVICES
PROPOSED AMENDMENT TO CLASSIFICATION

PUBLIC NOTICE IS HEREBY GIVEN of a virtual public hearing to amend the Classification of the Classified Service of the City of New York.

A virtual public hearing will be held by the Commissioner of Citywide Administrative Services in accordance with Rule 2.6 of the Personnel Rules and Regulations of the City of New York on Microsoft Teams on **February 16, 2022, at 10:00 A.M**.

Microsoft Teams meeting Details:

Join on your computer or mobile app
Click here to join the meeting

Or call in (audio only)
+1 646-893-7101,,88564805# United States, New York City

Phone Conference ID: 885 648 05#

For more information go to the DCAS website at:
https://www1.nyc.gov/site/dcas/about/public-hearings/page.

RESOLVED, that the classification of the Classified Service of the City of New York is hereby amended as follows:

I. By establishing in the Exempt Class the following managerial titles and positions, under the heading OFFICE OF THE MAYOR [002], subject to Rule X, as indicated:

Title Code Number	Class of Positions	Annual Salary	Number of Positions Authorized
XXXXX	Climate Policy Officer (Mayor's Office of Climate and Environmental Justice)	#	1 position

This is a Management Class of position paid in accordance with the Pay Plan for Management Employees. Salary for this position is set at a rate in accordance with duties and responsibilities.

II. By establishing in the Non-Competitive Class the following managerial titles and positions, under the indicated agency headings, subject to Rule X, Part I as indicated:

Title Code Number	Class of Positions	Annual Salary	Number of Positions Authorized
XXXXX	Chief Sustainability Officer	#	
A.	Department of Buildings [810]		1 position
XXXXX	City Chief Decarbonization Officer	#	
A.	Department of Citywide Administrative Services [868]		1 position
XXXXX	Agency Chief Decarbonization Officer	#	
A.	Department of Citywide Administrative Services [868]		1 position
B.	Department of Corrections [072]		1 position
C.	Department of Cultural Affairs [126]		1 position
D.	Department of Education [740]		1 position
E.	Department of Environmental Protection [826]		1 position
F.	Department of Parks and Recreation [846]		1 position
G.	Department of Sanitation [827]		1 position
H.	Department of Transportation [841]		1 position
I.	New York City Housing Authority [996]		1 position
J.	New York Police Department [056]		1 position
XXXXX	Director, Energy Management Strategy	#	
A.	Department of Buildings [810]		2 positions
B.	Department of Citywide Administrative Services [868]		9 positions
C.	Department of Corrections [072]		1 position
D.	Department of Cultural Affairs [126]		1 position
E.	Department of Education [740]		2 positions
F.	Department of Environmental Protection [826]		2 positions
G.	New York City Housing Authority [996]		1 position
H.	Mayor's Office of Climate and Environmental Justice [002]		2 positions

This is a Management Class of positions paid in accordance with the Pay Plan for Management Employees. Salary for these positions are set at a rate in accordance with duties and responsibilities.

Part I positions are designated as confidential or policy influencing under Rule 3.2.3 (b) of the Personnel Rules and Regulations of the City of New York and therefore are not covered by Section 75 of the Civil Service Law.

III. By establishing in the Non-Competitive Class the following non-managerial titles and positions, under the indicated agency headings, subject to Rule XI, Part II, as indicated:

Title Code Number	Class of Positions	Annual Salary	Number of Positions Authorized
XXXXX	Energy Management Strategist		
	Assignment Level I	$74,000 - $100,000	

		Assignment Level II	$83,000 - $117,000
A.	Department of Buildings [810]		18 positions
B.	Department of Citywide Administrative Services [868]		40 positions
C.	Department of Corrections [072]		1 position
D.	Department of Education [740]		6 positions
E.	Department of Environmental Protection [826]		20 positions
F.	Department of Homeless Services [071]		1 position
G.	Department of Parks and Recreation [846]		1 position
H.	Department of Sanitation [827]		1 position
I.	New York City Housing Authority [996]		4 positions
J.	Office of the Mayor [002]		4 positions
XXXXX	Energy Management Strategist Trainee	$66,000 - $75,000	
A.	Department of Buildings [810]		3 positions
B.	Department of Citywide Administrative Services [868]		14 positions
C.	Department of Education [740]		1 position
D.	Department of Environmental Protection [826]		1 position
E.	New York City Housing Authority [996]		1 position

Part II positions are covered by Section 75 of the Civil Service Law Disciplinary procedures after 5 years of service.

IV. By deleting the following title from under the heading DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES [868]

Title Code Number	Class of Positions	Annual Salary
M95618	Director of Energy Conservation	#

This is a Management Class of position paid in accordance with the Pay Plan for Management Employees. Salary for this position is set at a rate in accordance with duties and responsibilities.

V. Table of Equivalencies

All persons employed in the classes of positions listed under "Present Title," are hereby reclassified, without further examination, with no change in salary or benefits and at the same salaries they are presently receiving, in accordance with the Table of Equivalencies set forth below:

TABLE OF EQUIVALENCIES

Present Title	Reclassified Title
Director of Energy Conservation (M95618)	City Chief Decarbonization Officer (XXXXX)

VI. Terms and Conditions

All permanent employees in the titles listed above under "Present Title" who are reclassified as shown in the above Table of Equivalencies cannot be reassigned to a lower Assignment Level except in accordance with regular civil service procedures and regulations.

If you need to request a reasonable accommodation to attend or have questions about accessibility, please contact DCAS Accessibility at 212-386-0256, or accessibility@dcas.nyc.gov.

DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES
Dawn M. Pinnock
Commissioner

f11-16

COMMUNITY BOARDS

■ **PUBLIC HEARINGS**

NOTICE IS HEREBY GIVEN that the following matters have been scheduled for Public Hearing by Community Board:

BOROUGH OF BROOKLYN

COMMUNITY BOARD NO. 18 - Wednesday, February 16, 2022 7:00 P.M., Board Office Meeting Room, 1097 Bergen Avenue and via WebEx for participants who wish to participate online.

Public Comment on the Agency Responses, to the Community Board's Fiscal Year 2023 Register of Capital and Expense Priorities. *This Statutory Public Hearing has been duly advertised in the City Record.*

Please Note:

- The allowable occupancy for the Board Office Meeting Room (e.g. 70 members of the public will be permitted in the room).
- All meeting, attendees will be required to practice physical distancing and all, attendees over the age of two who are medically able to tolerate a face covering will be required to wear a face covering, regardless of vaccination status.
- Videoconferencing information for those who wish to participate online, is as follows:

REGULAR MONTHLY BOARD MEETING – FEBRUARY 16, 2022 7:00 P.M.

Date and time: Wednesday, February 16, 2022 7:00 P.M. Eastern Standard Time (New York, GMT-05:00)

Duration: 2 hours

Event number: 2342 055 0220

Event password: 7wiNhjxnJ94

Video Address: 23498928628@webex.com
You can also dial 173.243.2.68 and enter your meeting number.

Audio conference: United States Toll
+1-408-418-9388
Show all global call-in numbers

Access code: 2342 055 0220

f8-16

BOARD OF EDUCATION RETIREMENT SYSTEM

■ **MEETING**

The Board of Education Retirement System Board of Trustees Meeting, will be held, on Thursday, February 24, 2022, from 4:00 P.M. - 6:00 P.M. via Webex. If you would like to, attend this meeting, please contact BERS Executive Director, Sanford Rich, at Srich4@bers.nyc.gov.

☛ **f15-24**

HOUSING AUTHORITY

■ **MEETING**

Because of the on-going COVID-19 health crisis and in relation to Chapter 417 of the Laws of 2021, the Board Meeting of the New York City Housing Authority, scheduled for Wednesday, February 23, 2022,

at 10:00 A.M., will be limited to viewing the live-stream or listening via phone, instead of attendance in person.

For public access, the meeting will be streamed live, on NYCHA's YouTube Channel, http://nyc.gov/nycha, and NYCHA's Website, http://www1.nyc.gov/site/nycha/about/board-calendar.page, or can be accessed, via Zoom, by calling (646) 558-8656 using Webinar ID: 891 8751 2750 and Passcode: 5814107684.

For those wishing to provide public comment, pre-registration is required, via email, to corporate.secretary@nycha.nyc.gov, or by contacting (212) 306-6088, no later than 5:00 P.M., on the day prior to the Board Meeting. When pre-registering, please provide your name, development, or organization name, contact information and item you wish to comment on. You will then be contacted with instructions for providing comment. Comments are limited to the items on the Calendar.

Speaking time will be limited to three (3) minutes. Speakers will provide comment in the order in which the requests to comment are received. The public comment period will conclude upon all speakers being heard or at the expiration of thirty (30) minutes allotted for public comment, whichever occurs first.

Copies of the Calendar are available on NYCHA's Website, at http://www1.nyc.gov/site/nycha/about/board-calendar.page, to the extent practicable, no earlier than 24 hours before the upcoming Board Meeting. Copies of the draft Minutes are available on NYCHA's Website, at http://www1.nyc.gov/site/nycha/about/board-calendar.page, no earlier than 3:00 P.M., on the Thursday following the Board Meeting.

Any changes to the schedule will be posted on NYCHA's Website, at http://www1.nyc.gov/site/nycha/about/board-calendar.page, and via social media, to the extent practicable, at a reasonable time before the meeting.

Any person requiring a reasonable accomodation in order to participate in the Board Meeting, should contact the Office of the Corporate Secretary, by phone, at (212) 306-6088, or by email, at corporate.secretary@nycha.nyc.gov, no later than Wednesday, February 16, 2022, at 5:00 P.M.

For additional information regarding the Board Meeting, please contact the Office of the Corporate Secretary, by phone, at (212) 306-6088, or by email, at corporate.secretary@nycha.nyc.gov.

f7-23

LANDMARKS PRESERVATION COMMISSION

■ **PUBLIC HEARINGS**

NOTICE IS HEREBY GIVEN that pursuant to the provisions of Title 25, Chapter 3 of the Administrative Code of the City of New York (Sections 25-303, 25-307, 25-308, 25-309, 25-313, 25-318, 25-320) on Tuesday, February 22, 2022, the Landmarks Preservation Commission (LPC or agency), will hold a public hearing by teleconference with respect to the properties list below, and then followed by a public meeting.

The final order and estimated times for each application, will be posted on the Landmarks Preservation Commission website, the Friday before the hearing. Please note that the order and estimated times are subject to change. The teleconference will be by the Zoom app and will be live streamed on the LPC's YouTube channel, www.youtube.com/nyclpc.

Members of the public should observe the meeting on the YouTube channel and may testify on particular matters by joining the meeting using either the Zoom app or by calling in from any phone. Specific instructions on how to observe and testify, including the meeting ID and password, and the call-in number, will be posted on the agency's website, under the "Hearings" tab, https://www1.nyc.gov/site/lpc/hearings/hearings.page, on the Monday before the public hearing. Any person requiring language assistance services or other reasonable accommodation in order to participate in the hearing or attend the meeting should contact the LPC, by contacting Sasha Sealey, Community and Intergovernmental Affairs at ssealey@lpc.nyc.gov at least five (5) business days before the hearing or meeting. Please note: Due to the City's response to COVID-19, this public hearing and meeting is subject to change and/or cancellation.

1 Sidney Place, aka 130 Joralemon Street - Brooklyn Heights Historic District
LPC-22-05330 - Block 264 - Lot 9 - **Zoning:** R6B
CERTIFICATE OF APPROPRIATENESS
An Anglo-Italianate style rowhouse, built circa 1861-79. Application is to construct a garage with a roof deck and rooftop bulkhead, modify a masonry opening, replace infill, and install rooftop HVAC equipment.

205 Clinton Street - Cobble Hill Historic District
LPC-22-04393 - Block 292 - Lot - Zoning: R6
CERTIFICATE OF APPROPRIATENESS
A rowhouse built c. 1850s. Application is to construct a rear yard addition, excavate at the cellar and rear yard, modify the top floor to create a terrace, construct an elevator bulkhead and roof deck, remove stained glass and replace windows.

305 President Street - Carroll Gardens Historic District
LPC-22-04683 - Block 436 - Lot 69 - **Zoning:** R6B
CERTIFICATE OF APPROPRIATENESS
A rowhouse built in 1876. Application is to construct a rear yard addition and shed.

1810 Glenwood Road - Fiske Terrace-Midwood Park Historic District
LPC-22-04407 - Block 6693 - Lot 44 - **Zoning:** R2
CERTIFICATE OF APPROPRIATENESS
A Colonial Revival style freestanding house, designed by Slee & Bryson and built c. 1905. Application is to install skylights.

1 Hanover Square - , aka 164 Stone Street- Stone Street Historic District
LPC-22-03153 - Block 29 - Lot 7502 - **Zoning:** C5-5, LM
CERTIFICATE OF APPROPRIATENESS
An Anglo-Italianate style bank, built in 1851-54, later combined with three Greek Revival style store and loft buildings, built in 1836. Application is to install signage and entrance infill.

9 Vandam Street - Charlton-King-Vandam Historic District
LPC-22-06109 - Block 506 - Lot 44 - **Zoning:** R7-2
CERTIFICATE OF APPROPRIATENESS
A Federal style rowhouse, built in 1829-30. Application is to amend Certificate of Appropriateness 19-25254 for the construction of rear yard additions and excavation at the rear yard, and to modify the areaway.

18 East 68th Street - Upper East Side Historic District
LPC-21-08974 - Block 1382 - Lot 60 - **Zoning:** R8B
CERTIFICATE OF APPROPRIATENESS
A Beaux-Arts style residence, designed by C.P.H. Gilbert and built in 1904-05. Application is to install sculptural figures and a new gate at the areaway.

f8-18

NOTICE IS HEREBY GIVEN that, pursuant to the provisions of Title 25, Chapter 3 of the Administrative Code of the City of New York (Sections 25-303, 25-307, 25-308, 25-309, 25-313, 25-318, 25-320) on Tuesday, March 1, 2022, the Landmarks Preservation Commission (LPC or agency) will hold a public hearing by teleconference with respect, to the properties list below, and then followed by a public meeting.

The final order and estimated times for each application will be posted on the Landmarks Preservation Commission website, the Friday before the hearing. Please note that the order and estimated times are subject to change. The teleconference will be by the Zoom app and will be live streamed on the LPC's YouTube channel, www.youtube.com/nyclpc. Members of the public should observe the meeting on the YouTube channel and may testify on particular matters by joining the meeting using either the Zoom app or by calling in from any phone.

Specific instructions on how to observe and testify, including the meeting ID and password, and the call-in number, will be posted on the agency's website, under the "Hearings" tab, https://www1.nyc.gov/site/lpc/hearings/hearings.page, on the Monday before the public hearing. Any person requiring language assistance services or other reasonable accommodation in order to participate in the hearing or, attend the meeting should contact the LPC by contacting Sasha Sealey, Community and Intergovernmental Affairs, at ssealey@lpc.nyc.gov, at least five (5) business days before the hearing or meeting. Please note: Due, to the City's response to COVID-19, this public hearing and meeting is subject to change and/or cancellation.

205 Clinton Street - Cobble Hill Historic District
LPC-22-04393 - Block 292 - Lot 6 - **Zoning:** R6
CERTIFICATE OF APPROPRIATENESS
A rowhouse built c. 1850s. Application is to construct a rear yard addition, excavate, at the cellar and rear yard, alter the roof, construct a bulkhead, extend chimney flues, remove stained glass and replace windows.

44 Walker Street - Tribeca East Historic District
LPC-21-07542 - Block 194 - Lot 7502 - **Zoning:** C6-2A
CERTIFICATE OF APPROPRIATENESS
An Italiante style store and loft building, designed by T. Thomas & Son and built in 1854-55. Application is to legalize the installation of storefront infill without Landmarks Preservation Commission permit(s).

14 Gay Street - Greenwich Village Historic District
LPC-21-03671 - Block 593 - Lot 48 - **Zoning:** R6
CERTIFICATE OF APPROPRIATENESS
A Federal style house, built in 1827-28. Application is to reconstruct

the stoop, replace railings and install a stoop gate, and replace the under-stoop gate.

16 Gay Street - Greenwich Village Historic District
LPC-22-03343 - Block 593 - Lot 47 - **Zoning:** R6
CERTIFICATE OF APPROPRIATENESS
A Federal style house, built in 1828 with later alterations. Application is to reconstruct the stoop, replace railings and install a stoop gate, and replace the under-stoop gate.

1083 Fifth Avenue - Expanded Carnegie Hill Historic District
LPC-22-05211 - Block 1501 - Lot 4 - **Zoning:** R10, Pl
CERTIFICATE OF APPROPRIATENESS
A Beaux-Arts style townhouse, designed by Turner & Kilian and built in 1901-02, with significant alterations by Ogden Codman in 1913-15. Application is to alter the areaway and construct an areaway wall.

112 East 75th Street - Upper East Side Historic District
LPC-22-06581 - Block 1409 - Lot 68 - **Zoning:** 8C
CERTIFICATE OF APPROPRIATENESS
A Modern style synagogue building, designed by Schuman & Lichtenstein and, built in 1964-1968. Application is to alter façade, enclose the recessed ground floor and replace windows.

613 West 155th Street - Audubon Terrace Historic District
LPC-22-06782 - Block 2134 - Lot 8 - **Zoning:** R8
CERTIFICATE OF APPROPRIATENESS
A Neo-Renaissance style institutional building, designed by Charles P. Huntington and, built in 1904. Application is to install barrier-free access lifts, rooftop mechanical equipment and bulkheads, and signage.

☛ **f15-m1**

TRANSPORTATION

■ **PUBLIC HEARINGS**

NOTICE IS HEREBY GIVEN, pursuant to law, that the following proposed revocable consents, have been scheduled for a public hearing by the New York City Department of Transportation. The hearing will be held remotely commencing on Thursday, March 4, 2022 at 2:00 P.M., via the WebEx platform and in person, on the following petitions for revocable consent.

WebEx: https://meet125.webex.com/meet125/j.php?MTID=m9901efb1d75fb2b5b67f128722989357
Meeting Number (access code): 2633 384 0262
Meeting Password: X7ngPngvQ74

The hearing will be held in person, at 55 Water Street, BID ROOM, in the Borough of Manhattan. Masks are required to be worn, to enter the building and during the hearing. If you or a representative are planning to attend in person, please complete the health screening available, at dotcovidvisitorscreening.info

If you do not have internet access, conduct a self-screening using the information below:

Please do not attend this meeting if:

- **You have experienced any symptoms of COVID-19 within the past 10 days (a fever of 100.0 degrees Fahrenheit or greater, a new cough, new loss of taste or smell, or shortness of breath).**
- **You have tested positive for COVID-19 within the past 10 days.**
- **You have been in close contact (within 6 feet for at least 10 minutes over a 24-hour period) with anyone while they had COVID-19 within the past 10 days and are required to quarantine under existing CDC guidance (you have not had COVID-19 within the past 3 months, and you are not fully vaccinated).**

#1 IN THE MATTER OF a proposed revocable consent authorizing CHPE LLC, to use a concrete duct bank, containing two (2) eight-inch (8") and one (1) two-inch (2") PVC duct pipes, and, for the horizontal directionally drilled segment, two (2) eighteen-inch (18") HDPE conduits, all connected via two (2) cable splicing vaults under Randall's Island, between the Harlem River and the East River, at Block 1819, Lot 203, in the Borough of Manhattan. The proposed revocable consent is for a term of ten years from Approval Date by the Mayor and provides among other terms and conditions for compensation payable to the City according to the following schedule: **R.P. # 2561**

From the Approval Date by the Mayor to June 30, 2022- $148,169/per annum
For the period July 1, 2022 to June 30, 2023 - $150,581
For the period July 1, 2023 to June 30, 2024 - $152,993
For the period July 1, 2024 to June 30, 2025 - $155,405
For the period July 1, 2025 to June 30, 2026 - $157,817
For the period July 1, 2026 to June 30, 2027 - $160,229
For the period July 1, 2027 to June 30, 2028 - $162,641
For the period July 1, 2028 to June 30, 2029 - $165,053
For the period July 1, 2029 to June 30, 2030 - $167,465
For the period July 1, 2030 to June 30, 2031 - $169,877
For the period July 1, 2031 to June 30, 2032 - $172,289

with the maintenance of a security deposit in the sum of $2,491,131.00 the insurance shall be in the amount of Two Million Dollars ($2,000,000) per occurrence for bodily injury and property damage, One Million Dollars ($1,000,000) for personal and advertising injury, Two Million Dollars ($2,000,000) aggregate, and Two Million Dollars ($2,000,000) products/completed operations.

f11-m4

COURT NOTICES

SUPREME COURT

RICHMOND COUNTY

■ **NOTICE**

RICHMOND COUNTY
I.A.S. PART 89
NOTICE OF ACQUISITION
INDEX NUMBER CY4519/2021
CONDEMNATION PROCEEDING

IN THE MATTER OF the Application of the CITY OF NEW YORK Relative to Acquiring Title in Fee Simple Absolute to certain real property located in Staten Island for:

SOUTH BEACH AVENUE – STAGE 1

in the area generally bounded by Reid Avenue to the north, Quintard Street to the west, Olympia Boulevard to the south and Norway Avenue to the east, in the Borough of Staten Island, City and State of New York.

PLEASE TAKE NOTICE, that by order of the Supreme Court of the State of New York, County of Richmond (Hon. Wayne P. Saitta, J.S.C.), duly entered in the office of the Clerk of the County of Richmond on December 20, 2021 ("Order"), the application of the CITY OF NEW YORK ("City") to acquire certain real property, where not heretofore acquired for the same purpose, required for the reconstruction of roadways, sidewalks and curbs, and the installation of sanitary and storm sewers, water mains and appurtenances, was granted and the City was thereby authorized to file an acquisition map with the Office of the Clerk of Richmond County ("Map"). Said Map, showing the property acquired by the City, was filed with the Office of the Clerk of Richmond County. Title to the real property vested in the City of New York on December 30, 2021 ("Vesting Date").

PLEASE TAKE FURTHER NOTICE, that the City has acquired the parcels of real property as shown on the Map and described in the annexed Schedule A in fee simple absolute.

PLEASE TAKE FURTHER NOTICE, that pursuant to said Order and to §§ 503 and 504 of the Eminent Domain Procedure Law ("EDPL) of the State of New York, each and every person interested in the real property acquired in the above-referenced proceeding and having any claim or demand on account thereof shall have a period of three calendar years from the Vesting Date for this proceeding, to file a written claim with the Clerk of the Court of Richmond County, and to serve within the same timeframe a copy thereof on the Corporation Counsel of the City of New York, Tax and Bankruptcy Litigation Division, 100 Church Street, New York, NY 10007. Pursuant to EDPL § 504, the claim shall include:

(A) the name and post office address of the condemnee;

(B) reasonable identification by reference to the acquisition map, or otherwise, of the property affected by the acquisition, and the condemnee's interest therein;

(C) a general statement of the nature and type of damages claimed, including a schedule of fixture items which comprise part or all of the damages claimed; and,

(D) if represented by an attorney, the name, address and telephone number of the condemnee's attorney

Pursuant to EDPL § 503(C), in the event a claim is made for fixtures or for any interest other than the fee in the real property acquired, a copy of the claim, together with the schedule of fixture items, if applicable, shall also be served upon the fee owner of said real property.

PLEASE TAKE FURTHER NOTICE, that, pursuant to § 5-310 of the New York City Administrative Code, proof of title shall be submitted to the Corporation Counsel of the City of New York, Tax and Bankruptcy Litigation Division, 100 Church Street, New York, New York.

Dated: New York, NY
January 21, 2022

GEORGIA M. PESTANA
Corporation Counsel of the
City of New York
100 Church Street
New York, NY 10007
Tel. (212) 356- 4064

By: */s/ Stephanie M. Fitos*
Stephanie M. Fitos
Assistant Corporation Counsel

SCHEDULE A

PROPERTIES ACQUIRED

Part of and/or Adjacent Block Number	Part of and/or Adjacent Lot Number
3390	16
3390	14
3390	12
3390	11
3390	10
3390	9
3390	8
3390	5
3390	1
3390	54
3390	52
3390	50
3390	49
3390	47
3390	46
3391	26
3391	23
3391	22
3391	21
3391	20
3391	19
3391	118
3391	18
3391	16
3391	14
3391	10
3391	9
3391	6
3391	1
3391	46
3391	44
3391	42
3391	41
3391	40
3391	38
3391	37
3391	36
3391	34
3391	32
3391	31
3392	24
3392	20
3392	18
3392	16
3392	12
3392	9
3392	7
3392	5
3392	3
3392	2
3392	1
3392	43
3392	41
3392	40
3392	39
3392	35
3243	100
3248	1
3248	76
3248	75
3248	74
3248	72
3248	70
3248	71
3248	69
3248	68
3248	66
3248	64
3248	63
3248	62
3248	60
3248	58
3248	56
3248	54
3248	53
3248	151
3248	51
3248	50
3248	48
3248	47
3248	46
3248	44
3252	1

Part of and/or Adjacent Block Number	Part of and/or Adjacent Lot Number
3252	62
3252	60
3252	59
3252	57
3252	55
3252	53
3252	51
3252	49
3252	47
3252	45
3252	44
3252	43
3252	41
3252	35
3396	29
3396	29
3396	28
3396	124
3396	24
3396	123
3396	23
3396	122
3396	22
3396	121
3396	21
3396	20
3396	18
3396	16
3396	12
3396	10
3396	8
3396	6
3396	1
3397	13
3397	9
3397	53
3397	1
3398	7
3398	99
3398	1
3395	44
3395	43
3395	42
3395	41
3395	39
3395	38
3395	37
3395	35
3395	33
3395	31

Part of and/or Adjacent Block Number	Part of and/or Adjacent Lot Number
3395	29
3395	27
3395	26
3395	25
3395	24
3395	22
3395	21
3395	20
3395	19
3395	18
3395	17
3395	16
3395	15
3395	14
3395	13
3395	11
3395	10
3395	9
3395	7
3395	6
3395	3
3395	1
3395	100
3395	99
3395	98
3395	97
3395	95
3395	93
3395	91
3395	90
3395	89
3395	88
3395	86
3395	84
3395	83
3395	82
3395	80
3395	78
3395	76
3395	75
3395	74
3395	72
3395	70
3395	68
3395	67
3395	66
3395	65
3395	58
3395	54
3395	53

Part of and/or Adjacent Block Number	Part of and/or Adjacent Lot Number
3395	52
3395	51
3394	37
3394	38
3394	35
3394	32
3394	30
3394	29
3394	28
3394	24
3394	24
3394	22
3394	20
3394	16
3394	12
3394	11
3394	10
3394	9
3394	8
3394	7
3394	6
3394	5
3394	3
3394	2
3394	101
3394	1
3394	96
3394	95
3394	92
3394	90
3394	88
3394	85
3394	84
3394	80
3394	181
3394	181
3394	79
3394	78
3394	77
3394	75
3394	71
3394	72
3394	73
3394	173
3394	170
3394	69
3394	68
3394	67
3394	66
3394	65

Part of and/or Adjacent Block Number	Part of and/or Adjacent Lot Number
3394	64
3394	63
3394	61
3394	60
3394	59
3394	57
3394	56
3394	52
3394	51
3394	50
3394	48
3394	46
3394	44
3394	42
3393	46
3393	45
3393	44
3393	42
3393	41
3393	39
3393	39
3393	38
3393	35
3393	33
3393	32
3393	131
3393	31
3393	130
3393	30
3393	27
3393	25
3393	23
3393	20
3393	17
3393	14
3393	13
3393	12
3393	11
3393	10
3393	109
3393	9
3393	8
3393	7
3393	7
3393	5
3393	4
3393	3
3393	1
3393	96
3393	94

Part of and/or Adjacent Block Number	Part of and/or Adjacent Lot Number
3393	93
3393	92
3393	91
3393	89
3393	87
3393	85
3393	84
3393	83
3393	82
3393	81
3393	79
3393	77
3393	75
3393	73
3393	72
3393	71
3393	70
3393	69
3393	68
3393	65
3393	63
3393	61
3393	59
3393	56
3393	54
3393	52
3393	51
3398	C170
3398	33
3398	31
3398	30
3398	29
3398	28
3398	26
3398	23
3398	22
3398	21
3398	20
3398	19
3398	18
3398	15
3398	14
3398	13
3398	10
3398	9
3398	8
3397	53
3397	51
3397	50
3397	49

Part of and/or Adjacent Block Number	Part of and/or Adjacent Lot Number
3397	48
3397	47
3397	45
3397	44
3397	43
3397	42
3397	39
3397	38
3397	37
3397	36
3397	36
3397	35
3397	34
3397	33
3397	30
3397	29
3397	28
3397	26
3397	25
3397	23
3397	22
3397	20
3397	19
3397	17
3397	14
3396	3
3396	4
3396	43
3396	37
3396	36
3396	34
3396	33
3396	32
3418	7
3418	10
3419	11
3419	7
3419	5
3419	3
3419	3
3419	1
3420	28
3420	61

f2-15

RICHMOND COUNTY
I.A.S. PART 89
NOTICE OF PETITION
INDEX NUMBER CY4521/2021
CONDEMNATION PROCEEDING

IN THE MATTER OF the Application of the CITY OF NEW YORK Relative to Acquiring Title in Fee Simple Absolute to certain real property located in Staten Island for:

SOUTH BEACH AREA – STAGE 2

From McClean Avenue to the north, Norway Avenue to the west, Olympia Boulevard to the south and Hickory Avenue to the east, in the Borough of Staten Island, City and State of New York.

PLEASE TAKE NOTICE that the City of New York ("City") intends to make an application to the Supreme Court of the State of New York, Richmond County, IA Part 89, for certain relief.

Due to the ongoing COVID-19 public health emergency, the hearing for this matter will not be held in person at the Kings County Courthouse, located at 360 Adams Street, in the Borough of Brooklyn, City and State of New York, but rather will be held virtually and on the telephone via Microsoft Teams on February 23, 2022, at 10:00 A.M., or as soon thereafter as counsel can be heard. To receive a link and/or phone number to attend the virtual hearing please contact Senior Court Clerk Patriciaann McHenry directly, at pmchenry@nycourts.gov, prior to the hearing.

The application is for an order:

1) authorizing the City to file an acquisition map in the Office of the Richmond County Clerk;

2) directing that upon the filing of the order granting the relief sought in this petition, together with the filing of the acquisition map in the Office of the Richmond County Clerk, title to the property shown on said map and sought to be acquired and more particularly described in this petition shall vest in the City in fee simple absolute;

3) providing that the just compensation that should be made to the owners of the real property sought to be acquired and described in this petition be ascertained and determined by the Court without a jury;

4) directing that within thirty days of entry of the order granting the relief sought in this petition, the City shall cause a Notice of Acquisition to be published in at least ten successive issues of The City Record, an official newspaper published in the City of New York, and shall serve a copy of such notice by first class mail on each condemnee or his, her, or its attorney of record;

5) directing that each condemnee shall have a period of two calendar years from the vesting date for this proceeding in which to file a written claim, demand, or notice of appearance with the Clerk of this Court and to serve a copy of the same upon the Corporation Counsel of the City of New York, 100 Church Street, New York, NY 10007.

The City of New York, in this proceeding, intends to acquire title in fee simple absolute to certain real property where not heretofore acquired for the same purpose, for the reconstruction of roadways, sidewalks and curbs, and the installation of sanitary and storm sewers, water mains and appurtenances in the Borough of Staten Island, City and State of New York.

The description of the real property to be acquired is as follows, subject to the interest of the New York City Housing Authority, if any:

SITE A

McCLEAN AVENUE FROM NORWAY AVENUE TO HICKORY AVENUE

MALLORY AVENUE FROM FOCH AVENUE TO McCLEAN AVENUE

LAMPORT BOULEVARD FROM FOCH AVENUE TO McCLEAN AVENUE

KENSINGTON AVENUE FROM FOCH AVENUE TO McCLEAN AVENUE

JEROME AVENUE FROM FOCH AVENUE TO McCLEAN AVENUE

BIONIA AVENUE FROM FOCH AVENUE TO McCLEAN AVENUE

ALL that certain plot, piece or parcel of land, with buildings and improvements thereon erected, situate, lying and being in the Borough of Staten Island, Richmond County, City and State of New York, and being more particularly bounded and described as follows:

BEGINNING at the corner formed by the intersection of the southerly line of McClean Avenue (irregular width) with the westerly line of Mallory Avenue (60 feet wide);

RUNNING THENCE South 66 degrees 36 minutes 41 seconds West along the southerly line of McClean Avenue, a distance of 200.16 feet to the corner formed by the intersection of the southerly line of McClean Avenue with the easterly line of Norway Avenue (68 feet wide);

THENCE North 25 degrees 40 minutes 11 seconds West along the northerly prolongation of the easterly line of Norway Avenue, a distance of 70.06 feet to a point on the westerly prolongation of the northerly line of McClean Avenue (70 feet wide);

THENCE North 66 degrees 36 minutes 41 seconds East along the westerly prolongation of the northerly line of McClean Avenue, along the northerly line of McClean Avenue, a distance of 1571.24 feet to the corner formed by the intersection of the northerly line of McClean Avenue with the easterly line of Hickory Avenue (60 feet wide);

THENCE South 25 degrees 40 minutes 11 seconds East along the southerly prolongation of the easterly line of Hickory Avenue across the bed of McClean Avenue, a distance of 70.06 feet to the corner formed by the intersection of the easterly line of Hickory Avenue with the southerly line of McClean Avenue;

THENCE South 66 degrees 36 minutes 41 seconds West along the westerly prolongation of the southerly line of McClean Avenue, along the southerly line of McClean Avenue, a distance of 260.20 feet to the corner formed by the intersection of the southerly line of McClean Avenue with the easterly line of Bionia Avenue (60 feet wide);

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Bionia Avenue, a distance of 645.00 feet to the corner formed by the intersection of the easterly line of Bionia Avenue with the northerly line of Foch Avenue (70 feet wide);

THENCE South 64 degrees 19 minutes 49 seconds West along the westerly prolongation of the northerly line of Foch Avenue, a distance of 60.00 feet to the corner formed by the intersection of the northerly line of Foch Avenue with the westerly line of Bionia Avenue;

THENCE North 25 degrees 40 minutes 11 seconds West along the westerly line of Bionia Avenue, a distance of 647.39 feet to the corner formed by the intersection of the westerly line of Bionia Avenue with the southerly line of McClean Avenue;

THENCE South 66 degrees 36 minutes 41 seconds West along the said southerly line of McClean Avenue, a distance of 200.16 feet to the corner formed by the intersection of the southerly line of McClean Avenue with the easterly line of Jerome Avenue (60 feet wide;

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Jerome Avenue, a distance of 655.35 feet to the corner formed by the intersection of the easterly line of Jerome Avenue with the northerly line of Foch Avenue;

THENCE South 64 degrees 19 minutes 49 seconds West along the westerly prolongation of the northerly line of Foch Avenue, a distance of 60.00 feet to the corner formed by the intersection of the northerly line of Foch Avenue with the westerly line of Jerome Avenue;

THENCE North 25 degrees 40 minutes 11 seconds West along the westerly line of Jerome Avenue, a distance of 657.74 feet to the corner formed by the intersection of the westerly line of Jerome Avenue with the southerly line of McClean Avenue;

THENCE South 66 degrees 36 minutes 41 seconds West along the southerly line of McClean Avenue, a distance of 200.16 feet to the corner formed by the intersection of the southerly line of McClean Avenue with the easterly line of Kensington Avenue (60 feet wide);

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Kensington Avenue, a distance of 665.71 feet to the corner formed by the intersection of the easterly line of Kensington Avenue with the northerly line of Foch Avenue;

THENCE South 64 degrees 19 minutes 49 seconds West along the westerly prolongation of the northerly line of Foch Avenue, a distance of 60.00 feet to the corner formed by the intersection of the northerly line of Foch Avenue with the westerly line of Kensington Avenue;

THENCE North 25 degrees 40 minutes 11 seconds West along the westerly line of Kensington Avenue, a distance of 668.10 feet to the corner formed by the intersection of the westerly line of Kensington Avenue with the southerly line of McClean Avenue;

THENCE South 66 degrees 36 minutes 41 seconds West along the southerly line of McClean Avenue, a distance of 200.16 feet to the corner formed by the intersection of the southerly line of McClean Avenue with the easterly line of Lamport Boulevard (70 feet wide);

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Lamport Boulevard, a distance of 676.07 feet to the corner formed by the intersection of the easterly line of Lamport Boulevard with the northerly line of Foch Avenue;

THENCE South 64 degrees 19 minutes 49 seconds West along the westerly prolongation of the northerly line of Foch Avenue, a distance of 70.00 feet to the corner formed by the intersection of the northerly line of Foch Avenue with the westerly line of Lamport Boulevard;

THENCE North 25 degrees 40 minutes 11 seconds West along the westerly line of Lamport Boulevard, a distance of 678.86 feet to the corner formed by the intersection of the westerly line of Lamport Boulevard with the southerly line of McClean Avenue;

THENCE South 66 degrees 36 minutes 41 seconds West along the southerly line of McClean Avenue, a distance of 200.16 feet to the corner formed by the intersection of the southerly line of McClean Avenue with the easterly line of Mallory Avenue;

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Mallory Avenue, a distance of 686.82 feet to the corner formed by the intersection of the easterly line of Mallory Avenue with the northerly line of Foch Avenue;

THENCE South 64 degrees 19 minutes 49 seconds West along the westerly prolongation of the northerly line of Foch Avenue, a distance of 60.00 feet to the corner formed by the intersection of the northerly line of Foch Avenue with the westerly line of Mallory Avenue;

THENCE North 25 degrees 40 minutes 11 seconds West along the westerly line of Mallory Avenue, a distance of 689.21 feet to the point of **BEGINNING**.

This site is located within the beds of McClean Avenue, Mallory Avenue, Lamport Boulevard, Kensington Avenue, Jerome Avenue and Bionia Avenue as shown on "City Map" of the City of New York, Borough of Staten Island and on Damage and Acquisition Map No. 4226 and comprises an area of 316,869 square feet or 7.27431 of an acre.

Note: * Bearings are in the system established by the United States Coast and Geodetic Survey for the Borough of Staten Island.

SITE B

OLYMPIA BOULEVARD FROM NORWAY AVENUE TO HICKORY AVENUE

MALLORY AVENUE FROM OLYMPIA BOULEVARD TO FOCH AVENUE

LAMPORT BOULEVARD FROM OLYMPIA BOULEVARD TO FOCH AVENUE

KENSINGTON AVENUE FROM OLYMPIA BOULEVARD TO FOCH AVENUE

JEROME AVENUE FROM OLYMPIA BOULEVARD TO FOCH AVENUE

BIONIA AVENUE FROM OLYMPIA BOULEVARD TO FOCH AVENUE

ALL that certain plot, piece or parcel of land, with buildings and improvements thereon erected, situate, lying and being in the Borough of Staten Island, Richmond County, City and State of New York, and being more particularly bounded and described as follows:

BEGINNING at the corner formed by the intersection of the northerly line of Olympia Boulevard (70 feet wide) with the westerly line of Mallory Avenue (60 feet wide);

RUNNING THENCE North 25 degrees 40 minutes 11 seconds West along the westerly line of Mallory Avenue, a distance of 572.17 feet to the corner formed by the intersection of the westerly line of Mallory Avenue with the southerly line of Foch Avenue (70 feet wide);

THENCE North 64 degrees 19 minutes 49 seconds East along the easterly prolongation of the southerly line of Foch Avenue, a distance of 60.00 feet to the corner formed by the intersection of the southerly line of Foch Avenue with the easterly line of Mallory Avenue;

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Mallory Avenue, a distance of 569.81 feet to the corner formed by the intersection of the easterly line of Mallory Avenue with the northerly line of Olympia Boulevard;

THENCE North 62 degrees 04 minutes 39 seconds East along the northerly line of Olympia Boulevard, a distance of 200.16 feet to the corner formed by the intersection of the northerly line of Olympia Boulevard with the westerly line of Lamport Boulevard (70 feet wide);

THENCE North 25 degrees 40 minutes 11 seconds West along the westerly line of Lamport Boulevard, a distance of 561.94 feet to the corner formed by the intersection of the westerly line of Lamport Boulevard with the southerly line of Foch Avenue;

THENCE North 64 degrees 19 minutes 49 seconds East along the easterly prolongation of the said southerly line of Foch Avenue, a distance of 70.00 feet to the corner formed by the intersection of the southerly line of Foch Avenue with the easterly line of Lamport Boulevard;

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Lamport Boulevard and its southerly prolongation, a distance of 555.94 feet to the corner formed by the intersection of the easterly line of Lamport Boulevard with the present northerly line of Olympia Boulevard (irregular width) as laid out on a certain map entitled "Map of South Garden Villas in the Fourth Ward, Richmond Borough, New York City" dated December 3rd, 1923, surveyed by Harold L. Nelson, City Surveyor and filed in the Richmond County Clerk's Office on June 2nd, 1924 as Map No. 1389;

THENCE North 59 degrees 25 minutes 26 seconds East along the present northerly line of Olympia Boulevard, a distance of 200.74 feet to the point on the southerly prolongation of the westerly line of Kensington Avenue (60 feet wide);

THENCE North 25 degrees 40 minutes 11 seconds West along the southerly prolongation of the westerly line of Kensington Avenue, along the said westerly line of Kensington Avenue, a distance of 538.77 feet to the corner formed by the intersection of the westerly line of Kensington Avenue with the southerly line of Foch Avenue;

THENCE North 64 degrees 19 minutes 49 seconds East along the easterly prolongation of the southerly line of Foch Avenue, a distance of 60.00 feet to the corner formed by the intersection of the southerly line of Foch Avenue with the easterly line of Kensington Avenue;

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Kensington Avenue and its southerly prolongation, a distance of 533.61 feet to the corner formed by the intersection of the easterly line of Kensington Avenue with the present northerly line of Olympia Boulevard;

THENCE North 52 degrees 23 minutes 32 seconds East along the present northerly line of Olympia Boulevard, a distance of 204.42 feet to the corner formed by the intersection of the present northerly line of Olympia Boulevard with the westerly line of Jerome Avenue (60 feet wide);

THENCE North 25 degrees 40 minutes 11 seconds West along the westerly line of Jerome Avenue, a distance of 491.33 feet to the corner formed by the intersection of the westerly line of Jerome Avenue with the southerly line of Foch Avenue;

THENCE North 64 degrees 19 minutes 49 seconds East along the easterly prolongation of the southerly line of Foch Avenue, a distance of 60.00 feet to the corner formed by the intersection of the southerly line of Foch Avenue with the easterly line of Jerome Avenue;

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Jerome Avenue, a distance of 478.64 feet to the corner formed by the intersection of the easterly line of Jerome Avenue with the northerly line of Olympia Boulevard;

THENCE North 52 degrees 23 minutes 32 seconds East along the northerly line of Olympia Boulevard, a distance of 204.42 feet to the corner formed by the intersection of the northerly line of Olympia Boulevard with the westerly line of Bionia Avenue (60 feet wide);

THENCE North 25 degrees 40 minutes 11 seconds West along the westerly line of Bionia Avenue, a distance of 436.36 feet to the corner formed by the intersection of the westerly line of Bionia Avenue with the southerly line of Foch Avenue;

THENCE North 64 degrees 19 minutes 49 seconds East along the easterly prolongation of the southerly line of Foch Avenue, a distance of 60.00 feet to the corner formed by the intersection of the southerly line of Foch Avenue with the easterly line of Bionia Avenue;

THENCE South 25 degrees 40 minutes 11 seconds East along the easterly line of Bionia Avenue, a distance of 423.67 feet to the corner formed by the intersection of the easterly line of Bionia Avenue with the present northerly line of Olympia Boulevard;

THENCE North 65 degrees 22 minutes 32 seconds East along the said present northerly line of Olympia Boulevard and its easterly prolongation, a distance of 260.04 feet to the southerly prolongation of the easterly line of Hickory Avenue (60 feet wide);

THENCE South 18 degrees 06 minutes 37 seconds East across the bed of Olympia Boulevard, a distance of 54.31 feet to a point on the southerly line of Olympia Boulevard (70 feet wide);

THENCE South 71 degrees 53 minutes 23 seconds West along the southerly line of Olympia Boulevard, a distance of 22.34 feet to the angle point on the southerly line of Olympia Boulevard;

THENCE South 65 degrees 35 minutes 20 seconds West, a distance of 25.68 feet to a point;

THENCE South 59 degrees 56 minutes 51 seconds West and through tax lot 1 in Staten Island Tax Block 3404, as shown on the tax map for the Borough of Richmond as such tax map existed on March 20, 2020, a distance of 50.73 feet to a point;

THENCE South 65 degrees 27 minutes 16 seconds West, a distance of 50.12 feet to a point;

THENCE South 67 degrees 58 minutes 07 seconds West and through tax lot 12 in Staten Island Tax Block 3410, as said tax map, a distance of 59.88 feet to a point;

THENCE South 63 degrees 12 minutes 34 seconds West and through tax lot 8 in Staten Island Tax Block 3410, as said tax map, a distance of 40.41 feet to a point;

THENCE South 52 degrees 36 minutes 59 seconds West and through tax lots 1 and 5 in Staten Island Tax Block 3410, as said tax map, a distance of 130.77 feet to a point;

THENCE South 48 degrees 43 minutes 19 seconds West, a distance of 64.26 feet to a point;

THENCE South 57 degrees 30 minutes 39 seconds West and through tax lot 10 in Staten Island Tax Block 3411, as said tax map, a distance of 51.15 feet to a point;

THENCE South 52 degrees 36 minutes 59 seconds West and through tax lots 3, 4, 5, 6, 8 and 9 in Staten Island Tax Block 3411, as said tax map a distance of 129.51 feet to a point;

THENCE South 48 degrees 41 minutes 13 seconds West and through tax lot 1 in Staten Island Tax Block 3411, as said tax map, a distance of 60.20 feet to a point;

THENCE South 51 degrees 34 minutes 31 seconds West, a distance of 52.60 feet to a point;

THENCE South 62 degrees 46 minutes 30 seconds West and through tax lot 9 in Staten Island Tax Block 3412, as said tax map, a distance of 40.29 feet to a point;

THENCE South 55 degrees 25 minutes 46 seconds West and through tax lot 7 in Staten Island Tax Block 3412, as said tax map, a distance of 40.23 feet to a point on the present southerly line of Olympia Boulevard (irregular width) as laid out on a certain map entitled "Amended Map of Scott Farm adjoining South Beach in the Fourth Ward, Richmond Borough, City of New York", surveyed by Harold L. Nelson, City Surveyor and filed in the Richmond County Clerk's Office as Map No. 599B;

THENCE South 59 degrees 34 minutes 14 seconds West along the said present southerly line of Olympia Boulevard a distance of 122.94 feet to corner formed by the intersection of the southerly line of Olympia with the easterly line of Pearsall Street (50 feet wide) as laid out on the said Map No. 599B;

THENCE South 20 degrees 18 minutes 24 seconds East along the easterly line of Pearsall Street, a distance of 12.60 feet to the corner formed by the intersection of the easterly line of the said Pearsall Street with the southerly line of Olympia Boulevard (70 feet wide);

THENCE South 57 degrees 52 minutes 46 seconds West along the westerly prolongation of the southerly line of Olympia Boulevard and across the bed of the said Pearsall Street, a distance of 51.08 feet to the corner formed by the intersection of the westerly line of the Pearsall Street with the southerly line of the Olympia Boulevard;

THENCE North 20 degrees 18 minutes 24 seconds West along the westerly line of Pearsall Street, a distance of 9.13 feet a point;

THENCE South 59 degrees 34 minutes 14 seconds West through tax lots 101, 103 and 105 in Staten Island Tax Block 3417, as said tax map, a distance of 114.47 feet to a point;

THENCE South 20 degrees 18 minutes 24 seconds East, a distance of 12.58 feet to a point on the southerly line of Olympia Boulevard;

THENCE South 57 degrees 52 minutes 46 seconds West along the said southerly line of Olympia Boulevard, a distance of 3.22 feet to an angle point;

THENCE South 62 degrees 04 minutes 39 seconds West along the southerly line of Olympia Boulevard and its westerly prolongation, a distance of 205.99 feet to a point;

THENCE South 62 degrees 08 minutes 57 seconds West, a distance of 60.18 feet to the point on the easterly prolongation of the southerly line of Olympia Boulevard;

THENCE South 65 degrees 13 minutes 00 seconds West along the easterly prolongation of the southerly line of Olympia Boulevard, along the southerly line of Olympia Boulevard, a distance of 240.00 feet to a point;

THENCE North 22 degrees 53 minutes 02 seconds West, a distance of 32.03 feet to a point;

THENCE North 5 degrees 38 minutes 32 seconds West, a distance of 6.55 feet to a point;

THENCE North 25 degrees 46 minutes 28 seconds West, a distance of 75.24 feet to the point on the easterly prolongation of the northerly line of Olympia Boulevard (irregular width);

THENCE North 65 degrees 40 minutes 07 seconds East along the easterly prolongation of the said northerly line of Olympia Boulevard, a distance of 38.39 feet to a point;

THENCE South 29 degrees 45 minutes 20 seconds East, a distance of 43.28 feet to the point on the westerly prolongation of the northerly line of Olympia Boulevard (70 feet wide);

THENCE North 65 degrees 13 minutes 00 seconds East along the westerly prolongation of the northerly line of Olympia Boulevard, along the northerly line of Olympia Boulevard, a distance of 195.52 feet to the point of **BEGINNING**.

This site consists part of tax lot 35 in Staten Island Tax Block 3252, part of tax lot 1 in Staten Island Tax Block 3404, parts of tax lots 1, 5, 8 and 12 in Staten Island Tax Block 3410, parts of tax lots 1, 3, 4, 5, 6, 8, 9 and 10 in Staten Island Tax Block 3411, parts of tax lots 7 and 9 in Staten Island Tax Block 3412, parts of tax lots 101, 103 and 105 in Staten Island Tax Block 3417 and is located within the beds of Olympia Boulevard, Mallory Avenue, Lamport Boulevard, Kensington Avenue, Jerome Avenue and Bionia Avenue as shown on "City Map" of the City of New York, Borough of Staten Island and on Damage and Acquisition Map No.4226 and comprises an area of 259,050 square feet or 5.94697 of an acre.

Note: * Bearings are in the system established by the United States Coast and Geodetic Survey for the Borough of Staten Island.

SITE C

FOCH AVENUE FROM NORWAY AVENUE TO HICKORY AVENUE

ALL that certain plot, piece or parcel of land, with buildings and improvements thereon erected, situate, lying and being in the Borough of Staten Island, Richmond County, City and State of New York, and being more particularly bounded and described as follows:

BEGINNING at the corner formed by the intersection of the northerly line of Foch Avenue (70 feet wide) with the easterly line of Norway Avenue (68 feet wide);

RUNNING THENCE North 64 degrees 19 minutes 49 seconds East along the northerly line of Foch Avenue, a distance of 1559.14 feet to the corner formed by the intersection of the northerly line of Foch Avenue with the easterly line of Hickory Avenue (60 feet wide;

THENCE South 25 degrees 40 minutes 11 seconds East along the southerly prolongation of the easterly line of Hickory Avenue across the bed of Foch Avenue, a distance of 70.00 feet to the corner formed by the intersection of the southerly line of Foch Avenue with the easterly line of Hickory Avenue;

THENCE South 64 degrees 19 minutes 49 seconds West along the southerly line of Foch Avenue and its westerly prolongation, a distance of 1567.88 feet to a point;

THENCE North 25 degrees 03 minutes 38.5 seconds West a distance of 70.00 feet to the point on the westerly prolongation of the northerly line of Foch Avenue;

THENCE North 64 degrees 19 minutes 49 seconds East along the westerly prolongation of the northerly line of Foch Avenue, a distance of 8.00 feet to the point of **BEGINNING**.

This site is located within the bed of Foch Avenue as shown on "City Map" of the City of New York, Borough of Staten Island and on Damage and Acquisition Map No.4226 and comprises an area of 109,730 square feet or 2.51905 of an acre.

Note: * Bearings are in the system established by the United States Coast and Geodetic Survey for the Borough of Staten Island.

The above-described property shall be acquired subject only to those encroachments as delineated on Damage and Acquisition Map No. 4256, dated September 10, 2013, last revised December 21, 2020, so long as said encroachments shall stand.

Surveys, maps or plans of the property to be acquired are on file in the office of the Corporation Counsel of the City of New York, 100 Church Street, New York, New York 10007.

PLEASE TAKE FURTHER NOTICE THAT, pursuant to EDPL § 402(B)(4), any party seeking to oppose the acquisition must interpose a verified answer, which must contain specific denial of each material allegation of the petition controverted by the opponent, or any statement of new matter deemed by the opponent to be a defense to the proceeding. Pursuant to CPLR 403, said answer must be served upon the office of the Corporation Counsel at least seven (7) days before the date that the petition is noticed to be heard.

Dated: New York, NY
December 20, 2021

GEORGIA M. PESTANA
Corporation Counsel of the City of New York
Attorney for the Condemnor
100 Church Street
New York, NY 10007
Tel. (212) 356-4064

By: */s/ Stephanie M. Fitos*
Stephanie M. Fitos

SEE MAP(S) IN BACK OF PAPER

f2-15

PROPERTY DISPOSITION

CITYWIDE ADMINISTRATIVE SERVICES

■ SALE

The City of New York in partnership with PropertyRoom.com posts vehicle and heavy machinery auctions online every week, at:
https://www.propertyroom.com/s/nyc+fleet

All auctions are open, to the public and registration is free.

Vehicles can be viewed in person, at:
Kenben Industries Ltd., 1908 Shore Parkway, Brooklyn, NY 11214
Phone: (718) 802-0022

No previous arrangements or phone calls are needed to preview.
Hours are Monday and Tuesday from 10:00 A.M. – 2:00 P.M.

f23-a4

HOUSING PRESERVATION AND DEVELOPMENT

■ PUBLIC HEARINGS

All Notices Regarding Housing Preservation and Development Dispositions of City-Owned Property, appear in the Public Hearing Section.

j5-d30

PROCUREMENT

"Compete To Win" More Contracts!

Thanks to a new City initiative - "Compete To Win" - the NYC Department of Small Business Services offers a new set of FREE services to help create more opportunities for minority and Women-Owned Businesses to compete, connect and grow their business with the City. With NYC Construction Loan, Technical Assistance, NYC Construction Mentorship, Bond Readiness, and NYC Teaming services, the City will be able to help even more small businesses than before.

● ***Win More Contracts, at nyc.gov/competetowin***

"The City of New York is committed to achieving excellence in the design and construction of its capital program, and building on the tradition of innovation in architecture and engineering that has contributed, to the City's prestige as a global destination. The contracting opportunities for construction/construction services and construction-related services that appear in the individual agency listings below reflect that commitment to excellence."

HHS ACCELERATOR PREQUALIFICATION

To respond to human services Requests for Proposals (RFPs), in accordance with Section 3-16 of the Procurement Policy Board Rules of the City of New York ("PPB Rules"), vendors must first complete and submit an electronic HHS Accelerator Prequalification Application using the City's PASSPort system. The PASSPort system is a web-based system maintained by the City of New York for use by its Mayoral Agencies to manage procurement. Important business information collected in the Prequalification Application is required every three years. Documents related to annual corporate filings must be submitted on an annual basis to remain eligible to compete. Prequalification applications will be reviewed to validate compliance with corporate filings and organizational capacity. Approved organizations will be eligible to compete and would submit electronic proposals through the PASSPort system. The PASSPort Public Portal, which lists all RFPs, including HHS RFPs that require HHS Accelerator Prequalification, may be viewed at https://passport.cityofnewyork.us/page.aspx/en/rfp/request_browse_public. All current and prospective vendors should frequently review information listed on roadmap to take full advantage of upcoming opportunities for funding. For additional information about HHS Accelerator Prequalification and PASSPort, including background materials, user guides and video tutorials, please visit https://www1.nyc.gov/site/mocs/systems/about-go-to-passport.page.

ADMINISTRATION FOR CHILDREN'S SERVICES

■ AWARD

Human Services / Client Services

EXTRAORDINARY NEEDS FOSTER CARE SERVICES - Negotiated Acquisition - Other - PIN# 06822N0002001 - AMT: $500,473.25 - TO: Stetson School Inc., 455 South Street, P.O. Box 309, Barre, MA 01005.

This negotiated acquisition contract with Stetson School, located, at 455 South Street, PO BOX 309, Barre, MA 01005-0309, is for the provision of Extraordinary Needs Foster Care (ENFC) services for one youth in ACS custody. ACS selected to utilize the negotiated acquisition Procurement method pursuant, to the Procurement Policy Board Rules Section 3-04(b)(2)(i)(D) & Section 3-04(b)(2)(ii). The term of the contract will be from 5/11/2021 thru 6/30/2023 with one 3-year option to renew.

Pursuant to Section 3-04(b)(2)(i)(D) and 3-04(b)(2)(ii) of the Procurement Policy Board Rules, ACS decided to utilize the negotiated acquisition method to procure services directly with Stetson School as they were the only OCFS approved program that can provide immediately placement and has the resources, to continue appropriate care for this child's specific needs.

☛ **f15**

CITYWIDE ADMINISTRATIVE SERVICES

ADMINISTRATION

■ SOLICITATION

Construction / Construction Services

CITYWIDE ABATEMENT REQUIREMENTS CONTRACT - Competitive Sealed Bids - PIN# 85622B0006 - Due 3-23-22 at 11:00 A.M.

DCAS, is seeking a qualified vendor to furnish all labor, material and equipment necessary and required for the provision of Asbestos, Lead, and Mold abatement services to be performed, at various Department of Citywide Administrative Services ("DCAS") Facilities in the boroughs of Manhattan, Brooklyn, Queens, Staten Island, and the Bronx. This is for a requirements contract, pursuant to which the bidder to whom the Contract is awarded shall provide, during the term of the Contract, the City's requirements for labor, materials, and equipment necessary to perform asbestos, lead, and mold abatement work, at various DCAS facilities throughout the boroughs of Manhattan, Brooklyn, Queens, Staten Island, and the Bronx.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids, at date and time specified above.
Citywide Administrative Services, 1 Centre Street, 18th Floor, New York, NY 10007. Lucy Nguyen (212) 386-0441; lucyngu@dcas.nyc.gov

☛ **f15**

DISTRICT ATTORNEY - NEW YORK COUNTY

INFORMATION TECHNOLOGY

■ INTENT TO AWARD

Services (other than human services)

INVITATION FOR PROPOSALS: CYBER TRAINING COURSES - Negotiated Acquisition - Available only from a single source - PIN# 901DANYCYBRTRAIN - Due 2-17-22 at 5:00 P.M.

The New York County District Attorney's Office (DANY), is requesting proposals from qualified non-profit organizations to deliver a virtual training curriculum in cyber-related areas for personnel holding diverse positions in the office. The virtual trainings should be relevant, to the work of law enforcement and include, at a minimum computer forensics, data acquisition and analysis, methods of acquiring data from digital sources, and other topics pertaining to cyber and cyber-enabled criminal investigations. The contract term will be for a period of 12 months, beginning in April 2022, for approximately $69,000.00 (Sixty Nine Thousand and 00/100 Dollars).

This series of trainings are sought for the benefit of DANY personnel to gain foundation in techniques pertaining, to the extraction and analysis of digital evidence. The aim of this series is to assist the Office to 1) efficiently focus resources during investigations, (2) ensure our compliance with forensic standards, and (3) build institutional knowledge about cutting-edge technological and legal developments. Each course will be expected to seat, at least 30 individuals.

The virtual classes should consist of both lectures and hands-on training with the currently utilized, applicable hardware and software. The curriculum should be fully-developed and cover a range of topics related to computer hardware and operating systems, network investigations, and cellular investigations, among others. Classes should provide background and a theoretical basis in these subject areas, deliver instruction on relevant tools and techniques that can be utilized during the course of investigations, and allow students to gain experience utilizing the relevant tools and techniques themselves. Material covered over the course of the virtual trainings should be made available to students for access and reference afterwards. Eligible organizations must:

- Have a minimum of 10 years of experience conducting trainings on digital forensics and other cybercrime-related topics, with successful training of over 50,000 students.
- Offer a developed curriculum of over 25 courses for selection on the above-described topics.
- Must allow the opportunity for DANY to select the desired curriculum from the available courses to best meet DANY's needs.
- Courses must be regularly updated to account for new technological developments in the field.
- Course design must be tailored to law enforcement or prosecutorial application.
- Have extensive experience working with law enforcement, prosecutorial, and regulatory agencies throughout the United States.
- Possess mobile computer labs and other technology and equipment necessary to conduct virtual trainings for classes of 30 students.
- Have instructors with experience conducting virtual trainings in these subject areas and subject to evaluation.

There is a limited number of vendors available and able to perform the work.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids, at date and time specified above.
District Attorney - New York County, 80 Centre Street, 4th Floor, New York, NY 10013. Phillip Intatano (212) 335-3922; intatanop@dany.nyc.gov

f11-17

BOARD OF ELECTIONS

■ **AWARD**

Goods

ELECTRONIC POLL BOOKS - Intergovernmental Purchase - PIN# 003201920218 - AMT: $15,715,956.00 - TO: Know Ink LLC, 2111 Olive Street, St Louis, MO 63103.

This contract is a statewide, centralized contract to acquire Electronic Poll Book (E-Poll Book) Systems and related services, accessories, consumable, training, and Maintenance as specified herein for all Authorized Users eligible to purchase through this contract. The Board requires continuity in services to maintain the current levels needed to facilitate the Board responsibilities and projects that the necessary funding will be appropriated by the City Council for the upcoming contract years.

☛ **f15**

Goods and Services

PRINTING AND MAILING OF ABSENTEE BALLOT - Intergovernmental Purchase - Other - PIN# 20221400962 - AMT: $6,000,000.00 - TO: Fort Orange Press Inc., 11 Sand Creek Road, Albany, NY 12205-1409.

The Board of Elections, seeks to extend contracts # 20221400962 for a period of one (1) year. The contract extensions will allow the Board, to continue to receive from Fort Orange Press Absentee Ballots, which are printed and mailed for all elections. The contract term will be extended from January 1, 2022 through December 31, 2022

☛ **f15**

Services (other than human services)

NETWORK INFRASTRUCTURE IMPLEMENTATION & DEPLOYMENT - Intergovernmental Purchase - PIN# 00320212023 - AMT: $3,285,855.00 - TO: Derive Technologies, 40 Wall Street, 20th Floor, New York, NY 10005.

This is an Intergovernmental Purchase between the BOE and Derive Technologies LLC, to provide and deploy Network Equipment, pursuant to PPB rules 3-09 (A) The contract term is November 21, 2021 to November 30, 2023. This contract will replace end of life HPE Aruba network and deploy latest version of Cisco Equipment which will improve BOE network performance and enhance cyber security.

The Agency used a preexisting Administrative Services contract existing with the NY State Office of General Service (OGS). The Agency solicited competitive sealed bids from vendor list of this contract, pursuant to OGS rules to use the contract.

☛ **f15**

PROCUREMENT

■ **SOLICITATION**

Goods and Services

DEMOCRACY LIVE INC ADA ABSENTEE BALLOT APPLICATION - Negotiated Acquisition - Available only from a single source - PIN# 00302072022 - Due 2-28-22 at 2:00 P.M.

Judge Lewis J. Liman issued an order on August 19, 2020, the SBOE to issue a resolution requiring all County Boards of Elections shall provide accessible fillable PDF applications on their website to request ADA accessible ballots and provide ADA accessible ballots for the November General Election.

The SBOE, is currently in negotiation with plaintiff to create a state wide ADA absentee ballot application and absentee ballot specifications. The SBOE has requested the NYC BOE to continue to provide the same ADA absentee ballot application as the Board has been providing since the June Primary 2020.

The Board has been using the company Democracy Live Inc., to provide the services for the past elections. This company was obtained off a list of approved vendors originally provided by the SBOE.

Contract starts January 1, 2022, ends January 31, 2023.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids at date and time specified above.
Board of Elections, 32 Broadway, 7th Floor, New York, NY 10004. Leslie Williams (212) 855-1228; Lwilliams@boe.nyc

f14-18

FINANCE

TPS-TREASURY

■ **INTENT TO AWARD**

Services (other than human services)

EPIN 83622N0005 - GENERAL BANKING SERVICES - NEGOTIATED ACQUISITION EXTENSION - Negotiated Acquisition - Other - PIN# 83622N0005 - Due 2-18-22 at 5:00 A.M.

This is a notice of intent, to enter into Negotiated Acquisition Extension for a two-year contract with Bank of America, General Banking Services for the Department of Finance Treasury Division.

f11-18

HEALTH AND MENTAL HYGIENE

■ SOLICITATION

Human Services/Client Services

OPEN-ENDED REQUEST FOR PROPOSAL – JUSTICE INVOLVED SUPPORTIVE HOUSING - Competitive Sealed Proposals/Pre-Qualified List - PIN# 81622P0004 - Due 12-31-99 at 12:00 A.M.

The New York City Department of Health and Mental Hygiene (DOHMH), continues to seek proposals for the Open-Ended Justice Involved Supportive Housing Request for Proposals (RFP) through the PASSPort system. This RFP is issued and remains available through the PASSPort system only to those organizations that have an account and an Approved HHS Accelerator PQL qualification status in PASSPort. Proposals and prequalification applications will be accepted on an on-going basis ONLY through PASSPort.

If you do not have a PASSPort account or Approved PASSPort HHS Accelerator PQL Application, please visit nyc.gov/passport to get started.

This Open-Ended Request for Proposals, is intended to procure and make available permanent supportive housing units for adults (18+); initially, DOHMH anticipates that the population would be comprised mainly of individuals who are frequently cycling through jail and shelter who have a mental illness and/or substance use disorder. DOHMH anticipates that the population matches may expand to include individuals who, in addition to having frequent contact with the criminal justice system and the homeless system, have also had frequent contact with the mental health treatment system.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids, at date and time specified above.
Health and Mental Hygiene, 42-09 28th Street, 17th Floor, Long Island City, NY 11101. Dara R. Lebwohl (347) 396-4390; RFP@health.nyc.gov

☛ **f15**

OPEN-ENDED REQUEST FOR PROPOSAL – SCHOOL-BASED HEALTH CENTER SERVICES - Competitive Sealed Proposals/ Pre-Qualified List - PIN# 81622P0003 - Due 12-31-99 at 12:00 A.M.

The New York City Department of Health and Mental Hygiene (DOHMH) continues to seek proposals for the School Based Health Centers (Open-Ended) Request for Proposals (RFP) through the PASSPort system. This RFP is issued and remains available through the PASSPort system only to those organizations that have an account and an Approved HHS Accelerator PQL qualification status in PASSPort. Proposals and prequalification applications will be accepted on an on-going basis ONLY through PASSPort.

If you do not have a PASSPort account or Approved PASSPort HHS Accelerator PQL Application, please visit nyc.gov/passport to get started.

School Based Health Centers (SBHC) were established by Chapter 198 of the NYS Laws of 1978 "to improve the accessibility and availability of quality comprehensive and preventive physical and mental health services to preschool, elementary, middle and secondary school students in high risk areas of New York State. As a result of this Law, NYS Department of Health approves, licenses and monitors every SBHC in NYS. School Based Health Centers are medical health centers within the schools. They help students manage their illnesses during the school day. Because of the location, School Based Health Center are an easy health care option for busy students with busy parents who cannot always make it, to their doctor's office. School-Based Health Centers have been providing primary care to students in NYC schools for over 30 years. It's been proven that School-Based Health Centers lower school absences and parents' time away from work. They also lower the chance of an emergency room or hospital visit. If a child has a chronic illness, or suddenly gets sick, a School-Based Health Center, at their school can assist the child with needed care.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids, at date and time specified above.
Health and Mental Hygiene, 42-09 28th Street, 17th Floor, Long Island City, NY 11101. Dara R. Lebwohl (347) 396-4390; RFP@health.nyc.gov

☛ **f15**

HOMELESS SERVICES

■ AWARD

Human Services/Client Services

SHELTER FACILITIES FOR HOMELESS FWC- SUMMERFIELD FAMILY RES. - Competitive Sealed Proposals - Other - PIN# 07119P0003053 - AMT: $86,694,554.00 - TO: Home/Life Services, Inc., 9201 4th Avenue, 6th Floor, Brooklyn, NY 11209.

Provision of Shelter Facilities for Homeless FWC, at Summerfield Family Residence, 1616 Summerfield Street, Ridgewood, NY 11385 (Grp 50).

☛ **f15**

SHELTER FACILITIES FOR FWC - QUEENS FAMILY RESIDENCE - Competitive Sealed Proposals - Other - PIN# 07121P0118001 - AMT: $72,085,151.00 - TO: Home/Life Services, Inc, 9201 4th Avenue, 6th Floor, Brooklyn, NY 11209.

Provision of Shelter Facilities for Homeless Families with Children at Queens Family Residence, 7300-7304 Queens Boulevard, Woodside, NY 11377 (Grp 25).

☛ **f15**

FACILITIES, MAINTENANCE AND REPAIR

■ INTENT TO AWARD

Construction Related Services

EXTEND ARCHITECTURAL & ENGINEERING SUPPORT SERVICES CONTRACT WITH RKTB - Negotiated Acquisition - Other - PIN# 07122N0003 - Due 2-22-22 at 5:00 A.M.

This is a one year negotiated acquisition extension necessary, to continue services until the new contract is in place.

This NAE is needed until a new RFP is awarded.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids, at date and time specified above.
Homeless Services, 150 Greenwich Street, 37th Floor, New York, NY 10007. Vincent vpullo@dhs.nyc.gov

f11-17

EXTEND ARCHITECTURAL & ENGINEERING SUPPORT SERVICES CONTRACT WITH MOTT MACDONALD NY INC - Negotiated Acquisition - Other - PIN# 07122N0002 - Due 2-22-22 at 2:00 P.M.

This is a one year negotiated acquisition extension necessary to continue services until the new contract is in place.

This NAE is needed until a new RFP is awarded.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids at date and time specified above.
Homeless Services, 150 Greenwich Street, 37th Floor, New York, NY 10007. Jacques jfraizer@dhs.nyc.gov jfraizer@dhs.nyc.gov

f14-18

HOUSING AUTHORITY

PROCUREMENT

■ SOLICITATION

Goods and Services

SMD_SERVICES_INSTALLATION OF VINYL COMPOSITION (V/C) FLOOR TILE IN APARTMENTS - VARIOUS DEVELOPMENTS IN THE BOROUGHS OF BROOKLYN AND MANHATTAN - Competitive Sealed Bids - Due 3-17-22 at 12:00 A.M.

353922 - Wyckoff Gardens, Atlantic Terminal Site 4B, Brooklyn - Due at 10:00 A.M.
353923 - Brevoort Houses, Brooklyn - Due at 10:05 A.M.

353924 - Lower East Side II, Bracetti Plaza II, Campos Plaza II, First Houses, Lower East Side Rehab (GR. 5), Manhattan - Due at 10:10 A.M.
353925 - Clinton Houses, Manhattan - Due at 10:15 A.M.

Installation of vinyl-composition floor tile, over existing floor tile. Installation of vinyl-composition floor tile, over the existing properly prepared concrete floor. The removal and replacement of existing/or missing vinyl cove base molding (See Section VIII). As directed, remove Non-Asbestos Containing floor coverings, including but not limited to vinyl composition floor tile, linoleum, self-adhesive floor tile, carpet, ceramic floor tile, wood flooring, etc. The work as described above shall be performed in occupied and unoccupied ("move-out") apartments as designated by the Development Superintendent. The contractor will be required to perform this work in complete apartments or complete individual/rooms within apartments. However, the contractor will not be required to do a portion of a room. The work will be done in any apartment or in any individual room of any apartment in any of the various buildings of the Development(s) as listed in the Form of Proposal.

Interested vendors are invited to obtain a copy of the opportunity, at NYCHA's website by going, to the http://www.nyc.gov/nychabusiness. On the left side, click on "iSupplier Vendor Registration/Login" link. (1) If you have an iSupplier account, then click on the "Login for registered vendors" link and sign into your iSupplier account. (2) If you do not have an iSupplier account you can Request an account by clicking on "New suppliers register in iSupplier" to apply for log-in credentials. Once you have accessed your iSupplier account, log into your account, then choose under the Oracle Financials home page, the menu option "Sourcing Supplier", then choose "Sourcing", then choose "Sourcing Homepage"; and conduct a search in the "Search Open Negotiations" box for the RFQ Number (s) 353922, 353923, 353924 & 353925.

Note: In response, to the COVID-19 outbreak, we are accepting only electronic bids submitted online via iSupplier. Paper bids will not be accepted or considered. Please contact NYCHA Procurement, at procurement@nycha.nyc.gov, for assistance.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids, at date and time specified above.
Housing Authority, 90 Church Street, 6th Floor, New York, NY 10007.
Miriam Rodgers (212) 306-4718; miriam.rodgers@nycha.nyc.gov

☛ **f15**

Services (other than human services)

SMD_SERVICES_MAINTENANCE PAINTING OF APARTMENTS - VARIOUS DEVELOPMENTS - Competitive Sealed Bids - Due 3-10-22 at 12:00 A.M.

356896 - Park Rock Rehab - Consolidated - Brooklyn - Due at 10:00 A.M.
356897 - Patterson Houses - Bronx - Due at 10:05 A.M.
356899 - Richmond Terrace-Cassidy-Lafayette - Queens & Staten Island - Due at 10:10 A.M.

The Work shall consist of furnishing labor, material, equipment, insurance, incidental items and permits, all in accordance with the Contract Documents, for the painting of residential apartments in any of the Buildings constituting the Development(s) included in this Contract, as follows:

The Contractor must paint complete apartments (including all bedrooms, kitchen, living room, foyer, dinette, halls, bathrooms) in the manner described below, using a Standard One (1) Coat Paint System or a Standard Two (2) Coat Paint System or Three (3) Coat Paint System Modernization as stated in the Specifications and as directed by the Authority in Work Authorizations.

Interested vendors are invited to obtain a copy of the opportunity, at NYCHA's website by going, to the http://www.nyc.gov/nychabusiness. On the left side, click on "iSupplier Vendor Registration/Login" link. (1) If you have an iSupplier account, then click on the "Login for registered vendors" link and sign into your iSupplier account. (2) If you do not have an iSupplier account you can Request an account by clicking on "New suppliers register in iSupplier" to apply for log-in credentials. Once you have accessed your iSupplier account, log into your account, then choose under the Oracle Financials home page, the menu option "Sourcing Supplier", then choose "Sourcing", then choose "Sourcing Homepage"; and conduct a search in the "Search Open Negotiations" box for the RFQ Number (s) 356896, 356897 & 356899.

Note: In response, to the COVID-19 outbreak, we are accepting only electronic bids submitted online via iSupplier. Paper bids will not be accepted or considered. Please contact NYCHA Procurement, at procurement@nycha.nyc.gov, for assistance.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids, at date and time specified above.
Housing Authority, 90 Church Street, 6th Floor, New York, NY 10007.
Mimose Julien (212) 306-8141; mimose.julien@nycha.nyc.gov

☛ **f15**

HOUSING PRESERVATION AND DEVELOPMENT

EDC/APM/PM&CS - PROCUREMENT & SPECIAL INITIATIVES

■ **INTENT TO AWARD**

Human Services / Client Services

HOUSING MANAGEMENT & MAINTENANCE TRAINING NAE - Negotiated Acquisition - Other - PIN# 80622N0001 - Due 2-28-22 at 5:00 A.M.

1 year extension of the Housing Management & Maintenance Training contract for continuity of service.

☛ **f15-22**

EDC/HPD TECH

■ **INTENT TO AWARD**

Services (other than human services)

80622Y0035-SOLE SOURCE- MAINTENANCE OF AWARDS ELECTRONIC HEALTH RECORD SYSTEM - Request for Information - PIN# 80622Y0035 - Due 2-28-22 at 12:00 AM.

Pursuant to Section 3-05 of the City's Procurement Policy Board Rules,The NYC Department of Housing Preservation and Development (HPD) intends to enter into a sole source negotiation for the provision of a technical support agreement to include troubleshooting and software updates/upgrades to Foothold Technology`s AWARDS web-based case management system. AWARDS updates and troubleshooting are required to support HPD`s shelter case management services including client tracking, rehousing plans, case notes, incident reports, client demographics, census reporting, HRA reimbursement processes, lien processing, and Homeless Management Information System (HMIS) reporting and compliance.

AWARDS is the intellectual property of Foothold Technology, licensed to HPD. This Sole Source procurement is being managed through PASSPort (EPIN 80622Y0035). Any firm who believes it can provide this technical support requirement and is licensed by Foothold Technology is invited to send an email to Agency Contact.

f11-17

HUMAN RESOURCES ADMINISTRATION

■ **INTENT TO AWARD**

Services (other than human services)

PROVISION OF PROFESSIONAL TEMPORARY SERVICES TO DSS-HRA-DHS - Negotiated Acquisition - Other - PIN# 06922N0036 - Due 2-22-22 at 7:00 P.M.

HRA, intends to enter into a Negotiated Acquisition Extension contract with IOS Acquisitions LLC, to provide temporary personnel throughout the five boroughs to DSS-HRADHS, while the agency solicit a new contract through RFP. The contract term for this NAE is six months.

This NAE will allow continued services with IOS Acquisition, to provide temporary personnel throughout the five boroughs to DSS-HRA-DHS, while the agency negotiates a new contract through a Competitive sealed proposal.

f14-18

MAYOR'S OFFICE OF CRIMINAL JUSTICE

■ **AWARD**

Goods

ELECTRONIC MONITORING - Negotiated Acquisition - Other - PIN# 00221N0038001 - AMT: $550,000.00 - TO: Attenti US Inc., 1838 Gunn Highway, Odessa, FL 33556.

The contractor will provide the EM Tools and related services necessary for the City to maintain, operate, and expand its EM program in accordance with the Bail Reform Law's requirement that EM be available as a non-monetary condition of pretrial release where

a judge determines that EM is the least restrictive condition of pretrial release necessary to reasonably assure a defendant's return to court.

It would require onerous and expensive preparation, since virtually every current program participant would have to be given a hearing, discharged from the program (with monitoring devices removed and reclaimed), and either remanded to DOC custody or issued a new securing order. Simultaneously, courts and counsel would have to suspend new applications for and issuance of orders requiring EM, and that suspension would have to go into effect well before 7/31/2021. A contract with a different vendor would also be impractical, since it would be necessary to retrain Sheriff's Office personnel, to remove and replace devices for every program participant, and to provide all participants with guidance and support for use of the new devices.

☛ **f15**

PARKS AND RECREATION

REVENUE AND CONCESSIONS

■ **SOLICITATION**

Goods and Services

NYC PARKS REQUESTS PROPOSALS FOR BIKE RENTALS STATIONS IN MANHATTAN - Competitive Sealed Proposals - Judgment required in evaluating proposals - PIN# M10-BR-2021 - Due 3-16-22 at 3:00 P.M.

In accordance with Section 1-13 of the Concession Rules of the City of New York, the Department of Parks and Recreation ("Parks"), is issuing, as of the date of this notice, a significant RFP for the development, operation and maintenance of bicycle rental stations, at various locations in Manhattan, with the option for future Manhattan locations. There will be a recommended remote proposer meeting, on February 23, 2022, at 11:00 A.M. If you are considering responding to this RFP, please make every effort to attend this recommended remote proposer meeting. The Microsoft Teams link for the remote proposer meeting is as follows: https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZmRlYmNmZDUtZWY1ZC00Zjk0LTkzZGYtOGU1MjYwODEzN2M0%40thread.v2/0?context=%7b%22Tid%22%3a%2232f56fc7-5f81-4e22-a95b-15da66513bef%22%2c%22Oid%22%3a%22d47d17ec-c51f-4e53-ad23-fce00dfe3654%22%7d

You may also join the remote proposer meeting by phone using the following information: Dial: +1 646-893-7101 Phone Conference ID: 497 454 620#. Subject to availability and by appointment only, we may set up a meeting at the concession site, at Columbus Circle, Central Park South, Manhattan. All Proposals submitted in response to this RFP, must be submitted, by no later than March 16, 2022, at 3:00 P.M. Copies of the RFP can be obtained, at no cost, commencing, February 2, 2022, through March 16, 2022, by contacting Barbara Huang, Project Manager, at (212) 360-3490, or via email, Barbara.Huang@parks.nyc.gov.

The RFP is also available for download on Parks' website. To download the RFP, visit http://www.nyc.gov/parks/businessopportunities, click on the link for "Concessions Opportunities at Parks" and, after logging in, click on the "download" link that appears adjacent to the RFP's description. For more information or if you cannot attend the remote proposer meeting, the prospective proposer may contact, Barbara Huang, Project Manager, at (212) 360-3490, or via email: Barbara.Huang@parks.nyc.gov.

TELECOMMUNICATION DEVICE FOR THE DEAF (TDD) (212) 504-4115.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids at date and time specified above.
Parks and Recreation, The Arsenal, 830 Fifth Avenue, Room 407, New York, NY 10065. Glenn Kaalund (212) 360-3482; glenn.kaalund@parks.nyc.gov

Accessibility questions: Barbara Huang (212) 360-3490, barbara.huang@parks.nyc.gov, by: Friday, March 11, 2022, 5:00 P.M.

f2-15

POLICE DEPARTMENT

PERMITS

■ **SOLICITATION**

Goods

CHAIN STYLE HANDCUFFS - Competitive Sealed Bids - PIN# 05622ES00001 - Due 3-2-22 at 3:00 P.M.

The New York City Police Department Equipment Section is seeking bids from manufacturers for NYPD Chain Style Handcuffs which all conform to NYPD Specifications. All potential bidders who may wish to make a bid must include one (1) finished sample for the chain style handcuffs according to NYPD Specifications.

Use the following address unless otherwise specified in notice, to secure, examine or submit bid/proposal documents, vendor pre-qualification and other forms; specifications/blueprints; other information; and for opening and reading of bids, at date and time specified above.
Police Department, 375 Pearl Street, 15th Floor, Room 15-207, New York, NY 10038. Stephanie Gallop (718) 610-8626; stephanie.gallop@nypd.org

Accessibility questions: Nancy Brandon, by: Monday, February 28, 2022, 3:00 P.M.

☛ **f15**

SANITATION

■ **AWARD**

Services (other than human services)

PNEUMATIC TIRE CASING RETREADING AND REPAIR RENEWAL #1 - Renewal - PIN# 82719B8202KXLR001 - AMT: $2,000,000.00 - TO: East Coast Retreaders LLC, 85 Bell Street, West Babylon, NY 11704.

CT1-827-20191401276

☛ **f15**

CONTRACT AWARD HEARINGS

NOTE: LOCATION(S) ARE ACCESSIBLE TO INDIVIDUALS USING WHEELCHAIRS OR OTHER MOBILITY DEVICES. FOR FURTHER INFORMATION ON ACCESSIBILITY OR TO MAKE A REQUEST FOR ACCOMMODATIONS, SUCH AS SIGN LANGUAGE INTERPRETATION SERVICES, PLEASE CONTACT THE MAYOR'S OFFICE OF CONTRACT SERVICES (MOCS) VIA E-MAIL AT DISABILITYAFFAIRS@MOCS.NYC.GOV OR VIA PHONE AT (212) 788-0010. ANY PERSON REQUIRING REASONABLE ACCOMMODATION FOR THE PUBLIC HEARING SHOULD CONTACT MOCS AT LEAST THREE (3) BUSINESS DAYS IN ADVANCE OF THE HEARING TO ENSURE AVAILABILITY.

CORRECTION

■ **PUBLIC HEARINGS**

NOTICE IS HEREBY GIVEN that a Contract Public Hearing will be held on Thursday, February 24, 2022, at 10:00 AM. The Public Hearing will be held via Conference Call. **Call-in #: 1-646-992-2010, ACCESS CODE: 715 951 139.**

IN THE MATTER OF a Purchase Order/Contract between the New York City Department of Correction and Tri-Force Consulting Services, Inc., located at 650 North Cannon Avenue, Lansdale PA 19446, to provide ongoing maintenance and support services for DOC's IFCOM and IIS (Open VMS Support) system. The amount of this Purchase Order/Contract will be $475,835.00. The term shall be from March 1, 2022 to February 28, 2025 CB 1 and 3, Queens.
E-PIN #: 07222W0019001.

The Vendor has been selected by M/WBE Noncompetitive Small Purchase Method, pursuant to Section 3-08 (c)(1)(iv) of the Procurement Policy Board Rules.

In order to access the Public Hearing and testify, please call **1-646-992-2010, ACCESS CODE: 715 951 139** no later than 9:55 AM. If you need further accommodations, please let us know at least five business days in advance of the Public Hearing via e-mail at DisabilityAffairs@mocs.nyc.gov or via phone at 1-212-298-0734.

☛ **f15**

PARKS AND RECREATION

■ PUBLIC HEARINGS

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 P.M. via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and Afridi Associates, 19 W 21st Street, New York, NY 10010, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days. CNYG-2622M; EPIN: 84622P0006001

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and Tectonic Engineering Consultants, Geologists and Land Surveyors, 70 Pleasant Hill Road, PO Box 37, Mountainville, NY 10953, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days. Contract CNYG-2322M; EPIN: 84622P0006002

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and Hill International, Inc., One Commerce Square, 2005 Market Street, 17th Floor, Philadelphia PA 19103, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days. CNYG-2522M; EPIN: 84622P0006003

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and M & J Engineering PC, 2003 Jericho Turnpike, New Hyde Park, NY 11040-4739, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days.
CNYG-2722M; EPIN: 84622P0006004

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and Arcadis of New York, Inc, 110 Lincoln Center, 110 West Fayette Street, Syracuse, NY 13202, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days.
CNYG-2822M; EPIN: 84622P0006005

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and Entech Engineering PC, 17 State Street, 36th Floor, New York, NY 10004-1512, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days.
CNYG-2922M; EPIN: 84622P0006006

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and NV5, Inc., 32 Old Slip, Suite 401, New York, NY 10005-3500, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days. CNYG-3022M; EPIN: 84622P0006007

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and MP Engineer and Architects PC, 40 Rector Street, Suite 1020B, New York, NY 10006, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days.
CNYG-3122M; EPIN: 84622P0006008

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and Laland Baptiste LLC, 150 Broadhollow Road, Suite 314, Melville NY 11747, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days.
CNYG-3222M; EPIN: 84622P0006009

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and AECOM USA, Inc. 605 Third Avenue, New York, NY 10158, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days. CNYG-3322M; EPIN: 84622P0006010

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and KS Engineers, PC, 2 Riverfront Plaza, 3rd Floor, Newark, NJ 07102, to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days. CNYG-3422M; EPIN: 84622P0006011

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

NOTICE IS HEREBY GIVEN that a public hearing will be held on February 22, 2022, at 2:30 PM via ZOOM, for the following:

IN THE MATTER OF a proposed contract between the City of New York Parks and Recreation and de Bruin-MXML A Joint Venture, 1400 Old Country Road, Suite 106, Westbury, NY 11590 to provide Construction Supervision Services as needed for projects at Parks, Playgrounds, Buildings, & Facilities, Citywide. The contract amount shall be $15,000,000.00. The term of the contract shall be 1095 consecutive calendar days from the date of the written notice to proceed with one renewal option for 730 consecutive calendar days.
CNYG-2422M; EPIN: 84622P0006012

The proposed contractor has been selected by Competitive Sealed Proposal Method, pursuant to Section 3-03 of the Procurement Policy Board Rules.

In order to access the public hearing and testify, please join the Zoom Virtual Meeting Link
https://us02web.zoom.us/j/9573076290?pwd=cnVXVzN2Q014SjBLaktvVzIzWnlvUT09
Meeting ID: 957 307 6290; Passcode: 118035.

☛ **f15**

SANITATION

■ **PUBLIC HEARINGS**

NOTICE IS HEREBY GIVEN that a Contract Public Hearing will be held on Thursday, February 24, 2022, at 10:00 AM. The Public Hearing will be held via Conference Call. **Call-in #: 1-646-992-2010, ACCESS CODE: 715 951 139.**

IN THE MATTER OF a Purchase Order/Contract between the Department of Sanitation and Layne Lubrications LLC, located at 120 Middle Street, Suite #643, Bridgeport, CT 06604, for Hydraulic Oil, Boroughs of Manhattan and The Bronx. The amount of this contract will be $450,000.00. The term shall be from November 15, 2021 to June 30, 2022. PIN #: 82721MWBE12.

The Vendor has been selected by M/WBE Noncompetitive Small Purchase Method, pursuant to Section 3-08 (c)(1)(iv) of the Procurement Policy Board Rules.

A draft copy of the proposed contract is available for public inspection at the Department of Sanitation's Contract Division, 44 Beaver Street, 2nd Floor, Room 203, New York, NY 10004, Monday to Friday, from February 15, 2022 to February 24,2022, excluding Holidays from 10:00 AM to 4:00 PM.

In order to access the Public Hearing and testify, please call **1-646-992-2010, ACCESS CODE: 715 951 139** no later than 9:55 AM. If you need further accommodations, please let us know at least five business days in advance of the Public Hearing via e-mail at DisabilityAffairs@mocs.nyc.gov or via phone at 1-212-298-0734.

☛ **f15**

NOTICE IS HEREBY GIVEN that a Contract Public Hearing will be held on Thursday, February 24, 2022, at 10:00 AM. The Public Hearing will be held via Conference Call. **Call-in #: 1-646-992-2010, ACCESS CODE: 715 951 139.**

IN THE MATTER OF a Purchase Order/Contract between the Department of Sanitation and Layne Lubrications LLC, located at 120 Middle Street, Suite #643, Bridgeport, CT 06604, for Hydraulic Oil, Boroughs of Brooklyn and Staten Island. The amount of this contract will be $450,000.00. The term shall be from November 15, 2021 to June 30, 2022. PIN #: 82721MWBE11.

The Vendor has been selected by M/WBE Noncompetitive Small Purchase Method, pursuant to Section 3-08 (c)(1)(iv) of the Procurement Policy Board Rules.

A draft copy of the proposed contract is available for public inspection at the Department of Sanitation's Contract Division, 44 Beaver Street, 2nd Floor, Room 203, New York, NY 10004, Monday to Friday, from February 15, 2022 to February 24,2022, excluding Holidays from 10:00 AM to 4:00 PM.

In order to access the Public Hearing and testify, please call **1-646-992-2010, ACCESS CODE: 715 951 139** no later than 9:55 AM. If you need further accommodations, please let us know at least five business days in advance of the Public Hearing via e-mail at DisabilityAffairs@mocs.nyc.gov or via phone at 1-212-298-0734.

☛ **f15**

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IN THE MATTER OF a Purchase Order/Contract between the Department of Sanitation and Layne Lubrications LLC, located at 120 Middle Street, Suite #643, Bridgeport, CT 06604, for Hydraulic Oil, Borough of Queens. The amount of this contract will be $450,000.00. The term shall be from November 15, 2021 to June 30, 2022.
PIN #: 82721MWBE10.

The Vendor has been selected by M/WBE Noncompetitive Small Purchase Method, pursuant to Section 3-08 (c)(1)(iv) of the Procurement Policy Board Rules.

A draft copy of the proposed contract is available for public inspection at the Department of Sanitation's Contract Division, 44 Beaver Street, 2nd Floor, Room 203, New York, NY 10004, Monday to Friday, from February 15, 2022 to February 24,2022, excluding Holidays from 10:00 AM to 4:00 PM.

In order to access the Public Hearing and testify, please call **1-646-992-2010, ACCESS CODE: 715 951 139** no later than 9:55 AM. If you need further accommodations, please let us know at least five business days in advance of the Public Hearing via e-mail at DisabilityAffairs@mocs.nyc.gov or via phone at 1-212-298-0734.

☛ **f15**

SMALL BUSINESS SERVICES

■ PUBLIC HEARINGS

NOTICE IS HEREBY GIVEN that a Contract Public Hearing will be held on Thursday, February 24, 2022, at 10:00 AM. The Public Hearing will be held via Conference Call. **Call-in #: 1-646-992-2010, ACCESS CODE: 715 951 139.**

IN THE MATTER OF a proposed contract between the New York City Department of Small Business Services and Chamber of Commerce Borough of Queens, located at 75-20 Astoria Blvd., Suite 140, Jackson Heights, NY 11370, to assist small businesses throughout the New York City in assessing technical assistance for reopening and restarting their business. Services will include financing, marketing, technology and e-commerce legal PPE M/WBE certification general business counseling and regulatory assistance, Citywide. The contract term shall be for 12 months from July 1, 2021 to June 30, 2022. The amount of this contract is $125,000.00. E-PIN #: 80122L0034001.

The proposed contractor is being funded through City Council Discretionary Funds/Line Item Appropriation, pursuant to Section 1-02 (e) of the Procurement Policy Board Rules.

In order to access the Public Hearing and testify, please call **1-646-992-2010, ACCESS CODE: 715 951 139** no later than 9:55 AM. If you need further accommodations, please let us know at least five business days in advance of the Public Hearing via e-mail at DisabilityAffairs@mocs.nyc.gov or via phone at 1-212-298-0734.

☛ **f15**

AGENCY RULES

ENVIRONMENTAL PROTECTION

■ NOTICE

NOTICE OF ADOPTION OF FINAL RULE

NOTICE IS HEREBY GIVEN PURSUANT TO THE AUTHORITY VESTED IN THE COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION by Section 1043(a) of the New York City Charter (City Charter) and Section 24-523 of the Administrative Code of the City of New York (Administrative Code), that the Department of Environmental Protection promulgates and adopts amended rules governing house/site connections to the sewer system.

Statement of Basis and Purpose

The New York City Department of Environmental Protection (DEP or Department) is amending its rules governing house/site connections to the sewer system (Chapter 31 of Title 15 of the Rules of the City of New York (RCNY)) to clarify language, update peak flow requirements, provide alignment with new construction/post-construction requirements, provide alignment with recent updates to the New York City Plumbing Code, and provide more detailed and comprehensive information in order to make it easier for the regulated community to determine what needs to be done to attain compliance.

Background

New York City's 2012 house/site connection stormwater rule had the goal of reducing the adverse impacts on City sewers from runoff during rainstorms more severe than combined sewers are designed to handle. Sewer overflows, floods, and sewer backups can occur when excessive stormwater from impervious surfaces enters too quickly into the sewer system. The rule set forth a new performance standard, which applied to development in combined sewer areas of the City, allowing the City to more effectively manage stormwater runoff by prescribing standards for the permitting, construction and inspection of sewer connections to the City's combined sewer system.

Since adoption of this rule, the New York State Department of Environmental Conservation issued to the City a Municipal Separate Storm Sewer Systems (MS4) permit, which required the City to implement measures to reduce pollution in stormwater runoff from developments in the MS4 areas of the City (Chapter 19.1 of Title 15 of the RCNY, construction/post-construction stormwater management requirements), with the goal of protecting and improving water quality in the City's waterbodies.

These amendments to Chapter 31 of Title 15 of the RCNY are part of a unified approach to stormwater regulation, to be administered citywide, which aligns Chapter 31 stormwater quantity and flow rate requirements with Chapter 19.1 construction/post-construction permitting program water quality requirements, encouraging re-development projects greater than or equal to 20,000 square feet (sf) to use green infrastructure to meet the requirements of both chapters, where feasible. These amendments allow for reduction in combined sewer overflows and flooding, increase in green space, greater consistency across stormwater programs, flexibility in design options and improvements in water quality.

These amendments to Chapter 31 update onsite stormwater volume requirements and maximum stormwater release rates for both combined and storm sewer systems and reference the New York City Stormwater Manual (Appendix to Chapter 19.1 of Title 15 of the RCNY) for applicable stormwater technical requirements, including stormwater management practice hierarchies and stormwater management practice selection checklists.

The amendments to §31-01(b) Definitions:

- Add a definition for "building drain" to align with the definition in the New York City Plumbing Code.
- Add a definition for "building sewer" to include both combined and sanitary sewers.
- Revise the definition of "detention system" to align with the Chapter 19.1 definition of "detention system."
- Revise the definition of "house connection proposal" to limit applicability to plans for existing or proposed developments of one (1), two (2) or three (3) family dwelling units less than 20,000 sf in total site area connecting to a sewer that fronts the site.
- Revise the definition of "indirect discharge" to align with the Chapter 19.1 definition of "indirect discharge."
- Delete the definition for "interceptor-collector," and any references to this term.
- Revise the definition of "internal drain," to clarify that such definition applies to any drainage system which is not located in a final mapped street, a record street or an easement under the jurisdiction of the DEP.
- Add a definition for "NYC Stormwater Manual."
- Revise the definition of "non-plumbing work," to reference new definition for "plumbing work."
- Add a definition for "plumbing work."
- Clarify the definition for "retention system" to align with expanded opportunities to apply volume managed through non-detention systems toward total stormwater volume requirements.
- Add a definition for "shared sanitary sewer connection."
- Add a definition for "site."
- Revise the definition for "site connection proposals" to be applicable to all plans other than those in house connection proposals.
- Add a definition for "stormwater management facility."
- Add a definition for "stormwater volume requirement" to replace references to "required stormwater volume to be detained."

The amendments to § 31-02(b) Sewer Availability Certification/Specific Requirements:

- allow self-certified sewer certification applications except in certain circumstances, which would include applications for projects not filed with the Department of Buildings, for proposed developments where the sewer does not front the property but is available, and for proposed developments where storm or combined sewer extension is feasible.
- require certification applications to include a site plan, the stormwater volume requirement, the actual stormwater release rate from the site, and the maximum stormwater release rate.
- require computation of the stormwater release rate for connections in a combined or storm sewer system.
- provide that, if the department determines that the allowable flow is less than the maximum release rate outlined in 15

RCNY § 31-03(a)(1), then the maximum release rate will be equal to the allowable flow.

- clarify that lot numbers shall correspond to the most recent records supplied by the Department of Finance
- require site plans to be prepared in accordance with the latest standards and requirements of the Department, including Chapter 19.1 of Title 15 of RCNY and the stormwater technical requirements outlined in the NYC Stormwater Manual (Appendix to Chapter 19.1 of these rules).

The amendments to § 31-03 Stormwater performance standard:

- extend the stormwater performance standard's applicability to connections to the storm sewer system.
- set maximum stormwater release rates for both combined and storm sewer systems.

The amendment to § 31-07 Inspections aligns with the New York City Plumbing Code and clarifies that the Department of Buildings will inspect the building drain(s) and the Department will inspect the building sewer(s).

The amendments add a § 31-09 Effectiveness. Zoning map amendments potentially change the sewer hydraulics for the areas covered by rezoning. The unified stormwater rule is designed to maximize stormwater management during and post-construction and to reduce stormwater runoff from new and redevelopment sites to the drainage system, a smart growth strategy that utilizes the opportunity of redevelopment to retrofit the volume and pollutant loading from stormwater to benefit the drainage system and water quality.

Accordingly, DEP is distinguishing recently rezoned areas (after November 15, 2021 but before the effective date of this rule) by requiring sites taking advantage of that rezoning that have submitted any application for certification or have been issued a certification under the rules in effect prior to the effective date of the rule, to submit a new application for certification in compliance with Sections 31-02 and 31-03 of this Chapter.

A public hearing on the proposed rule was held on January 10, 2022. No changes to the rule are being made in response to the comments received at this hearing.

Pursuant to Charter sec. 1043(f), this rule will take effect immediately upon its publication in the City Record.

Material being deleted is shown below in [brackets] and material being added is underlined.

"Shall" and "must" denote mandatory requirements and may be used interchangeably in the rules of this department, unless otherwise specified or unless the context clearly indicates otherwise.

Section 1. Subdivision a of section 31-01 of title 15 of the rules of the city of New York is amended by adding new definitions of "building drain," "building sewer," "NYC stormwater manual," "plumbing work," "shared sewer connection," "site," "stormwater management facility," and "stormwater volume requirement," to be placed in alphabetical order, and the definitions of "allowable flow," "combined sewer connection," "contributory drainage area," "detention system," "finally mapped street," "house connection proposal," "indirect discharge," "internal drain," "intercepting sewer," "interceptor-collector," "non-plumbing work," "private drain," "private sewer," "record street," "retention system," "sanitary sewer connection," "site connection proposal," "stormwater release rate," and "stormwater sewer connection" are amended to read as follows:

Allowable flow. "Allowable flow" means the storm flow from developments that can be released into an existing storm or combined sewer based on existing sewer design criteria [that can be released into an existing storm of combined sewer].

Building Drain. "Building drain" means part of the lowest piping of a drainage system that receives the discharge from soil, waste and other drainage pipes inside and that extends to the exterior face of the exterior building wall; or the outlet of the most downstream trap, private manhole, catch basin, detention tank, or similar fixture or equipment, and conveys the drainage directly to the building sewer or, in the absence of building sewer, to an approved place of disposal.

Building Sewer. "Building sewer" means part of the drainage system that extends from the end of the building drain or the outlet of the most downstream trap, private manhole, catch basin, detention tank or similar fixture or equipment and conveys the discharge to a public sewer.

[Combined sewer connection. "Combined sewer connection" means a Sewer connection which extends from the property line and conveys both Sanitary sewage and storm water runoff to a Combined sewer or drain.]

Contributory drainage area. "Contributory drainage area" means a drainage area bounded by the [ridge lines] ridgelines of the furthest boundaries from which flow reaches a point of discharge.

Detention system. "Detention system" means a [structure] system designed to [store] slow and temporarily hold an accumulation of stormwater runoff and release it at a controlled rate [into an approved outlet sewer system of limited capacity].

[Finally] Final mapped street. "[Finally] Final mapped street" means a street as shown on the City map.

House connection proposal. "House connection proposal" means a plan showing proposed Sewer connection(s) to a City sewer, a Private sewer, a Private drain, or an approved outlet to serve Fee Simple One (1), Two (2) or Three (3) Family Dwelling Units less than 20,000 square feet in total site area, connecting to a sewer that fronts the site.

Indirect discharge. "Indirect discharge" means a discharge [into a City sewer, a Private sewer, or an approved outlet by means other than a direct discharge] from a private sewer to a public sewer, or a discharge to any street, gutter, pipe, channel, pumping station, catch basin, drain, waterway, or other conveyance leading to or connecting with a public sewer, including but not limited to the placement or abandonment of any substance which could reasonably enter a public sewer under the force of stormwater or other influence.

Internal drain. "Internal drain" means a drainage system [under the jurisdiction of the DOB and] which is not located in a Final Mapped street, a Record street or an Easement under the jurisdiction of DEP.

Intercepting sewer. "Intercepting sewer" or "Interceptor sewer" means a [sewer which] sewer that was built as part of the Treatment plant, which, during dry weather, receives the dry-weather flow from a number of transverse Sanitary or Combined sewers and conveys such Flow to a wastewater pollution control plant. During storms, it receives predetermined quantities of dry-weather flow mixed with stormwater and conveys combined sewage to a wastewater pollution control plant.

[Interceptor-collector. "Interceptor-collector" means an Intercepting sewer which also serves as a local Sanitary sewer.]

NYC Stormwater Manual. "NYC Stormwater Manual" (the "Manual") refers to the procedural and technical stormwater requirements set forth as an Appendix to Chapter 19.1 of this Title.

Non-plumbing work. "Non-plumbing work" means any work not referenced in the definition of "Plumbing Work" [as set forth in Section 28-401.3 of the Code], including excavation work, construction work or any other work not classified as [piping] plumbing work.

Plumbing work. "Plumbing work" means the installation, maintenance, repair, modification, extension or alteration of plumbing or piping system within a tax lot.

Private drain. "Private drain" means a private sanitary, stormwater, or combined drain that is constructed in a Final[ly] Mapped street, a Record street, or an easement and discharges into an approved outlet.

Private sewer. "Private sewer" means a private sanitary, stormwater, or combined sewer that is designed and constructed in accordance with the requirements of the City drainage plan to serve a specific development and is located in a [Finally] final mapped street, a Record street, or a sewer easement, and discharges into an approved outlet.

