ATTACHMENT 3

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February 26, 2024

Via email to Cheryl.Mayo@deq.virginia.gov

Cheryl Mayo
DEQ Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Re: Public Comments on Draft Federal Operating Permit No. PRO50232 for AdvanSix Resins and Chemicals LLC, Hopewell, VA

Dear Ms. Mayo:

The Southern Environmental Law Center ("SELC"); Hopewell-Colonial Heights NAACP (Unit # 7078); Sierra Club, Falls of the James Group; Virginia Interfaith Power & Light; and Chesapeake Bay Foundation hereby submit public comments on Draft Federal Operating Permit No. PRO50232 for AdvanSix Resins and Chemicals LLC ("AdvanSix" or "the facility"), which the Virginia Department of Environmental Quality ("DEQ") has noticed for public comment. The facility is an existing chemical manufacturing facility located at 905 East Randolph Road, Hopewell, VA 23860.

The facility and the proposed permit are of significant concern to members of the Hopewell community and to the public at large. The AdvanSix facility is Virginia's fourth largest emitter of nitrogen oxides ("NOx"), sixth largest emitter of fine particulate matter ("$PM_{2.5}$"), eleventh largest emitter of sulfur dioxide ("SO_2"), and largest emitter of ammonia.[1] The facility is also located in close proximity to five other major sources of air pollution, all in Hopewell.[2] Even in this highly industrialized area, however, AdvanSix stands apart as a chronic violator of federal and state air pollution law and a frequent target of enforcement by both DEQ and the U.S. Environmental Protection Agency ("EPA"). It is for facilities like AdvanSix that the Title V permitting process is especially important—and it is incumbent on DEQ to draft a permit with conditions sufficient to assure the facility's compliance with applicable requirements, based on a complete and transparent public record of the underlying facts.

Unfortunately, the public version of AdvanSix's Title V permit application contains no potential-to-emit information and impermissibly omits other emissions-related data. As a result,

[1] *See* DEQ, *2022 Annual Point Source Criteria Pollutant Emissions*, https://www.deq.virginia.gov/home/showpublisheddocument/21230/638343465513470000.
[2] EPA's Enforcement and Compliance History Online ("ECHO") database lists six major sources in Hopewell: AdvanSix, Ashland Specialty Ingredients, Hopewell Cogeneration Facility, Hopewell Power Station, Hopewell Water Renewal, and WestRock. EPA, *Facility Search – Enforcement and Compliance History Online*, https://perma.cc/9YDC-N4K2 (last updated Sept. 21, 2022) (selecting "Virginia" for "State/Territory," "Hopewell city" for "County," "Yes" for "Active/Operating," and "Yes" for "Major Designation").

AdvanSix's Title V permit is incomplete, rendering meaningful public participation impossible. We therefore request that DEQ require AdvanSix to submit a complete Title V permit application and re-notice the complete application for another round of public comment. We believe that DEQ's failure to do so would be an error necessitating a permit objection from EPA.

Further, DEQ must address the deficiencies in the draft permit set out below, including the permit's lack of any periodic stack-testing requirements and its unenforceable and vague opacity monitoring requirements, among other issues.

I. The AdvanSix permit warrants DEQ's special consideration for its potential impacts on an environmental justice community that already bears a significant pollution burden.

As the United States Court of Appeals for the Fourth Circuit observed in *Friends of Buckingham v. State Air Pollution Control Board*, "[t]here is evidence that a disproportionate number of environmental hazards, polluting facilities, and other unwanted land uses are located in communities of color and low-income communities."[3] Under Virginia law, DEQ has an obligation to look closely at its permitting actions and ensure that they do not perpetuate this pattern. The Virginia Environmental Justice Act made it "the policy of the Commonwealth to promote environmental justice and ensure that it is carried out throughout the Commonwealth, with a focus on environmental justice communities and fenceline communities."[4] Accordingly, it is Virginia policy to afford environmental justice communities meaningful involvement and fair treatment, and to ensure that they do not "bear[] a disproportionate share of any negative environmental consequence resulting from an industrial, governmental, or commercial operation, program, or policy."[5]

EPA air permitting guidance similarly encourages state permitting authorities to perform an environmental justice analysis to promote fair treatment and meaningful community participation where, as here, a permitting action "may result in disproportionately high and adverse human health or environmental effects on a community."[6] That analysis involves further evaluating adverse and disproportionate impacts and identifying ways to prevent or mitigate such impacts.[7] As appropriate, it also involves an evaluation of the cumulative impact of the permitting action together with impacts from other sources of pollution in the community.[8] While Title V of the Clean Air Act generally does not authorize the imposition of new, substantive air quality control requirements, it does require permits to contain sufficiently rigorous monitoring, recordkeeping, reporting, and other conditions to assure that facilities

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[3] 947 F.3d 68, 87 (4th Cir. 2020) (quoting Nicky Sheats, Achieving Emissions Reductions for Environmental Justice Communities Through Climate Change Mitigation Policy, 41 Wm. & Mary Env't L. & Pol'y Rev. 377, 382 (2017)).
[4] Va. Code § 2.2-235.
[5] *Id.* § 2.2-234. Separate legislation enacted in 2020 made it an express DEQ policy "to further environmental justice." *Id.* § 10.1-1183; *see also id.* § 10.1-1182 (defining "environmental justice").
[6] EPA, *Principles for Addressing Environmental Justice Concerns in Air Permitting* 2 (Dec. 2022), https://perma.cc/QVT4-7QSP.
[7] *Id.* at 3.
[8] *Id.* at 4.

comply with the requirements that do apply.[9] Ensuring that the AdvanSix permit meets this standard is particularly important in light of the environmental justice concerns at issue.

By all standards, the City of Hopewell—including the area of Hopewell where the AdvanSix facility is located—meets the Virginia Environmental Justice Act's definition of "environmental justice community." Nearly 56% of the residents of Hopewell are people of color,[10] as compared to 40% for Virginia as a whole.[11] Hopewell has a poverty rate of 21.3%[12] and is in the 86th percentile among Virginia localities for the percentage of its population classified as low-income (48%).[13]

The residents of Hopewell also face more health challenges than Virginians as a whole. The average life expectancy in Hopewell is 69 years,[14] more than eight years shorter than the statewide average (77.6 years).[15] Hopewell residents have the sixth-highest cancer mortality rate in the state,[16] and higher than average rates of cancer, heart disease, and asthma.[17] Exposure to air pollution increases the risk of all three diseases.[18]

Further, Hopewell represents one of Virginia's most environmentally burdened communities. Combined, Hopewell's industrial sources of air pollution (including the AdvanSix plant) account for 6.5% of Virginia's emissions of criteria pollutants and 8% of Virginia's emissions of air toxics[19]—all in a city that has only 0.27% of Virginia's population.[20] The three census tracts with residents closest to the AdvanSix facility all rank in the 98th or 99th percentile nationwide for their proximity to Risk Management Plan facilities (facilities that use or manufacture certain toxic or flammable substances)[21] and in the 99th or 100th percentile nationwide for their air toxics cancer risk, as measured by the Centers for Disease Control and

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[9] *See* Operating Permit Program, 57 Fed. Reg. 32,250, 32,251 (July 21, 1992) (EPA final action promulgating Part 70 rules).
[10] EPA, *EJScreen Community Report: Hopewell, VA*, at 1 (retrieved Feb. 7, 2024) ("Hopewell EJScreen") (Attachment A).
[11] U.S. Census Bureau, Virginia, tbl. P1 (last visited Feb. 23, 2024), https://perma.cc/EZ56-N2Q8 ("Virginia 2020 Census Data").
[12] U.S. Census Bureau, *QuickFacts: Hopewell city, Virginia*, https://perma.cc/NTP9-WG29 (last visited Feb. 23, 2024).
[13] Hopewell EJScreen at 3.
[14] *Id.* at 1.
[15] Nat'l Ctr. for Health Stat., *Virginia*, https://perma.cc/BV2B-TVN2 (last updated Sept. 12, 2023).
[16] Nat'l Cancer Inst., *NCI Cancer Atlas Table View: Mortality, Virginia Counties, All Races, All Malignant Cancers (Both Sexes), 2016–2020*, https://perma.cc/2EJ3-MKRD (last updated June 14, 2023).
[17] Hopewell EJScreen at 4.
[18] World Health Org., *Ambient (outdoor) air pollution* (Dec. 19, 2022), https://perma.cc/BE8A-FBJT.
[19] EPA, Nat'l Emissions Inventory, 2020 Facility-Level Data accessed through 2020 NEI Data Retrieval Tool at https://awsedap.epa.gov/public/single/?appid=20230c40-026d-494e-903f-3f112761a208&sheet=5d3fdda7-14bc-4284-a9bb-cfd856b9348d&opt=ctxmenu,currsel (retrieved Feb. 22, 2024).
[20] U.S. Census Bureau, Hopewell city, Virginia, tbl. P1, https://perma.cc/Y7U9-5XWJ; Virginia 2020 Census Data.
[21] EPA, *EJScreen Community Report: Hopewell, VA, Tract 51670820100*, at 3 (retrieved Feb. 7, 2024) (Attachment B); EPA, *EJScreen Community Report: Hopewell, VA, Tract 51670820300*, at 3 (retrieved Feb. 7, 2024) (Attachment C); EPA, *EJScreen Community Report: Hopewell, VA, Tract 51670820700*, at 3 (retrieved Feb. 7, 2024) (Attachment D).

Prevention.[22] In all, there are more than 900 homes located within one mile of the AdvanSix facility,[23] with some of these homes just beyond the AdvanSix fenceline.

In light of these environmental justice concerns, it is critical that DEQ ensure that the conditions in the AdvanSix permit are sufficient to prevent the facility's emissions from imposing a disproportionate burden on the health and well-being of the Hopewell community. As part of that analysis, DEQ must consider the AdvanSix facility's effects in combination with the other environmental stressors affecting the residents of Hopewell—in particular, community members' exposure to pollution from five other major sources of air pollution.[24] DEQ must evaluate the degree to which such cumulative impacts could amplify the impacts of this permitting action on the Hopewell community.[25]

II. AdvanSix's application and DEQ's draft statement of basis omit emission data and other requisite information.

A. AdvanSix's Title V permit application is incomplete without potential emissions calculations.

As part of the requisite permit application materials, Title V permit applications must include estimates of potential emissions as well as the calculations used to generate those estimates. This information is vital to public participation because emissions estimates determine which applicable requirements apply to individual units or to the facility as a whole, and this data informs the adequacy of the permit's monitoring, recordkeeping, and reporting requirements. AdvanSix's Title V permit application is wholly devoid of this requisite and essential emissions information.

Specifically, Title V permit applications "may not omit information needed to determine the applicability of, or to impose, any applicable requirement."[26] This information includes potential emissions estimates; specifically, 40 C.F.R. § 70.5(c)(3)(i) requires the disclosure of "[a]ll emissions of pollutants for which the source is major, and all emissions of regulated air

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[22] ATSDR, *Env't Justice Explorer: Census Tract 8201, Hopewell city, Virginia*, at 1 (retrieved Feb. 23, 2024) (Attachment E); ATSDR, *Env't Justice Explorer: Census Tract 8203, Hopewell city, Virginia*, at 1 (retrieved Feb. 23, 2024) (Attachment F); ATSDR, *Env't Justice Explorer: Census Tract 8207, Hopewell city, Virginia*, at 1 (retrieved Feb. 23, 2024) (Attachment G). "Air toxics cancer risk" is a composite measure of the cancer risk associated with inhaling 140 different hazardous air pollutants. ATSDR, *Environmental Justice Index Indicators*, https://perma.cc/WC2K-7YQK (last updated May 31, 2023).

[23] EPA, *EJScreen Community Report: Hopewell, VA, 1 mile Ring Centered at 37.300033,-77.272511* (retrieved Jan. 30, 2024) (Attachment H).

[24] *See, e.g.*, EPA, *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* § 2.2.2 (1998), https://perma.cc/CNK8-EM93 ("EPA NEPA analyses must consider the cumulative effects on a community by addressing the full range of consequences of a proposed action as well as other environmental stresses which may be affecting the community.").

[25] *See, e.g.*, Fed. Interagency Working Grp. on Env't Justice & NEPA Comm., *Promising Practices for EJ Methodologies in NEPA Reviews* 43 (2016), https://perma.cc/C5RK-V5FS.

