

Statement of Undisputed Facts in Support of the Conservation Law Foundation’s Petition for DEM to Perform Its Non-Discretionary and Mandatory Duty to Notify and Require RIPDES Permitting of Unpermitted Commercial, Industrial, and Residential Dischargers in the Bailey’s Brook and North Easton Pond Watersheds in Newport County, Rhode Island

1. Bailey’s Brook (RI0007035R-01) is a 4.8-mile long stream located in Middletown, RI.¹ R.I. Dep’t of Env’tl. Mgmt., Rhode Island Statewide TMDL for Bacteria Impaired Waters, Bailey’s Brook Watershed Description (2011) at 4, <http://www.dem.ri.gov/programs/benviron/water/quality/swbpdf/bailey.pdf> (the “Bailey’s Brook Watershed Description”); *see also Conservation Law Foundation v. EPA*, Motion to Dismiss Ex. 4, Dkt. 17-5 No. 1:15-cv-00165-ML-PAS, 5 (D.R.I. 2016).
2. Bailey’s Brook has two stream branches flowing southerly to join at North Easton Pond at the southern boundary of the watershed. North Easton Pond is connected to South Easton Pond, which discharges directly to the Atlantic Ocean. North and South Easton Ponds provide drinking water to the residents of Aquidneck Island. *Id.*
3. Bailey’s Brook is a Class AA² fresh water stream and is a tributary within the Newport public drinking water supply system. Bailey’s Brook Watershed Description at 4.
4. Within a watershed, the quality of groundwater and surface water is directly related to land use activities. *Protect Your Drinking Water*, R.I. Dep’t of Health, http://cels.uri.edu/rinemo/factsheets/aquidneck_factsheet.pdf (last visited Sept. 13, 2018).
5. The Bailey’s Brook watershed covers 3.1 square miles and is highly developed. Bailey’s Brook Watershed Description at 1.

¹ The Town of Middletown is located on Aquidneck Island and Bailey’s Brook is situated in the southern portion of the town. Bailey’s Brook Watershed Description at 1.

² “These waters are designated as a source of public drinking water supply (PDWS) or as tributary waters within a public drinking water supply watershed (the terminal reservoir of the PDWS are identified in Appendix A), for primary and secondary contact recreational activities and for fish and wildlife habitat. These waters shall have excellent aesthetic value.” R.I. Admin Code § 25-16-25:8(B)(1)(a).

6. Approximately two-thirds (68 percent) of the Bailey’s Brook watershed is developed land,³ including the Newport State Airport and other land designated for commercial, residential, and transportation uses. *Id.*
7. The Bailey’s Brook watershed, which feeds North and South Easton Ponds, is the most urban in the Newport Water Supply system with 20 percent commercial land use. As a result, this area is at extreme risk of contamination from polluted runoff, underground storage tanks, and businesses where hazardous materials may be used. *Protect Your Drinking Water*, R.I. Dep’t of Health, http://cels.uri.edu/rinemo/factsheets/aquidneck_factsheet.pdf (last visited Sept. 13, 2018).
8. Because Bailey’s Brook watershed makes up 40 percent of the total watershed system, these factors increase pollution risks to the Newport Water Supply. *Id.*
9. Due to its location within a drinking water supply, Bailey’s Brook has been designated by DEM as a Special Resource Protection Water (SRPW)⁴ with special protections under DEM’s antidegradation provisions.⁵ Bailey’s Brook Watershed Description at 1.
10. During 2006-2008, water samples were collected from three sampling locations (WW407, WW408, and WW409) and analyzed for the indicator bacteria *enterococci*. During all years sampled and at all three sampling locations, the geometric mean statistical metric for these data exceeded the water quality criteria value. *Id.* at 4.
11. The water quality criteria for *enterococci* is a geometric mean of 54 colonies/100mL. *Id.* at 11.

³ Currently, the Bailey’s Brook watershed is approximately 16 percent undeveloped and only a small portion is protected as open space. It is important to preserve these undeveloped areas, and institute controls on development in Bailey’s Brook watershed. *Id.* at 10.

⁴ SRPWs are high quality surface waters that have been identified as having significant ecological or recreational uses or are public water supplies. Bailey’s Brook Watershed Description at 1.

⁵ R.I. Admin Code § 25-16-25:18(D) (“Where high quality waters constitute a SRPW, there shall be no measurable degradation of the existing water quality necessary to protect the characteristic(s) which cause the waterbody to be designated as an SRPW.”)

