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Peirce Island Pool Discharge Elimination

Natalie Landry

New Hampshire Department of Environmental Services

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Peirce Island Pool Discharge Elimination

A Final Report to

The New Hampshire Estuaries Project

Submitted by

Natalie Landry

New Hampshire Department of Environmental Services

360 Corporate Drive

Portsmouth, NH, 03801



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Executive Summary

The City of Portsmouth maintains a public swimming pool on Peirce Island which is situated in the Piscataqua River and accessed by a bridge in downtown Portsmouth. The swimming pool filter backwash discharged to the Piscataqua River. In 2002, the City applied for a New Hampshire Estuary Project grant with the goal of eliminating the direct discharge. The grant was awarded to the City through the New Hampshire Department of Environmental Services. Using the grant funds and local cash and in kind services, the City installed a pump system and new piping to deliver the filter backwash to the Peirce Island wastewater treatment facility via a force main.

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Introduction

The Peirce Island Pool is owned by the City of Portsmouth and serves approximately 19,000 swimmers each summer. The pool was originally constructed in the 1930s and updated in the 1970s and again in the mid 1990s. The pool's 800,000 gallons of water were cleaned through a rapid sand filter. The filter was then cleaned through a backwash process and that wastewater was discharged directly into the Piscataqua River which is part of the Great Bay Estuary. The City sought and was awarded funds through the New Hampshire Estuaries Project (NHEP) to eliminate the direct discharge to the River. The NHEP Workplan reference number for this project is 03-A-3.

Project Goal

The goal of the Peirce Island Pool Discharge Elimination project was to remove the direct discharge of pool filter backwash that flows into the Piscataqua River.

Methods

The City of Portsmouth applied for a NHEP grant in 2002. The NHEP transferred funds to the New Hampshire Department of Environmental Services (DES) through a memorandum of agreement that authorized DES to enter into a grant agreement with the City and manage the project. The New Hampshire Governor and Executive Council granted approval of a grant agreement between the DES and the City on February 19, 2003, Item #62 for \$15,000.

The City installed a pump facility to provide the appropriate lift so the discharge could be connected with the 24" force main. Pipe lines were also installed to connect the pool filter to the pump chamber. The 8" discharge pipe leading into the Piscataqua River was cut and capped. Figure 1 illustrates the proposed design. All construction was completed in accordance with the plans and the filter backwash was redirected to the wastewater treatment plant.

