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January 31, 2024

Terrence Gray
Director
Rhode Island Department of Environmental Management
235 Promenade St.
Providence, RI 02908-5767

RE: Petition for Determinations (1) that Unpermitted Commercial, Industrial, and Residential Dischargers Contribute to Water Quality Standards Violations in the Mashapaug River Watershed, Rhode Island, and (2) that RIPDES Permitting of Such Properties is Required

Dear Director Gray,

The Office of the Rhode Island Attorney General hereby petitions you, as the Director of the Rhode Island Department of Environmental Management ("RIDEM"), for a determination, pursuant to 40 C.F.R. § 122.26(f)(2), that discharges of stormwater from unregulated sources in the Mashapaug Watershed "contribute to the violation of water quality standards," *id.*, in Mashapaug and Spectacle Ponds (the "Ponds").

The Ponds have been impaired for their designated uses for decades, contributing to public health hazards in these Environmental Justice Focus Areas identified by RIDEM itself.[1] Efforts to control stormwater and its toxic consequences through municipally separate storm sewer systems ("MS4") and other established permit

[1] Rhode Island Department of Environmental Management, *Department of Environmental Management Environmental Justice Policy Version 1.4*, (September 28, 2023) https://dem.ri.gov/sites/g/files/xkgbur861/files/2023-09/ridem-environmental-justice-policy_0.pdf.

schemes have been inadequate to meet water quality standards in the Ponds in the more than 25 years these Ponds have appeared on Rhode Island's list of impaired waterways. RIDEM has the authority pursuant to its designation by the United States Environmental Protection Agency's ("EPA") to establish a permitting system applicable to surrounding impervious surface owners under 40 C.F.R. § 122.26(a)(9)(i)(D) and (f)(2) and to thereby regulate stormwater discharge on top of the MS4 permit system. Issuing Rhode Island Pollution Discharge Elimination System (RIPDES) permits would be entirely consistent with RIDEM's discretionary authority. RIDEM's use of this authority would open the door to protection of waterways as has been initiated in similar Environmental Justice neighborhoods in Massachusetts.[2]

RIDEM has an obligation to determine whether these waters require this level of protection. As a Vermont court has explained, exercise of discretion in determining whether residual designation authority is needed is "not optional."[3] Moreover, Rhode Island's 2021 Act on Climate compels RIDEM, like all state agencies, to exercise its existing authority with the additional purpose of achieving "climate change mitigation, adaptation, and resilience." R.I. Gen. Laws § 42-6.2-8. As our changing climate increases rainfall across our state, urban areas with a high percentage of impervious surface, like the Mashapaug watershed, are at increasing risk for environmental and infrastructure damage.

Implementation of a general permit, like the one the EPA is developing in Massachusetts, would have co-benefits in managing urban stormwater runoff for climate change mitigation and adaptation purposes. Moreover, a general permit can provide a menu of no- and low-cost options for small businesses to mitigate stormwater on their property, making it a practical solution to control stormwater runoff for commercial, industrial, and institutional properties with one acre or more of impervious surface.

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[2] EPA, *Clean Water Act Residual Designation Determination for Certain Stormwater Discharges in the Charles, Mystic, and Neponset River Watersheds, in Massachusetts*, (Sept. 14, 2022) https://www.epa.gov/system/files/documents/2022-09/epa-r1-rda-determination-charles-mystic-neponset-2022-combine-signed.pdf.

[3] *In re Stormwater NPDES Petition*, 910 A.2d 824, 835 (2006) (holding state agency erred in failing to make decision on petition and stating that "while [the agency] may believe that the "multi-prong" analysis necessary to determine the propriety of NPDES stormwater permits lends itself to a single, case-by-case approach, the federal regulations nevertheless plainly authorize a more categorical approach within a broad geographic setting.").

The Office of the Attorney General therefore brings this petition for RIDEM to confirm that unpermitted nonpoint sources of stormwater are "contributing to a water quality violation" in the Ponds, and to issue a general stormwater permitting scheme in addition to the existing MS4 permits applicable to the area. In doing so, the Office of the Attorney General adds its petition to the petition of the Conservation Law Foundation dated November 19, 2018, which remains pending, undecided, with RIDEM.

I. THE CLEAN WATER ACT PROVIDES LEGAL AUTHORITY FOR RIDEM TO ACT NOW.

A. The Clean Water Act and its Regulations Were Expressly Amended to Add Authority to Regulate Nonpoint Sources of Stormwater Pollution.

Pollution from stormwater is not a new issue. Almost 40 years ago, Congress amended the Clean Water Act to specify particular point sources of stormwater discharges that should be subject to permitting under the National Pollution Discharge Elimination System (NPDES): (1) industrial sites; (2) large MS4 systems; and (3) small MS4 systems. 33 U.S.C. § 1342(p). In setting forth a schedule to develop regulations, Congress also afforded states a catchall authority, which is now often referred to as the residual designation authority, 40 CFR 122.26(a)(9)(i)(C)-(D), to require NPDES permits of *other* sources if EPA or a state "determines that the stormwater discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States." Clean Water Act (CWA) § 402(p)(2)(E). EPA has further explicated this authority through regulation, and the Director of the state NPDES program (here, Director of RIDEM) may require NPDES permits for other sources of stormwater discharge upon determination that the discharge 1) contributes to a violation of water quality standards, 2) is a significant contributor of pollutants to protected surface waters; or 3) waste load allocations that are part of Total Maximum Daily Loads (TMDLs) that address the pollutant(s) of concern require additional controls.[4] People may petition EPA or the delegated states, such as Rhode Island, to utilize this authority. 40 CFR 122.26(f).

[4] *Id*.

B. Residual Designation Authority Has Been Used to Address Urban Stormwater.

Decades passed without use of this authority while EPA and the states concentrated on developing, approving, and enforcing MS4 permits for large and small systems. Then, in 2009, as a result of a "petition filed by the Conservation Law Foundation (CLF) and a Judgment Order issued by the Vermont Environmental Court[,]"[5, 6] The Vermont Department of Environmental Conservation exercised its Residual Designation Authority for discharges to five watersheds that failed to "meet the Vermont Water Quality Standards due primarily to excess stormwater runoff."[7, 8] Vermont chose to exercise its RDA only as applied to point sources.[9] However, more recently, EPA has utilized its RDA in urban watersheds to regulate non-point sources in response to three petitions by Conservation Law Foundation ("CLF") requesting determinations that certain commercial, industrial, institutional, and multi-family residential property dischargers in the Charles River, Mystic River, and Neponset

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[5] Vermont Department of Environmental Conservation, *Frequently Asked Questions (FAQ) Vermont Agency Of Natural Resources Initial Designation Pursuant To Clean Water Act*, (last visited Oct. 21, 2023) https://dec.vermont.gov/sites/dec/files/wsm/stormwater/docs/PermitinformationResidualDesignationAuthority/sw_rda_faq.pdf.

