

3.2 Surface Water Resources and Stormwater Management Comments and Responses

Comment 3.2-1 (Public Hearing, February 9, 2010 - Diedre Rylander, Yonkers Resident): I am just wondering the year the day was collected for the hundred year storm, because as we know from this miserable winter weather there have been changes and storms have been occurring more frequently and there will likely be more storm runoff.

Response 3.2-1: *The 100-year storm is defined in the NYSDEC Stormwater Management Design Manual as an “extreme flood event which statistically has a one percent chance of being equaled or exceeded in any given year”. As per the project engineer, the 100-year storm rainfall data used in the stormwater management design was obtained from the U.S Weather Bureau Technical Paper Number 40 (TP-40) and was checked with the database available on the State of New York Department of Transportation website. The 100 year storm determination is based upon historical data rather than projections of future conditions. The amount of rainfall is based on data collected from various recording gage stations over a multi-year time period. For example, the U.S. Weather Bureau Technical Paper Number 40 (TP-40) uses data from the period 1890 through 1958. The NYSDOT data also references the U.S. Weather Bureau Technical Paper Number 40 (TP-40). A type III rainfall pattern with a 24 hour duration was used for the analysis.*

Comment 3.2-2 (Letter 1, January 20, 2011, James Moran, P.E., Yonkers Department of Engineering): The proposed project will disturb more than 1 acre and will therefore require a NYSDEC SPDES (stormwater pollution discharge elimination system) permit for stormwater discharges from construction activity (GP-0-10-001). The applicant must conform to all current NYSDEC permit requirements and local law 12-2007 (section 56-174 through 56-189 of the city code). A Stormwater Pollution Prevention Plan (SWPPP) should be reviewed for approval by the planning board as part of site plan approval.

Response 3.2-2: *Comment noted. The list of permits and approvals identifies the required SPDES permit. In addition, the Applicant will submit a SWPPP in conjunction with the site plan that will be reviewed and approved by the Planning Board.*

Comment 3.2-3 (Letter 6, February 25, 2011, Edward Burroughs, AICP, Commissioner, Westchester Co. Department of Planning): STORMWATER REDUCTION — We commend the applicant for proposing an innovative way to reduce stormwater flows from the site by providing an underground cistern for the collection of rainwater that will be used to irrigate the rooftop hydroponic garden, According to the draft EIS, approximately 40% of the annual stormwater will be used for this purpose, which will represent a significant reduction of stormwater entering the system from this site. In addition, the cistern will be capable of storing runoff equivalent to a 100-year storm event where it would then be released at a slower rate into the storm drain system. However, since this flow will still occur during the storm event, we recommend that the City require the applicant to contact the County Department of Environmental Facilities (DEF) to determine if alternate release timings can be established to lower the impact of stormwater on YJWWTP operations during storm events.

Response 3.2-3: *The final design of the stormwater management system will be coordinated with the DEF to optimize the pump timing and flow rates that will control the stormwater discharge from the site.*

Comment 3.2-4 (Letter 6, February 25, 2011, Edward Burroughs, AICP, Commissioner, Westchester Co. Department of Planning): PUBLIC HEALTH IMPACTS OF CISTERN — The storage of water underground could become a health concern if it becomes a breeding area for mosquitoes. We recommend that the City work with the applicant to examine if a mosquito control plan will be required, with possible surveillance or treatment as necessary. Preventative measures (mechanical, chemical or biological) may be necessary depending on the design of the proposed cistern.

Response 3.2-4: *The final operation and maintenance plan will be reviewed by the City engineering department as part of detailed site plan review. The stormwater management plan includes appropriate periodic inspections of the cistern and will outline acceptable methods of control should mosquitoes be found to be breeding in the system.*

Comment 3.2-5 (Letter 9, February 24, 2011, Patricia Dow, Majority Leader, Yonkers City Council): Stormwater management (Page 1-4) - referencing Storm water storage - Is the developer citing his project alone or is he referencing a combining all the IP projects? Will the storage of the storm water be able to handle to all the projects?

Response 3.2-5: *The stormwater management design considers only the proposed Project and its associated watershed area as depicted on the Watershed Area Map provided in Appendix E of the DEIS.*

Comment 3.2-6 (Letter 9, February 24, 2011, Patricia Dow, Majority Leader, Yonkers City Council): Stormwater management (Page 1-5) - Manhole covers - Who is building and installing the new manhole covers required for this project? Will the City be absorbing the cost or the developer?

