CITY OF MINNEAPOLIS

HERC Air Emissions and Impact on Health

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Minneapolis Health

Building Healthier Communities

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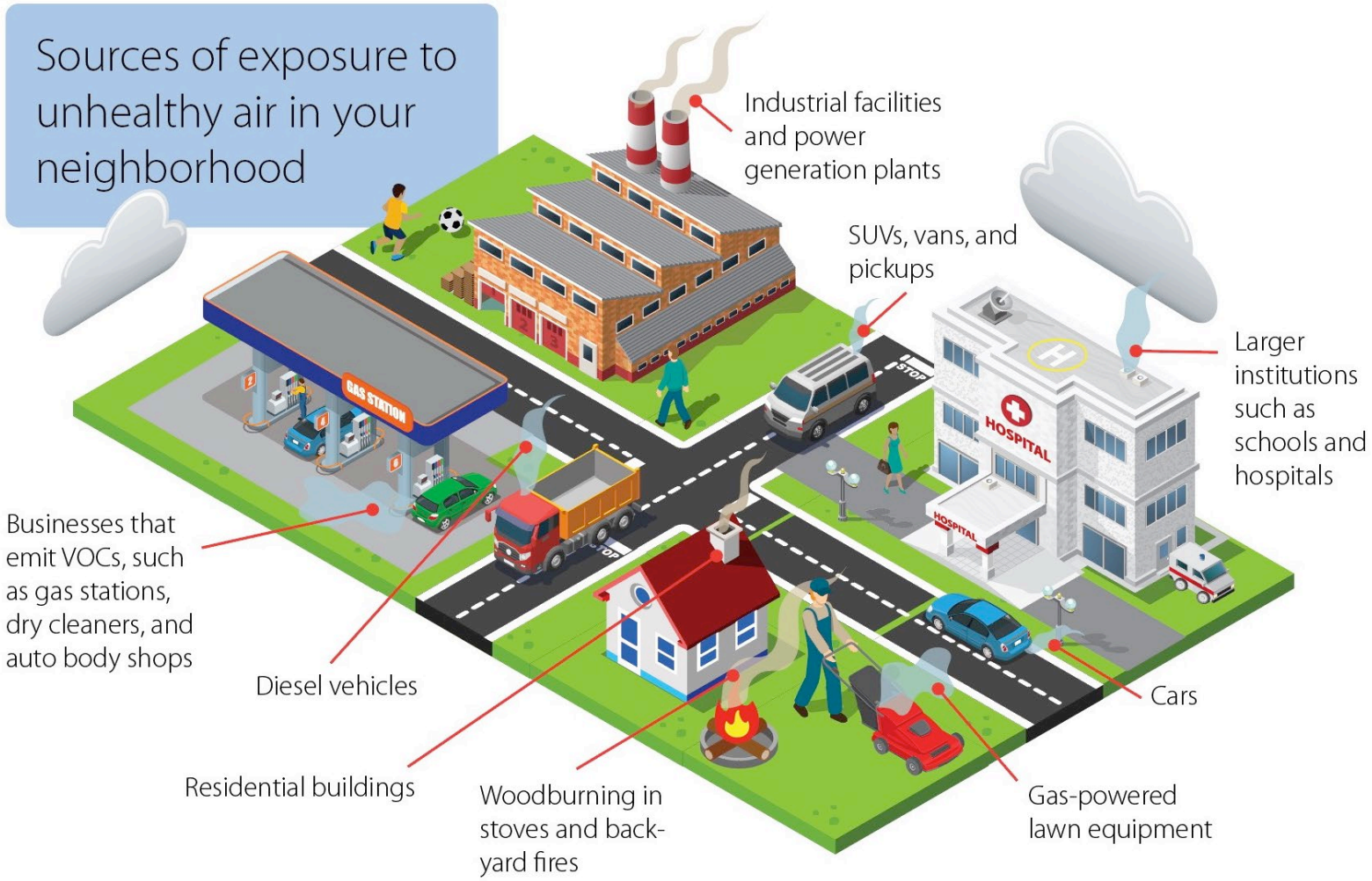
Zero Waste Programming Legislative Directive

- An analysis of the air pollution impacts of trash burning at the HERC, in relation to the expected air quality emergencies we anticipate this year and projected in the future due to climate change impacts across the continent.

