

3.3 STORMWATER MANAGEMENT

3.3.1 Existing Environmental Conditions

Existing Drainage

Stormwater from the vast majority of the subject parcel (as will be further described below) is accommodated by the Nassau County drainage system and by on-site infiltration. Storm drainage from Charles Lindbergh Boulevard is routed through the subject property, where it then flows to an interconnected network of storm drains throughout the Coliseum Parcel and Marriott Hotel Parcel parking lots. From there, the system forms a major north/south storm drain line (two 66-inch pipes) that continues by way of two 72-inch pipes across Hempstead Turnpike, into a ten-foot-by-six-foot box culvert. The box culvert travels south on Glenn Curtiss Boulevard to the Nassau County recharge basin located south of the RexCorp Plaza West Parcel. According to the NCDPW *Mitchel Field Existing Utilities* drawings (Sheet C8), prepared by Sidney B. Bowne and Son, dated May, 1986, the box culvert accepts drainage from Earl Ovington Boulevard and a substantial portion of Hempstead Turnpike.

According to maps provided by NCDPW, Parcel A (Coliseum Parcel/Marriott Hotel Parcel) is part of an approximately 269-acre watershed that drains into the County's recharge basin located south of Hempstead Turnpike, south of the RexCorp Plaza West Parcel. In reviewing the watershed boundaries for the westerly basin (which serves the Coliseum Parcel/Marriott Hotel Parcel), approximately one-quarter of the watershed has been developed (including Hofstra University, RexCorp Plaza and the Omni). These properties were developed with on-site drainage, which would reduce the runoff that is contributed to the County recharge basin. Similarly, approximately half the easterly watershed has been developed, and the contributing runoff would have been similarly reduced. The project engineer, BBV, has indicated that these findings are supported by the fact that the County has permitted both recharge basins to become "dual use" basins, allowing a soccer field to be built within part of the westerly basin and a baseball field to be built in the easterly basin.

Parcel A currently discharges all stormwater through the existing County drainage system to the existing County recharge basin, noted above. It currently has a runoff coefficient of approximately 92 percent. The maps provided by Nassau County indicate that the basin has a storage capacity of approximately 2.1 million cubic feet. Discussions with Richard Peters of the NCDPW indicated that this watershed is linked with another on the east side of the Meadowbrook Parkway, which is approximately 147 acres in size. A separate recharge basin of approximately 800,000 cubic feet serves this watershed.

Parcel C (the existing Rexcorp Plaza East Parcel) uses on-site drywells and has a runoff coefficient of approximately 71 percent. Parcel D (the RexCorp Plaza West Parcel), as it is undeveloped, does not have an existing drainage system. All runoff recharges directly into the ground or flows to the road to be collected by the Nassau County drainage system. Parcel B (the Omni Parcel) uses existing on-site drywells to recharge water from the existing parking lot.

Required storage for a five-inch storm for the four parcels that comprise the subject property, under current conditions, is as follows:

Parcel A (Nassau Coliseum/Marriott Hotel Parcel):	1,527,492 cubic feet
Parcel B (Omni Parcel):	304,889 cubic feet ¹
Parcel C (RexCorp Plaza East Parcel):	365,488 cubic feet
Parcel D (RexCorp Plaza West Parcel):	22,852 cubic feet

In addition to storm drainage, sanitary sewers and water mains, there is physical evidence of additional utilities including telephone, gas and electric facilities throughout Parcel A. These services are routed through the Coliseum site to serve (Parcel A, currently the Coliseum and the Marriott Hotel) from both Hempstead Turnpike and Charles Lindbergh Boulevard. There also appears to be a main utility easement through the Coliseum site connecting Hempstead Turnpike to Charles Lindbergh Boulevard which likely carries main trunk lines for the utilities. Parcel B (The Omni) is currently served by existing utilities (sewer, water, electric, telephone) from

¹ This figure includes the entire parcel. However, only 2.89 acres of the overall Omni Parcel is proposed to be disturbed. This area would generate approximately 50,000 cubic feet of stormwater, based upon a five-inch storm.

Charles Lindbergh Boulevard. There is no indication from current field information that gas extends to the property. Parcel C (the RexCorp Plaza parcel) is served by existing sanitary sewers in an easement along the north and east side of the site, and from existing water mains on Hempstead Turnpike. Visible physical features suggest that gas, electric and telephone service are obtained from existing facilities on Hempstead Turnpike. Although there are no structures on Parcel D at this time, existing utilities (sewer, water, gas, electric and telephone) are available from Hempstead Turnpike.

Nonpoint Source Management Handbook (“the Handbook”)

The *Nonpoint Source Management Handbook* (hereinafter the “*Handbook*,” LIRPB, 1984), which was prepared as part of the USEPA’s 208 Plan Implementation Program, is divided into several elements: Land Use; Stormwater Runoff; On-site Systems; Highway Deicing; Fertilizer; Animal Waste; Wells-Water Supply; Boat Pollution; and Site Plan Review and Ordinances. The *Handbook* makes a variety of recommendations for counties, municipalities, engineers, etc., to use in the controlling of non-point sources of groundwater contamination. Relevant recommendations from this study along with a review of the project’s consistency therewith are included in Section 3.3.2 of this DGEIS.

Long Island Segment of the Nationwide Urban Runoff Program (“NURP Study”)

Years of study, including various 208 studies, have provided conclusive evidence that in many areas, pollutant loading contributed by non-point sources exceeds that contributed by point sources, and urban runoff is the most significant non-point source.