12. Single sample *enterococci* results for Bailey’s Brook from 2006-2008 with geometric mean statistics showed mean bacteria levels ranging from 84 to 713 colonies/100mL. *Id.* at 11-12.
13. Due to the elevated bacteria measurements, Bailey’s Brook was identified as impaired and was placed on the 303(d) list. *Id.* at 4.
14. The State of Rhode Island 2014 303(d) List identifies Bailey’s Brook and its tributaries (Waterbody ID Number RI0007035R-01) as impaired by excess benthic-macroinvertebrate, bio assessments, lead, and enterococcus. R.I. Dep’t of Env’tl. Mgmt., 2014 303(d) List of Impaired Waters FINAL (2015), <http://www.dem.ri.gov/pubs/303d/303d14.pdf> (the “2014 303(d) List”).
15. The 2014 303(d) List identifies Bailey’s Brook as a Category 5 waterbody, which is impaired/threatened for designated use(s) by a pollutant(s), and requires a TMDL. *Id.*
16. The Clean Water Act (CWA) requires that all 303(d) listed waters undergo a TMDL assessment that describes the impairments and identifies the measures needed to restore water quality. The goal is for all waterbodies to comply with state water quality standards (WQSs). Bailey’s Brook Watershed Description at 4.
17. Bailey’s Brook has also been assessed by DEM as not meeting WQSs for biodiversity and lead, though no TMDLs have been completed for these impairments. *Id.*
18. Potential sources of harmful bacteria in the Bailey’s Brook watershed include stormwater runoff from developed areas, illicit discharges, and agricultural activities. *Id.* at 5.
19. A stream buffer survey found that 34 percent of the stream buffer was under high intensity land use. Intensive land use near Bailey’s Brook is likely to result in increased adverse impacts because the natural land buffering system of the stream has been removed. *Id.* at 5.
20. The Bailey’s Brook watershed has an impervious cover⁶ of 32 percent, a level where stormwater impacts are expected. At this threshold, DEM is requiring the MS4 operators

⁶ Impervious cover is defined as land surface areas, such as roofs and roads, that force water to run off land surfaces rather than infiltrating into the soil. Impervious cover provides a useful metric for the potential for adverse stormwater impacts. Bailey’s Brook Watershed Description at 5.

to revise their post-construction ordinances and evaluate whether the six minimum measures alone are sufficient to meet the bacteria reduction targets. *Id.* at 5, 7-8.

21. A watershed management plan developed for Bailey's Brook identified numerous locations⁷ where stormwater runoff was directly connected to Bailey's Brook. Because stormwater is known to carry a suite of pollutants other than phosphorus, these locations are likely sources of bacteria to Bailey's Brook. *Id.* at 5.
22. Bailey's Brook is mostly sewerred, but also relies partially on onsite wastewater treatment systems (OWTS) (i.e., septic systems). Failing OWTSs can be significant sources of bacteria by allowing raw waste to reach surface waters. *Id.* at 5, 8.
23. Sewer system leaks and other illicit discharges have historically been reported in Bailey's Brook. In 2005, an interceptor sewer line that runs along Bailey's Brook was observed to be overflowing at multiple locations, causing a surge of wastewater from sewer manholes in very close proximity to the stream. Other areas along the sewer line had reports of odors and organic growth, indicating leaking. In 2007, the Town of Middletown inspected the sewer line and repaired the manholes and manhole connections. *Id.* at 6.
24. In 2010, three sewage discharges were reported in the vicinity of Bailey's Brook. In response to the unprecedented rainfall amount at the end of March, a manhole on Griffin Avenue surcharged. Debris and grease led to bypass on O'Neill Boulevard in May and on Haymaker Road in October. *Id.* at 6.
25. Dry weather sampling results show that Bailey's Brook continues to have elevated bacteria levels, suggesting the potential for additional leaks, illicit discharges, and/or failing OWTS. *Id.* at 6.
26. Because agricultural land use makes up 15 percent of the Bailey's Brook watershed, agricultural runoff is a potential source of bacteria to Bailey's Brook. *Id.* at 6.

⁷ In the a separate TMDL (the "9 Eutrophic Ponds TMDL") stormwater outfalls were also found to contribute large amounts of phosphorus to Bailey's Brook, resulting in high concentrations in North Easton Pond. *Id.*; see also R.I. Dep't of Env'tl. Mgmt., Total Maximum Daily Loads for Phosphorus To Address 9 Eutrophic Ponds in Rhode Island (2007), <http://www.dem.ri.gov/programs/benviron/water/quality/rest/pdfs/eutropnd.pdf> (the "9 Eutrophic Ponds TMDL")