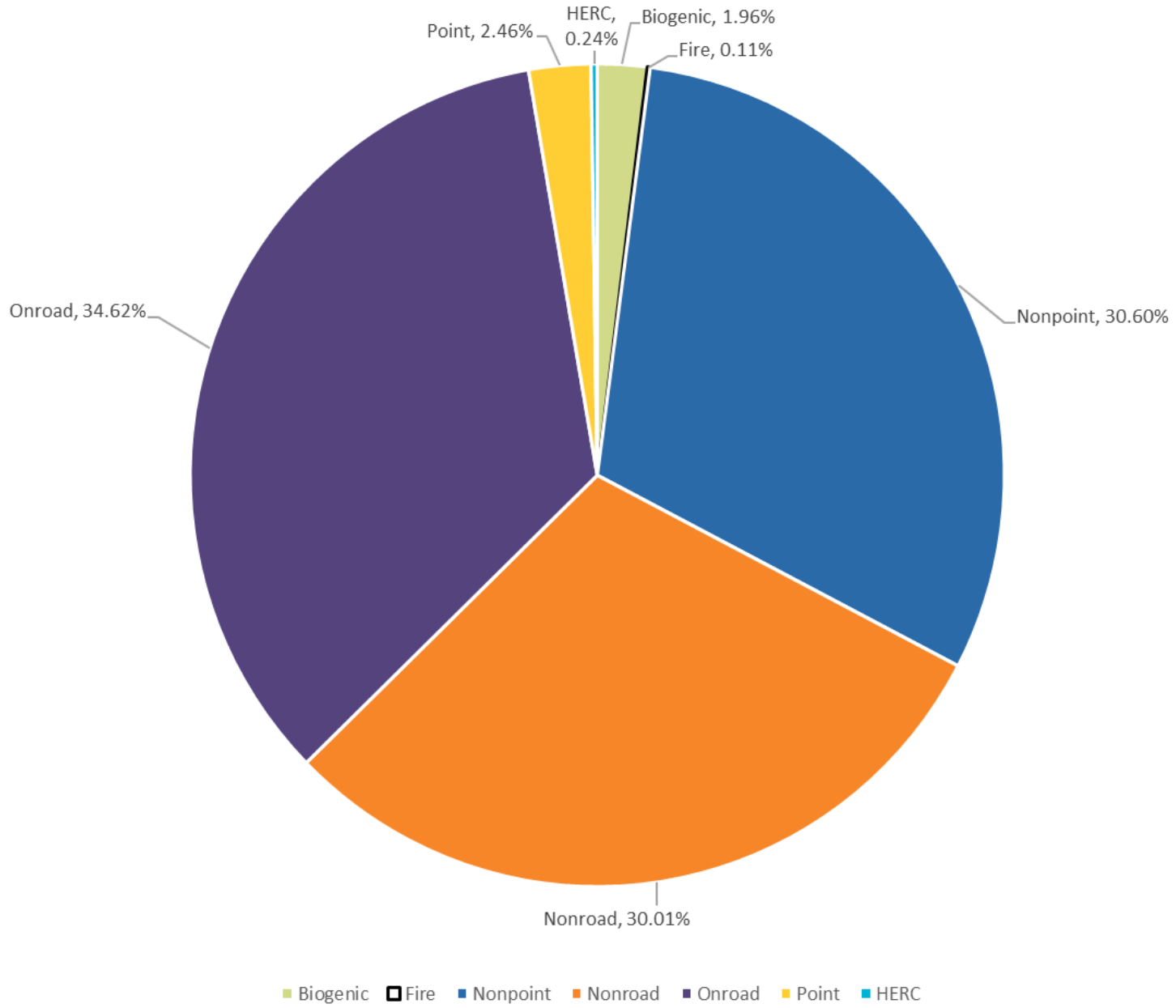
Conclusions

- Emissions in Hennepin County are dominated by mobile and non–point and those sources pose much higher risks to human health than emissions from HERC
- The cancer and non-cancer risks from HERC emissions are well below Minnesota Department of Health incremental risk thresholds
- HERC is not likely to cause more harmful cancer or non-cancer health effects in one part of the community than another (equally low impact on surrounding communities)
- Cancer and non-cancer risks from air pollution in Minneapolis are driven by mobile sources
- The closure of HERC will not impact overall cancer and non-cancer risks from air emissions in Minneapolis

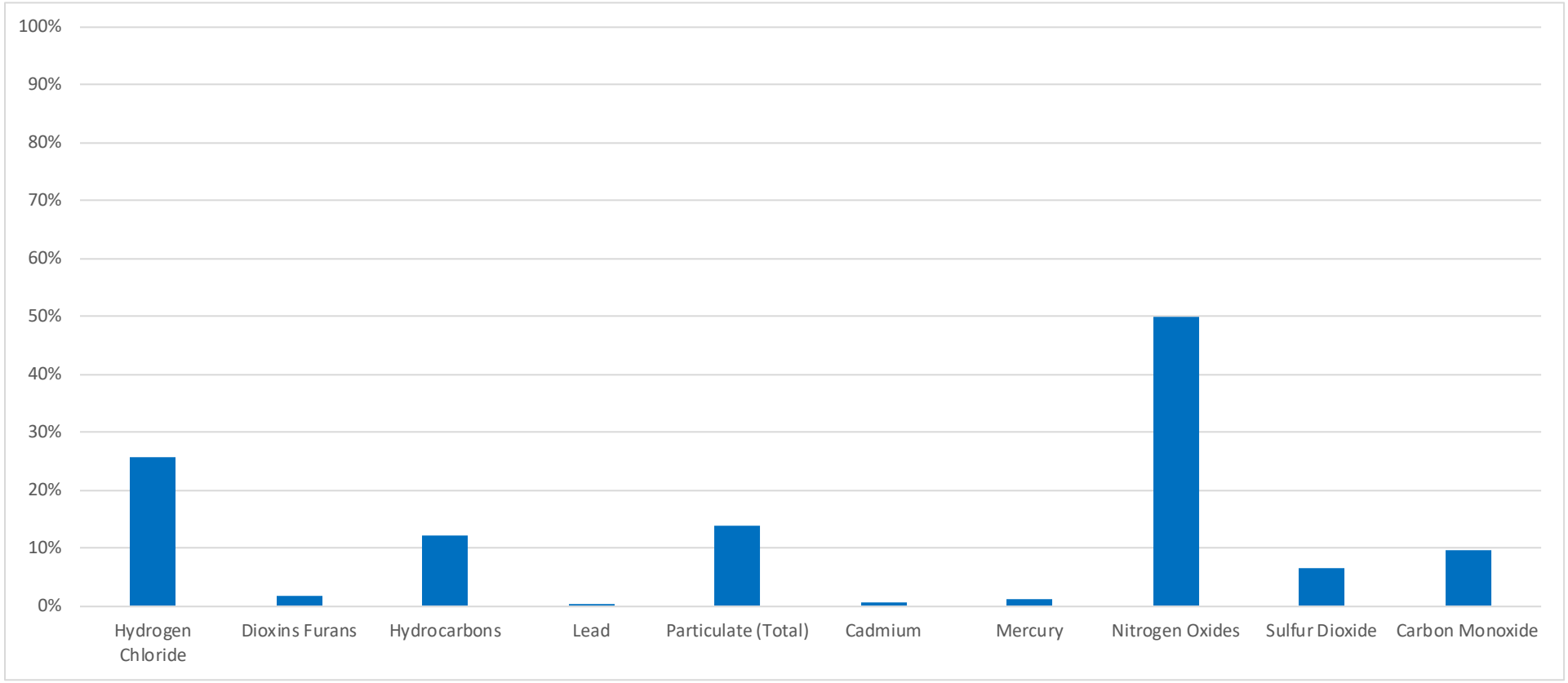
Emissions


Sources of exposure to unhealthy air in your neighborhood
Industrial facilities and power generation plants
SUVs, vans, and pickups
Larger institutions such as schools and hospitals
Businesses that emit VOCs, such as gas stations, dry cleaners, and auto body shops
Diesel vehicles
Residential buildings
Woodburning in stoves and back-yard fires
Cars
Gas-powered lawn equipment
GAS STATION
HOSPITAL
STOP

