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**VIA ELECTRONIC MAIL AND FEDERAL EXPRESS**

Atlantic Yards c/o Planning and Environmental Review  
Attn: Maria Mooney (atlanticyards@empire.state.ny.us)  
Empire State Development Corporation  
633 Third Avenue  
New York, NY 10017

Re: Atlantic Yards Draft Environmental Impact Statement

Dear Ms. Mooney:

Below please find comments on the Draft Environmental Impact Statement (DEIS) for the proposed Atlantic Yards Arena and Redevelopment Project ("Atlantic Yards" or "Proposed Project"). These comments are submitted on behalf of Riverkeeper, Inc., an independent, member-supported, not-for-profit environmental organization dedicated to protecting the ecological, recreational and commercial integrity of the Hudson River and its watershed and tributaries, including the East River and the Gowanus Canal.

**Executive Summary**

Combined sewer overflows (CSOs) are the most significant water quality problem in many of New York City's waters, including the East River and Gowanus Canal. If built as proposed and evaluated in the DEIS, Atlantic Yards will increase both the volume and frequency of CSOs to these two waterbodies, thereby contributing additional disease-causing pathogens, reducing the level of dissolved oxygen, and further exacerbating other harms to human health, recreation, aesthetics, and fish and wildlife in these waters.

We raised this issue in our October 28, 2005 letter commenting on the draft scope of analysis for this DEIS. In response to our comments, the developer, Forest City Ratner (FCR) has included "Sustainable Design Features" as integral components of the Proposed Project, designed to reduce CSOs. We commend FCR for acknowledging this significant problem and taking these steps to address it. However, as explained more fully below, the DEIS does not fully and properly analyze the magnitude of, or evaluate the significance of, the project's CSO impacts. Moreover, the Sustainable Design Features do not eliminate the significant adverse CSO impacts caused by the project – even though a relatively modest expansion of those features would do so.

First, the DEIS's analysis of CSO impacts, which relies on modeling conducted by New York City's consultant, HydroQual Environmental Engineers and Scientists, in a July 7, 2006 report, is flawed and incomplete and may well underestimate the increase in CSOs attributable to the Proposed Project. The inconsistencies and omissions in this information and analysis also thwart public participation. In particular, we have identified the following deficiencies with the technical analysis: (1) The DEIS fails to identify, quantify and analyze the effects of the specific pollutants that will discharge into the Gowanus Canal and East River as a result of Atlantic Yards' increase in CSOs; (2) The DEIS's estimates of additional CSOs are inconsistent with those in the HydroQual report and underreport CSO volumes by hundreds of thousands of gallons per year; (3) HydroQual's modeling of the additional CSOs is imprecise and the DEIS failed to provide a margin of error or analyze the reasonable worst case CSO scenario; (4) The DEIS assumes unrealistically low and unsubstantiated sanitary sewage volumes; (5) The DEIS assumes water reuse volumes far beyond the proposed water reuse demand; (6) The DEIS fails to provide adequate details of the arena roof; (7) The DEIS fails to properly estimate the net volume of annual rainfall; and (8) The ESDC thwarted public participation by failing to include the HydroQual report in the DEIS. (*See* Section I, below.)

Second, DEIS's conclusion that the Sustainable Design Features will reduce the CSOs to an insignificant level violates SEQRA and CEQR. In fact, Atlantic Yards' additional CSOs discharges – an additional 1.1 million gallons per year into the Gowanus Canal by 2010 and an additional 700,000 gallons per year in the East River by 2016 (as predicted in the DEIS even after the “Sustainable Design Features” are implemented) – are significant because they will contribute to and exacerbate the significant water quality violations in these waterways. Furthermore, in addition to exacerbating problems associated with CSO discharges that would occur without the project, the Atlantic Yards development, according to the DEIS's own predictions, will cause an additional two CSO discharge events in East River, and an additional discharge event in the Gowanus Canal, that would not otherwise occur. On these days, Atlantic Yards will cause, rather than simply contribute to, discharges that will impair the waterways' ability to sustain their designated uses. Where pollution limits are already exceeded – as is the case for fecal coliform and biological oxygen demand in the East River and Gowanus Canal – even a relatively small amount of additional pollution that contributes to the existing problem must be considered significant under SEQRA and CEQR. (*See* Section II, below.)

Third, Atlantic Yards' CSO impacts must be evaluated for their cumulative significance with related, nearby ESDC projects. At least ten ESDC projects in Brooklyn and Manhattan are related components of an overall plan and will cumulatively and significantly increase CSOs in the East River and Gowanus Canal, thereby mandating a cumulative impact analysis. Such analysis is mandatory with respect to related actions of the ESDC and is a proper exercise of discretion with respect to unrelated, but cumulatively significant, actions. (*See* Section III, below.)

Fourth, additional “Sustainable Design Features” should be included as project components to completely eliminate Atlantic Yards' adverse CSO impacts. Fortunately, there are readily available solutions to Atlantic Yards' CSO problem. In particular: (1) Low impact

development features that maximize permeable soil infiltration should be installed to further reduce CSOs by decreasing stormwater and combined sewer volumes; (2) Green roofs should be installed throughout the proposed project; (3) The Proposed Project should provide for additional water reuse; (4) Street trees and street gardens should be planted; (5) Off-site mitigation measures within the Red Hook drainage basin should be added; and (6) Larger stormwater retention and detention tanks should be installed. (*See* Section IV, below.)

We look forward to working with the ESDC, FCR, and all stakeholders towards meeting our common goal of improving, and not adversely affecting, the East River and Gowanus Canal for all City residents.

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## **Background**

Atlantic Yards is proposed to be built on 22 acres in the Atlantic Terminal area of Brooklyn. This area is served by a combined sewer system in which all of the sanitary sewage and contaminated stormwater runoff from the 3000-acre “sewershed” combine in underground pipes leading to the Red Hook Water Pollution Control Plant. Even if there is adequate capacity to handle all of the dry weather flow, the volume of stormwater runoff generated during wet weather – as little as one-tenth of an inch of rain – overwhelms the collection and treatment system, resulting in combined sewer overflows (CSOs). During a CSO event in this part of Brooklyn the combined sanitary wastewater and stormwater is discharged to the Gowanus Canal and East River without treatment.

The principal pollutants present in CSOs are microbial pathogens, suspended solids, toxics, nutrients, and floatables (i.e., trash).<sup>1</sup> These pollutants can adversely affect human health, recreation, fish consumption, shellfish harvesting, wildlife propagation and survival, and other uses for which the receiving waters are formally designated.<sup>2</sup> CSOs are therefore a major threat to the ecology and public safety of our waterways. As the U.S. Environmental Protection Agency (EPA) recently reported to Congress:

Because CSOs contain untreated wastewater and storm water, they contribute microbial pathogens and other pollutants to surface waters. CSOs can impact the environment and human health. Specifically, CSOs can cause or contribute to water quality impairments, beach closures, shellfish bed closures, contamination of drinking water supplies, and other environmental and human health problems.<sup>3</sup>

In New York City, approximately 27 billion gallons of untreated combined sewage overflow in an average rainfall year.<sup>4</sup> These CSOs discharge through 460 outfalls operated by the New York City Department of Environmental Protection (DEP). As a direct result of pollutants discharged in CSOs, many New York City waterways are “impaired,” i.e., are not meeting state water quality standards and are therefore deemed not suitable for their designated uses. Specifically, each of NYC’s water bodies is classified as SA, SB, I, or SD by New York

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<sup>1</sup> US EPA, *Report to Congress: Impacts and Control of CSOs and SSOs*, EPA 833-R-04-001, August 2004 (hereinafter, “2004 EPA CSO Report”). at p. 5-2; see also Natural Resources Defense Council and Environmental Integrity Project, *Swimming in Sewage: The Growing Problem of Sewage Pollution and How the Bush Administration is Putting Our Health and Environment at Risk*, February 2004.

<sup>2</sup> 2004 EPA CSO Report at p. 5-3.

<sup>3</sup> *Id.* at p. ES-2.

<sup>4</sup> HydroQual, *Combined Sewer Overflows to New York Harbor Waters from New York City Watersheds for an Average Precipitation Year (JFK, 1988) Current Conditions (2003 Dry Weather Flow, 2003 Operations)*, September 29, 2004.

State, based on the “best uses” they should be capable of supporting.<sup>5</sup> The Gowanus Canal is classified as SD and therefore should be suitable for fish survival.<sup>6</sup> The East River is classified as I and therefore should be suitable for secondary contact recreation and fishing, as well as fish propagation and survival. Water quality standards for these and other waters in NYC are based on these state classifications and include, among others, standards for pathogens (total coliforms<sup>7</sup> and fecal coliforms<sup>8</sup>), dissolved oxygen,<sup>9</sup> floatables (trash),<sup>10</sup> and nitrogen.<sup>11</sup>

As a direct result of CSOs, existing water quality standards are currently not being met in the subject waterways. The Gowanus Canal and the upper and lower sections of the East River are included on the New York State Waterbody Inventory and Priority Waterbodies List (PWL) as waterbody segments impacted by CSOs because their water quality standards are not being met and their designated uses are “stressed” or “threatened.”<sup>12</sup> In addition, the Gowanus Canal is included in New York State’s most recent Section 303(d) list as impaired by CSOs – meaning that it is not meeting the state water quality standards for pathogens, oxygen demand, floatables and/or nitrogen as a result of pollutants in CSOs, and its designated uses are not being adequately supported.<sup>13</sup>

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<sup>5</sup> Pursuant to 6 NYCRR Part 701, the best usages of Class SA waters are commercial shellfishing, primary and secondary contact recreation, and fishing; the best usages of Class SB waters are primary and secondary contact recreation and fishing; and the best usages of Class I waters are secondary contact recreation and fishing. Waters in Classes SA, SB, and I must be suitable for fish propagation and survival. The best usage of Class SD waters is fishing and such waters must be suitable for fish survival.

<sup>6</sup> NYC DEP, *2003 New York Harbor Water Quality Report*, July 2004 at p. 49; *see also* NYS DEC, Waterbody Inventory and Priority Waterbodies List, 2000 Atlantic Ocean Long Island Sound Basin, Vol. 1: NYC Metropolitan Waters (hereinafter, “2000 PWL”).

<sup>7</sup> In Class I waters, including the East River, the monthly geometric mean, from a minimum of five examinations, shall not exceed 10,000 total coliforms per 100 ml. There is no total coliform standard for Class SD waters, such as the Gowanus Canal. 6 NYCRR § 703.4(a).