[6] *In re: Stormwater NPDES Petition (Conservation Law Foundation Appeal)* Docket No. 14-1-07 Vtec (Aug. 28, 2008) (available at: https://dec.vermont.gov/sites/dec/files/wsm/stormwater/docs/PermitinformationResidualDesignationAuthority/sw_docket_petition_14-1-07.pdf).

[7]Department of Environmental Conservation, *Residual Designation Authority (RDA)*, Vermont Agency of Natural Resources, (last visited Oct. 19, 2023) https://dec.vermont.gov/watershed/stormwater/permit-information-applications-fees/rda.

[8] *Compare National Pollutant Discharge Elimination System (Npdes) General Permit 3-9030 For Designated Discharges To The Bartlett, Centennial, Englesby, Morehouse And Potash Brook Watersheds* https://dec.vermont.gov/sites/dec/files/wsm/stormwater/docs/PermitinformationResidualDesignationAuthority/sw_rda_permit_FINAL.pdf *with General Permit 3-9050 (2020) For Operational Stormwater Discharges* ("This general permit supersedes previously issued General Permit 3-9010, General Permit 3-9015, and General Permit 3-9030. Under this general permit, existing valid authorizations under General Permit 3-9010, General Permit 3-9015, and General Permit 3-9030 shall remain in full force and effect.") https://dec.vermont.gov/sites/dec/files/wsm/stormwater/docs/2020_09_01%20Final%20GP%203-9050.pdf

[9] *Id.*

River watersheds in Massachusetts contribute to water quality standards violations and that NPDES permitting of such properties is required.[10]

Significantly, in granting the petitions in 2022, EPA found that while "any one of the factors in 40 C.F.R. § 122.26(a)(9)(i)(C), (D) are alone sufficient to support an RDA determination, EPA demonstrates that all three factors are present for this RDA determination," in that, "such stormwater discharges contribute to water quality standards violations, are significant contributors of pollutants to waters of the United States, and need to be controlled based on waste load allocations that are part of the TMDLs that address phosphorus and/or bacteria."[11] Ultimately, EPA Region 1 exercised its discretionary RDA "under CWA § 402(p)(2)(E) and implementing regulations to designate for [NPDES] permitting certain stormwater discharges from commercial, industrial, and institutional properties[] with one acre or more of impervious surface[] in the Charles, Neponset, and Mystic River watersheds in Massachusetts."[12] EPA specified that "contiguous commercial, industrial, or institutional properties with the same owner or operator where the combined land area contains one acre or greater of impervious surface" were covered by the designation, while any areas covered by specific MS4 permits were exempted. Moreover, EPA indicated that it would not issue individual NPDES permits but would instead issue one or more general permits, which is a simplified process for permit development and compliance. The EPA is currently in the process of conducting stakeholder outreach to best inform the permitting process.[13] Region 1 intends to issue a draft RDA general permit by the end of summer 2024.[14]

EPA Region I's actions set forth a path for delegated states, like Rhode Island, to issue similar determinations.

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[10] EPA, David Cash, Regional Administrator, *Clean Water Act Residual Designation Determination for Certain Stormwater Discharges in the Charles, Mystic, and Neponset River Watersheds, in Massachusetts*, (Sept. 14, 2022) https://www.epa.gov/system/files/documents/2022-09/epa-r1-rda-determination-charles-mystic-neponset-2022-combine-signed.pdf.

[11] *Id.* at p. 4, FN 24.

[12] *Id.*

[13] EPA, *April 2023 Update: Residual Designation Activities Underway for the Charles River, Neponset River and Mystic River Watersheds,* (April 2023) https://www.epa.gov/npdes-permits/april-2023-update-residual-designation-activities-underway-charles-river-neponset.

[14] *Id*.

II. RIDEM Has Already Identified and Quantified Ongoing Violations of Water Quality Standards in the Ponds.

A. For at Least 25 Years, Waterbodies in the Mashapaug Pond Watershed Have Been Impaired By Pollutants or Have Not Attained Their Designated Uses.

The Mashapaug Pond Watershed (the "Watershed" or "Mashapaug Watershed") includes Mashapaug, Tongue, and Spectacle Ponds, which are all hydrologically connected via natural topography, manmade ditches, and Mashapaug Brook. The Watershed encompasses approximately 308 hectares (762 acres) of urban land, is 83% developed, and has an impervious cover of 61%, as shown in Figure 1.[15]

Figure 1 – Impervious Surfaces Map - RIDEM Environmental Resource Map. Spring 2020.

Since at least 1998, Mashapaug and Spectacle Ponds have been listed on Rhode Island's 303(d) List of Impaired Waters for excess algal growth, dissolved oxygen, total phosphorus, and fecal coliform, due in large part to the significant number of impervious surfaces within the watershed.[16, 17]

When waterbodies consistently fail to meet water quality standards ("WQS") applicable to their

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[15] Rhode Island Department of Environmental Management, *R.I. Statewide TMDL for Bacteria Impaired Waters Mashapaug Pond Watershed Summary*, (June 2011) https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/swbpdf/mashpaug.pdf.

[16] Department of Environmental Management, *State of Rhode Island 1998 303(d) List of Impaired Waters*, (July 1998) https://dem.ri.gov/sites/g/files/xkgbur861/files/pubs/303d/303d98.pdf.