With regard to stormwater runoff, the *NURP Study* (LIRPB, 1982) has made the following findings with regard to groundwater and surface water:

Groundwater

- Most of the runoff into recharge basins is derived from rain that falls directly on impervious surfaces, except during storms of high intensity, high volume and/or long duration;
- In general, with the exception of lead and chloride, the concentrations of inorganic chemicals measured in stormwater runoff do not have the potential to adversely affect groundwater quality;
- Infiltration through the soil is generally an effective mechanism for reducing lead and probably chromium from runoff on Long Island. Although the *NURP Study* findings concerning chromium are not conclusive, data from a spill at Farmingdale indicate attenuation. Chloride is not attenuated. The effect of infiltration on nitrogen is undetermined;
- Coliform and fecal streptococcal indicator bacteria are removed from stormwater as it infiltrates through soil;
- Lead concentrations in runoff entering a recharge basin appear to be directly related to the extent and characteristics of the road network and the type and volume of traffic in the drainage area served by the basin;
- Plastic-lined basins with overflow to a recharge structure and unlined recharge basins are equally effective in recharging stormwater to the groundwater reservoir and in attenuating chemical constituents in stormwater; and
- Plant growth on a basin floor enhances infiltration because the plant root system keeps the soil layer loose and permeable, and provides channels for infiltrating water. Removal of basin vegetation is not necessary, and may indeed decrease the infiltration rate.

Surface Water

- Any control of chemical constituents in runoff requires awareness of the year-round presence. The use of highway deicing salts in winter explains the high chloride concentrations found in runoff during that season;
- Stormwater is a major source of coliform loading to Long Island bays; and
- The evidence accumulated in the *NURP Study* strongly supports the belief that fecal coliform loads are derived from non-human sources. Estimates indicate that the dog population could be a major source of the fecal coliform load in stormwater runoff. Dogs and birds are common throughout the study area, but the data are not sufficiently conclusive to permit ideal source or combination of sources.

A consistency analysis of the proposed project with the recommendations of the *NURP Study* is included in Section 3.3.2 of this DGEIS.

3.3.2 Potential Impacts

Utilities

As noted in Section 3.3.1, above, there appears to be a main utility easement through the Coliseum site connecting Hempstead Turnpike to Charles Lindbergh Boulevard which likely carries main trunk lines for the utilities. The easement, as well as the utilities, on the Coliseum site would be relocated around the new construction. The utilities currently serving the existing RexCorp Plaza building and the Omni building from the adjacent roadways will remain. New utilities for the vacant RexCorp property will be extended from Hempstead Turnpike.

Prior to the start of any demolition or construction on the site, subsurface mark-out of all the utilities, on all parcels where construction is to take place, will be arranged for the purpose of accurately mapping subsurface utilities, and that information will be included in the detailed site

engineering plans submitted to the Town and the County. New York State law requires that all utilities be marked in the field prior to any excavation.

Stormwater Management During Construction

According to the USEPA, “stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater runoff from naturally soaking into the ground.” Thus, stormwater runoff needs to be captured and handled by a stormwater management system that allows leaching of runoff into the ground. Stormwater management for the overall site is proposed to be accomplished by on-site infiltration of stormwater to varying degrees. No change to existing surface waters is proposed or expected.

As previously noted, the construction of The Lighthouse at Long Island would occur in two phases. Phase 1 is expected to have a disturbance area of approximately 61 acres and would take approximately five years to complete. Phase 2 of the project is expected to have an area of disturbance of approximately 89 acres. This phase is also proposed to take approximately five years to construct. The drainage system would be constructed as designed within each phase. The relocation of the two large, existing drainage pipes, situated within the Coliseum Parcel and Hempstead Turnpike, is proposed to take place in Phase 1 of development. This would permit any overflow of the on-site drainage system to be transported directly to the existing Nassau County recharge basin as per the final design. In addition, the first phase of construction will include relocation of all existing electric, telephone and gas services, main trunk lines and easements so as to prepare for future construction on Parcel A. Parcel B does not appear to require relocation of any existing utilities as the only proposed construction is removal of certain paved areas at the south end of the parcel. Parcel C will require new utility services to be extended from Hempstead Turnpike. Parcel D will require new utility services for the new office building (to be extended from Hempstead Turnpike), but there should not be any need for modification of existing utilities currently serving the existing building. The existing sanitary sewer located in an easement to NCDPW will remain in place.

In accordance with the current NYSDEC regulations governing the potential discharge of stormwater from construction sites (General Permit for Construction Activity GP-0-08-001) and Town and County regulations regarding stormwater management, a Stormwater Pollution Prevention Plan (“SWPPP”) would be prepared for each phase of the project submitted for site plan review (see Appendix 3.3-1 for the *Stormwater Management Report and Application for Coverage Under the New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activity – Permit No. GP-0-08-001*). The SWPPP for each phase would be submitted to the Town of Hempstead for approval, and forwarded to the NYSDEC upon completion of the Town approval process. As part of Nassau County’s 239f review, the SWPPP would also be submitted for review by the NCDPW. Construction activities would not be initiated until all approvals are obtained.

The General Permit, noted above, limits disturbed areas to a maximum of five acres unless additional conditions are met. On a project of this magnitude it is not feasible or efficient to limit the disturbed areas to five acres. Therefore, the proposed development would be subject to additional requirements. Specifically, disturbance of more than five acres must be authorized by the local land use control (in this case, the Town), the frequency of required inspections must be increased, soil stabilization must take place within seven days, and detailed phasing plans must be submitted.