[26] 40 C.F.R. § 70.5(c).

pollutants." Further, this calculation of emissions must be made on a unit-by-unit basis.[27] The Title V rules further require submission of "[e]missions rate in tpy [tons per year] and in such terms as are necessary to establish compliance consistent with the applicable standard reference test method."[28] Finally, the application must include the "[c]alculations on which the [foregoing emissions information] is based."[29]

EPA has objected to Title V permits when potential to emit calculations were not included in Title V applications.[30] In *Cash Creek Generation, LLC*, the applicant failed to include emissions estimates for fugitive emissions in its Title V application; even though the applicant provided this information after the close of the comment period, EPA still objected on the grounds that the original omission of this information rendered public participation impossible.[31]

The public version of AdvanSix's Title V renewal application contains no potential to emit calculations or estimates.[32] Moreover, it does not appear that AdvanSix included such emissions calculations in the confidential version of the application. However, if it did, and the company is attempting to withhold this information from the public, that would be unlawful. As discussed in more detail below, emission data must be publicly available, and calculations of potential emissions are squarely emission data.

Additionally, while the draft statement of basis does list 2022 facility-wide *actual* emissions for some pollutants,[33] actual emissions are not the same as potential emissions for purposes of assessing applicable regulatory requirements, and a tabulation of facility-wide emissions does not allow the public to assess applicable requirements and monitoring conditions, which often apply to a defined area of the facility, on a process unit-by-unit basis. Moreover, the table in the statement of basis is incomplete; for instance, it does not list sulfuric acid mist emissions (a pollutant subject to Prevention of Significant Deterioration ("PSD") applicability thresholds), despite the fact that units at the facility can emit sulfuric acid mist.[34]

DEQ did belatedly produce tables of emission estimates from recent New Source Review ("NSR") permit applications in response to a Virginia Freedom of Information Act ("FOIA") request by SELC.[35] However, these emissions tables were not included in AdvanSix's Title V

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[27] *See id.* § 70.5(c)(3)(i) ("A permit application shall describe all emissions of regulated air pollutants emitted from any emissions unit . . . .").
[28] *Id.* § 70.5(c)(3)(iii).
[29] *Id.* § 70.5(c)(3)(viii).
[30] *See, e.g.*, *In the Matter of Cash Creek Generation, LLC,* Order on Petition No. IV-2020-4 (EPA June 22, 2012), https://perma.cc/AJD2-734Y.
[31] *Id.* at 10–11.
[32] *See generally* AdvanSix, Federal Operating Permit Renewal Application (Jan. 2019) ("AdvanSix Permit Application").
[33] Draft Statement of Basis at 5.
[34] *See, e.g.*, DEQ, Engineering Analysis at 15 (revised Sept. 6, 2022) (engineering analysis for Sept. 2022 NSR permit).
[35] After failing to produce the NSR emissions calculations as part of its initial FOIA response on November 14, 2023, DEQ only released the emissions calculations on January 26, 2024, two weeks into the public comment period on the draft permit—and only after SELC notified DEQ that it could not lawfully withhold such information.

renewal application, meaning the Title V application is still incomplete. It is impossible for the public to know whether any of these calculations are still accurate in 2024. Additionally, these tables do not provide adequate information on *how* the emissions were calculated, as required by the Part 70 rules.[36] In particular, these tables do not set out how various emission factors used in the estimates were sourced or derived, preventing the public from assessing the representativeness or accuracy of the calculations.

Simply stated, DEQ must require a complete permit application—including detailed potential to emit estimates and the underlying calculations—and must make the complete application available to the public for the entire comment period. That has not happened here. DEQ must hold a new public comment period once AdvanSix has submitted a complete Title V renewal application.

B. The lack of emissions calculations renders meaningful public participation impossible.

Understanding potential emissions on a process unit-by-unit basis is a critical part of assessing the adequacy of AdvanSix's draft Title V permit. Emissions calculations are necessary to assess compliance with regulatory obligations and permit limits and to evaluate monitoring, recordkeeping, and reporting requirements. For example, if AdvanSix calculates that a given process unit has the potential to emit volatile organic compounds ("VOCs") at 95% of a permit limit (i.e., a Best Available Control Technology ("BACT") limit or a potential to emit limit), commenters can identify this unit as needing additional monitoring to assure compliance with the limit, given the small margin of compliance. This is especially critical because, as discussed below, the draft permit does not require any periodic stack testing and extremely limited continuous monitoring.

Potential-emissions calculations are also vital to assessing whether key requirements apply to given units. Title V's Compliance Assurance Monitoring ("CAM") is just one example.[37] And although AdvanSix does identify some units as subject to CAM requirements based on their potential uncontrolled emissions, the public is not able to assess whether any other units should also be subject to CAM requirements.

We also note that AdvanSix has recently undertaken substantial modifications at the facility that did not undergo public notice and comment. After a complex netting exercise spanning several years, AdvanSix determined that these modifications would not trigger major New Source Review. Even under EPA's recently proposed rule concerning the scope of EPA's review of NSR requirements in its oversight of Title V permits,[38] EPA would still consider whether AdvanSix's modifications should have been classified as major modifications, due to

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[36] *See* 40 C.F.R. § 70.5(c)(3)(viii).
[37] *See id.* pt. 64. Generally speaking, the CAM rules require additional CAM monitoring whenever a unit or process has the potential to emit a pollutant at a rate that exceeds a given emission limit but will rely on air pollution control technology to achieve compliance. *See generally id.*
[38] Clarifying the Scope of "Applicable Requirements" Under State Operating Permit Programs and the Federal Operating Permit Program, 89 Fed. Reg. 1150 (Jan. 9, 2024).

the lack of public notice and opportunity for comment.[39] Inclusion of up-to-date emissions calculations in the Title V application would at least enable the public to assess whether these modifications, along with the accompanying emission reductions AdvanSix claimed in the netting exercise, were legitimately minor modifications or whether they instead should have been subject to major New Source Review. This is especially important because AdvanSix claimed credit for emissions reductions that occurred in 2017, which is now outside of the relevant five-year "contemporaneous" period for purposes of NSR netting.[40] Therefore, an accounting of the facility's potential emissions as part of the facility's 2023 Title V application is highly relevant; for instance, if AdvanSix projects that process units that previously reduced emissions now have higher potential emissions, that could mean the past "minor" modifications (which used emission reduction credits in the netting process) were in fact major modifications subject to major New Source Review.

In sum, the lack of potential emissions calculations in the Title V permit has made it impossible for the public to adequately review the draft Title V permit's applicable requirements, its monitoring, recordkeeping, and reporting provisions, or the legitimacy of AdvanSix's recent minor New Source Review modifications.

C. AdvanSix has also improperly withheld other emission data that must be public.

AdvanSix has claimed that key emission data in its application cannot be made public because it is confidential business information ("CBI"). Likewise, DEQ has withheld documents responsive to SELC's FOIA request due to AdvanSix's CBI claims. Most critically, AdvanSix has withheld process throughput rates (instead using coded process rates that are understandable only with a confidential "key" that the public does not have access to), general process narratives, and general process flow diagrams.

Although federal and state law allow some information in Title V applications to be withheld as CBI, both are clear that CBI may not include "emission data."[41] Clean Air Act regulations define "emission data" broadly to mean:

> [W]ith reference to any source of emission of any substance into the air—
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> > (A) Information necessary to determine the identity, amount, frequency, concentration, or other characteristics (to the extent related to air quality) of any emission which has been emitted by the source (or of any pollutant

[39] *See id.* at 1169 ("The EPA has also reviewed, and will continue to review, substantive NSR issues where the underlying NSR permit was not issued following public notice and the opportunity for comment and judicial review.").
[40] *See* 9 VAC 5-80-2010(C) (definition of "Net emissions increase").
[41] *See* 42 U.S.C. § 7414(c) (excluding "emission data" from information that may be considered confidential); 9 VAC 5-170-60(A) ("Emission data in the possession of the department shall be available to the public without exception.").

> resulting from any emission by the source), or any combination of the foregoing;
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> (B) Information necessary to determine the identity, amount, frequency, concentration, or other characteristics (to the extent related to air quality) of the emissions which, under an applicable standard or limitation, the source was authorized to emit (including, to the extent necessary for such purposes, a description of the manner or rate of operation of the source); and
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> (C) A general description of the location and/or nature of the source to the extent necessary to identify the source and to distinguish it from other sources (including, to the extent necessary for such purposes, a description of the device, installation, or operation constituting the source).[42]

EPA has further published a *non-exclusive* list of information that it believes is, in all cases, emission data that may not be withheld as trade secrets or CBI.[43] The list includes, as examples, "[b]oiler or process design capacity," "[e]mission estimation method (e.g., the method by which an emission estimate has been calculated such as material balance, source test, use of AP-42 emission factors, etc.)," and "[h]ourly maximum design rate (e.g., the greatest operating rate that would be expected for a source in a 1-hour period)."[44]

Accordingly, AdvanSix cannot withhold "process design capacity" or "hourly maximum design rate[s]" for its operations.[45] This information is also emission data in that it is "[i]nformation necessary to determine the identity, amount, frequency, concentration, or other characteristics" of the facility's emissions.[46] Along with emission factors, which AdvanSix has also improperly omitted from the public version of its application, process throughput capacities are vital to allowing the public to verify that the facility is accurately calculating potential emissions, so that the public can assess applicable requirements and the adequacy of the draft permit's monitoring, recordkeeping, and reporting requirements.

Likewise, process narratives and process flow diagrams are also information that is needed to determine the facility's emissions and applicable requirements. While we understand that highly detailed process flow information may potentially be considered CBI, a high-level overview of the processes would not injure AdvanSix and would do a great deal to aid public understanding of the facility's operations, emissions, and applicable requirements and the draft permit's monitoring provisions.

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[42] 40 C.F.R. § 2.301(a)(2)(i).
[43] Disclosure of Emission Data Claimed as Confidential Under Sections 110 and 114(c) of the Clean Air Act, 56 Fed. Reg. 7042 (Feb. 21, 1991).
[44] *Id.* at 7043.
[45] *Id.*
[46] 40 C.F.R. § 2.301(a)(2)(i)(A).

III. The draft permit's monitoring, recordkeeping, and reporting conditions are insufficient to assure compliance with applicable requirements.

Title V permits must include "periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit."[47] Moreover, as DEQ is aware, the AdvanSix facility has a remarkably checkered compliance history, including several notices of violation that remain outstanding. Based on our review of publicly available records, including records DEQ provided in response to SELC's FOIA request, since 2012, the facility has received at least 14 notices of violation from DEQ involving hundreds of individual violations[48] and is still operating under a consent decree with DEQ and EPA entered in 2013.[49]

Despite the facility's history of pervasive and repeated noncompliance, however, the draft permit is in many instances devoid of even the most basic periodic monitoring necessary to demonstrate some degree of compliance with emission limits and other requirements. For example, not a single process vent or stack at any process unit at the facility is subject to periodic stack testing requirements for any pollutant. Additionally, many of the draft permit's monitoring provisions are vague and unenforceable. In sum, the draft permit fails to include monitoring (ideally continuous, but at least periodic) sufficient to assure compliance with numerous underlying applicable requirements.

A. The draft permit requires no periodic stack testing and fails to assure compliance with emission limits.

AdvanSix has more than 220 emission points, yet the draft permit requires Continuous Emission Monitoring Systems ("CEMS") for only nine stacks. The only direct emissions monitoring that the permit requires for any of the other 210-plus emission points is *initial* stack tests, for only about a dozen additional stacks. The draft permit thus requires no initial stack testing for almost 200 emission points and no periodic stack testing for the dozen or so emission points required to conduct an initial stack test.

Worse yet, even units that have failed prior stack tests are not subject to any future periodic stack testing requirements. For example, the Area 11 Centrifuges failed particulate matter ("PM") and $PM_{2.5}$ compliance testing in 2017,[50] but the draft permit does not require the centrifuges to ever undergo additional testing. This is especially troubling because the 2017 test produced an emission rate for filterable PM of 0.85 pounds per hour ("lb/hr"), more than twice

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[47] *Id.* § 70.6(a)(3)(i)(B).
[48] DEQ, Notice of Violation Nos. 12-04-PRO-08322 (Apr. 17, 2012), 12-05-PRO-401 (May 22, 2012), 12-11-PRO-8551 (Nov. 19, 2012), APRO000305-001 (Nov. 30, 2015), APRO-000324 (Jan. 21, 2016), APRO000757-001 (Dec. 7, 2017), APRO000888-001 (Apr. 26, 2018), APRO001039-001 (Feb. 4, 2019), APRO001232-001 (July 15, 2019), APRO001824-001 (May 28, 2021), APRO001965-001 (Oct. 1, 2021), APRO001965-003 (May 3, 2022), APRO001965-004 (Jan. 27, 2023), APRO001965-005 (July 6, 2023).
[49] Consent Decree, *United States v. Honeywell Resins & Chems. LLC*, No. 3:13-cv-193 (E.D. Va. lodged Mar. 28, 2023), https://perma.cc/W5XN-5E4F.
[50] Notice of Violation No. APRO000757-001, at 2.

the current permit limit of 0.4 lb/hr.[51] Likewise, testing performed in 2015 on one of the facility's five hydroxylamine diammonium sulfonate towers, TW-18, showed violations of SO_2 emission limits.[52] Despite the fact that TW-18 is still subject to the same SO_2 limits,[53] the draft permit requires no future testing.