[17] Department of Environmental Management, *State of Rhode Island 2022 Impaired Waters Report*, (Dec. 2021) https://www.epa.gov/system/files/documents/2022-03/2022-ri-list-report.pdf.

designated uses,[18] Section 303(d) of the Clean Water Act mandates establishment of Total Maximum Daily Loads for "all pollutants violating or causing violation of applicable water quality standards."[19] These TMDLs set "allowable loadings of pollutants or other quantifiable parameters for a water body, based on the relationship between pollution sources and in-stream water quality conditions."[20]

Accordingly, in 2007, RIDEM took the important next step by establishing TMDLs for both Mashapaug Pond, covering dissolved oxygen and phosphorus, and Spectacle Pond for phosphorus.[21, 22, 23] However, despite this regulatory step, both Ponds have remained on the 303(d) list and suffer frequent algal blooms, including those containing toxic cyanobacteria.[24] These long-term impairments have caused this watershed to have no contact advisories that stretch months at a time, many of which are shown in Figure 2 below. [25]

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[18] Mashapaug and Spectacle Ponds are Class B water bodies, meaning that they are "designated for fish and wildlife habitat and primary and secondary contact recreational activities." This designation means that Mashapaug and Spectacle Ponds "shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses[,]" and that the "waters shall have good aesthetic value." *Id.*

[19] *Id.*

[20] *Id.*

[21] Letter, U.S. Envtl. Prot. Agency, *Approval of 9 Eutrophic Ponds and Mashapaug Pond TMDLs* (Sept. 27, 2007) https://attains.epa.gov/attains-public/api/documents/actions/RIDEM/33511/109493 (EPA approved the Mashapaug Pond and 9 Eutrophic Ponds TMDLs, explicitly including the stormwater waste load allocations.

[22] Rhode Island Department of Environmental Management, *R.I. Statewide TMDL for Bacteria Impaired Waters Mashapaug Pond Watershed Summary*, June 2011, https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/rest/pdfs/mashpaug.pdf

[23] *See* State of Rhode Island Department of Environmental Management, *TMDL and Water Quality Restoration Study Documents* (last visited Oct. 19, 2023) https://dem.ri.gov/environmental-protection-bureau/water-resources/research-monitoring/restoration-studies-tmdl-documents.

[24] Department of Environmental Management, *State of Rhode Island 2022 Impaired Waters Report*, (Dec. 2021) https://www.epa.gov/system/files/documents/2022-03/2022-ri-list-report.pdf.

[25] Rhode Island Department of Environmental Management, *Cyanobacteria (Blue-Green Algae)* https://dem.ri.gov/environmental-protection-bureau/water-resources/research-monitoring/cyanobacteria-blue-green-algae.

Figure 2 – Contact Advisories within Mashapaug Watershed.

Waterbody	Advisory Date	Post Advisory Date	Lift
Mashapaug Pond	9/23/11	11/1/11	
Spectacle Pond	9/23/11	11/1/11	
Mashapaug Pond	8/15/12	11/1/12	
Mashapaug Pond	7/30/13	11/2/13	
Mashapaug Pond	9/11/14		
Spectacle Pond	9/24/14	11/1/14	
Mashapaug Pond	9/16/16	12/15/16	
Spectacle Pond	7/24/17	12/29/17	
Mashapaug Pond	9/12/17	11/2/17	
Mashapaug Pond	7/25/18	12/8/18	
Spectacle Pond	9/10/18	12/8/18	
Mashapaug Pond	8/9/19	12/17/19	
Spectacle Pond	9/10/20	12/7/20	
Mashapaug Pond	9/28/20	12/31/20	
Mashapaug Pond	7/13/21	12/7/21	
Spectacle Pond	7/13/21	12/21/21	
Mashapaug Pond	7/22/22	12/29/22	
Spectacle Pond	7/28/2023	08/25/23	
Spectacle Pond	10/06/2023	Ongoing	
Mashapaug Pond	10/06/2023	Ongoing	

B. Current RIDEM Efforts Fall Short and Do Not Remedy the Impairments.

While these waterbodies have TMDLs in place, TMDLs are "neither self-implementing nor directly enforceable."[26] Rather, TMDLs are needed as a step towards clean-up and "serve[] as an informational tool that the EPA and the states use in seeking to achieve the specified pollutant levels — and the applicable water quality standards — by means of discharge permits and other regulatory tools."[27] In a 2019 decision affirming the authority of the Maryland Department of the Environment's issuance of storm sewer permits, the Court of Appeals of Maryland held: "To enforce the TMDL limits and corresponding water quality standards, agencies that issue discharge permits seek to ensure that the total pollution discharged by point sources does not exceed the wasteload allocations in the relevant TMDLs."[28] In other words, TMDLs need secondary actions to achieve the goals set forth.

Current regulation is not sufficient to bring these burdened waters to safe levels. The Clean Water Act's National Pollution Discharge Elimination System stormwater program, adopted by Rhode Island through its federally approved RIPDES program, only directly regulates stormwater discharges from three main sources: Municipal Separate Storm Sewer Systems, construction activities, and industrial activities. These sources of stormwater account for only a fraction of the total pollutant load entering waterbodies and generally do not include most large impervious surfaces such as parking lots or strip malls.

As a result, the current attempts at meeting water quality standards for Mashapaug Pond largely are limited to the MS4s that collect runoff from paved surfaces and drain directly into the pond.[29] However, these storm drains only account for 22% of the phosphorus load in Mashapaug Pond and are already regulated as point sources

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[26] *Maryland Dep't of the Env't v. Cnty. Commissioners of Carroll Cnty.*, 465 Md. 169, 193, 214 A.3d 61, 75 (2019) (citing *American Farm Bureau Federation v. EPA*, 984 F. Supp. 2d 289, 297-98 (M.D. Pa. 2013), aff'd, 792 F.3d 281 (3d Cir. 2015)).
[27] *Id.*
[28] *Id.*
[29] RIDEM, *Total Maximum Daily Load For Dissolved Oxygen and Phosphorus Mashapaug Pond, Rhode Island,* (Sept. 2007) pp. 13-14 https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/rest/pdfs/mashpaug.pdf.

with NPDES permits.[30] Likewise, MS4 permits for Cranston and Woonsocket municipal systems around Spectacle Pond only account for eight[31] out of thirty-five outfalls identified as contributing to the TMDL for Spectacle Pond in 2007.[32] There are a handful of point sources with RIPDES permits that likewise are ineffective to keep pollutants entering these waterbodies within the TMDL. [33, 34]

In other words, despite a degree of regulation, many sources of urban stormwater in the Mashapaug Watershed are left unregulated as they are not required to obtain a permit or mitigate their stormwater pollution, despite contributing significantly to the stormwater problem and pollution.[35]

III. RIDEM Should Designate Stormwater Discharges from Commercial, Industrial, and Institutional Properties with One Acre or More of Impervious Surface Within the Mashapaug Watershed for RIPDES Permitting.