Hennepin County Emissions by Source

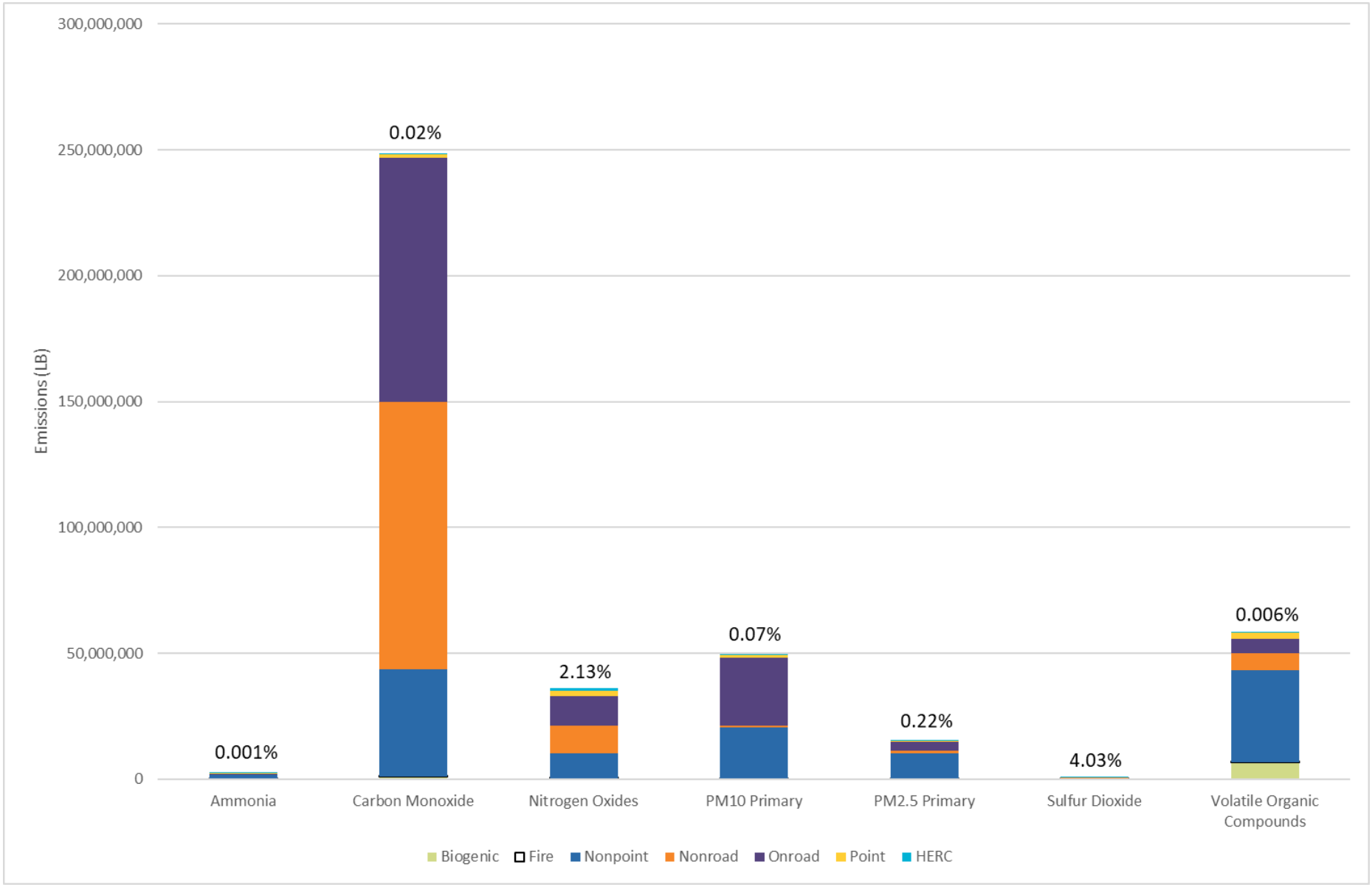


HERC Air Emissions as Percent of MPCA Permit Limit

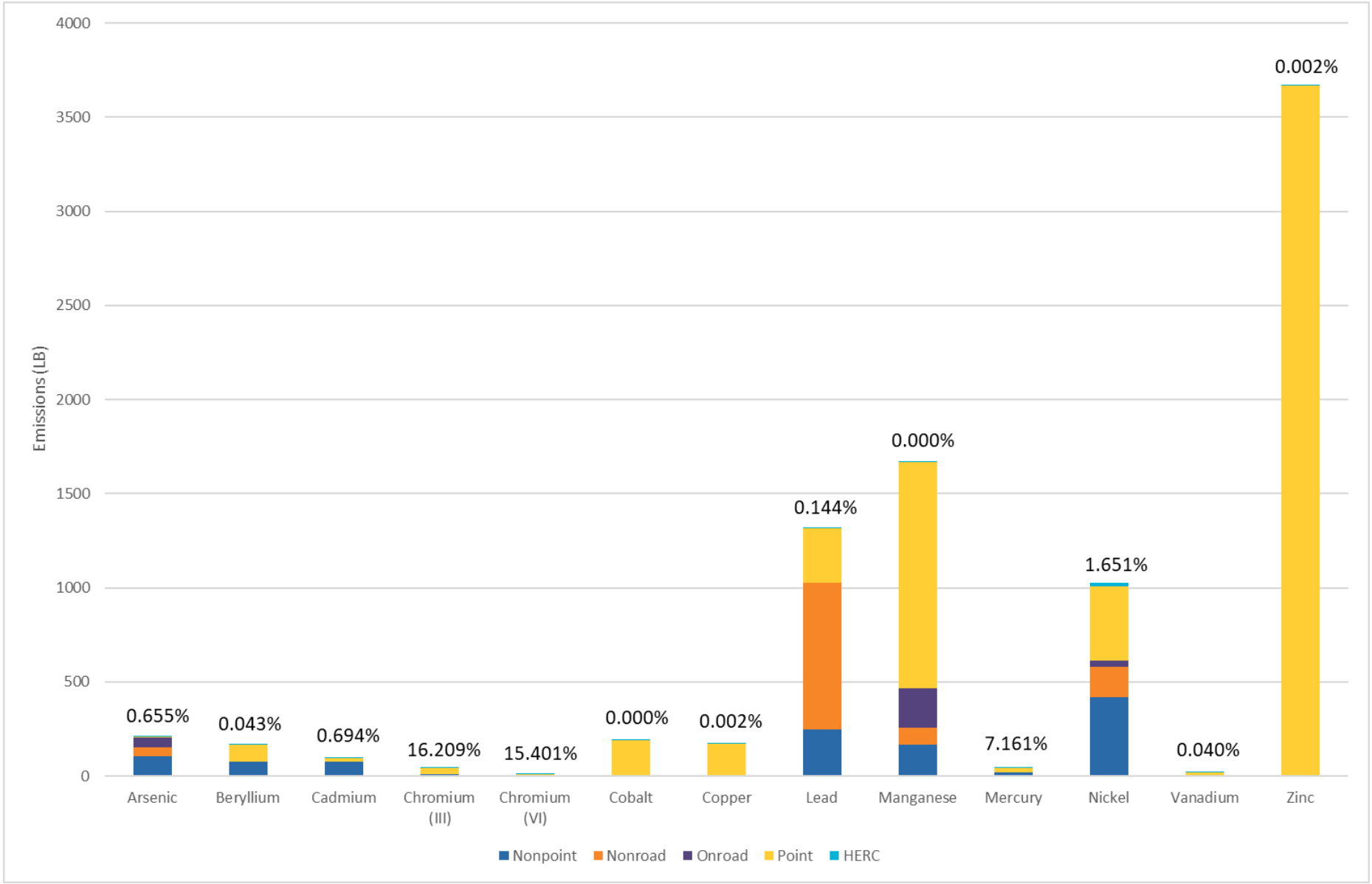


Unit Measure	parts per million	nanogram/dry standard cubic meter	pounds/hr	microgram/dry standard cubic meter	grains/dry standard cubic foot	micrograms/ dry standard cubic meter	micrograms/ dry standard cubic meter	tons per year	tons per year	tons per year
MPCA Permit Limit	29	30	3	400	0.02	35	50	820.2	100	243.6
2023 Emissions	7.5	0.58	0.37	1.94	0.0028	0.28	0.65	409.4	6.5	23.5
% of Limit	25.9%	1.9%	12.3%	0.5%	14.0%	0.8%	1.3%	49.9%	6.5%	9.6%