Response 3.2-6: *The manhole covers proposed for the project will be purchased from a manufacturer by the contractor after consultation with the City engineering department. The cost of installing the manhole is the responsibility of the Applicant and will be paid for by same.*

Comment 3.2-7 (Letter 9, February 24, 2011, Patricia Dow, Majority Leader, Yonkers City Council): Stormwater management (Page 1-6) - Will the storm water run off affect Metro North railroad?

Response 3.2-7: *As designed, the stormwater management analysis anticipates no increase in runoff or concentration of flow to the Metro North property. As such, no adverse impacts are anticipated.*

Comment 3.2-8 (Letter 17, January 21, 2011, David McInerney, AICP, PS&S - City Engineering Consultant): Design Manual - DEIS Section 3.2.1 references the 2008 *New York State Stormwater Management Design Manual* and Section 2.2 of Appendix E references a 2003 edition of the manual. The NYSDEC updated this design manual in 2010. The Applicant should reference the updated manual and verify the proposed erosion control measures are designed in accordance with the updated recommendations.

Response 3.2-8: *Comment noted. The stormwater management design and the erosion controls as designed for the project are consistent with the current manuals.*

Comment 3.2-9 (Letter 17, January 21, 2011, David McInerney, AICP, PS&S - City Engineering Consultant): Stormwater Design - DEIS Section 3.2.2 and Appendix E Section 2.3 describe the proposed underground cistern and stormwater storage system. The Applicant should provide additional details for backup pumps and backup power in the event that power is interrupted in the area. A gravity by-pass for the stormwater should also be evaluated.

Response 3.2-9: *There are five pumps utilized in the cistern as described in the hydraulic analysis. One pump is used for irrigation while the other four are used for discharge. Maintenance conducted on any of the four discharge pumps will leave the three other pumps available for service. The system will be connected to backup generation that will be sized to serve the appropriate elements of the facility that may be needed during a power outage.*

The project engineer has evaluated the potential for a gravity bypass. Due to the depth of the underground stormwater system, a gravity bypass to Buena Vista Avenue to the east is not feasible. Additionally, there are no nearby culverts to divert stormwater toward the west, under the MetroNorth tracks. A gravity by-pass system is not feasible.

Comment 3.2-10 (Letter 17, January 21, 2011, David McInerney, AICP, PS&S - City Engineering Consultant): DEIS Section 3.2.3 describes how maintenance records will be submitted to the City of Yonkers Engineering Department. The Applicant should provide additional descriptions of the maintenance procedures and how the system will be maintained and or replaced if required. Details should be provided on the filter replacements, pump maintenance, etc. The proposed system is located below the automated parking garage structure. Additional plans should be provided to verify that the parking equipment does not interfere with the drainage system.

Response 3.2-10: *The final operation and maintenance plan will be coordinated with the City of Yonkers Engineering Department. The final design of the pump system will consider access for periodic inspection and maintenance of the filters, pumps, and other vital components of the system. The mechanical equipment associated with the automated garage will not interfere with the drainage system. The details will be provided during site plan review.*

Comment 3.2-11 (Letter 17, January 21, 2011, David McInerney, AICP, PS&S - City Engineering Consultant): Irrigation Water Quality - The Applicant should demonstrate that the quality of the stormwater runoff to be used as irrigation water for the rooftop hydroponic garden will meet applicable standards for hydroponic production of produce for human consumption.

Response 3.2-11: *New York State does not regulate the quality of water used to irrigate agricultural products. Best practices specifically limit pathogens from irrigation water including E. coli, Salmonella spp., Shigella spp., Cryptosporidium parvum, Giardia lamblia, Cyclospora cayetanensis, and other viruses. Typical sources for pathogens include animal pastures, manure storage facilities, feed lots, faulty septic systems and high concentrations of wildlife. The likelihood for pathogens entering the cistern is very low. The operator will regularly test the irrigation water, including for common pathogens, to ensure that the water is acceptable for growing food products and follow good agricultural practices - see:*

<http://www.smallfarms.cornell.edu/pdfs/Guide/MarketingRegulationsUpdated2-10.pdf>

Comment 3.2-12 (Letter 18, April 22, 2011, Yonkers Dept. of Planning & Development):

Page 1-5 NYSDEC Stormwater Pollution Prevention plan [stormwater permit] The City Engineer has a general policy of recommending that applicant submit SPPP at time of site plan review.