A. Urban Stormwater is a Significant Contributor of Pollutants and Gives Rise to Water Quality Standards Violations in these Impaired Waterbodies.

In RIDEM's own words, "[i]mpervious surfaces within the watershed impact the water quality of Mashapaug Pond." Moreover, as RIDEM noted in the TMDL for

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[30] Roseen, R., *Expert Report TMDL Attainability Analyses for Phosphorus and Fecal Coliform for Mashapaug Pond, Rhode Island*, (Nov. 13, 2008) p. viii; 42, https://www.clf.org/wp-content/uploads/2018/11/Expert-Report-Mashapaug-Pond.pdf.

[31] RIDEM, *MS4 Resource Map*, https://ridemgis.maps.arcgis.com/apps/webappviewer/index.html?id=1fdee2179c1e4da3ac75a48b4b7931da (select "Stormwater Outfall" layer and navigate to Spectacle and Tongue Ponds).

[32] RIDEM, *Total Maximum Daily Loads for Phosphorus To Address 9 Eutrophic Ponds in Rhode Island*, (Sept. 2007). Fig. A.7 & Table B.6, https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/rest/pdfs/eutropnd.pdf

[33] *Id.*

[34] RIDEM, *Total Maximum Daily Load For Dissolved Oxygen and Phosphorus Mashapaug Pond, Rhode Island,* (Sept. 2007) pp. 13-14 https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/rest/pdfs/mashpaug.pdf.

[35] *Compare* Deegan, David, EPA, *EPA Implements Advanced Effort to Protect Water Quality in Three Boston-area River Watersheds* (Sept. 14, 2022) https://www.epa.gov/newsreleases/epa-implements-advanced-effort-protect-water-quality-three-boston-area-river, (stating that "much of this pollution comes directly from stormwater originating from certain commercial, industrial, and institutional sources [. . .] which are not currently required to be covered by an existing permit.")

Spectacle Pond, "[s]tormwater runoff has long been recognized as a major source of total phosphorus in urban environments."[36] The Mashapaug Watershed has a "large amount of impervious surfaces" which cause "a substantial increase in the volume of stormwater during rain events."[37] That increased volume in stormwater often results in "[l]ocalized flooding [. . .] when rainfall overwhelms the capacity of urban drainage systems."[38] In addition to flooding, "[b]ecause stormwater flows over hard surfaces directly into a water body or storm drain, there is no opportunity for soil and plants or a water treatment facility to filter out pollutants."[39] Essentially, much more water arrives into a waterbody, much more quickly, and brings with it an increased amount of pollutants picked up from the impervious surfaces, like sediments, organic pollutants, phosphorus, nitrogen, pesticides, metals, oil, and grease.[40] One of the most problematic pollutants is phosphorus, as it is a limiting nutrient for algae growth, meaning that the more that gets added to the system, the more algae will prosper.[41] And that is exactly the mechanism that has lead the Mashapaug Watershed to its current nonattainment status even after many decades of attention to water quality in the ponds.

RIDEM has already been presented with evidence that existing efforts will not restore these waters to their designated uses. RIDEM itself continues to list Mashapaug and Spectacle Ponds as "not supporting" at least some of each of the Ponds' designated uses.[42] As discussed in the expert report prepared by Robert M. Roseen, Ph.D., P.E., D.W.R.E ("Roseen") for Conservation Law Foundation, "[t]he total existing load (231.60 kg/yr) must be reduced by 53.5% to achieve the TMDL

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[36] Rhode Island Department of Environmental Management, *R.I. Statewide TMDL for Bacteria Impaired Waters Mashapaug Pond Watershed Summary*, at viii https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/rest/pdfs/eutropnd.pdf

[37] Rhode Island Department of Environmental Management, *R.I. Statewide TMDL for Bacteria Impaired Waters Mashapaug Pond Watershed Summary*, at 55 https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/rest/pdfs/mashpaug.pdf

[38] EPA, *Manage Flood Risk* (last visited Sept. 18, 2023) https://www.epa.gov/green-infrastructure/manage-flood-risk

[39] EPA, *Sources and Solutions: Stormwater*, (last visited Sept. 18, 2023) https://www.epa.gov/nutrientpollution/sources-and-solutions-stormwater

[42] DEM, *2022 Integrated Report Waterbody Tables* https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/pdf/irrc22.pdf.

(107.70 kg/yr)." With respect to oxygen deprivation, Dr. Roseen's work has concluded, "a nutrient load reduction of 62% from all storm drains and direct overland runoff areas as well as the base flow from Spectacle Pond was required in order to meet the water quality standard for hypoxia."[43, 44]

B. Existing Efforts Have Not Solved the Problem.

With the need for significant reductions in mind, Roseen ran a number of scenarios, each of which could onlyachieve attainment of the TMDL designated uses if RIDEM exercises its residual designation authority. He concluded that RIDEM would have to "expand[] the scope of its stormwater permitting program to also manage runoff from all residential, commercial, and industrial parcels[.]"[45] Importantly, because Roseen's analysis assumes the achievement – not yet realized – of "a 54% phosphorus load reduction from the entire Spectacle Pond watershed[,]" he concluded that to meet the Phosphorus TMDL, RIDEM would likely have to implement RDA in the area around Mashapaug Pond, and also "expand RDA to the area surrounding Spectacle Pond."[46]

Significant efforts have been made by adjacent municipalities, Cranston and Providence, to implement best management practices for stormwater and nutrients to comply with their MS4 RIPDES permits. The efforts by Cranston in mitigating pollution into Mashapaug Pond are found primarily through best management practices (BMPs) adjacent to Spectacle Pond, which is a source of pollution to Mashapaug Pond as described above. Cranston currently maintains four types of BMPs: 70 retention basins, 5 Vortechnic units, 2 bioretention basins, and one

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[43] Roseen, R. (2018) *Expert Report TMDL Attainability Analyses for Phosphorus and Fecal Coliform for Mashapaug Pond, Rhode Island*, p. 6 (available at: https://www.clf.org/wp-content/uploads/2018/11/Expert-Report-Mashapaug-Pond.pdf) (emphasis added).

