



**CONNECTICUT DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION**
OFFICE OF ENVIRONMENTAL REVIEW
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To: Helen Muniz
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Date: November 20, 2015 **E-Mail:** david.fox@ct.gov

Subject: The Hamlet, Suffield

The Department of Energy and Environmental Protection has reviewed the Notice of Scoping for proposed State funding for Phase II of the Hamlet, a housing development project on East Street South in Suffield. The following commentary is submitted for your consideration. It includes comments on the State sponsored work as well as recommendations for the subsequent development of additional project phases that should be forwarded to the sponsor of the project.

The Natural Resources Conservation Service's Soil Survey depicts two lobes of Scitico, Shaker & Maybid soils, regulated wetland soils, in the areas of Phases, 2, 3 and 4. It is recommended that a certified soil scientist perform a reconnaissance of the sites in order to determine whether there are any areas which would be regulated as wetlands or watercourses as defined by section 22a-38 (15) and (16) of the CGS, respectively. If the reconnaissance identifies regulated areas, they should be delineated. Any development should avoid regulated areas to the maximum extent practicable. Any inland wetlands or watercourses at the site are regulated by the local inland wetlands agency, pursuant to section 22a-42 of the CGS. Many local agencies have established setback or buffer areas and require review and approval of activities within these upland areas adjacent to wetlands or watercourses. The local agency should be contacted regarding permit requirements.

In order to protect wetlands and watercourses adjacent to the site, strict erosion and sediment controls should be employed during construction. The *Connecticut Guidelines for Soil Erosion and Sediment Control* prepared by the Connecticut Council on Soil and Water Conservation in cooperation with DEEP is a recommended source of technical assistance in the selection and design of appropriate control measures. The 2002 revised edition of the Guidelines is available online at: [Erosion Control Guidelines](#).

The Natural Diversity Data Base had reviewed the project at the request of Fuss & O'Neill in November 2014. They identified records of the Federal and State endangered dwarf wedgemussel (*Alasmidonta heterodon*) in Stony Brook upstream of the site as well as the wood turtle (*Glyptemys insculpta*) listed by the State, pursuant to section 26-306 of the CGS as a species of special concern, in the project area.

After subsequent review of a freshwater mussel biologist's report dated March 17, 2015, the NDDB concurred with the survey methods and the assessment that the Federal and State

endangered dwarf wedgemussel and State endangered brook floater do not occur in the stretch of Stony Brook adjacent and downstream of the development due to lack of appropriate habitat. They also concurred with the proposed assessment and recommendations for protection of the state species of special concern wood turtle during the construction process. If these recommendations for wood turtle protections are incorporated into project planning and BMPs for protection of wetlands and watercourses are employed and maintained during construction, potential negative impacts to state-listed species will be minimized.

In addition, we recommend that any materials used for sediment and erosion control NOT contain plastic netting/mesh. Products that have plastic mesh embedded in them have been documented to entangle reptiles, amphibians and even birds. Entanglements such as this lead to mortality. Additionally, plastic products that claim to be "degradable" or "biodegradable" have varying decomposition rates and continue to present entanglement hazards for many years after degrading. A better alternative would be erosion control products composed of 100% biodegradable plant-based netting material, such as jute (vegetable fibers), sisal (stiff Agave fibers) or coir fiber (coconut husk fibers). Not only are these products truly biodegradable, but because the weave in these natural fiber nets is not fixed, as is the case in synthetic netting, it is easier for wildlife to freely move through the weave without getting entangled. Any silt fencing or other erosion controls used for this project should be removed as soon as soils have stabilized to avoid impeding amphibian and reptile movements between wetlands and uplands.

Stony Brook, downstream of its confluence with Muddy Brook, is impaired and does not meet the designated use as habitat for fish and other aquatic life. Potential causes include urban stormwater. The Connecticut River is impaired and does not meet the designated use of recreation due to bacteria, with potential sources including stormwater. The Department has completed a Connecticut Statewide Total Maximum Daily Load (TMDL) for Bacteria-Impaired Waters that includes the Connecticut River. The document is available on-line at: [Bacteria TMDL](#). The Connecticut River appendix to the TMDL identifies future activities necessary to ensure the long-term protection of the river. These measures include installation of best management practices (BMPs) designed to encourage stormwater to infiltrate into the ground before entering the Connecticut River. Several studies examining the bacteria removal performance of stormwater BMPs suggest that flow reduction is the most effective approach to pathogen attenuation in stormwater. Although LID techniques are not primarily designed to reduce pathogen pollution, their mitigation of hydrologic impacts is likely to reduce pathogen loading from stormwater by reducing the volume and rate of runoff from a given area. The appendix can be found at: [Connecticut River TMDL Appendix](#).

The Department strongly supports the use of low impact development (LID) practices such as water quality swales and rain gardens for infiltration of stormwater at the proposed housing site. Key strategies for effective LID include: managing stormwater close to where precipitation falls; infiltrating, filtering, and storing as much stormwater as feasible; managing stormwater at multiple locations throughout the landscape; conserving and restoring natural vegetation and soils; preserving open space and minimizing land disturbance; designing the site to minimize impervious surfaces; and providing for maintenance and education. Water quality and quantity benefits are maximized when multiple techniques are grouped together.

