June 12, 2025

Mr. Brian Hutchins
Air Quality Bureau
Department of Natural Resources - Environmental Services Division
6200 Park Ave Suite 200
Des Moines, IA 50321

Re: Comments on the 2025 Air Monitoring Network Plan

Dear Mr. Hutchins:

The Iowa Environmental Council (IEC), Sierra Club, and Environmental Law & Policy Center (ELPC) offer the following comments on the Iowa Ambient Air 2025 Network Plan, noticed for public comment on May 13, 2025.

The Iowa Environmental Council is an alliance of more than 100 organizations, over 500 individual members, and an at-large board of farmers, business owners, and conservationists. IEC works to build a safe, healthy environment and sustainable future for Iowa. Our members care about air and water quality across the state, and they hike, recreate, and enjoy the outdoors in Iowa and beyond.

Sierra Club is a national nonprofit organization with 67 chapters and approximately 650,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. Sierra Club's Iowa Chapter has over 5,200 members. Sierra Club has long participated in Clean Air Act rulemaking and litigation across the country in order to advocate for clean air and public health.

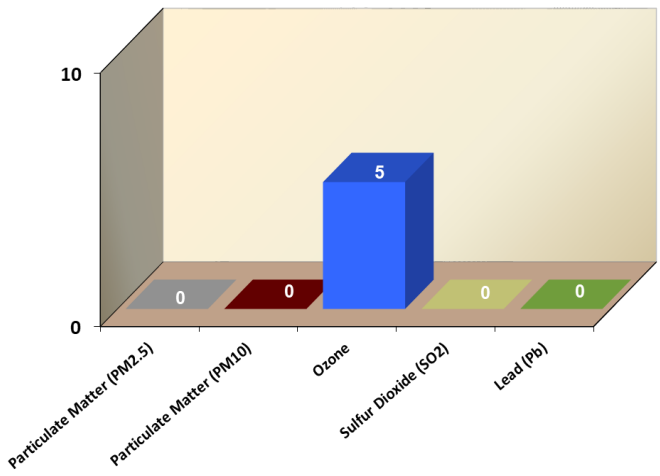
Environmental Law and Policy Center is a Midwest-based not-for-profit public interest environmental advocacy organization dedicated to improving environmental quality and public health, including protecting the Great Lakes and other Midwest natural resources. For nearly 30 years, ELPC has used litigation, policy advocacy, and strategic communications to improve environmental quality and protect the Midwest's natural resources.

Our organizations are concerned about the limited monitoring the Iowa Department of Natural Resources (DNR) has proposed for susceptible populations required under the Clean Air Act and request expansion of the state's air monitoring network.

I. Ambient Air Standards

Air pollution is a well-recognized threat to public health and environmental quality.[1] Two key criteria air pollutants can affect asthma: ozone (found in smog) and particle pollution (found in haze, smoke, and dust). When ozone and particle pollution are in the air, adults and children with asthma are more likely to have symptoms.[2] The NAAQS for 8-hour ozone is 70 ppb (parts per billion), with an annual $PM_{2.5}$ standard of 9.0 µg/m^3 (micrograms per cubic meter), and a 24-hour $PM_{2.5}$ standard of 35 µg/m^3.[3] In 2025 through May 22, Iowa air monitoring showed exceedance of the ozone standard 5 times (see chart below). [4]

2025 Iowa NAAQS Exceedances
(through May 22)



The challenge in an air monitoring network is addressing "gaps in health protection that can occur for criteria pollutants and HAPs near strong local sources" because air monitoring is often insufficient.[5] There are gaps nationwide and in Iowa between health protection and atmospheric research. Inadequate monitoring of emission, air quality, and health relationships can "result in inappropriate SIPs [State Implementation Plans], gaming, or paralysis by analysis."[6] Although

[1] Stern, *History of Air Pollution Legislation in the United States*; 32 J. AIR POLLUTION CONTROL ASS'N 44–61 (1982).
[2] U.S. EPA, Asthma and Outdoor Air Pollution," available at https://www.airnow.gov/sites/default/files/2018-03/asthma-flyer.pdf.
[3] U.S. EPA, "Ozone National Ambient Air Quality Standards (NAAQS)," available at https://www.epa.gov/ground-level-ozone-pollution/ozone-national-ambient-air-quality-standards-naaqs (last visited May 29, 2025); U.S. EPA, "National Ambient Air Quality Standards (NAAQS) for PM," available at https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm (last visited May 29, 2025).
[4] Iowa DNR, "NAAQS_Exceedances_2025.pdf," available at https://www.iowadnr.gov/media/8322/download?inline
[5] Chow et al., *Critical Review Discussion: Will the Circle Be Unbroken: A History of the U.S. National Ambient Air Quality Standards*, 57 J. AIR & WASTE MANAG. ASS'N. 1151, 1160 (2007).
[6] *Id.* at 1159.

states, in the SIP process, have more leeway in developing *monitoring*, a state must act to ensure that its monitoring plan is protective of public health—not to simply "ensure compliance" by failing to look closer at public health concerns.[7]

II. Air Monitoring Network

The Clean Air Act requires every state to establish a network of air monitoring stations for criteria pollutants, using criteria set by EPA for their location and operation, as part of the State Implementation Plan (SIP).[8] The monitoring stations in this network are called the State and Local Air Monitoring Stations (SLAMS). State and local agencies use another type of monitor, the Special Purpose Monitor (SPM), to fulfill very specific or short-term monitoring goals.[9]

Iowa has a continuing duty to ensure that its air monitoring is consistent with statutory and regulatory obligations. As a part of those obligations, the DNR must complete both network assessments[10] and network plans.[11] Those processes detail monitoring purpose and compliance with minimum monitoring requirements. Minimum monitoring requirements rely on population, measured concentrations, and air pollution emissions data.[12] Critically, they establish that Iowa must place monitors to protect at-risk communities.