27. Rhode Island Nursery is one of the largest agricultural operations in the Bailey's Brook watershed. Agricultural runoff from two separate operations of the Nursery may be contributing phosphorus to Bailey's Brook and North Easton Pond. Agricultural runoff may contain other pollutants, such as bacteria. *Id.* at 6.
28. Inspection of aerial photographs shows that the much larger nursery operation located between the Newport State Airport and East Main Rd. (Route 138) may be a source of phosphorus to North Easton Pond. 9 Eutrophic Ponds TMDL at 71; *see also Conservation Law Foundation v. EPA*, Motion to Dismiss Ex. 2, Dkt. 17-3 No. 1:15-cv-00165-ML-PAS, 5 (D.R.I. 2016).
29. The goals of the TMDL are to mitigate bacteria sources and meet WQSs in Bailey's Brook. Bailey's Brook Watershed Description at 10.
30. The percent reduction required to meet the TMDL is 97 percent (includes 5 percent margin of safety). *Id.* at 11.
31. Though the Town of Middletown has developed and implemented programs to protect water quality from bacterial contamination, future mitigative activities are necessary to ensure the long-term protection of Bailey's Brook. *Id.* at 6.
32. The existing watershed management plan and the 9 Eutrophic Ponds TMDL provide a strong technical basis for beginning to reduce a suite of pollutants, including bacteria. *Id.* at 6.
33. The entire watershed is regulated under the Phase II program. Middletown's Storm Water Management Program Plan (SWMPP) (2008) outlines the goals for the reduction of stormwater runoff to Bailey's Brook through the implementation of Best Management Practices (BMPs). *Id.* at 7.
34. In 2006, the Town of Middletown adopted an illicit discharge detection and elimination ordinance, based on the model ordinance developed by the Center for Watershed Protection. This ordinance prohibits illicit discharges to the MS4 and provides an enforcement mechanism. *Id.* at 7.
35. Additional efforts are needed to restore the stream's water quality. *Id.* at 7.

36. The U.S. Environmental Protection Agency (EPA) approved of Rhode Island's Statewide Bacteria TMDL on September 22, 2011. *See* Letter, U.S. Env'tl. Prot. Agency, Approval of 9 Eutrophic Ponds and Mashapaug Pond TMDLs (Sept. 27, 2007), https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_blobs_id=67876; *see also* *Conservation Law Foundation v. EPA*, Defendant's Motion to Dismiss, Ex. 8, Dkt. 17-9, Dkt. 17-8 No. 1:15-cv-00165-ML-PAS (D.R.I. 2016).
37. EPA has determined that these TMDLs meet the requirements of § 303(d) of the CWA and EPA's implementing regulations. *Id.*
38. North Easton Pond, a pond fed by Bailey's Brook, has been assessed as impaired for phosphorus and is included in the 9 Eutrophic Ponds TMDL. Bailey's Brook is recognized as a significant source of phosphorus to North Easton Pond. Bailey's Brook Watershed Description at 4.
39. North Easton Pond is located on the southern end of Aquidneck Island only 600 meters north of Newport's First Beach and Easton Bay. The majority of the pond is located in the Town of Middletown, but its southwest corner extends into the City of Newport. 9 Eutrophic Ponds TMDL at 7.
40. North Easton Pond has a surface area of 45 hectares and a maximum depth of 3.3 meters. With an average depth of 2.6 meters, the estimated volume of North Easton Pond is $1.17 \times 10^6 \text{ m}^3$. *Id.*
41. Inflow to the pond consists primarily of groundwater, surface water runoff, stormwater runoff, tributary inflow, and direct precipitation. *Id.*
42. North Easton Pond, along with eight other reservoirs, comprises the drinking water utilized by the Newport Water Division. *Id.*
43. The North Easton Pond watershed encompasses approximately 982 hectares. The watershed is mostly sewered. Approximately 30 percent of the watershed consists of high-density residential development. Forest, wetland and water and agriculture comprise approximately 19 percent and 16 percent of the watershed, respectively. Commercial and mixed urban development each account for approximately 12 percent of the watershed. Industrial development accounts for approximately 7 percent of the watershed. *Id.*

