



# Nature's Trust RI

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July 10, 2019

David DelSesto  
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Department of Environmental Management  
235 Promenade Street  
Providence, RI 02908

Dear Mr. DelSesto:

These are our public comments re *Title V Operating Permit, Shell Oil Products US, 520 Allens Ave, Providence, RI 02905.*

As set forth in great detail in the April 29, 2019 letter from NoLNG in PVD and the Washington Park Neighborhood Association,<sup>1</sup> the Shell terminal poses a serious, immediate and continuing threat to the neighboring communities. Nature's Trust Rhode Island endorsed that April letter, and we are writing to add the following to the public record.

The Department of Environmental Management (DEM) undoubtedly is aware of the following:<sup>2</sup>

Fine particulate matter (PM<sub>2.5</sub>) air pollution exposure is the largest environmental health risk factor in the United States. Here, we link PM<sub>2.5</sub> exposure to the human activities responsible for PM<sub>2.5</sub> pollution. We use these results to explore “pollution inequity”: the difference between the environmental health damage caused by a racial-ethnic group and the damage that group experiences. We show that, in the United States, PM<sub>2.5</sub> exposure is disproportionately caused by consumption of goods and services mainly by the non-Hispanic white majority, but disproportionately inhaled by black and Hispanic minorities.

Indeed, it is well-known that fine particulate matter may consist of fugitive dust and is also created by secondary formation from precursor emissions such as sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>),

<sup>1</sup>M. Huertas and L. Perri, *Request for a public hearing. No LNG in PVD and Washington Park Neighborhood Association.* Apr. 29, 2019. URL: <https://upriseri.com/wp-content/uploads/2019/04/Shell-Terminal-comment-letter-No-LNG-in-PVD-and-WPNA.pdf> (visited on July 8, 2019).

<sup>2</sup>C. W. Tessum *et al.*, “Inequity in consumption of goods and services adds to racial–ethnic disparities in air pollution exposure”. In: *Proceedings of the National Academy of Sciences* 116.13 (2019), pp. 6001–6006. DOI: [10.1073/pnas.1818859116](https://doi.org/10.1073/pnas.1818859116). eprint: <https://www.pnas.org/content/116/13/6001.full.pdf>. URL: <https://www.pnas.org/content/116/13/6001>, p. 6001.

volatile organic compounds (VOCs) and ammonia ( $\text{NH}_3$ ).<sup>3</sup> With few exceptions, these substances are emitted by the Shell terminal.

The health issues caused by fine particulate matter have been documented extensively and are summed up in the following:<sup>4</sup>

Many populations (e.g., healthy, diseased, etc.) and life stages (e.g., children, older adults, etc.) have been shown to be at-risk of a health effect in response to short- or long-term PM [particulate matter] exposure, particularly  $\text{PM}_{2.5}$ . However, of the populations and life stages examined, current scientific evidence indicates that only some populations may be at *disproportionately increased risk* of a  $\text{PM}_{2.5}$ -related health effect, including nonwhite populations, children, people with specific genetic variants in genes in the glutathione pathway, people who are overweight or obese, people with pre-existing cardiovascular and respiratory diseases, and people of low socioeconomic status (SES). [emphasis in original]

Even in the absence of additional sources of fine particulate matter, its impact is expected to increase as the climate crisis continues to unfold.<sup>5</sup>

Stagnant atmospheric conditions can lead to hazardous air quality by allowing ozone and particulate matter to accumulate and persist in the near-surface environment. By changing atmospheric circulation and precipitation patterns, global warming could alter [increase] the meteorological factors that regulate air stagnation frequency.

The climate crisis manifests itself in the already observed dramatic increase in extreme weather events.<sup>6</sup> As Hansen points out:<sup>7</sup>

Extreme heat of more than 3 SDs [standard deviations], which almost never happened 50 years ago, recently is occurring about 15% of the time.

Note that three-standard deviation events occur about 0.3% of the time. In other words, over the last fifty years heat extremes have increased by a factor of fifty across the globe.

At the same time, other extreme events have also followed an upward trend.<sup>8</sup> The STORMTOOLS

<sup>3</sup>W. M. Hodan and W. R. Barnard, *Evaluating the Contribution of PM2.5 Precursor Gases and Re-entrained Road Emissions to Mobile Source PM2.5 Particulate Matter Emissions*. MACTEC Under Contract to the Federal Highway Administration, 2004. URL: <https://www3.epa.gov/ttnchie1/conference/ei13/mobile/hodan.pdf> (visited on July 9, 2019).

<sup>4</sup>J. Sacks *et al.*, *Integrated Science Assessment for Particulate Matter (External Review Draft)*. EPA, Oct. 2018. URL: [https://yosemite.epa.gov/sab/sabproduct.nsf/0/932D1DF8C2A9043F852581000048170D/\\$File/PM-1STERD-OCT2018.PDF](https://yosemite.epa.gov/sab/sabproduct.nsf/0/932D1DF8C2A9043F852581000048170D/$File/PM-1STERD-OCT2018.PDF) (visited on July 8, 2019), p. 1-1.