The specific details of the SWPPP for each phase submitted for site plan review will depend on the scope of the phase, the extent of site disturbance, facilities in place from prior phases and the location of the phase of the project under construction. However, each plan would specifically address erosion control measures in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control*, and will address stormwater management in accordance with the *New York State Stormwater Management Design Manual*.

With respect to erosion control, the basic erosion control measures depicted on the *General Stormwater Pollution Control Measures* plans (see Appendix 3.3-1) are proposed to be employed in all phases of the development in order to minimize erosion and transport of sediment. Perimeter erosion control measures will include silt fence, hay bales and the

maintenance of construction entrances to prevent sediment from being transported to adjacent properties. Within the disturbed areas various types of inlet protection will be employed in order to protect on-site infiltration measures and off-site recharge basins. Stockpiling and clearing will be controlled (through containment and temporary seeding where appropriate) to minimize the erosion potential of the site, and vegetative stabilization (including seeding and sodding) will be used where grading operations are complete and areas can be permanently stabilized. There are no steep slopes, existing or proposed, within the disturbed areas on the project site that will require protection or stabilization. In accordance with the conditions of the SPDES General Permit, as noted, no construction activities will be initiated before all approvals related to Stormwater Pollution Prevention are received and the appropriate measures are in place.

As noted above, erosion control for both phases of The Lighthouse development are proposed to be provided in accordance with the erosion control measures as depicted on the General Stormwater Pollution Control Measures plans (see Appendix 3.3-1) and are designed to minimize erosion and sediment transport, as described in Section 3.3.3 of this DGEIS. Throughout both phases of construction, particular attention would be paid to the environmentally sensitive Hempstead Plains (along the east side of the Coliseum Parcel) and the wetlands (along the east side of the RexCorp Plaza East Parcel). These areas will be separated from the construction site using silt fence and hay bale dikes to prevent overland sediment transport. Construction fencing will be erected where necessary to prevent equipment and personnel from entering the protected areas. Protection for both areas will be more fully developed in the individual Stormwater Pollution Prevention Plans developed in conjunction with Site Engineering Plans, when more would be known about the extent of disturbance near these areas.

As the architectural and site plans are developed, a detailed analysis of construction sequencing for each phase would be developed which will address demolition, noise abatement, material storage, employee and public parking, staging and access, work site safety, spill response, litter control and cleanup plans, recommendations for de-icing of internal roadways and all other aspects of construction. These documents would be included as part of, and incorporated into, the detailed SWPPP prepared for each construction phase, as required under the General Permit.

During construction, erosion control measures are proposed to be inspected by a qualified inspector every seven days. During times when more than five acres of the site are disturbed, a qualified inspector would conduct at least two site inspections every seven days. The qualified inspector would inspect all erosion and sediment control practices to ensure their integrity and effectiveness; all post-construction stormwater management practices under construction to ensure that they conform to the design of the SWPPP (as noted in Section 3.3.3); all areas of disturbance that have not achieved final stabilization; and all points of discharge from the construction site. The inspector would prepare an inspection report as per the details in Part IV.C.4 of the 2008 Stormwater Construction Permit, which would be submitted as part of the SWPPP, including quarterly compliance reports where required under the General Permit.

Construction equipment and materials are proposed to be stored in the northwest corner of the Coliseum Parcel. This area will serve as a construction staging area and would accommodate contractor parking, stockpiling of material, and management trailers. During construction, there would be no on-site storage of bulk liquids except for water used to wash construction vehicles. However, in the event that there is on-site storage of oil or oil-containing product (as defined under federal regulations, 40 CFR 112, *Spill Prevention Control and Countermeasure (SPCC) Regulation*), an appropriate spill response plan would be prepared in order to minimize potential stormwater impacts. This plan would include certifications of the owner/operator's commitment to respond to a spill; a complete description of the facility and the oil storage location; discharge predictions as to where the oil would flow in the event of a failure; a description of the secondary containment mechanism to prevent release; procedures for spill response and cleanup; training and inspection for the use of the facility and the institution of the spill response plan.

In addition, all refueling vessels and equipment used at the site would be checked at the construction gate upon arrival to the site and before leaving the site for potential pre-existing leaks. Any equipment found to have pre-existing leak conditions would be prohibited from entering the site. Typically, refueling vessels come and go; however, if it is deemed necessary to have refueling vessels staged on-site the following will occur. Vessels would be staged in a designated area which would contain buffers to prevent any potential spillage or leakage from

seeping into the groundwater or stormwater systems. Buffers would typically be constructed and would include soil berms, fabric materials, etc. The Construction Manager would maintain a spill prevention kit at all times, which would be located at the designated staging area.

Additionally, a spill prevention kit would be employed (with specifically-required equipment) at the location where the actual refueling process will occur. This is necessary since some equipment such as cranes cannot be moved to the staging area. Vessels must pull alongside to fill up the equipment.

Concrete washout stations are proposed to be located in designated areas within the confines of the construction site. The washout stations will be isolated from the County sewer system and streets so as to prevent runoff into the stormwater system. Washout stations would be monitored on a regular basis to prevent overflows. The washout stations are proposed to be constructed so that concrete washout from concrete delivery trucks is contained within a designated area. Wherever possible, a slight depression or pit would be built to capture the washout liquids. Washout materials would be required to harden in place and subsequently removed from the site and treated as recycled waste product.