In the planning and assessment process, Iowa must design a monitoring system that enables protection of public health: the network "must be designed with a variety of types of monitoring sites."[13] That variety must include sites that are designed to capture the highest concentration of a pollutant at micro to neighborhood scale. Iowa may also define other sites as appropriate, for example, sites that detail the public health impacts or lack thereof of pollutant exposure.[14]

Iowa must also develop monitoring to address at-risk populations—such as populations that experience high levels of environmentally-related disease like asthma. Iowa must develop sites in at-risk communities to monitor fine particulate matter. In network plans, Iowa must submit to the EPA by the 2025 planning year a "PM2.5 network design to address at-risk communities."[15] Moreover, Appendix D is clear that "[a]t least one monitoring station is to be sited at neighborhood or larger scale in an area of expected maximum concentration."[16] The neighborhood scale is the most important scale. In areas with "additional required SLAMS, a monitoring station is to be sited in an at-risk community with poor air quality, particularly where there are anticipated effects from sources in the area."[17]

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[7] 40 C.F.R. pt. 58, Appendix D at 1.1.1.
[8] 42 U.S.C. § 7410(a)(2)(B).
[9] 40 C.F.R. § 58.20.
[10] 40 C.F.R. § 58.10(d).
[11] 40 C.F.R. § 58.10(a) (1).
[12] 40 C.F.R. pt. 58, Appendix D.
[13] *Id.*
[14] *Id.*
[15] 40 C.F.R. 58.10(b) (14).
[16] 40 C.F.R. pt. 58, Appendix D at 4.7.1(b).
[17] *Id.*

Iowa's network assessment must ensure that monitoring provides an adequate assessment of whether and how air quality impacts susceptible populations. "The network assessment must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., *children with asthma*) and other at-risk populations."[18]

Iowa law does not constrain Iowa's ability to execute a monitoring scheme that effectively complies with the purpose and black-letter requirements of federal regulation. The DNR Director is to "determine by field studies and sampling the quality of atmosphere and the degree of air pollution" and both "conduct and encourage" research on air pollution and its *causes, effects*, abatement, control, and prevention."[19] Likewise, the Environmental Protection Commission has the broad authority to "adopt, amend, or repeal ambient air quality standards for the atmosphere of this state on the basis of providing air quality necessary to protect the public health and welfare" and take other measures "as necessary to assure attainment and maintenance of ambient air quality standards."[20] Ensuring compliance with federal air quality standards is a key duty. In fact, the duty to protect the public health is paramount not only federal law but also Iowa law.

III. Air Monitor Locations and Asthma in Iowa

It is critical that Iowa specifically investigate the ambient air where peoples' health may be especially harmed by pollution. Recent reporting highlights the declining air quality in some areas of Iowa.[21] In particular, Sioux City has seen nearly a 15 percent increase in particulate matter.[22]

We used U.S. EPA's Environmental Justice screening and mapping tool[23] to identify areas of the state with high rates of asthma. On each area with high asthma rates, IEC superimposed the location of any current air monitor on the image and identified by a red circle (see Appendix A). IEC submitted this in comments on the Iowa Ambient Air 2024 Network Plan on June 14, 2024, noticed for public comment on May 16, 2024.[24] IEC requested that DNR expand the SLAMS network to include ozone and PM 2.5 monitors in all of the areas identified with asthma rates higher than 80% of the national population. DNR has not done so.

Each of the 13 identified communities contains at-risk populations with asthma rates higher than 80% of the population nationally. Four of the communities have at-risk populations with asthma

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[18] 40 C.F.R. § 58.10(d) (emphasis added).
[19] IOWA CODE § 455B.134 (4–5) (2024) (emphasis added).
[20] IOWA CODE § 455B.133 (1–3) (2024).
[21] Jason Clayworth, "DSM faces declining air quality while most U.S. cities improve," Axios (May 27, 2025), available at https://www.axios.com/local/des-moines/2025/05/27/dsm-air-pollution-increase.
[22] *Id.*
[23] U.S. EPA, "EJScreen: EPA's Environmental Justice Screening and Mapping Tool (Version 2.2)," previously available at https://ejscreen.epa.gov/mapper/ (last visited June 5, 2024); *see also* "EJScreen," Public Environmental Data Partners, available at https://pedp-ejscreen.azurewebsites.net/.
[24] Available at https://www.iaenvironment.org/webres/File/2024%20Air%20network%20comments%20%206_6_24%20Final-formatted.pdf.

rates higher than 95% of the population nationally, with at-risk populations in Ames at 99%, Iowa City at 96%, Cedar Falls at 98%, and Waterloo at 97%.

Of the 13 communities with at-risk populations, five (Ames, Burlington, Dubuque, Fort Dodge and Ottumwa) do not have *any* monitors for either Ozone or PM 2.5. Only Cedar Rapids, Davenport and Des Moines have both Ozone and PM 2.5 monitors. However, as shown in Table 1 below, only Davenport has Ozone and PM 2.5 monitors located in an area with an at-risk population experiencing asthma at rates greater than 80% of the population nationally.

Table 1. Correlation of Iowa Ambient Air Monitoring Sites and High Asthma Rates

City	Site	Address	County	Ozone Monitor	PM 2.5 Monitor	Ozone Monitor in >80%	PM 2.5 Monitor in >80%
Ames				No	No	No	No
Burlington				No	No	No	No
Cedar Rapids	Public Health	500 11th St. NW	Linn	Yes	Yes	No	No
Council Bluffs	Franklin School	3130 C Ave.	Pottawattamie	No	Yes	No	No
Davenport	Jefferson School	10th St. & Vine St.	Scott	Yes	Yes	Yes	Yes
Davenport	Hayes School	622 South Concord St	Scott	No	Yes	No	No
Des Moines	Health Dept.	1907 Carpenter	Polk	Yes	Yes	No	No
Des Moines	Public Works	5885 NE 14th	Polk	No	Yes	No	No
Dubuque				No	No	No	No
Fort Dodge				No	No	No	No
Iowa City	Hoover School	2200 East Court	Johnson	No	Yes	No	No
Ottumwa				No	No	No	No
Sheldahl	Southern Crossroads	15795 NW 58th St	Polk	Yes	No	No	No
Sioux City	Irving School	901 Floyd Blvd.	Woodbury	Yes	Yes	No	No
Waterloo/Cedar Falls	Water Tower	Vine St. & Steely	Black Hawk	No	Yes	No	Yes

Current monitoring does not necessarily mean that Ozone levels are within safe levels where adverse health impacts are occurring. In its 2024 response to IEC's comments, DNR argued that the correlation between monitors meant that the existing network already captures variation across the state. However, the ozone and PM 2.5 monitors are clearly not in locations with the most significant rates of asthma, and are not adequately capturing the public health impacts on at-risk populations as required by the Clean Air Act.