Record street. "Record street" means a street that appears on the Tax map of the City, but is not a [Finally] final mapped street.

Retention system. "Retention system" means a [structure] system designed to [store] capture an accumulation of stormwater runoff [and dispose of it onsite] on site through infiltration, evapotranspiration, storage for reuse, or a combination thereof.

[Sanitary sewer connection. "Sanitary sewer connection" means a Sewer connection which extends from the property line of a building and conveys only sanitary sewage to a sanitary sewer/drain or a combined sewer/drain.]

Shared sewer connection. "Shared sewer connection" means a sewer connection serving two or more tax lots.

Site. "Site" means the area that is being developed.

Site connection proposal. "Site connection proposal" means a plan showing proposed Sewer connection(s) from existing or proposed developments other than [Fee Simple of One (1), Two (2) or Three (3) Family Dwelling Units to a City sewer, a Private sewer, a Private drain, or an approved outlet] a House Connection Proposal.

Stormwater management facility. "Stormwater management facility" means a stormwater management practice serving a developed site and consisting of technology or strategies designed to reduce pollutants in stormwater runoff or reduce runoff rate or volume from the developed site through infiltration, retention, detention, direct plant uptake, filtration, or other method or treatment. Such term includes, but is not limited to, detention systems and retention systems.

Stormwater release rate. "Stormwater release rate" means the rate at which stormwater is released from a site, calculated in terms of cubic feet per second (cfs) [or as a percentage of the Allowable Flow, which is also calculated in terms of cfs].

[Stormwater sewer connection. "Stormwater sewer connection" means a Sewer connection, which extends from the property line of a Building and conveys stormwater runoff to a Storm sewer/drain, or Combined sewer/drain or an approved outlet.]

Stormwater volume requirement. "Stormwater volume requirement" means the minimum volume of stormwater required to be managed on the site.

§ 2. Section 31-02 of title 15 of the rules of the city of New York is amended to read as follows:

§ 31-02 Sewer Availability Certification.

(a) General Requirements.

Owners proposing to connect to a City sewer, a private sewer, a private drain, or an approved outlet to serve an existing or a proposed development must file a sewer certification application with the appropriate department of the City, in accordance with the following requirements:

(1) For an existing or a proposed Fee Simple One (1), Two (2) or Three (3) Family Dwelling Unit less than 20,000 square feet in total site area, a House Connection Proposal for sewer availability certification shall be required. Stormwater management systems for developments that include subdivision of lots must be submitted to DEP for review and approval.

(2) For all existing or proposed developments other than [Fee Simple One (1), Two (2) or Three (3) Family Dwelling Units] House Connection Proposals, a Site Connection Proposal for sewer availability certification shall be required and must be submitted to DEP. Stormwater management systems for developments that include multiple construction phases or subdivision of lots must be submitted to DEP for review and approval as a master/phased plan site connection application proposal.

(3) For the elimination of existing cesspools [or], septic tanks, or shared sanitary connections for existing buildings other than [Fee Simple One (1), Two (2) or Three (3) Family Dwelling Units] House Connection Proposals, a Site Connection Proposal for sewer availability certification shall be required, unless the site has been granted a prior sewer availability certification.

(4) All House Connection Proposals or Site Connection Proposals for sewer availability certification shall be prepared by, or under the supervision of, a professional engineer or registered architect licensed by the State of New York and shall be submitted with the appropriate sewer certification application form. The signature and seal of a professional engineer or registered architect shall appear on each proposal.

(b) Specific Requirements.

(1) A professional engineer or registered architect may self-certify the availability of sewers by using the appropriate self-certified sewer certification application, except as specified in paragraph [(3)] (2) of this subdivision.

(2) [All sewer certification applications for new construction under the jurisdiction of the DOB may be submitted to the DEP or to the DOB. All other sewer certification applications for construction that is not under the jurisdiction of the DOB and do not require DOB project identification number(s) (DOB PIN(s)) shall be submitted to the DEP.

(3)]A professional engineer or registered architect shall not self-certify sewer certification applications for the cases listed below. Such applications shall be submitted to the DEP for review and certification:

(i) Applications for projects not filed with DOB;

(ii) Applications for proposed developments where a sewer does not front the property, but is available;

(iii) Applications for proposed developments where a storm or combined sewer extension is feasible;

[(i)] (iv) Applications involving mapping actions;

[(ii)] (v) Applications for connection(s) to a proposed private sewer or private drain under construction by the applicant to serve a proposed development;

[(iii)] (vi) Applications for proposed developments to be constructed in staged phases;

[(iv)] (vii) Applications for proposed developments on part of a tax lot;

[(v)] (viii) Applications to connect to a sewer or drain where the flow discharged must pass through a private pumping station;

[(vi)] (ix) Applications for proposed developments which must utilize an easement through, or cross, adjacent properties, to gain access to an approved outlet;

[(vii)] (x) Applications for proposed developments on a site traversed by a watercourse, active ditch, or existing sewer easement;

[(viii)] (xi) Applications for proposed discharge of flow to a private drain not built in accordance with the City drainage plan and which is not owned by the owner(s) of the proposed development(s);

[(ix)] (xii) Applications to connect to sewers or drains discharging to a private sewage treatment plant;

[(x)] (xiii) Applications for proposed sanitary discharge to an interceptor sewer;

[(xi)] (xiv) Applications for proposed sanitary discharge to six (6) inch diameter sanitary sewers or drains;

[(xii)] (xv) Applications for proposed discharge of site storm flow to a highway drain, Work Project Administration (WPA) sewer, Temporary Connection (TC), plumber's drain, watercourse diversion, or State arterial highway drain;

[(xiii)] (xvi) Applications for skewed connections or connections to stub extensions from existing manholes; and

[(xiv)] (xvii) Application for proposed developments in areas rezoned after June 1993.

[(4)] (3) All sewer certification applications shall contain the appropriate identification number(s) as issued by the DOB, except for:

(i) [Self-certified applications filed with the DOB] Applications using DOB's self-certification process; or

(ii) Applications which are not required to be filed with the DOB.

[(5)] (4) Sewer certification applications shall include a site plan that shows [show] the proposed sanitary discharge; [the proposed developed site storm flow]; stormwater volume requirement; the actual stormwater release rate from the site; and the maximum stormwater release rate, in accordance with the following:

(i) The stormwater technical requirements as outlined in the NYC Stormwater Manual.

[(i) Computation of allowable flow to be discharged into stormwater or combined sewers or drains shall be based on either the City drainage plan or an approved drainage proposal under which the existing sewers or drains were constructed.] (ii) Computation of the stormwater release rate shall be in accordance with 15 RCNY § 31-03(a)(1) for connections in a combined or storm sewer system. In no case shall the maximum release rate exceed the allowable flow. If it is determined by DEP that the allowable flow is less than the maximum release rate outlined in 15 RCNY § 31-03(a)(1), then the maximum release rate will be equal to the

allowable flow. Computation of allowable flow to be discharged into stormwater or combined sewers or drains shall be based on either the City drainage plan or an approved drainage proposal under which the existing sewers or drains were constructed.

[(ii) Developed site storm flow shall be computed using the rational method for the total site area, with rainfall intensity of 5.95 inches per hour and the weighted runoff coefficient (Cw) based on the site development.

A. DEP will provide runoff coefficients to be used in computing site storm flow.]

[B.] (iii) DEP will accept for review applications that minimize the runoff coefficient of the entire site by maximizing open areas, and areas with grass or vegetative cover, green roofs, permeable pavements with suitable infiltration, or other techniques based on the runoff coefficients published by DEP. Further runoff coefficient reductions must be substantiated by soil borings taken at the location of the proposed areas in addition to a permeability test performed in situ.

[C.] iv. Overall site runoff coefficients must not be decreased without the express written approval of DEP.

[(iii)] v. Applicants shall specify the method(s) of disposal of all developed site storm flow in conformance with the provisions of local laws governing such disposal.

[(iv)] vi. Sanitary flow discharged to sanitary or combined sewers or drains shall be computed based on the density development permissible under zoning designation for the proposed development in accordance with the most recent drainage design criteria of the DEP.

[6] (5) Block and lot numbers shall correspond to the most recent records supplied by the DOF. Any applicant proposing to alter an existing block and/or lot layout shall submit to the [DOB] DEP a Tentative Lot Number(s) Request Form bearing the applicant's signature and seal and showing the proposed block or lot modifications. [Such forms shall be approved by the DOB.]

[7](6) All existing and proposed sewer connections shall be shown on the site plan and supporting documents. The minimum size of pipe for proposed connections to the sewer system shall be an eight (8) inch pipe in the Borough of Manhattan and a six (6) inch pipe in all other Boroughs.

[8](7) No horizontal bends for sewer connections shall be permitted outside the property lines of the project site.

[9](8) All sewer connections shall be gravity connections. Single structures utilizing an internal ejector shall follow provisions of the New York City Building Code and shall connect to the sewer by gravity for such use. In cases where multiple structure developments use internal ejectors, the internal ejector system shall discharge into a pressure relief manhole within the property lines, and then flow into the existing sewer by a gravity sewer connection.

[10](9) All site plans submitted to the DEP with sewer certification applications shall be prepared in accordance with the latest standards and requirements of the DEP, as indicated below:

(i) Site plans shall be drawn to scale, and shall contain the original seal and signature of the filing professional engineer or registered architect.

(ii) All hydraulic computations, and the proposed method(s) of disposal for all sanitary and storm discharge, must be shown on the site plan.

(iii) Swimming pool(s) must be shown on the site plan, but are not reviewed as part of the sewer certification application(s). A separate approval for the discharge from swimming pools must be obtained from the DEP. All swimming pools must discharge to an internal sanitary system prior to discharge into the existing sewer or drain.

(iv) Computations and details for the stormwater management facilities [practices] proposed for the on-site retention and/or detention of stormwater runoff from the developed site necessary to ensure compliance with this rule and/or with Chapter 19.1 of this Title, must be shown on the site plan.

[11](10) Subsoil boring logs and soil permeability testing information must be submitted, in accordance with the NYC Stormwater Manual, to substantiate any proposed on-site stormwater infiltration.

[12](11) Any person constructing a new development abutting a waterway shall discharge its stormwater to that waterway. All direct discharges shall comply with all applicable laws and regulations.

[13](12) For sites with industrial waste discharge, the applicant must obtain approval from the DEP for such discharge prior to the certification of the sewer certification application. For self-certified sewer certification applications, the approval for the discharge of industrial waste must be obtained prior to submission of the self-certified sewer certification application to the City.

§ 3. The title and subdivision (a) of section 31-03 of Title 15 of the Rules of the City of New York are amended to read as follows:

§ 31-03 Stormwater performance standard for connections to combined or storm sewer [system] systems.

(a) Stormwater release [rate] rates.

The following provisions apply to the issuance of permits for sewer availability certifications and connections to combined and storm sewer systems for new buildings and alterations as defined in the Construction/Plumbing Codes and related requirements for any horizontal building enlargement or any proposed increase in impervious surfaces.

(1) The maximum Stormwater Release [Rate] Rates [must be no more than the greater of 0.25 cfs or 10% of the Allowable Flow or, if the Allowable Flow is less than 0.25 cfs, no more than the Allowable Flow] are set forth in the following table.

Sewer Type	Maximum Stormwater Release Rate
Storm Sewer System	1 cfs per acre or 0.046 cfs, whichever is greater
Combined Sewer System	0.1 cfs per acre or 0.046 cfs, whichever is greater

(2) For [Alterations] applications where the site is part of a lot, the stormwater release rate for the altered area must be no more than the stormwater release rate for the entire site, determined in accordance with subparagraph (1) above, multiplied by the ratio of the altered area to the total site area. No new points of discharge are permitted.

(3) For [proposed open-bottom detention systems] sites where stormwater management facilities other than detention systems are proposed, applicants [would] may be entitled to a reduction of the [required stormwater volume to be detained] stormwater volume requirement [where stormwater will be infiltrated into the below soils provided that the applicant demonstrates to the satisfaction of the department that the existing soil surrounding and below the system has a favorable rate of permeation substantiated by soil borings taken at the location of the proposed system in addition to a permeability test performed in situ]. The NYC Stormwater Manual identifies eligible stormwater management facilities, which must provide a reliable reduction in peak runoff rates for large events, and sets forth methods for determining the amount of volume that may be reduced. Requests for any volume [credits] reduction must be shown on the site connection proposal application and reviewed by DEP and must be made in accordance with the NYC Stormwater Manual.

[(4) Applicants would be entitled to a reduction of the required stormwater volume to be detained where stormwater will be recycled for on-site uses provided that the department finds that the recycling system is independent and does not result in total site discharge to the sewer system greater than the Stormwater Release Rate at any time. Such recycling systems cannot be modified or disconnected, without the express written approval of DEP. This restriction applies to both current and future owners and other persons in control of the property.]

§ 4. Paragraphs (1) and (2) of subdivision (a) of section 31-04 of title 15 of the rules of the city of New York are amended to read as follows:

(1) No person or Owner shall connect to, make use of, or make an opening into any interceptor sewer, [interceptor collector,] or sanitary, storm, or combined sewer or drain; or install, repair, relay or plug sewer connections, except upon issuance of a permit consistent with the provisions of this Rule. No sewer connections shall be permitted to any catch basin. Any such connection made without a permit shall be in violation of this Rule.

(2) Permits for a new connection or connections shown on certified sewer certification applications shall be required for the following:

(i) new developments;

(ii) alterations performed on existing buildings, where sewer availability certification is required by the DOB;

(iii) existing buildings served by cesspools, [or] septic tanks or shared sanitary connections to be connected to fronting sewers or drains; and

(iv) unplugging and reuse of a plugged sewer connection.

§ 5. Subparagraph (v) of paragraph (2) of subdivision (c) of section 31-04 of title 15 of the rules of the city of New York are amended to read as follows:

(v) No sewer connection permit shall be issued without the presentation of a valid building construction permit or alteration repair application (ARA) from DOB or other required work permit from any other agency [Agencies] having jurisdiction.

§ 6. Paragraphs (2) and (5) of subdivision (d) of section 31-04 of title 15 of the rules of the city of New York are amended to read as follows:

(2) [Unplug and Reuse or Reuse] Reuse of Plugged Connection and Reuse of Existing Connection. For one, two or three family dwellings, permits for unplugging and reuse of a plugged sewer connection, or reuse of an existing sewer connection will be issued upon:

(i) compliance with all of the requirements listed in paragraph (1) of this subdivision (d); and

(ii) submission to the DEP of the following:

(A) notarized letter of intent from the owner requesting reuse of the plugged sewer connection or reuse of the existing sewer connection;

(B) signed and sealed certification from the filing professional engineer or registered architect that the existing sewer connection is adequate; and

(C) signed and sealed certification from the Licensed Master Plumber that such plumber has verified that the existing sewer connection is in good working order.

(5) Connections to an existing sewer for the purpose of eliminating cesspools, [or] septic systems or shared sanitary connections. Permits for sewer connections to an existing sanitary or combined sewer in order to eliminate cesspools, [or] septic systems or shared sanitary connections will be issued upon:

(i) compliance with the requirements contained in subparagraphs (i), (ii), (iii), (iv), (v), and (ix) of paragraph (1) of this subdivision (d);

(ii) for fee simple one, two or three family dwelling units, submission of approval from DOB to abandon the existing cesspool, [or] septic system or shared sanitary connection;

(iii) for other than fee simple one, two or three family dwelling units, submission of:

(A) an approval from DOB to abandon the existing cesspool, [or] septic system or shared sanitary connection; and

(B) a certified site connection proposal from the appropriate department, as required by subparagraphs (i), (ii) and (v) of paragraph (1) of this subdivision (d).

§ 7. Subparagraph (ii) of paragraph (7) of subdivision (b) of section 31-05 of title 15 of the rules of the city of New York is amended to read as follows:

(iii) For six (6) inch diameter sewer connections to eight (8) inch diameter sewers or drains, if the existing eight (8) inch diameter sewer or drain is not supported by a concrete cradle, the connection method described in subparagraph (i) of this paragraph (7) shall apply. For sewers or drains on concrete cradles, a minimum of four (4) feet in length of the existing sewer or drain shall be encased in concrete from the point of connection. The concrete shall be allowed to set for [twenty-four (24)] forty-eight (48) hours, after which time, core drilling shall be performed.

§ 8. Subdivision (a) of section 31-07 of title 15 of the rules of the city of New York is amended to read as follows:

(a) General Requirements.

(1) All sewer connections, including new connections, relays/repairs, plugs, catch basin and catch basin connections, and seepage basins shall be inspected and approved by an Inspector.

(2) DOB will inspect the building drain(s) and DEP will inspect the building sewer(s).

(3) A permittee shall be granted an inspection one business day following the request for such inspection.

[(3)] (4) Prior to commencing excavation for sewer connections, the permittee shall verify that the sewer or drain is not surcharged, obstructed, or damaged. If the sewer is surcharged, obstructed, or damaged, the permittee shall not perform any work and shall immediately notify the DEP.

[(4)] (5) No sewer connection or related work shall be inspected or approved by an Inspector unless the trench is open for any length of previously un-inspected work and all pipes, joints, and related work are visible. A suitable ladder affording safe access for such inspection shall be provided by the permittee. Trenches must conform to all applicable Rules, Regulations and laws regarding safety.

[(5)] (6) An Inspector is required to be present during any drill-in to a sewer or drain.

[(6)] (7) Any trench backfilled without completed inspection shall be re-excavated to the degree necessary as determined by the Inspector.

[(7)] (8) Inspections will be conducted Monday through Friday (except on holidays) between the hours of seven (7) A.M. and four (4) P.M. Exceptions to this requirement may be granted upon traffic and work stipulations set forth by the DOT or other entity having jurisdiction or for other unforeseen circumstances, at the discretion of the department.

[(8)] (9) No inspection shall be performed unless all permits and appropriate documentation required by the DEP are displayed at the work site. Such documentation shall include:

(i) the certified house connection proposal or certified site connection proposal, with all pertinent supporting documents where required;

(ii) the approved permit application and sewer connection permit;

(iii) the street opening permit from the DOT or other entity having jurisdiction, and when a Builder's Pavement Plan has been required, an approved copy thereof;

(iv) all approved shop drawings;

(v) all Mayor's Traffic Construction Coordination Committee traffic stipulations, where weekend and/or night work is scheduled; and

(vi) all applicable notarized affidavits regarding the reuse of existing connections.

§ 9. Chapter 31 of title 15 of the rules of the city of New York is amended by adding a new section 31-09 to read as follows:

§ 31-09 Effectiveness.

(a) The amendments to this chapter made by the rule that added this section do not apply to any site with a sewer availability certification issued prior to February 15, 2022.

(b) Notwithstanding subdivision a of this section, a site that is within an area that was rezoned as a result of a zoning map amendment application filed by the Department of City Planning, that received final approval after November 15, 2021 but before the effective date of the rule that added this section, must comply with the requirements of the amendments to this Chapter made by such rule if such site seeks to develop a parcel of land pursuant to such rezoning. Where any application for certification for such a site was submitted or any certification for such a site was issued under the rules in effect prior to the effective date of the rule that added this section, the applicant may not proceed under that application for certification or issued certification and must submit a new application for certification in compliance with Sections 31-02 and 31-03 of this Chapter, as amended by the rule that added this section.

Statement of Substantial Need for Earlier Implementation

I hereby find, pursuant to §1043(f)(1)(d) of the New York City Charter, that there is a substantial need for the implementation, immediately upon their final publication in the City Record, of the rule amending Chapter 19.1 of Title 15 of the Rules of the City of New York and the rule amending Chapter 31 of Title 15 of the Rules of the City of New York. These rules carry out the provisions of Local Law 91 of 2020 and implement a new uniform approach to control of stormwater run-off to protect New York City's sewer system from overflow and the waters of the city from pollution.

Local Law 91 of 2020 amended provisions of the Administrative Code of the City of New York requiring the control of stormwater runoff during and after certain land development activities to extend such controls citywide and to allow the Department of Environmental Protection to make them applicable to smaller projects.

The earlier implementation of the rule amending Chapter 19.1 and the rule amending Chapter 31 is necessary to better address the management and control of discharges and runoff from public and private property. These amendments, which implement a unified stormwater policy for the city, will align the Chapter 19.1 Construction/Post-Construction permitting program water quality requirements with Chapter 31 stormwater quantity and flow rate requirements. These rules together will allow for reduction in combined sewer overflows and flooding, increase in green space, greater consistency across stormwater programs, and improvements in water quality.

_____/s/_____

Vincent Sapienza

Commissioner

Approved:

____/s/_____

Eric Adams

Mayor

Date: 1/29/22

☛ **f15**

NOTICE OF ADOPTION OF FINAL RULE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE IS HEREBY GIVEN PURSUANT TO THE AUTHORITY VESTED IN THE COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION by Section 1043(a) of the New York City Charter (City Charter) and Section 24-553 of the Administrative Code of the City of New York (Administrative Code), that the Department of Environmental Protection promulgates and adopts a new rule governing governing management of construction and post-construction stormwater sources (Title 15, chapter 19.1 of the Rules of the City of New York ("RCNY")).

Statement of Basis and Purpose

The New York City Department of Environmental Protection ("DEP" or "Department") is amending its rules governing management of construction and post-construction stormwater sources (Title 15, chapter 19.1 of the Rules of the City of New York ("RCNY")).

Section 1403(b-1) of the Charter of the City of New York provides that the Commissioner of Environmental Protection ("Commissioner") has "the power to administer and enforce provisions of law, rules and regulations relating, to the management and control of discharges and runoff from public and private property, including but not limited to stormwater discharges, which may convey pollutants and other materials that may enter and have an adverse impact on the waters of the state." Title 24 of the Administrative Code of the city of New York, Chapter 5-A establishes stormwater management controls for construction projects to reduce the flow of stormwater runoff and water borne pollutants into sewers that empty directly in, to the waters of the state or that overflow into such waters because of rain or snowmelt that exceeds the design capacity of wastewater treatment plants.

The amendments to Chapter 19.1 extend, to the combined sewer area the Department's permitting, inspection and enforcement program for covered development projects, as defined in the rule, including requirements for construction and post-construction stormwater controls, standards for such controls, and penalties for non-compliance with the rules and permit conditions.

These amendments are part of a unified stormwater policy to be administered citywide, which will align Chapter 19.1 Construction/ Post-Construction permitting program water quality requirements with Chapter 31 stormwater quantity and flow rate requirements, encouraging development projects greater than or equal to 20,000 SF to use green infrastructure to meet requirements of both Chapters, where feasible. These amendments allow for reduction in combined sewer overflows and flooding, increase in green space, greater consistency across stormwater programs, flexibility in design options and improvements in water quality. DEP is also adding, as an appendix to this chapter, a NYC Stormwater Manual, to provide additional procedural and technical guidance to owners, developers and applicants.

The amendments to §19.1-01.2 Definitions:

- change the definition of "covered development project" to include development activity that involves or results in an amount of soil disturbance greater than or equal to 20,000 square feet or creation of 5,000 square feet or more of impervious surface or covered maintenance activity.
- add a definition for "covered maintenance activity" to include roadway maintenance that involves 20,000 sf or more.
- change the definition of "development activity**"** to include creation of impervious surface.
- change the definition of "SWPPP acceptance form" to delete reference, to the MS4 and the NYS Department of Environmental Conservation.
- change the definition of "MS4 area" to delete reference, to the MS4 map.-
- add a definition for MS4 project.
- delete the definition of new development.
- change the definitions of "notice of intent" or "NOI" and notice of termination" or "NOT" to add reference, to their applicability in the MS4 area.
- add a definition for "NYC Stormwater Manual"
- delete the definition of "redevelopment."
- change the definition of "retention system" for consistency with Chapter 31 of these rules.
- add a definition of "roadway maintenance" as work in the ROW, including milling and filling of existing asphalt pavements, etc.
- change the definition of "routine maintenance activity" to eliminate full depth milling and filling of existing asphalt pavements, etc.

A public hearing regarding the proposed rule was held on January 10, 2022. In response to comments received, at that hearing, certain revisions have been made, to the final rule, as discussed below.

The amendments to §19.1-03.1 Applicability include deletion of reference, to the MS4 map and changes in grandfathering provisions. A revision since the date of initial publication clarifies the rule relating to application to projects where a city sewer is not available, and private development projects that drain by overland flow to waters of the state. The term "grandfathering" to describe applicability of the rule to existing projects has been deleted.

The amendments to §19.1-03.3 Permits would clarify permit application requirements including a requirement to identify any elements of the design not in conformance with the design criteria in the technical standard, including the reason for the deviation or alternative design and demonstration that the deviation or alternative design is equivalent, to the technical standard; and reference to preference for post-construction practices that rely on infiltration/retention to those that rely on filtration/detention. A section added since initial publication of the rule exempts from permitting covered development projects that drain to waters of the state through an outfall approved by NYSDEC unless the outfall is owned or operated by the city of New York. For applications submitted to DEP, DEP might determine that a permit is not required for a covered development project where a public combined or storm sewer is not available.

The amendments add §19.1-03.4 on Selecting Stormwater Management Practices (SMPs), as further described in the NYC Stormwater Manual, using the SMP Hierarchy, which requires implementing vegetated retention practices, to the maximum extent practicable.

A new section 8 is added to clarify the inclusion of the New York City Stormwater Manual as an appendix to Chapter 19.1.

Revisions, to the New York City Stormwater Manual since initial publication include a correction in Figure 3.2 in Chapter 3; adding brief guidance in Chapters 1 and 2 that there are certain requirements in the NYS Stormwater Management Design Manual that are not addressed in the NYC Stormwater Manual (e.g., regarding Chapter 2, there are requirements in addition to WQv that might apply to sites greater than 1 acre, including extreme flood protection); and adding in Chapter 4 guidance on the water quality flow rate to help with design for innovative practices.

Permit issuance for covered development projects, meaning projects that involve or result in, at least 20,000 square feet of soil disturbance or creation of 5,000 square feet or more of impervious surface or covered maintenance activities, is not subject to environmental review, pursuant to 6 NYCRR Section 617.5(c)(19).

New material is underlined. Deleted material is shown in [brackets]. "Shall" and "must" denote mandatory requirements and may be used interchangeably in the rules of the department, unless otherwise specified or unless the context clearly indicates otherwise.

Section 1. Section 19.1-01.1 of Chapter 19.1 of Title 15 of the Rules of the City of New York is amended to read as follows:

§ **19.1-01.1 Applicability. Applicability.** [These rules apply] This chapter applies to discharges from industrial stormwater sources within those portions of the city of New York served by the municipal separate storm sewer system (MS4) and the discharge of stormwater from [property within those portions of the city of New York served by the municipal separate storm sewer system (MS4) including, but not limited to, discharges from industrial stormwater sources and] covered development projects.

§2. The definitions of "covered development project," "detention system," "developer," "development activity," "MS4 SWPPP acceptance form," "MS4 area," "new development,", "notice of intent" or "NOI," "notice of termination" or "NOT," "pollutants of concern" or "POCs," "Redevelopment," "retention system," routine maintenance activity" and "storm sewer"set forth in section 19.1-01.2 of Chapter 19.1 of title 15 of the rules of the city of New York are amended and new definitions of "covered maintenance activity," "MS4 project" "NYC stormwater manual" and "roadway maintenance" are added to such section to read as follows:

Covered development project. The term "covered development project" means development activity,private or public, that involves or results in an amount of soil disturbance [within the MS4 area] greater than or equal to [one acre] 20,000 square feet or creation of 5,000 square feet or more of impervious surface, or covered maintenance activity. Such term includes development activity that is part of a larger common plan of development or sale involving or resulting in soil disturbance [within the MS4 area] greater than or equal to [one acre] 20,000 square feet or creation of 5,000 square feet or more of impervious surface. [Such term must include all development activity within the MS4 area that requires a SWPPP pursuant, to the New York State Department of Environmental Conservation (NYSDEC) construction general permit.]

Covered Maintenance Activity. The term "covered maintenance activity" means roadway maintenance that involves 20,000 sf or more.

Detention system. The term "detention system" means a system [that slows] designed to slow and temporarily [holds] hold an accumulation of stormwater runoff [so that it can be released] and release it, at a controlled rate.

Developer. The term "developer" means a person that owns or leases land on which development activity that is part of a covered development project is occurring, or a person that has operational control over the development activity's or covered maintenance activity's plans and specifications, including the ability to make modifications, to the construction plans and specifications.

Development activity. The term "development activity" means creation of impervious surface and/or soil disturbance on a site including but not limited to land contour work, clearing, grading, excavation, demolition, construction, reconstruction, [new development, redevelopment,] [creation or replacement of impervious surface,] stockpiling activities or placement of fill. Clearing activities include but are not limited to logging equipment operation, the cutting and skidding of trees, stump removal, and/or brush root removal. Such term does not include routine maintenance [(such as road resurfacing) performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility].

[MS4] SWPPP acceptance form. The term "[MS4] SWPPP acceptance form" means the form [developed by NYSDEC to be] used to indicate acceptance of a SWPPP by [a municipality] the department.

MS4 area. The term "MS4 area" means those portions of the city of New York served by separate storm sewers and separate stormwater outfalls owned or operated by the city of New York or areas served by separate storm sewers owned or operated by the city of New York that connect to combined sewer overflow pipes downstream of the regulator owned or operated by the city of New York, and areas in which municipal operations and facilities drain by overland flow to waters of the state, as determined by the department [and described on the map of the MS4 area set forth in these rules and available on the department's website].

MS4 Project: The term "MS4 project" means a covered development project that is subject, to the NYSDEC construction general permit.

[New development. The term "new development" means any construction or disturbance of a parcel of land that is currently undisturbed or unaltered by human activities and in a natural state.]

Notice of intent or NOI. The term "notice of intent" or "NOI" means for MS4 projects or industrial stormwater sources in the MS4 area the document submitted to NYSDEC to obtain coverage under the NYSDEC construction general permit or the MSGP.

Notice of termination or NOT. The term "notice of termination" or "NOT" means for MS4 projects or industrial stormwater sources in the MS4 area the document submitted to NYSDEC to terminate coverage under the NYSDEC construction general permit or the MSGP. For non-MS4 area projects, the term "notice of termination" or "NOT" means the document submitted to DEP to terminate coverage under the DEP SW construction permit.

NYC Stormwater Manual. The term "NYC Stormwater Manual" (the "Manual") refers, to the procedural and technical guidance document developed to inform owners/developers/applicants how to meet stormwater requirements set forth in this chapter and in Chapter 31 of these rules; the Manual is, attached as an appendix to this chapter.

Pollutants of concern (POCs). The term "pollutants of concern" or "POCs" means pollutants [that might reasonably be expected to be present in stormwater in quantities that may cause or contribute to an exceedance of water quality standards. These pollutants include but are not limited to nitrogen, phosphorus, silt and sediment, pathogens, floatables, petroleum hydrocarbons, heavy metals, and polycyclic aromatic hydrocarbons (PAHs).] causing the impairment of an impaired water segment listed in Appendix I of the New York City MS4 permit, including nitrogen, phosphorus, fecal coliform, and garbage and refuse.

[Redevelopment. The term "redevelopment" means reconstruction of or modification to any existing previously developed land such as residential, commercial, industrial, institutional or road/highway, which involves soil disturbance. Redevelopment is distinguished from new development in that new development refers to construction on land where there had not been previous construction. Redevelopment specifically applies to constructed areas with impervious surface or fill.]

Retention system. The term "retention system" means a system [that captures] designed to capture an accumulation of stormwater runoff on site [with no release] through infiltration, evapo-transpiration, storage for reuse, or some combination of these.

Roadway Maintenance. The term "roadway maintenance" means work in the right of way (ROW) including milling and filling of existing asphalt pavements ("milling and paving"), replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six inches of subbase material; and long-term use of equipment storage areas, at or near highway maintenance facilities.

Routine maintenance activity. The term "routine maintenance activity" means a maintenance activity [that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility,] including, but not limited to:

- Re-grading of gravel roads or parking lots;
- Stream bank restoration projects (does not include the placement of spoil material);
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch;
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes, to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch);
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment;
- [Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six inches of subbase material;]
- [Long-term use of equipment storage areas, at or near highway maintenance facilities;]
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface, to the highway ditch or embankment;
- Replacement of curbs, gutters, sidewalks, and guide rail posts; and
- Repairs made to SMPs **to restore them to former condition or to operating order.**

Storm sewer. The term "storm sewer" means a sewer, [the primary purpose of which is to carry], which conveys only stormwater.

§3. Subdivision (a) of section 19.1-02.1 of chapter 19.1 of title 15 of the rules of the city of New York is amended to read as follows:

(a) Applicability.

This section applies to industrial stormwater sources within the MS4 area and industrial or commercial premises or facilities in the MS4 area that the department determines may [generate significant contributions of pollutants of concern into impaired waters] contribute a significant pollutant load, to the MS4.

§4. Subdivision (b) of section 19.1-02.3 of chapter 19.1 of title 15 of the rules of the city of New York ia amended to read as follows:

(b) Unpermitted industrial and commercial facilities.

The department or an authorized inspection agent may enter and inspect any unpermitted premises or facilities within the MS4 area, as required by the MS4 permit, during normal operating hours. The department will inspect unpermitted facilities to identify those that [generate significant contributions of pollutants of concern to impaired waters] may contribute a significant pollutant load, to the MS4 and will refer those to NYSDEC. The department or an authorized inspection agent may inspect the facility, including, but not limited to, its equipment, practices, operations and records,nsistent with applicable law.

§5. Section 19.1.3.1 of chapter 19.1 of title 15 of the rules of the city of New York is amended to read as follows:

§ 19.1-03.1 Applicability

(a)[This rule] Section 19.1-03 of this chapter applies to covered development projects, public and private[, that discharge to a separate storm sewer system owned or operated by the City, and covered development projects that are located on municipally owned or operated sites that drain by overland flow to waters of the state].

[(b) The MS4 map set forth in these rules is not the sole basis for determining whether a development activity is a covered development project. The map is an approximation of the boundaries of the MS4 area, at a point in time. Such boundaries may change with changes, to the separate storm sewer system and refinement of the map. The map is intended as a convenience and is not dispositive of whether a development project is within the MS4 area. When in doubt, developers should submit a record request form found on the department's website for information on sewer drainage.]

[c.] (b) [Grandfathering] Applicability to Existing Projects

(1) [This rule] Section 19.1-03 of this chapter does not apply to any development activity with a letter of acknowledgment of notice of intent for coverage under the NYSDEC construction general permit issued by NYSDEC before [the effective date of this rule] June 1, 2019.

(2) [This rule] Section 19.1-03 of this chapter does not apply to any development activity with a valid individual State Pollutant Discharge Elimination System (SPDES) permit issued by NYSDEC for construction activity before [the effective date of this rule] June 1, 2019.

(3) Section 19.1-03 of this chapter does not apply to any covered development project, other than an MS4 project, where an application for construction document approval for the construction of such project was filed with the Department of Buildings or the Department of Small Business Services, as applicable, prior to March 26, 2021.

(4) The amendments to this chapter effective on February 15, 2022 do not apply to any development activity with an MS4 SWPPP acceptance form issued within two years prior to such date.

(5) Section 19.1-03 of this chapter does not apply to any covered development project of less than 1 acre (other than a project of less than 1 acre all or any part of which is within an area that was rezoned as a result of a zoning map amendment application filed by the Department of City Planning, that received final approval after November 15, 2021, and which project seeks to develop a parcel of land pursuant, to the rezoning), if prior to February 15, 2022 an application for construction document approval was filed with the Department of Buildings or the Department of Small Business Services for such project.

(6) Section 19.1-03 of this chapter does not apply to any covered development project of less than 1 acre all or any part of which is within an area that was rezoned as a result of a zoning map amendment application filed by the Department of City Planning, that received final approval after November 15, 2021, and which seeks to develop a parcel of land pursuant, to the rezoning, if prior to December 10, 2021, a permit for the construction of such project was issued by the Department of Buildings or the Department of Small Business Services, as applicable.

§6. Section 19.1-03.3 of chapter 19.1 of title 15 of the rules of the city of New York is amended to read as follows:

§ 19.1-03.3 Permits

(a) Permit Program Requirements

(1) Permit applications and applications to amend permits must be filed electronically on the department's web site.

(2) The developer and owner of a site must certify that the application is being submitted on their behalf.

(3) Qualified professionals who have prepared application materials are required to certify that the materials submitted meet the technical standards included in the NYSDEC construction general permit and these rules.

(4) [Stormwater] In addition to technical standards included in this section, stormwater management practices must be designed and constructed in accordance with the following technical standards for performance and design:

(i) The New York City Stormwater Manual, incorporated as an appendix to this chapter.

[(i)](ii)The New York State Stormwater Management Design Manual January 2015 or its successor including the enhanced phosphorus removal standards.

[ii] (iii) New York Standards and Specifications for Erosion and Sediment Control, dated November 2016, or its successor.

[(iii)The New York City StormwateManual.]

(5) Where, in any specific case, different provisions of this chapter or of the technical standards incorporated by reference specify different materials, methods of construction or other requirements, the most restrictive shall govern.

(6) Exemptions for certain covered development projects

(i) A permit is not required for a covered development project that drains to waters of the state through an outfall approved by NYSDEC unless the outfall is owned or operated by the city of New York.

(ii) Upon receiving an application, DEP may determine that a permit is not required for a covered development project where a public combined or storm sewer is not available.

(b) Stormwater Construction Permit

(1) [No] Except as otherwise provided in paragraph (6) of subdivision (a) of this section or subdivision (b) of section 19.1-03.1 of this chapter no developer may [commence] perform development activity in connection with a covered development project [located in the MS4 area], public or private, without having first obtained a stormwater construction permit from the department. The commissioner, in his or her discretion, may impose such terms and conditions in the permit as he or she deems necessary to protect the [MS4] sewer system or to protect the public health or welfare.

(2) The following activities are not considered covered development projects:

(i) Routine maintenance activities; and

(ii) [Repairs to any stormwater management practice or facility deemed necessary by the department; and

(iii)] Emergency activities that are immediately necessary for the protection of life, property, or natural resources.

(3) Permit application requirements

(i) To obtain a permit, an applicant must complete and file an application available on the department's website. The application must be accompanied by a processing fee of $1,000 dollars in addition to a $2,000 dollar fee per acre of land disturbed.

(ii)When a covered development project consists entirely of installation of an environmental enhancement project made up of one or more stormwater management practices, and does not include other development, DEP may exempt the owner or developer from payment of any fees associated with these rules.

(iii)The application must include certification by a developer that the covered development project that is the subject of the application is in full compliance with City Environmental Quality Review, Chapter 5 of Title 62 of the Rules of the City of New York.

[(iii)] (iv)The application must include a SWPPP prepared, signed, and sealed by a qualified professional. [The SWPPP must be submitted in an electronic format acceptable, to the department, as further detailed on the department's website, and must contain all the elements required in the NYSDEC construction general permit and in these rules, as follows:]

[(ii)](v) All components of the SWPPP that involve the practice of engineering, as defined by Article 145 of the NYS Education Law, must be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York. The SWPPP must be submitted in an electronic format acceptable, to the department, as further detailed on the department's website, and must contain all the elements required in the NYSDEC construction general permit and in this chapter, as follows:

A. Background information about the scope of the project, including type and size of project;

B. Site map/construction drawing(s) for the project, including a general location map., at a minimum, the site map should show:

(1) The total site area;

(2) All improvements including underground utilities;

(3) Areas of disturbance;

(4) Areas that will not be disturbed;

(5) Existing vegetation;

(6) On-site and adjacent off-site surface water(s);

(7) Floodplain/floodway boundaries;

[(7)] (8) Wetlands and drainage patterns that could be affected by the [construction] development activity;

[(8)] (9)Existing and final contours;

[(9)] (10) Location of soil types with boundaries;

[(10)] (11) Material, waste, borrow or equipment storage areas located on adjacent properties; and

[[11)] (12) Location(s) of the stormwater discharge(s).

C. A description of the soil(s) present, at the site;

D. A construction phasing plan describing the intended sequence of development activities, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity, at the site that results in soil disturbance;

E. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a pollutant source in stormwater runoff;

F. A description of the minimum erosion and sediment control practices to be installed or implemented for each [construction] development activity that will result in soil disturbance or creation of impervious surface and for each covered maintenance activity, including a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

G. A site map or construction drawing or drawings specifying the location, size and length of each erosion and sediment control practice;

H. Dimensions, material specifications and installation details for all erosion and sediment control practices, including the siting and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

I. A temporary and permanent soil stabilization plan that meets the requirements of these rules and the technical standard, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of final stabilization;

J. A maintenance inspection schedule for the trained contractor(s), to ensure continuous and effective operation of the erosion and sediment control practices;

K. The name or names of the receiving waters;

L. A delineation of SWPPP implementation responsibilities for each part of the site;

M. A description of structural practices designed to divert flows from exposed soils, store flows, or otherwise limit the runoff and the discharge of pollutants from exposed areas of the site, to the degree, attainable; and

N. Any existing data that describe the stormwater runoff, at the site including but not limited to calculations to size n control practices.

O. Identification of any elements of the design that are not in conformance with the design criteria in the technical standards listed in (a)(4) of this section. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is equivalent, to the technical standard.

[(iv) When a covered development project consists entirely of repair or installation of an environmental enhancement project made up of one or more stormwater management practices, and does not include other development or redevelopment, DEP may exempt the owner or developer from payment of any fees associated with these rules.]

P. Development activities that are on Table 2.3 of the NYC Stormwater Manual in covered development projects under these rules must prepare a SWPPP that includes post-construction stormwater management practices. However, with respect to covered development projects for road construction or reconstruction that are less than one acre and for covered maintenance activities, erosion and sediment control practices will be required, but no post-construction stormwater management practices will be required.

(4)Development activities that alter hydrology, reduce perviousness or include the reconstruction of an impervious surface that disturbs soil, must develop a SWPPP that includes post-construction stormwater management practices.

[(4)] (5)SWPPPs for projects that require post-construction stormwater management practices must be prepared, signed, and sealed by a qualified professional who has an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics, and the SWPPPs must include the following items:

(i)All information required in § 19.1-03.3(b)(3), above;

(ii) A description of each post-construction stormwater management practice designed to retain or infiltrate stormwater or documentation, as further required by the NYC Stormwater Manual, that retention or infiltration is not possible and a description of the selected practice;

(iii) A site map or construction drawing or drawings showing the specific location and size of each post-construction stormwater management practice;

(iv) Dimensions, material specifications and installation details for each post-construction stormwater management practice;

(v) A hydrologic and hydraulic analysis for all structural components of the stormwater management system for the applicable design storms that includes, but is not limited to:

A. Map or maps showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing and design points;

B. Map or maps showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

C. Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre- and post-development runoff rates and volumes for the different storm events;

D. Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the sizing criteria included in the technical standards, as further described in § 19.1-03.3(a)(4) above; and

E. Identification of any elements of the design that are not in conformance with the performance criteria in the technical standards. Include the reason or reasons for the deviation or alternative design and provide information, which demonstrates that the deviation or alternative design is equivalent, to the technical standards.(vi)Soil testing results and locations (test pits, borings);

(vi) Soil testing results and locations(test pits borings)

(vii) Infiltration testing results and locations when an infiltration practice will be implemented;

(viii) An operations and maintenance plan that includes inspection and maintenance schedules and actions, to ensure continuous and effective operation of each post-construction stormwater management practice. The plan must identify the entity that will be responsible for the long-term operation and maintenance of each practice;

(ix) For flood management projects, the SWPPP must include an analysis of the impact of the project on existing water quality of receiving waters;

(x) For covered development projects located in the watersheds identified in Appendix 1 of the NYC MS4 permit NY-0287890, or most current, and for which there is an increase in impervious area, the SWPPP must include a pollutant loading analysis that demonstrates that the proposed post-construction stormwater management practices meet the no net increase requirement as further provided in the New York City Stormwater [Management Design] Manual; and

[(xi) Certification by a developer that the covered development project that is the subject of the application is in full compliance with City Environmental Quality Review, Chapter 5 of Title 62 of the Rules of the City of New York; and]

[(xii)] (xi) Plans, drawings and maps that are part of the SWPPP must be submitted, at a scale not smaller than 1"=50' unless otherwise specified by the department.

~~(1)~~ [(5)] (6) Additional requirements for projects that disturb five acres or more

The owner or developer of a development activity must not disturb greater than five acres of soil, at any one time without prior written authorization from the department., at a minimum, the owner or developer must comply with the following requirements in order to be authorized to disturb greater than five acres of soil, at any one time:

(i) The owner or developer must have a qualified inspector conduct, at least two site inspections in accordance with the NYSDEC construction general permit every seven-calendar days, for as long as greater than five acres of soil remain disturbed. The two inspections must be separated by a minimum of two full calendar days;

(ii) In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures

must be initiated by the end of the next business day and completed within seven days from the date the current soil disturbance activity ceased. The soil stabilization measures selected must be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

(iii) The owner or developer must prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fill; and

(iv) The owner or developer must install any additional site-specific practices needed to protect water quality.

~~(2)~~ [(6)] (7) Application review and determinations

(i) The department or a qualified professional employed by the City of New York will review applications for compliance with the NYSDEC construction general permit and these rules.

(ii) The department will issue a determination within 45 days of submittal of the complete application and fee, to the department. However, with respect to submissions that include non-conforming designs per sections 19.1-03.3 (b)(3)(iv)(O) and 19.1-03.3 (b)(4)(v)(E), the department will issue a determination within 60 days of submittal of the complete application and fee, to the department.

(iii) If an application meets the standards set forth herein, the department will provide the applicant with [an MS4] a SWPPP acceptance form [for submission to NYSDEC as required by the NYSDEC construction general permit]. If the developer does not obtain a stormwater construction permit for the project within two years from the date of issuance of the SWPPP acceptance form, the plan approval will expire and a new permit application must be submitted.

(iv) If an application does not meet the standards set forth herein, the department will send notice, to the developer indicating the specific deficiencies that caused the department to reject the application. Applicants may re-apply upon addressing the deficiencies.

~~(3)~~ [(7)] (8) Issuance of the Stormwater Construction Permit.

(i) Permit issuance under the rule is not subject to environmental review, pursuant to 6 NYCRR § 617.5(c)(25).

(ii) The owner or developer must file a Permit Initiation Form, including the name and contact information for a qualified inspector.

(iii) Before the department will issue a stormwater construction permit for an MS4 project, the applicant must provide a copy of the NYSDEC SPDES permit number and NOI acknowledgement letter.

(iv) The contractor with primary responsibility for the project site must file a Permit Request Form that includes a certification that the contractor will comply with these rules, with the SWPPP and with the terms and conditions of this permit, and provides credentials for the trained contractor who will be responsible for overseeing day-to-day operations, at the project site during construction.

(v) When the department requires post-construction stormwater management practices, it must not issue a stormwater construction permit for the project until the execution and recording of a maintenance easement, as follows:

A. The maintenance easement will be binding on all subsequent owners of the real property served by such post-construction stormwater management practice.

B. The maintenance easement must provide for access to post-construction stormwater management practices, at reasonable times in accordance with the law for periodic inspection by the department or qualified professionals authorized by the department, to ensure that such practices are maintained in good working condition to meet the applicable design standards.

C. The grantor must record the maintenance easement in the office of the city register or, if applicable, the county clerk, after approval by the corporation counsel.

D. A maintenance easement is not required when the corporation counsel has determined that such a maintenance easement is not necessary due, to the property's ownership or use by a public agency or instrumentality. For post-construction stormwater management practices subject to such an exception, when there is a subsequent conveyance or cessation of public use, the corporation counsel may require the execution and recording of a maintenance easement, at that time.

~~(4)~~ [(8)] (9) Permit conditions

(i) The applicant and all contractors and subcontractors responsible for implementation of the SWPPP must comply with these rules, the SWPPP, NYSDEC construction general permit, if applicable, and the terms and conditions of the stormwater construction permit.

(ii) A stormwater construction permit must be renewed every two years from date of issuance.

(iii) An application for permit renewal for two years or for a permit extension for up to one year must be submitted, to the department, pursuant to § 19.1-03.3(b)(9).

(iv) The contractor or developer must notify the department no fewer than 7 days prior, to the start of development activity.

(v) A copy of the permit must be retained and displayed, at the site of the development activity during construction, from the date of initiation of development activities, to the date of final stabilization of the site.

(vi) A copy of the approved SWPPP must be retained, at the site of the development activity from the date of initiation of development activities, to the date of final stabilization

(vii) The developer must have a trained contractor inspect daily the erosion and sediment control practices and pollution prevention measures being implemented within the active work area, to ensure that they are being maintained in effective operating condition, at all times. The trained contractor must document (e.g., log) these daily inspections. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

(viii) The developer must have a qualified inspector conduct site inspections and document the effectiveness of all erosion and sediment control practices every seven days, as detailed in the NYSDEC construction general permit. If deficiencies are identified, the contractor must begin implementing corrective actions within one business day and must complete the corrective actions in a reasonable timeframe.

(ix) The developer must notify the department of an anticipated temporary shutdown a minimum of seven days before the shutdown, and must submit documentation showing that the site is stable and that all stormwater management practices are operational. The developer will be responsible for having a qualified inspector visit the site and inspect it, at least once every 30 days during the shutdown. In addition, all permits must be kept current during the suspension of development activity.

(x) If the developer terminates construction without completing the project, the developer must submit a closure plan demonstrating that the site will remain stable and that all completed stormwater management practices are operating as designed and in compliance with department rules. Any project that has post-construction stormwater management practices that are constructed and operating must comply with § 19.1-03.3(c) of these rules.

(xi) All amendments, to the SWPPP must be submitted, to the department.

(xii) Major amendments, to the SWPPP must be submitted, to the department and will be processed and approved or disapproved in the same manner as the original SWPPP. An application must be accompanied by a $1,000 dollar fee per disturbed acre for processing of the amendment. Major amendments include, but are not limited to:

A. Changes to structural stormwater management practices; or

B. Changes that require new stormwater modeling or changes to modeling methodology.

[(9)] (10) Expiration and extension of plan approval and permit, and permit renewal

(i) A plan approval will expire if the permit is not requested within two years of issuance of the SWPPP acceptance form. The department may, upon written presentation of sufficient justification for delay and a fee of $1,000 per disturbed acre, made 30 days prior, to the expiration of a plan approval, grant an extension of time of up to one year to request a permit. If the plan approval expires, a new permit application must be submitted.

(ii) A stormwater construction permit will expire if:

A. The commencement of development activities does not take place within one year of the permit issuance; or

B. Development activity is not completed by a date specified in the permit; or

C. The permitted work is suspended or abandoned for a continuous period of 12 months (or less than 12 months if the permit expires earlier).

(iii) The department may, upon written presentation of sufficient justification for delay and a fee of $1,000 per disturbed acre made 30 days prior, to the expiration of a permit, grant a one-time extension of time of up to one year to begin or complete the work prescribed under the permit. Expired permits will require re-application as detailed in the permit conditions.

(iv) An application for permit renewal for two years must be submitted, to the department no less than 30 days prior, to the permit expiration date and must be accompanied by a processing fee in the

amount of $1,000 dollars in addition to a $2,000 dollar fee per acre of land disturbed.

~~(10)~~ [(10)] (11) Notice of Termination

(i) An owner or developer of a covered development project that has completed all development activities must submit a completed NOT, to the department for sign-off prior to submitting the NOT to NYSDEC. The department will review the completed NOT, to ensure that the following conditions have been met:

A. All development activities identified in the SWPPP have been completed;

B. All areas of disturbance have achieved final stabilization;

C. All temporary structural erosion and sediment control measures have been removed; and

D. Any post-construction stormwater management practices identified in the SWPPP have been constructed in conformance with the SWPPP and are operational.

(ii) An owner or developer of a covered development project that requires a planned shutdown with partial project completion must submit a completed NOT, to the department for sign-off prior to submitting the NOT to NYSDEC. The department will review the completed NOT, to ensure that the following conditions have been met:

A. All soil disturbance has ceased;

B. All areas disturbed as of the project shutdown date have achieved final stabilization;

C. All temporary structural erosion and sediment control measures have been removed; and

D. Any post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

~~(11)~~ [(11)] (12) Recordkeeping. The developer must keep and maintain records of all inspections and tests required to be performed during construction throughout the period of construction and for five years after completion of construction.

(c) Stormwater Maintenance Permit

(1) Permit application

(i) Upon final stabilization of the site, covered development projects requiring a SWPPP that includes post-construction stormwater management practices under these regulations will be required to obtain and maintain a stormwater maintenance permit.

(ii) To obtain a permit, an owner must file an application on the department's website. The application must be accompanied by the following:

A. NYSDEC NOT as provided for under 19.1.3-03(b)(10);

B. As-built plan of the site's stormwater management practices, including inverts in and out of all structures, at a scale no less than 1" to 50' in an electronic format acceptable, to the department signed and sealed by a qualified professional;

C. An operation and maintenance manual, in an electronic format acceptable, to the department;

D. Name and contact information for the person or company designated to maintain the practices; and

E. Sewer certification, as required by the department (pursuant to Chapter 19 of Title 15 of the Rules of the City of New York).

(2) Post-construction stormwater management practices are not required for the following covered development projects:

(i) Covered development projects identified as activities that require only an erosion and sediment control component in the NYSDEC construction general permit except for the installation of underground, linear utilities, such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains; and

(ii) Installation of underground, linear utilities, such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains where surface will be restored, to the existing condition.

(3) Permit conditions

(i) The Maintenance Entity must document (e.g., log) any maintenance activities undertaken pursuant, to the operation and maintenance plan.

(ii) The owner must submit, to the department annually, not more than 30 days before and not later than the anniversary date of the issuance of the stormwater maintenance permit, a certification signed by the owner that the stormwater management practices are operating as designed.

(iii) The owner of the site must renew the stormwater maintenance permit every five years. An application for renewal must be submitted, to the department no less than 30 days prior, to the permit expiration date and must be accompanied by a report certified by a qualified professional that the stormwater management practices are operating as designed and a fee of $1,500.

(iv) A licensed professional engineer must perform inspections and certifications of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment.

(v) The owner of the site must notify the department of any sale or conveyance of the premises and must provide the name of and contact information for the new owner.

(4) Modification of a practice covered by a stormwater maintenance permit

(i) Should the owner wish to modify a stormwater management practice covered by a stormwater maintenance permit, the owner must submit an application for modification of the stormwater maintenance permit (available on the department's website).

(ii) The application for modification of the stormwater maintenance permit must include calculations and supporting documentation to demonstrate that the practice is, at least as protective of water quality as the existing practice and that it controls stormwater flows as required by the NYSDEC construction general permit.

(iii) The department will review the application following the criteria for new applications.

(5) Inspections. As also provided in § 19.1-03.2, the department or an authorized inspection agent may conduct periodic inspections, to ensure that post-construction stormwater management practices are maintained in good working condition to meet the applicable design standards.

(6) Recordkeeping. The owner must keep and maintain records of all required post-construction inspections and tests for five years after performance of such inspections or tests. The owner must keep and maintain all as-built drawings for the life of the post-construction stormwater management practice.

(7) Should any provision of these rules and a provision in the NYS construction general permit differ, the more stringent of the two provisions will apply.

§7. Chapter 19.1 of title 15 of the rules of the city of New York is amended by adding a new section 19.1-03.4 to read as follows:

§ 19.1-03.4 Selecting SMPs using the SMP Hierarchy

(a)SMPs must be selected, using the SMP hierarchy, as follows, and as more fully described in the NYC Stormwater Manual:

(1) V*egetated retention* practices must be used, to the maximum extent practicable to meet requirements.

(2) Where vegetated retention practices are not possible or cannot meet the entire runoff reduction volume due to site constraints, the site constraints must be documented in the SWPPP and *non-vegetated retention* practices must be used, to the maximum extent practicable to meet requirements.

(3) Where both vegetated and non-vegetated retention practices are not possible or cannot meet the entire runoff reduction volume due to site constraints, the site constraints must be documented in the SWPPP and:

(i) In the combined sewer service area, any remaining requirements must be met using either *vegetated or non-vegetated detention* practices;

(ii) In the MS4 area, any remaining requirements must be met using either *vegetated or non-vegetated treatment* practices.

(b)When SMPs are deemed infeasible due to site constraints, including soil, subsurface, "hotspot," surface and space constraints, the designer must provide the appropriate documentation that demonstrates each constraint.

(c)All documentation for constraints and justification for the selection of practices must be included in the SWPPP and are subject to review and approval by the Department.

§8. Chapter 19.1 of title 15 of the rules of the city of New York is amended by adding an appendix "New York City Stormwater Manual" to read as Follows:

APPENDIX
NEW YORK CITY STORMWATER MANUAL

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ACRONYMS

Aic: Area of new impervious cover

A.S.T.M. The American Standards for the Testing of Materials, latest edition.

BEPA: Bureau of Environmental Planning & Analysis or its successor.

BMP: Best Management Practice

BWSO: The Bureau of Water & Sewer Operations or its successor.

CSO: Combined Sewer Overflow

CSS: Combined Sewer System

DEP: The New York City Department of Environmental Protection or its successor Agency.

DO: Dissolved Oxygen

DOB: The New York City Department of Buildings or its successor Agency.

DOF: The New York City Department of Finance or its successor Agency.

DOT: The New York City Department of Transportation or its successor Agency.

ESC: Erosion and Sedimentation Control

HCP: House Connection Proposal

HSG: Hydrologic Soil Group

IC: Impervious Cover

MS4: Municipal Separate Storm Sewer System

NNI: No Net Increase

NOI: Notice of Intent

NOT: Notice of Termination

NYC SWM: New York City Stormwater Manual

NYSDEC: The New York State Department of Environmental Conservation.

NYS SWMDM: New York State Stormwater Management Design Manual

O&M: Operations and Maintenance

PC: Post-Construction

POC: Pollutant of Concern

PPGH: Pollution Prevention and Good Housekeeping

ROW: Right of Way

RR: Runoff Reduction

RRv: Runoff Reduction Volume

SCP: Site Connection Proposal

sf: square feet

SMP: Stormwater Management Practice

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SWPPP: Stormwater Pollution Prevention Plan

SWPTS: Stormwater Permitting and Tracking System

TN: Total Nitrogen

Vv: Sewer Operations Volume

WQ: Water Quality

WQv: Water Quality Volume

WRRF: Wastewater Resource Recovery Facility

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GLOSSARY

Agency: An agency of the City.

Applicant: The person filing the online application for a stormwater construction permit or a stormwater maintenance permit. This may be the owner, developer, qualified professional, or other person that is a registered user in the online application system.

Building: A structure having a specific Block and Lot (or tax sub-lot). In general, a structure will be considered a Building if it has a separate entrance from an outdoor area.

City: The City of New York.

Cleanout: Structure to allow access to subsurface pipes for cleaning.

Cleanout Pipes: Pipes that provide a connection between the cleanout and internal pipes to allow for regular maintenance.

Code: The Administrative Code of the City of New York.

Combined Sewer: A sewer receiving a combination of sanitary and/or industrial wastewater and stormwater runoff.

Combined Sewer Overflow (CSO): Sometimes, during heavy rain and snowstorms, a combined sewer system receives higher than normal flows. NYC wastewater resource recovery facilities (WRRFs) are unable to handle flows that are more than twice their design capacity and when this occurs, a mix of excess stormwater and untreated wastewater discharges directly into the City's waterways at certain outfalls to prevent upstream flooding. This is called a combined sewer overflow.

Combined Sewer System (CSS): A sewer system used to convey both wastewater and stormwater in a single pipe to WRRFs.

Commissioner: The Commissioner of the New York City Department of Environmental Protection.

Connection permit: A written authorization issued by the DEP to connect to an existing sewer or drain or an approved outlet.

Contractor: An entity retained by the Owner/Applicant to construct a facility.

Contributing (or contributory) drainage area: A drainage area bounded by the ridgelines of the furthest boundaries from which flow reaches a point of discharge.

Controlled-Flow Orifice: Orifice located within the outlet control structure used to reduce the flow rate out of a practice.

Conveyance Pipes: Umbrella term used to describe pipes that convey stormwater, which can include yard drains, as well as SMP specific pipes, such as bypass pipes, overflow pipes, and intake pipes.

Covered development project: development activity that involves or results in an amount of soil disturbance greater than or equal to 20,000 square feet; or creation of 5,000 square feet or more of impervious surface; or a covered maintenance activity. Such term includes development activity that is part of a larger common plan of development or sale involving or resulting in soil disturbance greater than or equal to 20,000 square feet or creation of 5,000 square feet or more of impervious surface.

Covered Maintenance Activity: roadway maintenance activity that involves an area of 20,000 or more square feet.

CSO Outfall: The physical point where a municipally owned or operated combined sewer discharges to surface waters of the state.

Department: The New York City Department of Environmental Protection (DEP).

Designer: A Qualified Professional.

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Detention System: A system designed to slow and temporarily hold an accumulation of stormwater runoff and release it at a controlled rate.

Developer: A person that owns or leases land on which development activity that is part of a covered development project is occurring, or a person that has operational control over the development or maintenance activity's plans and specifications, including the ability to make modifications to the plans and specifications.

Development Activity: Creation of impervious surface and/or soil disturbance on a site including but not limited to land contour work, clearing, grading, excavation, demolition, construction, reconstruction, stockpiling activities or placement of fill. Clearing activities can include but are not limited to logging equipment operation, the cutting and skidding of trees, stump removal, and/or brush root removal. Such term does not include routine maintenance.

Disturbance Threshold: The minimum area of disturbed soil or created impervious surface as a result of development activities that triggers the need for a Stormwater Construction Permit.

Discharge: The introduction or release of any substance, whether knowing or unknowing, accidental or otherwise, to a public sewer or private sewer connected to a public sewer or to waters of the State and shall include indirect discharges as defined herein.

Drawdown: The process of stormwater emptying a practice storage area (surface or subsurface) through one or more of infiltration, evapotranspiration, reuse, filtration, or an outlet pipe.

Dual Function System: Cases in which one stormwater management practice is configured to support runoff management via two, equally contributing functions.

Erosion and Sediment Controls (ESC): Stormwater management practices designed to minimize the discharge of pollutants during development activities including, but not limited to, structural erosion and sediment control practices, construction sequencing to minimize exposed soils, soil stabilization, dewatering control measures, and other pollution prevention and good housekeeping practices (PPGH) appropriate for construction sites.

Evapotranspiration System: A system designed primarily to capture stormwater for evaporation and/or transpiration back into the atmosphere.

Filtration System: A system designed primarily to remove pollutants from stormwater by trapping and separating particles in stormwater as it passes through a porous media.

Floatables: Manmade materials, such as plastics, papers, or other products which, when improperly disposed of onto streets or into catch basins, can ultimately find their way to waterbodies and may create nuisance conditions with regard to aesthetics, recreation, navigation, and waterbody ecology.

Flow: A continuous movement of storm water or wastewater.

Forebay: A separate segment within a stormwater basin used to trap sediment, chosen to facilitate maintenance and removal of the sediment. Use of a forebay is intended to facilitate sedimentation and thus protect other unit treatment processes.

Fronting: An existing sewer or drain abutting an existing or proposed development.

Green Infrastructure (GI): Also known as and referred to throughout this manual as stormwater management practices (SMPs), are designed to protect, restore, or mimic the natural water cycle within built environments by retaining, detaining, and/or treating stormwater runoff. Generally includes practices such as rain gardens, green or blue roofs, porous pavements, subsurface stormwater storage systems, and stormwater reuse systems.

GreenHUB: DEP's web-based application with data management capabilities that provides asset management for the green infrastructure practices citywide over their lifecycle, where designers upload the Project Tracking Spreadsheet.

Groundwater: Any existing water in subsoil stratums, including water from springs and natural underground streams, but

excluding water from wells used for the delivery of potable or processed water.

Groundwater table: The actual depth of ground water below surface.

Head (Hydraulic Head): Energy represented as a difference in elevation. In slow-flowing open systems, the difference in water surface elevation, e.g., between an inlet and outlet.

House connection proposal (HCP): A plan showing proposed Sewer connection(s) to a City sewer, a Private sewer, a Private drain, or an approved outlet to serve Fee Simple One (1), Two (2) or Three (3) Family Dwelling Units less than 20,000 square feet in total site area, connecting to a sewer that is fronting the site.

Hybrid System: Cases in which two or more stormwater management practices of the same function are integrated as one practice.

Impaired Water: Includes (i) a water body for which NYSDEC has established a total maximum daily load ("TMDL"), (ii) a water body for which NYSDEC expects that existing controls such as permits will resolve the impairment, and (iii) a water body identified by NYSDEC as needing a TMDL. A list of impaired waters is issued by NYSDEC pursuant to section 303(d) of the federal water pollution control act, chapter 26 of title 33 of the United States code.

Impervious Area (Cover): All impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (e.g., parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Impervious Surface: Any surface that cannot effectively infiltrate rainfall: generally, rooftops, pavements, sidewalks, and driveways.

Infiltration: Process of water percolating through a porous media, mainly in a downward direction, due to gravity. Infiltration rate (or infiltration capacity) is the maximum rate at which a soil in a given condition will absorb water.

Infiltration System: A system designed primarily to infiltrate stored or detained stormwater into soils below.

Inlet: Any structure that captures water which eventually drains to a practice, usually located at the low points of a site.

Internal Pipes: Perforated pipes inside the practice that can be used to evenly distribute or drain water in the stone base

Invert: The bottom elevation of a channel, pipe, or manhole.

Larger Common Plan of Development or Sale: A contiguous area where multiple separate and distinct development activities are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation including a sign, public notice of hearing, sales pitch, advertisement, drawing, permit application, uniform land use review procedure (ULURP) application, state environmental quality review act (SEQRA) or city environmental quality review (CEQR) application, application for a special permit, authorization, variance or certification pursuant to the zoning resolution, subdivision application, computer design, or physical demarcation (including boundary signs, lot stakes, and surveyor markings) indicating that development activities may occur on a specific plot. Such term does not include area-wide rezonings or projects discussed in general planning documents. For discrete development activities that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each activity can be treated as a separate plan of development or sale provided that any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Lot: A tax lot as shown on the Tax map of the City.

Maintenance Entity: The entity identified by the owner that will be responsible for the long-term operation and maintenance of each post-construction stormwater management practice.

MS4 Area: Those portions of the city of New York served by separate storm sewers and separate stormwater outfalls owned or operated by the city of New York or areas served by separate storm sewers owned or operated by the city

of New York that connect to combined sewer overflow pipes downstream of the regulator owned or operated by the city of New York, and areas in which municipal operations and facilities drain by overland flow to waters of the state, as determined by the department.

MS4 Project: Covered Development Project that is located in the MS4 area and has submitted a SWPPP to the SWPTS.

Multi-sector general permit (MSGP): The NYSDEC SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity, Permit No. GP-0-17-004 or its successor.

Municipal Operations and Facilities: Any operation or facility serving a New York city governmental purpose and over which the City of New York has operational control.

No Net Increase (NNI): A pollutant load analysis included in the SWPPP that demonstrates adequate controls are in place such that the change in pollutant loading will not result in a net increase.

Notice of Intent (NOI): For MS4 projects or industrial stormwater sources in the MS4 area, the document submitted to NYSDEC to obtain coverage under the NYSDEC construction general permit or the multi-sector general permit, respectively.

Notice of Termination (NOT): For MS4 projects or industrial stormwater sources in the MS4 area, the document submitted to NYSDEC to terminate coverage under the NYSDEC construction general permit or the multi-sector general permit, respectively. For non-MS4 area projects, the term "notice of termination" or "NOT" means the document submitted to DEP to terminate coverage under the DEP SW construction permit.

NYC MS4 No Net Increase Calculator for Nitrogen: Interactive spreadsheet tool developed by DEP to help developers calculate post-development nitrogen load increases and select SMPs to manage total nitrogen. The calculator takes pre- and post-development inputs from the user and outputs net runoff volume and nitrogen load changes.

NYC MS4 Permit: The SPDES permit for MS4s of New York city, SPDES No. NY-0287890 or its successor

NYSDEC Construction General Permit (CGP): The SPDES general permit for stormwater discharges from construction activities, Permit No. GP-0-15-002 or its successor.

Observation Well: Structure located within the footprint of a practice that allows monitoring of subsurface water levels.

Outlet Control Structure: Any structure that houses a controlled-flow device or weir that regulates drainage from a practice.

Outlet Pipe: A pipe that can drain water from a stormwater management practice before it is full, which typically connects the storage zone of the practice with a point of discharge.

Owner (for purposes of Chapter 19.1): A person having legal title to premises, a mortgagee or vendee in possession, a trustee in bankruptcy, a receiver, or any other person having legal ownership or control of premises.

Owner (for purposes of Chapter 31): Any individual, firm, corporation, company, association, society, institution or any other legal entity that owns the property, appurtenances, and easements compromising an existing or a proposed development.

Pathogens: disease-producing agents such as bacteria, viruses, or other microorganisms. Fecal coliform is a pathogen-related water quality parameter.

Peak Runoff: The maximum stormwater runoff rate (cfs) determined for the design storm, or design rainfall intensity.

Person: Means an individual, corporation, partnership, limited-liability company or other legal entity.

Pollutant: Dredged soil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, and agricultural waste discharged into water; which may cause or might reasonably be expected

to cause pollution of the waters of the State in contravention of the standards or guidance values adopted as provided in 6 New York codes, rules and regulations ("NYCRR") section 750-1.2(a).

Pollutant of Concern (POC): Pollutants causing the impairment of an impaired water segment listed in Appendix I of the New York City MS4 permit, including nitrogen, phosphorus, pathogens, and floatables.[1]

Ponding Depth: The depth of surface water within a practice.

Post-Construction Stormwater Management Practice or Post-Construction Practice: A stormwater management practice serving a developed site and consisting of technology or strategies designed to reduce pollutants in stormwater runoff or reduce runoff rate or volume from the developed site through infiltration, retention, detention, direct plant uptake, filtration, or other method or treatment. Such term includes, but is not limited to, detention systems and retention systems.

Post-Development: Relating to the site conditions such as land use, land coverage, topography, zoning, and corresponding hydrologic functions that will exist following proposed development activities.

Pre-Development: Relating to the site conditions such as land use, land coverage, topography, zoning, and corresponding hydrologic functions that exist prior to proposed development activities.

Qualified Inspector: A person who is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, a Certified Professional in Erosion and Sediment Control (CPESC), or a Registered Landscape Architect.

This term can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years. This term can also mean a person that meets the Qualified Professional qualifications in addition to the Qualified Inspector qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional: A person who is knowledgeable in the principles and practices of stormwater management and treatment such as a licensed professional engineer or a registered landscape architect or other NYSDEC endorsed individual(s).

Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by Article 145 of the NYS Education Law, shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Reuse System: A system designed primarily to store or detain stormwater for onsite uses.

Retention: The process of holding or retaining runoff close to the source for infiltration, evapotranspiration, or reuse.

[1] The 2018 NYS 303(d) list and Appendix I (Impaired Water Segments And Pollutants Of Concern) of the pending renewal of the MS4 Permit have replaced reference to "pathogens" with "fecal coliform" and reference to "floatables" with "garbage and refuse;" see also Table 2.4 of this manual.

Retention System: A system designed to capture an accumulation of stormwater runoff on site through infiltration, evapotranspiration, storage for reuse, or some combination of these.

Roadway Maintenance: Work in the right of way (ROW) including milling and filling of existing asphalt pavements ("milling and paving"), replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six inches of subbase material; or long-term use of equipment storage areas at or near highway maintenance facilities.

Routine Maintenance Activity: A maintenance activity, including, but not limited to:

- Re-grading of gravel roads or parking lots
- Stream bank restoration projects (does not include the placement of spoil material);
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch;
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch);
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment;
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment; and
- Replacement of curbs, gutters, sidewalks, and guide rail posts; and
- Repairs made to SMPs to restore them to former condition or to operating order.

Runoff: Overland stormwater flow that is not absorbed into the ground.

Runoff Coefficient: The fraction of total rainfall (volume or rate) that appears as total runoff (volume or rate) for a given type of land cover.

Separate Stormwater Outfall: A point where stormwater from a storm sewer or other source of concentrated stormwater flow, owned or operated by the city of New York, is discharged into a water of the state or to a separate storm sewer system that requires coverage under the NYSDEC MS4 general permit.

Sewer: A pipe or conduit for carrying sewage and/or stormwater. Except where otherwise specified or where the context clearly dictates otherwise, the term "sewer" must refer to a public sewer.

Sewer Certification: A house connection proposal application or site connection proposal application to certify the adequacy of the existing abutting sewer to receive site storm and sanitary discharge from a development.

Sewer Connection: That part of a sanitary, stormwater, or combined sewer disposal pipe, which extends from the property line to an existing City sewer, a Private sewer, a Private drain, or an approved outlet under the jurisdiction of the DEP.

Site: The area that is being developed.

Site Connection Proposal (SCP): A plan showing proposed Sewer connection(s) from existing or proposed developments other than a House Connection Proposal.

Site Connection Proposal (SCP) Certification: The Department's acceptance of a Site Connection Proposal.

Slope: Land gradient described as the vertical rise divided by the horizontal run expressed in percent.

Storm Sewer: A sewer, which conveys only stormwater.

Stormwater or Stormwater Runoff: The excess water running off the surface of a drainage area during, and

immediately following, a period of precipitation. For the purposes of the stormwater construction permit, precipitation includes rain events or snowmelt.

Stormwater Construction Permit: A permit issued by the department authorizing development activity on land on which there is a covered development project with an approved SWPPP.

Stormwater Maintenance Permit: A permit issued by the department where maintenance is required of post-construction stormwater management practices by owners of real property benefited by such facilities.

Stormwater Management Practice (SMP): Measure to prevent flood damage or to prevent or reduce point source or nonpoint source pollution inputs to stormwater runoff and water bodies. Such term includes ESC, post-construction SMPs, and practices to manage stormwater runoff from industrial activities.

Stormwater Permitting and Tracking System (SWPTS): The Department's online system for submitting applications for a Stormwater Construction Permit or for checking the status of an existing application.

Stormwater Pollution Prevention Plan (SWPPP): (i) when used in connection with a covered development project, a plan for controlling stormwater runoff and pollutants during construction and, where required by these rules, after construction is completed, or (ii) when used in connection with an industrial stormwater source, a plan, which is required by the MSGP, for controlling stormwater runoff and pollutants.

Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form: The form used to indicate acceptance of a SWPPP by the Department.

Stormwater Pollution Prevention Plan (SWPPP) Approval: The Department's initial approval of the application for a Stormwater Construction Permit

Stormwater Release Rate: The rate at which stormwater is released from a site, calculated in terms of cubic feet per second (cfs)

Subsurface Loaded Practices: Practices designed to have stormwater enter the facility below-grade.

Surface Loaded Practices: Practices designed to have stormwater enter the facility through the surface.

Surface Waters of the State or Waters of the State: Lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

Temporary Shutdown: The suspension of development activity at a site with an approved stormwater construction permit.

Time of Concentration (Tc): The time for runoff to travel from the hydraulically most distant point of the drainage area to the watershed outlet or study point.

Trained Contractor: An employee of a contracting (construction) company, who has received four hours of NYSDEC-endorsed training in proper erosion and sediment control principles from a soil and water conservation district, or other NYSDEC-endorsed entity. After receiving the initial training, the trained contractor must receive four hours of training every three years. The term can also mean an employee of a contracting (construction) company who meets the qualifications required to be a qualified inspector. The trained contractor is responsible for the day-to-day implementation of the SWPPP during development activities.

Tributary Drainage Area: The amount of surface area that drains to a practice or point of study.

Unified Stormwater Rule: Chapters 19.1 and 31 of title 15 of the rules of the city of New York.

Weighted Runoff Coefficient: The fraction of total rainfall (volume or rate) that appears as total runoff (volume or rate)

for a drainage area, calculated as an area-based, weighted average of the runoff coefficients for the various types of land cover present in the drainage area.

1. Introduction

The New York City Department of Environmental Protection (DEP) is charged with preserving and enriching the environment and safeguarding public health for all New Yorkers. Stormwater management is a critical element of DEP's work, and with the promulgation of a Unified Stormwater Rule and release of this NYC Stormwater Manual (SWM), NYC is entering a new era of stormwater management. The Unified Stormwater Rule updates and aligns water quantity requirements in the city's combined sewer drainage areas with water quality requirements in separately sewered drainage areas, providing a comprehensive, citywide stormwater management policy for public and private development. This NYC Stormwater Manual (SWM) provides technical guidance for developers, designers, and engineers who will work with DEP on stormwater permitting.

The Unified Stormwater Rule and the technical guidance within this Manual emphasize a retention-first, green infrastructure approach to stormwater management practice selection and design, applying lessons learned during ten years of implementing the NYC Green Infrastructure Program, through which DEP and partners have constructed over 11,000 distributed green infrastructure practices across the city.

Green infrastructure practices, also known as and referred to throughout this manual as *stormwater management practices (SMPs)*, are designed to protect, restore, or mimic the natural water cycle within built environments by retaining, detaining, and/or treating stormwater runoff. SMPs generally include practices such as rain gardens, green or blue roofs, porous pavements, subsurface stormwater storage systems, and stormwater reuse systems. These practices are an important and demonstrably effective tools for stormwater management in NYC, allowing stormwater to be managed where it falls and reducing, filtering and/or slowing the amount of stormwater entering the City's sewer system.

In NYC, SMPs are reducing Combined Sewer Overflows (CSOs), decreasing the amount of polluted stormwater runoff entering waterbodies, and increasing capacity within City infrastructure. When coupled with vegetation or other siting goals, SMPs provide benefits beyond stormwater management: increased urban greening, reduced urban heat island, minimized urban flooding, and improved habitats for birds and pollinators.

The Unified Stormwater Rule brings together two DEP stormwater regulation programs: Site/House Connection Proposal Certification and Stormwater Construction/Stormwater Maintenance Permitting ("Stormwater Permitting"). This unification allows applicants and designers to approach projects with a clear understanding of the individual permit objectives and the technical requirements for compliance. It also, for the first time, creates a consolidated technical approach for applicants that seek to implement SMPs to meet both application objectives.

This NYC SWM provides the technical guidance necessary for compliance with the Unified Stormwater Rule, providing the core benefits summarized below:

- Consistent approach to water quality and sewer operation objectives across combined sewer system (CSS) and Municipal Separate Stormwater Sewer System (MS4) areas;
- A retention-first SMP hierarchy that requires a feasibility assessment of implementation of retention-based practices to reduce the amount of stormwater entering City sewers and to maximize SMP benefits;
- Increased on-site detention requirements to reduce loading rates on City sewers; and
- Prioritization of green, vegetated SMPs to provide co-benefits to NYC residents and to align with the sustainable roofing requirements of the Climate Mobilization Act of 2019.

This chapter provides more information on NYC's stormwater management regulatory framework, the purpose and scope of this Manual, and an overview of the other chapters and technical guidance included.

2. Background

Like other ultra-urban cities, NYC is faced with increasing challenges from managing stormwater runoff from impervious surfaces. Unmanaged stormwater runoff overburdens the City's sewer system and wastewater resource recovery facilities, contributes to CSOs and increases pollutant loads into receiving waterbodies. Development offers an opportunity to improve on-site stormwater management on properties that were developed at a time when stormwater management best practices were not well-understood or widely implemented and current stormwater management regulations were not yet in place.

The NYC Charter gives DEP authority over and responsibility for the city's drainage plan and stormwater management. Through DEP approval of sewer certifications (approval that the city sewer can accept the development's proposed discharge) and subsequent sewer connection permits (authorization to connect to a sewer), DEP limits the flow from developed lots to ensure adequate capacity in the sewer system. NYC's 2012 house/site connection stormwater rule had the goal of reducing the adverse impacts on City sewers from runoff during rainstorms more severe than combined sewers are designed to handle. Sewer overflows, floods, and sewer backups can occur when excessive stormwater from impervious surfaces enters the sewer system too quickly.

The 2012 rule set forth a new performance standard, which applied to development in combined sewer areas of the City, allowing the City to more effectively manage stormwater runoff by prescribing standards for the permitting, construction and inspection of sewer connections to the City's combined sewer system. The revised performance standard provided a mechanism to reduce peak discharges to the city's sewer system during rain events by requiring greater on-site storage of stormwater runoff and slower release to the sewer system.

DEP, pursuant to the MS4 permit the NYS Department of Environmental Conservation (NYSDEC) issued to the City in 2015, is also responsible for administering a construction/post-construction program equivalent to the state's NYS SPDES General Permit for Stormwater Discharges from Construction Activity. Through approval of Stormwater Construction and Stormwater Maintenance permits, including approval of Stormwater Pollution Prevention Plans (SWPPPs) for all applicable construction projects, DEP requires owners and developers to implement measures in the MS4 areas of the City to reduce pollution in stormwater runoff from developments with the goal of protecting and improving water quality in the City's waterbodies.

NYC's 2017 stormwater rule required stormwater management controls for construction projects to reduce the flow of stormwater runoff and water borne pollutants into sewers that empty directly into the waters of the state or that overflow into such waters because of rain or snowmelt events that exceed the design capacity of wastewater resource recovery facilities. The revisions to that rule incorporated in the Unified Stormwater Rule will extend citywide DEP's permitting, inspection, and enforcement program, including requirements for construction and post-construction stormwater controls and standards for such controls.

Specifically, the Unified Stormwater Rule brings together and updates these existing stormwater management requirements by:

- Increasing on-site stormwater detention requirements and updating release rate requirements for CSS and establishing new release rate requirements for MS4 areas for Sewer Certification and Sewer Connection Permitting;
- Expanding the Stormwater Permitting requirements citywide to include CSS areas; reducing the soil disturbance threshold from 1 acre to 20,000 square feet; adding the creation of 5,000 square feet of impervious area as an additional trigger; and including covered maintenance activities as a trigger;

- Requiring a retention-first approach to SMP design for Stormwater Permitting requirements; and
- Providing a clear technical path for using SMPs constructed under Stormwater Permitting requirements to satisfy requirements for SMPs under Sewer Certification and Sewer Connection Permitting.

Users of this manual are encouraged to review Chapters 31 and 19.1 of Title 15 of the Rules of the City of New York for the requirements of the Unified Stormwater Rule.

3. Manual Purpose and Scope

The NYC SWM provides a comprehensive overview of NYC stormwater management requirements, and design guidance for developers of and design professionals on projects that must comply with the requirements of the DEP Sewer Certification/Sewer Connection Permitting and Stormwater Permitting. The intent of the SWM is to provide a clear and consolidated approach for meeting stormwater management requirements that, when followed, results in successful and streamlined project implementation. However, please note that while the water quality criteria presented in the NYC SWM align with water quality criteria of NYSDEC SWMDM, meeting the NYC SWM criteria does not obviate the need for a full review of and compliance with all NYSDEC SWMDM requirements, as applicable.

The SWM replaces the Guidelines for the Design and Construction of Stormwater Management Systems (2012), the Criteria for Detention Facility Design (2012), and the NYC Stormwater Design Manual (2018). In addition, this SWM provides the information needed to complete and submit applications for Stormwater Permits in NYC. Application guidance and materials for Sewer Certification and Sewer Connection Permitting are not a part of this manual and are available on DEP's website https://www1.nyc.gov/site/dep/about/sewer-connections.page.

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Table 1.1 Chapters in this SWM and the purpose of each.

Chapter	Purpose
Chapter 1 Introduction	Provides an overview of the NYC Stormwater Manual and the Sewer Certification/Sewer Connection Permitting and Stormwater Permitting Programs.
Chapter 2 Stormwater Management Requirements	Details NYC stormwater management requirements and how to determine applicability.
Chapter 3 City Development & Review Process	Provides an overview of the review process for projects that trigger either Sewer Certification/Sewer Connection Permitting or Stormwater Permitting or both and step-by-step instructions for submitting projects that trigger Stormwater Permitting Program.
Chapter 4 Stormwater Management Practice (SMP) Selection & Design	Defines SMP types and functionalities and provides guidance on how to select and design an appropriate SMP.
Chapter 5 Post-Construction Stormwater Management Requirements	Provides SMP operation and maintenance procedures and requirements for Stormwater Maintenance Permits.
Chapter 6 Right-of-Way Stormwater Management Requirements	Provides guidance for right-of-way covered development projects that trigger Stormwater Construction Permits.
Appendix A Stormwater Management Practice Hierarchy Checklist	Lists SMPs by implementation tier, function type, and practice type and indicates which constraints would impact SMP feasibility. Also indicates which SMPs can be used toward sewer operations criteria.
Appendix B Nitrogen No-Net-Increase Calculator Guide	Provides an example for NYC MS4 No-Net Increase Calculator for Nitrogen.
Appendix C Stormwater Management Practice Siting Criteria	Provides SMP siting criteria for on-site projects.
Appendix D Stormwater Management Practice Sizing Examples	Provides example SMP sizing calculations for each practice function.
Appendix E Site Design Example	Provides an example design for an entire site.
Appendix F Controlled-Flow Pump Workbook	An Excel-based workbook, which includes a template for controlled-flow pump calculations and a design example.
Appendix G Detention in Series Workbook and Examples	An Excel-based workbook available to assist designers with detention in series calculations.
Appendix H Right-of-Way Guidance Materials	Supplemental guidance materials referenced in Chapter 6.

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4. Stormwater Management Requirements

The Unified Stormwater Rule links and enhances two previously unconnected rules. The first rule aims to improve water quality through a Stormwater Construction Permitting program. The second rule aims to manage flow rates in City sewers through a Site/House Connection Proposal Certification program. Together, these rules and permits make up the Unified Stormwater Rule, as further described in this Manual. Between the two rules, there are a total of five stormwater management requirements that may apply to projects in NYC. In addition to bringing these requirements under one umbrella, the Rule updates several requirements to help meet the City's stormwater management goals.

This chapter will cover the applicability of each permit (Section 2.1), the applicability of requirements within those permits (Section 2.2), the criteria for meeting each requirement (Section 2.3), and the requirements for geotechnical investigations (Section 2.4).

4.1. Permit Applicability

Stormwater Construction Permit

In accordance with Chapter 19.1 of Title 15 of the Rules of the City of New York, the Stormwater Construction Permit applies to all covered development projects. A covered development project is any development in New York City, public or private, that meets one or more of the following criteria:

- Disturbs 20,000 sf or more of soil; OR
- Creates 5,000 sf or more new impervious area OR
- Is a covered maintenance activity

Covered maintenance activities apply only to Right-of-Way projects. For discussion of Right-of-Way projects, refer to Chapter 6.

There are several types of activities that are not considered covered development projects per Chapter 19.1 of Title 15 of the Rules of the City of New York. Examples of projects not considered covered development projects are listed below, but readers should refer to the rules noted above for the most up-to-date list of exclusions and definitions:

- Routine maintenance activities.
- Emergency activities that are immediately necessary for the protection of life, property, or natural resources.

Soil Disturbance

Disturbed area is the area of soil disturbed by development activities, such as building, demolition, renovation, replacement, restoration, rehabilitation, or alteration of any structure or road; or land clearing, land grading, excavation, filling or stockpiling.

Activities that do not disturb soils, such as interior renovations, and surface markings of paved areas, are not considered in the estimation of disturbed areas.

There are two important clarifications to consider when determining the disturbed area. First, all soil disturbances, even those outside the bounds of the developed property, are counted as part of the disturbed area. Second, if an individual project disturbs less than the soil disturbance threshold but is part of a larger common plan of phased development or sale that will exceed the soil disturbance threshold, the individual project is also considered a covered development project.

Impervious Area

An **impervious surface** is any surface that cannot effectively infiltrate rainfall: generally, impervious hardscapes such as rooftops, pavements, sidewalks, and driveways. Impervious surfaces can also include miscellaneous structures such as patios, pools, and sheds. In addition, pervious hardscapes such as gravel roadways, parking lots, driveways, and sidewalks are also considered impervious surfaces unless a geotechnical investigation indicates that the permeability rate of underlying soils is sufficient for reducing runoff. More specifically, underlying soils must have a permeability rate of at least 0.5 in/hr.

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An increase (or decrease) in impervious area is calculated as the difference in total impervious area from pre-to-post development. The pre-development case must represent the least amount of impervious surface for the disturbed area within the last 5 years prior to proposed development. When possible, photos, plans, and/or satellite images should be used to determine the appropriate pre-development impervious area.

House/Site Connection Proposals

In general, house or site connection proposals are required when one or more of the following are true:

- Project proposes a new sewer connection
- DOB requires a house or site connection proposal
- Applicant agency's process requires a house or site connection proposal

Readers are encouraged to refer to Chapter 31 of Title 15 of RCNY for the latest details on when house and site connection proposals are required.

For projects that require a house or site connection proposal, the house connection proposal (HCP) shall be used for 1-3 family (fee simple) residential homes that do not meet the definition of covered development project. All other projects shall use a site connection proposal (SCP).

Before proceeding to the specific requirements of each permit, it is worth noting that the criteria set forth in the Unified Stormwater Rule supersede the 2012 NYC Stormwater Rule and the 2012 NYC BWSO Criteria for Detention Facility Design.

In all other cases, the Unified Stormwater Rule does not obviate the need for compliance with any existing city, state, or federal permit that may be otherwise required for the covered development project. The owner is responsible for identifying and complying with all other rules applicable to that development activity, including, but not limited to, any applicable NYC DOB construction code regulations.

5. Permit Requirements

For projects that require a Stormwater Construction Permit, a stormwater pollution prevention plan (SWPPP) must be prepared that meets up to four stormwater management requirements:

- **Erosion and sediment control (ES)** – aims to minimize the discharge of pollutants during construction activities.
- **Water quality (WQ)** – aims to manage runoff from small, frequent storm events that can significantly impact the quality of receiving waters in both MS4 and CSS areas.
- **Runoff reduction (RR)** – aims to maintain a minimum level of runoff reduction during small storms to preserve natural hydrologic functions.
- **No net increase (NNI)** – aims to reduce pollutants of concern in MS4 areas that discharge to an impaired waterbody.

For projects that require a House/Site Connection Proposal, the proposal must meet the following stormwater management requirement:

- **Sewer operations (Vv)** – aims to manage runoff from larger storm events to maintain optimal flow rates in the City's sewer system and, in turn, improve overall sewer operations.

The applicability of each stormwater management requirement is shown in Table 2.1; such applicability is based on several factors including soil disturbance area, new impervious area, activity type, sewershed type, receiving water body, and whether a house or site connection proposal is required. A brief description of how to determine the applicability of each requirement is provided in the following paragraphs.

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Table 2.1 Applicability criteria for each stormwater management requirement.

SMR	Applicable Projects
Erosion & Sediment Control (ESC)	Covered development project
Water Quality (WQ)	Covered development project Except for activities listed in Table 2.2
Runoff Reduction (RR)	Covered development project Except for activities listed in Table 2.2
No-net Increase (NNI)	Project area of 20,000 sf or more AND Project located in MS4 area AND Discharges to an impaired water body AND Increases impervious area
Sewer Operations (Vv)	Project requires a house connection proposal OR Project requires a site connection proposal

The ESC requirement applies to all covered development projects. The WQ and RR requirements apply to all covered development projects that are not listed in Table 2.2. While not exhaustive, a list of typical development projects that require WQ and RR requirements is included in Table 2.3.

In the case of highly complex projects, such as those with irregular site conditions, significant drainage areas, complex drainage systems, or complex SMPs, additional criteria or submittals not described in this Manual may be required at the discretion of DEP.

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Table 2.2. Covered development projects that require the preparation of a SWPPP that includes only erosion and sediment control (ESC) requirements.

Covered Development Activity
Installation of underground, linear utilities such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
Pond construction
Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
Cross-country ski trails and walking/hiking trails
Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
Slope stabilization projects
Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
Spoil areas that will be covered with vegetation
Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that alter hydrology from pre- to post-development conditions,
Athletic fields (natural grass) that do not include the construction or reconstruction of impervious area and do not alter hydrology from pre to post development conditions
Demolition project where vegetation will be established, and no redevelopment is planned
Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with impervious cover
Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete
Road reconstruction projects where the total soil disturbance from all activities is less than 1-acre

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Table 2.3. Covered development projects that require the preparation of a SWPPP that includes ESC requirements, as well as WQ and RR requirements.

Covered Development Activity
Single family home directly discharging to one of the impaired segments listed in Appendix 2 of the MS4 Permit
Single family home that disturbs five (5) or more acres of land
Single family residential subdivisions directly discharging to one of the impaired segments listed in Appendix 2 of the MS4 Permit
Single family residential subdivisions Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
Airports
Amusement parks
Breweries, cideries, and wineries, including establishments constructed on agricultural land
Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or alter the hydrology from pre to post development conditions
Commercial developments
Churches and other places of worship
Golf courses
Institutional development; includes hospitals, prisons, schools and colleges
Industrial facilities; includes industrial parks
Landfills
Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
Office complexes
Playgrounds that include the construction or reconstruction of impervious area
Sports complexes
Racetracks; includes racetracks with earthen (dirt) surface
Road construction, including roads constructed as part of the covered development projects listed in Table 2.2
Road reconstruction, except as indicated in Table 2.2 when the total soil disturbance from all activities is less than 1-acre
Parking lot construction or reconstruction, including parking lots constructed as part of the covered development projects listed in Table 2.2
Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or alter the hydrology from pre to post development conditions
Athletic fields with artificial turf
Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with impervious cover, and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
All other covered development projects that include the construction or reconstruction of impervious area or alter the hydrology from pre to post development conditions, and are not listed in Table 2.2

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The NNI requirement is applicable only when all four of the following conditions are met:

- Disturbed area is 20,000 sf or more[2]
- Project is located in an MS4 area
- Project discharges to an impaired waterbody, and
- Project results in an increase in impervious area.

A project is **located in the MS4 area** if stormwater drains from the project to surface waters through a separate storm sewer, high-level storm sewer, or bluebelt owned or operated by the City that is connected to either an MS4 outfall or combined sewer overflow (CSO) outfall downstream of a regulator. Projects involving NYC municipal operations and facilities where stormwater drains from the project directly to surface waters are also considered to be in the NYC MS4 area. Non-municipal projects that drain directly to surface waters follow separate guidance from NYSDEC (see https://www.dec.ny.gov/chemical/43133.html).

The MS4 Interactive Map (www.nyc.gov/dep/ms4map) is available to assist applicants in locating outfalls and drainage areas that are part of the NYC MS4 area. Applicants should recognize that all projects that require house/site connection proposal approval for connection to a DEP storm sewer are likely located in the MS4 area. The interface of the MS4 Interactive Map is shown in Figure 2.1 for illustrative purposes. However, readers should refer to the website for the latest maps and to help determine the sewershed status of their project.

An **impaired waterbody** is one that does not meet water quality standards for its intended use in accordance with the Clean Water Act. Impairments can be due to several pollutants of concern (POCs), including fecal coliform, garbage and refuse, phosphorus, and nitrogen. Impaired waterbodies in and around NYC are identified in Appendix I of the NYC MS4 Permit, which is provided in Table 2.4 for ease of reference.

[2] Except in ROW, where threshold is 1 acre or more. See Chapter 6 of this Manual.

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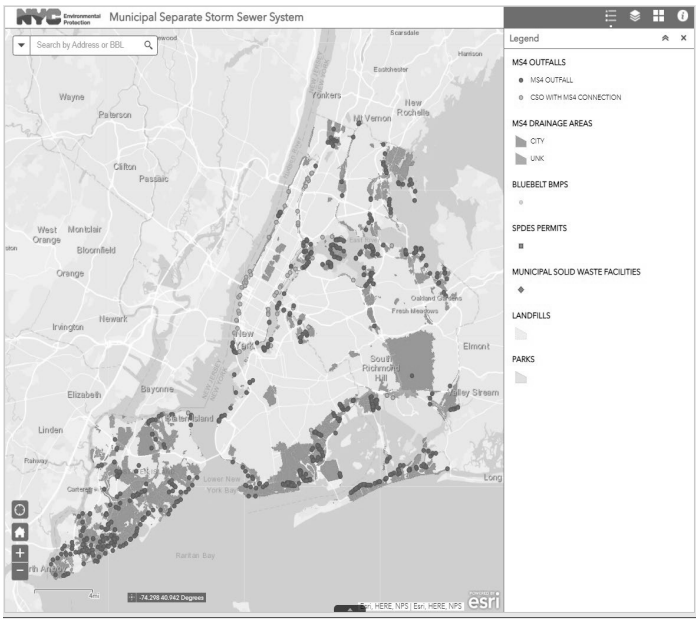
Figure 2.1. Interface of the MS4 Interactive Map for NYC.



8

Figure 2.2. Using the MS4 Interactive Map to identify impaired waterbodies in and around NYC.

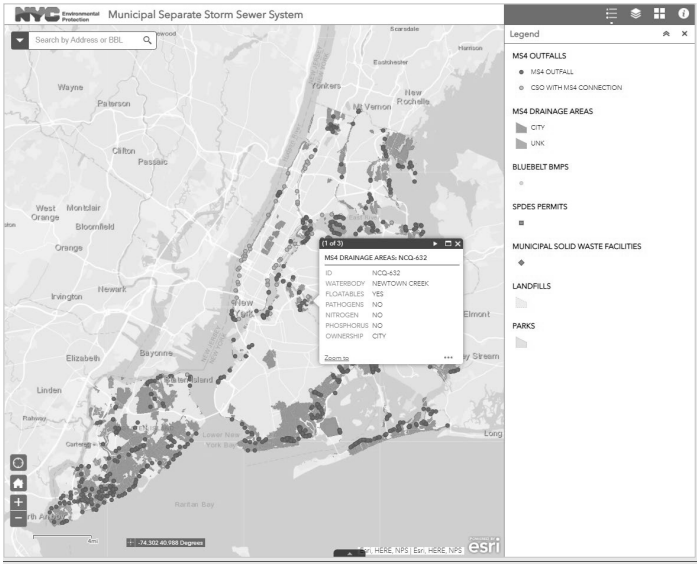


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Table 2.4. Impaired Water Segments and Pollutants of Concern in and Around NYC (Source: Final 2018 NYS 303(d) list, which is the basis for Appendix I of the pending renewal of the NYC MS4 Permit)

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Waterbody Name	Waterbody Identification Number (WIN)	Pollutant
Alley Creek/little Neck Bay Trib	(MW2.5) ER/LIS-LNB-19 thru 20	Fecal Coliform
Arthur Kill (Class I) and minor tribs	(MW1.2) SI (portion 1)	Garbage & Refuse
Arthur Kill (Class SD) and minor tribs	(MW1.2) SI (portion 2)	Garbage & Refuse
Atlantic Ocean Coastline	(MWO.O) AO (portion 1)	Fecal Coliform
Bergen Basin	(MW8.5a) JB-247	Fecal Coliform
Bergen Basin	(MW8.5a) JB-247	Nitrogen
Bergen Basin	(MW8.5a) JB-247	Garbage & Refuse
Bronx River, Lower	(MW2.4) ER-3	Fecal Coliform
Bronx River, Lower	(MW2.4) ER-3	Garbage & Refuse
Bronx River, Middle, and tribs	(MW2.4) ER-3	Fecal Coliform
Bronx River, Middle, and tribs	(MW2.4) ER-3	Garbage & Refuse
Coney Island Creek	(MW1.1) LB/GB-253	Fecal Coliform
Coney Island Creek	(MW1.1) LB/GB-253	Garbage & Refuse
East River, Lower	(MW2.1) ER (portion 1)	Garbage & Refuse
East River, Upper	(MW2.3) ER (portion 2)	Garbage & Refuse
East River, Upper	(MW2.3) ER (portion 3)	Garbage & Refuse
Flushing Creek/Bay	(MW2.5) ER-LI-12	Fecal Coliform
Flushing Creek/Bay	(MW2.5) ER-LI-12	Garbage & Refuse
Gowanus Canal	(MW1.3) UB-EB- 1	Garbage & Refuse
Grasmere Lake/Brady's Pond	(MW1.2) SI.P1039,P1051,P1053	Phosphorus
Harlem Meer	(MW2.2) ER..P1036	Phosphorus
Harlem River	(MW2.3) ER-1	Garbage & Refuse
Hendrix Creek	(MW8.6) JB-249a	Fecal Coliform
Hendrix Creek	(MW8.6) JB-249a	Nitrogen
Hendrix Creek	(MW8.6) JB-249a	Garbage & Refuse
Hutchinson River, Lower, and tribs	(MW3.2) LIS- 2	Garbage and Refuse
Jamaica Bay, Eastern, and tribs (Queens)	(MW8.5b) JB	Fecal Coliform
Jamaica Bay, Eastern, and tribs (Queens)	(MW8.5b) JB	Nitrogen
Jamaica Bay, Eastern, and tribs (Queens)	(MW8.5b) JB	Garbage & Refuse
Kill Van Kull	(MW1.2) SI (portion 4)	Garbage & Refuse
Kissena Lake	(MW2.5) ER-LI-12-P76	Phosphorus
Little Neck Bay	(MW2.5) ER/LIS-LNB	Fecal Coliform
Meadow Lake	(MW2.5) ER-LI-12-100a	Phosphorus
Mill Basin and tidal tribs	(MW8.6a) JB-250b	Garbage & Refuse
Newark Bay	(MW1.2) SI (portion 3)	Garbage & Refuse
Newtown Creek and tidal tribs	(MW2.1) ER- LI- 4	Fecal Coliform
Newtown Creek and tidal tribs	(MW2.1) ER- LI- 4	Garbage & Refuse
Paerdegat Basin	(MW8.6a) JB-250a	Garbage & Refuse
Prospect Park Lake	(MW8.6a) JB-P0009	Phosphorus
Raritan Bay (Class SA)	(MW1.2) RB (portion 1)	Fecal Coliform
Shellbank Basin	(MW8.5a) JB-248a	Nitrogen
Spring Creek and tribs	(MW8.5a) JB-249	Garage & Refuse
The Lake in Central Park	(MW2.2) ER..P1029	Phosphorus
Thurston Basin	(MW8.5a) JB-241a	Fecal Coliform
Thurston Basin	(MW8.5a) JB-241a	Garbage & Refuse
Van Cortlandt Lake	(MW2.3) ER-1-5-P1043	Phosphorus
Westchester Creek	(MW2.4) ER-4	Garbage & Refuse
Willow Lake	(MW2.5) ER-LI-12-100f	Phosphorus

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A three-step flowchart was created to further assist readers in determining which requirements and procedures are applicable to their projects (Figure 2.3). Each step is described further in the following paragraphs.

Step 1 of the flowchart asks a series of questions to help determine the applicability of the ESC, WQ, RR and NNI requirements.

Step 2 of the flowchart asks a series of questions to help determine the applicability of the sewer operations criteria.

Readers are again encouraged to refer to Chapter 31 of Title 15 of RCNY for the latest details on when HCP and SCP are required.

Finally, step 3 of the flowchart shows readers where they can find details on the requirement criteria, submittal process, and design criteria for each applicable stormwater management requirement.

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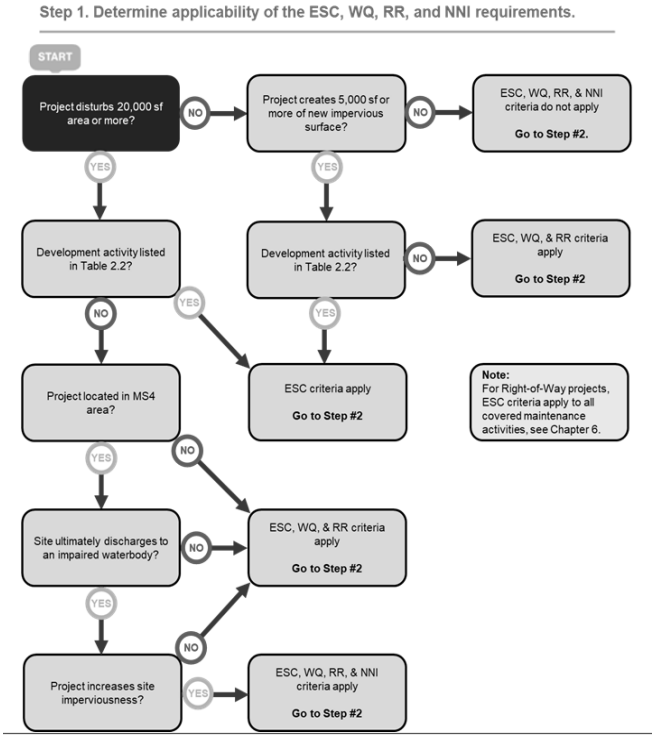
Figure 2.3. Flowchart to help determine applicable stormwater management requirements and procedures.