Section 3.13 of this DGEIS addresses site construction issues, including those issues relating to stormwater runoff. This document details treatment and sequencing of construction waste management, litter control, hazardous materials and site logistics. Adhering to the requirements outlined in the construction report, and discussed herein, will assist in maintaining the quality of the stormwater runoff that is generated by the proposed development.

As described above, stormwater management for the overall site is proposed to be accomplished by on-site infiltration of stormwater to varying degrees. The stormwater drainage systems would be installed in the early stages of construction in each phase, making the drainage system available to store runoff from construction activities. According to the *Soil Survey*, on-site soils consist of Urban Land (“Ug”), Urban Land Hempstead Complex (“Uh”) and Hempstead silt loam (“He”). An analysis of these on-site soils in Table 15 of the *Soil Survey* indicates that the permeability rate is greater than 20 inches per hour at depths of 33 to 60 inches for Uh and He

soils. The permeability rate is not available for Ug soils, although most Ug soils are well-drained. Thus, the Uh and He soils are suitable for infiltration practices (i.e., drywells or leaching pools), and therefore, the proposed stormwater management system, described below, is suitable for these soil types.

The *Nassau County Department of Public Works Drainage Requirements* (last revised October 27, 2004) specifies storage requirements for various types of development. As the regulations apply to this project, the individual parcels would be classified as follows:

Parcel A (Coliseum Parcel) – The parcel is currently connected to the County drainage system, which requires a Drainage Connection Permit. The conditions of a Drainage Connection Permit typically include the implementation of Best Management Practices (“BMPs”) to reduce impacts to the County drainage system. The practices proposed by the applicant are described herein.

Parcel B (Omni Parcel) – The parcel is currently developed and would require slight modifications. Under normal circumstances, the regulations would require storage of runoff from an eight-inch rainfall for new construction. In this case, the impervious area is proposed to be reduced; therefore, no additional drainage facilities would be required.

Parcel C (RexCorp Plaza) – The parcel is currently developed and is proposed to be substantially modified, which requires upgrade of the storage capacity of the drainage system to eight inches of runoff.

Parcel D (Vacant Property) – The parcel is currently undeveloped, and therefore, is classified as new construction, requiring the storage of runoff from an eight-inch rainfall.

The requirements outlined above also contain provisions for requesting a reduction in the eight-inch storage requirement. Parcel A would not appear to require such a waiver (as it will be developed under an existing connection permit), but the applicant intends to request a reduction from eight inches to five inches for Parcels C and D. Justification for such a waiver would be

based on the ability of the proposed development to meet SWPPP water quality requirements, the limited area available for stormwater management facilities, and the availability of overflow capacity in the existing County recharge basin (which currently receives stormwater from the subject property) and beyond. In the project engineer's experience, waivers of this nature have been granted routinely by the County.

If for some reason the anticipated waivers are not approved, the site plans for Parcels C and D would need to incorporate storage for the runoff from an eight-inch rainfall on each respective site. The required storage could be accommodated by constructing recharge basins in lieu of the proposed ponds, which would be less desirable from an aesthetic standpoint, but would comply with the storage requirements. Based on the assumption that the waivers will be granted, however, stormwater management for each of the parcels will be accomplished as follows.

The Lighthouse at Long Island is proposing to provide storage capacity for a five-inch storm through the use of a combination of leaching pools, drainage reserve areas, ponds and the existing recharge basin and associated infrastructure. The runoff coefficients used in preparation of the drainage calculations are 0.15 for pervious surfaces and 1.0 for impervious surfaces. Runoff calculations for the proposed development are presented in the following subsections.

Parcel A (Coliseum Parcel/Marriott Hotel Parcel)

It is proposed that the Coliseum Parcel/Marriott Hotel Parcel provide for a total of five inches of storage -- storage for a two-inch rainfall directly on-site, and storage for the additional three inches via continued connection to and use of the recharge basin located on the south side of Hempstead Turnpike. As impervious surfaces in the post-development condition would be less than that in the current condition (82.9± acres existing versus 79.9 acres proposed), there would be less contribution from this parcel after the proposed action is implemented. The following are the required and provided storage:

Required Storage:	1,401,348 cubic feet
Provided Storage On-site:	563,314 cubic feet
Provided Storage within Existing Off-site Recharge Basin:	838,034 cubic feet

The on-site storage would consist of the installation of approximately 349, 16-vertical-foot drywells throughout the parcel. None of the proposed surface waters on this parcel would be used for stormwater storage purposes. The amount of runoff proposed to be directed to the existing off-site recharge basin from this parcel (838,034 cubic feet) would be significantly less than under the current condition (1.5± million cubic feet).

In order to minimize impacts associated with stormwater runoff, the development of the Parcel A (Coliseum Parcel/Marriott Parcel) will include sufficient drywells to store the runoff from a two-inch rainfall, in excess of the SWPPP/Water Quality requirement to store the runoff from the 90th percentile 24-hour storm (1.2 inches). Excess runoff will be discharged into the existing County drainage system and will be conveyed to the existing County recharge basin on Glenn Curtiss Boulevard. The net result of the on-site infiltration and the reduction in impervious surfaces resulting from the redevelopment of the site will be a reduction in the discharge of runoff to the existing County recharge basin after development. This arrangement has the added benefit of providing for settling of silt and debris in the drywells prior to discharge to the County system, which should reduce the maintenance necessary for the County recharge basin. Since all runoff is recharged either on-site or in the recharge basin, there would be no discharge of runoff to surface waters from Parcel A.