<sup>5</sup>D. E. Horton, Harshvardhan, and N. S. Diffenbaugh, “Response of air stagnation frequency to anthropogenically enhanced radiative forcing”. In: *Environmental Research Letters* 7.4 (2012), p. 044034. DOI: [10.1088/1748-9326/7/4/044034](https://doi.org/10.1088/1748-9326/7/4/044034). URL: <https://doi.org/10.1088%2F1748-9326%2F7%2F4%2F044034>, p. 1.

<sup>6</sup>J. E. Hansen and M. Sato, “Regional climate change and national responsibilities”. In: *Environmental Research Letters* 11.3 (2016), p. 034009. DOI: [10.1088/1748-9326/11/3/034009](https://doi.org/10.1088/1748-9326/11/3/034009). URL: <http://stacks.iop.org/1748-9326/11/i=3/a=034009>.

<sup>7</sup>J. E. Hansen, *Impacts of shifting bell curves (transcript of video abstract)*. IOP Science. Mar. 2, 2016. URL: <https://cdn.iopscience.com/content/1748-9326/11/3/034009/Mmedia/abstract-transcript-034009-va.txt> (visited on July 8, 2019).

<sup>8</sup>Petition for rulemaking. Nature’s Trust Rhode Island. Sept. 5, 2018. URL: <https://naturestrustri.org/wp-content/uploads/2018/11/RIDEMPetition-20180904-FINAL-amended.pdf>, section A.6.16.1, p. 79.

map in the Huertas and Perri's April letter shows that a 100-year storm would inundate almost the entire Shell Terminal. As mentioned in the letter, this result does not even account for the projected sea level rise.<sup>9</sup> As a matter of fact, the trend observed over the last decades renders the whole concept of a "100-year storm" virtually meaningless; such events are expected to occur with greatly increased frequency.

DEM's response to the letter from NoLNG in PVD and the Washington Park Neighborhood Association<sup>10</sup> completely ignores these changing conditions. Nor does the response address the violations of the Clean Water Act alleged in the complaint of the Conservation Law Foundation filed against Shell Oil Products US et al.<sup>11</sup>

DEM's response is incompatible with the best available health and climate science. The reply also ignores environmental and intergenerational justice, and the precautionary principle. Issuing a permit to continue to pollute is a violation of DEM's statutory duties, as specified in Title 42-17.1, defining the responsibilities of the Department, and in Title 42-6.2, the Resilient Rhode Island Act of 2014.

Finally, we draw your attention to the study by Tong et al. entitled *Committed emissions from existing energy infrastructure jeopardize 1.5°C climate target*, published this month in the highly regarded scientific journal Nature.<sup>12</sup> The point made in this paper is simple: not only should we stop building, we should retire existing fossil-fuel infrastructure. Obviously, permitting Shell to continue its activities would fly in the face of Governor Raimondo's Executive Order 17-06, reaffirming Rhode Island's commitment to the principles of the Paris Climate Agreement.<sup>13</sup>

Respectfully submitted,



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<sup>9</sup>Huertas and Perri, *supra* note 1, p. 6.

<sup>10</sup>L. Grandchamp, *DEM response to request for public hearing*. R.I. Department of Environmental Management (Office of Air Resources). May 2019. URL: <https://static1.squarespace.com/static/546d61b5e4b049f0b10b95c5/t/5ceaf250ee6eb04deea33b76/1558901328361/GrandchampLetter.pdf> (visited on July 8, 2019).

<sup>11</sup>*Conservation Law Foundation's complaint for declaratory and injunctive relief and civil penalties (Case 1:17-cv-00396)*. Conservation Law Foundation v. Shell Oil Products US et al., Aug. 28, 2017. URL: <https://www.clf.org/wp-content/uploads/2017/08/2017-08-28-Dkt-1-Complaint.pdf> (visited on July 9, 2019).

<sup>12</sup>D. Tong et al., "Committed emissions from existing energy infrastructure jeopardize 1.5 °C climate target". In: *Nature* (July 1, 2019). DOI: [10.1038/s41586-019-1364-3](https://doi.org/10.1038/s41586-019-1364-3). URL: <https://doi.org/10.1038/s41586-019-1364-3>.

<sup>13</sup>G. Raimondo, *Reaffirming Rhode Island's commitment to the principles of the Paris climate agreement*. State of Rhode Island and Providence Plantations, Office of the Governor. June 12, 2017. URL: [http://www.governor.ri.gov/documents/orders/ExecOrder\\_17-06\\_06112017.pdf](http://www.governor.ri.gov/documents/orders/ExecOrder_17-06_06112017.pdf).