STORMWATER MAINTENANCE PLAN

SCITECH SCITY

Block 21504, Lots 4.01, 5, 6 and 7
City of Jersey City, Hudson County, New Jersey

Prepared For:

Applicant

SciTech Scity LLC c/o Liberty Science Center
222 Jersey City Boulevard
Jersey City, New Jersey 07305

Prepared By:

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28 June 2021
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NJ Certificate of Authorization No. 24GA27996400

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ATTACHMENTS

I. INTRODUCTION

The New Jersey Administrative Code NJAC 7:8-5.8 entitled "Maintenance requirements" sets forth rules and refers to the New Jersey Stormwater Best Practices Manual (the BMP manual) by the New Jersey Department of Environmental Protection (NJDEP). Chapter 8 of the BMP manual entitled "Maintenance and Retrofit of Stormwater Management Measures" specifically addresses the requirements for maintenance of a major development. Major development is defined in the aforementioned administrative code as any development that provides for ultimately disturbing one or more acres of land or increasing the amount of impervious surface by one quarter of an acre or more. This report is prepared to address the maintenance component of the herein described development to ensure the effective, efficient, and enduring service of a particular stormwater measure. This plan contains preventative and corrective maintenance tasks and procedures.

The party responsible for the preventative and corrective maintenance of the stormwater measures described herein is:

SciTech Scity LLC c/o Liberty Science Center
222 Jersey City Boulevard
Jersey City, New Jersey 07305

II. PROJECT DESCRIPTION

Existing Site Description

The SciTech Scity development is located at 153 Phillip Street in the City of Jersey City, Hudson County, New Jersey. The 12.54-acre property is identified as Block 21504, Lots 4.01, 5, 6 and 7 (see Figure 1 – Site Location Map) and is currently occupied by abandoned sedimentation tanks, an abandoned water tank, an abandoned 1-story brick building, tightly-packed gravel lots and overgrown vegetated areas. The property is bound by the New Jersey Turnpike to the north, Jersey City Boulevard to the east, and Phillip Street to the south and west.

The site topography is relatively flat with existing surface elevations from el 23 (NAVD88) in the northeastern corner of the property to el 8 at the southeastern and southwestern corners of the property. Slopes within the site vary from around 1.5% to 5.0%. The site stormwater runoff sheet flows primarily to a number of inlets within the existing adjacent roadways, which conveys stormwater runoff to an existing 33-inch stormwater pipe in Phillip Street.

Proposed Development

The proposed development at the site will consist of the following improvements:

- The new Edgeworks building which is an 8-story, 18,377 square foot footprint office building;
- Two new 10-story residential buildings and a 4-story high school to be constructed in the future by others;

- New plaza areas, at-grade parking, sidewalks, landscape and lighting improvements;
- Improvements to the landscaping and lighting areas around the site; and,
- Stormwater management system consisting of a two bioretention systems and a new stormwater conveyance system.

III. STORMWATER MAINTENANCE OBJECTIVE

The stormwater system proposed for this development is intended to convey the stormwater from the development. This maintenance plan is prepared to verify that the proposed systems in place are operating efficiently and reliably. The responsible party shall ensure the long-term/perpetual operation, maintenance, repair, and safety of the stormwater management facilities. In the event that the stormwater management conveyance system becomes a danger to public safety or public health, or if it is in need of maintenance, the municipality shall so notify the responsible person in writing. If for reasons of safety there is need for immediate action, the responsible person shall act forthwith to remove the danger.

Maintenance procedures are required to maintain the intended operation and safe condition of the stormwater management facility by reducing the occurrence of problems and malfunctions. To be effective, maintenance shall be performed on a regular basis and include such routine procedures as training of staff, periodic inspections, silt and debris removal and disposal, control of mosquitoes and other insects, and review of maintenance and inspection work to identify where the maintenance program could be more effective. The required inspections are to be conducted only by properly trained individuals, including confined space entry training and certification. As per N.J.A.C. 7:8-5.8(f), the person responsible for maintenance shall maintain a detailed log of all preventative and corrective maintenance for the structural stormwater management measures incorporated into the design of the development, including a record of all inspections and copies of all maintenance-related work orders. The person with maintenance responsibility must retain and, upon request, make available the maintenance plan and associated logs and other records for review by a public entity with administrative, health, environmental, or safety authority over the site.

Repair procedures are required to correct a problem or malfunction at a stormwater management facility and to restore the facility's intended operation and safe condition. Based upon the severity of the problem, repairs shall be performed on an as-needed or emergency basis and may include such procedures as structural repairs, mosquito control, removal of debris, sediment and trash which threaten discharge capacity, erosion repair, snow and ice removal and restoration of vegetation.

In the event that the stormwater management conveyance system becomes a danger to public safety or public health, or if it is in need of maintenance, the municipality may notify the responsible person in writing. Upon receipt of that notice, the responsible person shall have fourteen (14) days to initiate maintenance and repair of the system in a manner that is approved by the municipal engineer or his designee. If the responsible person fails or refuses to perform such maintenance

and repair, the municipality may immediately proceed to do so and shall bill the cost thereof to the responsible person.