<sup>8</sup> In Class I waters, including the East River, the monthly geometric mean, from a minimum of five examinations, shall not exceed 2,000 fecal coliforms per 100 ml. There is no fecal coliform standard for Class SD waters, such as the Gowanus Canal. 6 NYCRR § 703.4(b).

<sup>9</sup> Dissolved oxygen must be at least 4.0 mg/l in Class I waters, including the East River; and at least 3.0 mg/l in Class SD waters, including the Gowanus Canal. 6 NYCRR § 703.3.

<sup>10</sup> Garbage and other refuse is absolutely prohibited in Class I and SD waters, including the East River and Gowanus Canal. 6 NYCRR § 703.2.

<sup>11</sup> Nitrogen is prohibited in Class I and SD waters, including the East River and Gowanus Canal, “in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages.” 6 NYCRR § 703.2.

<sup>12</sup> 2000 PWL.

<sup>13</sup> *New York State Section 303(d) List*, January 28, 2004.

By adding thousands of new residential units and other dense and intensive land uses to the 22-acre site, Atlantic Yards will vastly increase the volume of sanitary sewage in the Red Hook sewershed and will thereby increase the volume of CSOs discharging in to Gowanus Canal and East River. (Presently these CSO events occur about 50 times per year, or once per week on average, in these waterbodies.) Further, by covering the Atlantic railyards with a platform, the Proposed Project will increase the volume of stormwater runoff, further increasing the volume of CSOs.

Despite this, the Atlantic Yards Draft Scope of Analysis made absolutely no mention of CSOs. In our October 28, 2005 comments on the scope, we explained that the Proposed Project's CSO impacts must be fully evaluated in the DEIS and mitigation measures developed for any significant impacts. We also called on FCR and the ESDC to design the project to produce no net CSOs. In particular, we stated that "the volume of combined sewage from this site should never exceed – and should, ideally, represent a significant decrease from – pre-project conditions."

In response, in the DEIS, FCR and ESDC have taken promising and productive steps towards a "no net CSOs" outcome. The "Sustainable Design Features" proposed as an integral component of the Proposed Project will go a long way to reducing the additional CSOs caused by Atlantic Yards. In particular, the proposal to capture and reuse large quantities of stormwater on-site is one of the measures we called for in our October 2005 letter. But even after implementing these "Sustainable Design Features," the DEIS acknowledges that the project will nevertheless still increase CSOs into the Gowanus Canal and East River. Thus, as presently designed, Atlantic Yards will contribute to and exacerbate the significant water quality violations and the hazardous environmental conditions in these two waterbodies.

### Discussion

#### **I. THE DEIS'S ANALYSIS OF THE PROPOSED PROJECT'S INCREASE IN CSOs IS INADEQUATE.**

The DEIS's analysis of Atlantic Yards' CSO impacts, which relies on modeling conducted by New York City's consultant, HydroQual Environmental Engineers and Scientists, in a July 7, 2006 report, is flawed and incomplete and may well underestimate the increase in CSOs attributable to the Proposed Project. The inconsistencies and omissions in this information and analysis also thwart public participation. In particular, we have identified the following deficiencies with the technical analysis.

##### **A. The DEIS Fails to Quantify and Analyze the Effects of the Specific Pollutants That Will Discharge into the Gowanus Canal and East River as a Result of Atlantic Yards' Increase in CSOs.**

The CEQR Technical Manual specifies how agencies should assess the magnitude of

environmental impact for projects, like Atlantic Yards, that will affect surface water bodies in New York City.<sup>14</sup> The starting point in such analysis is to consider the New York State water quality classifications for affected City waterbodies because each classification has specific standards designed to protect the waters for their designated uses.<sup>15</sup> Significantly, these classifications “serve as a basis for comparison in the analysis of impacts on surface water resources.”<sup>16</sup>

The manual further identifies a variety of pollutants that can adversely affect water quality in New York City and thereby impair designated uses such as contact recreation, fishing and boating, fish habitat, and fish passage.<sup>17</sup> In order to assess a project’s effect on the affected waterbodies’ classifications and uses, the manual emphasizes the importance of gathering accurate water quality data: “Where sampling data are not available or where information for smaller areas of a larger water body is required, *it may be necessary to take water quality samples.*”<sup>18</sup> Further, “[t]o determine the worst-case water quality conditions, sampling should be conducted during the late summer, when water quality, especially dissolved oxygen, is at its lowest” and, significantly, “[s]ampling after storms should be performed when stormwater discharges, CSO’s, or SSO’s are potentially affected by the action.”<sup>19</sup>

The DEIS acknowledges that Atlantic Yards will increase CSO volume in the Lower Gowanus Canal and East River in 2010, will increase CSO volume in the East River in 2016, and will increase CSO frequency at the Gowanus Pumping Station and in the East River in 2016.<sup>20</sup> *But neither the DEIS nor the HydroQual report listed as the source for the CSO modeling identifies any water quality sampling, any modeling, or any other analysis of the specific constituent pollutants contained in these additional CSOs.* Without knowing what pollutants, and in what quantity, will enter the affected waterways, it is impossible to gauge the magnitude

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<sup>14</sup> CEQR Technical Manual at 3I-32 to 3I-35.

<sup>15</sup> *Id.* at 3I-32.

<sup>16</sup> *Id.*

<sup>17</sup> *Id.* at 3I-33 (discussing the following pollutants: “dissolved oxygen (DO), which indicates the level at which fish life can be maintained; biochemical oxygen demand (BOD), which indicates presence of organic pollution; fecal coliform, which indicates the presence of pathogens that spread disease; heavy metals, such as iron, manganese, copper, zinc, and lead, which are indications of industrial pollution; nutrients, such as phosphorus, ammonia, nitrite, and nitrates, which are discharged from wastewater treatment plants and, in excess, allow algal growth that results in a reduction of oxygen levels; suspended solids; secchi transparency; pH; and chlorophyll ‘a’, an indicator of the presence of algae.”).

<sup>18</sup> *Id.* (emphasis added).

<sup>19</sup> *Id.*

<sup>20</sup> DEIS, p. 11-35, Table 11-12 (“Results of CSO Modeling”). As noted below, the figures in this table differ from those in the HydroQual report, even though that report is cited as the source for the table.

and, ultimately, the significance of the impact. By simply stating the results of CSO modeling in terms of total gallons and CSO “events,” the DEIS has failed to comply with SEQRA’s “hard look” requirement and with the CEQR Technical Manual, and has failed to inform members of the public of the consequences of the Proposed Project. Such omission is particularly glaring because HydroQual, in two recent EISs (Hudson Yards In 2004 and the Greenpoint Williamsburg rezoning in 2005), assessed the existing level of water pollution in the receiving water bodies and predicted, from modeling, the quantity of major pollutant parameters (e.g., fecal coliform, biological oxygen demand, and others) that would be discharged in the CSOs caused by those projects.<sup>21</sup>

As the CEQR Technical Manual provides, in preparing the Atlantic Yards DEIS, the ESDC should have not only modeled the pollutant loads in the Proposed Project’s CSOs, but should have also conducted sampling within the East River and Gowanus Canal’s outfalls during CSO events, as well as in the ambient waterbodies, near the outfalls, after storms. To assess worst-case water quality conditions, sampling should be conducted “during the late summer, when water quality, especially dissolved oxygen, is at its lowest.”<sup>22</sup>

The ESDC cannot rely on pre-existing water quality sampling and data for New York City’s waterways because such data is inadequate to assess the impacts of CSOs. In particular, NYC DEP samples water quality far less frequently than the minimum five times per month required to assess compliance with New York State water quality standards for total coliform and fecal coliform.<sup>23</sup> As DEP stated in its 1997 New York Harbor Water Quality Survey, “[s]ince the Harbor Survey Program typically tests each site only 2-4 times per month, a true determination of compliance is not possible.”<sup>24</sup> Likewise, DEP’s 2003 New York Harbor Water Quality Report acknowledged that in 2003 it collected only 509 samples at 34 regularly sampled sites – an average of only 15 samples per year at each site, which is far below the necessary five samples per month.<sup>25</sup> In fact, even if DEP had sampled frequently enough to determine compliance, such data would nevertheless fail to fully and properly assess the effects of CSO discharges in NYC because CSO effects are somewhat limited both temporally (i.e., occur only after rain events) and geographically (pollutants discharge from shoreline outfalls). Thus, monitoring performed away from the shore and according to a schedule not timed to precipitation events will distort results. This is particularly true because recreational uses like

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<sup>21</sup> HydroQual’s modeling of pollutants in the CSOs for Hudson Yards and Greenpoint-Williamsburg was based on a simplistic assumption that CSOs are typically 10% sanitary sewage and 90% (polluted) stormwater. However, a more sophisticated analysis, based on modeling, should be performed.

<sup>22</sup> CEQR Technical Manual at 3I-33.

<sup>23</sup> See 6 NYCRR § 703.4, requiring a minimum of five samples per month.

<sup>24</sup> NYC DEP, 1997 New York Harbor Water Quality Survey at p. 27.

<sup>25</sup> NYC DEP, 2003 New York Harbor Water Quality Report at p. 9.

swimming, fishing and boating often occur near the shoreline, and thus closer to the CSO outfalls, where higher pollutant levels would be expected.<sup>26</sup>

Consequently, to comply with SEQRA, the ESDC should conduct appropriate sampling of CSO outfalls during discharges and of ambient water quality immediately after storms in the subject waterbodies, and then evaluate the Proposed Project's addition of each pollutant to the waterbodies in light of the water quality standards, classifications, designated uses and actual uses of the Gowanus Canal and East River.

**B. The DEIS's Estimates of Additional CSO Volumes Are Inconsistent with those in the HydroQual Report.**

Not only did the ESDC present its CSO results simply in terms of total additional CSO volume and frequency (rather than in terms of the pollutants discharged to the waterways), but these volume and frequency results presented in the DEIS are inconsistent with those presented in the technical report prepared by HydroQual, which is cited as the support for the DEIS results. Table 11-12 on page 11-35 of the DEIS is entitled "Results of CSO Modeling." The table's footnotes state that HydroQual's July 7, 2006 report is the source of the data presented in the table. But the table of CSO modeling results in the HydroQual report (Table 2 on page 5-13, entitled "Summary of Changes in CSO Volume and Frequency") sets forth results that are inconsistent with those in the DEIS. In most cases, the DEIS predicts less frequent and lower volume CSOs than does the HydroQual report on which it was based. Thus, if the HydroQual report is presumed to be accurate, then *the DEIS is underreporting CSO volumes by hundreds of thousands of gallons per year*. Moreover, in one case, CSO discharges to the lower Gowanus Canal in 2010, the DEIS reports a higher increase in CSO volume (2.6 million gallons per year) than the HydroQual report (2.5 million gallons per year). Accuracy and consistency are paramount to any environmental assessment. Moreover, "[i]t is the lead agency alone that is responsible for the adequacy and accuracy of the final EIS, regardless of who prepares it."<sup>27</sup> These discrepancies are particularly troubling because the vast majority of them underreport the impact in the DEIS. The ESDC should explain and correct these inconsistencies in the CSO results.

