

Appendix 6 - Equity Analysis Approach



To: Colleen Hoesly, Greater Madison MPO
From: Alta Planning + Design
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Re: Task 2.3 Equity Analysis Memorandum

The Greater Madison MPO (MPO) is committed to understanding how their High Injury Network (HIN) relates to areas of equity concern around the region. Using equity areas identified for recent regional transportation planning efforts, this memorandum outlines key patterns and considerations for how equity areas bare a disproportionate burden of transportation safety concerns around the greater Madison region.

Madison MPO Environmental Justice Areas

Approach Summary

The Greater Madison MPO (MPO) developed a methodology to prioritize equity areas within the region for transportation investments. To do so, the MPO defined two tiers of Environmental Justice (EJ) Areas based on the concentrations of low-income and racial/ethnic minority residents.

The MPO began this approach during the 2021-2025 regional Transportation Improvement Plan (TIP). The effort used US Census data to identify concentrations of minority (non-White and/or Hispanic) and low-income residents (those with household incomes below 150% of the federal poverty level). These two metrics formed the basis of a Minority Score and Poverty Score, with 0 to 4 points awarded for each based on relative presence compared to the region.

The MPO made additional adjustments to scores based on local understanding. Because of the large margin of error in the American Community Survey household income data, some areas were awarded additional points to correct what MPO staff believed to be underestimates of their low-income population. Additional points were only awarded to zones with a high proportion of students eligible for free and reduced-price school lunches. The MPO also adjusted block group geographies to generally exclude non-residential land uses, with the exception of some schools and parks. These efforts fine-tuned portions of Census block groups to be included as Tier 1 Environmental Justice Areas.

After using this methodology for the 2021-2025 TIP, the MPO developed a second tier of EJ Areas with slightly lower concentrations of vulnerable populations than the original EJ Areas (Tier 1 EJ Areas), but which still have higher-than-average concentrations of these populations. The resulting two-tiered EJ Areas approach was first used in the 2022-2026 TIP and forms the basis of the following HIN comparison.