44. Bailey's Brook is the main source of surface water into North Easton Pond. The Bailey's Brook watershed is the most urban in the Newport Water Supply system. Bailey's Brook, along with an unnamed perennial stream, discharge into a marsh located to the immediate north of North Easton Pond, opposite Green End Avenue. *Id.*
45. Inspection of aerial photographs reveals that the marsh was a small body of open water in the 1970's. The area has since filled in with sediment, probably due to erosion from nearby agricultural fields and upstream urban development. *Id.* at 7, 40.
46. A potential phosphorus impairment to North Easton Pond was first identified based on anecdotal evidence of algal blooms. *Id.* at 136.
47. The 2014 303(d) List identifies North Easton Pond (Waterbody ID Number RI0007035L-03) as impaired by excess algal growth, other flow regime alterations, phosphorus (total), and total organic carbon (TOC).
48. The 2014 303(d) List further identifies North Easton Pond as a Category 5 waterbody, which is impaired/threatened for designated use(s) by a pollutant(s), and requires a TMDL. *Id.*
49. Another unnamed perennial stream discharges into the southeast end of North Easton less than 100 meters from the outlet of the pond.⁸ ⁹ Eutrophic Ponds TMDL at 7.
50. Research performed by the URI Watershed Watch (URIWW) indicates that the phosphorus load to North Easton Pond exceeds the allowable load by a significant margin. *Id.* at 21.
51. North Easton Pond was sampled by DEM staff for total phosphorus, dissolved phosphorus, chlorophyll, and dissolved oxygen at both the surface and bottom on June 21, August 15, and October 29, 2002. The mean total phosphorus concentration was 110 ug/l. The data suggest that total phosphorus concentrations increased as the growing season progressed.⁹ The mean dissolved phosphorus concentration for the 2002 sampling period was 24 ug/l.

⁸ Although this tributary may be a significant source of phosphorus to North Easton Pond, its watershed is much smaller than that of Bailey's Brook. Also, the unnamed tributary discharges to North Easton Pond in very close proximity to the outlet of the pond, so it may have more impact on the water quality of South Easton rather than North Easton Pond. ⁹ Eutrophic Ponds TMDL at 39.

⁹ Urban runoff, the main source of external phosphorus to most of the lakes, is typically highest in the spring and lowest in the summer. *Id.* at 35.

The mean chlorophyll-a concentration was 14 ug/l. Dissolved oxygen levels ranged from 7.0 to 11.0 mg/l at the surface and 6.8 to 9.0 mg/l at the bottom. *Id.* at 19.

52. The Newport Water and Stone Bridge Fire District Source Water Assessment (2003), conducted by URIWW for the Rhode Island Department of Health (DOH), used a mass balance model to estimate the total phosphorus load from the Bailey's Brook watershed. The phosphorus load was calculated using the estimated flow and phosphorus concentrations based on literature values for different land uses. The Source Water Assessment estimated that the annual phosphorus load to the Bailey's Brook watershed was 2.0 lb/ac/yr (2601 kg/yr) and found that Bailey's Brook's water quality was at an extreme risk. This exceeded the estimate of the existing phosphorus load to North Easton Pond in the 9 Eutrophic Ponds TMDL (1443 kg/yr). Both estimates of current phosphorus loading significantly exceed the estimated maximum allowable load of 301 kg/yr. *Id.* at 136.
53. Given both the phosphorus sampling results from both North Easton Pond and Bailey's Brook, the persistent excessive algal growth within North Easton Pond, and the independent Source Water Assessment conducted by URIWW, there is ample evidence of phosphorus impairment in North Easton Pond. *Id.* at 137.
54. Bailey's Brook is the major tributary to North Easton Pond. Since there are no outfalls discharging directly to North Easton Pond, Bailey's Brook appears to be the single biggest source of external phosphorus. 9 Eutrophic Ponds TMDL at 39.
55. Bailey's Brook was sampled for total phosphorus by DEM personnel on 31 occasions between 1991 and 2003. Samples were collected at Kampinar's Clambake, located at the southern end of the stream. Total phosphorus concentrations ranged from 15 to 2730 ug/l. The 2730 ug/l concentration appears to be an anomaly, with the second highest value being 150 ug/l. Excluding the highest value of 2730 ug/l, the mean concentration for the remaining 30 values is 42 ug/l. *Id.* at 39, 71.
56. Stormwater is likely the most significant source of external phosphorus to North Easton Pond. *Id.* at 39.