When underlying applicable requirements do not contain adequate monitoring to assure compliance, Title V permits must include supplemental periodic monitoring.[54] Moreover, when a facility or particular unit does not use continuous emissions monitoring, Title V permits must include periodic monitoring requirements "that provide sufficiently reliable and timely information for determining compliance."[55] We note that EPA has objected to Title V permits due to the lack of adequate periodic stack testing requirements.[56]

In order to achieve adequate periodic monitoring for units and emission points that do not utilize CEMS, DEQ must require periodic stack testing in at least three instances.[57] First, DEQ must implement periodic compliance testing for any units that have previously been subject to initial testing requirements, unless repeated tests have demonstrated a substantial margin of compliance. In other words, if DEQ previously determined that initial stack tests were warranted, it stands to reason that adequate periodic monitoring under Title V would include periodic stack tests for the same units.

Second, and relatedly, DEQ must institute periodic stack testing for any unit that has previously failed a stack test, such as the Area 11 Centrifuges and hydroxylamine diammonium sulfonate tower TW-18. These units need additional periodic stack testing to assure compliance given that they were previously exceeding emission limits.

Third, DEQ must require periodic stack testing for any process units that have the potential to emit pollutants at a rate that is close to the relevant emission limits. We note that the public cannot accurately identify these units because, as discussed above, AdvanSix's application was incomplete and did not include potential-emissions estimates at all.

Finally, the statement of basis does not explain why the permit fails to include periodic stack-testing requirements. For instance, DEQ does not explain how the permit's monitoring provisions for the units that failed prior stack tests will be adequate to assure compliance without additional periodic stack-testing requirements—that is, DEQ does not explain that in lieu of periodic stack testing in these instances, it has implemented more stringent parametric monitoring that would somehow negate the need for periodic stack testing. This is itself a defect

[51] Draft Permit, Condition 327.
[52] Notice of Violation No. APRO000305-001, at 2.
[53] *See, e.g.*, Draft Permit, Condition 153.
[54] 40 C.F.R. § 70.6(a)(3)(i)(B).
[55] 42 U.S.C. § 7661c(b).
[56] EPA has objected to Title V permit conditions on the basis that once-per-permit-term testing requirements do not constitute periodic monitoring sufficient to comply with 40 C.F.R. § 70.6(a)(3)(B). *See In re Consolidated Edison Co. of NY, Inc. Ravenswood Steam Plant*, Order on Petition No. II-2001-08, at 21 (EPA Sept. 30, 2003), https://perma.cc/3Y3H-33HY.
[57] *See* 40 C.F.R. § 70.6(a)(3)(i)(B).

that DEQ must address; EPA has emphasized that "the rationale for the selected monitoring method must be clear and documented in the permit record,"[58] and has objected to Title V permits when permitting authorities fail to explain why they selected particular monitoring methods.[59]

B. The initial stack testing requirements do not demonstrate compliance with emission limits.

While the draft permit does require "initial" compliance testing for several units, these initial testing provisions are also inadequate to assure compliance. Specifically, Condition 113, which requires VOC testing of VT-N2 through N5 (volatile organic liquid storage tanks), states that testing shall occur when the units are at a "minimum of 80% of their maximum capacity."[60] Likewise, Conditions 204 and 205 require VOC testing for CL-15, CL-81, and CL-62 (Toluene/Sulfate Stripping Columns) to demonstrate that the controlling flares achieve at least 98% VOC destruction. But again, these conditions only require operations at a "minimum of 80% of their maximum capacity."[61]

It is unclear why DEQ selected a floor of 80% of maximum operating capacity for these units during the stack tests, but unless DEQ has determined that worst-case emissions from these units occur at 80% capacity (or can be reasonably scaled from testing at 80% capacity) rather than at higher capacities, these tests will not demonstrate compliance with the underlying VOC emission limits. Alternatively, if DEQ has in fact determined that worst-case emissions occur at 80% capacity, then the requirement to only test at a *minimum* of 80% operating capacity also fails to assure that the measured emissions represent worst-case emissions, since the provision would allow testing at rates other than the worst-case operating scenarios. In either instance, the testing condition fails to demonstrate compliance with the underlying VOC limits.

In any event, the draft statement of basis fails to explain the rationale behind the minimum 80% operating-capacity requirements in these testing provisions. As explained above, this is itself a defect that DEQ must address.

C. The permit's opacity monitoring requirements are vague, are unenforceable, and fail to assure compliance with opacity limits.

Throughout the draft permit, DEQ requires opacity monitoring as such:

> [emission points] shall be observed visually at least once each operating month for at least a brief time period to determine which emissions units have normal

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[58] *In the Matter of Fort James Camas Mill,* Order on Petition No. X-1999-1, at 8 (EPA Dec. 22, 2000), https://perma.cc/G2VD-MVVD.
[59] *Id.* at 13–14, 14–15, 17–18, 20–21, 24–25, 27–28, 30–31; *see also* Letter from Stephen Rothblatt, EPA, to Robert F. Hodanbosi, Ohio Env't Prot. Agency, at 1 (Dec. 20, 2001), https://perma.cc/46H7-ET3S (explaining that an adequate statement of basis "generally should include . . . the rationale for the monitoring methods selected").
[60] Draft Permit, Condition 113.
[61] *Id.* Conditions 204, 205.

> visible emissions (does not include condensed water vapor/steam), unless a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the emissions unit.[62]

These conditions are unacceptably vague and fail to assure compliance with the underlying opacity limits. For instance, the duration of the observation, described as a "brief period of time" is entirely subjective, as is any determination of "normal visible emissions." Utilizing "normal" visible emissions is not compatible with assuring compliance with an objective opacity limit. If a unit frequently exceeds the opacity limit, then observations of "normal visible emissions" will do nothing to discover opacity violations, as by definition the excess opacity will be "normal" opacity. Additionally, the permit's opacity monitoring provisions do not require any sort of rigor or consistency in making opacity observations. For example, the company could make opacity "observations" on gray, overcast days or even at night, while ostensibly meeting the specified monitoring requirements.

In order to assure compliance with the underlying opacity limits, DEQ should either require full Method 9 monitoring or at least require Method 22 observations in the first instance to determine whether visible emissions are present. If visible emissions are detected with Method 22, then the permit should require Method 9 observations to quantify the opacity and determine whether violations of the opacity limits are occurring.

Finally, given the history of noncompliance at the facility, including violations of opacity limits,[63] the requirement to conduct visible emissions monitoring only once per month is wholly inadequate. The underlying opacity limits apply on a short-term basis (six-minute intervals), and the draft permit conditions on this point allow the facility to choose any time during a given month to conduct the requisite opacity monitoring. This runs afoul of Title V requirements, which provide that permits must contain "periodic monitoring sufficient to yield reliable data from the *relevant time period* that are representative of the source's compliance with the permit."[64] Accordingly, DEQ should instead implement daily opacity monitoring requirements. DEQ should also consider using digital opacity monitoring[65] to provide continuous opacity monitoring data, especially for units or locations that have previously violated opacity requirements.

D. Many of the draft permit's averaging times for compliance monitoring are far too long.

BACT emission limits and associated monitoring must "demonstrate protection of short term ambient standards (limits written in pounds/hour) and be enforceable as a practical matter (contain appropriate averaging times, compliance verification procedures and recordkeeping

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[62] *Id.* Condition 352. Opacity provisions with the same deficiencies are found in Conditions 411, 439, 560, and 593.
[63] *See, e.g.*, DEQ, Enforcement Recommendation & Plan (ERP) at 1, 2, 4 (Mar. 27, 2013).
[64] 40 C.F.R. § 70.6(a)(3)(B) (emphasis added).
[65] *See, e.g.*, Virtual Tech., *Digital Opacity Compliance System Second Generation (DOCS II)*, https://perma.cc/MP46-GM6N (last visited Feb. 26, 2024).

requirements)."[66] In other words, if a particular National Ambient Air Quality Standard ("NAAQS") is a 1-hour or 8-hour standard, then the BACT limits and their associated monitoring schedules (i.e., averaging times) should match the standard. A 30-day rolling average for a limit, for instance, would not be protective of the short-term NAAQS that have average times less than 30 days. Short-term spikes in emissions could readily cause NAAQS exceedances without detection, yet there would be no permit-limit violation.

Here, to cite one example, the Powerhouse boilers (FU-17, FU-18, and FU-19) are subject to NOx limits, but the monitoring and compliance averaging periods for these limits are on a 30-day rolling basis.[67] This is improper considering that the relevant NAAQS are much shorter: the ozone NAAQS applies on an 8-hour basis (with NOx as the primary precursor pollutant for ozone), the nitrogen dioxide NAAQS applies on a 1-hour basis, and there is a $PM_{2.5}$ NAAQS with 24-hour averaging. The draft permit's averaging periods therefore fail to assure compliance with the NAAQS.

Likewise, in many instances, the permit utilizes 12-month averaging periods, which are insufficient to assure compliance with short-term NAAQS. Although some of these limits may be synthetic minor limits (where a 12-month average is often used), at least some appear to have been implemented as BACT limits, which do require short-term averaging periods. For example, Condition 4 implements a temperature limit to reduce VOC emissions from tanks; this condition cites to the 2022 NSR permit, where the underlying permit condition (2022 NSR Permit Condition 28) cites to 9 VAC 5-50-260, which implements BACT requirements. To the extent these limits with 12-month rolling averages are BACT limits as opposed to synthetic minor limits, a 12-month averaging time completely fails to assure compliance with the 8-hour ozone NAAQS. (VOCs are likewise an ozone precursor.)

IV. The permit appears to omit key LDAR provisions under NSPS Subparts VV and VVa.

New Source Performance Standards ("NSPS") Subparts VV and VVa set leak detection and repair ("LDAR") standards for synthetic organic chemical manufacturing industrial units to detect and fix fugitive emissions from equipment leaks. Subpart VV applies to facilities constructed, reconstructed, or modified after 1981, while Subpart VVa applies to facilities constructed, reconstructed, or modified after 2006. The draft permit, however, includes only a single condition implementing Subpart VVa LDAR standards: Condition 22, requiring Subpart VVa LDAR control of emissions from the KA Oil equipment in Area 6. Several other units are subject to Subpart VV "equivalent" requirements (based on past agreements between DEQ and the facility related to Reasonably Available Control Technology conditions), and the statement of basis also explains that Subpart VVb (which applies units constructed, reconstructed, or modified after 2023) will be an applicable requirement in the future. Despite these provisions, it

[66] EPA, *New Source Review Workshop Manual* B.56 (1990), https://perma.cc/5XP3-FTAE; *see also In re ConocoPhillips Co.*, 13 E.A.D. 768, 796 (EAB 2008) (citing NSR Manual for proposition that permit must provide for reporting and recordkeeping sufficient to allow permitting authority to determine source's compliance).
[67] Draft Permit, Conditions 457 and 459.

is unclear why more units are not subject to full Subpart VV and VVa LDAR requirements, rather than either no such requirements or only "equivalent" requirements.

AdvanSix's application, meanwhile, states that the facility is not subject to NSPS Subpart VV[68] and is completely silent on the related Subpart VVa. Yet as DEQ's draft statement of basis makes clear, at least one unit, the KA Oil equipment in Area 6, is indeed subject to Subpart VVa.[69] AdvanSix does not explain why Subpart VV or Subpart VVa is not applicable. For example, there is no discussion of changes after 2006 that may have triggered Subpart VVa in other process units besides KA Oil equipment in Area 6. Moreover, DEQ's statement of basis states that units in both Area 6 (the KA Oil equipment) and Area 7 are subject to Subpart VVa requirements,[70] yet the draft permit contains only the single condition relating Area 6; there are no conditions in the Area 7 portion of the permit implementing Subpart VVa.