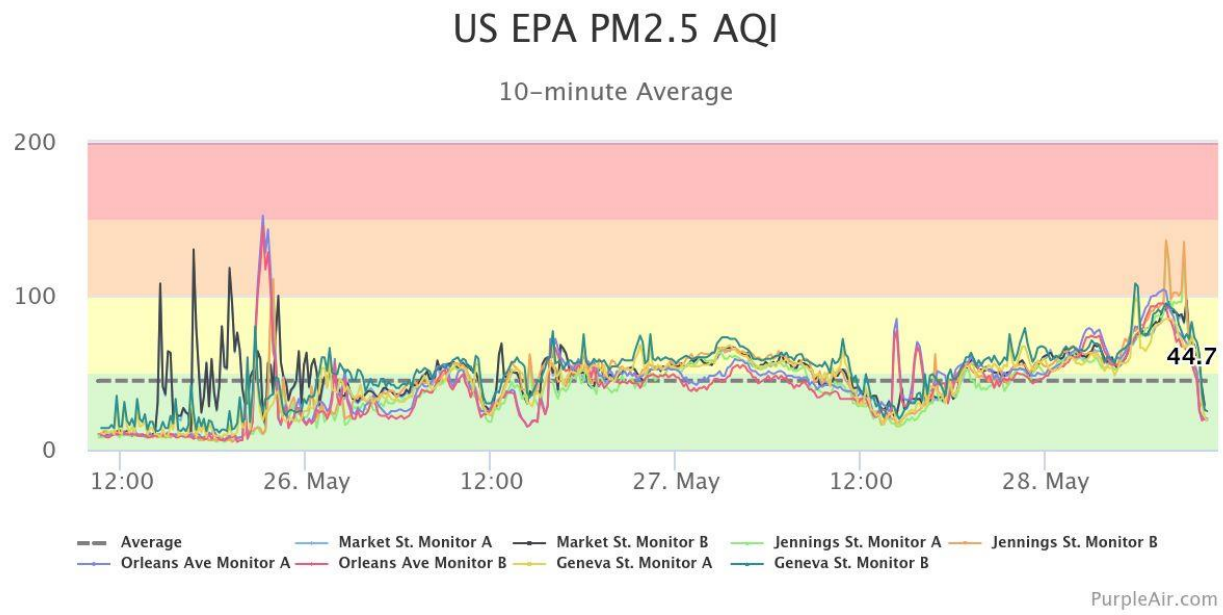
IV. Sioux City Monitoring

Although the Iowa Ambient Air 2025 Network Plan is changing three existing PM2.5 special purpose monitors in Des Moines, Iowa City, and Sioux City to SLAMS monitors, the 2025 Network Plan does not call for implementation of those changes until January 1, 2027.[25] Importantly, it does not expand the SLAMS network to include ozone and PM 2.5 monitors in the areas identified with asthma rates higher than 80% of the national population, nor add SPM ozone and PM2.5 monitors as IEC had requested in 2024.

[25] Iowa DNR, "Iowa Ambient Air Monitoring 2025 Network Plan" (hereinafter "Draft Plan") (May 13, 2025), available at https://www.iowadnr.gov/media/7934/download?inline.

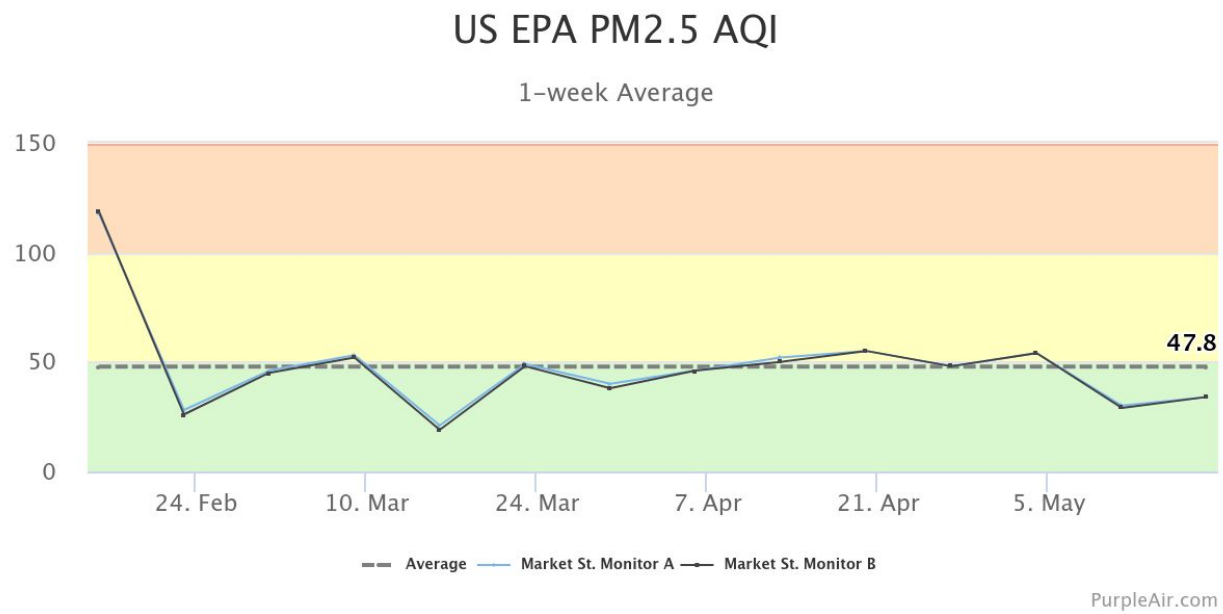
Sioux City has a PM2.5 design value of 8.1 ug/m^3, equal to 90 percent of the ambient standard.[26] This ranks among the highest in the state. The monitor in Sioux City being converted from SPM to SLAMS will operate on a "1 in 3" basis, meaning that it samples one out of every three days rather than on a continuous basis.[27]

Partially in response to the lack of PM2.5 network monitors to address at-risk communities, IEC located three Purple PM 2.5 monitors in Sioux City. DNR's draft Five-year Monitoring Network Assessment notes that the Purple Air monitoring network is becoming as dense as the SLAMS network and the state itself is operating the monitors at 14 locations.[28] The annual $PM_{2.5}$ standard is 9.0 µg/m^3 (micrograms per cubic meter), and the 24-hour $PM_{2.5}$ standard is 35 µg/m. As shown below, the PM 2.5 level in the snapshot below peaked at 152 µg/m^3 and over a three day span averaged 44.7 µg/m^3. Meanwhile, nearly all statewide PM2.5 monitoring by DNR showed daily averages well below that level, not reflecting the potential effects on a susceptible population.[29]



In the graph below, the one week average PM 2.5 concentrations are shown for one of the purple monitors in Sioux City. It is noteworthy that the 1-week average over a period of months is 47.8 µg/m^3, well above the 24-hour $PM_{2.5}$ standard of 35 µg/m^3.

