Comments on the Draft Scope of Analysis for an Environmental Impact Statement (EIS) for the Proposed Atlantic Yards Arena and Redevelopment Project

At the Brooklyn Borough President's Office Special Meeting

Prepared by:

Franco Montalto, PhD

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Affiliations:

The Earth Institute at Columbia University
Research Fellow
SW Mudd, Room 606A
500 West 120th Street, MC 4709
New York, NY 10027
Tel: 212-854-3219

And

eDesign Dynamics LLC
President
220 61st Street, Suite 2b
West New York, NJ 07093
Tel: 201-453-9300

On March 2, the potential combined sewer impacts impact of the Proposed Atlantic Yards Arena and Redevelopment Project were discussed before the Brooklyn Borough President. In subsequent press coverage of the meeting, comments that I made were transcribed out of context, suggesting that the basis of my testimony was essentially that more development would definitively overwhelm the sewage treatment plant in Red Hook. It is true that the Forest City Ratner Company could propose an unimaginative development that does indeed overwhelm the local treatment plant and result in an increase of raw sewage in the Gowanus Canal and East River. However, also possible is an alternative and innovative design - one that through the use of onsite and offsite low impact technologies that facilitate stormwater capture, and water conservation and reuse actually has a net zero or even a positive impact on the number of sewer overflows to local surface water bodies. Ultimately, it is the design intention of the developer- as studied in the EIS and embodied in the final design documents- that will determine the magnitude of combined sewer impacts of this development.

The challenge that this or any other development needs to overcome is its interface with the approximately 4,700 miles of New York City's combined sewers[i] and associated infrastructure. In a combined sewer system, one pipe transports *both* wastewater and stormwater to the treatment plant. When it's not raining or (raining just a little), there is usually sufficient capacity to convey all of the wastewater to the treatment plant. The problem with combined sewer systems, however, arises during wet weather. Between 75% and 100% of the City's precipitation falls on impervious streets, sidewalks, roofs, or parking lots. Precipitation falling on these areas isn't intercepted by tree canopies, infiltrated into the soil, or transpired by plants, as it might if it fell on an undeveloped landscape. Instead, it flows rapidly overland and into the nearest drain or catchbasin. Since treatment plants don't have the capacity to treat all this runoff and sewage, regulators divert excess combined sewage, untreated, to nearby canals, creeks, or to the harbor directly. Such occurrences are known as combined sewer overflows, or CSOs, and pose significant environmental and public health risks in urban areas. As little as a tenth of an inch of rain falling over the course of one hour on the Park Slope section of Brooklyn, for example, can trigger a CSO event in the Gowanus Canal.

If a new development causes an increase in the amount of wastewater or stormwater discharged to a combined sewer system, overflow events during wet weather can become more frequent. A net increase in wastewater will increase the dry weather base flow in the sewer pipes, reducing by a proportional amount the residual capacity of the system to buffer against CSO events. With respect to stormwater, the potential impacts are straightforward. If the post-development site condition were to generate more runoff than the pre-development site condition, overall the project would have resulted in an increase in the number of CSO events at the nearest downstream regulator.

We need to consider the net increases in both wastewater and stormwater in order to estimate the CSO impacts of a proposed development like Atlantic Yards. With respect to CSO impacts, the role of the EIS is to compare the wastewater and stormwater generated under different design configurations, so as to arrive at one particular configuration that appears to lead minimum adverse impacts.

The Atlantic Yards project would be located on 22 acres of land in downtown Brooklyn. Approximately 26.7 million gallons of rainwater will fall on the site during an average year. Currently, the vast majority of the site is impervious and this volume of water likely drains entirely to the combined sewer system. If the developer chose to capture and use all of this rainwater on site, the project could actually result in a net reduction in stormwater to the combined sewer system. As for what an innovative design would do with the captured rainwater, consider that the 600,000 gallons generated during each one-inch storm is enough water to flush all the toilets in all of the 7300 proposed residential units four times a day for two weeks!

The proposed development site is located within the Red Hook Water Pollution Control Plant sewer-shed. Of the treatment plant's 60 million gallons per day (MGD) capacity, the current average monthly flow rate is reported at approximately 30 MGD, or half its total capacity. The proposed residential and commercial units, the hotel, and arena will produce approximately another four MGD of sewage on days when there are arena events. If this additional flow were discharged to the sewer system, it would consume approximately thirteen percent of Red Hook's current excess available capacity during dry weather, and would reduce by a proportional amount the stormwater flow threshold leading to CSOs. A more innovative design could treat this wastewater onsite, reusing it for landscape and park irrigation, as make-up water for the building air conditioning systems, or potentially for the establishment of a neighborhood grey-water recycle loop.

After all the opportunities for water conservation and reuse onsite have been exhausted, mitigation for any unavoidable net additions of wastewater and stormwater input to the sewer system could be implemented offsite, at distributed locations within the regulator-shed. Specifically, water conservation, and stormwater capture measures subsidized by the developer, could be used to reduce flows in the sewer system- *in proportion to the net increase in flows resulting from the proposed development itself*. Such a plan would be the water analog to emissions trading program outlined in the International Kyoto Protocol, or the compensatory wetland mitigation program described in Section 404 of the Federal Clean Water Act, and might include construction of vegetated curbside infiltration galleries along Fourth and Atlantic Avenues, installation of green roofs in Fort Greene and Park Slope, and installation of low flow fixtures in buildings throughout the surrounding neighborhood. This approach should only be pursued, however, if the EIS reveals that the other benefits of this project to the people of Brooklyn are significant, and if it can be ensured that the offsite measures be properly designed and installed by the Developer, prior to the initiation of construction at Atlantic Yards. After installation, responsibility for any maintenance these offsite measures require should be shared with the New York City Department of Environmental Protection, who's responsibility it is to develop a long term control plan for CSOs in the City.