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<sup>26</sup> The DEIS also ignores the substantial probability that storm events during high tides will cause backflooding of sewage into basements and out manhole covers into the street. The HydroQual Report states, on page 5-8, that "[d]uring high tides, the overflows from outfalls are generally contained in the sewer system and outfalls until the tide recedes, thereby allowing more flows to reach the treatment plant." However, as HydroQual should be well aware, when the tide gates on CSO outfalls are closed by the pressure of high tides, combined sewage backs up in the sewage collection system and can flood residential and commercial basements and discharge through toilets sinks, other fixtures, and manhole covers, as occurred many times in lower Manhattan in 1999 (when several large storms coincided with high tides) and in other parts of the City at other times.

<sup>27</sup> *Akpan v. Koch*, 152 A.D.2d 113, 124 (N.Y. App. Div. 1989).

**C. HydroQual's Modeling of the Additional CSO Volume and Frequency Is Imprecise and the DEIS Failed to Analyze Provide a Margin of Error or Analyze the Reasonable Worst Case CSO Scenario.**

As the HydroQual report explains, the CSO modeling undertaken for Atlantic Yards ignored all CSO events smaller than 5,000 gallons,<sup>28</sup> considered only those sewer pipes with a diameter greater than 60 inches,<sup>29</sup> and assumed without analysis that the 22-acre Atlantic Yards site is representative of the larger 750 acres subcatchment area within the Red Hook sewershed.<sup>30</sup> However, discharges of “only” 5,000 gallons of combined sewage into the Gowanus Canal and East River gallons can be significant, especially to a recreational user near an outfall. Further, models are only as accurate as the data, assumptions and formula that comprise and are inputted into them. All of these modeling simplifications affect the sensitivity and accuracy of the CSO modeling and the results. The accuracy of water quality models is typically evaluated through calibration with data obtained from actual samples and measurements. The DEIS fails to include information regarding how, or even if, the model was calibrated. Moreover, the DEIS and the HydroQual Report provide little detail about the modeling results, other than the very cursory, summary results provided in the tables discussed above.

The DEIS also fails to explain or support its counterintuitive conclusion of increased CSO frequency yielding a reduction in total CSO volume. Both the DEIS and the HydroQual report conclude, quite surprisingly, that in 2016, the Proposed Project will increase the frequency of CSO events into the Gowanus Canal, while simultaneously decreasing the total volume of CSOs discharged in those events. While it is possible that Atlantic Yards will cause more overflows while reducing the volume of overflows that occur in the absence of the project, this counterintuitive and unlikely result should have been explained.

Given the imprecision in HydroQual's modeling, as well as the ESDC's failure to provide the public with more of the modelling data, the calibration report, and other information needed to peer review and verify the results, it is particularly problematic that the DEIS sets forth the increases in CSO volume and frequency as if they were exact numbers. Instead, the DEIS should have provided a margin of error with the data. Such a margin of error would account for the uncertainty that is always present when making predictions about future events based on incomplete information or limited modeling resources, and would be particularly relevant considering the substantial imprecision discussed above. Adding a suitable margin of error to the estimated increase in CSO would allow the DEIS to evaluate the reasonable worst case

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<sup>28</sup> HydroQual report at 5-12 to 5-13.

<sup>29</sup> *Id.* at 5-5.

<sup>30</sup> *See id.* at 5-6 to 5-7, Figures 7 and 8.

scenario as is necessary to undertake the “hard look” required by SEQRA<sup>31</sup> and CEQR.<sup>32</sup>

**D. The DEIS Assumes Unrealistically Low and Unsubstantiated Sanitary Sewage Volumes.**

The DEIS proposes installing water conserving fixtures, including waterless urinals in the arena, flow restrictors, low-flow toilets, low-flow sinks and low-flow showers in order to reduce the volume of sanitary sewage generated by the Proposed Project, and thereby reduce CSOs.<sup>33</sup> The DEIS anticipates these water conservation features will decrease sanitary sewer flow volumes by 120,699 gallons per day. Specifically, it estimates a reduction of approximately 6.5%, from 1,876,365 gallons per day (which was calculated according to rates given in the CEQR Technical Manual<sup>34</sup>) to 1,755,666 gallons per day (which was calculated by Flack + Kurtz, a subcontractor to HydroQual, based on certain assumptions set forth in an attachment to the HydroQual report<sup>35</sup>). In particular, Flack + Kurtz based its water conservation assumptions on “ASPE & IPSDC Sewage Flow Tables, previous design experience and additional influencing factors, eg low consumption fixtures.”<sup>36</sup>

However, the DEIS and HydroQual report provide few details regarding the specific water conserving fixtures which would be used, such as their minimum water conservation specifications. Such information should have been provided in order to allow the public to assess the accuracy of the water conservation assumptions. Further, Flack + Kurtz’s vague term “additional influencing factors,” which they claim were used to derive the results, should have been listed and explained.

Furthermore, the DEIS should not have assumed that 100% of the benefit of using low-flow fixtures will continue to be realized over the life of the project. The 6,860 residential units proposed for the Atlantic Yards project include 4,500 rental units and 2,360 privately owned

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<sup>31</sup> *Matter of C/S 12th Ave. LLC v. City of New York*, 2006 NY Slip Op 4172, 5 (N.Y. App. Div. 2006) (“the FGEIS’s consideration of 21 *worst case scenarios* in 24 categories... satisfied the substantive requirements of SEQRA.”) (emphasis added).

<sup>32</sup> CEQR Technical Manual, 3I-33 (“To determine the *worst-case water quality conditions*, sampling should be conducted during the late summer, when water quality, especially dissolved oxygen, is at its lowest.”) (emphasis added).

<sup>33</sup> DEIS at 11-4.

<sup>34</sup> *Id.* at 11-30.

<sup>35</sup> *Id.* at 11-31.

<sup>36</sup> Appendix 1a to the HydroQual report. ASPE and IPSDC stand for American Society of Plumbing Engineers and International Private Sewage Disposal Code, respectively.

condominiums.<sup>37</sup> The DEIS does not address the potential for low flow fixtures to be replaced with fixtures demanding more water in the 2,360 privately owned condominiums. In addition, some fraction of the renters in the 4,500 rental units may also replace some low-flow fixtures with fixtures demanding more water. The DEIS seems to premise sanitary sewer demand on the unrealistic assumption that all residential units will maintain the originally installed low-flow fixtures.

**E. The DEIS Assumes Water Reuse Volumes Far Beyond the Proposed Water Reuse Demand.**

The vast majority of the benefit from the “Sustainable Design Features” comes from the detention and retention of stormwater in tanks, which nearly compensates for the additional sanitary sewage generated by the Proposed Project. Furthermore, the effectiveness of water retention is highly dependent on the volume of water in the retention tanks which is reused. The more stormwater used on-site, the more capacity will be available in the tanks to capture stormwater. However, the scope and extent of stormwater reuse on-site cannot be determined by reading the DEIS and supporting documents because of vague and internally inconsistent assertions.

For example, the DEIS states that reuse “would include using recycled storm water in the cooling towers for make-up water, and also for landscaping.”<sup>38</sup> Appendix 2 of the Hydroqual report states the on-site water reuse “will” also harvest storm water for non-potable uses such as toilet flushing and mechanical uses on-site.<sup>39</sup> However, the body of the DEIS makes no mention of reusing storm water for either toilet flush water or mechanical uses on-site.

The commitment to use plants that minimize irrigation needs is inconsistently set forth within the DEIS itself. Chapter 1 states that the project developers “are considering” using native plants that minimize irrigation needs.<sup>40</sup> However, Chapter 11, states that the “use of irrigation minimizing native plants... would be part of the project design.”<sup>41</sup> Furthermore, if landscaping will be irrigated with captured storm water, the use of irrigation minimizing native plants is inconsistent with the goal of maximizing stormwater retention and reuse. Rather, irrigation *maximizing* native plants should be identified and used throughout the site to maximize reuse of storm water and thereby increase capacity in the retention tanks to capture more stormwater.

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<sup>37</sup> DEIS at 1-18,

<sup>38</sup> *Id.* at 11-23.

<sup>39</sup> Outline Specification, 4 of 9.

<sup>40</sup> DEIS at 1-28.

<sup>41</sup> *Id.* at 11-4.

Also problematic is that the projected volume of water reuse cannot be determined from the DEIS. The DEIS states that the “anticipated rate of reuse is expected to be, on average, between 50 and 100 gallons per minute.”<sup>42</sup> No explanation is provided for this 50 to 100 gallon per minute estimate. Moreover, the HydroQual report includes a table providing average daily reuse demand. Extrapolating an average gallon per minute demand over one year indicates that the average rate of reuse for cooling tower makeup will be only 30.9 gallons per minute.<sup>43</sup> That leaves an additional 19.1 to 69.1 gallons per minute of reuse which is not explicitly accounted for or explained. At a minimum, it likely includes irrigation demand, but this calculation should have been explained and set forth in detail. If storm water will be reused to flush toilets (which is unclear given the discrepancy between the DEIS and HydroQual report), the associated demand for this use should also be calculated and disclosed.

Moreover, irrigation and cooling tower makeup are seasonal uses of water. The DEIS should have clearly expressed the calculations seasonally, to better reflect actual demands and should have explained how the modeling accounted for the seasonal variations in reuse. In particular, the DEIS should have explained whether irrigation and air conditioning systems will be operated in the cooler months, and if they will not, how this will affect both the reuse of retained water and CSOs.

#### **F. The DEIS Fails to Provide Adequate Details of the Arena Roof.**

The proposed project includes a three-acre green roof on the arena.<sup>44</sup> Green roofs can be built with varying levels of effective storm water detention, depending on their design. An effective green roof maximizes the percentage of vegetated roof area and maximizes the detention capacity of the roof. For example, for a 2,000 square foot roof, an increase in the growing medium depth from four to six inches results in a 46% increase in the roof’s retention capacity of a five year storm and delays runoff from the roof for an additional hour.<sup>45</sup> Therefore, the storm water retention effectiveness of a green roof cannot be evaluated without reviewing the design parameters.