While Subparts VV and VVa do set forth potential alternative compliance methods utilizing Part 63 and Part 65 standards, the record does not indicate whether AdvanSix has chosen this option for Subpart VVa. The fact that DEQ has indicated that at least one unit is subject to Subpart VVa requirements suggests that the facility has not opted for alternative compliance options.

DEQ must set forth in the statement of basis why Subparts VV and VVa are, or are not, applicable requirements for each of the process areas (or sub-areas) at the facility. Further, especially considering the substantial modifications that have occurred at the facility since 2006, it would appear that Subpart VVa in particular should be an applicable requirement for many more units than just the KA Oil equipment. DEQ must also correct the record to explain why the statement of basis states that Subpart VVa applies to units in Area 7 when no Subpart VVa conditions exist in the draft permit. To the extent that units that have been changed since 2006 but have not triggered Subpart VVa as a result of those changes, the rationale for not triggering, including emissions estimates before and after such changes, should be fully provided in the public record.

V. DEQ must require AdvanSix to provide emergency notifications to the surrounding community and comply with Clean Air Act section 112(r)(7).

In the last three years alone, the AdvanSix facility has experienced multiple unpermitted releases, including releases of NOx, SO_2, ammonia, and oleum. According to Hopewell residents living in the vicinity of the facility, some of these releases required Hopewell's fire department and hazardous materials team to respond, or resulted in employees at AdvanSix and nearby industrial facilities being instructed to shelter in place. Yet residents report that they were not notified by either AdvanSix or local officials about the releases until significantly later (or were not notified at all).

[68] AdvanSix Permit Application at 2–5.
[69] *See* Draft Statement of Basis at 8.
[70] *Id.* at 8, 17.

Pursuant to Clean Air Act section 112(r)(7), AdvanSix is required to develop an emergency response plan for accidental releases that includes "procedures for informing the public and local agencies responsible for responding to accidental releases."[71] Though AdvanSix notes in its permit application that it handles chemicals on the 112(r) list and that "[a] risk management program and Risk Management Plan (RMP) has been developed and submitted,"[72] the draft permit fails to clearly identify section 112(r)(7) as an applicable requirement. Instead, the permit ambiguously states: "If the permittee has more or will have more than a threshold quantity of a regulated substance in a process, as determined by 40 CFR 68.115, the permittee shall comply with the requirements of 40 CFR Part 68."[73]

The federal Title V regulations at 40 C.F.R. § 70.2 define "applicable requirement" for purposes of Title V permitting to include "any requirement concerning accident prevention under section 112(r)(7) of the Act." Likewise, EPA's RMP regulations at 40 C.F.R. § 68.215(a) provide that a facility's Title V permit must include "[a] statement listing [part 68] as an applicable requirement," as well as conditions requiring either a compliance schedule for meeting RMP requirements or, "[a]s part of the compliance certification submitted under 40 C.F.R. 70.6(c)(5), a certification statement that the source is in compliance with all requirements of [part 68], including the registration and submission of the RMP." To comply with these requirements, AdvanSix's permit must do more than state that AdvanSix must comply with part 68 if it applies; in accordance with 40 C.F.R. § 68.215(a), the permit must specifically "list[]" part 68 "as an applicable requirement."

Aside from clearly identifying section 112(r)(7) as an applicable requirement, DEQ has a responsibility to investigate whether AdvanSix has been fulfilling its section 112(r)(7) obligations, and if it is not, to place AdvanSix on an enforceable schedule for attaining full compliance. The reports from residents living near the AdvanSix facility suggest that AdvanSix is not properly implementing community notification requirements. This apparent deficiency also raises concerns about whether AdvanSix is complying with substantive requirements intended to prevent accidental releases from occurring.

Considering that homes are located at the AdvanSix fenceline, releases have the very real likelihood of affecting residents. Thus, it is incumbent upon DEQ not just to check the box that AdvanSix developed and submitted an RMP, but also to ensure that the RMP is adequate and that AdvanSix is fulfilling its RMP obligations, including notifying the surrounding community of accidental releases when required.

VI. DEQ should hold a public hearing on the proposed permit.

Our five organizations request a public hearing so that DEQ hears directly from affected community members along with other members of the public. Under the Virginia Environmental Justice Act, affected community residents must "have access and opportunities to participate in the full cycle of the decision-making process about a proposed activity that will affect their

[71] 42 U.S.C. § 7412(r)(7)(b)(ii)(III).
[72] AdvanSix Permit Application at 2-7.
[73] Draft Permit, Condition 652 (General Conditions – Accident Release Prevention).

environment or health."[74] Decision-makers must "seek out and consider" the participation of affected community members, "allowing the views and perspectives of community residents to shape and influence the decision."[75]

As described in this letter, the AdvanSix facility is located in an environmental justice community, in close proximity to residents and to several other major sources of air pollution; it is one of Virginia's largest emitters of nitrogen oxides and other pollutants; and it has a long history of noncompliance with federal and state air regulations. By failing to ensure the facility's future compliance with such regulations, an inadequate Title V permit directly and adversely affects the air quality, health, and safety of local residents in particular and of Virginians more broadly—interests that are represented by the undersigned organizations. We have included in these comments specific references to the proposed permit's terms and conditions and suggested revisions.

* * *

As discussed above, AdvanSix did not submit a complete Title V permit application because the company omitted critical emissions information, including quantification of potential emissions. As such, DEQ must require AdvanSix to supplement its application and must reissue the draft permit for public comment once it has received a complete application. In addition, DEQ must address each of the permit deficiencies identified in this letter.

Respectfully submitted,

/s/ Patrick J. Anderson
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Joe Brancoli, Chair
Sierra Club, Falls of the James Group
scfojg@gmail.com

[74] Va. Code § 2.2-234; *see also id.* § 2.2-235.
[75] Va. Code § 2.2-234; *see also id.* § 2.2-235.

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Chesapeake Bay Foundation
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Attachment A

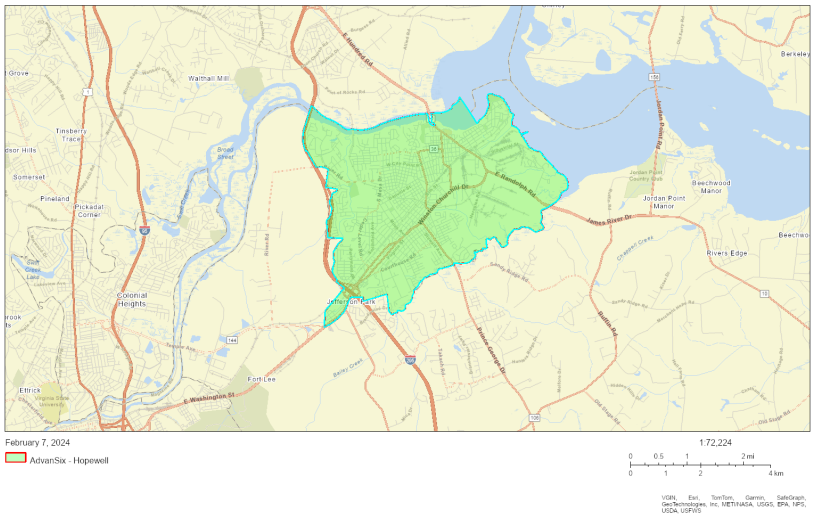
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Hopewell, VA

City: Hopewell
Population: 23,020
Area in square miles: 10.83

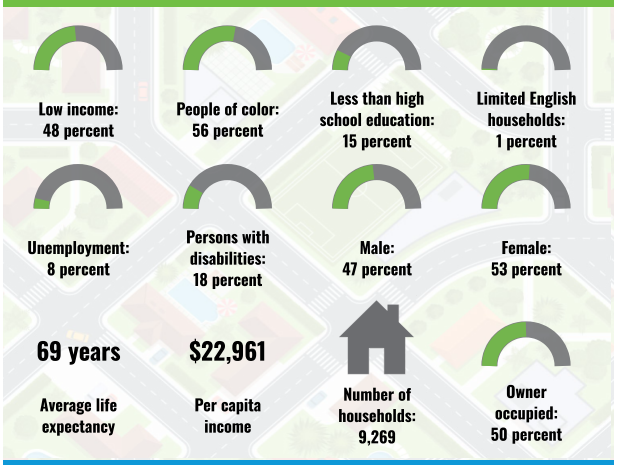
A3 Landscape



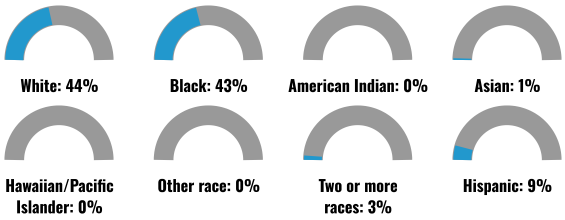
LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	93%
Spanish	5%
Other Indo-European	1%
Tagalog (including Filipino)	1%
Total Non-English	7%

COMMUNITY INFORMATION



BREAKDOWN BY RACE



BREAKDOWN BY AGE

LIMITED ENGLISH SPEAKING BREAKDOWN

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

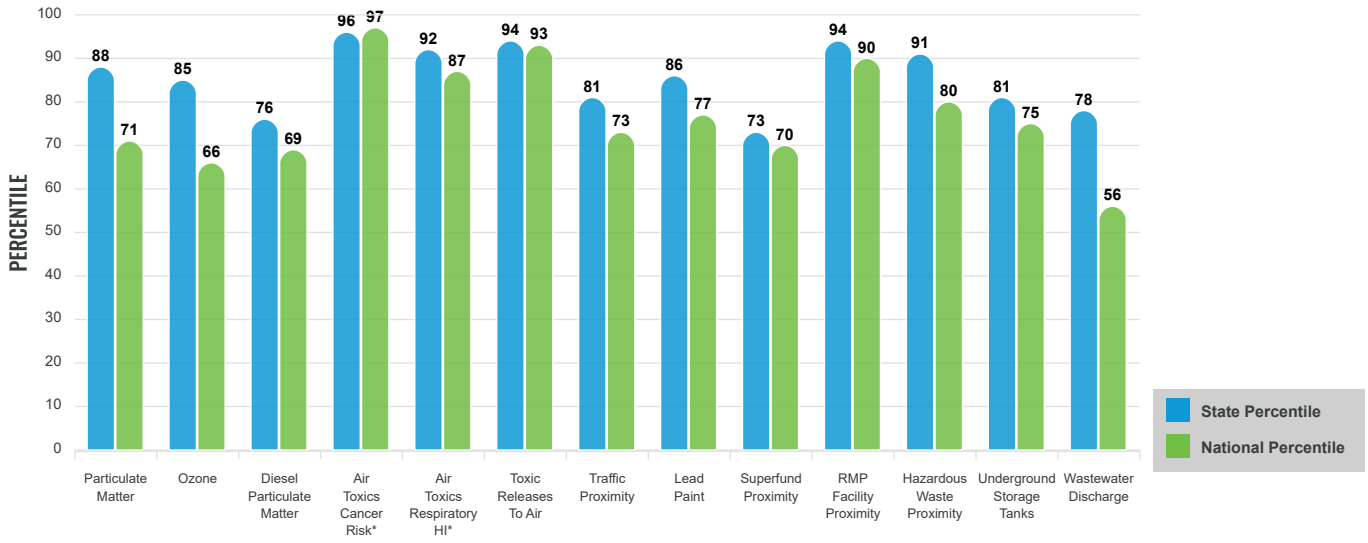
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