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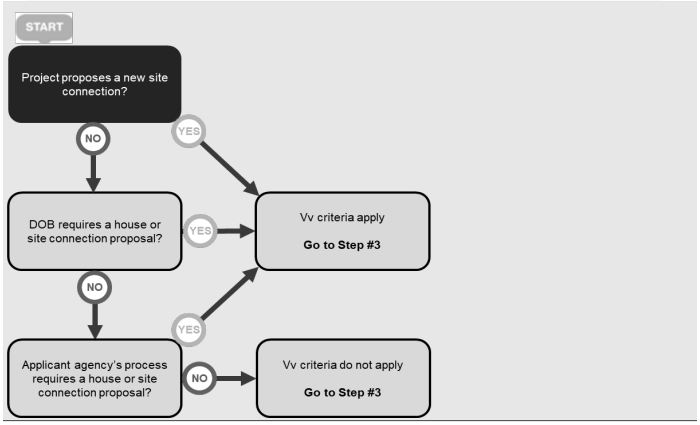
Step 2. Determine applicability of the sewer operations requirement.



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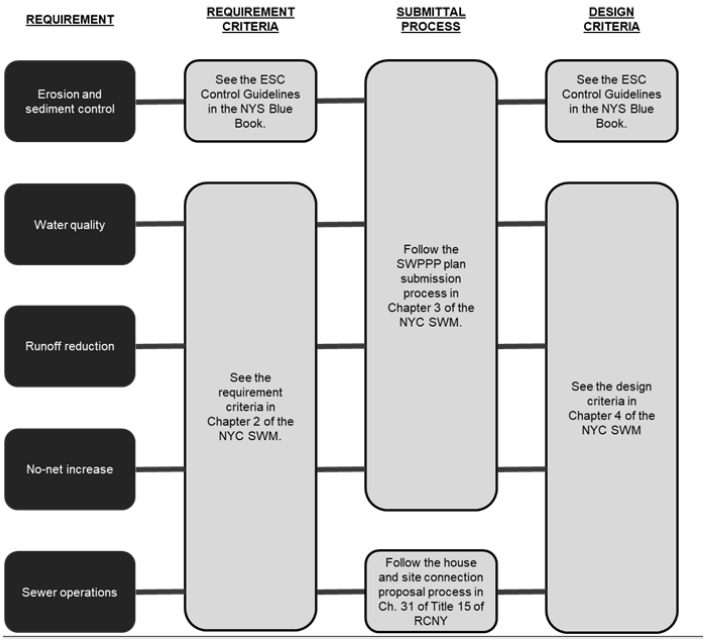
Step 3. Identify procedures for the applicable requirements.



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6. Requirement Criteria

This subsection outlines the specific criteria that must be met for each stormwater management requirement applicable to a project.

7. Erosion and sediment criteria

Erosion and sediment control (ESC) refers to stormwater management practices (SMPs) that are designed to minimize the discharge of pollutants during construction activities.

ESC measures can include, but are not limited to, structural controls (e.g., sediment barriers), intentional sequencing of construction to minimize exposed soils, soil stabilization measures, dewatering control measures, and other pollution prevention and good housekeeping (PPGH) measures that are appropriate for construction sites.

All covered development projects must implement ESC measures in accordance with the NYS Standards and Specifications for Erosion and Sediment Control (The Blue Book), dated November 2016 (https://www.dec.ny.gov/chemical/29066.html).

The WQ criterion is met by managing runoff from the applicable small storm design event. NYS DEC defines this design event as the 90th percentile rain event. In New York City, the 90th percentile rain event is 1.5 inches of rainfall (Figure 4.1 of the NYS SWMDM).

The volume of runoff from the 90th percentile rain event, which must be managed by SMPs, is also referred to as the water quality volume (WQ_v). The following equation can be used to calculate the WQ_v:

EQ2.1:

$$WQ_V = \frac{1.5"}{12} * A * R_V$$

where:

WQ_v: water quality volume (cf)

A: contributing area (sf)

R_v: runoff coefficient relating total rainfall and runoff

R_v: 0.05 + 0.009(I),

I: percent impervious cover

8. Water quality criteria

The water quality (WQ) requirement aims to manage runoff from small, frequent storm events that can significantly impact the quality of receiving waters in both MS4 and CSS areas.

In MS4 areas, runoff from these events tends to contain higher pollutant levels. Therefore, retention and treatment of small storm runoff in MS4 areas help to remove those pollutants and, in turn, improve WQ.

In CSS areas, these events trigger the majority of CSO events. Therefore, retention and detention of small storm runoff in CSS areas helps to reduce CSOs and, in turn, improves water quality.

The SWPPP must show how the WQv is managed at the practice and site levels. This requirement means that the contributing area, runoff coefficient, and WQv must be determined for each individual practice – and that, in total, the practices must manage the WQv across the entire site. It is also important to note that the contributing area includes all tributary areas, even those which may be outside the covered development project area.

SMPs used to meet WQv must be selected in accordance with the SMP hierarchy (Section 4.2). Refer to Chapter 4 for details on the sizing and design of SMPs.

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9. Runoff reduction criteria

The runoff reduction (RR) requirement aims to maintain a minimum level of RR during small storms in order to preserve natural hydrologic functions. Runoff is considered reduced when it is retained by SMPs for infiltration, evapotranspiration, or reuse. Ideally the entire WQv will be reduced by SMPs when the SMP hierarchy is followed (Section 4.2), however if site constraints are such that reducing the entire WQv is not possible, the application must demonstrate that the minimum RRv has been met.

In no case shall the runoff reduction volume (RRv) of SMPs be less than the minimum RRv resulting from the newly constructed impervious areas, determined by the following equation:

EQ2.2:

$$RR_V = \frac{1.5"}{12} * 0.95 * Aic * S$$

where:

Aic: total area of new impervious cover (sf)

S: specific reduction factor, see Table 2.5

Sites that meet the WQv using only retention practices will, by default, also meet the RR criteria. All other cases must check that the RR criterion is met.

The specific reduction factor used to calculate RRv will depend on the hydrologic soil group (HSG) of soils underlying the project site, as defined in Part 630 of the National Engineering Handbook (NRCS 2007). As indicated in the handbook, there are four HSG categories based on saturated hydraulic conductivity, depth to water impermeable layer, and/or depth to high water table. Designers may classify soils based on results of the geotechnical investigation or refer to the NRCS web soil survey for data on HSGs by location.

Changes in the specific reduction factor for each HSG reflect differences in the underlying soils' ability to infiltrate water. Refer to table 2.5 for specific reduction factor values by category.

Table 2.5. Specific reduction factors based on hydrologic soil group (HSG).

S	Description
0.55	HSG-A
0.40	HSG-B
0.30	HSG-C
0.20	HSG-D

The total area of new impervious cover (Aic) is determined by comparing the total area of impervious surfaces for the project from pre-to-post development. The pre-development case must represent the least amount of impervious surface for the covered development project within the last 5 years prior to proposed development. Section 2.1 includes definitions of impervious surfaces and suggested resources for selecting the appropriate pre-development case.

In most cases, using the SMP hierarchy (Section 4.2) to meet the WQ requirement, will also result in the project meeting the RR requirement. Refer to Chapter 4 for details on the sizing and design of SMPs.

10. No net increase criteria

The NNI requirement aims to reduce POCs in MS4 areas that discharge to an impaired waterbody. POCs can include:

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- Pathogens[3] – disease-producing agents such as bacteria, viruses, or other microorganisms
- Floatables[4] – manmade materials such as plastics, papers, or other products, which have made their way to a waterbody
- Phosphorus – a nutrient that can lead to algae blooms that deplete oxygen in the water, which can kill aquatic life
- Nitrogen – another nutrient that can lead to algae blooms that deplete oxygen in the water, which can kill aquatic life

Pathogens

Pathogens are disease-producing agents such as bacteria, viruses, or other microorganisms. Most pathogens found in stormwater runoff are from human and animal fecal matter. The presence of fecal indicator bacteria, such as fecal coliform, can provide evidence of fecal contamination and the potential presence of pathogenic organisms.

To meet the NNI requirements for pathogens, BMPs must be implemented as provided in the post-construction O&M manual to mitigate potential sources of pathogens present at the developed site. Table 2.6 lists examples of BMPs that may address pathogen sources per land use. This list is not exhaustive or prescriptive, and applicants may propose additional BMPs to mitigate site-specific pathogen sources.

The NYS SWMDM contains provisions for floatables control in the design of SMPs. These provisions include pretreatment, settling or filtration, outlet controls and maintenance that will effectively capture and remove floatables and settleable trash and debris prior to discharge.

To meet the NNI requirements for floatables, refer to Chapter 4 of the NYS SWMDM to determine the required garbage and refuse removal features of post-construction SMPs.

Phosphorus

Phosphorus is a nutrient that is a natural part of aquatic ecosystems and supports the growth of algae and aquatic plants. However, excess phosphorus can cause nuisance algae blooms and aquatic weed growth, which reduces water clarity and dissolved oxygen (DO) and can harm aquatic life. Sources of phosphorus include lawn/plant fertilizer, illicit discharges of sanitary waste, pet and wildlife waste, and leaves, branches, and grass clippings.

Part II.B.1.b.ii of the NYC MS4 Permit states, "For phosphorus-limited waterbodies, compliance with Chapter 10 of the NYS SWMDM (January 2015) will satisfy the No Net Increase requirement." To meet the NNI requirements for phosphorus, refer to Chapter 10 of the NYS SWMDM to design SMPs.

Floatables

Floatables are manmade materials, such as plastics, papers, or other products that, when improperly disposed of onto streets or into catch basins, can ultimately find their way to local waterbodies.

[3] The current NYS 303(d) list and Appendix I of the pending renewal of the MS4 Permit have replaced references to "pathogens" with "fecal coliform." Fecal coliform is a pathogen-related water quality parameter; see also Table 2.4 of this manual.

Nitrogen

Nitrogen is a nutrient that occurs naturally in aquatic ecosystems but can be harmful in high concentrations.

[4] The current NYS 303(d) list and Appendix I of the pending renewal of the MS4 Permit have replaced reference to "floatables" with "garbage and refuse." The meanings of the terms are analogous; see also Table 2.4 of this manual.

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Sources of nitrogen in stormwater are the same as those described above for phosphorus.

Projects in MS4 areas that discharge to nitrogen-impaired waters must provide calculations to demonstrate NNI in total nitrogen (TN) loading from existing conditions to post-development conditions. If the project will increase the TN load, excess nitrogen must be removed through the implementation of SMPs. Procedures for completing these calculations are detailed in Appendix B.

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Table 2.6. BMPs for pathogen removal by land use.

BMP	Source of Pathogen	Applicable Land Use
Install signs, distribute public education and outreach materials, and implement trainings to support pathogen reduction programs.	All	All
Inspect and clean areas where animal waste may be present (e.g., dumpsters, grease storage, waterfowl congregation areas, and dog parks).	Pets and Wildlife	All
Discourage free-range pets. Adopt rules within a development to pick up pet wastes. Offer bags and waste receptacles to make it easy for pet owners to pick up and dispose of waste products. Distribute educational materials and signage to support program.	Pets	Residential, Open Space & Outdoor Recreation, Commercial & Office Buildings (pet store, veterinarian)
Identify areas with high bird populations and evaluate deterrents, habitat modifications, and other measures.	Wildlife	Open Space & Outdoor Recreation, Residential (common areas in a development), Vacant Lots
Reduce food sources accessible to urban wildlife (e.g., manage restaurant dumpsters/grease traps and residential garbage).	Wildlife	Residential, Commercial & Office Buildings (restaurants, groceries), Public Facilities & Institutions, Industrial
Use latched or heavy-lidded trash containers to deter wildlife.	Wildlife	Open Space & Outdoor Recreation, Residential, Commercial & Office Buildings (restaurants, groceries), Public Facilities & Institutions, Industrial
Increase collections and waste disposal for private haulers.	Wildlife	Commercial & Office Buildings (restaurants, groceries)
Reduce attractive odors that may draw wildlife.	Wildlife	Residential, Commercial & Office Buildings (restaurants, groceries)
Introduce strategies to reduce food, shelter, and habitats for overpopulated urban wildlife.	Wildlife	All
Inhibit access to open water by managing vegetation growth, limit food sources-seeds, and discourage feeding wildlife, especially on impervious surfaces, near open water, or near practices that discharge directly to open waters. Provide educational materials to support program.	Wildlife	Open Space & Outdoor Recreation, Residential (common areas in a development)
Inspect and clean catch basins regularly and distribute educational materials to support program.	Wildlife	Residential, Commercial & Office Buildings, Parking
Monitor for illegal dumping into catch basins.	Human and Pet	All
Monitor illicit connections by tenants to storm sewer. Look for dry weather flows in storm sewer system.	Human	All
Minimize stormwater runoff that is directly connected to the system from impervious areas.	All	All
Clean main sewer line that connects to building, pump septic tank, or leaching pit. Pressure test or inspect sewer main or septic tank for leakage once every five years.	Human	Residential, Commercial & Office Buildings, Industrial, Public Facilities & Institutions
Locate portable toilets away from storm drains or open water.	Human	All (especially during construction and temporary public events)

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11. Sewer operations criteria

The sewer operations volume (Vv) requirement aims to manage runoff from larger storm events in order to maintain optimal flow rates in the City's sewer system and, in turn, improve overall sewer operations. Compliance with this requirement is usually achieved by detention practices, but some retention practices may also be used as part of the Unified Stormwater Rule and as clarified by this Manual (see Chapter 4).

There are two elements to the sewer operations criteria; a volume (V_v) that must be provided to temporarily store water – and a maximum release rate (Q_{DRR}) that must be maintained via flow control systems. This volume (Vv) is consistent with the stormwater management volume in Chapter 31 of Title 15 of RCNY, but will be referred to hereafter as the sewer operations volume for clarity in the context of this Manual. The two elements (Vv and Q_{DRR}) work in tandem to manage peak flow rates from the site. Please note that compliance with the sewer operations criteria does not obviate full review of and compliance with all NYSDEC SWMDM requirements, as applicable.

The rainfall depth (R_D) used to calculate V_V will vary based on sewershed type and connection proposal type for the project, as shown in Table 2.7. This variation in applied rainfall depth reflects the different operational goals between CSS and MS4 areas, as well as a reduction in requirements for small, residential lots that apply for HCPs. As before, the contributing area includes all tributary areas, even those which may be outside the disturbed area.

Table 2.7. Applied rainfall depth by sewershed type and connection proposal type.

R_D	Description
1.85	CSS areas with SCP
1.50	CSS areas with HCP
1.50	MS4 areas with SCP
1.10	MS4 areas with HCP

Consistent with previous Bureau of Water and Sewer Operations (BWSO) rules for the connections to the City's sewer, sites must manage the peak rate of runoff for the 10YR rainfall event. The following equation can be used to determine the sewer operations volume (Vv):

EQ2.3:

$$V_V = \frac{R_D}{12} * A * C_W$$

where:

V_V: sewer operations volume (cf)

R_D: rainfall depth (in)

A: contributing area (sf)

C_W: weighted runoff coefficient relating peak rate of rainfall and runoff

EQ2.4:

$$C_W = \frac{(C_1A_1 + C_2A_2 + \cdots etc.)}{A_t}$$

where:

C_W = weighted runoff coefficient relating peak rate of rainfall and runoff

C_1 = runoff coefficient for surface type 1

A_1 = area of surface type 1 (sf)

C_2 = runoff coefficient for surface type 2

A_2 = area of surface type 2 (sf)

A_t = total area (sf)

While there is no hierarchy for the selection of SMPs to meet the sewer operations criteria, the SMP hierarchy checklist (Appendix A) does include SMPs that can be used toward this goal. Refer to Chapter 4 for details on the sizing and design of SMPs.

In cases where two detention practices are proposed in series, the upstream detention system may reduce the effective C_W value used to determine Vv for the downstream system. Technical notes on the design of detention systems in series are provided in Section 4.11.

The second element of the sewer operations criteria, the maximum release rate, will also vary based on sewershed type. This variation again reflects the different operational goals between MS4 and CSS areas. Values for the maximum release rate per acre (q) are shown in Table 2.9 and defined in Chapter 31 of Title 15 of RCNY.

Table 2.9. Maximum release rate per acre (cfs/acre) by sewershed type.

all tributary areas, even those which may be outside the disturbed area.

12. Geotechnical investigation

An understanding of subsurface conditions is needed to determine the feasibility of using various SMP types.

This is illustrated by the SMP hierarchy in Section 4.2, which indicates the potential for soil and subsurface constraints to impact the selection of SMPs.

Therefore, unless otherwise directed by DEP, a limited geotechnical investigation is required to characterize subsurface conditions of the site. The limited geotechnical investigation shall include soil borings and permeability tests to, at a minimum, determine the following:

- Soil characteristics and texture
- Depth to groundwater (if encountered)
- Depth to bedrock (if encountered)
- Infiltration rate of soils at specified depths
- Any potential contamination concerns (if encountered)

The runoff coefficient is based on surface type, where values for common surfaces are provided in Table 2.8.

Table 2.8. C values for various surface types.

C	Surface Description
0.95	Roof areas
0.85	Paved areas
0.70	Green roof with 4 in. growing media
0.70	Porous asphalt/Porous Concrete[a]
0.70	Synthetic turf fields[a]
0.65	Gravel parking lot
0.30	Undeveloped areas
0.20	Grass, bio-swales, or landscaped areas

[a] Using a C value of 0.7 for the indicated surface types typically requires the use of an outlet pipe, with approval at the discretion of DEP.

In cases where the contributing area includes more than one surface type, the area weighted runoff coefficient across all surface types shall be used in the calculation of V_V, which may be calculated as follow:

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q (cfs/acre)	Description
1.0	MS4 areas
0.1	CSS areas

The maximum release rate per acre (q) can then be used to calculate the maximum release rate for the contributing area (Q_{DRR}) using the following equation:

EQ2.5:

$$Q_{DRR} = \frac{q\left(\frac{cfs}{acre}\right) * A(sf)}{43560(\frac{sf}{acre})} \text{ or } 0.046 \text{ [whichever is greater]}$$

Q_{DRR}: maximum release rate, site (cfs)

q: maximum release rate, per acre (cfs/acre)

A: contributing area (sf)

The equation above includes a conversion factor from square feet to acres. All house or site application proposals for the sewer operations criteria must be in units of square feet, not acres.

The maximum release rate must be maintained using flow control systems, such as an orifice or other controlled-flow device. Technical notes on the design of flow controls can be found in Section 4.10.

When the sewer operations requirement is applicable, projects must meet both the volume (Vv) and maximum release rate (Q_{DRR}) criteria. In addition, the proposal must show how the Vv and Q_{DRR} criteria are met at the practice and site level. Therefore, the contributing area, weighted runoff coefficient, and maximum release rate must be determined for each individual practice and, in total, the practices must meet the criteria across the entire site. It is also important to note that the contributing area includes

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Additionally, the designer must make a reasonable determination as to whether additional tests may be needed based on field conditions, such as soil textural classifications and the standard penetration tests. This determination is particularly critical in areas of fill soils where characteristics will vary greatly over small distances.

The owner is responsible for obtaining all applicable permits and approvals related to conducting the geotechnical investigation.

13. Procedures

Geotechnical investigations shall be conducted in accordance with the NYS SWMDM procedures (Appendix D: Infiltration Testing Requirements). The minimum number of soil boring and permeability tests, collectively referred to as B/PTs, is based on the footprint area of the proposed SMP, as follows:

- SMPs with areas less than 1000sf: at least one B/PT per SMP
- SMPs with areas of 1000sf or more, but less than 5000 sf: at least two B/PT per SMP
- SMPs with areas of 5000sf or more: at least two B/PTs plus an additional B/PT for every 5000 sf of SMP area

14. City Development and Review Process

Two DEP offices review NYC stormwater management permit applications. Bureau of Water and Sewer Operations (BWSO) reviews Site and House Connection Proposals and Bureau of Environmental Planning & Analysis (BEPA) reviews Stormwater Construction Permits. This chapter predominantly provides application guidance for projects that require a Stormwater Construction Permit and outlines the process through which applications will be submitted to and reviewed by DEP's BEPA. However, because some projects may trigger both permitting requirements, section 3.2 provides an overview of the joint review process in place for such projects. Prior to using Chapter 3, the applicant must review the stormwater regulations and project applicability requirements described in Chapter 2.

14.1. Projects that Require Site or House Connection Proposals Only

As noted above, this Chapter predominantly provides application guidance for projects that require a Stormwater Construction permit. For Site and House Connection Proposal applications and associated guidelines, see DEP's website:

https://www1.nyc.gov/site/dep/about/sewer-connections.page.

Refer to other chapters of this Manual for technical requirements and stormwater management practice (SMP) design guidance for projects that trigger a Site or House Connection Proposal.

15. Projects that Require both Site Connection Proposal and Stormwater Construction Permit

Some projects will require both a Site Connection Proposal and a Stormwater Construction Permit. For projects that trigger both requirements, this section outlines that process through which the applications will be reviewed by the respective bureaus responsible for enforcing the requirements and how the reviews will be coordinated. An applicant may submit the applications in any sequence or simultaneously, as appropriate to the project timeline. Two DEP offices (as noted above, BWSO for the Site Connection Proposal and BEPA for the Stormwater Construction Permit) will review these applications.

As part of the BWSO review process, the initial application for a sewer connection from the property is the Site Connection Proposal (SCP), and BWSO's acceptance of that proposal is the SCP Certification. The main DEP BWSO office at LeFrak in Queens issues the SCP Certification, though other BWSO offices may review and issue certifications, especially for House Connection Proposals, depending on the circumstances. The SCP Certification is required under all circumstances in which: (1) the applicant proposes a new connection, (2) DOB requires the certification, or (3) the applicant agency's process includes the requirement. Before making the physical site connection, applicants must also obtain a Sewer Connection Permit. BWSO's local offices issue the Sewer Connection Permits.

As part of the BEPA review process, the initial application for stormwater management compliance includes the Stormwater Pollution Prevention Plan (SWPPP), and BEPA's approval of that plan is known as SWPPP Acceptance. In addition to the SWPPP Acceptance, covered development projects must also obtain a Stormwater Construction Permit and a Stormwater Maintenance Permit from BEPA, as further detailed below.

For projects that require both the Site Connection Proposal and Stormwater Construction Permit, the Site Connection Proposal Certification, Sewer Connection Permit, SWPPP Acceptance, and Stormwater Construction Permit are inter-related as follows:

- The Site Connection Proposal Certification and SWPPP Acceptance are required before BEPA issues the Stormwater Construction Permit, which is required before a shovel goes into the ground.
- BWSO does not issue the Sewer Connection Permit until the connection to a City sewer is necessary. The Site Connection Proposal Certification includes a condition that BWSO will not issue the Sewer Connection Permit until the applicant obtains the Stormwater Construction Permit.
- BEPA will not issue a Stormwater Maintenance Permit until BWSO issues the Sewer Connection Permit.

Figure 3.1 illustrates how each submission, approval, and/or permit is inter-related. Overall, the order of the DEP process can be summarized in four steps:

Step 1 – Submit Site Connection Proposal and Stormwater Construction Permit Application/SWPPP, which may be done in parallel

Step 2 – Site Connection Proposal Certification and SWPPP Acceptance required for issuance of the Stormwater Construction Permit

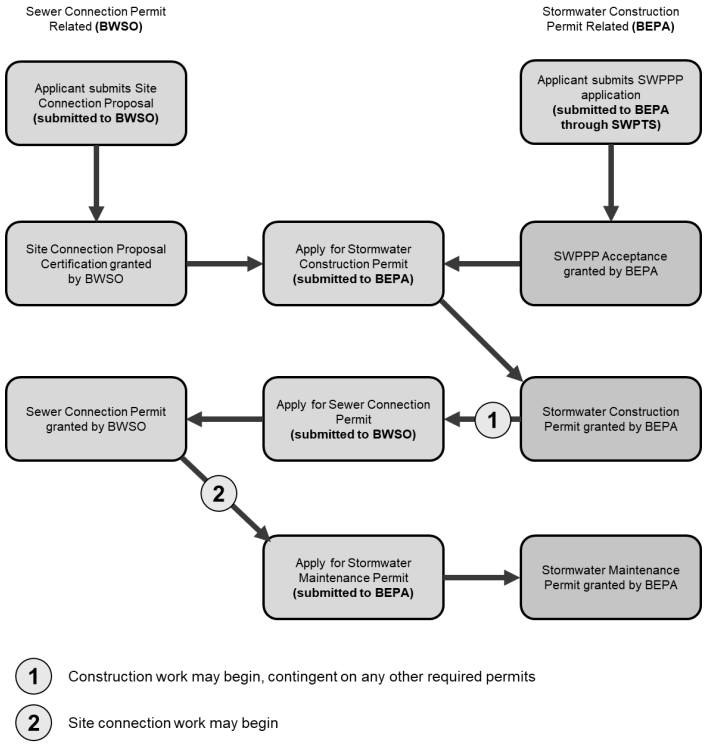
Step 3 – Stormwater Construction Permit required for construction to begin and for issuance of the Sewer Connection Permit

Step 4 – Sewer Connection Permit required for sewer connection work to begin and issuance of the Stormwater Maintenance Permit

For Site and House Connection Proposal applications and guidelines, see DEP's website https://www1.nyc.gov/site/dep/about/sewer-connections.page.

For projects that require a Stormwater Construction Permit, see section 3.3 for submittal requirements, review processes, and the Stormwater Permitting and Tracking System (SWPTS).

Figure 3.1. Flowchart outlining the inter-relation of BWSO and BEPA submissions, approvals, and permits.



16. Projects that Require Stormwater Construction Permit (All)

To simplify the submittal and approval process, DEP has created an online project application system, the Stormwater Permitting and Tracking System (SWPTS), (https://deppermits.microsoftcrmportals.com/), which will enable applicants to submit a SWPPP and Stormwater Construction Permit application, as well as to follow the status of DEP's review.

The SWPTS will allow DEP to confirm that each permit application meets the requirements for erosion & sediment control, water quality, runoff reduction, and no net increase, as applicable. The review time for the DEP SWPPP approval process is forty-five (45) days. Applicants should note that DEP Stormwater Construction Permits and DEP Stormwater Maintenance Permits issued under the requirements of Title 15, Chapter 19.1, do not obviate the need for obtaining any other existing city, state or federal permit that may be required for the covered development project.

A user-friendly template for SWPPP applications can be found on DEP's website www.nyc.gov/dep/stormwaterpermits. The template is an editable document file where text, tables, and figures can be added or removed as needed. In total, the template includes eight sections and 14 appendices, with instructions on what information is needed for each. For ease of reference, the following sections are included in the SWPPP template:

- Contact Information / Responsibilities
- Site Evaluation, Assessment, and Planning
- Erosion and Sediment Controls
- Construction Inspection
- Post Construction Stormwater Controls
- Certification and Notification

coverage under the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (CGP) for the covered development project.

As part of the SWPTS, DEP has identified roles and responsibilities for people involved with the development project, as provided below and in Table 3.1. While in some instances the roles and responsibilities may overlap, the following major roles are identified in the SWPTS and used throughout the following sections of this manual.

Owner – Owner of the property undergoing development is the individual, corporation, partnership, limited-liability company or other legal entity having legal title to premises, a mortgagee or vendee in possession, a trustee in bankruptcy, a receiver, or any other person having legal ownership or control of premises. Owners must certify that they are aware of the development activity and understand their role under RCNY Title 15 Chapter 19.1. The owner may also be the Developer.

Developer – Primary project contact, is the person who owns or leases land on which development activity that is part of a covered development project is occurring, or a person who has operational control over the development or maintenance activity's plans and specifications, including the ability to make modifications to the plans and specifications. Developers must certify that they have overseen the SWPPP development and that the project has been completed as designed. The Developer may also be the Owner.

Applicant – Fills in applications and uploads reports, plans and other documentation to the SWPTS.

- Retention of Records
- Required Drawings

For projects in MS4 areas, upon receiving DEP SWPPP Acceptance, the applicant may proceed to request

Qualified Professional (Construction) – Responsible for inspection and certification of installed SMPs. Qualified Professional (Construction), who typically works for the Developer, must certify that all SMPs have been constructed in accordance with the SWPPP.

Qualified Inspector – Responsible for inspection and certification that final stabilization has been achieved at the site. Performs weekly inspections of erosion and sediment control (ESC) practices. The Qualified Inspector, who typically works for the developer must certify that all ESC SMPs are constructed and removed in accordance with the SWPPP.

Contractor – Responsible for construction of project and implementation of SWPPP. Contractors must certify that they will agree to comply with the SWPPP as well as all applicable permits, including the NYC Stormwater Construction Permit and/or the CGP. The Contractor reports to the Developer.

Trained Contractor – Responsible for daily inspection, implementation and maintenance of ESC. Reports to Contractor and must be an employee of the Contractor.

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SWPPP Preparer – Must be a qualified professional. Creates the SWPPP for review and submittal to the SWPTS. The SWPPP Preparer, who typically works for the Developer, must certify that the SWPPP was prepared in accordance with RCNY Title 15 Chapter 19.1.

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Table 3.1. Roles and responsibilities in the SWPTS.

Role	Responsibility	Minimum Professional Registration/ Certification	Signoff/ Certification Required for Plan Approval/ Construction Permitting?	Signoff/ Certification Required for Construction Closeout/ Maintenance Permitting?
Applicant	Fills in application and uploads reports and plans to the SWPTS.	N/A	N/A	N/A
Contractor	Responsible for construction of project and implementation of SWPPP.	NYC DOB	Yes	N/A
Developer	Primary project contact, responsible for payments and project staff. May be the same entity as Owner.	N/A	Yes	Yes
Owner	Must provide permission for work to occur on property. May be liable for all fees and fines.	N/A	Yes	N/A
Owner/Developer	See 'Owner ' and 'Developer'.	N/A	Yes	Yes
Qualified Inspector	Responsible for w eekly (bi-weekly) inspections. Reports to Developer.	NYS PE or RLA or works under the direct supervision of same or CPESC.	N/A	Yes
Qualified Professional (Construction)	Responsible for inspection and certification of installed SMPs. Reports to Developer. May also serve as the SWPPP Preparer or Qualified Inspector.	NYS PE or RLA	N/A	Yes
SWPPP Preparer	Responsible for creating the SWPPP for review and approval. Works for Developer. May also serve as the Qualified Professional (Construction) or Qualified Inspector.	NYS PE, RLA or CPESC (E&SC Plan only)	Yes	N/A
Trained Contractor	Responsible for daily inspection, implementation and maintenance of ESC. Reports to Contractor and must be an employee of Contractor.	NYSDEC 4-hour ESC Class	N/A	N/A

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17. DEP SWPPP Submittal and Review Process

Figure 3.2 details, from start to finish, the complete DEP SWPPP submittal, review, and approval process for a covered development project. The responsible party for each step in the process is designated by color, with decision points for approvals and other actions noted accordingly.

As part of the SWPPP approval and stormwater construction permitting process, all users will be required to register in the SWPTS to use the system. Users include the owner, applicant, developer, contractor, etc. Each responsible party will be required to provide requested information in the SWPTS to be able to submit an application and receive DEP approval.

and/or the submittal and review process. For additional information and answers to frequently asked questions, SWPPP preparers and applicants can:

- Visit the DEP SWPTS website at https://deppermits.microsoftcrmportals.com/
- Email the DEP SWPPP Review and Inspection Staff at stormwaterpermits@dep.nyc.gov

SWPPP preparers and applicants may request discussions with DEP to address site challenges and proposed innovative stormwater management approaches. Each project will be assessed on a case-by-case basis to determine if the concerns require an in-person meeting. All questions or requests for in-person meetings should be emailed to stormwaterpermits@dep.nyc.gov.

An in-depth, step-by-step description of the process is provided in Section 3.5. DEP encourages SWPPP preparers, developers, and applicants to read Chapter 3 in its entirety to understand the entire submittal and review process along with the associated requirements and decision points. During development of the SWPPP, SWPPP preparers, developers, and applicants should also review Chapters 2 and 4 and make sure they understand what is required in order to develop a SWPPP that will obtain DEP approval.

Parties requesting an in-person meeting will need to provide a project description, preliminary site plan, a description of the issues/concerns that need to be discussed and three (3) preferred dates and times to meet with DEP within two (2) weeks of the meeting request submittal. DEP staff will determine the final meeting date and time based on availability.

18. Electronic Submissions

The SWPPP and all associated application information must be submitted electronically using the SWPTS. All required information except for the SWPPP document itself will be entered directly into the SWPTS using the online input forms. The complete SWPPP, including all drawings and associated materials, must be uploaded into the SWPTS as a pdf. If issues arise during the upload of the SWPPP document, contact NYCSWPTSAdmin@dep.nyc.gov to request direction on how to submit the application.

19. Contacting DEP Staff

DEP encourages SWPPP preparers and applicants to contact the DEP SWPPP Review and Inspection Team for assistance at any point during development of the SWPPP

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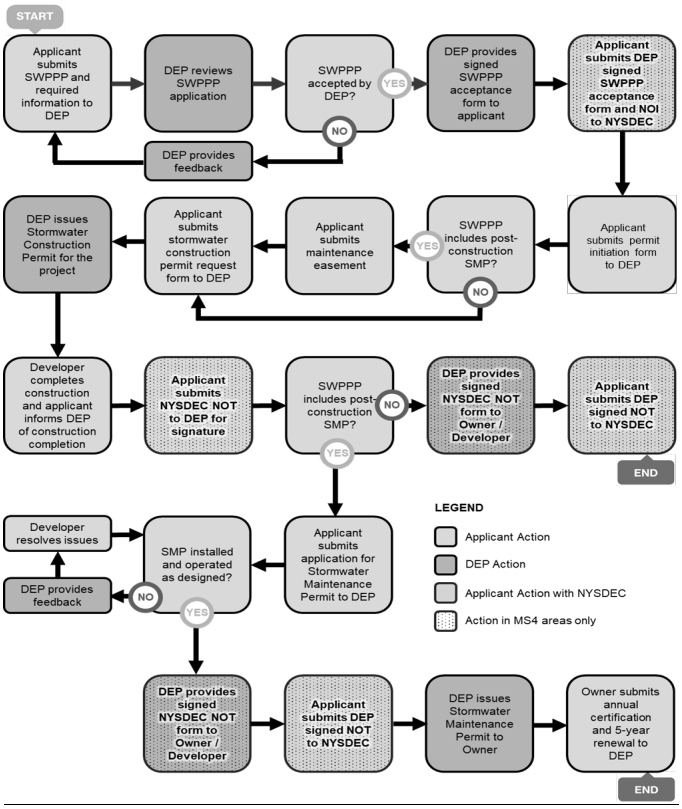
Figure 3.2 Detailed NYC Stormwater Permit Submission, Review, and Approval Process.



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20. SWPPP Submission, Review and Approval Details

The following sections provide detailed information about the specific phases of the DEP SWPPP submittal and approval process shown in Figure 3.2.

21. SWPPP Submission Materials

To begin the DEP submittal and approval process, the applicant for the covered development project must:

- Complete the online application in the SWPTS;
- Upload a complete SWPPP in the SWPTS; and
- Pay the associated permit fees.

22. SWPPP Acceptance

If DEP disapproves the submitted SWPPP application, as shown in Figure 3.3, it will provide the applicant with a notice identifying the deficiencies within the SWPPP that will need to be addressed in order to obtain DEP approval. A new application will then have to be submitted to DEP for review and approval.

If DEP approves the submitted SWPPP application, DEP will provide the applicant with a signed SWPPP Acceptance Form for the project. For projects in MS4 areas, the applicant then includes the signed SWPPP Acceptance Form with the NYSDEC Notice of Intent (NOI) when applying to obtain coverage for the proposed project under the CGP.

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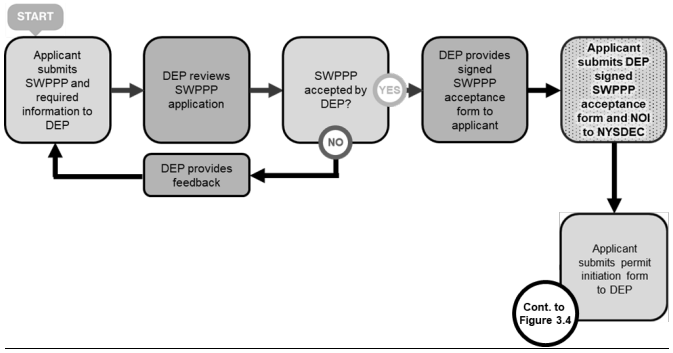
Figure 3.3. SWPPP Acceptance Decision Point



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23. SWPPPs without Post- Construction SMP(s)

If the SWPPP does not require a post-construction SMP, the Permit Initiation Form may be submitted in the SWPTS without a stormwater maintenance easement, as shown in Figure 3.4.

DEP will issue a Stormwater Construction Permit for the project once all the required information in the Permit Request Form has been submitted and approved. Once the DEP Stormwater Construction Permit has been issued, construction may begin. DEP may conduct inspections at any time during the construction process.

After the completion of construction, the applicant will inform DEP of construction completion. For projects in MS4 areas, the applicant will submit the NYSDEC Notice of Termination (NOT) to DEP for the MS4 acceptance signature, as shown in Figure 3.5. DEP may inspect the project site and, if satisfied, will provide the signed NOT to the applicant. The applicant will then submit the signed NOT to NYSDEC.

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Figure 3.4. Permit Initiation Form and Maintenance Easement Requirements

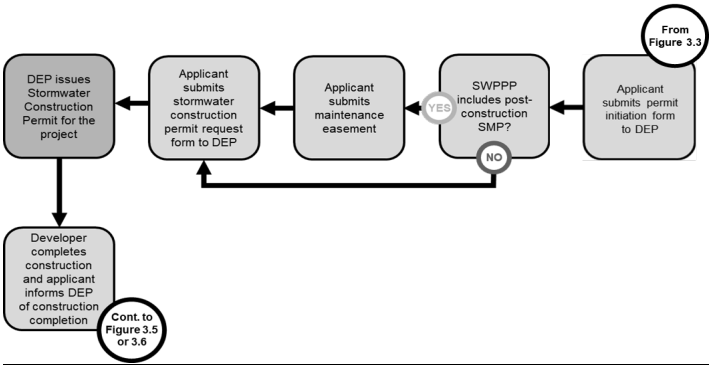
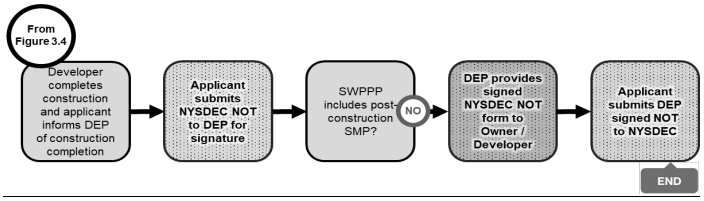


Figure 3.5. SWPPP Does Not Include Post-Construction SMP Decision Point



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24. SWPPP with Post-Construction SMP(s)

If a SWPPP includes one or more post-construction SMPs, the applicant must obtain a maintenance easement. A copy of the maintenance easement and the information required on the Permit Initiation Form must be submitted via SWPTS as shown in Figure 3.4. DEP will issue a Stormwater Construction Permit for the project once all the required information in the Permit Request Form has been submitted and approved. Once the DEP Stormwater Construction Permit has been issued, construction may begin.

Once construction is completed, the applicant must also submit the application for a Stormwater Maintenance Permit to DEP as shown in Figure 3.6. The Stormwater Maintenance Permit application shall consist of the following:

- NOT;
- As-built plan;
- Operation and maintenance manual that designates the entity responsible for the long term maintenance;
- Fee specified in the DEP Stormwater Rule.

An electronic version of the NOT is available on the SWPTS. As-built plans and a final Operation and Maintenance Manual will need to be uploaded in a PDF or other acceptable format. The Operation and Maintenance plan should be finalized based on the installed SMP(s), reflecting any changes that were made during the construction period.

DEP may inspect the SMP(s) at any time. If the SMP is not installed or operating as designed, DEP will provide feedback and the applicant must resolve the issue(s). Once the SMP(s) is installed and operating as designed, DEP will provide the acceptance signature for the NOT and issue the Stormwater Maintenance Permit. For projects in MS4 areas, the applicant will then submit a signed NOT to NYSDEC.

The owner must submit an annual certification for the SMP as well as a 5-year permit renewal to DEP via the SWPTS. Requirements for inspection schedules as well as typical SMP operation and maintenance requirements are detailed in Chapter 5.

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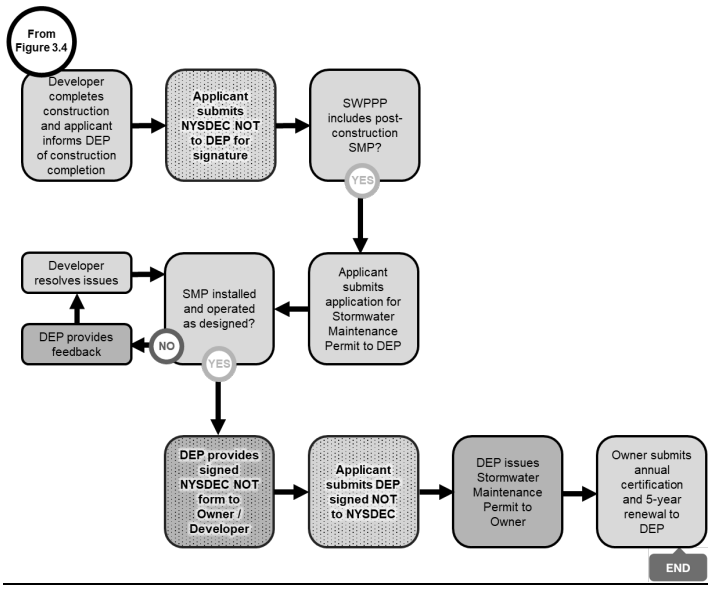
Figure 3.6. SWPPP Does Include Post-Construction SMP Decision Point



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25. Expiration Policy

SWPPP Acceptances expire if a permit is not requested within 2 years of the plan approval date. A Stormwater Construction Permit will expire if the commencement of development activities does not take place within one year or is not completed by a date specified in the permit. Furthermore, a Stormwater Construction Permit will expire if the permitted work is suspended or abandoned for a continuous period of 12 months unless such permit expires earlier. Expired permits will require reapplication as detailed in the permit conditions.

26. Partial Shutdowns

If a covered development project requires temporary shutdown for less than 12 months, the developer must notify DEP a minimum of seven days before the shutdown and submit documentation showing that the site is stable and that all SMPs are operational. The developer will be responsible for having a qualified inspector visit the site and inspect it at least once every 30 days during the shutdown. In addition, all permits must be kept current during the suspension of development activity.

If a covered development project requires a planned shutdown with partial project completion for 12 months or longer, the owner or developer must submit a completed NOT to DEP for sign-off prior to submitting the NOT to NYSDEC. The department will review the completed NOT to ensure that the following conditions have been met:

- All soil disturbance has ceased;
- All areas disturbed as of the project shutdown date have achieved final stabilization;
- All temporary structural ESC measures have been removed; and
- Any post-construction SMPs required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

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27. SMP Selection and Design

This chapter covers the following topics:

- Section 4.1 – Overview of SMP functions and surface types used for classification
- Section 4.2 – Selecting SMPs using the SMP hierarchy
- Section 4.3 – Methods for sizing SMPs to meet applicable stormwater management requirements
- Section 4.4-4.8 – General design criteria for SMPs by function
- Section 4.9 – Process for approval of other, innovative systems
- Section 4.10 – Specific design criteria for each SMP component
- Section 4.11 – Calculations for special cases

27.1. Practice Types

SMPs are systems that are designed to protect, restore, or mimic the natural water cycle within built environments by retaining, detaining, and/or treating stormwater runoff. In this manual, SMPs are categorized in two ways: first, by their primary function and second, by their surface type.

28. SMP Functions

Runoff that enters an SMP is typically managed via one or more of the following physical processes:

- Infiltration – water is captured and infiltrated into the underlying soils (sometimes referred to as exfiltration).
- Evapotranspiration (ET) – water is captured and evaporated or transpired back into the atmosphere.
- Reuse – water is captured and reused for purposes other than SMP irrigation (which can reduce water storage potential of other SMPs).
- Filtration – water passes through a filtration medium to remove various pollutants.
- Detention – water is temporarily stored and released at a lower flow rate.

SMPs may support more than one process, but there is usually one primary function for which the system was designed. For example, a bioretention system that is constructed on permeable soils is designed to manage runoff primarily by infiltration, since ET accounts for a smaller portion of managed runoff. However, a bioretention system with an outlet pipe is designed to manage runoff primarily by filtration, since most runoff will exit the practice and enter the sewer system once it has been filtered.

While one primary function is most common, some SMPs may be configured to support runoff management via two, equally contributing functions, e.g., detention systems that are also designed with components to filter runoff as it flows through the practice. These types of SMPs are referred to as dual function systems, which are described further in the Innovative Systems section (Section 4.9).

Among the five primary functions, infiltration, ET, and reuse SMPs are considered retention-based practices because they aim to eliminate or reduce the total volume of runoff leaving the site. The other two functions, filtration SMPs and some extended detention SMPs, are considered treatment-based practices because they aim to remove pollutants from runoff before it ultimately leaves the site. The distinction between retention-based practices and treatment-based practices is important when selecting an SMP to meet water quality goals, discussed further in Section 4.2.

In this manual, the primary SMP function, or dual functions for some systems, will be used to help categorize SMPs. This does not mean that secondary processes are to be neglected during the SMP design but allows for a straightforward means for grouping and crediting SMPs. As indicated in the earlier examples for bioretention systems, SMPs can take on different functions depending on how they are designed, and this

1

framework provides flexibility for a wide range of potential configurations that may be necessary to accommodate various site constraints. An illustration of the physical process for each function type is shown in Figure 4.1, along with a brief description and example SMP.

29. SMP Surface Types

In addition to primary function, SMPs can be further categorized by one of two surface types:

- Vegetated SMPs – practices with a planting media that supports vegetation.
- Non-vegetated SMPs – practices without vegetation, such as permeable hardscapes, permanent ponds, enclosed systems, or subsurface systems.

Vegetated practices can provide a number of added co-benefits beyond stormwater management, such as air filtration, reduction of heat island effects, ecological benefits, and amenity. Non-vegetated practices often lack most co-benefits but may be necessary for highly constrained sites. A major goal of the Unified Stormwater Rule, and therefore this manual, is to increase the use of vegetated practices in order to realize additional co-benefits for NYC residents.

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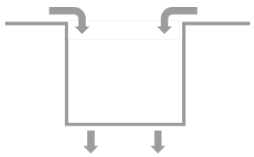
Figure 4.1. SMP function diagrams.

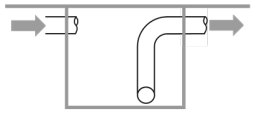


Infiltration

Description: water is captured and infiltrated into the underlying soils, which is sometimes referred to as exfiltration.
Design: Relies on sufficient permeability rates of underlying soils. Practices do not use outlet pipes to drain water.
Example: Bioretention system, no outlet pipe

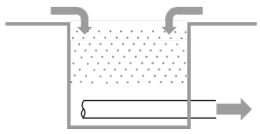
Evapotranspiration

Description: Water is captured and evaporated or transpired back into the atmosphere.
Design: Relies on ET occurring between rainfall events. Practices are usually shallow and have no or limited ability to infiltrate water.
Example: Green roof



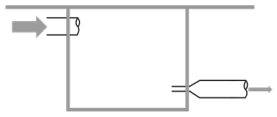
Reuse

Description: Water is captured and reused for non-irrigation purposes.
Design: Relies on continuous reuse of water. Practices can be integrated into existing non-potable and non-contact water uses.
Example: Reuse in cooling tower



Filtration

Description: Water passes through a filtration media to remove various pollutants.
Design: Relies on steady flow of water through the filtration media. Practices have an outlet pipe to support filtration.
Example: Sand filter



Detention

Description: water is temporarily stored and released at a lower flow rate.
Notes: Relies on ability to control release rate. Practices have a controlled-flow device, such as an orifice.
Example: Detention tank

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30. Selecting an appropriate system

Designers must select and design practices to meet all applicable stormwater management requirements outlined in Chapter 2. This subsection includes guidance on selecting practices to meet the water quality criterion (WQv), runoff reduction criterion (RRv), and no net increase criterion (NNI), this guidance follows an SMP hierarchy based on several guiding principles.

The ESC criteria should be met using best practices in accordance with the NYS Standards and Specifications for Erosion and Sediment Control (The Blue Book). The sewer operations criterion (Vv) does not require the use of the SMP hierarchy, although DEP encourages the use of vegetated infiltration practices, where feasible, because of their potential co-benefits.

The SMP hierarchy was created with two goals: first, to create a clear and consistent approach for the selection of SMPs throughout the City and second, to guide designers toward practices that are most effective at meeting the City's goals for stormwater management and co-benefits. The SMP hierarchy follows three logical steps:

- Step 1 (CSS & MS4) – use vegetated retention practices to meet requirements, or up to the maximum extent practicable.
- Step 2 (CSS & MS4) – use non-vegetated retention practices to meet requirements, or up to the maximum extent practicable.
- Step 3 (CSS) – meet any remaining requirements using either vegetated or non-vegetated detention practices.
- Step 3 (MS4) – meet any remaining requirements using either vegetated or non-vegetated treatment practices.

These steps reflect several principles that were discussed in Chapter 2. For example, the principle that improving water quality in CSS areas is largely achieved by limiting CSO volume and occurrence. In this case, retention practices are preferred, while detention practices are a secondary option. Alternatively, improving water quality in MS4 areas is largely achieved by managing pollutants in runoff. In this case, retention practices are preferred, while treatment practices, such as filtration systems and some extended detention systems, are a secondary option. Finally, the SMP hierarchy also reflects that vegetated practices are generally preferred over non-vegetated practices due to the valuable co-benefits the former can provide for NYC residents.

The SMP hierarchies for CSS areas and MS4 areas are shown in Figures 4.2 and 4.3, respectively. Each hierarchy shows five groups of SMPs based on their function and/or surface type, as previously defined in Section 4.1. The CSS hierarchy includes groups for retention systems (vegetated and non-vegetated), detention systems (vegetated and non-vegetated), and reuse systems. The MS4 hierarchy is similar, except detention systems are replaced with treatments systems. Within each group are a list of applicable practices. Since some SMPs can be configured for multiple functions, they may appear in more than one group.

These SMP groups are shown in a grid that is arranged by their order of preference, with more preferred practices at the top-left and least preferred practices at the bottom-right. Reuse systems, which are also recognized as retention systems, appear as a standalone group that is optional, but can be used at any time. This placement reflects that reuse applications are not practical for all sites, but are among the high-priority SMP types, when appropriate.

The priority level of each SMP group is indicated by tiers with different colors, where the darker shades of green (CSS) or blue (MS4) indicate higher tier SMPs. These priority levels reflect the three logic steps of the SMP hierarchy. Designers must assess and implement SMPs in higher tiers to the maximum extent practicable before moving to lower tier systems. In this case, the maximum extent practicable is defined as the greatest extent to which site constraints allow.

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Figure 4.2. SMP hierarchy for CSS areas.

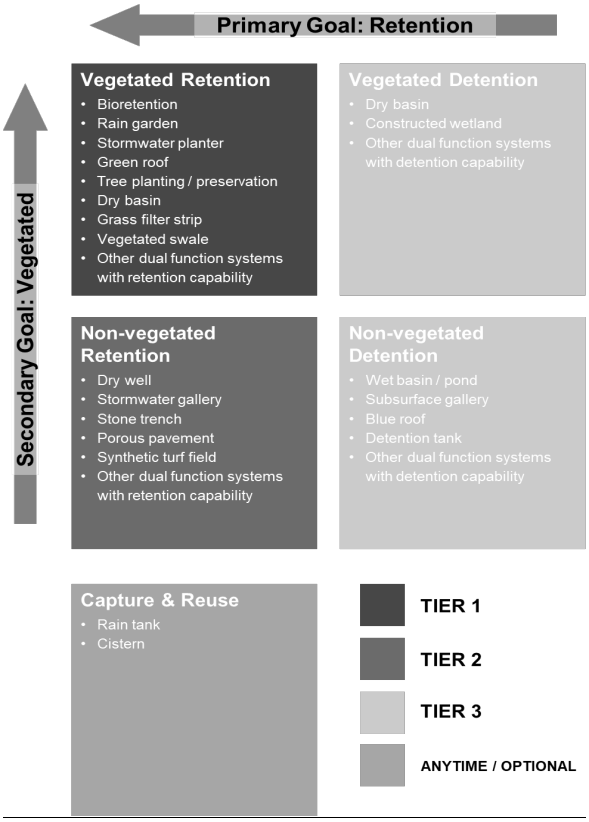
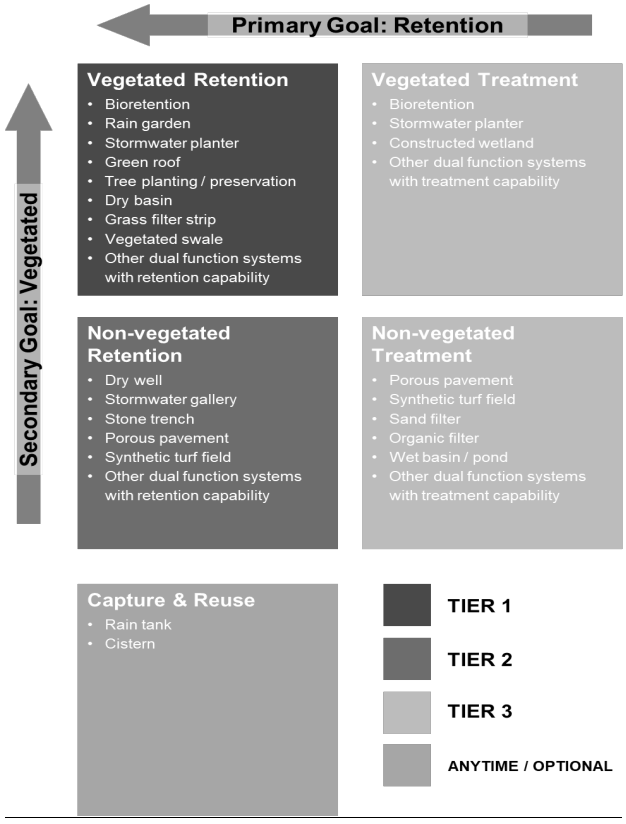


Figure 4.3. SMP hierarchy for MS4 areas.



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There are five potential site constraints that may impact the feasibility of SMPs, defined as follows:

- Soil constraints –permeability tests indicate that soil infiltration rates are less than 0.5 in/hr, limiting the use of infiltration practices.
- Subsurface constraints – boring tests indicate that the bottom of practice would be less than three feet from the groundwater table or bedrock, limiting the use of most practices, except those enclosed in concrete with adequate anchoring, as determined by an engineer.
- Hotspot constraints – land use or soil conditions increase the risk of runoff contamination, limiting the use of infiltration practices, or those without liners. (see criteria below).
- Surface constraints – regulations require the use of paved surfaces, limiting the use of vegetated practices. As an example, regulations for parking and/or egress requirements.
- Space constraints – required setbacks from structures, utilities, property lines, existing trees, or other site features limits the use of practices at the ground level. General siting criteria for on-site projects can be found in Appendix C.

Keep in mind, that some constraints may be limited to one portion of the site, rather than impacting the entire site. For this reason, it is important that designers consider how constraints may vary across the site when demonstrating that SMPs are used to the maximum extent practicable. To assist designers in following the SMP hierarchy, an SMP hierarchy checklist was created which shows how each constraint impacts the feasibility of specific SMPs in CSS and MS4 areas (Appendix A).

Hotspot constraints may be caused by either land uses or soil conditions. Land uses that cause stormwater hotspots are listed in Table 4.3 of the NYS SWMDM. Soil conditions that cause stormwater hotspots are listed below, which may be demonstrated through environmental assessments or as part of a regulatory program (e.g., NYSDEC Spills and Remediation Programs) documentation:

- Presence of grossly contaminated soil or non-aqueous phase liquid (NAPL) as defined in NYSDEC DER-10
- Soil exceeds the groundwater protection objectives of NYSDEC 6 NYCRR 375
- Soil is characterized as hazardous waste as defined in 6 NYCRR 360 or 40 CRF 261
- Groundwater exceeds standards, guidance values and/or limits described in NYSDEC AWQS in 6 NYCRR 703 or TOGS1.1.1

The checklist includes one row for each SMP type, with fields that indicate the practices: tier, function type, and practice name, along with markers to show which constraints would impact that SMPs feasibility. For example, "X" markers in the checklist are used to indicate the site constraints that would prevent each practice from being used. Designers are required to use the SMP selection checklist to determine which practices should be used on a site-by-site basis. This can be done in three steps:

- Determine what, if any, site constraints are applicable for the site, or portions of a site
- Eliminate practices that are not feasible given the applicable site constraints
- Meet the water quality criterion by exhausting all remaining SMP opportunities from higher tiers, before moving to lower tiers

When SMPs are eliminated due to site constraints, the designer must provide the appropriate documentation that demonstrates each constraint (see Chapter 3). In addition, whenever a tier 2 or tier 3 SMP has been proposed, the designer must provide written justification for how higher tier practices have either been eliminated due to site constraints or used to the maximum extent practicable. All documentation for constraints and justification for use of lower tier practices are subject to review and approval by NYC DEP.

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Once selected, SMPs must be designed in accordance with all applicable design criteria outlined in Sections 4.4-4.11.

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31. SMP Sizing

SMPs shall be sized so that the total volume of water that can be stored in the practice meets or exceeds the volume of runoff that must be managed to meet the stormwater management requirement. Procedures for computing the SMP storage volume are outlined in this subsection, along with how that volume is applied towards meeting the stormwater management requirements.

It is important to note that the following sizing methods are applicable to volume-based stormwater management requirements and SMPs. Designers seeking a deviation from the sizing methods or design criteria in this chapter must submit a stormwater model that demonstrates SMPs will meet the goals of each applicable stormwater criterion, subject to approval by DEP. Models must assess storage, routing, and drawdown for the design event(s) of interest. Acceptable stormwater models include HydroCAD and EPA SWMM.

Volume-based stormwater management requirements include water quality, runoff reduction, sewer operations, and NNI for Nitrogen removal. Other NNI requirements and the ESC requirement are criteria-based and should be met by following all relevant guidelines outlined in Chapter 2.

Volume-based SMPs include all practices except grass filter strips, vegetated swales, and tree preservation, which are criteria-based. As an example, the design criteria for grass filter strips and vegetated swales are intended to promote contact time between surface runoff and the vegetated surface for infiltration, rather than to use a storage element. These practices shall be designed to meet all relevant guidelines outlined in Sections 4.4-4.10.

The storage volume of a practice is the volume of water that can be stored at the surface or within the voids of the system itself. Internal voids can include those of any media (e.g. engineered soil or crushed stone), as well as voids of any internal structures (e.g. chambers or pipes).

To be counted, the storage volume must fall within the active storage zone of the practice, which spans the distance from the lowest elevation from which water exits the storage zone up to the elevation of an overflow device that allows water to exit or bypass a practice once full.

For infiltration, the bottom of the active storage zone is simply the bottom of the practice. For ET systems, the bottom of the active storage zone is the bottom of the soil media layer. For reuse systems, the bottom of the active storage zone is the lowest elevation of usable water. For filtration and detention systems, the bottom of the active storage zone corresponds to the invert elevation of the outlet pipe.

The volume of the active storage zone can be calculated by adding up the volume of voids for each storage component. Therefore, a general formula for the calculation of storage volume is as follows:

EQ4.1:

$$V_{SMP} = V_p + V_s + V_i + V_D$$

where:

V_{SMP} = storage volume of SMP (cf)

V_p = volume of surface ponding (cf)

V_s = volume of voids in the soil media layer (cf)

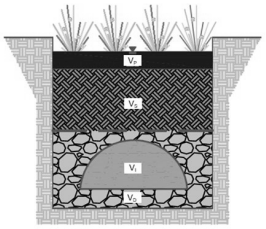
V_i = volume of voids created by internal structures such as chambers or pipes (cf)

V_D = volume of voids in the drainage media (cf)

One benefit of this general formula is that it is applicable to all storage based SMPs, regardless of function type or geometry. As an example, Figure 4.11 shows each of the four storage components for a bioretention system that uses a subsurface chamber. Methods for calculating the storage volume of each term in the general formula will be discussed first, followed by a consolidated formula that may be used for common practices with simple geometry.

10

Figure 4.11. Illustration of storage areas for a bioretention system with surface ponding (V_P), soil media (V_S), internal structure (V_I), and drainage media (V_D).



During the design process, designers should also consider any other factors which may impact the size of the overall practice or specific elements. For example, the elevation of the overflow device will govern the top of the active storage zone, which may impact the depth of drainage media that may be counted towards SMP storage volume.

32. Surface Ponding

The volume of surface ponding can be calculated using several different methods, depending on the most appropriate method for the geometry of the ponding area. Prior to calculating the volume of surface ponding, designers should refer to the applicable design criteria for each SMP to identify whether a minimum volume of surface ponding is required. This requirement is intended to prevent bypass of the water quality event in cases where water must percolate through a planting or filtration media.

For ponding areas where the surface is relatively flat, the equation for the volume of a rectangular box shall be used:

EQ4.2:

$$V_P = A_{SMP} * D_P$$

where:

V_P = volume of surface ponding (cf)

A_{SMP} = area of the SMP (sf)

D_P = depth of ponding (ft)

For ponding areas where the surface has slopes that are relatively uniform, the equation for the volume of a truncated pyramid shall be used:

EQ4.3:

$$V_P = \frac{1}{3}\left(A_{P1} + \sqrt{A_{P1} * A_{P2}} + A_{P2}\right) * D_P$$

where:

V_P = volume of surface ponding (cf)

A_{P1} = area at the base of surface ponding zone (sf)

A_{P2} = area at the top of surface ponding zone (sf)

D_P = depth of ponding (ft)

For ponding areas with complex geometry, the designer shall create a stage-area curve that relates the depth of ponding to the area of ponding at regular intervals. The volume of each interval may then be calculated using the equation above by inputting the area at the top and bottom of the interval. The volume of surface ponding can then be calculated as the sum of all intervals.

Finally, in cases where there is no surface ponding, or the surface ponding area is above the elevation of an overflow device, the surface ponding volume is zero.

33. Soil Media

The volume of voids in the soil media layer is calculated as the total volume of soil times the porosity of soil:

EQ4.4:

$$V_S = A_{SMP} * D_S * n_S$$

where:

V_S = volume of voids in the soil media layer (cf)

A_{SMP} = area of the SMP (sf)

D_S = depth of soil media layer (ft)

n_S = available porosity of soil media (cf/cf)

Available porosity is defined as the percent of soil volume that is available for water storage at the onset of a rainfall event, on an average annual basis. The available porosity of soil media shall be set to 0.2 cf/cf. This value is less than the total porosity of a typical engineered soil used for SMPs, which reflects a reduction in storage capacity due to residual soil moisture.

The soil media storage equation assumes the sides of the practice are vertical, which means that the volume of soil may be calculated as the volume of a rectangular box. Where the sides of the practice are sloped, this method should be adjusted to use the equation for the volume of a truncated pyramid.

34. Internal Structures

The volume of voids created by internal structures is calculated based on the type of structure. For modular structures, such as chambers, tanks, cisterns, crates, or other pre-cast units, the volume is calculated as the interior volume of one modular structure times the number of units:

EQ4.5:

$$V_I = V_M * N_M$$

where:

V_I = volume of voids created by internal structure (cf)

V_M = interior volume of one modular structure (cf)

N_M = number of modular structures (unit less)

For voids created by internal pipes, the volume is calculated as the interior area of the pipe times the total length of pipe:

EQ4.6:

$$V_I = A_P * L_P$$

where:

V_I = volume of voids created by internal structure (cf)

A_P = area of pipe (sf)

L_P = total length of pipe (ft)

Outlet and overflow pipes may not be counted towards the storage volume of a practice. In addition, any portion of structures above the elevation of an overflow device must be excluded from the calculated volume.

In cases where more than one type of modular system or more than one pipe size is used, the volume of voids may be calculated for each system and summed together to determine the total volume of voids.

35. Drainage Media

The volume of voids in the drainage media is calculated as the total volume of the drainage media, excluding the volume of any internal structures in this layer, multiplied by the porosity of drainage media:

EQ4.7:

$$V_D = (A_{SMP} * D_D - V_{I,d}) * n_D$$

where:

V_D = volume of voids in the drainage media (cf)

A_{SMP} = area of the SMP (sf)

D_D = depth of the drainage media (ft)

$V_{I,d}$ = volume of voids created by internal structures within the drainage media (cf)

n_D = porosity of drainage media (cf/cf)

The porosity of stone base and sand shall be set based on media composition, with a maximum value of 0.4 cf/cf, unless otherwise approved by DEP. If there are internal structures within the drainage media, then the volume of voids for those structures must be subtracted to avoid double counting. Since the active storage zone for ET practices is only the soil media layer, the volume of storage in drainage media is excluded for these systems.

Like the calculation for soil media, this equation assumes the sides of the practice are vertical, allowing us to calculate the volume of the drainage media as the volume of a rectangular box. Where the sides of the practice are sloped, this method should be adjusted to use the equation for the volume of a truncated pyramid.

If more than one type of drainage media is used, the volume of voids may be calculated for each layer and summed together to determine the total volume of voids. DEP may request that the volume occupied by walls of internal structures also be subtracted from total volume of the drainage layer. This would be limited to instances where the volume of walls is significant due to wall thickness or large number of structures, at the discretion of NYCDEP.

36. Meeting Requirements

As noted earlier, SMPs must be sized so that the total storage volume of the SMP meets or exceeds the volume of runoff that must be managed for the applicable stormwater management requirement. Rather than design separate systems to meet each stormwater management requirement individually, the USWR framework allows designers to apply each SMP towards meeting multiple objectives.

As an example, an infiltration system may be sized to store the water quality volume, but that storage may also help reduce the peak rate of runoff for larger events towards meeting the sewer operations requirement. The percentage of storage volume that may be applied to each stormwater management requirement will depend on the function of the system, as shown in Table 4.1.

Table 4.1. Percent of SMP volume that may be applied to SW management criteria by SMP function.

	Percent of SMP Volume Applied to Requirement (F_A)		
SMP Function	**WQv**	**RRv**	**Vv**
Infiltration	100	100	50
Evapotranspiration	100	100	0
Reuse[A]	100	100	50
Filtration	100[B]	40[C]	0
Detention	100[D]	0	100

[A] Designers must demonstrate continuous and reliable capacity throughout the year (see Section 4.11)

[B] Applies to MS4 areas only

[C] Applies to practices with engineered soils only

[D] Applies to CSS areas and select detention practices with treatment abilities in MS4 areas

In all cases, the entire storage volume can be applied toward WQv because the practice will fully retain, filter,

or detain the WQ event by design, as appropriate for CSS and MS4 areas.

The percentage of total volume that can be applied toward RRv reflects the portion of the runoff that may be retained by the practice. This is 100% for infiltration, ET, and reuse practices and 40% for bioretention used as filtration practices, as specified in the NYS SWMDM.

Detention practices that are designed to meet the Vv event will have 100% of their volume applied to meeting the Vv criterion. Any other practices that are designed to infiltrate or reuse the WQv event can apply up to 50% of their volume towards the Vv criterion as well, which accounts for several factors related to differences between the WQv and Vv events. To apply reuse volume towards stormwater management requirements, designers must demonstrate that the system will have continuous and reliable capacity throughout the year, approved at the discretion of BEPA/BWSO (see Section 4.11). The application of volumes for dual function systems are covered in Section 4.9 on Innovative Systems.

Generally, it is recommended that designers size practices to meet the WQv as a first step. Once the WQv requirement is met, designers can compute the volume that may be applied to other requirements to determine whether any additional practices are needed.

Note that when retention practices alone are used to meet the WQ requirement, this will typically result in meeting the RR and NNI for nitrogen requirements as well. Alternatively, in cases where only the sewer operations requirement is applicable to a site, designers may size practices to meet Vv as a first step.

The following equation can be used to compute the SMP volume that may be applied to each stormwater management requirement:

EQ4.8:

$$V_A = V_{SMP} * F_A$$

where:

V_A = storage volume that may be applied to relevant stormwater management requirement (cf)

V_{SMP} = storage volume of SMP (cf)

F_A = percentage of storage volume that may be applied to the stormwater management requirement (%)

Values for the percentage of storage volume that may be applied to the stormwater management requirement (F_A) are provided in Table 4.1. In total, the storage volume that may be applied to each criterion (V_A) must equal or exceed the required storage volume of each criterion.

SMPs must meet all design criteria outlined in the following sections for their volume to be applied towards the applicable stormwater management requirements. In addition, there are Special Cases that do not follow the general percentages listed in Table 4.1, which are marked as "SC" on the SMP selection checklist. An example sizing calculation for each practice function can be found in Appendix D, while an example design for an entire site can be found in Appendix E.

37. Simple Systems

When the geometry of the SMP is relatively simple, equations to calculate the volume of individual components can be substituted into Equation 4.1 to create a streamlined formula for sizing. In cases where the ponding surface is flat, the sides of the SMP are vertical, and voids created by internal structures are all located in the drainage layer, then the simplified formula becomes:

EQ4.9:

$$V_A = [A_{SMP}(D_P + D_S * n_S + D_D * n_D) + V_I(1 - n_D)] * F_A$$

where:

V_A = storage volume that may be applied to relevant stormwater management requirement (cf)

A_{SMP} = area of the SMP (sf)

D_P = depth of ponding (ft)

D_S = depth of soil media layer (ft)

n_S = porosity of soil media (cf/cf)

D_D = depth of the drainage media (ft)

n_D = porosity of drainage media (cf/cf)

V_I = volume of voids created by internal structures such as chambers or pipes (cf)

F_A = percentage of storage volume that may be applied to the relevant stormwater management requirement (%)

Looking at each parameter of Equation 4.9 in more detail leads to several additional simplifications. For example, the available porosity of soil media (n_S) is set to the specified value of 0.20 cf/cf. Similarly, the porosity of the drainage layer (n_D) shall be set based on media composition, with a maximum value of 0.40 cf/cf. In addition, the percentage of storage volume that may be applied towards the stormwater management requirement (F_A) will be referenced from Table 4.1 based on the SMP function and the applicable stormwater management requirement.

This leaves the area of the SMP (A_{SMP}), depth of ponding (D_P), depth of soil media (D_S), depth of drainage media (D_D), and the volume of internal structures (V_I) as design elements of the system. The area of the practice is bounded by the maximum allowable ratio between the SMP area and the contributing TDA area, as detailed in Sections 4.4-4.8. Similarly, the depths of various media are constrained by the maximum allowable drawdown time, which can be evaluated using the following methods.

38. Drawdown Time – Surface Ponding

The drawdown time for surface ponding is calculated by dividing the volume of ponding by the average flow rate through the surface media. In this case, the flow rate is calculated based on the principles of Darcy's law. Drawdown time is calculated as:

EQ4.10:

$$dt_P = \frac{V_P}{\left(\frac{K_S}{12}\right) * \left(1 + \frac{0.5D_P}{D_M}\right) * \left(\frac{A_{P1} + A_{P2}}{2}\right)}$$

where:

dt_P = drawdown time of surface ponding (hr)

V_P = volume of surface ponding (cf)

K_S = saturated hydraulic conductivity of media below the surface ponding area (in/hr)

D_P = maximum depth of ponding (ft)

D_M = depth of media below surface ponding area (ft)

A_{P1} = area at the base of surface ponding zone (sf)

A_{P2} = area at the top of surface ponding zone (sf)

Hydraulic conductivity shall be set based on media type, as follows:

- Engineered soil: 0.5 in/hr
- Sand filter media: 1.75 in/hr
- Peat/sand filter media: 1.0 in/hr

The denominator of the surface ponding drawdown time equation uses three terms to estimate the flow through rate which account for, from left to right, the hydraulic conductivity of the surface media, average hydraulic gradient through the surface media, and average area of surface ponding zone (area of percolation).

For infiltration SMPs, designers must confirm that the flow rate of infiltration through the bottom of practice is

not more restrictive that the flow rate through surface media. This is done by comparing the denominator of surface ponding drawdown time with the denominator of infiltration drawdown time equation. The lesser of the two values should be used to compute surface drawdown time.

Designers shall confirm that the drawdown time of the surface ponding area does not exceed the maximum allowable for that the proposed practice (see Sections 4.4-4.8), which is commonly 12-hours.

39. Drawdown Time – Infiltration SMPs

The drawdown time for infiltration SMPs is calculated by dividing the volume of the practice by the average flow rate out of the system via infiltration. In this case, the flow rate via infiltration is field measured, which also relies on the principles of Darcy's law. Drawdown time is calculated as:

EQ4.11:

$$dt_{SMP} = \frac{V_{SMP}}{\left(\frac{i}{12}\right) * A_{INF}}$$

where:

dt_{SMP} = drawdown time of infiltration SMP (hr)

V_{INF} = volume of infiltration SMP (cf)

i = field measured infiltration rate (in/hr)

A_{INF} = area of infiltrating surface at the bottom of SMP (sf)

The denominator uses two terms to estimate the flow rate, which are the field measured infiltration rate and the area of infiltrating surface at the bottom of practice. As a factor of safety, the field measured infiltration rate used to calculate drawdown time shall be capped at 5 in/hr.

Designers shall confirm that the drawdown time of the infiltration SMP does not exceed 48 hours, where applicable.

40. Drawdown Time – ET SMPs

The soil media of ET systems releases water back to the atmosphere as evaporation and transpiration occur over time. Given the variable nature of ET throughout the year, ET systems are designed to avoid long periods of ponded water by using shallow ponding depths, small loading rations (practice-to-contributing area), and a means to drain excess water. For these reasons, there is no drawdown calculation for ET SMPs.

41. Drawdown Time – Filtration SMPs

The drawdown time for filtration SMPs is typically calculated by dividing the volume of the practice by the average flow rate through the filtration media. In this case, drawdown time can be calculated similar to surface ponding, which is based on the principles of Darcy's law. Drawdown time is calculated as:

EQ4.12:

$$dt_{SMP} = \frac{V_{SMP}}{\left(\frac{K_S}{12}\right) * \left(1 + \frac{0.5D_{pf}}{D_f}\right) * A_f}$$

where:

dt_{SMP} = drawdown time of filtration SMP (hr)

V_{SMP} = volume of filtration SMP (cf)

K_S = saturated hydraulic conductivity of filtration media (in/hr)

D_{pf} = maximum depth of ponding above filtration media (ft)

D_f = depth of filter media (ft)

A_f = area of filter bed (sf)

Hydraulic conductivity shall be set based on media type, as follows:

- Engineered soil: 0.5 in/hr
- Sand filter media: 1.75 in/hr
- Peat/sand filter media: 1.0 in/hr

The denominator uses three terms to estimate the flow rate which account for, from left to right, the hydraulic conductivity of the filtration media, average hydraulic gradient through the filtration media, and area of the filter bed (area of percolation).

If the flow rate through the filtration media is greater than the flow rate through any outlet pipes or controlled-flow devices, then the drawdown time is not governed by the filtration media and must be determined by the most flow restrictive component. Where a level outlet pipe or controlled-flow device restricts flow, the drawdown time may be calculated using the equation for detention SMPs.

Where sloped outlet pipes restrict flow, the Manning's equation may be used to estimate the outlet flow rate, which replaces the denominator in the drawdown time calculation.

If outlet pipes are connected to an internal pipe or network of pipes, designers must ensure that the perforations in the internal pipes are adequate to not restrict flow.

Designers shall confirm that the drawdown time of the filtration SMP does not exceed 48-hours, where applicable.

42. Drawdown Time – Reuse SMPs

The drawdown time for reuse SMPs is calculated by dividing the volume of the practice by the average flow rate out of the system via the water reuse application. In this case, drawdown time is simply calculated as:

EQ4.13:

$$dt_{SMP} = \frac{V_{SMP}}{Q_{RU}}$$

where:

dt_{SMP} = drawdown time of filtration SMP (hr)

V_{SMP} = volume of filtration SMP (cf)

Q_{RU} = flow rate of reuse application (cf/hr)

Designers shall confirm that the drawdown time of the reuse SMP does not exceed 48-hours, where applicable. In cases where the reuse application alone does not meet this requirement, controlled-flow devices can be used in tandem to achieve the desired drawdown time.

43. Drawdown Time – Detention SMPs

The drawdown time for detention SMPs is calculated by dividing the volume of the practice by the average flow rate out of the system via a controlled-flow device. In this case, the system can be treated as a tank with an orifice, where the flow rate is derived from the Bernoulli equation. Drawdown time is calculated as:

EQ4.14:

$$dt_{SMP} = \frac{V_{SMP}}{0.5C_D A_o \sqrt{2gH}} * \frac{1}{3600}$$

where:

dt_{SMP} = drawdown time of filtration SMP (hr)

V_{SMP} = volume of filtration SMP (cf)

C_D = coefficient of discharge; 0.61 (flush), 0.52 (re-entrant), or 0.73 (long re-entrant)

A_o = area of the orifice (ft^2)

g = acceleration due to gravity, 32.2 (ft/s^2)

H = maximum hydraulic head above the centerline of the orifice (ft)

Designers shall confirm that the drawdown time of the detention SMP does not exceed the maximum permitted, which varies by practice type (Section 4.8).

43.4. Infiltration Systems

Infiltration is the process whereby water passes through a porous media, mainly in a downward direction, due to gravity. SMPs that primarily manage runoff via infiltration of water into underlying soils are classified as infiltration systems. Infiltration systems are also considered retention systems because their primary function reduces runoff.

There are several features that are common to all infiltration systems:

- Underlying soils have adequate hydrologic conductivity for infiltration
- Underlying soils are not constrained by high groundwater, bedrock, or contamination
- Have no liner or other impermeable material at the bottom (i.e. has a permeable bottom)
- Have no outlet pipe or have an outlet pipe that is permanently capped

An outlet pipe is any pipe that can drain water from the practice before it is full. Typically, this would be a pipe that connects the storage zone of the practice with a point of discharge, such as a sewer, site drainage system, or structure with a controlled-flow orifice. For infiltration systems, outlet pipes must be permanently capped, except during maintenance, to prevent water from exiting the system.

Components used for infiltration systems vary, but may include surfacing mulch for moisture retention, engineered soil used to support vegetation, surface area used for ponding, stone base used to store water, geotextiles, and internal structures or pipes used to help distribute or store water. The total volume of water that can be stored in the practice must meet or exceed the volume of runoff calculated for the stormwater management requirement (Section 2.3). Further details on SMP sizing can be found in Section 4.3.

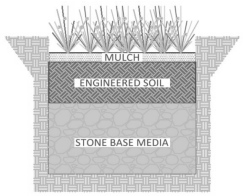
Infiltration systems provide a range of stormwater management benefits, which include runoff reduction, peak flow mitigation, groundwater recharge, and treatment of pollutants from runoff. Vegetated systems may provide several added co-benefits such as heat island mitigation, ecologic function, community amenity, and removal of airborne pollutants.

The feasibility of infiltration systems can be limited by soil constraints, subsurface constraints, hotspot constraints, and space constraints. In addition, surface constraints may limit the use of vegetated infiltration practices. A description of each constraint may be found in Section 4.2. Readers should refer to the SMP Selection Hierarchy (Appendix A) for details on how various constraints impact the use of specific SMPs.

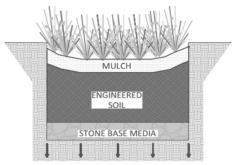
44. Infiltration SMPs

SMPs that can be configured to function as infiltration systems include bioretention, rain gardens, stormwater planters, tree plantings, dry basins, grass filter strips, vegetated swales, dry wells, synthetic turf fields, porous pavements, stone trenches, and stormwater galleries. In addition to these systems, other innovative systems may also qualify as infiltration practices, as described in Section 4.9. A brief description of each infiltration SMP is provided below, along with an example cross section. Please note that the cross sections are for illustrative purposes only and are not meant to show all required components. Further, systems described in this manual may differ from those used as part of the ROW green infrastructure program.

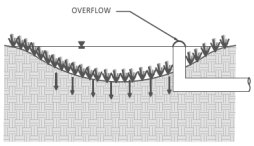
Bioretention - landscaped shallow depression that captures surface runoff. Typically used in dense urban areas. Similar to rain gardens, but components are designed to manage runoff from large areas. Commonly consists of a surface ponding area, mulch layer, engineered soil with vegetation, and stone base.



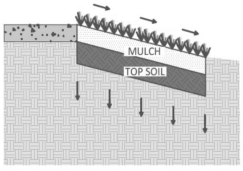
Rain garden - landscaped shallow depression that captures surface runoff. Typically used in residential applications. Similar to bioretention, but components are designed to manage runoff from small areas. Commonly consists of a surface ponding area, mulch layer, engineered soil with vegetation, and a shallow stone base to improve infiltration.



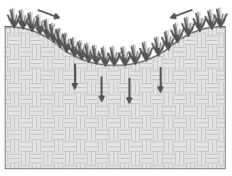
Stormwater planter - self-contained planter box with a permeable bottom. Commonly consists of a surface ponding area, mulch layer, engineered soil with vegetation, and stone base.



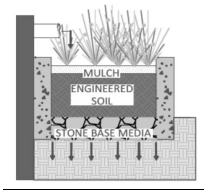
Grass filter strip - strip of grass that infiltrates sheet flow as it passes over its surface. Commonly consists of a shallow topsoil that is planted with short grasses



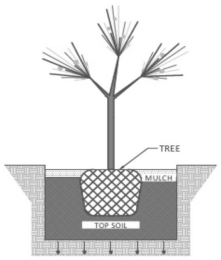
Vegetated swale - open, shallow channels with short vegetation along bottom and sides that infiltrates water as it is conveyed along swale. Commonly consists of a shallow topsoil that is planted with short grasses and may also have check dams to regulate flow within the channel.



Dry well – subsurface shaft (circular) that is typically excavated or augured and then filled with a stone base or a prefabricated structure used to store water. When the

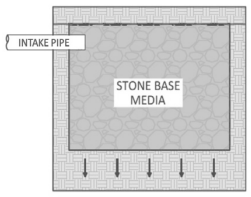


Tree planting (or preservation) - standalone trees (planted or preserved) that capture surface runoff. Commonly consists of a shallow surface ponding area and topsoil for tree planting. In the case of plantings, may also include a shallow drainage layer. This practice is counted towards a reduction of impervious area when calculating the runoff coefficient, rather than towards a required storage volume.

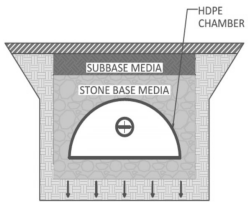


Dry basin - earthen depression that is typically planted with grasses and functions as one large surface ponding area. Usually constructed on naturally pervious soils that do not require the layering of engineered materials.

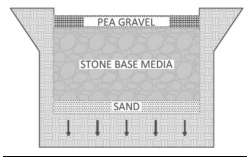
depth of a dry well is greater than its diameter, which is common, an EPA injection well permit may be required (visit epa.gov/uic for more details).



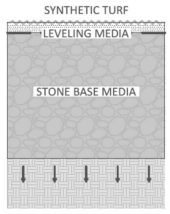
Stormwater gallery – subsurface area (typically rectangular) that is excavated and then filled with stone base, prefabricated structures, chambers, or pipes used to store water. Usually larger than a typical dry well system and, as a result, may treat larger drainage areas.



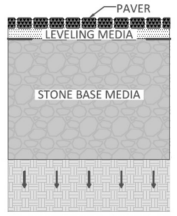
Stone trench – an excavated trench (typically linear) that is filled with stone base or internal pipes used to store water. Similar to a dry well, except the stone trench length is usually greater than its depth and it receives runoff via an exposed stone surface.



Synthetic turf field – synthetic turf material that allows runoff to percolate into underlying layers. Common underlying layers include a shock absorbing pad, leveling course, and a stone base. Due to their size, many synthetic turf fields also include internal pipes to help spread water evenly across the entire storage area.



Porous pavement – pavements that contain voids which allow runoff to percolate into underlying layers. The surface of these systems can either be entirely porous pavement or a grid of pavers and porous materials, such as grass or gravel. Common underlying layers include a leveling course and a stone base.



45. Design Requirements

A comparison of general design requirements for each infiltration system is shown in Table 4.5. Additional requirements, specific to each SMP component, are provided in Section 4.10. Designers must ensure that requirements for all applicable components are met via their design drawings, notes, and specifications. Example sizing calculations can be found in Appendix D.

46. Maintenance Requirements

Post-construction maintenance requirements for various systems are detailed in Chapter 5.

Table 4.5. General design requirements for infiltration SMPs.

Design Parameter[a]	Bioretention	Rain garden	Stormwater planter	Tree planting / preservation	Dry basin
MAX. loading ratio, practice-to-contributing area	1:20	1:5	1:20	1:4	1:40
MAX. contributing area	5 acre	1000 sf	15000 sf	400 sf	5 acre
MIN. infiltration rate of underlying soils	0.5 in/hr	0.5 in/hr	0.5 in/hr	0.5 in/hr	0.5 in/hr
Vertical separation from groundwater / bedrock[b]	3' MIN	3' MIN	3' MIN	-	3' MIN
Surface ponding depth	12" MAX[c]	12" MAX	12" MAX[c]	-	-
Media layers	Mulch Eng. Soil Stone base	Mulch Eng. Soil Stone base	Mulch Eng. Soil Stone base	Mulch Topsoil	Native soils or Topsoil
Surfacing media depth	2-3" TYP.	2-3" TYP.	2-3" TYP.	Varies	-
Leveling media depth	-	-	-	-	-
Planting/filter media depth	2.5' MIN 4' MAX	1' MIN 2' MAX	1.5' MIN	Varies	-
Stone base depth	12" MIN	6" MIN 12" MAX	12" MIN	-	-
Slope of practice surface	1:3 MAX	1:3 MAX	No Slope	-	1:3 MAX
Slope of practice bottom	No Slope	No Slope	No Slope	-	3% MAX
MAX. Drawdown time	Surface = 24hr Total = 48hr	Surface = 24hr Total = 48hr	Surface = 24hr Total = 48hr	-	Surface = 48hr

[a]SMPs in MS4 areas shall follow any additional criteria set forth in the NYS SWMDM for all parameters or components that are not already defined in the NYC SWM
[b]Minimum vertical separation from the top of groundwater table in sole source aquifers is increased to 4 feet.
[c]Storage in surface ponding area above planting media must be 75% of WQv to prevent bypass. This requirement is waived for infiltration practices when a connection is made between the surface ponding area and drainage course to increase rate of storage.

Table 4.5. General design requirements for infiltration SMPs. (Cont.)

Design Parameter[d]	Grass filter strip	Vegetated swale	Dry well	Stormwater gallery	Stone trench	Porous pavement	Synthetic turf field
MAX. loading ratio, practice-to-contributing area	1:3 (Prv.) 1:1.25 (Imp.)	-	-	-	-	-	-
MAX. contributing area	10,000 sf	5 acre	1 acre	5 acre	5 acre	5 acre	5 acre
MIN. infiltration rate of underlying soils	0.5 in/hr	0.5 in/hr	0.5 in/hr	0.5 in/hr	0.5 in/hr	0.5 in/hr	0.5 in/hr
Vertical separation from groundwater / bedrock[e]	3' MIN	3' MIN	3' MIN	3' MIN	3' MIN	3' MIN	3' MIN
Surface ponding depth	-	4" MAX[f]	-	-	-	-	-
Media layers	Native soils or Topsoil	Native soils or Topsoil	Stone base	Stone base	Pea gravel Stone base Sand filter	Leveling media Subbase[g] Stone base	Leveling media Subbase[g] Stone base
Surfacing media depth	-	-	-	-	6" TYP.	-	-
Leveling media depth	-	-	-	-	-	2-4" TYP.	2-4" TYP.
Planting/filter media depth	-	-	-	-	6" MIN	-	-
Stone base depth	-	-	12" MIN	12" MIN	12" MIN	12" MIN	12" MIN
Slope of practice surface	15% MAX 8% MAX (AVG.)	1:3 MAX[h]	-	-	-	5% MAX	-
Slope of practice bottom	-	0.5% MIN 4% MAX	No Slope	No Slope	No Slope	-	No Slope
MAX. Drawdown time	-	-	Total = 48hr	Total = 48hr	Total = 48hr	Total = 48hr	Total = 48hr

[d]SMPs in MS4 areas shall follow any additional criteria set forth in the NYS SWMDM for all parameters or components that are not already defined in the NYC SWM
[e]Minimum vertical separation from the top of groundwater table in sole source aquifers is increased to 4 feet.
[f]Maximum depth of water in the vegetated channel
[g]In cases where geosynthetics do not provide adequate separation and stability, subbase may be added between leveling course and stone base in accordance with manufactuer's recommendation
[h]Maximum cross slope of the vegetated channel

46.5. Evapotranspiration Systems

ET is the process of water being transferred from the land to the atmosphere via the combination of evaporation from land surfaces and transpiration from plants. SMPs that primarily manage runoff by capturing it and slowly releasing it back into the atmosphere over time via ET are classified as ET systems. ET systems are also considered retention systems because their primary function reduces runoff.

There are several features that are common to all ET systems:

- Limited or no ability to infiltrate water due to the composition of underlying soils or physical barriers.
- Receive only direct rainfall or surface runoff (i.e., surface loading only)
- Shallow depth practice composed of mostly soil media, which promotes the natural wicking of moisture to the surface for ET.
- Means of draining excess runoff through outlet pipes, weep holes, drainage course, or other method

An outlet pipe is any pipe that can drain water from the practice before it is full. Typically, this would be a pipe that connects the storage zone of the practice with a point of discharge, such as a sewer, site drainage system, or structure with a controlled-flow orifice. For ET systems, outlet pipes can be used as a means to drain excess runoff, which is required to prevent ponding over long periods

Components used for ET systems vary, but may include surfacing mulch for moisture retention, engineered soil used to support vegetation, surface area used for ponding, drainage media, and geotextiles. The total volume of water that can be stored in the practice must meet or exceed the volume of runoff calculated for the stormwater management requirement. Further details on SMP sizing can be found in Section 4.3.

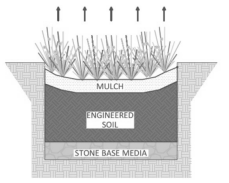
ET systems provide a range of stormwater management benefits, which include runoff reduction, peak flow mitigation, and treatment of pollutants from runoff. Vegetated systems may provide several added co-benefits such as heat island mitigation, ecologic function, community amenity, and removal of airborne pollutants.

The feasibility of ET systems can be limited by subsurface constraints and space constraints. In addition, surface constraints may limit the use of some vegetated ET practices. A description of each constraint may be found in Section 4.2. Readers should refer to the SMP Hierarchy Checklist (Appendix A) for details on how various constraints impact the use of specific SMPs.

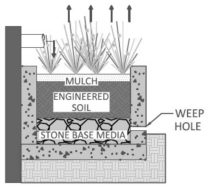
47. ET SMPs

SMPs that can be configured to function as ET systems include rain gardens, stormwater planters, tree plantings, and green roofs. In addition to these systems, other innovative systems may also qualify as ET practices, as described in Section 4.9. A brief description of each ET SMP is provided below, along with an example cross section. Please note that the cross sections are for illustrative purposes only and are not meant to show all required components. Further, systems described in this manual may differ from those used as part of the ROW green infrastructure program.

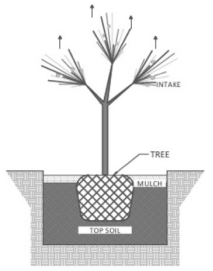
Rain garden - landscaped shallow depression that captures surface runoff. Typically used in residential applications. Similar to bioretention, but components are designed to manage runoff from small areas. Commonly consists of a surface ponding area, mulch layer, engineered soil with vegetation, and a shallow stone base for drainage.



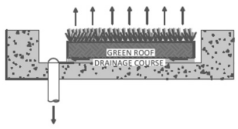
Stormwater planter - self-contained planter box with a concrete bottom. Commonly consists of a surface ponding area, mulch layer, engineered vegetation, and a stone base drainage layer. May also have weep holes to help drain excess water.



Tree planting (or preservation) – standalone trees (planted or preserved) that capture surface runoff. Commonly consists of a shallow surface ponding area and topsoil for tree planting. In the case of plantings, may also include a shallow drainage layer. This practice is counted towards a reduction of impervious area when calculating the runoff coefficient, rather than towards a required storage volume.



Green roof – series of built-up layers on a rooftop that supports vegetation. Commonly consists of a green roof media and drainage course. Some systems include other specialized layers for enhanced storage, filtration, or detention capabilities.



48. Design Requirements

A comparison of general design requirements for each ET system is shown in Table 4.6. Additional requirements, specific to each SMP component, are provided in Section 4.10. Designers must ensure that requirements for all applicable components are met via their design drawings, notes, and specifications. Example sizing calculations can be found in Appendix D.

49. Maintenance Requirements

Post-construction maintenance requirements for various systems are detailed in Chapter 5.

Table 4.6. General design requirements for ET SMPs.

Design Parameter[a]	Rain garden	Stormwater planter	Tree planting / preservation	Green roof
MAX. loading ratio, practice-to-contributing area	1:5	1:5	1:4	1:1
MAX. contributing area	1000 sf	15000 sf	400 sf	-
MIN. infiltration rate of underlying soils	-	-	-	-
Vertical separation from groundwater / bedrock[b]	3' MIN	3' MIN	-	-
Surface ponding depth	3" MAX	3" MAX	-	-
Media layers	Mulch Eng. Soil Stone base[c]	Mulch Eng. Soil Stone base[c]	Mulch Topsoil	Green roof media Stone base[c]
Surfacing media depth	2-3" TYP	2-3" TYP	Varies	-
Leveling media depth	-	-	-	-
Planting/filter media depth	1' MIN 2' MAX	1.5' MIN	Varies	4" MIN[d]
Stone base depth	Varies	Varies	-	Varies
Slope of surface media	1:3 MAX	No Slope	-	Varies[e]
Slope of bottom of practice	No Slope	No Slope	-	Varies[e]
MAX. Drawdown time	-	-	-	-

[a]SMPs in MS4 areas shall follow any additional criteria set forth in the NYS SWMDM for all parameters or components that are not already defined in the NYC SWM
[b]Minimum vertical separation from the top of groundwater table in sole source aquifers is increased to 4 feet. Vertical separation requirements are waived for practices enclosed in concrete with adequate anchoring to withstand uplift pressures.
[c]Evapotranspiration practices must allow drainage of excess water via outlet pipe, weep hole, or other equivalent measure. Geosynthetics can be used as a drainage course instead of stone base, where appropriate, in accordance with manufacturer's specifications.
[d]Green roof media depth of 6-inches is preferred.
[e]Configuration of green roof systems varies widely, see manufacturer's specifications.

49.6. Reuse Systems

Reuse is the process of collecting rainfall or runoff and storing it for eventual reuse in other applications. SMPs that primarily manage runoff by capturing it and reusing it over time, in this case for non-potable and non-irrigation purposes, are classified as reuse systems. Reuse systems are also considered retention systems because their primary function reduces runoff.

There are several features that are common to all reuse systems:

- Enclosed containment area to hold runoff
- Connection with (or manual application to) a system that will reuse stormwater for non-potable and non-irrigation purposes
- Dewatering device

A dewatering device may be needed to empty the container for regular maintenance or cleaning. Common dewatering devices include a valve that releases water or a pump that discharges water. Components of reuse systems commonly include a watertight storage container, secure cover, screen for debris and mosquitoes, access hatch, and the dewatering device. The total volume that can be stored in the structure must meet or exceed the volume of runoff calculated for the stormwater management requirement. Further details on SMP sizing can be found in Section 4.3.

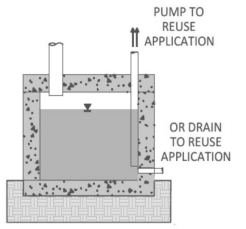
Reuse systems provide runoff reduction and peak flow mitigation through the capture of runoff. In addition, reuse systems help to reduce the demand on potable water.

The feasibility of reuse systems is usually based on the availability of a suitable reuse application, rather than the typical site or space constraints that limit other SMPs. Nonetheless, readers should still refer to the SMP Hierarchy Checklist (Appendix A) when assessing the suitability of various SMPs for the overall project.

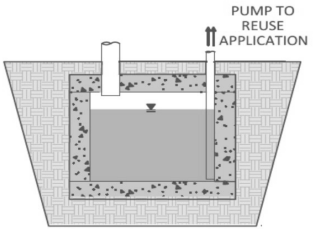
50. Reuse SMPs

SMPs that can be configured to function as reuse systems include rain tanks and cisterns. In addition to these systems, other innovative systems may also qualify as reuse practices, as described in Section 4.9. A brief description of each reuse SMP is provided below, along with an example cross section. Please note that the cross sections are for illustrative purposes only and are not meant to show all required components. Further, systems described in this manual may differ from those used as part of the ROW green infrastructure program.

Rain tank – container that is used to store runoff at or above grade. Typically connected to a system that will automatically and continuously reuse water over time.



Cistern – container that is used to store runoff below grade. Typically connected to a system that will automatically and continuously reuse water over time.



51. Design Requirements

Rain tanks and cisterns are typically manufactured products, available in a wide range of potential materials, sizes, and geometries. As such, designers shall meet all manufacturer recommendations for the installation, use, and maintenance of the system. Additional requirements, specific to each SMP component, are provided in Section 4.10. Designers must ensure that requirements for all applicable components are met via their design drawings, notes, and specifications. Example sizing calculations can be found in Appendix D.

52. Maintenance Requirements

Post-construction maintenance requirements for various systems are detailed in Chapter 5.

52.7. Filtration Systems

Filtration is the process of passing a liquid through a porous medium to trap and separate solids from the liquid. SMPs that primarily manage runoff by filtering out pollutants are classified as filtration SMPs. Filtration SMPs are not considered retention SMPs because they often provide limited runoff reduction. As indicated in Appendix A, filtration practices may not be used towards meeting the water quality stormwater management requirement in CSS areas.

There are several features that are common to all filtration systems:

- Contains a filtration medium that runoff is passed through, which is deep enough to facilitate pollutant removal
- Have an outlet pipe that promotes the continuous filtration of runoff

An outlet pipe is any pipe that drains water from the practice before it is full. In filtration systems, the outlet pipe is located beneath the filtration medium to continuously remove water from the system after it has been filtered. This outlet pipe would typically be a pipe that connects the drainage media of the practice with a point of discharge, such as a sewer, site drainage system, or structure with a controlled-flow orifice.

Components used for filtration systems vary but may include a filtration medium (such as engineered soil, sand, or sand/peat blend); temporary storage area above the filtration medium (can be surface or subsurface); stone base to promote drainage; geotextiles; and an outlet pipe. The total volume of water that can be stored in the practice must meet or exceed the volume of runoff calculated for the stormwater management requirement. Further details on SMP sizing can be found in Section 4.3.

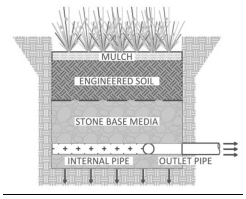
Filtration systems, mainly targeting the treatment of pollutants from runoff, are more limited in stormwater management benefits in comparison to other systems. However, some peak flow reduction may occur where temporary storage areas are used, and some runoff reduction may occur where engineered soils are used as filtration media. Vegetated systems may provide several added co-benefits such as heat island mitigation, ecologic function, community amenity, and removal of airborne pollutants.

The feasibility of filtration systems can be limited by subsurface constraints and space constraints. In addition, surface constraints may limit the use of vegetated infiltration practices. A description of each constraint may be found in Section 4.2. Readers should refer to the SMP Hierarchy Checklist (Appendix A) for details on how various constraints impact the use of specific SMPs.

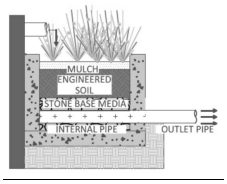
53. Filtration SMPs

SMPs that can be configured to function as filtration systems include bioretention, stormwater planters, porous pavements, synthetic turf fields, sand filters, and organic filters. In addition to these systems, other innovative systems may also qualify as filtration practices, as described in Section 4.9. A brief description of each filtration SMP is provided below, along with an example cross section. Please note that the cross sections are for illustrative purposes only and are not meant to show all required components. Further, systems described in this manual may differ from those used as part of the ROW green infrastructure program.

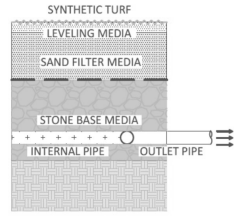
Bioretention - landscaped shallow depression that captures surface runoff. Typically used in dense urban areas. Similar to rain gardens, but components are designed to manage runoff from large areas. Commonly consists of a surface ponding area, mulch layer, engineered soil with vegetation, and stone base to promote drainage.



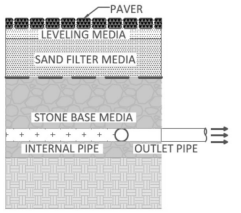
Stormwater planter - self-contained planter box with a permeable or lined bottom. Commonly consists of a surface ponding area, mulch layer, engineered soil with vegetation, and stone base.



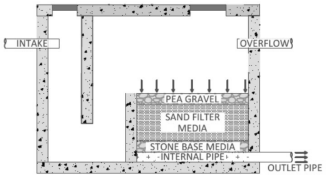
Synthetic turf field – synthetic turf material that allows runoff to percolate into underlying layers. Common underlying layers include a shock absorbing pad, leveling course, sand filter media, and a stone base. Due to their size, many synthetic turf fields also include internal pipes to help spread water evenly across the entire storage area.



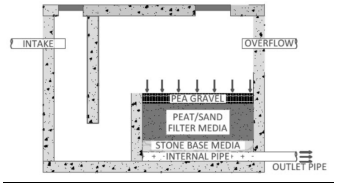
Porous pavement – pavements that contain voids which allow runoff to percolate into underlying layers. The surface of these systems can either be entirely porous pavement or a grid of pavers and porous materials, such as grass or gravel. Common underlying layers include a leveling course, sand filter media, and a stone base.



Sand filter – typically a prefabricated chamber that contains a filter bed of sand. The chamber also facilitates the temporary storage of water above the filer bed as it percolates through the sand filter.



Organic filter – typically a prefabricated chamber that contains a filter bed of organic media. The chamber also facilitates the temporary storage of water above the filter bed as it percolates through the organic media filter.



54. Design Requirements

A comparison of general design requirements for each filtration system is shown in Table 4.7. Additional requirements, specific to each SMP component, are provided in Section 4.10. Designers must ensure that requirements for all applicable components are met via their design drawings, notes, and specifications. Example sizing calculations can be found in Appendix D.

Table 4.7. General design requirements for filtration SMPs.