Parcel B (Omni Parcel)

Due to the removal of parking and its replacement with pervious surfaces, the amount of stormwater runoff on this site is expected to decrease from the current condition. Stormwater is currently collected via leaching pools/drywells. The existing drainage system would be used and the existing castings would be brought to grade, where required. Based upon a capture of five inches, the following are the required and provided storage for that portion of the site (approximately 2.89 acres), which is proposed to be modified:

Required Storage: 12,867 cubic feet
Provided Storage On-site: 12,913 cubic feet

No new leaching pools are proposed to be installed on this parcel.

Parcel C (RexCorp Plaza East Parcel)

The amount of impervious surface on this parcel would increase, based upon the proposed design. Thus, stormwater runoff would increase from the current condition, based upon a five-inch design, as follow:

Required Storage: 332,282 cubic feet
Provided Storage: 333,453 cubic feet

Approximately 190,461 cubic feet of storage would be provided within 118 drywells situated throughout the site. In addition, a new 0.91±-acre storage pond would be constructed that would store approximately 142,992 cubic feet. The pond would be situated along Hempstead Turnpike between the existing western tower of RexCorp Plaza and the proposed new office building.

The Parcel C (RexCorp Plaza East Parcel) redevelopment is proposed to include an additional office building and parking structure. The storm drainage system for the disturbed areas as well as the existing development is proposed to be upgraded to provide storage for the runoff from a five-inch storm in drywells and a pond, in excess of the SWPPP/Water Quality requirement of 1.2 inches. All runoff collected in the system will infiltrate into the soil through the drywells. There would be no direct discharge of runoff to surface waters.

Parcel D (RexCorp Plaza West Parcel)

As with the RexCorp Plaza East Parcel, the impervious surface on the site would increase from its current condition. Therefore, stormwater runoff, based upon a five-inch design, would also increase, as follows:

Required Storage: 112,083 cubic feet

Provided Storage: 179,010 cubic feet

The stormwater management system on this parcel would consist of the construction of a 0.93-acre storage pond, which would contain 93,393± cubic feet of stormwater and a 0.79-acre drainage reserve area (within the proposed western buffer), which would contain approximately 85,617 cubic feet of stormwater.

In summary, Parcel D (RexCorp Plaza West Parcel) is proposed to be developed with an office building and parking structure. The storm drainage system would consist of a pond, a drainage reserve area and drywells designed to store the runoff from a five-inch rainfall, in excess of the SWPPP/Water Quality requirements. All runoff collected in the system is expected to infiltrate into the soil through the drywells or the drainage reserve area. There would be no direct discharge to surface waters.

Under the provisions of the *New York State Stormwater Management Design Manual*, which is the primary NYSDEC reference used for compliance with the Phase II regulations, the SWPPP must demonstrate that Water Quality Control and Water Quantity Control goals are met through the use of various BMPs² to control stormwater runoff. As detailed above, stormwater management for the overall site will be accomplished by on-site infiltration of stormwater to varying degrees through the use of drywells, recharge ponds, a drainage reserve area and a recharge basin.

² Methods that have been determined to be the most effective, practical means of preventing or reducing pollution from non-point sources. Such BMPs include use of a recharge basin and infiltration systems to recharge stormwater into the ground and use of drywells as a settling mechanism to trap trash and sediment before stormwater flows offsite.

The Narrative Report and Plans to be prepared in conjunction with the filing of the Notice of Intent (“NOI”) will provide the necessary background information for the project and will fully detail required erosion control measures, compliance with Water Quality Control requirements, and compliance with Water Quantity Control requirements using BMPs developed by the NYSDEC (see Appendix 3.3-1 of this DGEIS).

Overall, the various stormwater retention facilities constructed as part of the development will provide more than sufficient storage on all of the individual sites to meet the Water Quality requirements of the State Pollution Discharge Elimination System (“SPDES”) permit. In addition, there is sufficient storage to mitigate extreme rainfall events within each of the drainage systems. In the event of a 100-year storm under unusual conditions, which preclude an infiltration rate sufficient to fully contain the storm, the East Meadow Brook serves as an overflow for a number of local recharge basins.

Post-Development Stormwater Management

Following the conclusion of the construction of the project, a qualified inspector would perform a final site inspection prior to the issuance of a Notice of Termination. The inspector would certify that all disturbed areas have achieved final stabilization, all temporary structural erosion and sediment control measures have been removed, and that all post-construction stormwater management practices have been constructed in accordance with the stormwater pollution prevention plan. A Post Construction Stormwater Maintenance Manual (including post-construction stormwater management practices plans, where appropriate) will be provided to the owner/operator of the site, which would identify the parties responsible for regular maintenance, recommended maintenance schedules and recommendations for periodic inspection of stormwater storage facilities for pollutants and illicit discharges.

The principle behind the stormwater management for the Lighthouse project is the infiltration of all stormwater back into the ground. This would be accomplished using on-site drywells in conjunction with several recharge ponds and a recharge basin. In all cases, proper maintenance of the recharge structures would ensure that the system operates correctly and will prevent off-site discharge.

Drywells would need to be inspected and cleaned on a regular basis. Removal of trash and debris from the inlets would ensure uninterrupted flow into the system. When necessary, cleaning of the interior walls of the structures would maintain the proper amount of infiltration from the well.