Comparison of HERC's Emissions to Other Sources in Hennepin County – Criteria Air Pollutants



Comparison of HERC's Emissions to Other Sources in Hennepin County - Metals



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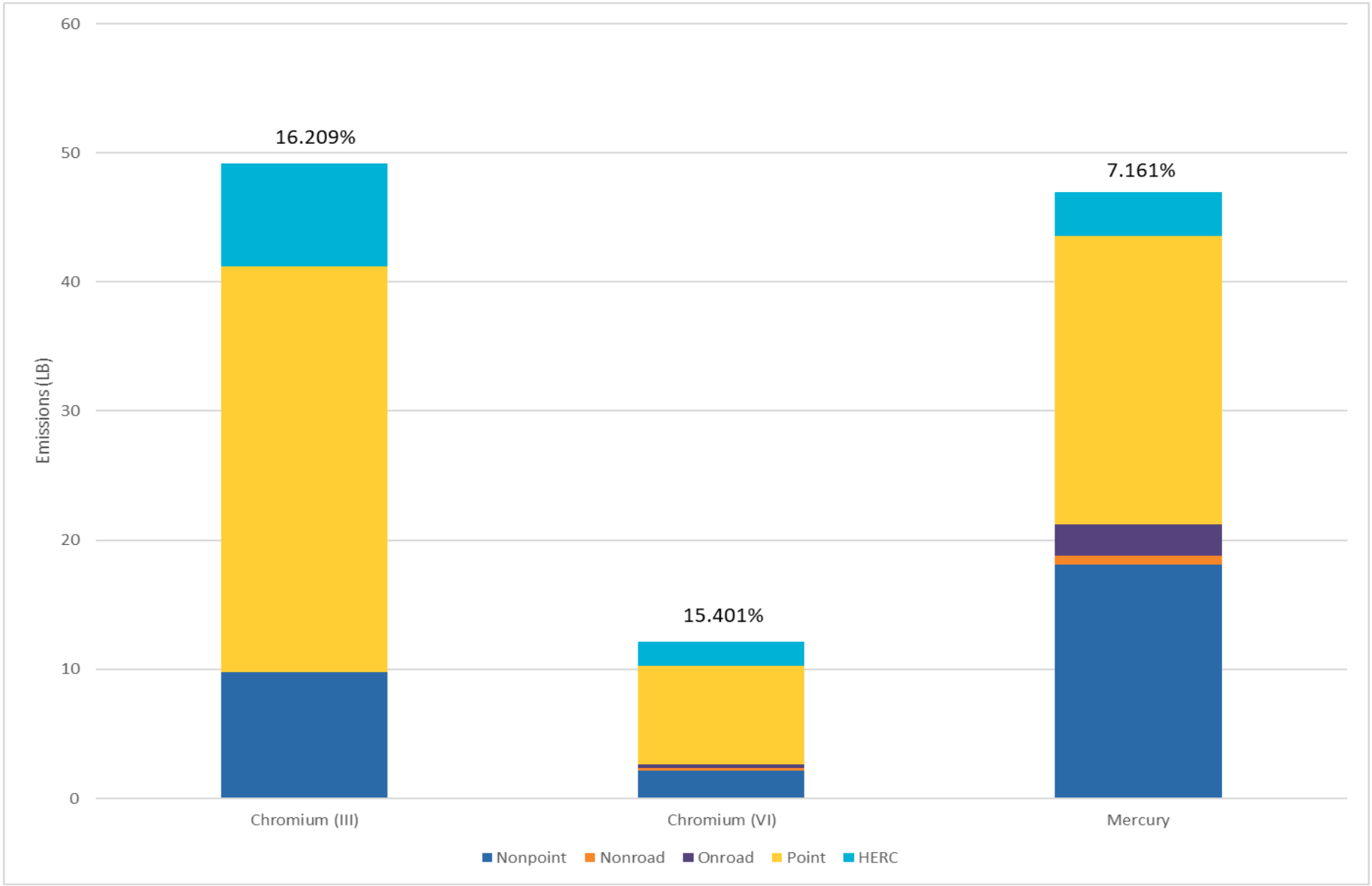
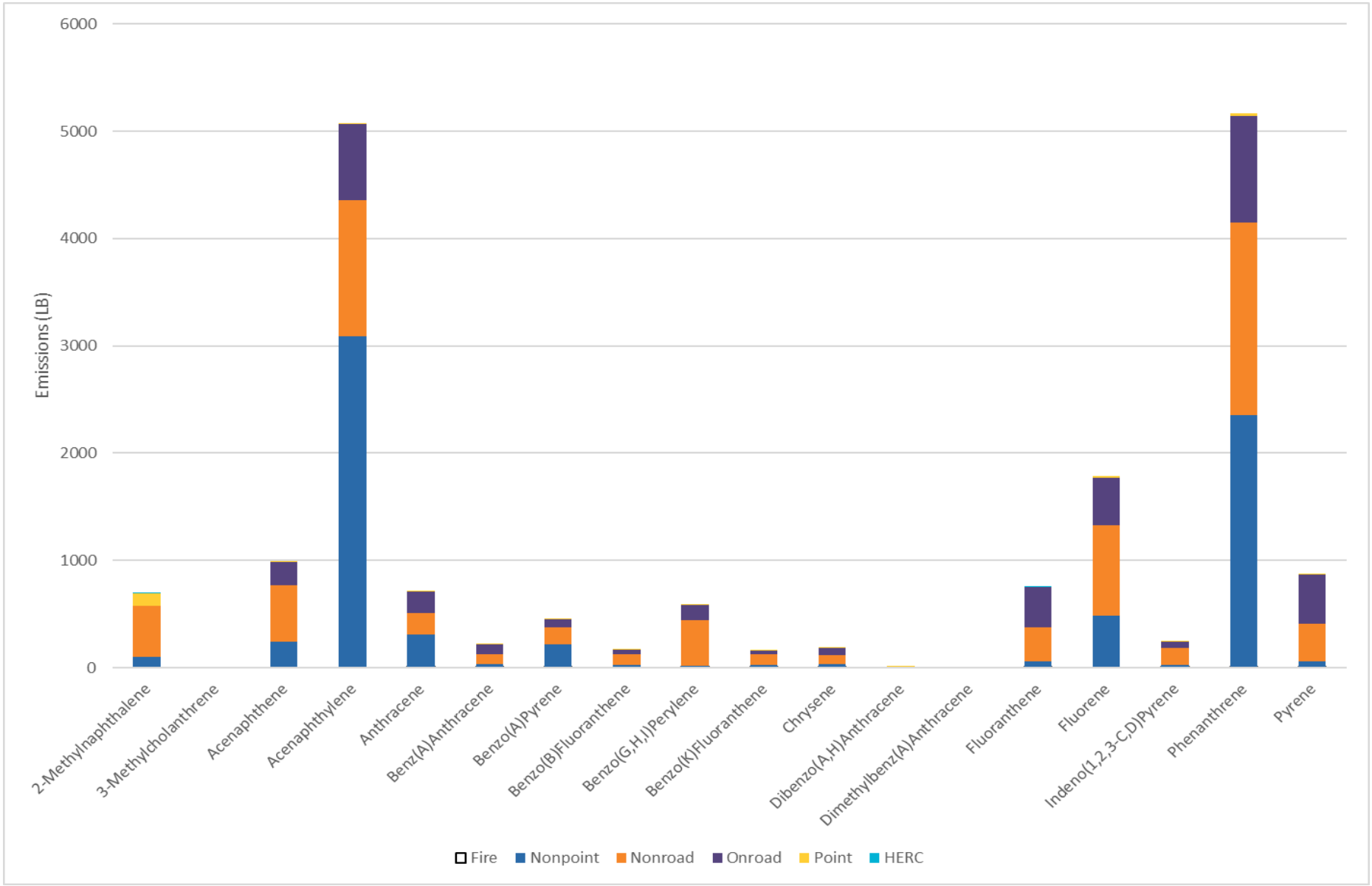
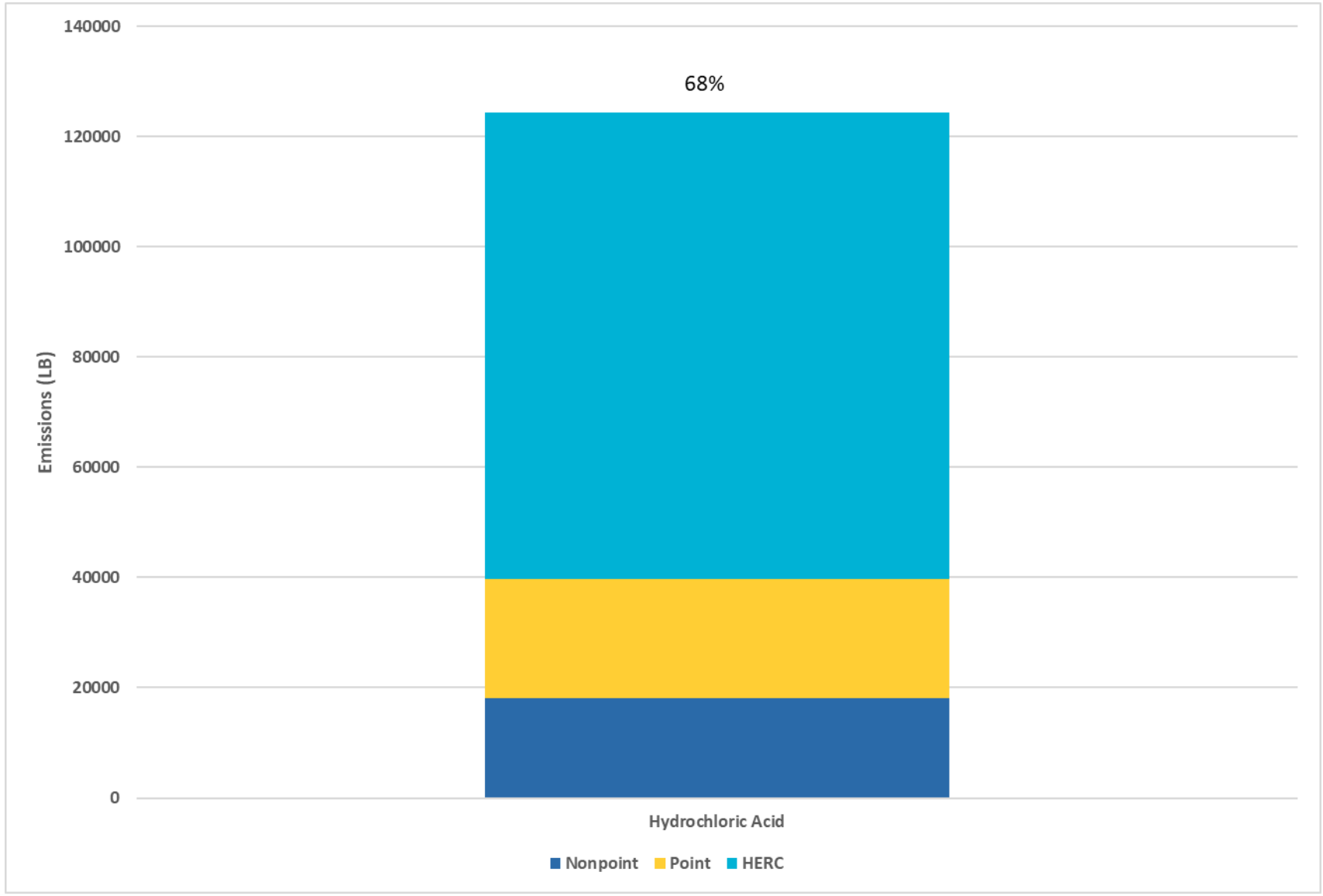