Design Parameter[a]	Bioretention	Stormwater planter	Porous pavement	Synthetic turf field	Sand filter	Organic filter
MAX. loading ratio, practice-to-contributing area	1:20	1:20	1:60	1:60	1:60	1:30
MAX. contributing area	5 acre	15000 sf	5 acre	5 acre	10 acre	10 acre
MIN. infiltration rate of underlying soils	-	-	-	-	-	-
Vertical separation from groundwater / bedrock[b]	3' MIN	3' MIN	3' MIN	3' MIN	3' MIN	3' MIN
Surface ponding depth[c]	6" MIN 12" MAX	6" MIN 12" MAX	Varies	Varies	6" MIN	6" MIN
Media layers	Mulch Eng. Soil Stone base	Mulch Eng. Soil Stone base	Leveling media Subbase[d] Sand filter Stone base	Leveling media Subbase[d] Sand filter Stone base	Pea gravel[e] Sand filter Stone base	Pea gravel[e] Peat/sand filter Stone base
Surfacing media depth	2-3" TYP	2-3" TYP	-	-	Varies[e]	Varies[e]
Leveling media depth	-	-	2-4" TYP	2-4" TYP	-	-
Planting/filter media depth	2.5' MIN	1.5' MIN	1.5' MIN	1.5' MIN	1.5' MIN	1.5' MIN
Stone base depth	12" MIN	12" MIN	12" MIN	12" MIN	6" MIN	6" MIN
Slope of surface media	1:3 MAX	No Slope	5% MAX	-	-	-
Slope of bottom of practice	No Slope	No Slope	-	No Slope	-	-
MAX. Drawdown time	Surface = 24hr Total = 48hr	Surface = 24hr Total = 48hr	Total = 48hr	Total = 48hr	Total = 48hr	Total = 48hr

[a]SMPs in MS4 areas shall follow any additional criteria set forth in the NYS SWMDM for all parameters or components that are not already defined in the NYC SWM
[b]Minimum vertical separation from the top of groundwater table in sole source aquifers is increased to 4 feet. Vertical separation requirements are waived for practices enclosed in concrete with adequate anchoring to withstand uplift pressures.
[c]Storage in ponding area above filtration media must be 75% of WQv to prevent bypass. This requirement cannot be waived for filtration practices.
[d]In cases where geosynthetics do not provide adequate separation and stability, subbase may be added between leveling course and stone base in accordance with manufactuer's recommendation.
[e]Surfacing media type and depth for protection of filtration media varies. Other types of surfacing media can include debris screens and topsoil.

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54.8. Detention Systems

Detention is the process of temporarily holding back stormwater so that it may be released in a controlled manner at a lower rate. SMPs that primarily manage runoff by detaining runoff to reduce the peak flow rate felt by downstream systems are classified as detention SMPs. Detention SMPs are not considered retention SMPs because they often provide limited runoff reduction.

There are several features that are common to all detention systems:

- Device which controls the flow rate of runoff that exits the practice, such as an orifice
- Temporary storage zone that can fill-up when the inflow rate is greater than the release rate
- Hydraulic connection between the controlled-flow device and temporary storage zone, usually via an outlet pipe

An outlet pipe is any pipe that drains water from the practice before it is full. In detention systems, the outlet pipe typically connects the drainage layer of the practice with a structure that contains a controlled-flow orifice.

The temporary storage zone of detention systems is usually either a surface area for ponding, enclosed container, or subsurface stone base. Other common components can include engineered soil used to support vegetation, geotextiles, controlled-flow orifice, and internal structures or pipes used to help distribute or store water. The total volume of water that can be stored in the practice must meet or exceed the volume of runoff calculated for the stormwater management requirement. Further details on SMP sizing can be found in Section 4.3.

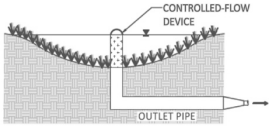
Detention systems, mainly targeting the reduction of peak flow rates, are more limited in stormwater management benefits compared to other systems. However, some runoff reduction may occur in systems where soil media are used. Vegetated systems may provide several added co-benefits such as heat island mitigation, ecologic function, community amenity, and removal of airborne pollutants.

The feasibility of detention systems can be limited by subsurface constraints and space constraints. In addition, surface constraints may limit the use of vegetated detention practices. A description of each constraint may be found in Section 4.2. Readers should refer to the SMP Hierarchy Checklist (Appendix A) for details on how various constraints impact the use of specific SMPs. As indicated in Appendix A, only select detention practices with treatment abilities may be used towards meeting the water quality stormwater management requirement in MS4 areas.

55. Detention SMPs

SMPs that can be configured to function as detention systems include dry basins, constructed wetlands, wet basins (or ponds), stormwater galleries, blue roofs, and detention tanks. In addition to these systems, other innovative systems may also qualify as detention practices, as described in Section 4.9. A brief description of each detention SMP is provided below, along with an example cross section. Please note that the cross sections are for illustrative purposes only and do not show all potential components. Further, systems described in this manual may differ from those used as part of the ROW green infrastructure program.

Dry basin - earthen depression that is typically planted with grasses and functions as one large surface ponding area. May be constructed on pervious or non-pervious soils when used as a detention system.



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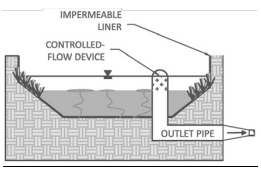
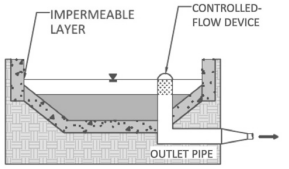
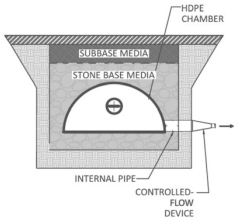
Constructed wetlands – an artificial wetland that is created using impervious soils or liners, within which vegetation and a permanent pool of water are used to treat stormwater. These systems allow for additional, temporary storage above the permanent pool.



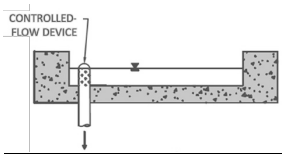
Wet basins/ponds – a permanent pool of water used to treat stormwater, usually underlain by impervious soils or a liner. These systems allow for additional, temporary storage above the permanent pool.



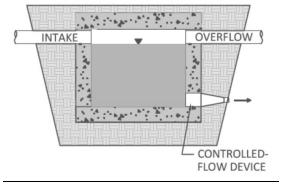
Stormwater gallery – subsurface area (typically rectangular) that is excavated and then filled with stone base, prefabricated structures, chambers, or pipes used to store water. Usually larger than a typical dry well system and, as a result, may treat larger drainage areas.



Blue roof – any rooftop that is outfit with a system that temporarily holds back water on the roof surface. Common systems include check-dams, modular storage units, or roof drain restriction devices.



Detention tank – enclosed tank with a device that controls the release rate of water. Common devices include a controlled-flow orifice or pump.



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56. Design Requirements

A comparison of general design requirements for each detention system is shown in Table 4.8. Additional requirements, specific to each SMP component, are provided in Section 4.10. Designers must ensure that requirements for all applicable components are met via their design drawings, notes, and specifications. It is essential that designers configure the detention system to maintain the appropriate maximum release rate for either CSS or MS4 areas, as specified in Equation 2.5. Example sizing calculations can be found in Appendix D.

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Table 4.8. Basic design requirements for detention SMPs.

Design Parameter	Dry basin	Constructed wetland[a]	Wet basin/pond[a]	Stormwater gallery	Blue roof	Detention tank
MAX. (MIN.) loading ratio, practice-to-contributing area	1:40	(1:100)	(1:100)	-	-	-
MAX. (MIN.) contributing area	5 acre	(25 acre)	(25 acre)	5 acre	-	-
MIN. infiltration rate of underlying soils	-	-	-	-	-	-
Vertical separation from groundwater / bedrock[b]	3' MIN	3' MIN	3' MIN	3' MIN	-	3' MIN
Has a permanent pool?	No	Yes	Yes	No	No	No
Slope of surface media	1:3 MAX	1:3 MAX	1:3 MAX	-	-	-
Slope of bottom of practice	3% MAX	3% MAX	3% MAX	No Slope	-	-
MAX. Drawdown time	Temp. Storage Area = 48hr	Temp. Storage Area = 48hr	Temp. Storage Area = 48hr	Temp. Storage Area = 48hr	Temp. Storage Area = 24hr	Temp. Storage Area = 72hr

[a]SMPs in MS4 areas shall follow any additional criteria set forth in the NYS SWMDM for all parameters or components that are not already defined in the NYC SWM
[b]Minimum vertical separation from the top of groundwater table in sole source aquifers is increased to 4 feet. Vertical separation requirements are waived for practices enclosed in concrete with adequate anchoring to withstand uplift pressures.

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57. Innovative Systems

SMP technologies are constantly evolving as innovations are made in their components and configurations. As such, new and innovative systems may not conform to the standard practices or common functions outlined in the previous sections. NYC DEP supports the use of innovative practices through several pathways for the approval of proprietary, hybrid, and dual function technologies. This section outlines the approval process for these systems.

58. Proprietary Systems

Proprietary systems encompass a broad range of manufactured SMPs that are made available by commercial vendors. These systems can vary widely in terms of components and intended function. Some examples of common proprietary systems include:

- Hydrodynamic separators – flow-through structures that use the dynamics of moving water to separate and deposit pollutants such as sediment and floatables. Typically, this system involves creating a centrifugal flow and/or movement through a series of baffles.
- Alternative media filters – systems that filter runoff using an alternative medium, such as fabrics, activated carbon, perlite, zeolite, or other blended media.
- Modular infiltration systems – prefabricated structures with proprietary components that facilitate the storage and infiltration of runoff.
- The system function does not correspond to the standard functions outlined in this chapter
- The system seeks a variance in the methods used for determining storage capacity

For application in MS4 areas, proprietary systems must be evaluated and approved via one of the processes outlined in the NYS SWMDM. These processes include the US EPA Environmental Technology Verification Program (ETV), the state of Washington Technology Assessment Protocol – Ecology (TAPE), or the Technology Acceptance Reciprocity Partnership Protocol (TARP). Proprietary systems that are verified or certified by the ETV, TAPE, or TARP process as meeting the treatment criteria detailed in the NYS SWMDM are approved for use in MS4 areas.

Proprietary systems that are approved via the NYS SWMDM processes may also be used in CSS areas. In addition, NYC DEP may also evaluate and approve proprietary systems for application in CSS areas on a case-by-case basis. For approval from NYC DEP, designers must demonstrate that the proprietary system will either achieve the desired level of infiltration, ET, reuse, or detention; or result in an equivalent reduction of CSO volume. Depending on the type of proprietary system, this may involve showing that:

- Infiltration and ET systems have an active storage zone that is sufficient to fully capture the water quality event and recharge that capacity in a timely manner.

- Enhanced green roofs – green roofs that manage stormwater using proprietary media other than soils, such as retention fabrics, detention meshes, and modular storage components.

This list of common proprietary systems is not meant to be exhaustive and, in fact, new systems will continue to become available over time. In general, the use of proprietary systems must be approved when one or more of the following are true:

- The system does not meet the design criteria of standard practices outlined in this chapter
- Detention systems are able to maintain a maximum release rate of 0.1 cfs/acre for the sewer operations event.

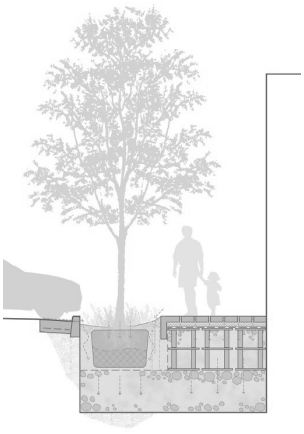
Approved technologies must be sized to manage runoff from contributing areas for the appropriate design event. Storage-based practices may be sized in accordance with the storage volume methods of Section 4.3. Designers are responsible for meeting all design criteria, guidelines, and recommendations provided by the manufacturer for that system, including, but not limited to, structural integrity, components, configuration, installation, operation, and maintenance. In addition, designers must ensure that any requirements related to setbacks, subsurface conditions, inflow/outflow rates, bypass, overflow, accessibility, maintenance, or safety issues are addressed.

59. Hybrid Systems

Hybrid systems refer to cases where two or more SMPs of the same function are integrated as one practice. Typically, hybrid systems involve the use of two infiltration systems that share a single storage zone. For example, a bioretention and porous pavement system that are located adjacent to one another and drain into a shared stone base (Figure 4.12).

Figure 4.12. Illustration of a hybrid system that incorporates bioretention and porous pavement features (image courtesy of SCAPE).

- ET systems with alternative storage methods (e.g., non-soil storage) will achieve sufficient ET either by wicking to the green roof media layer or by direct evaporation.
- Reuse systems do not rely on water uses that would impair another systems stormwater management capability.
- Filtration systems and other flow-based practices are able to treat the water quality event without bypass. Designers should refer to Appendix B of the NYS SWMDM for flow calculation methods.

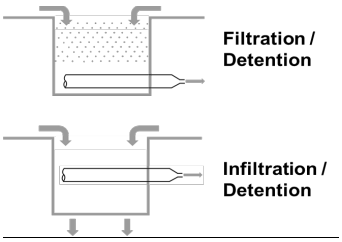


If each SMP of the hybrid system meets all applicable design criteria, then no special approvals are required for their use. When this is not the case, hybrid systems must gain approval through the same processes identified for proprietary systems. While most hybrid systems are anticipated to be infiltration systems, other types may be feasible at the discretion of NYC DEP.

60. Dual Function Systems

Dual function systems refer to cases where one SMP is configured to support runoff management via two, equally contributing functions. The two most common types of dual function systems is one with filtration/detention systems and infiltration/detention systems, as illustrated in Figure 4.13.

Figure 4.13. Illustration of the two most common dual function systems.



While these are the most common types, other dual function systems may be possible. A brief description and examples of the two common dual function systems are presented in the following paragraphs.

Filtration/Detention Systems

Dual function systems for filtration/detention are designed to allow water to pass through a filtration media, which then drains to a controlled-flow device for slow release. These systems rely on both the steady flow of water and the ability to control the release rate.

Any of the standard filtration practice may be designed with a controlled-flow device to facilitate detention. No special approvals are required when the SMP meets all of the design criteria for filtration systems and has a controlled-flow device with a maximum release rate of 0.1 cfs/acre. In cases where one or both of these conditions are not met, dual function filtration/detention systems must gain approval through the same processes identified for proprietary systems.

If a release rate of 0.1 cfs/acre would require an orifice less than one-inch, a one-inch orifice may be accepted, at the discretion of NYC DEP, when another detention system is located downstream. If the flow rate through the controlled-flow device is more restrictive than the filtration media, designers must use the controlled-flow rate to calculate drawdown time.

With regards to storage volume, the active storage zone for both filtration and detention practices are the same. The bottom of the active storage zone is the invert elevation of the outlet pipe, while the top is the elevation at which water may overflow or bypass the system. Therefore, the volume of the practice used for both functions is the same.

Filtration/detention practices may apply 100% of their volume towards the water quality criterion (WQv) and 50% towards the sewer operations criterion (Vv). Finally, if the filtration / detention system uses an engineered soil media filter, 40% of the volume may be applied towards the runoff reduction criterion (RRv).

Infiltration / Detention Systems

Dual function systems for infiltration/detention are designed with an outlet pipe that is raised above the bottom of the practice and drains water to a controlled-flow device. This means that water below the outlet pipe is captured and infiltrated, while water above the invert of the outlet pipe is detained.

Any standard infiltration practice with a stone base may be designed with a controlled-flow device to facilitate detention, except for rain gardens. No special approvals are required when the SMP meets all of the design criteria for infiltration systems and also has a controlled-flow device with a maximum release rate of 0.1 cfs/acre. In cases where one or both of these conditions are not met, dual function filtration/detention systems must gain approval through the same processes identified for proprietary systems.

If a release rate of 0.1 cfs/acre would require an orifice less than one-inch, a one-inch orifice may be accepted, at the discretion of NYC DEP, when another detention system is located downstream.

The calculation of drawdown time and application of volumes is more complex for infiltration / detention systems since their storage volumes are defined differently. The volume that functions as infiltration is only the volume below the invert elevation of the outlet pipe, whereas the volume that functions as detention is the volume above the invert elevation of the outlet pipe up to the elevation that either overflow or bypass occurs. With that in mind, two drawdown times must be computed. One for the drawdown time of the infiltration volume and another for the drawdown time of the detention volume.

Of the volume that functions as infiltration, 100% may be applied towards the WQv and RRv, while 50% may be applied towards the Vv. Of the volume that functions as detention, 100% may be applied towards the WQv in CSS areas and 50% may be applied to the Vv. However, if the practice does not have any planting or filtration media (e.g., stormwater gallery), then 100% of the volume that functions as detention may be applied toward the Vv. The storage volumes for each function of infiltration/detention systems must be clearly identified in section view as part of permit applications.

61. SMP Components

SMPs are designed as systems with several components that work together to ensure the functionality of the practice. This section provides guidance and requirements for the design of each common SMP component. Designers must ensure that requirements for all applicable components are met via their design drawings, notes, and specifications. The designer may propose systems with components that are not mentioned here, subject to approval by NYC DEP.

62. Pre-treatment

Pre-treatment refers to systems that help remove sediment, floatable debris, hydrocarbons, and/or other contaminants commonly found in stormwater runoff before they enter an SMP.

All inlets that ultimately drain to a subsurface practice must have pre-treatment systems that help to remove sediments and floatables. This requirement helps protect the SMP against the reduction of storage capacity, clogging of internal pipes, and/or loss of infiltration that sedimentation can cause over time. Designers should refer to the inlet component subsection for more details.

Beyond the required pre-treatment systems for inlets, designers shall consider other measures in cases where sedimentation risks are increased due to land uses, topography, or high permeability of underlying soils (greater than 2 in/hr). In these cases, additional pre-treatment measures, such as a forebays, vegetated swales, filter strips or hydrodynamic separators may be required, at the discretion of NYC DEP.

Pretreatment may be of particular importance for industrial maintenance facilities where pollutants of concern include, salt, oils, and grease. In addition to the measures described above, pre-treatment devices such as media filters and sorbents have been shown to be effective at removing oils and grease (CWP 2007, Pitt et al. 1999). Salt, however, is highly soluble and is not readily removed by structural management practices, including media filters. Pollution prevention, such as covering salt storage areas or placing impermeable barriers around salt piles is the most effective method of reducing salt transport via stormwater runoff (WDNR 1994, MPCA 2000).

Other considerations for the design of the ponding depth may include adjacent land use, site constraints, and the potential need for public safety measures. Specifically, in cases where ponding area design may present public hazards, designers shall consider signage, barriers, and/or other safety measures to mitigate such hazards.

64. Permanent Pool

Unlike ponding areas, a permanent pool is a surface area where water is permanently held. Typically, permanent pools are underlain by an impermeable soil or liner to prevent them from draining. Wetlands and wet ponds have permanent pools that help to treat runoff through sedimentation and biological processes.

SMPs with permanent pools require a 25-foot buffer area between the point of maximum water surface elevation and any site features. Trees in the buffer area should be preserved during construction. Warning signs must be posted around SMPs with permanent ponds, which prohibit swimming, wading, and skating; warn of possible contamination or pollution of pond water; and indicate the maximum depth of the pond. In addition, designers

63. Ponding Area

Ponding areas are used to temporarily store runoff at the surface of an SMP. Most SMPs with ponding areas allow depths of up to 12-inches, except for ET SMPs which allow up to 3-inches, as well as a few specific practices that temporarily store all their volume at the surface (e.g., dry basins). Ponding areas must drawdown within 24-hours to mitigate the risk of mosquito breeding, except for dry basins which are allowed 48-hours to drawdown. Drawdown time calculations are provided in Section 4.3.

Most practices that filter water through a planting or filtration media must be able to temporarily hold 75% of the WQv above the filter media to avoid bypass of the WQ event (see design criteria). This is typically done in the ponding area but may also be achieved by an equalization structure. For infiltration practices, this requirement is waived when a hydraulic connection is made between the ponding area and stone base, such as a riser pipe or stone gabion. Designers must consider measures to reduce the sedimentation risks of hydraulic connections, such as raising the connection above the lowest ponding elevation, providing screens, or other alternatives.

A minimum 3 inches of freeboard (i.e., depth between maximum surface ponding and adjacent grade) is required for all ponding areas. Overflow devices shall be used to control the maximum surface ponding depth. Typical overflows consist of a riser pipe and domed grate.

In cases where the surface of an SMP is not level, the ponding depths may vary across the practice, but the minimum and maximum allowable values must be followed. When graded slopes are used to create ponding areas, a maximum side slope of 1V:3H shall be used.

Each permanent pool must have an outlet pipe that, when activated, can drain the pond within 24 hours. In addition, the outlet pipe shall have an elbow or protected intake to prevent sediment deposition within the pipe.

65. Vegetation

Establishing vegetation is essential to the functionality of a vegetated practice. Plants should be chosen based on their hardiness, soil and light conditions, root structure, and ability to adapt to wet and dry conditions. The vegetative cover and root systems should promote infiltration within the engineered soil, provide an aesthetic benefit, and help prevent erosion, particularly on surface side slopes.

In cases where runoff enters a practice via a vegetated surface, the entrance velocity of runoff may not exceed erosive velocities. If the grading of adjacent areas cannot be modified to prevent erosive velocities, or the practice receives surface water from a rooftop drain pipe, energy dissipation measures must be used to limit erosion (see energy dissipation components).

shall also consider barriers and/or other safety measures to mitigate public hazards.

The perimeter of all permanent pools with depths of 4ft or more must have an aquatic bench and a safety bench. In these cases, the boundary of the permanent pool will have four distinct zones, each with its own slope requirement:

- Aquatic bench – extends from the edge of the normal water level, 15ft inwards towards the basin floor. Maximum slope of 1V:10H.
- Pool slope – extends from the aquatic bench to the basin floor. Maximum slope of 1V:2H.
- Safety bench – extends from the edge of the normal water level, 15ft outwards towards the edge of the practice. Maximum slope of 1V:15H.
- Toe slope – extends from the safety bench to the edge of the practice. Maximum slope of 1V:3H.

Given that landscaping is critical to the performance of vegetated SMPs, a landscaping plan must be provided for these systems. Guidance on the selection and planting of SMP vegetation can be found in the Native Species Planting Guide for New York City, which is available online at the NYC DPR publications webpage (www.nycgovparks.org/greening/natural-resources-group/publication). In general, considerations for the development of landscaping plans include:

- Vegetation should be selected that are capable of withstanding frequent cycles of inundation and drought.
- Native plant species should be specified over non-native species.
- The prevalence of wet, dry, sunny, or shady zones within the SMP should be considered as part of the landscaping plans.

- Where trees are proposed, an understory of shrubs and herbaceous materials should be provided.
- Woody vegetation should not be specified at inflow locations.
- For on-site facilities, a tree spacing of approximately 10 feet on-center is recommended.
- The recommended spacing for shrubs is 5 feet on-center for large container sizes (5gal or more), 3 feet on center in standard applications, and 1.5 foot on-center for small rain gardens.
- The recommended spacing for herbaceous vegetation is 2 feet on-center for grasses and 1.5 feet for perennials.

66. Media

Most SMPs consist of a series of built-up media layers that work together to manage stormwater. A wide range of media types have been developed for SMPs, which have an equally wide range of naming conventions and compositions. Table 4.9 includes standard names and compositions for ten media types, which are to be used for SMP design. A general description for each media type is as follows:

- Mulch – used on the surface of soils for moisture retention and nutrients
- Pea gravel – used on the surface of filters or other media to reduce direct contact or scour
- Engineered soil – default soils to be used for planting areas, except for special cases
- Topsoil – specialized soils for standalone tree plantings or soil amendments that have more fine and nutrient content
- Green roof media – specialized soils for green roofs that are lightweight and fast draining
- Sand filter media – sand media that is intended to filter percolating water
- Peat/sand filter media – peat/sand media blend that is intended to filter percolating water
- Stone base media – default media to be used for storage and/or drainage layers
- Leveling media – used under porous pavements and synthetic turf fields to increase contact area and allow leveling
- Subbase media – may be used as a transition between the leveling media and stone base media for added separation and stability

The design criteria tables in Sections 4.4-4.8 indicate which media are appropriate for each practice type, along with their required depths. Guidance on the composition for each media type are provided in Table 4.9. Practices that are not constructed in accordance with these media guidelines may be rejected, at the discretion of NYC DEP.

Wherever trees are used, practices must have at least 2.5 feet depth of soil media, which would be topsoil for standalone tree plantings and engineered soil for other practices. All other vegetation requires at least 1 foot depth of soil media, with a depth of 2 feet being preferred.

The installation of stone base should be done in lifts of 6-8 inches, with care taken not to over-compact the subgrade or stone base layers. Over-compaction can result in lower than anticipated storage potential and a reduction in infiltration rates. Any practice that uses a subsurface stone base must include an observation well or other means of observing the subsurface water level (see the Observation Well component subsection).

Table 4.9. Composition guidance for the ten SMP media types.

Media Name	Composition	Additional Guidance
Mulch (Surfacing Media)	Shredded hardwood	Aged 6-months minimum
Pea gravel (Surfacing Media)	ASTM D 448 No. 6	Clean and free of fines Rounded bank run gravel
Engineered soil, CSS areas	By weight: Gravel (> 2.0mm) 0-8% Sand (0.05-2mm) 80-85%, of which: Course Sand (0.5-1mm) 0-5% Medium Sand (0.25-0.5mm) 55-75% Fine Sand (0.1-0.25mm) 20-40% Silt (0.002-0.05mm) 5-10% Clay (<0.002mm) 3-8% Organic Matter 3-6%	pH 5.0-7.0 Kjeldahl N - 0.06 - 0.25% (NO-3 < 20ppm) Phosphorous - 80 - 100 lbs/acre Potasium - 100 - 300 lbs/acre Acid-producing Soil Test pH > 4.5 Free of refuce, hard clods, woody vegetation, stiff clay, construction debris (of any kind), boulders, stones greater than 1-1/2 inch, chemicals, or other deleterious material toxic to any vegetation used on this project
Engineered soil, MS4 areas	By volume: Sand (0.05-2mm) 35-60% Silt (0.002-0.05mm) 30-55% Clay (<0.002mm) 10-25% Organic Matter 1.5-4%	pH 5.2-7.0 Phosphorous > 75 lbs/acre Potasium > 85 lbs/acre Magnesium > 35 lbs/acre Free of stones, stumps, roots, or other woody material over 1" in diameter. Brush or seeds from noxious weeks.
Topsoil media	By weight: Gravel (> 2.0mm) < 20% Sand (0.05-2mm) 65-70% Silt (0.002-0.05mm) 10-30% Clay (<0.002mm) < 10% Organic Matter 5-9%	pH 6.0-7.5
Green roof media	By weight: Silt (0.002-0.05mm) ≤ 10% Clay (<0.002mm) ≤ 2% Organic Matter ≤ 8%	pH 6.0-8.5 Maximum water holding capacity 35-65%
Sand filter media	Clean AASHTO M-6 or ASTM C-33 concrete sand	Sand substitutes such as diabase and graystone #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. "Rock dust" cannot be substituted for sand.
Peat/Sand filter media	By volume: 50% Reed-sedge hemic peat 50% Clean AASHTO M-6 or ASTM C-33 concrete sand	Sand guidance: see above Peat guidance: Ash Content <15% pH 4.9-5.2 Loose bulk density 0.12-0.15 g/cc Shredded, uncompacted, uniform, and clean
Stone base media	ASTM No. 57 Stone	Clean and free of fines Maximum wash loss of 0.5% Maximum abrasion of 10% for 100 revolutions and 50% for 500 revolutions
Leveling media	ASTM No. 89 Stone	
Subbase media	ASTM No. 2 Stone	Clean and free of fines

67. Subgrade (Underlying Soils)

Subgrade refers to the native soils that are underneath the base of an SMP. Prior to the installation of SMPs, the subgrade must be evaluated in accordance with the NYS SWMDM procedures (Appendix D: Infiltration Testing Requirements). Only subgrades with an infiltration rate of 0.5 in/hr or more are suitable for infiltration practices. Alternatively, when the permeability rate is 2.0 in/hr or greater, additional pre-treatment measures may be needed to reduce the risk of contaminant transport.

Wherever possible, SMPs should be designed with a permeable bottom between the SMP base and the subgrade to help facilitate infiltration, even in cases where the practice is not considered an infiltration practice (i.e., permeability rates are low). However, SMPs may not have a permeable bottom in the following cases:

- land uses may result in contaminated runoff,
- geotechnical tests indicate that native soils may be contaminated, or
- water table or bedrock are within three feet of the bottom of the practice

After SMP excavation, particular care should be taken not to compact the subgrade prior to placement of the stone base or other components. In cases where compaction could not be avoided, the subgrade shall be restored via tilling or aerating prior to placement of the stone base or other components.

In addition, the subgrade surface should be scarified prior to the placement of any infiltration practices. In cases where erosion of the subgrade has resulted in an accumulation of fine materials at the proposed base of an SMP, remove these materials to a depth of 6-inches and replace with engineered soil.

It is recommended that the stone base and other components are placed immediately after subgrade preparation to prevent the accumulation of debris or sediment.

70. Geomembranes

SMPs must be completely lined with a geomembrane in the following cases:

- land uses may result in contaminated runoff, or
- geotechnical tests indicate that native soils may be contaminated

Geomembranes may also be used along the sides of practices to reduce the risk of water intrusion when SMPs cannot meet setback requirements from structures, at the discretion of NYC DEP. In this case, the impervious liner shall extend from the top of the freeboard to 12 inches beneath the bottom of the practice and shall cover the full width of the excavation.

All geomembranes shall be made of high-density polyethylene. The geomembrane liner shall be sufficiently anchored along the upper edge to prevent slipping and shall not extend to the surface where it would be visible. Specific material requirements for geomembranes include the following:

- ASTM D751 (30 mm thickness)
- ASTM D412 (tensile strength 1,100 lb, elongation 200%)
- ASTM D624 (tear resistance 150 lb/in)

71. Inlets

An inlet is any structure that captures water which eventually drains to an SMP. They are usually located at the low points of a site. Common types of inlets include yard drains, catch basins, and manholes with a slotted frame. All inlets must include where appropriate:

- A minimum 1-foot sump to allow for sediment collection and removal
- Hood or baffle to allow for containment of floatable debris
- ADA (Americans with Disabilities Act) compliant grates, if placed over pedestrian surfaces

68. Internal Structures

Internal structures refer to any interior container that is used to store water, typically located within the drainage layer of the SMP. Internal structures include modular systems, such as chambers, tanks, cisterns, crates, or other pre-cast units, as well as storage pipes.

In the case of modular systems, designers must follow all manufacturer guidelines for their design and installation. This may include, but is not limited to, guidelines for setbacks, spacing, cover, base depth, hydraulic connections, and maintenance access. In the case of storage pipes, refer to the internal pipe component subsection.

69. Geotextile

Geotextile fabrics should be used along the sides and top of the drainage layer, where the drainage layer interfaces with native soils, engineered soils, and filtration media. Geotextile fabrics should not be used at the base of practices, as the fabric is more likely to become clogged and impede infiltration. In addition, geotextile fabrics should not be used around perforated pipes, when they are within the drainage layer of an SMP, to help reduce the potential for clogging.

Non-woven geotextile fabrics are the most appropriate type for allowing and sustaining infiltration. It is critical that the geotextile fabric does not impede flow rates, and designers shall specify materials accordingly. Heat-bonded nonwoven fabrics are not recommended, because they tend to clog very quickly. Designers should review manufacturer's recommendations to avoid placement that would void the warranty.

Adjacent strips of geotextile filter fabric shall overlap a minimum of 16 inches and shall be secured at least 4 feet outside of bed until all bare soils contiguous to beds are stabilized and vegetated.

- H-20 loading grates, if placed in locations with vehicular traffic

To prevent flooding, inlets shall include a means of bypassing the practice once it is full. This is often a bypass pipe that connects to a drainage system downstream of the practice. The invert of the bypass shall match or exceed the maximum storage elevation of the SMP. In cases where a bypass pipe is not feasible, designers must show that flow rates to the inlet will not cause surcharge within 6-inches of the inlet surface when the practice is full.

Pre-treatment components, such as the sump and the hood or baffle, are particularly important for reducing the amount of sediment and debris that are conveyed to the SMP. This requirement helps protect the SMP against the reduction of storage capacity, clogging of internal pipes, and loss of infiltration that sediment and debris can cause over time.

Hoods and baffles are typically installed around the pipe that exits the inlet to prevent floatable debris from being conveyed downstream. The hood or baffle must extend at least four inches below the exiting pipe's invert and must project away from the pipe opening enough not to restrict flow. In the case of proprietary hoods and baffles, all manufacturers' guidelines must be followed.

Additional pre-treatment measures, such as filter bags and baskets, can help to further reduce sediment and floatable debris that are conveyed to the SMP. While these measures are typically optional, they may be required in areas where risk of sedimentation and floatable debris is high.

Filter bags and baskets are inserts that are situated under the inlet grate to capture floatable debris and sediments as water enters the inlet. Filter bags are typically made of permeable fabrics, while baskets are usually made of more rigid materials with openings. The level of pre-treatment provided by filter bags and baskets is related to

the size of openings in the materials; where smaller openings will capture more sediments but require more frequent maintenance to prevent clogging. The size of openings should be set to capture the most sediment and debris possible without resulting in a flow restriction when the bag or basket is partially full. Designers should also consider the likely frequency of maintenance when setting the size of openings.

72. Energy Dissipation

Energy dissipation and/or armoring measures are required when the velocity of runoff entering an SMP may result in erosion.

Energy dissipation is often achieved by some form of level spreader which reduces the velocity of runoff by creating sheet flow across a larger surface area. Other, proprietary, energy dissipation methods usually involve sending water through a matrix where eddies and friction work to slow the velocity of water. Common types of armoring, to protect against erosive velocities, include inlet aprons of hard materials and crushed stone ballasts or channels.

73. Manholes

Manholes are structures that serve as junction points of the drainage system, used where pipes change elevation, change direction, or at each 300ft interval of pipe to allow access and maintenance. Whenever feasible, manholes should be designed so that they do not require confined space entry but can easily be accessed by a vactor truck attachment. Generally, manholes:

- Shall be a minimum of 4 feet in diameter when there are two or more inlet pipes
- Shall not have more than three pipe connections at the same elevation; additional connections shall be separated by at least 1 foot vertically
- Shall be located at least 3 feet above the groundwater table, or be properly anchored, to prevent potential groundwater infiltration into the system

- Require a minimum concrete leg of 6 inches between the manhole block-outs for adjacent pipes.

74. Observation Wells

Observation wells must be installed in all practices with a subsurface stone base. As an alternative, inspection ports may be installed in cases where chambers are used. Other suitable alternatives may also be considered that allow observation of the subsurface water level. The observation well or inspection port is key to monitoring the water levels in the practice and determining the need for maintenance. One observation well or other means of observation is required for each 5,000 sf of SMP area.

Observation wells shall consist of a minimum four-inch diameter polyvinyl chloride (PVC) pipe, extending from the surface of the practice to the bottom of the drainage layer, with perforations along the entire drainage layer. The observation well must be anchored in place, which is commonly done using a concrete collar. The top of the observation well must be capped with a lockable top lid. In locations with pedestrian access, the cap of the observation well must be flush with the surface to avoid a tripping hazard.

75. Pipes

Given the wide range of pipe functions and naming conventions, the Unified Stormwater Rule defines four types of pipes for clarity, as follows:

- Conveyance pipes – umbrella term used to describe yard drains, bypass pipes, overflow pipes, and intake pipes
- Internal pipes – perforated pipes inside the practice that can be used to evenly distribute or drain water in the stone base
- Cleanout pipes – pipes that provide a connection between the surface (vertical) and internal pipes (horizontal) to allow for regular maintenance
- Outlet pipes – any pipe that can drain water from the practice before it is full, which typically connects the active storage zone of the practice with a point of discharge

Specific requirements for each type of pipe are described in the subsections below. It is important to note that a pipe connecting the on-site drainage system to the City sewer is called a site connection. While the Unified Stormwater Rule includes stormwater management requirements for obtaining site/house connection permits, this manual does not prescribe the design of site connection pipes themselves, which is regulated separately by BWSO.

Any pipes used to convey stormwater inside of buildings must be designed in accordance with the latest NYC DOB Plumbing Codes for Storm Drainage systems. Any pipes used to convey stormwater outside of buildings, except for site connections, must be designed for a minimum 3 in/hr rainfall intensity for the associated drainage area, or as required by the NYC DOB Plumbing Code in special cases where pipes convey both primary and secondary rooftop drains. Designers may also consider larger events, as appropriate, to provide additional drainage capacity.

Conveyance Pipes

A bypass or overflow device shall be provided to safely convey runoff away from all practices once they are full, sized in accordance with the above guidance. In addition, conveyance pipes shall:

- Have 6-inch or greater diameter and use materials that can be joined to existing site infrastructure, consistent with NYC Plumbing Code.
- Have a minimum slope of 0.5% and a maximum slope of 10%.
- Have a minimum full-flow velocity of 3.5 feet per second.

Internal Pipes

Typically, internal pipes have no slope and rely on conveyance pipes and outlet pipes to convey water into and out of the practice, respectively. In larger systems, a grid of connected internal pipes can be used to form an internal pipe network. Internal pipes shall:

- Have 8-inch or greater diameter and be made of high-density polyethylene (HDPE) meeting the requirements of ASTM D3350
- Be perforated with perforations meeting AASHTO Class II specifications
- Have cleanouts that may be used to access every 75 feet of straight pipe runs
- Have endcaps at the ends of all segments that do not connect to a cleanout
- Use 1/8 (45 degree) elbows for bends (does not apply to pipe networks). For example, 90-degree bends should be made using two 1/8 (45 degree) elbows and separated by at least 1 foot of straight pipe
- Have a minimum of 6 inches of stone on all sides.

The contractor should follow the engineering design documents and manufacturer's installation instructions when installing perforated pipes. The spacing between parallel pipes should be at least 12 inches for pipes with internal diameters less than 24 inches, and at least equal to half of the internal pipe diameter for pipes larger than 24 inches.

Cleanouts

At least one cleanout must be provided when internal pipes are used. In cases where cleanouts are installed in engineered soils, the top of the cleanout must be anchored in place, which is commonly done using a concrete collar. The top of the cleanout well must be capped with a lockable top lid. In locations with pedestrian access, the cap of the cleanout must be flush with the surface to avoid a tripping hazard. In addition, cleanouts shall:

- Be 8-inch diameter or greater high-density polyethylene (HDPE) meeting the requirements of ASTM D3350
- Use 1/8 (45 degree) elbows for transition from vertical to horizontal

- Have caps placed above the freeboard elevation in areas with surface ponding and permanent pools.
- Be placed within 75 feet of and in-line with each outlet pipe
- Be placed at the end of any standalone internal pipe used for distribution
- Be placed at the ends of an internal pipe network along primary pathways
- Be placed outside of any play fields or high traffic areas
- Give consideration to site constraints and maintenance equipment access

Outlet pipes

Outlet pipes shall be installed in all filtration practices, as well as detention practices that are not self-contained, unless directed otherwise by DEP. In cases where outlet pipes are used in infiltration practices for maintenance purposes, the outlet pipe must have a permanent cap that is only removed when maintenance is being performed. ET practices must have a means of draining excess runoff, using either outlet pipes, weep holes, drainage course, or other method. In addition, outlet pipes shall:

- Be 6-inch diameter or greater HDPE meeting the requirements of ASTM D2729
- Have a minimum slope of 0.5% and a maximum slope of 10%.
- Use 1/8 (45 degree) elbows for bends. For example, 90 degree bends should be made using two 1/8 (45 degree) elbows and separated by at least one foot of straight pipe. Designers should make every effort to avoid using bends in outlet pipes.
- Be accessible on both ends, either by a cleanout or drainage structure (e.g., outlet control structure)
- Avoid having an open connection to surface features when conveyed to a controlled-release device to prevent entry of sedimentation and trash

77. Controlled-Flow Orifice

A controlled-flow orifice is a small opening used to regulate drainage from a practice. Detention practices must have a controlled-flow device, which includes controlled-flow orifices. Controlled-flow orifices shall:

- Be sized to drain the practice in accordance with the appropriate maximum release rate for the contributing area (see Chapter 2).
- Be easily accessible and have appropriate protection to prevent clogging
- Drain the practice within the required maximum drawdown time (see design criteria tables in Section 4.4-4.8)
- Be set at or above the invert elevation of connection to the on-site drainage system (minimum 3-inch drop preferred)

Detention practices with controlled-release orifices may be used to manage the water quality volume in CSS areas when higher tier practices have been exhausted and the maximum release rate complies with the sewer operations requirement in Chapter 2 (i.e., 0.1 cfs/acre). The maximum release rate of the controlled-flow orifice should be calculated as follows:

EQ4.15:

$$Q_o = C_D * A_o * \sqrt{2gH}$$

where:

Q_O = maximum release rate of orifice (cfs)

C_O = coefficient of discharge; 0.61 (flush), 0.52 (re-entrant), or 0.73 (long re-entrant)

A_O = area of orifice (ft^2)

g = acceleration due to gravity, 32.2 (ft/s^2)

H = maximum hydraulic head above the centerline of the orifice (ft)

- Have base and embedding material, as appropriate, to prevent pipe damage

76. Outlet Control Structures

An outlet control structure (OCS) is any structure that houses a controlled-flow device or weir that regulates drainage from a practice. These structures serve as an access point for maintenance and typically include other measures to manage sediments or allow overflow once the practice is full.

OCSs are required for all detention practices except for blue roofs, where the controlled-flow device is already accessible from the roof surface. Note that detention tanks are themselves an OCS and do not require a separate facility. OCSs may also be used for infiltration practices, as an access point for maintenance, when the outlet pipe is capped or a weir is provided to prevent water from draining the practice before it is full.

Several OCS configurations are acceptable if the following requirements are met:

- Connected to the SMP via an outlet pipe (does not apply for detention tanks)
- Provides an overflow for discharge of captured runoff in excess of the design volume
- Provides a controlled-flow device for the slow release of water (applies to detention systems only)
- Provide, for the collection of debris, a 12-inch minimum sump below the invert of the outlet pipe or controlled-flow orifice, whichever is lower
- Allows access to the controlled-flow device and sump for regular maintenance
- Discharge only to an on-site drainage structure, such as a manhole or inlet, rather than directly to a City sewer (does not apply to detention tanks)

Controlled-flow orifice size should never be smaller than 1-inch diameter for practices. Practices with orifice sizes less than 2-inches shall include pre-treatment measures to prevent clogging.

Controlled-flow orifices within outlet control structures should provide flexibility to modify SMPs in the future with minimal changes to the practice. Adjustments to the system can be made to account for actual performance by either opening or closing the orifice.

78. Controlled-Flow Pumps

A controlled-flow pump is a small pump used to regulate drainage from a practice, which are typically reserved for cases where site elevations prevent the use of a controlled-flow orifice that drains by gravity. These circumstances can include, but are not limited to:

- Sites that drain to shallow sewers, where roof detention is insufficient or infeasible.
- Sites that require deeper practices, where the outlet would be too low for gravity drainage

Such systems must still maintain the required maximum release rates outlined in Chapter 2 using a controlled-flow pump system. Controlled-flow pump systems require the following components, which must be shown on a section view of the proposed system:

- A detention facility where water may be stored, with dimensions.
- At least one pump and one backup pump. If other pumps are to be used as "primary pumps," such as when pumps are to be used in parallel, a backup pump is required for each primary pump.
- An intake, outlet (a "force main"), and an overflow, shown on a section view, with dimensions.

The dimensions provided on the section view must be to scale and match the proposed configuration specified in the pump analysis calculations.

Design methods for controlled-flow orifices differ from controlled-flow pumps. For example, the design goal of a controlled-flow orifice is to ensure that the release rate does not exceed maximum rate for the facility, at the time when the volume is being provided. However, for controlled-flow pumps, the design goal is to ensure that the average release rate does not exceed the maximum rate for the facility, at the time when the volume is being provided.

The analysis to determine if the controlled-flow pump meets the release rate criterion is substantially more complex than the analysis that must be done for a controlled-flow orifice. For this reason, a controlled-flow pump workbook is available in Appendix F, which includes a template for calculations and a design example. In addition, the following paragraphs include details on the calculation methods and criteria for using controlled-flow pumps.

The average pump rate for the system is determined by taking the maximum and minimum pump rates for the system and averaging these. The maximum and minimum rates are determined by finding the operation point for each rate, respectively. The operation point is defined as the point where the system head curve intersects with the pump curve. There will be two system curves, one corresponding to the maximum rate, and the other corresponding to the minimum rate, and each will have a corresponding amount of head loss.

There are a number of methodologies that are used to generate a system head curve for a particular type of pump system, but the one that DEP uses for analysis is the "equivalent length." So regardless of the methodology that the applicant uses, DEP requires the following inputs to do an analysis of equivalent length:

1. The fittings that are proposed, specified by the number of each type of fitting. Each fitting has an equivalent length and should be shown diagrammatically on the section view. See Appendix F for more information about the types of fittings that can cause head loss.
2. The elevation of water where the pump system is designed to turn on. This is typically near the top of the tank.
3. The elevation of water where the pump system is designed to turn off. This is typically near the bottom of the tank.
4. The elevation at which the proposed force main will discharge by gravity only (where it is no longer under pressure). The nature of this elevation requires that it be above the sewer.
5. The required detention volume, in cubic feet (cf) calculated for the system. The required detention volume for singular detention systems can be computed using equations in Chapter 2, while the required detention volume of systems in series can be computed using equations in Section 4.11.
6. The area of the detention tank, in square feet (sf), which in conjunction with item (5), will determine the elevation of the maximum storage volume.
7. The force main pipe diameter, in inches (in), minimum of 2-inches and provided in half-inch increments.
8. The force main length, in feet (ft), not including any equivalent lengths provided in item (1)
9. The proposed maximum pump rate that the pump will operate at, in gallons per minute (GPM). This should be the operation point for when the pressure head is the lowest.
10. The proposed minimum pump rate at which the pump will operate, in gallons per minute (GPM). This should be the operation point for when the pressure head is the highest.
11. The proposed Hazen-Williams coefficient, typically 130 for new wrought or cast Iron, steel, ductile iron, or vitrified clay pipes.

The above inputs will allow for the following outputs to be calculated:

1. The minimum static lift, in feet (ft).
2. The maximum static lift, in feet (ft).
3. The provided storage depth, in feet (ft).
4. The minimum head loss, in feet (ft).
5. The maximum head loss, in feet (ft).
6. The maximum pump rate, in cubic feet-per-second (cfs).
7. The minimum pump rate, in cubic feet-per-second (cfs).
8. The maximum pump rate, in cubic feet-per-second (cfs), which is the average of item (6) and (7).

The process of finding the actual pump behavior requires testing a proposed maximum and minimum pump rate (items 9 and 10 in the inputs), against the minimum and maximum head losses (items 4 and 5 in the outputs), iterating until each operation point is found. Once each operation point is found, their average is used as the actual release rate of the pump system. If this is lower than the maximum release rate, then the pump system is acceptable.

78.9. Special Cases

There are several special cases (SC) where the methods for sizing and applying SMP volume, as outlined in Section 4.3, do not apply. These cases are marked as "SC" on the SMP Hierarchy Checklist (Appendix A). There are three general types of special cases:

- Criteria-based practices used to meet water quality goals, where storage volume is either not provided or cannot be computed
- Reuse systems used to meet sewer operations goals, where the amount of volume that may be applied varies by system operation
- Detention systems in series, where the upstream detention system modifies the volume to be managed in the downstream system

The following subsections include methods for determining how these special case systems may be applied to meet stormwater management requirements.

79. Criteria-Based Practices

Criteria-based practices include grass filter strips, vegetated swales, and standalone trees (planted or preserved). These are special cases because either the SMP has no storage volume or, in the case of tree preservation, it often cannot be computed due to unknown conditions. Criteria-based practices must meet all special design criteria to facilitate the desired stormwater management requirement. When all criteria are met, these systems reduce a set percentage of the WQv that falls on the contributing area.

Grass filter strips can manage 100% of the WQv that falls on the contributing area when the following supplementary design criteria are met:

- Minimum width of 50 feet for slopes of 0% to 8%, 75 feet for slopes of 8% to 12% and 100 feet for slopes of 12% to 15%.
- Maximum contributing length (i.e., length of flow path to the grass filter strip) shall be 150 feet for pervious surfaces and 75 feet for impervious surfaces.
- For a combination of impervious cover (IC) and pervious cover (PC), use the following to determine the maximum length of each contributing area:
  - 150 – IC = contributing length of PC (maximum IC = 75, maximum PC =150)
- Maximum slope of the first ten feet of filter is less than 2%
- Average contributing slope is 3% maximum unless a flow spreader is used

Vegetated swales can manage 20% of the water quality volume that falls on the contributing area when the following supplementary design criteria are met:

- Receive WQv flow rates from the contributing area that are 3 cfs or less
- Convey the peak discharge for water volume flow (3 cfs or less):
  - at a velocity of < 1.0 fps, and
  - at a flow depth of 4 inches or less
- Provide sufficient length (minimum 100 ft) to retain the computed treatment volume for 10 minutes in a swale that receives runoff as a point discharge at the inlet, or an average of 5 minutes of retention time for a swale receiving sheet drainage or multiple point discharges along its length
- Have a trapezoidal or parabolic shape, with a bottom width minimum of 2' and no greater than 6'
- Provide 4 inches of topsoil
- Apply recommended seed mixes (or sod) per the table from NYS SWMDM below.

Table 5.9

Mixtures	Rate per Acre (pounds)	Rate per 1,000 square feet (pounds)
A.Perennial ryegrass	30	0.68
Tall fescue or smooth bromegrass	20	0.45
Redtop	2	0.05
OR		
B.Kentucky bluegrass[1]	25	0.60
Creeping red fescue	20	0.50
Perennial ryegrass	10	0.20

[1] Use this mixture in areas which are mowed frequently. Common white clover may be added if desired and seeded at 8 pounds/acre (0.2 pound/1,000 square feet).

Calculations for peak runoff rates, design flows, and retention times should be done in accordance with small storm hydrology methods (NYS SWMDM Appendix B), conventional hydrology methods (NYS SWMDM Chapter 8), or Manning's equations for open channel flow, as appropriate. For hydraulic calculations, variable n values should be used corresponding to flow depths, from 0.15 down to 0.03 (NYS SWMDM Appendix L).

Tree planting and preservation refers to standalone trees, rather than trees planted as part of larger bioretention practices. A standalone tree (planted or preserved) may be counted as a reduction in impervious area when calculating the runoff coefficient (Rv) in the WQv equation. The amount of impervious reduction that may be applied is based on the size of the tree, which reflects the increased stormwater management benefits of a larger canopy and root system.

Standalone trees may reduce the impervious area used to calculate Rv by half the tree canopy area, up to 100 sf. This means that trees with canopies of 16-foot diameter or less will count half their canopy area, while larger canopies will be capped at 100 sf reduction. In order for standalone trees to apply this reduction, the following supplementary design criteria must be met:

- New trees planted must be planted within 10 feet of ground-level, directly connected impervious areas.
- New deciduous trees must be at least 2-inch caliper and new evergreen trees must be at least 6 feet tall to be eligible for the reduction.
- For new trees, the average slope for the contributing area, including the area under the canopy must not be greater than 5%.

80. Reuse Systems

Reuse systems may be eligible toward meeting the sewer operations volume requirement, when designers can demonstrate that reuse application will be automated and continuous throughout the year. In this case, designers must submit documents that indicate the intended reuse application, the anticipated reuse for each month of the year, and the systems and logic that will automate the reuse process. Eligible reuse systems will be able to apply 50% of their total volume towards the sewer operations volume requirement, subject to approval by NYC DEP BWSO.

81. Detention Systems in Series

Common examples of detention systems in series include a blue roof system with a downstream detention tank, or where two detention systems are used on separate floors of a building due to space constraints. These are special cases because the volume and release rates of the detention systems may vary, requiring alternative calculations.

For example, where the downstream system is designed to maintain the 0.1 cfs/acre maximum release rate, the upstream system may be designed with a release rate up to 2 cfs/acre. In this case, the upstream system would require less volume to maintain the release rate compared to the sewer operations volume calculation. In addition, the downstream system may also require less volume, if the upstream system provides meaningful flow reductions.

The volume required for the upstream detention system is a function of its maximum release rate, which can be computed using the following two equations:

EQ4.16:

$$V_U = \left[\frac{0.19 * C_W * A_U}{(t_U + 15)} - 40Q_{DRR}\right] * t_U$$

where:

V_U = required detention volume of the upstream detention system (cf)

C_W: weighted runoff coefficient relating peak rate of rainfall and runoff

A_U = site area tributary to the upstream detention system (ft^2)

t_U = duration of sewer operations event where the upstream detention system is filling (min)

Q_{DRR} = maximum release rate of the upstream detention system (cfs)

EQ4.17:

$$t_U = 0.27 * \sqrt{\frac{C_W * A_U}{Q_{DRR}}} - 15$$

where:

t_U = duration of sewer operations event where the upstream detention system is filling (min)

C_W: weighted runoff coefficient relating peak rate of rainfall and runoff

A_U = site area tributary to the upstream detention system (ft^2)

Q_{DRR} = maximum release rate of the upstream detention system (cfs)

The actual storage volume of the upstream system, determined using methods of Section 4.3, must be equal to or greater than the required storage volume calculated above. In cases where this is not feasible, the maximum release rate of the upstream system must be increased until the required storage volume is equal to or less than actual storage volume.

The upstream detention system will reduce the peak flow rate for its tributary area which will, in turn, reduce the effective runoff coefficient for that area. The effective runoff coefficient for the tributary area of the upstream system may be calculated as:

EQ4.18:

$$C_{EU} = 311 * Q_{DRR} * \frac{(t_U + 15)}{A_U}$$

where:

C_{EU} = effective runoff coefficient for the area tributary to the upstream detention system

Q_{DRR} = maximum release rate of the upstream detention system (cfs)

t_U = duration of sewer operations event where the upstream detention system is filling (min)

A_U = site area tributary to the upstream detention system (ft^2)

The effective runoff coefficient for the area tributary to the upstream detention system (C_{EU}) may then be used to calculate the area weighted runoff coefficient of the downstream detention system. Note, that unless the area tributary to the upstream and downstream systems is the same, designers may not use C_{EU} directly as the weighted runoff coefficient for the downstream system. Instead, designers must consider the runoff coefficients of all other areas that may be tributary to the downstream detention system, weighted by area.

The weighted runoff coefficient of the downstream detention system is then used to calculate the required volume for that system, using the sizing methods in Section 4.3. A detention in series workbook is available in

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Appendix G, which includes a template for calculations and design examples to assist designers.

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82. Post-Construction Stormwater Management Requirements

SMPs that are constructed as part of a covered development project must be regularly maintained and inspected in accordance with this Chapter to ensure continued performance as designed. This chapter outlines the requirements for:

- SMP Maintenance Procedures (Section 5.1);
- SMP Operation and Maintenance Plan Requirements (Section 5.2); and
- SMP Inspection, Reporting, and Re-certification Requirements (Section 5.3).

Non-structural best management practices (BMPs) used to meet NNI requirements in the NYC MS4 area must also be continuously maintained.

Maintenance of SMPs and BMPs is the responsibility of the property owner and is required per the issued Stormwater Maintenance Permit. The Stormwater Maintenance Permit requires ongoing maintenance and periodic inspections to assess the condition and functionality of each SMP and BMP and to assess any adjustments to maintenance frequencies and tasks that may be needed to maintain performance over time. Furthermore, owners must provide an annual certification that SMPs and BMPs have been inspected and properly maintained. Every fifth year, a certification from a registered qualified professional must be provided with the maintenance permit renewal. Owners are subject to random DEP inspections and must renew their Stormwater Maintenance Permit(s) every five years.

DEP recommends that the maintenance and inspection procedures outlined in this Chapter are also followed for SMPs constructed as part of non-covered development projects.

82.1. Maintenance Procedures

Maintenance procedures contained in this section consist of recommended tasks and associated frequencies for routine maintenance activities, as well as general guidance on common problems. While maintenance procedures generally apply to SMPs, the continued implementation of BMPs may also require maintenance practices.

Maintenance comprises those activities that occur on a set frequency or that are otherwise periodically required for SMP upkeep. These activities include tasks such as weeding, watering, sediment, and trash removal for bio-retention SMPs that can often be accomplished during pre-set routine maintenance cycles.

Occasionally, SMPs require non-scheduled maintenance to address performance issues that may arise and cannot be adequately addressed through pre-set maintenance activities. These activities may include replanting, erosion control, and structural repairs and may require specialized equipment and/or skilled expertise to properly implement. The alteration or modification of an approved SMP or of the approved operation and maintenance of SMPs will require prior review and approval of DEP.

83. Routine Maintenance

Routine maintenance consists of tasks that are performed on a set schedule or undertaken periodically based on the results of the annual inspections. Routine tasks are intended to maintain system performance under normal operating conditions, assuming SMPs have been appropriately sited, designed, and constructed.

Routine maintenance tasks and suggested frequencies are specified by SMP type in Tables 5.2 to 5.14. To help streamline, readers can refer to Table 5.1 for an overview of the applicable maintenance table for each SMP.

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Suggested frequencies are guidelines based on normal operating conditions. Generally, frequencies for many tasks will need to increase for high sediment loading and highly exposed SMPs (i.e., SMPs sited adjacent to commercial driveways, parking lots, or other areas with heavy vehicular traffic that receive direct runoff from these surfaces) and may be decreased for lower sediment loading and/or less exposed SMPs (i.e., SMPs sited adjacent to areas of low or no vehicular traffic and receive primarily roof runoff). Frequencies should be adjusted over time based on the results of ongoing and annual SMP inspections.

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Table 5.1. Overview of the applicable maintenance table for each SMP type

Vegetated	
Bioretention	Table 5.2
Rain garden	Table 5.2
Stormwater planter	Table 5.2
Tree planting	Table 5.3
Tree preservation	Table 5.3
Green roof	Table 5.4
Grass filter strip	Table 5.5
Vegetated swale	Table 5.5
Dry basin	Table 5.5
Constructed wetland	Table 5.6
Non-vegetated	
Rain tank	Table 5.7
Cistern	Table 5.7
Dry well	Table 5.8
Subsurface gallery	Table 5.8
Stone trench	Table 5.9
Synthetic turf field	Table 5.10
Porous pavement	Table 5.11
Sand filter	Table 5.12
Organic filter	Table 5.12
Wet basin / pond	Table 5.13
Blue roof	Table 5.14
Detention tank	Table 5.7

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Table 5.2. Routine Maintenance Tasks and Frequencies for Bioretention, Rain Gardens and Stormwater Planters

Task	Description	Frequency
Watering	Watering of new plantings during the first two years of establishment	During extended dry periods of no significant precipitation within 7 days, or as needed based on plant condition
Weeding	Removal of non-native or undesirable vegetation	Quarterly at minimum during the growing season or more frequently based on ongoing inspections
Mulching	Mulching of planting beds	Once annually for the first two growing seasons or until beds have filled in
Vegetation Management	Cutting and trimming of detrital herbaceous vegetation from the previous growing season to four to six inches above the ground	Annually in late winter or early spring prior to break in dormancy
Sediment Removal	Removal of accumulated sediment and debris from practice areas	Twice per year or more frequently if needed based on ongoing inspections (note: leaves and other natural materials can be left in place if they do not impede conveyance)
Pipe Cleaning	Hydraulic cleaning of inflow, outflow and underdrain piping	As warranted based on video pipe inspections conducted every three years
Inlet Filter Cleaning	Emptying of inlet filter bags and/or baskets	Minimum quarterly or more frequently based on ongoing inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment and debris within inlets sumps and hoods	Minimum annually or more frequently if debris accumulation is rapid based on ongoing and annual inspections
Outlet Cleaning	Removal of accumulated sediment and debris from risers (vacuum cleaning), trash racks, and spillways and clearing sediment from orifices and outlet control structures to prevent clogging	Annually at minimum or more frequently basedononongoingand annual inspections
Erosion Control	Stabilization of eroded soil areas with vegetative or mechanical means	As warranted based on ongoing inspections

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Table 5.3. Routine Maintenance Tasks and Frequencies for Trees

Task	Description	Frequency
Watering	Watering of new plantings during the first two years of establishment	During extended dry periods of no significant precipitation within 7 days, or as needed based on plant condition
Weeding	Removal of non-native or undesirable vegetation	Quarterly at minimum during the growing season or more frequently based on ongoing inspections
Mulching	Mulching around root flare to suppress weeds and regulate temperature	Minimum annually or as needed based on ongoing inspections
Pruning (Small)	Removal of dead, damaged or diseased wood under 2" diameter	As observed throughout the year
Pruning (Large)	Removal of dead branches over 2" in diameter or selective removal for proper form	During the dormant season as warranted
Sediment Removal	Removal of accumulated sediment and debris from practice areas	Twice per year or more frequently if needed based on ongoing inspections (note: leaves and other natural materials can be left in place if they do not impede conveyance)

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Table 5.4. Routine Maintenance Tasks and Frequencies for Green Roofs

Task	Description	Frequency
Watering	Watering of new plantings during the first two years of establishment	During extended dry periods of no significant precipitation within 7 days, or as needed based on plant condition
Weeding	Removal of non-native or undesirable vegetation	Quarterly at minimum during the growing season or more frequently based on ongoing inspections
Vegetation Management	Removal of detrital herbaceous vegetation from the previous growing season	Annually or as needed depending on the type of green roof vegetation
Fertilization	Use of slow-release fertilization capsules to supply plant nutrients; may only be done in the first year of establishment	As necessary based on visual observation of plant health or soil fertility testing
Outlet Cleaning	Removal of sediment from drain outlets including rooftop drains, gutters, downspouts and secondary overflows	Twice a year or as needed based on ongoing inspections
Erosion Control	Stabilization of eroded soil areas via vegetative or mechanical means	During the growing season for plant materials and as warranted for mechanical methods based on annual and ongoing inspections

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Table 5.5. Routine Maintenance Tasks and Frequencies for Grass Filter Strips, Vegetated Swales and Dry Basins

Task	Description	Frequency
Watering	Watering of new plantings during the first two years of establishment	During extended dry periods of no significant precipitation within 7 days, or as needed based on plant condition
Weeding	Removal of non-native or undesirable vegetation	Quarterly at minimum during the growing season or more frequently based on ongoing inspections
Mowing/Trimming	Mowing and/or trimming of detrital herbaceous material to four to six inches above the ground	Annually for non-turf grass type vegetation or more frequently for turf grasses during period of active growth (all clippings should be removed)
Vegetation Management	Dethatching and soil conditioning for turf grasses	Annually or as warranted based on ongoing inspections
Sediment Removal	Removal of accumulated sediment and debris from practice areas	Twice per year or more frequently if needed based on ongoing inspections (note: leaves and other natural materials can be left in place if they do not impede conveyance)
Pipe Cleaning	Hydraulic cleaning of inflow, outflow and underdrain piping	As warranted based on video pipe inspections conducted every three years
Inlet Filter Cleaning	Emptying of inlet filter bags and baskets	Minimum quarterly or more frequently if debris accumulation is rapid based on ongoing inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment and debris within inlets sumps and hoods	Minimum annually or more frequently if debris accumulation is rapid based on annual and ongoing inspections
Outlet Cleaning	Removal of accumulated sediment and debris from risers (vacuum cleaning), trash racks, and spillways and clearing sediment from orifices and outlet control structures to prevent clogging	Annually at minimum or more frequently based on ongoing and annual inspections
Erosion Control	Stabilization of eroded soil areas with vegetative or mechanical means	During the growing season for plant materials and as warranted based on ongoing inspections

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Table 5.6. Routine Maintenance Tasks and Frequencies for Constructed Wetlands

Task	Description	Frequency
Watering	Watering of new plantings during first two years of establishment	During extended dry periods of no significant precipitation within 7 days, or as needed based on plant condition
Weeding	Removal of non-native or undesirable vegetation	Quarterly at minimum during the growing season or more frequently based on ongoing inspections
Woody Vegetation Removal	Removal of woody vegetation from berms and embankments	Annually during the dormant season when present
Sediment Removal	Removal of accumulated sediment and debris from forebay and open water areas	Every 5 years or when 50% of capacity has been lost
Pipe Cleaning	Hydraulic cleaning of inflow and outflow and underdrain piping	As warranted based on video pipe inspections conducted every three years
Inlet Filter Cleaning	Emptying of inlet filter bags and/or baskets	Minimum quarterly or more frequently if debris accumulation is rapid based on ongoing inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment and debris within inlets sumps and hoods	Minimum annually or more frequently if debris accumulation is rapid based on ongoing and annual inspections
Outlet Cleaning	Removal of accumulated sediment and debris from risers (vacuum cleaning), trash racks, and spillways and clearing sediment from orifices and outlet control structures to prevent clogging	Annually at minimum or more frequently basedononongoingand annual inspections
Erosion Control	Stabilization of eroded soil areas via vegetative or mechanical means	During the growing season for plant materials and as warranted for mechanical methods based on annual and ongoing inspections

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Table 5.7. Routine Maintenance Tasks and Frequencies for Rain Barrels, Cisterns and Detention Tanks

Task	Description	Frequency
Sediment Removal	Vacuum cleaning of accumulated sediment from primary storage tank(s)	As warranted based on annual inspections
Intake Cleaning	Cleaning of sediment from intake screen, hose and/or pipe	Quarterly at a minimum or as warranted based on ongoing inspections
Pipe Cleaning	Hydraulic cleaning of inflow and outflow piping	As warranted based on video pipe inspections conducted every three years
Outlet Cleaning	Cleaning of gutters, downspouts and first flush chambers	Twice a year or more frequently based in ongoing and annual inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment within inlet hoods and sumps	Minimum annually or more frequently if debris accumulation is rapid based on ongoing and annual inspections

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Table 5.8. Routine Maintenance Tasks and Frequencies for Dry Wells and Subsurface Galleries

Task	Description	Frequency
Pipe Cleaning	Hydraulic cleaning of inflow, distribution and outflow piping	As warranted based on video pipe inspections conducted every three years
Sediment Removal	Vacuum cleaning of accumulated sediment and debris within internal structures	As warranted based on video inspections of subsurface galleries conducted every three years
Inlet Filter Cleaning	Emptying of inlet filter bags and/or baskets	Minimum quarterly or more frequently if debris accumulation is rapid based on ongoing inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment and debris within inlets sumps and hoods	Minimum annually or more frequently if debris accumulation is rapid based on ongoing and annual inspections
Outlet Cleaning	Removal of accumulated sediment and debris from risers (vacuum cleaning), trash racks, and spillways and clearing sediment from orifices and outlet control structures to prevent clogging	Annually at minimum or more frequently based on ongoing and annual inspections

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Table 5.9. Routine Maintenance Tasks and Frequencies for Stone Trenches

Task	Description	Frequency
Sediment Removal	Removal of accumulated sediment from permeable surface	Twice per year or more frequently for high loading systems based on ongoing and annual inspections
Pipe Cleaning	Hydraulic cleaning of inflow, outflow and underdrain piping	As warranted based on video pipe inspections conducted every three years
Inlet Filter Cleaning	Emptying of inlet filter bags and/or baskets	Minimum quarterly or more frequently if debris accumulation is rapid based on ongoing inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment and debris within inlets sumps and hoods	Minimum annually or more frequently if debris accumulation is rapid based on ongoing and annual inspections
Outlet Cleaning	Removal of accumulated sediment and debris from risers (vacuum cleaning), trash racks, and spillways and clearing sediment from orifices and outlet control structures to prevent clogging	Annually at minimum or more frequently based on ongoing and annual inspections

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Table 5.10. Routine Maintenance Tasks and Frequencies for Synthetic Turf

Task	Description	Frequency
Weeding	Removal of any vegetation from synthetic turf area	Year-round as observed during on ongoing inspections
Raking	Raking of the synthetic turf to keep grass fibers upright and to loosen and evenly distribute the infill layer	As needed based on manufacturer's/ installer's specifications
Sediment Removal	Vacuuming or removal of small, loose debris using a blower	Twice per year or more frequently based on level of use
Pipe Cleaning	Hydraulic cleaning of inflow, outflow and underdrain piping	As warranted based on video pipe inspections conducted every three years
Inlet Filter Cleaning	Emptying of inlet filter bags and/or baskets	Minimum quarterly or more frequently if debris accumulation is rapid based on ongoing inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment and debris within inlets sumps and hoods	Minimum annually or more frequently if debris accumulation is rapid based on ongoing and annual inspections
Outlet Cleaning	Removal of accumulated sediment and debris from risers (vacuum cleaning), trash racks, and spillways and clearing sediment from orifices and outlet control structures to prevent clogging	Annually at minimum or more frequently basedonongoingand annualinspections

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Table 5.11. Routine Maintenance Tasks and Frequencies for Porous Pavements

Task	Description	Frequency
Sediment Removal	Vacuuming of porous asphalt or concrete surfaces with regenerative air sweeper or commercial vacuum sweeper (pavement washing systems and compressed air units are not recommended)	Twice per year or more frequently based on ongoing and annual inspections
Weeding	Removal of non-native or undesirable vegetation from vegetated pavement systems	Quarterly at minimum during the growing season or as warranted based on ongoing inspections
Mowing	Mowing of vegetative material to four to six inches above the ground	As needed based on rate of vegetative growth during the growing season (all clippings should be removed)
Pipe Cleaning	Hydraulic cleaning of inflow, outflow and underdrain piping	As warranted based on video pipe inspections conducted every three years
Inlet Filter Cleaning	Emptying of inlet filter bags and/or baskets	Minimum quarterly or more frequently if debris accumulation is rapid based on ongoing inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment and debris within inlets sumps and hoods	Minimum annually or more frequently if debris accumulation is rapid based on ongoing and annual inspections

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Table 5.12. Routine Maintenance Tasks and Frequencies for Sand and Organic Filters

Task	Description	Frequency
Media Raking	Raking of sand or organic filter media to remove trash and debris from control openings	As warranted based on annual inspections
Surface Media Replacement	Removal, cultivation, and replenishment of sand or organic filter media to sufficient depths to achieve unclogged media	As warranted based on annual inspections
Sediment Removal	Vacuum cleaning of accumulated sediment from filter bed within sedimentation chambers	Annually or when the sediment accumulation within the sedimentation chamber reaches a depth of 6 inches
Pipe Cleaning	Hydraulic cleaning of inflow and outflow piping from subsurface systems	As warranted based on video pipe inspections conducted every three years
Inlet Filter Cleaning	Emptying of inlet filter bags and/or baskets	Minimum quarterly or more frequently if debris accumulation is rapid based on ongoing inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment and debris within inlets sumps and hoods	Minimum annually or more frequently if debris accumulation is rapid based on ongoing and annual inspections
Outlet Cleaning	Removal of accumulated sediment and debris from risers (vacuum cleaning), trash racks, and spillways and clearing sediment from orifices and outlet control structures to prevent clogging	Annually at minimum or more frequently based on ongoing and annual inspections

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Table 5.13. Routine Maintenance Tasks and Frequencies for Wet Basins and Ponds

Task	Description	Frequency
Weeding	Removal of non-native or undesirable vegetation from vegetated pavement systems	Quarterly at minimum during the growing season or as warranted based on ongoing inspections
Mowing/Trimming	Mowing and/or trimming of detrital herbaceous material to four to six inches above the ground	Annually for non-turf grass type vegetation or more frequently for turf grasses during period of active growth (all clippings should be removed)
Woody Vegetation Removal	Removal of woody vegetation from berms and embankments	Annually during the dormant season when present
Sediment Removal	Removal of accumulated sediment and debris from forebay, basin and open water areas	Every five years or when 50% of capacity has been reached
Pipe Cleaning	Hydraulic cleaning of inflow and outflow piping	As warranted based on video pipe inspections conducted every three years
Inlet Filter Cleaning	Emptying of inlet filter bags and/or baskets	Minimum quarterly or more frequently if debris accumulation is rapid based on ongoing inspections
Inlet Cleaning	Vacuum cleaning of accumulated sediment and debris within inlets sumps and hoods	Minimum annually or more frequently if debris accumulation is rapid based on ongoing and annual inspections
Outlet Cleaning	Removal of accumulated sediment and debris from risers (vacuum cleaning), trash racks, and spillways and clearing sediment from orifices and outlet control structures to prevent clogging	Annually at a minimum or more frequently based on ongoing and annual inspections
Signage Maintenance	Damage repair and clearing of visual obstructions to keep posted signage in good and legible conditions	As warranted based on ongoing inspections

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Table 5.14. Routine Maintenance Tasks and Frequencies for Blue Roofs

Task	Description	Frequency
Sediment and Debris Removal	Removal of sediment and debris from roof storage area(s), behind check and/or slotted dams; and from drain outlets including roof drains, gutters, downspouts, secondary overflows and drain screens	Monthly during the first year after installation to determine maintenance frequency, and minimum twice per year based on ongoing inspections or as needed
Ice Removal	Break-up and removal of ice formations around outlet and overflow structures	As warranted based on inspections during wintertime
Repair Leaks	Repair of roofing materials for damages and leaks	As warranted based on ongoing inspections

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84. Additional Maintenance Activities

Additional maintenance activities include those activities intended to repair or remediate SMPs that are not functioning properly. Additional maintenance activities are usually identified during the course of an annual inspection or during informal visual assessments. Additional maintenance activities that result in a modification to the stormwater management practice require review and approval of the department.

The need for additional maintenance activities may indicate an underlying performance issue that may require additional investigation and analysis, particularly if the performance issues are recurring. The assistance of a qualified professional will likely be required in order to perform diagnostic activities needed to properly remediate recurrent problems. Examples of some common problems addressed via additional maintenance activities are provided below.

Erosion Problems

Erosion issues are common at the system inflow points for vegetated SMPs such as areas downslope of curb cuts conveying flow into a stormwater planter system. Erosion problems can typically be remedied by either replanting the area with an extended term erosion blanket or turf reinforcement matting or by adding structural measures such as rip-rap or river stone.

Poorly Performing Plantings

Vegetation health is integral to any vegetated SMP, such as bioretention systems and green roofs. Poorly performing plantings may be an indication of one or more underlying problems, particularly if plantings fare poorly in the same location within the SMP on a recurring basis. Poor plant performance commonly results from improper plant selection and can be effectively addressed by replanting with an adjusted plant palette that is more appropriate for the soil and moisture conditions in the area.

Plantings can also be negatively affected by various other external factors including erosion, sedimentation, poor soil conditions, disease, shade, road salt, and foot traffic compaction. A landscape or horticultural qualified professional can help diagnose areas and causes of poor plant performance and recommend a combination of adjusted plantings and/or soil amendments, among other remedies.

Differential Settlement

Differential settlement occurs where portions of the ground surface become depressed relative to surrounding areas. Some minor settlement is common after construction, but more severe settlement could indicate the presence of soft soils or improperly compacted subgrade. Monitoring areas of settlement once they are identified is critical for assessing the need for excavation and repair.

Diagnostic activities to assess the soil and subsurface conditions in areas of settlement include ground penetrating radar scans or other geophysical methods, soil borings, and dye testing. Potential remedial activities could include excavation of poorly compacted underlying soils and replacement with suitable compactable backfill. Major settlement issues often require a qualified professional to perform an evaluation and determine the correct solution.

Sedimentation and Clogging

Routine maintenance activities involve removal of sediment from SMPs, particularly inlet areas and forebays. However, in some cases, rates of sedimentation may be excessive and may lead to performance issues such as clogging and planting failure. In these situations, it is important to assess the contributing drainage area to identify any areas of bare soil, active construction, or other activities that may be the source of high rates of sediment delivery to the SMP. Cessation of these activities or the implementation of temporary or permanent erosion control measures can help to lower rates of sediment delivery and reduce the frequency of sediment removal from the SMP.

Remediation of severe sedimentation and clogging conditions may require a qualified professional to identify where the removal and replacement of some or all storage/filtration media is required. Adequate pre-treatment and routine maintenance can help to extend SMP service life and reduce the frequency of storage/filtration media replacement.

Structural Defects

Structural defects can cause a wide array of performance issues and most commonly include broken or cracked hydraulic control structures and/ or piping and damaged concrete edging or metal edge restraints around structures such as stormwater planters. Areas of surface wear on porous pavement also fall into this category. Depending on the issue, inspection by a qualified structural professional may be warranted to determine if and how a structure can be safety repaired.

85. Operations and Maintenance Plan

All permitted SMPs that are constructed as part of a covered development project must have an operations and maintenance (O&M) plan that sets forth a specific plan for operation and maintenance of each permitted SMP. Submission and approval of the O&M plan is a pre-requisite to Stormwater Maintenance Permit issuance.

At minimum, the O&M plan must contain the following:

- List of SMPs to be maintained;
- Copy of the as-built plans showing locations and elevations of SMPs;
- Location map depicting SMPs to be maintained;
- Contact information for responsible party;
- Information regarding whether the maintenance will be performed by the responsible party and/or contracted to an outside party;
- Table of maintenance tasks and frequencies for each SMP type;
- Inspection form with list of maintenance checks and fields for recording observations;
- Schedule of proposed self-inspections; and
- Copy of the Stormwater Maintenance Permit issued by DEP.

In addition, if the permitted project is subject to NNI requirements for pollutants of concern, the O&M plan must contain a list of BMPs to address the applicable pollutant of concern sources. The list should also be included as an inspection form or checklist to be submitted as annual certification that BMPs have been implemented and maintained. See Table 2.6 for an example list of BMPs for pathogen removal by land use.

86. Inspection, Reporting, and Recertification Requirements

87. Property Owner Inspections

Property owners are responsible for conducting periodic inspections of SMPs to ensure that the systems are working properly, to reassess routine maintenance frequency, and to identify additional maintenance work required to address any condition or performance deficits. Routine maintenance and frequency recommendations presented in Tables 5.2 through 5.14 for specific types of practices present general guidelines for when inspections should occur.

Table 5.15 provides types and frequencies of inspections as a guideline for developing an ongoing SMP inspection program. Property owners are also responsible for maintaining BMPs to continue to meet the NNI requirements for pollutants of concern.

In addition to the inspection tasks outlined in Table 5.15, the property owner or maintenance personnel should perform periodic, quick visual assessments of SMP function when performing routine maintenance. For example, observation wells should be checked for standing water during dry periods, which may be an indication that the system is not functioning properly. Similarly, green and blue roof membranes can be checked for leaks and defects.

Some proprietary practices such as green and blue roof may have recommended frequencies for inspections per manufacturer's or installer's specifications that should be followed.

Inspection forms

All inspections must be logged and recorded on an inspection form. The owner must keep and maintain copies of all inspection records and tests for five years after performance of such inspections or tests.

Annual Certification

Property owners are responsible for providing an Annual Certification attesting that any permitted SMPs and BMPs have been properly inspected and maintained. The Annual Certification must be submitted via the SWPTS.

Table 5.15. Routine Inspection Frequency Summary Table

Type of Inspection	Purpose	Applicable Components or SMPs	Suggested Frequency
Video pipe inspection	To identify accumulated sediment and defects in piping systems	Inflow, outflow and underdrain piping	Every three years
Video subsurface internal storage inspection	To identify accumulated sediment and defects in internal storage and detention structures	Subsurface internal structures	Every three years
Annual vegetation inspection	To assess the health and condition of vegetation	Vegetated SMPs	Annually during the growing season
Annual structural inspection	To identify areas of differential settlement or structural concern	Structural components including concrete structures, piping, fencing	Annually
Drawdown test	To assess the drawdown time of the practice	Infiltration practices	As needed, based on changes in permeability of infiltrating surface

88. DEP Inspections

As the permitting agency, DEP reserves the right to perform periodic inspections of permitted SMPs. DEP inspectors will typically perform a visual assessment of key components to check for issues such as poor plant cover, erosion, sedimentation, clogging, or structural damage. DEP inspectors may also ask to see inspection and maintenance records, which must be kept up-to-date and available on premises. DEP inspections may be more frequent immediately following construction to ensure that property owners are effectively transitioning to an active O&M phase.

Deficiencies

If DEP inspections reveal deficiencies in the SMPs, DEP wil issue a deficiency notice and the property owner must initiate a remedial action plan to address any noted deficiencies. Annual certification and permit renewal will depend on the resolution of any outstanding deficiencies.

Deficiencies that are not resolved in a timely manner as determined by DEP may result in Notices of Violation and, ultimately, fines.

89. Permit Renewal

DEP rules require that Stormwater Maintenance Permits be renewed every 5 years. Permit renewal requires a certification from a qualified professional, depending on the type of professional that signed and sealed the original construction drawings. Permit renewal applications must be filed on the SWPTS.

90. Right-of-Way Stormwater Management Requirements

Guidance included in this Chapter is applicable only to Right-of-Way (ROW) projects triggering applicability in either the Combined Sewer (CSS) areas or Municipal Separate Storm Sewer (MS4) areas. All other projects shall refer to Chapters 2-5 for relevant information. This chapter covers the following topics:

- Section 6.1 – Overview of criteria for applicability of stormwater construction permit
- Section 6.2 – Stormwater Pollution Prevention Plan (SWPPP) requirements based on development activity type and other factors
- Section 6.3 – Technical requirements for meeting stormwater management objectives
- Section 6.4 – Guidance for selecting, siting, and sizing of Post-Construction (PC) Stormwater Management Practices (SMPs)
- Section 6.5 – Geotechnical requirements for ROW SMPs
- Section 6.6 – Additional resources for SWPPP application development

90.1. Permit Applicability

A ROW project must apply for a stormwater construction permit, which includes a SWPPP, when the project meets one or more of the following criteria:

- Disturbs 20,000 sf or more of soil; OR
- Creates 5,000 sf or more new impervious area; OR
- Is a covered maintenance activity

Disturbed area is the area of soil disturbed by development activities such as building, demolition, renovation, replacement, restoration, rehabilitation, or alteration of any structure or road; or land clearing, land grading, excavation, filling or stockpiling.

Activities that do not disturb soils, such as surface markings of paved areas are not considered in the estimation of the extent of the disturbed area.

It is important to note that linear utility work that results in soil disturbance counts toward the overall soil disturbance threshold. In cases where linear utility work, or any other development activity, is carried out in phases, the project may be considered a common plan of development for which the total disturbed area across all phases results in the need for a stormwater construction permit.

[callout box]

All soil disturbances that are part of a common plan development must be considered toward the soil disturbance threshold and the need for a stormwater construction permit.

[/end callout box]

An impervious surface is any surface that cannot effectively infiltrate rainfall. Such surfaces generally include rooftops, pavements, sidewalks, and driveways. In addition, pervious hardscapes such as gravel roadways and gravel sidewalks are also considered impervious surfaces unless a geotechnical investigation indicates that the permeability rate of underlying soils is sufficient for reducing runoff. More specifically, underlying soils must have a permeability rate of at least 0.5 in/hr.

The increase (or decrease) in impervious area is calculated as the difference in total impervious area from pre- to post-development. The pre-development case must represent the least amount of impervious surface for the disturbed area within the last 5 years prior to development. When possible, photos, plans, and/or satellite images should be used to determine the appropriate pre-development impervious area.

Covered maintenance activity is defined as roadway maintenance that involves 20,000 sf or more. Roadway maintenance activities occur in the ROW and include milling and filling of existing asphalt pavements ("milling and paving"), replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six inches of subbase material; or long-term use of equipment storage areas at or near highway maintenance facilities.

91. SWPPP Requirements

For projects that have been determined to require a stormwater construction permit and a SWPPP, the next step is to determine what stormwater management measures must be included in the SWPPP. The following guidance can be used to make that determination.

ROW projects that require a stormwater construction permit, but disturb less than one acre of soil, including covered maintenance activities, will require a SWPPP with only erosion and sediment controls (ESC).

ROW projects that require a stormwater construction permit and disturb one acre of soil or more will have varying SWPPP requirements based on the type of development activity. More specifically, covered development projects listed in Table 2.2 (Chapter 2) will require a SWPPP with only ESC; while all other covered development projects will require both ESC and PC SMPs.

For ease of reference, common activities related to ROW work and their associated requirements are included in the table below.

Table 6.1: ROW Project Scenarios and SWPPP Requirements.

Project Scenarios	Type of SWPPP Required
1. Private utility move-outs – coordinated with city agency to support agency work	ESC
2. Water/sewer mains trench work only	ESC
3. Road reconstruction**	ESC and PC SMPs
4. Road reconstruction with water/sewer mains work**	ESC and PC SMPs
5. Roadway maintenance	ESC

**PC SMPs are required only when the project disturbs one acre or more of soil

Project Scenario Definitions:

- Private Utility Move-out – Installation of underground utilities, such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains.
- Water/Sewer Mains Trench Work Only – Installation or rehabilitation of water/sewer mains where soils are disturbed only within the trench width required for utility work.
- Road Reconstruction – Full depth roadway replacement from curb to curb that results in exposure of subbase or disturbance of soils.
- Road Reconstruction with Water/Sewer Mains Work – Full-depth roadway replacement that occurs in conjunction with the installation or rehabilitation of water/sewer mains, which results in exposure of subbase or disturbance of soils outside of trench width required for utility work.
- Roadway Maintenance – includes milling and filling of existing asphalt pavements ("milling and paving"), replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six inches of subbase material; or long-term use of equipment storage areas at or near highway maintenance facilities.

Projects that include development activities across multiple blocks or locations may use control measures appropriate for each area. For example, using ESC and PC SMPs in areas with roadway reconstruction, while using ESC only in areas with water/sewer main trench work.

For projects that require a SWPPP with ESC, the ESC measures shall be designed in accordance with the NYS Standards and Specifications for Erosion and Sediment Control (The Blue Book), dated November 2016, or its successor (https://www.dec.ny.gov/chemical/29066.html).

For projects that require a SWPPP with PC SMPs, see sections 6.3 and 6.4 for technical requirements and design guidance on PC SMPs, respectively.

In addition to identifying required ESC and PC SMPs, practitioners must determine whether No Net Increase (NNI) criteria are applicable to the project. The NNI requirement is applicable in the ROW when all four of the following conditions are met:

- Disturbed area is 1 acre or more
- Project is located in an MS4 area
- Project discharges to an impaired waterbody, and
- Project results in an increase in impervious area

When NNI is applicable, designers shall refer to Chapter 2 for specific criteria.

The remaining sections in this chapter provide guidance on ROW projects that require PC SMPs.

92. Technical Requirements

93. Projects without new impervious area

ROW projects that do not cause an increase in impervious area have the following options for meeting water quality goals:

- Option 1 - Reduce the existing *impervious area* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.5 of the NYSDEC SMMDM must be applied to all newly created pervious areas; or

- Option 2 - Manage a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of PC SMPs; or
- Option 3 - Apply a combination of 1 and 2 above that provides a weighted average of at least two of the above methods.

In addition, if there is an existing PC SMP located on the site that captures and treats runoff from the *impervious area* being disturbed, then the condition and size of the PC SMP shall be evaluated by the designer. If the PC SMP is able to manage the appropriate WQv as-is, then use of that practice may be continued. Otherwise, designers need to consider additional practices or changes to the existing practice to meet the requirements above. Additional details on each option are provided in the following sections.

Option 1 – Reduce impervious area

As a first step, designers must seek to reduce existing impervious area by a minimum of 25% of the total disturbed, impervious area. The designer must demonstrate that impervious area reduction was thoroughly analyzed and implemented to the maximum extent practicable before proceeding to Option 2. Agencies should include this analysis in the planning stage. DEP will review submitted supporting documentation in making its determination about whether an impervious area reduction is infeasible.

Impervious area can be reduced by replacing existing impervious surfaces with pervious surfaces. Some specific examples include:

- Vegetated medians – a vegetated area that separates opposing or merging lanes of traffic.
- Curb strip – a strip of grass, plants, or trees, located between a roadway curb and a sidewalk.
- Street trees – a tree that is growing in the city ROW between the sidewalk and the curb.

Street trees should be designed in accordance with all applicable criteria from the NYC DPR tree planting standards (www.nycgovparks.org/trees/street-tree-planting) and Section 5.3.4 of the NYS SWMDM. Note that vegetated medians may be used either as a means to reduce impervious cover, if configured as a simple greenspace, or as a PC SMP, if designed with the standard practices identified in Section 6.4. If reducing impervious area by 25% is not feasible, then PC SMPs are required to meet water quality goals.

Option 2 – Capture and treat the WQv

The water quality requirement aims to manage runoff from small, frequent storm events that can significantly impact the quality of receiving waters.

In MS4 areas, runoff from these events tends to contain higher pollutant levels. Therefore, retention and treatment of small storm runoff in MS4 areas help to remove those pollutants and, in turn, improve water quality.

In CSS areas, these events trigger the majority of CSO events. Therefore, retention and detention of small storm runoff in CSS areas helps to reduce CSOs and, in turn, improves water quality.

The water quality criteria are met by managing runoff from an appropriate small storm design event. NYSDEC defines this design event as the 90th percentile rain event. In New York City, the 90th percentile rain event is 1.5 inches of rainfall (Figure 4.1 of the NYS SWMDM).

The volume of runoff from the 90th percentile rain event, which is the target to be managed by PC SMPs, is also referred to as the water quality volume (WQ_v). The following equation can be used to calculate 25% of the WQ_v which needs to be managed by PC SMPs:

EQ6.1:

$$WQ_v = \frac{1.5"}{12} * A * 0.95 * 0.25$$

where:

WQ_v: water quality volume (cf)

A: disturbed, impervious drainage area (sf)

[callout box]

This equation is only applicable to ROW projects. All other projects should refer to guidance in Chapters 2-5.

[/end callout box]

The SWPPP must show how the WQv is managed at the practice and site level, i.e., the disturbed, impervious drainage area, runoff coefficient, and WQv must be determined for each individual practice, and, in total, the practices must manage the WQv across the entire project.

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ROW projects have a limited number of PC SMPs that may be used to manage the WQv due to several unique challenges of working in the ROW. For more information on suitable PC SMPs for ROW projects refer to Section 6.4. Guidance on delineating the disturbed, impervious drainage area is also provided in Section 6.4.

Finally, designers must also ensure that runoff from any additional contributing areas, beyond the disturbed, impervious drainage area itself, can safely bypass the PC SMP without adversely impacting the practice or surrounding areas. A note should be included on the SWPPP to indicate that safe bypass of runoff was considered and that any water in excess of WQv will continue along the gutter to catch basins, as intended.

Option 3 – Combination Approach

This option proposes a combination of impervious cover (IC) reduction and PC SMPs that results in an equivalent management of stormwater runoff compared to either method individually. The total combination is calculated using the following equation:

EQ6.2:

$$25\% = \%\ IC\ reduction + \%\ WQv\ managed\ by\ PC\ SMPs$$

Below are examples of how the water quality goals can be met using the combined method in each disturbed drainage area:

- 5% IC reduction, 20% WQv with PC SMPs
- 10% IC reduction, 15% WQv with PC SMPs
- 15% IC reduction, 10% WQv with PC SMPs
- 20% IC reduction, 5% WQv with PC SMPs

Note that areas where impervious surfaces have been changed to pervious can be counted EITHER towards the IC reduction to reduce the percent of WQv that needs to be treated, OR to reduce the runoff coefficient (Rv) when calculating WQv. New pervious areas cannot be counted twice as both a percent IC reduction and a reduction of Rv.

94. Projects with new impervious area

ROW projects that cause an increase in impervious area must manage 100% of the WQv from the newly created impervious areas. The remaining disturbed areas may be managed using one of the three options above.

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95. Projects that cannot meet technical requirements

After following the guidance in this Chapter, projects that cannot meet the above technical requirements must schedule a consultation with DEP before proceeding with the SWPPP application. As part of the meeting, DEP and the designers will review opportunities and other potential considerations for meeting water quality objectives.

96. ROW SMP Selection, Siting, and Sizing

Designers must ensure that proposed PC SMPs meet the WQv requirements detailed in Section 6.3. This section provides guidance on the selection, siting, and sizing of PC SMPs for ROW projects to meet this objective.

97. SMP Selection

ROW projects have a limited number of PC SMPs that may be used to manage the WQv due to several unique challenges of working in the ROW.

Table 6.2 Applicable ROW PC SMPs

SMP Function	SMP Types (in order of preferred hierarchy)
Infiltration	ROW Precast Porous Concrete Panels[5] ROW Bioswales with Type D inlet ROW Infiltration Basins ROW Bioswales

All of these practices are considered infiltration practices, because they capture and infiltrate runoff into the underlying soils (sometimes referred to as exfiltration). Infiltration practices may only be used in areas where geotechnical tests indicate that soils are adequate for infiltration.

Designers should refer to the latest DEP Standard Designs and Guidelines for Green Infrastructure Practices for the layout and configuration of each system (https://www1.nyc.gov/site/dep/water/green-infrastructure.page).

[5] As of the release of this version of the guidance NYC DOT is evaluating porous technologies for use in bike lanes. Future versions of this guidance document may include additional porous technologies to facilitate implementation.

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In accordance with these standards, porous concrete panel systems should be designed to look continuous across the entire length of the block. In places where valves or other street features prevent the use of pre-cast panels, poured-in-place concrete (non-porous) may be used to achieve a continuous concrete system. Refer to the casting detail in the green infrastructure standard designs for the required dimensions of poured-in-place concrete around valves and other castings to prevent cracking.

Note that the PC SMPs listed in Table 6.2 above are ordered in a preferred practice hierarchy. Designers should evaluate the feasibility of PC SMPs in the order in which they are listed. However, each location must be assessed for its unique siting constraints in order to select the appropriate SMP. When feasible, designers may consider placing these standard practices in the ROW median. Finally, designers should evaluate adjacent publicly-owned properties for SMP implementation if necessary.

98. SMP Siting

There are five site constraints that may limit the feasibility of PC SMPs:

- Soil constraints –permeability tests indicate that soil is not suitable for infiltration. See Appendix H for more information on soil permeability.
- Subsurface constraints – boring tests indicate that the bottom of the practice would be too close to groundwater table or bedrock for proper function.
- Hotspot constraints – land use or soil conditions increase the risk of runoff contamination, limiting the use of infiltration practices (see criteria below).
- Surface constraints – regulations require the use of paved surfaces, which limit the use of vegetated practices, e.g., regulations on parking and/or egress requirements.
- Space constraints – required setbacks from structures, utilities, property lines, existing trees, or other site features limit the use of practices at the ground level.

Keep in mind, that some constraints may not impact the entire site, but may be limited to one portion of the site. In such cases, it is important that, when demonstrating that SMPs are used to the maximum extent practicable, designers consider how constraints may vary across the site.

Hotspot constraints may be caused by either land uses or soil conditions. Land uses that cause stormwater hotspots may be found in Table 4.3 of the NYS SWMDM. Listed below are soil conditions that cause stormwater hotspots, which may be demonstrated through environmental assessments or as part of regulatory program (e.g. NYSDEC Spills and Remediation Programs) documentation:

- Presence of grossly contaminated soil or non-aqueous phase liquid (NAPL) as defined in NYSDEC DER-10

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- Soil exceeds the groundwater protection objectives of NYSDEC 6 NYCRR 375
- Soil is characterized as hazardous waste as defined in 6 NYCRR 360 or 40 CRF 261
- Groundwater exceeds standards, guidance values and/or limits described in NYSDEC AWQS in 6 NYCRR 703 or TOGS1.1.1

The latest siting criteria for ROW projects can be found online at the DEP green infrastructure webpage (www1.nyc.gov/site/dep/water/green-infrastructure.page). Note that the siting criteria in Appendix C are meant for on-site projects and do not include all ROW siting criteria. The ROW siting criteria may be used to determine where SMPs cannot be placed within the ROW project area, due to space constraints: for example, the required clearances between PC SMPs and street furnishings such as utility poles, street signs, and parking meters.

99. SMP Sizing

PC SMPs must be sized to manage the appropriate WQv from the disturbed, impervious drainage area, as described in Section 6.3. The SWPPP must show 1) how the WQv is managed at the practice and project level: the disturbed drainage area, runoff coefficient, and WQv must be determined for each individual practice; and 2) that, in total, the practices manage the WQv across all areas that require PC SMPs.

For ROW projects, designers can determine the disturbed, impervious drainage area and appropriate SMP size in five steps, using the following guidance.

Step 1. Gather Data

The delineation of disturbed, impervious drainage areas will require the following data:

- Surface elevation data for the project area to determine roadway flow directions
- Locations of any existing or proposed catch basins in the project area to determine drainage points
- Locations of property lines around the ROW project area to delineate drainage areas
- Information on existing surface cover types

In cases where a topographic survey has been conducted for the project area, these data should be used to identify runoff flow directions and cover types.

When topographic survey is unavailable, digital elevation maps and property lines may be downloaded from the NYC Open Data online portal (https://opendata.cityofnewyork.us/). In addition, catch basin

data can be requested from DEP BWSO using a Request for Records form, which can be found online (https://www1.nyc.gov/site/dep/about/request-records.page).

Please note that practitioners should account for any catch basins that will be added or removed as part of the proposed project.

Step 2. Evaluate Roadway Flow Directions

Using the surface elevation data, practitioners should identify the direction of runoff flow along each roadway within the project area. When using digital elevation maps, it is recommended that contours are generated to assist with this analysis. Spot elevations should be consulted for any flat or difficult to evaluate areas.

In cases where one portion of the roadway flows in a different direction from the other, the location of any high points should be marked and a flow direction for each portion of the roadway should be assigned. An example of the roadway flow direction analysis is shown in Figure 6.1 below.

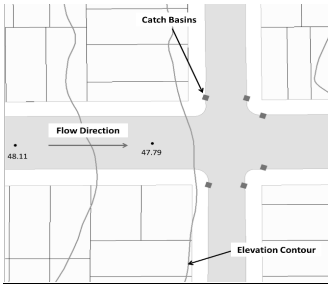


Figure 6.1. Example roadway flow direction analysis.

Step 3: Delineate the disturbed, impervious drainage area of each catch basin

To delineate the disturbed drainage area of each catch basin, first draw the boundary of the disturbed area. Then add lines that reflect the hydraulic boundaries between separate drainage areas. Hydraulic boundaries can include the crown of the roadway, catch basins, and high points. See the following paragraphs for example delineations.

Figure 6.2 shows delineations after drawing the boundary of the disturbed area and adding separation lines for the crown of roadway and catch basins. When catch basins are located at the corner of an intersection, draw a boundary that connects the center of the intersection, with the corner of the disturbed area boundary. When catch basins are located mid-block, draw a boundary perpendicular to the street centerline at the location of the catch basin.

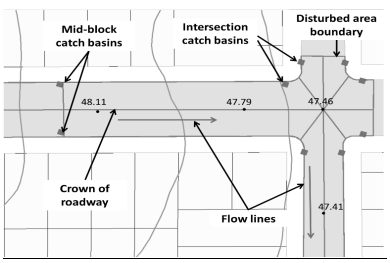


Figure 6.2. Example delineation of disturbed drainage areas with separation lines for the crown of roadway and catch basins.

Figure 6.3 shows updated delineations when separation lines are added for high points along the roadway. Similar to mid-block catch basins, the boundary for a high point is drawn perpendicular to the street centerline.

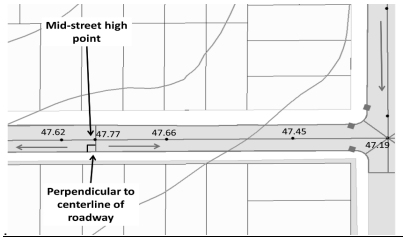


Figure 6.3. Example delineation of disturbed drainage areas with added separation lines at high points.

Perform this process until the disturbed drainage areas for each catch basin within the project area have been identified. Once completed, then identify the portion of each disturbed drainage area that is impervious using available information on existing surface types. The resulting disturbed, impervious drainage areas can be used to determine the required WQv within the applicable project area.

Step 4: Delineate the disturbed, impervious drainage area of each SMP

Once the disturbed, impervious drainage areas of catch basins are known, these areas can be further delineated into drainage areas for each SMP. To do this, designers should draw another boundary perpendicular to the street centerline at the inlet location of each individual practice, as shown in the figure below.

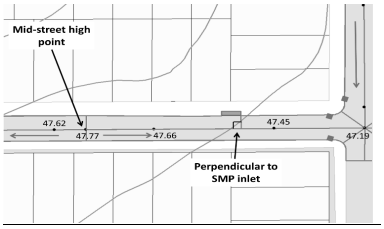


Figure 6.4. Example boundaries at inlets of PC SMPs.

The resulting areas can be used to calculate the WQv that must be managed by each practice.

Step 5: Size PC SMPs to manage the WQv

PC SMPs must be sized to manage the associated WQv from their disturbed, impervious drainage area. In addition, PC SMPs must be sited in a way that manages the total WQv across the entire ROW project.

Note that when two or more PC SMPs are located in the same catch basin drainage area, the downstream PC SMPs may be used to manage any WQv that could not be managed by upstream practices.

Designers should refer to Chapter 4 for guidance on determining the storage volume for each PC SMP and for sizing accordingly to meet the WQv requirement.

100. Geotechnical Requirements

Guidance on geotechnical investigations for ROW projects is provided in Appendix H. Note that on-site projects must refer to Appendix D of the NYSDEC SWMDM for geotechnical requirements.

101. Additional Resources

For more information on how to submit stormwater construction permit applications, refer to Chapter 3.

A ROW SMP Data Tracking Form is required for SWPPPs that include both ESC and PC SMPs. See Appendix H for this form and associated guidance.

PC SMPs in ROW areas will require an O&M plan as part of the stormwater construction permit; refer to Chapter 5 for individual SMP maintenance requirements.