[44] Rhode Island Department of Environmental Management, *R.I. Statewide TMDL for Bacteria Impaired Waters Mashapaug Pond Watershed Summary*, at 60 Table 6-1 *Summary of Corrective Measures* https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/quality/rest/pdfs/mashpaug.pdf (Noting in the "Summary of Corrective Measures" that RIDEM included in the Mashapaug Pond TMDL, Spectacle Pond is listed as a pollution source to Mashapaug.).

[45] Roseen, R. (2018) *Expert Report TMDL Attainability Analyses for Phosphorus and Fecal Coliform for Mashapaug Pond, Rhode Island*, p. 6 (available at: https://www.clf.org/wp-content/uploads/2018/11/Expert-Report-Mashapaug-Pond.pdf) .

[46] Roseen, R. (2018) *Expert Report TMDL Attainability Analyses for Phosphorus and Fecal Coliform for Mashapaug Pond, Rhode Island*, p. 6 (available at: https://www.clf.org/wp-content/uploads/2018/11/Expert-Report-Mashapaug-Pond.pdf).

underground infiltration basin.[47] Included in these numbers are recent activities related to Spectacle Pond, which include: the 2017 installation of a bioretention swale on Narragansett Boulevard, the design and installation of an underground infiltration system and a vegetated infiltration basin near Spectacle Pond at the end of Cottage and Carlton Streets, and an additional stormwater underground infiltration basin at the end of Barrett Street.[48] Cranston's MS4 indicates that it will be adding an additional underground infiltration basin at Pomham Street in 2023.[49] Crucially, however, Cranston has yet to implement a procedure for ensuring proper operation and maintenance of privately-owned BMP's.[50]

Providence maintains an index of both municipal and private BMP's which, even when combined, demonstrate a severe lack of effective management practices around Mashapaug Pond. [51] The Providence Parks Department maintains a single vegetated infiltration basin at JT Owens Park near Mashapaug Pond.[52] As for private BMP's, the index shows a bioretention area at 125 Dupont Drive (owned by Providence Water), along with a cobble swale at 10 Park Lane (owned by Brown University).[53] As stated in the *Year 18 RIPDES Small MS4 Annual Report*, the comprehensive list of privately-owned BMP's has not been revised since 2017.[54] Further (and similar to Cranston), Providence does not maintain a system for tracking inspection, maintenance, or complaints surrounding privately-owned BMPs. [55]

Providence, in connection with Rhode Island Groundwork, is currently installing right-of-way bioswales in residential sidewalks to promote infiltration and increase the water quality entering the MS4.[56] It is also anticipated that municipal projects will incorporate water quality BMP's moving forward thanks to the Green and

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[47] Tally, E., City of Cranston Department of Public Works, *2022 Annual Report RIPDES Permit NO. RIR040012, Cranston, RI*, Appendix L List of BMPs (March. 9, 2023).
[48] *Id.* at Appendix B: Audubon Spring 2021 Report p. 19; *id.* at Appendix L List of BMPs; *id.* at Appendix N; *id.* at Appendix D.
[49] *Id.* at Appendix O; at Appendix E.
[50] *Id.* at Appendix O.
[51] Perrotto, L., City of Providence Department of Public Works, *RIPDES Small MS4 Annual Report Permit NO. RIR040005,* Appendix C (Jan. 2021 – Dec. 2021).
[52] *Id.*
[53] *Id.*
[54] *Id.* p. 16.
[55] *Id.* p. 19.
[56] *Id.* p. 24.

Complete Streets Ordinance of 2021.[57] It is unclear based on current reports and the BMP index if these anticipated projects will take place within the Mashapaug Pond Watershed, or to what effect.

Rhode Island's experience echoes the situation that led EPA to exercise residual designation authority in Massachusetts. EPAs determination specifically highlights that the MA cities and towns had already made significant efforts to reduce phosphorus in municipal stormwater and are subject to MS4 permits that cover municipal direct discharges and discharges from residents and certain businesses that connect to the MS4 system.[58] For example, EPA stated in the Record of Decision ("ROD") that "[c]ontrols of additional sources and enhanced controls of sources currently regulated under the NPDES program, such as MS4s, will also be necessary."[59] However, EPA found that a significant portion of the phosphorus load also comes directly from privately-owned or unregulated sources that bypass the MS4 systems, and residual designation is required to achieve necessary reductions to reach the TMDL, beyond those reductions achievable under the MS4 permit.[60]

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[57] *Id.* p. 24. PROVIDENCE, RI, CODE OF ORDINANCES ch. 23, art. VII, § 23-191 et. seq. (2023).

[58] *See,* EPA, *Record Of Decision Residual Designation Pursuant to CWA for Charles River Watershed*, at pg. 21, https://www.epa.gov/sites/default/files/2015-03/documents/rodfinalnov12.pdf (stating that, "significant reductions from numerous phosphorus sources in the Charles River watershed will be necessary to meet the waste load allocations of the TMDL. Some of those reductions can be achieved through the implementation of an existing consent decree (CSOs) or through the enforcement of current permits and the reissuance of permits that are consistent with the WLAs (MS4 and WWTF permits). Even after those reductions are made, significant additional reductions from land generating high phosphorus loads in storm water must be made to assure water quality is consistent with Massachusetts water quality standards and to meet the WLAs of the TMDL. This residual designation helps to assure that those additional phosphorus reductions are secured through the reliable, enforceable process provided by the NPDES permitting program."); EPA, David Cash, Regional Administrator, *Clean Water Act Residual Designation Determination for Certain Stormwater Discharges in the Charles, Mystic, and Neponset River Watersheds, in Massachusetts*, (Sept. 14, 2022) https://www.epa.gov/system/files/documents/2022-09/epa-r1-rda-determination-charles-mystic-neponset-2022-combine-signed.pdf (stating on p. 27 that "WQS and TMDL goals can be met through a combination of actions by municipalities as required by the 2016 MA MS4 permit as well as actions on private parcels containing the largest amount of impervious surface (the parcels with the largest relative contribution of pollutants via stormwater) but cannot be met by municipalities' actions alone.")

[59] EPA, *Record Of Decision Residual Designation Pursuant to CWA for Charles River Watershed*, at pg. 25, https://www.epa.gov/sites/default/files/2015-03/documents/rodfinalnov12.pdf

[60] *Id.*

The Massachusetts determination also emphasizes that large impervious areas are one of the last major unregulated sources of water pollution, and a chief culprit in dramatic algal blooms – including toxic cyanobacteria – as well as high bacteria levels that have plagued the Charles, Mystic, and Neponset in recent years.[61] Extensive impervious cover also aggravates the severity of flooding because those areas diminish the amount of land that can naturally soak in and filter rainwater, moving even more pollutants into waterways.

