

OSPREY COURT DEFINITIVE SUBDIVISION

# Water Quality Report

March 2024

PREPARED FOR

**New Seabury Homes, LLC**

33 Seaneast Drive

Mashpee, MA 02649

PREPARED BY

 **BSC GROUP**

349 Route 28, Unit D

West Yarmouth, MA 02673

# 1. Project Location

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- The project is located in the Town of Mashpee Ground Water Protection District.
- The project is located in a State-designated Zone II.
- The project is not located within 300 feet of the of the Santuit, Mashpee, Quashnet or Childs River, Quaker Run south of Route 28, Red Brook or any pond, bay or other surface water body or of any adjacent wetlands as defined by MGL C. 131, §40.
- The project is not located within the groundwater recharge zone of any Great Pond or bay or other surface water body over one (1) acre.

# 2. Hazardous or Toxic Materials

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The proposed subdivision will result in the development of seven (7), single-family homes. It is anticipated that homeowners will keep normal household quantities of fuel, paint, etc. for general maintenance and upkeep of their home and property. However, development of the roadway and its infrastructure will not result in the production of hazardous or toxic materials, as defined by 314 CMR Section 3 and MGL 21(E). The storage of such materials will not have an impact on public health or safety.

# 3. Stormwater Runoff

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A stormwater management system has been designed for the proposed development. Stormwater runoff from the proposed roadway and contributing portions of the building lots will be collected in catch basins along the edge of the roadway and conveyed to an infiltration basin located in the southerly portion of the property. Prior to its discharge, all stormwater runoff from the roadway will be treated by proprietary water quality device, which remove Total Suspended Solids (TSS) and nutrients to a lesser degree. The system has been designed in accordance with the Massachusetts Stormwater Management Standards. Erosion and sedimentation controls will be installed during the construction of the subdivision and will remain in place until all surfaces are stabilized and vegetation is established. All runoff will be managed on-site and there will be no impacts to any surface water body, watercourse or wetland resource areas. There will be no adverse effects to any fishery, shellfish bed or other wildlife or aquatic vegetative resources.

# 4. Nutrient Loading

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Nitrogen and phosphorus loading calculations have been completed for the proposed development to assess the impacts due to nutrient loading. The calculations have been prepared in accordance with the procedures outlined in Section 174-27(B)(4)(a-d) of the Town of Mashpee Zoning Bylaws.

The results indicate that a total of 46 pounds of Nitrogen could be produced annually by the proposed development. This equates to 6.30 pounds per acre.

Phosphorus loading was also considered, based on the procedures referenced above. The results indicate that a total of 0.26 pounds of Phosphorus could be produced annually by the proposed development. This equates to 0.036 pounds per acre.

One of the conclusions derived from the analysis conducted by the Massachusetts Estuaries Project (MEP) is that 75-80% of the watershed nitrogen load to an embayment is derived from wastewater. The proposed development will not include on-site sewage disposal, and therefore does not pose a significant threat to the Popponesset Bay Estuarine system or the Rock Landing public water supply wells.

## 5. Existing Water Quality

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The proposed development is located in the Zone II of the Rock Landing public water supply wells. Based on the delineation of the Popponesset Bay watershed, the site appears to lie just outside the southern limit of the Popponesset Bay watershed, and adjacent to the boundary between the Popponesset Creek and Ockway Bay sub-watersheds. This location is outside the limits of the MEP and thus water quality data is not readily available.

## 6. Expected Changed Condition of Water Supply

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The proposed development is located in the Zone II of the Rock Landing public water supply wells. Given the site's location within the Zone II, and its relative proximity to the Cottages at New Seabury Phase IV development, sanitary sewage will be conveyed to the New Seabury private wastewater treatment plant, in lieu of on-site sewage disposal systems, which would potentially contribute significant nutrient loading to the groundwater supply. For this reason, we do not anticipate the proposed development will have a negative effect on the groundwater supply.

## 7. Nitrogen Impacts on Sub-Watershed

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Based on the site's location, as discussed in Section 5 above, there is no means for comparison to target nitrogen loading as this area lies outside the MEP study area. However, considering that there will be no loading from sanitary wastewater, and that post-development stormwater runoff will be contained on-site, nitrogen loading from the proposed development will be significantly lower than it would be for a conventional subdivision (i.e. not a cluster), which would typically include the use of on-site sewage disposal systems.

## 8. Test Wells

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The proposed development entails the creation of seven (7) residential building lots, thus development of test wells is not required.