Consequently, more detail in the EIS is necessary to determine the effectiveness of the proposed arena green roof, including: the percentage of the three acres that will actually be green roof, taking into account mechanical equipment, pathways, roof access and other factors; the depth and type of soil proposed; the proposed plants and the associated irrigation demand; and, any other details influencing the effectiveness of the green roof.

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<sup>42</sup> *Id.* at 11-23.

<sup>43</sup> Appendix 1b to the Hydroqual report.

<sup>44</sup> DEIS at 1-18.

<sup>45</sup> Green Roof Storm Water Modeling, BioCycle 47 No 2 F, 2006.

**G. The DEIS Fails to Properly Estimate Net Volume of Annual Rainfall.**

The DEIS appears to inaccurately estimate annual on-site storm water volumes. Appendix 2 of the HydroQual report states that the average annual depth of precipitation on-site is 47.25 inches<sup>46</sup> and that the project site is 22.19 acres.<sup>47</sup> Calculating annual storm water volume using a standard conversion of 325,851 gallons per acre foot reveals the average annual storm water volume is 28.2 million gallons. However, the HydroQual report estimates the total volume of storm water at just 19.8 million gallons,<sup>48</sup> 42 percent less storm water than should be anticipated. This significant discrepancy must be explained and, if necessary, corrected.

**H. The ESDC Thwarted Public Participation by Failing to Include the HydroQual Report in the DEIS.**

In both the Hudson Yards and Greenpoint-Williamsburg EISs, the lead agency (NYC Planning Department) retained HydroQual to analyze the CSO increases, as ESDC has done here. But in both of those EISs, the lead agency included the HydroQual report as part of the EIS itself or in an appendix thereto.<sup>49</sup> Here the HydroQual report was not included in the DEIS or an appendix thereto. Riverkeeper's counsel was able to obtain the HydroQual report from the ESDC, but only after numerous calls and emails, and many weeks after the comment period had begun. Because many other members of the public did not have ready access to the HydroQual report, the ESDC had not made full and proper disclosure of its analysis and has thereby thwarted public participation.

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<sup>46</sup> Outline Specification, 4 of 9.

<sup>47</sup> Appendix 2 to HydroQual report, Table 2.

<sup>48</sup> Appendix 2 to HydroQual report, Outline Specification, 4 of 9.

<sup>49</sup> Albeit in both those cases, the lead agency and HydroQual did not analyze the CSO issue until the *final* EIS.

## II. THE DEIS'S CONCLUSION THAT CSO IMPACTS WILL BE INSIGNIFICANT VIOLATES SEQRA AND CEQR.

New York's State Environmental Quality Review Act (SEQRA)<sup>50</sup> requires government agencies and officials to consider in advance the environmental impacts of their decisions,<sup>51</sup> weigh alternatives,<sup>52</sup> and develop measures to mitigate all significant environmental effects.<sup>53</sup> New York City has implemented SEQRA by adopting a mandatory legal process known as City Environmental Quality Review (CEQR).<sup>54</sup> CEQR and SEQRA place requirements on ESDC with respect to its evaluation of Atlantic Yards in the DEIS. In particular, the ESDC *must* evaluate environmental impacts of the proposed Atlantic Yards development for their significance,<sup>55</sup> and ESDC must certify that the final EIS contains feasible mitigation measures for all significant impacts.<sup>56</sup> Unfortunately, the Atlantic Yards DEIS improperly and illegally fails to acknowledge that the incremental increases in CSO volume and frequency caused by the Proposed Project are significant under SEQRA and CEQR. Not only are the magnitude of CSO impacts projected in the DEIS significant, but (as explained above in Section I of these comments) a proper evaluation of the CSO impacts would reveal that the magnitude of CSO impacts are greater, thus further increasing their significance. ESDC has also violated SEQRA and CEQR by failing to develop and set forth in the DEIS sufficient mitigation measures for

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<sup>50</sup> SEQRA is codified in Article 8 of the state Environmental Conservation Law and its implementing regulations are published in Part 617 of Title 6 of the New York Codes, Rules and Regulations (NYCRR).

<sup>51</sup> 6 NYCRR § 617.1(c).

<sup>52</sup> *Id.* at § 617.2(n).

<sup>53</sup> *Id.*

<sup>54</sup> CEQR Rules of Procedure are published in the Rules of the City of New York (RCNY), Title 62, Chapter 5 with provisions of Executive Order No. 91 published as an Appendix and also in Title 43 of the Rules of the City of New York. The DEIS states that it "has been prepared in accordance with SEQRA and the New York City *Environmental Quality Review (CEQR) Technical Manual*, where applicable." DEIS at S-12.

<sup>55</sup> 6 NYCRR § 617.7(a), "The lead agency must determine the significance of any Type 1 . . . action in writing . . ." Atlantic Yards qualifies as a Type 1 action under many of the criteria listed in the SEQRA regulations, see § 617.4(b).

<sup>56</sup> 6 NYCRR § 617.11(d)(5) ("[The lead agency's] [f]indings must . . . certify that . . . the action is one that avoids or minimizes adverse environmental impacts to the maximum extent practicable, and that adverse environmental impacts will be avoided or minimized to the maximum extent practicable by incorporating as conditions to the decision those mitigative measures that were identified as practicable.").

these significant impacts.<sup>57</sup>

**A. The Proposed Project's Increase in CSOs in the East River and Gowanus Canal Is a Significant Impact Under SEQRA and CEQR Because it Will Contribute to Exceedences of State Water Quality Standards.**

The East River and the Gowanus Canal are designated for a variety of uses.<sup>58</sup> Currently, however, due to CSO discharges, the State regards them as impaired in their ability to accommodate those uses for which they have been designated.<sup>59</sup> The Gowanus Canal is a severely impaired waterway that is currently designated as only suitable for fish survival, and is impaired in even that capacity.<sup>60</sup> CSOs are recognized by New York State as a chief pollution source for the Canal<sup>61</sup> and they cause the Canal to violate dissolved oxygen and oxygen demand standards.<sup>62</sup> According to the DEC “[a]quatic life support, recreational uses (fishing) and aesthetics are severely restricted in Gowanus Canal by CSO discharges of raw sewage, stormwater discharges and oxygen demand sediments.”<sup>63</sup> Under these conditions, any additional pollution, even if small by comparison, will serve to further impair the Canal, frustrate efforts to lower the waterbody’s current pollution load, and further extend cleanup efforts into the future.

The East River is listed by the DEC as a priority waterbody impaired by the discharge of CSOs: “[a]quatic life support, fish consumption, recreational uses and aesthetics in the Lower East River are limited by a variety of pollutants/sources, including inadequately treated

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<sup>57</sup> As discussed below in Section IV of these comments, FCR can quite easily eliminate the significant CSO impact by expanding Atlantic Yards’ “Sustainable Design Features.”

<sup>58</sup> The East River is designated a Class I waterway, for which the designated uses include secondary contact recreation, fishing, and fish propagation and survival. Although it is not designated for swimming, people do swim in the East River. The DEC classifies the Gowanus Canal as an SD waterway, suitable only for fish survival. Nevertheless, secondary contact recreation, such as canoeing and kayaking, has become popular in the Gowanus Canal.

<sup>59</sup> The Gowanus Canal is included on the DEC’s List of Impaired Waters, *see supra* note 13. Furthermore, both waterways are described as impaired on the DEC’s Priority Waterbodies List, *See* New York State Department of Environmental Conservation, Statewide Priority Waterbodies List Summary Table (May 2005), at 136-37, available at <http://www.dec.state.ny.us/website/dow/bwam/wipwl05.pdf>.

<sup>60</sup> *See* New York State 2004 Section 303(d) List of Impaired Waters Requiring TMDL, Part 1 (September 24, 2004) available at <http://www.dec.state.ny.us/website/dow/part1.pdf>.

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> *See* New York State Department of Environmental Conservation, The 2000 Atlantic Ocean Long Island Sound Basin Waterbody Inventory and Priority Waterbodies List, Vol. 1: New York City Metropolitan Waters, at 87.

municipal sewage, untreated sewage from CSOs, toxic/contaminated sediments, pathogens, industrial activity, stormwater and urban runoff.”<sup>64</sup> The DEC describes the ability of the East River to support designated uses of public bathing, recreation and aquatic life as impaired, fish consumption is precluded, and aesthetics are stressed.<sup>65</sup> In recent years, the use of the East River for contact recreation has increased, bringing more New Yorkers into contact with the pollutants contained in the River. This trend heightens the need for the pollution levels of the East River to be brought down. The predicted additional discharge due to Atlantic Yards is completely incompatible with the imperative need to improve water quality in the East River. The additional volume of CSO discharges that the Atlantic Yards will cause, in addition to the two discharges that will occur solely as a result of the proposed project in 2016, constitute a significant impact that must be addressed and mitigated.

The proposed Atlantic Yards development, according to the DEIS, will increase the volume of CSOs discharged, and the number of discharges, to these two waterbodies. The DEIS predicts that, as a result of the Atlantic Yards development, the East River will receive up to an additional 500,000 gallons of CSOs in 2010 and an extra 700,000 gallons in 2016, even after the “Sustainable Design Features” are implemented.<sup>66</sup> The Gowanus Canal would receive up to an additional 1.1 million gallons in 2010, even after the “Sustainable Design Features” are implemented.<sup>67</sup> Moreover, in 2016, Atlantic yards would cause one additional CSO event per year at the Gowanus Pumping Station and two additional CSO events per year in the East River.<sup>68</sup> This means that on certain days of the year Atlantic Yards will not only increase the volume of a CSO discharge that would otherwise occur, but would actually cause new CSO discharges.<sup>69</sup>

Although the ESDC’s DEIS predicts increases in both the volume and number of CSO discharges to the Gowanus Canal and the East River, it concludes that this adverse environmental impact will not be significant. No explicit rationale is given for this conclusion.

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<sup>64</sup> See New York State Department of Environmental Conservation, *The 2000 Atlantic Ocean Long Island Sound Basin Waterbody Inventory and Priority Waterbodies List*, Vol. 1: New York City Metropolitan Waters, at 89.

<sup>65</sup> See DEC’s *Priority Waterbodies List*, See New York State Department of Environmental Conservation, *Statewide Priority Waterbodies List Summary Table* (May 2005), at 136-37, available at <http://www.dec.state.ny.us/website/dow/bwam/wipwl05.pdf>

<sup>66</sup> See DEIS Table 11-12, at 11-35. The figures given are in addition to the predicted volume of CSOs in the given years if the Atlantic Yards development were not to proceed.