57. A brief survey of a small portion of this urbanized watershed indicates that there are many stormwater outfalls discharging to its major tributary, Bailey's Brook. There are numerous roads that cross the main stem of Bailey's Brook and its tributaries, including the unnamed tributary that drains into the southeast corner of North Easton Pond. Most, if not all, of these roads have stormwater outfalls associated with them. *Id.* at 39.
58. Erosion and sedimentation may be a significant source of phosphorus to North Easton Pond. A study of the Bailey's Brook watershed conducted by Geosyntec Consultants (2005) revealed that both were significant problems in two of the tributaries to Bailey's Brook. Specifically, eroding landscape material was reported at 245 Oliphant Lane and sedimentation associated with a sand and gravel operation was reported at Aquidneck Avenue just south of Vierra Terrace. *Id.* at 40.
59. RIDEM set a total phosphorus concentration of 25 ug/l as the numeric target for most of the shallow ponds included in the TMDL, including North Easton. These ponds are less than 5 meters deep. The 25 ug/l numerical target is consistent with the State's water quality criteria for total phosphorus. Compliance points of shallow ponds are based on historic surface sampling stations. *Id.* at 47.
60. The URIWW data indicates that the primary water quality problem affecting most of the ponds is an overabundance of algae caused by elevated levels of phosphorus. Although many ponds had mean chlorophyll-a concentrations within an acceptable range, all exhibited extremely elevated maximum chlorophyll-a concentrations ranging from 21 to 166 ug/l. The presence of algal blooms diminishes the value of the ponds for virtually all uses and aggravates hypoxic conditions in the bottom waters of the ponds in the summer months. Recreational use becomes less appealing, aesthetic enjoyment is impaired, and habitat value is reduced. To support these designated uses, a chlorophyll level of 9 ug/l is set as an objective of this TMDL. *Id.* at 48.
61. North Easton Pond has a mean annual total phosphorus concentration of 114[ug/l], and a current load of 1470 kg/yr. *Id.* at 51.
62. At 1470 kg/yr, North Easton Pond has the highest current annual phosphorus load of any of the ponds in the study group. *Id.* at 51.

63. The TMDL allocation of phosphorus loads for North Easton Pond is 301 kg/yr. The waste load allocation (WLA) of phosphorus loads for North Easton Pond is 101.0 kg/yr. *Id.* at 53.
64. The WLAs are based on the amount of developed land that would contribute to the stormwater runoff in these water bodies. Letter, U.S. Env'tl. Prot. Agency, Approval of 9 Eutrophic Ponds and Mashapaug Pond TMDLs (Sept. 27, 2007) § 5, https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_blobs_id=67876; *see also Conservation Law Foundation v. EPA*, Defendant's Motion to Dismiss, Ex. 7, Dkt. 17-8 No. 1:15-cv-00165-ML-PAS (D.R.I. 2016).
65. Achieving water WQSs requires that both the volume of stormwater and its phosphorus concentration be reduced. 9 Eutrophic Ponds TMDL at 55.
66. A feasibility study must be conducted to determine the types and locations of BMPs that will be most effective in reducing stormwater volumes and phosphorus loading to the pond to the maximum extent feasible. *Id.* at 71.
67. DEM recommends infiltration, filtration, and/or retention BMPs throughout the identified catchments to reduce runoff volume and phosphorus loading of stormwater reaching North Easton Pond, rather than end-of-pipe solutions. *Id.* at 71.
68. Stormwater discharges from facilities that discharge "storm water associated with industrial activity" are regulated under the statewide general RIPDES permit prescribed in chapters 46-12, 42-17.1 and 42-35 of the Rhode Island General Laws. Two owners/operators of facilities are currently authorized to discharge to Bailey's Brook. With completion of this TMDL, consistent with Part I.C. of the general permit, facilities currently authorized to discharge under the permit must either demonstrate that the existing Storm Water Pollution Prevention Plan (SWPPP) is consistent with the TMDL or amend their plan demonstrating consistency with the TMDL. *Id.* at 71.
69. EPA approved the 9 Eutrophic Ponds TMDL on September 27, 2007. Letter, U.S. Env'tl. Prot. Agency, Approval of 9 Eutrophic Ponds and Mashapaug Pond TMDLs (Sept. 27, 2007), https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_blobs_id=67876.

70. EPA has determined that these TMDLs meet the requirements of §303(d) of the CWA and EPA's implementing regulations. *Id.*
71. The nine source reservoirs of the Newport Water System are nutrient-enriched and experience frequent algal and cyanobacteria blooms, which impact aquatic life and the reservoirs' use for drinking water purposes. Reducing algal abundance in the reservoirs should lessen Newport Water System's use of advanced treatment processes and associated operational costs. Press Release, R.I. Dep't of Env't'l Mgmt., DEM Announces March 31st Meeting to Discuss Launch of Source Water Protection Initiative for Newport's Drinking Water Resources (Mar. 20, 2015), <http://www.dem.ri.gov/news/2015/pr/0320152.htm>.
72. To protect water quality Commercial and Industrial Businesses can adhere to all laws, regulations, and recommended practices for hazardous waste management, above and underground storage tanks, and wastewater discharges. *Protect Your Drinking Water*, R.I. Dep't of Health, http://cels.uri.edu/rinemo/factsheets/aquidneck_factsheet.pdf (last visited Sept. 13, 2018).