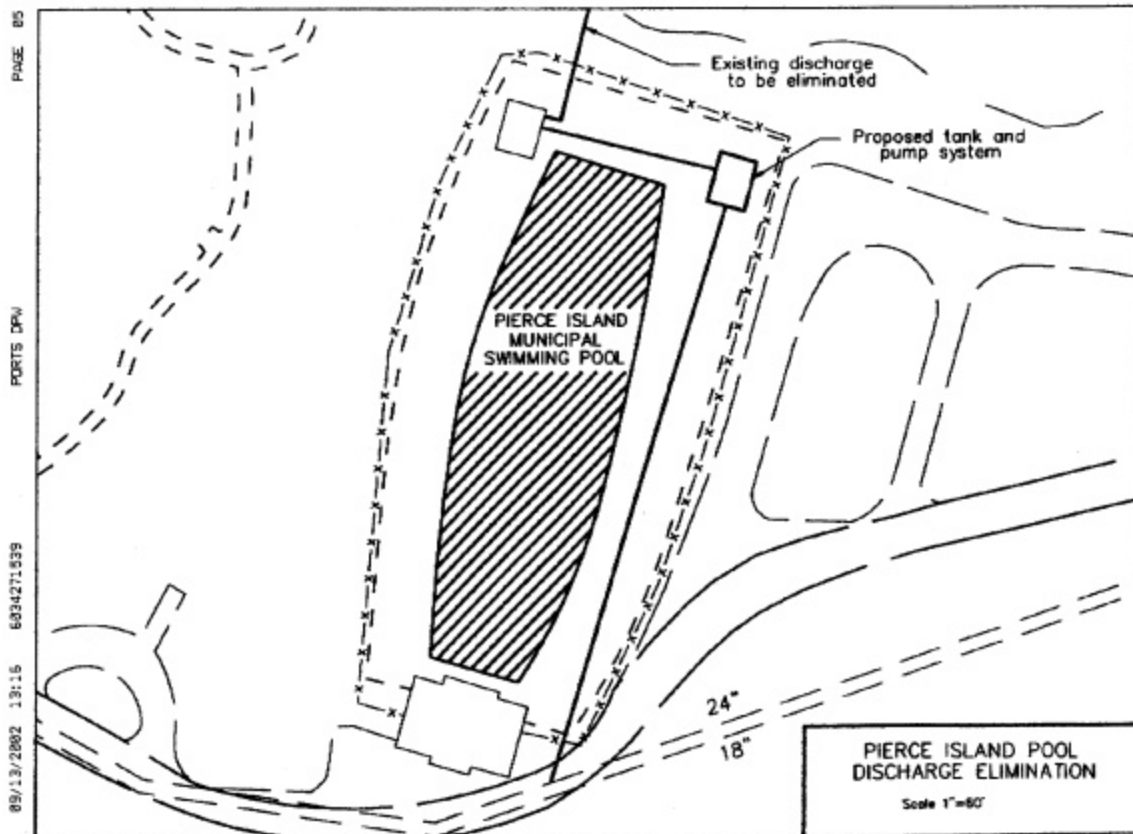


Figure 1 Schematic of Peirce Island Pool

Results and Discussion

All construction took place during June 2003. The project was successfully completed. The discharge to the River was capped and the filter backwash is now routed through the new pipeline and pump system to the force main which connects to the Peirce Island wastewater treatment plant. The

City of Portsmouth provided local matching funds and in kind services which totaled \$179,560. This exceeded the minimum required local match of \$55,546.00 (see Table 1). By eliminating the pool filter backwash, a source of bacteria and chemicals that flowed into the Piscataqua River has been removed. The elimination of this discharge works toward the overall goal of improving water quality in the Great Bay Estuary watershed.

Table 1 Proposed Project Budget

| Item | Quantity/Rate | Grant | Match | Total |
|------------------|----------------------------|----------|----------|----------|
| Equipment | Dump Truck 1 ea @ \$40/day | 200 | 200 | 400 |
| Equipment | Backhoe 1 ea @ \$40/day | 200 | 200 | 400 |
| Equipment | Pick-up 1 ea @ \$10/day | 50 | 50 | 100 |
| Labor | 3 man crew @ \$360.40 | 1,802 | 1,802 | 3604 |
| Materials | Gravel | 200 | 200 | 400 |
| Materials | 8" DI – 550 lf | 2,350 | 2,350 | 4,700 |
| Materials | 24X8 tap sleeve | 600 | 600 | 1,200 |
| Materials | 2-8" elbow 45 MJ | 74 | 74 | 148 |
| Materials | 2-8" check valve | 1,050 | 1,050 | 2,100 |
| Materials | 8" tap gate MJ | 233 | 233 | 466 |
| Materials | Gate box | 14 | 14 | 28 |
| Materials | 5000 gal vault | 2,500 | 2,500 | 5,000 |
| Materials | 25hp duplex system | 5,727 | 21,273 | 27,000 |
| Contract service | Electrical | | 10,000 | 10,000 |
| Contract service | Pump Install | | 15,000 | 15,000 |
| | | | | |
| Totals | | \$15,000 | \$55,546 | \$70,546 |

Conclusions

The City of Portsmouth has met all the requirements of the Grant Agreement and submitted match documentation and an invoice to DES. The elimination of this contamination to the Piscataqua River has been successfully completed.

Recommendation

The NHEP should consider funding similar projects that result in the removal of illicit discharges to tidal waters. Infrastructure improvement projects are typically expensive and the financial partnering by NHEP assists communities in meeting the growing needs of replacing aging infrastructure.