EPA Region I reasoned that use of residual designation authority "prepares the way for greater accountability and places responsibility for cleaning up pollution squarely on those responsible – greatly reducing the burden faced by cities and towns throughout these watersheds."[62] EPA Region I therefore designated commercial, industrial, and institutional properties with one acre or more of impervious surface as additional sources that require a permit, and anticipates that a future general permit will require these sources to implement some combination of "well-proven and easily implemented" best management practices like "leaf litter pickup, parking lot sweeping, installing rain gardens or other infiltration practices, planting trees, reducing pavement or utilizing pervious pavement."[63] As discussed above, Cranston and Providence have already committed to the MS4 permitting scheme and invested in best management practices to implement the requirements of their permits. Nevertheless, RIDEM's own monitoring reflects that both Spectacle and Mashapaug Ponds have not achieved their intended uses. Therefore, a determination should be made that other impervious surface owners, like commercial, industrial, and institutional properties with one acre or more of impervious surface, must contribute to efforts to reduce stormwater runoff in these watersheds.

Moreover, even if RIDEM were to believe more information is needed to make its determination notwithstanding the investigations to date, RIDEM should respond fully and timely to this petition. The regulation requires the Director to act expeditiously; he "shall make a final determination on any petition received under this section within 90 days after receiving the petition." 40 C.F.R. § 122.26(f). EPA Region I "gather[ed] and analyz[ed] additional evidence" after petitions were

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[61] *Id.*
[62] *Id.*
[63] Deegan, David, EPA, *EPA Implements Advanced Effort to Protect Water Quality in Three Boston-area River Watersheds* (Sept. 14, 2022) https://www.epa.gov/newsreleases/epa-implements-advanced-effort-protect-water-quality-three-boston-area-river.

lodged.[64] If RIDEM feels such additional evidence is necessary, it should similarly act on its own initiative, but in any event within 90 days of receipt of this petition. Of note, in Massachusetts, the petitioners filed a Notice of Intent to File Suit Under the Clean Water Act after EPA Region I failed in its mandatory duty to make a determination in the specified time period. *Id.*

C. Under the Act on Climate, RIDEM Must Use Its Discretion to Mitigate Effects of Climate Change By Regulating All Sources of Urban Stormwater.

On April 14, 2021, Governor Dan McKee signed into law the 2021 Act on Climate, which sets mandatory climate emissions reduction goals culminating in net-zero emissions by 2050. At the current rate of climate change, New England will experience a staggering 12 to 14 degrees Fahrenheit increase in temperature by the end of the century due to an exorbitant amount of atmospheric carbon dioxide.[65] This warming trend has already led to more intense and frequent precipitation events. New England is expected to experience increased rainfall, already seeing a 10% increase over the last hundred years.[66] The EPA notes that more intense storms will result in overwhelmed sewer systems and exacerbate water pollution through runoff.[67] A warming climate will further worsen contamination of waterways, as algal blooms flourish in the heat.[68]

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[64] EPA, *Record Of Decision Residual Designation Pursuant to CWA for Charles River Watershed*, at pg. 3, https://www.epa.gov/sites/default/files/2015-03/documents/rodfinalnov12.pdf

[65] Select Committee on Energy Independence and Global Warming Global Warming Impact Zones, *Global Warming in New England: Slushier Slopes and Faded Foliage*, senate.gov, (last visited Oct. 19, 2023) https://www.markey.senate.gov/imo/media/globalwarming/impactzones/newengland.html#main_content.

[66] *See* Hersher, R. *A new study predicts a huge increase in catastrophic hurricanes for the northeastern U.S.*, National Public Radio, (Feb 3, 2023) https://www.npr.org/2022/02/03/1077775237/a-new-study-predicts-a-huge-increase-in-catastrophic-hurricanes-for-the-northeas.

[67] Climate Change Adaptation Resource Center, *Climate Adaptation and Stormwater Runoff* (last visited Oct. 19, 2023) https://www.epa.gov/arc-x/climate-adaptation-and-stormwater-runoff.

[68] EPA, *Climate Change and Harmful Algal Blooms: Nutrient Pollution* (last visited Oct. 19, 2023) https://www.epa.gov/nutrientpollution/climate-change-and-harmful-algal-blooms#:~:text=Harmful%20algae%20usually%20bloom%20during%20the%20warm%20summer,mixing%2C%20allowing%20algae%20to%20grow%20thicker%20and%20faster.

These events are already happening. This fall, a series of tropical storm remnants and other types of rainstorms led to dramatic flooding in Providence, leading to serious property damage and spurring looting.[69] As the Providence mayor told reporters, "Recent rainstorms are an example of the extreme weather that we're starting to see more frequently . . . And even the most robust sewer system can't handle as much rain as we've been receiving in recent storms in such a short period of time."[70] In other words, lived experience supports what environmental monitoring has been warning for years—MS4 permitting, including sewer system upgrades and adjunctive best management practice, is not enough to mitigate the increased dangers from stormwater due to climate change.

Additional economic and public health impacts from the increased stormwater events include, "[b]each closures due to water quality concerns [which] pose major disruptions and economic losses to [the [beach recreation and coastal tourism] sector of Rhode Island's economy[,]"and risk to the fishing and shell fishing industry. [71] In fact, "stormwater contamination [i]s a leading factor causing high bacteria counts that require the closing of beaches[.]"[72]

The Rhode Island Executive Climate Change Coordinating Council ("EC4"), recently issued the 2022 Climate Update pursuant to statutory mandate.[73] In the 2022 Climate Update, the EC4 identified priority actions related to land use and explained that:

> "Plants on our lands and in our oceans can absorb carbon dioxide, acting as a sink for emissions. However, removing natural elements of our land to develop our built environment (for roads, renewable energy resources and other uses) can take away the land's ability to sequester

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[69] Amy Russo & Wheeler Cowperthwaite, *Weather Woes In Region – Providence Cleans Up Mess: More rain and a hurricane loom following extensive flooding from heavy downpours*, The Providence Journal (Sep. 13, 2023).
[70] *Id.*
[71] SNEP Network, *Financing Climate Resilience, Stormwater Management, and Green Infrastructure in Rhode Island*, (June 2022) https://snepnetwork.org/wp-content/uploads/2022/07/Network_Financing_Report_FINAL.pdf
[72] *Id.*
[73] Rhode Island Executive Climate Change Coordinating Council (EC4), *Rhode Island 2022 Climate Update*, (Dec. 15, 2022) https://climatechange.ri.gov/media/1261/download?language=en.

