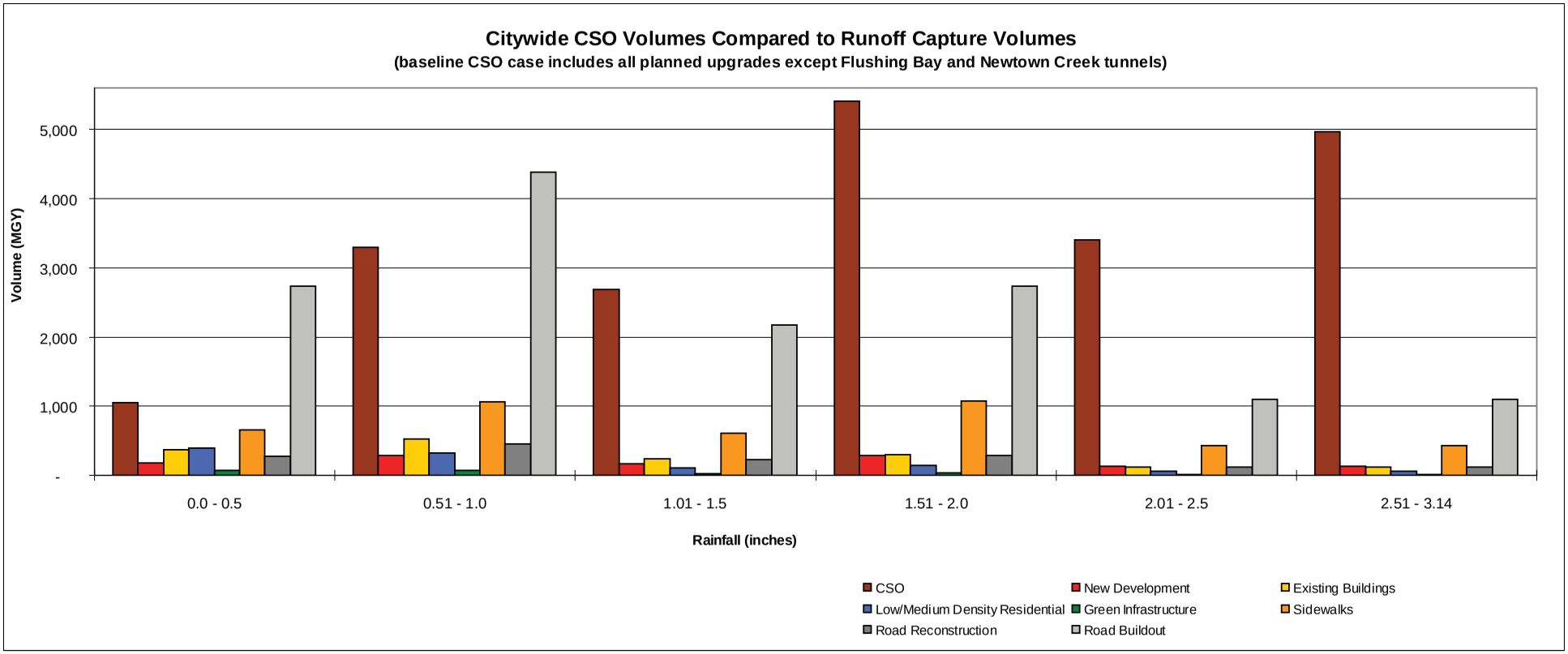
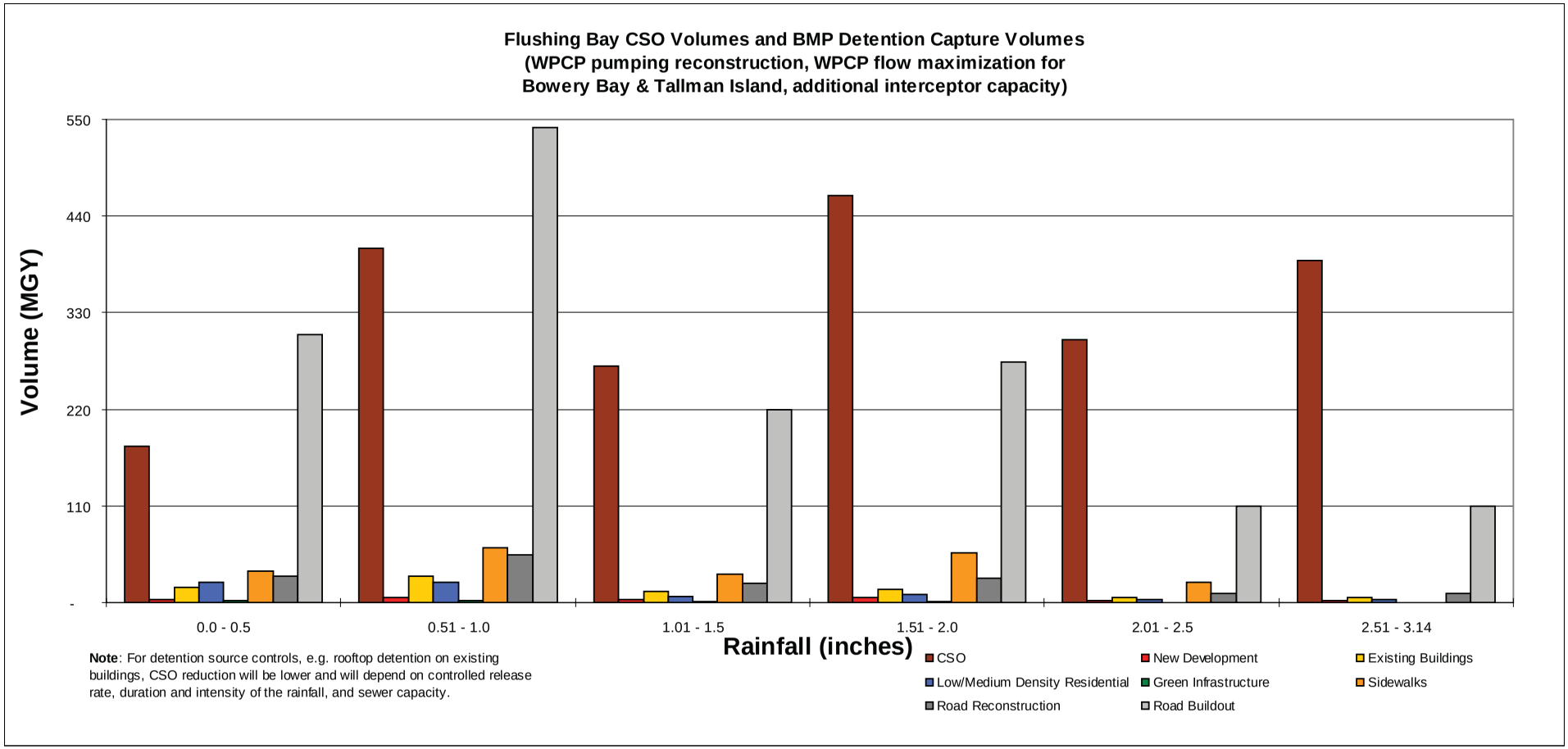
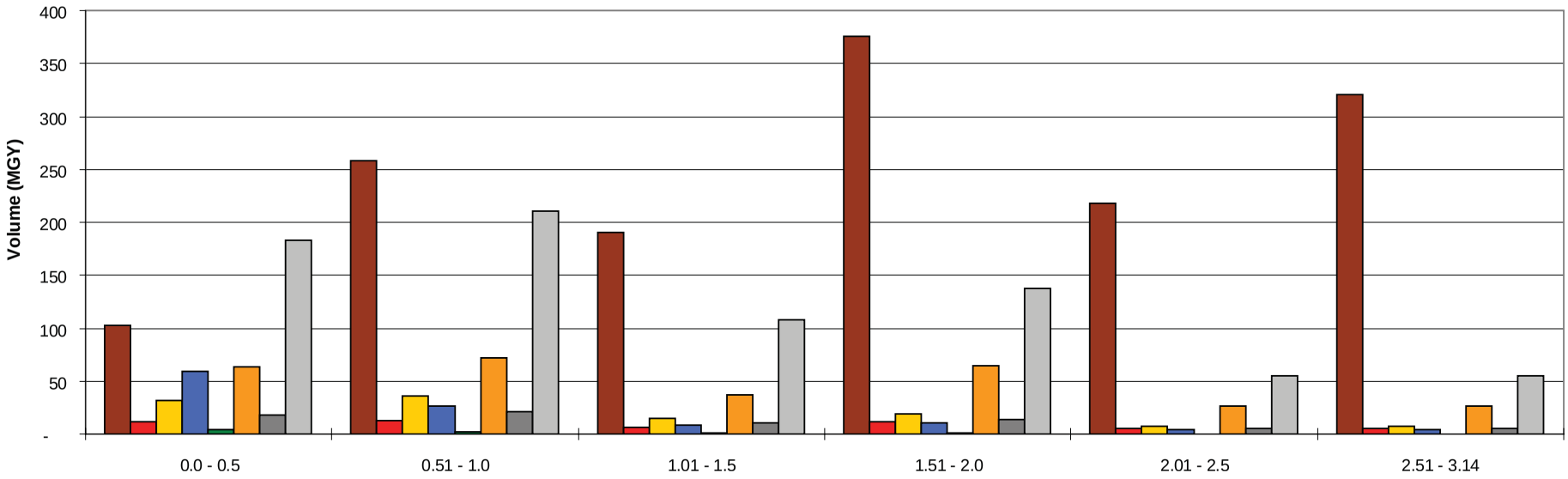
Appendix H: Projected CSO Reduction Charts (Citywide and Waterbody-Specific)



Note: For detention source controls, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

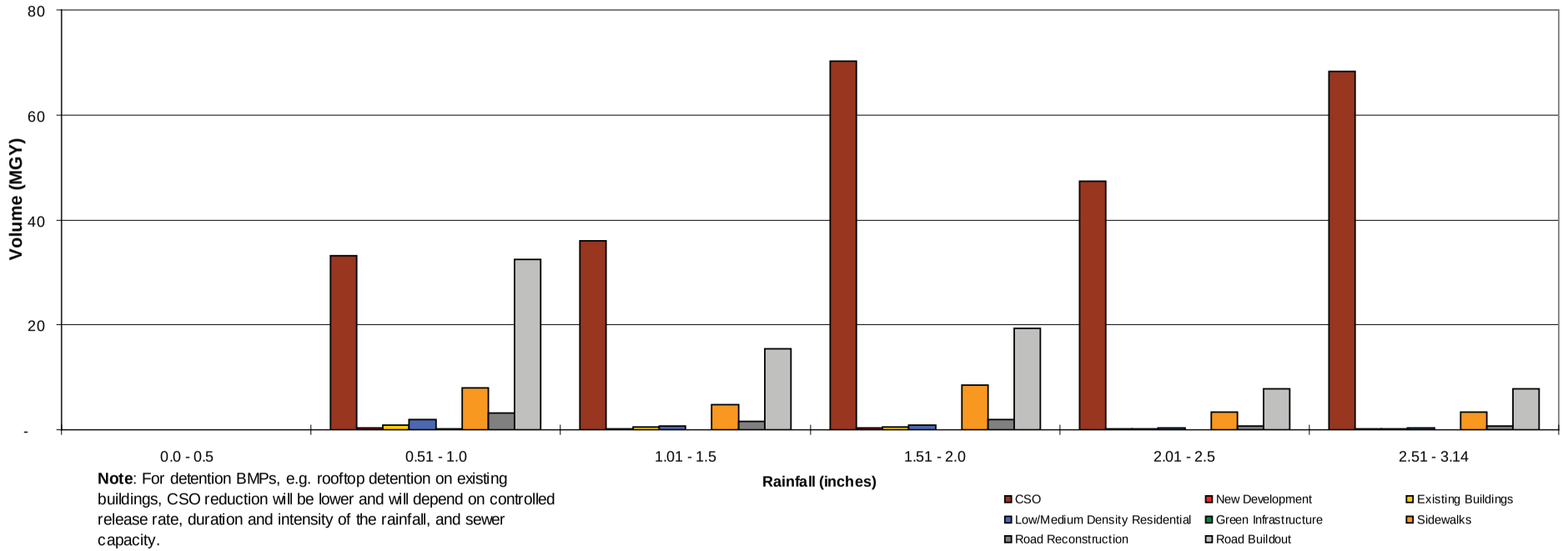

Flushing Bay CSO Volumes and BMP Detention Capture Volumes
(WPCP pumping reconstruction, WPCP flow maximization for
Bowery Bay & Tallman Island, additional interceptor capacity)
Volume (MGY)
550
440
330
220
110
-
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
Note: For detention source controls, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout

Newtown Creek CSO Volumes and BMP Detention Capture Volumes
(NC WPCP wet weather flow maximization and other improvements)

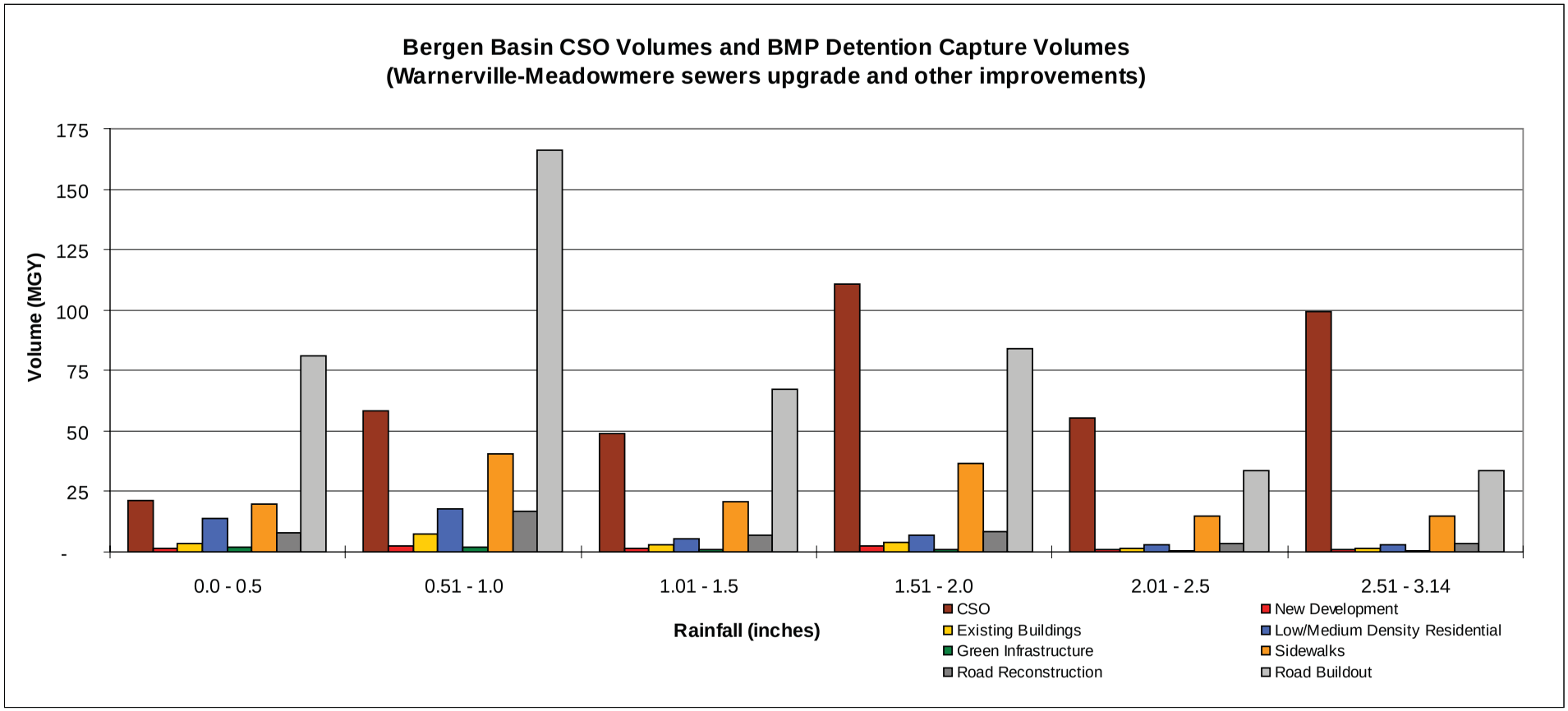


Note: For detention source controls, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

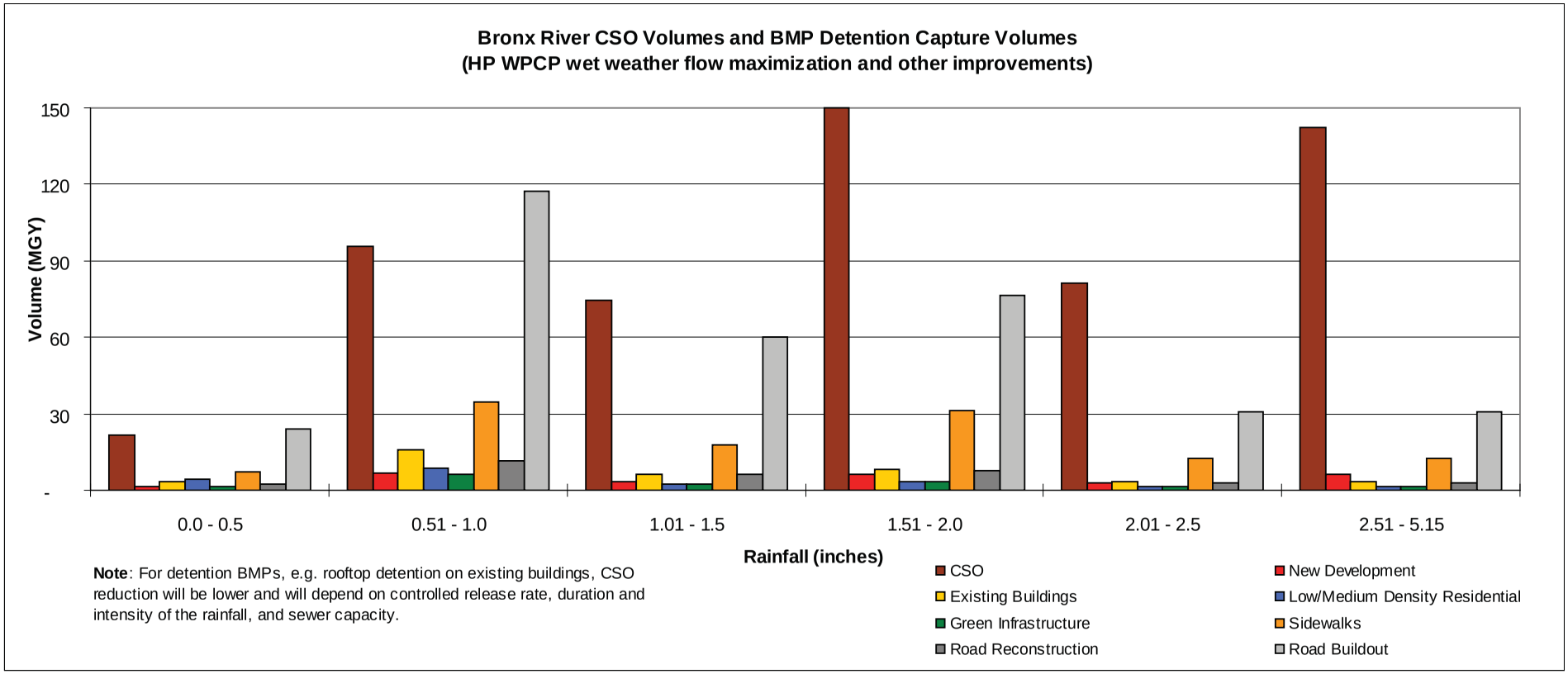
Alley Creek CSO Volumes and BMP Detention Capture Volumes
(Alley Creek Tank, TI WPCP wet weather flow maximization and other improvements)



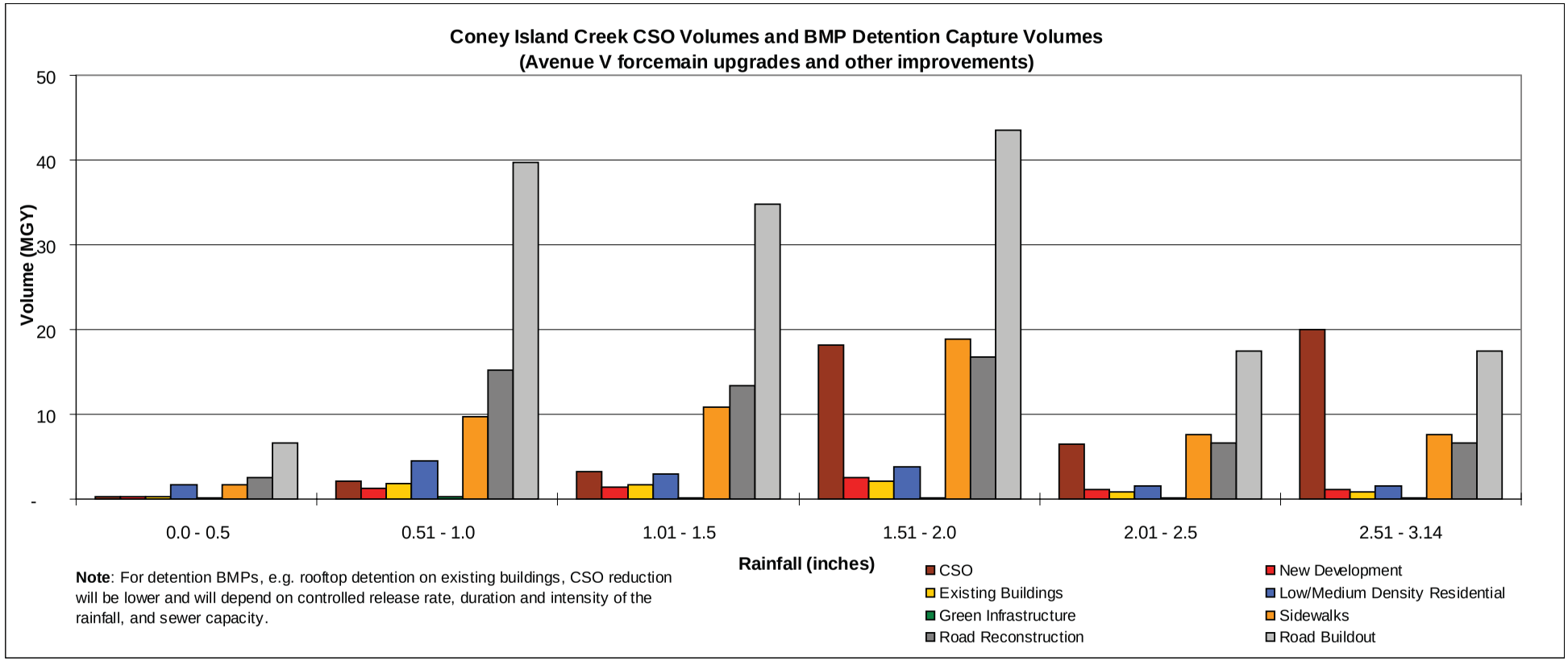
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.