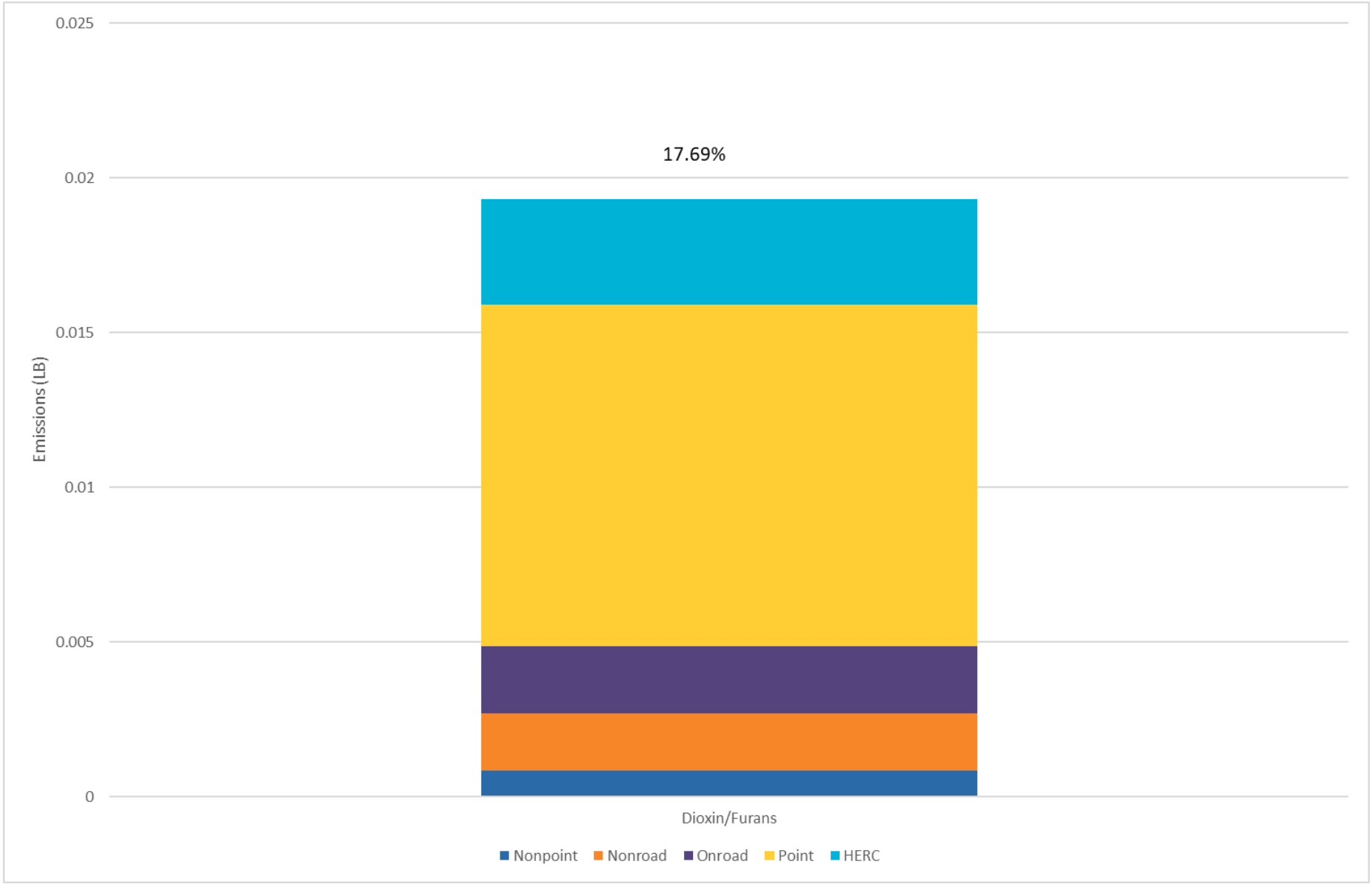
Comparison of HERC's Emissions to Other Sources in Hennepin County - PAHs