Consequently, we typically recommend the utilization of one, or a combination of, the following measures:

- the use of pervious pavement or grid pavers (which are very compatible for parking lot and fire lane applications), or impervious pavement without curbs or with notched curbs to direct runoff to properly designed and installed infiltration areas,
- the use of vegetated swales, tree box filters, and/or infiltration islands to infiltrate and treat stormwater runoff (from building roofs and parking lots),
- the minimization of access road widths and parking lot areas to the maximum extent possible to reduce the area of impervious surface,
- if soil conditions permit, the use of dry wells to manage runoff from the building roofs,
- the use of vegetated roofs (green roofs) to reduce the runoff from buildings,
- proper treatment of special activity areas (e.g. loading docks, covered maintenance and service areas),
- the installation of rainwater harvesting systems to capture stormwater from building roofs for the purpose of reuse for irrigation, and
- providing for pollution prevention measures to reduce the introduction of pollutants to the environment.

The effectiveness of various LID techniques that rely on infiltration depends on the soil types present at the site. According to the Natural Resources Conservation Service's Soil Web Survey, the various soils at the site are rated as either most, somewhat or least suitable for their capacity for stormwater management practices involving pervious paving or infiltration. However, infiltration practices may be suitable at this site. Soil mapping consists of a minimum 3 acres map unit and soils may vary substantially within each mapping unit. Test pits should be dug in areas planned for infiltration practices to verify soil suitability and/or limitations. Planning should insure that areas to be used for infiltration are not compacted during the construction process by vehicles or machinery. The siting of areas for infiltration must also consider any existing soil or groundwater contamination.

The Department has compiled a listing of web resources with information about watershed management, green infrastructure and LID best management practices. It may be found on-line at: [LID Resources](#). A *Low Impact Development Appendix* to the *Guidelines for Soil Erosion and Sediment Control* has been prepared to provide specific guidance on low impact development techniques. It is also available on-line at: [LID Appendix](#).

Stormwater discharges from construction sites where one or more acres are to be disturbed, regardless of project phasing, require a permit from the Permitting & Enforcement Division. The *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities* (DEEP-WPED-GP-015) will cover these discharges. For projects disturbing five or more acres, registration describing the site and the construction activity must be submitted to the Department prior to the initiation of construction. A stormwater pollution control plan, including measures such as erosion and sediment controls and post construction stormwater management, must be prepared. A goal of 80 percent removal of total suspended solids from the stormwater discharge shall be used in designing and installing post-construction stormwater management measures. The general permit also requires that post-

construction control measures incorporate runoff reduction practices, such as LID techniques, to meet performance standards specified in the permit.

The construction stormwater general permit dictates separate compliance procedures for Locally Approvable projects and Locally Exempt projects (as defined in the permit). Locally Exempt construction projects disturbing over 1 acre must submit a registration form and Stormwater Pollution Control Plan (SWPCP) to the Department. Locally Approvable construction projects with a total disturbed area of one to five acres are not required to register with the Department provided the development plan has been approved by a municipal land use agency and adheres to local erosion and sediment control land use regulations and the *CT Guidelines for Soil Erosion and Sediment Control*. Locally Approvable construction projects with a total disturbed area of five or more acres must submit a registration form to the Department. This registration shall include a certification by a Qualified Professional who designed the project and a certification by a Qualified Professional or regional Conservation District who reviewed the SWPCP and deemed it consistent with the requirements of the general permit. The SWPCP for locally approvable projects is not required to be submitted to the Department unless requested. For further information, contact the division at 860-424-3018. A copy of the general permit as well as registration forms may be downloaded at: [Construction Stormwater GP](#).

The northern border of the Phase 5 site is along Stony Brook. The 100-year flood elevation along this stretch ranges from 39' to 54' (NAVD88) and the 500-year flood elevation is approximately 4' above these figures. If State funding will be used in Phase 5, no new residential structures should be sited within the 500-year flood zone in order to comply with state policy regarding nonintensive floodplain development. State funding for any construction within the 100-year flood zone or any residential structures within the 500-year flood zone, which is a critical activity as defined in section 25-68b(4) of the Connecticut General Statutes (CGS), must be certified by the sponsoring agency as being in compliance with flood and stormwater management standards specified in section 25-68d of the CGS and section 25-68h-1 through 25-68h-3 of the Regulations of Connecticut State Agencies (RCSA) and receive approval from the Department.

The project area is served by the Connecticut Water Company, Northern Region. The Water Supply Plan for the utility, revised in November 2011, concludes that additional groundwater supply, interconnection with the Metropolitan District Commission and upgrades to the Rockville water treatment plant will be needed to meet maximum day demands with projected growth of the system. The ability of the utility to provide supply should be confirmed. The ability of the Suffield water pollution control facility to treat the proposed sanitary discharges should also be confirmed.

Thank you for the opportunity to review this proposal. If you have any questions concerning these comments, please contact me.

cc: Robert Hannon, DEEP/OPPD
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