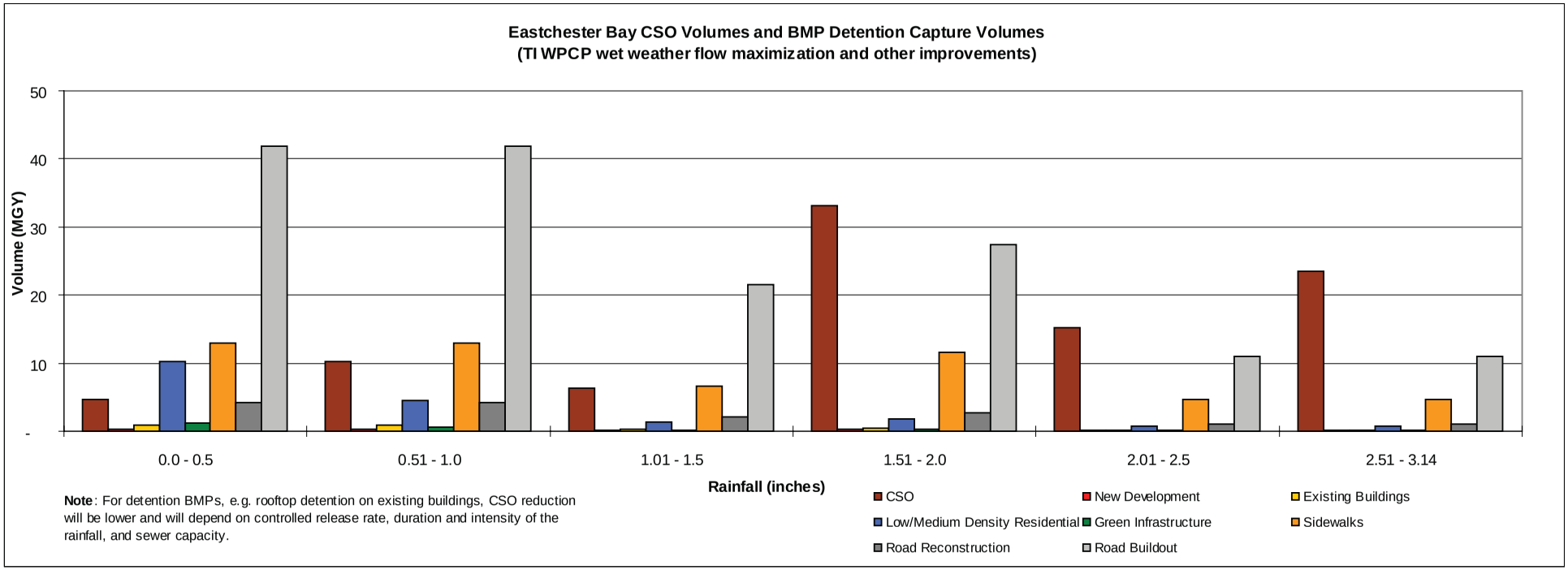
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.



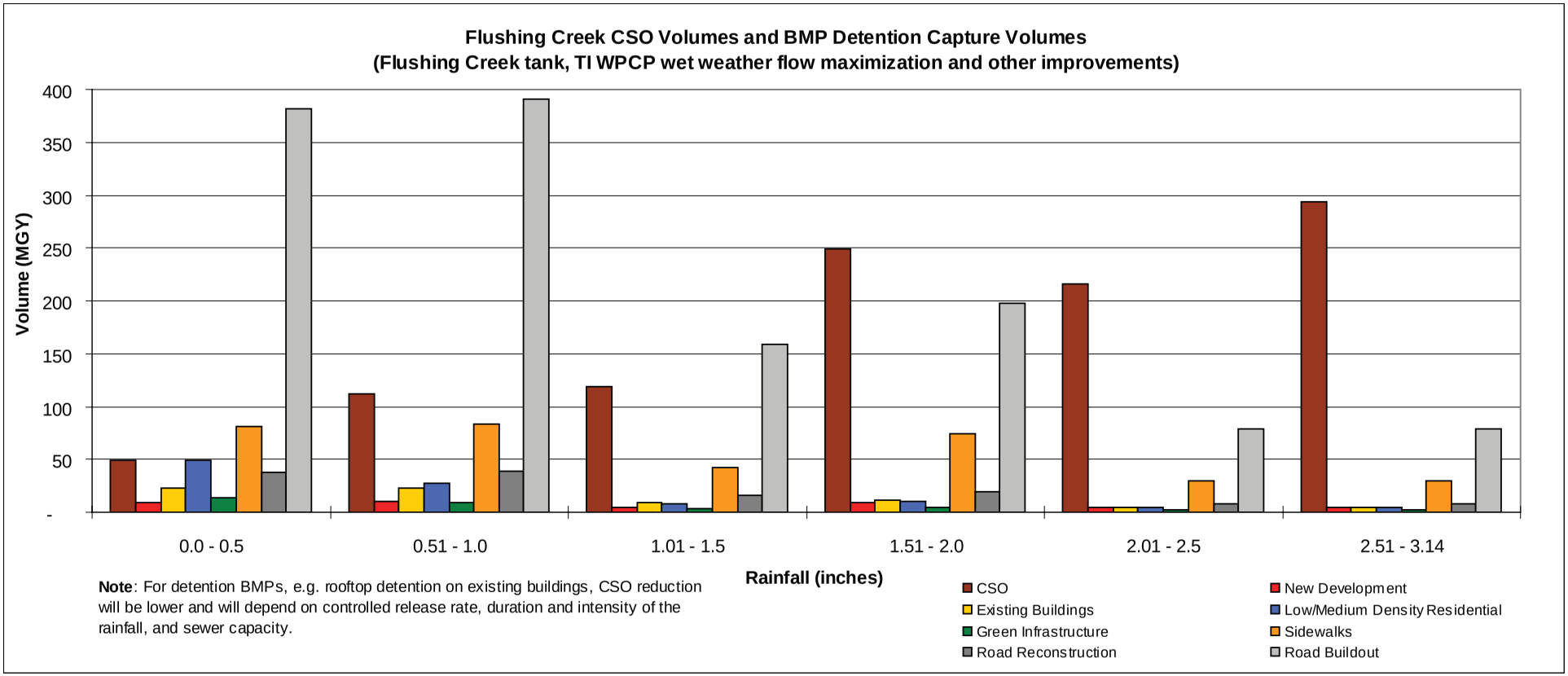
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