Comparison of HERC's Emissions to Other Sources in Hennepin County - HCl



Comparison of HERC's Emissions to Other Sources in Hennepin County – Dioxin/Furans

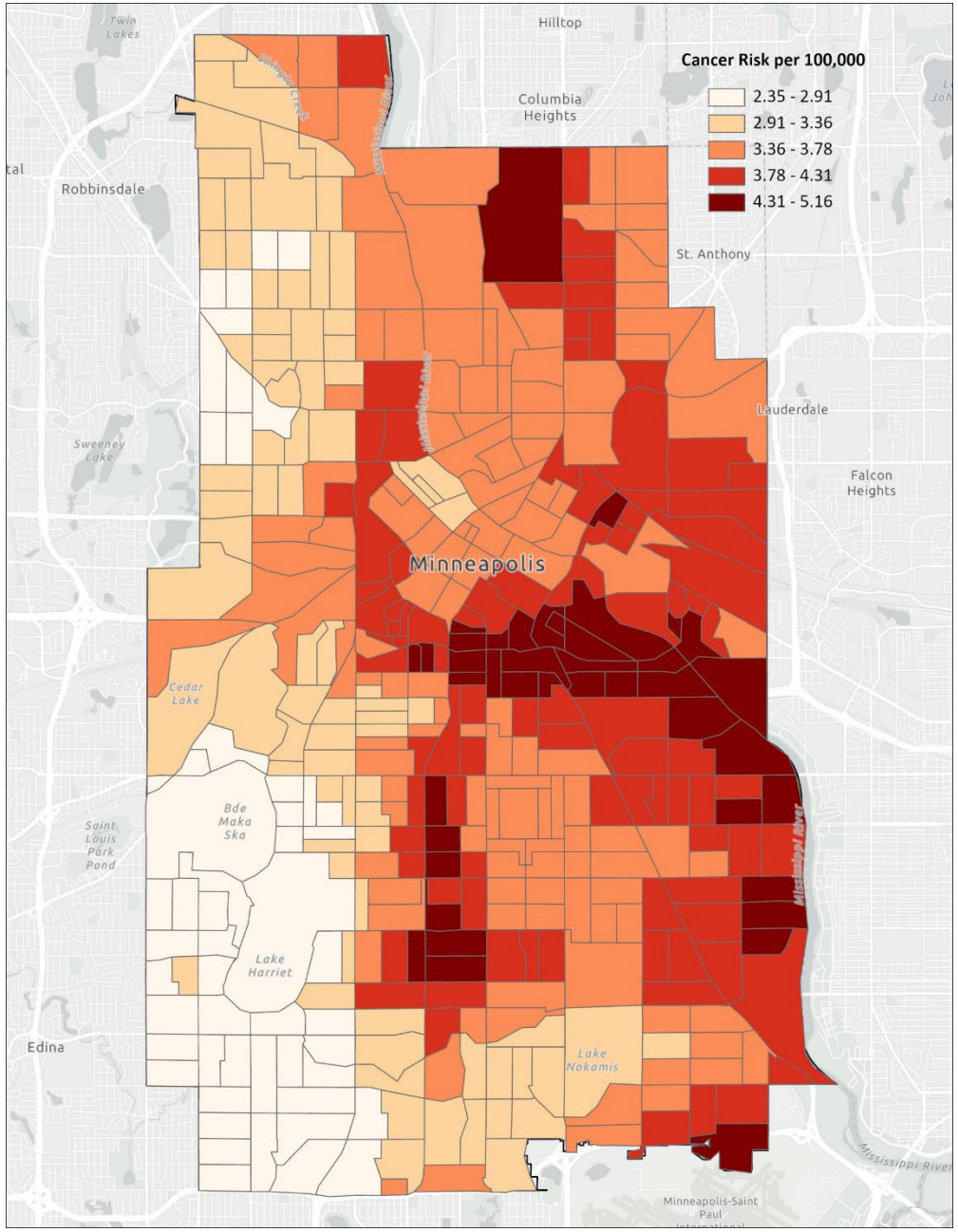


Minnesota Statewide Screening of Human Health Risks from Air Pollution Modeling - MNRISKS

Calculated risk results are compared to the following facility incremental risk guidelines developed by the Minnesota Department of Health, in accordance with U.S. EPA guidance

- Total facility cancer risk at or below: **1 in 100,000 (1×10^{-5})**
- Total facility hazard quotient at or below: **1**

