

Environmental Integrity Indicator: Urban Sprawl

Why: Urban sprawl is a pattern of land development resulting in inefficient consumptive use of land and associated resources. Preserving green space and limiting expansion of low density urbanization is considered to be more effective land use and more likely to be sustainable. When the increase in urban land use outpaces population growth, it can result in discontinuous development and associated problems of increased traffic and pollution.

According to recent research², two indicators used for urban sprawl in the *2007 Prosperity Index Report* -- “Land for Urban,” and “Average Commute Time” – did not correlate highly with urban sprawl. This research also showed that the indicator with the highest correlation to urban sprawl is the number of fatal traffic accidents (FTA) per 100,000 population.

What: The number of fatal traffic accidents per 100,000 population in the indicated geography.

Where: National Highway Traffic Safety Administration, *Fatality Analysis Reporting System*, <http://www-fars.nhtsa.dot.gov/Main/index.aspx>.

Index Scores

Rubric: There is no definitive standard for urban sprawl. Based on the data showing correlation between fatal traffic accidents and urban sprawl, 12.0 fatalities per 100,000 population was set as the sustainable level.

Scale: Simple scale of 4.0 FTAs between levels. Index scores are higher for lower numbers of traffic fatalities per 100,000 population.

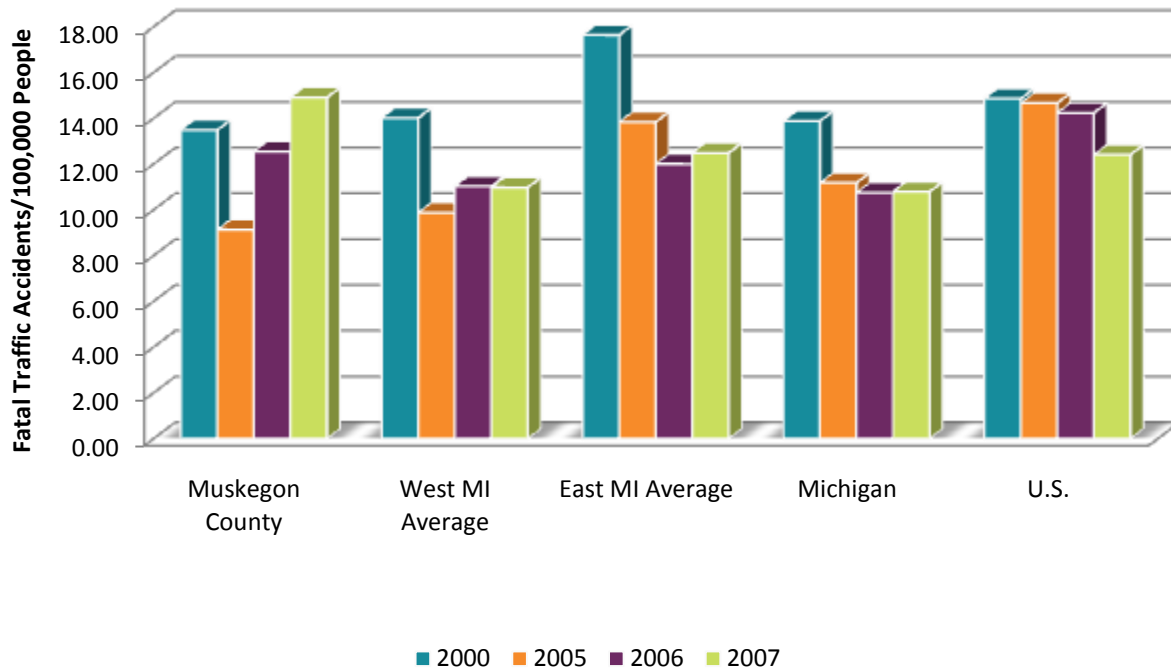
Urban Sprawl fatal traffic accidents per 100,000 population								
Geography	2000		2005		2006		2007	
	FTA	Index Score	FTA	Index Score	FTA	Index Score	FTA	Index Score
Muskegon County	13.49	2.6	9.14	3.7	12.55	2.9	14.91	2.3
Kent County	11.45	3.1	8.73	3.8	9.67	3.6	11.25	3.2
Ottawa County	17.12	1.7	11.76	3.1	10.87	3.3	7.72	4.1
West MI Average	14.02	2.5	9.88	3.5	11.03	3.3	10.98	3.3
Bay County	18.16	1.5	17.45	1.7	6.46	4.4	8.37	3.9
Genesee County	18.08	1.5	11.07	3.2	13.58	2.6	13.11	2.7
Saginaw County	16.67	1.8	12.99	2.8	16.00	2.0	13.34	2.7
East MI Average	17.64	1.6	13.94	2.8	12.01	3.0	12.49	2.9
Michigan	13.88	2.5	11.18	3.2	10.75	3.3	10.79	3.3
U.S.	14.86	2.3	14.67	2.3	14.24	2.4	12.41	2.9

Rubric: Urban Sprawl		
Level	Index	FTA/10 ⁵
Thriving	5	4.00
Advancing	4	8.00
Sustainable	3	12.00
Needs Improvement	2	16.00
Failing	1	20.00

² "Urban Sprawl as a Risk Factor in Motor Vehicle Occupants and Pedestrian Fatalities" by Reid Ewing, Richard Schieber, and Charles Zegeer (2003)

Urban Sprawl

Fatal Traffic Accidents/100,000 People



- Among the three West Michigan counties, Muskegon County had the highest rate of traffic fatalities and the lowest urban sprawl index score.
- Between 2005 and 2007, fatal traffic accidents declined significantly in Bay County resulting in the highest index score among all geographies reported.
- The urban sprawl index score for the U.S. has stayed at less than sustainable levels since 2000.