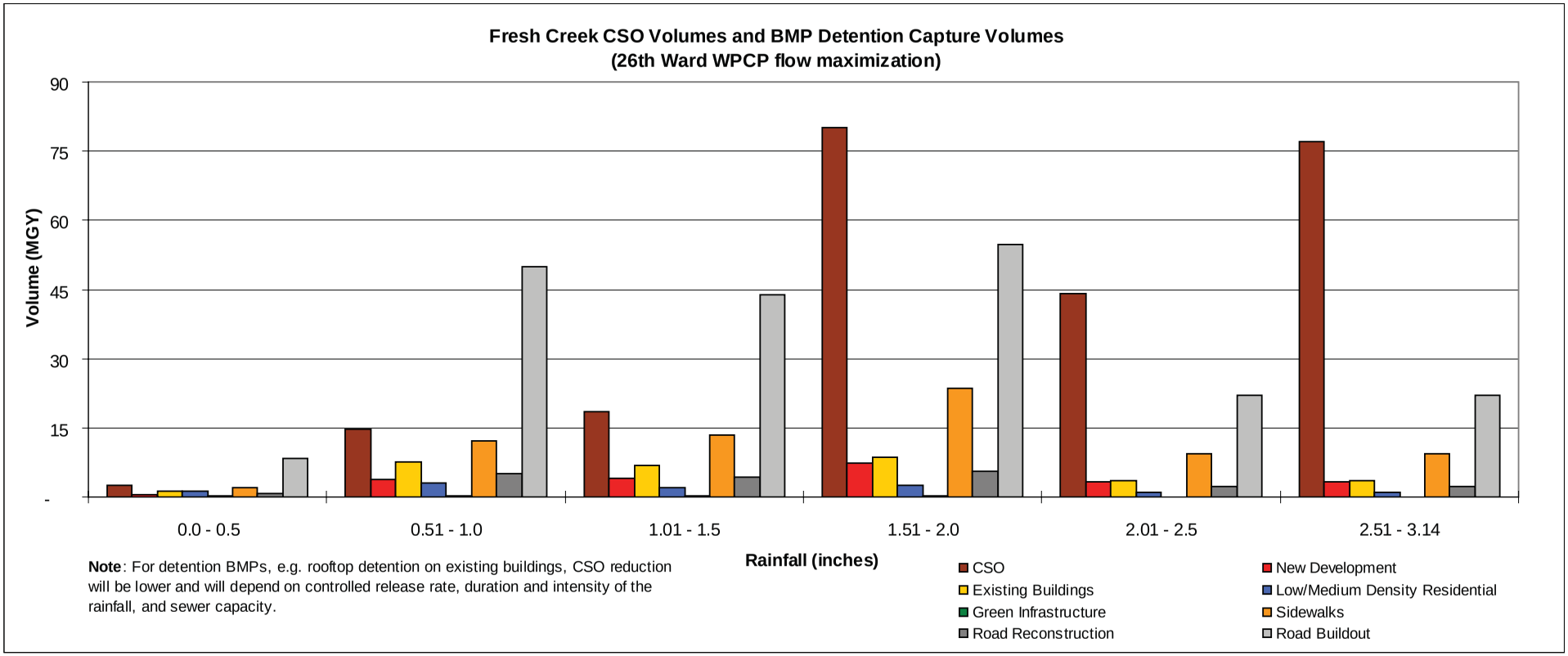


Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

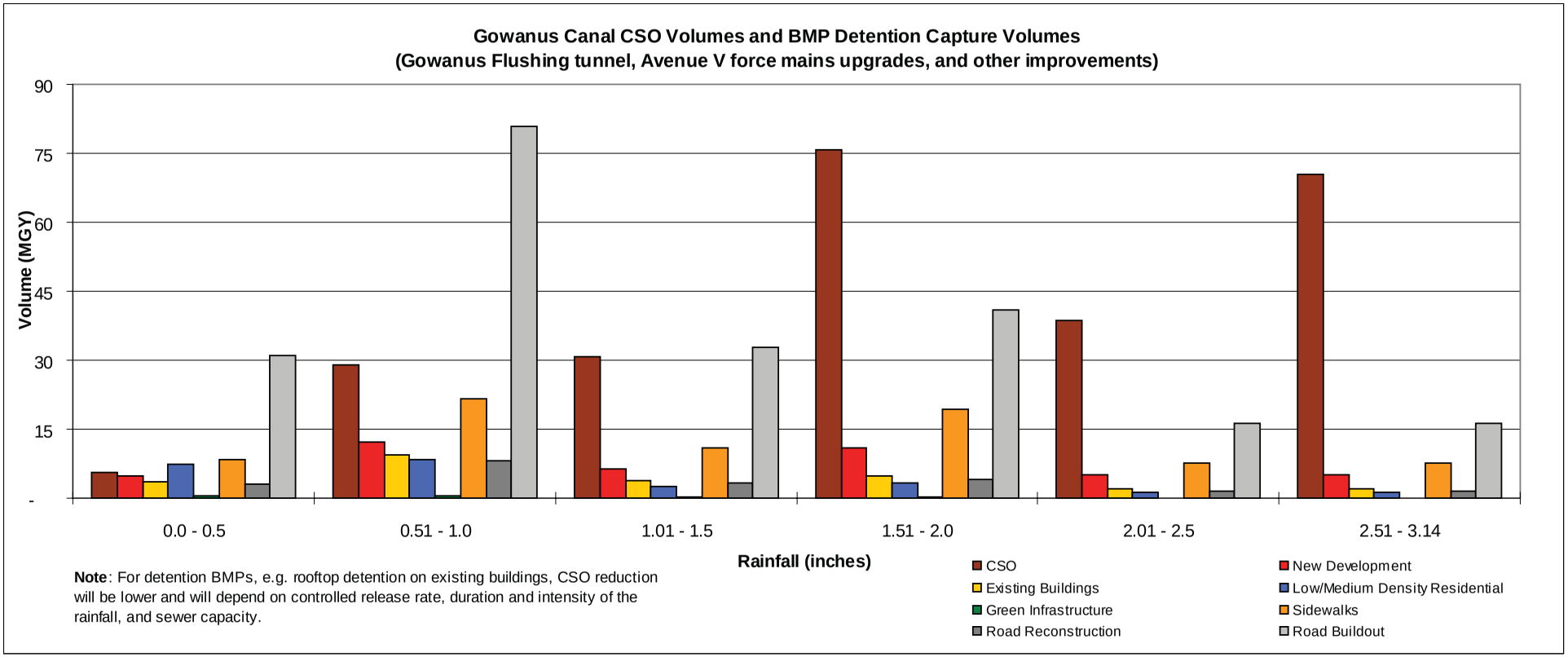


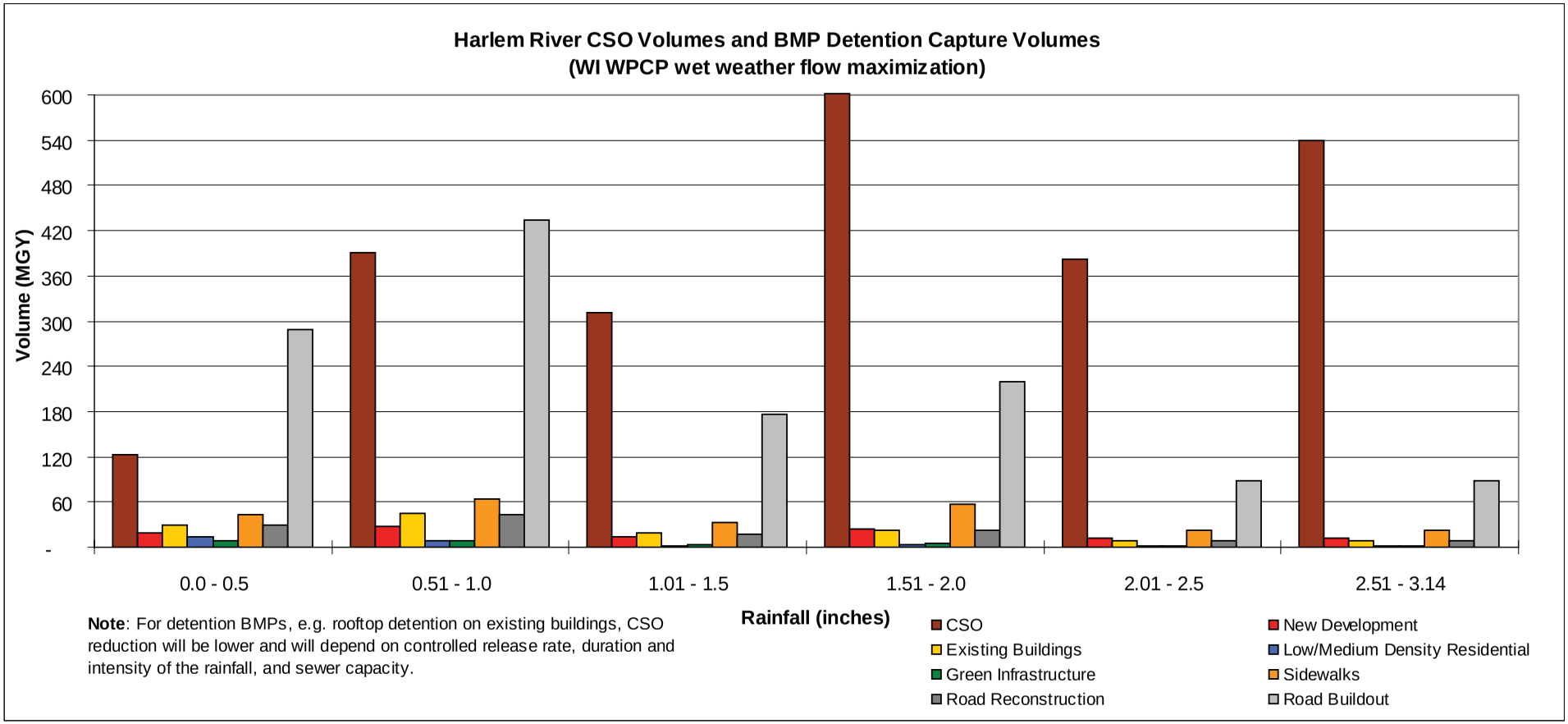
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.


Flushing Creek CSO Volumes and BMP Detention Capture Volumes
(Flushing Creek tank, TI WPCP wet weather flow maximization and other improvements)
Volume (MGY)
400
350
300
250
200
150
100
50
-
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout

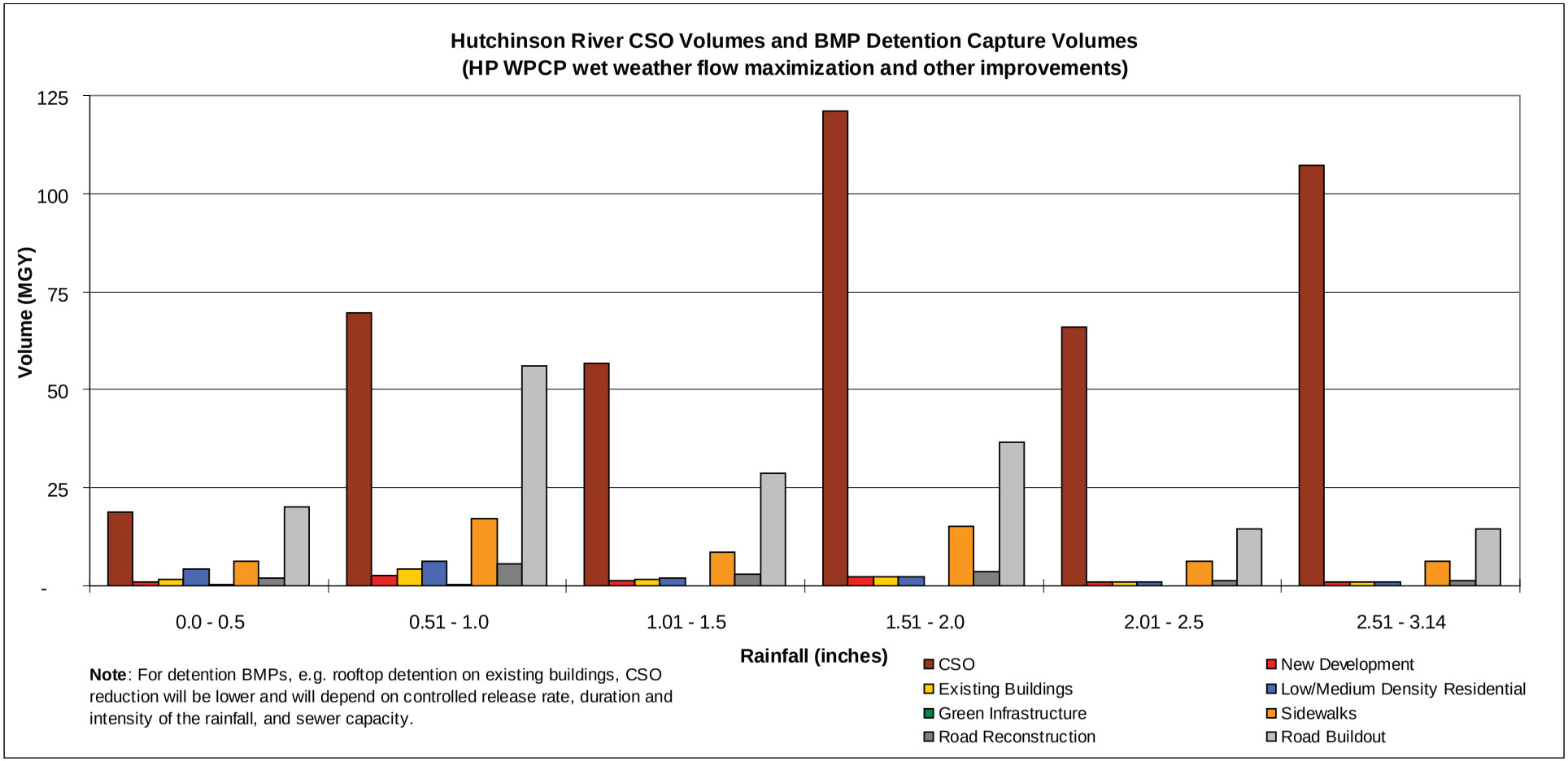


Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

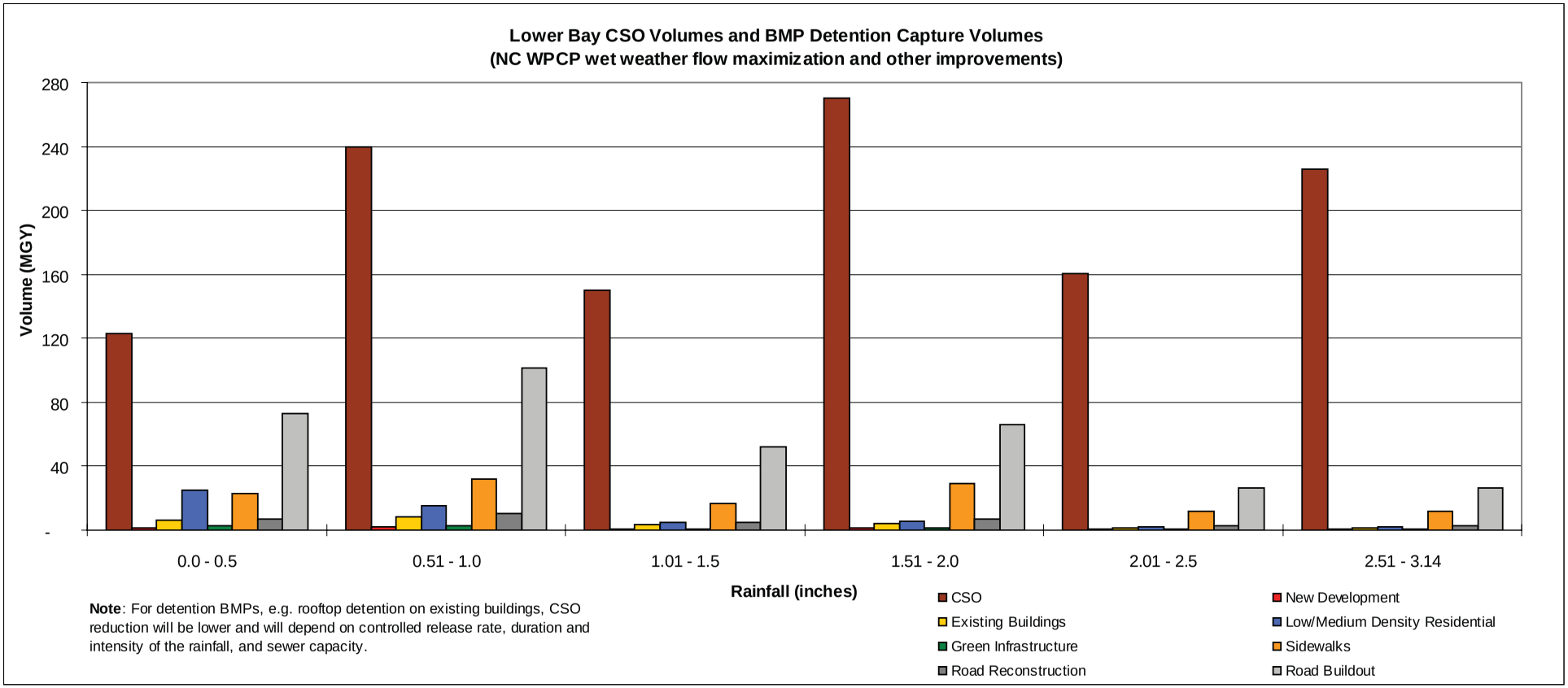

Gowanus Canal CSO Volumes and BMP Detention Capture Volumes
(Gowanus Flushing tunnel, Avenue V force mains upgrades, and other improvements)
Volume (MGY)
90
75
60
45
30
15
-
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