APPENDIX A

Stormwater Management Practice Hierarchy Checklist

SMP HIERARCHY CHECKLIST - CSS AREAS

			Percent of SMP volume applied[a]			Site constraints that limit SMP feasibility[b]				
Tier[c]	Function Type[d]	Practice Type[e]	WQv	RRv	Vv	Soil	Subsurface	Hotspot	Surfaces	Space
Tier 1	Infiltration (Vegetated)	Bioretention	100	100	50	×	×	×	×	×
		Rain garden	100	100	50	×	×	×	×	×
		Stormwater planter	100	100	50	×	×	×	×	×
		Tree planting / preservation	SC	SC	0					
		Dry basin	100	100	50	×	×	×	×	×
		Grass filter strip	SC	SC	0	×	×	×	×	×
		Vegetated swale	SC	SC	0	×	×	×	×	×
	Evapotranspiration[f]	Rain garden	100	100	0		×		×	×
		Stormwater planter	100	100	0				×	
		Tree planting / preservation	SC	SC	0					
		Green roof	100	100	0					
Tier 2	Infiltration (Non-vegetated)	Dry well	100	100	50	×	×	×		×
		Stormwater gallery	100	100	50	×	×	×		×
		Stone trench	100	100	50	×	×	×	×	×
		Porous pavement	100	100	50	×	×	×		×
		Synthetic turf field	100	100	50	×	×	×	×	×
Anytime / Optional	Reuse	Rain tank	100	100	SC					
		Cistern	100	100	SC					
Tier 3	Detention[g,h,i]	Dry basin	100	0	100		×		×	×
		Constructed wetland	100	0	100		×		×	×
		Wet basin / pond	100	0	100		×		×	×
		Stormwater gallery	100	0	100		×			×
		Blue roof	100	0	100					
		Detention tank	100	0	100					

[a]Values marked "SC" are special cases for criteria-based practices, see Section 4.11 for details on criteria and application.
[b]An "X" marker indicates the site constraints that would prevent each practice from being used, contingent on the appropriate documention for that constraint.
[c]All practices of higher tiers must be used to the maximum extent possible or eliminated due to site constraints, before moving to lower tier practices
[d]Details on the design criteria and applied volumes for dual function systems are available in Section 4.9 on Innovative Systems.
[e]Other practice types not shown here may be proposed, subject to DEP approval, see Section 4.9 on Innovative Systems.
[f]Where permeablity rates of the site are 0.5 in/hr or greater, rain gardens, stormwater planters, and tree planting/preservation must be designed as infiltration practices
[g]High groundwater (subsurface constraint) limits the use of most practices, except those enclosed in concrete with adequate anchoring, as determined by an engineer
[h]Detention practices may be used to manage WQv in CSS areas when the release rate complies with the sewer operations requirement (i.e., 0.1 cfs/acre)
[i]Detention practices in series (e.g., blue roof to detention tank) require special calculations to account for changes in required detention volumes

SMP HIERARCHY CHECKLIST - MS4 AREAS

			Percent of SMP volume applied[a]			Site constraints that limit SMP feasibility[b]				
Tier[c]	Function Type[d]	Practice Type[e]	WQv	RRv	Vv	Soil	Subsurface	Hotspot	Surfaces	Space
Tier 1	Infiltration (Vegetated)	Bioretention	100	100	50	×	×	×	×	×
		Rain garden	100	100	50	×	×	×	×	×
		Stormwater planter	100	100	50	×	×	×	×	×
		Tree planting / preservation	SC	SC	0					
		Dry basin	100	100	50	×	×	×	×	×
		Grass filter strip	SC	SC	0	×	×	×	×	×
		Vegetated swale	SC	SC	0	×	×	×	×	×
	Evapotranspiration[f]	Rain garden	100	100	0		×		×	×
		Stormwater planter	100	100	0				×	
		Tree planting / preservation	SC	SC	0					
		Green roof	100	100	0					
Tier 2	Infiltration (Non-vegetated)	Dry well	100	100	50	×	×	×		×
		Stormwater gallery	100	100	50	×	×	×		×
		Stone trench	100	100	50	×	×	×	×	×
		Porous pavement	100	100	50	×	×	×		×
		Synthetic turf field	100	100	50	×	×	×	×	×
Anytime / Optional	Reuse	Rain tank	100	100	SC					
		Cistern	100	100	SC					
Tier 3	Filtration[g]	Bioretention	100	40	0		×		×	×
		Stormwater planter	100	40	0		×		×	×
		Porous pavement	100	0	0		×			×
		Synthetic turf field	100	0	0		×		×	×
		Sand filter	100	0	0		×		×	
		Organic filter	100	0	0		×		×	
	Detention[g,h]	Constructed wetland	100	0	100		×		×	×
		Wet basin / pond	100	0	100		×		×	×
Other	Detention[g,i,j]	Dry basin	0	0	100		×		×	×
		Stormwater gallery	0	0	100		×			×
		Blue roof	0	0	100					
		Detention tank	0	0	100					

[a]Values marked "SC" are special cases for criteria-based practices, see Section 4.11 for details on criteria and application.
[b]An "X" marker indicates the site constraints that would prevent each practice from being used, contingent on the appropriate documention for that constraint.
[c]All practices of higher tiers must be used to the maximum extent possible or eliminated due to site constraints, before moving to lower tier practices
[d]Details on the design criteria and applied volumes for dual function systems are available in Section 4.9 on Innovative Systems.
[e]Other practice types not shown here may be proposed, subject to DEP approval, see Section 4.9 on Innovative Systems.
[f]Where permeablity rates of the site are 0.5 in/hr or greater, rain gardens, stormwater planters, and tree planting/preservation must be designed as infiltration practices
[g]High groundwater (subsurface constraint) limits the use of most practices, except those enclosed in concrete with adequate anchoring, as determined by an engineer
[h]Select detention practices with treatment abilities may be used to manage WQv in MS4 areas when all design criteria are met
[i]Remaining detention practices may only be used to meet sewer operations criteria, included here for completeness
[j]Detention in series (e.g., blue roof to detention tank) require special calculations to account for changes in required detention volumes

APPENDIX B

Nitrogen No-Net-Increase Calculator Guide

NYC MS4 No-Net-Increase Calculator for Nitrogen

Non-negligible land use changes can increase the amount of nitrogen within stormwater runoff. This increase can be calculated by comparing the existing site conditions before a project has begun (pre-construction) and after a project is completed (post-construction). The simplified procedures for using DEP's interactive tool, the NYC MS4 No-Net-Increase Calculator for Nitrogen, are described below.

DEP developed the NYC MS4 No-Net-Increase Calculator for Nitrogen to aid applicants in demonstrating NNI of nitrogen resulting from a project subject to NNI requirements. The calculator compares existing site conditions (pre-construction) to post-construction conditions and outputs the net change in nitrogen loads based on the calculated WQv.

Overview of Calculator

The NYC MS4 No-Net-Increase Calculator for Nitrogen input and output page is shown in Figure 3-4. The online version of the calculator is located on the DEP MS4 web page (https://www1.nyc.gov/assets/dep/downloads/pdf/water/stormwater/ms4/nni-calculator.xlsx).

Figure 3-4. NYC MS4 No-Net-Increase Calculator for Nitrogen

NYC MS4 No-Net-Increase Calculator

Project Name: [Enter Name]
DEP Application Number: [Enter Number]
Borough, Block, and Lot: [Enter Borough, Block #, Lot #]

Prepared For: [Enter Owner Name]
Prepared By: [Enter Company Name]
Date: [Enter Date]

Step 1: Nitrogen Load Calculation (DRAFT)

This section calculates the change in nitrogen load from pre- to post-construction site conditions (see Nitrogen Load Calculation tab). Please fill in shaded cells.
Any increase in nitrogen load must be removed using stormwater management practices (SMPs).

Pre-Construction	
Project Area (acres)	
Impervious Area (acres)	
Current Land Use	
Runoff Coefficient (R_v)	
Total Nitrogen Load (Pre)	lbs

Post-Construction	
Project Area (acres)	
Impervious Area (acres)	
Proposed Land Use	
Runoff Coefficient (R_v)	
Total Nitrogen Load (Post)	lbs
Required Nitrogen Load Reduction	lbs
Percent Reduction Required	%

Step 2: SMP Nitrogen Removal Calculation (DRAFT)

This section calculates the nitrogen load reduction for proposed SMPs. Load reduction calculation considers both pervious and impervious areas within SMP catchment area.
Fill in shaded cells for post-construction conditions. Use a separate row for each catchment area draining to an SMP. SMP must be sized to manage the entire SMP catchment area.
For alternative SMPs not in drop down (manufactured technologies or treatment trains), see NYC SWDM and enter SMP type and removal rate in Rows 7-10 (must attach documentation).

	SMP Catchment Area (acres)	Impervious Area (acres)	SMP Type	Total Nitrogen Removal Rate (%)	Total Nitrogen Load Reduction (lbs)
1					
2					
3					
4					
5					
6					
7			[Enter Other SMP Type]		
8			[Enter Other SMP Type]		
9			[Enter Other SMP Type]		
10			[Enter Other SMP Type]		
	0.0	0.0			0.00

Step 3: No-Net Increase Verification (DRAFT)

This section verifies that proposed SMPs will reduce the post-construction nitrogen load equal to or less than the pre-construction nitrogen load, resulting in no net increase.

	Load (lbs)	Percent (%)	
Required Nitrogen Load Reduction			(from Step 1)
Actual Nitrogen Load Reduction			(from Step 2)

PLEASE COMPLETE STEPS 1 AND 2

NYC MS4 No-Net-Increase Calculator for Nitrogen

User Inputs

For the NYC MS4 No-Net-Increase Calculator for Nitrogen, the SWPPP preparer will be responsible for inputting the following information:

- Total project area (acres)
- Pre-construction conditions for the total project area
  - Impervious area (acres)
  - Current land use type (from dropdown menu)
- Post-construction conditions for the total project area
  - Impervious area (acres)
  - Proposed land use type (from dropdown menu)

Calculator Outputs

Post-construction TN load will depend on land use changes and the EMCs for these land use types, as well as impervious cover changes. The calculator will compare the pre- and post-construction conditions and output the resulting net changes in TN load, as a quantity in pounds (lbs) and percentage (%).

DEP recommends reducing the post-construction impervious area to the greatest extent feasible, to mitigate stormwater runoff increases and net increases in TN load. As a next step toward compliance with NNI requirements, SMPs described in Table 3-2, must be implemented in the SWPPP to remove all net increases in TN load from the covered development project.

SMPs for Nitrogen Removal

For projects subject to NNI requirements which drain to nitrogen-impaired receiving waterbodies, SWPPP preparers must implement SMPs to mitigate any net increases in nitrogen due to non-negligible land use changes. Table 3-2 is a list of pollutant removal rates by SMP. DEP derived these values by comparing SMP TN removal rate data from a number of different national research reports, regional design documents, and state and municipal manuals. The third column refers to the appropriate guidance in the NYS SWMDM for each SMP. However, SWPPP preparers should refer to all applicable sections in Chapters 5, 6, and 7 of the NYS SWMDM for SMP design and selection information.

Table 3-2. TN Removal by SMP

SMP	TN Removal Rate	NYS SWMDM Section
Rainwater Reuse System	100%	Section 5.3.10
Rain Garden	100%	Section 5.3.7
Bioretention	100%	Section 6.4
Porous Pavement	100%	Section 5.3.11
Infiltration Trench	100%	Section 6.3
Turf Field	40%	N/A
Sand Filter (Filtration)	40%	Section 6.4
Bioretention with Underdrain	40%	Section 6.4
Porous Pavement with Underdrain	40%	Section 5.3.11
Green Roof	35%	Section 5.3.8
Constructed Wetlands	35%	Section 6.2
Ponds	30%	Section 6.2

SMPs should be selected based on site conditions such as infiltration feasibility, available space, land use, soil suitability, site slope, depth to groundwater, and O&M requirements. The catchment areas draining to individual SMPs (or SMPs in series, as described below) need to be delineated accurately and included in the calculator to assess the overall pollutant load reduction for the entire project area.

The NYC MS4 No-Net-Increase Calculator for Nitrogen allows applicants to assign the TN removal rates in Table 3-2 to each SMP catchment area based on the selection and design of corresponding SMPs. The calculator estimates the total removal efficiencies across all SMP catchment areas and compares the TN removed by the SMPs to the net TN increase due to the development activity. The total post-construction TN load for the project area must be less than or equal to the total pre-construction TN loads. All NNI calculations for TN must be included and documented in the SWPPP. An example NYC MS4 No-Net-Increase Calculator for Nitrogen calculation is provided in Attachment 2.

The TN load change is calculated by subtracting the pre-construction TN load from the post-construction TN load, using the equation below. The TN load for pre- and post-construction conditions is determined by multiplying the water quality volume (WQv) for the project area by the event mean concentration (EMC) for TN for its associated land use type, as per Table 3-1. The WQv is found using the formula from Chapter 4 of the NYS SWMDM, with a minimum value for the volumetric runoff coefficient Rv of 0.2.

WQv (post) * EMCTN (post) – WQv (pre) * EMCTN (pre) = TN load change

If the post-construction load is greater than the pre-construction load, the calculated value for the net increase serves as the basis for the stormwater management recommendations and should be included in the SWPPP. Any resulting net TN load increase must be removed using appropriately selected and designed SMPs, detailed in Table 3-2.

Accounting for Pervious and Impervious Area Conditions

Increasing pervious surface area onsite may help to avoid NNI requirements all together (see definition of "Negligible Land Use Change"). DEP encourages developers to increase pervious areas in the post-construction site condition during site planning, to the greatest extent possible. DEP considers green roofs, porous pavement, vegetated SMPs, or other landscaped pervious areas for the purpose of calculating WQv and required nitrogen load reduction in Step 1. In addition, TN removal in stormwater runoff from impervious and pervious surfaces managed by various SMPs is determined in Step 2 of the calculator as shown in Table 3-2.

Event Mean Concentrations of TN

Table 3-1 shows median values for TN EMCs for common land uses in NYC, related zoning districts, and similar or applicable land uses included in the NYSDEC Notice of Intent (NOI) form. The values in Table 3-1 were derived by comparing estimated EMCs for various land use types across 10 national studies. The NYC MS4 No-Net-Increase Calculator for Nitrogen uses the values from this table as land use loading coefficients when computing TN loadings for the project area.

Table 3-1. Median EMCs for TN

NYC Land Use	NYC Zoning Districts	Similar or Applicable Land Uses From NOI	EMC for TN (mg/L)
Commercial	C1-C8	Institutional/School, Municipal	2.08
Industrial/Manufacturing	M1-M3	Linear Utility, Well Drilling Activity (Oil, Gas, etc.), Road/ Highway, Parking Lot	2.10
Vacant/Open Space	NA	Forest, Pasture/Open Land, Cultivated Land, Recreational/ Sports Field, Bike Path/Trail, Clearing/Grading, Demolition/No Redevelopment	1.50
Lower-Density Residential	R1-R5	Single Family Home/Subdivision	2.10
Moderate- and Higher-Density Residential	R6-R10	Town Home Residential, Multifamily Residential	2.41

Note: mg/L = milligrams per liter.

Treatment Trains and Manufactured Technologies for Nitrogen Removal

SWPPP preparers may use alternative technologies not listed in Table 3-2 to achieve TN NNI requirements. SWPPPs that propose alternative technologies must include supporting documentation to verify TN removal efficiencies.

DEP will rely on the approval processes referenced in Chapter 3 of the NYS SWMDM, including the requirement that the alternative technology must be approved by a third party verification program (https://www.dec.ny.gov/chemical/29089.html).

For alternative technologies, including proprietary water quality treatment devices that are not included in or do not meet the standards of the NYS SWMDM, supporting documentation of TN removal rates must follow the approach currently employed by NYSDEC to verify technology effectiveness. Specifically, applicants must provide evidence of third party verification from Washington State's Technology Assistance Protocol - Ecology (TAPE) Program or the multi-state Technology Acceptance Reciprocity Partnership (TARP) Program for TN removal rates applied for each proposed alternative technology in the calculator.

SWPPP preparers may also elect to implement multiple SMPs in series, referred to as a treatment train, to treat runoff from the same SMP catchment area and achieve NNI requirements for the project area. This can be an effective way to achieve NNI requirements for sites where a single SMP for each catchment area cannot achieve the required TN load reduction, or for space-constrained sites.

For example, rooftop runoff can be treated with a green roof and outflow from the green roof can then be discharged to a sand filter or other approved treatment technology at ground level. With this post-construction condition, TN load is effectively reduced first through the green roof and remaining load is reduced further by the sand filter. In order for a treatment train to be effective, the SMPs utilized must be different types of technologies (i.e. placing two sand filters in a row is not considered a treatment train). Figure 3-5 represents a schematic of a treatment train with three different SMPs implemented in series.

SWPPP preparers should use the calculation below to identify the TN removal rate of an SMP treatment train for a specific SMP catchment area:

$$Rr = [1 - ((1 - rr1)*(1 - rr2)*(1 - rr3))] * 100$$

Where:

Rr = overall removal rate (%)

rr1, 2, 3 = removal rates for SMP1, SMP2, and SMP3, respectively (%)

The TN load of the inflow is first treated by SMP1 with a TN removal efficiency of rr1 (removal rate for SMP1), and the remainder pollutant load is then treated by SMP2 with a removal efficiency of rr2 (removal rate for SMP2), and so on.

The calculation for each SMP catchment area with a proposed treatment train needs to be provided as supporting documentation with the SWPPP. Removal rates in Table 3-2 should be used for each SMP proposed in series or, if an alternative technology is proposed, the guidance below should be used. The overall removal rate (Rr) calculated should be entered into the NYC MS4 No-Net-Increase Calculator as the TN removal rate for an SMP treatment train to demonstrate that NNI requirements are met.

Figure 3-5. SMP Treatment Train Schematic

NYC MS4 No-Net-Increase Calculator for Nitrogen - Example

In this example, proposed redevelopment activities will increase the impervious area on a 4.0-acre site in the Flushing Bay watershed by 0.5 acres, which will trigger NNI requirements, Figure 1.

Figure 1 - Four-acre site in Flushing Bay watershed with proposed increase in impervious surfaces that must meet NNI requirements.

The NYC MS4 No-Net-Increase Calculator input table for the project site in Figure 1 is presented in Figure 2.

Figure 2 – NYC MS4 No-Net-Increase Calculator for the Four-acre site in Flushing Bay watershed with proposed increase in impervious surfaces that must meet NNI requirements.

NYC MS4 No-Net-Increase Calculator

NYC Environmental Protection

Project Name:	Four-Acre Example	Prepared For:	[Enter Owner Name]
DEP Application Number:	[Enter Number]	Prepared By	[Enter Company Name]
Borough, Block, and Lot:	[Enter BBL]	Date:	[Enter Date]

Step 1: Nitrogen Load Calculation (DRAFT)

This section calculates the change in nitrogen load from pre- to post-construction site conditions (see Nitrogen Load Calculation tab). Please fill in shaded cells.
Any increase in nitrogen load must be removed using stormwater management practices (SMPs).

Pre-Construction			Post-Construction		
Project Area (acres)	4.00		Project Area (acres)	4.00	
Impervious Area (acres)	2.50		Impervious Area (acres)	3.00	
Current Land Use	Commercial		Proposed Land Use	Commercial	
Runoff Coefficient (R_v)	0.61		Runoff Coefficient (R_v)	0.73	
Total Nitrogen Load (Pre)	1.73	lbs	Total Nitrogen Load (Post)	2.05	lbs
			Required Nitrogen Load Reduction	**0.32**	lbs
			Percent Reduction Required	**16%**	

Step 2: SMP Nitrogen Removal Calculation (DRAFT)

This section calculates the nitrogen load reduction for proposed SMPs. Load reduction calculation considers both pervious and impervious areas within SMP catchment area.
Fill in shaded cells for post-construction conditions. Use a separate row for each catchment area draining to an SMP. SMP must be sized to manage the entire SMP catchment area.
For alternative SMPs not in drop down (manufactured technologies or treatment trains), see NYC SWDM and enter SMP type and removal rate in Rows 7-10 (must attach documentation).

SMP Catchment Area (acres)	Impervious Area (acres)	SMP Type	Total Nitrogen Removal Rate (%)	Total Nitrogen Load Reduction (lbs)
1.00	0.00	Green Roof	35%	0.05
1.00	1.00	Sand Filter (Filtration)	40%	0.27
		[Enter Other SMP Type]		
		[Enter Other SMP Type]		
		[Enter Other SMP Type]		
		[Enter Other SMP Type]		
2.00	1.00			0.32

Step 3: No-Net Increase Verification (DRAFT)

This section verifies that proposed SMPs will reduce the post-construction nitrogen load equal to or less than the pre-construction nitrogen load, resulting in no net increase.

	Load (lbs)	Percent (%)	
Required Nitrogen Load Reduction	**0.32**	**16%**	(from Step 1)
Actual Nitrogen Load Reduction	**0.32**	**16%**	(from Step 2)
NO-NET-INCREASE REQUIREMENTS MET			

As shown in Figure 2, the pre- and post-development conditions for the inputs for Step 1: Nitrogen Load Calculation are below, together with the calculated total nitrogen load:

Pre-Construction:

- Project Area: 4.0 acres
- Impervious Area: 2.5 acres
- Current Land Use: Commercial
- Total Nitrogen Load (pre): 1.73 lbs.

Post-Construction:

- Project Area: 4.0 acres
- Impervious Area: 3.0 acres
- Proposed Land Use: Commercial
- Total Nitrogen Load (post): 2.05 lbs.

Note that the pervious surface area of green roofs, porous pavement, vegetated SMPs, or other landscaped areas should not be included in the impervious area cell under Step 1 or Step 2. In this example, a green roof is considered pervious area not impervious area and, consequently, the WQv and required nitrogen load reduction is less than if considered a regular roof. The green roof also provides limited nitrogen removal in Step 2 given a minimum runoff coefficient of 0.2 for all surfaces (impervious and pervious).

Therefore, in this example, the SWPPP preparer is required to install SMPs to remove 0.32 lbs. (or 16%) of total nitrogen, which represents the load increase between pre- and post-development.

The SWPPP preparer proposes multiple SMPs and enters their associated catchment areas into the upper rows of the table in Step 2: SMP Nitrogen Removal Calculation. The calculator assigns the appropriate nitrogen removal rates and identifies the total nitrogen load removed per SMP.

SMP 1 Type: Green Roof

Impervious Area (First SMP Catchment Area): 0.0 acres

Total Nitrogen Removal Rate: 35%

Total Nitrogen Load Reduction: 0.05 lbs.

SMP 2 Type: Porous Pavement

Impervious Area (Second SMP Catchment Area): 1.0 acre

Total Nitrogen Removal Rate: 40%

Total Nitrogen Load Reduction: 0.27 lbs.

The total nitrogen load removal for the proposed SMPs is 0.32 lbs. (or 16%), which equals the NNI requirements as verified in Step 3: No-Net Increase Verification. The developer should print the calculator results as confirmation and include it in their SWPPP submittal.

APPENDIX C

Stormwater Management Practice Siting Criteria

SMP Siting Criteria

HORIZONTAL SETBACKS	Minimum Setback Distance (feet)
Building Foundations, Vaults and Protruded Basements	10
Flagpoles and Light Poles	10
Retaining Walls	10
Transit Structures	25
Highway/Roadway Structures	25
Monitoring Wells	50
DEP Infrastructure (e.g. water and/or sewer mains, etc.)	15
Property Line	5
Slopes 10% below practice Slopes 10% - 30% below the practice Note: avoid installing an infiltration facility near slopes greater than 30%.	100 100 + 5 feet for every 1% slope
VERTICAL SEPARATION	
Bottom of practice to the top of the high groundwater table	3
Bottom of practice to the top of bedrock or other impermeable material or subsurface layer	3

APPENDIX D

Stormwater Management Practice Sizing Examples

WATER QUALITY VOLUME SIZING EXAMPLES

Infiltration (vegetated)

Stormwater Planter

Design a stormwater planter that will treat the water quality volume from an impervious area of 3,000 square feet, with a runoff coefficient of 0.95. Assume a media saturated hydraulic conductivity of 2 in/hr and an infiltration rate of 2 in/hr.

Step 1: Calculate the WQ_V.

$$WQ_V = \frac{1.5\ in}{12} * A * R_V$$

where:
WQ_V = water quality volume (cf)
A = contributing area (sf) = 3,000 sf
R_V = runoff coefficient relating total rainfall and runoff
R_V = 0.05 + 0.009(I) = 0.95
I = percent impervious cover = 100%

$$WQ_V = \frac{1.5\ in}{12} * 3{,}000\ sf * 0.95$$

$$WQ_V = 356.25\ cf$$

Step 2: Calculate the SMP area assuming a maximum loading ratio of 1:20 for a stormwater planter practice. Use the area to set the initial length and width of the practice.

$$A_{SMP} = \frac{A}{20}$$

where:
A_{SMP} = area at the base of infiltration SMP (sf)
A = contributing area (sf) = 3,000 sf

$$A_{SMP} = \frac{3{,}000\ sf}{20}$$

$$A_{SMP} = 150\ sf$$

Assume a 15 ft by 10 ft practice.

Step 3: Calculate the volume of surface ponding assuming a surface ponding depth of 0.5 ft, which is less than the maximum surface ponding depth of 1 ft for a stormwater planter practice.

$$V_P = A_{SMP} * D_P$$

where:
V_P = volume of surface ponding (cf)
A_{SMP} = area of the SMP (sf) = 150 sf
D_P = depth of ponding (ft) = 0.5 ft

$$V_P = 150\ sf * 0.5\ ft$$

$$V_P = 75\ cf$$

In this case, the designer has chosen to use a hydraulic connection between the ponding zone and the stone base. Therefore, the ponding zone does not need to temporarily store 75% of the water quality volume.

Step 4: Calculate the volume of voids in the soil media layer assuming a soil media depth of 1.5 ft equal to the minimum soil media depth of 1.5 ft for a stormwater planter practice.

$$V_S = A_{SMP} * D_S * n_S$$

V_S = volume of voids in the soil media layer (cf)
A_{SMP} = area of the SMP (sf) = 150 sf
D_S = depth of soil media layer (ft) = 1.5 ft
n_S = available porosity of soil media (cf/cf) = 0.2 cf/cf

$$V_S = 150\ sf * 1.5\ ft * 0.2\frac{cf}{cf}$$

$$V_S = 45\ cf$$

Step 5: Calculate the volume of voids created by internal structures.

Assume there are no internal structures in this stormwater planter practice, so the volume is 0.

$$V_I = 0\ cf$$

Step 6: Calculate the volume of voids in the drainage layer assuming a drainage media depth of 1 ft, which is equal to the minimum drainage media depth of 1 ft for a stormwater planter practice.

$$V_D = (A_{SMP} * D_D - V_{I,d}) * n_D$$

where:
V_D = volume of voids in the drainage layer (cf)
A_{SMP} = area of the SMP (sf) = 150 cf
D_D = depth of the drainage layer (ft) = 1 ft
$V_{I,d}$ = volume of voids created by internal structures within the drainage layer (cf) = 0 cf
n_D = porosity of drainage layer media (cf/cf) = 0.4 cf/cf

$$V_D = (150\ sf * 1\ ft - 0\ cf) * 0.4\frac{cf}{cf}$$

$$V_D = 60\ cf$$

Step 7: Calculate the total SMP volume from the individual component volumes and compare to the WQ_V.

$$V_{SMP} = V_P + V_S + V_I + V_D$$

where:
V_{SMP} = storage volume of SMP (cf)
V_P = volume of surface ponding (cf) = 150 cf
V_S = volume of voids in the soil media layer (cf) = 90 cf
V_I = volume of voids created by internal structures such as chambers or pipes (cf) = 0 cf
V_D = volume of voids in the drainage layer (cf) = 120 cf

$$V_{SMP} = 150\ cf + 45\ cf + 0\ cf + 60\ cf$$

$$V_{SMP} = 255\ cf\ <\ WQ_V = 356.25\ cf \quad NO$$

Practice does not manage the entire WQv. Reconfigure the practice to increase the storage volume and return to associated step. In this case, the practice area will be increased, and Steps 2-8 are repeated.

Step 2: Calculate the SMP area assuming a loading ratio of 1:10, which is less than the maximum loading ratio of 1:20 for a stormwater planter practice. Use the area to set the initial length and width of the practice.

$$A_{SMP} = \frac{A}{10}$$

where:
A_{SMP} = area at the base of infiltration SMP (sf)
A = contributing area (sf) = 3,000 sf

$$A_{SMP} = \frac{3{,}000\ sf}{10}$$

$$A_{SMP} = 300\ sf$$

Assume a 30 ft by 10 ft practice.

Step 3: Calculate the volume of surface ponding assuming a surface ponding depth of 0.5 ft, which is less than the maximum surface ponding depth of 1 ft for a stormwater planter practice.

$$V_P = A_{SMP} * D_P$$

where:
V_P = volume of surface ponding (cf)
A_{SMP} = area of the SMP (sf) = 300 sf
D_P = depth of ponding (ft) = 0.5 ft

$$V_P = 300\ sf * 0.5\ ft$$

$$V_P = 150\ cf$$

In this case, the designer has chosen to use a hydraulic connection between the ponding zone and the stone base. Therefore, the ponding zone does not need to temporarily store 75% of the water quality volume.

Step 4: Calculate the volume of voids in the soil media layer assuming a soil media depth of 1.5 ft equal to the minimum soil media depth of 1.5 ft for a stormwater planter practice.

$$V_S = A_{SMP} * D_S * n_S$$

V_S = volume of voids in the soil media layer (cf)
A_{SMP} = area of the SMP (sf) = 300 sf
D_S = depth of soil media layer (ft) = 1.5 ft
n_S = available porosity of soil media (cf/cf) = 0.2 cf/cf

$$V_S = 300\ sf * 1.5\ ft * 0.2\frac{cf}{cf}$$

$$V_S = 90\ cf$$

Step 5: Calculate the volume of voids created by internal structures.

Assume there are no internal structures in this stormwater planter practice, so the volume is 0.

$$V_I = 0\ cf$$

Step 6: Calculate the volume of voids in the drainage layer assuming a drainage media depth of 1 ft, which is equal to the minimum drainage media depth of 1 ft for a stormwater planter practice.

$$V_D = (A_{SMP} * D_D - V_{I,d}) * n_D$$

where:
V_D = volume of voids in the drainage layer (cf)
A_{SMP} = area of the SMP (sf) = 300 cf
D_D = depth of the drainage layer (ft) = 1 ft
$V_{I,d}$ = volume of voids created by internal structures within the drainage layer (cf) = 0 cf
n_D = porosity of drainage layer media (cf/cf) = 0.4 cf/cf

$$V_D = (300\ sf * 1\ ft - 0\ cf) * 0.4\frac{cf}{cf}$$

$$V_D = 120\ cf$$

Step 7: Calculate the total SMP volume from the individual component volumes and compare to the WQ_V.

$$V_{SMP} = V_P + V_S + V_I + V_D$$

where:
V_{SMP} = storage volume of SMP (cf)
V_P = volume of surface ponding (cf) = 150 cf
V_S = volume of voids in the soil media layer (cf) = 90 cf
V_I = volume of voids created by internal structures such as chambers or pipes (cf) = 0 cf
V_D = volume of voids in the drainage layer (cf) = 120 cf

$$V_{SMP} = 150\ cf + 90\ cf + 0\ cf + 120\ cf$$

$$V_{SMP} = 360\ cf > WQ_V = 356.25\ cf \quad OK$$

Step 8: Check the ponding and infiltration drawdown times of the practice do not exceed the required times of 12 hours and 48 hours, respectively.

Infiltration drawdown time:

$$dt_{SMP} = \frac{V_{SMP}}{\left(\frac{i}{12}\right) * A_{SMP}}$$

where:
dt_{SMP} = drawdown time of infiltration SMP (hr)
V_{SMP} = volume of infiltration SMP (cf) = WQ_V = 360 cf
i = field measured infiltration rate (in/hr) = 2 in/hr
A_{SMP} = area at the base of infiltration SMP (sf) = 300 sf

$$dt_{SMP} = \frac{360\ cf}{\left(\frac{2\ in/hr}{12}\right) * 300\ sf}$$

$$dt_{SMP} = 7.2\ hr < 48\ hr \quad OK$$

Surface ponding drawdown time:

$$dt_P = \frac{V_P}{\left(\frac{K_s}{12}\right) * \left(1 + \frac{0.5D_p}{D_m}\right) * \left(\frac{A_{P1} + A_{P2}}{2}\right)}$$

where:
dt_P = drawdown time of surface ponding (hr)
V_P = volume of surface ponding (cf) = 75 cf
K_S = saturated hydraulic conductivity of media below the surface ponding area (in/hr) = 2 in/hr
D_p = maximum depth of ponding (ft) = 0.5 ft
D_m = depth of media below surface ponding area (ft) = 1.5 ft
A_{P1} = area at the base of surface ponding zone (sf) = 300 sf
A_{P2} = area at the top of surface ponding zone (sf) = 300 sf

$$dt_P = \frac{150\ cf}{\left(2\frac{in}{hr}\right) * \left(1 + \frac{0.5 * 0.5\ ft}{1.5\ ft}\right) * \left(\frac{300\ sf + 300\ sf}{2}\right)}$$

$$dt_P = 2.57\ hr < 12\ hr \quad OK$$

Note: A portion of the SMP volume for this practice may be applied towards meeting the V_V requirements, see Chapter 4 and Appendix C.

Evapotranspiration

Green Roof

Design a green roof that will treat the water quality volume from a 1,100 square foot rooftop with a runoff coefficient of 0.95. Assume that the green roof will cover 900 square feet (82%) of the rooftop due to required setbacks and/or equipment.

Step 1: Calculate the WQ_V.

$$WQ_V = \frac{1.5\ in}{12} * A * R_V$$

where:
WQ_V = water quality volume (cf)
A = contributing area (sf) = 1,100 sf
R_V = runoff coefficient relating total rainfall and runoff
R_V = 0.05 + 0.009(I) = 0.95
I = percent impervious cover = 100%

$$WQ_V = \frac{1.5\ in}{12} * 1{,}100\ sf * 0.95$$

$$WQ_V = 130.63\ cf$$

Note: Since the green roof will cover 900 square feet (82% of the total area) and the maximum loading ratio 1:1, the green roof may only treat up to 106.88 cf (82%) of the 130.63 cf water quality volume.

Step 2: Calculate the volume of surface ponding.

Green roofs are fast draining and typically do not pond water. Any ponding that does occur would not be stored long enough for evapotranspiration. Therefore, the volume of surface ponding is zero.

$$V_P = 0\ cf$$

Step 3: Calculate the volume of voids in the soil media layer assuming a soil media depth of 0.33 ft, which is equal to the minimum soil media depth of 0.33 ft for a green roof.

$$V_S = A_{SMP} * D_S * n_S$$

V_S = volume of voids in the soil media layer (cf)
A_{SMP} = area of the SMP (sf) = 900 sf
D_S = depth of soil media layer (ft) = 0.33 ft

n_S = available porosity of soil media (cf/cf) = 0.2 cf/cf

$$V_S = 900\ sf * 0.33\ ft * 0.2\frac{cf}{cf}$$

$$V_S = 59.4\ cf$$

Step 4: Calculate the volume of voids created by internal structures.

Assume there are no internal structures in this green roof practice, so the volume is 0.

$$V_I = 0\ cf$$

Step 5: Calculate the volume of voids in the drainage layer.

The active storage zone for a green roof is considered from the base of the soil media up, so the storage volume of the drainage layer is zero.

$$V_D = 0\ cf$$

Step 6: Calculate the total SMP volume from the individual component volumes and compare to the WQ_V.

$$V_{SMP} = V_P + V_S + V_I + V_D$$

where:
V_{SMP} = storage volume of SMP (cf)
V_P = volume of surface ponding (cf) = 0 cf
V_S = volume of voids in the soil media layer (cf) = 59.4 cf
V_I = volume of voids created by internal structures such as chambers or pipes (cf) = 0 cf
V_D = volume of voids in the drainage layer (cf) = 0 cf

$$V_{SMP} = 0\ cf + 59.4\ cf + 0\ cf + 0\ cf$$

$$V_{SMP} = 59.4\ cf < WQ_V = 130.63\ cf \quad \textbf{\textit{NOT MET}}$$

Since the SMP volume is less than the WQ_V, other practices must be used to treat the remaining WQ_V.

Infiltration (unvegetated)

Subsurface Gallery

Design a subsurface gallery that will treat the water quality volume from an impervious area of 90,000 square feet (2.07 acres) with a runoff coefficient of 0.95. Assume an infiltration rate of 1 in/hr.

Step 1: Calculate the WQ_V.

$$WQ_V = \frac{1.5\ in}{12} * A * R_V$$

where:
WQ_V = water quality volume (cf)
A = contributing area (sf) = 90,000 sf
R_V = runoff coefficient relating total rainfall and runoff
R_V = 0.05 + 0.009(I) = 0.95
I = percent impervious cover = 100%

$$WQ_V = \frac{1.5\ in}{12} * 90{,}000\ sf * 0.95$$

$$WQ_V = 10{,}687.5\ cf$$

Step 2: Calculate the SMP area assuming a loading ratio of 1:10. Note that the subsurface gallery does not have a maximum loading ratio. Use the area to set the initial length and width of the practice.

$$A_{SMP} = \frac{A}{10}$$

where:
A_{SMP} = area at the base of infiltration SMP (sf)
A = contributing area (sf) = 90,000 sf

$$A_{SMP} = \frac{90{,}000\ sf}{10}$$

$$A_{SMP} = 9{,}000\ sf$$

Assume a 90 ft x 100 ft practice.

Step 3: Calculate the volume of surface ponding.

There is no surface ponding associated with a subsurface gallery since the SMP is below ground level, so the volume is 0.

$$V_P = 0$$

Step 4: Calculate the volume of voids in the soil media layer.

There is no soil media associated with a subsurface gallery, so the volume is 0.

$$V_S = 0$$

Step 5: Calculate the volume of voids created by internal structures.

Assume 300 ft of 12" distribution pipe will be placed within the system in a grid pattern.

$$V_I = A_P * L_P$$

where:
V_I = volume of voids created by internal structure (cf)
A_P = area of pipe (sf) = (π) * $(0.5)^2$ = 0.79 sf
L_P = total length of pipe (ft) = 300 ft

$$V_I = 0.79\ sf * 300\ ft$$

$$V_I = 237\ cf$$

Step 6: Calculate the volume of voids in the drainage layer assuming a drainage media depth of 3 ft, which is greater than the minimum drainage media depth of 1 ft for a subsurface gallery practice.

$$V_D = (A_{SMP} * D_D - V_{I,d}) * n_D$$

where:
V_D = volume of voids in the drainage layer (cf)
A_{SMP} = area of the SMP (sf) = 9,000 sf
D_D = depth of the drainage layer (ft) = 2 ft
$V_{I,d}$ = volume of voids created by internal structures within the drainage layer (cf) = 273 cf
n_D = porosity of drainage layer media (cf/cf) = 0.4 cf/cf

$$V_D = (9{,}000\ sf * 3\ ft - 273\ cf) * 0.4\frac{cf}{cf}$$

$$V_D = 10{,}690.8\ cf$$

Step 7: Calculate the total SMP volume from the individual component volumes and compare to the WQ_V.

$$V_{SMP} = V_P + V_S + V_I + V_D$$

where:
V_{SMP} = storage volume of SMP (cf)
V_P = volume of surface ponding (cf) = 0 cf
V_S = volume of voids in the soil media layer (cf) = 0 cf
V_I = volume of voids created by internal structures such as chambers or pipes (cf) = 273 cf
V_D = volume of voids in the drainage layer (cf) = 10,690.8 cf

$$V_{SMP} = 0\ cf + 0\ cf + 273\ cf + 10{,}690.8\ cf$$

$$V_{SMP} = 10{,}963.8\ cf > WQ_V = 10{,}687.5\ cf \quad OK$$

Step 8: Check the infiltration drawdown time does not exceed the required time of 48 hours.

$$dt_{SMP} = \frac{V_{SMP}}{\left(\frac{i}{12}\right) * A_{SMP}}$$

where:
dt_{SMP} = drawdown time of infiltration SMP (hr)
V_{SMP} = volume of infiltration SMP (cf) = WQ_V = 10,963.8 cf
i = field measured infiltration rate (in/hr) = 1 in/hr
A_{SMP} = area at the base of infiltration SMP (sf) = 9,000 sf

$$dt_{SMP} = \frac{10{,}963.8\ cf}{\left(\frac{1\ in/hr}{12}\right) * 9{,}000\ sf}$$

$$dt_{SMP} = 14.62\ hr < 48\ hr \quad OK$$

Note: A portion of the SMP volume for this practice may be applied towards meeting the V_V requirements, see Chapter 4 and Appendix C.

Reuse

Cistern

Design a reuse system to treat the water quality volume from a 3,000 square foot impervious surface with a runoff coefficient of 0.95. Designers must additionally show that water will be reused for non-irrigation purposes.

Step 1: Calculate the WQ_V.

$$WQ_V = \frac{1.5\ in}{12} * A * R_V$$

where:
WQ_V = water quality volume (cf)
A = contributing area (sf) = 3,000 sf
R_V = runoff coefficient relating total rainfall and runoff
R_V = 0.05 + 0.009(I) = 0.95
I = percent impervious cover = 100%

$$WQ_V = \frac{1.5\ in}{12} * 3{,}000\ sf * 0.95$$

$$WQ_V = 356.25\ cf$$

Step 2: Calculate the total SMP volume from unit conversion of the WQ_V.

$$V_{SMP} = WQ_V * (7.5\frac{gal}{cf})$$

$$V_{SMP} = 356.25\ cf * (7.5\frac{gal}{cf})$$

$$V_{SMP} = 2{,}671.88\ gal$$

Therefore, to treat the water quality volume for the area draining to the practice, a 2,700-gallon cistern is required.

Note: The system may be designed larger if more water is needed for the intended reuse application.

Filtration

Bioretention

Design a bioretention practice that will treat the water quality volume from an impervious area of 21,780 square feet (0.5 acres), with a runoff coefficient of 0.95. Note that filtration system may only be used to treat the water quality volume in separate storm sewer areas. Assume a soil media saturated hydraulic conductivity of 2 in/hr.

Step 1: Calculate the WQ_V.

$$WQ_V = \frac{1.5\ in}{12} * A * R_V$$

where:
WQ_V = water quality volume (cf)
A = contributing area (sf) = 21,780 sf
R_V = runoff coefficient relating total rainfall and runoff
R_V = 0.05 + 0.009(I) = 0.95
I = percent impervious cover = 100%

$$WQ_V = \frac{1.5\ in}{12} * 21{,}780\ sf * 0.95$$

$$WQ_V = 2{,}586.38\ cf$$

Step 2: Calculate the SMP area assuming a loading ratio of 1:8, which is less than the maximum loading ratio of 1:20 for a bioretention practice. Use the area to set the initial length and width of the practice.

$$A_{SMP} = \frac{A}{8}$$

where:
A_{SMP} = area at the base of infiltration SMP (sf)
A = contributing area (sf) = 21,780 sf

$$A_{SMP} = \frac{21{,}780\ sf}{8}$$

$$A_{SMP} = 2{,}722.5\ sf$$

Round the SMP area up to 2,730 sf. Assume a 65 ft x 42 ft practice.

Step 3: Calculate the volume of surface ponding assuming the maximum surface ponding depth of 1 ft for a bioretention practice.

Assume the ponding zone is uniformly sloped. Use the SMP area and grading of the practice to determine the area at the base and top of the surface ponding zone.

$$V_P = \frac{1}{3}\left(A_{P1} + \sqrt{A_{P1} * A_{P2}} + A_{P2}\right) * D_P$$

where:
V_P = volume of surface ponding (cf)
A_{P1} = area at the base of surface ponding zone (sf) = 1,400 sf
A_{P2} = area at the top of surface ponding zone (sf) = 2,600 sf
D_P = depth of ponding (ft) = 1 ft

$$V_P = \frac{1}{3}\left(1{,}400\ sf + \sqrt{1{,}400\ sf * 2{,}600\ sf} + 2{,}600\ sf\right) * 1\ ft$$

$$V_P = 1{,}969.29\ cf$$

Since a hydraulic connection is not being used, confirm that the volume of surface ponding is greater than 75% of the water quality volume.

$$V_P = 1{,}969.29\ cf < 75\%\ of\ WQ_V = 1{,}939.79\ cf \qquad OK$$

Step 4: Calculate the volume of voids in the soil media layer assuming a soil media depth of 3.5 ft, which is greater than the minimum soil media depth of 2.5 ft for bioretention practices.

$$V_S = A_{SMP} * D_S * n_S$$

V_S = volume of voids in the soil media layer (cf)
A_{SMP} = area of the SMP (sf) = 2,730 sf
D_S = depth of soil media layer (ft) = 3.5 ft
n_S = available porosity of soil media (cf/cf) = 0.2 cf/cf

$$V_S = 2{,}730\ sf * 3.5\ ft * 0.2\frac{cf}{cf}$$

$$V_S = 1{,}911\ cf$$

Step 5: Calculate the volume of voids created by internal structures.

Assume 92 ft of 12" distribution pipe will be placed within the system in a grid pattern.

$$V_I = A_P * L_P$$

where:
V_I = volume of voids created by internal structure (cf)
A_P = area of pipe (sf) = $(\pi) * (0.5)^2 = 0.79$ sf
L_P = total length of pipe (ft) = 92 ft

$$V_I = 0.79\ sf * 92\ sf$$

$$V_I = 72.68\ cf$$

Step 6: Calculate the volume of voids in the drainage layer assuming a drainage media depth of 3 ft, which is greater than the minimum drainage media depth of 1 ft for bioretention practices.

$$V_D = (A_{SMP} * D_D - V_{I,d}) * n_D$$

where:
V_D = volume of voids in the drainage layer (cf)
A_{SMP} = area of the SMP (sf) = 2,730 cf
D_D = depth of the drainage layer (ft) = 3 ft
$V_{I,d}$ = volume of voids created by internal structures within the drainage layer (cf) = 72.68 cf
n_D = porosity of drainage layer media (cf/cf) = 0.4 cf/cf

$$V_D = (2{,}730\ sf * 3\ ft - 72.68\ cf) * 0.4\frac{ft^3}{ft^3}$$

$$V_D = 3{,}246.93\ cf$$

Step 7: Calculate the total SMP volume from the individual component volumes and compare to the WQ_V.

$$V_{SMP} = V_P + V_S + V_I + V_D$$

where:
V_{SMP} = storage volume of SMP (cf)
V_P = volume of surface ponding (cf) = 1,969.29 cf
V_S = volume of voids in the soil media layer (cf) = 1,911 cf
V_I = volume of voids created by internal structures such as chambers or pipes (cf) = 72.68 cf
V_D = volume of voids in the drainage layer (cf) = 3,246.93 cf

$$V_{SMP} = 1{,}969.29\ cf + 1{,}911\ cf + 72.68\ cf + 3{,}246.93\ cf$$

$$V_{SMP} = 7{,}199.9\ cf > WQ_V = 2{,}586.38\ cf \qquad OK$$

Step 8: Check the ponding and filtration drawdown times of the practice do not exceed the required times of 24 hours and 48 hours, respectively.

Filtration drawdown time:

$$dt_{SMP} = \frac{V_{SMP}}{\left(\frac{K_S}{12}\right) * \left(1 + \frac{0.5D_{pf}}{D_f}\right) * A_f}$$

where:
dt_{SMP} = drawdown time of filtration SMP (hr)
V_{SMP} = volume of filtration SMP (cf) = 7,199.9 cf
K_S = saturated hydraulic conductivity of filter media (in/hr) = 2 in/hr
D_{pf} = maximum depth of ponding above filter media (ft) = 1 ft
D_f = depth of filter media (ft) = 3.5 ft
A_f = area of filter bed (sf) = 2,730 sf

$$dt_{SMP} = \frac{7{,}199.9\ cf}{\left(\frac{2\frac{in}{hr}}{12}\right) * \left(1 + \frac{0.5 * 1\ ft}{3.5\ ft}\right) * 2{,}730\ sf}$$

$$dt_{SMP} = 13.85\ hr < 48\ hr \qquad OK$$

Surface ponding drawdown time:

$$dt_P = \frac{V_P}{\left(\frac{K_S}{12}\right) * \left(1 + \frac{0.5D_p}{D_m}\right) * \left(\frac{A_{P1} + A_{P2}}{2}\right)}$$

where:
dt_P = drawdown time of surface ponding (hr)
V_P = volume of surface ponding (cf) = 1,969.29 cf
K_S = saturated hydraulic conductivity of media below the surface ponding area (in/hr) = 2 in/hr
D_p = maximum depth of ponding (ft) = 1 ft
D_m = depth of media below surface ponding area (ft) = 3.5 ft
A_{P1} = area at the base of surface ponding zone (sf) = 1,400 sf
A_{P2} = area at the top of surface ponding zone (sf) = 2,600 sf

$$dt_P = \frac{1{,}969.29\ cf}{\left(\frac{2\frac{in}{hr}}{12}\right) * \left(1 + \frac{0.5 * 1\ ft}{3.5\ ft}\right) * \left(\frac{1{,}400\ sf + 2{,}600\ sf}{2}\right)}$$

$$dt_P = 5.17\ hr < 24\ hr \qquad OK$$

SEWER OPERATIONS VOLUME SIZING EXAMPLES

Detention

Detention Tank - CSS with SCP

A 93,200 sf site in the Bronx consists of a multistory commercial building. The site was proposed to connect to a 15 in. combined sewer. Design a detention tank to treat the sewer operations volume (V_V), given the following:

Area = 93,200 sf
Roof = 29,000 sf @ 0.95 runoff coefficient
Paved = 48,000 sf @ 0.85 runoff coefficient
Grass = 16,200 sf @ 0.20 runoff coefficient

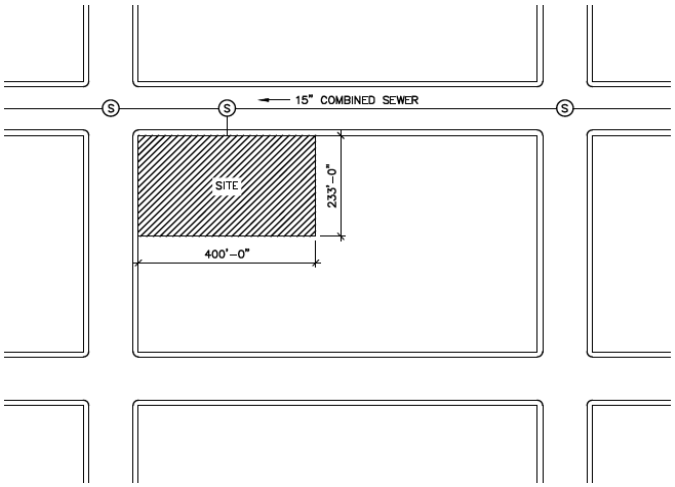


Figure F.1. Schematic of Site (Not to Scale)

Step 1: Identify the rainfall depth (R_D) based on the sewershed type and connection proposal type for the project. Use Table 2.7 in Chapter 2.

Since the project is 20,000 sf or more, and consists of a multistory commercial building, this project requires a site connection permit (SCP). In addition, the site is connecting to a 15 in. combined sewer.

Table 2.7. Applied rainfall depth by sewershed type and connection proposal type.

R_D	Description
1.85	CSS areas with SCP
1.50	CSS areas with HCP
1.50	MS4 areas with SCP
1.10	MS4 areas with HCP

According to Table 2.7, $R_D = 1.85\ in.$

Step 2: Calculate the runoff coefficient (C_W) using the weighted area approach.

$$C_W = \frac{(C_1A_1 + C_2A_2 + \cdots etc.)}{A_t}$$

where:
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff
C_1 = the runoff coefficient for the area classified as roof = 0.95
A_1 = the area classified as roof (sf) = 29,000 sf
C_2 = the runoff coefficient for the area classified as paved = 0.85
A_2 = the area classified as paved (sf) = 48,000 sf
C_3 = the runoff coefficient for the area classified as grass = 0.20
A_3 = the area classified as grass (sf) = 16,200 sf
A_t = contributing area (sf) = 93,200 sf

$$C_W = \frac{(0.95 * 29{,}000\ sf) + (0.85 * 48{,}000\ sf) + (0.20 * 16{,}200\ sf)}{93{,}200\ sf}$$

$$C_W = 0.768$$

Step 3: Calculate V_V.

$$V_V = \frac{R_D}{12} * A * C_W$$

where:
V_V = sewer operations volume (cf)
R_D = rainfall depth (in) = 1.85 in
A = contributing area (sf) = 93,200 sf
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff = 0.768

$$V_V = \frac{1.85\ in}{12} * 93{,}200\ sf * 0.768$$

$$V_V = 11{,}035\ cf$$

Step 4: Calculate the release rate to be maintained by the controlled-flow orifice. Use the maximum release rate per acre (q) shown in Table 2.9, Chapter 2.

The site is connecting to a 15 in. combined sewer.

Table 2.9. Maximum release rate per acre (cfs/acre) by sewershed type.

q (cfs/acre)	Description
1.0	MS4 areas
0.1	CSS areas

According to Table 2.9, $q = 0.1\ \frac{cfs}{acre}$.

$$Q_{DRR} = \frac{q * A}{43560}\ or\ 0.046\ \ [whichever\ is\ greater]$$

where:
Q_{DRR} = maximum release rate for the site (cfs)
q = maximum release rate per acre (cfs/acre) = 0.1 cfs/acre
A = contributing area (sf) = 93,200 sf

$$Q_{DRR} = \frac{0.1\ \frac{cfs}{acre} * 93{,}200\ sf}{43560} or\ 0.046\ \ [whichever\ is\ greater]$$

$$Q_{DRR} = 0.214\ cfs\ > 0.046\ cfs$$

The maximum release rate is 0.214 cfs.

Step 5: Use the controlled-flow orifice equation to determine an appropriate orifice area by assuming the active storage depth.

In order to minimize the area required for the detention tank, choose the maximum depth that is still feasible according to site limitations and use a re-entrant orifice. In this case, the designer has chosen an active storage depth of 4 ft.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.214 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf)
g = acceleration due to gravity, 32.2 (ft/s^2)

H = maximum hydraulic head above the centerline of the orifice (ft) = 4 ft

$$0.214\ cfs = 0.52 * A_o * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * 4\ ft}$$

$$A_o = 0.026\ sf$$

Step 6: Translate the area of the controlled-flow orifice (A_O) into a diameter and check that it is greater than the minimum diameter of 1 in.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf) = 0.026 sf
D_O = diameter of orifice (in)

$$0.026\ sf = \frac{\left[\pi * \left(\frac{D_O}{2}\right)^2\right]}{144}$$

$$D_O = 2.18\ in\ > 1\ in \qquad OK$$

Set the orifice diameter to the nearest 0.25-inch interval rounding down, with a minimum orifice diameter of one-inch. In this case, use an orifice diameter of 2.00 inches.

Step 7: Confirm the orifice area of the selected orifice diameter from Step 6.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf)
D_O = diameter of orifice (in) = 2 in

$$A_O = \frac{\left[\pi * \left(\frac{2\ in}{2}\right)^2\right]}{144}$$

$$A_O = 0.022\ sf$$

Step 8: Confirm the required active storage depth in the tank using the orifice area from Step 7.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:

Q_O = maximum release rate of orifice (cfs) = 0.214 cfs

C_D = coefficient of discharge, 0.52 for re-entrant orifice

A_O = area of orifice (sf) = 0.022 sf

g = acceleration due to gravity, 32.2 (ft/s^2)

H = maximum hydraulic head above the centerline of the orifice (ft)

$$0.214\ cfs = 0.52 * 0.022\ sf * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * H}$$

$$H = 5.4\ ft$$

If the active storage depth is too high, then increase the orifice size by 0.25 inches and re-run Steps 7-8 until a suitable depth is identified. If the active storage depth is too low, then decrease the orifice size by 0.25 inches (but not less than 1 inch) and re-run Steps 7-8. Alternatively, the designer can choose a different orifice configuration as needed to modify the active storage depth.

In this case, the depth is feasible.

Step 9: Set the dimensions of the detention tank's active storage zone.

Based on the active storage depth of 5.4 ft and the V_V of 11,035 cf, set the interior detention tank dimensions to L: 45.5 ft and W: 45.5 ft. The resulting detention tank has an active storage volume of 11,179 cf. Note that the exterior dimensions of the detention tank will be larger than the dimensions of the active storage zone (45.5'L x 45.5'W x 5.4'D) to accommodate wall thickness, bypass structures, and/or other internal features.

Detention Tank - CSS with HCP

A 15,000 sf site in the Bronx consists of a two-family (no-fee) residence. The site was proposed to connect to a 15 in. combined sewer. Design a detention tank to treat the sewer operations volume (V_V), given the following:

Area = 15,000 sf
Roof = 2,000 sf @ 0.95 runoff coefficient
Paved = 7,000 sf @ 0.85 runoff coefficient
Grass = 6,000 sf @ 0.20 runoff coefficient

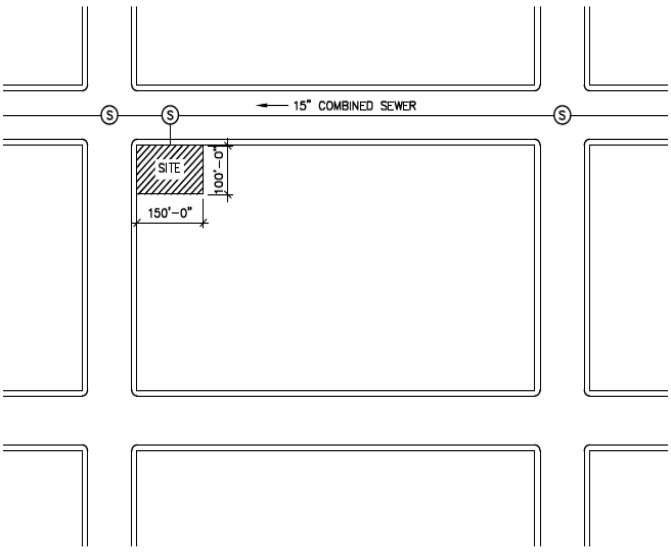


Figure F.2. Schematic of Site (Not to Scale)

Step 1: Identify the rainfall depth (R_D) based on the sewershed type and connection proposal type for the project. Use Table 2.7 in Chapter 2.

Since the project is less than 20,000 sf and consists of a two-family (no fee) residence, this project requires a house connection permit (HCP). In addition, the site is connecting to a 15 in. combined sewer.

Table 2.7. Applied rainfall depth by sewershed type and connection proposal type.

R_D	Description
1.85	CSS areas with SCP
1.50	CSS areas with HCP
1.50	MS4 areas with SCP
1.10	MS4 areas with HCP

According to Table 2.7, $R_D = 1.50\ in.$

Step 2: Calculate the runoff coefficient (C_W) using the weighted area approach.

$$C_W = \frac{(C_1A_1 + C_2A_2 + \cdots etc.)}{A_t}$$

where:
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff
C_1 = the runoff coefficient for the area classified as roof = 0.95
A_1 = the area classified as roof (sf) = 2,000 sf
C_2 = the runoff coefficient for the area classified as paved = 0.85
A_2 = the area classified as paved (sf) = 7,000 sf
C_3 = the runoff coefficient for the area classified as grass = 0.20
A_3 = the area classified as grass (sf) = 6,000 sf
A_t = contributing area (sf) = 15,000 sf

$$C_W = \frac{(0.95 * 2{,}000\ sf) + (0.85 * 7{,}000\ sf) + (0.20 * 6{,}000\ sf)}{15{,}000\ sf}$$

$$C_W = 0.603$$

Step 3: Calculate V_V.

$$V_V = \frac{R_D}{12} * A * C_W$$

where:
V_V = sewer operations volume (cf)
R_D = rainfall depth (in) = 1.50 in
A = contributing area (sf) = 15,000 sf
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff = 0.603

$$V_V = \frac{1.50\ in}{12} * 15{,}000\ sf * 0.603$$

$$V_V = 1{,}131\ cf$$

Step 4: Calculate the release rate to be maintained by the controlled-flow orifice. Use the maximum release rate per acre (q) shown in Table 2.9, Chapter 2.

The site is connecting to a 15 in. combined sewer.

Table 2.9. Maximum release rate per acre (cfs/acre) by sewershed type.

q (cfs/acre)	Description
1.0	MS4 areas
0.1	CSS areas

According to Table 2.9, $q = 0.1\ \frac{cfs}{acre}$.

$$Q_{DRR} = \frac{q\ * A}{43560}\ or\ 0.046\ \ [whichever\ is\ greater]$$

where:
Q_{DRR} = maximum release rate for the site (cfs)
q = maximum release rate per acre (cfs/acre) = 0.1 cfs/acre
A = contributing area (sf) = 15,000 sf

$$Q_{DRR} = \frac{0.1\ \frac{cfs}{acre} * 15{,}000\ sf}{43560} or\ 0.046\ \ [whichever\ is\ greater]$$

$$Q_{DRR} = 0.034\ cfs\ < 0.046\ cfs$$

The maximum release rate is 0.046 cfs.

Step 5: Use the controlled-flow orifice equation to determine an appropriate orifice area by assuming the active storage depth.

In order to minimize the area required for the detention tank, choose the maximum depth that is still feasible according to site limitations and use a re-entrant orifice. In this case, the designer has chosen an active storage depth of 4 ft.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.046 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf)
g = acceleration due to gravity, 32.2 (ft/s^2)

H = maximum hydraulic head above the centerline of the orifice (ft) = 4 ft

$$0.046\ cfs = 0.52 * A_o * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * 4\ ft}$$

$$A_o = 0.006\ sf$$

Step 6: Translate the area of the controlled-flow orifice (A_O) into a diameter and check that it is greater than the minimum diameter of 1 in.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf) = 0.006 sf
D_O = diameter of orifice (in)

$$0.006\ sf = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

$$D_O = 1.05\ in\ > 1\ in \qquad OK$$

Set the orifice diameter to the nearest 0.25-inch interval rounding down, with a minimum orifice diameter of one-inch. In this case, use an orifice diameter of 1.00 inch.

Step 7: Confirm the orifice area of the selected orifice diameter from Step 6.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf)
D_O = diameter of orifice (in) = 1 in

$$A_O = \frac{\left[\pi * \left(\frac{1\ in}{2}\right)^2\right]}{144}$$

$$A_O = 0.005\ sf$$

Step 8: Confirm the required active storage depth in the tank using the orifice area from Step 7.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.046 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf) = 0.005 sf
g = acceleration due to gravity, 32.2 (ft/s^2)
H = maximum hydraulic head above the centerline of the orifice (ft)

$$0.046\ cfs = 0.52 * 0.005\ sf * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * H}$$

$$H = 4.9\ ft$$

If the active storage depth is too high, then increase the orifice size by 0.25 inches and re-run Steps 7-8 until a suitable depth is identified. If the active storage depth is too low, then decrease the orifice size by 0.25 inches (but not less than 1 inch) and re-run Steps 7-8. Alternatively, the designer can choose a different orifice configuration as needed to modify the active storage depth.

In this case, the depth is feasible.

Step 9: Set the dimensions of the detention tank's active storage zone.

Based on the active storage depth of 4.9 ft and the V_V of 1,131 cf, set the interior detention tank dimensions to L: 15.5 ft and W: 15.5 ft. The resulting detention tank has an active storage volume of 1,177 cf. Note that the exterior dimensions of the detention tank will be larger than the dimensions of the active storage zone (15.5'L x 15.5'W x 4.9'D) to accommodate wall thickness, bypass structures, and/or other internal features.

Detention Tank - MS4 with SCP

A 25,050 sf site consists of a multistory commercial building. The site was proposed to connect to a 12 in. storm sewer that eventually discharges into Gravesend Bay via an MS4 outfall. Design a detention tank to treat the sewer operations volume (V_V), given the following:

Area = 25,050 sf
Roof = 16,000 sf @ 0.95 runoff coefficient
Paved = 6,100 sf @ 0.85 runoff coefficient
Grass = 2,950 sf @ 0.20 runoff coefficient

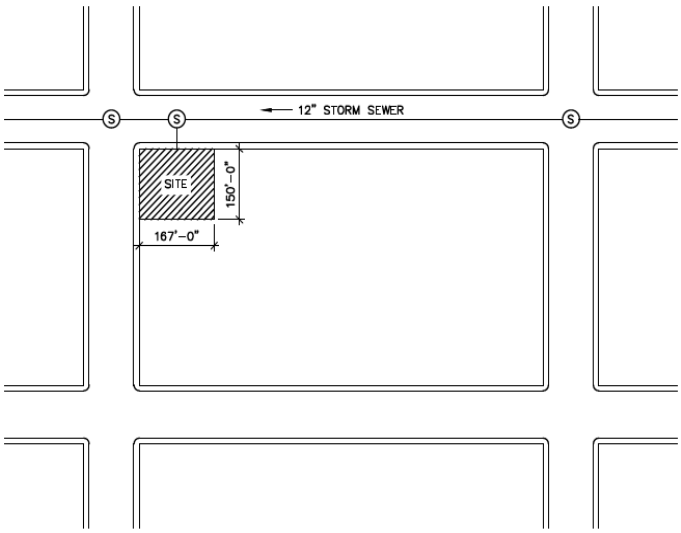


Figure F.3. Schematic of Site (Not to Scale)

Step 1: Identify the rainfall depth (R_D) based on the sewershed type and connection proposal type for the project. Use Table 2.7 in Chapter 2.

Since the project is 20,000 sf or more, and consists of a multistory commercial building, this project requires a site connection permit (SCP). In addition, the site is connecting to a 12 in. storm sewer that discharges through an MS4 outfall.

Table 2.7. Applied rainfall depth by sewershed type and connection proposal type.

R_D	Description
1.85	CSS areas with SCP
1.50	CSS areas with HCP
1.50	MS4 areas with SCP
1.10	MS4 areas with HCP

According to Table 2.7, $R_D = 1.50\ in.$

Step 2: Calculate the runoff coefficient (C_W) using the weighted area approach.

$$C_W = \frac{(C_1A_1 + C_2A_2 + \cdots etc.)}{A_t}$$

where:
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff
C_1 = the runoff coefficient for the area classified as roof = 0.95
A_1 = the area classified as roof (sf) = 16,000 sf
C_2 = the runoff coefficient for the area classified as paved = 0.85
A_2 = the area classified as paved (sf) = 6,100 sf
C_3 = the runoff coefficient for the area classified as grass = 0.20
A_3 = the area classified as grass (sf) = 2,950 sf
A_t = contributing area (sf) = 25,050 sf

$$C_W = \frac{(0.95 * 16{,}000\ sf) + (0.85 * 6{,}100\ sf) + (0.20 * 2{,}950\ sf)}{25{,}050\ sf}$$

$$C_W = 0.837$$

Step 3: Calculate V_V.

$$V_V = \frac{R_D}{12} * A * C_W$$

where:
V_V = sewer operations volume (cf)
R_D = rainfall depth (in) = 1.50 in
A = contributing area (sf) = 25,050 sf
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff = 0.837

$$V_V = \frac{1.50\ in}{12} * 25{,}050\ sf * 0.837$$

$$V_V = 2{,}621\ cf$$

Step 4: Calculate the release rate to be maintained by the controlled-flow orifice. Use the maximum release rate per acre (q) shown in Table 2.9, Chapter 2.

The site is connecting to a 12 in. storm sewer that discharges through an MS4 outfall.

Table 2.9. Maximum release rate per acre (cfs/acre) by sewershed type.

q (cfs/acre)	Description
1.0	MS4 areas
0.1	CSS areas

According to Table 2.9, $q = 1.0 \frac{cfs}{acre}$

$$Q_{DRR} = \frac{q * A}{43560}\ or\ 0.046\ \ [whichever\ is\ greater]$$

where:
Q_{DRR} = maximum release rate for the site (cfs)
q = maximum release rate per acre (cfs/acre) = 1.0 cfs/acre
A = contributing area (sf) = 25,050 sf

$$Q_{DRR} = \frac{1.0\ \frac{cfs}{acre} * 25{,}050\ sf}{43560} or\ 0.046\ \ [whichever\ is\ greater]$$

$$Q_{DRR} = 0.575\ cfs\ > 0.046\ cfs$$

The maximum release rate is 0.575 cfs.

Step 5: Use the controlled-flow orifice equation to determine an appropriate orifice area by assuming the active storage depth.

In order to minimize the area required for the detention tank, choose the maximum depth that is still feasible according to site limitations and use a re-entrant orifice. In this case, the designer has chosen an active storage depth of 4 ft.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.575 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf)

g = acceleration due to gravity, 32.2 (ft/s^2)
H = maximum hydraulic head above the centerline of the orifice (ft) = 4 ft

$$0.575\ cfs = 0.52 * A_o * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * 4\ ft}$$

$$A_o = 0.069\ sf$$

Step 6: Translate the area of the controlled-flow orifice (A_O) into a diameter and check that it is greater than the minimum diameter of 1 in.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf) = 0.069 sf
D_O = diameter of orifice (in)

$$0.069\ sf = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

$$D_O = 3.56\ in\ > 1\ in \qquad OK$$

Set the orifice diameter to the nearest 0.25-inch interval rounding down, with a minimum orifice diameter of one-inch. In this case, use an orifice diameter of 3.50 inches.

Step 7: Confirm the orifice area of the selected orifice diameter from Step 6.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf)
D_O = diameter of orifice (in) = 3.50 inches

$$A_O = \frac{\left[\pi * \left(\frac{3.50\ in}{2}\right)^2\right]}{144}$$

$$A_O = 0.067\ sf$$

Step 8: Confirm the required active storage depth in the tank using the orifice area from Step 7.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.575 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf) = 0.067 sf
g = acceleration due to gravity, 32.2 (ft/s^2)
H = maximum hydraulic head above the centerline of the orifice (ft)

$$0.575\ cfs = 0.52 * 0.067\ sf * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * H}$$

$$H = 4.2\ ft$$

If the active storage depth is too high, then increase the orifice size by 0.25 inches and re-run Steps 7-8 until a suitable depth is identified. If the active storage depth is too low, then decrease the orifice size by 0.25 inches (but not less than 1 inch) and re-run Steps 7-8. Alternatively, the designer can choose a different orifice configuration as needed to modify the active storage depth.

In this case, the depth is feasible.

Step 9: Set the dimensions of the detention tank's active storage zone.

Based on the active storage depth of 4.2 ft and the V_V of 2,621 cf, set the interior detention tank dimensions to L: 25 ft and W: 25 ft. The resulting detention tank has an active storage volume of 2,625 cf. Note that the exterior dimensions of the detention tank will be larger than the dimensions of the active storage zone (25'L x 25'W x 4.2'D) to accommodate wall thickness, bypass structures, and/or other internal features.

Detention Tank - MS4 with HCP

A 3,000 sf site consists of a one-family (no-fee) residence. The site was proposed to connect to a 12 in. storm sewer that eventually discharges into East River via an MS4 outfall. Design a detention tank to treat the sewer operations volume (V_V), given the following:

Area = 3,000 sf
Roof = 2,100 sf @ 0.95 runoff coefficient
Paved = 500 sf @ 0.85 runoff coefficient
Grass = 400 sf @ 0.20 runoff coefficient

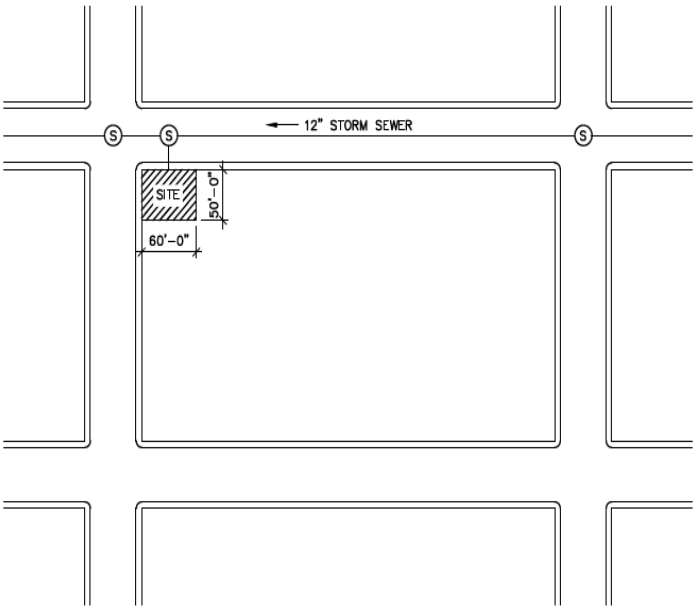


Figure F.4. Schematic of Site (Not to Scale)

Step 1: Identify the rainfall depth (R_D) based on the sewershed type and connection proposal type for the project. Use Table 2.7 in Chapter 2.

Since the project is less than 20,000 sf and consists of a one-family (no fee) residence, this project requires a house connection permit (HCP). In addition, the site is connecting to a 12 in. storm sewer that discharges through an MS4 outfall.

Table 2.7. Applied rainfall depth by sewershed type and connection proposal type.

R_D	Description
1.85	CSS areas with SCP
1.50	CSS areas with HCP
1.50	MS4 areas with SCP
1.10	MS4 areas with HCP

According to Table 2.7, $R_D = 1.10\ in.$

Step 2: Calculate the runoff coefficient (C_W) using the weighted area approach.

$$C_W = \frac{(C_1A_1 + C_2A_2 + \cdots etc.)}{A_t}$$

where:
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff
C_1 = the runoff coefficient for the area classified as roof = 0.95
A_1 = the area classified as roof (sf) = 2,100 sf
C_2 = the runoff coefficient for the area classified as paved = 0.85
A_2 = the area classified as paved (sf) = 500 sf
C_3 = the runoff coefficient for the area classified as grass = 0.20
A_3 = the area classified as grass (sf) = 400 sf
A_t = contributing area (sf) = 3,000 sf

$$C_W = \frac{(0.95 * 2{,}100\ sf) + (0.85 * 500\ sf) + (0.20 * 400\ sf)}{3{,}000\ sf}$$

$$C_W = 0.833$$

Step 3: Calculate V_V.

$$V_V = \frac{R_D}{12} * A * C_W$$

where:
V_V = sewer operations volume (cf)
R_D = rainfall depth (in) = 1.10 in
A = contributing area (sf) = 3,000 sf
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff = 0.833

$$V_V = \frac{1.10\ in}{12} * 3{,}000\ sf * 0.833$$

$$V_V = 229\ cf$$

Step 4: Calculate the release rate to be maintained by the controlled-flow orifice. Use the maximum release rate per acre (q) shown in Table 2.9, Chapter 2.

The site is connecting to a 12 in. storm sewer that discharges through an MS4 outfall.

Table 2.9. Maximum release rate per acre (cfs/acre) by sewershed type.

q (cfs/acre)	Description
1.0	MS4 areas
0.1	CSS areas

According to Table 2.9, $q = 1.0\ \frac{cfs}{acre}$.

$$Q_{DRR} = \frac{q * A}{43560}\ or\ 0.046\ \ [whichever\ is\ greater]$$

where:
Q_{DRR} = maximum release rate for the site (cfs)
q = maximum release rate per acre (cfs/acre) = 1.0 cfs/acre
A = contributing area (sf) = 3,000 sf

$$Q_{DRR} = \frac{1.0\ \frac{cfs}{acre} * 3{,}000\ sf}{43560} or\ 0.046\ \ [whichever\ is\ greater]$$

$$Q_{DRR} = 0.069\ cfs\ > 0.046\ cfs$$

The maximum release rate is 0.069 cfs.

Step 5: Use the controlled-flow orifice equation to determine an appropriate orifice area by assuming the active storage depth.

In order to minimize the area required for the detention tank, choose the maximum depth that is still feasible according to site limitations and use a re-entrant orifice. In this case, the designer has chosen an active storage depth of 4 ft.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.069 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf)
g = acceleration due to gravity, 32.2 (ft/s^2)
H = maximum hydraulic head above the centerline of the orifice (ft) = 4 ft

$$0.069\ cfs = 0.52 * A_o * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * 4\ ft}$$

$$A_o = 0.008\ sf$$

Step 6: Translate the area of the controlled-flow orifice (A_O) into a diameter and check that it is greater than the minimum diameter of 1 in.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf) = 0.008 sf
D_O = diameter of orifice (in)

$$0.008\ sf = \frac{\left[\pi * \left(\frac{D_O}{2}\right)^2\right]}{144}$$

$$D_O = 1.21\ in\ > 1\ in \qquad OK$$

Set the orifice diameter to the nearest 0.25-inch interval rounding down, with a minimum orifice diameter of one-inch. In this case, use an orifice diameter of 1 inch.

Step 7: Confirm the orifice area of the selected orifice diameter from Step 6.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf)
D_O = diameter of orifice (in) = 1 inch

$$A_O = \frac{\left[\pi * \left(\frac{1\ in}{2}\right)^2\right]}{144}$$

$$A_O = 0.005\ sf$$

Step 8: Confirm the required active storage depth in the tank using the orifice area from Step 7.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.069 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf) = 0.005 sf
g = acceleration due to gravity, 32.2 (ft/s^2)
H = maximum hydraulic head above the centerline of the orifice (ft)

$$0.069\ cfs = 0.52 * 0.005\ sf * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * H}$$

$$H = 10.9\ ft$$

If the active storage depth is too high, then increase the orifice size by 0.25 inches and re-run Steps 7-8 until a suitable depth is identified. If the active storage depth is too low, then decrease the orifice size by 0.25 inches (but not less than 1 inch) and re-run Steps 7-8. Alternatively, the designer can choose a different orifice configuration as needed to modify the active storage depth.

In this case, the depth is too high to drain via gravity connection to the storm sewer. Using an orifice size of 1.25 inches results in an active storage depth of 3.4 ft.

Step 9: Set the dimensions of the detention tank's active storage zone.

Based on the active storage depth of 3.4 ft and the V_V of 229 cf, set the interior detention tank dimensions to L: 8.5 ft and W: 8.5 ft. The resulting detention tank has an active storage volume of 246 cf. Note that the exterior dimensions of the detention tank will be larger than the dimensions of the active storage zone (8.5'L x 8.5'W x 3.4'D) to accommodate wall thickness, bypass structures, and/or other internal features.

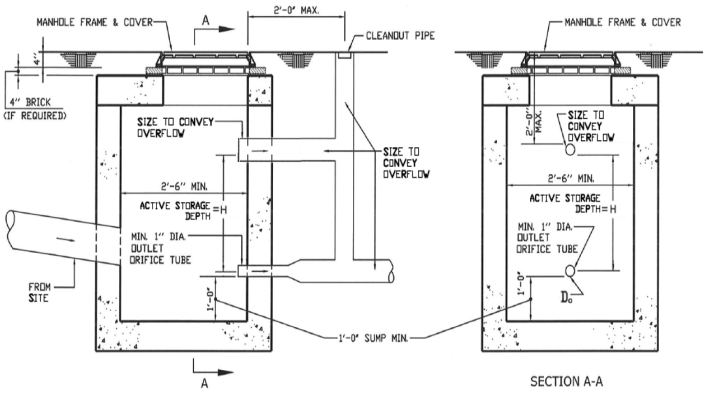


Figure F.5. Detention Tank with Re-Entrant Orifice

APPENDIX E

Site Design Example

Site Design Example

Design stormwater management practices for a 21,545 square foot commercial development that proposes a new site connection. This site is located within the sewershed of a combined sewer system and has no site constraints. Based on geotechnical investigations, the soil permeability rate across the site is at least 0.5 in/hr.

Step 1: Determine applicable permit requirements for the site.

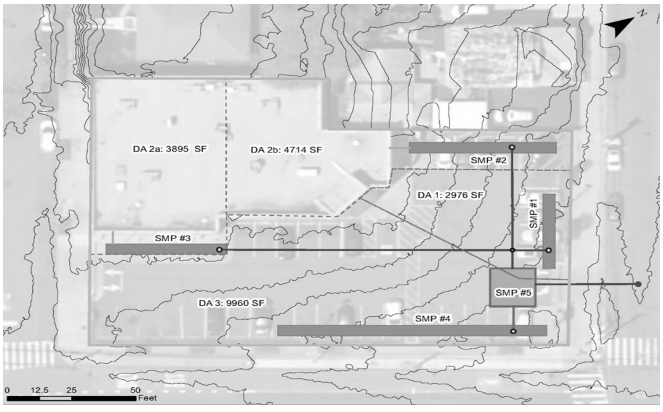
Since the project disturbs more than 20,000 square feet and involves commercial development, a Stormwater Construction Permit is applicable. As shown in Table 2.3 of Chapter 2, commercial development is a covered development activity that requires the preparation of a SWPPP meeting erosion and sediment control (ESC), water quality (WQ_V), and runoff reduction (RR) requirements. The no-net increase (NNI) requirement is not applicable because the project is not located in an MS4 sewershed area and does not discharge into an impaired water body.

The project proposes a new site connection and is located within the sewershed of a combined sewer system. Therefore, a Site Connection Permit is also applicable. A connection proposal must be prepared to meet the sewer operations (V_V) requirements.

Step 2: Use Appendix C to select appropriate practices for meeting the WQ_V, RR, and V_V requirements. The ESC requirements should be met using best practices in accordance with the NYS Standards and Specifications for Erosion and Sediment Control (The Blue Book).

Since the site has no constraints and the soil permeability rate is at least 0.5 in/hr, an infiltration practice is preferred. To meet the WQ_V and RR requirements, the designer has chosen to use a bioretention practice for each of the four drainage areas. The designer has chosen to use a detention tank to meet the V_V requirements.

Figure G.1. Schematic of Scenario 1



SMP 1: Bioretention

Design a bioretention practice (SMP 1) that will treat the water quality volume from an impervious area of 2,976 square feet with a runoff coefficient of 0.95. This example assumes a soil media saturated hydraulic conductivity of 2 in/hr, and an infiltration rate of 1.5 in/hr.

Note: If a bioretention practice is designed to meet the water quality volume, the practice will, by default, also meet the runoff reduction criteria.

Step 3.1: Calculate the WQ_V.

$$WQ_V = \frac{1.5\ in}{12} * A * R_V$$

where:
WQ_V = water quality volume (cf)
A = contributing area (sf) = 2,976 sf
R_V = runoff coefficient relating total rainfall and runoff
R_V = 0.05 + 0.009(I) = 0.95
I = percent impervious cover = 100%

$$WQ_V = \frac{1.5\ in}{12} * 2{,}976\ sf * 0.95$$

$$WQ_V = 353.4\ cf$$

Step 3.2: Calculate the minimum SMP area using the maximum loading ratio of 1:20 for a bioretention practice. Use the minimum area to set the initial length and width of the practice.

$$A_{SMP} = \frac{A}{20}$$

where:
A_{SMP} = area at the base of infiltration SMP (sf)
A = contributing area (sf) = 2,976 sf

$$A_{SMP} = \frac{2{,}976\ sf}{20}$$

$$A_{SMP} = 148.8\ sf$$

Round the SMP area up to 150 sf. Assume a 30 ft by 5 ft practice.

Step 3.3: Calculate the volume of surface ponding assuming the maximum surface ponding depth of 1 ft for a bioretention practice.

Assume the ponding zone is relatively flat.

$$V_P = A_{SMP} * D_P$$

where:
V_P = volume of surface ponding (cf)
A_{SMP} = area of the SMP (sf) = 150 sf
D_P = depth of ponding (ft) = 1 ft

$$V_P = 150\ sf * 1\ ft$$

$$V_P = 150\ cf$$

Since the bioretention practice uses engineered soil media, confirm that the volume of surface ponding is at least 10% of the water quality volume.

$$V_P = 150\ cf > 10\%\ of\ WQ_V = 35.3\ cf \qquad OK$$

In this case, the designer has also chosen to use a hydraulic connection between the ponding zone and the stone base. Therefore, the ponding zone does not need to temporarily store 75% of the water quality volume.

Step 3.4: Calculate the volume of voids in the soil media layer assuming a soil media depth of 2.5 ft, equal to the minimum soil media depth of 2.5 ft for a bioretention practice.

$$V_S = A_{SMP} * D_S * n_S$$

V_S = volume of voids in the soil media layer (cf)
A_{SMP} = area of the SMP (sf) = 150 sf
D_S = depth of soil media layer (ft) = 2.5 ft
n_S = available porosity of soil media (cf/cf) = 0.2 cf/cf

$$V_S = 150\ sf * 2.5\ ft * 0.2\frac{cf}{cf}$$

$$V_S = 75\ cf$$

Step 3.5: Calculate the volume of voids created by internal structures.

Assume there are no internal structures in this bioretention practice, so the volume is 0.

$V_I = 0\ cf$

Step 3.6: Calculate the volume of voids in the drainage layer assuming a drainage media depth of 2.5 ft, which is greater than the minimum drainage media depth of 1 ft for a bioretention practice.

$V_D = (A_{SMP} * D_D - V_{I,d}) * n_D$

where:
V_D = volume of voids in the drainage layer (cf)
A_{SMP} = area of the SMP (sf) = 150 cf
D_D = depth of the drainage layer (ft) = 2.5 ft
$V_{I,d}$ = volume of voids created by internal structures within the drainage layer (cf) = 0 cf
n_D = porosity of drainage layer media (cf/cf) = 0.4 cf/cf

$V_D = (150\ sf * 2.5\ ft - 0\ cf) * 0.4 \frac{cf}{cf}$

$V_D = 150\ cf$

Step 3.7: Calculate the total SMP volume from the individual component volumes and compare to the WQ_V.

$V_{SMP} = V_P + V_S + V_I + V_D$

where:
V_{SMP} = storage volume of SMP (cf)
V_P = volume of surface ponding (cf) = 150 cf
V_S = volume of voids in the soil media layer (cf) = 75 cf
V_I = volume of voids created by internal structures such as chambers or pipes (cf) = 0 cf
V_D = volume of voids in the drainage layer (cf) = 150 cf

$V_{SMP} = 150\ cf + 75\ cf + 0\ cf + 150\ cf$

$V_{SMP} = 375\ cf > WQ_V = 353.4\ cf \quad OK$

Step 3.8: Check that the ponding and infiltration drawdown times of the practice do not exceed the required times of 24 hours and 48 hours, respectively.

Infiltration drawdown time:

$dt_{SMP} = \frac{V_{SMP}}{\left(\frac{i}{12}\right) * A_{SMP}}$

where:
dt_{SMP} = drawdown time of infiltration SMP (hr)
V_{SMP} = volume of infiltration SMP (cf) = WQ_V = 375 cf
i = field measured infiltration rate (in/hr) = 1.5 in/hr
A_{SMP} = area at the base of infiltration SMP (sf) = 150 sf

$dt_{SMP} = \frac{375\ cf}{\left(\frac{1.5\ in/hr}{12}\right) * 150\ sf}$

$dt_{SMP} = 20\ hr < 48\ hr \quad OK$

Surface ponding drawdown time:

$dt_P = \frac{V_P}{\left(\frac{K_S}{12}\right) * \left(1 + \frac{0.5 D_p}{D_m}\right) * \left(\frac{A_{P1} + A_{P2}}{2}\right)}$

where:
dt_P = drawdown time of surface ponding (hr)
V_P = volume of surface ponding (cf) = 150 cf
K_S = saturated hydraulic conductivity of media below the surface ponding area (in/hr) = 2 in/hr
D_p = maximum depth of ponding (ft) = 1 ft
D_m = depth of media below surface ponding area (ft) = 2.5 ft
A_{P1} = area at the base of surface ponding zone (sf) = 150 sf
A_{P2} = area at the top of surface ponding zone (sf) = 150 sf

$dt_P = \frac{150\ cf}{\left(2\frac{in}{hr}\right) * \left(1 + \frac{0.5 * 1\ ft}{2.5\ ft}\right) * \left(\frac{150\ sf + 150\ sf}{2}\right)}$

$dt_P = 5\ hr < 24\ hr \quad OK$

SMP 2-4: Bioretention

Steps 4-6: Design bioretention practices (SMP 2, SMP 3, and SMP 4) for the other three drainage areas by running through the same steps as for SMP 1. Assume a soil media saturated hydraulic conductivity of 2 in/hr, and an infiltration rate of 1.5 in/hr.

Table G.1 shows the final dimensions, SMP volume, and required water quality volume for each bioretention practice.

Table G.1. Summary of WQ_V Design

SMP #	Drainage Area (sf)	Dimensions (L' x W' x D')	SMP Volume (cf)	WQ_V (cf)
1	2,976	30 x 5 x 6	375	353.4
2	4,714	48 x 5 x 6	600	559.8
3	3,895	39 x 5 x 6	487.5	462.5
4	9,960	100 x 5 x 6	1,250	1,182.8

SMP 5: Detention Tank

Design a detention tank (SMP 5) that will treat the sewer operations volume from an impervious area of 21,545 square feet with a weighted runoff coefficient of 0.88.

Step 7.1: Identify the rainfall depth (R_D) based on the sewershed type and connection proposal type for the project. Use Table 2.7 in Chapter 2.

As determined in Step 1, the project requires a site connection permit (SCP). In addition, the project is located within the sewershed of a combined sewer system.

Table 2.7. Applied rainfall depth by sewershed type and connection proposal type.

R_D	Description
1.85	CSS areas with SCP
1.50	CSS areas with HCP
1.50	MS4 areas with SCP
1.10	MS4 areas with HCP

According to Table 2.7, $R_D = 1.85\ in.$

Step 7.2: Calculate the total V_V.

$V_V = \frac{R_D}{12} * A * C_W$

where:
V_V = sewer operations volume (cf)
R_D = rainfall depth (in) = 1.85 in
A = contributing area (sf) = 21,545 sf
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff = 0.88

$V_V = \frac{1.85\ in}{12} * 21{,}545\ sf * 0.88$

$V_V = 2{,}922.9\ cf$

Step 7.3: Subtract the amount of SMP volume that may be credited towards meeting the total V_V from Step 7.2. The remaining volume ($V_{V,Tank}$) must be managed by the detention tank.

50% of the V_{SMP} from each bioretention practice can be credited towards the V_V.

Total creditable V_{SMP}:

$V_{SMP,TC} = 0.5(V_{SMP,1} + V_{SMP,2} + V_{SMP,3} + V_{SMP,4})$

where:
$V_{SMP,TC}$ = total creditable SMP volume (cf)
$V_{SMP,1}$ = volume from SMP 1 (cf) = 375 cf
$V_{SMP,2}$ = volume from SMP 2 (cf) = 600 cf
$V_{SMP,3}$ = volume from SMP 3 (cf) = 487.5 cf
$V_{SMP,4}$ = volume from SMP 4 (cf) = 1,250 cf

$V_{SMP,TC} = 0.5(375\ cf + 600\ cf + 487.5\ cf + 1{,}250\ cf)$

$V_{SMP,TC} = 1{,}356.25\ cf$

Remaining volume managed by the detention tank:

$V_{V,Tank} = 2{,}922.9\ cf - 1{,}356.25\ cf$

$V_{V,Tank} = 1{,}566.65\ cf$

Step 7.4: Calculate the release rate to be maintained by the controlled-flow orifice. Use the maximum release rate per acre (q) shown in Table 2.9, Chapter 2.

The project is located within the sewershed of a combined sewer system.

Table 2.9. Maximum release rate per acre (cfs/acre) by sewershed type.

q (cfs/acre)	Description
1.0	MS4 areas
0.1	CSS areas

According to Table 2.9, $q = 0.1 \frac{cfs}{acre}$.

$$Q_{DRR} = \frac{q * A}{43560} \; or \; 0.046 \;\; [whichever \; is \; greater]$$

where:
Q_{DRR} = maximum release rate for the site (cfs)
q = maximum release rate per acre (cfs/acre) = 0.1 cfs/acre
A = contributing area (sf) = 93,200 sf

$$Q_{DRR} = \frac{0.1 \; \frac{cfs}{acre} * 21{,}545 \; sf}{43560} or \; 0.046 \;\; [whichever \; is \; greater]$$

$$Q_{DRR} = 0.049 \; cfs \; > 0.046 \; cfs$$

The maximum release rate is 0.049 cfs.

Step 7.5: Use the controlled-flow orifice equation to determine an appropriate orifice area by assuming the active storage depth.

In order to minimize the area required for the detention tank, choose the maximum depth that is still feasible according to site limitations and use a re-entrant orifice. In this case, the designer has chosen an active storage depth of 4 ft.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.049 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf)
g = acceleration due to gravity, 32.2 (ft/s^2)
H = maximum hydraulic head above the centerline of the orifice (ft) = 4 ft

$$0.049 \; cfs = 0.52 * A_o * \sqrt{2 * 32.2 \left(\frac{ft}{s^2}\right) * 4 \; ft}$$

$$A_o = 0.006 \; sf$$

Step 7.6: Translate the area of the controlled-flow orifice (A_O) into a diameter and check that it is greater than the minimum diameter of 1 in.

$$A_o = \frac{\left[\pi * \left(\frac{D_O}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf) = 0.006 sf
D_O = diameter of orifice (in)

$$0.006 \; sf = \frac{\left[\pi * \left(\frac{D_O}{2}\right)^2\right]}{144}$$

$$D_O = 1.05 \; in \; > 1 \; in \quad OK$$

Set the orifice diameter to the nearest 0.25-inch interval rounding down, with a minimum orifice diameter of one-inch. In this case, use an orifice diameter of 1.00 inch.

Step 7.7: Confirm the orifice area of the selected orifice diameter from Step 7.6.

$$A_o = \frac{\left[\pi * \left(\frac{D_O}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf)
D_O = diameter of orifice (in) = 1 in

$$A_O = \frac{\left[\pi * \left(\frac{1 \; in}{2}\right)^2\right]}{144}$$

$$A_O = 0.005 \; sf$$

Step 7.8: Confirm the required active storage depth in the tank using the orifice area from Step 7.7.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.049 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf) = 0.005 sf
g = acceleration due to gravity, 32.2 (ft/s^2)
H = maximum hydraulic head above the centerline of the orifice (ft)

$$0.049 \; cfs = 0.52 * 0.005 \; sf * \sqrt{2 * 32.2 \left(\frac{ft}{s^2}\right) * H}$$

$$H = 5.5 \; ft$$

If the active storage depth is too high, then increase the orifice size by 0.25 inches and re-run Steps 7.7-7.8 until a suitable depth is identified. If the active storage depth is too low, then decrease the orifice size by 0.25 inches (but not less than 1 inch) and re-run Steps 7.7-7.8. Alternatively, the designer can choose a different orifice configuration as needed to modify the active storage depth.

In this case, the depth is feasible.

Step 7.9: Set the dimensions of the detention tank's active storage zone.

Based on the active storage depth of 5.5 ft and the $V_{V,Tank}$ of 1,566.65 cf, set the interior detention tank dimensions to L: 17 ft and W: 17 ft. The resulting detention tank has an active storage volume of 1,589.5 cf. Note that the exterior dimensions of the detention tank will be larger than the dimensions of the active storage zone (17'L x 17'W x 5.5'D) to accommodate wall thickness, bypass structures, and/or other internal features.

Table G.2 summarizes the final designs for the bioretention practices and the detention tank.

Table G.2. Summary of WQ_V and V_V Design

SMP #	Drainage Area (sf)	Dimensions (L' x W' x D')	SMP Volume (cf)	WQ_V (cf)	V_V (cf)
1	2,976	30 x 5 x 6	375	353.4	187.5
2	4,714	48 x 5 x 6	600	559.8	300
3	3,895	39 x 5 x 6	487.5	462.5	243.75
4	9,960	100 x 5 x 6	1,250	1,182.8	625
5	21,545	17 x 17 x 5.5	1,589.5	0	1,589.5
Total	**21,545**	**-**	**-**	**2,558.5**	**2,945.75**

APPENDIX F

Controlled-Flow Pump Workbook

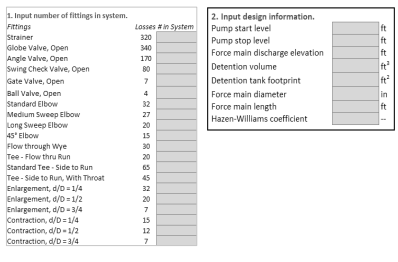
APPENDIX F: Detention in Series Workbook and Example
Workbook notes

This workbook is intended for detention system designs where a controlled-flow orifice with gravity drainage is infeasible. In these cases, the required maximum release rates are maintained with a controlled-flow pump system. When working to target a specific release rate for a pump system, the average release rate should not exceed the maximum rate for the facility at the time when the volume is being provided. The average rate for the system is determined by taking the average of the maximum and minimum rates for the system. The maximum and minimum rates are determined by finding the operation point for each rate respectively. The operation point is defined as the point where the system head curve intersects with the pump curve. The following steps and inputs are required to use this workbook.

The ***Notes*** section provides space to include notes and details on the system specifications. The ***Reviewer*** name should also be included here. Notes on how to choose a Hazen-Williams coefficient are also included in this section for reference.


Pump Head Losses
Reviewer:
Date: 4/2/2021
Notes:
*Choosing Hazen-Williams Coefficient:
New Wrought or Cast Iron, Steel, Ductile Iron, Vitrified: 130
New Concrete: 120
Old Concrete or Brick: 100

The ***first section (1)*** asks for user inputs on the fittings proposed for the system and the number of each type of fitting. The user should place numbers corresponding to each type of fitting in the orange 'input' boxes. Any fitting that is not used can remain blank.


1. Input number of fittings in system.

Fittings	Losses # in System
Strainer	320
Globe Valve, Open	340
Angle Valve, Open	170
Swing Check Valve, Open	80
Gate Valve, Open	7
Ball Valve, Open	4
Standard Elbow	32
Medium Sweep Elbow	27
Long Sweep Elbow	20
45° Elbow	15
Flow through Wye	30
Tee - Flow thru Run	20
Standard Tee - Side to Run	65
Tee - Side to Run, With Throat	45
Enlargement, d/D = 1/4	32
Enlargement, d/D = 1/2	20
Enlargement, d/D = 3/4	7
Contraction, d/D = 1/4	15
Contraction, d/D = 1/2	12
Contraction, d/D = 3/4	7

2. Input design information.

Pump start level	ft
Pump stop level	ft
Force main discharge elevation	ft
Detention volume	ft^3
Detention tank footprint	ft^2
Force main diameter	in
Force main length	ft
Hazen-Williams coefficient	--

The following information should be included in the ***second section (2).***

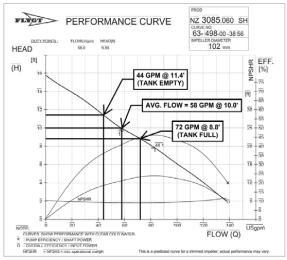
Pump start level (L3) - The elevation of water where the pump system is designed to turn on. This is typically near the top of the tank.
Pump stop level (L4) - The elevation of water where the pump system is designed to turn off. This is typically near the bottom of the tank.
Force main discharge elevation (L5) - The elevation that the proposed force main will discharge by gravity only (where it is no longer under pressure). The nature of this location requires that it be above the sewer.
Detention volume (L6) - The required detention volume in cubic feet calculated for the system. The required detention volume for singular detention systems can be computed using equations in Chapter 2, while the required detention volume of systems in series can be computed using equations in Section 4.11.
Detention tank footprint (L7) - The area of the detention tank in square feet.
Force main diameter (L8) - The force main pipe diameter in inches. Minimum of 2-inches and provided in half-inch increments.
Force main length (L9) - The force main length in feet, not including any equivalent lengths provided in section 1 (number of fittings in system).
Hazen-Williams coefficient (L10) - The proposed Hazen-Williams coefficient, typically 130 for new wrought or cast iron, steel, ductile iron, or vitrified clay pipes.

The ***third section (3)*** asks the user to recreate a pump curve provided by a manufacturer. The following table should be populated with values corresponding to a provided pump curve (example shown). The pump curve example given corresponds to ***Example 1.*** A table is also available for the user to input pump product information directly in the workbook.

Manfacturer:	
Duty Point: Flow (gpm):	
Duty Point: Head (ft):	
Product:	
Curve Number:	
Impeller Diameter (mm):	

3. Build pump curve (from manufacturer).

Head (ft)	*Flow (gpm)*



In the ***fourth section (4),*** the user is asked to provide the proposed maximum pump rate at which the pump will operate in gallons per minute ***(Q21)***, or the operation point for when the pressure head is the lowest, and the proposed minimum pump rate at which the pump will operate ***(Q22)***, or the operation point for when the pressure head is the highest. These inputs will allow for the following outputs to be calculated.

The equivalent length of pipe for fittings (V15)
The minimum static lift in feet (V17)
The maximum static lift in feet (V18)
The provided storage depth in feet (V19)
The maximum water level in feet (V20)
The maximum head loss in feet (P21)
The minimum head loss in feet (P22)
The maximum pump rate in cubic feet-per-second (V21)
The minimum pump rate in cubic feet-per-second (V22)
The average pump rate in cubic feet-per-second (V23), which is the average of V21 and V22.

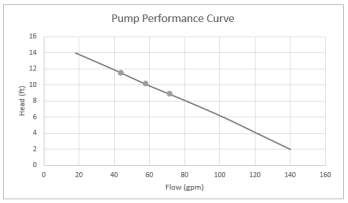
4. Change minimum and maximum flow rates until points align with pump curve.

	Head (ft)	*Flow (gpm)*
Maximum	8.81	72
Minimum	11.44	44
Average	10.12	58

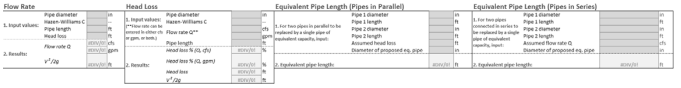
Calculations:

Equivalent length of pipe for fittings	152	ft
Minimum static lift	5.01	ft
Maximum static lift	9.92	ft
Provided storage depth	5.24	ft
Maximum water level	156.99	ft
Maximum pump rate	0.160	cfs
Minimum pump rate	0.098	cfs
Average rate	0.129	cfs
$V^2/2g$	0.17	ft

The process of finding the actual pump behavior requires testing a proposed maximum and minimum pump rate (***Q21*** and ***Q22***) against the minimum and maximum head losses (***P21*** and ***P22***) - iterating until each operation point is found. The maximum and minimum rates must be adjusted until agreement with the pump curve is achieved. Once each operation point is found, this determines the actual release rate of the pump system. If this is lower than the maximum, then the pump system is acceptable. If the maximum pump rate exceeds the maximum release rate, the force main size must be changed or a smaller pump should be selected.



Space for additional calculations is provided in case they are required for specific design systems.



Pump Head Losses

Reviewer:
Date: 11/24/2021

Notes:

Choosing Hazen-Williams Coefficient:
New Wrought or Cast Iron, Steel, Ductile Iron, Vitrified: 130
New Concrete: 120

1. Input number of fittings in system.

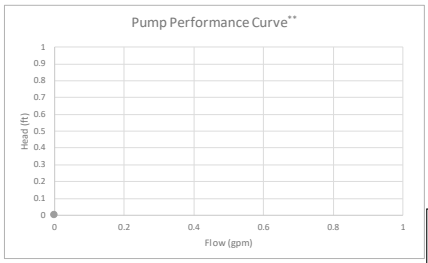
Fittings	*Losses # in System*	
Strainer	320	
Globe Valve, Open	340	
Angle Valve, Open	170	
Swing Check Valve, Open	80	
Gate Valve, Open	7	
Ball Valve, Open	4	
Standard Elbow	32	
Medium Sweep Elbow	27	
Long Sweep Elbow	20	
45° Elbow	15	
Flow through Wye	30	
Tee - Flow thru Run	20	
Standard Tee - Side to Run	65	
Tee - Side to Run, With Throat	45	
Enlargement, d/D = 1/4	32	
Enlargement, d/D = 1/2	20	
Enlargement, d/D = 3/4	7	
Contraction, d/D = 1/4	15	
Contraction, d/D = 1/2	12	
Contraction, d/D = 3/4	7	

2. Input design information.

Pump start level		ft
Pump stop level		ft
Force main discharge elevation		ft
Detention volume		ft^3
Detention tank footprint		ft^2
Force main diameter		in
Force main length		ft
Hazen-Williams coefficient		--

3. Build pump curve (from manufacturer).

Head (ft)	*Flow (gpm)*



4. Change minimum and maximum flow rates until points align with pump curve.

	Head (ft)	*Flow (gpm)*
Maximum	#DIV/0!	
Minimum	#DIV/0!	
Average	#DIV/0!	#DIV/0!