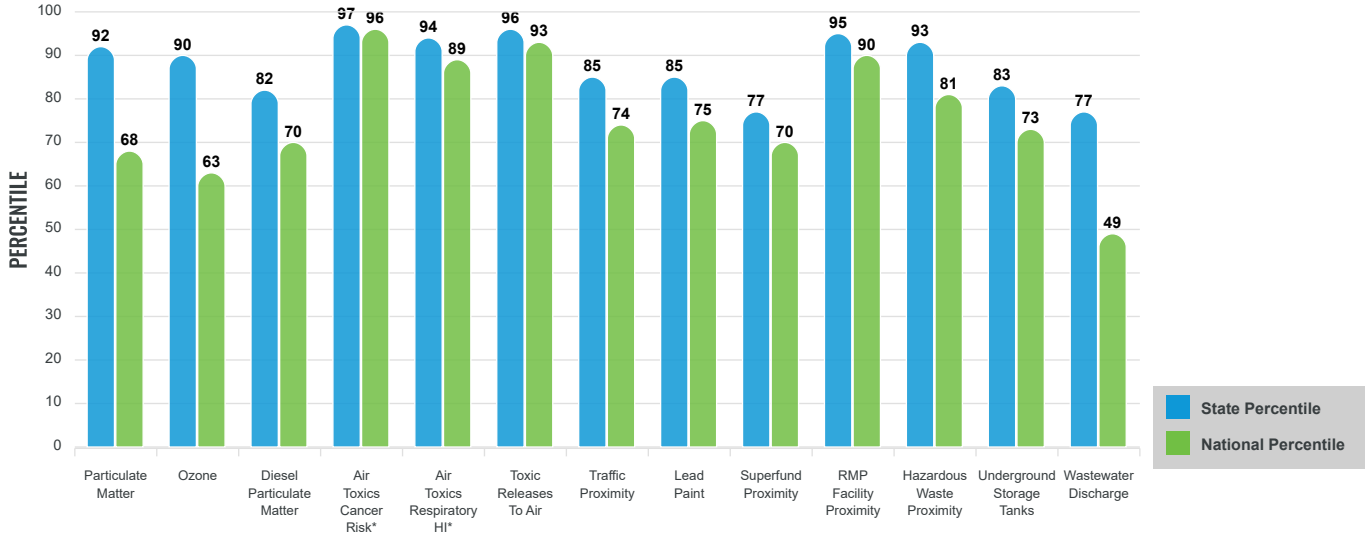
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for City: Hopewell

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	7.98	7.53	67	8.08	44
Ozone (ppb)	59.8	59.1	64	61.6	38
Diesel Particulate Matter (µg/m^3)	0.201	0.209	51	0.261	46
Air Toxics Cancer Risk* (lifetime risk per million)	44	29	89	25	94
Air Toxics Respiratory HI*	0.4	0.33	62	0.31	70
Toxic Releases to Air	200,000	4,300	99	4,600	99
Traffic Proximity (daily traffic count/distance to road)	110	150	65	210	60
Lead Paint (% Pre-1960 Housing)	0.35	0.22	75	0.3	62
Superfund Proximity (site count/km distance)	0.052	0.11	44	0.13	45
RMP Facility Proximity (facility count/km distance)	2.6	0.21	99	0.43	97
Hazardous Waste Proximity (facility count/km distance)	1.5	0.61	88	1.9	68
Underground Storage Tanks (count/km^2)	2.2	1.9	68	3.9	60
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00014	7.2	55	22	32
SOCIOECONOMIC INDICATORS					
Demographic Index	52%	31%	85	35%	76
Supplemental Demographic Index	19%	12%	85	14%	76
People of Color	56%	38%	74	39%	70
Low Income	48%	25%	86	31%	79
Unemployment Rate	9%	5%	82	6%	77
Limited English Speaking Households	1%	2%	65	5%	58
Less Than High School Education	15%	10%	76	12%	71
Under Age 5	7%	6%	70	6%	69
Over Age 64	15%	17%	47	17%	46
Low Life Expectancy	25%	20%	89	20%	89

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	4
Water Dischargers	25
Air Pollution	28
Brownfields	14
Toxic Release Inventory	16

Other community features within defined area:

Schools	7
Hospitals	4
Places of Worship	35

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for City: Hopewell

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	25%	20%	89	20%	89
Heart Disease	7.6	5.5	83	6.1	78
Asthma	11.5	9.6	91	10	85
Cancer	6.5	6.1	53	6.1	54
Persons with Disabilities	17.3%	12.6%	79	13.4%	77

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	6%	9%	52	12%	45
Wildfire Risk	0%	2%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	15%	13%	63	14%	61
Lack of Health Insurance	8%	8%	56	9%	56
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Report for City: Hopewell

Attachment B

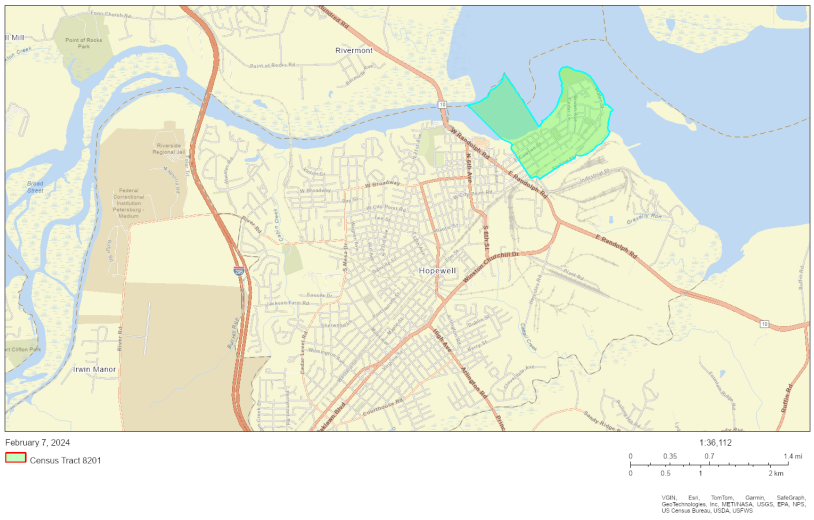
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Hopewell, VA

Tract: 51670820100
Population: 1,592
Area in square miles: 0.63

A3 Landscape



LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	91%
Spanish	6%
Other Indo-European	2%
Tagalog (including Filipino)	1%
Total Non-English	9%

COMMUNITY INFORMATION

- Low income: 47 percent
- People of color: 63 percent
- Less than high school education: 17 percent
- Limited English households: 0 percent
- Unemployment: 10 percent
- Persons with disabilities: 31 percent
- Male: 44 percent
- Female: 56 percent
- 69 years — Average life expectancy
- $21,282 — Per capita income
- Number of households: 702
- Owner occupied: 27 percent

BREAKDOWN BY RACE

- White: 37%
- Black: 45%
- American Indian: 0%
- Asian: 1%
- Hawaiian/Pacific Islander: 0%
- Other race: 0%
- Two or more races: 5%
- Hispanic: 12%

BREAKDOWN BY AGE

From Ages 1 to 4	10%
From Ages 1 to 18	28%
From Ages 18 and up	72%
From Ages 65 and up	11%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	0%
Speak Other Indo-European Languages	0%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

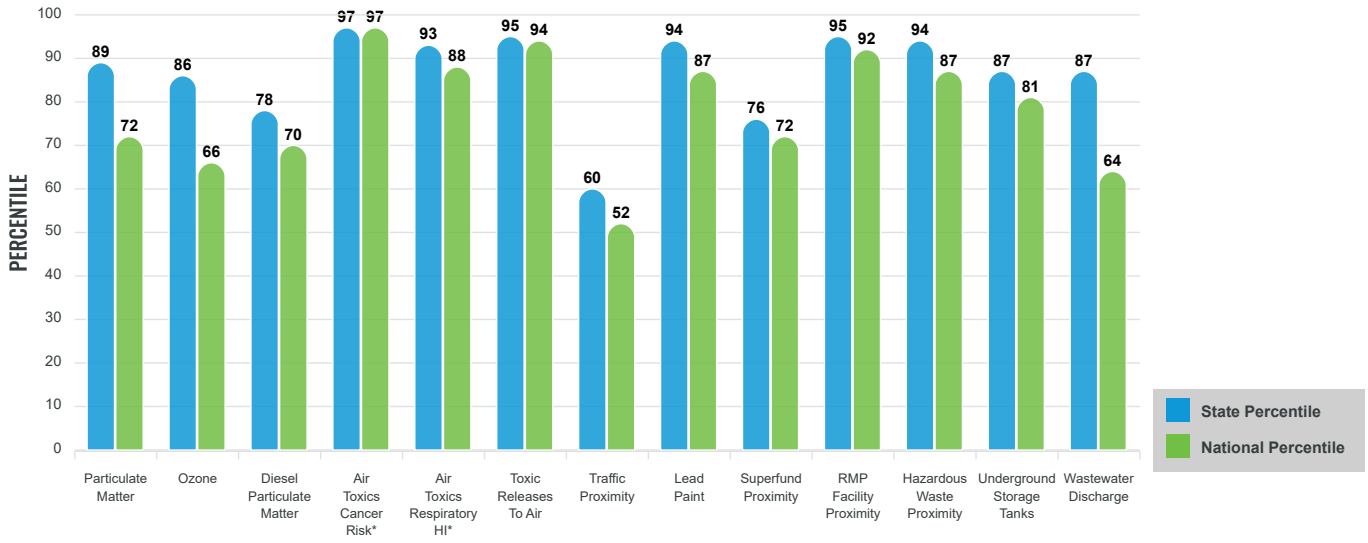
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

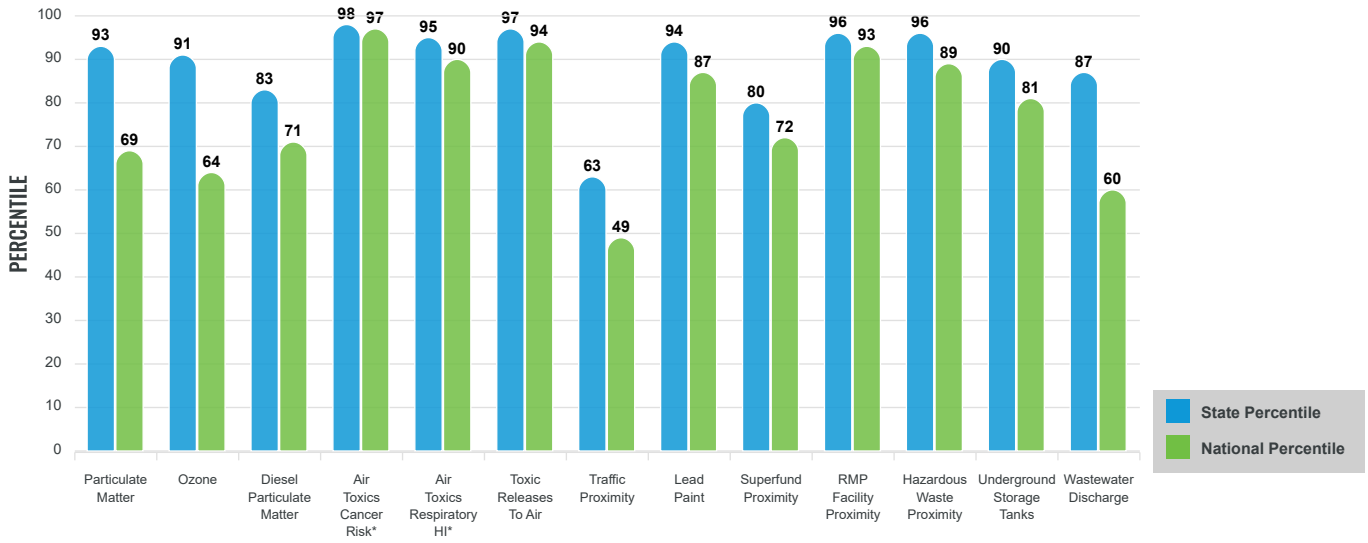
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 51670820100

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	7.94	7.53	65	8.08	43
Ozone (ppb)	59.6	59.1	62	61.6	36
Diesel Particulate Matter (µg/m^3)	0.197	0.209	50	0.261	44
Air Toxics Cancer Risk* (lifetime risk per million)	50	29	97	25	94
Air Toxics Respiratory HI*	0.4	0.33	62	0.31	70
Toxic Releases to Air	170,000	4,300	99	4,600	99
Traffic Proximity (daily traffic count/distance to road)	23	150	30	210	26
Lead Paint (% Pre-1960 Housing)	0.52	0.22	86	0.3	75
Superfund Proximity (site count/km distance)	0.052	0.11	44	0.13	44
RMP Facility Proximity (facility count/km distance)	5.8	0.21	99	0.43	99
Hazardous Waste Proximity (facility count/km distance)	3.1	0.61	96	1.9	81
Underground Storage Tanks (count/km^2)	2.5	1.9	71	3.9	63
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00016	7.2	57	22	34
SOCIOECONOMIC INDICATORS					
Demographic Index	55%	31%	87	35%	79
Supplemental Demographic Index	21%	12%	88	14%	80
People of Color	63%	38%	81	39%	74
Low Income	47%	25%	85	31%	78
Unemployment Rate	10%	5%	86	6%	80
Limited English Speaking Households	0%	2%	0	5%	0
Less Than High School Education	17%	10%	82	12%	76
Under Age 5	10%	6%	87	6%	86
Over Age 64	11%	17%	34	17%	32
Low Life Expectancy	29%	20%	98	20%	98