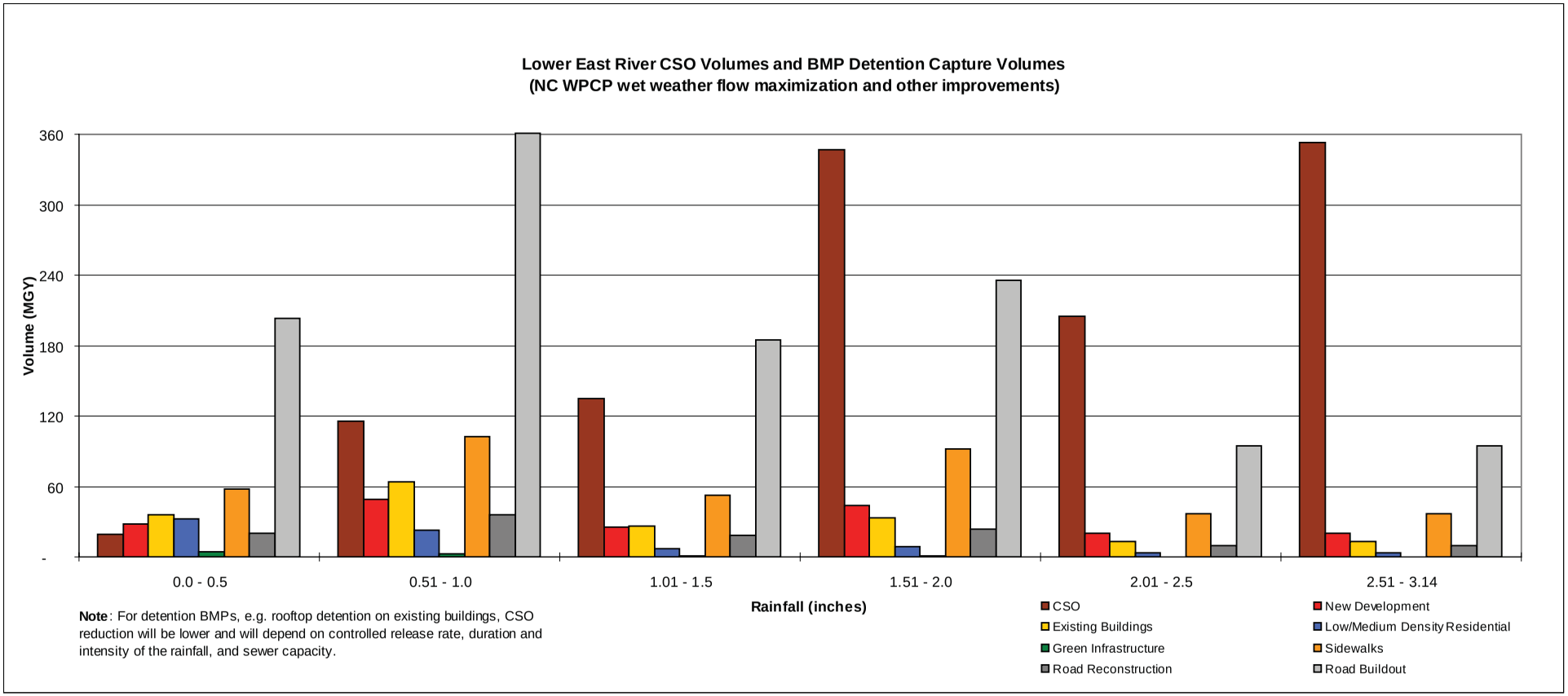


Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

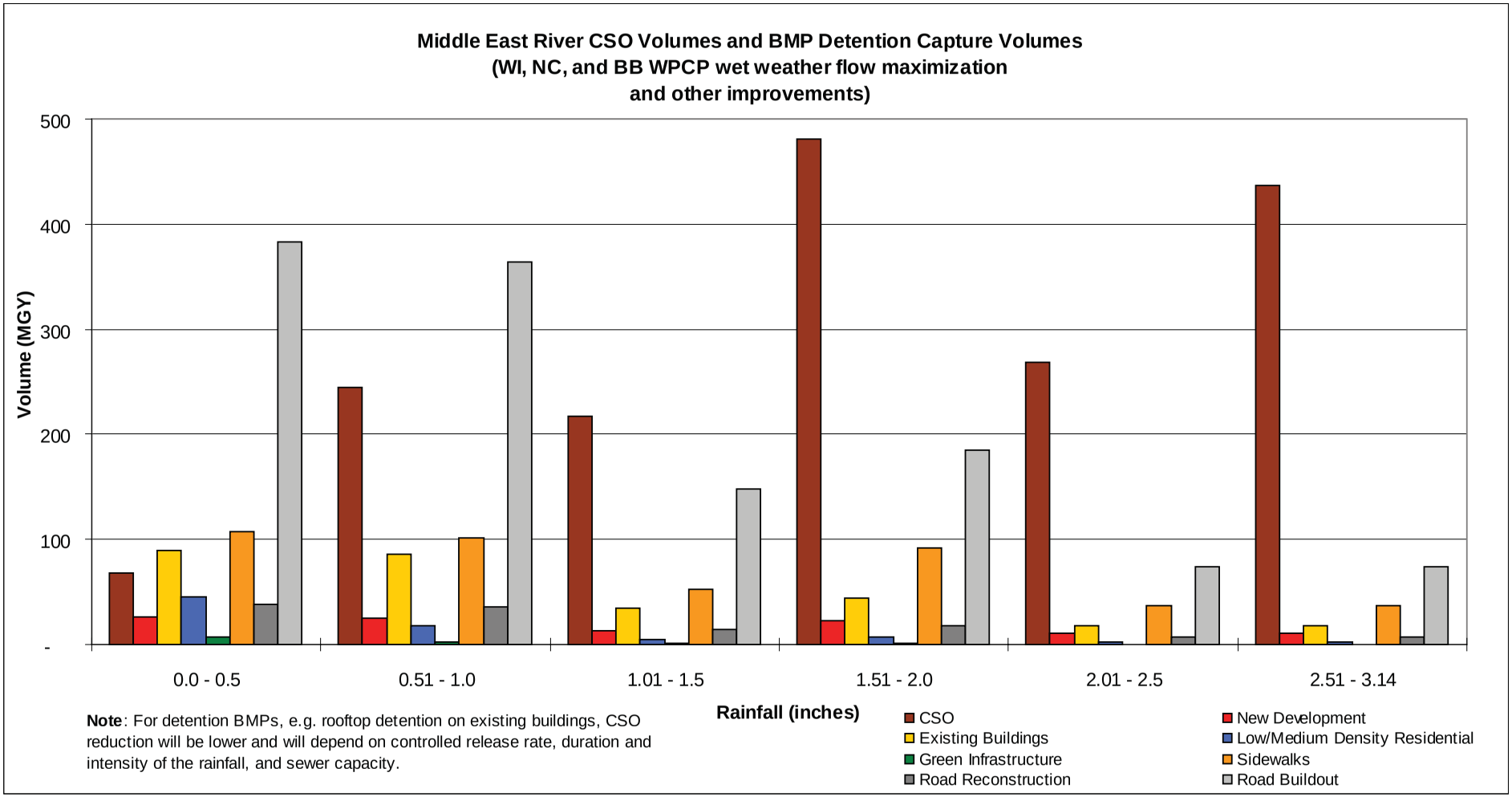


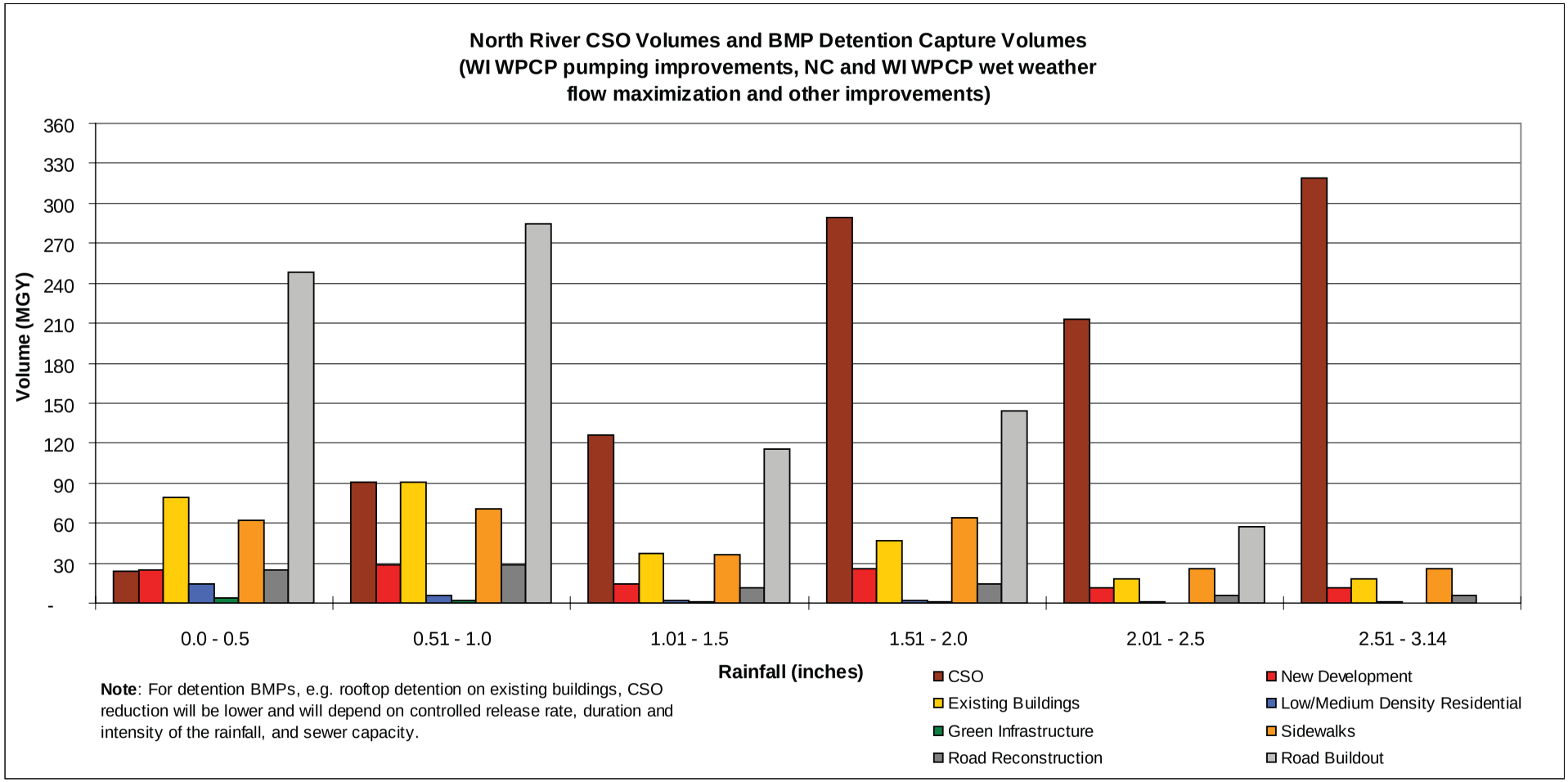
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

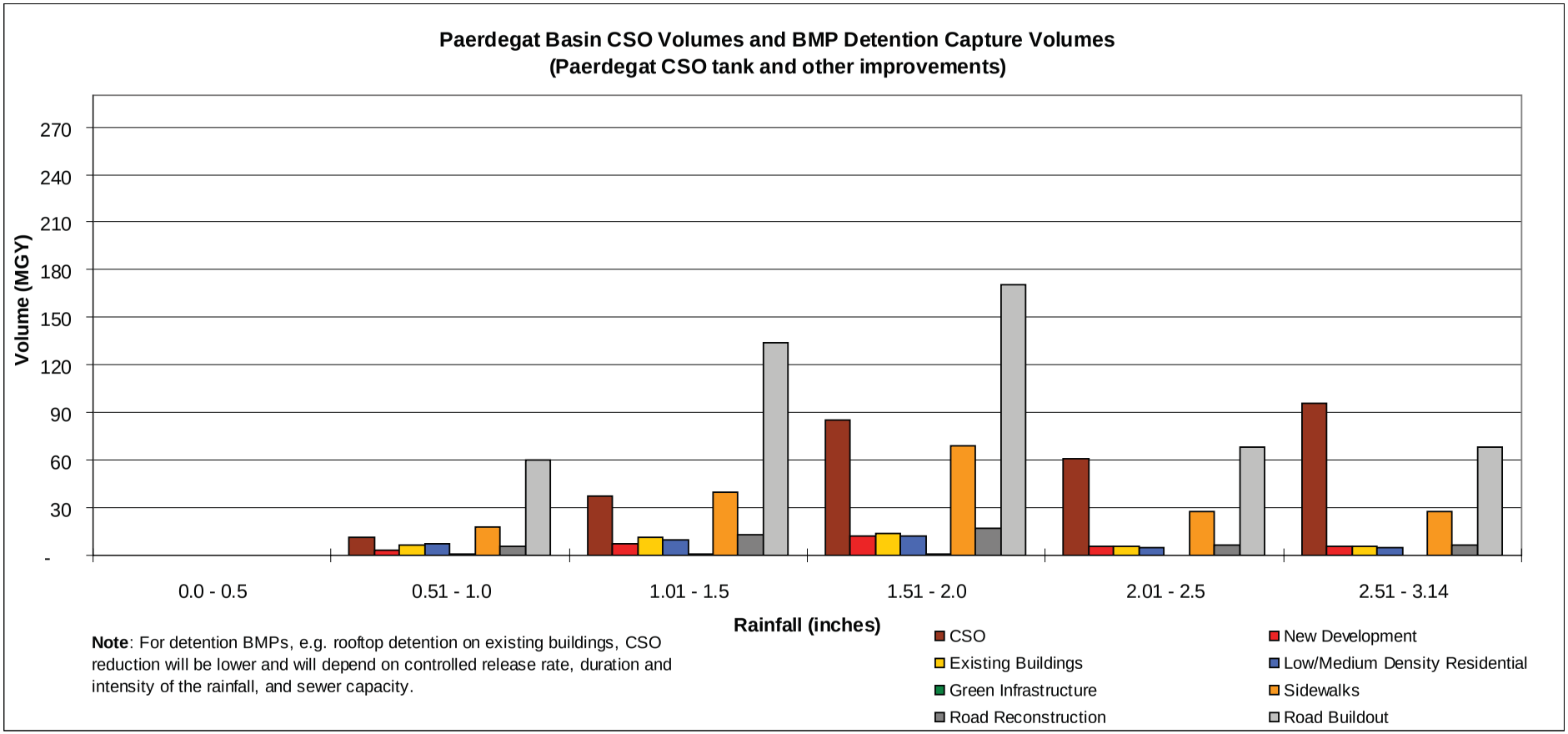

Lower Bay CSO Volumes and BMP Detention Capture Volumes
(NC WPCP wet weather flow maximization and other improvements)
Volume (MGY)
280
240
200
160
120
80
40
-
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.



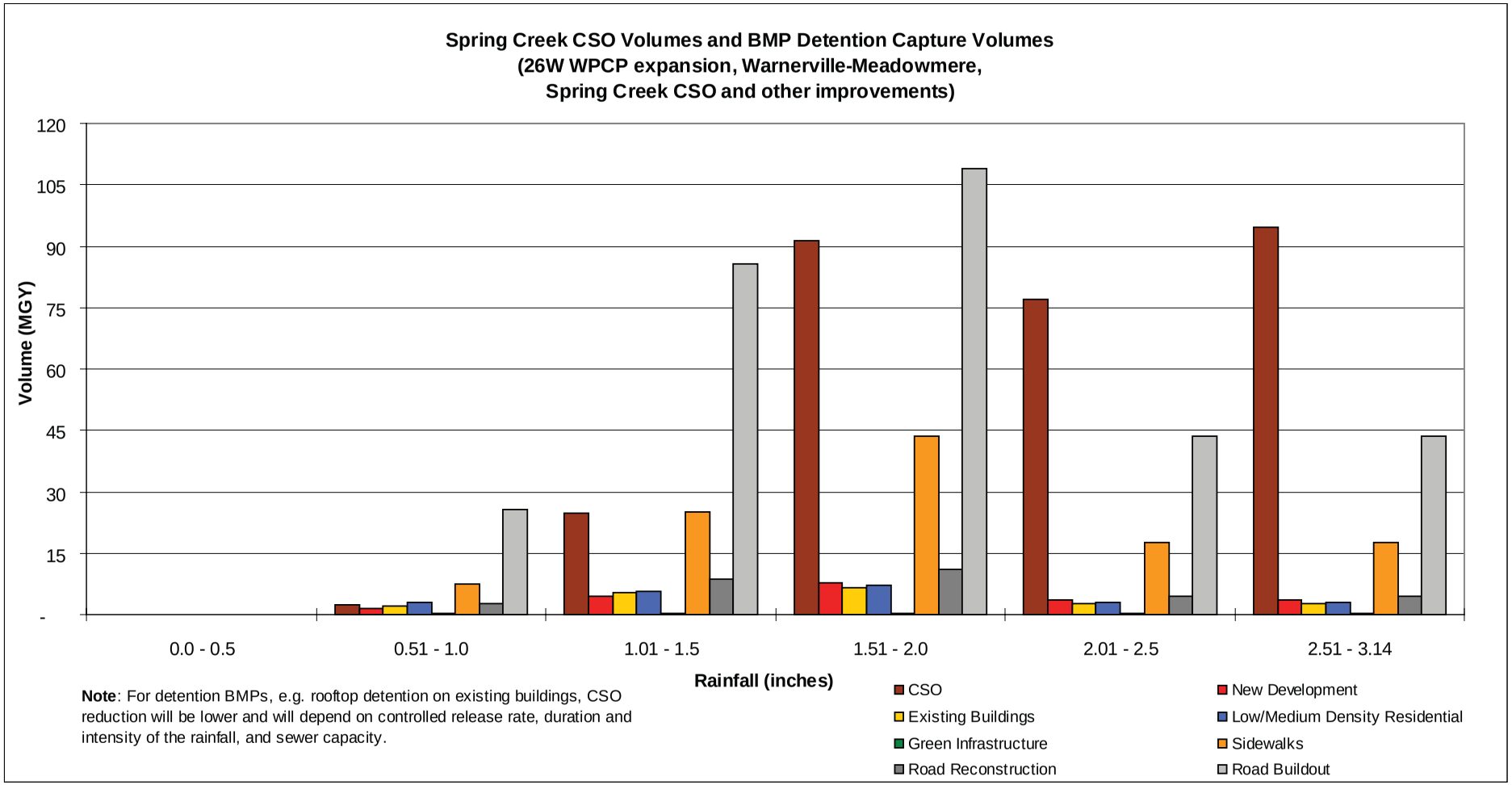
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.