[26] "Iowa Fine Particulate Monitoring Network Design Values 2022-2024," Iowa DNR, at 7, available at https://www.iowadnr.gov/media/7939/download?inline (last visited May 29, 2025).
[27] Draft Plan Appendix D at 7,
[28] Iowa DNR, "lowa DNR Five-Year Ambient Monitoring Network Assessment," Appx. E, available at https://www.iowadnr.gov/media/8393/download?inline.
[29] "AirNow," U.S. EPA, available at https://www.airnow.gov/state/?name=iowa (last visited June 9, 2025) (historical data for May 25-28).



The high annual design values and the exceedances of the 24-hour standards support continuous monitoring in Sioux City. Consistent with this request, IEC has requested increased monitoring in areas with asthma rates higher than 80% of the national population. This is particularly important since studies have shown that asthma rates increase at PM 2.5 levels below the annual and 24 hour standards. 14-day average PM2.5 $\geq$ 7.07 µg/m^3 was associated with an estimated 4-5% higher asthma symptom prevalence, and in the range of 4.00-7.06 µg/m^3 of PM2.5, each 1-µg/m^3 increase was associated with a 3.4% increase in symptom prevalence.[30]

V. Recommendations

At-risk, susceptible populations often cluster together and tend to be closest to sources of pollution. As documented using the Environmental Justice screening tool, Iowa has areas of the state with at-risk populations experiencing extremely high asthma rates. Federal regulations require the network assessment to "consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., *children with asthma*) and other at-risk populations."[31] Numerous communities in Iowa have susceptible populations, but not air quality monitoring stations. Locations such as Sioux City have exceeded the 24-hour standard based on local monitoring. As such, Iowa needs to expand the ozone and PM 2.5 monitoring network to accurately characterize air quality for these at-risk populations.

IEC requests that the SLAMS network be expanded to include ozone and PM 2.5 monitors in all of the areas identified with asthma rates higher than 80% of the national population. In the alternative, SPM ozone and PM 2.5 monitors need to be located in these areas with high rates of asthma.

[30] Outdoor PM2.5, Ambient Air Temperature, and Asthma Symptoms in the Past 14 Days among Adults with Active Asthma, December 2016, https://pubmed.ncbi.nlm.nih.gov/27385358/.
[31] 40 C.F.R. § 58.10(d) (emphasis added).

Thank you for the opportunity to comment. If you have questions or we can clarify these comments further, please feel free to contact us.

Sincerely,

/s/ Steve Guyer

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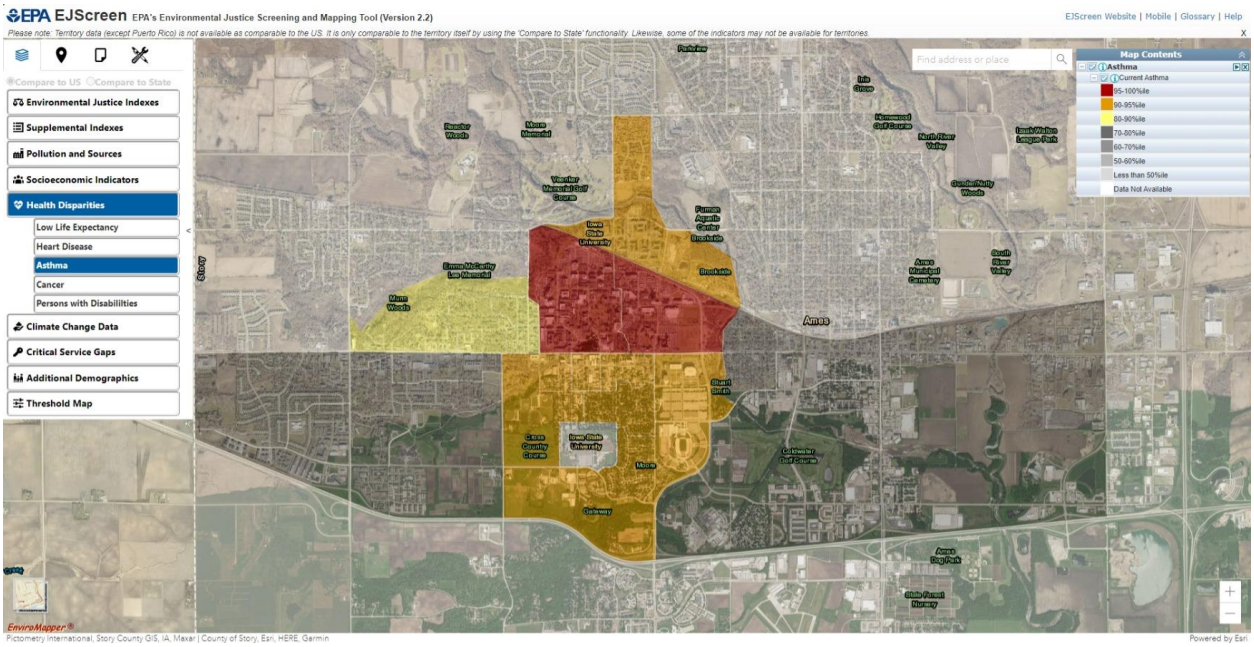
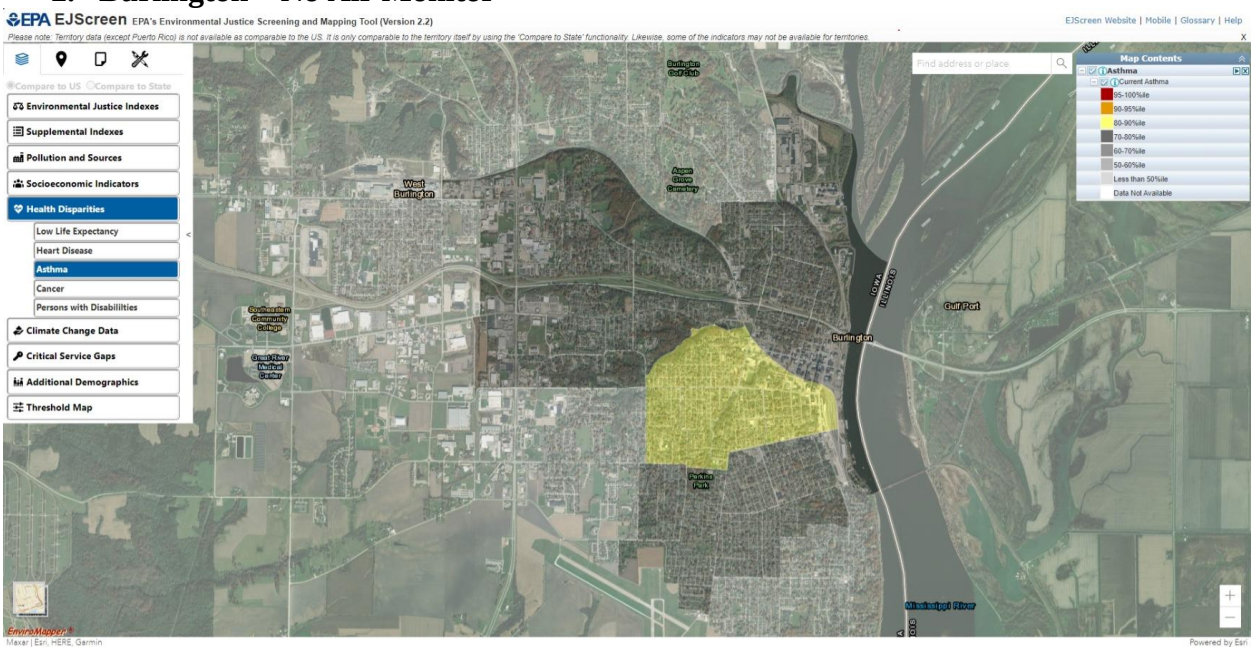
Appendix A: Asthma Rates and Monitoring Locations