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund 0
Hazardous Waste, Treatment, Storage, and Disposal Facilities 0
Water Dischargers 1
Air Pollution 3
Brownfields 0
Toxic Release Inventory 1

Other community features within defined area:

Schools 0
Hospitals 0
Places of Worship 3

Other environmental data:

Air Non-attainment ..... Yes
Impaired Waters ..... Yes

Selected location contains American Indian Reservation Lands* ..... No
Selected location contains a "Justice40 (CEJST)" disadvantaged community ..... Yes
Selected location contains an EPA IRA disadvantaged community ..... Yes

Report for Tract: 51670820100

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	29%	20%	98	20%	98
Heart Disease	6.3	5.5	65	6.1	56
Asthma	11.2	9.6	89	10	82
Cancer	5.5	6.1	36	6.1	35
Persons with Disabilities	27.7%	12.6%	97	13.4%	97

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	8%	9%	66	12%	57
Wildfire Risk	0%	2%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	19%	13%	72	14%	71
Lack of Health Insurance	11%	8%	75	9%	71
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Report for Tract: 51670820100

Attachment C

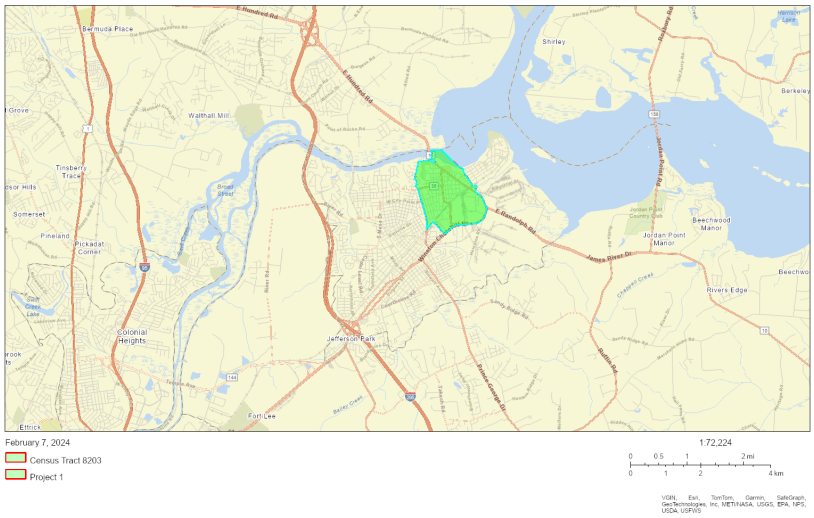
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Hopewell, VA

Tract: 51670820300
Population: 2,824
Area in square miles: 1.18

A3 Landscape



LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	91%
Spanish	2%
German or other West Germanic	1%
Other Indo-European	1%
Tagalog (including Filipino)	4%
Total Non-English	9%

COMMUNITY INFORMATION

- Low income: 64 percent
- People of color: 54 percent
- Less than high school education: 7 percent
- Limited English households: 4 percent
- Unemployment: 9 percent
- Persons with disabilities: 18 percent
- Male: 44 percent
- Female: 56 percent
- 69 years — Average life expectancy
- $18,502 — Per capita income
- Number of households: 1,202
- Owner occupied: 34 percent

BREAKDOWN BY RACE

- White: 46%
- Black: 45%
- American Indian: 0%
- Asian: 5%
- Hawaiian/Pacific Islander: 0%
- Other race: 0%
- Two or more races: 2%
- Hispanic: 2%

BREAKDOWN BY AGE

From Ages 1 to 4	8%
From Ages 1 to 18	32%
From Ages 18 and up	68%
From Ages 65 and up	13%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	14%
Speak Other Indo-European Languages	86%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

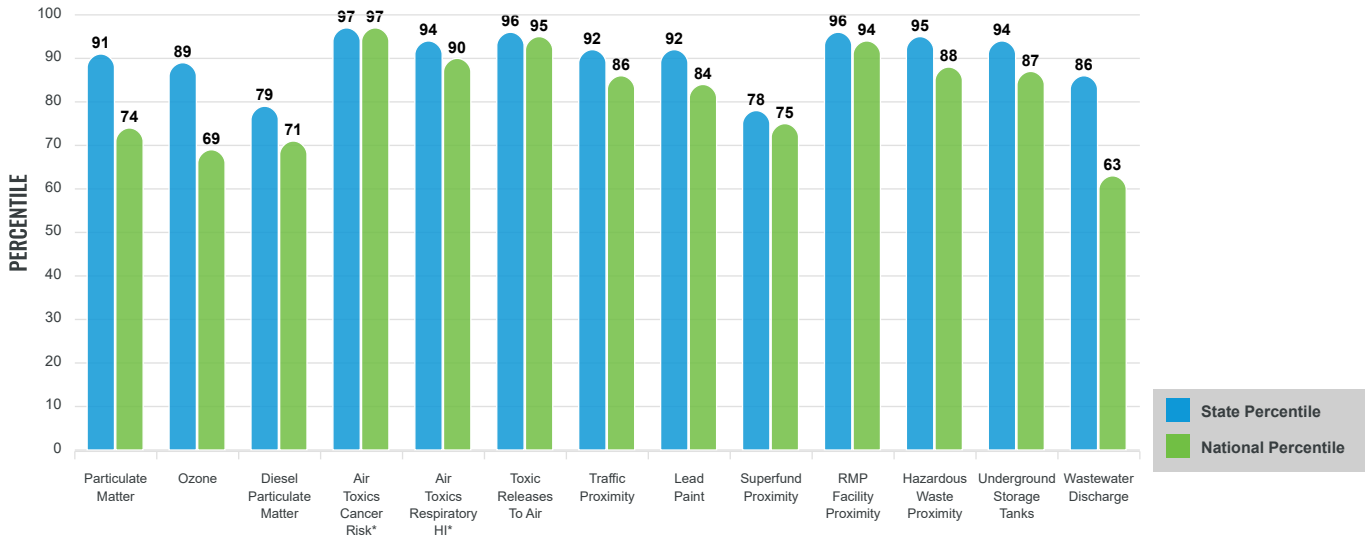
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

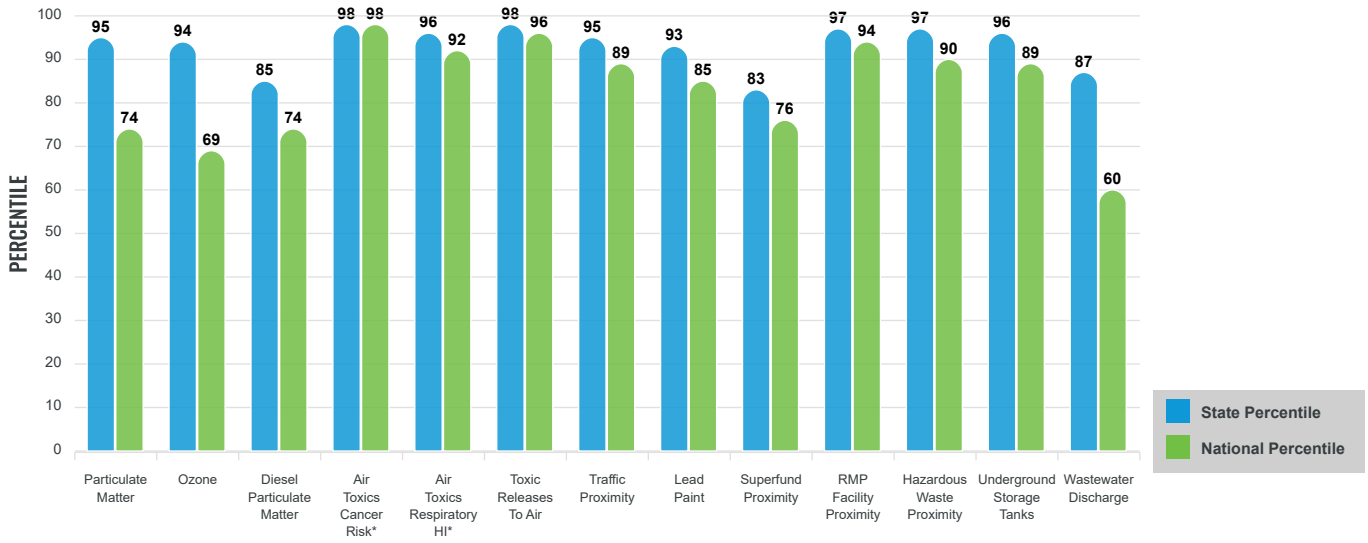
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 51670820300

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	7.97	7.53	67	8.08	44
Ozone (ppb)	59.7	59.1	63	61.6	37
Diesel Particulate Matter (µg/m^3)	0.192	0.209	48	0.261	43
Air Toxics Cancer Risk* (lifetime risk per million)	50	29	97	25	94
Air Toxics Respiratory HI*	0.4	0.33	62	0.31	70
Toxic Releases to Air	550,000	4,300	99	4,600	99
Traffic Proximity (daily traffic count/distance to road)	210	150	80	210	75
Lead Paint (% Pre-1960 Housing)	0.45	0.22	83	0.3	70
Superfund Proximity (site count/km distance)	0.053	0.11	44	0.13	45
RMP Facility Proximity (facility count/km distance)	5.4	0.21	99	0.43	99
Hazardous Waste Proximity (facility count/km distance)	2.5	0.61	94	1.9	77
Underground Storage Tanks (count/km^2)	4.7	1.9	88	3.9	76
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00014	7.2	55	22	32
SOCIOECONOMIC INDICATORS					
Demographic Index	59%	31%	90	35%	82
Supplemental Demographic Index	23%	12%	92	14%	84
People of Color	54%	38%	73	39%	69
Low Income	64%	25%	95	31%	91
Unemployment Rate	9%	5%	85	6%	79
Limited English Speaking Households	4%	2%	79	5%	71
Less Than High School Education	7%	10%	51	12%	47
Under Age 5	8%	6%	78	6%	77
Over Age 64	13%	17%	40	17%	38
Low Life Expectancy	29%	20%	98	20%	98

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	0
Water Dischargers	5
Air Pollution	10
Brownfields	12
Toxic Release Inventory	3

Other community features within defined area:

Schools	1
Hospitals	3
Places of Worship	16

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for Tract: 51670820300

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	29%	20%	98	20%	98
Heart Disease	8	5.5	87	6.1	84
Asthma	12.4	9.6	95	10	93
Cancer	6.1	6.1	47	6.1	48
Persons with Disabilities	17.1%	12.6%	78	13.4%	76

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	6%	9%	52	12%	45
Wildfire Risk	0%	2%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	9%	13%	47	14%	42
Lack of Health Insurance	6%	8%	44	9%	45
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Report for Tract: 51670820300

Attachment D

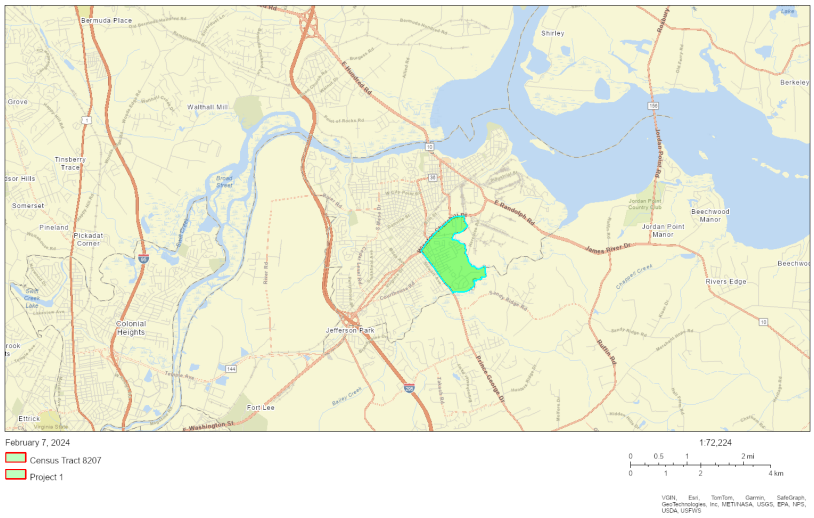
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Hopewell, VA

