

Action Plan
for Bermed Infiltration Ponds

Background/Problem Statement

Bermed infiltration ponds (BIPs) have been an approved method of on-site sewage disposal since the late 1980's in counties on the Lower Eastern Shore with most concentrated in Dorchester County. The Maryland Department of the Environment (Department or MDE) has concerns about the performance of BIPs, particularly older ponds. With a number of ponds at risk for failure, MDE is taking action exploring options for replacement and repair, including technical and financial assistance.

Properties served by BIPs can be individual residential properties, or a combination of several residential properties with greater wastewater volumes. Typically these systems have been constructed in environmentally sensitive areas within the Chesapeake Bay Critical Area, especially non-tidal and tidal wetlands.

Considering the multiple environmental and health risks, including climate change, flooding, and groundwater contamination, MDE needs to evaluate and review this method of sewage disposal. Recognizing numerous existing BIPs are failing and/or appear to have inadequate operation and maintenance, the Department will co-review any new construction of BIPs, connections to existing BIPs or expansion of properties served by BIPs until the Department's evaluation and review are completed.

Study Goals/Objectives

During this 15-month period, the Department will conduct a study of existing BIPs to:

- Determine if an on-site solution to repair/replace Onsite Sewage Disposal Systems (OSDSs) is feasible, or consider alternative methods, including, but not limited to, public sewer connection.
- Study berm integrity and assess proper operation and maintenance of BIP structures and associated equipment.
- Conduct water quality/treatment effectiveness investigations that will:
 - Evaluate pond water quality and any related risks for human contact.
 - Monitor groundwater depth around BIPs.
 - Investigate the impact to shellfish waters and contact recreation.
- Determine the extent of site vulnerability related to the impact of sea level rise and increased rainfall volume and intensity.
- Compile a detailed inventory of developed and undeveloped properties served or to be served by BIPs.
- Determine associated impacts to Chesapeake Bay critical areas.
- Make a final determination on the feasibility and advisability of utilizing BIPs as a means of on-site sewage disposal.
- Investigate whether existing BIPs have adequate signage and fencing for the public.

- Investigate whether existing BIPS have adequate separation from surface runoff.
- Assess differences in designs of individual residential vs multi-use/>600 gallon per day design.
- Confirm eligibility of funding for current and future projects through the Clean Water State Revolving Fund and Bay Restoration Fund (BRF) Septics Account while exploring other sources of funding.
- Assess potential sites for alternate methods of sewage disposal.

MCKEIL POINT BIP #1 ONSITE SEWAGE SYSTEM REMOVAL

- MDE included \$298,575 in loans and \$298,575 in loan forgiveness funding for McKeil Point BIP #1 to connect the existing homes to the Cambridge Enhanced Nutrient Removal Wastewater Treatment Plant. Additional funding for the project will be provided through the BRF Septics Account (up to \$20K per connection based on homeowner income level).

Details of the study will be included in a comprehensive report to be completed no later than 15 months from the issuance of the action plan.

Field Data Collection

- Conduct water quality sampling over a one-year period. Sampling will include quarterly collection for a minimum of one year from the shallow groundwater both upgradient and downgradient from selected sites.
 - ◆ Water quality laboratory analysis may include, but not be limited to, chemical/ biochemical parameters such as fecal coliform, e. coli, total nitrogen, total phosphorus, nitrate, nitrite, temperature, pH, conductivity, dissolved oxygen, nuisance/odors.
- Collect site observations related to BIP conditions, including, but not limited to, environmental factors and standard compliance criteria (free-board, vegetation, signage) from the prioritized sites according to the aforementioned sampling schedule.
- Conduct quality assurance/quality control, data management, analysis review and reporting.