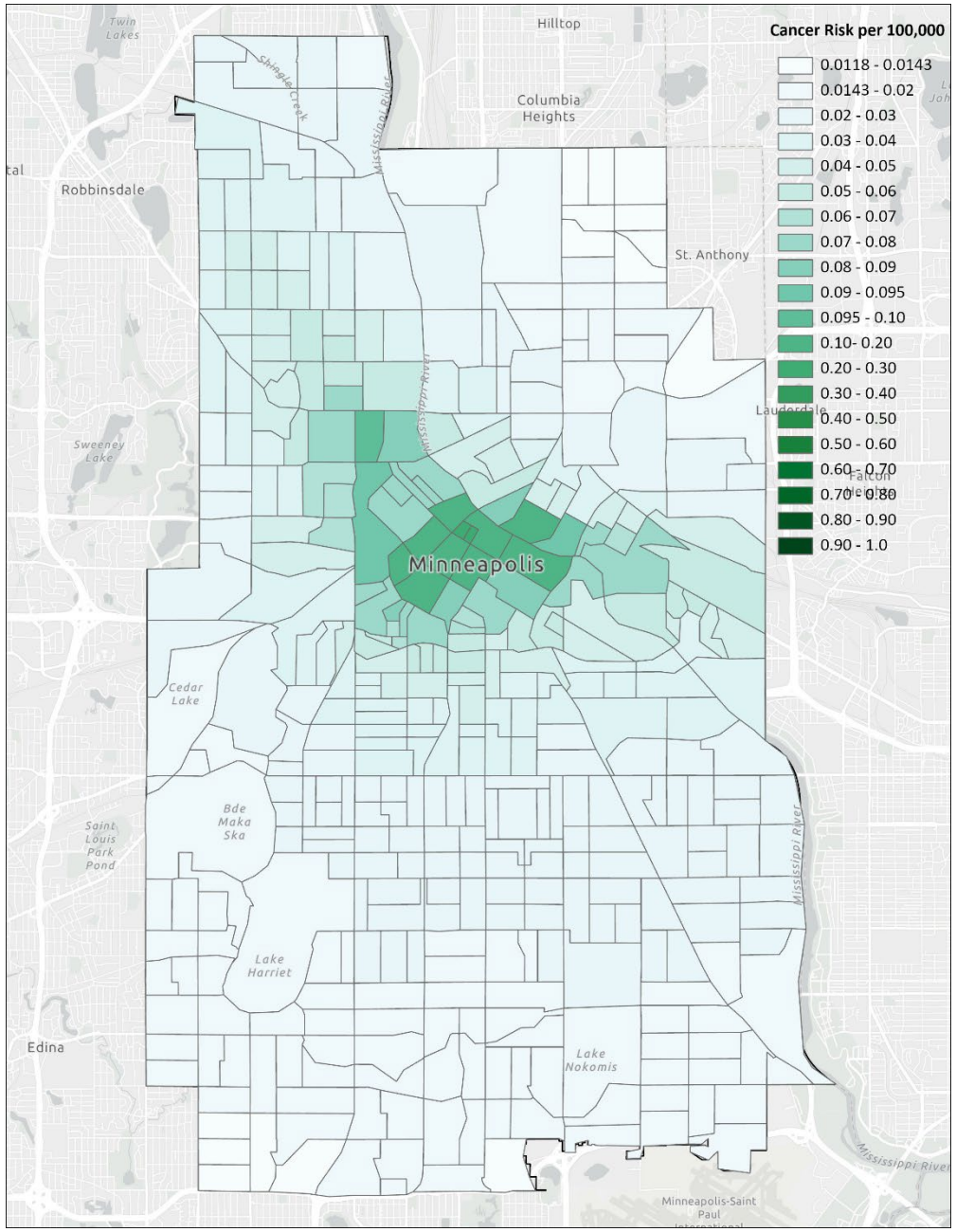
All Pollution Sum – Cancer Risk

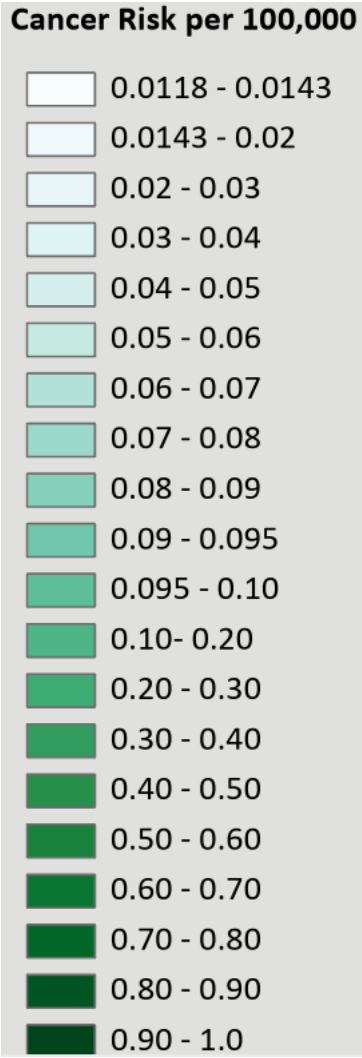


Cancer Risk per 100,000

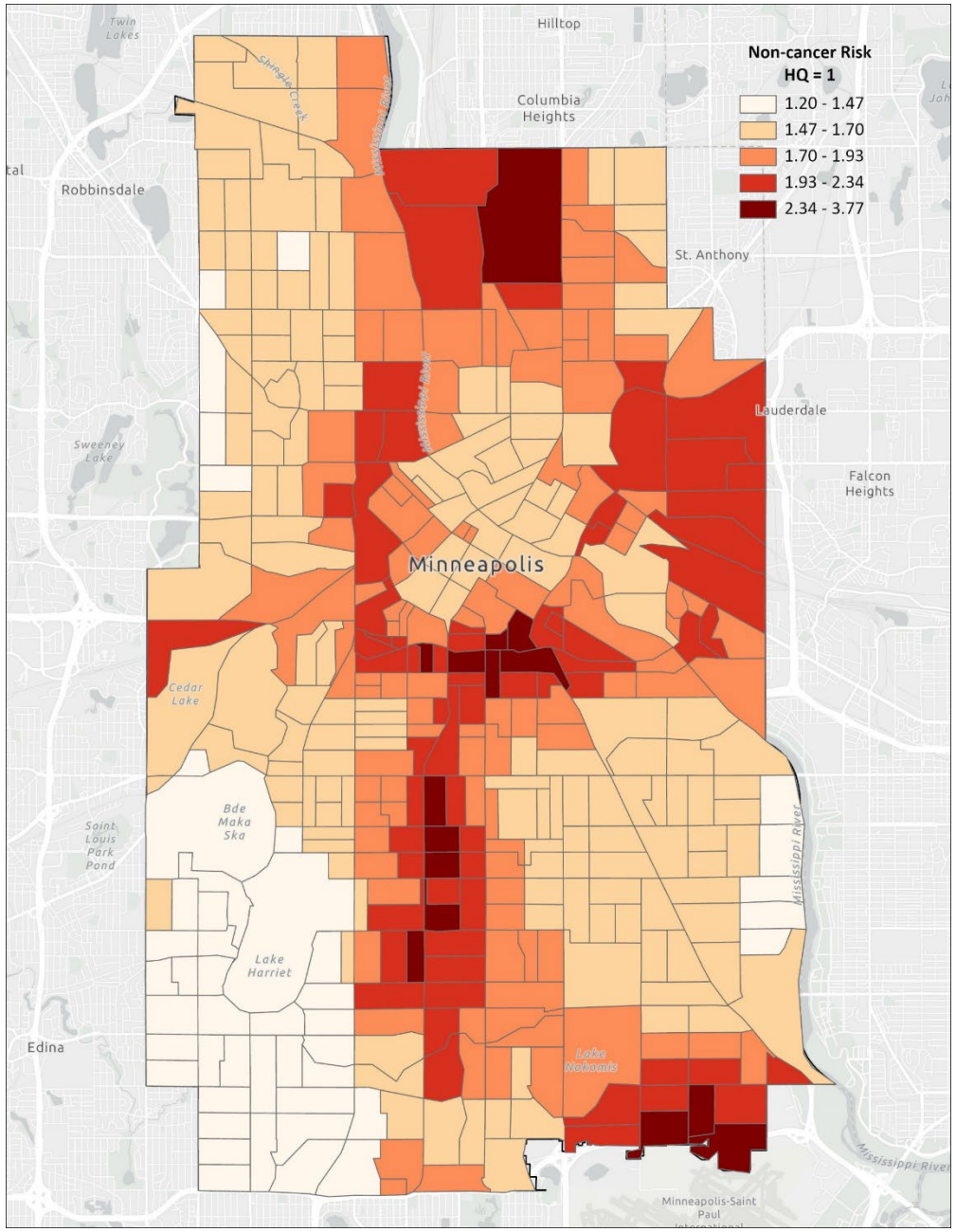
2.35 - 2.91
2.91 - 3.36
3.36 - 3.78
3.78 - 4.31
4.31 - 5.16