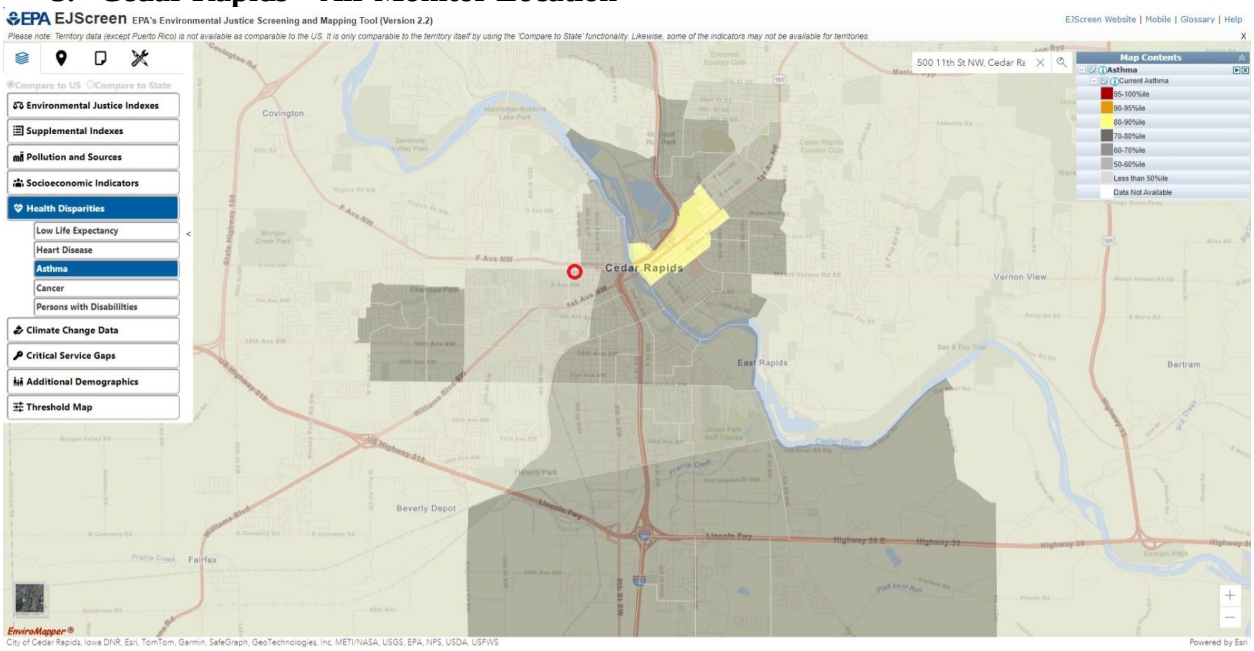
1. Ames – No Air Monitor



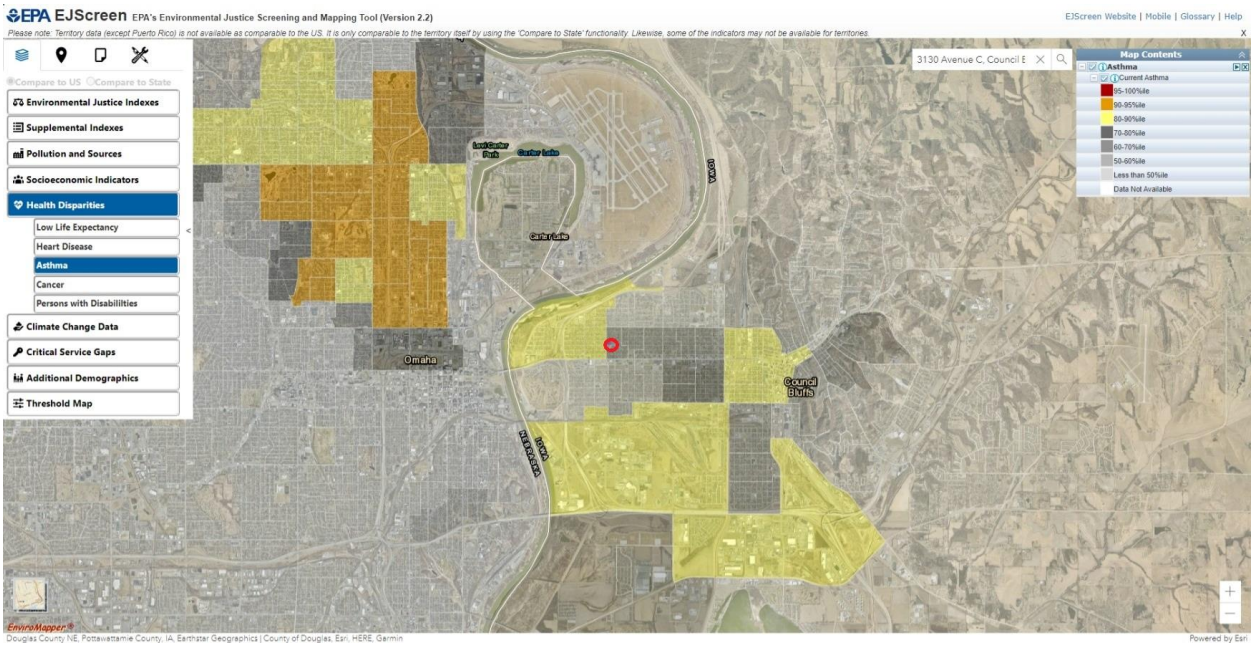
2. Burlington – No Air Monitor



