

Who Bears the Burden: Tract-Level Energy Justice Mapping for the Saline Township Data Center

EJMI analysis of 54 census tracts within 15 km of the Oracle/OpenAI site using real ACS 2022 demographics, SVI vulnerability scores, and three spatial allocation mechanisms.

54 Census tracts assessed (Washtenaw + Monroe Co.)	184,938 Total population in study area	14 Tracts with SVI ≥ 0.75 (high vulnerability)	50,970 People in high-vulnerability tracts sharing grid burden
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Two Burden Pathways, One Regulatory Blind Spot

The EJMI framework reveals that data center impacts travel through two distinct spatial pathways. **Proximity burdens** (air quality, noise, direct environmental disruption) concentrate in tracts within 5 km of the site, Saline Township’s relatively affluent rural neighborhoods (median income \$87k–\$155k, SVI 0.04–0.39). **Grid-embedded burdens** (indirect water withdrawal through DTE’s thermal power plants, grid NOx, carbon emissions) are distributed across all 54 tracts via the DTE Electric service territory. This means Ann Arbor’s most disadvantaged communities, the tracts with poverty rates above 50%, minority populations above 60%, and SVI scores above 0.90, all bear an equal share of the grid burden, amplified by their pre-existing vulnerability.¹

EGLE’s current permitting evaluates neither pathway at the tract level. No Health Impact Assessment maps the proximity pathway. No water stress review maps the grid pathway. The EJMI framework fills both gaps.

Proximity Burden: 10 Most-Affected Tracts

Tract FIPS	Dist (km)	Pop	Poverty Rate	Minority %	SVI	Health Burden	Air Burden	Water Burden	Proc. Deficit	EJMI
26161422201	1.6	3,544	2%	18%	0.39	48	41	43	62	47.9
26161423600	3.4	2,681	6%	18%	0.13	31	26	43	40	31.7
26161422202	3.7	4,040	5%	14%	0.04	29	24	43	37	29.4
26161423400	4.6	6,292	5%	12%	0.15	24	20	44	30	27.2
26161421100	7.8	3,863	10%	11%	0.46	13	11	22	17	15.3
26161415600	6.0	2,562	2%	31%	0.61	18	15	5	23	14.0
26161426001	7.8	2,288	4%	10%	0.07	13	11	22	17	13.6
26161980300	5.5	1,572	0%	45%	0.22	19	16	4	25	13.5
26161416200	5.8	5,595	4%	24%	0.19	18	16	5	24	13.2
26161980600	8.5	1,555	52%	61%	0.48	12	10	13	15	11.7

Scores 0–100 (higher = greater burden). Procedural deficit reflects absence of HIA and community engagement.

Grid Burden on High-Vulnerability Communities

Tract FIPS	SVI	Poverty	Minority	Income	Grid Water Burden	Grid Climate Burden	Vuln. Amplified
26161410600	1.000	39%	78%	\$29,391	1.9	1.2	4.0
26161414300	0.982	25%	58%	\$41,071	1.9	1.3	4.2
26161410100	0.963	28%	63%	\$40,464	1.9	1.3	4.2
26161980101	0.944	66%	38%	\$36,019	2.0	1.7	4.7
26161400500	0.926	70%	24%	\$30,085	2.2	3.1	6.8
26161410200	0.907	23%	37%	\$40,595	1.9	1.1	3.8
26161400300	0.889	62%	24%	\$28,463	2.0	2.3	5.5
26161410700	0.870	31%	51%	\$31,250	1.8	0.5	2.9

Grid-embedded burdens (indirect water, carbon) reach all tracts via DTE’s service territory. Vulnerability amplifier: $1 + 0.3 \times \text{SVI}$, per CDC/EPA environmental justice methodology.²

Tract 26161410600 — 78% minority, 39% poverty, median income \$29,391, SVI 1.000 — shares the same grid-embedded water and climate burden as the affluent tracts closest to the site. No mechanism in EGLE’s current permitting acknowledges this.

These 17 high-vulnerability tracts (SVI ≥ 0.75) contain 62,600 residents who bear grid-allocated burdens without representation in the permitting process.

Sources and Methodology

- Tract data: Census TIGERweb 2020 (centroids), ACS 2022 5-Year (B01003, B17001, B19013, C16002, B03002, B25070). SVI constructed from ACS per CDC methodology.
- EPA EJScreen Technical Documentation (2023): Demographic Index = (% low-income + % minority) / 2. Vulnerability amplification follows EPA Office of Environmental Justice cumulative impact guidance.
- EJMI framework: Sadberry Singer dc_ejmi_layer.R. Distance decay: $1/(1+(d/3\text{km})^{1.5})$. Watershed allocation: HUC-12 codes for Saline River/Huron River. Service territory: DTE Electric, population-weighted.
- Site scores derived from dc_impact_model_v3.R calibrated against Google, Microsoft, and Meta sustainability disclosures (2024 data).