Middle East River CSO Volumes and BMP Detention Capture Volumes
(WI, NC, and BB WPCP wet weather flow maximization
and other improvements)
Volume (MGY)
500
400
300
200
100
-
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

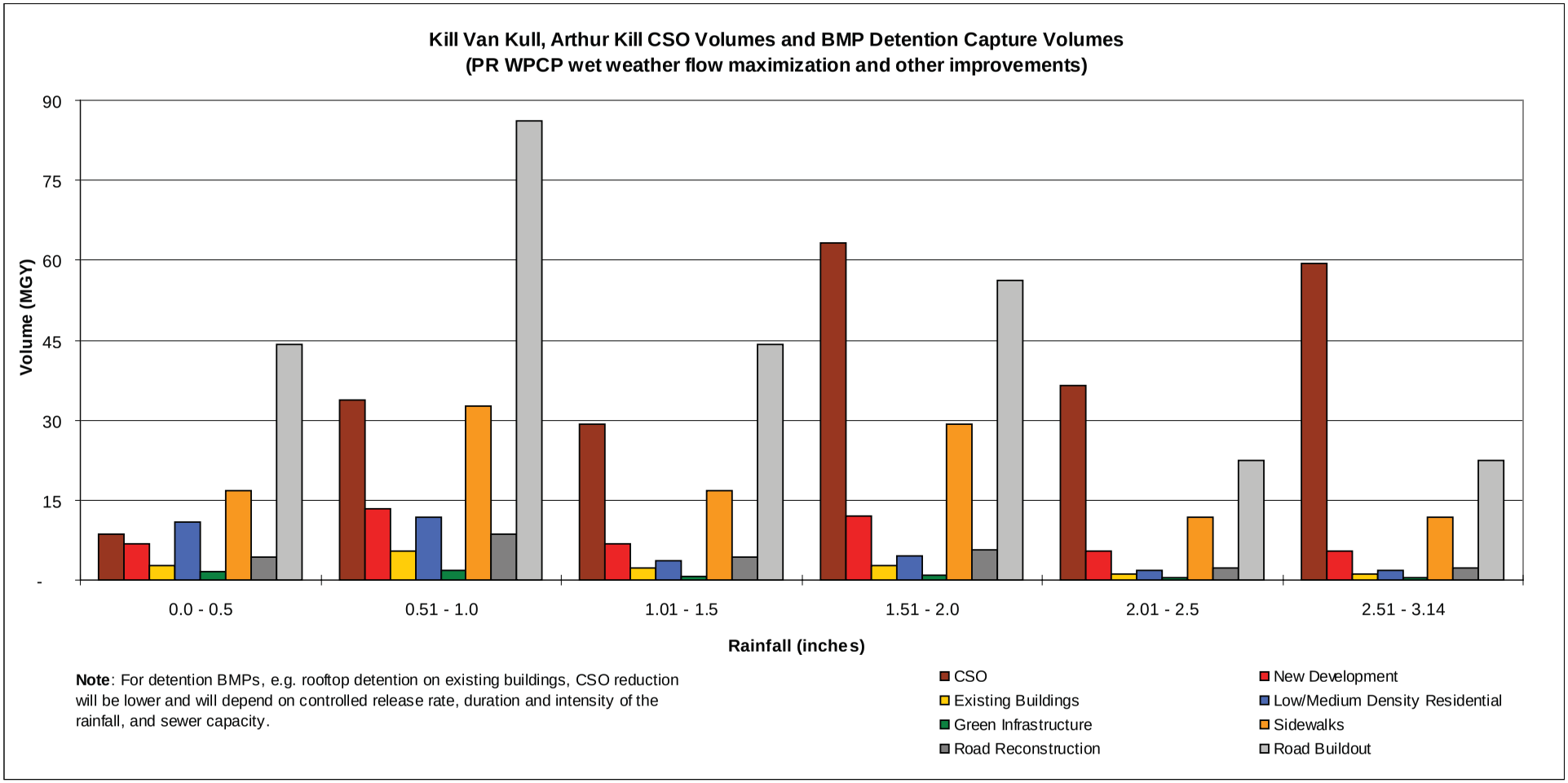

North River CSO Volumes and BMP Detention Capture Volumes
(WI WPCP pumping improvements, NC and WI WPCP wet weather
flow maximization and other improvements)
Volume (MGY)
360
330
300
270
240
210
180
150
120
90
60
30
-
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

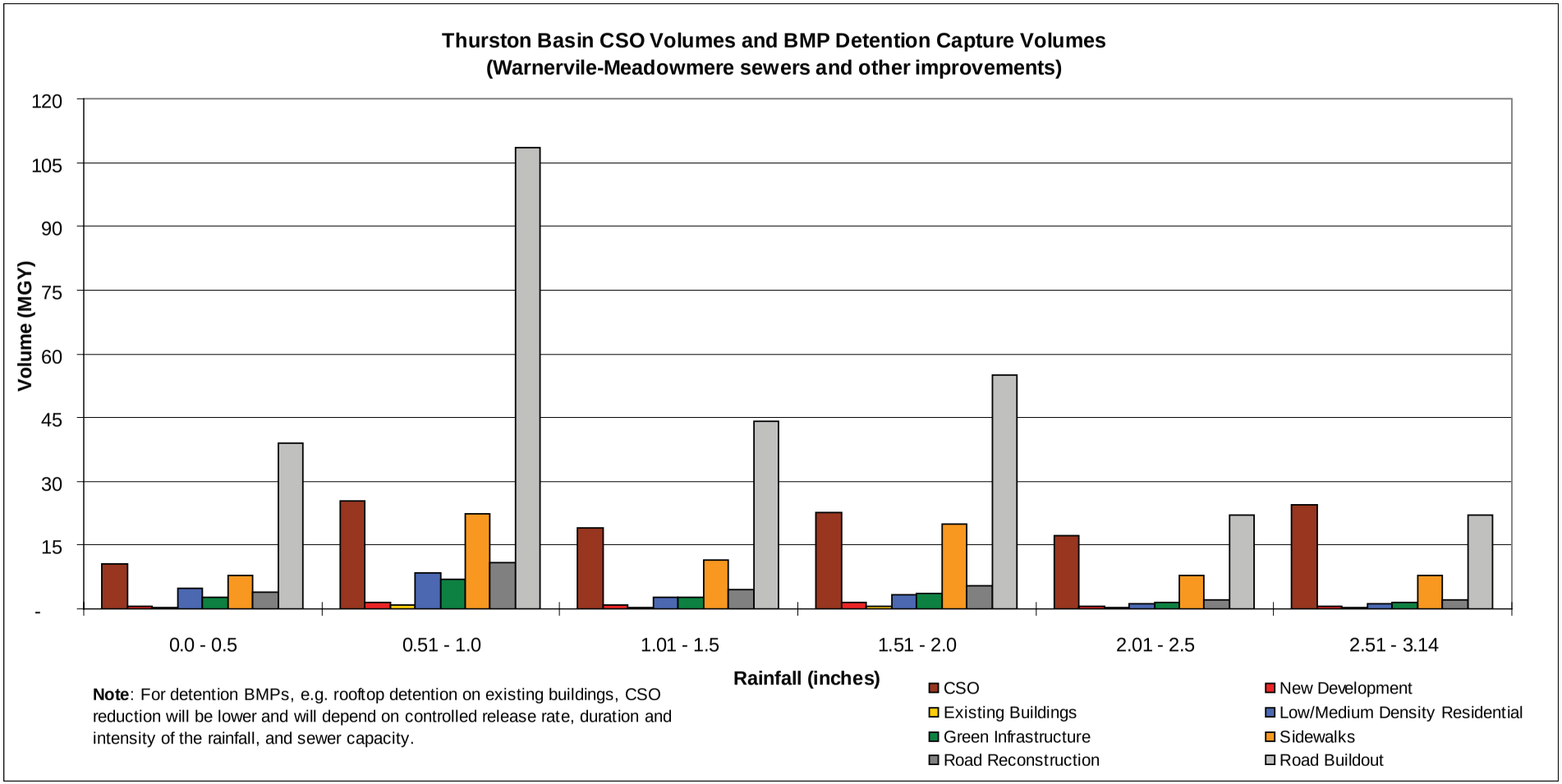


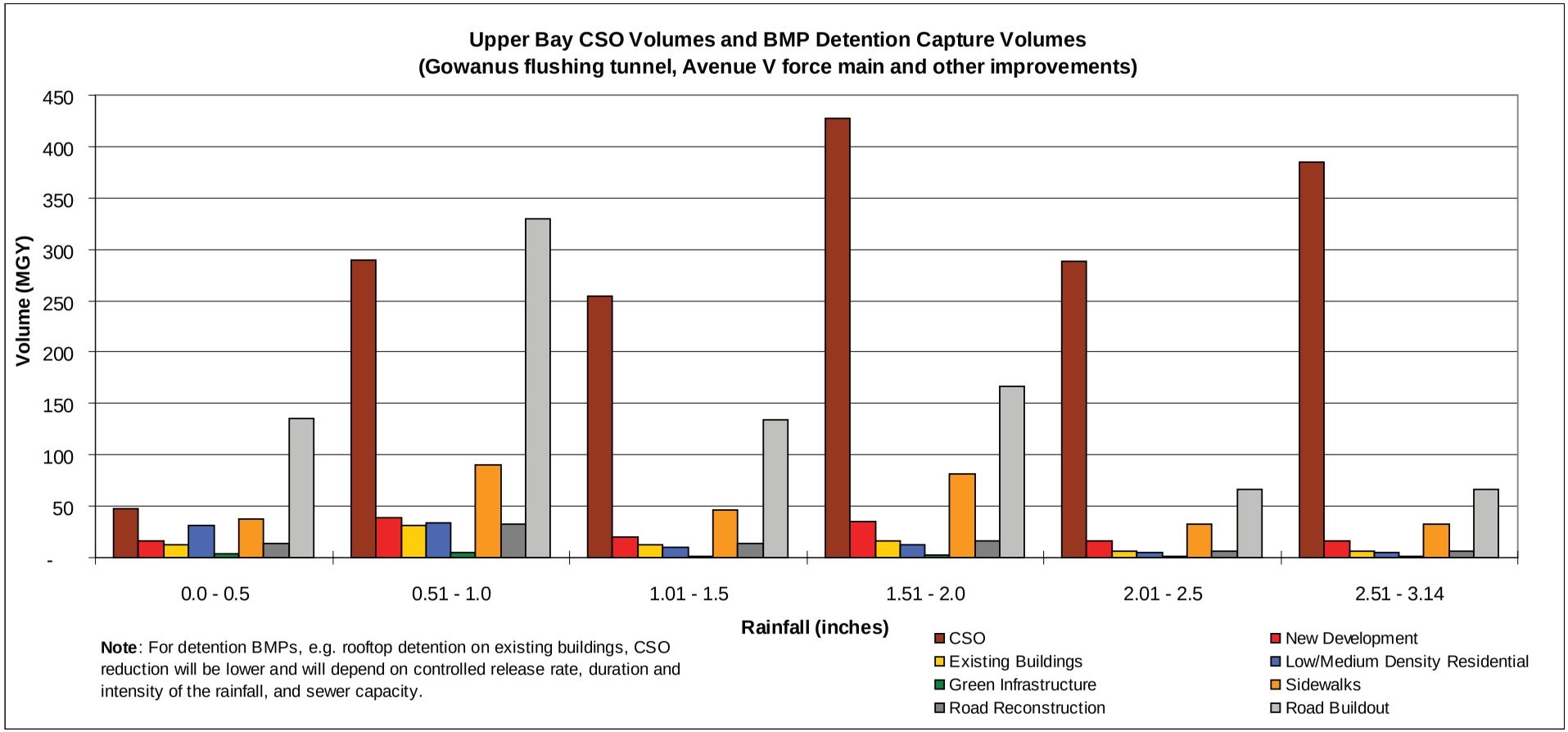
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