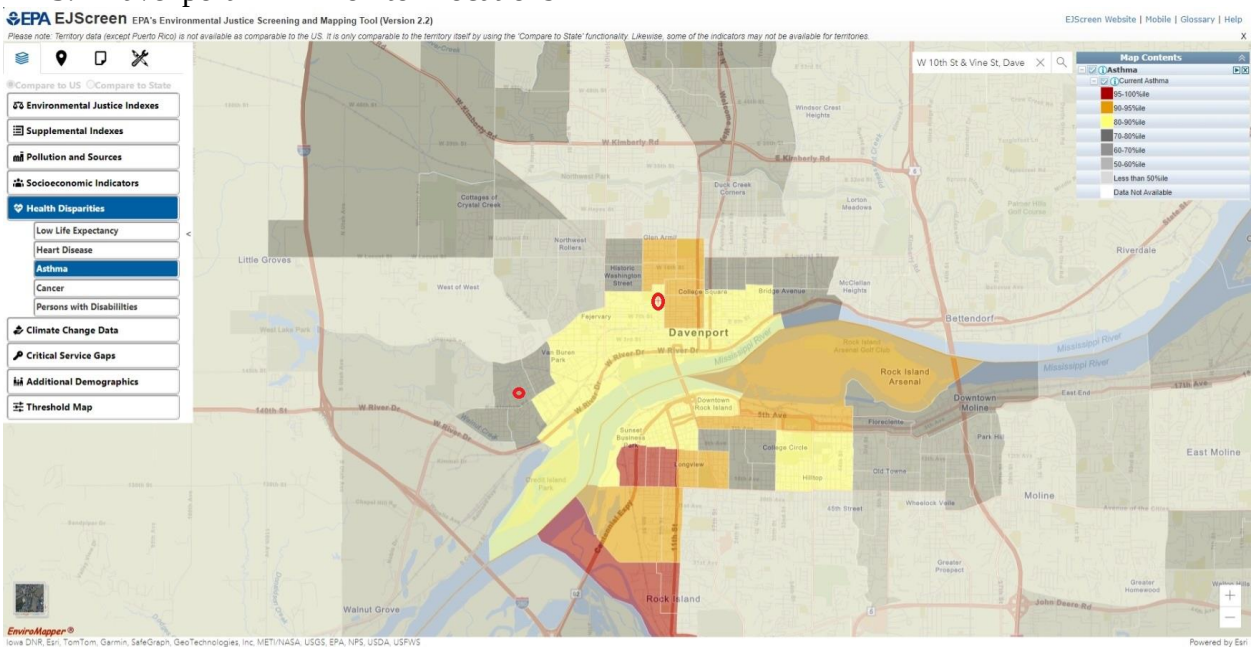
3. Cedar Rapids – Air Monitor Location



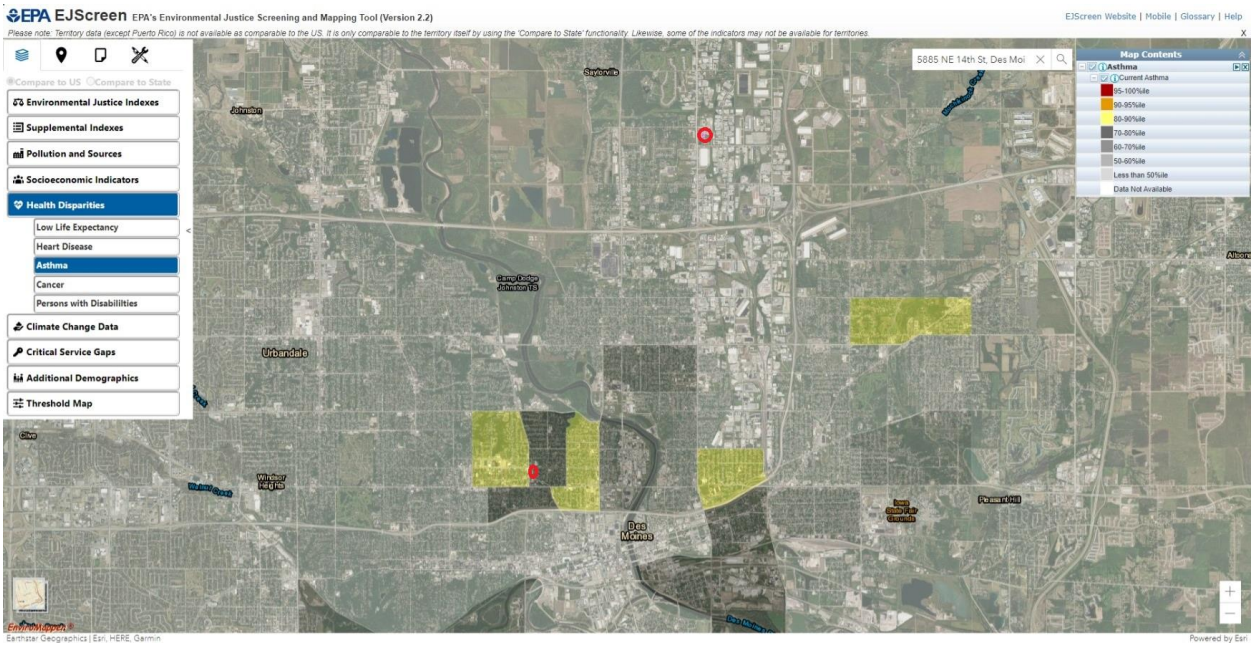
4. Council Bluffs – Air Monitor Location