IV. MAINTENANCE OF CONVEYANCE SYSTEMS

The proposed conveyance systems have adequate access for inspection and/or maintenance. The use of the proposed conveyance systems is necessary to manage runoff and is consistent with the community's surroundings for this area.

All conveyance systems including inlets/catch basins, manholes and pipes are expected to receive and/or accumulate debris and sediment. These systems must be inspected for clogging and excessive debris and sediment accumulation at least annually as well as after every storm exceeding 2 inches of rainfall. Sediment removal should take place when all runoff has drained from the conveyance network and the systems are reasonably dry. Disposal of debris, trash, sediment, and other waste material should be done at suitable disposal/recycling sites and in compliance with all applicable local, state, and federal waste regulations.

All structural components must be inspected quarterly for cracking, subsidence, breaching, wearing, and deterioration. The condition of surrounding and above lying materials shall be inspected for evidence of potential failures or deterioration. Damage to the structural components shall be repaired promptly. The analysis of structural damage and the design and performance of structural repairs should only be undertaken by qualified personnel.

Maintenance of the conveyance systems would require a minimum of two people. The routine equipment expected to be utilized for the maintenance tasks may include a jet vacuum vehicle, shovels, lighting equipment and a wheel barrel or truck for the hauling off of debris. Water, mosquito control chemicals, and concrete repair materials may also be required depending on the condition of the structure. The cost to perform routine maintenance tasks including removal of debris, sediment and trash is estimated to be $2,000/year for the proposed on-site conveyance systems.

Related inspection and maintenance forms for this work are located at the end of this plan.

V. ANNUAL EVALUATION OF THE EFFECTIVENESS OF THE PLAN

As per N.J.A.C. 7:8-5.8(g), the person responsible for maintenance shall evaluate the effectiveness of the maintenance plan at least once per year and adjust the plan as needed. The annual assessment shall be documented. Records must be retained and be available upon request for review by a public entity with administrative, health, environmental, or safety authority over the site.

The responsible party should evaluate the effectiveness of the maintenance plan by comparing the maintenance plan with the actual performance of the maintenance. The items to evaluate may include, but not be limited to:

- Whether the inspections have been performed as scheduled;

- Whether the preventive maintenance has been performed as scheduled;
- Whether the frequency of preventative maintenance needs to increase or decrease;
- Whether the planned resources were enough to perform the maintenance;
- Whether the repairs were completed on time; and
- Whether the inspection, maintenance, and repair records have been kept.

If actual performance of those items has been deviated from the maintenance plan, the responsible party should find the causes and implement solutions in a revised maintenance plan.

Related annual evaluation form is located in the appendix at the end of this plan.

MAINTENANCE INSPECTION FOR CONVEYANCE SYSTEMS

SCITECH SCITY
JERSEY CITY, NEW JERSEY

NOTE: INSPECTIONS TO BE EVALUATED DURING A PERIOD OF DRY AND WARM WEATHER AND LOW TIDE CONDITIONS AT THE PROJECT SITE

Yes	No	Maintenance Evaluation	Action(s) Required if Answer "Yes"
❑	❑	Is there a buildup of sediment (in excess of 2 inches), trash, debris or any other stormwater pollution?	Remove sediment and evaluate on-site upstream systems. Dispose debris in accordance with local, state and federal requirements.
❑	❑	Is there standing water?	Evaluate downstream systems for clogging or trash sediment buildup.
❑	❑	Is there any structural failure?	Consult engineer to determine safety and/or stability of the system.
❑	❑	Are there visible signs of cracking, subsidence, erosion or deterioration of any of the storm conveyance systems?	Consult engineer to determine safety and/or stability of the system.
❑	❑	Are there any root intrusions or any other vegetation within catch basins, outlet control structures or storm manholes?	Remove roots and dispose vegetation in accordance with local, state and federal requirements.
❑	❑	Are ladder rungs in manholes or outlet structures damaged, missing or misaligned?	Repair or replace.
❑	❑	Are and covers or grates missing, damaged or only partially in place at any catch basin, outlet control structure or manhole?	Repair or replace.

MAINTENANCE LOG
FOR CONVEYANCE SYSTEMS

INSTRUCTIONS:
THIS LOG SHALL BE UPDATED TO INCLUDE ALL MAINTENANCE PERFORMED AT A SPECIFIC STORMWATER MEASURE.

SCITECH SCITY
JERSEY CITY, NEW JERSEY

DATE	PERSON CONDUCTING MAINTENANCE	AREA OF MAINTENANCE	PROBLEM(S) FOUND	ACTION(S) TAKEN

RECORD OF ANNUAL EVALUATION OF THE EFFECTIVENESS OF THE PLAN

SCITECH SCITY
JERSEY CITY, NEW JERSEY

NOTE: EVALUATION TO BE CONDUCTED DURING A PERIOD OF DRY AND WARM WEATHER AND LOW TIDE CONDITIONS AT THE PROJECT SITE

Evaluator(s)	Date of Evaluation	Decision
		__Maintain current version OR __Revise current version Revision date _____ (also update the last revision date on the cover page)
		__Maintain current version OR __Revise current version Revision date _____ (also update the last revision date on the cover page)
		__Maintain current version OR __Revise current version Revision date _____ (also update the last revision date on the cover page)