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> Unfortunately, the DEIS does not quantify these discharges, but they are at least 5,000 gallons each because that is smallest discharge HydroQual modeled.

However, it appears that ESDC has reached such conclusion because of the relatively small magnitude of the increase in CSOs (measured by volume and frequency only<sup>70</sup>) as compared to the “no-build” scenario. The DEIS’s implicit approach – determining an impact’s significance assessment by merely comparing the incremental addition of pollution by the project to the pollution contributed by other sources – is wholly inappropriate method of analysis for CSO pollution and violates SEQRA and CEQR.

Under SEQRA, impacts must be found to be significant if they cause a “substantial adverse change in . . . ground or surface water quality or quantity.”<sup>71</sup> Moreover, in assessing significance, the ESDC must also assess other indicators of significance including whether the project: “[i]mpair[s] the character or quality of important . . . aesthetic resources or of existing community or neighborhood character,” or “substantially chang[es] the use or intensity of use of land including . . . recreational resources or its capacity to support existing uses.”<sup>72</sup> SEQRA’s Environmental Assessment Form (EAF) “ultimately provides the factual and legal basis for the determination of environmental significance” and is thus critical to the environmental review process.<sup>73</sup> On the full EAF, two assessment questions are particularly relevant to CSOs: first, whether the action will affect water quality or quantity and, second, whether the action will alter drainage patterns or surface water runoff.<sup>74</sup> Furthermore, SEQRA regulations require that a predicted impact “be assessed in connection with the following seven factors:

- (i) its setting (e.g., urban or rural);
- (ii) its probability of occurrence;
- (iii) its duration;
- (iv) its irreversibility;
- (v) its geographic scope;
- (vi) its magnitude; and
- (vii) the number of people affected.”<sup>75</sup>

Where pollution limits are already exceeded – as is the case for fecal coliform and biological oxygen demand in the East River and Gowanus Canal – even a relatively small amount of additional pollution that contributes to the existing problem must be considered

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<sup>70</sup> As explained above in Section I.A., the DEIS failed to quantify or analyze the pollutants contained in the additional CSOs caused by Atlantic Yards.

<sup>71</sup> 6 NYCRR § 617.7(c)(1)(ix).

<sup>72</sup> *Id.* at § 617.7(c)(1)(viii).

<sup>73</sup> Michael B. Gerrard, Daniel A. Ruzow & Philip Weinberg, *Environmental Impact Review in New York*, § 3.04 (Matthew Bender 2005).

<sup>74</sup> *See* 6 NYCRR § 617.20.

<sup>75</sup> 6 NYCRR § 617.7(c)(3).

significant under SEQRA. For example, in discussing the analysis required under SEQRA for transportation impacts, the court in *Chatham Green, Inc. v. Bloomberg* held that such an analysis must consider the extent to which a new project would worsen already-poor traffic conditions.<sup>76</sup> Similarly, in *In re Pyramid Crossgates Co.*, the DEC Commissioner found that “[the lead agency] has the responsibility to cure any condition *causing or contributing to exceedance of permissible emission limits* which have as their purpose the prevention of adverse health effects. In order to effectively and efficiently meet this responsibility, [SEQRA] must be applied prospectively wherever possible.”<sup>77</sup>

Under CEQR, an impact is significant “if a resource has been found to serve one or more of a number of natural or recreational functions and an action would directly or indirectly diminish its size or its capacity to function.”<sup>78</sup> Examples of significant actions include those that “cause or *exacerbate* a water quality violation” and actions that “cause a *noticeable decrease* in a resource’s ability to serve one or more of the following functions: . . . recreational use [or] aesthetic or scenic enhancement.”<sup>79</sup> The CEQR Technical Manual’s<sup>80</sup> guidelines specifically recognize the potential for significant impacts from stormwater, and, implicitly, from CSO discharges. Such impacts would occur “if the stormwater would *degrade* water quality in the receiving body.”<sup>81</sup> Recognized forms of degradation “may include adverse impacts on aquatic biota and vegetation.”<sup>82</sup> CSOs quite obviously cause adverse effects on aquatic biota and vegetation. Indeed, the U.S. EPA has explicitly warned of the link between CSOs and damage to water quality – specifically describing the potential for damage to wildlife, shellfish and [fin]fish.<sup>83</sup> Consequently, incremental CSOs constitute a significant impact under SEQRA and CEQR where they exacerbate or contribute to existing water quality violations and/or noticeably decrease the waterbodies’ ability to serve recreational users. In the Gowanus Canal and the East River this is precisely the effect additional CSO discharges due to the Atlantic Yards development would have – the Atlantic Yards development will increase the volume and number

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<sup>76</sup> 765 N.Y.S.2d 446 (Sup Ct. New York Co. 2003).

<sup>77</sup> DEC Comm’r Decision, June 25, 1981 at 4 (emphasis added).

<sup>78</sup> *Id.* at 3I-41. City water bodies serve multiple natural and recreational functions. *Id.* at 3I-1.

<sup>79</sup> *Id.* at 3I-41 (emphasis added).

<sup>80</sup> The CEQR Technical Manual was developed by the Mayor’s Office of Environmental Coordination as part of its mandate to “[w]ork with appropriate city agencies to develop and maintain technical standards and methodologies for environmental review . . .” 62 RCNY § 5-04(c)(1). The Manual “establishes a specific analytical framework for the environmental review process.” Gerrard at § 8A.04[4][a].

<sup>81</sup> *Id.* at 3L-10 (emphasis added).

<sup>82</sup> *Id.*

<sup>83</sup> See *supra* footnotes 1-3 and accompanying text.

of CSO discharges, thereby contributing to and exacerbating the current problem with CSOs in these two waterbodies and reducing their ability to sustain recreational uses.

The discharge of up to an additional 1.1 million gallons of CSOs per year into the Gowanus Canal in 2010<sup>84</sup> and the addition of 500,000 gallons per year in 2010 and 700,000 gallons per year in 2016,<sup>85</sup> (even after the “Sustainable Design Features” are implemented) is significant because it will contribute to and exacerbate the significant water quality violations in these these waterways. Furthermore, in addition to exacerbating problems associated with CSO discharges that would occur without the project, the Atlantic Yards development, according to its own predictions, will cause up to an additional two CSO discharge events in 2010,<sup>86</sup> and an additional discharge in 2016,<sup>87</sup> that would not otherwise occur. On these days, Atlantic Yards will cause, rather than simply contribute to, discharges that will impair the Gowanus Canal’s ability to sustain its designated uses. These impacts are clearly significant under SEQRA and CEQR.

The approach mandated by SEQRA and CEQR for projects that contribute in even small ways to serious pre-existing environmental problems is consistent with the law of other jurisdictions under their environmental review laws. For example, when considering the prospect of additional contributions to an extant air quality problem the court in *Kings County Farm Bureau v. City of Hanford*, held that “[t]he relevant question to be addressed in the [Environmental Impact Report (EIR)] is not the relative amount of precursors emitted by the project when compared with preexisting emissions, but whether any additional amount of precursor emissions should be considered significant in light of the serious nature of the ozone problems in this air basin.”<sup>88</sup> Likewise, the court in *L.A. Unified Sch. Dist. v. City of L.A.*, declared inadequate an EIR which concluded that a project’s contribution of about three decibels of ambient noise was insignificant, because the existing noise level already exceeded guidelines.<sup>89</sup>

Likewise, the National Environmental Policy Act of 1969 (NEPA) – the federal law which SEQRA and other state’s environmental review laws were patterned after – is also in accord. Federal courts have found that the relevant consideration in the circumstances presented here is not whether a project’s contribution of pollution is small in relative terms, but whether it

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<sup>84</sup> DEIS Table 11-12, at 11-35. As discussed in Section I above, these figures may understate the true magnitude of the additional CSOs.

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> 221 Cal. App. 3d 692, 718 (Cal. Ct. App. 1990).

<sup>89</sup> 58 Cal. App. 4<sup>th</sup> 1019, 1024-26 (Cal. Ct. App. 1997).

increases the overall problem by some measurable degree. For example, in *High Sierra Hikers Ass'n v. Blackwell*, the court stated that individual businesses' impacts, in this case due to acting as pack operators in wilderness areas under special-use permits, though "de minimis," still needed to be considered as small parts of a whole that creates a significant impact.<sup>90</sup>

This "death by a thousand cuts" principle underlies other environmental laws as well. In *Covington v. Jefferson County*, the court found that ozone-depleting chemicals escaping from a small pile of landfilled refrigerators were significant, even though they were only a drop in the bucket when put in the context of the global ozone depletion problem: "While the landfill here only contributes to a fraction of overall ozone depletion, it cannot be doubted that the actions of the landfill operators to a degree increase ozone depletion."<sup>91</sup> Similarly, in *U.S. v Gerke Excavating, Inc.*, although the court acknowledged that the effect on the Wisconsin River of dumping dredged stumps and roots into a wetland was likely small, it held that the "sum of many small interferences with commerce can be large, and so to protect commerce Congress must be able to regulate an entire class of acts if the class affects commerce, even if no individual act has a perceptible effect."<sup>92</sup>

Consequently, where a project will either cause *or contribute* to the exceedance of applicable environmental standards, the lead agency's analysis must focus not on the incremental contribution of pollution (which may appear small in relation to the total amount) but rather on the significance of the overall problem to which the project contributes. Because Atlantic Yards will increase the volume and frequency of CSOs that will discharge into the Gowanus Canal and East River, and these project-related discharges contribute to the current exceedance of water quality standards in those waterways, the determinative factor is not whether Atlantic Yards contributes 90% or less than 1% of the total CSOs discharged in a given year. Indeed, focusing only on the relative proportion of a particular project's contribution to an overall problem would, in most circumstances, lead to the absurd conclusion that *none* of the contributions to a significant environmental problem will ever themselves be deemed significant. Indeed, CSO pollution, like air pollution and traffic congestion, results from the aggregation of many small insults. If thousands of new projects could be approved, each adding small amounts of CSO pollution, yet each project's contribution were to be deemed insignificant under SEQRA, then the overall problem would continue to worsen without any recognition of consequences during

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<sup>90</sup> 390 F.3d 630, 645 (9th Cir. 2004).

<sup>91</sup> 358 F.3d 626, 650 (9th Cir. 2004) (considering the Clean Air Act and the Resource Conservation and Recovery Act).