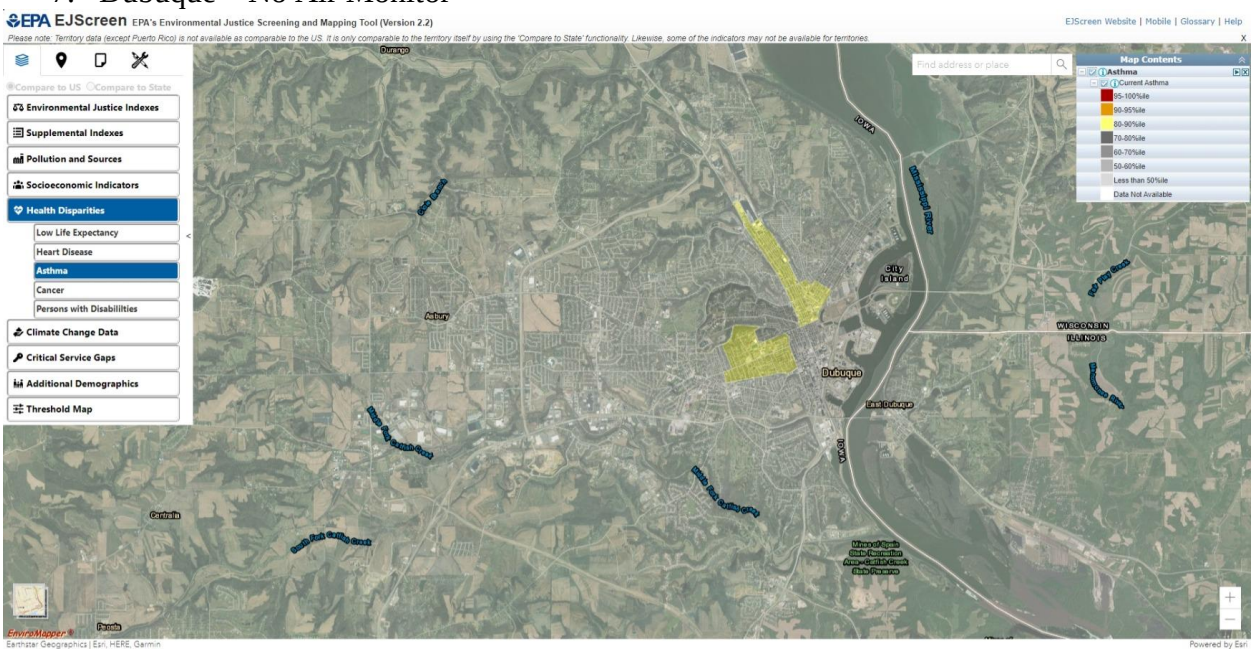
5. Davenport – Air Monitor Locations



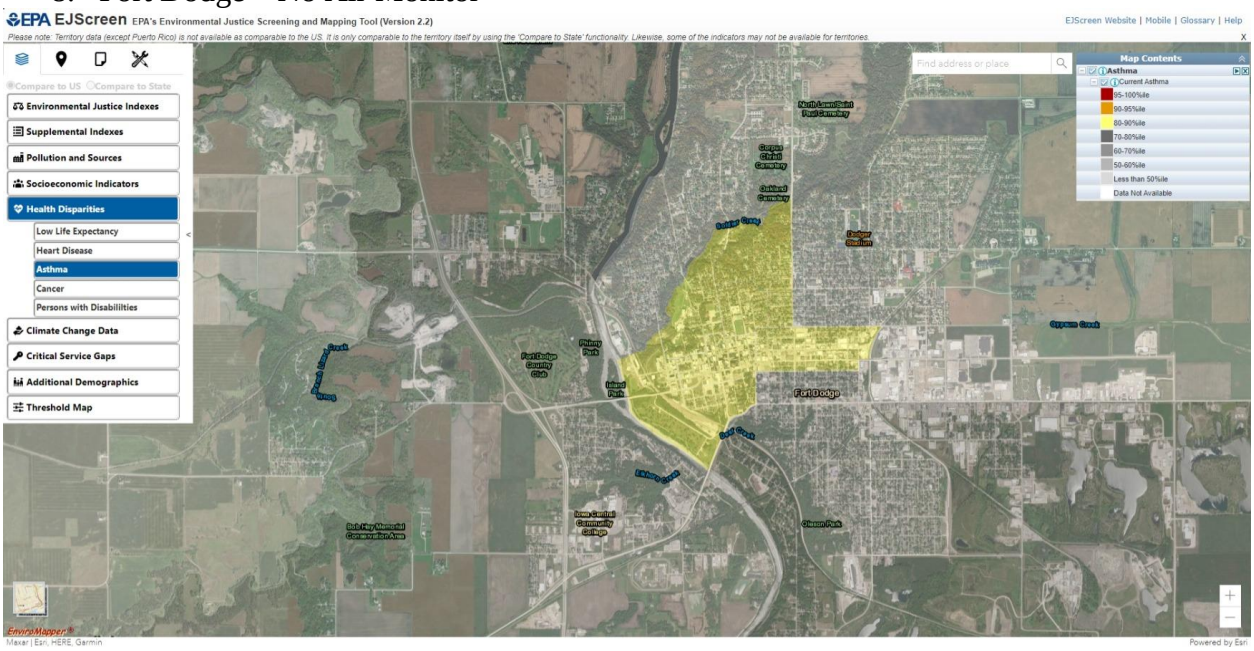
6. Des Moines – Air Monitor Locations



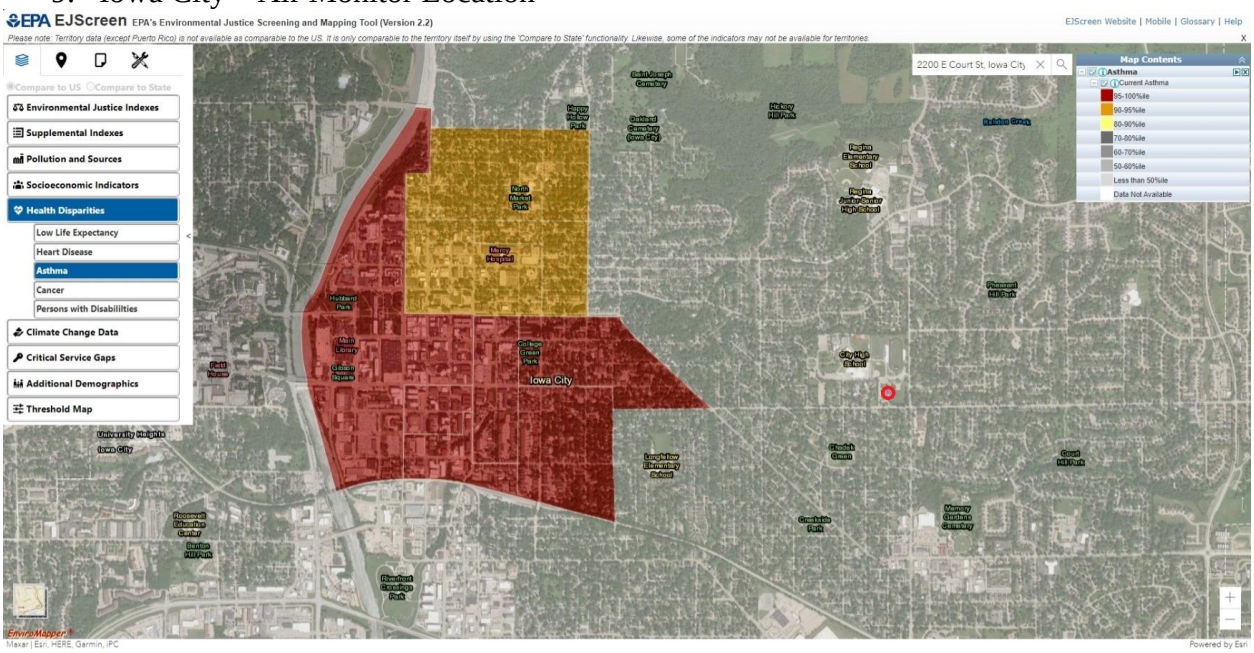
7. Dubuque – No Air Monitor