Manfacturer:	
Duty Point: Flow (gpm):	
Duty Point: Head (ft):	
Product:	
Curve Number:	
Impeller Diameter (mm)	

Calculations:

Equivalent length of pipe for fittings	0	ft
Minimum static lift	#DIV/0!	ft
Maximum static lift	0.00	ft
Provided storage depth	#DIV/0!	ft
Maximum water level	#DIV/0!	ft
Maximum pump rate	0.000	cfs
Minimum pump rate	0.000	cfs
Average rate	0.000	cfs
$V^2/2g$	#DIV/0!	ft

Note that applicants must include the pump curve on the site plan, along with all of the necessary

Key

#	*user input*
#	*provided pump curve information*
#	*calculation*

Flow Rate

1. Input values:	Pipe diameter		in
	Hazen-Williams C		--
	Pipe length		ft
	Head loss		ft
2. Results:	*Flow rate Q*	#DIV/0!	cfs
		#DIV/0!	gpm
	$V^2/2g$	#DIV/0!	ft

Head Loss

1. Input values: (**Flow rate can be entered in either cfs or gpm, or both.)	Pipe diameter		in
	Hazen-Williams C		--
	Flow rate Q**		cfs
			gpm
	Pipe length		ft
2. Results:	*Head loss % (Q, cfs)*	#DIV/0!	%
	Head loss % (Q, gpm)	#DIV/0!	%
	Head loss	#DIV/0!	ft
	$V^2/2g$	#DIV/0!	ft

Equivalent Pipe Length (Pipes in Parallel)

1. For two pipes in parallel to be replaced by a single pipe of equivalent capacity, input:	Pipe 1 diameter		in
	Pipe 1 length		ft
	Pipe 2 diameter		in
	Pipe 2 length		ft
	Assumed head loss		ft
	Diameter of proposed eq. pipe		in
2. Equivalent pipe length:		#DIV/0!	ft

Equivalent Pipe Length (Pipes in Series)

1. For two pipes connected in series to be replaced by a single pipe of equivalent capacity, input:	Pipe 1 diameter		in
	Pipe 1 length		ft
	Pipe 2 diameter		in
	Pipe 2 length		ft
	Assumed flow rate Q		cfs
	Diameter of proposed eq. pipe		in
2. Equivalent pipe length:		#DIV/0!	ft

Pump Head Losses

Reviewer: C. Moskos
Date: 11/24/2021

Example:
- 1 pump
- Fittings: 1 strainer, 1 swing check valve, 3 ball valves, 3 standards elbows, 145° elbow, 1 'flow thru run' tee, 1 'side to run' tee
- Pump start level: 152.08'
- Pump stop level: 151.75'
- Force main discharge elevation: 162'
- Detention volume: 1919 ft^3
- Detention tank footprint: 366 ft^2
- Force main diameter: 3"
- Force main length: 62'
- Hazen-Williams coefficient: 130*

Choosing Hazen-Williams Coefficient:
New Wrought or Cast Iron, Steel, Ductile Iron, Vitrified: 130
New Concrete: 120

1. Input number of fittings in system.

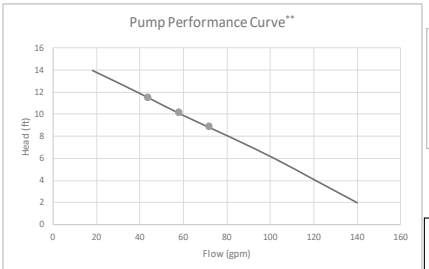
Fittings	*Losses # in System*	
Strainer	320	1
Globe Valve, Open	340	
Angle Valve, Open	170	
Swing Check Valve, Open	80	1
Gate Valve, Open	7	
Ball Valve, Open	4	3
Standard Elbow	32	3
Medium Sweep Elbow	27	
Long Sweep Elbow	20	
45° Elbow	15	1
Flow through Wye	30	
Tee - Flow thru Run	20	1
Standard Tee - Side to Run	65	1
Tee - Side to Run, With Throat	45	
Enlargement, d/D = 1/4	32	
Enlargement, d/D = 1/2	20	
Enlargement, d/D = 3/4	7	
Contraction, d/D = 1/4	15	
Contraction, d/D = 1/2	12	
Contraction, d/D = 3/4	7	

2. Input design information.

Pump start level	152.08	ft
Pump stop level	151.75	ft
Force main discharge elevation	162.00	ft
Detention volume	1919	ft^3
Detention tank footprint	366	ft^2
Force main diameter	3.0	in
Force main length	62.00	ft
Hazen-Williams coefficient	130	--

3. Build pump curve (from manufacturer).

Head (ft)	*Flow (gpm)*
2	140
4	121
6	102
8	81
10	59
12	39
14	18



4. Change minimum and maximum flow rates until points align with pump curve.

	Head (ft)	*Flow (gpm)*
Maximum	8.81	72
Minimum	11.44	44
Average	10.12	58

Manfacturer:	Flygt
Duty Point: Flow (gpm):	58.0
Duty Point: Head (ft):	9.8
Product:	NZ 3085.060 SH
Curve Number:	63-498-00-3856
Impeller Diameter (mm)	102

Calculations:

Equivalent length of pipe for fittings	152	ft
Minimum static lift	5.01	ft
Maximum static lift	9.92	ft
Provided storage depth	5.24	ft
Maximum water level	156.99	ft
Maximum pump rate	0.160	cfs
Minimum pump rate	0.098	cfs
Average rate	0.129	cfs
$V^2/2g$	0.17	ft

Note that applicants must include the pump curve on the site plan, along with all of the necessary

Key

#	*user input*
#	*provided pump curve information*
#	*calculation*

Flow Rate

1. Input values:	Pipe diameter		in
	Hazen-Williams C		--
	Pipe length		ft
	Head loss		ft
2. Results:	*Flow rate Q*	#DIV/0!	cfs
		#DIV/0!	gpm
	$V^2/2g$	#DIV/0!	ft

Head Loss

1. Input values: (**Flow rate can be entered in either cfs or gpm, or both.)	Pipe diameter		in
	Hazen-Williams C		--
	Flow rate Q**		cfs
			gpm
	Pipe length		ft
2. Results:	*Head loss % (Q, cfs)*	#DIV/0!	%
	Head loss % (Q, gpm)	#DIV/0!	%
	Head loss	#DIV/0!	ft
	$V^2/2g$	#DIV/0!	ft

Equivalent Pipe Length (Pipes in Parallel)

1. For two pipes in parallel to be replaced by a single pipe of equivalent capacity, input:	Pipe 1 diameter		in
	Pipe 1 length		ft
	Pipe 2 diameter		in
	Pipe 2 length		ft
	Assumed head loss		ft
	Diameter of proposed eq. pipe		in
2. Equivalent pipe length:		#DIV/0!	ft

Equivalent Pipe Length (Pipes in Series)

1. For two pipes connected in series to be replaced by a single pipe of equivalent capacity, input:	Pipe 1 diameter		in
	Pipe 1 length		ft
	Pipe 2 diameter		in
	Pipe 2 length		ft
	Assumed flow rate Q		cfs
	Diameter of proposed eq. pipe		in
2. Equivalent pipe length:		#DIV/0!	ft

APPENDIX G

Detention in Series Workbook and Examples

APPENDIX G: Detention in Series Workbook and Examples
PROJECT NAME
PROJECT ID
ADDRESS

Notes: Use this form to determine the required storage volumes for detention systems in series. There are two parts to this form. In the first part, users input properties of the downstream detention system. In the second part, users input properties of each individual upstream area that drains to the downstream detention system. Inputs are entered in the yellow cells and outputs are shown in the gray cells.

ERRORS None

DOWNSTREAM SYSTEM

INPUTS			OUTPUTS	
Permit Type	Total Contributing Area	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	cfs	cf	#
CSS - SCP	40000	0.092	3883	0.63

UPSTREAM SYSTEM

INPUTS					OUTPUTS	
TDA ID	TDA Area	C-value	Detention System Type	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	#	name	cfs	cf	#
1	20000	0.95	Blue Roof	0.5	1829	0.41
2	20000	0.85	None			0.85

I. Detention Facilities with a variable outflow

For a detention facility where the outflow is controlled by means of an outlet orifice tube, subject to a head which increases as the depth of storage increases, in a storage facility with an approximately uniform area with respect to storage height, and for roof detention by means of controlled flow roof drains, the average flow rate out of the detention facility is approximately 2/3 of the maximum outflow rate. The following procedure is used to compute the maximum required detention storage volume in ft^3:

1. Compute the duration of the storm in minutes with a 10 yr. return frequency, t_V, which requires the maximum detention volume with outflow controlled by an orifice or by controlled flow roof drains, by the equation:

$$t_V = 0.27(C_{WT} A_t / Q_{DRR})^{0.5} - 15$$

where:
t_V = the duration of the storm in min. with a 10 yr. return frequency requiring the maximum detention volume with a variable outflow
C_{WT} = the weighted runoff coefficient for the area tributary to the detention facility
A_t = the area tributary to the detention facility in ft^2
Q_{DRR} = the detention facility maximum release rate in cfs

2. Compute the maximum required detention volume in ft^3 with outflow controlled by an orifice tube or by controlled flow roof drains, V_V, by the equation:

$$V_V = [0.19 C_{WT} A_t / (t_V + 15) - 40 Q_{DRR}] t_V$$

where:
V_V = the maximum required detention volume in ft^3 with a variable outflow
C_{WT} = the weighted runoff coefficient for the area tributary to the detention facility
A_t = the area tributary to the detention facility in ft^2
t_V = the duration of the storm in min., with a 10 yr. return frequency, requiring the maximum detention volume with a variable outflow
Q_{DRR} = the detention facility maximum release rate in cfs

3. For roof detention compute the duration of the storm in minutes with a 10 yr. return frequency, t_V, which requires the maximum detention volume, and compute the maximum required detention volume in ft^3 with outflow controlled by controlled flow roof drains, V_V, with a detention facility maximum release rate in cfs, Q_{DRR}, as in I-1 through I-2 above. Confirm that the detention volume provided on the controlled flow roof, based on the slopes and geometry of the roof, is equal to or greater than the volume required, V_V, and that the actual release rate from the roof does not exceed the proposed maximum release rate in cfs for the roof, Q_{DRR}, following the procedure detailed in the DEP "Guidelines for the Design and Construction of Stormwater Management Systems".

II. Weighted effective runoff coefficient for series detention systems

1. A. When the flow from a roof which has been restricted by controlled flow roof drains is discharged to a subsurface detention facility, the weighted effective weighted runoff coefficient for the roof, C_{WE}, is based on the average rainfall intensity in in/hr, i_{10}, for the duration in min. of the storm with a 10 yr. return frequency, as computed under I-1, t_V, for which the roof detention volume in ft^3, V_V, was computed. Compute the weighted effective runoff coefficient for the roof with runoff restricted by controlled flow roof drains, C_{WE}, by the equation:

$$C_{WE} = 311 Q_{DRR}(t_V + 15)/ A_t$$

where:
C_{WE} = the weighted effective weighted runoff coefficient for the roof with runoff restricted by controlled flow roof drains
Q_{DRR} = the maximum release rate from the roof in cfs
t_V = the duration in min of the rainfall event for which the roof detention volume was computed
A_t = the area of the roof in ft^2 tributary to the roof detention
311 = 43,560 ft^2 per ac./140

B. Use this effective weighted runoff coefficient for the roof with runoff restricted by controlled flow roof drains, C_{WE}, to compute the weighted runoff coefficient for the area tributary to the sub- surface detention facility, C_{WT}, to which this restricted roof will discharge, as on page 2 above. Compute the maximum required detention volume in ft^3, V_V as in I-1 through I-2, or V_C as in II-1 through II-2.

Detention System Types
None
Blue Roof
Tank
Subsurface
Pond
Wetland

Permit Type	Vv
CSS - SCP	1.85
MS4 - SCP	1.50
CSS - HCP	1.50
MS4 - HCP	1.10

Detention in Series Example

A site in Queens consists of a multistory office building and a parking lot for its tenants. The site was proposed to connect to a 15 in. combined sewer. The building owner intends to use a blue roof and detention tank in series to meet the stormwater management requirement. The total roof area will be used for detention. Design a blue roof and a downstream detention system that treats runoff from the roof and the parking lot, given the following:

Total Contributing Area = 40,000 sf
Roof (sloped 1/8 in per ft) = 20,000 sf @ 0.95 runoff coefficient.
Paved = 20,000 sf @ 0.85 runoff coefficient

Use the Detention In Series Workbook provided in Appendix I.

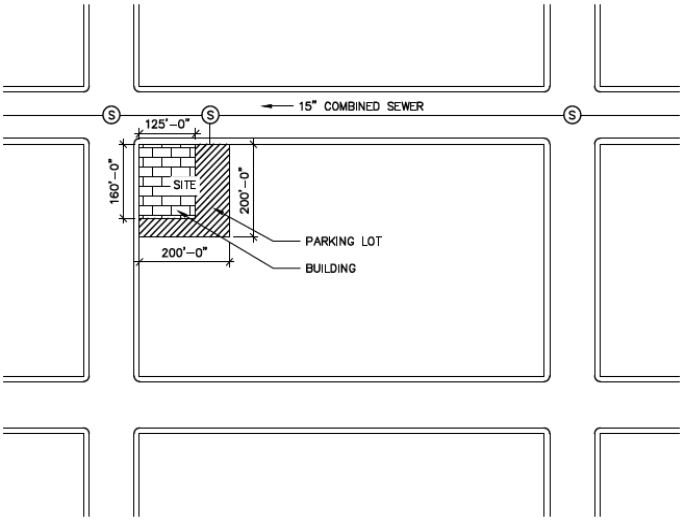


Figure I.1. Schematic of Example 1 (Not to Scale)

Step 1: Input the properties of the blue roof that will drain into the downstream detention system.

The first upstream area that drains to the downstream detention system is the 20,000 sf blue roof.

UPSTREAM SYSTEM

INPUTS					OUTPUTS	
TDA ID	TDA Area	C-value	Detention System Type	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	#	name	cfs	cf	#
1	20000	0.95	Blue Roof			

Figure I.2. Inputs for the Blue Roof Properties

Step 2: Design the maximum release rate to be maintained by the blue roof.

Identify a controlled-flow roof drain by an approved manufacturer. In this case, the designer has selected a controlled-flow roof drain that restricts flow to 10 gpm/in.

The roof has an area of 20,000 sf. According to the 2014 Plumbing Code by the NYC Department of Buildings, not less than four roof drains shall be installed in roofs over 10,000 sf in area. In this case, the designer has chosen to install four roof drains.

Ponding depths should not exceed 4 inches above the low point (or as specified in the current Construction Codes). The designer has chosen to use a ponding depth of 2 inches.

$$Q_{ROOF} = \frac{Q_i N_{RD} d_{max}}{449}$$

where:
Q_{ROOF} = maximum release rate from rooftop detention (cfs)
Q_i = maximum release rate from each drain (gpm/in) = 10 gpm/in
N_{RD} = number of roof drains = 4
d_R = the roof drain depth of flow (in) = 2 in

$$Q_{ROOF} = \frac{10\,\frac{gpm}{in} * 4 * 2\,in}{449}$$

$$Q_{ROOF} = 0.18\,cfs$$

The blue roof can maintain a maximum release rate of approximately 0.2 cfs. Input this maximum release rate into the workbook.

UPSTREAM SYSTEM

INPUTS					OUTPUTS	
TDA ID	TDA Area	C-value	Detention System Type	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	#	name	cfs	cf	#
1	20000	0.95	Blue Roof	0.2		

Figure I.3. Input for the Maximum Release Rate Maintained by the Blue Roof

Step 3: Based on the inputs from Steps 1 and 2, the workbook will automatically calculate the duration of a storm (min) with a 10-year return frequency. This calculation is shown below.

The total roof area will be used for detention. Therefore, the available area is the entire 20,000 sf.

$$t_V = 0.27(\frac{C_{WT} A_t}{Q_{DRR}})^{0.5} - 15$$

where:
t_V = the duration of the storm with a 10 yr. return frequency requiring the maximum detention volume with a variable outflow (min)
C_{WT} = the weighted runoff coefficient for the contributing area = 0.95
A_t = contributing area (sf) = 20,000 sf
Q_{DRR} = maximum release rate for the site (cfs) = 0.2 cfs

$$t_V = 0.27(\frac{0.95 * 20{,}000\,sf}{0.2\,cfs})^{0.5} - 15$$

$$t_V = 68.2\,min$$

Step 4: Based on the inputs from Steps 1 and 2, the workbook will automatically calculate the required detention volume through the blue roof. This calculation is shown below.

$$V_V = (\frac{0.19 C_{WT} A_t}{t_V + 15} - 40 Q_{DRR}) t_V$$

where:
V_v = the maximum required detention volume (cf)
C_{WT} = the weighted runoff coefficient for the contributing area = 0.95
A_t = contributing area (sf) = 20,000 sf
t_V = the duration of the storm with a 10 yr. return frequency requiring the maximum detention volume with a variable outflow (min) = 68.2 min
Q_{DRR} = maximum release rate for the site (cfs) = 0.2 cfs

$$V_V = [\frac{0.19 * 0.95 * 20{,}000\,sf}{68.2\,min + 15} - (40 * 0.2\,cfs)](68.2\,min)$$

$$V_V = 2{,}414\,cf$$

UPSTREAM SYSTEM

INPUTS					OUTPUTS	
TDA ID	TDA Area	C-value	Detention System Type	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	#	name	cfs	cf	#
1	20000	0.95	Blue Roof	0.2	2414	

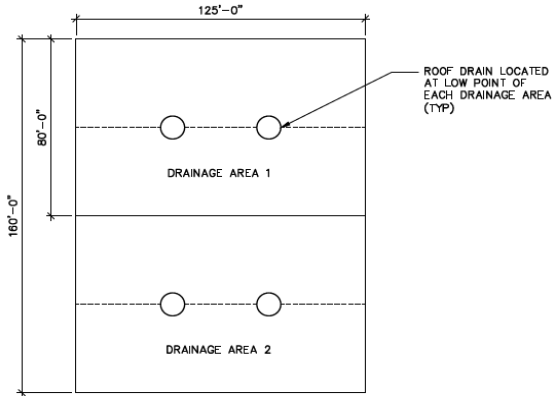
Figure I.4. Output for the Required Detention Volume Through the Blue Roof

Step 5: Check that the available storage volume of the roof is greater than the required detention volume.

The total roof area will be used for detention. Therefore, the available area is the entire 20,000 sf.

The designer has considered two different roof configurations: 1) a uni-directionally sloped roof, as shown in Figure I.5 and 2) a multi-directionally sloped roof, as shown in Figure I.6.

Uni-directionally Sloped Roof:



The lengths and widths of each drainage area are as follows:

Drainage Area 1: 125'L x 80'W
Drainage Area 2: 125'L x 80'W

If the roof is sloped 1/8 in per ft, the height difference between the high and low points of each drainage area is 5 inches. The ponding depth is 2 inches. Therefore, the high point of each drainage area will not be inundated.

Calculate the available storage volume of each drainage area, using the volume of a triangular prism.

$$V_A = \frac{1}{2} LW * \frac{d_R}{12}$$

where:
V_A = the available storage volume of each drainage area (cf)
L = the length of each drainage area (ft) = 125 ft
W = the width of each drainage area (ft = 80 ft
d_R = the roof drain depth of flow (in) = 2 in

$$V_A = \frac{1}{2} * 125\,ft * 80\,ft * \frac{2\,in}{12}$$

$$V_A = 833\,cf$$

The total available storage volume is:

$$V_T = V_1 + V_2$$

where:
V_T = the total available storage volume (cf)
V_1 = the available storage volume of Drainage Area 1 (cf) = 833 cf
V_2 = the available storage volume of Drainage Area 2 (cf) = 833 cf

$$V_T = 833\,cf + 833\,cf$$

$$V_T = 1{,}666\,cf \leq V_V = 2{,}414\,cf \quad \textbf{\textit{NOT MET}}$$

Since the required detention volume is greater than the available storage volume, select a different controlled-flow roof drain or design depth of flow and re-run Steps 2-4.

In this case, the designer has chosen 3 inches as the new design depth of flow. The new ponding depth results in a maximum release rate of 0.27 cfs, a required detention volume of 2,242 cf, and a total available storage volume of 2,500 cf.

Multi-directionally Sloped Roof:

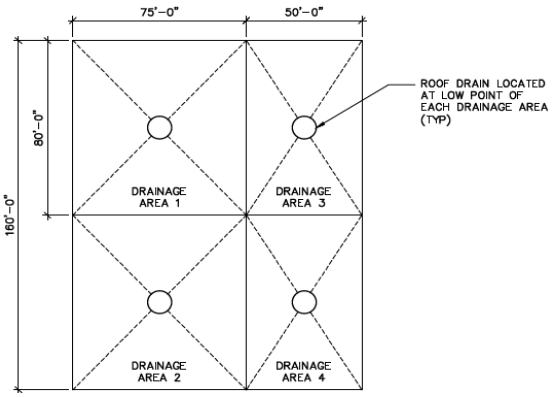


Figure I.6. Plan View of Multi-Directionally Sloped Blue Roof

The lengths and widths of each drainage area are as follows:

Drainage Area 1: 75'L x 80'W
Drainage Area 2: 75'L x 80'W
Drainage Area 3: 50'L x 80'W
Drainage Area 4: 50'L x 80'W

If the roof is sloped 1/8 in per ft, the height difference between the high and low points is 6.9 inches for drainage areas 1 and 2, and 5.9 inches for drainage areas 3 and 4. The ponding depth is 2 inches. Therefore, the high point of each drainage area will not be inundated.

Calculate the available storage volume of each drainage area, using the volume of a pyramid.

Drainage Areas 1 and 2:

$$V_A = \frac{1}{3} LW * \frac{d_R}{12}$$

where:
V_A = the available storage volume of each drainage area (cf)

W = the width of each drainage area (ft = 80 ft
d_R = the roof drain depth of flow (in) = 2 in

$$V_A = \frac{1}{3} * 75\ ft * 80\ ft * \frac{2\ in}{12}$$

$$V_A = 333\ cf$$

Drainage Areas 3 and 4:

$$V_A = \frac{1}{3} LW * \frac{d_R}{12}$$

where:
V_A = the available storage volume of each drainage area (cf)
L = the length of each drainage area (ft) = 50 ft
W = the width of each drainage area (ft = 80 ft
d_R = the roof drain depth of flow (in) = 2 in

$$V_A = \frac{1}{3} * 50\ ft * 80\ ft * \frac{2\ in}{12}$$

$$V_A = 222\ cf$$

The total available storage volume is:

$$V_T = V_1 + V_2 + V_3 + V_4$$

where:
V_T = the total available storage volume (cf)
V_1 = the available storage volume of Drainage Area 1 (cf) = 333 cf
V_2 = the available storage volume of Drainage Area 2 (cf) = 333 cf
V_3 = the available storage volume of Drainage Area 3 (cf) = 222 cf
V_4 = the available storage volume of Drainage Area 4 (cf) = 222 cf

$$V_T = 333\ cf + 333\ cf + 222\ cf + 222\ cf$$

$$V_T = 1{,}110\ cf \leq V_V = 2{,}414\ cf \quad \textbf{\textit{NOT MET}}$$

Since the required detention volume is greater than the available storage volume, select a different controlled-flow roof drain or design depth of flow and re-run Steps 2-4.

In this case, the designer has chosen 3 inches as the new design depth of flow. The new ponding depth results in a maximum release rate of 0.27 cfs, a required detention volume of 2,242 cf, and a total available storage volume of 1,666 cf.

A uni-directionally sloped roof provides sufficient storage volume for a ponding depth of 3 inches. The multi-directionally sloped roof does not provide enough storage volume for the same depth. Therefore, the designer has chosen to use a uni-directionally sloped roof, with a ponding depth of 3 inches.

The inputs have been updated, and the workbook automatically outputs the new required detention volume of 2,242 cf.

UPSTREAM SYSTEM

INPUTS					OUTPUTS	
TDA ID	TDA Area	C-value	Detention System Type	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	#	name	cfs	cf	#
1	20000	0.95	Blue Roof	0.27	2242	

Figure I.7. Inputs and Output for the Required Detention Volume Through the Blue Roof, Using a Ponding Depth of 3"

Step 6: Based on the inputs from Steps 1 and 2, the workbook will automatically calculate the effective weighted runoff coefficient for the blue roof. This calculation is shown below.

$$C_{WE} = \frac{311 Q_{DRR}(t_V + 15)}{A_t}$$

where:
C_{WE} = the effective weighted runoff coefficient for the roof with runoff restricted by controlled-flow roof drains
Q_{DRR} = maximum release rate for the site (cfs) = 0.27 cfs
t_V = the duration of the storm with a 10 yr. return frequency requiring the maximum detention volume with a variable outflow (min) = 56.6 min
A_t = contributing area (sf) = 20,000 sf

$$C_{WE} = \frac{311 * 0.27\ cfs * (56.6\ min + 15)}{20{,}000\ sf}$$

$$C_{WE} = 0.301$$

UPSTREAM SYSTEM

INPUTS					OUTPUTS	
TDA ID	TDA Area	C-value	Detention System Type	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	#	name	cfs	cf	#
1	20000	0.95	Blue Roof	0.27	2242	0.301

Figure I.8. Output for the Effective C-Value of the Blue Roof

Step 7: Input the properties of the parking lot that will drain into the downstream detention system.

The second upstream area that drains to the downstream detention system is the 20,000 sf parking lot. Since there is no detention system specifically for the parking lot, the effective weighted runoff coefficient remains as 0.85. The workbook will automatically output this value.

UPSTREAM SYSTEM

INPUTS					OUTPUTS	
TDA ID	TDA Area	C-value	Detention System Type	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	#	name	cfs	cf	#
1	20000	0.95	Blue Roof	0.27	2242	0.301
2	20000	0.85	None			0.850

Figure I.9. Inputs and Output for the Parking Lot

Step 8: Calculate the release rate to be maintained by the controlled-flow orifice for the downstream detention system. Use the maximum release rate per acre (q) shown in Table 2.9, Chapter 2.

Since the project is 20,000 sf or more, and consists of a multistory office building, this project requires a site connection permit (SCP). In addition, the site is connecting to a 15 in. combined sewer.

Table 2.9. Maximum release rate per acre (cfs/acre) by sewershed type.

q (cfs/acre)	Description
1.0	MS4 areas
0.1	CSS areas

According to Table 2.9, $q = 0.1 \frac{cfs}{acre}$.

$$Q_{DRR} = \frac{q * A}{43560}\ or\ 0.046\ \ [whichever\ is\ greater]$$

where:
Q_{DRR} = maximum release rate for the site (cfs)
q = maximum release rate per acre (cfs/acre) = 0.1 cfs/acre
A = contributing area (sf) = 40,000 sf

$$Q_{DRR} = \frac{0.1\ \frac{cfs}{acre} * 40{,}000\ sf}{43560}\ or\ 0.046\ \ [whichever\ is\ greater]$$

$$Q_{DRR} = 0.092\ cfs\ > 0.046\ cfs$$

The maximum release rate is 0.092 cfs.

Step 9: Input the properties of the downstream detention system. Use the maximum release rate from Step 8.

Since the project is 20,000 sf or more, and consists of a multistory office building, this project requires a site connection permit (SCP). The site has a total contributing area of 40,000 sf.

DOWNSTREAM SYSTEM

INPUTS			OUTPUTS	
Permit Type	Total Contributing Area	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	cfs	cf	#
CSS - SCP	40000	0.092		

Figure I.10. Inputs for the Downstream Detention System

Step 10: Based on the inputs from Step 9, the workbook will automatically calculate the effective weighted runoff coefficient for the downstream detention system. This calculation is shown below.

$$C_W = \frac{(C_1A_1 + C_2A_2 + \cdots etc.)}{A_t}$$

where:
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff
C_1 = the effective weighted runoff coefficient for the area classified as roof = 0.30
A_1 = the area classified as roof (sf) = 20,000 sf
C_2 = the effective weighted runoff coefficient for the area classified as paved = 0.85
A_2 = the area classified as paved (sf) = 20,000 sf
A_t = contributing area (sf) = 40,000 sf

$$C_W = \frac{(0.30 * 20{,}000\ sf) + (0.85 * 20{,}000\ sf)}{40{,}000\ sf}$$

$C_W = 0.575$

DOWNSTREAM SYSTEM

INPUTS			OUTPUTS	
Permit Type	Total Contributing Area	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	cfs	cf	#
CSS - SCP	40000	0.092		0.575

Figure I.11. Output for the Effective C-Value of the Downstream Detention System

Step 11: Identify the rainfall depth (R_D) based on the sewershed type and connection proposal type for the project. Use Table 2.7 in Chapter 2.

Since the project is 20,000 sf or more, and consists of a multistory office building, this project requires a site connection permit (SCP). In addition, the site is connecting to a 15 in. combined sewer.

Table 2.7. Applied rainfall depth by sewershed type and connection proposal type.

R_D	Description
1.85	CSS areas with SCP
1.50	CSS areas with HCP
1.50	MS4 areas with SCP
1.10	MS4 areas with HCP

According to Table 2.7, $R_D = 1.85\ in.$

Step 12: Based on the inputs from Step 9, the workbook will automatically calculate the required detention volume through the detention tank. This calculation is shown below.

$$V_V = \frac{R_D}{12} * A * C_W$$

where:
V_V = the maximum required detention volume (or sewer operations volume) (cf)
R_D = rainfall depth (in) = 1.85 in
A = contributing area (sf) = 40,000 sf
C_W = weighted runoff coefficient relating peak rate of rainfall and runoff = 0.575

$$V_V = \frac{1.85\ in}{12} * 40{,}000\ sf * 0.575$$

$V_V = 3{,}548\ cf$

DOWNSTREAM SYSTEM

INPUTS			OUTPUTS	
Permit Type	Total Contributing Area	Maximum Release Rate	Required Detention Volume	Effective C-value
name	sf	cfs	cf	#
CSS - SCP	40000	0.092	3548	0.575

Figure I.12. Output for the Required Detention Volume Through the Downstream Detention System

Step 13: Use the controlled-flow orifice equation to determine an appropriate orifice area for the detention tank, by assuming the active storage depth.

In order to minimize the area required for the detention tank, choose the maximum depth that is still feasible according to site limitations and use a re-entrant orifice. In this case, the designer has chosen an active storage depth of 4 ft.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.092 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf)
g = acceleration due to gravity, 32.2 (ft/s^2)
H = maximum hydraulic head above the centerline of the orifice (ft) = 4 ft

$$0.092\ cfs = 0.52 * A_o * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * 4\ ft}$$

$A_o = 0.011\ sf$

Step 14: Translate the area of the controlled-flow orifice (A_O) into a diameter and check that it is greater than the minimum diameter of 1 in.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf) = 0.011 sf
D_O = diameter of orifice (in)

$$0.011\ sf = \frac{\left[\pi * \left(\frac{D_O}{2}\right)^2\right]}{144}$$

$D_O = 1.42\ in\ > 1\ in \quad OK$

Set the orifice diameter to the nearest 0.25-inch interval rounding down, with a minimum orifice diameter of one-inch. In this case, use an orifice diameter of 1.25 inches.

Step 15: Confirm the orifice area of the selected orifice diameter from Step 14.

$$A_o = \frac{\left[\pi * \left(\frac{D_o}{2}\right)^2\right]}{144}$$

where:
A_O = area of orifice (sf)
D_O = diameter of orifice (in) = 1.25 inches

$$A_O = \frac{\left[\pi * \left(\frac{1.25\ in}{2}\right)^2\right]}{144}$$

$A_O = 0.009\ sf$

Step 16: Confirm the required active storage depth in the tank using the orifice area from Step 15.

$$Q_O = C_D * A_o * \sqrt{2gH}$$

where:
Q_O = maximum release rate of orifice (cfs) = 0.092 cfs
C_D = coefficient of discharge, 0.52 for re-entrant orifice
A_O = area of orifice (sf) = 0.009 sf
g = acceleration due to gravity, 32.2 (ft/s^2)
H = maximum hydraulic head above the centerline of the orifice (ft)

$$0.092\ cfs = 0.52 * 0.009\ sf * \sqrt{2 * 32.2\ \left(\frac{ft}{s^2}\right) * H}$$

$H = 6.0\ ft$

If the active storage depth is too high, then increase the orifice size by 0.25 inches and re-run Steps 13-14 until a suitable depth is identified. If the active storage depth is too low, then decrease the orifice size by 0.25 inches (but not less than 1 inch) and re-run Steps 13-14. Alternatively, the designer can choose a different orifice configuration as needed to modify the active storage depth.

In this case, the depth is too high to drain via gravity connection to the storm sewer. Using a flush orifice, which has a coefficient of discharge of 0.61, results in an active storage depth of 4.4 ft.

Step 17: Set the dimensions of the detention tank's active storage zone.

Based on the active storage depth of 4.4 ft and the V_V of 3,548 cf, set the interior detention tank dimensions to L: 28.5 ft and W: 28.5 ft. The resulting detention tank has an active storage volume of 3,574 cf. Note that the exterior dimensions of the detention tank will be larger than the dimensions of the active storage zone (28.5'L x 28.5'W x 4.4'D) to accommodate wall thickness, bypass structures, and/or other internal features.

APPENDIX H

Right-of-Way Guidance Materials

- ROW Geotechnical Procedures
- ROW SMP Data Tracking Form

NYC Environmental Protection

NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF ENVIRONMENTAL PLANNING AND ANALYSIS

PROCEDURE GOVERNING

LIMITED GEOTECHNICAL INVESTIGATION

FOR

RIGHT-OF-WAY STORMWATER MANAGEMENT PRACTICES

NYC Stormwater Manual

July 2021

Table of Contents

Attachments:

- Attachment A: Geotechnical Report Summary Table
- Attachment B: Soil Boring Log
- Attachment C: Falling-Head Borehole Test Log
- Attachment D: Soil Sampling Laboratory Test Results (Example)

Limited Geotechnical Investigation

1 General Guidelines

The Limited Geotechnical Investigation consists of:

a) Soil borings to determine the soil characteristics (field observation and laboratory testing) as well as the depths to groundwater table and bedrock where encountered, AND
b) In-situ soil permeability tests to determine infiltration rates of the existing soil.

The minimum required number of soil borings and permeability tests, collectively referred to as B/PTs, is as follows depending on the size (footprint area) of the proposed stormwater management practice (SMP):

- SMPs with areas less than 1000 SF: at least one B/PT per SMP
- SMPs with areas 1000 SF or more and less than 5000 SF: at least two B/PTs per SMP
- Additionally, the Qualified Professional[1] must make a reasonable determination based on the soil textural classifications and the standard penetration tests to determine if additional tests may be needed; this is particularly critical in areas of fill soils where characteristics will vary greatly over small distances.

Where two or more B/PTs are being conducted for a single SMP, the Qualified Professional must select appropriate locations and spacing between the B/PTs to ensure the geotechnical investigation results will be representative of the underlying soil across the footprint of the SMP.

The following sections provide more detail on the soil boring and PT procedures.

1.1 Geotechnical Investigation Locations

Soil borings and permeability tests shall be conducted in separate boreholes no closer than 5 ft apart. If a boulder or other obstruction is encountered during drilling for any SMP, another attempt shall be made within 5 ft - 10 ft of the original borehole. Each borehole should be given a name corresponding to the SMP ID and the test (B/PT) and an accurate coordinate (latitude and longitude) of each borehole should be recorded.

Soil borings and PTs must be performed within the footprint of the SMP. In the event that drilling cannot be conducted within the footprint area, drilling should be done no more than 10 ft beyond the footprint of the SMP.

[1] As defined in Chapter 19.1 of Title 15 of Rules of the City of New York

1.2 Geotechnical Investigation Methodology

1.2.1 Soil Boring Procedure and Equipment

The Qualified Professional shall approve the drilling method that will minimize disturbance to the soil tested from the following list of acceptable equipment:

- Direct Push Method with a 4-inch inner diameter casing
- Hollow-stem auger (HSA) with a 4-inch inner diameter hollow-stem
- Rotary Tri-cone Roller Bit cased by 4-inch inner diameter casing

In the event that no subsurface records (utility records such as water, sewer, etc) were obtainable for drilling and/or the Qualified Professional chooses, pneumatic and/or hand auger is an acceptable method of boring up to the depth of the first soil sample or PT (see **Section 1.2.3**. for soil sampling and PT depths). The reason for conducting this procedure must be properly documented and reported to DEP.

Only water from a hydrant or any clean potable water source shall be used as drilling fluid. It is not acceptable to recycle the drilling fluid or to use drilling mud. Proper sediment control must be used at all times to prevent runoff containing fine or coarse material from entering the catch basins or leaving the work zone.

The Qualified Professional shall be on-site to observe the soil boring operation and keep a continuous and accurate Boring Log for each location recording all pertinent data. Refer to **Section 2.1.1** for details on the Boring Log.

1.2.1.1 Standard Penetration Test

In each soil boring location, a Standard Penetration Test (SPT) shall be conducted continuously in accordance with ASTM D1586 (i.e. a 24-inch long, 2-inch outside diameter split-barrel-sampler driven by blows from a 140-pound hammer falling freely from a height of 30 inches) to the depth detailed in **Section 1.2.3**.

The number of blows required to drive the 24-inch split-barrel sampler every 6-inch increment will be recorded. The Standard Penetration Resistance (N-value) shall be determined as the sum of the blows required to drive the sampler to the second and third 6-inch increments, representing the number of blows per foot.

1.2.1.2 Soil Sampling

The Qualified Professional shall make observations of the soil samples at all depths during drilling and submit observations for each soil boring location as individual Boring Logs.

The Qualified Professional shall collect soil samples that are representative of the actual recovered soil at specific depths for laboratory analysis. Collected samples shall be stored in labeled jars, to be delivered to an approved AASHTO-certified laboratory for subsequent examination and testing. Samples shall be taken and tested as outlined in **Section 1.3**.

1.2.2 Permeability Test Procedure and Equipment

The recommended method for the in-situ permeability test is the falling-head borehole test as outlined below; however, the Qualified Professional may choose to conduct permeability tests following a percolation test or double-ring infiltrometer test procedure, depending on project or site conditions.

Prior to conducting any permeability test, the following conditions shall be checked:

- If a soil boring was conducted within 20 ft. of a planned PT location, the borehole from the soil boring must be completely backfilled before the PT is commenced.
- Clean water must be used in conducting PTs. PTs conducted using "dirty water" creates faulty results, which shall be rejected, and retest will be required.
- Permeability tests shall not be performed when the ambient temperature is below 0°C, in frozen soils, or with water at temperatures less than 5°C (see **Section 1.2.2.4** on temperature measurement requirements).

1.2.2.1 Falling-head borehole test procedure

The falling-head borehole test procedure is as follows:

- Drive the 4-inch inner diameter casing to the required test depth (refer to soil boring procedure for allowable equipment). The space (annulus) between the casing and borehole must be kept at a minimum. If the casing cannot be driven and a larger hole is first bored to allow for the casing, the annulus must be backfilled and packed with drill cuttings before any water is introduced for testing into the casing.
- Measure the depth to the bottom of the hole to the nearest inch.
- Ensure that the depth to the bottom of the hole is within 1 inch of the depth to the bottom of the casing.
- Place approximately 6 - 8 inches of coarse sand (4.75mm – 2mm) at the bottom of the casing.
- Wash out casing using a continuous flow of clean water at low water pressure (the water shall not disturb the coarse sand layer at the bottom of the casing) until the water exiting the casing runs clear with no discoloration.
- Saturate the soil beneath the bottom of the casing for at least thirty (30) minutes using clean water.
- Fill casing to the top with clean water and record the temperature of the water at the bottom of the casing at the start of the test (see **Section 1.2.2.4** for details on temperature measurement).
- Record the time at the beginning of the test.
- Record the falling water level in the casing at 1, 2, 3, 4, 5, 10, and 15 minutes after the beginning of the test or until the water level in the casing has stopped falling.

- At the conclusion of the test, fill the casing to the top with clean water and maintain the water at this level for five (5) minutes.
- Repeat the test once for each testing depth using the same procedure.

Falling-head borehole tests may be terminated after the 30-minute saturation period and reported accordingly for the following conditions:

- If the casing is completely filled during the saturation period and there is no visible drop in water level after 30 minutes, the falling-head borehole test shall be reattempted for the same depth at another location between 5 ft to 10 ft away. If there is no visible drop in water level after 30 minutes at the reattempted location, the falling-head borehole test shall be terminated for that depth only and the soil permeability rate shall be reported as "0.000 in/hr".
- If the casing cannot be filled due to rapid infiltration (RI) during the saturation period and no water is retained in the casing after 30 minutes, the falling-head borehole test shall be reattempted for the same depth at another location between 5 ft to 10 ft away. If rapid infiltration is observed during the saturation period for the reattempt, the falling-head borehole test shall be terminated for that depth only and the permeability coefficient reported as "RI".

The Qualified Professional must log continuous data during this test and report them accurately in Falling-head Borehole Test Logs (FH Logs). Refer to the below and **Section 2.1.3** for details on the PT Log.

Average permeability rates shall be calculated based on a modification of ASTM D6391 using the following formula. The FH Log template with the formula and associated calculation methods is provided. In general, no permeability calculations are necessary at the time of drilling since permeability values (and other variables used to calculate permeability values) are automatically calculated in the FH Log once all the data recorded during the falling-head borehole test are inputted into the template.

$$K_m = \pi \cdot R_t \cdot \frac{D \cdot \left(\ln \frac{h_1}{h_2}\right)}{11 \cdot (t_2 - t_1)}$$

$$R_t = \frac{2.2902(0.9842^{\mathrm{T}})}{\mathrm{T}^{0.1702}}$$

Where: K_m = Mean permeability [in/hr], and $K_m = \sqrt{k_h \cdot k_v}$

k_h = Horizontal permeability [in/hr]

k_v = Vertical permeability [in/hr]

D = Inner diameter of casing [in]

h = Height of water above bottom of casing at time t [in]

t = Time [hr]

R_t = Ratio of viscosity of water at test temperature to the viscosity of water at 20 °C

T = temperature [°C]

1.2.2.2 Percolation test procedure

Percolation tests are commonly used for on-site sewage (septic) and stormwater (dry well) systems. They differ from cased borehole tests in that there is no casing and there is no control for water lost at the sides of the test pit hole during percolation testing. The percolation test method shall not be utilized for proposed SMP locations less than 10 feet from buildings or underground structures. Percolation tests must be conducted in accordance with the NYS procedure[2] for onsite sewage treatment systems.

Following the above percolation test procedure will result in a measurement of the stabilized rate of percolation of the soil. This stabilized percolation rate must be translated to a permeability, or infiltration rate, using a reduction factor that accounts for water lost at the sides of the test pit. The following equation may be used to calculate the infiltration rate:

$$I = \frac{P_s}{R_f}$$

where:

I: infiltration rate (in/hr)

P_s: stabilized rate of percolation (in/hr)

R_f: Reduction factor of 1.92

The reduction factor assumes the percolation rate is affected by the depth of water in the test hole and that the percolating surface of the hole is in uniform soil. If there are site conditions that cause significant deviations from either assumption, such as noticeably different soil strata along the percolation test hole, then this methodology is not appropriate for determining infiltration rates.

1.2.2.3 Double-Ring Infiltrometer test procedure

Double-Ring Infiltrometer tests require less equipment compared to the other permeability test procedures but can be more difficult to use in very pervious or very impervious soils, in dry or stiff soils, or if the rings are fractured when installed. Double-Ring Infiltrometer tests shall be conducted in accordance with the latest version of ASTM D3385, the Standard Test Method for Infiltration Rate of Soils in Field Using Double-Ring Infiltrometer.

[2] Full procedure available at the following links (accessible as of July 2021): https://www.dec.ny.gov/docs/water_pdf/2014designstd.pdf or https://www.health.ny.gov/environmental/water/drinking/wastewater_treatment_systems/docs/design_handbook.pdf

1.2.2.4 Temperature Measurement

Temperatures shall be measured in °C using equipment meeting the specifications as shown in Table 1 and calibrated against a National Institute of Standards and Technology (NIST) Standard or with certified calibration traceable to NIST.

Table 1 – Acceptable Temperature Measurement Equipment

Equipment	Specifications
Liquid-in-glass thermometer (nonmercury)	• Temperature range, at least -5 to +45°C • 0.5°C gradations or smaller • Calibrated accuracy within 1 percent of full scale or 0.5°C, whichever is less
Thermistor	• Calibrated accuracy within 0.1 to 0.2°C • Digital readout to at least 0.1°C

1.2.3 Geotechnical Investigation Depths

The minimum depth for all soil borings is 20 ft or 5 ft below the SMP base (i.e. the depth of the infiltrating surface), whichever is deeper.

Bulk soil samples for laboratory testing shall be collected and analyzed for every 2 ft of soil depth, starting at the 3-5 ft depth then every 2 ft interval thereafter to the extent possible to the full soil boring depth. If different soil stratums are encountered within an interval, the Qualified Professional is recommended to recover separate samples for each stratum.

PTs must be conducted at the depth of the SMP base. Qualified Professionals are recommended to conduct additional PTs at depths beyond the SMP base if soils with high fines are observed at the shallow depths and sandy soils are observed at deeper depths, which may allow for the use of stone columns for infiltration.

For example, a SMP that infiltrates at 5 ft depth requires, at a minimum:

- Soil boring to 20 ft
- Soil samples collected and analyzed at the following depths: 3-5 ft, 5-7 ft, 7-9 ft, 9-11 ft, 11-13 ft, 13-15 ft, 15-17 ft, 17-19 ft
- PT at 5 ft

Qualified Professionals should take into account any proposed surface elevation changes when determining appropriate geotechnical investigation depths.

1.3 Geotechnical Laboratory Testing

Laboratory tests shall be conducted by an AASHTO-certified laboratory to determine the distribution of particle sizes of the soil – particularly the fines (silts and clays) content – in accordance with ASTM D422.

2 Geotechnical Report

2.1 Geotechnical Investigation Data

Geotechnical reports must include a Geotechnical Report Summary Table, detailed boring logs, and permeability test logs. Additionally, field-measured B/PT locations must be accurately recorded and submitted on a map that also shows the location of the SMP(s).

2.1.1 Geotechnical Report Summary Table

Pertinent data from the soil borings, PTs, laboratory test results, and any other information acquired during the geotechnical investigation shall be summarized in the Geotechnical Report Summary Table format provided (see Attachment A).

2.1.2 Boring Logs

Separate boring logs must be prepared for all soil borings. An example boring log template is provided as Attachment B. At a minimum, boring logs must include the information listed below:

- Identification number (ID No.)
- Soil boring location and coordinates (latitude/longitude)
- Description of equipment (drilling, SPT, soil sampling, etc)
- Weather
- Number of blows per 6-inch intervals of continuous penetration
- Length of sample recovery (inches) for each 2-ft interval
- Depths of soil samples retrieved for laboratory analysis
- Thickness of each soil stratum encountered (including pavement, fill or topsoil layers).
- Characteristics of the soil (based on field observations) for all depths, including:
  1. Soil description per Modified Burmister
  2. Soil classification per Unified Soil Classification System (USCS), in parentheses
  3. Color
  4. Soil moisture (dry, moist, or wet)
  5. Soil consistency:
     a. for Cohesive soil: very soft, soft, medium stiff, stiff, very stiff, hard
     b. for Granular soils: very loose, loose, medium dense, dense, very dense
  6. If present:
     a. Debris (brick, concrete, wood, glass, etc.)
     b. Cobbles, boulders, etc.
     c. Odor (organic, chemical, etc.)
     d. Notable soil formations which may affect permeability (e.g. "bull's liver", glacial till, etc.)
     e. Indication of possible contamination (ash, petroleum, slag, etc.)
     f. Decomposed vegetation
- Depth to groundwater and/or bedrock, if encountered
- Other subsurface conditions encountered during drilling (e.g. utilities, structures, etc.)

- Additional observations noted during soil boring

2.1.3 Permeability Test Logs

Permeability test logs must be submitted for all PTs, including those that were terminated. At a minimum, PT logs must include the following:

- Permeability test method
- PT ID number
- Weather and ambient temperature
- PT location and coordinates (latitude/longitude)
- Description of equipment utilized
- PT depth
- Depth to groundwater and/or bedrock, if encountered
- Water temperature at the start of the test
- All water depth readings as required by test procedure
- Calculation steps
- Resulting permeability rates

Falling-head borehole test results shall be reported on the FH Log (see Attachment C). The following are additional notes for reporting on falling-head borehole test results:

- Early termination of falling-head borehole tests shall be noted in the "Inspectors Remarks" section of the FH Logs and in the Geotechnical Report Summary Table under "General Geotech Notes". No field data shall be reported as "Depth (in)", and no permeability values shall be calculated for terminated falling-head tests.
- The FH Log template contains default time values of 1, 2, 3, 4, 5, 10, and 15 minutes after the start of the test. If the water level drops below the casing before the 15-minute measurement period, these default values must be modified to the actual time values for which water depth measurements were recorded.
- If the permeability rate cannot be calculated (for example, due to RI), the FH Log shall clearly indicate that calculations are not valid.

2.1.4 Laboratory Test Results

Laboratory testing and reporting must include a sieve analysis of soil samples and plotting of gradation curves, as well as soil classification based on the USCS.

The following USCS-classified sieve sizes are to be included with data points for all sampled depths overlaid on the same gradation curve:

4"
3"
1-1/2"
3/4"
3/8"
#4
#10
#20
#40
#60
#100
#200

An example of an acceptable format for reporting soil sieve analyses and gradation curves is provided as Attachment D.

Project: [Project Description]
Prepared By: [Consultant/Sub Name]

NYC Department of Environmental Protection

Geotechnical Report Summary Table

NYC Environmental Protection

SMP ID No.	Soil Laboratory Results				Permeability Analysis				Groundwater Table Depth (ft)	Bedrock Depth (ft)	General Geotechnical Notes	Additional Notes
	Boring ID No.	Depth (ft)	USCS Symbol	% Passing No 200 Sieve	Permeability Test ID No.	PT Method	Permeability Test Depth (ft)	Average Permeability Rate (in/hr)				

Notes:
Only numbers should be inputted in the '% Passing No 200 Sieve', 'Average Permeability Coef. (ft)', 'Groundwater Table Depth (ft)', and 'Bedrock Depth (ft)' columns.
For the '% Passing No. 200 Sieve' column, values must be between 0 and 1. (i.e. use either 0.15 or 15% not 15). Numbers greater than 1 will not be accepted.
Please refer below for allowable exceptions and other specific instructions:
(NE = not encountered, NR = no record, NP = not performed)

Column	Exception(s)
'USCS Symbol', '% Passing No 200 Sieve'	If soil sampling was cancelled due to groundwater, bedrock, obstructions, etc., enter "NP" (details should be included in the 'General Geotech Notes' column) If soil sample could not be obtained or recovery was too low to be analyzed, enter "NR"
Average Permeability Coef. (ft)	For high permeabilities where the water level drop rate could not be measured, enter "RI" If a PT could not be conducted at specific depths, input depth with "NP" as the Permeability Rate (details should be included in the 'General Geotech Notes' or 'Additional Notes' as applicable)
Groundwater Table Depth (ft)	Enter the depth that groundwater was encountered. If groundwater was not encountered, enter "NE" If perched water was encountered, enter "NE" (but include in the 'General Geotech Notes' column)
Bedrock Depth (ft)	Enter the depth that bedrock was encountered. If bedrock was not encountered, enter "NE"

Relevant information to include under General Geotechnical Notes include (but not limited to): refusal (please provide possible cause of refusal), suspected contamination, perched water, etc.

COMPANY NAME/LOGO

Boring ID No. <XXXX>

Project: <Project Name/Description>

Location: <Description of Location>

INSPECTOR:	<name>	DRILLER:	<name>	Start Date:	<date>
CONTRACTOR:	<name>	HELPER:	<name>	Start Time:	<time>
OVERSIGHT:	<name>			Weather:	<weather>

Total Boring Depth:	<##> ft	Drill Bit Type:	<type>	Weight of Hammer for casing:	<##> lbs
Rig Type:	<type>	Casing Inner Diameter:	4 in	Weight of Hammer for spoon:	<##> lbs
		Depth of Casing:	ft	Type of Hammer:	<type>
Depth to Groundwater Table (bgs):	<##> ft			Drop:	in
Depth to Bedrock (bgs):	<##> ft			Split Spoon Diameter:	in

<XXXX> BORING LOG

Depth Below Ground Surface (ft)	Soil Sample Retrieval and Sample No.	Soil Description (Field Observations)	SPT Blows per 6"	N Value	Recovery Length (inches)	Remarks
0		asphalt pavement				
5						
10						
15						
20						

Boring terminated at xx feet below ground surface

Latitude: <latitude> Longitude: <longitude>

Inspector's Remarks:

July 2021

Falling-Head Borehole Test Log

COMPANY NAME/LOGO

PT ID No. <ID> Sheet <#> of <#>

Project: <Project Name/Description>

LOCATION:

INSPECTOR:	<name>	DRILLER:	<name>	Start Date:	<date>
CONTRACTOR:	<name>	HELPER:	<name>	Start Time:	<time>
OVERSIGHT:	<name>			Weather:	<weather and ambient temperature>

Depth of PT:	<depth> ft	Drill Bit Type:	<type>	Weight of Hammer for casing:	140 lbs
Rig Type:	<type>	Casing Internal Diameter:	4 in	Type of Hammer:	<type>
		Casing Length:	<length> in		

ASTM D-6391 PERMEABILITY COEFFICIENT (Km) FORMULA:

General Formula: $K_m = \pi R_t \times \frac{\left[D\left\{Ln\left(\frac{h_1}{h_2}\right)\right\}\right]}{11 \times (t_2 - t_1)}$

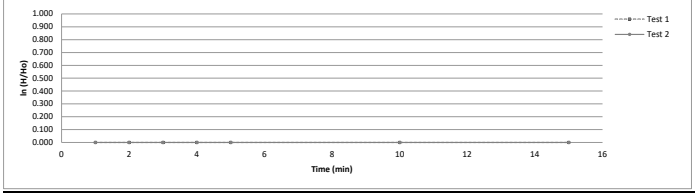
Formula for 4" internal diameter casing (in/hr): $K_m = 1.142 R_t \times \frac{\left[Ln\left(\frac{h_1}{h_2}\right)\right]}{(t_2 - t_1)}$

where: $R_t = 2.2902(0.9842^T)/T^{0.1702}$

<ID> @ <depth> ft

TEST 1						TEST 2					
Water temperature (°C), T:			Rt= -			Water temperature (°C), T:			Rt= -		
FIELD DATA		CALCULATED DATA				FIELD DATA		CALCULATED DATA			
Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	(t_1-t_2)	*Kv (in/hr)	Time (min)	Depth (in)	Height (in)	Ln (H/Ho)	(t_1-t_2)	*Kv (in/hr)
1		-	-	0.017	-	1		-	-	0.017	-
2		-	-	0.017	-	2		-	-	0.017	-
3		-	-	0.017	-	3		-	-	0.017	-
4		-	-	0.017	-	4		-	-	0.017	-
5		-	-	0.017	-	5		-	-	0.017	-
10		-	-	0.083	-	10		-	-	0.083	-
15		-	-	0.083	-	15		-	-	0.083	-

<ID> @ <depth> ft



TEST 1 FINAL RESULTS			TEST 2 FINAL RESULTS		
Time Weighted Average Permeability Coefficient	K_m=	0.0000 in/hr	Time Weighted Average Permeability Coefficient	K_m=	0.0000 in/hr

AVERAGE <ID> @ <depth> ft			Coordinates:	
Time Weighted Average Permeability Coefficient	*K_m=	0.0000 in/hr	Longitude:	<longitude>
			Latitude:	<latitude>

Inspectors Remarks:

DEFINITION OF VARIABLES

*K_m= Mean permeability rate

T = Temperature of permeant (water), in °C

Ln = Natural Logarithmic

t_1 = Time at the start of the test in the same units selected for Km

t_2= Time at the end of the test in the units selected for Km

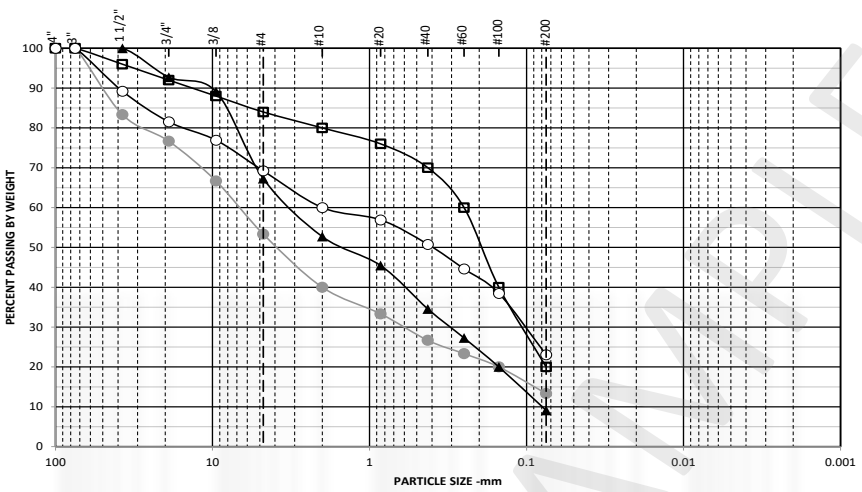
h_1= Height of the water above the bottom of the casing at the start of the test in the same units selected for Km

h_2= Height of the water above the bottom of the casing at the end of the test in the same units selected for Km

R_t = Ratio of viscosity of water at test temperature to the viscosity of water at 20°C

July 2021

COBBLES | GRAVEL: COARSE, FINE | SAND: COARSE, MEDIUM, FINE | SILT OR CLAY



Boring ID No. XXXX

Symbol	●	□	▲	○	◆
Depth	5-7	7-9	11-13	18-20	-
% Gravel	46.67	16.00	32.73	30.77	-
% Sand	40.00	64.00	58.18	46.15	-
% Fines	13.33	20.00	9.09	23.08	-
% -2μ	-	-	-	-	-
Cc	-	-	0.36	-	-
Cu	-	-	41.54	-	-
D_{100} (mm)	75.00	75.00	37.50	75.00	-
D_{60} (mm)	7.13	0.25	3.38	2.00	-
D_{30} (mm)	0.64	0.11	0.32	0.11	-
D_{10} (mm)	-	-	0.08	-	-
USCS	SP-SM	SM	SP	SM-ML	-
w (%)	-	-	-	-	-

Particle Size (Sieve #)	Percent Finer				
	●	□	▲	○	◆
4"	100.0	100.0	100.0	100.0	-
3"	100.0	100.0	100.0	100.0	-
1 1/2"	83.3	96.0	100.0	89.2	-
3/4"	76.7	92.0	92.7	81.5	-
3/8"	66.7	88.0	89.1	76.9	-
4	53.3	84.0	67.3	69.2	-
10	40.0	80.0	52.7	60.0	-
20	33.3	76.0	45.5	56.9	-
40	26.7	70.0	34.5	50.8	-
60	23.3	60.0	27.3	44.6	-
100	20.0	40.0	20.0	38.5	-
200	13.3	20.0	9.1	23.1	-

Depth (ft bgs)	Symbol	DESCRIPTION AND REMARKS
5-7	●	sandy silt
		Color/Odor/Impurities: brown
7-9	□	silt and sand
		Color/Odor/Impurities: dark brown - brown
11-13	▲	poorly graded sand, little silt
		Color/Odor/Impurities: light brown
18-20	○	silt and clay, some sand
		Color/Odor/Impurities: brown/gray
-	◆	-

PARTICLE SIZE DISTRIBUTION

Project: <Project Description>

Company Name/Logo

Laboratory Name

Comments:

July 2021

ROW SMP Data Tracking Form Updated July 2021

PROJECT LEVEL DATA

No.	Field Name	Field Description	Response
1	Project ID	Contract ID of project	
2	Project Description	Short description of project	
3	Project Borough	Borough (Bronx, Manhattan, Queens, Brooklyn, or Staten Island)	
4	Project Area	Approximate area of entire project in **acres**	
5	Agency	City agency (DDC, DOT, etc) managing project	
6	Contact First Name	Project manager first name	
7	Contact Last Name	Project manager last name	
8	Design Completion Date	Design completion date, may use date when contract drawings were finalized	
9	Construction NTP Date	Enter date Notice to Proceed (NTP) was issued for construction	
10	Construction Guarantee End Date	Enter date when the contractor guarantee period for SMPs ended	
11	Construction Project Acceptance Date	Enter date when all SMPs were accepted	
12	Construction End Date	Enter construction contract end date	

SMP INFORMATION - SEPARATE REPONSES ARE REQUIRED FOR EACH SMP, ADD ADDITIONAL COLUMNS FOR EACH SMP

No.	Field Name	Field Description	Response <SMP1>
1	SMP ID	Assign a unique ID to each SMP. Alphanumeric only.	
2	SMP Type	Choose from: ROW Precast Porous Concrete, ROW Bioswale with Type D inlet, ROW Infiltration Basin, ROW Bioswale. *If ROW Infiltration Basin, indicate if grass or concrete.	
3	SMP X-Coordinate	X-coordinate of SMP using NAD 1983 State Plane Long Island FIPS 3104 Feet, measured at asset inlet or upstream corner for Porous Concrete	
4	SMP Y-Coordinate	Y-coordinate of SMP using NAD 1983 State Plane Long Island FIPS 3104 Feet, measured at asset inlet or upstream corner for Porous Concrete	
5	SMP BBL	BBL nearest to SMP	
6	Disturbed impervious drainage area of SMP	Disturbed drainage area (in SF) specific to the SMP, as delineated in Chapter 6 - SMP Sizing	
7	SMP storage volume	Storage volume of the SMP as calculated according to Chapter 4	
8	SMP Length	Length of SMP as measured parallel to the curb, in ft	
9	SMP Width	Width of SMP as measured perpendicular to the curb, in ft	
10	SMP Features	Indicate if SMP utilizes stormwater chambers and/or stone columns	
11	SMP Standards Date	Indicate date of ROW GI Standards referenced for project	
12	Soil Depth	For ROW Bioswale (with or without Type D inlet), indicate depth of soil layer - 1.5 ft or 2 ft. Put zero for other SMP Types.	
13	Stone Depth	Indicate depth of stone layer in ft	
14	Volume of Stormwater Chamber	If SMP utilizes stormwater chamber, volume of stormwater chamber in CF. Leave blank if no stormwater chamber.	
15	Number of Stone Columns	If SMP utilizes stone columns, number of stone columns	
16	Depth of Stone Columns	Indicate number of feet below ground surface the stone columns extend to	
17	HDPE Barrier?	Indicate 'Y' or 'N' if SMP utilizes HDPE barrier	
18	Bridge Connection?	Indicate 'Y' or 'N' if SMP is hydraulically connected to another SMP	
19	Curb Type	Choose from: Bluestone, Bluestone Cobblestone, Cobblestone, Concrete, Granite, Granite Cobblestone, None, or Steel-Faced	
20	Tree Latin Name and Cultivar	If SMP has a tree, indicate latin name and cultivar of tree. Otherwise leave blank.	
21	Planting Plan (Wet or Dry)	If SMP is ROW Bioswale (with or without Type D inlet), indicate whether planting plan is for wet sites, dry sites, or combination	
22	Planting Plan (Sun or Shade)	If SMP is ROW Bioswale (with or without Type D inlet), indicate whether planting plan is for sunny, shady, or mixed	
23	Planting Plan (Residential or Industrial)	If SMP is ROW Bioswale (with or without Type D inlet), indicate whether planting plan is for residential or commercial/industrial	
24	Soil Boring ID	ID of soil boring conducted for the SMP	
25	Soil Boring X-Coordinate	x-coordinate of soil boring using NAD 1983 State Plane Long Island FIPS 3104 Feet	
26	Soil Boring Y-Coordinate	y-coordinate of soil boring using NAD 1983 State Plane Long Island FIPS 3104 Feet	
27	Soil Sample Depth at SMP base	Depth of soil sample taken at the SMP base. For ROW Porous Concrete, should be 3'-5' and for all others should be 5'-7'	
28	Soil Sample USCS at SMP base	Based on lab analysis, USCS Soil Classification symbols for soil sample taken at SMP base	
29	Soil Sample % fines at SMP base	Based on lab analysis, % passing No. 200 sieve for soil sample taken at SMP base	
30	Stone Column Soil Sample Depth	Depth of soil sample for which the stone column penetrates into. Leave blank if no stone columns.	
31	Stone Column Soil Sample USCS	Based on lab analysis, USCS Soil Classification symbols for soil sample at stone column depth. Leave blank if no stone columns.	
32	Stone Column Soil Sample % fines	Based on lab analysis, % passing No. 200 sieve for soil sample at stone column depth. Leave blank if no stone columns.	
33	Soil Boring - Groundwater	Enter depth (ft) of groundwater encountered during soil boring. Put "NE" if not encountered.	
34	Soil Boring - Bedrock	Enter depth (ft) of bedrock encountered during soil boring. Put "NE" if not encountered.	
35	Permeability Test ID	ID of permeability test conducted for the SMP	
36	Permeability Test X-Coordinate	x-coordinate of permeability test using NAD 1983 State Plane Long Island FIPS 3104 Feet	
37	Permeability Test Y-Coordinate	y-coordinate of permeability test using NAD 1983 State Plane Long Island FIPS 3104 Feet	
38	Permeability Test Depth	Depth below ground surface of permeability test taken to represent SMP base, in ft	
39	Permeability Test Method	Indicate which permeability test procedure was utilized (falling-head borehole, percolation, or double-ring infiltrometer)	
40	Permeability Test Result	Result of permeability test at SMP base, in inches per hour	

Statement of Substantial Need for Earlier Implementation

I hereby find, pursuant to §1043(f)(1)(d) of the New York City Charter, that there is a substantial need for the implementation, immediately upon their final publication in the City Record, of the rule amending Chapter 19.1 of Title 15 of the Rules of the City of New York and the rule amending Chapter 31 of Title 15 of the Rules of the City of New York. These rules carry out the provisions of Local Law 91 of 2020 and implement a new uniform approach to control of stormwater run-off to protect New York City's sewer system from overflow and the waters of the city from pollution.

Local Law 91 of 2020 amended provisions of the Administrative Code of the City of New York requiring the control of stormwater runoff during and after certain land development activities to extend such controls citywide and to allow the Department of Environmental Protection to make them applicable to smaller projects.

The earlier implementation of the rule amending Chapter 19.1 and the rule amending Chapter 31 is necessary to better address the management and control of discharges and runoff from public and private property. These amendments, which implement a unified stormwater policy for the city, will align the Chapter 19.1 Construction/ Post-Construction permitting program water quality requirements with Chapter 31 stormwater quantity and flow rate requirements. These rules together will allow for reduction in combined sewer overflows and flooding, increase in green space, greater consistency across stormwater programs, and improvements in water quality.

_____/s/_____
Vincent Sapienza
Commissioner

Approved:

____/s/_____
Eric Adams
Mayor

Date: 1/29/22

☛ **f15**

SPECIAL MATERIALS

HEALTH AND MENTAL HYGIENE

■ **NOTICE**

The New York City Department of Health and Mental Hygiene ("DOHMH") proposes to issue an RFP to procure services from 4 to 10 qualified organizations, to provide doula support and related services to pregnant people and families in New York City who are facing social, economic, and racial inequities, and other social determinants of health that affect their health and well-being. The selected organizations will also help build doula capacity in the city through recruitment, training, and certification of residents as doulas.

DOHMH will be hosting a provider conference to obtain feedback and input from the provider community on the Citywide Doula Initiative, at 12:00 P.M. on Friday, February 25, 2022. The conference can be accessed, at the following URL:

https://health-nyc-gov.zoom.us/meeting/register/tZcpdu2tpzwjEt1d-4hyDLh-bd3JuXBw7uKn

Please enter, at least 10 minutes prior, to the conference start to allow for the log-in process.

The Concept Paper will be posted on PASSPort, https://passport.cityofnewyork.us/page.aspx/en/rfp/request_browse_public, from February 18, 2022 through April 4, 2022. DOHMH invites written comments submitted to, RFP@health.nyc.gov, through the end of the posting period. Indicate "Doula Services Concept Paper" in the subject line.

f11-17

HOUSING PRESERVATION AND DEVELOPMENT

■ **NOTICE**

REQUEST FOR COMMENT
REGARDING AN APPLICATION FOR A
CERTIFICATION OF NO HARASSMENT

Notice Date: February 15, 2022

To: Occupants, Former Occupants, and Other Interested Parties

Property: Address	Application #	Inquiry Period
536 West 149th Street, Manhattan	11/2022	January 6, 2019 to Present
352 State Street, Brooklyn	12/2022	January 12, 2019 to Present
120 West 124th Street, Manhattan	13/2022	January 24, 2019 to Present
118 West 124th Street, Manhattan	14/2022	January 24, 2019 to Present

Authority: SRO, Administrative Code §27-2093

Before the Department of Buildings can issue a permit for the alteration or demolition of a single room occupancy multiple dwelling, the owner must obtain a "Certification of No Harassment" from the Department of Housing Preservation and Development ("HPD") stating that there has not been harassment of the building's lawful occupants during a specified time period. Harassment is conduct by an owner that is intended to cause, or does cause, residents to leave or otherwise surrender any of their legal occupancy rights. It can include, but is not limited to, failure to provide essential services (such as heat, water, gas, or electricity), illegally locking out building residents, starting frivolous lawsuits, and using threats or physical force.

The owner of the building identified above has applied for a Certification of No Harassment. If you have any comments or evidence of harassment at this building, please notify HPD at **CONH Unit, 100 Gold Street, 6th Floor, New York, NY 10038** by letter postmarked not later than 30 days from the date of this notice or by an in-person statement made within the same period. To schedule an appointment for an in-person statement, please call **(212) 863-5277 or (212) 863-8211.**

For the decision on the Certification of No Harassment Final Determination please visit our website at, www.hpd.nyc.gov or call (212) 863-8266.

PETICIÓN DE COMENTARIO SOBRE UNA SOLICITUD PARA UN CERTIFICACIÓN DE NO ACOSO

Fecha de notificacion: February 15, 2022

Para: Inquilinos, Inquilinos Anteriores, y Otras Personas Interesadas

Propiedad: Dirección	Solicitud #	Período de consulta
536 West 149th Street, Manhattan	11/2022	January 6, 2019 to Present
352 State Street, Brooklyn	12/2022	January 12, 2019 to Present
120 West 124th Street, Manhattan	13/2022	January 24, 2019 to Present
118 West 124th Street, Manhattan	14/2022	January 24, 2019 to Present

Autoridad: SRO, Código Administrativo §27-2093

Antes de que el Departamento de Edificios pueda conceder un permiso para la alteración o demolición de una vivienda múltiple de ocupación de cuartos individuales, el propietario debe obtener una "Certificación de No Acoso" del Departamento de Preservación y Desarrollo de la Vivienda ("HPD") que indique que tiene no haber sido hostigado a los ocupantes legales del edificio durante un período de tiempo especificado. El acoso es una conducta por parte de un dueño de edificio que pretende causar, o causa, que los residentes se vayan o renuncien a cualquiera de sus derechos legales de ocupación. Puede incluir, entre otros, no proporcionar servicios esenciales (como calefacción, agua, gas o electricidad), bloquear ilegalmente a los residentes del edificio, iniciar demandas frívolas y utilizar amenazas o fuerza física.

El dueño del edificio identificado anteriormente ha solicitado una Certificación de No Acoso. Si tiene algún comentario o evidencia de acoso en este edificio, notifique a HPD al **CONH Unit, 100 Gold Street, 6th Floor, New York, NY 10038** por carta con matasellos no mas tarde que **30 días** después de la fecha de este aviso o por una declaración en persona realizada dentro del mismo período. Para hacer una cita para una declaración en persona, llame al **(212) 863-5277 o (212) 863-8211.**

Para conocer la decisión final sobre la Certificación de No Acoso, visite nuestra pagina web en *www.hpd.nyc.gov o llame al 212-863-8266.*

☛ **f15-24**

REQUEST FOR COMMENT REGARDING AN APPLICATION FOR A CERTIFICATION OF NO HARASSMENT PILOT PROGRAM

Notice Date: February 15, 2022

To: Occupants, Former Occupants, and Other Interested Parties

Property: Address	Application #	Inquiry Period
506 Brook Avenue, Bronx	1/2022	January 24, 2017 to Present

Authority: Pilot Program Administrative Code §27-2093.1, §28-505.3

Before the Department of Buildings can issue a permit for the alteration or demolition of a multiple dwelling on the Certification of No Harassment Pilot Program building list, the owner must obtain a "Certification of No Harassment" from the Department of Housing Preservation and Development ("HPD") stating that there has not been harassment of the building's lawful occupants during a specified time period. Harassment is conduct by an owner that is intended to cause, or does cause, residents to leave or otherwise surrender any of their legal occupancy rights. It can include, but is not limited to, failure to provide essential services (such as heat, water, gas, or electricity), illegally locking out building residents, starting frivolous lawsuits, and using threats or physical force.

The owner of the building identified above has applied for a Certification of No Harassment. If you have any comments or evidence of harassment at this building, please notify HPD at **CONH Unit, 100 Gold Street, 6th Floor, New York, NY 10038** by letter postmarked not later than 45 days from the date of this notice or by an in-person statement made within the same period. To schedule an appointment for an in-person statement, please call **(212) 863-5277 or (212) 863-8211.**

For the decision on the Certification of No Harassment Final Determination please visit our website at, www.hpd.nyc.gov or call (212) 863-8266.

PETICIÓN DE COMENTARIO SOBRE UNA SOLICITUD PARA UN CERTIFICACIÓN DE NO ACOSO PROGRAMA PILOTO

Fecha de notificacion: February 15, 2022

Para: Inquilinos, Inquilinos Anteriores, y Otras Personas Interesadas

Propiedad	Dirección	Solicitud #	Período de consulta
	506 Brook Avenue, Bronx	1/2022	January 24, 2017 to Present

Autoridad: PILOT, Código Administrativo §27-2093.1, §28-505.3

Antes de que el Departamento de Edificios pueda conceder un permiso para la alteración o demolición de una vivienda múltiple de ocupación de cuartos individuales, el propietario debe obtener una "Certificación de No Acoso" del Departamento de Preservación y Desarrollo de la Vivienda ("HPD") que indique que tiene no haber sido hostigado a los ocupantes legales del edificio durante un período de tiempo especificado. El acoso es una conducta por parte de un dueño de edificio que pretende causar, o causa, que los residentes se vayan o renuncien a cualquiera de sus derechos legales de ocupación. Puede incluir, entre otros, no proporcionar servicios esenciales (como calefacción, agua, gas o electricidad), bloquear ilegalmente a los residentes del edificio, iniciar demandas frívolas y utilizar amenazas o fuerza física.

El dueño del edificio identificado anteriormente ha solicitado una Certificación de No Acoso. Si tiene algún comentario o evidencia de acoso en este edificio, notifique a HPD al **CONH Unit, 100 Gold Street, 6th Floor, New York, NY 10038** por carta con matasellos no mas tarde que **45 días** después de la fecha de este aviso o por una declaración en persona realizada dentro del mismo período. Para hacer una cita para una declaración en persona, llame al **(212) 863-5277 o (212) 863-8211.**

Para conocer la decisión final sobre la Certificación de No Acoso, visite nuestra pagina web, en *www.hpd.nyc.gov* ***o llame al (212) 863-8266.***

☛ **f15-24**

MAYOR'S OFFICE OF CONTRACT SERVICES

■ **NOTICE**

Notice of Intent to Issue New Solicitation(s) Not Included in FY 2022 Annual Contracting Plan and Schedule

NOTICE IS HEREBY GIVEN that the Mayor will be issuing the following solicitation(s) not included in the FY 2022 Annual

Contracting Plan and Schedule that is published, pursuant to New York City Charter § 312(a):

Agency: Department of Parks and Recreation (DPR-E)
Description of services sought: Consultant to identify, review, optimize, and document existing and desired workflows of Parks' Forestry Management System (ForMS), and develop a comprehensive business and technical requirements document for programming a new ForMS system on the Salesforce platform.
Start date of the proposed contract: 9/1/2022
End date of the proposed contract: 8/31/2025
Method of solicitation the agency, intends to utilize: MWBE Small Purchase
Personnel in substantially similar titles within agency: None
Headcount of personnel in substantially similar titles within agency: 0

Agency: Department of Parks and Recreation (DPR-E)
Description of services sought: Consultant to identify, review, optimize, and document existing and desired workflows of Parks' Forestry Management System (ForMS), and develop a comprehensive business and technical requirements document for programming a new ForMS system on the Salesforce platform.
Start date of the proposed contract: 9/1/2022
End date of the proposed contract: 8/31/2025
Method of solicitation the agency, intends to utilize: Competitive Sealed Proposal
Personnel in substantially similar titles within agency: None
Headcount of personnel in substantially similar titles within agency: 0

☛ **f15**

Notice of Intent to Issue New Solicitation(s) Not Included in FY 2022 Annual Contracting Plan and Schedule

NOTICE IS HEREBY GIVEN that the Mayor will be issuing the following solicitation(s) not included in the FY 2022 Annual Contracting Plan and Schedule that is published, pursuant to New York City Charter § 312(a):

Agency: Comptroller
Description of services sought: Secondary Sale Advisor
Start date of the proposed contract: 9/1/22
End date of the proposed contract: 8/30/25
Method of solicitation the agency intends to utilize: Negotiated Acquisition
Personnel in substantially similar titles within agency: None
Headcount of personnel in substantially similar titles within agency: 0

☛ **f15**

CHANGES IN PERSONNEL

COMMUNITY COLLEGE (QUEENSBORO)
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
LOPEZ CARRENO	LEONARDO		10102	$20.0000	APPOINTED	YES	11/29/21	464
MARTINEZ	AUSTRIA		04689	$46.4900	APPOINTED	YES	12/06/21	464
MIM	MOMINA	A	10102	$17.0000	APPOINTED	YES	11/19/21	464
NUHA	IBNAT		10102	$17.0000	APPOINTED	YES	12/03/21	464
PAULINO	DANIEL		10102	$17.0000	APPOINTED	YES	11/09/21	464
PERDOMO	CHRISTAL	M	10102	$17.0000	APPOINTED	YES	12/03/21	464
PERSAUD	ARADHNA		04099	$68861.0000	RESIGNED	YES	12/18/21	464
PULLIN	MICHAEL	J	04314	$155000.0000	INCREASE	YES	11/03/21	464
ROSARIO	SAMANTHA	A	10102	$17.0000	APPOINTED	YES	12/01/21	464
SAPUTO	MATTEO	N	10102	$17.0000	APPOINTED	YES	11/19/21	464

COMMUNITY COLLEGE (KINGSBORO)
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ABDULRAZZAK	AMINA		10102	$15.6100	APPOINTED	YES	12/13/21	465
ALVAREZ	CHRISTOP		10102	$17.0000	APPOINTED	YES	12/13/21	465
AMACHEE	ERIC		10102	$15.6100	APPOINTED	YES	12/07/21	465
ARMOUR	LAURA		04099	$62139.0000	INCREASE	YES	11/14/21	465
BEAUBRUN	FARAH	M	04294	$23.0418	APPOINTED	YES	09/12/21	465
BROWNE	ROBERT		90698	$249.2800	RETIRED	NO	12/11/21	465
GRANVILLE-PETER	YONETTE	O	04625	$60.0000	APPOINTED	YES	12/11/21	465
JOSEPH	SASHA	A	04625	$60.0000	APPOINTED	YES	12/13/21	465
MADURAMENTE	ALTHEA		04097	$126774.0000	APPOINTED	YES	12/05/21	465
MCKERNAN	LINDA	S	04099	$81301.0000	APPOINTED	YES	12/12/21	465
OQUENDO	ROBERT		04975	$95638.0000	APPOINTED	YES	12/05/21	465
PEREZ	SAMUEL		04844	$52139.0000	RESIGNED	NO	12/07/21	465
PIETERS	RONEECE		04625	$60.0000	APPOINTED	YES	12/13/21	465
ROCCO	BETH	H	10102	$15.6100	APPOINTED	YES	12/14/21	465
SODEN	PENNY	C	04075	$94707.0000	APPOINTED	YES	12/12/21	465
STEWART	GARFIELD	H	04861	$17.1500	RESIGNED	YES	12/12/21	465
YE	RUI FENG		10102	$15.6100	APPOINTED	YES	12/13/21	465
ZULFIQAR	HAAMID		10102	$15.6100	APPOINTED	YES	12/09/21	465

COMMUNITY COLLEGE (MANHATTAN)
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
BIEN-AIME	JEAN		04625	$45.9000	APPOINTED	YES	12/04/21	466
BRANCH	TIMOTHY	R	04861	$35811.0000	DECEASED	YES	12/01/21	466
CACCIATO	MICHAEL		04802	$37915.0000	RESIGNED	NO	12/06/21	466
CRUZ	BRANDON	R	04861	$32585.0000	RESIGNED	YES	10/15/21	466
MULLEN	PATRICK		04891	$478.0000	APPOINTED	YES	12/12/21	466
PATTERSON	MERCEDES		04841	$15.0000	RESIGNED	YES	12/02/19	466
PAUL	GRACE		10102	$15.6100	APPOINTED	YES	12/13/21	466
PHILIP	ROBERT	K	12200	$36516.0000	RETIRED	NO	11/26/21	466
ROMAN	KARL	S	04841	$15.0000	RESIGNED	YES	01/27/20	466
RULEY	JOAN		10102	$15.6100	APPOINTED	YES	12/13/21	466
SAINT FLEUR	KATHLINE		04841	$33201.0000	APPOINTED	NO	12/12/21	466

CUNY CENTRAL OFFICE
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
BERMAN	JOHN	S	04075	$102017.0000	RETIRED	YES	11/28/21	467

COMMUNITY COLLEGE (HOSTOS)
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ASHOR	MANAR		04844	$36614.0000	TERMINATED	YES	12/09/21	468
CAMPBELL	BRIAN		04915	$508.8000	RESIGNED	NO	11/22/21	468
FELIPE	LIRAZEN	P	10102	$15.6100	RESIGNED	YES	12/18/21	468
GUTIERREZ	ROSSY	E	10102	$15.6100	RESIGNED	YES	12/01/21	468
JOHNSON	KIANNA	S	10102	$15.6100	RESIGNED	YES	11/30/21	468
JOHNSON	SADA	A	10102	$15.6100	APPOINTED	YES	12/07/21	468
KENNEDY	MICHELLE	L	04625	$39.6600	APPOINTED	YES	11/13/21	468
MARTIN	RYAN	T	04689	$46.4900	RESIGNED	YES	11/15/21	468
MOSCAT	MERCEDES	E	04075	$115496.0000	RETIRED	YES	12/05/21	468
ROCK	KEVIN		04841	$31946.0000	RESIGNED	NO	12/07/21	468
SANTIAGO	MIRIAM		04802	$46283.0000	RETIRED	NO	12/07/21	468

COMMUNITY COLLEGE (LAGUARDIA)
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ARREDONDO	CARMENZA		04802	$40527.0000	DECEASED	NO	12/05/21	469
BERNSEN	ZACKARY	H	10102	$17.0000	APPOINTED	YES	12/06/21	469
CHIU	BING-CHU		04877	$72209.0000	RESIGNED	YES	02/10/20	469
CIEGO-LEMUR	SORAYA	L	04689	$45.5800	APPOINTED	YES	10/15/21	469
DEMBY	MAYA	S	10102	$20.0000	APPOINTED	YES	12/01/21	469
DESTIN	DONOVAN	J	10102	$18.0000	APPOINTED	YES	11/29/21	469
DICARLO	DOUGLAS		04689	$45.5800	APPOINTED	YES	10/15/21	469
HANDTE	EMMA	L	04689	$46.4900	APPOINTED	YES	12/06/21	469
LIN	FREDERIC	D	04802	$39485.0000	INCREASE	NO	12/12/21	469
MARTINEZ	MARGARIT		10102	$20.5500	RESIGNED	YES	07/01/21	469
MEZICK	DAVID		04689	$45.5800	APPOINTED	YES	10/15/21	469
ORTIZ	KEITO		04625	$42.8800	APPOINTED	YES	12/08/21	469
RAMOS	MALIA	L	10102	$15.6100	APPOINTED	YES	12/06/21	469
SAYED	SABIBA		10102	$15.6100	APPOINTED	YES	12/06/21	469
SIERRA	VIRGINIA		04802	$39485.0000	INCREASE	NO	12/12/21	469
SIMPSON	BRITNEY		10102	$15.6100	APPOINTED	YES	12/08/21	469
TRIPP	ANDREW	H	10102	$23.6700	APPOINTED	YES	12/06/21	469
VONACKBERSINGH-	AMANDA		04601	$30.0100	APPOINTED	YES	10/31/21	469

HUNTER COLLEGE HIGH SCHOOL
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ABDULRAZZAK	AMINA		04133	$73515.0000	APPOINTED	YES	11/08/21	470
COCO	NICHOLAS	J	04139	$153.1300	APPOINTED	YES	12/06/21	470
OUTLAW	MACHE	M	10102	$15.6100	RESIGNED	YES	12/11/21	470

DEPARTMENT OF EDUCATION ADMIN
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ABRAHAM	JEAN		54504	$37439.0000	RETIRED	YES	12/06/21	740
ACEVEDO	LUZ		56073	$73372.0000	RESIGNED	YES	11/02/21	740
ACOSTA	ALEXIS		13613	$60000.0000	INCREASE	NO	10/01/21	740
ALBRECHT	DOROTHY		54483	$62889.0000	RETIRED	NO	12/04/21	740
ALLY	SHABANA		10026	$107781.0000	INCREASE	NO	12/01/21	740
ALMONTE	MARICELA	R	54483	$43711.0000	APPOINTED	YES	12/01/21	740
ALVAREZ	CARLOS		22427	$88290.0000	RETIRED	NO	12/15/21	740
AMOS	HOPE	S	56057	$43968.0000	RESIGNED	YES	11/08/21	740
ANGUS	DAVINA		10031	$112795.0000	RESIGNED	NO	11/30/21	740
ANTOINE	KAREN	E	95005	$150672.0000	INCREASE	YES	07/02/21	740
AQUINO	PAMELA	E	56057	$38235.0000	APPOINTED	YES	10/31/21	740
AQUINO	XIOMARA	I	56057	$38235.0000	APPOINTED	YES	10/13/21	740
ARELLANO	DANIEL	J	60888	$60990.0000	INCREASE	NO	11/04/21	740
AVILA	LESLYE	G	56057	$38235.0000	APPOINTED	YES	11/28/21	740
AYALA	BRIAN		56057	$43968.0000	APPOINTED	YES	11/28/21	740
AZNAVOORIAN	PATRICIA		56057	$38235.0000	APPOINTED	YES	12/05/21	740
BAEZ	MELANIE	N	56057	$38235.0000	INCREASE	YES	11/28/21	740
BALDWIN	NA TASHA		56057	$47000.0000	APPOINTED	YES	12/07/21	740
BALFOUR	SHAQUANN		10031	$141915.0000	RESIGNED	NO	11/30/21	740
BALGOBIN	FAYEH	J	10080	$79444.0000	INCREASE	NO	07/01/21	740

BARREAU	PIERRE	52304	$47705.0000	TRANSFER	NO	12/05/21	740
BASSON	ERIC	10026	$137750.0000	INCREASE	NO	07/02/21	740
BELL	LATEEFAH	40526	$43365.0000	APPOINTED	NO	12/05/21	740
BELLOMO	DIANE	54504	$37439.0000	APPOINTED	YES	11/14/21	740
BENSIGNOR	MICHELLE	10062	$125961.0000	INCREASE	NO	12/05/21	740
BERMAN	LAURA K	95005	$140444.0000	INCREASE	YES	07/02/21	740
BLUMSTEIN	JEREMY	51221	$73394.0000	APPOINTED	YES	12/02/21	740
BOGDANOV	ANATOLY	10050	$129411.0000	INCREASE	NO	10/31/21	740
BOYD	RYAN	10031	$110419.0000	INCREASE	NO	12/05/21	740
BRADLEY	KINDER	56058	$53961.0000	APPOINTED	YES	11/28/21	740
BRIMAGE	RUBY	56057	$38235.0000	APPOINTED	YES	11/30/21	740
BROWN	ANGELLA M	10124	$67499.0000	INCREASE	NO	07/02/21	740
BROWN	TYLER	56057	$38235.0000	APPOINTED	YES	09/26/21	740
BUGGE	JAKE R	56058	$62055.0000	APPOINTED	YES	11/21/21	740
BURGOS	FRANCES	1006B	$89116.0000	INCREASE	YES	10/31/21	740
CAMACHO GODOY	MONICA	56057	$38235.0000	APPOINTED	YES	12/01/21	740
CAMPBELL	DILLARD T	10026	$120942.0000	INCREASE	NO	11/16/21	740
CAMPORESE	CONCETTA	56057	$43968.0000	RETIRED	YES	12/08/21	740

DEPARTMENT OF EDUCATION ADMIN
FOR PERIOD ENDING 12/23/21

NAME		TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
CAO	CAROL	51221	$75381.0000	APPOINTED	YES	12/07/21	740
CARBONE	STEVEN	12626	$74479.0000	INCREASE	NO	12/01/21	740
CARRASCO	LIDIA M	56056	$32440.0000	APPOINTED	YES	11/28/21	740
CARRION CORDOVA	KATHERIN E	56056	$32440.0000	APPOINTED	YES	10/12/21	740
CASELLA	JOANNA M	56058	$62055.0000	RESIGNED	YES	12/03/21	740
CASHIN	TRACY L	10026	$165512.0000	INCREASE	NO	11/24/21	740
CASIMIR	GENET	50910	$75933.0000	RETIRED	YES	12/03/21	740
CASTILLO	JOVIELIS	56058	$53961.0000	APPOINTED	YES	12/07/21	740
CHARLES	YONETTE A	10080	$88000.0000	INCREASE	NO	12/01/21	740
CHERNOVA	IRINA	40526	$49870.0000	INCREASE	NO	11/21/21	740
CHRISTIAN	DENEVIA J	51221	$73394.0000	APPOINTED	YES	12/07/21	740
CHRISTIAN	RAMONA	70810	$50207.0000	RETIRED	NO	12/01/21	740
CLARKE	DAVID	56056	$37306.0000	RESIGNED	YES	12/02/21	740
CLEMENT	MARVIN	10031	$104265.0000	INCREASE	NO	09/01/21	740
COLLIER	SANDY	56058	$53961.0000	APPOINTED	YES	12/01/21	740
COLON	JOSE M	56057	$43968.0000	APPOINTED	YES	09/12/21	740
CONCEPCION	SHANTEL	56057	$38235.0000	APPOINTED	YES	12/02/21	740
CORADO DERAS	ELISA E	56056	$37306.0000	APPOINTED	YES	11/16/21	740
CORRADO-LODI	CATHERIN	51221	$81186.0000	RETIRED	NO	10/29/21	740
COTTONE	SARA	56057	$56505.0000	RETIRED	YES	12/17/21	740
COX	KYRA	10031	$128745.0000	INCREASE	NO	12/01/21	740
CRANE	STEPHANI	10062	$157776.0000	INCREASE	NO	12/01/21	740
CRESPI	MARK N	1263A	$110965.0000	RETIRED	NO	12/01/21	740
CROSBOURNE STRA	NICOLE	54483	$43711.0000	APPOINTED	YES	12/01/21	740
CRUZ	LISETTE	82976	$87487.0000	INCREASE	NO	07/01/21	740
D'URSO	ARIANA	51221	$73394.0000	APPOINTED	YES	12/09/21	740
DAVILLA	JENNIFER	10031	$122950.0000	INCREASE	NO	09/01/21	740
DE LA ROSA	NOEL	10062	$110419.0000	RESIGNED	NO	12/01/21	740
DEJESUS	ELVIRA	56057	$38235.0000	APPOINTED	YES	11/30/21	740
DENT	CHA-NAI A	56057	$43968.0000	APPOINTED	YES	12/08/21	740
DESCHAMPS	KATHERIN	56057	$43968.0000	APPOINTED	YES	11/28/21	740
DIAZ ROBLES	ODALIS	56057	$43968.0000	APPOINTED	YES	11/14/21	740
DIMANCHE	NIKKI R	10031	$184539.0000	INCREASE	NO	07/01/21	740
DONEGAN	DONNA D	56057	$50011.0000	RETIRED	YES	11/24/21	740
DREPAUL	SABETA M	60888	$72708.0000	INCREASE	NO	12/01/21	740
DUDEK	OLIVIA	51221	$73394.0000	APPOINTED	YES	11/21/21	740
DURAN	RICARDO	10062	$162977.0000	INCREASE	NO	07/01/21	740
EDWARDS	ANGELA	10025	$138212.0000	INCREASE	NO	07/01/21	740
EICHELE	PAUL	56058	$67019.0000	APPOINTED	YES	11/28/21	740
EICHELE	PAUL	56058	$67019.0000	APPOINTED	YES	12/01/21	740
ELKAYAM	BARRY	10026	$165585.0000	INCREASE	NO	07/01/21	740
ENGLES	ODESSA	56057	$38235.0000	APPOINTED	YES	12/08/21	740
ESPINAL	KASSANDR	56057	$44000.0000	APPOINTED	YES	12/03/21	740
ESPINAL PEREZ	JOSE A	90702	$290.0000	RESIGNED	YES	12/05/21	740
EVANS	DANIELLE	56058	$72000.0000	INCREASE	YES	12/05/21	740
FERNANDEZ	ALONDRA	56057	$38235.0000	APPOINTED	YES	12/02/21	740
FERNANDEZ	ELIZABET	56057	$51964.0000	RESIGNED	YES	09/13/21	740
FEUER	JOSHUA	95005	$133000.0000	INCREASE	YES	12/01/21	740
FEVOLA	LOUIS	91697	$108060.0000	INCREASE	YES	07/01/21	740
FIORENTINO	JESSICA	56073	$53820.0000	APPOINTED	YES	11/28/21	740
GANTZ	TONI	95005	$184540.0000	INCREASE	YES	12/01/21	740

DEPARTMENT OF EDUCATION ADMIN
FOR PERIOD ENDING 12/23/21

NAME		TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
GARNER	ISABELLE	56057	$53241.0000	RETIRED	YES	10/01/21	740
GIBSON	SHONA	10026	$185337.0000	INCREASE	NO	12/01/21	740
GILGEOUS	ANDREA	56057	$51315.0000	RESIGNED	YES	11/24/21	740
GOLDBERG	JEFFREY	51221	$80730.0000	RESIGNED	NO	12/08/21	740
GONZALES	CURTIS A	56056	$32440.0000	APPOINTED	YES	12/08/21	740
GOTTLIEB	MANDY	56058	$72000.0000	APPOINTED	YES	12/05/21	740
GRAHAM	JULIA	56057	$38235.0000	APPOINTED	YES	12/05/21	740
GRANT	ANNIE	10251	$58198.0000	RETIRED	NO	12/01/21	740
GRANT	ARIEL	56058	$62055.0000	INCREASE	YES	11/21/21	740
GREEN	LARYSSA	51221	$73394.0000	APPOINTED	YES	12/05/21	740
GRIFFIN	PAMELA	56057	$46340.0000	RESIGNED	YES	12/05/21	740
GRIFFIN	TAYLOR	56073	$61893.0000	APPOINTED	YES	11/28/21	740
GROSSMAN	KEITH D	10031	$129918.0000	INCREASE	NO	07/01/21	740
GUERRA	CHARITY M	95005	$184498.0000	INCREASE	YES	12/01/21	740
GUIRGUIS	ATHNASIO	10015	$133250.0000	INCREASE	NO	07/01/21	740
GULIAN	TRICIA	51221	$73394.0000	APPOINTED	YES	12/09/21	740
HANSEN	KATIE	10062	$136147.0000	INCREASE	NO	09/09/21	740
HARRIS JR	CLIFFORD	52311	$58940.0000	RESIGNED	YES	12/05/21	740
HE	VERONICA	51222	$75381.0000	APPOINTED	YES	10/24/21	740
HERRERA	KAROLYN	56057	$38235.0000	APPOINTED	YES	12/08/21	740
HERRERA	ODALIS	56056	$32440.0000	APPOINTED	YES	11/28/21	740
HEUMAN-HEENEY	KATHARIN T	51221	$80270.0000	RESIGNED	NO	10/28/21	740
HILL	ZENAIDA E	56057	$21847.0000	APPOINTED	YES	12/09/21	740
HOFFMAN	BEATRICE L	B0087	$99102.0000	RESIGNED	YES	12/01/21	740
HORSFORD	JOSHUA J	06745	$111272.0000	INCREASE	YES	11/14/21	740
HOUSE	LAUREN D	1263A	$107259.0000	INCREASE	NO	11/28/21	740
HOWARD	TEMESIA	56057	$50000.0000	RESIGNED	YES	12/07/21	740
HUNT	PATRICIA	60888	$64109.0000	RESIGNED	NO	11/28/21	740
IACONO	ANTHONY F	56056	$32440.0000	APPOINTED	YES	12/10/21	740
IBRAHIM	NASSER A	12626	$74479.0000	INCREASE	NO	12/01/21	740
ISLES	NAOMI H	56056	$32440.0000	APPOINTED	YES	11/28/21	740
JACKSON	ALLONA C	54483	$43711.0000	APPOINTED	YES	12/01/21	740
JACKSON	KIM I	10080	$130000.0000	INCREASE	NO	12/01/21	740
JAGROOP	AMANDA	56073	$61893.0000	APPOINTED	YES	12/09/21	740
JAMISON	SYLVIA M	10026	$144918.0000	INCREASE	NO	12/01/21	740
JOHNSON	CANDICE R	56058	$62055.0000	INCREASE	YES	10/24/21	740
JOHNSON	ONIMEL	10080	$118602.0000	INCREASE	NO	12/01/21	740
JOHNSON	SHAQUANA C	56057	$38235.0000	APPOINTED	YES	10/21/21	740
JORDAN	JUAN CAR	10050	$155000.0000	INCREASE	NO	09/26/21	740
JOUDEH	DEIMA	56057	$50000.0000	APPOINTED	YES	12/05/21	740
JUSTINIANO	DANIELLE	56073	$53820.0000	APPOINTED	YES	11/28/21	740
KALEMKERIAN	SARAH	10031	$121461.0000	INCREASE	NO	08/01/21	740
KHO	MUILANG	54512	$38770.0000	APPOINTED	YES	11/07/21	740
KNIGHT	AYANA E	5450E	$42746.0000	RESIGNED	YES	12/12/21	740
KOCCAZ	BERK L	56057	$63628.0000	APPOINTED	YES	11/14/21	740
KOLKER	DANIELLE H	10026	$125000.0000	INCREASE	NO	11/21/21	740
KUNSCH	BRETT	10031	$118418.0000	RESIGNED	NO	12/01/21	740
LA BELLA	MERYL	10022	$140155.0000	INCREASE	NO	09/08/21	740
LABBAN	DANYA	40542	$168172.0000	INCREASE	YES	12/01/21	740
LALLI	DOMINIQU	10033	$143758.0000	INCREASE	NO	10/31/21	740
LAM	SIU CHIN	40493	$63380.0000	TRANSFER	NO	12/05/21	740

DEPARTMENT OF EDUCATION ADMIN
FOR PERIOD ENDING 12/23/21

NAME		TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
LAMPITT	COLLIN	56058	$62055.0000	INCREASE	YES	10/31/21	740
LANEHART	SHARIE M	10200	$89488.0000	RESIGNED	YES	12/04/21	740
LARINO	HELEN	56057	$38235.0000	APPOINTED	YES	11/23/21	740
LATCHOLIA	LISA A	56056	$32440.0000	APPOINTED	YES	12/05/21	740
LATINA	JOSEPH	54747	$100811.0000	INCREASE	YES	11/07/21	740
LAU	CINDY	56057	$38235.0000	APPOINTED	YES	10/31/21	740
LEE	YEE MAN	56058	$53961.0000	APPOINTED	YES	12/01/21	740
LEES	ILENE A	95005	$169300.0000	INCREASE	YES	12/01/21	740
LENTINI	ANNETTE M	56057	$58375.0000	RETIRED	YES	11/05/21	740
LEROY	WILLIAM	82901	$124009.0000	INCREASE	YES	07/02/21	740
LEVITT	BRYNA	51221	$75381.0000	INCREASE	NO	12/14/21	740
LISS	EMMY	10062	$157776.0000	INCREASE	YES	12/01/21	740
LLOYD	ROCKELLE S	10026	$134500.0000	INCREASE	NO	10/31/21	740
LUIS	MARIA J	56057	$38235.0000	APPOINTED	YES	12/03/21	740
MAANI	MAY	1006B	$100599.0000	RESIGNED	YES	11/30/21	740
MAHABIR	SUNITA H	82901	$126631.0000	INCREASE	YES	07/01/21	740
MAHLER	AMY	56058	$62055.0000	RESIGNED	YES	12/02/21	740
MARCUS	KRISTEN	56057	$38235.0000	APPOINTED	YES	11/28/21	740
MARO	KATHERIN A	10062	$146415.0000	INCREASE	NO	09/01/21	740
MARTINEZ	HECTOR D	34205	$77921.0000	RESIGNED	NO	12/05/21	740
MARZIGLIANO	NICHOLAS	10080	$80968.0000	INCREASE	NO	11/16/21	740
MAXWELL	DION M	56058	$62055.0000	INCREASE	YES	11/14/21	740
MCCABE	MEISHENG A	56057	$43968.0000	RETIRED	YES	12/08/21	740
MCDERMOTT	MEREDITH C	10031	$134344.0000	INCREASE	NO	07/01/21	740
MCGUINNESS	JOSHUA	82901	$128037.0000	INCREASE	YES	07/01/21	740
MCKENZIE-SIMMS	KALIMA	54747	$97850.0000	APPOINTED	YES	11/28/21	740
MCLOUGHLIN	CHRISTOP	92071	$397.6000	RETIRED	YES	11/25/21	740
MCNEAL	DENISE	54503	$35594.0000	RETIRED	YES	11/01/21	740
MEDINA	JANET E	56057	$48474.0000	RESIGNED	YES	11/15/21	740
MELENDEZ	JASON K	56057	$43968.0000	APPOINTED	YES	10/31/21	740
MENDOZA	JOEL	10031	$164000.0000	INCREASE	NO	10/31/21	740
MENDOZA	SERGIO	12626	$74479.0000	INCREASE	NO	12/01/21	740
MENEZ	MAYAH A	56058	$53961.0000	APPOINTED	YES	11/28/21	740
MENUAL	RAMONA	54503	$30425.0000	RESIGNED	YES	11/18/21	740
MERCEDES	FRANCISC A	54503	$30425.0000	RETIRED	YES	12/08/21	740
MIDDLER	TODD G	40871	$133514.0000	INCREASE	YES	07/02/21	740
MIGLIACCIO	MICHELA	56057	$48000.0000	APPOINTED	YES	12/05/21	740
MILLER	JAY G	10026	$148843.0000	INCREASE	NO	07/01/21	740
MINARCIK	EMILY	95005	$176241.0000	INCREASE	YES	12/01/21	740
MINHAS	NITIN	10050	$145000.0000	INCREASE	NO	10/31/21	740
MOLINARI	NADIA A	82976	$141500.0000	INCREASE	NO	10/31/21	740
MONTANEZ	STEPHANI	56057	$43968.0000	APPOINTED	YES	11/30/21	740
MORALES	CINTIA D	56057	$38235.0000	APPOINTED	YES	11/30/21	740
MORINGLANECRUZ	CAROL	56058	$62055.0000	INCREASE	YES	11/21/21	740
MUHAMMAD	REUBEN	13613	$75871.0000	RETIRED	NO	12/09/21	740
MUNNANGI	RAJYALAK	10050	$166226.0000	INCREASE	NO	10/31/21	740
MYERS	ELIANNE E	56058	$62055.0000	RESIGNED	YES	09/09/21	740
NAHIAN	MIKAIL	82901	$112768.0000	INCREASE	YES	07/02/21	740
NEWTON	REMIGIO A	56057	$38235.0000	APPOINTED	YES	12/02/21	740
O'HANLON	KATHLEEN	13304	$130000.0000	INCREASE	YES	09/29/21	740
ORENGO	LUANA C	56057	$50000.0000	APPOINTED	YES	11/24/21	740