<sup>92</sup> 412 F.3d 804, 806-7 (7th Cir 2005) *vacated and remanded on other grounds* 126 S. Ct. 2964, (2006) (case brought under the Clean Water Act). *See also* *NWF v. Norton*, 332 F.Supp.2d 170 (D.D.C. 2004); *Pacific Coast Federation of Fishermen's Association, Inc. v. National Marine Fisheries Service*, 265 F.3d 1028, 1036 (9th Cir.2001) ("If the effects of individual projects are diluted to insignificance and not aggregated, then [plaintiff] is correct in asserting that NMFS's assessment ... is tantamount to assuming that no project will ever lead to jeopardy of a listed species.").

environmental review. This absurd result contravenes the most fundamental purposes of SEQRA and CEQR, and would perpetuate environmental disasters by endlessly facilitating increasing pollution.

Both the State and City laws require, through their respective legal frameworks, that environmental impacts are to be assessed through an examination of the effect on the resource in question – its ecological health, its ability to sustain certain uses, and any ripple effects that a change to the resource might have on the wider human and environmental context of the resource.<sup>93</sup> Furthermore, the purpose of SEQRA is not merely to alleviate the impact of human activity on the environment; it is to “promote efforts which will prevent or *eliminate* damage to the environment and enhance human and community resources.”<sup>94</sup> These guiding principles dictate that when a proposed project will frustrate and retard any efforts to eliminate damage to already stressed and impaired environmental resources, its impacts must be considered significant.

In the Gowanus Canal ,the Atlantic Yards development will hamper attempts to remedy the severe impairment of the waterway. In the East River,the development will push the pollution levels in the waterway further from desired standards. In both cases, the project will exacerbate the current pollution problems, and further impair the ability of the waterways to sustain their designated uses. In addition, both waterways are also used in ways that they are not officially designated to sustain.<sup>95</sup> For the forgoing reasons the ESDC must find that Atlantic Yards’ contribution to the water quality violations caused by CSO discharges in the East River and the Gowanus Canal is significant, and should demand that these impacts be addressed and mitigated in the EIS.

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<sup>93</sup> It is for these reasons that attempts to avoid EIS requirements through piecemeal applications were rejected in *Karasz v. Wallace*, 134 Misc. 2d 1052, 1055, 513 N.Y.S.2d 950, 953 (Sup Ct. Saratoga Co. 1987).

<sup>94</sup> NY Env. Cons. Law § 8-0101 (emphasis added).

<sup>95</sup> Anglers, crabbers, kayakers and swimmers use the two waterways in spite of their classifications. The annual Manhattan Island Swim, for example, has established swimming as an actually achieved use in all of the waters surrounding Manhattan for more than two decades. Thus, thousands of people are using NYC’s waters for recreation despite the water quality violations, making the need for CSO remediation more imperative than ever.

### III. ATLANTIC YARDS' CSO IMPACTS MUST BE EVALUATED FOR THEIR CUMULATIVE SIGNIFICANCE WITH THE IMPACTS OF RELATED, NEARBY PROJECTS.

Under SEQRA, a project must be found to have a "significant impact on the environment" where there are "two or more related actions undertaken, funded or approved by an agency, none of which has or would have a significant impact on the environment, but when considered cumulatively would meet one or more of the criteria in this subdivision." 6 NYCRR § 617.7(c)(1)(xii). Courts have held that cumulative impact consideration is mandatory under this provision of SEQRA where the individual impacts are related and dependent, such as part of the same overall plan or project. For example, in considering the cumulative impact of individual road construction projects, the Court of Appeals in *Westbury v. Department of Transp.*<sup>96</sup> found them to be "complementary components of the remedy for the Northern State Parkway's traffic flow problems, sharing a common purpose... That being so, the regulations require the consideration of their combined effects even though they are not part of a single formalized plan."<sup>97</sup> Similarly, in *Long Island Pine Barrens v. Brookhaven* the court stated, distinguishing two earlier cases, "that the requisite 'relatedness' among the projects [in those two cases] was established because the municipalities' plans, in and of themselves, provided a sufficiently cohesive framework for mandatory cumulative impact review. In other words, the decisive factor in both *Chinese Staff*<sup>98</sup> and *Save the Pine Bush*<sup>99</sup> was the existence of a 'larger plan' for development."<sup>100</sup> Thus, SEQRA mandates the ESDC to analyze the cumulative impacts of all individual actions it undertakes in furtherance of the same "larger plan for development."

Furthermore, under certain circumstances, SEQRA requires an analysis of the cumulative impact of even *unrelated* projects with collectively significant impacts. While such analysis is

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<sup>96</sup> 75 N.Y.2d 62, 70-71 (1989).

<sup>97</sup> *Id.*

<sup>98</sup> *Chinese Staff* concerned the failure of a city EIS to consider relocation of citizens as an environmental impact as part of an overall development plan. The court determined that such a failure violated SEQRA's requirement to consider related cumulative impacts and was arbitrary and capricious. *Chinese Staff & Workers Ass'n v. New York*, 68 N.Y.2d 359 (N.Y. 1986).

<sup>99</sup> *Save the Pine Bush* involved the City of Albany's approval of a multi-phase residential and commercial development. The court found that the city failed to consider the environmental impact of different phases of the project cumulatively, and that its exercise of discretion in doing so was arbitrary and capricious. *Save Pine Bush, Inc. v. Planning Bd. of Albany*, 96 A.D.2d 986 (N.Y. App. Div. 1983)

<sup>100</sup> 80 N.Y.2d 500, 514 (1987). In *Pine Barrens* a conservation group argued that the SEQRA cumulative impact analysis for a proposed shopping center must include all buildings within a specific geographic location. In rejecting that argument, the court found that while close geographic proximity alone did not constitute sufficient "relatedness," the existence of a larger plan would. *Long Island Pine Barrens v. Brookhaven*, 80 N.Y.2d 500, 514 (1992).

discretionary,<sup>101</sup> this does not render it optional. Indeed, one of the primary functions of the court in reviewing SEQRA compliance is to determine whether or not there was an abuse of discretion on the part of the agency. In particular, courts must determine “whether a determination was made in violation of lawful procedure, was affected by an error of law or was arbitrary and capricious or an abuse of discretion.”<sup>102</sup> Thus, SEQRA requires the ESDC to make a discretionary, and judicially reviewable, determination of whether the cumulative impacts of unrelated projects with collectively significant CSO impacts should be assessed in the Atlantic Yards EIS. Unfortunately, the ESDC has failed to even exercise its discretion in this regard. Such determination is also required because, in preparing the Final EIS, the ESDC must consider and respond to comments on the DEIS, including the cumulative impact comments contained herein.

**A. Atlantic Yards’ Increases in CSO Volume and Frequency in the East River and Gowanus Canal are Cumulatively Significant when Considered with Related ESDC Actions Causing CSO Discharges to those Waterways.**

Numerous other past, present and reasonably foreseeable actions by the ESDC will cumulatively and significantly increase CSOs in the East River and Gowanus Canal, and must therefore be assessed in conjunction with Atlantic Yards. Such analysis is mandatory with respect to related actions of the ESDC and is a proper exercise of discretion with respect to unrelated, but cumulatively significant, actions.

**1. At Least Ten ESDC Projects in Brooklyn and Manhattan are Related Components of an Overall Project and are Cumulatively Significant with Respect to CSOs, Thereby Mandating a Cumulative Impact Analysis.**

ESDC projects and those of its subsidiaries such as the Harlem Community Development Corporation (HCDC) and the Brooklyn Bridge Park Development Corporation (BBPDC) contribute CSOs to the Gowanus Canal, and/or the East River. Appendix 1, hereto, is a map depicting ESDC projects that will impact the East River and Gowanus Canal. The cumulative CSO impact of these projects must be evaluated in the EIS along with the individual CSO impact of the Atlantic Yards Project.

At least five appellate decisions have mandated cumulative impact assessment under

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<sup>101</sup> *Settco, LLC v. N.Y. State Urban Dev. Corp.*, 305 A.D.2d 1026, 1027 (App. Div. 2003); *see also Noslen Corp. v. Ontario Co. Bd. of Supervisors*, 295 A.D.2d 924, 926 (App. Div. 2002)(finding cumulative impact analysis unnecessary for evaluation of county jail construction because jail project was independent of other potential future development plans).

<sup>102</sup> *Chinese Staff*, *supra*, 68 N.Y.2d at 363.

SEQRA: *Save the Pine Bush v City of Albany*,<sup>103</sup> *City of Westbury v Department of Transportation*,<sup>104</sup> *Chinese Staff & Worker's Ass'n v. City of New York*,<sup>105</sup> *Sun Company, Inc. v. City of Syracuse Industrial Dev. Agency*,<sup>106</sup> and *Segal v Town of Thompson*.<sup>107</sup> According to the oft-cited SEQRA treatise, *Environmental Impact Review in New York*,<sup>108</sup> all five of the decisions required cumulative impact analysis on the basis of three elements. The first element is that the projects must have significant common impacts. The second is that the projects spring from or are included in a common plan or policy. The third is that the projects are specifically identified.<sup>109</sup>

For Atlantic Yards, as it relates to other ESDC projects, all three elements are plainly satisfied. First, the projects are specifically identified and, second, they have significant common impacts. The ESDC projects, including the projects on Roosevelt Island and Governors Island, will directly increase the amount of CSOs released into the East River and the Gowanus Canal. The BBPDC project of the Brooklyn Bridge Park Development and the HCDC projects in East Harlem will also increase the amount of CSOs in the affected waterways. The Brooklyn Bridge Park Development, for example, will increase the sanitary sewage on the site by an estimated 640,600 gallons per day (gpd).<sup>110</sup> One of the largest and most potentially harmful developments is that in Western Queens under the Queens West Development Corporation (QWDC), which promises to develop 74 acres on the banks of the East River.

Along with these actions, the ESDC has also approved five Empire Development Zones directly along the East River and/or Gowanus Canal. Projects within these zones, known as Empire Zone Enterprises (EZEs), are eligible for sales tax exemption, real property and business tax credits for businesses locating and expanding in EZEs. The purpose of the Empire Zones Program is to give companies that increase employment the opportunity to operate on a nearly "tax-free" basis for up to 10 years in designated areas of the State, with additional savings available on a declining basis in years 11 through 15.<sup>111</sup>

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<sup>103</sup> 70 N.Y.2d 193, 205-206, 518 N.Y.S.2d 943 (1987).

<sup>104</sup> 75 N.Y.2d 62, 550 N.Y.S.2d 604 (1989).

<sup>105</sup> 68 N.Y.2d 359, 509 N.Y.S.2d 499 (1986).

<sup>106</sup> 209 A.D.2d 34, 625 N.Y.2d 371 (4th Dept. 1995).

<sup>107</sup> 182 A.D.2d 1043, 583 N.Y.S.2d 50 (3d Dept. 1992).