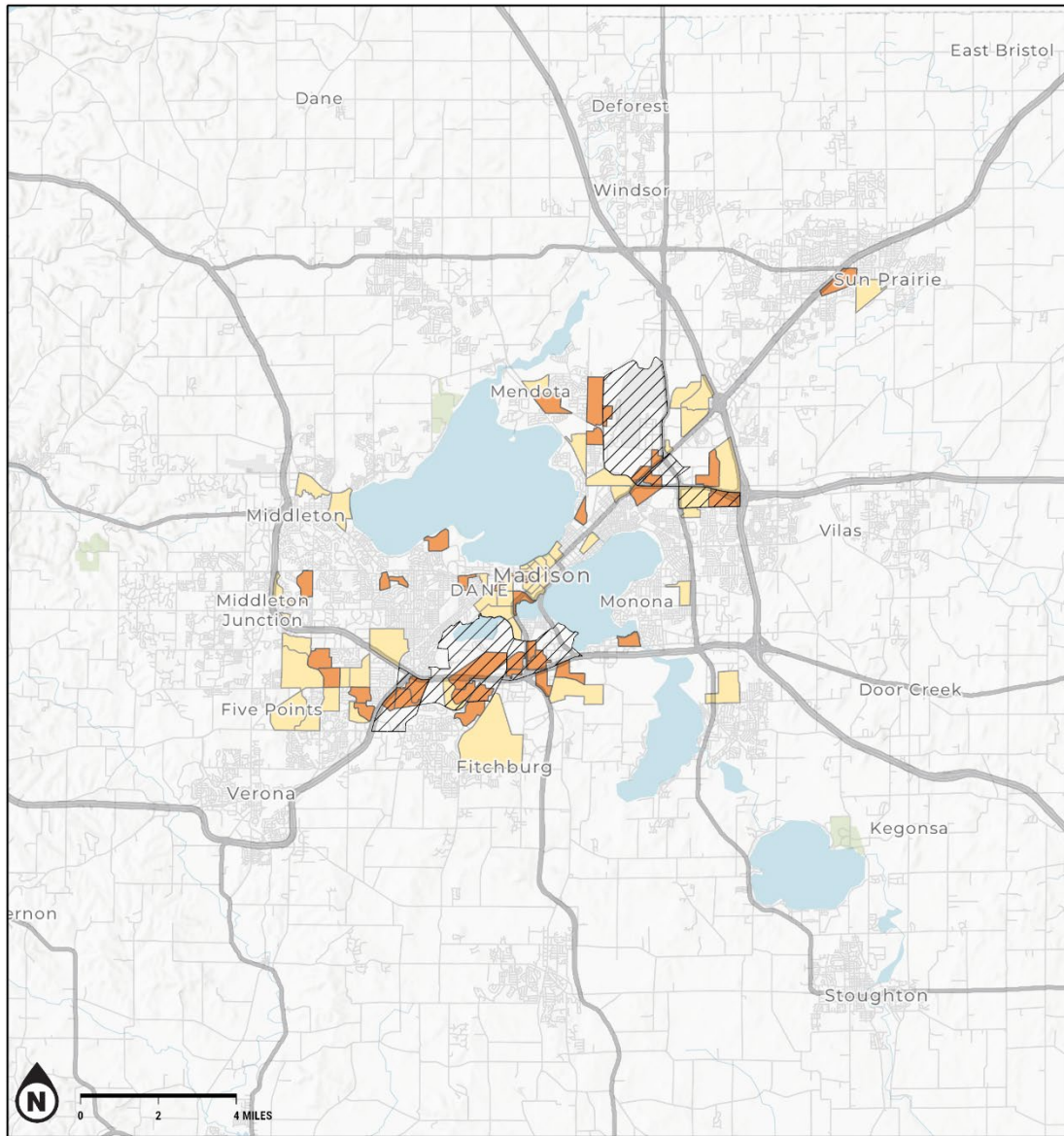
Comparison to Federal Metrics

The MPO's Safety Action Plan is intended to position the Greater Madison MPO for Safe Streets for All implementation funding. The equity analysis required for that application has changed in the first two iterations of the grant, as federal best practice and available tools have evolved. Given the evolving nature of these best practices, and the significant work that the MPO has put into identifying an equity analysis process that considers local nuances, the equity analysis for the Safety Action Plan will be utilizing the analysis developed by the MPO, which defined Tier 1 and Tier 2 Environmental Justice Areas.



The current federal tool to understand overburdened and underserved areas is the Climate and Economic Justice Screening Tool (CEJST) from the US Council on Environmental Quality. The tool identifies Census tracts that are considered disadvantaged based on environmental, climate, socioeconomic, or other burdens. Categories include health, housing, legacy pollution, transportation, workforce development, and others. Communities qualify as disadvantaged if they surpass percentile thresholds for one environmental or other burden, as well as an associated socioeconomic burden.

Madison MPO Tier 1 and Tier 2 EJ Areas are mapped alongside the CEJST areas in Figure 1. This map shows where the Madison MPO is more refined to local context than the federal designation. For example, the CEJST designation includes the entire Dane County Regional Airport, while the Madison MPO EJ Tiers highlight the residential areas on the perimeter of the airport that more accurately reflect where burdened residents live. Another difference is around the University of Wisconsin Arboretum. The federal designation includes the entire Census tract, while the Madison MPO designation highlights only the most affected block groups where burdened residents live.



**ENVIRONMENTAL JUSTICE
AREA COMPARISON**

MADISON MPO
SAFETY ACTION PLAN

ENVIRONMENTAL JUSTICE AREA

- Climate and Economic Justice Screening Tool - Disadvantaged Area
- Madison MPO - Tier 1
- Madison MPO - Tier 2



Figure 1. Comparison of USDOT and Greater Madison MPO Equity Areas

EJ Area Overlap with the HIN

Tier 1 and Tier 2 EJ Areas are spread across the MPO region. The City of Madison has the highest number of roadway miles in EJ Areas (337 miles), followed by the City of Fitchburg (41 miles), the City of Sun Prairie (16 miles), and the City of Middleton (13 miles).

HIN roadway segments and intersections are overrepresented in EJ Areas. Tier 1 and Tier 2 EJ Areas cover only 8% of region’s roadway miles; however, EJ Areas account for 17% of HIN miles in the region, and 29% of HIN intersections. Table 1 shows the distribution of HIN miles in Tier 1 and Tier 2 EJ Areas around the MPO region, displayed by jurisdiction.

Table 1. Distribution of HIN Roadway Segments in Tier 1 and Tier 2 EJ Areas

Jurisdiction	Total Roadway Miles in Tier 1 and Tier 2 EJ Areas	Percent HIN Miles in Tier 1 and Tier 2 Areas
City of Madison	336.6	8.8%
City of Fitchburg	40.9	10.3%
City of Sun Prairie	15.5	19.4%
City of Middleton	13.1	11.5%
Town of Blooming Grove	6.2	-
Village of McFarland	4.6	6.5%
Town of Burke	4.5	24.4%
City of Monona	0.9	-
Village of Maple Bluff	0.7	-
Town of Middleton	0.4	25%

Additional Analysis

The Safety Action Plan analysis identified a total of 11 crash profiles that represent the most prevalent types of severe crashes, by mode. As a next step, these crash profiles will be compared to the MPO’s Tier 1 and 2 EJ Areas, to determine the link and impact level of severe crashes in disadvantages areas.