Maintaining the proposed recharge surfaces in the ponds and recharge basin is proposed to consist of ensuring an adequate surface for infiltration. This involves removing trash and debris from the slopes and bottom. The surfaces must be inspected for silt and, when necessary, the silt must be scraped from the surface and removed.

Maintaining the post-construction stormwater management systems would ensure that the environmentally sensitive areas adjacent to the project (Hempstead Plains, wetlands to the east of RexCorp Plaza) would not receive runoff from the project area. Any water not infiltrated directly on-site is proposed to flow to the existing recharge basin as opposed to flowing overland into these areas. The only nearby watercourse/wetland is the East Meadow Brook, is not expected to receive runoff directly from the proposed development. Nassau County, which owns and maintains the recharge basin on Glenn Curtiss Boulevard as well as other nearby basins, reports that the recharge basins could, under extreme conditions, overflow to the brook. However, the incorporation of drywells on the Coliseum Parcel coupled with upgrading the storage capacity on Parcel C and installation of drainage facilities on the currently vacant Parcel D, in conjunction with the reduction in impervious areas on Parcels A and B, would in effect reduce the total runoff from the subject site. In addition, as no Critical Environmental Areas (“CEAs”) exist on or directly adjacent to the subject property, there would be no impact to such resources.

The stormwater management and pollution control measures described herein comply with USEPA Phase II Stormwater Regulations as required under the general permit (GP-0-08-001) as well as Town and County storm drainage requirements. There are no other applicable stormwater management regulations known to the project engineer. As it is anticipated that the construction period for each phase will extend beyond the effective period of the General Permit, the applicant would be required to complete construction covered under the current permit within

six months or, if construction is to extend beyond six months, submit a new Notice of Intent and related documentation for coverage under the new General Permit. This process would be repeated as necessary for subsequent General Permit revisions.

Nonpoint Source Management Handbook

The proposed project's consistency with the relevant recommendations of *The Handbook* is presented below.

Land Use

- *Limit new development, particularly industrial uses, in the deep recharge and critical shallow recharge areas.*

The subject property is located in Hydrogeologic Zone I, which is characterized as a deep recharge area. It is not located in a critical shallow recharge area. Although located in a deep recharge zone, the site (with the exception of the RexCorp Plaza West Parcel) and surrounding area are completely developed. Thus, the majority of the development is proposed to consist of the redevelopment of existing developed areas. All proposed development would be designed to comply with prevailing Nassau County requirement and NYSDEC Phase II stormwater regulations, including the recharge of stormwater through drywells, recharge basins, ponds and a drainage reserve area. The subject site is also sewered and will use public water. It should be noted that no industrial uses are proposed. Therefore, the proposed action complies with the intent of this recommendation.

- *Concentrate high density or commercial/industrial land uses in existing high density or commercial/industrial areas or in areas located downgradient and within existing contaminant plumes.*

The Lighthouse at Long Island is a high-density, mixed-use development that includes, among many other uses, commercial facilities. The subject property is located in a

highly-developed area of commercial and industrial land uses. Furthermore, the development would be connected to the municipal sewer and water systems. Thus, the proposed project is consistent with this recommendation.

- *Aggregate uses that would require similar sewage treatment at densities where sewage treatment will be economically feasible.*

The proposed development would be connected to an existing Nassau County municipal sewer system. Therefore, this recommendation is not applicable.

- *Limit the removal of natural vegetation and the creation of lawn areas.*

The existing vegetation on Parcels A, B and C consists of limited landscaped and lawn areas with limited natural vegetation. Parcel D consists of some successional vegetation, including meadow/grassland. In order to construct the proposed development, most of the vegetation located on Parcel D would be removed. To minimize potential impacts to native vegetation on Parcel D, a transplanting project was held on June 7, 2008, in coordination with the Friends of Hempstead Plains at NCC, for the transplant of native plants from Parcel D (the RexCorp Plaza West Parcel) to the preserved area on the NCC property. Prior to transplanting, native species were identified and tagged by qualified personnel from Nelson, Pope & Voorhis and the Friends of Hempstead Plains. Thus, although natural vegetation would be removed from Parcel D, a transplanting program has been implemented to minimize potential adverse impacts to such vegetation.

Furthermore, upon implementation of the proposed project, there would be more vegetation on the site (4.9± acres) than under the existing condition, as shown on Table 3.4-4 in Section 3.4.2 of this DGEIS.

Currently 16 percent of the property contains lawn and landscaping and, upon implementation of the proposed action, an additional six percent of the site is proposed to be covered with lawn/landscaping. Minimal use of chemical fertilizers, pesticides and

herbicides on landscaped portions of the subject property is proposed, as noted in Section 3.4.3 of this DGEIS. Furthermore, invasive plant species are proposed to be removed and replaced with less aggressive species.

Overall, there would be an increase in green, pervious surface on the site from the existing condition to the post-development condition. Furthermore, as explained in detail in Section 3.4.2 of this DGEIS, green roofs would be established on several buildings, adding to the green space on the site. Thus, the proposed development complies with this recommendation.