<sup>108</sup> Gerard, *Environmental Impact Review in New York*, §5.10(4)(c) at 5-61.

<sup>109</sup> *Id.*

<sup>110</sup> *Brooklyn Bridge Park Project: Final Environmental Impact Statement*, Ch. 13, p. 13-7, available at <http://www.empire.state.ny.us/bbpdc>.

<sup>111</sup> *Empire Zone Description of Benefits*, <http://www.empire.state.ny.us>

Third, the projects spring from a common policy. The abovementioned ESDC projects (and any others not mentioned here that may contribute CSOs to the relevant waterways) are part of a plan or policy that includes Atlantic Yards for purposes of the cumulative impact assessment because they further the urban redevelopment mission of the ESDC under its authorizing legislation. As such, any projects approved, undertaken or funded by the ESDC in these zones must be considered for cumulative impact in the Atlantic Yards EIS. In 1968 the State legislature passed the New York State Urban Development Corporation Act (hereafter known as the “ESDC Act”) and “declared ... the policy of the state to promote a vigorous and growing economy, to prevent economic stagnation and to encourage the creation of new job opportunities,” and to “promote the safety, health, morals and welfare of the people of the state.”<sup>112</sup> For these purposes, the ESDC Act created the ESDC (a/k/a New York State Urban Development Corporation “to acquire, construct, reconstruct, rehabilitate or improve such industrial, manufacturing, commercial, educational, recreational and cultural facilities, and housing accommodations for persons and families of low income, and facilities incidental or appurtenant thereto, and to carry out the clearance, replanning, reconstruction and rehabilitation of such substandard and insanitary areas.”<sup>113</sup>

The Atlantic Yards Project, approved and funded by the ESDC (pursuant to Section 16(2) of the ESDC Act), is in furtherance of ESDC’s redevelopment mission as dictated by the legislature. The proposed project “would include an approximately 18,000 seat arena, 16 buildings for residential, office, retail, community facilities, parking, and possibly hotel uses, including approximately 5,790 to 6,860 low, moderate and market-rate housing units, and a minimum of 7 acres of publicly accessible open space. The proposed project would also reconfigure and improve the Vanderbilt rail yard and improve access to the Atlantic Terminal subway station.”<sup>114</sup> The Proposed Project’s arena and parks are “recreational facilities” and its low income housing falls are “dwelling accommodations... for persons and families of low income” within the meaning of ESDC’s enabling law.<sup>115</sup> The remainder of Atlantic Yards is purportedly covered by the state policy to promote a vigorous economy through attraction of industry in blighted areas “in coordination with development of housing, mass transit and public services...”<sup>116</sup>

Since the ESDC was granted the power to undertake, approve or fund development and redevelopment projects – including Atlantic Yards and the other related projects discussed above – in furtherance of the above-stated policy goals, those developments are sufficiently related for

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<sup>112</sup> NY CLS Unconsol., Ch 252, § 2.

<sup>113</sup> *Id.*

<sup>114</sup> *Atlantic Yards*, <http://www.empire.state.ny.us/AtlanticYards/>

<sup>115</sup> NY CLS Unconsol., Ch 252, § 2.

<sup>116</sup> *Id.*

purposes of SEQRA's cumulative impact analysis. They are all components of ESDC's urban revitalization initiatives within Brooklyn and Manhattan, as authorized by the New York State Legislature. The policy promulgated by the State legislature is narrowly focused, giving specific guidelines for how to achieve the sought-after goals and is integrally related to project construction. It is this specificity, narrow focus, and relation to construction that distinguishes the policy in the ESDC Act from that in *Long Island Pine Barrens v. Brookhaven*, in which the court found a cumulative impact assessment non-mandatory.<sup>117</sup>

ESDC is not only aware of the potential of its related projects that will increase CSOs in the Gowanus Canal and East River, but has quantified the incremental increase in CSOs attributable to two of them within its CSO analysis for Atlantic Yards. Specifically, on pages 5-9 to 5-11 of the HydroQual report, FCR's consultant projected that the BBPDC and the Downtown Brooklyn Development Plan (DBDP) will contribute an estimated additional 1.0 mgd dry weather flow to the Red Hook sewershed by 2010 and 1.5 mgd by 2016. HydroQual then used those figures in calculating the increase in CSOs to the Gowanus Canal and East River under the DEIS's "no-build" scenario. In order to comply with SEQRA, however, ESDC must also use the additional dry weather flows and any changes in storm-water runoff attributable to these and the other projects discussed herein in a cumulative impact analysis. A proper cumulative impact analysis must subtract the impact of these other projects from the projected baseline conditions in 2010 and 2016 and add them to the incremental impact caused by Atlantic Yards.

**2. Atlantic Yards and all ESDC Development and Redevelopment Projects within the Sewersheds that Drain into the East River and Gowanus Canal are Cumulatively Significant with Respect to CSOs, and Excluding them from the Cumulative Impact Analysis Would Constitute an Abuse of Discretion.**

"In reviewing administrative proceedings in general and SEQRA determinations in particular, [courts consider] 'whether a determination was made in violation of lawful procedure, was affected by an error of law or was arbitrary and capricious or an abuse of discretion' (CPLR § 7803(3))."<sup>118</sup> To properly exercise their discretion, agencies must take a "hard look" at relevant areas of environmental concern and make a "reasoned elaboration" of the basis for their

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<sup>117</sup> 80 N.Y.2d 500, 519 (1992). In that case, the pre-existing statutory scheme, designating Sole Source Aquifer Protection Areas (NY CLS ECL § 55-0113), was so broad and vague that the court felt that any mandate for cumulative impact assessment should come from the legislature. *See also Long Island Pine Barrens Soc'y, Inc. v. Town Bd. of East Hampton*, 293 A.D.2d 616, 741 N.Y.S.2d 80 (2d Dept. 2002).

<sup>118</sup> *Chinese Staff* at 363-364 (N.Y. 1986).

determination.<sup>119</sup> Further, they must give “reasoned consideration to all pertinent issues revealed in the process.”<sup>120</sup>

As explained herein, the DEIS failed to assess the cumulative CSO impacts of ESDC projects in the vicinity of East River and Gowanus Canal. At a minimum, the ESDC must take a “hard look” at the cumulative impacts of said projects and provide a “reasoned elaboration” of the basis for its determination in the EIS. A failure to address cumulative impact concerns in the EIS would violate SEQRA and result in the finding of an abuse of discretion during judicial review.

SEQRA mandates that “[a]gencies shall use all practicable means to realize the policies and goals set forth in this article, and shall act and choose alternatives which, consistent with social, economic and other essential considerations, to the maximum extent practicable, minimize or avoid adverse environmental effects, including effects revealed in the environmental impact statement process.”<sup>121</sup> There are many social considerations implicated by the presence, and the ESDC’s cumulative increase of CSOs in our waterways – swimming, fishing, health hazards, and aesthetic considerations, to name a few. As explained herein, reducing CSOs will also contribute other social benefits such as reducing the urban heat island effect.

Regardless of what considerations SEQRA mandates be contained within an EIS, the Atlantic Yards EIS should set forth measures to mitigate the cumulative impact of the other ESDC projects. The Sustainable Design Features can quite easily be expanded to mitigate these cumulative impacts, as explained below in Section IV. The threat to the East River and the Gowanus Canal is quite significant indeed, individually and cumulatively, and will not be adequately addressed unless the ESDC considers the cumulative impact of all its projects affecting the East River and Gowanus Canal (and other agencies do the same). The goal of SEQRA is to “promote efforts which will prevent or eliminate damage to the environment and enhance human and community resources.”<sup>122</sup> The current state of environmental degradation in the affected waterways underscores that the Atlantic Yards DEIS will not fulfill the purposes of SEQRA unless the cumulative impact of ESDC projects is considered, analyzed, and factored into planned mitigation measures.

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<sup>119</sup> *Aldrich v Pattison*, 107 AD2d 258, 265, *supra*; *Coalition Against Lincoln W. v City of New York*, 94 AD2d 483, 491, *aff’d* 60 NY2d 805, *supra*; *H.O.M.E.S. v New York State Urban Dev. Corp.*, 69 AD2d 222, 232.

<sup>120</sup> *Jackson v. New York State Urban Dev. Corp.*, 67 N.Y.2d 400, 417 (N.Y. 1986).

<sup>121</sup> NY Env. Cons. Law § 8-0109.

<sup>122</sup> *Id.* at § 8-0101.

**IV. ADDITIONAL “SUSTAINABLE DESIGN FEATURES” ARE AVAILABLE TO COMPLETELY ELIMINATE ATLANTIC YARDS’ ADVERSE CSO IMPACTS, AND SHOULD BE INCORPORATED AS COMPONENTS OF THE PROJECT.**

The Atlantic Yards Project has the opportunity to set a new standard for sustainable development and long-term abatement of wastewater problems in New York City. The project should employ a range of low impact development and sustainable design features to ensure no increases in CSO frequency or volumes. A full complement of sustainable design features would likely decrease CSO impacts and reflect a commitment by the FCR, the ESDC, and all involved agencies to restoring the East River and Gowanus Canal.

**A. Low Impact Development Features that Maximize Permeable Soil Infiltration Should be Used to Further Reduce CSOs by Decreasing Stormwater and Combined Sewer Volumes.**

The proposed project includes approximately seven acres of open public space and approximately one acre of private open space.<sup>123</sup> Existing site conditions include three blocks of below grade rail yards comprised of Block 1119, Block 1120, and Block 1121, bounded generally by Atlantic Avenue to the north, Vanderbilt Avenue to the east, Pacific Street to the south and 5<sup>th</sup> Avenue to the west.<sup>124</sup> These three blocks do not contribute stormwater to the combined sewer system. Rather, stormwater either evaporates or seeps into the soil.

Re-developing the site with approximately 8 acres of open space provides an opportunity to allow significant volumes of stormwater to continue to infiltrate the soil. For example, on walkways permeable pavers or porous pavement could be used instead of traditional concrete or asphalt. Permeable pavers are interlocking concrete blocks that allow stormwater to drain between the blocks. Porous pavement looks more like traditional pavement but includes enough void space to allow stormwater to pass through the pavement.

Likewise, rain gardens and bioswales could be used in landscaped areas. Rain gardens are simply gardens that have been graded and planted to maximize stormwater retention and infiltration. A bioswale is a vegetated drainage corridor intended to filter pollutants and provide an opportunity for stormwater infiltration before reaching a combined sewer drain.