> carbon dioxide. Beyond impacts on emissions – or climate change mitigation – how we use our lands is of critical importance in relation to climate change adaptation – our ability to reduce damages from and recover from the impacts of climate change like intense storms, extreme heat, and flooding." [74]

EC4 also repeatedly mentioned the Municipal Resiliency Program, which funds municipal green infrastructure and nature-based climate solutions projects as a key accomplishment of the state in its efforts to mitigate climate change since 2016.[75] Many municipalities have made use of these funds specifically to implement stormwater management projects.[76] Mitigating stormwater issues often involves installing bioswales, using porous materials for otherwise impervious surfaces, reducing parking sizes or driveway widths, installing rain gardens, capturing and re-using rain in rain barrels, installing retention basins, and more.[77] These strategies not only would keep the Mashapaug watershed cleaner, but stormwater mitigation would also result in less impervious surface area, and therefore less extreme flooding. Green Infrastructure not only "reduces flood risks and bolsters the climate resiliency of communities by capturing rain where it falls and keeping it out of sewers and waterways[,]" but also acts as an additional "sink" to absorb carbon dioxide.[78]

RIDEM's exercise of discretion to require broader RIPDES stormwater permitting would not only mitigate the effects of climate change on water, environment, and local communities, but could also help to combat climate change itself. One of many solutions for reducing carbon dioxide is land restoration: converting impervious surfaces into areas with vegetation and soil.[79] This action would both help waterbodies meet their standards by allowing runoff to filter through soil, while

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[74] *Id.* at 89.
[75] *Id.* at 47, 57.
[76] Rhode Island Infrastructure Bank & The Nature Conservancy of Rhode Island, *Municipal Resilience Program Action Grant Funded Project Descriptions*, (2019) https://riib.org/wp-content/uploads/2022/09/RIIB_20220902_MRP-2019-2021-Funded-Project-Descriptions.pdf.
[77] *See* StormwaterPA, *Pennsylvania Stormwater Best Management Practices Manual* at Chapter 4, (Dec. 30, 2006) https://www.stormwaterpa.org/assets/media/BMP_manual/05_Chapter_4.pdf
[78] Natural Resources Defense Council, *Green Infrastructure: How to Manage Water in a Sustainable Way*, (July 25, 2022) https://www.nrdc.org/stories/green-infrastructure-how-manage-water-sustainable-way#benefits
[79] P.R. Shukla, *et al*, *Summary for Policymakers*, IPCC (2019) https://www.ipcc.ch/site/assets/uploads/sites/4/2022/11/SRCCL_SPM.pdf.

simultaneously reducing atmospheric carbon dioxide in areas with mitigation options such as rain gardens or bioswales. RIDEM could fulfill its duty under the Act on Climate and contribute to meeting to the State's Act on Climate greenhouse gas reduction mandates by encouraging more widespread adoption of these types of solution through new RIPDES general stormwater permits.

D. Expanding RIPDES Stormwater Permits Would Be a Step to Address Current and Historic Environmental Injustices in this Community.

Finally, and crucially, the Mashapaug Watershed is home to Environmental Justice communities. Environmental justice is a concern at both the federal and state level. Thirty years ago, at the federal level, President Clinton issued Executive Order 12898 which requires that, "[t]o the greatest extent practicable and permitted by law [. . .] each Federal Agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."[80] On January 27, 2021, President Biden signed an Executive Order on "Tackling the Climate Crisis at Home and Abroad," which laid "the foundation for the most ambitious environmental justice agenda ever undertaken by an Administration and putting environmental justice and climate action at the center of the federal government's work."[81, 82, 83, 84] President Biden also "created the Justice40 Initiative to ensure that federal agencies deliver 40 percent of the overall benefits of climate, clean energy, affordable and sustainable housing, clean water, and other investments to

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[80] Exec. Order No. 12,898, 59 Fed.Reg. 7629 (1994).

[81] The White House, *Fact Sheet: A Year Advancing Environmental Justice* (Jan. 26, 2022) https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/26/fact-sheet-a-year-advancing-environmental-justice/.

[82] The White House, *Executive Order on Tackling the Climate Crisis at Home and Abroad* (Jan. 27, 2021) https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/.

[83] The White House, *Fact Sheet: President Biden Takes Executive Actions to Tackle the Climate Crisis at Home and Abroad, Create Jobs, and Restore Scientific Integrity Across Federal Government* (Jan. 27, 2021) https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/27/fact-sheet-president-biden-takes-executive-actions-to-tackle-the-climate-crisis-at-home-and-abroad-create-jobs-and-restore-scientific-integrity-across-federal-government/.

[84] 86 Fed. Reg. 7619 (Feb. 1, 2021) (E.O. 14008 of Jan 27, 2021).

underserved communities[,]"established the White House Environmental Justice Advisory Council, and more.[85]

In addition to federal efforts, RIDEM also has its own Environmental Justice policy, with goals that include: "[t]o ensure that pollution does not have disproportionate negative impacts on any group of people or community", "[t]o provide residents living and working in overburdened communities access to safe and healthy natural resources to ensure nature is within reach of all" and "[t]o make informed decisions and improve work quality through collaborative efforts and build mutual understanding and trust between the Department and the public it serves."

RIDEM has characterized the communities in the Mashapaug Watershed as EJ focus areas.[86, 87, 88] EPA's mapping tool, EJScreen, provides "a nationally consistent dataset and approach for combining environmental and demographic socioeconomic indicators" for a specified geographic area; "the tool then provides demographic socioeconomic and environmental information for that area."[89] The "Demographic Index" of the EJScreen tool "is based on the average of two socioeconomic indicators; low-income and people of color."[90] For the area within one mile of Mashapaug Pond the Demographic Index shows that the area is at or above the 90th percentile in the State for eleven of the thirteen EJ Indexes, and at or above the 80th percentile in the Nation for eleven other EJ Indexes, as shown in Figure 3 below.[91, 92]

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[85] The White House, *Fact Sheet: A Year Advancing Environmental Justice* (Jan. 26, 2022) https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/26/fact-sheet-a-year-advancing-environmental-justice/.