Stormwater Runoff

- *Minimize grade changes and site clearing. Preserve swales in their natural state. Avoid disturbance of existing grades, vegetation or soils and the alteration of surface hydrology.*

The majority of the subject property has already been cleared and graded for previous development. In addition, existing grades, vegetation, soils and surface hydrology patterns have been significantly altered by previous development. The majority of the property has been highly disturbed and developed with impervious surfaces (78± percent). Thus, there would be virtually no alteration of natural grades or disturbance to previously-undisturbed soils or surface hydrology. However, natural vegetation and slopes that do exist are proposed to be retained wherever possible, especially along the site boundaries on Parcels C and D, south of Hempstead Turnpike and adjacent to the East Meadow Brook. There are no swales located on the site, thus, there would be no impact to same. Accordingly, the proposed development complies with this recommendation.

- *Provide temporary on-site areas to receive stormwater runoff flows that are generated by construction and other site development activities. Do not allow increased sediment resulting from the construction or operational phase of site development to leave the site*

or to be discharged into stream corridors, marine or freshwater wetlands. Minimize the amount of soil area exposed to rainfall and the period of exposure. Cover or plant exposed soils as soon as possible.

General Stormwater Pollution Prevention Measures plans were prepared by the project engineer for the proposed development (see Appendix 3.3-1 of the DGEIS).

The basic erosion control measures depicted on the *General Stormwater Pollution Prevention Measures* plans are proposed to be employed in all project phases in order to minimize erosion and transport of sediment. Perimeter erosion control measures would include silt fence, hay bales and the maintenance of construction entrances to prevent sediment from being transported to adjacent properties. Within the disturbed areas, various types of inlet protection will be employed in order to protect on-site infiltration measures and off-site recharge basins. In addition, stockpiling and clearing will be controlled to minimize the erosion potential of the site. There are no steep slopes, existing or proposed, within the disturbed areas on the project site that would require protection or stabilization.

The specific plans prepared for each phase of the project would specifically address erosion control measures in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, and will address stormwater management in accordance with the *New York State Stormwater Management Design Manual*.

Compliance with local and state stormwater management requirements would effectively reduce non-point source pollutants leaving the subject property in the form of surface runoff. The existing recharge basin will be used as part of the proposed development's stormwater management system, similar to its current use. Thus, the proposed development complies with this recommendation.

- *Detain runoff on-site and direct stormwater from road surfaces to sediment basins before discharge to a sump wherever topography limits or precludes the on-site recharge.*

The initial stormwater runoff generated from Parcel A (the runoff from a two-inch rainfall) would be captured and recharged on-site through the use of a leaching system (drywells) before any excess runoff overflows to the existing recharge basin to which the site is currently connected. The proposed drainage systems for Parcels C and D include provisions for storing the runoff from a five-inch rainfall on-site (through man-made ponds, a drainage reserve area and drywells) with no direct connection to the existing recharge basin. The initial storage of runoff will serve to settle out sediment from interior roads and other surfaces, therefore the proposed action conforms to this recommendation.

- *Stabilize exposed slopes during and after construction by using temporary and/or permanent, structural or non-structural stabilization measures.*

The *General Stormwater Pollution Prevention Measures* plans (see Appendix 3.3-1 of this DGEIS) indicate that soils, soil stockpiles and disturbed areas will, if applicable, be temporarily stabilized through the use of prompt seeding and/or sodding, and silt fencing will be installed at the toes of slopes, as required. Permanent stabilization in the form of either permanent landscaping or installation of impervious materials, including buildings, would occur as soon as possible after soil exposure. Therefore, the proposed development complies with this recommendation.

Highway Deicing

- *Evaluate various salt/sand ratios currently used for maintaining highways to determine which mixture offers the maximum safety for the public with the minimum impact upon groundwater under most storm conditions.*

This recommendation refers to highways. Notwithstanding this, attention will be paid to salt/sand ratios to maintain internal roadways, parking lots and sidewalks, while

protecting groundwater and ensuring the safety of residents, employees, visitors and vehicles. Recommendations for de-icing practices are proposed to be included in the constructability report that would be incorporated into the detailed SWPPP documents prepared in conjunction with the detailed site engineering plans.

Fertilizer

- *Retain as much of the natural vegetation of the site as possible. Minimize grade changes and site clearing.*

There is little natural vegetation on the site (most of the natural vegetation is on Parcel D, and as previously explained, a transplanting program has been performed). Accordingly, clearing of natural vegetation would be minimal. All of the subject property has experienced clearing and grading in the past. As the proposed project is a redevelopment, minimal impacts relating to site clearing and grading would occur.

Approximately 3.17 percent of the subject property would be maintained in natural vegetation (see Section 3.4.2 of this DEIS). There would be more pervious area and green space on the subject property after implementation of the proposed development than currently exists on-site. Therefore, the proposed development comports with this recommendation.

- *Use native plants for the planting of areas that have been disturbed by grading. Consider the use of alternate types of groundcover and other plant materials to avoid or reduce lawn area and the consequent need for fertilizer applications, extensive watering and maintenance.*

There would be minimal use of chemical fertilizers, pesticides and herbicides on landscaped portions of the subject property, as noted in Section 3.4.2 of this DGEIS. Furthermore, there would be no use of fertilizers within natural areas on the subject

property, or within roadside landscaped vegetation adjacent to the Francis T. Purcell Preserve. Therefore, the proposed action complies with this recommendation.