Tract: 51670820700
Population: 2,860
Area in square miles: 0.77

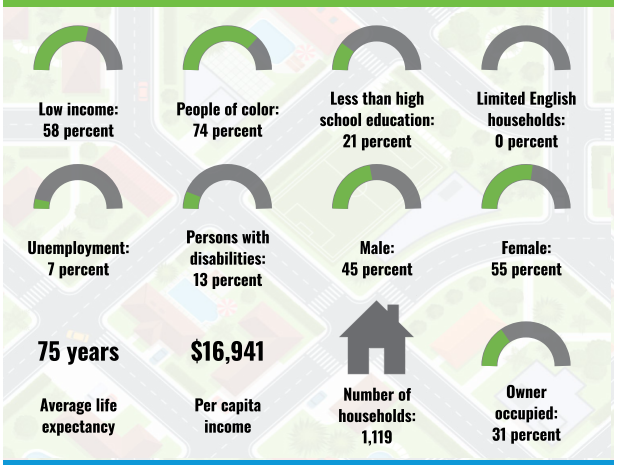
A3 Landscape



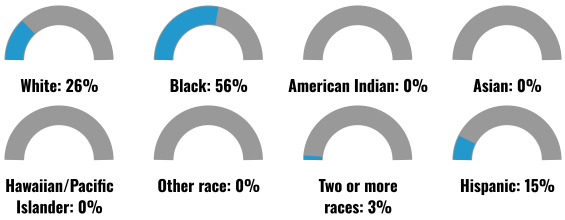
LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	85%
Spanish	13%
German or other West Germanic	1%
Other Indo-European	1%
Total Non-English	15%

COMMUNITY INFORMATION



BREAKDOWN BY RACE



BREAKDOWN BY AGE

LIMITED ENGLISH SPEAKING BREAKDOWN

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

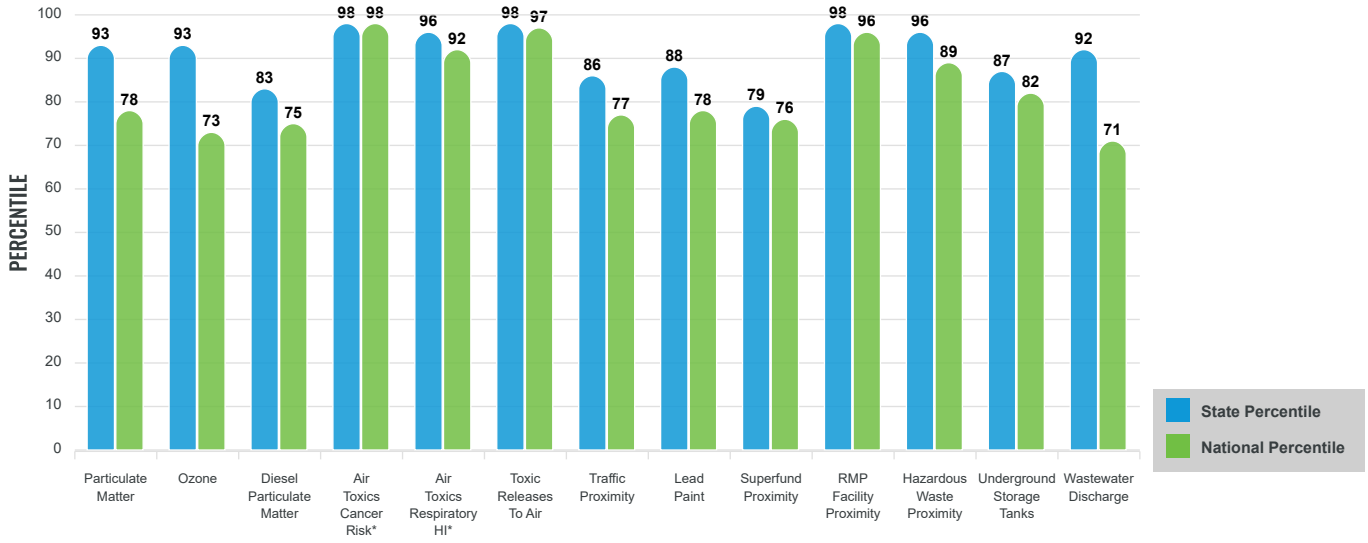
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

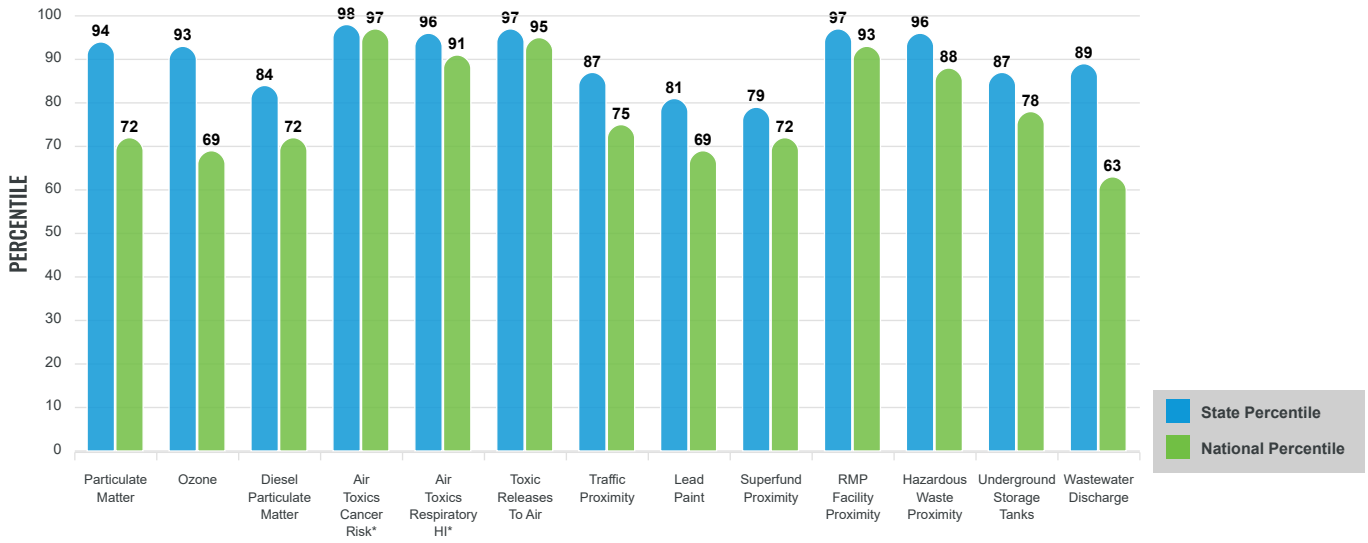
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 51670820700

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	7.96	7.53	66	8.08	44
Ozone (ppb)	59.8	59.1	64	61.6	38
Diesel Particulate Matter (µg/m^3)	0.192	0.209	48	0.261	43
Air Toxics Cancer Risk* (lifetime risk per million)	60	29	99	25	94
Air Toxics Respiratory HI*	0.4	0.33	62	0.31	70
Toxic Releases to Air	530,000	4,300	99	4,600	99
Traffic Proximity (daily traffic count/distance to road)	76	150	55	210	49
Lead Paint (% Pre-1960 Housing)	0.16	0.22	53	0.3	43
Superfund Proximity (site count/km distance)	0.049	0.11	41	0.13	42
RMP Facility Proximity (facility count/km distance)	3.1	0.21	99	0.43	98
Hazardous Waste Proximity (facility count/km distance)	2.1	0.61	92	1.9	74
Underground Storage Tanks (count/km^2)	1.6	1.9	60	3.9	55
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00021	7.2	59	22	35
SOCIOECONOMIC INDICATORS					
Demographic Index	66%	31%	93	35%	87
Supplemental Demographic Index	22%	12%	91	14%	83
People of Color	74%	38%	87	39%	80
Low Income	58%	25%	92	31%	87
Unemployment Rate	7%	5%	78	6%	72
Limited English Speaking Households	0%	2%	0	5%	0
Less Than High School Education	21%	10%	87	12%	82
Under Age 5	8%	6%	77	6%	76
Over Age 64	10%	17%	28	17%	26
Low Life Expectancy	23%	20%	81	20%	80

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	0
Water Dischargers	0
Air Pollution	0
Brownfields	0
Toxic Release Inventory	0

Other community features within defined area:

Schools	2
Hospitals	0
Places of Worship	2

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for Tract: 51670820700

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	23%	20%	81	20%	80
Heart Disease	6.1	5.5	62	6.1	52
Asthma	12.8	9.6	96	10	95
Cancer	4.6	6.1	22	6.1	19
Persons with Disabilities	12.2%	12.6%	52	13.4%	47

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	3%	9%	33	12%	32
Wildfire Risk	0%	2%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	16%	13%	66	14%	65
Lack of Health Insurance	10%	8%	73	9%	69
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Report for Tract: 51670820700

Attachment E

CDC/ATSDR Environmental Justice Index 2022

For more information on EJI indicators, click on the indicator names in the table below.
Note: ⚠ indicates a score of >0.75 or high prevalence of a chronic condition test

Location	Census Tract 8201, Hopewell city, Virginia
Total Population	1,249
EJI Rank	⚠0.95
Environmental Burden Rank	⚠0.90
Social Vulnerability Rank	⚠0.76

Air Pollution	**0.58**
Ozone	0.33
PM2.5	0.39
Diesel Particulate Matter	0.37
Air Toxics Cancer Risk	⚠1.00

Potentially Hazardous & Toxic Sites	**⚠0.98**
National Priority List Sites	0.00
Toxic Release Inventory Sites	⚠0.85
Treatment, Storage, and Disposal Sites	⚠0.98
Risk Management Plan Sites	⚠0.98
Coal Mines	0.00
Lead Mines	0.00

Built Environment	**0.70**
Lack of Recreational Parks	0.39
Housing Built Pre-1980	⚠0.95
Lack of Walkability	0.48

Transportation Infrastructure	**0.37**
High-Volume Roads	0.00
Railways	⚠0.79
Airports	0.00

Water Pollution	0.59
Impaired Surface Water	0.59

Minority Status	0.65
Minority Status	0.65

Socioeconomic Status	⚠0.90
Poverty	0.70
No High School Diploma	⚠0.82
Unemployment	⚠0.87
Housing Tenure	⚠0.88
Housing Burdened, Lower-Income Households	0.56
Lack of Health Insurance	⚠0.86
Lack of Internet Access	⚠0.91

Household Characteristics	0.74
Age 65 and Older	0.40
Age 17 and Younger	0.16
Civilian with a Disability	⚠0.99
Speaks English "Less than Well"	0.74

Housing Type	0.00
Group Quarters	0.00
Mobile Homes	0.00

High Pre-existing Chronic Disease Prevalence Sum	4 out of 5
High Estimated Prevalence of Asthma	Yes⚠
High Estimated Prevalence of Cancer	No
High Estimated Prevalence of High Blood Pressure	Yes⚠
High Estimated Prevalence of Diabetes	Yes⚠
High Estimated Prevalence of Poor Mental Health	Yes⚠

Attachment F

CDC/ATSDR Environmental Justice Index 2022

For more information on EJI indicators, click on the indicator names in the table below.
Note: ⚠ indicates a score of >0.75 or high prevalence of a chronic condition test

Location	Census Tract 8203, Hopewell city, Virginia
Total Population	3,059
EJI Rank	⚠0.97
Environmental Burden Rank	⚠0.86
Social Vulnerability Rank	⚠0.91

Air Pollution	**0.58**
Ozone	0.33
PM2.5	0.40
Diesel Particulate Matter	0.36
Air Toxics Cancer Risk	⚠0.99

Potentially Hazardous & Toxic Sites	**⚠0.98**
National Priority List Sites	0.00
Toxic Release Inventory Sites	⚠0.83
Treatment, Storage, and Disposal Sites	⚠0.98
Risk Management Plan Sites	⚠0.98
Coal Mines	0.00
Lead Mines	0.00

Built Environment	**0.51**
Lack of Recreational Parks	0.39
Housing Built Pre-1980	0.74
Lack of Walkability	0.45

Transportation Infrastructure	**0.37**
High-Volume Roads	0.00
Railways	⚠0.79
Airports	0.00

Water Pollution	0.59
Impaired Surface Water	0.59

Minority Status	0.73
Minority Status	0.73

Socioeconomic Status	⚠0.90
Poverty	⚠0.94
No High School Diploma	⚠0.83
Unemployment	⚠0.78
Housing Tenure	⚠0.94
Housing Burdened, Lower-Income Households	0.67
Lack of Health Insurance	0.68
Lack of Internet Access	0.73

Household Characteristics	0.48
Age 65 and Older	0.24
Age 17 and Younger	⚠0.94
Civilian with a Disability	⚠0.81
Speaks English "Less than Well"	0.00