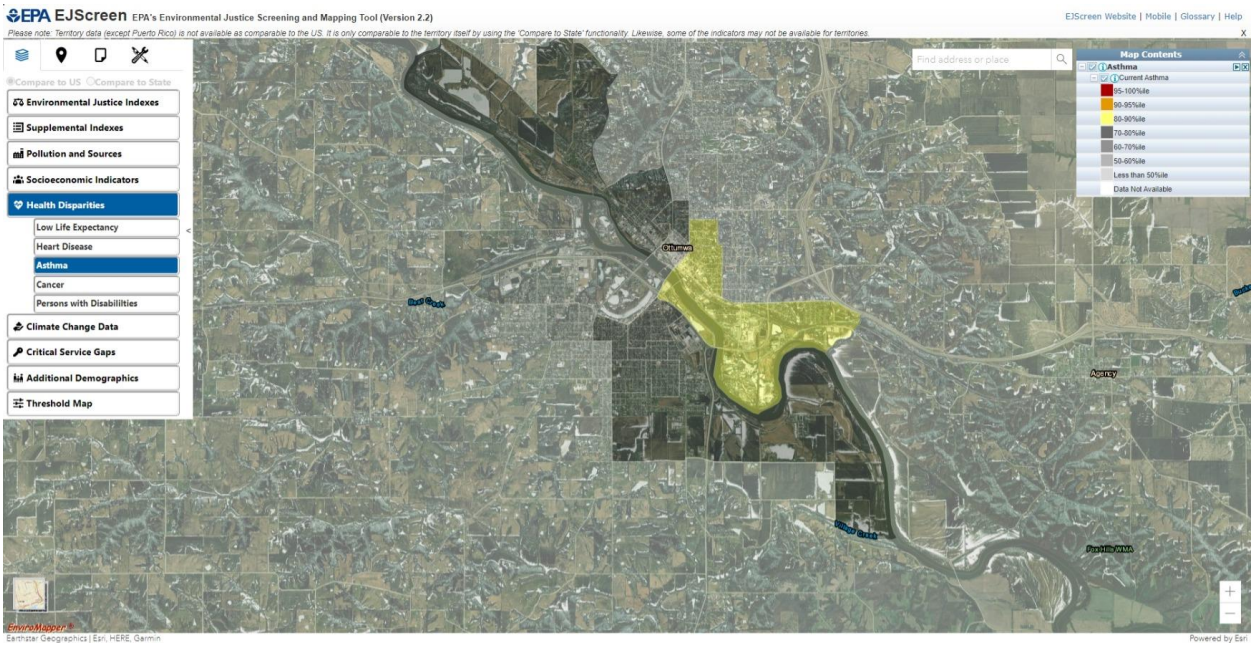
8. Fort Dodge – No Air Monitor



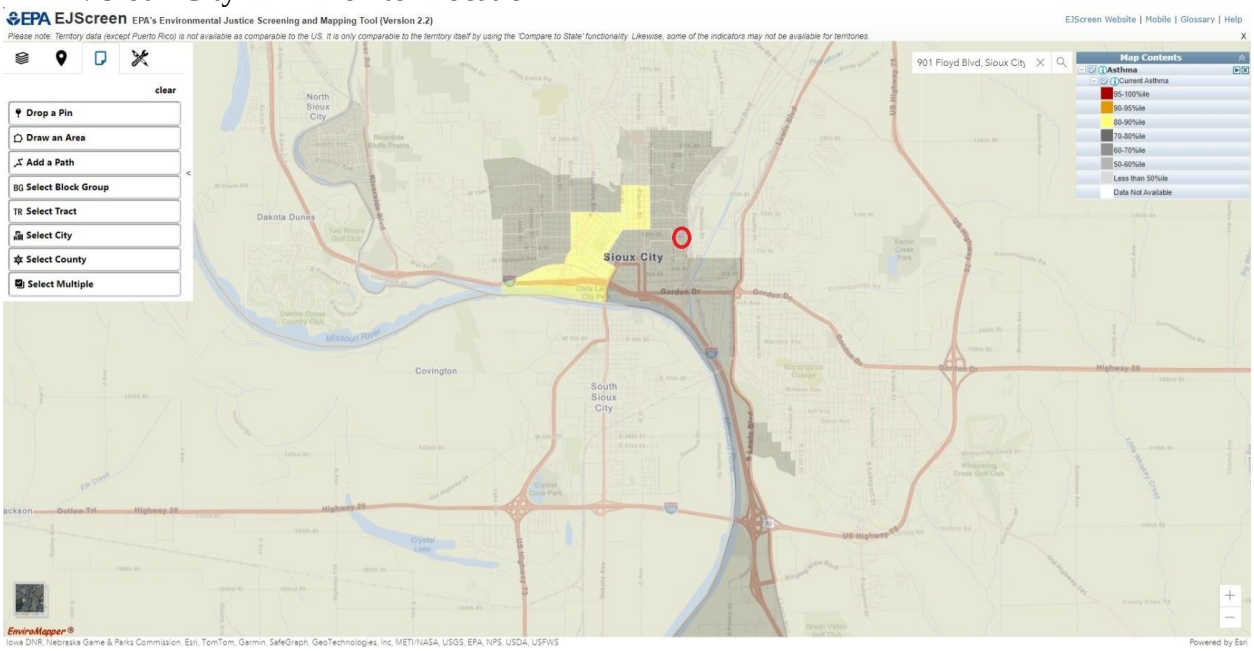
9. Iowa City – Air Monitor Location



10. Ottumwa – No Air Monitor



11. Sioux City - Air Monitor Location



12. Waterloo/Cedar Falls – Air Monitor Location