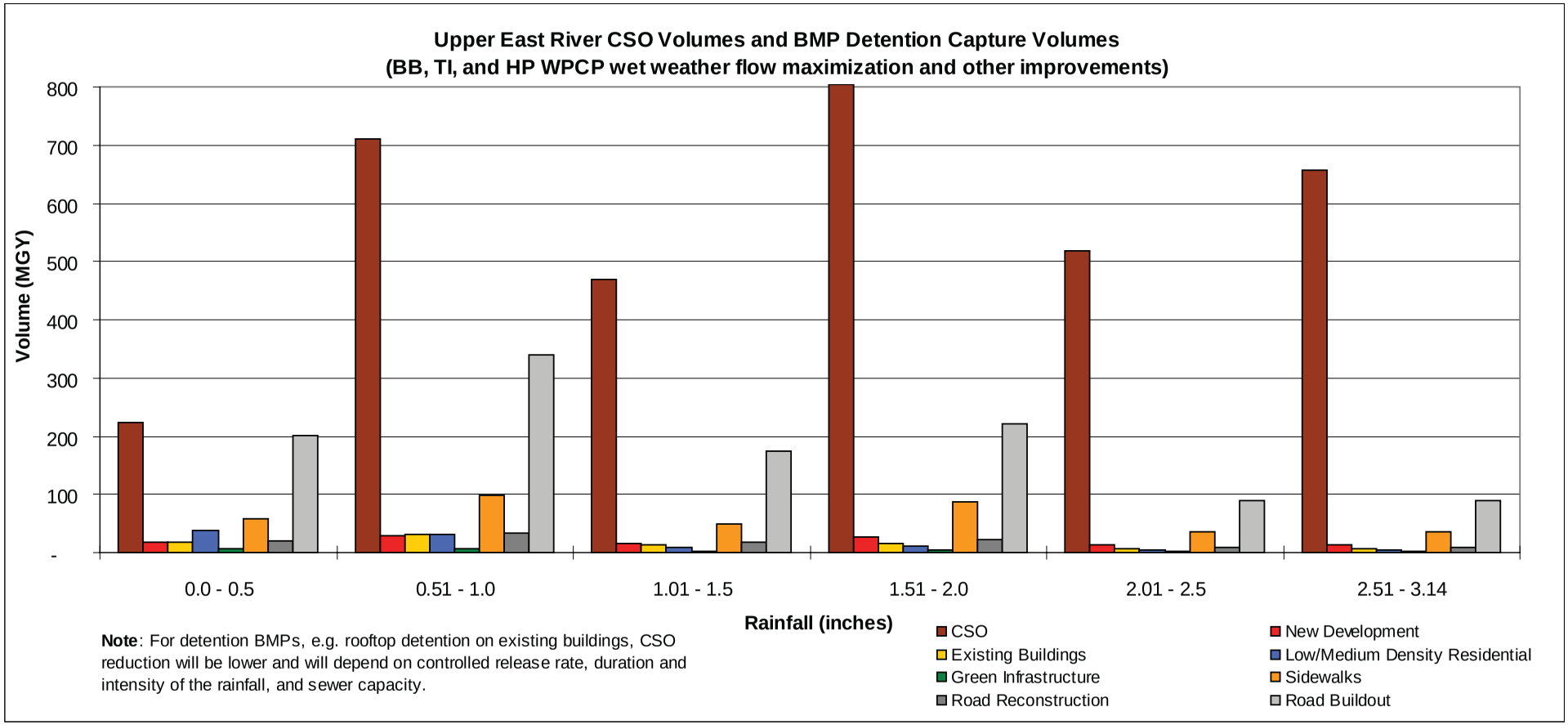


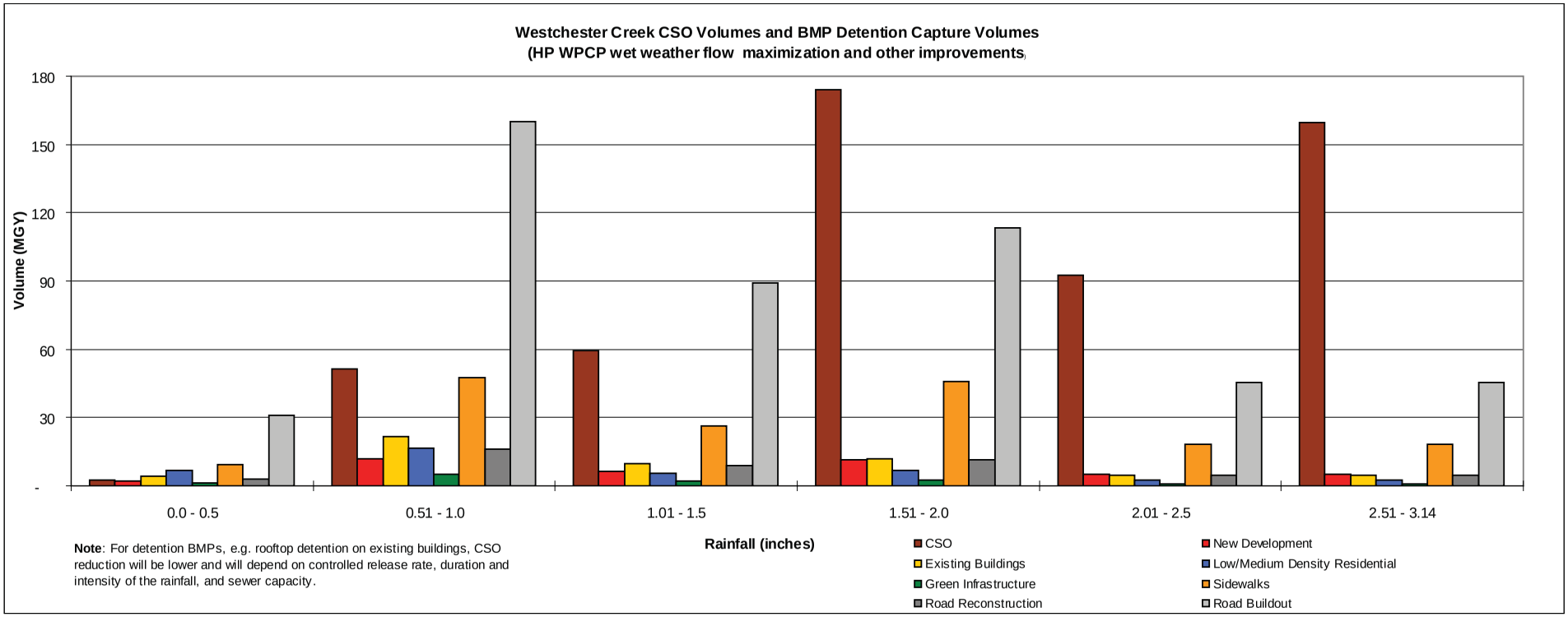
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.


Kill Van Kull, Arthur Kill CSO Volumes and BMP Detention Capture Volumes
(PR WPCP wet weather flow maximization and other improvements)
Volume (MGY)
90
75
60
45
30
15
-
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout


Thurston Basin CSO Volumes and BMP Detention Capture Volumes
(Warnervile-Meadowmere sewers and other improvements)
120
105
90
75
60
45
30
15
-
Volume (MGY)
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout


Upper Bay CSO Volumes and BMP Detention Capture Volumes
(Gowanus flushing tunnel, Avenue V force main and other improvements)
Volume (MGY)
450
400
350
300
250
200
150
100
50
-
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.


Upper East River CSO Volumes and BMP Detention Capture Volumes
(BB, TI, and HP WPCP wet weather flow maximization and other improvements)
Volume (MGY)
800
700
600
500
400
300
200
100
-
0.0 - 0.5
0.51 - 1.0
1.01 - 1.5
1.51 - 2.0
2.01 - 2.5
2.51 - 3.14
Rainfall (inches)
CSO
New Development
Existing Buildings
Low/Medium Density Residential
Green Infrastructure
Sidewalks
Road Reconstruction
Road Buildout
Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.



Note: For detention BMPs, e.g. rooftop detention on existing buildings, CSO reduction will be lower and will depend on controlled release rate, duration and intensity of the rainfall, and sewer capacity.

Appendix I: Public Meeting Summaries

Meeting 1

6/12/2007, 6-8 p.m.
NYU's Kimmel Center for University Life
Washington Square South
New York, NY 10012

Notice by email to CSO Stakeholders List developed by DEP, about 75 in attendance.

Following opening presentations on green infrastructure and PlaNYC initiatives by the DEP and Mayor's Office, the attendees broke into groups for 20-30 minutes of facilitated discussion of the following areas: Public Right of Way, Open Space, City Owned Property, Private Development. The groups reported their ideas to the entire meeting, and provided feedback worksheets.

Meeting 2

10/17/2007, 6-8 p.m.
New York City College of Technology (City Tech)
300 Jay Street
Ampitheater
Brooklyn, NY

Notice by email to CSO Stakeholders List developed by DEP and attendees at first meeting, about 75 in attendance.

DEP and the Mayor's Office provided updates on the Jamaica Bay Watershed Protection Plan, citywide source control initiatives, a source control technology list, and answered questions from the audience.

Members of the Mayor's Office provided email addresses at the meeting, which led to email correspondence and follow up meetings.

Meeting 3

2/4/2008, 6-8 p.m.
Rosenthal Pavilion of the Kimmel Center
New York University
Washington Square South
New York, NY 10012

Notice by email to CSO Stakeholders List developed by DEP and attendees at first meeting, about 100 in attendance.

The format of the next meeting was changed to open tables and the brainstorming/input activities of the first meeting, following presentations by the Mayor's Office. Facilitated by city employees, round table discussions were held on design standards that could be adopted in the following types of locations: High Density and Low Density Residential, Big Box/Industrial, Streets, Sidewalks, Playgrounds, Parks, and Waterfront. Each table then provided its top three ideas to the entire group. Detailed notes were taken.

Prior to the meeting, the City had created an interactive website -- http://bmpstakeholders.pbwiki.com. Meeting notes from each of the tables were posted on the website. In addition, members of the public are free to post ideas and feedback. This site is frequently consulted by the City.

Meeting 4

6/19/2007, 6-8 p.m.
Art Gallery
Adam Clayton Powell State Office Building
2nd Floor
163 West 125th Street
New York, NY

Notice by email to CSO Stakeholders List developed by DEP and attendees at first meeting, about 75 in attendance

DEP and the Mayor's office discussed geographical considerations around BMP distribution and pilot projects, and presented detailed maps and other data. Following these presentations, three groups conducted a brainstorming session, reporting their ideas back to the group. Notes from these meetings are posted on the wiki site (http://bmpstakeholders.pbwiki.com).

In addition, the city created an experimental source control registry site to collect as much information as we can about all the stormwater source controls or best management practices that have already been installed in New York City. The registry form is located at http://www.nyc.gov/html/planyc2030/html/plan/water_quality-bmp-task-force.shtml.