HERC– Cancer Risk

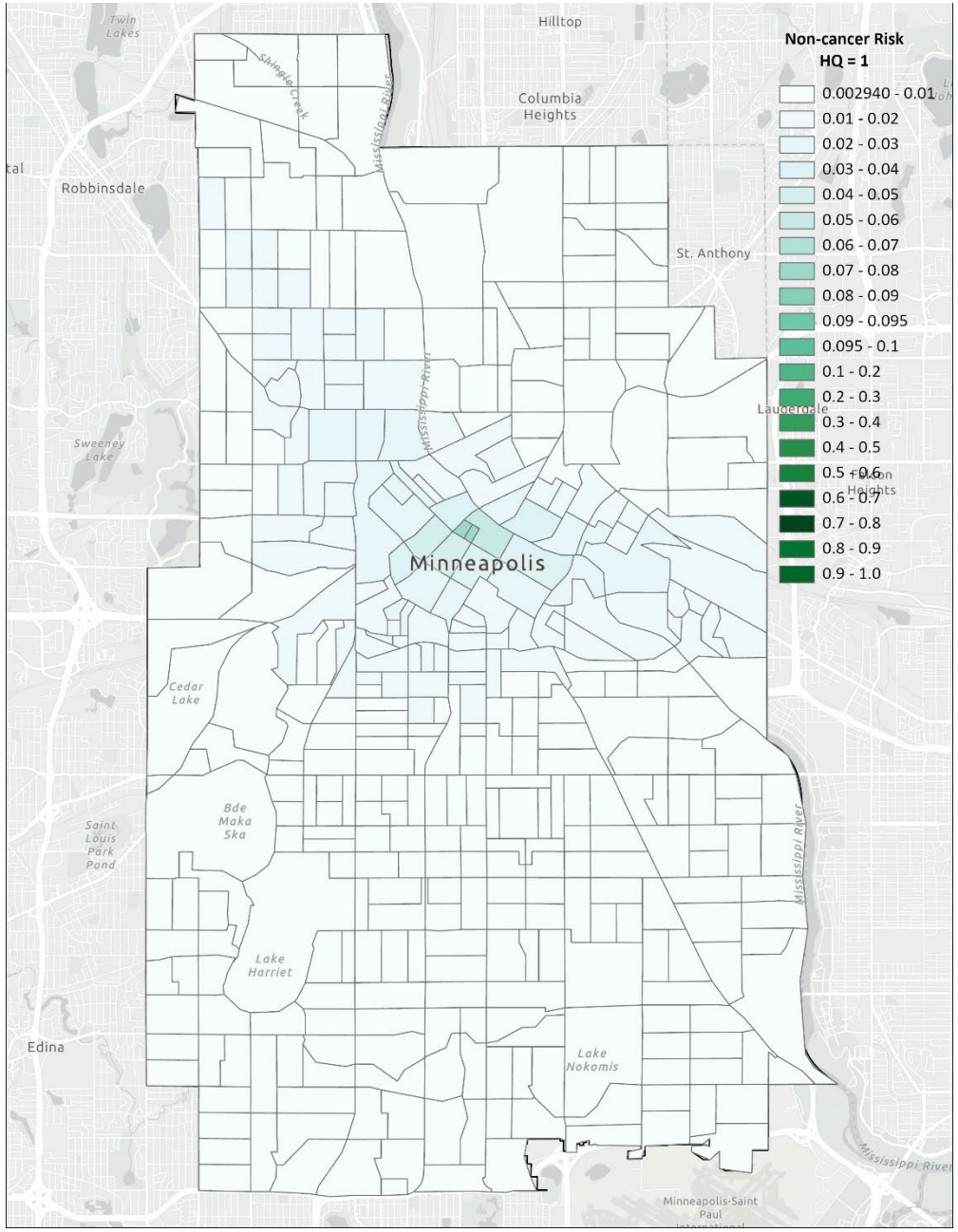




All Pollution Sum – Non-Cancer Risk



HERC– Non-Cancer Risk



Non-cancer Risk
HQ = 1
0.002940 - 0.01
0.01 - 0.02
0.02 - 0.03
0.03 - 0.04
0.04 - 0.05
0.05 - 0.06
0.06 - 0.07
0.07 - 0.08
0.08 - 0.09
0.09 - 0.095
0.095 - 0.1
0.1 - 0.2
0.2 - 0.3
0.3 - 0.4
0.4 - 0.5
0.5 - 0.6
0.6 - 0.7
0.7 - 0.8
0.8 - 0.9
0.9 - 1.0

Considerations

- Evaluation of impact of HERC emissions versus impact of landfilling including emissions from increased truck trips
- Closure of HERC will increase truck transport of trash throughout the county and outside of Hennepin County to landfills, resulting in more than 10,000 additional trips by semi-trailer trucks
- The increase in truck traffic would add to what is already the highest source of pollution in Hennepin County and driver of cancer and non-cancer risks in Minneapolis
- Increased pollution from truck traffic results in higher exposures at breathing height rather than higher in the air where there may be more dispersion