DEPARTMENT OF EDUCATION ADMIN
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
OUTLER	LETICIA		10080	$98646.0000	INCREASE	NO	07/01/21	740
OWENS	CARLY		10200	$89488.0000	INCREASE	YES	11/21/21	740
PALADINO	MICHELLE		10062	$145720.0000	INCREASE	NO	09/09/21	740
PATNETT	CRYSTAL		56056	$32440.0000	APPOINTED	YES	11/28/21	740
PELLERANO	ELVIN		13611	$92986.0000	INCREASE	NO	10/03/21	740
PENA	ERICA		56056	$32440.0000	APPOINTED	YES	11/14/21	740
PENA	VERONICA		56058	$62055.0000	INCREASE	YES	11/14/21	740
PENNINGTON	NATALIE	S	10062	$126420.0000	INCREASE	YES	12/01/21	740
PEPE	GRACE		10062	$163465.0000	RETIRED	NO	12/13/21	740
PESANTES	MARTHA	C	56058	$62055.0000	INCREASE	YES	11/21/21	740
PIROS	NINOSKA		10062	$150263.0000	INCREASE	NO	12/01/21	740
PRATA	JOAN	M	51221	$81186.0000	RETIRED	NO	12/01/21	740
PROTO	JOHN	A	91915	$369.5300	RETIRED	NO	12/13/21	740
PROUDNIKOV	INNA		10065	$91917.0000	INCREASE	YES	11/16/21	740
QAISER	JUNAID		10031	$139335.0000	INCREASE	NO	12/01/21	740
QUATTROPANI	PAUL		10065	$96577.0000	INCREASE	NO	11/16/21	740
RAJU	THOMAS		13632	$85372.0000	APPOINTED	NO	01/27/21	740
RAMDAT	ROMANEY	D	60888	$55856.0000	INCREASE	NO	11/21/21	740
RAMDIN	DARWIN		10026	$129500.0000	INCREASE	NO	07/01/21	740
RAMIREZ-CRESPO	LEONOR	M	56057	$38235.0000	APPOINTED	YES	11/28/21	740
RAMNATH	ANIL	B	91697	$103386.0000	INCREASE	YES	07/01/21	740
RAMPHAL	PARMANAN		91697	$144500.0000	INCREASE	YES	07/01/21	740
REA	RAVEN		56058	$72100.0000	RESIGNED	YES	12/05/21	740
REIMELS	BRIAN	J	95005	$130741.0000	INCREASE	YES	07/02/21	740
REYES	CARMEN	Y	56057	$57000.0000	RESIGNED	YES	12/13/21	740
RICCIARDI	MARIA	I	54513	$36676.0000	RESIGNED	YES	12/05/21	740
RICHARDS	DEVAN		51221	$73394.0000	APPOINTED	YES	12/01/21	740
RIGGS	DAMI		56057	$38235.0000	APPOINTED	YES	11/05/21	740
RINCON	VICTOR	L	56057	$38235.0000	RESIGNED	YES	12/03/21	740
RIOS LUA	JOSE	A	10033	$115632.0000	INCREASE	NO	11/19/21	740
RIVERA	JUDITH		10031	$158697.0000	INCREASE	NO	10/01/21	740
ROBERTS	BRENDA		56058	$72055.0000	APPOINTED	YES	11/07/21	740
ROBLES PEREZ	ELIZABET		56058	$63296.0000	APPOINTED	YES	11/21/21	740
RODRIGUEZ	AMANDA	A	54483	$50267.0000	INCREASE	YES	11/21/21	740
RODRIGUEZ	ARAMIS		91697	$138400.0000	INCREASE	YES	07/01/21	740
RODRIGUEZ	BLANCA	B	56057	$38235.0000	APPOINTED	YES	12/05/21	740
RODRIGUEZ	GENESIS	A	56057	$38235.0000	APPOINTED	YES	11/30/21	740
RODRIGUEZ	YAHAIRA		56058	$62055.0000	INCREASE	YES	11/21/21	740
RODRIGUEZ	YANIZA	M	56056	$32440.0000	APPOINTED	YES	11/28/21	740
ROFAIEL	EVELIN	F	56057	$44000.0000	APPOINTED	YES	12/08/21	740
ROSS	RICHARD		10031	$185000.0000	INCREASE	NO	12/01/21	740
RUDOLPH	MICHELE	L	51221	$73394.0000	APPOINTED	YES	12/05/21	740
SABATER-GONZALE	VALEEN		56057	$38235.0000	RESIGNED	YES	10/22/21	740
SAMMONS CHEN	JODI	E	10062	$140625.0000	INCREASE	NO	11/14/21	740
SANTANA	ELIZABET		56057	$47507.0000	RESIGNED	YES	12/05/21	740
SANTANA	FABIAN	M	56073	$53820.0000	APPOINTED	YES	11/28/21	740
SCHOLZ	TAOCHING		56057	$43968.0000	APPOINTED	YES	11/24/21	740
SERHAN	MONICA		56058	$53961.0000	APPOINTED	YES	12/01/21	740
SEVOS	CATHERIN		56058	$75197.0000	RETIRED	YES	10/20/21	740
SHAMES	ALEXANDR		95005	$133000.0000	INCREASE	YES	12/01/21	740
SIMOES	DANIEL	R	10026	$129500.0000	INCREASE	NO	12/01/21	740

DEPARTMENT OF EDUCATION ADMIN
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
SOLAGES	XAVIER	A	60888	$40345.0000	RESIGNED	NO	11/23/21	740
SOLIMANDO	KAREN		95005	$160120.0000	INCREASE	YES	12/01/21	740
SOLON	NEAL	P	95005	$133000.0000	INCREASE	YES	12/01/21	740
SPIES	DELMIS		56057	$53968.0000	APPOINTED	YES	11/07/21	740
SPINELLI	DANA	L	10026	$98646.0000	INCREASE	NO	07/02/21	740
STEPHENS	SAMIRA		56057	$43968.0000	RESIGNED	YES	09/09/21	740
STEVENSON	TERENCE	J	95005	$145363.0000	INCREASE	YES	07/01/21	740
STORMER	ALEA		82901	$128742.0000	INCREASE	YES	07/01/21	740
SUCRE	NICOLE		50910	$71049.0000	RESIGNED	YES	12/01/21	740
SUDOL	TEIJA	I	10031	$150263.0000	INCREASE	NO	12/01/21	740
SULLIVAN	ROSEMARI		56056	$37306.0000	APPOINTED	YES	12/07/21	740
SULTANA	TANIA		56057	$48000.0000	APPOINTED	YES	11/28/21	740
THOMAS	DEJAUNIQ		1263A	$97508.0000	INCREASE	NO	11/23/21	740
THOMAS	LOUISE		1003B	$101027.0000	RETIRED	NO	12/01/21	740
TORRES	ZAIRA		56058	$53961.0000	APPOINTED	YES	12/01/21	740
TSIHLIS	TARALYNN		10031	$121461.0000	INCREASE	NO	07/02/21	740
TUCKER	NADEA	A	56057	$38235.0000	APPOINTED	YES	10/03/21	740
ULMAN	JULIET	O	10033	$119000.0000	INCREASE	NO	07/01/21	740
VANDERHORST	SHAQWAN	E	10031	$120000.0000	INCREASE	NO	07/01/21	740
VARGHESE	THOMAS		40526	$49870.0000	INCREASE	NO	11/21/21	740
VAZQUEZ	MILDRED		56057	$38235.0000	APPOINTED	YES	12/07/21	740
VILLANUEVA	DEBORAH		56057	$50190.0000	RESIGNED	YES	11/07/21	740
VISHNEVA	KATHERIN		31047	$46118.0000	RESIGNED	YES	12/12/21	740
VISTA	MICHAEL	R	10050	$143670.0000	INCREASE	NO	10/31/21	740
VOROS	MARK		82901	$139815.0000	INCREASE	YES	07/01/21	740
WALKER	SHANEE		1263A	$78751.0000	INCREASE	NO	10/14/21	740
WANG	SUSAN	X	56057	$48968.0000	RESIGNED	YES	11/28/21	740
WARD	DAVID	C	91697	$133250.0000	INCREASE	YES	07/01/21	740
WILLIAMS	GERI		10251	$49452.0000	DECEASED	NO	04/20/17	740
WILSON	OVELLA		10031	$145000.0000	INCREASE	NO	09/01/21	740
WINSTONE	JONATHAN	R	10026	$117173.0000	INCREASE	NO	09/09/21	740
WONG BLANCHET	SANDRA	L	56057	$38235.0000	APPOINTED	YES	12/03/21	740
WU	XIAN	X	13631	$94982.0000	RESIGNED	NO	11/17/21	740
WURZEL	JULIE	A	52311	$61485.0000	RESIGNED	YES	12/05/21	740
YACHIR	THILELI		40491	$50535.0000	APPOINTED	YES	12/05/21	740
YE	WENQIN		40510	$63525.0000	RESIGNED	NO	11/30/21	740
ZEMOUCHE	DIHYA	K	40491	$55840.0000	APPOINTED	YES	11/07/21	740
ZEPEDA	CARMEN		51221	$75381.0000	APPOINTED	NO	12/07/21	740
ZIMNIS	MARIA		1003B	$116388.0000	PROMOTED	NO	11/28/21	740
ZITO	ALEXANDR		56058	$62676.0000	APPOINTED	YES	12/05/21	740
ZITRIN	ARIEL	S	95005	$160352.0000	INCREASE	YES	12/01/21	740
ZOTOS	JASON		10038	$122950.0000	INCREASE	YES	07/01/21	740

DEPARTMENT OF PROBATION
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
AMOSU	OLUWASAN	B	51810	$52824.0000	APPOINTED	NO	11/28/21	781
ATHAR	ARFAA		51801	$40963.0000	APPOINTED	YES	11/29/21	781
BACKUS	RUSSELL		51810	$52824.0000	APPOINTED	NO	11/28/21	781
CASE	KAYA	J	51801	$47108.0000	INCREASE	YES	11/28/21	781
DELIMA	WILLIAM	G	51801	$40963.0000	APPOINTED	YES	11/29/21	781
DORSETT	LETICIA	Y	51810	$58566.0000	RESIGNED	NO	12/17/21	781
JONES	MICHAEL		51810	$45934.0000	APPOINTED	NO	11/28/21	781
LORA	YARITZA		51801	$40963.0000	APPOINTED	YES	11/29/21	781
LYONS	PATRICIA	B	51860	$70879.0000	RESIGNED	YES	12/10/21	781
LYONS	PATRICIA	B	51810	$65598.0000	RESIGNED	NO	12/10/21	781
MARTIN	BRITTANY	S	51810	$45934.0000	APPOINTED	NO	11/28/21	781
PALISENO	AMANDA		13603	$5.3000	RESIGNED	YES	07/02/00	781
PAYNE	KENYA	L	51810	$45934.0000	APPOINTED	NO	11/28/21	781
SEALY	DESIREA	L	51810	$52824.0000	RESIGNED	NO	12/14/21	781

DEPARTMENT OF BUSINESS SERV.
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ANSARI	NAIMA		12627	$106167.0000	INCREASE	YES	09/08/19	801
ARAUJO	DAVID		13611	$75000.0000	INCREASE	NO	10/31/21	801
KEYSER	CYNTHIA	K	10009	$167298.0000	RESIGNED	NO	07/09/21	801
WILLIAMS	CHRISTIN		10209	$15.0000	RESIGNED	YES	12/01/21	801

HOUSING PRESERVATION & DVLPMNT
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
AMIN	SYED	M	34202	$57078.0000	APPOINTED	YES	12/12/21	806
BACCHUS	ARSHAD	S	22507	$92700.0000	RESIGNED	YES	12/15/21	806
BAHAR	MOSUME		56057	$38333.0000	RESIGNED	YES	11/10/21	806
BOUZY	ELVITA		56057	$38333.0000	RESIGNED	YES	11/27/21	806
BUKHGALTER	LEONID		10015	$123357.0000	RETIRED	NO	10/01/21	806
CAPHART	GARDEA	T	10026	$137410.0000	APPOINTED	YES	12/05/21	806
CAPP	JOHN		34202	$78429.0000	RETIRED	NO	12/02/21	806
CARCANA	DANIEL		1002A	$105000.0000	INCREASE	NO	12/05/21	806
CATAPANO	NICHOLAS	T	40910	$65000.0000	APPOINTED	YES	12/05/21	806
CHERRY	MARGARET	S	22507	$72100.0000	RESIGNED	YES	12/15/21	806
CRAWFORD	ASHLEY	N	56058	$66171.0000	RESIGNED	YES	12/09/21	806
DARBY	LANCE	W	56057	$38333.0000	RESIGNED	YES	10/16/21	806
DENNIS	FLORENCE		56057	$32320.0000	RESIGNED	YES	09/06/09	806

HOUSING PRESERVATION & DVLPMNT
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
DEWITT	MONICA	L	56058	$78989.0000	RESIGNED	YES	01/19/21	806
EDWARDS	MAGGIE		10251	$40263.0000	RETIRED	NO	12/16/21	806
FOSTER	DONOVAN	C	56057	$44083.0000	APPOINTED	YES	12/05/21	806
GARCIA	GLEYMY	A	56058	$73000.0000	APPOINTED	YES	12/12/21	806
HAMIM HUSAIN	GAZI	M	34202	$57078.0000	APPOINTED	YES	12/12/21	806
HASAN	RASHEDUL		34202	$57078.0000	APPOINTED	YES	12/12/21	806
HEWITT	FRANZ	A	1005A	$98755.0000	RESIGNED	NO	12/09/21	806
HEWITT	LATESHA		56057	$44083.0000	RESIGNED	YES	11/30/21	806
HOUSE	LORRAINE		56057	$56459.0000	RETIRED	YES	12/16/21	806
INSHAN	MOHAMED	E	34202	$57078.0000	APPOINTED	YES	12/05/21	806
KHAN	LIAKAT	A	40510	$57750.0000	TERMINATED	NO	12/17/21	806
LINCOLN	AMANI	T	56057	$38333.0000	APPOINTED	YES	12/05/21	806
LUCAS	RASHEED	A	22122	$63489.0000	APPOINTED	NO	12/05/21	806
MANUH	ABA	T	10251	$40220.0000	RETIRED	NO	12/07/21	806
MAYFIELD	SHAMEKA	S	56058	$54100.0000	APPOINTED	YES	12/05/21	806
MCLUNE	ABIOLA	N	56057	$38333.0000	APPOINTED	YES	12/12/21	806
MITCHELL	CHANTELL	C	95538	$125000.0000	INCREASE	YES	11/28/21	806
MOMBRUN	GABRIEL		22507	$77240.0000	RESIGNED	NO	08/29/21	806
MURPHY	COLIN	S	22507	$90000.0000	RESIGNED	YES	11/27/21	806
OBRUSNIK	AGATA		22122	$74989.0000	APPOINTED	NO	12/05/21	806
PAGE	ANGUS	R	22507	$90000.0000	INCREASE	NO	10/31/21	806
PERSAUD	RADHIKA		56057	$38333.0000	RESIGNED	YES	11/04/21	806
PIMENTEL FRANCO	DANIELA		56058	$67192.0000	APPOINTED	YES	12/05/21	806
PINEIRO-VILLALB	GIOVANNI		22122	$74989.0000	APPOINTED	NO	12/05/21	806
PINNIX	DORKA	S	22507	$77921.0000	APPOINTED	NO	10/31/21	806
RASHID	MD MAMUN	U	34202	$57078.0000	APPOINTED	YES	12/12/21	806
RICCI	NINA	M	22507	$77921.0000	APPOINTED	NO	10/31/21	806
SAFONOVA	LIA		34202	$88020.0000	RETIRED	NO	12/08/21	806
SEYUM	ABEL	S	56057	$38333.0000	APPOINTED	YES	12/12/21	806
SHENTON	BRYANA	M	10025	$76270.0000	APPOINTED	NO	10/24/21	806
SWARTWOOD	MERRAN	E	22122	$65208.0000	APPOINTED	NO	12/05/21	806
TIRADO	RAFAEL		31670	$61598.0000	RETIRED	NO	10/13/21	806
WEYEL	JENNY	M	22507	$77921.0000	APPOINTED	NO	10/31/21	806

WIGGINS	TINA		56057	$38333.0000	APPOINTED	YES	12/12/21	806
WYATT	DARRELL	T	56057	$38333.0000	APPOINTED	YES	12/12/21	806

DEPARTMENT OF BUILDINGS
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
AKIF	ZAHIN		10209	$17.3000	RESIGNED	YES	11/19/21	810
ALDORANDO	DESIREE	J	31622	$70161.0000	INCREASE	YES	12/12/21	810
ARFANIS	JEANNE		13632	$94244.0000	APPOINTED	NO	12/12/21	810
BOUCHOUR	SOUMIA		10209	$15.5000	APPOINTED	YES	12/14/21	810
CARDONA	CARLOS	A	31643	$72268.0000	INCREASE	YES	11/14/21	810
D'ADAMO	TRACEY	A	1002C	$122588.0000	INCREASE	NO	11/28/21	810
DELVALLE	NICKOLAI		31622	$66388.0000	RESIGNED	NO	11/16/21	810
DUBAJ	MARCIN		31643	$72268.0000	INCREASE	YES	11/14/21	810
EDELMAN	ALENA		22405	$65000.0000	APPOINTED	YES	12/12/21	810
FRIAS FUENTES	MARCO	A	10015	$139000.0000	INCREASE	NO	12/12/21	810
GILL	ADRIAN	L	20315	$105318.0000	RESIGNED	NO	10/12/21	810
GRANT	RONDELL	E	31622	$70161.0000	INCREASE	YES	12/12/21	810
GUERRA	ANTHONY	F	22405	$69826.0000	RESIGNED	NO	10/14/21	810
HARARY	CHARLES		30087	$63228.0000	APPOINTED	YES	12/12/21	810
HENRY	KEITH	D	31622	$65087.0000	RETIRED	NO	12/10/21	810
HOUMITA	MOURAD		31622	$70161.0000	INCREASE	YES	12/12/21	810
JAGARNAUTH	SHARMILA	J	30087	$72712.0000	RESIGNED	YES	12/12/21	810
JULSAITOV	NAILYA		40502	$74585.0000	APPOINTED	YES	12/12/21	810
LEWIS	FITZROY	V	31622	$52000.0000	RESIGNED	YES	12/10/21	810
MASRY	GINA		31622	$61800.0000	APPOINTED	YES	12/05/21	810
MITCHELL	KESTON	J	31629	$65087.0000	RESIGNED	NO	11/30/21	810
MUNOZ	EVELYN		10251	$37777.0000	RESIGNED	YES	12/12/21	810
NAQVI	SYED	A	22410	$80892.0000	INCREASE	YES	10/31/21	810
ROBINSON	HEATH	M	31643	$72268.0000	INCREASE	YES	11/14/21	810
ROMAN	KENNETH	J	10124	$80639.0000	RESIGNED	NO	12/12/21	810
SACKLOW	ROBERT		31622	$84002.0000	RETIRED	NO	12/09/21	810
SCHWALBE	GABRIELL	R	30086	$71757.0000	RESIGNED	YES	12/13/21	810
SHEVORYKIN	DENIS		31622	$70161.0000	INCREASE	YES	12/12/21	810
SOKOLOWSKI	MICHAL		31622	$70161.0000	INCREASE	YES	12/12/21	810
TAVAREZ	JUAN	E	31629	$65087.0000	RESIGNED	NO	12/10/21	810
TUPI	ILIR		31629	$70161.0000	INCREASE	NO	12/12/21	810
VAR	ASAD	U	31622	$80400.0000	INCREASE	YES	12/12/21	810
VARGHESE	AMOL	P	31622	$61800.0000	APPOINTED	YES	12/05/21	810
WALL	JACOB	R	31622	$61800.0000	APPOINTED	YES	12/12/21	810
WILLIAMS	GLENN	E	31622	$70436.0000	RETIRED	YES	12/07/21	810

DEPT OF HEALTH/MENTAL HYGIENE
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ABITBOL	EVAN		30087	$76000.0000	APPOINTED	YES	12/12/21	816
ALCOS	ALELI	B	51022	$35.0200	RESIGNED	NO	11/10/21	816
ANDERSON	DENEISHA	N	31105	$50000.0000	APPOINTED	NO	12/05/21	816
ANTOINE	NADEGE		51022	$35.0200	APPOINTED	YES	09/19/21	816
ASSANAH-DEANE	TRACEY	L	21744	$86830.0000	INCREASE	YES	11/28/21	816
BACULIMA	MARILYN	C	10209	$18.3000	RESIGNED	YES	12/15/21	816
BASORA	CARLOS	L	70817	$55853.0000	RESIGNED	NO	12/08/21	816
BELFON	KIZZI	A	21744	$97138.0000	RESIGNED	YES	12/03/21	816
BELLIA	ALEXANDE	F	51310	$31.2300	RESIGNED	YES	12/18/21	816
BHUIYAN	SYED	M	56058	$62215.0000	RESIGNED	YES	12/04/21	816
BROWN	TIFFANY	M	51611	$72000.0000	RESIGNED	YES	09/25/21	816
BUTINDARI	MICHELLE		83052	$66770.0000	RESIGNED	YES	12/08/21	816
CHARLES	DOREEN	A	51195	$21.4100	APPOINTED	NO	12/05/21	816
CHENG	KEN		13633	$100000.0000	APPOINTED	YES	12/12/21	816
CHEUNG	CHI HANG		21514	$90000.0000	APPOINTED	YES	12/05/21	816
CLARK	LOIS		56057	$50599.0000	APPOINTED	YES	12/12/21	816
CLARKE	MARIE	A	56057	$50000.0000	RETIRED	YES	12/14/21	816
CORREDOR	DIANA	A	31215	$62533.0000	RESIGNED	NO	12/08/21	816
CRAWFORD	JENNET		51022	$35.0200	RESIGNED	NO	11/09/21	816
DANIELS	ZANDRA	M	56057	$50000.0000	RESIGNED	YES	10/07/21	816
DOLATSHAHI	JENNIFER	T	21744	$97138.0000	RESIGNED	YES	11/25/21	816
EIRAS	DANIEL	P	53040	$84.8600	RESIGNED	YES	09/28/21	816
FAHIMA	JENAT		31215	$45722.0000	RESIGNED	YES	10/28/21	816
FERGUSON	TANTANIE	M	56057	$52000.0000	APPOINTED	YES	12/12/21	816
FLORESTAL	JEANNIE	C	51022	$35.0200	RESIGNED	YES	12/04/21	816
FLUEGGE	KYLE	R	21744	$108426.0000	RESIGNED	YES	12/07/21	816
FRANCOIS	ANTOINE	J	56057	$52600.0000	APPOINTED	YES	12/12/21	816
GARCIA	LENYN	E	31105	$50000.0000	APPOINTED	NO	12/12/21	816
GENOVESI	NICHOLAS		51008	$76174.0000	RESIGNED	YES	11/07/21	816
GIBSON	LINDSEY		21744	$38.6200	RESIGNED	YES	11/02/21	816
GIRON	MARIA	L	31105	$50000.0000	APPOINTED	NO	12/05/21	816
GOLDENBERG	GENE		52613	$58741.0000	APPOINTED	NO	11/28/21	816
HAMILTON	ALTHEA	C	21744	$70554.0000	RESIGNED	YES	09/25/21	816
HAN	ELIZABET		83052	$56625.0000	APPOINTED	YES	12/05/21	816
HOSLER	CHESLEIG	N	31215	$45722.0000	RESIGNED	YES	10/16/21	816
HOTZ	LIAT	J	51181	$57613.0000	RESIGNED	YES	12/01/21	816
HOUSTON	DARLENE	M	5100B	$34.7300	RESIGNED	YES	12/04/21	816
HUTCHINSON	MARTINA	K	5100B	$34.7300	RESIGNED	YES	10/20/21	816
KANG	JOY	X	21744	$110382.0000	RESIGNED	YES	10/22/21	816
KENNEDY	ASIA	C	56057	$50000.0000	APPOINTED	YES	12/12/21	816
KONIG	JASON	C	51195	$21.4100	APPOINTED	NO	12/05/21	816
LAM	JOSEPH	W	1020B	$16.0200	APPOINTED	YES	12/12/21	816
LANSIQUOT	SHARLENE	S	51022	$35.0200	RESIGNED	YES	10/21/21	816
LATCHMAN	HARESH		31215	$62533.0000	RESIGNED	YES	10/24/21	816
LEUNG	CYNTHIA	S	31105	$50000.0000	APPOINTED	NO	12/12/21	816
LIN	YING		21744	$97138.0000	INCREASE	NO	11/21/21	816
LIU	EDWARD		31215	$45722.0000	RESIGNED	YES	09/28/21	816
LOOK	JENNIFER	L	31105	$50000.0000	APPOINTED	NO	12/05/21	816
MARTINEZ	MONICA	J	21744	$78795.0000	RESIGNED	YES	10/14/21	816
MARTINEZ	WANDA	I	51022	$35.0200	RESIGNED	NO	11/10/21	816
MATTISON	DIANA		51022	$35.0200	RESIGNED	YES	12/10/21	816

DEPT OF HEALTH/MENTAL HYGIENE
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
MAYNARD	TRACY	L	31105	$64646.0000	APPOINTED	NO	11/28/21	816
MCDOWELL	MAYCIL	C	51022	$35.0200	RETIRED	NO	12/09/21	816
MCNEILL	PATRICK		31105	$50000.0000	APPOINTED	NO	12/05/21	816
MYRIE	LATISHA	M	51008	$76174.0000	RESIGNED	YES	12/05/21	816
NAUGHTON	TANISHA	M	51001	$56980.0000	DECREASE	NO	11/19/21	816
NELSON	HAILEIGH	J	13402	$115000.0000	APPOINTED	YES	12/12/21	816
NG-LEE	BETTY	M	31220	$69503.0000	RESIGNED	NO	11/16/21	816
NICKENS	ROBIN	M	51611	$82086.0000	RESIGNED	NO	11/04/21	816
NUDELMAN	ALEXANDR	L	1002A	$92305.0000	RESIGNED	NO	08/08/21	816
NUNEZ	JESENIA		10251	$38956.0000	RESIGNED	YES	11/20/21	816
O'CONNOR	MARCIA	J	1006D	$121299.0000	INCREASE	NO	09/19/21	816
OWOLABI	OLOLADE	T	1020B	$15.7100	RESIGNED	YES	10/05/21	816
OXLEY	RASHNELL	K	51001	$69152.0000	RESIGNED	YES	09/09/21	816
PIMENTEL FRANCO	DANIELA		56058	$62215.0000	RESIGNED	YES	12/05/21	816
PREMCHAND	HELENA		06611	$111231.0000	RESIGNED	YES	12/05/21	816
PULITZER	JESSICA	R	30087	$85260.0000	RESIGNED	YES	12/09/21	816
RASHID	MARIUM		51195	$21.4100	APPOINTED	NO	12/05/21	816
RAZZAK	MOHAMMED		31105	$50000.0000	APPOINTED	NO	12/05/21	816
REGALADO	TIFFANY		51022	$35.0200	RESIGNED	YES	09/30/21	816
REYNOLDS	LAUREN	D	56058	$69826.0000	RESIGNED	YES	12/07/21	816
RIVERA	VERONICA		21512	$52545.0000	RESIGNED	YES	12/07/21	816
RODRIGUEZ	MABEL		56057	$52000.0000	APPOINTED	YES	12/12/21	816
RODRIGUEZ	MERCEDES	E	10251	$41848.0000	RETIRED	NO	12/18/21	816
SAINT VICTOR	LOUSETTE		21744	$84301.0000	RESIGNED	YES	12/02/21	816
SCHOBERT	KELSEY	L	56057	$31.7100	RESIGNED	YES	12/02/21	816
SEVIL	SAVAS		1005D	$105115.0000	RESIGNED	NO	11/18/21	816
SHIELDS	ANTOINET		31105	$50000.0000	APPOINTED	NO	12/12/21	816
SINGH	CHRISTOP		1020B	$21.3800	RESIGNED	YES	12/05/21	816
SINGH	LORRAINE	C	21744	$86830.0000	INCREASE	NO	11/21/21	816
SMITH	GIOVANA	A	1009A	$100000.0000	APPOINTED	NO	12/05/21	816
SORIAO	ESTRELLA	M	51022	$35.0200	RESIGNED	YES	11/11/21	816
STADIER	ABIGAIL	T	21849	$55098.0000	RESIGNED	YES	10/13/21	816
SUSANA	ALEXANDE		95714	$88851.0000	APPOINTED	YES	12/12/21	816
TURNER	LENNON		21744	$119934.0000	RESIGNED	YES	12/02/21	816
VILLALON	KATHERIN		31215	$52580.0000	RESIGNED	YES	10/06/21	816
WANG	DAWEI		2184C	$125473.0000	INCREASE	YES	11/21/21	816
WATT	SHARLEEN	A	5100B	$34.7300	RESIGNED	YES	11/11/21	816
WENG	OLIVIA		21744	$70554.0000	RESIGNED	YES	10/01/21	816
WIKRAMANAYAKE	RADHIKA	M	21744	$86830.0000	RESIGNED	YES	12/06/21	816
WU	WINFRED	Y	53040	$98.8400	RESIGNED	YES	12/03/21	816

ADMIN TRIALS AND HEARINGS
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ALI-RAMPERSAD	FEROZA		56056	$20.4700	INCREASE	YES	11/28/21	820
AMAR	RACHEL	B	10022	$107072.0000	INCREASE	NO	12/15/21	820
ANOLIK	HALLEY	B	95005	$96897.0000	INCREASE	YES	11/28/21	820
ARENAS	WANDA	E	12800	$51209.0000	APPOINTED	YES	12/12/21	820
BERNARD	WISLANDE	O	56056	$37398.0000	INCREASE	YES	11/28/21	820
BLAKENEY	ALESIA		56056	$37398.0000	INCREASE	YES	11/28/21	820
CLARK	YVONE	P	10251	$46019.0000	APPOINTED	YES	11/21/21	820
CONSTANT	TACHANA		56056	$32520.0000	INCREASE	YES	11/28/21	820
FESTUS	KWAHNESH		56056	$20.4700	INCREASE	YES	11/28/21	820
FRIMPONG	AKOSUA	S	56058	$62215.0000	RESIGNED	YES	12/05/21	820
GONZALEZ TEJADA	ARLENY		56056	$20.4700	INCREASE	YES	11/28/21	820
GRANT	MARCIA	A	1002F	$140000.0000	INCREASE	NO	11/28/21	820
HAYNES IV IV	JAMES	A	56056	$37398.0000	INCREASE	YES	11/28/21	820
ISLER	ALLISON	M	56056	$20.4700	INCREASE	YES	11/28/21	820
JOHNSON	OLIVIA	N	56056	$37398.0000	RESIGNED	YES	12/16/21	820
KENNEDY	ASIA	C	52406	$18.5700	RESIGNED	YES	12/12/21	820
LEEDS	MARK	H	95005	$114029.0000	RETIRED	YES	11/09/18	820
OTOBA	EVANN	O	60215	$39357.0000	RESIGNED	NO	12/06/21	820
PIERCE	DEBORAH	E	56056	$20.4700	INCREASE	YES	11/28/21	820
ROBINSON	DENISE	S	56056	$20.4700	INCREASE	YES	11/28/21	820
SHIPP	BRIANNA	P	56056	$20.4700	INCREASE	YES	11/28/21	820
TAPIA	NATALIE		56056	$20.4700	INCREASE	YES	11/28/21	820

DEPT OF ENVIRONMENT PROTECTION
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ADISSOU	KOKOU	F	20210	$65640.0000	APPOINTED	NO	08/12/21	826
AGGARWAL	SUNNY		20616	$59125.0000	APPOINTED	NO	11/07/21	826
AIELLO	LAWRENCE		91011	$41033.0000	APPOINTED	YES	12/12/21	826
AJAYI	ALEXANDE	O	34615	$38216.0000	APPOINTED	YES	12/05/21	826
ATKINSON II	OMAR	R	34615	$38216.0000	APPOINTED	YES	12/05/21	826
BARRETT	VANESSA		10124	$61363.0000	RETIRED	NO	12/11/21	826
BERENSHTEYN	SERGEY		20210	$65640.0000	APPOINTED	NO	11/21/21	826
CALLEGARI	SUANNE		10251	$46019.0000	RESIGNED	NO	10/29/21	826
CANELO	ANTHONY		20113	$56354.0000	TERMINATED	NO	10/24/21	826
CASEY	WILLIAM	F	20616	$59125.0000	APPOINTED	NO	11/07/21	826
CHAND	CHRISTOP		34615	$38216.0000	APPOINTED	YES	12/05/21	826

CHIN	MAY	K	30087	$112358.0000	RESIGNED	YES	12/09/21	826
CHIRA	OSELOKA	K	20616	$59125.0000	APPOINTED	NO	11/07/21	826
COLON	CHRISTOP		34615	$38216.0000	APPOINTED	YES	12/05/21	826
CONWAY	JENAZIA		10251	$19.9200	APPOINTED	YES	12/12/21	826
DALE	BRIAN	J	1002D	$105138.0000	RESIGNED	NO	12/15/21	826
DAWOOD	MARY	E	20210	$65640.0000	APPOINTED	NO	12/12/21	826
DENARDO	MICHAEL	J	90767	$396.4000	RETIRED	NO	12/12/21	826
DI BENEDETTO	SALVATOR		91717	$440.1600	INCREASE	YES	10/24/21	826

DEPT OF ENVIRONMENT PROTECTION
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
DIAZ	MICHAEL	A	90756	$352.3200	DECREASE	YES	12/09/21	826
DIAZ	MICHAEL	A	90748	$50530.0000	APPOINTED	YES	12/05/21	826
DOLAN	KEVIN	M	34615	$52864.0000	RESIGNED	NO	10/13/21	826
FOLZ	WILLIAM		92610	$298.2400	APPOINTED	NO	12/12/21	826
FOSTER	GEOFFREY	A	20210	$70868.0000	RESIGNED	NO	09/03/21	826
FULLAM	ROBERT	C	92610	$347.2000	APPOINTED	NO	12/12/21	826
GARCIA	MARLON	R	91001	$74773.0000	APPOINTED	YES	12/12/21	826
GARUBA	AKIMU		10015	$144143.0000	INCREASE	NO	10/24/21	826
GOEL	DEEPAK		20403	$59125.0000	APPOINTED	YES	08/22/21	826
GREENGARTEN	PAMELA		21538	$60871.0000	RESIGNED	YES	11/22/21	826
GRINDLEY	GREGORY	K	92610	$309.2000	APPOINTED	NO	12/12/21	826
GURBUZ	ONUR		34615	$38216.0000	APPOINTED	YES	12/05/21	826
HAIDER	SYED	A	20616	$59125.0000	APPOINTED	NO	11/07/21	826
HAILE	ELIAS	W	20210	$65640.0000	APPOINTED	NO	12/12/21	826
HALL	BRITTANY	D	10251	$22.9100	RESIGNED	NO	12/06/21	826
HANNIBAL	CLARISSA		10251	$19.9200	APPOINTED	YES	12/12/21	826
HAQUE	REBEKA		91406	$15.4500	RESIGNED	YES	11/10/21	826
HARVEY	BRIAN	D	91314	$82918.0000	RETIRED	NO	12/01/21	826
HILL	MALCOLM	A	90641	$34716.0000	RESIGNED	YES	12/15/21	826
HILLMAN	CRAIG	A	91011	$41033.0000	RESIGNED	YES	10/28/21	826
HYLTON	SOPHIA	C	92610	$347.2000	APPOINTED	NO	12/12/21	826
ISLAM	FARIDUL		10251	$19.9200	APPOINTED	YES	12/12/21	826
JAGSARAN	MARTIN		90767	$396.4000	PROMOTED	NO	10/17/21	826
JOHNSTON-VARGAS	MARA	L	12749	$48473.0000	APPOINTED	NO	08/01/21	826
JONAS	MATROY	O	34615	$38216.0000	APPOINTED	YES	12/05/21	826
JOSEPH	MINDY	H	20246	$69632.0000	INCREASE	NO	11/21/21	826
KARICKAKUZHIYIL	BONNEY		20403	$59125.0000	APPOINTED	YES	08/22/21	826
KEMME	CAMERON	J	10209	$15.7500	APPOINTED	YES	12/12/21	826
KHANANOV	NURALI	R	20210	$92640.0000	APPOINTED	NO	11/21/21	826
KIEBLESZ	THOMAS	M	34615	$38216.0000	APPOINTED	YES	12/05/21	826
KOCOVIC	ADRIANA		22427	$103631.0000	INCREASE	NO	11/21/21	826
KOWCHAI	EON	R	92610	$347.2000	APPOINTED	NO	12/12/21	826
LAI	JIAHUI		20616	$59125.0000	APPOINTED	NO	11/24/21	826
LAKERAM	ALVIN	N	92610	$347.2000	APPOINTED	NO	12/12/21	826
LALLBEHARRY	DEODAT		92610	$347.2000	APPOINTED	NO	12/12/21	826
LALLKISSOON JR	NEIL	A	90641	$16.6300	RESIGNED	YES	11/28/21	826
LOBIFARO	DOMINICK	J	90756	$352.3200	DECREASE	YES	12/09/21	826
LOBIFARO	DOMINICK	J	90748	$50530.0000	APPOINTED	YES	12/05/21	826
LOCHAN	HAYMANKU		10015	$171901.0000	RETIRED	NO	11/01/20	826
LOVETRO III	ANTHONY		34615	$38216.0000	APPOINTED	YES	12/05/21	826
LUONG	ANDREW	T	20616	$59125.0000	APPOINTED	NO	11/07/21	826
MELENDEZ	KEURY		90748	$58109.0000	APPOINTED	YES	12/05/21	826
MORALES	JONATHAN	J	90748	$44307.0000	APPOINTED	YES	12/05/21	826
MOSINA	IRINA		34202	$54807.0000	RETIRED	NO	12/02/21	826
NIJJAR	HARINDER	S	34615	$38216.0000	APPOINTED	YES	12/05/21	826
NIRAHU	DANNY	K	34615	$38216.0000	APPOINTED	YES	12/05/21	826
NOEL	NIXON	K	91717	$440.1600	INCREASE	YES	10/24/21	826
ORLOWSKI	DANIEL		20403	$59125.0000	APPOINTED	YES	08/22/21	826
PALMERI	FRANK		70811	$55862.0000	RESIGNED	NO	12/12/21	826
PAPASMIRIS	GEORGE	P	20616	$59125.0000	APPOINTED	NO	11/07/21	826
PATEL	BHAVESH	N	91645	$501.9200	RETIRED	NO	12/12/21	826

DEPT OF ENVIRONMENT PROTECTION
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
PRETTITORE III	FRANCIS	J	90748	$50530.0000	APPOINTED	YES	12/05/21	826
PROANO ORELLANA	JOHNNY	G	34615	$38216.0000	APPOINTED	YES	12/05/21	826
RAMIREZ	MIGUEL		91011	$41033.0000	RESIGNED	YES	11/29/21	826
RAMLALL	DEVENDRA		92610	$309.2000	APPOINTED	NO	12/12/21	826
REYES	FLAVIO		34202	$85713.0000	INCREASE	NO	11/21/21	826
REYNOLDS	TERRENCE	P	90739	$359.8400	DISMISSED	NO	11/19/21	826
RICHARDS	GABRIEL		10251	$22.9100	INCREASE	YES	10/24/21	826
ROACH	MICHAEL	A	34615	$38216.0000	APPOINTED	YES	12/05/21	826
ROBINSON	JOHN	K	90748	$50530.0000	APPOINTED	YES	12/05/21	826
RODRIGUEZ	ALBIN		34615	$38216.0000	APPOINTED	YES	12/05/21	826
RODRIGUEZ	MARIAH	L	70811	$49645.0000	RESIGNED	NO	12/05/21	826
ROMANO	GIUSEPPE		90748	$50530.0000	APPOINTED	YES	12/05/21	826
SALAIMAN	KAMLA		10251	$19.9200	APPOINTED	YES	12/12/21	826
SANCHEZ	MATTHEW	A	90748	$50530.0000	APPOINTED	YES	12/05/21	826
SANFILIPPO	COSIMO		90748	$50530.0000	APPOINTED	YES	12/05/21	826
SAVVA	NICHOLAS		34615	$38216.0000	APPOINTED	YES	12/05/21	826
SCHINDLER	STEVEN	C	10055	$188100.0000	RETIRED	YES	12/22/20	826
SERRANO	ANDRES	M	90748	$50530.0000	APPOINTED	YES	12/05/21	826
SHAH	JIGNESH	K	95711	$156531.0000	INCREASE	YES	10/24/21	826
SHAHZAD	FATIMA		10251	$41848.0000	RESIGNED	NO	12/08/21	826
SHEYNMAN	IZABELA		12626	$73149.0000	RETIRED	NO	12/01/21	826
SHEYNMAN	LYUDMILA		10124	$54924.0000	RETIRED	NO	11/30/21	826
SHUM	MICHAEL		95622	$156531.0000	INCREASE	YES	10/24/21	826
SMELLIE	EVAN	A	91717	$440.1600	INCREASE	YES	10/24/21	826
SMITH III	ENRIQUE	W	34615	$38216.0000	APPOINTED	YES	12/05/21	826
SMOLYAR	BIANCA	C	20617	$65640.0000	APPOINTED	NO	11/07/21	826
SYLVESTER	CLINT	S	34615	$38216.0000	APPOINTED	YES	12/05/21	826
TEJADA	ZOILANGY		10251	$19.3400	RESIGNED	YES	06/14/19	826
THOMPSON JR	CHRISTOP	T	34615	$38216.0000	APPOINTED	YES	12/05/21	826
TORRES	ALEX	M	34615	$38216.0000	APPOINTED	YES	12/05/21	826
TRAN	ROBERT H	N	10251	$19.9200	APPOINTED	YES	12/12/21	826
UDIT	PRATIMA	D	10251	$19.9200	APPOINTED	YES	12/12/21	826
USSERY	MICHAEL	A	20210	$65640.0000	APPOINTED	NO	11/21/21	826
WALSH JR	THOMAS	J	90748	$50530.0000	APPOINTED	YES	12/05/21	826
WANG	LINGYUN		20210	$70805.0000	RESIGNED	NO	12/14/21	826
WASHINGTON	RYAN	L	34615	$38216.0000	APPOINTED	YES	12/05/21	826
WHITE	PETER	L	34615	$38216.0000	APPOINTED	YES	12/05/21	826

DEPARTMENT OF SANITATION
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ARIF	FAHAD		13632	$116640.0000	APPOINTED	NO	12/12/21	827
BESETT	CLIFFORD		92305	$389.7600	RETIRED	NO	12/30/12	827
BUTLER	JOSEPH		90647	$37364.0000	RESIGNED	YES	12/07/21	827
CHOW	YVONNE	O	56058	$54100.0000	APPOINTED	YES	12/12/21	827
CHRISTOPHER JR.	BENJAMIN		92340	$392.7000	APPOINTED	YES	10/18/19	827
FIGUEROA	MARCUS	A	10251	$54384.0000	RESIGNED	NO	12/12/21	827
FOSTER JR	ANTHONY	T	80633	$15.4500	RESIGNED	YES	11/19/21	827
GIRGIS	MARIANA	M	12627	$81203.0000	INCREASE	NO	08/15/21	827
GJONDREKAJ	ROLAND		70112	$40622.0000	RESIGNED	NO	12/05/21	827
GREEN	PATRICE	P	53040	$84.8600	APPOINTED	YES	12/05/21	827
GREENE	CHARLES	D	70112	$83465.0000	RETIRED	NO	12/15/21	827
HERNANDEZ	ADAM		80633	$15.4500	RESIGNED	YES	11/18/21	827
HIGGINS	ROBERT	D	13643	$145581.0000	INCREASE	NO	12/12/21	827
JACKSON	TIMOTHY	J	22427	$85646.0000	PROMOTED	NO	11/28/21	827
JOHNSON	ABIGAIL		1002C	$86318.0000	DECEASED	NO	12/12/21	827
KALLMAN	HOLLY	A	22427	$83340.0000	PROMOTED	NO	11/28/21	827
KHAN	ZAKREE	X	56058	$64455.0000	RESIGNED	YES	12/07/21	827
KUZNETSOVA	YEKATERI		53040	$84.8600	APPOINTED	YES	12/08/21	827
LAKERAM	ALVIN	N	92610	$309.2000	RESIGNED	YES	12/12/21	827
LALLBEHARRY	DEODAT		92610	$309.2000	RESIGNED	YES	12/12/21	827
LAMBERTI III	VICTOR	J	70112	$35643.0000	DECREASE	NO	09/26/21	827
LEWIS JR	DREXEL	E	70112	$40622.0000	RESIGNED	NO	11/01/21	827
MAJORANA IV	CHARLES	F	70112	$83465.0000	RESIGNED	NO	12/17/21	827
MARINO II	ANTHONY	J	70112	$83465.0000	RESIGNED	NO	12/12/21	827
MCKINLEY	ROBERT	A	92510	$37.2800	APPOINTED	YES	12/17/21	827
MELLIS	KEITH	W	7019A	$219161.0000	INCREASE	NO	12/12/21	827
MOLINA	CHRISTOP	I	12626	$61866.0000	INCREASE	NO	11/07/21	827
MONACO III	MICHAEL	G	70150	$54163.0000	PROMOTED	NO	12/05/21	827
MYRIE	PATRICK	L	92510	$38.6500	RESIGNED	YES	12/02/21	827
O'GRADY	KEVIN	P	70112	$35534.0000	TERMINATED	NO	05/18/03	827
OWCZAREK	NATASHA	Z	21744	$97138.0000	INCREASE	YES	12/12/21	827
POLITI	ANGELICA	L	56058	$54100.0000	APPOINTED	YES	12/12/21	827
RANEGAN	JENNIFER		10251	$41848.0000	RESIGNED	NO	12/10/21	827
RILEY	LATIA	S	1002A	$91207.0000	APPOINTED	YES	12/12/21	827
RIVERA	JOSEPH	S	71685	$34217.0000	APPOINTED	YES	12/12/21	827
ROBINSON	ANDREA	S	80633	$15.4500	RESIGNED	YES	11/26/21	827
SANFILIPPO	CHRISTIN	M	80633	$15.4500	RESIGNED	YES	10/22/21	827
SAVARESE	THERESA	G	56058	$80000.0000	RESIGNED	YES	10/10/21	827
SONG	MING ROO		22427	$77921.0000	PROMOTED	NO	11/28/21	827
TORTORELLA	CHRISTOP	C	70112	$40622.0000	RESIGNED	NO	12/03/21	827
WHITFIELD	LISA	L	10124	$54531.0000	PROMOTED	NO	12/12/21	827
ZAPATA	JAVIER		92305	$389.7600	RETIRED	NO	12/02/12	827

BUSINESS INTEGRITY COMMISSION
FOR PERIOD ENDING 12/23/21

NAME		TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
JIANG	JOYCE	56057	$45000.0000	RESIGNED	YES	12/18/21	831

DEPARTMENT OF FINANCE
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ABREU	ALFONSO	E	1002C	$82546.0000	INCREASE	NO	11/28/21	836
ANAND	PUNIT	K	40202	$93519.0000	INCREASE	NO	12/05/21	836
CLEMONS	WANDA		10124	$82272.0000	RETIRED	NO	12/10/21	836
COLLYMORE	SANDRA		10124	$61015.0000	INCREASE	NO	12/12/21	836
CUOMO	LILLIAN		40202	$117117.0000	RETIRED	NO	12/10/21	836
DONNELLY	MARGARET		10026	$140400.0000	INCREASE	NO	11/28/21	836
EDWARDS	KHARI	A	0667A	$54.9300	RESIGNED	YES	11/28/21	836
FOGEL	MAXIMILL	T	31105	$41483.0000	RESIGNED	NO	12/05/21	836
FRANKI	GREGORY	M	10049	$126809.0000	INCREASE	YES	12/05/21	836
GRANT	STACY		40202	$80638.0000	INCREASE	NO	12/05/21	836
KELLY-FRENCH	SHARON	D	82988	$112887.0000	INCREASE	YES	12/05/21	836
KHASKY	JOSEPH	D	40202	$93519.0000	INCREASE	NO	12/05/21	836
LEE	ROBIN	S	95005	$141369.0000	INCREASE	YES	12/05/21	836
LI	ZIYING		21744	$122290.0000	INCREASE	NO	11/28/21	836
LOMBARDO	JOLYN	C	10124	$61015.0000	RESIGNED	NO	12/12/21	836
MAHATA	TATHAGAT		1005D	$139519.0000	RESIGNED	NO	12/05/21	836
MARA	VALENTIN		21744	$97138.0000	INCREASE	YES	12/12/21	836
MATUSIEWICZ	CHRISTOP	W	40202	$80638.0000	INCREASE	NO	12/05/21	836
MODI	ANURAG		40523	$64415.0000	INCREASE	NO	11/21/21	836
MOORE	CEQUYNA		10124	$61015.0000	RESIGNED	NO	12/07/21	836
NEDLIN	NELSON	R	30087	$78932.0000	INCREASE	YES	11/21/21	836
NG	GEORGE		40523	$64415.0000	INCREASE	NO	11/21/21	836

NYARKO-BRENTUO	FANNY	B	40202	$93519.0000	RETIRED	NO	12/18/21	836
PALMERI	FRANK		30312	$33884.0000	APPOINTED	NO	12/12/21	836
POWELL	VERENA	C	95005	$144200.0000	RESIGNED	YES	12/12/21	836
RAHMAN	MOHAMMAD	M	40202	$80638.0000	INCREASE	NO	12/05/21	836
REGALBUTO	JOSEPH	P	40523	$64415.0000	INCREASE	NO	11/21/21	836
SIDHOM	NEAMA	A	10251	$49812.0000	RETIRED	NO	12/02/21	836
SIMON	BLESSON	J	40202	$93519.0000	INCREASE	NO	12/05/21	836
TALAVERA	MICHAEL	J	30312	$33884.0000	APPOINTED	NO	12/12/21	836
THOMAS	SHARAH	K	0667A	$54.9300	RESIGNED	YES	10/04/21	836
TRAKHTENBERG	ELENA		40510	$74245.0000	INCREASE	NO	11/21/21	836
TRANO	MICHAEL	C	31118	$76408.0000	INCREASE	NO	12/12/21	836
UWAKWE	VICTOR	N	40523	$64415.0000	INCREASE	NO	11/21/21	836
VERGANELIS	ANDREW	J	40202	$93519.0000	INCREASE	NO	12/05/21	836
WIGGINS-MUHAMMA	DORIS		10251	$41848.0000	RETIRED	YES	12/10/21	836

DEPARTMENT OF TRANSPORTATION
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ALCHUNDIA LABOR	LUIS	A	10209	$17.3000	APPOINTED	YES	11/28/21	841
BALIK	JUSTIN	T	13389	$106704.0000	RESIGNED	YES	10/25/19	841
CARBONE	JOSEPH		10039	$192159.0000	INCREASE	YES	11/21/21	841
CHENG	LOUIS		22316	$85847.0000	INCREASE	YES	11/21/21	841
CORBETT	YOLANDA	J	90692	$54549.0000	INCREASE	YES	09/28/21	841
DEVI	PAPI	R	12627	$84916.0000	RESIGNED	NO	07/21/19	841
DIBONA	PETER	J	35007	$33019.0000	RESIGNED	YES	11/28/21	841
DONIGAN	LASHAWN	D	90692	$54549.0000	INCREASE	YES	12/10/21	841
FOLAYAN	DEBORAH		10209	$17.3000	APPOINTED	YES	12/05/21	841
FOREMAN	ANECIA	V	10124	$82318.0000	APPOINTED	YES	11/28/21	841
FRANCIS	BRADFORD		10001	$164490.0000	INCREASE	YES	11/10/19	841
FUSCO	FRANK	J	34202	$84155.0000	APPOINTED	YES	12/05/21	841
GIEBLER	JAMES	A	22306	$56727.0000	RESIGNED	YES	12/05/21	841
GOIRICELAYA	CARMELO	F	1002C	$68675.0000	RETIRED	NO	12/01/21	841
GRIMALDI	ANTHONY		9090A	$80212.0000	RETIRED	NO	04/09/21	841
HERNANDEZ	HECTOR	L	12627	$81203.0000	RESIGNED	NO	10/30/21	841
HERTLER	KURT		92305	$393.6800	RETIRED	NO	11/01/21	841
HICKS	KEVIN		91110	$47407.0000	DISMISSED	NO	11/26/21	841
HIRAESAVE	VIJAETH		20210	$85646.0000	RESIGNED	NO	12/08/21	841
JACKSON	RONALD		91547	$61555.0000	RESIGNED	NO	12/05/21	841
JORGE	LORENZO	A	12626	$57590.0000	INCREASE	NO	01/01/20	841
LAM	SIU CHIN		12626	$68450.0000	APPOINTED	NO	12/05/21	841
LAWRENCE	DAMIAN	O	91616	$536.6700	INCREASE	NO	12/05/21	841
LEWIS	MONIQUE	L	31626	$72000.0000	DISMISSED	NO	11/26/21	841
LUBO JR	FELIX		31645	$73000.0000	PROMOTED	NO	10/24/21	841
MAROTTA	KIMBERLY	A	91616	$536.6700	INCREASE	NO	12/05/21	841
MCDUFFIE	JEFFREY	T	31715	$72635.0000	INCREASE	NO	11/21/21	841
MIKULIAK	KATELYN	J	12627	$115805.0000	APPOINTED	NO	07/04/21	841
NILES	CEDRICK	E	1002C	$76270.0000	RETIRED	NO	12/11/21	841
OTT	ZEESHAN	M	54738	$98836.0000	RESIGNED	YES	09/19/21	841
PALMER	JOHN	A	10077	$158851.0000	INCREASE	YES	11/21/21	841
PERKINS	PAMELA		1002C	$94883.0000	INCREASE	NO	11/21/21	841
PETERS-SMITH	RENEE		1002E	$163512.0000	INCREASE	NO	11/21/21	841
PEZZINO	GIUSEPPE		92510	$309.2000	RESIGNED	NO	11/28/21	841
PINEIRO	WILDE	I	92355	$548.0000	INCREASE	YES	10/20/19	841
REARDON	MICHAEL	P	10209	$17.3000	APPOINTED	YES	11/28/21	841
ROACH	WILLIAM		9090A	$84505.0000	RETIRED	YES	12/15/21	841
ROACH	WILLIAM		90910	$53923.0000	RETIRED	NO	12/15/21	841
RODRIGUEZ	RICARDO	A	95005	$147698.0000	INCREASE	YES	11/21/21	841
SANCHEZ	SARA	I	10124	$65896.0000	APPOINTED	YES	12/05/21	841
SIDIAL	KRISHEND		90910	$67044.0000	RETIRED	NO	12/11/21	841
SIRICA	VINCENT		92305	$389.7600	RETIRED	NO	02/02/13	841
SOTILLIO	TASHA	T	40910	$52242.0000	INCREASE	YES	11/21/21	841
STEPHENSON	STANLEY		91616	$536.6700	INCREASE	NO	12/05/21	841
UKYAB	TENZING		13368	$62684.0000	INCREASE	YES	11/21/21	841
WEIR	ADAM	J	90904	$73638.0000	RESIGNED	YES	12/14/21	841
YANG	JIN	C	31645	$73000.0000	PROMOTED	NO	10/24/21	841
YESEPKIN	MIKHAIL		92610	$347.2000	RETIRED	NO	12/18/21	841
ZENG	NANCY		10209	$19.9000	APPOINTED	YES	12/05/21	841

DEPT OF PARKS & RECREATION
FOR PERIOD ENDING 12/23/21

NAME			TITLE NUM	SALARY	ACTION	PROV	EFF DATE	AGENCY
ALFARO RIVERA	FRANCIS	J	80633	$15.4500	RESIGNED	YES	11/29/21	846
ANATOLE	MICHAEL	A	56057	$26.4600	RESIGNED	YES	12/15/21	846
ARCESE JR	JOSEPH	J	60421	$24.2500	INCREASE	YES	10/17/21	846
BAO	LICHEN		22427	$67757.0000	APPOINTED	NO	10/31/21	846
BARDEN	DONALD	R	90641	$39923.0000	RETIRED	YES	12/07/21	846
BARRAH	SOLOMON		90641	$16.6200	INCREASE	YES	07/11/21	846
BARTOSZEWSKI	PIOTR		81310	$66140.0000	APPOINTED	NO	10/17/21	846
BENITEZ	HECTOR		80633	$15.4500	RESIGNED	YES	11/27/21	846
BLACKMAN	CHRISTIA	A	91406	$16.2700	RESIGNED	YES	11/28/21	846
BLAGDEN	MEGAN	F	60421	$24.2505	APPOINTED	YES	12/06/21	846
BORDEN	SCHUYLER	R	81361	$59497.0000	APPOINTED	YES	12/05/21	846
BRATCHER	LENORA		91406	$15.4500	RESIGNED	YES	12/01/21	846
CAMACHO	ALEXIS	N	91406	$15.4500	RESIGNED	YES	11/28/21	846
CASTILLO	IVONNE	L	91406	$15.4500	RESIGNED	YES	12/01/21	846
CAVANAGH	BRIAN	A	80633	$15.4500	RESIGNED	YES	11/28/21	846
CHEUNG	SARAH	Y	21310	$65640.0000	APPOINTED	NO	11/01/21	846
CHILDERS	KAYLA		90641	$16.6264	RESIGNED	YES	12/09/21	846
COFIELD	DESMOND		91406	$16.2700	RESIGNED	YES	11/24/21	846
COKER	LINDSAY		91406	$15.4500	RESIGNED	YES	12/05/21	846
CONTRERAS	JOHN		60440	$59269.0000	INCREASE	YES	12/05/21	846

LATE NOTICE

CIVIC ENGAGEMENT COMMISSION

■ MEETING

Pursuant to section 104 of the Public Officers Law, notice is hereby given of an open meeting of the Commissioners of the Civic Engagement Commission. Join the meeting to learn about programs and upcoming initiatives.

Date: **Tuesday, February 22, 2022**
Time: **11:00 A.M.**

To join the meeting, enter the Webex URL:

https://civicengagement.webex.com/civicengagement/j.php?MTID=m4e0e5f999eb5eb7e307c5e213faa91d7

If prompted to provide a password or number, please enter the following:
Meeting Password: **0222**
Meeting Number: **2633 117 6798**

To join via phone dial-in:

When joining the meeting you can join via device audio, or dial-in via phone. To dial-in via phone, please use the following local dial-in phone number and participant code:

Phone: 646-992-2010

Access Code: 2633 117 6798

If you have low bandwidth or inconsistent internet connection, use the dial-in option for the meeting. This will reduce the possibility of dropped audio and glitching.

Reasonable Accommodations

You must contact the Commission if you need a reasonable accommodation for a disability. To request a sign language interpreter, please contact the Commission no later than 10:00 A.M., Friday, 18, 2022 by calling or texting (646) 769-6026, or by emailing info@civicengagement.nyc.gov. Closed Captioning is available.

The Commission will provide 30 minutes at the end of its meeting for public comment related to the mission and activities of the Commission. Please note that public comment is limited to three minutes. This time is intended for comment and is not designated for questions and answers. To allow for comment in an orderly fashion, please sign up in advance by emailing your name and affiliation to info@civicengagement.nyc.gov, by 5:00 P.M., Monday, February 21, 2022. Participants who will be dialing-in via phone are strongly encouraged to register in advance.

Further instructions on how to participate during the Webex meeting:

Please note that participants will be muted upon entry to the meeting.

Using the Chat panel

Click the Chat icon on the main meeting screen to open the Chat panel and chat directly with the meeting host. You may communicate your intention to offer public comment through the chat. The meeting host will then enable the audio to allow for public comment.

During the meeting participants can place an icon beside their name to communicate with the host without disrupting the flow of the meeting. For example, click the Raise Hand icon beside your name to alert the meeting host that you would like to offer comment.

For participants who will be dialing-in via phone during the meeting and do not have access to a computer monitor, please text your name and affiliation to (646) 763-2189 to offer public comment. The meeting host will then enable the audio and call on the dial-in participant by name to offer public comment in the order the text request was received.

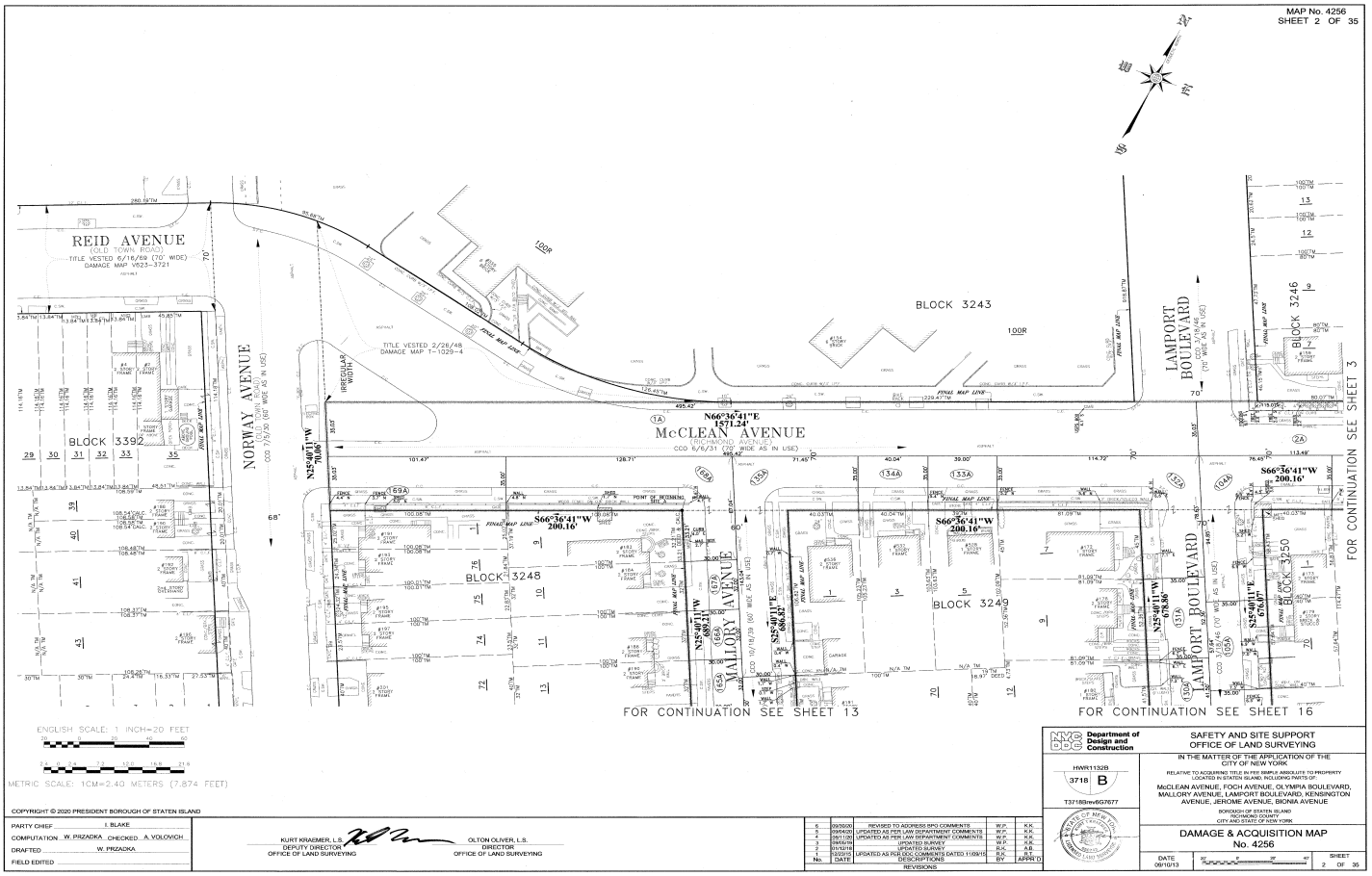
Participants who do not have access to text or short message services (SMS) are strongly encouraged to register for public comment in advance by calling (646) 763-2189 or by emailing the Commission at info@civicengagement.nyc.gov, by 5:00 P.M., Monday, February 21, 2022.

Accessibility questions: Francis Urroz, furroz@civicengagement.nyc.gov, 646-763-2189, by: Friday, February 18, 2022, 10:00 A.M.

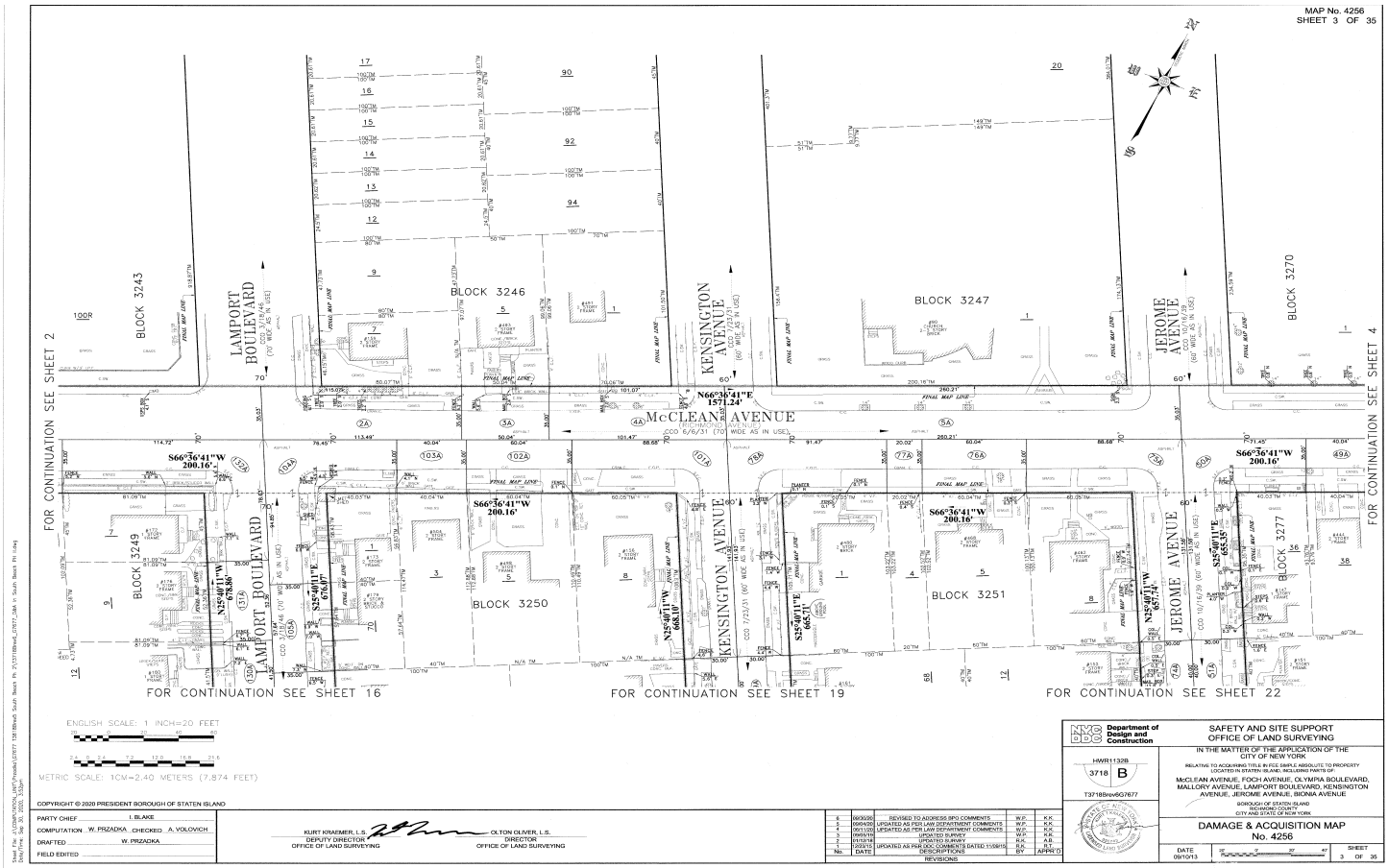
cc

☛ **f15-22**

DAMAGE & ACQUISITION MAP #4256



DAMAGE & ACQUISITION MAP #4256



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PARTY CHIEF I. BLAKE
COMPUTATION W. PRZADKA CHECKED A. VOLOVICH
DRAFTED W. PRZADKA
FIELD EDITED

KURT KRAEMER, L.S. — DEPUTY DIRECTOR, OFFICE OF LAND SURVEYING
OLTON OLIVER, L.S. — DIRECTOR, OFFICE OF LAND SURVEYING

No.	DATE	DESCRIPTIONS	BY	APPR'D
6	09/30/20	REVISED TO ADDRESS BPO COMMENTS	W.P.	K.K.
5	09/04/20	UPDATED AS PER LAW DEPARTMENT COMMENTS	W.P.	K.K.
4	06/11/20	UPDATED AS PER LAW DEPARTMENT COMMENTS	W.P.	K.K.
3	09/04/19	UPDATED SURVEY	W.P.	K.K.
2	01/30/18	UPDATED SURVEY	K.K.	A.B.
1	12/03/15	UPDATED AS PER DOC COMMENTS DATED 11/09/15	K.K.	R.T.

REVISIONS

DDC Department of Design and Construction

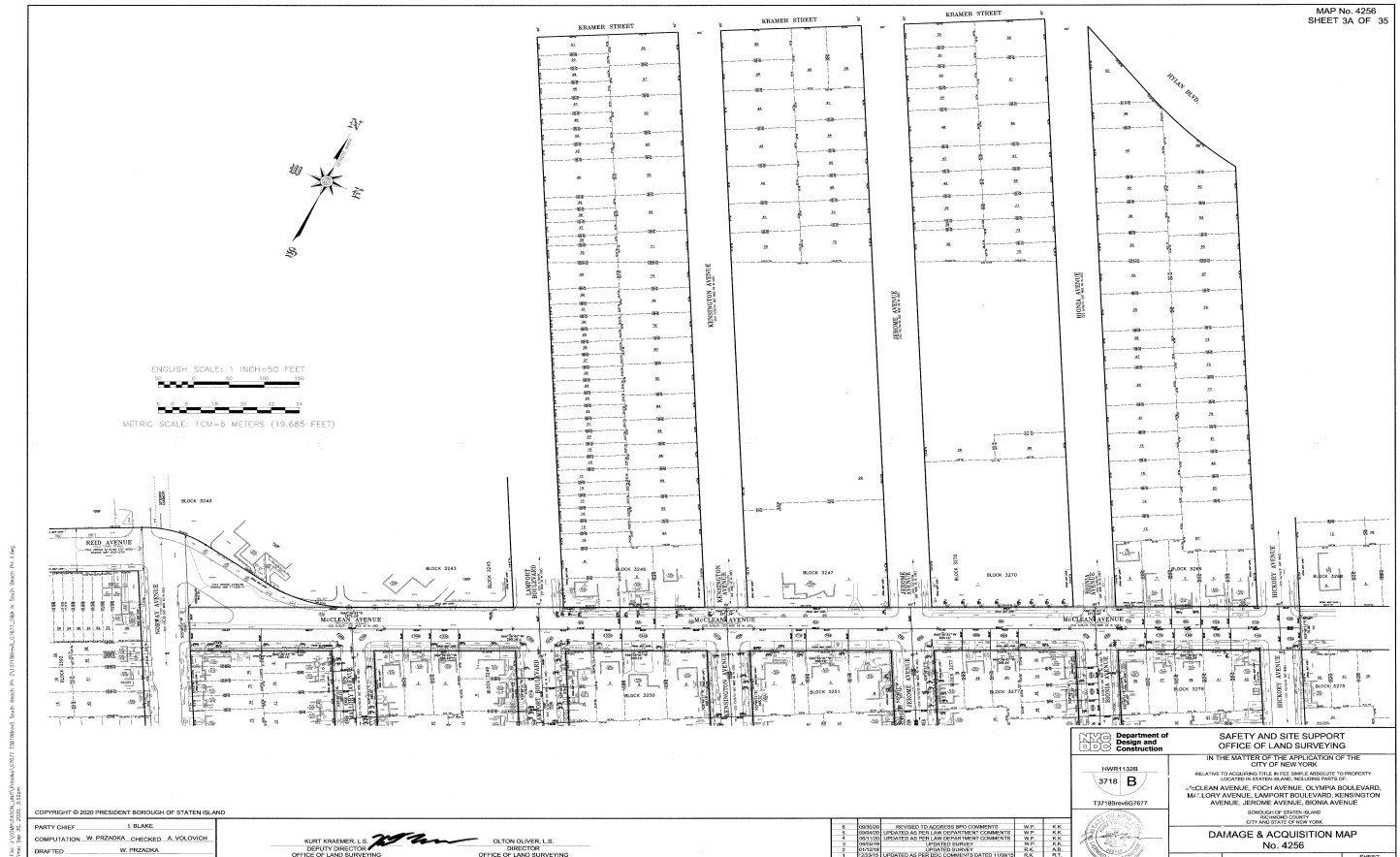
SAFETY AND SITE SUPPORT
OFFICE OF LAND SURVEYING

HWR11328
3718 B
T3718rev6G7677

IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
RELATIVE TO ACQUIRING TITLE IN FEE SIMPLE ABSOLUTE TO PROPERTY LOCATED IN STATEN ISLAND, INCLUDING PARTS OF:
McCLEAN AVENUE, FOCH AVENUE, OLYMPIA BOULEVARD, MALLORY AVENUE, LAMPORT BOULEVARD, KENSINGTON AVENUE, JEROME AVENUE, BIONIA AVENUE
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13 — SCALE 1" = 50' — SHEET 3 OF 35



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DRAFTED W. PRZADKA
FIELD EDITED

KURT KRAEMER, L.S. — DEPUTY DIRECTOR, OFFICE OF LAND SURVEYING
OLTON OLIVER, L.S. — DIRECTOR, OFFICE OF LAND SURVEYING

REVISIONS

DDC Department of Design and Construction

SAFETY AND SITE SUPPORT
OFFICE OF LAND SURVEYING

HWR11328
3718 B
T3718rev6G7677

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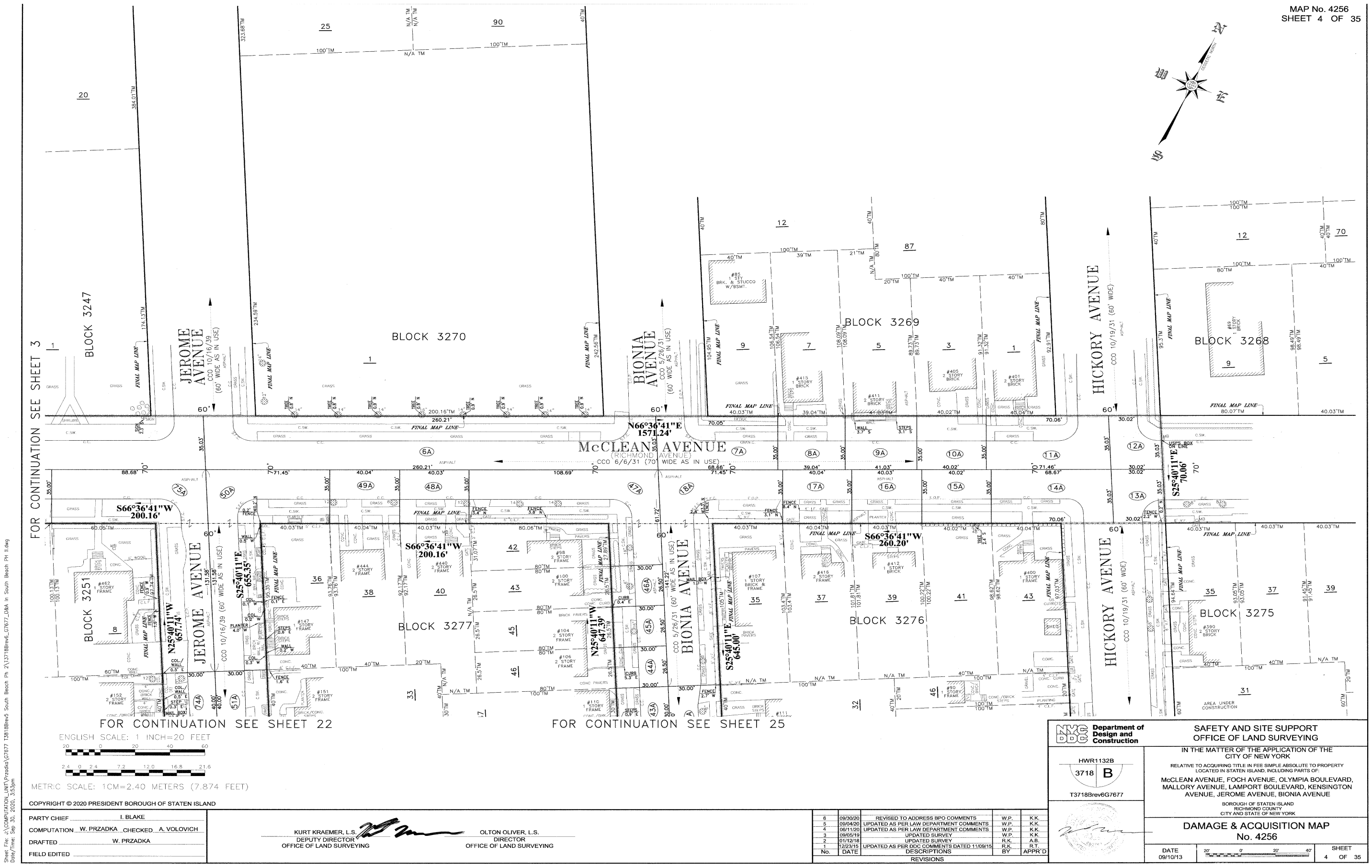
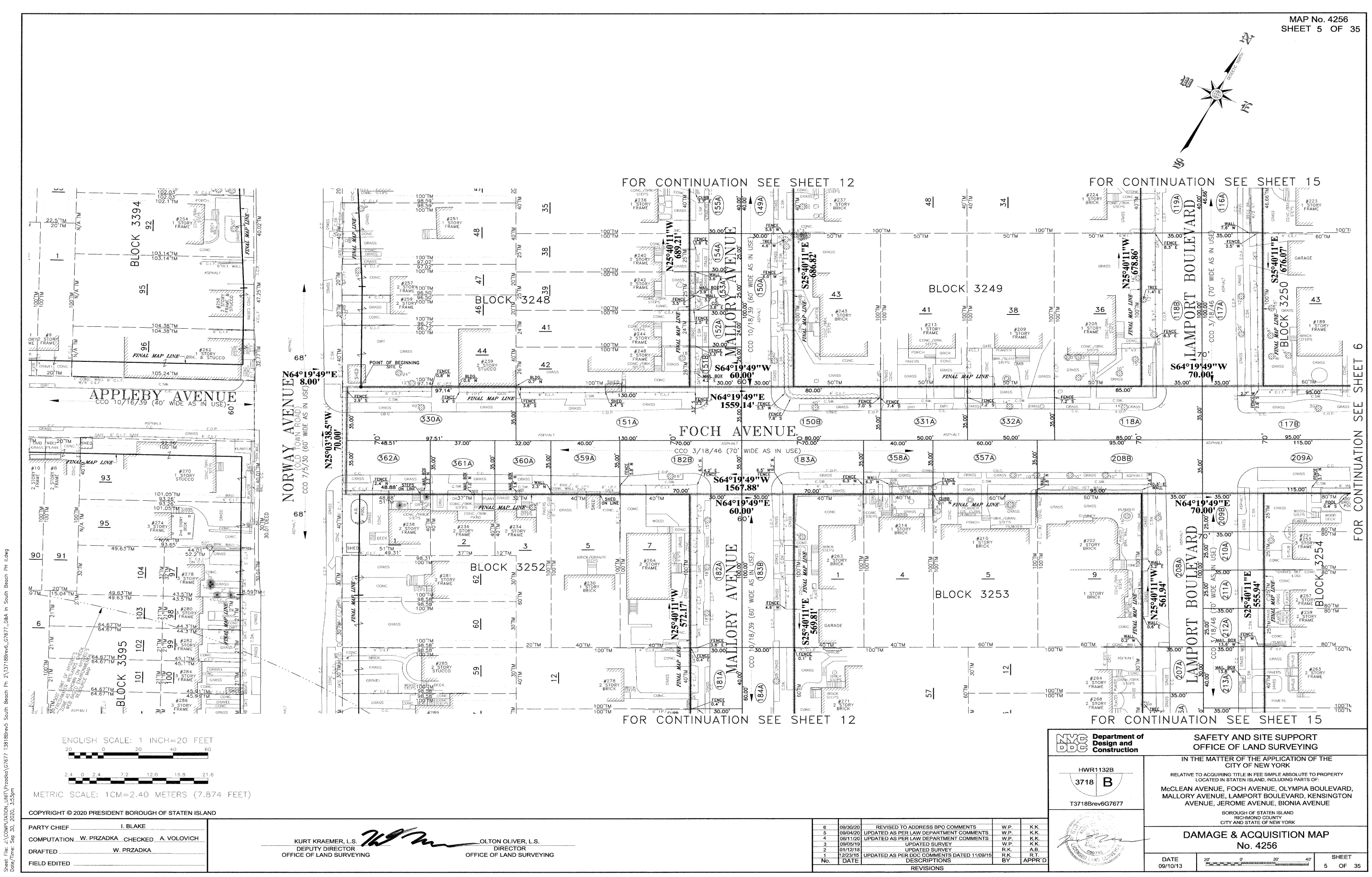
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

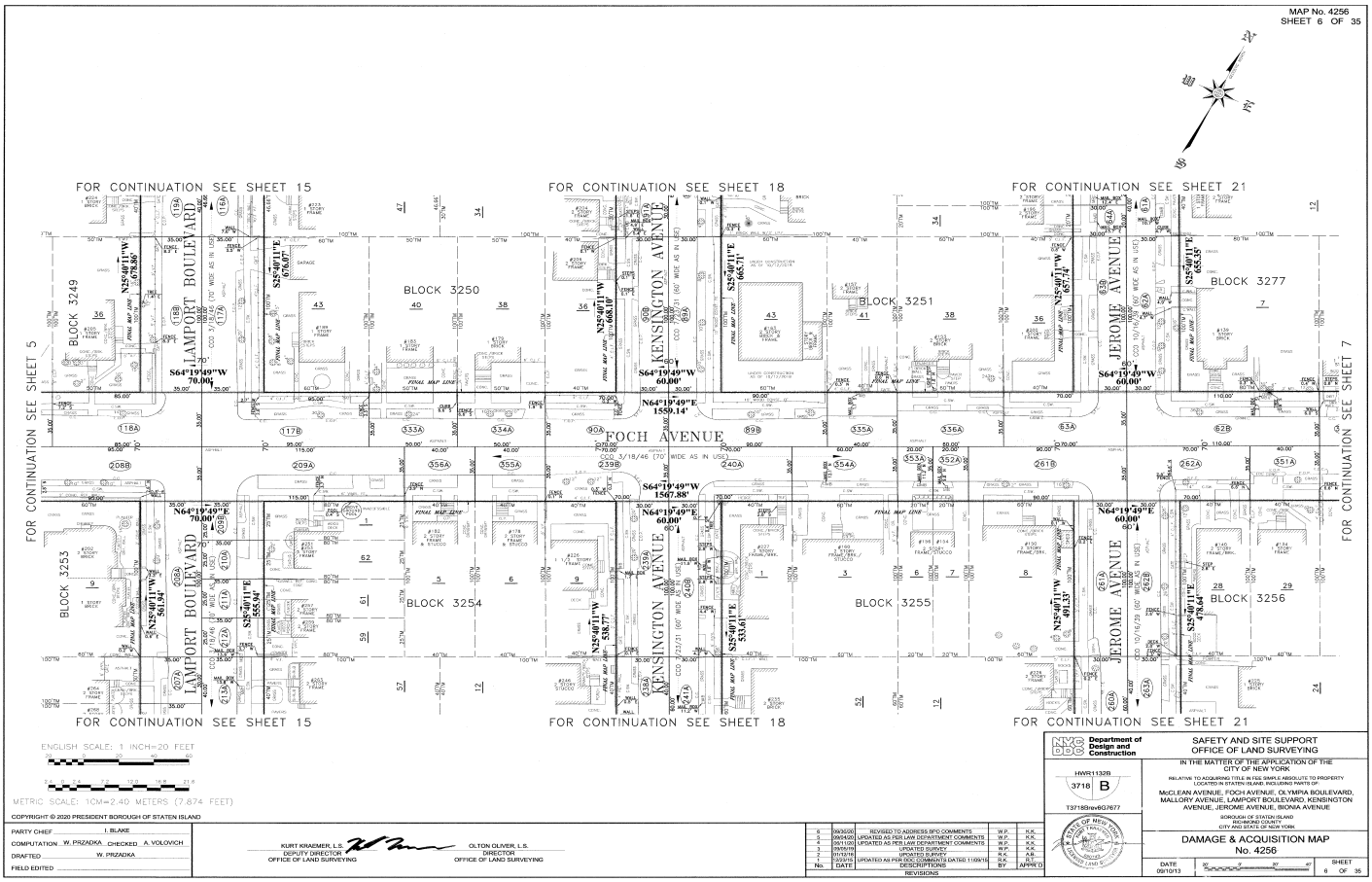
DATE 09/10/13 — SCALE 1" = 50' — SHEET 3A OF 35

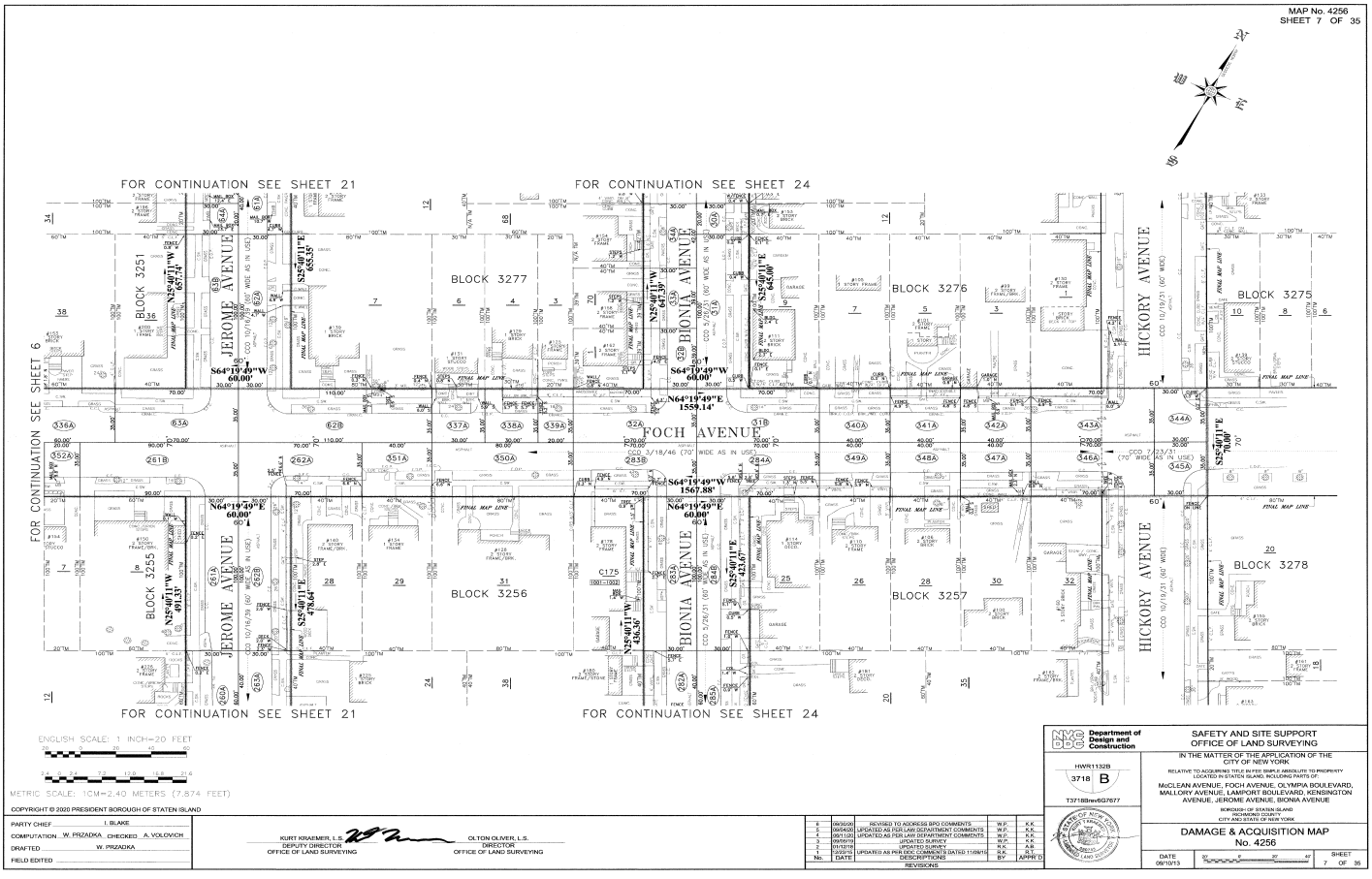
DAMAGE & ACQUISITION MAP #4256





DAMAGE & ACQUISITION MAP #4256





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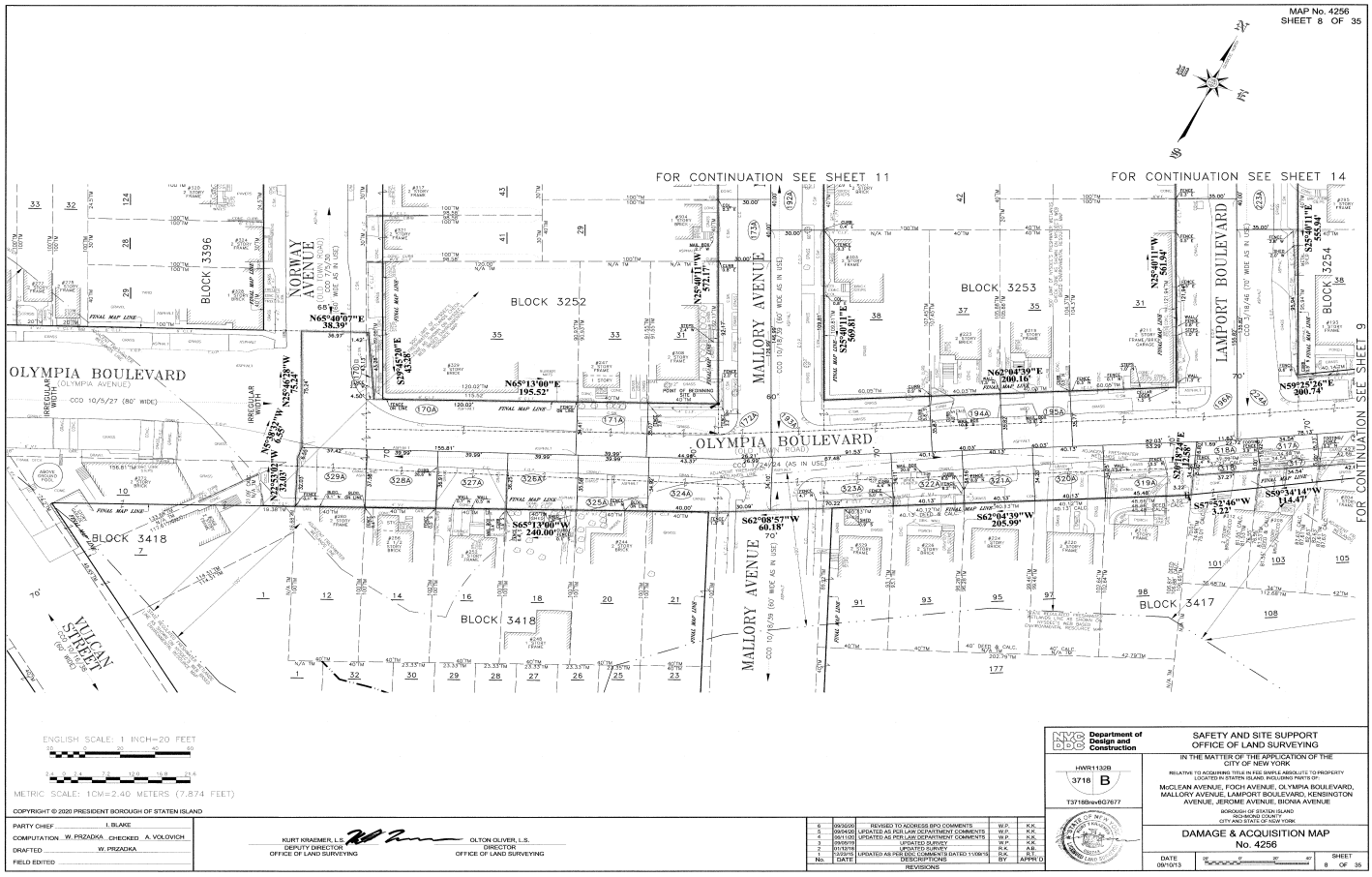

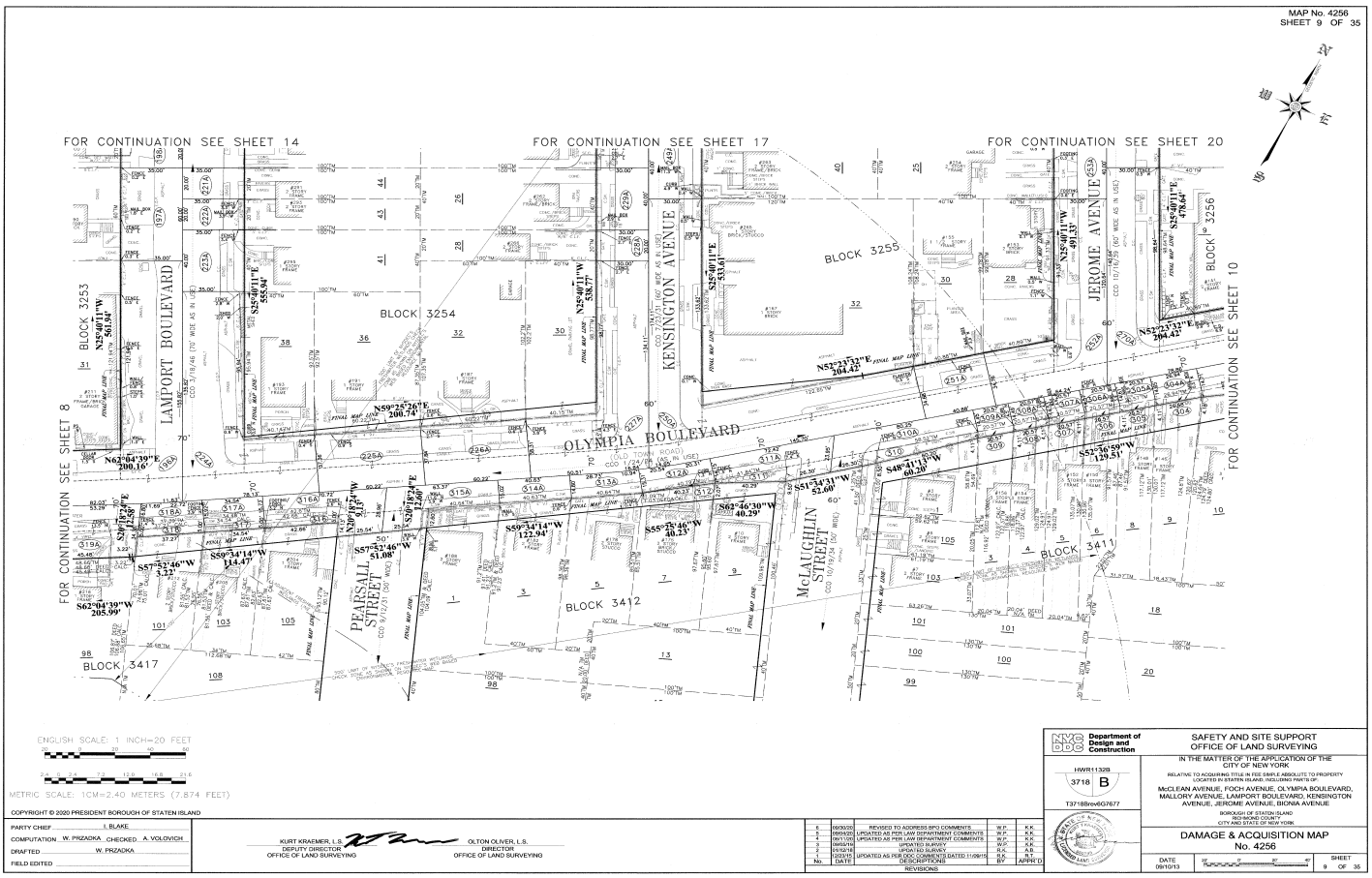

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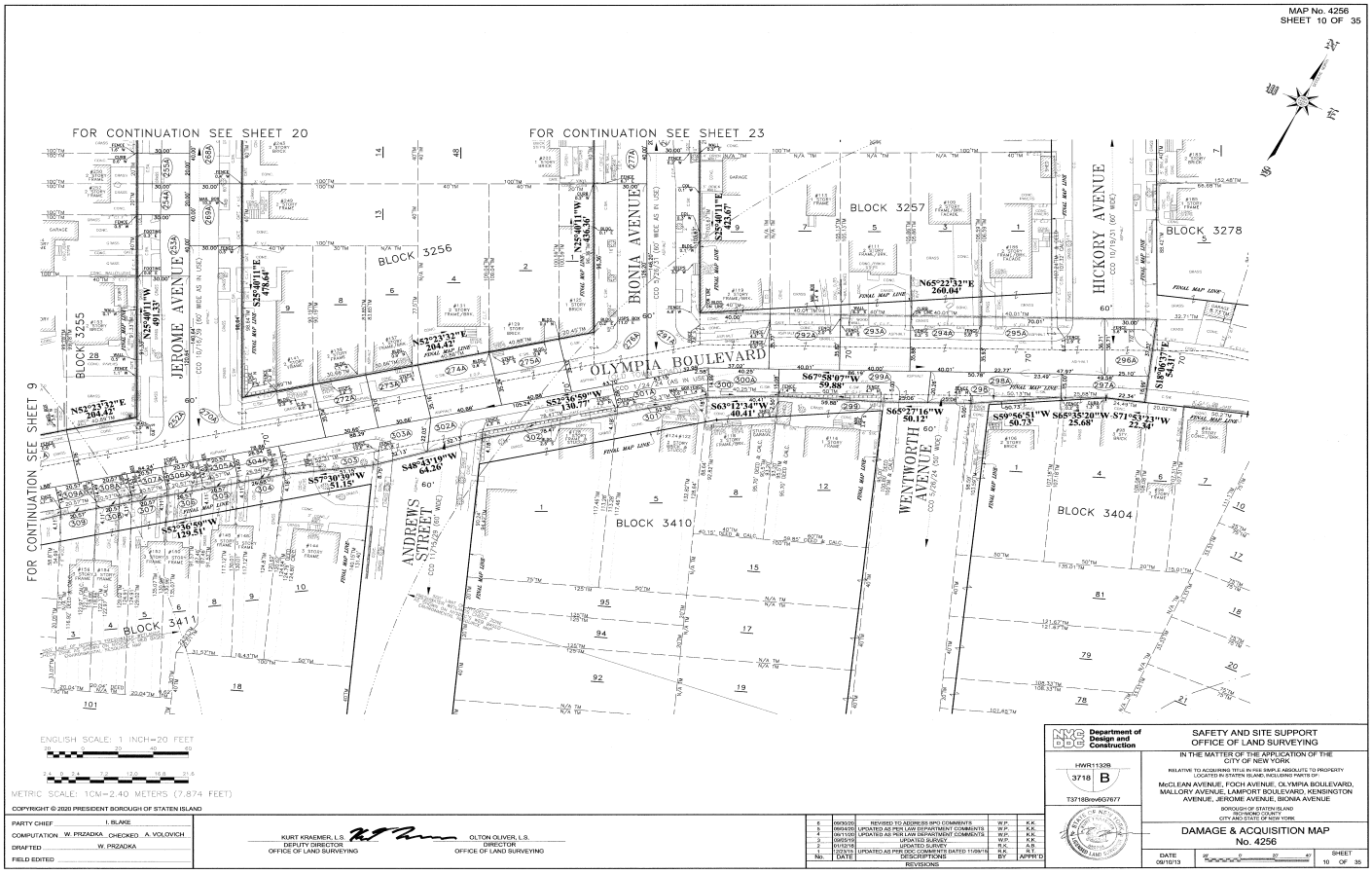