Unfortunately, the DEIS does not commit to designing and installing permeable surfaces for stormwater retention. In fact, the DEIS merely proposes consideration of “additional stormwater strategies such as rain gardens, bioswales, vegetated filters, buffers, and permeable paving.”<sup>125</sup> The Hydroqual report uses equally non-committal language, stating that “some of

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<sup>123</sup> DEIS at 1-17, Table 1-3.

<sup>124</sup> *Id.* at 11-11.

<sup>125</sup> *Id.* at 1-28.

the stormwater may be infiltrated into permeable soils...”<sup>126</sup> The project developers should commit to a comprehensive strategy to maximize stormwater infiltration of permeable surfaces. Such a commitment could decrease CSOs by significantly decreasing combined sewer volumes.

**B. Green Roofs Should Be Installed Throughout the Proposed Project to Further Reduce CSOs by Decreasing Stormwater Combined Sewer Volumes.**

All buildings in the proposed project should be constructed with green roofs. The 22-acre proposed project site includes eight acres of open space and three acres of green roof, leaving approximately 11 acres of rooftop available for greening. An additional 11 acres of green roof could substantially decrease the proposed project’s contribution to CSO volume and frequency by providing stormwater detention and delaying stormwater runoff.

Green roofs also provide benefits beyond decreased combined sewer volumes, adding to the quality and comfort of the entire re-development. These benefits include cooler daytime rooftop temperatures, potential decreased energy costs, aesthetically pleasing views, and potential decreases in the urban heat island effect.<sup>127</sup>

**C. The Proposed Project Should Provide for Additional Water Reuse to Further Reduce CSOs by Decreasing Sanitary Sewer and Combined Sewer Volumes.**

As explained above in Section I.E., FCR considered but failed to adopt stormwater reuse for toilet flush water as a design feature in the DEIS. Appendix 2 to the Hydroqual report explains that buildings 9 through 15 could reuse up to 40,000 gallons of stormwater daily as toilet flush water.<sup>128</sup> At that rate, buildings 9 through 15 alone could reuse over 14 million gallons of stormwater per year. Extrapolating across the entire project suggests that a comprehensive plan to reuse stormwater as toilet flush water would provide enough demand to use all on-site stormwater.

FCR also considered but failed to adopt graywater reuse,<sup>129</sup> which would decrease the total demand on the sanitary sewers, thereby decreasing the volume of combined sewer

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<sup>126</sup> HydroQual report, Appendix 2, Outline Specifications, 2 of 9.

<sup>127</sup> ASLA Dedicates New Green Roof at Washington, D.C. Headquarters, PR Newswire US, April 26, 2006, [www.asla.org](http://www.asla.org). For general information on green roofs and low impact development see *Rooftops to Rivers; Green Strategies for Controlling Stormwater and Combined Sewer Overflows*, NRDC, June 2006. <http://www.nrdc.org/water/pollution/rooftops/rooftops.pdf>

<sup>128</sup> Outline Specification, 7 of 9.

<sup>129</sup> Appendix 2 to the Hydroqual report, Hydroqual report, Outline Specification 2 of 9.

overflows. Unfortunately, the Atlantic Yards Project has not proposed any graywater collection and reuse strategies. As addressed in our October 28, 2005 draft scope comments, decentralized wastewater and stormwater plants are being considered for urban areas subject to CSOs in New York City and beyond. Depending on the technology applied, the scaled-down plants can collect, treat, pre-treat, discharge, recycle, and even re-use the building's wastewater and stormwater runoff. These facilities can discharge their treated wastes outside the large, centrally located system that receives inputs from all the buildings and impermeable surfaces in the area. In this way, decentralized systems can remove large volumes of wastewater from the system, and when incorporated into any new development, can ensure no net volume or only a limited volume of untreated sewage is added into an already overloaded system.

**D. Street Trees and Street Gardens Should be Planted to Further Reduce CSOs by Decreasing Stormwater and Combined Sewer Volumes.**

Street trees and street gardens designed to capture stormwater for irrigation can significantly decrease the volume of stormwater entering the combined sewer system throughout and adjacent to the project site. In 1996, the New York City Department of Parks and Recreation (NYC Parks Department) started converting traffic islands into "greenstreets," which are vegetated areas comprised of shrubs, flowers and trees.<sup>130</sup> Over 2,001 greenstreets have been constructed throughout the City.<sup>131</sup> Although the initial design of the greenstreets inadequately irrigated many of the plantings, the NYC Parks Department is now installing 10 to 20 "water retaining" greenstreets a year on a trial basis. Water retaining greenstreets collect rainwater from the surrounding roadway and store the water in engineered permeable soils in order to collect more stormwater and provide additional irrigation to the plantings.

The areas in and around the Proposed Project site provide excellent opportunities to install water retaining greenstreets. All of the streets within the 22-acre project site should be considered as candidates for water retaining greenstreets. Further, Atlantic Avenue is a divided road with a wide median that appears suitable for installing a substantial street garden. A well designed vegetated area on the median could capture and use significant volumes of stormwater. Likewise, the surrounding blocks appear to require many more street trees to provide pedestrians with more complete canopy cover. Street trees installed with the intent to capture stormwater can capture and use significant volumes of stormwater, further decreasing the load on the combined sewer system. Examples of street tree installation designs that help capture water include site grading, large sidewalk openings or permeable pavement and engineered porous soil boxes.

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<sup>130</sup> [http://www.nycgovparks.org/sub\\_your\\_park/trees\\_greenstreets.html](http://www.nycgovparks.org/sub_your_park/trees_greenstreets.html)

<sup>131</sup> [http://www.nycgovparks.org/sub\\_faqs/park\\_faqs.html#p5](http://www.nycgovparks.org/sub_faqs/park_faqs.html#p5)

**E. Off-Site Mitigation Measures within the Red Hook Drainage Basin Should be Added to Further Reduce CSOs by Decreasing the Net Stormwater Volume Within the Red Hook Combined Sewer System.**

The Proposed Project can accomplish its aim of producing a final project plan that will have no significant adverse impact on water quality in the Gowanus Canal or East River<sup>132</sup> by adding *off-site* site measures. Street trees, greenstreets, green roofs and other off-site mitigation measures, so long as they are still within the same Red Hook sewershed, provide another opportunity for Atlantic Yards to capture and re-use even more stormwater than is available on-site. By decreasing combined sewer volumes from adjacent streets, the net effect of the project on combined sewer overflow events could be mitigated. Off-site improvements are an accepted mitigation strategy. For example, the Draft New York State Stormwater Management Design Manual recommends, in certain circumstances, off-site watershed improvements to offset failures to meet certain levels of stormwater control.<sup>133</sup>

The Red Hook drainage area provides ample opportunity to offset the proposed projects increases in volume and frequency of combined sewer overflows. For example, a comprehensive street tree planting initiative in the surrounding neighborhood coordinated through the NYC Parks Department as an element of the final approved project could offset increases in combined sewer volumes. The additional trees in the surrounding neighborhood would bring benefits beyond stormwater control. Additional benefits of planting street trees include cool, shaded sidewalks, increased property values, and a beautified community that attracts customers, enhances productivity, and reduces stress.<sup>134</sup> Street trees also improve air quality by capturing particulate matter and reducing street level ozone, the primary component of urban smog.<sup>135</sup> Alternative off-site mitigation measures might include: installing green roofs on area schools or other appropriate buildings; installing street gardens throughout the neighborhood; installing rain cisterns for neighborhood buildings; or installing rain gardens in other appropriate spaces.

**F. Larger Stormwater Retention and Detention Tanks Should be Installed to Further Reduce CSOs by Decreasing and Delaying the Peak Stormwater Flow from the Proposed Project Site.**

As part of the “Sustainable Design Features,” the Proposed Project includes 639,000

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<sup>132</sup> DEIS at ES-1.

<sup>133</sup> Draft Chapter 9, p. 4.

<sup>134</sup> Human-Environment Research Laboratory, Department of Natural Resources and Environmental Sciences, University of Illinois, <http://web.aces.uiuc.edu/herl/submit/cfm>

<sup>135</sup> *Greening New York's Cities: A Guide to How Trees Can Clean Our Water, Improve Our Air, and Save Money*; May 2004.

gallons of stormwater storage capacity, far in excess of the required site-wide detention capacity of 334,000 gallons.<sup>136</sup> This is a very promising means of addressing the CSO problem, which we support. However, because the project proposes to add substantial amounts of sanitary sewage and convert a predominantly permeable surface (the railyards) into a predominantly impermeable surface,<sup>137</sup> the proposed design will nevertheless still result in increased CSO volume and frequency.<sup>138</sup> Larger stormwater detention and retention tanks would further reduce CSOs by holding more stormwater on the site for longer periods of time. Larger tanks would also create other benefits by providing more stormwater for reuse, thereby reducing water consumption, and reducing the amount of diluted combined sewage that has to be treated at the treatment plant after the overflow event.

### Conclusion

The additional volume and frequency of CSO discharges that will occur as a result of Atlantic Yards constitute a significant environmental impact that should be eliminated. In order to comply with SEQRA and CEQR, the EIS must fully evaluate both the effects of and proposed mitigation for the significant impacts of any increased sanitary sewage and stormwater runoff that will enter the already-overburdened combined sewer system and already-overstressed East River and Gowanus Canal.

Atlantic Yards presents an opportunity for the developer and the involved agencies to directly address the issue of CSOs in Brooklyn. This problem must be addressed now, and we look forward to working with you in shaping solutions that will benefit the entire community. If you have any questions or need further information, please do not hesitate to contact us at (212) 854-4291.

Sincerely,



Reed Super  
Edward Lloyd  
Adrian Barnes (clinical law student)  
Daniel Brian (clinical law student)  
Michael Plumb (clinical law student)

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<sup>136</sup> DEIS at 11-23.

<sup>137</sup> *Id.* at 11-21.

<sup>138</sup> *Id.* at 11-35.

Atlantic Yards DEIS Comments

September 29, 2006

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ESDC Builds

- Governors Island
- Roosevelt Island
- Brooklyn Bridge Park (through ESDC subsidiary)
- Harlem Redevelopment (through Harlem CDC, a subsidiary of ESDC)
- Queens West Development (Through QWDC, A subsidiary of ESDC)
- Two Brooklyn Empire Zones
- 3 Hunts Point/East Harlem/Port Morris Empire Zones
- Atlantic Yards

NYC Empire Zones



- |                      |                       |
|----------------------|-----------------------|
| 1. Hudson River      | 5. Upper New York Bay |
| 2. East River        | 6. Lower New York Bay |
| 3. Long Island Sound | 7. Jamaica Bay        |
| 4. Newark Bay        | 8. Atlantic Ocean     |