[86] Rhode Island Department of Environmental Management, *Environmental Justice* (last visited Oct. 19, 2023) https://dem.ri.gov/environmental-protection-bureau/initiatives/environmental-justice.

[87] RIDEM, *Environmental Justice – Interactive Map*, https://dem.ri.gov/environmental-protection-bureau/initiatives/environmental-justice.

[88] Warburton, R., *EPA's Environmental Justice Tool Designed to Map, Protect Vulnerable Populations*, EcoRI News, (May 23, 2022) https://ecori.org/epas-environmental-justice-tool-designed-to-map-protect-vulnerable-populations/.

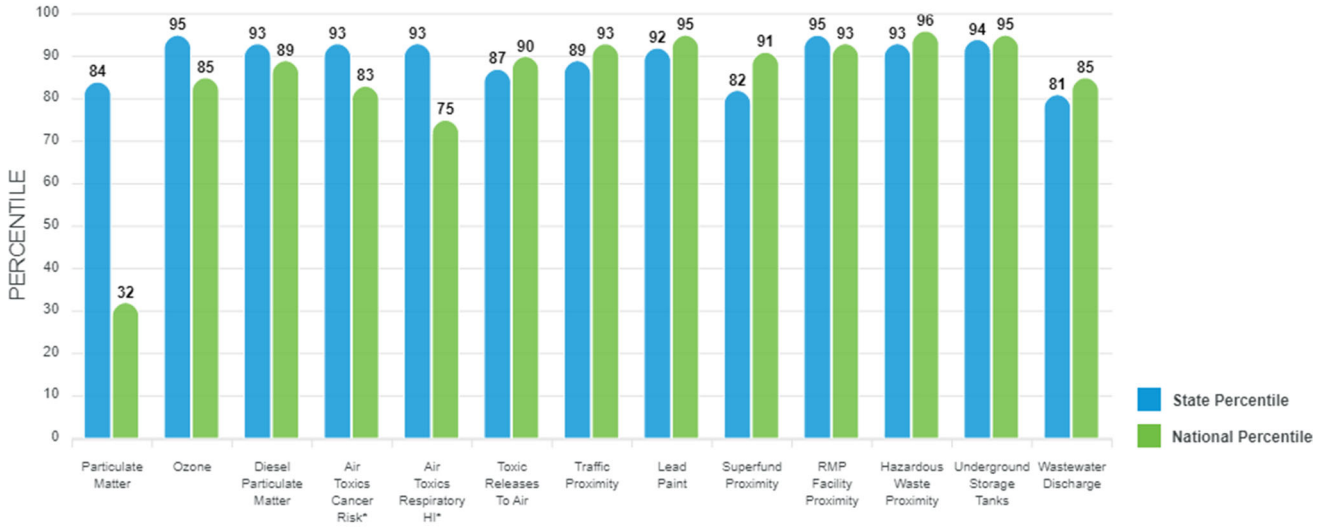
[89] EPA, *What Is EJScreen?* (last visited Oct. 19, 2023) https://www.epa.gov/ejscreen/what-ejscreen.

[90] EPA, *Overview of Socioeconomic Indicators in EJScreen* (last visited Oct. 19, 2023) https://www.epa.gov/ejscreen/overview-socioeconomic-indicators-ejscreen.

[91] *See generally,* EPA EJScreen, *EPA's Environmental Justice Screening and Mapping Tool (Version 2.2)* (last visited Oct. 19, 2023) https://ejscreen.epa.gov/mapper/.

[92] *See generally,* EPA *Overview of Environmental Indicators of EJScreen* https://www.epa.gov/ejscreen/overview-environmental-indicators-ejscreen.

Figure 3 - Environmental Justice Indexes for Mashapaug Pond Watershed



This area and the people living there have historically been deprioritized, so much that the residents cannot boat, swim, or fish in the pond. The Dr. Jorge Alvarez High School, built in 2007 on top of contamination from Gorham, requires a ventilation system to trap contaminants rising up from groundwater and into the air, as well as an eight-foot fence blocking access to the toxic site.[93] The school has not built its own track or baseball fields because of Mashapaug Pond's historical and ongoing contamination.[94] The children who live in that area grow up making fences to surround contaminated areas as art projects and hear rumors that the water is so polluted that it makes frogs grow a third eye.[95] Addressing the stormwater issue in the Mashapaug Pond area would not only improve the health of the Pond and increase climate mitigation measures, but it also would restore access to this community that has lacked safe recreational space for decades.

IV. CONCLUSION

The extreme pollution of Mashapaug Pond and the surrounding watershed clearly demonstrates the negative impacts of stormwater runoff in Rhode Island. The failure to meet water quality standards in Mashapaug Pond results in further contamination

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[93] Benedict, L., *Interview with Joe Martella*, Brown Digital Repositor,. Brown University Library, (March 22, 2013) https://repository.library.brown.edu/studio/item/bdr:317802/.
[94] Ettelman, A., *Interview with Tanaiya Jeffries*, Brown Digital Repository, Brown University Library, (April 9, 2014) https://repository.library.brown.edu/studio/item/bdr:716037/.
[95] Perkins, S., *Interview with anonymous mother and daughter*, Brown Digital Repository,. Brown University Library, (April 13, 2013) https://repository.library.brown.edu/studio/item/bdr:317824/.

of the surrounding environment — including significant air quality concerns — and poses an unjust burden to the public. Like the three watersheds in Massachusetts where EPA recently exercised its RDA, the Mashapaug Watershed is a severely overburdened area, has a direct impact on EJ communities, has routinely been listed as "impaired", and can only achieve its WQS through the use of RDA. RIDEM has clear authority from the Clean Water Act to utilize Residual Designation Authority to take action to help solve the many environmental, health, quality of life, and environmental justice issues presented by the significant stormwater runoff and pollution in Mashapaug Pond. In similar circumstances, EPA Region I determined the designation of commercial, industrial, and institutional properties with one acre or more of impervious surface as sources was necessary. Following EPA Region I's lead and developing a general permit or more than one general permit for these sources could lead to the cost effective stormwater control needed to make a difference in this watershed. Consequently, this Office urges RIDEM to utilize the Residual Designation Authority in order to finally bring Mashapaug Watershed into compliance with the TMDLs and WQSs.