NURP Study

The *NURP Study* evaluates the impacts of stormwater runoff and the means to minimize pollution contributions from same. The major findings of the *NURP Study* are discussed in Section 3.3.1. Based upon these findings, the *NURP Study* made specific recommendations. The proposed project's consistency with same is shown in the normal type below each italicized recommendation:

- *Continue to use recharge basins wherever feasible for the disposal of stormwater and the replenishment of the groundwater.*

The proposed project incorporates an extensive stormwater management system to collect and recharge the site-generated stormwater runoff. The existing recharge basin, located south of Hempstead Turnpike, will continue to be used to accommodate stormwater runoff that is generated on the Coliseum Parcel/Marriott Hotel Parcel. Additional stormwater management features include the creation of two recharge ponds and one drainage reserve area, as well as the extensive use of drywells throughout the site, as described earlier in this section. Therefore, the proposed action complies with this recommendation.

- *Consider the use of in-line storage leaching drainage systems, or components thereof, as a substitute for recharge basins in areas, other than parking lots, where maintenance will be assured and where the value of the land for development purposes is greater than the cost of installing and maintaining the underground system. Storage leaching drainage systems should also be considered for use where the installation of recharge basins is not feasible.*

The stormwater management plans for Parcels A, C and D (which cover all new construction) include the use of drywells upstream of any discharge (direct or indirect) to the existing recharge basin.

- *Prevent illegal discharges to drainage systems or recharge basins. Such discharges, which often result from improper storage or deliberate dumping of chemicals, must be controlled at the source.*

The proposed stormwater management plans include the capture and recharge of site-generated stormwater either on-site or off-site at the existing recharge basin south of Hempstead Turnpike. Furthermore, the proposed drainage and sewer collection systems would be designed in accordance with prevailing regulations. Given that no industrial uses are proposed, it is not expected that there would be illegal discharges or threats to drainage systems associated with the improper storage of chemicals. However, the Post Construction Stormwater Maintenance Manual would include recommendations for periodic inspection of drywells for pollutants and illicit discharges. Therefore, the proposed development complies with this recommendation.

- *To maintain existing water quality where it is currently satisfactory, preclude any additional direct discharge of stormwater runoff into surface waters, using all available means for detention and/or recharge to reduce bacterial loads.*

No direct discharge to surface water bodies is proposed as part of the action. As described in detail above, the subject property would be connected to the municipal sewer system and stormwater would be captured and recharged either on-site or via connection to the existing recharge basin located south of Hempstead Turnpike. Thus, the proposed project complies with this recommendation.

- *Protect stream corridors from encroachment, so that the stream reaches that will become dry because of the lowering of the water table due to sewerage will always be available for stormwater detention and recharge.*

East Meadow Brook is a stream corridor that is located adjacent to the subject property, east of the RexCorp Plaza East Parcel (Parcel C). The proposed development does not involve encroachment upon the East Meadow Brook. Furthermore, the entire development has been and will continue to be connected to the municipal sewer district. Therefore, there would be no change in the sewage disposal status. The proposed development would comply with this recommendation.

Overall, based upon the foregoing, the proposed project would meet the recommendations as presented in the *Nonpoint Source Management Handbook* and the *NURP Study*.

Through implementation of the comprehensive stormwater management plan, as described above, and compliance with the *Nonpoint Source Management Handbook* and the *NURP Study*, potential adverse impacts associated with stormwater runoff will be minimized.

3.3.3 Proposed Mitigation

In order to minimize impacts associated with stormwater runoff, the following measures have been incorporated into the proposed action:

- Comprehensive stormwater management plans have been designed to capture and recharge stormwater runoff. Such stormwater system includes the use of on-site drywells, man-made recharge ponds and a drainage reserve area, and the adjacent off-site recharge basin;
- The stormwater management system has been designed to ensure that there would be no direct discharge to surface waters;

- Basic erosion control measures depicted on the *General Stormwater Pollution Control Measures* plans are proposed to be employed in all phases of the development in order to minimize erosion and transport of sediment. Perimeter erosion control measures would include silt fencing, hay bales and the maintenance of construction entrances to prevent sediment from being transported off-site. Various types of inlet protection would be used to protect on-site infiltration measures and the off-site recharge basin, and stockpiling and clearing would be controlled to minimize the erosion potential of the site;
- In accordance with the current NYSDEC regulations governing the potential discharge of stormwater from construction sites (General Permit for Construction Activity GP-0-08-001), a SWPPP would be prepared for each phase of the project submitted for site plan review. The SWPPP for each phase would be submitted to the Town of Hempstead for approval and Nassau County for review under 239f, and will be forwarded to the NYSDEC upon completion of the Town approval process. As previously noted, construction activities, by phase, would not be initiated until all required approvals are obtained;
- During construction, erosion control measures would be inspected by a qualified inspector every seven days. During times when more than five acres of the site are disturbed, the inspector would conduct at least two site inspections every seven days. The inspector would prepare an inspection report (on at least a quarterly basis, as required under the General Permit) in compliance with the requirements of the SWPPP;
- In the event that there is the on-site storage of oil or oil-containing product (as defined under federal regulations, 40 CFR 112), an appropriate spill response plan would be prepared in order to minimize potential stormwater impacts;
- Proper maintenance of the recharge structures would be employed to ensure that the system operates correctly and would prevent any discharge to surface waters. Termination of coverage under the General Permit requires that post construction management practices and plans be provided to the operator in the form of a post-

construction stormwater practices maintenance manual and plan. Maintenance of the post-construction stormwater management systems would ensure that the environmentally sensitive areas adjacent to the project (Hempstead Plains, wetlands) would not receive runoff from the project area; and

- The proposed development has been designed to comply with the Phase II Stormwater Regulations and the recommendations of the *Nonpoint Source Management Handbook* and the *NURP Study*, as demonstrated in Section 3.3.2.