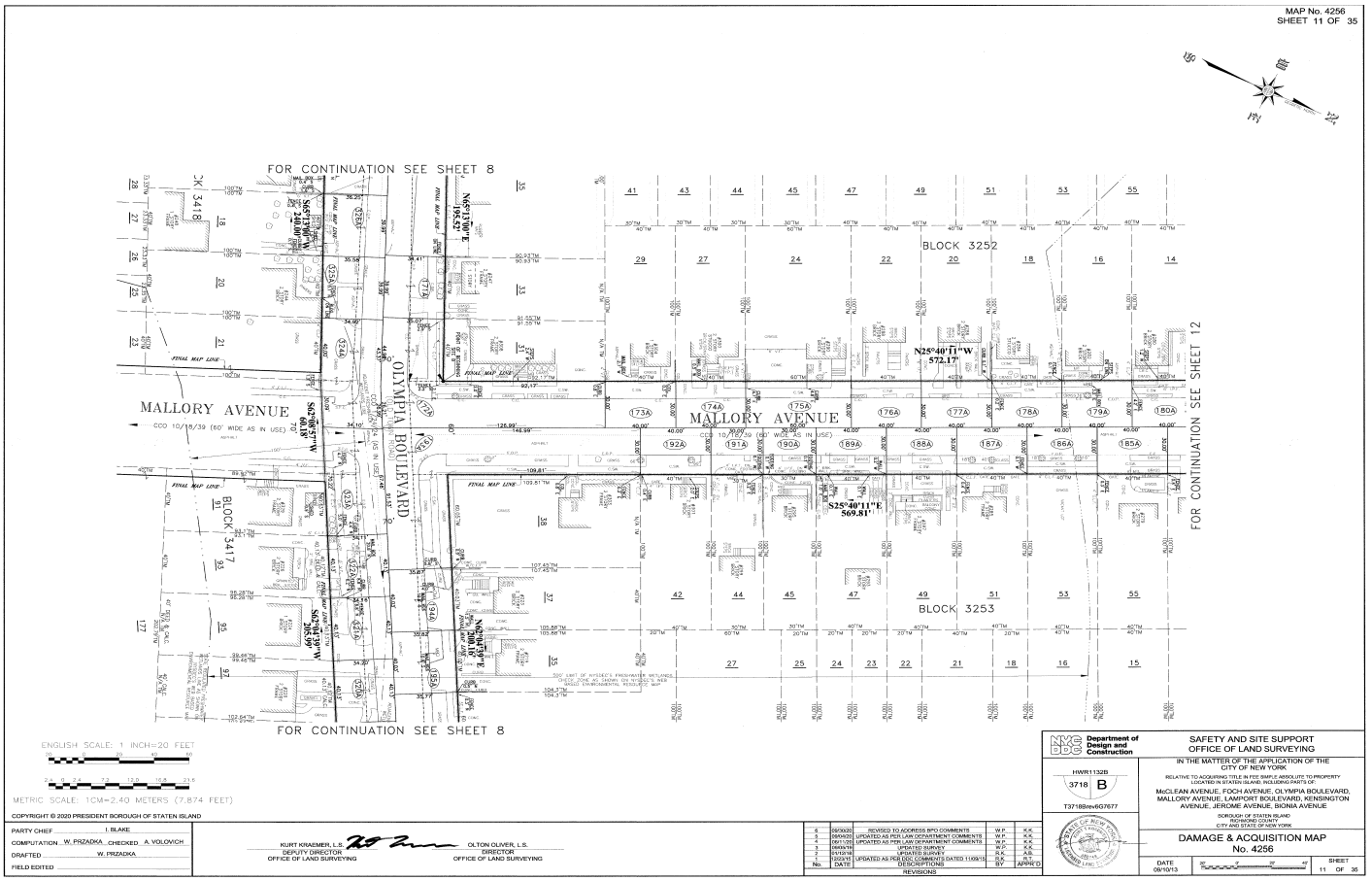

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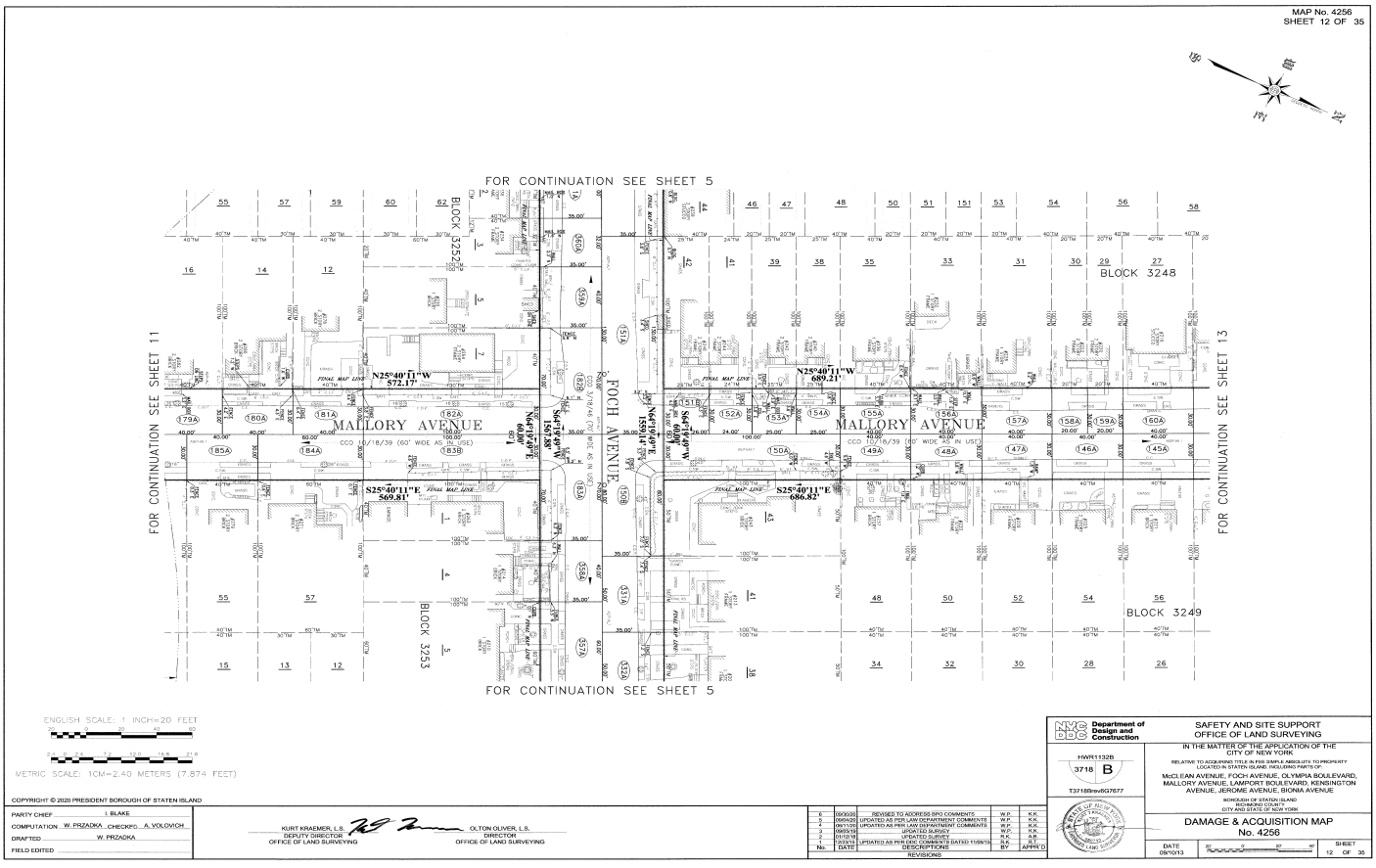
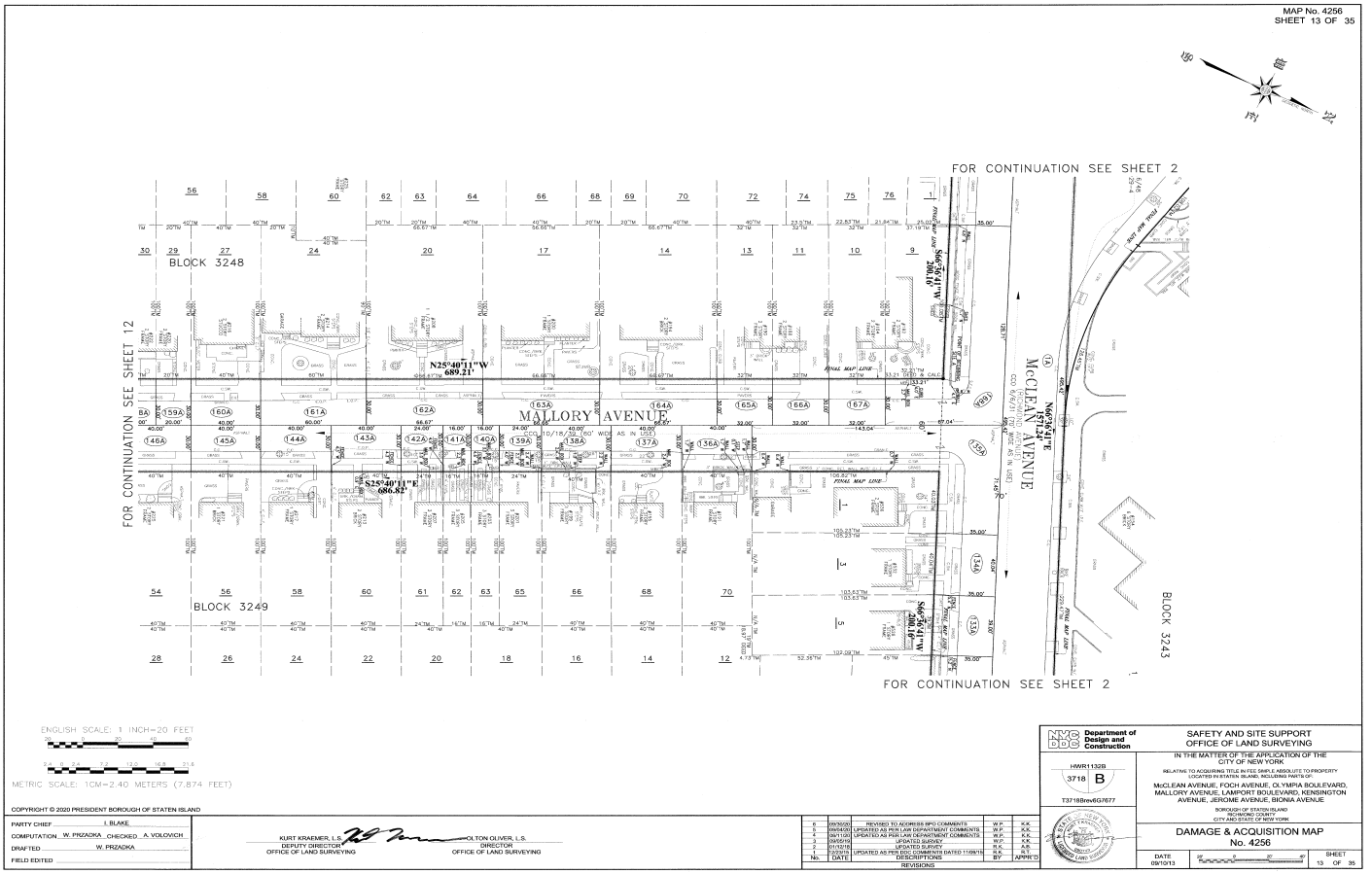
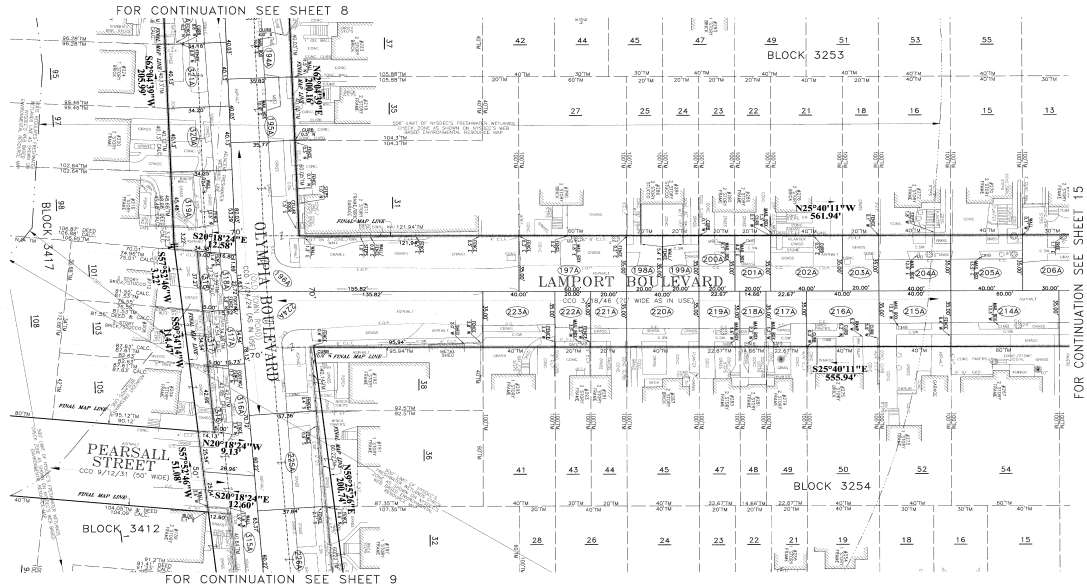




DAMAGE & ACQUISITION MAP #4256

MAP No. 4256
SHEET 14 OF 35



ENGLISH SCALE: 1 INCH=20 FEET
METRIC SCALE: 1CM=2.40 METERS (7.874 FEET)

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DRAFTED W. PRZADKA
FIELD EDITED

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OLTON OLIVER, L.S. DIRECTOR OFFICE OF LAND SURVEYING

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HWR11328
3718 B
T37188rev6G7677

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RELATIVE TO ACQUIRING TITLE IN FEE SIMPLE ABSOLUTE TO PROPERTY LOCATED IN STATEN ISLAND, INCLUDING PARTS OF...
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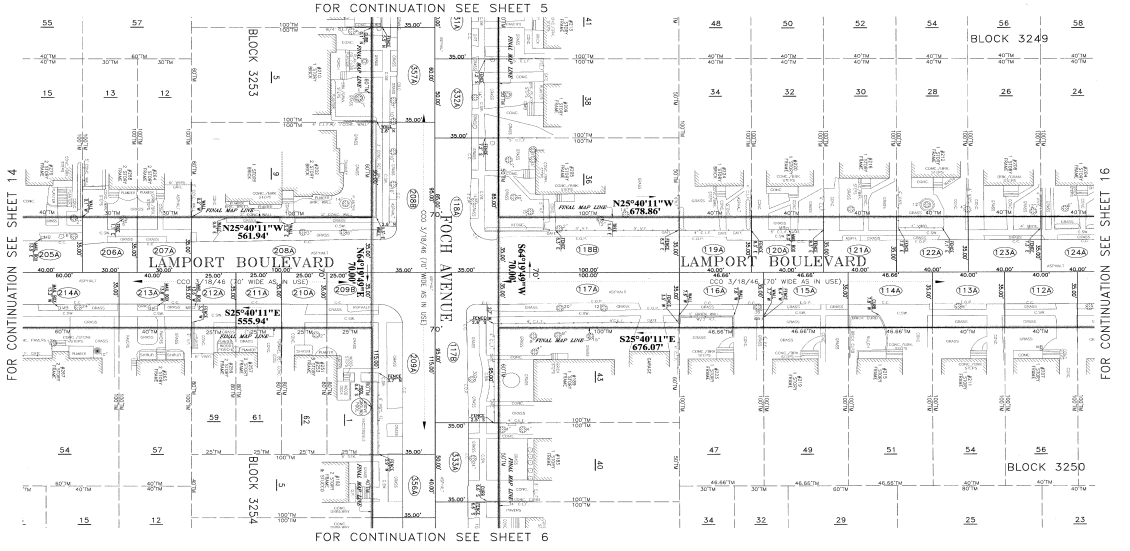
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13 SCALE 0 20' 40' SHEET 14 OF 35

MAP No. 4256
SHEET 15 OF 35



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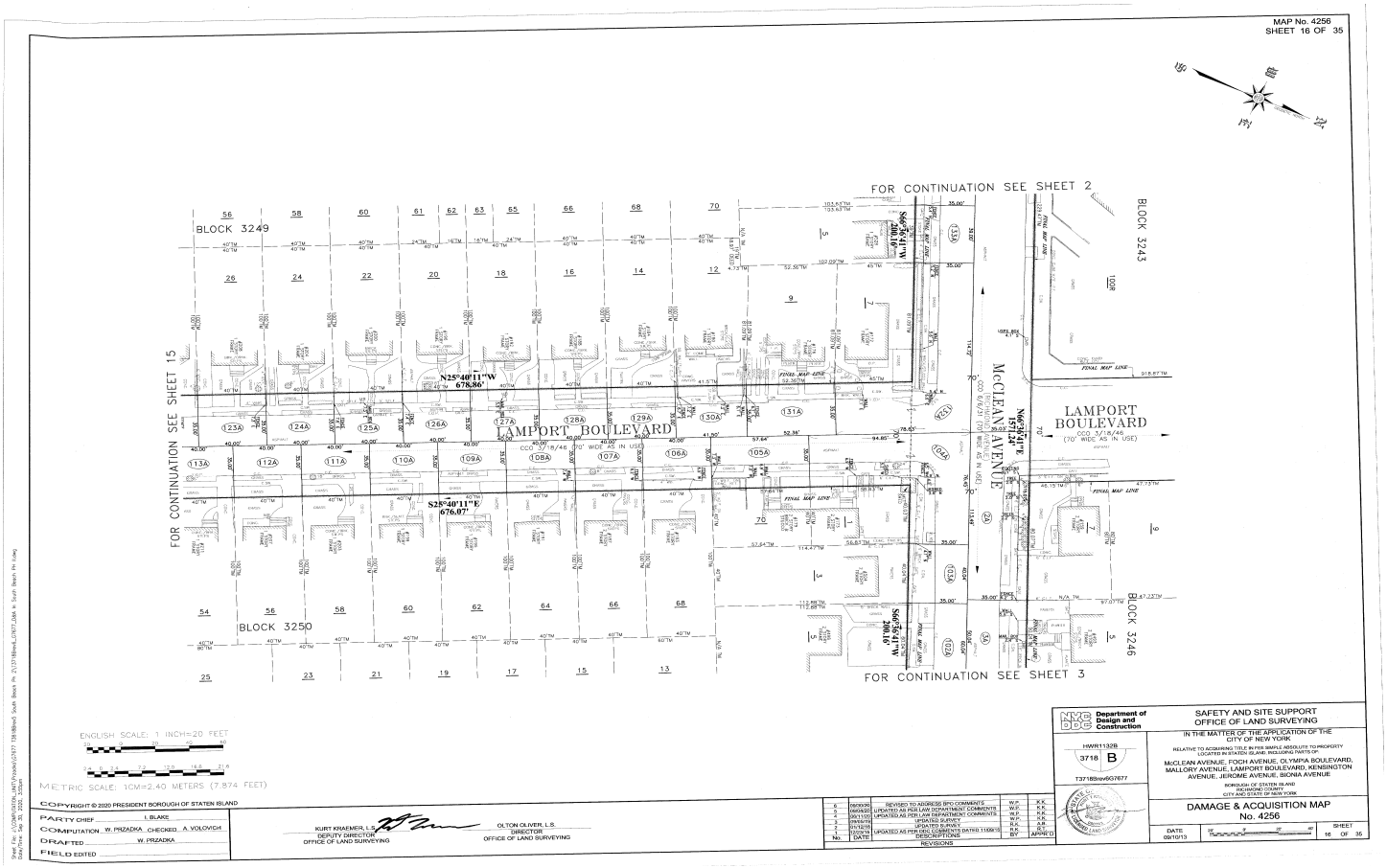
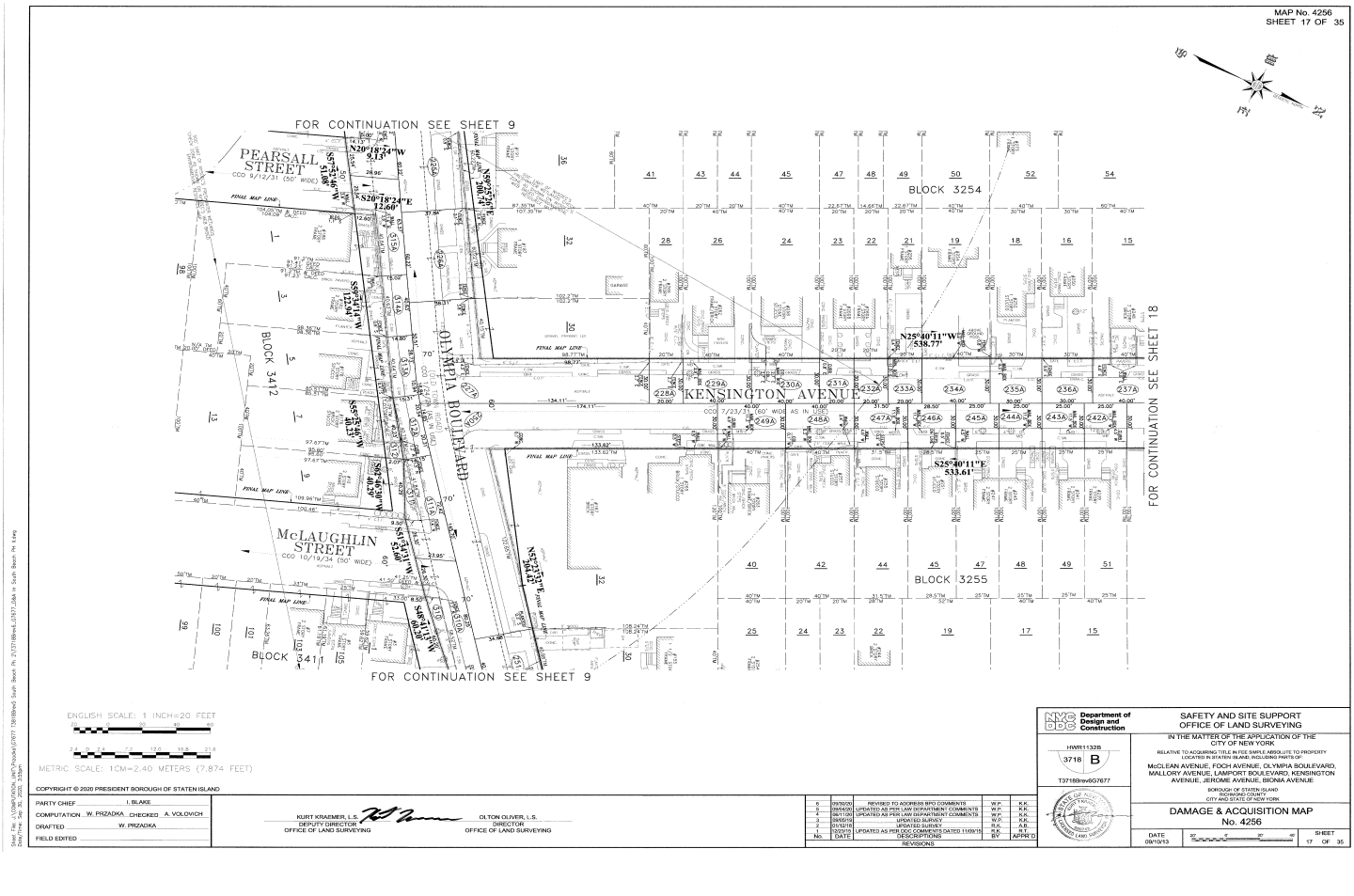
DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13 SCALE 0 20' 40' SHEET 15 OF 35

DAMAGE & ACQUISITION MAP #4256





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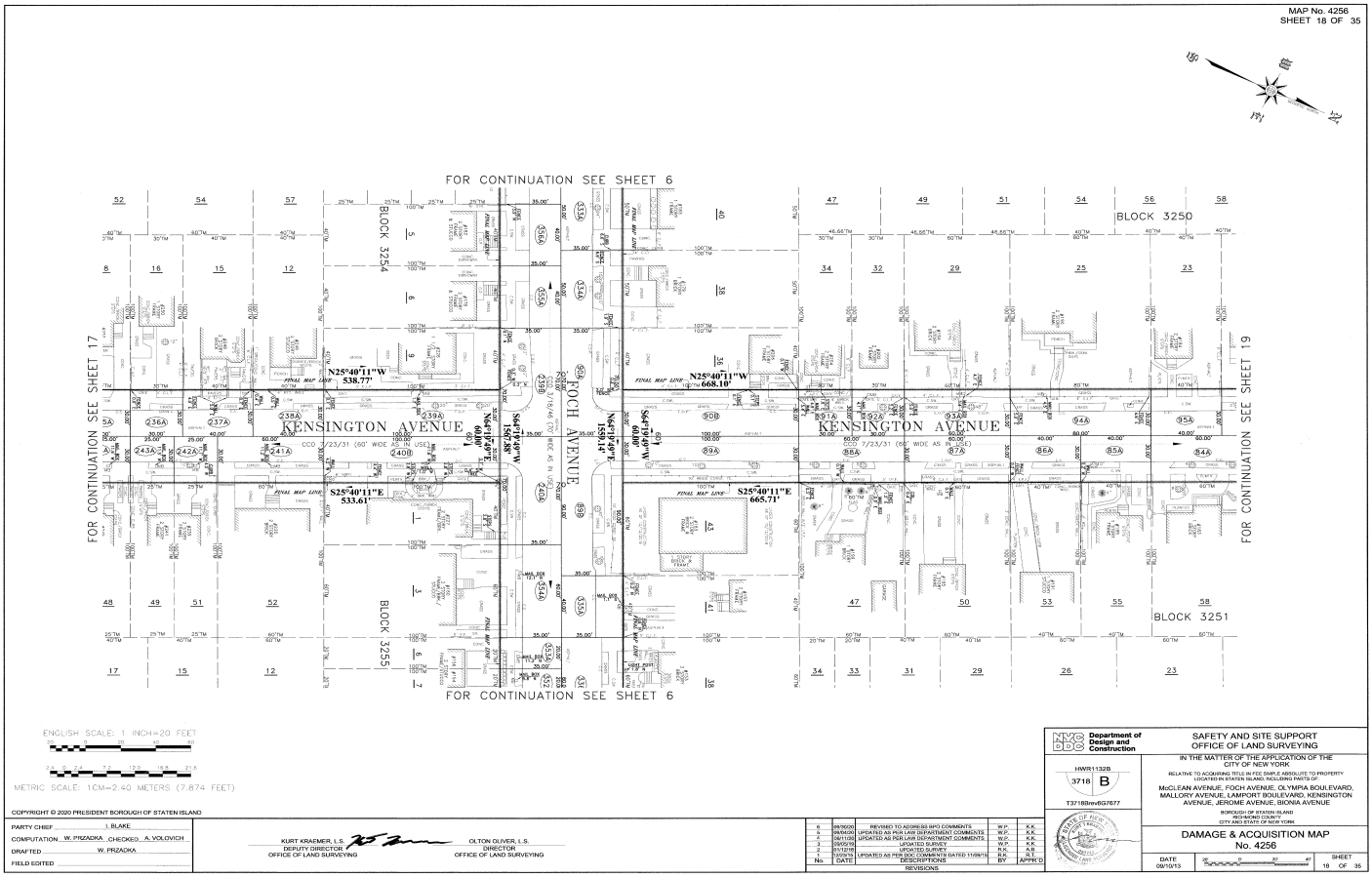

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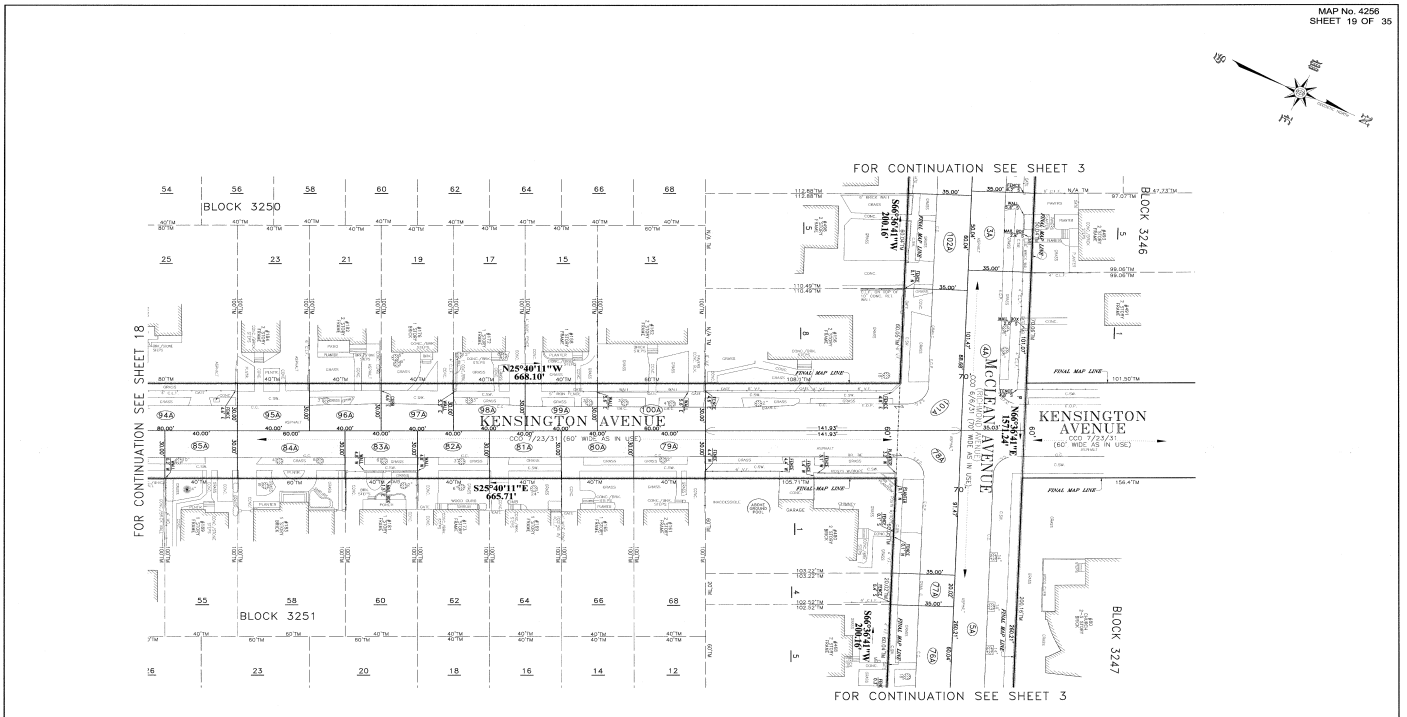
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13

SCALE 0 30' 60'

SHEET 18 OF 35



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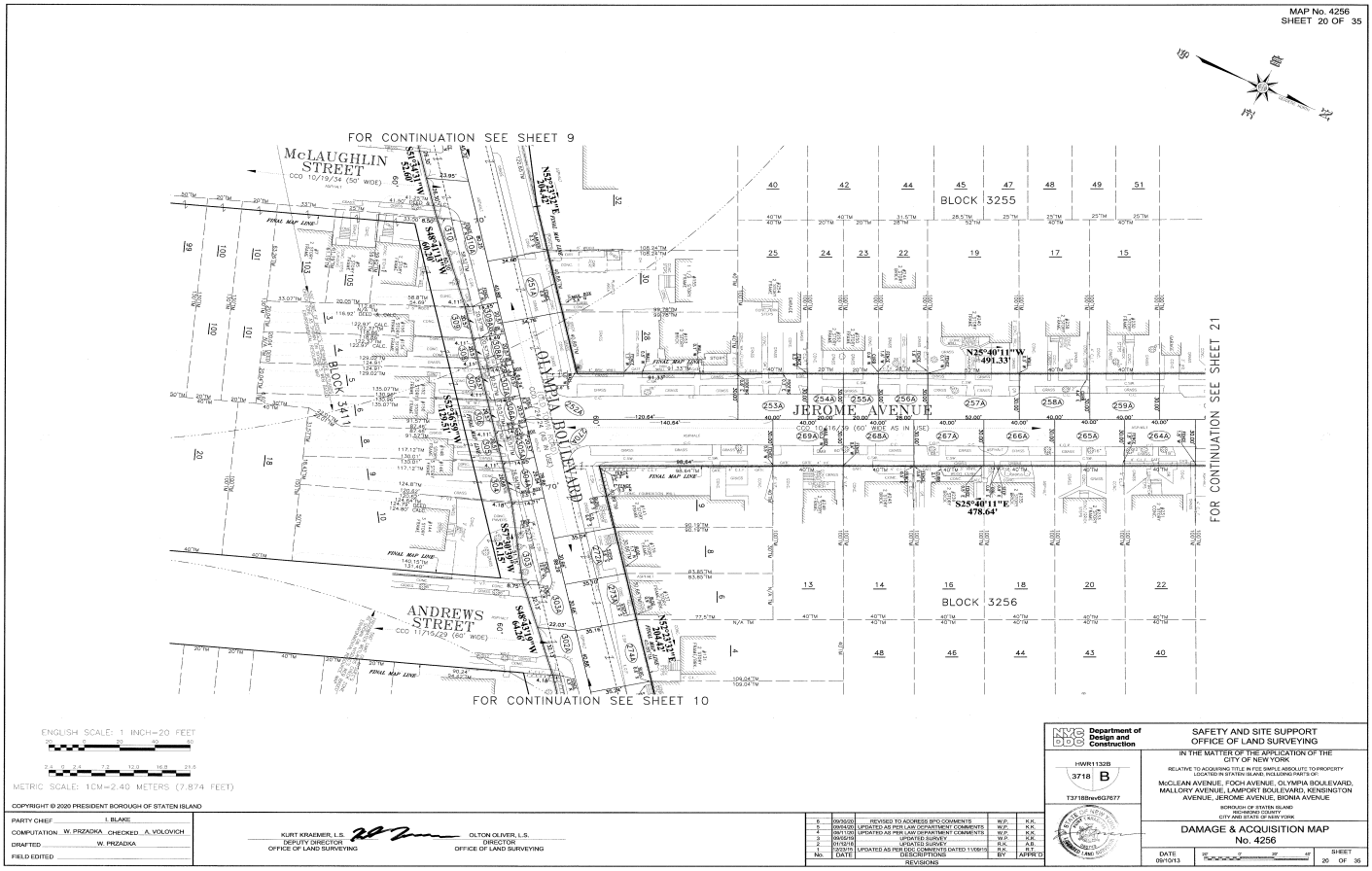
DAMAGE & ACQUISITION MAP
No. 4256

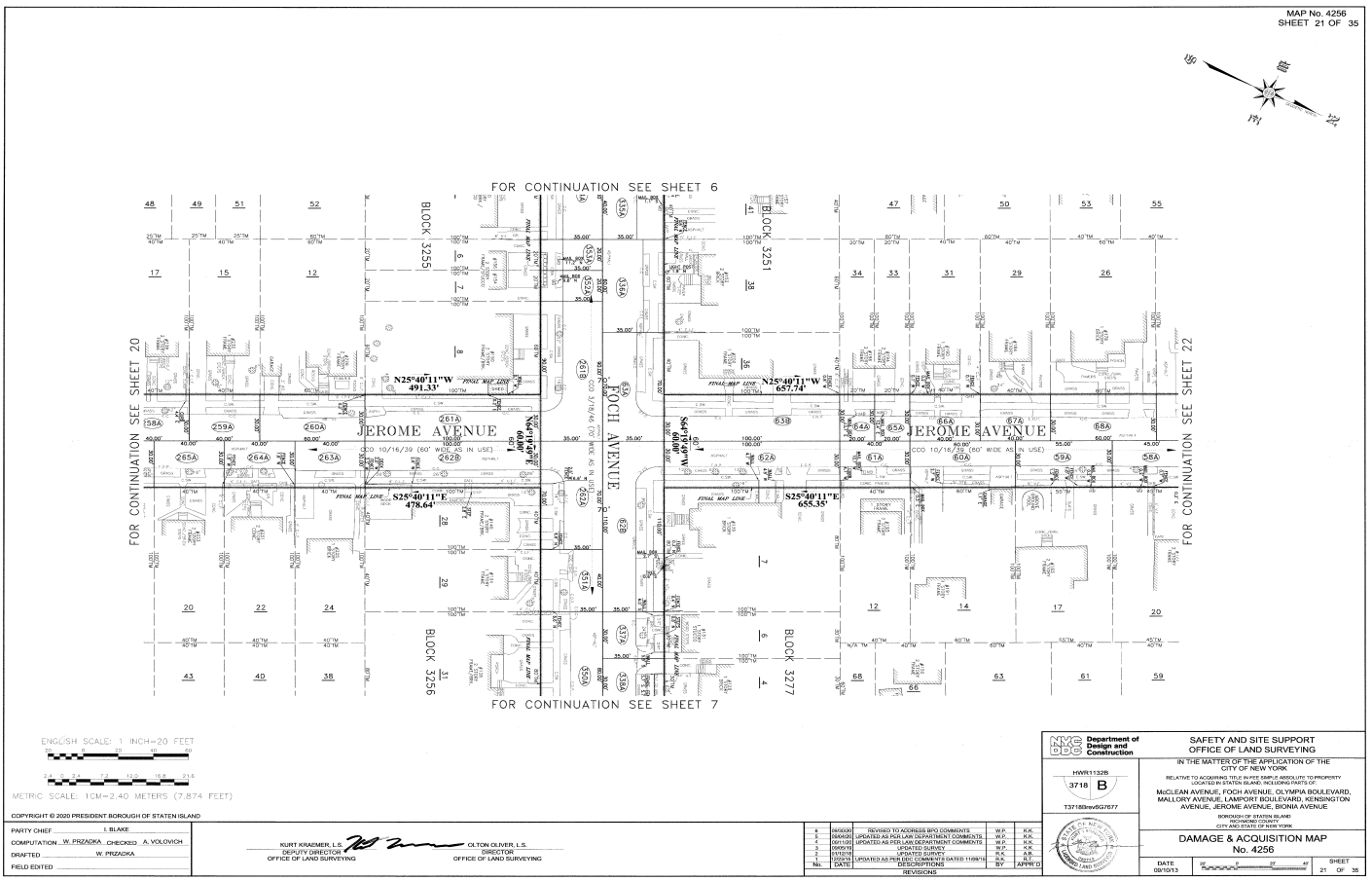
DATE 09/10/13

SCALE 0 30' 60'

SHEET 19 OF 35

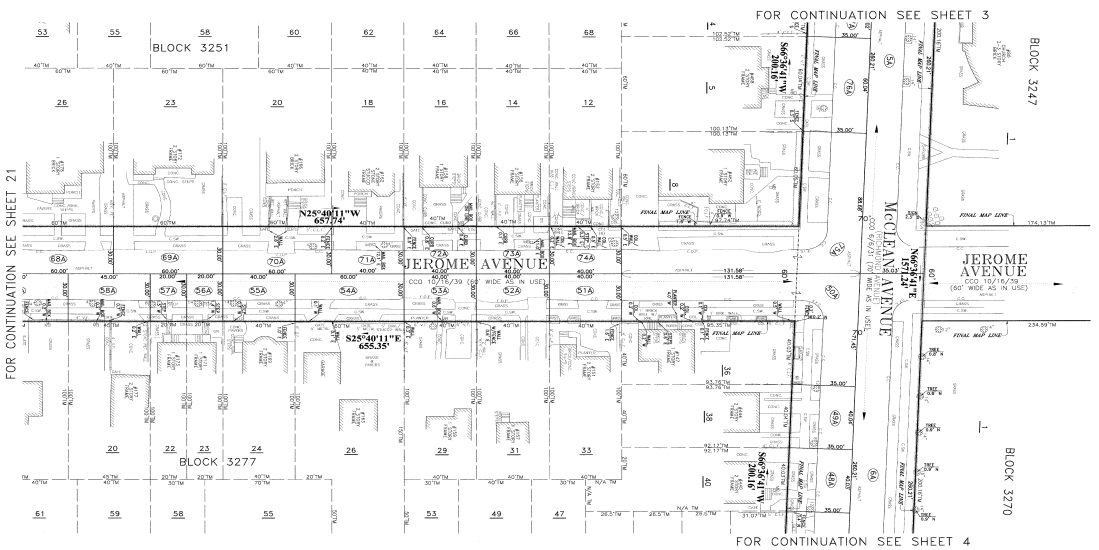
DAMAGE & ACQUISITION MAP #4256





DAMAGE & ACQUISITION MAP #4256

MAP No. 4256
SHEET 22 OF 35



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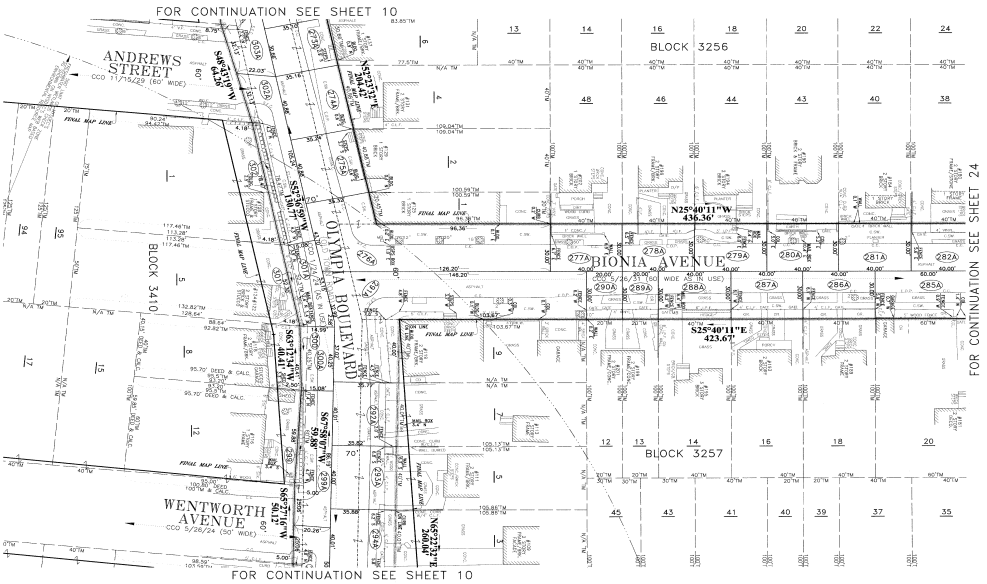
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13
SCALE 0' 20' 40'
SHEET 22 OF 35

MAP No. 4256
SHEET 23 OF 35



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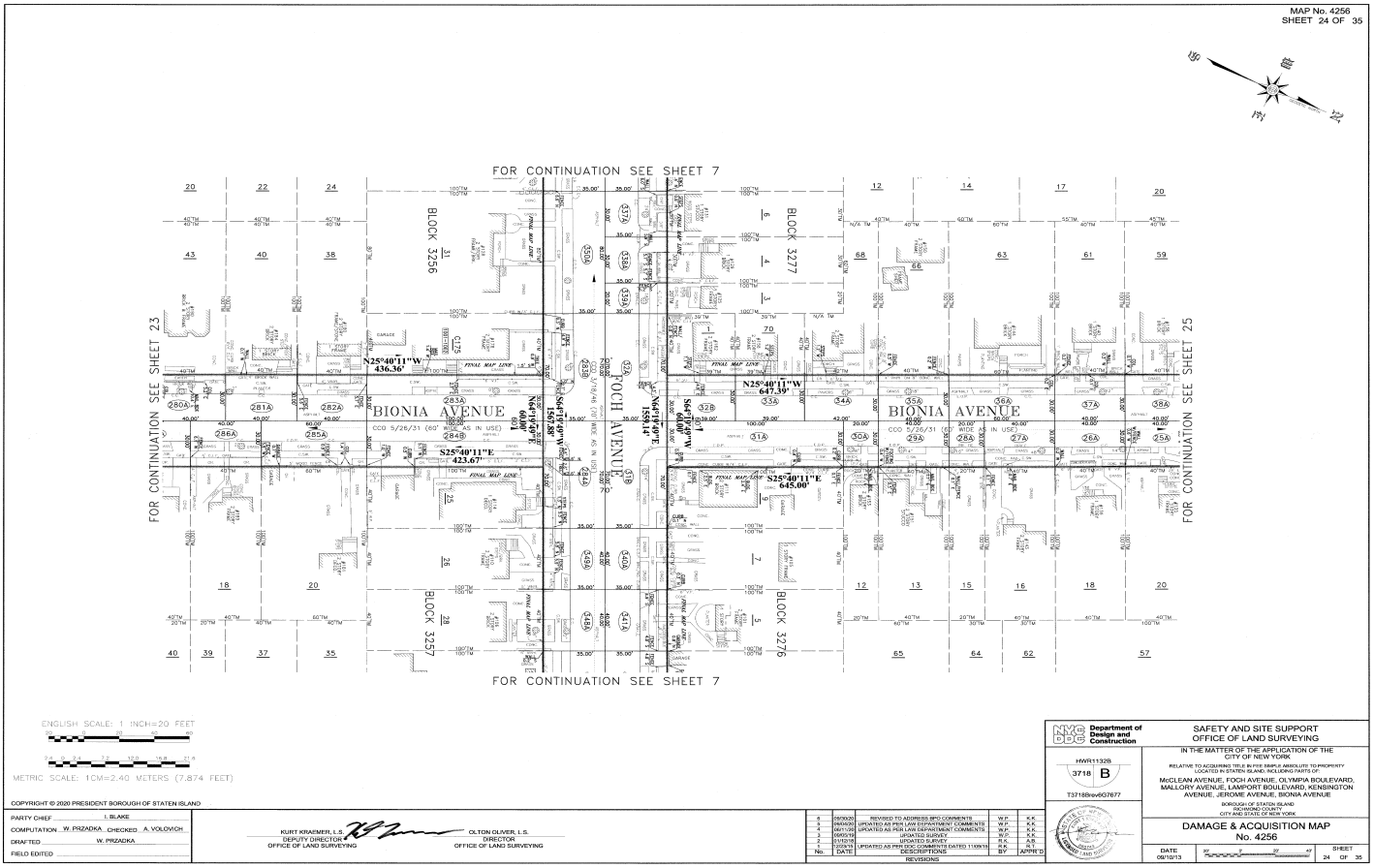
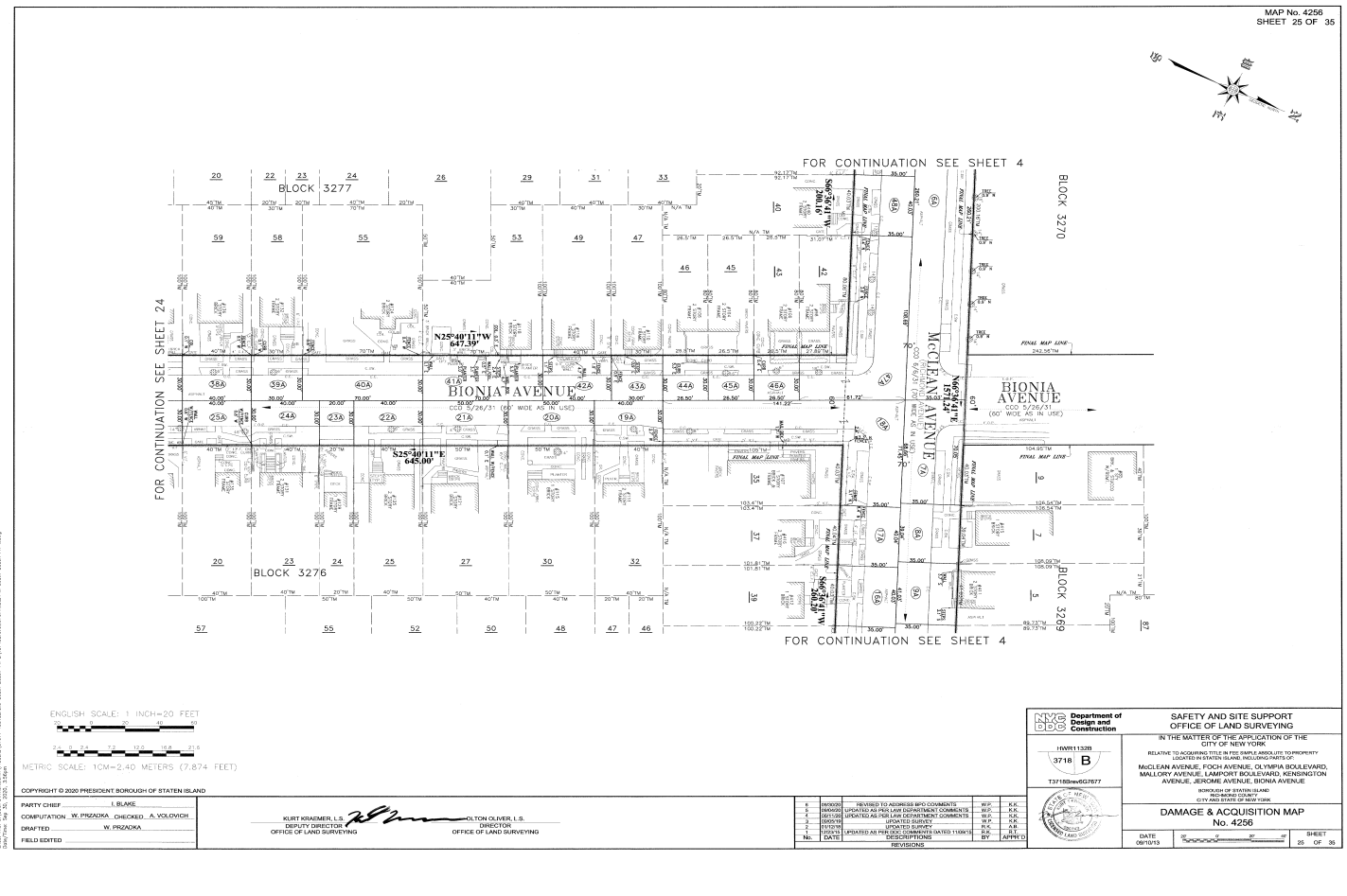
DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13
SCALE 0' 20' 40'
SHEET 23 OF 35

DAMAGE & ACQUISITION MAP #4256





DAMAGE & ACQUISITION MAP #4256

MAP No. 4256
SHEET 26 OF 35

DAMAGE PARCEL NO.	BLOCK NO.	LOT NO.	REPUTED OWNER(S)	AREA IN SQ. FEET		LOCATION	REMARKS	ASSESSED VALUATIONS								WETLANDS DELINEATION AREAS		
								2016-2017		2017-2018		2018-2019 (ACTUAL)		2018-2019 (PRORATED)				
				TAKEN	REMAINING			LAND ONLY	TOTAL	LAND ONLY	TOTAL	LAND ONLY	TOTAL	LAND ONLY	TOTAL	WETLANDS	ADJ. TO WETLANDS	REMAINING
170	3252	P/O 35	S.I. BETTER PLACE	128	10,673*	BED OF OLYMPIA BOULEVARD		109,350	425,250	109,350	447,750	109,350	475,200	1,288	5,598	N/A	N/A	N/A
298	3404	P/O 1	LAURANCE EID	125	5,144	BED OF OLYMPIA BOULEVARD		7,736	26,126	6,811	26,512	7,795	26,512	185	629	N/A	N/A	N/A
299	3410	P/O 12	MERITAN KRAJA	225	5,632	BED OF OLYMPIA BOULEVARD		9,245	29,574	9,176	31,348	7,879	32,496	303	1,248	N/A	N/A	N/A
300	3410	P/O 8	TRF REALTY HOLDINGS, LLC	134	3,650	BED OF OLYMPIA BOULEVARD		7,857	23,224	6,597	23,400	6,129	23,400	217	829	N/A	N/A	N/A
301	3410	P/O 5	VINCENT SQUARCIAFICO, ANTONIETTA SEPE	209	6,048	BED OF OLYMPIA BOULEVARD		15,122	27,793	12,784	29,460	10,958	31,185	366	1,042	N/A	N/A	N/A
302	3410	P/O 1	DENISE ROSELLI, DOMINIC CATELLO	314	7,632	BED OF OLYMPIA BOULEVARD		9,120	16,620	8,290	17,617	8,204	18,674	324	738	N/A	N/A	N/A
303	3411	P/O 10	NAIM BLAKAJ & VJOLLCE BLAKAJ	323	6,300	BED OF OLYMPIA BOULEVARD		11,570	27,348	10,592	28,988	9,715	30,727	474	1,499	N/A	N/A	N/A
304	3411	P/O 9	TODD REALTY CORP	107	2,577	BED OF OLYMPIA BOULEVARD		6,451	19,016	6,350	20,156	5,129	21,365	204	852	N/A	N/A	N/A
305	3411	P/O 8	XUE YING YANG	82	2,312	BED OF OLYMPIA BOULEVARD		6,900	19,440	6,439	20,606	5,496	21,842	188	748	N/A	N/A	N/A
306	3411	P/O 6	TODD REALTY CORP, LORETTA R. DELGADO	82	2,193	BED OF OLYMPIA BOULEVARD		5,840	18,126	5,416	19,213	4,396	20,365	158	734	N/A	N/A	N/A
307	3411	P/O 5	RAFAL PODKOWKA & EWA PODKOWKA	82	2,559	BED OF OLYMPIA BOULEVARD		5,819	18,062	5,397	19,145	4,390	20,293	136	630	N/A	N/A	N/A
308	3411	P/O 4	JOLANTA PUCHNOWSKI & RYSZARD PUCHNOWSKI	82	2,438	BED OF OLYMPIA BOULEVARD		5,503	17,871	4,969	18,943	4,147	20,079	135	653	N/A	N/A	N/A
309	3411	P/O 3	ANNA AKHRINA	82	2,317	BED OF OLYMPIA BOULEVARD		6,552	19,716	6,213	20,898	5,367	22,151	183	757	N/A	N/A	N/A
310	3411	P/O 1	THANH H NGO, NGA THI T TRAN	356	2,554	BED OF OLYMPIA BOULEVARD		6,301	18,952	6,148	20,089	6,245	21,294	764	2,605	N/A	N/A	N/A
311	3412	P/O 9	TADEUSZ CZARNIAWSKI & KATARZYNA CZARNIAWSKI	231	3,921	BED OF OLYMPIA BOULEVARD		7,111	23,404	6,111	24,808	5,091	26,296	283	1,463	N/A	N/A	N/A
312	3412	P/O 7	BAOXIA LIN, SHEJIAO LIANG, YIZHEN LIANG, YUELAI LIANG	40	3,621	BED OF OLYMPIA BOULEVARD		6,983	22,578	6,576	23,932	5,089	25,367	56	277	N/A	N/A	N/A
316	3417	P/O 105	THEODORE CIOFFI	210	3,628	BED OF OLYMPIA BOULEVARD		9,422	21,751	10,500	22,020	9,819	23,341	537	1,277	N/A	N/A	N/A
317	3417	P/O 103	KRYSTIAN GRUM	170	2,706	BED OF OLYMPIA BOULEVARD		15,540	25,500	15,285	27,030	12,535	28,651	741	1,694	N/A	N/A	N/A
318	3417	P/O 101	BARBARA BURGIO	183	2,688	BED OF OLYMPIA BOULEVARD		9,480	23,940	9,434	25,376	7,713	26,898	492	1,715	N/A	73	110
			TOTAL:	3,165											TOTAL:	N/A	73	

NOTE:
* – TOTAL AREA FOR MAP No. 4226 AND MAP No. 4256

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4	06/11/20	UPDATED AS PER LAW DEPARTMENT COMMENTS	W.P.	K.K.
3	09/05/19	UPDATED SURVEY	W.P.	K.K.
2	01/12/18	UPDATED SURVEY	R.K.	A.B.
1	12/23/15	UPDATED AS PER DDC COMMENTS DATED 11/09/15	R.K.	R.T.

REVISIONS

NYC DDC Department of Design and Construction

HWR1132B
3718 B
T3718Brev6G7677

STATE OF NEW YORK KURT T KRAEMER 050743 LICENSED LAND SURVEYOR

SAFETY AND SITE SUPPORT
OFFICE OF LAND SURVEYING

IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
RELATIVE TO ACQUIRING TITLE IN FEE SIMPLE ABSOLUTE TO PROPERTY LOCATED IN STATEN ISLAND, INCLUDING PARTS OF:
McCLEAN AVENUE, FOCH AVENUE, OLYMPIA BOULEVARD, MALLORY AVENUE, LAMPORT BOULEVARD, KENSINGTON AVENUE, JEROME AVENUE, BIONIA AVENUE
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13
20' 0' 20' 40'
SHEET 26 OF 35

Date/Time: Sep 30, 2020, 3:56pm

MAP No. 4256
SHEET 27 OF 35

DAMAGE PARCEL NO.	ADJACENT BLOCK NO.	ADJACENT TO LOT NO.	REPUTED OWNER(S) OF ADJACENT LOT*	AREA IN SQ. FEET		LOCATION	REMARKS	ASSESSED VALUATIONS						WETLANDS DELINEATION AREAS		
								2016-2017		2017-2018		2018-2019				
				TAKEN	REMAINING			LAND ONLY	TOTAL	LAND ONLY	TOTAL	LAND ONLY	TOTAL	WETLANDS	ADJ. TO WETLANDS	REMAINING
1A	3243	100R	NEW YORK CITY HOUSING AUTHORITY	17,339	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 100 in tax block 3243, as long as such encroachment shall stand. Subject to any interest that the New York City Housing Authority may have in this damage parcel.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2A	3246	7	DASURIJE SAINOVSKI & NEVZAT SAINOVSKI	4,003	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3A	3246	5	NAZIKE KOLARI & SABRI KOLARI	1,751	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)	This part of the street is being taken subject to the encroachments of the mail box and wall on tax lot 5 in tax block 3246, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4A	3246	1	FRANK AMMIRATI & JOSEPHINE SCALA	3,527	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 1 in tax block 3246, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5A	3247	1	CHURCH OF THE HOLY ROSARY	9,107	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)	This part of the street is being taken subject to the encroachment of the sign on tax lot 1 in tax block 3247, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6A	3270	1	CHURCH OF THE HOLY ROSARY	9,107	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7A	3269	9	MATTEO DI GIOIA & GIUSEPPE DI GIOIA	2,428	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8A	3269	7	GERARD M. MURPHY & JOHN R. MURPHY	1,366	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9A	3269	5	MICHAEL C GIAMMARINO	1,436	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)	This part of the street is being taken subject to the encroachments of the steps and wall on tax lot 5 in tax block 3269, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10A	3269	3	JOSEPH NERI	1,401	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11A	3269	1	PATRICIA E FASANO	2,477	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12A	3268	9	MARIO DEGIOVANNI	1,051	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 9 in tax block 3268, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13A	3275	35	VITO J. BIANCHINI & LINDA A. BIANCHINI	1,051	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14A	3276	43	BENEDICT PARADISO JR., AS TRUSTEE OF THE PARADISO FAMILY IRREVOCABLE RESIDENCE TRUST	2,428	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15A	3276	41	BENEDICT PARADISO JR TRUSTEE	1,401	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16A	3276	39	ALTIN SELMANI	1,401	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
17A	3276	37	JOSEPH MIGLIORINI & ROSA MIGLIORINI	1,401	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18A	3276	35	ANNE MARINA BOYLE	5,644	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 35 in tax block 3276, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19A	3276	32	NICHOLAS J. MATERA & MARIA MATERA	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20A	3276	30	DARLENE CROWE	1,500	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
21A	3276	27	LAVDERIM QOKU	1,500	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22A	3276	25	ROBERT CICULLA, DANIELA ZAGARA	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
23A	3276	24	JAMES GILL	600	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
24A	3276	23	WITOLD BAGINSKI & EWA BAGINSKA	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
25A	3276	20	LISA CORAZZA, MARIA MONICO, PRUDENCE DIBELLO	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26A	3276	18	MEU LING LIN	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
27A	3276	16	VINCENT CAMA	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
28A	3276	15	MICHAEL J. SCARSO	600	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
29A	3276	13	MICHAEL J. SCARSO	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
30A	3276	12	LOUISE MASTROMARINO	600	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
31A	3276	9	FRANCES VATICANO	3,000	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
31B	3276	9	FRANCES VATICANO	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
32A	3277	1	JANUSZ JURGA	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
32B	3277	1	JANUSZ JURGA	1,170	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
33A	3277	70	BAO LING ZHANG & XIAN QIANG LU	1,170	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
34A	3277	68	KOI KUN WONG	1,260	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35A	3277	66	JOHN BRUILLO	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
36A	3277	63	ROBERT & ANGELICA TOSTO IRREVOCABLE TRUST	1,800	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
37A	3277	61	ALDO G. SCALA	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachment of the columns on tax lot 61 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
38A	3277	59	MICHAEL MICELI	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
39A	3277	58	EDUARD SHKLYAR	900	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
40A	3277	55	MANUEL LIBANO & MARYANN LIBANO	2,100	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
41A	3277	53	FRANCINE RINALDI BENV	2,100	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachments of the wall, steps and mail box on tax lot 53 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
42A	3277	49	PATRICIA CARUSELLE	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachments of the wall and steps on tax lot 49 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE:
* – THE REPUTED OWNER MAY OR MAY NOT HAVE INTEREST IN THE DAMAGE PARCEL

PARTY CHIEF I. BLAKE
COMPUTATION W. PRZADKA CHECKED A. VOLOVICH
DRAFTED W. PRZADKA
FIELD EDITED

KURT KRAEMER, L.S.
DEPUTY DIRECTOR
OFFICE OF LAND SURVEYING

OLTON OLIVER, L.S.
DIRECTOR
OFFICE OF LAND SURVEYING

No.	DATE	DESCRIPTIONS	BY	APPR'D
6	09/30/20	REVISED TO ADDRESS BPO COMMENTS	W.P.	K.K.
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STATE OF NEW YORK KURT T KRAEMER 050743 LICENSED LAND SURVEYOR

SAFETY AND SITE SUPPORT
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IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
RELATIVE TO ACQUIRING TITLE IN FEE SIMPLE ABSOLUTE TO PROPERTY LOCATED IN STATEN ISLAND, INCLUDING PARTS OF:
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BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13
20' 0' 20' 40'
SHEET 27 OF 35

DAMAGE & ACQUISITION MAP #4256

MAP No. 4256
SHEET 28 OF 35

DAMAGE PARCEL NO.	ADJACENT BLOCK NO.	ADJACENT TO LOT NO.	REPUTED OWNER(S) OF ADJACENT LOT*	AREA IN SQ. FEET		LOCATION	REMARKS	ASSESSED VALUATIONS 2016-2017		2017-2018		2018-2019		WETLANDS DELINEATION AREAS		
				TAKEN	REMAINING			LAND ONLY	TOTAL	LAND ONLY	TOTAL	LAND ONLY	TOTAL	WETLANDS	ADJ. TO WETLANDS	REMAINING
43A	3277	47	BENEDETA GIALLOMBARDO	900	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachment of the steps on tax lot 47 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
44A	3277	46	MARTA L PABON	795	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
45A	3277	45	GREGG DEMATTEO & ANN DEMATTEO	795	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
46A	3277	43	JOHN CONTE	795	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
47A	3277	42	MICHAEL MIRANDA & VICTORIA MIRANDA	4,648	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
48A	3277	40	STEVEN C. DI SALVO, STEVEN J. DI SALVO	1,401	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
49A	3277	38	LORETTA QUINN & EDWARD KANE	1,401	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
50A	3277	36	JOSEPH A PUCCIARELLI	5,355	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachments of the wall and columns on tax lot 36 in tax block 3277, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
51A	3277	33	ROCCO LONGO JR	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
52A	3277	31	FRANK POLLINA	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
53A	3277	29	ROBERT FREEO & RUSSELL F. FREEO, JR.	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 29 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
54A	3277	26	SANDY Y WONG	1,800	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the wall on tax lot 26 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55A	3277	24	JOSEPH DIBELLO	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
56A	3277	23	KEVIN R MCPARTLAND	600	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
57A	3277	22	MARGARET HUGHES	600	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
58A	3277	20	LEONARD J NITTI, CONCETTA CHRISTENSEN	1,350	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 20 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
59A	3277	17	CARLO MATRANGA & CONCETTA MATRANGA	1,650	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 17 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
60A	3277	14	CARLO MATRANGA & CONCETTA MATRANGA	1,800	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
61A	3277	12	SAFET VUKOVIC	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 12 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
62A	3277	7	JOHN LEBRIO	3,000	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the wall on tax lot 7 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
62B	3277	7	JOHN LEBRIO	3,850	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 7 in tax block 3277, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
63A	3251	36	JOSEPH A. CAVALLO & MARIA I. CAVALLO AS TRUSTEES OF THE CAVALLO FAMILY TRUST	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
63B	3251	36	JOSEPH A. CAVALLO & MARIA I. CAVALLO AS TRUSTEES OF THE CAVALLO FAMILY TRUST	3,000	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
64A	3251	34	HENRYK TROSZCZYNSKI & ANTONINA TROSZCZYNSKI	600	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 34 in tax block 3251, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
65A	3251	33	MAURIZIO CALANDRA & PATRICIA CALANDRA	600	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 33 in tax block 3251, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
66A	3251	31	CHAOTONG YE & XIAOYAN YE	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
67A	3251	29	SUSAN ANNE BRIGANTE	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
68A	3251	26	STANISLAV BEER	1,800	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
69A	3251	23	AL SLIMAS & LAURA SLIMAS, DONNA KEHOE	1,800	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
70A	3251	20	JOSEPH BARCHITTA	1,800	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the wall on tax lot 20 in tax block 3251, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
71A	3251	18	LI ZHANG	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 18 in tax block 3251, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
72A	3251	16	GHAZANFAR CHAUDHRY	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
73A	3251	14	JOSEPH COMPITELLO & FRANCINE COMPITELLO	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 14 in tax block 3251, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
74A	3251	12	ANTONIO VITO SUSCA	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachments of the wall, steps and mail box on tax lot 12 in tax block 3251, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
75A	3251	8	KATHLEEN LEE & PONNEL IRWIN-LEE	6,043	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
76A	3251	5	BARDHYL RRAGAMI	2,101	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
77A	3251	4	VITO R AGLIO	701	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
78A	3251	1	DONNA AGLIO	6,366	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
79A	3251	68	EVANGELINE MAKALING, LEILANI CRUTO, ARLENE LLERAS	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
80A	3251	66	JAMES MASIELLO, LORRAINE MASIELLO, JENNIE MASIELLO	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
81A	3251	64	GLENN POPLASKI	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
82A	3251	62	KAREN GOODWIN AS TRUSTEE OF THE DOROTHY DOWLING IRREVOCABLE TRUST	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the wall on tax lot 62 in tax block 3251, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
83A	3251	60	SZE YIN TAM	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the wall on tax lot 60 in tax block 3251, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
84A	3251	58	NATALIYA RAZMADZE & ALEXANDER A RAZMADZE	1,800	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
85A	3251	55	URSZULA GALECKA & ADAM SOBOLEWSKI	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE:
* – THE REPUTED OWNER MAY OR MAY NOT HAVE INTEREST IN THE DAMAGE PARCEL

PARTY CHIEF I. BLAKE
COMPUTATION W. PRZADKA CHECKED A. VOLOVICH
DRAFTED W. PRZADKA
FIELD EDITED

KURT KRAEMER, L.S.
DEPUTY DIRECTOR
OFFICE OF LAND SURVEYING

OLTON OLIVER, L.S.
DIRECTOR
OFFICE OF LAND SURVEYING

No.	DATE	DESCRIPTIONS	BY	APPR'D
6	09/30/20	REVISED TO ADDRESS BPO COMMENTS	W.P.	K.K.
5	09/04/20	UPDATED AS PER LAW DEPARTMENT COMMENTS	W.P.	K.K.
4	06/11/20	UPDATED AS PER LAW DEPARTMENT COMMENTS	W.P.	K.K.
3	09/05/19	UPDATED SURVEY	W.P.	K.K.
2	01/12/18	UPDATED SURVEY	R.K.	A.B.
1	12/23/15	UPDATED AS PER DDC COMMENTS DATED 11/09/15	R.K.	R.T.

REVISIONS

NYC DDC Department of Design and Construction

SAFETY AND SITE SUPPORT
OFFICE OF LAND SURVEYING

HWR1132B
3718 B
T3718Brev6G7677

IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
RELATIVE TO ACQUIRING TITLE IN FEE SIMPLE ABSOLUTE TO PROPERTY LOCATED IN STATEN ISLAND, INCLUDING PARTS OF:
McCLEAN AVENUE, FOCH AVENUE, OLYMPIA BOULEVARD, MALLORY AVENUE, LAMPORT BOULEVARD, KENSINGTON AVENUE, JEROME AVENUE, BIONIA AVENUE
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

STATE OF NEW YORK · KURT T. KRAEMER · 050743 · LICENSED LAND SURVEYOR

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13 — 20' 0' 20' 40' — SHEET 28 OF 35

MAP No. 4256
SHEET 29 OF 35

DAMAGE PARCEL NO.	ADJACENT BLOCK NO.	ADJACENT TO LOT NO.	REPUTED OWNER(S) OF ADJACENT LOT*	AREA IN SQ. FEET		LOCATION	REMARKS	ASSESSED VALUATIONS 2016-2017		2017-2018		2018-2019		WETLANDS DELINEATION AREAS		
				TAKEN	REMAINING			LAND ONLY	TOTAL	LAND ONLY	TOTAL	LAND ONLY	TOTAL	WETLANDS	ADJ. TO WETLANDS	REMAINING
86A	3251	53	MARA ASANOVIC	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the wall on tax lot 53 in tax block 3251, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
87A	3251	50	JOHN MEYERS	1,800	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
88A	3251	47	S ESPOSITO	1,800	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the wall on tax lot 47 in tax block 3251, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
89A	3251	43	DIMOLA CONSTRUCTION CORP.	3,000	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
89B	3251	43	DIMOLA CONSTRUCTION CORP.	3,150	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90A	3250	36	NADEZDA KORCAKOVA & JAN KORCAK	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90B	3250	36	NADEZDA KORCAKOVA & JAN KORCAK	3,000	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the wall and steps on tax lot 36 in tax block 3250, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
91A	3250	34	CALOGERO CUSUMANO	900	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the wall, steps and mail box on tax lot 34 in tax block 3250, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
92A	3250	32	STEVEN W. CARL	900	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 32 in tax block 3250, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
93A	3250	29	ANN MARIE LASALA, MAY LASALA ORLANDO, CHARLES ORLANDO	1,800	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 29 in tax block 3250, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
94A	3250	25	DAWN BYE & JOSEPH BYE	2,400	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 25 in tax block 3250, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
95A	3250	23	LOUIS A. VALENTI, MARIE E. VALENTI, MAUREEN M. VALENTI	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
96A	3250	21	STEVEN CAMACHO & AMANDA BRAVATA	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
97A	3250	19	MARY LOU MALCZEWSKI	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
98A	3250	17	PETER MORGANTE & RICHARD MORGANTE	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
99A	3250	15	SIO IN WONG & HIO I. KONG	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
100A	3250	13	MERYEM KURUN, MELEK SAVASLI	1,800	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the wall on tax lot 13 in tax block 3250, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
101A	3250	8	FLAMUR STRIKEANI	6,353	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
102A	3250	5	ON YOUR MARK INC	2,101	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
103A	3250	3	VADIM KLIMENKO & SOLVITA MITENBERGG	1,401	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)	This part of the street is being taken subject to the encroachment of the wall on tax lot 3 in tax block 3250, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
104A	3250	1	CHARLES DESARIO	4,720	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachments of the shed and wall on tax lot 1 in tax block 3250, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
105A	3250	70	LUKASZ WOLYNIEC & SZYMON WOLYNIEC	2,017	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the ret. wall on tax lot 70 in tax block 3250, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
106A	3250	68	TERESA VENTURINI, JOANN VENTURINI AS CO TRUSTEES OF THE VENTURINI FAMILY TRUST	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
107A	3250	66	ANDREA TRENTACOSTA, LIZABETH ZIZNEWSKI, ROBERT J. ZIZNEWSKI, CHARLES J. CAGGIANO, PHILIP R. CAGGIANO	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
108A	3250	64	T LOFTUS	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
109A	3250	62	ANTHONY T PATRONE	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
110A	3250	60	DANIEL & PATRICIA VENEZIA	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
111A	3250	58	VINCENT RUSSO	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
112A	3250	56	THERESA BARBA & JOHANNA CAVORLEY	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
113A	3250	54	R TETLUS	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
114A	3250	51	LARRY BELCASTRO	1,633	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
115A	3250	49	KARUNA J CHRISTIAN, PEARLYN CHRISTIAN, CLIFFORD CHRISTIAN, SHASHIKANT CHRISTIAN	1,633	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
116A	3250	47	YURIY KOTLYARSKIY & LYUBOV SHEREMETA	1,633	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the wall on tax lot 47 in tax block 3250, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
117A	3250	43	DEBRA WEINBERG, DAVID VALERO AS TRUSTEES OF THE VALERO IRREVOCABLE TRUST OF 2009	3,500	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
117B	3250	43	DEBRA WEINBERG, DAVID VALERO AS TRUSTEES OF THE VALERO IRREVOCABLE TRUST OF 2009	3,325	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
118A	3249	36	SERGEY O. TIMOFEEV	2,975	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
118B	3249	36	SERGEY O. TIMOFEEV	3,500	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
119A	3249	34	GISELA BARANOW IRREVOCABLE TRUST	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
120A	3249	32	MICHAEL DUFFY	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 32 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
121A	3249	30	ANGELA CALABRO	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
122A	3249	28	KENNETH PICCININNI, TRUSTEE	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
123A	3249	26	LI HUAN LI, CHAOHUA WU	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
124A	3249	24	J EREMITA	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
125A	3249	22	MIECZYSLAW SMULSKI & SOPHIE SMULSKI	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 22 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
126A	3249	20	PATRICIA SCHIUMO	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE:
* – THE REPUTED OWNER MAY OR MAY NOT HAVE INTEREST IN THE DAMAGE PARCEL

PARTY CHIEF I. BLAKE
COMPUTATION W. PRZADKA CHECKED A. VOLOVICH
DRAFTED W. PRZADKA
FIELD EDITED

KURT KRAEMER, L.S.
DEPUTY DIRECTOR
OFFICE OF LAND SURVEYING

OLTON OLIVER, L.S.
DIRECTOR
OFFICE OF LAND SURVEYING

No.	DATE	DESCRIPTIONS	BY	APPR'D
6	09/30/20	REVISED TO ADDRESS BPO COMMENTS	W.P.	K.K.
5	09/04/20	UPDATED AS PER LAW DEPARTMENT COMMENTS	W.P.	K.K.
4	06/11/20	UPDATED AS PER LAW DEPARTMENT COMMENTS	W.P.	K.K.
3	09/05/19	UPDATED SURVEY	W.P.	K.K.
2	01/12/18	UPDATED SURVEY	R.K.	A.B.
1	12/23/15	UPDATED AS PER DDC COMMENTS DATED 11/09/15	R.K.	R.T.

REVISIONS

NYC DDC Department of Design and Construction

SAFETY AND SITE SUPPORT
OFFICE OF LAND SURVEYING

HWR1132B
3718 B
T3718Brev6G7677

IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
RELATIVE TO ACQUIRING TITLE IN FEE SIMPLE ABSOLUTE TO PROPERTY LOCATED IN STATEN ISLAND, INCLUDING PARTS OF:
McCLEAN AVENUE, FOCH AVENUE, OLYMPIA BOULEVARD, MALLORY AVENUE, LAMPORT BOULEVARD, KENSINGTON AVENUE, JEROME AVENUE, BIONIA AVENUE
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13 — 20' 0' 20' 40' — SHEET 29 OF 35

DAMAGE & ACQUISITION MAP #4256

MAP No. 4256
SHEET 30 OF 35

DAMAGE PARCEL NO.	ADJACENT BLOCK NO.	ADJACENT TO LOT NO.	REPUTED OWNER(S) OF ADJACENT LOT*	AREA IN SQ. FEET		LOCATION	REMARKS	ASSESSED VALUATIONS 2016-2017		2017-2018		2018-2019		WETLANDS DELINEATION AREAS		
				TAKEN	REMAINING			LAND ONLY	TOTAL	LAND ONLY	TOTAL	LAND ONLY	TOTAL	WETLANDS	ADJ. TO WETLANDS	REMAINING
127A	3249	18	ROBERT ACEVEDO & LOURDES ACEVEDO	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 18 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
128A	3249	16	BARBARA ANN FINAZZO, ELAIN URCIUOLI, JOSEPH J. FINAZZO AS TRUSTEES OF THE ROSE P. FINAZZO TRUST	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
129A	3249	14	ANGELINA DANTON IRREVOCABLE TRUST, DARLENE VIGLIOTTI, AS TRUSTEE	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
130A	3249	12	PHILIP MURRAY	1,452	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
131A	3249	9	EDWARD SCAFFIDI	1,833	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
132A	3249	7	HECTOR A. CABALLERO	5,590	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the wall on tax lot 7 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
133A	3249	5	DIEGO A. LADINO	1,365	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
134A	3249	3	ZHAO FENG LU, WEI HONG HU	1,401	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
135A	3249	1	FRANK GALLEGGIANTE	5,699	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachment of the wall on tax lot 1 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
136A	3249	70	SIYI ZHOU	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachments of the wall and step on tax lot 70 in tax block 3249, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
137A	3249	68	MAHMOUD ALI, OLA MAHMOUD	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 68 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
138A	3249	66	AMY DEMARCO	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachments of the steps, wall and mail box on tax lot 66 in tax block 3249, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
139A	3249	65	GUO ZAN CHEN & SHARON LIN	720	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachments of the wall and mail box on tax lot 65 in tax block 3249, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
140A	3249	63	ALIREZA AMIRI	480	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 63 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
141A	3249	62	ARTUR MELNIK	480	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 62 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
142A	3249	61	RUTH PANTALEON	720	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 61 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
143A	3249	60	VELI SPAHIU	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
144A	3249	58	SURIJE CONWAY & JACK CONWAY	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
145A	3249	56	MUHAMED LEKPERIC & TUSE LEKPERIC	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
146A	3249	54	GREGG R. SCUDERO & ERICA SCUDERO	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
147A	3249	52	MICHAEL A. PITTELLI	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
148A	3249	50	JOHN BREEN	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachment of the wall on tax lot 50 in tax block 3249, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
149A	3249	48	ROSE ANN CUOCO	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
150A	3249	43	TINA CARUSO	3,000	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
150B	3249	43	TINA CARUSO	2,800	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
151A	3248	42	GENADIY RAYNIN & ALLA RAYNIN	4,550	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the shed on tax lot 42 in tax block 3248, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
151B	3248	42	GENADIY RAYNIN & ALLA RAYNIN	780	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 42 in tax block 3248, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
152A	3248	41	CATHERINE MADDEN	720	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
153A	3248	39	LGUO WEN LI & TRACY QILAN WU	750	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachments of the mail box, wall and columns on tax lot 39 in tax block 3248, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
154A	3248	38	ALAN P KINDOS	750	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
155A	3248	35	ANGELA STAZZONE & BENIDETTO STAZZONE	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
156A	3248	33	JAMES MC COURT & MARGARET MC COURT	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachments of the wall and step on tax lot 33 in tax block 3248, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
157A	3248	31	WAI LUEN LEE	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
158A	3248	30	SHU PIAO ZHANG, YAN HONG LIANG	600	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
159A	3248	29	FRANCES GONZALEZ	600	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
160A	3248	27	ANNA WILK & ADAM WILK	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
161A	3248	24	THOMAS MUSTARI	1,800	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
162A	3248	20	HUI JIA LUO,CUI YUN ZHENG, GUI XIANG LUO	2,000	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
163A	3248	17	ROCCO PESIRI	2,000	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
164A	3248	14	CARLO VERSELLA	2,000	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
165A	3248	13	ROBERT ALTAMORE & LISA ALTAMORE	960	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE:
★ – THE REPUTED OWNER MAY OR MAY NOT HAVE INTEREST IN THE DAMAGE PARCEL

PARTY CHIEF I. BLAKE
COMPUTATION W. PRZADKA CHECKED A. VOLOVICH
DRAFTED W. PRZADKA
FIELD EDITED

KURT KRAEMER, L.S.
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IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
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BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13
SHEET 30 OF 35

MAP No. 4256
SHEET 31 OF 35

DAMAGE PARCEL NO.	ADJACENT BLOCK NO.	ADJACENT TO LOT NO.	REPUTED OWNER(S) OF ADJACENT LOT*	AREA IN SQ. FEET		LOCATION	REMARKS	ASSESSED VALUATIONS 2016-2017		2017-2018		2018-2019		WETLANDS DELINEATION AREAS		
				TAKEN	REMAINING			LAND ONLY	TOTAL	LAND ONLY	TOTAL	LAND ONLY	TOTAL	WETLANDS	ADJ. TO WETLANDS	REMAINING
166A	3248	11	ALFREDO CASELLA	960	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
167A	3248	10	KENNETH R ELDER JR	960	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
168A	3248	9	WALTER CACCAVALE	5,508	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931) BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the Street is being taken subject to the encroachments of the shed, wall and mail box on tax lot 9 in tax block 3248, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
169A	3248	1	A CAPRIOTTI	3,527	N/A	BED OF McCLEAN AVENUE (C.C.O. 6-6-1931)	This part of the street is being taken subject to the encroachment of the shed on tax lot 1 in tax block 3248, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
170A	3252	35	S.I. BETTER PLACE	6,775	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
171A	3252	33	JOHN DEVINE	1,389	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
172A	3252	31	CARL DI PIETRO & CAROLE DI PIETRO	5,264	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
173A	3252	29	ALMIR HOXHA & BLERDI HOXHA	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
174A	3252	27	SHQIPE HOXHA & BLESDI HOXHA	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
175A	3252	24	YU XIAN LEE & WAI HUNG LEE	1,800	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
176A	3252	22	NAHED TURIFI & HISHAM SHAHOUT	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
177A	3252	20	CAROL SCILLUFFO	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
178A	3252	18	CHUANG WU & DAO PING XING	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
179A	3252	16	LUANE SHALEESH	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 16 in tax block 3252, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
180A	3252	14	SULEJMAN RAMUSEVIC & ENVER RAMUSEVIC	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
181A	3252	12	CATHERINE TINERINO MOORE, SALVATORE J. TINERINO, DIANE SLOAN	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
182A	3252	7	EWELINA PUZA	3,000	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
182B	3252	7	EWELINA PUZA	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
183A	3253	1	FA QIANG WANG	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
183B	3253	1	FA QIANG WANG	3,000	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
184A	3253	57	JOHN A ZUCCA	1,800	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
185A	3253	55	LOUIS ILLAS	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
186A	3253	53	NTB BUILDERS INC.	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
187A	3253	51	JUN LONG LLC	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
188A	3253	49	ANTONETTE FOLINO	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
189A	3253	47	MICHAEL DELLAVALLE JR.	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)	This part of the street is being taken subject to the encroachment of the wall on tax lot 47 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
190A	3253	45	FATRIJE MELANI & HAJRI MELANI	900	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
191A	3253	44	YLLI KADRIA & ANJEZA LIKA	900	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
192A	3253	42	SALVATRICE DIMARTINO-LUBRANO & TONI A DIMARTINO	1,200	N/A	BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
193A	3253	38	ANDREW V. BOYLE	6,573	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
194A	3253	37	IWONA MIECZKOWSKA & DARIUSZ MIECZKOWSKI	1,435	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 37 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
195A	3253	35	CARLOS TITUANA & MAURITA TITUANA	1,433	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 35 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
196A	3253	31	SALVATORE DIFORE	7,612	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachments of the wall and steps on tax lot 31 in tax block 3253, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
197A	3253	27	KEITH MELONI	2,100	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 27 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
198A	3253	25	LI XING H	700	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the wall on tax lot 25 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
199A	3253	24	GRZEGORZ IGNATOWICZ & KRYSTYNA IGNATOWICZ	700	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the wall on tax lot 24 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
200A	3253	23	STELA BLLACA & ENDRIT BLLACA	700	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 23 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
201A	3253	22	SANDRA SOLEBELLO & FRANK LO BUE	700	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 22 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
202A	3253	21	THERESA BURNEY	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
203A	3253	18	AGNES BURNEY & THERESA BURNEY	700	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
204A	3253	16	ELAINE GRIGORYAN	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 16 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE:
★ – THE REPUTED OWNER MAY OR MAY NOT HAVE INTEREST IN THE DAMAGE PARCEL

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PARTY CHIEF I. BLAKE
COMPUTATION W. PRZADKA CHECKED A. VOLOVICH
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FIELD EDITED

KURT KRAEMER, L.S.
DEPUTY DIRECTOR
OFFICE OF LAND SURVEYING

OLTON OLIVER, L.S.
DIRECTOR
OFFICE OF LAND SURVEYING

No.	DATE	DESCRIPTIONS	BY	APPR'D
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2	01/12/18	UPDATED SURVEY	R.K.	A.B.
1	12/23/15	UPDATED AS PER DDC COMMENTS DATED 11/09/15	R.K.	R.T.

REVISIONS

NYC DDC Department of Design and Construction

SAFETY AND SITE SUPPORT
OFFICE OF LAND SURVEYING

HWR1132B
3718 B
T3718Brev6G7677

IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
RELATIVE TO ACQUIRING TITLE IN FEE SIMPLE ABSOLUTE TO PROPERTY LOCATED IN STATEN ISLAND, INCLUDING PARTS OF:
McCLEAN AVENUE, FOCH AVENUE, OLYMPIA BOULEVARD, MALLORY AVENUE, LAMPORT BOULEVARD, KENSINGTON AVENUE, JEROME AVENUE, BIONIA AVENUE
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13
SHEET 31 OF 35

DAMAGE & ACQUISITION MAP #4256

MAP No. 4256
SHEET 32 OF 35

DAMAGE PARCEL NO.	ADJACENT BLOCK NO.	ADJACENT TO LOT NO.	REPUTED OWNER(S) OF ADJACENT LOT*	AREA IN SQ. FEET TAKEN	AREA IN SQ. FEET REMAINING	LOCATION	REMARKS	ASSESSED VALUATIONS 2016-2017 LAND ONLY	2016-2017 TOTAL	2017-2018 LAND ONLY	2017-2018 TOTAL	2018-2019 LAND ONLY	2018-2019 TOTAL	WETLANDS DELINEATION AREAS WETLANDS	ADJ. TO WETLANDS	REMAINING
205A	3253	15	ANTHONY MIGNONE & ELISABETH F. MIGNONE	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 15 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
206A	3253	13	GARY ROMEO & PAMELA ROMEO	1,050	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
207A	3253	12	ANITA A. PAPPAS	1,050	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208A	3253	9	JOLEEN ARCHUL & ROBERT J ARCHUL	3,500	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the wall on tax lot 9 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
208B	3253	9	JOLEEN ARCHUL & ROBERT J ARCHUL	3,325	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the wall on tax lot 9 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
209A	3254	1	JASON A TAFURI	4,025	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
209B	3254	1	JASON A TAFURI	875	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
210A	3254	62	JIA JIN LU & YUEPING BOEY TAN	875	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
211A	3254	61	JOHN BIONDO JR. & GAETANA BIONDO	875	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
212A	3254	59	ROLAND DEVOLL & ROSALINA DEVOLL	875	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 59 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
213A	3254	57	JUSTYNA WOLICKI & ARKADIUSZ WOLICKI	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 57 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
214A	3254	54	RANDI VOY LATONA	2,100	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 54 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
215A	3254	52	G ZOCCHI	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 52 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
216A	3254	50	DOMENICO LIANTONIO & SEBASTIANA LIANTONIO	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
217A	3254	49	RICHARD SCHNEIDER	793	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 49 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
218A	3254	48	PAYAL A DESAI	513	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 48 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
219A	3254	47	KENNETH PAUL RAFTERY	793	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 47 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
220A	3254	45	MARILYN A MCKEON	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
221A	3254	44	NICOLE XIAOHUA LU & WU QING RONG	700	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
222A	3254	43	JAMES GRANNIS	700	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 43 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
223A	3254	41	GLORIA MCKEON	1,400	N/A	BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
224A	3254	38	KENNETH FULCHER JR, LAUREL FULCHER, TRACI GERVASI, LENORE O'KEEFE	6,254	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF LAMPORT BOULEVARD (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the shed on tax lot 38 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
225A	3254	36	TRACEY R WALTON, ANNA MARIA MENDEZ	2,264	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
226A	3254	32	BANGZE CHEN	2,293	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
227A	3254	30	DAVID T THOMPSON	5,568	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
228A	3254	28	JIANWEN CHEN	600	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
229A	3254	26	THE IRENE ARRIGALI IRREVOCABLE TRUST, CHRISTOPHER ARRIGALI	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 26 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
230A	3254	24	MUHAMET BAJRO	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the columns and mail box on tax lot 24 in tax block 3254, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
231A	3254	23	RONALD CALCAGNO	600	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
232A	3254	22	PASQUALE CIOFFI	600	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
233A	3254	21	BAO HUA LIU	600	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 21 in tax block 3254, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
234A	3254	19	DAVID AUILES	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
235A	3254	18	KRZYSZTOF D. KUKLA & MARTA KUKLA	900	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 18 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
236A	3254	16	KENSINGTON PROPERTY 0909 CORP.	900	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
237A	3254	15	SORENA LEMBERT, SHULIM LEMBERT, ESTERA BABAYOVA	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the wall on tax lot 15 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
238A	3254	12	BESIM ISAKOVSKI	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the wall on tax lot 12 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
239A	3254	9	FRANK SCHUMACHER	3,000	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 9 in tax block 3254, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
239B	3254	9	FRANK SCHUMACHER	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
240A	3255	1	ANNA BLYAKHMAN & YURY BLYAKHMAN	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
240B	3255	1	ANNA BLYAKHMAN & YURY BLYAKHMAN	3,000	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the steps and mail box on tax lot 1 in tax block 3255, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
241A	3255	52	ZAMIRA ZYKA & ANTON ZYKA	1,800	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 52 in tax block 3255, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
242A	3255	51	LIXIAO TANG	750	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 51 in tax block 3255, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE:
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PARTY CHIEF I. BLAKE
COMPUTATION W. PRZADKA CHECKED A. VOLOVICH
DRAFTED W. PRZADKA
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STATE OF NEW YORK · KURT T KRAEMER · 050743 · LICENSED LAND SURVEYOR

IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
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CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13 — 20' 0' 20' 40' — SHEET 32 OF 35

MAP No. 4256
SHEET 33 OF 35

DAMAGE PARCEL NO.	ADJACENT BLOCK NO.	ADJACENT TO LOT NO.	REPUTED OWNER(S) OF ADJACENT LOT*	AREA IN SQ. FEET TAKEN	AREA IN SQ. FEET REMAINING	LOCATION	REMARKS	ASSESSED VALUATIONS 2016-2017 LAND ONLY	2016-2017 TOTAL	2017-2018 LAND ONLY	2017-2018 TOTAL	2018-2019 LAND ONLY	2018-2019 TOTAL	WETLANDS DELINEATION AREAS WETLANDS	ADJ. TO WETLANDS	REMAINING
243A	3255	49	ZBIGNEW CIESIELSKI	750	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 49 in tax block 3255, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
244A	3255	48	DMITRY PETROVSKI & MARIA SVINTSOVA	750	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 48 in tax block 3255, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
245A	3255	47	JOHN SIRACUSA	750	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
246A	3255	45	MAGDALENA CYGAN & MICHAEL ARLEQUIN	855	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the wall and mail box on tax lot 45 in tax block 3255, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
247A	3255	44	JOSEPH TEW	945	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the wall, steps and mail box on tax lot 44 in tax block 3255, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
248A	3255	42	BEATA TABOR & WIESLAW TABOR	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the wall, column and mail box on tax lot 42 in tax block 3255, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
249A	3255	40	BINA SLUTSKAYA & VIKTORIYA SLUTSKAYA, ANTONIO MACHADO	1,200	N/A	BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the mail box and wall on tax lot 40 in tax block 3255, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
250A	3255	32	167 OLYMPIA BOULEVARD	9,514	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF KENSINGTON AVENUE (C.C.O. 7-23-1931)	This part of the street is being taken subject to the encroachments of the wall and steps on tax lot 32 in tax block 3255, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
251A	3255	30	ALEKSANDR KUVYATKIN & YELENA KUVYATKINA	1,419	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
252A	3255	28	DMITRY KRIVOSHEYEV & NELLE KRIVOSHEYEV	5,009	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the wall on tax lot 28 in tax block 3255, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
253A	3255	25	THOMAS S. GALLO	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
254A	3255	24	ALEKSANDER TSODIKOV & LYUDMILA TSODIKOV	600	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
255A	3255	23	FRANCINE RYAN & ROBERT RYAN	600	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
256A	3255	22	RICHARD LEI & GRACE JIN	840	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
257A	3255	19	GRACE PROVENZANO & EUGENE PROVENZANO	1,560	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
258A	3255	17	MICHAEL MICELI	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
259A	3255	15	JENNIFER M. NATOLI, CATHERINE C. NATOLI AS TRUSTEES OF THE FRANK T. NATOLI & JOANNE NATOLI	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
260A	3255	12	STEPHANIE BENNETTI AS TRUSTEE OF THE 2014 BENNETTI MEDICAID ASSET PROTECTION TRUST	1,800	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
261A	3255	8	ARON KAPLUN	3,000	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
261B	3255	8	ARON KAPLUN	3,150	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
262A	3256	28	MARIE OLDAKER	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
262B	3256	28	MARIE OLDAKER	3,000	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the deck on tax lot 28 in tax block 3256, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
263A	3256	24	RALPH DI MAGGIO	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
264A	3256	22	ELIZABETH UMBRA	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
265A	3256	20	GRACE TROCCO	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
266A	3256	18	HANI ELSAID	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
267A	3256	16	MYKHAYLO VASYLETS & YULIYA SYSOYEVA	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
268A	3256	14	AMY CHANG	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
269A	3256	13	MARGARET A BILLANTI	1,200	N/A	BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 13 in tax block 3256, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
270A	3256	9	VIKTOR PANAS	5,684	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF JEROME AVENUE (C.C.O. 10-16-1939)	This part of the street is being taken subject to the encroachments of the building and cellar door on tax lot 9 in tax block 3256, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BREAK IN SEQUENCE AS A RESULT OF MERGED LOTS																
272A	3256	8	MASSIMO BENNICI & PAOLO BENNICI	1,075	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the steps on tax lot 8 in tax block 3256, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
273A	3256	6	QIANWEN LI	1,077	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the steps on tax lot 6 in tax block 3256, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
274A	3256	4	4110 5TH AVE. CORP.	1,439	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
275A	3256	2	ROBERT VOLPE & ANTONETTE VOLPE	1,442	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachments of the building and steps on tax lot 2 in tax block 3256, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
276A	3256	1	OLYMPIA HOLDINGS LLC	4,472	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachments of the building and mail box on tax lot 1 in tax block 3256, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
277A	3256	48	SAMSON MOGARIA	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachment of the wall on tax lot 48 in tax block 3256, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
278A	3256	46	PRZEMYSLAW KUNECKI & MALGORZATA KUNECKI	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
279A	3256	44	LYUBOV KOTLOVSKAYA	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 44 in tax block 3256, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
280A	3256	43	XIU YU DONG	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachments of the wall and mail box on tax lot 43 in tax block 3256, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
281A	3256	40	JOSEPH DICOSTANZO	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
282A	3256	38	ANDRES FAMILY IRREVOCABLE TRUST	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE:
★ – THE REPUTED OWNER MAY OR MAY NOT HAVE INTEREST IN THE DAMAGE PARCEL

PARTY CHIEF I. BLAKE
COMPUTATION W. PRZADKA CHECKED A. VOLOVICH
DRAFTED W. PRZADKA
FIELD EDITED

KURT KRAEMER, L.S.
DEPUTY DIRECTOR
OFFICE OF LAND SURVEYING

OLTON OLIVER, L.S.
DIRECTOR
OFFICE OF LAND SURVEYING

No.	DATE	DESCRIPTIONS	BY	APPR'D
6	09/30/20	REVISED TO ADDRESS BPO COMMENTS	W.P.	K.K.
5	09/04/20	UPDATED AS PER LAW DEPARTMENT COMMENTS	W.P.	K.K.
4	06/11/20	UPDATED AS PER LAW DEPARTMENT COMMENTS	W.P.	K.K.
3	09/05/19	UPDATED SURVEY	W.P.	K.K.
2	01/12/18	UPDATED SURVEY	R.K.	A.B.
1	12/23/15	UPDATED AS PER DDC COMMENTS DATED 11/09/15	R.K.	R.T.

REVISIONS

Department of Design and Construction

SAFETY AND SITE SUPPORT
OFFICE OF LAND SURVEYING

HWR1132B
3718 B
T3718Brev6G7677

IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
RELATIVE TO ACQUIRING TITLE IN FEE SIMPLE ABSOLUTE TO PROPERTY LOCATED IN STATEN ISLAND, INCLUDING PARTS OF:
McCLEAN AVENUE, FOCH AVENUE, OLYMPIA BOULEVARD, MALLORY AVENUE, LAMPORT BOULEVARD, KENSINGTON AVENUE, JEROME AVENUE, BIONIA AVENUE
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK

DAMAGE & ACQUISITION MAP
No. 4256

DATE 09/10/13 — 20' 0' 20' 40' — SHEET 33 OF 35

DAMAGE & ACQUISITION MAP #4256

MAP No. 4256
SHEET 34 OF 35

DAMAGE PARCEL NO.	ADJACENT BLOCK NO.	ADJACENT TO LOT NO.	REPUTED OWNER(S) OF ADJACENT LOT*	AREA IN SQ. FEET: TAKEN	AREA IN SQ. FEET: REMAINING	LOCATION	REMARKS	ASSESSED VALUATIONS 2016-2017: LAND ONLY	2016-2017: TOTAL	2017-2018: LAND ONLY	2017-2018: TOTAL	2018-2019: LAND ONLY	2018-2019: TOTAL	WETLANDS DELINEATION AREAS: WETLANDS	ADJ. TO WETLANDS	REMAINING
283A	3256	C175	NOT ON FILE	3,000	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
283B	3256	C175	NOT ON FILE	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
284A	3257	25	ALFRED LEBRIO & KARAN PERILLO-LEBRIO	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the steps on tax lot 25 in tax block 3257, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
284B	3257	25	ALFRED LEBRIO & KARAN PERILLO-LEBRIO	3,000	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
285A	3257	20	JERRY STRZEBALA	1,800	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachments of the garage and columns on tax lot 20 in tax block 3257, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
286A	3257	18	ALFRED SPECIALE	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
287A	3257	16	JESUS RUIZ & ANGELINE RUIZ	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
288A	3257	14	ANDRII VOLKOV & VICTORIA REZNYK	1,200	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
289A	3257	13	WAI LEUNG LAU & YAN XIU MA	600	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
290A	3257	12	ANDRII VOLKOV	600	N/A	BED OF BIONIA AVENUE (C.C.O. 5-26-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
291A	3257	9	STATEN ISLAND LLC	5,710	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF BIONIA AVENUE (C.C.O. 5-26-1931)	This part of the street is being taken subject to the encroachments of the building and steps on tax lot 9 in tax block 3257, as long as such encroachments shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
292A	3257	7	VICTOR BRUNO & JOAN M. BRUNO	1,432	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
293A	3257	5	JOAN BRUNO	1,434	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
294A	3257	3	VICTOR BRUNO & JOAN M. BRUNO	1,437	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
295A	3257	1	JOHN J. RUGGIERO	2,548	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF HICKORY AVENUE (C.C.O. 10-19-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
296A	3278	5	JOHN RUGGIERO, CRYSTAL RUGGIERO	1,017	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF HICKORY AVENUE (C.C.O. 10-19-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
297A	3404	4	MARIA CIOFFI, PASQUALE CIOFFI, PASQUALINA CIOFFI, ANTHONY CIOFFI	747	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
298A	3404	1	LAURANCE EID	1,261	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
299A	3410	12	MERITAN KRAJA	1,425	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
300A	3410	8	TRF REALTY HOLDINGS, LLC	605	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
301A	3410	5	VINCENT SQUARCIAFICO, ANTONIETTA SEPE	818	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 5 in tax block 3410, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
302A	3410	1	DENISE ROSELLI, DOMINIC CATELLO	1,771	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF ANDREWS STREET (C.C.O. 11-15-1929)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
303A	3411	10	NAIM BLAKAJ & VJOLLCE BLAKAJ	1,500	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF ANDREWS STREET (C.C.O. 11-15-1929)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
304A	3411	9	TODD REALTY CORP	396	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 9 in tax block 3411, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
305A	3411	8	XUE YING YANG	301	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 8 in tax block 3411, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
306A	3411	6	TODD REALTY CORP, LORETTA R. DELGADO	300	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 6 in tax block 3411, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
307A	3411	5	RAFAL PODKOWKA & EWA PODKOWKA	299	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 5 in tax block 3411, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
308A	3411	4	JOLANTA PUCHNOWSKI & RYSZARD PUCHNOWSKI	298	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
309A	3411	3	ANNA AKHRINA	298	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
310A	3411	1	THANH H NGO, NGA THI T TRAN	1,405	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF McLAUGHLIN STREET (C.C.O. 10-19-1934)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
311A	3412	9	TADEUSZ CZARNIAWSKI & KATARZYNA CZARNIAWSKI	1,230	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF McLAUGHLIN STREET (C.C.O. 10-19-1934)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
312A	3412	7	BAOXIA LIN, SHEJIAO LIANG, YIZHEN LIANG, YUELAI LIANG	597	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
313A	3412	5	MICHAEL MOLINARO	594	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
314A	3412	3	ZDZISLAW KSZTON	606	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
315A	3412	1	JOSE FERNANDEZ	1,307	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF PEARSALL STREET (C.C.O. 9-12-1931)	This part of the street is being taken subject to the encroachment of the wall on tax lot 1 in tax block 3412, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
316A	3417	105	THEODORE CIOFFI	1,423	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF PEARSALL STREET (C.C.O. 9-12-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
317A	3417	103	KRYSTIAN GRUM	547	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
318A	3417	101	BARBARA BURGIO	577	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	10	567
319A	3417	98	HUA YE	1,747	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,150	597
320A	3417	97	NAZMIJE TOCI, LEONARD RUSI	1,374	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,091	282
321A	3417	95	COLIN HENG	1,373	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,235	137
322A	3417	93	VADYM BILOBLOTSKYY & NADIYA BILOBLOTSKA	1,370	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 93 in tax block 3413, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,181	189

NOTE:
* - THE REPUTED OWNER MAY OR MAY NOT HAVE INTEREST IN THE DAMAGE PARCEL

PARTY CHIEF I. BLAKE
COMPUTATION W. PRZADKA CHECKED A. VOLOVICH
DRAFTED W. PRZADKA
FIELD EDITED

KURT KRAEMER, L.S. DEPUTY DIRECTOR OFFICE OF LAND SURVEYING
OLTON OLIVER, L.S. DIRECTOR OFFICE OF LAND SURVEYING

No.	DATE	DESCRIPTIONS	BY	APPR'D
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3	09/05/19	UPDATED SURVEY	W.P.	K.K.
2	01/12/18	UPDATED SURVEY	R.K.	A.B.
1	12/23/15	UPDATED AS PER DDC COMMENTS DATED 11/09/15	R.K.	R.T.

REVISIONS

NYC DDC Department of Design and Construction
HWR1132B
3718 B
T3718Brev6G7677

SAFETY AND SITE SUPPORT
OFFICE OF LAND SURVEYING
IN THE MATTER OF THE APPLICATION OF THE CITY OF NEW YORK
RELATIVE TO ACQUIRING TITLE IN FEE SIMPLE ABSOLUTE TO PROPERTY LOCATED IN STATEN ISLAND, INCLUDING PARTS OF:
McCLEAN AVENUE, FOCH AVENUE, OLYMPIA BOULEVARD, MALLORY AVENUE, LAMPORT BOULEVARD, KENSINGTON AVENUE, JEROME AVENUE, BIONIA AVENUE
BOROUGH OF STATEN ISLAND
RICHMOND COUNTY
CITY AND STATE OF NEW YORK
DAMAGE & ACQUISITION MAP
No. 4256
DATE 09/10/13
SHEET 34 OF 35

MAP No. 4256
SHEET 35 OF 35

DAMAGE PARCEL NO.	ADJACENT BLOCK NO.	ADJACENT TO LOT NO.	REPUTED OWNER(S) OF ADJACENT LOT*	AREA IN SQ. FEET: TAKEN	AREA IN SQ. FEET: REMAINING	LOCATION	REMARKS	ASSESSED VALUATIONS 2016-2017: LAND ONLY	2016-2017: TOTAL	2017-2018: LAND ONLY	2017-2018: TOTAL	2018-2019: LAND ONLY	2018-2019: TOTAL	WETLANDS DELINEATION AREAS: WETLANDS	ADJ. TO WETLANDS	REMAINING
323A	3417	91	ASOLI VITTORIO	2,345	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,765	580
324A	3418	21	MOUSTAFA HOUR, SAMAH TRIEFI	2,410	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924) BED OF MALLORY AVENUE (C.C.O. 10-18-1939)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,340	1,070
325A	3418	20	ANTONIO DICIANNI, DICIANNI FAMILY IRREVOCABLE LIVING TRUST	1,410	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	179	1,231
326A	3418	18	CRAIG W MALIK	1,436	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
327A	3418	16	DINA MENNELLA VITIELL	1,464	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the wall on tax lot 16 in tax block 3418, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
328A	3418	14	JULIA SOKOLINSKAYA & HUTCH RYDER	1,490	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
329A	3418	12	JAN MATYSZEW & TERESA MATYSZEW, JAN MATYSZEWSKI	1,499	N/A	BED OF OLYMPIA BOULEVARD (C.C.O. 1-24-1924)	This part of the street is being taken subject to the encroachment of the building on tax lot 12 in tax block 3418, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
330A	3248	44	DZEVDET BEGGIE	3,407	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
331A	3249	41	CYNTHIA SIRACUSA	1,750	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
332A	3249	38	A DI PIETRO	1,750	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
333A	3250	40	ANN M ILLARDI	1,750	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
334A	3250	38	CARMINE CARBONARO	1,750	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
335A	3251	41	FRANCES TUZEO	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 41 in tax block 3251, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
336A	3251	38	MARIA I. CAVALLO, JOSEPH A. CAVALLO AS TRUSTEES OF THE CAVALLO FAMILY TRUST	2,100	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
337A	3277	6	PEIWEN LIN, KILUN CHONG	1,050	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
338A	3277	4	PAWEL TOLPA & ALICJA TOLPA	1,050	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
339A	3277	3	GUIMEI HUANG	700	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
340A	3276	7	DOMINICK VILLANI & DOROTHY VILLANI	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
341A	3276	5	FREDY N ABREU	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
342A	3276	3	OLEKSANDR BUDNYK, WOJCIECH MIECZKOWSKI	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 3 in tax block 3276, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
343A	3276	1	AHMED E ABOUELENIN	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946) BED OF FOCH AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
344A	3275	10	ROBERT NICOTERA	1,050	N/A	BED OF FOCH AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
345A	3278	20	PAULA MARINO	1,050	N/A	BED OF FOCH AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
346A	3257	32	EBAZER KALENDER	2,450	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946) BED OF FOCH AVENUE (C.C.O. 7-23-1931)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
347A	3257	30	JOAN C. PARENTE	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 30 in tax block 3257, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
348A	3257	28	HYRIJE RADONCIC & SKENDER RADONCIC	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
349A	3257	26	THERESA PICCININNI, ANDREA BRENNER AS TRUSTEES OF THE MICHAEL PICCININNI IRREVOCABLE TRUST	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
350A	3256	31	LAWRENCE TOSTO JR. & SUSAN TOSTO	2,800	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
351A	3256	29	LAWRENCE TOSTO JR.	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
352A	3255	7	LEONID DUBSON	700	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 7 in tax block 3255, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
353A	3255	6	LEONID DUBSON & IGOR DUBSON	700	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 6 in tax block 3255, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
354A	3255	3	S & A BRAVATA	2,100	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 3 in tax block 3255, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
355A	3254	6	NOT ON FILE	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
356A	3254	5	BLOCK 3159 LLC	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
357A	3253	5	JOHN LIANTONIO & NICOLE LA MANNA	2,100	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
358A	3253	4	359 HYLAN BLVD., LLC	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the wall on tax lot 4 in tax block 3253, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
359A	3252	5	OLGA SOROTCHINSKI & IGOR SOROTCHINSKI	1,400	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the wall on tax lot 5 in tax block 3252, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
360A	3252	3	FELDBLYUM 2014 FAMILY TRUST & IGOR FELDBLYUM	1,120	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 3 in tax block 3252, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
361A	3252	2	YIN FAN PONG LI	1,295	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 2 in tax block 3252, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
362A	3252	1	JOSE MORA & GLADYS MORA	1,704	N/A	BED OF FOCH AVENUE (C.C.O. 3-18-1946)	This part of the street is being taken subject to the encroachment of the mail box on tax lot 1 in tax block 3252, as long as such encroachment shall stand.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
			TOTAL:	682,483									TOTAL:	N/A	7,951	

NOTE:
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