SUSTAIN: Scoring to Understand Sustainable Transportation Attributes and Indicators

Variables

The SUSTAIN scoring system considers ten municipality-level attributes of environmental sustainability sorted into three broad areas: place, behavior, and fleet cleanliness.

Category	Attribute	Score
Place	Availability of transit	0-3
	Residential density (2006-2010 ACS)	1-3
	WalkScore ®	1-3
	Road lane miles per resident (MassDOT 2011)	1-3
Behavior	Proportion of transit/bike/ped commuters (2006-2010 ACS)	1-3
	VMT 2008-2010	1-3
	Proportion of zero-vehicle households (2006-2010 ACS)	1-3
Fleet Cleanliness	Age of fleet (MA data bank reports 2010)	1-3
	Percent automobiles in fleet (MA data bank reports 2010)	1-3
	Proportion of low-emission vehicles	1-3
SUSTAIN Score		**9-30**

Municipalities are ranked compared to each other and assigned a score for each of the ten attributes. With the exception of availability of transit, municipalities are divided into thirds (1 point for bottom third, 2 for second, 3 for top). Some attributes are reverse coded (for example, low VMT is more environmentally sustainable, so the lowest third of the municipalities gets maximum points).

Availability of transit is ranked on a four-point scale because some municipalities have no access to transit at all; these municipalities get 0 points. Municipalities with RTA service get 1 point, those with commuter rail or MBTA bus only (excluding key bus routes) get 2 points, and those with key bus routes or rapid transit get 3 points.

The coding direction for each attribute is detailed below:

Attribute	Coding Direction
Availability of transit	Positive
Residential density	Positive
WalkScore®	Positive
Lane Miles per Resident	Negative
Transit/Bike/Ped Commute	Positive
VMT 2008-2010	Negative
Proportion zero-vehicle households 2006-2010 ACS	Positive
Age of Fleet	Negative
Auto Mix (% autos)	Positive
Alternate Fuel vehicles as a proportion of total vehicles	Positive

The attribute scores are added to create the total SUSTAIN score for each municipality. The SUSTAIN scores range from 10-30 (although a 9 is technically possible if a municipality scores 0 for availability of transit and 1 for every other measure, this situation does not exist in the data set). The SUSTAIN scores are also divided approximately into thirds for interpretation.

SUSTAIN scores between 10-16 indicate "Low Sustainability," 17-21 indicate "Fair Sustainability," and scores 22-30 indicate "High Sustainability."

Score Range	Frequency	Percent	Cumulative Percent
Low Sustainability	108	30.8	30.8
Fair Sustainability	120	34.2	65.0
High Sustainability	123	35.0	100.0
Total	351	100.0	