***Response 3.2-12:** Comment noted. The stormwater management plan will be reviewed at the time the detailed site plan is submitted.*

Comment 3.2-13 (Letter 18, April 22, 2011, Yonkers Dept. of Planning & Development):

The Larkin Plaza project, the daylighting of the Saw Mill River, was reviewed in the EIS that reviewed the larger downtown/SFC project, but was not a part of the SFC development project. It is a City of Yonkers development.

***Response 3.2-13:** Comment noted.*

Comment 3.2-14 (Letter 18, April 22, 2011, Yonkers Dept. of Planning & Development):

Page 3.2-3 1st full paragraph notes that the pre-development water quality of the west side of the site would be maintained. Is this correct as the pre-development quality is of a brown field site.

***Response 3.2-14:** The brownfield conditions are subsurface soil issues and do not presently impact the quality of existing surface water runoff.*

Comment 3.2-15 (Letter 18, April 22, 2011, Yonkers Dept. of Planning & Development):

Page 3.2-3 Storm water collected in the cistern will provide “up to 30 days of stored irrigation water for the hydroponic garden...” What happens after 30 days if there is no rain to replenish the water? Will city of Yonkers potable water be used?

***Response 3.2-15:** City of Yonkers potable water will not be used. If necessary, water from the geothermal wells will be used as a backup water source.*

Comment 3.2-16 (Letter 18, April 22, 2011, Yonkers Dept. of Planning & Development):

Page 3.2-3 Does the cistern water have to be treated prior to being used on food plants? Will there be run off from the auto court with automobile related pollutants in the water requiring filtration? Will there be effluent from the hydroponic gardens?

***Response 3.2-16:** See Response 3.2-11.*

Comment 3.2-17 (Letter 18, April 22, 2011, Yonkers Dept. of Planning & Development):

Page 3.2-4 Stored storm water will eventually be metered out from the cistern into the storm system. The on-site system helps to smooth the peak input into the sewer system but is not the same as off setting increases in waste water generation. Detail how the project will mitigate an equivalent amount of input into the system to bring the waste water generation to a zero level.

***Response 3.2-17:** Under existing conditions, the site presently discharges to the City system without any detention. After the project is constructed, the existing amount that enters the system will be retained as well as the net additional stormwater generated by the project - this results in a net reduction to the system and increases capacity. Since the project site discharge is to a combined sanitary/sewer line, holding back stormwater discharge to off-peak time periods adds capacity to the combined line. Appendix B includes the comments of Mr. James Moran, P.E., Senior Professional Engineer with City of Yonkers Department of Engineering. The existing City sewer in Buena Vista*

Avenue has been camera inspected. The Department of Engineering has recommended that the Applicant fund the cured in place sewer lining. According to the Department, this lining and installation of a new manhole will eliminate groundwater infiltration and offset the increased sanitary sewer flow due to this project. No further analysis is necessary.

Comment 3.2-18 (Letter 18, April 22, 2011, Yonkers Dept. of Planning & Development):

Page 3.2-5 Future surface water quality Clarify a “sources & uses” chart showing the amount of storm water falling on the site, the amount used by the garden, the amount passed out of the cistern and into the system and the amount of effluent from the garden. The explanation does not track as a net reduction of storm water.

Response 3.2-18: *Table 3.2-2 of the DEIS compares pre-and post-development runoff volumes. The stormwater calculations are provided in Appendix F of the DEIS.*

For the worst case, i.e., the 100-year storm event, the following runoff has been estimated:

<i>Existing Stormwater Runoff (100-year storm)</i>	<i>Proposed Project</i>	<i>Net Increase in Runoff</i>
<i>195,907 gallons</i>	<i>226,764 gallons</i>	<i>30,857 gallons</i>

If the project were only addressing the net increase, it would provide storage for 30,857 gallons only. However, the storage is being designed to handle 200,000 gallons of runoff. Post-development, the stormwater volume required to handle the hydroponic garden’s irrigation demand is 46,300 gallons, and 38,542 gallons of storm water to contain the 90 percent rainfall event (for stormwater quality), for a total required storage of 84,842 gallons. The remainder is additional storage that will store runoff that is presently not detained, freeing up capacity for wastewater flow.