Housing Type	⚠0.84
Group Quarters	⚠0.88
Mobile Homes	0.55

High Pre-existing Chronic Disease Prevalence Sum	4 out of 5
High Estimated Prevalence of Asthma	Yes⚠
High Estimated Prevalence of Cancer	No
High Estimated Prevalence of High Blood Pressure	Yes⚠
High Estimated Prevalence of Diabetes	Yes⚠
High Estimated Prevalence of Poor Mental Health	Yes⚠

Attachment G

CDC/ATSDR Environmental Justice Index 2022

For more information on EJI indicators, click on the indicator names in the table below.
Note: ⚠ indicates a score of >0.75 or high prevalence of a chronic condition test

Location	Census Tract 8207, Hopewell city, Virginia
Total Population	2,430
EJI Rank	⚠0.96
Environmental Burden Rank	⚠0.89
Social Vulnerability Rank	⚠0.80

Air Pollution	**0.58**
Ozone	0.33
PM2.5	0.40
Diesel Particulate Matter	0.34
Air Toxics Cancer Risk	⚠1.00

Potentially Hazardous & Toxic Sites	**⚠0.95**
National Priority List Sites	0.00
Toxic Release Inventory Sites	⚠0.78
Treatment, Storage, and Disposal Sites	⚠0.94
Risk Management Plan Sites	⚠0.88
Coal Mines	0.00
Lead Mines	0.00

Built Environment	**⚠0.83**
Lack of Recreational Parks	0.57
Housing Built Pre-1980	0.60
Lack of Walkability	⚠0.86

Transportation Infrastructure	**0.37**
High-Volume Roads	0.00
Railways	⚠0.79
Airports	0.00

Water Pollution	0.59
Impaired Surface Water	0.59

Minority Status	⚠0.88
Minority Status	⚠0.88

Socioeconomic Status	⚠0.95
Poverty	⚠0.91
No High School Diploma	⚠0.79
Unemployment	⚠0.89
Housing Tenure	⚠0.91
Housing Burdened, Lower-Income Households	⚠0.96
Lack of Health Insurance	⚠0.84
Lack of Internet Access	0.71

Household Characteristics	0.42
Age 65 and Older	0.14
Age 17 and Younger	⚠0.89
Civilian with a Disability	0.37
Speaks English "Less than Well"	0.52

Housing Type	0.00
Group Quarters	0.00
Mobile Homes	0.00

High Pre-existing Chronic Disease Prevalence Sum	4 out of 5
High Estimated Prevalence of Asthma	Yes⚠
High Estimated Prevalence of Cancer	No
High Estimated Prevalence of High Blood Pressure	Yes⚠
High Estimated Prevalence of Diabetes	Yes⚠
High Estimated Prevalence of Poor Mental Health	Yes⚠

Attachment H

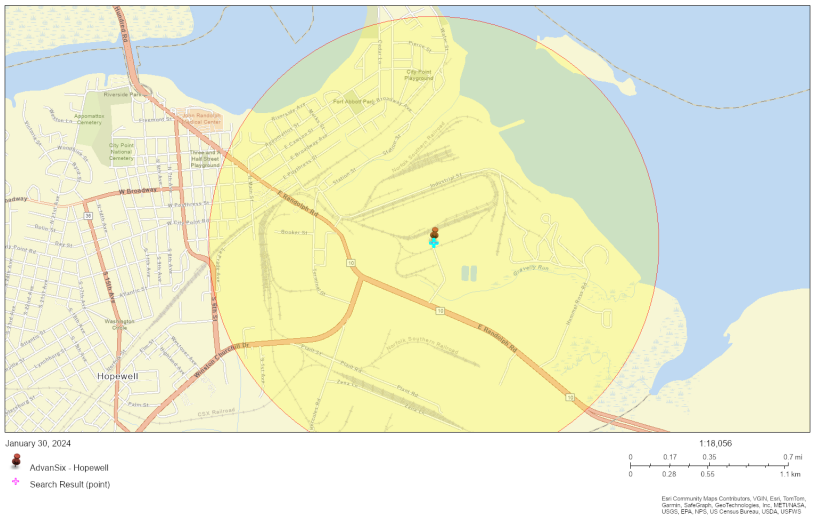
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Hopewell, VA

1 mile Ring Centered at 37.300033,-77.272511
Population: 2,195
Area in square miles: 3.14

A3 Landscape



LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	91%
Spanish	4%
German or other West Germanic	1%
Other Indo-European	2%
Tagalog (including Filipino)	3%
Total Non-English	9%

COMMUNITY INFORMATION

- Low income: 54 percent
- People of color: 63 percent
- Less than high school education: 15 percent
- Limited English households: 1 percent
- Unemployment: 10 percent
- Persons with disabilities: 26 percent
- Male: 44 percent
- Female: 56 percent
- 61 years — Average life expectancy
- $19,373 — Per capita income
- Number of households: 966
- Owner occupied: 27 percent

BREAKDOWN BY RACE

- White: 37%
- Black: 47%
- American Indian: 0%
- Asian: 3%
- Hawaiian/Pacific Islander: 0%
- Other race: 0%
- Two or more races: 4%
- Hispanic: 9%

BREAKDOWN BY AGE

From Ages 1 to 4	10%
From Ages 1 to 18	31%
From Ages 18 and up	69%
From Ages 65 and up	10%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	14%
Speak Other Indo-European Languages	86%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

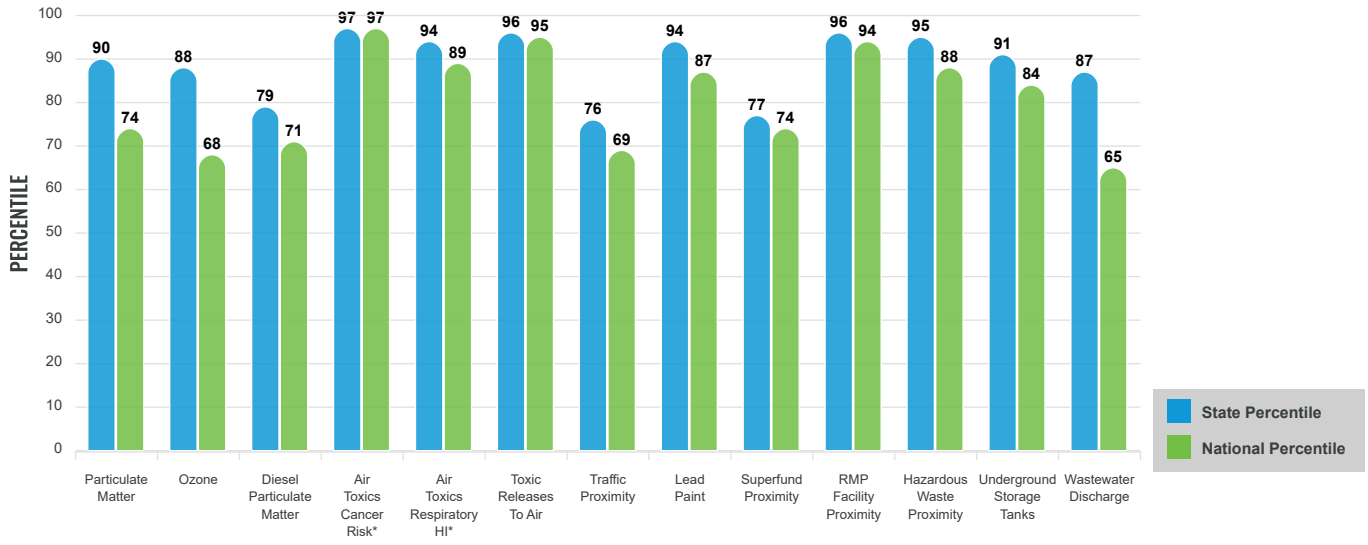
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

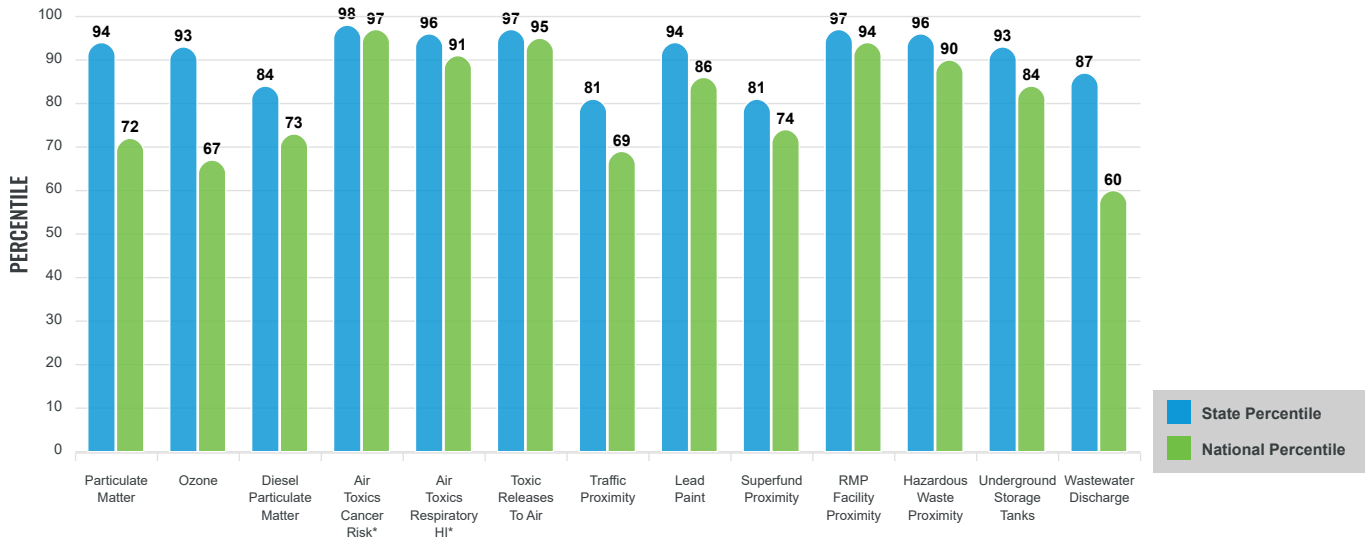
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for 1 mile Ring Centered at 37.300033,-77.272511

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	7.95	7.53	66	8.08	43
Ozone (ppb)	59.6	59.1	62	61.6	36
Diesel Particulate Matter (µg/m^3)	0.196	0.209	50	0.261	44
Air Toxics Cancer Risk* (lifetime risk per million)	50	29	97	25	94
Air Toxics Respiratory HI*	0.4	0.33	62	0.31	70
Toxic Releases to Air	320,000	4,300	99	4,600	99
Traffic Proximity (daily traffic count/distance to road)	75	150	55	210	49
Lead Paint (% Pre-1960 Housing)	0.47	0.22	84	0.3	71
Superfund Proximity (site count/km distance)	0.052	0.11	44	0.13	44
RMP Facility Proximity (facility count/km distance)	5.8	0.21	99	0.43	99
Hazardous Waste Proximity (facility count/km distance)	2.9	0.61	96	1.9	80
Underground Storage Tanks (count/km^2)	3.3	1.9	78	3.9	68
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00015	7.2	55	22	33
SOCIOECONOMIC INDICATORS					
Demographic Index	58%	31%	89	35%	81
Supplemental Demographic Index	22%	12%	91	14%	82
People of Color	63%	38%	80	39%	74
Low Income	54%	25%	90	31%	84
Unemployment Rate	10%	5%	86	6%	81
Limited English Speaking Households	1%	2%	68	5%	60
Less Than High School Education	15%	10%	76	12%	71
Under Age 5	10%	6%	86	6%	85
Over Age 64	10%	17%	28	17%	26
Low Life Expectancy	29%	20%	98	20%	98

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	4
Water Dischargers	24
Air Pollution	19
Brownfields	9
Toxic Release Inventory	15

Other community features within defined area:

Schools	1
Hospitals	0
Places of Worship	6

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	Yes

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for 1 mile Ring Centered at 37.300033,-77.272511

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	29%	20%	98	20%	98
Heart Disease	6.8	5.5	72	6.1	65
Asthma	11.6	9.6	91	10	86
Cancer	5.7	6.1	38	6.1	37
Persons with Disabilities	24.7%	12.6%	94	13.4%	94

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	7%	9%	64	12%	55
Wildfire Risk	0%	2%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	16%	13%	65	14%	64
Lack of Health Insurance	10%	8%	68	9%	65
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Footnotes

Report for 1 mile Ring Centered at 37.300033,-77.272511