Historically, urbanization has been synonymous with environmental degradation. A project of the scale of the proposed Atlantic Yards Arena and Redevelopment Project has the potential to set a new precedent for urban form in our City and in all cities. A truly creative design will combine the laudable goals of job creation, affordable housing, and

public open space development, with a set of building systems that are truly integrated into the urban environment surrounding it. A failure to do so will result in increased costs- both economic and environmental- faced by the City and ultimately by taxpayers like you and I, for a problem that didn't need to be created in the first place.

Summarized below are specific proposed modifications to discreet sections of the draft scope of analysis document.

Task 2: Analysis Framework

The analysis framework needs to consider ongoing CSO abatement projects in the Red Hook WPCP Service area, and CSO impacts to priority waterbodies receiving these discharges.

The analysis years should be based on high, low, and average rainfall years, as described in the following.

Task 3: Land use, Zoning, and Public Policy

With respect to CSO's the proposed principal, primary, and secondary study areas are not appropriate. (That the proposed study areas should be expanded for several key topics, including wastewater was also pointed out by Marty Markowitz in his own comments of the draft EIS scoping document.) Like the catchment areas for community services such as fire, police, and health care facilities, the areas appropriate for studying CSO impacts do not necessarily correspond to the immediate quarter or half mile area surrounding the development. In Task 5, the draft EIS scoping document acknowledges that in assessing the impacts of the proposed project on community services "the individual catchment areas for each service provider will serve as the study area boundaries for these analyses." Accordingly, the following study areas are proposed for assessing water impacts of the proposed project:

Principal study area: the immediate CSO-sheds and waterbodies impacted by flows from the proposed project

Primary study area: the interceptor or regulator sheds in which the CSO-shed of the principal study area is located.

Secondary study area: the Red Hook WPCF sewershed, and waterbodies impacted by it.

The task 3 items listed should be updated as per below:

1) Include a description and mapping of existing and recent zoning actions that result in the generation of additional wastewater or stormwater to the study areas. This might include the recent rezoning actions in Park Slope, for example
2) Include a description of public policies pertaining to CSOs, wastewater, or stormwater that are relevant in the revised study areas. These might include activities proposed under the NYCDEP's Long Term Control Plan for Control of CSO's or the Use and Standards Attainment Project for local priority water bodies.
3) List the future development projects that could increase base flow or wet weather flow in the revised study area. This will involve updating Table 3 on Page 10

"Development in the Project Study Areas Anticipated to be Complete by 2016" to reflect the revised study area

4) In coordination with socioeconomic task, investigate the "potential for the proposed project to influence land use trends and development" should be addressed so as to address how the increase in dry weather flow to the Red Hook WPCF, may create limits on future growth elsewhere within the revised study areas.

Task 4: Socioeconomic conditions:

Extend population projections to include the revised study areas outlined above.

Task 11: Infrastructure, energy and solid waste

Water supply:

"Estimate the total average and peak water demand for the proposed project," disaggregating these into water demands that can be met using treated greywater, treated blackwater, or harvested rainwater, and those that must be met with water imported from the City's water supply system.

"Assess the effects of the incremental demand of the proposed project on the water supply system," considering different water conservation, water reuse, and rainwater harvesting scenarios.

Sewage and Stormwater:

"Existing flows to the Red Hook Water Pollution Control Facility… " should be calculated not, as written in the draft EIS Scoping document, for the latest 12-month period, but rather for wet, dry, and average flow years. There is no rationale for using the latest 12-month period, or 2005, because neither of these necessarily represents flow years of interest in modeling the CSO impacts of the proposed development.

In previous CSO analyses conducted for major developments in the City, the "365 day average flow" is referenced. This is defined as the total flow processed at the WPCP on a daily basis, including wet weather events. In the draft EIS scoping document, the "existing conditions" analysis should be based on the 365 day average flow during wet, dry, and average rainfall years. Accordingly, the "reasonable worst case scenario" with respect to combined sewer impacts would incorporate the proposed project and be the 365-day average flow at Red Hook WPCP during a "wet year".

"Estimate sanitary sewage generation for the future baseline condition, and the future with the proposed project for both analysis years," but consider these in the CSO-sheds, interceptor-sheds, and sewersheds, listed above. Also, consider in the scenario analyses, the project with, and without, onsite wastewater treatment, with black and/or grey water reuse system, and rainwater harvesting systems.

Because this portion of the City is served by combined sewers, the EIS cannot consider any "planned modifications to the stormwater system and any future changes to the stormwater runoff based on baseline conditions" independently of sanitary sewage generation. Moreover, "the effects of any changes to stormwater runoff due to the development of the proposed project" need to be considered in conjunction with any changes to sanitary sewage generation within the appropriate CSO, interceptor, and sewersheds.

In the description of "how stormwater would be managed within the development area," the EIS should consider options within the principal, primary, and secondary study areas, so as to result in an overall net increase in combined sewer overflows from the Red Hook WPCP.

One future scenario that could be considered in the EIS, would entail the Project Sponsors offsetting the proposed project's contribution to the dry and wet weather flow to Red Hook WPCP by subsidizing water conservation efforts, and low impact development infrastructure (green streets, infiltration galleries, rain barrels, green roofs) within the hydrologic study areas, so as to completely mitigate project impacts, and maintain current flowrates at Red Hook during wet and dry weather at their current values. Such a plan would be similar to a "cap and trade" program whereby flowrates to Red Hook are capped at current values, and the Project Sponsors are allowed to add wastewater to the sewer system, in exchange for their subsidizing the reduction of wastewater and stormwater elsewhere in the sewershed.

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[i] 1997 New York Harbor Water Quality Survey, NYCDEP