



## Rail Transit Reduces Urban Livability

*A Rail Livability Index shows that rail transit has reduced the livability of every urban area that has it. The index assesses the impact of rail transit on transit ridership, congestion, taxpayers, safety, energy consumption, and other measures of urban livability. The results show that urban areas that are building rail transit would be better off spending their limited transportation funds on road improvements and bus-rapid transit.*

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Does rail transit improve urban livability? To answer this question, the Center for the American Dream collected data for rail regions in thirteen categories, including transit ridership trends, congestion trends, rail cost effectiveness, safety, and energy costs.

Each of the categories produced scores ranging from roughly 100 to minus 100 (though a few exceeded plus or minus 100). Adding all of the scores together produced a *Rail Livability Index* with potential scores of roughly plus or minus 1,300.

Two-dozen U.S. urban areas have rail transit. One, New Haven, is fairly small and because New Haven transit service is managed by the state of Connecticut its transit data cannot be easily separated from other Connecticut cities. So the Center calculated the Rail Livability Index for the other twenty-three regions, all of which are among the nation's fifty largest urban areas.

The data for many of the categories were calculated by comparing the rail urban areas against the nation's largest urban areas served by bus-only transit. Thus the Rail Livability Index scores are not so much comparisons between rail regions as comparisons of rail regions with non-rail regions.

Compiling any index requires some judgment regarding the relative weighting of categories. For example, four of the thirteen categories in the Rail Livability Index have to do with transit riders. This may be overly weighted towards transit users because transit carries no more than 11 percent of travel in any urban area and no more than 5 percent in any area outside of New York. But all four categories were used because the goal of rail transit, after all, is to increase transit ridership.

While some may quibble with the weightings, the

results are clear: Rail transit reduced the livability of every urban area that has it. This may come as a surprise to those who think rail transit plays a vital role in such urban areas as Chicago and Washington. In fact, transit is declining in importance in both regions, and the high cost of rail transit may be contributing to that decline.

Actual Rail Livability Index scores range from minus 46 for New York to minus 500 for Buffalo. New York is the one urban area where rail transit may make sense, and this is supported by New York's relatively high score. But if New York didn't already have rail transit, it probably wouldn't make sense to build it, as suggested by the high cost of projects to extend rail service there. One plan calls for building an eight-mile subway line for \$16.8 billion, or an incredible \$2.1 billion a mile.

Rail transit is even more difficult to justify in other urban areas. New construction makes no sense at all, as bus-rapid transit can carry as many people as fast as rail transit at a far lower cost, while freeways are typically fourteen times as cost effective in moving people as rail transit. For many existing rail lines, the best thing that can be done is to abandon them, saving the taxpayers money and providing rights of way that can be used by buses, autos, and/or pedestrians.

Denver's light-rail line scores poorly because it has killed far more people per passenger mile than autos or buses, it is not cost effective, and it cost far more than the original estimates. It has also done little to reduce Denver's growing traffic congestion.

Beyond the actual scores, this analysis revealed some discouraging facts about rail transit:

- Collectively, the two dozen regions with rail transit lost 14,000 transit commuters during the 1990s;

- By comparison, urban areas with bus-only transit gained 53,000 transit commuters during the 1990s;
- Transit lost market share of commuters in two thirds of all rail regions;
- Rail transit is strongly associated with increasing congestion: Sixteen of the twenty urban areas with the fastest rising congestion have rail transit, and one of the other four is building rail;
- Rail is dangerous: Light-rail and commuter-rail

- transit kill far more people per passenger mile than buses or autos on urban roads. Heavy rail kills more people than buses or urban interstates;
- Three out of five rail transit systems use more energy per passenger mile than passenger autos.

The table below presents the Rail Livability Index scores. For more information, including a complete description of each category in the index and detailed profiles of all rail transit systems, download the complete analysis from [i2i.org/articles/1-2004.pdf](http://i2i.org/articles/1-2004.pdf).

### Rail Livability Index

	Rider Growth	Travel Share	Commuter Growth	Commuter Share	Cost Overrun	Rider Shortfall	TTI Growth	VMT/Cap Growth	Cost Effective v. Fwys	Cost Effective v. Buses	Safety	Energy	Land Use	Total
Atlanta	14	-20	6	-28	-58	-63	-29	-68	-93	-42	25	-22	22	-356
Baltimore	-3	-4	-17	-19	-60	-59	-22	-46	-97	-74	-32	-43	16	-460
Boston	10	21	12	-2	0	0	-29	-28	-64	44	-96	19	-28	-141
Buffalo	-5	-24	-26	-4	-61	-68	-5	-62	-97	-79	10	-99	20	-500
Chicago	-15	-20	-7	-20	0	0	-25	-47	-47	80	-182	3	10	-270
Cleveland	-14	-15	-20	-26	0	0	-10	-37	-89	-19	-3	-86	19	-300
Dallas	31	-7	-3	-20	-37	0	-24	-14	-89	-31	0	-100	5	-289
Denver	40	1	37	6	-79	0	-34	-14	-90	-29	-17	-1	-11	-191
Los Angeles	14	3	-5	3	-56	-50	-41	-10	-91	-30	-59	-19	-49	-390
Miami	43	-14	2	-10	-58	-85	-28	-41	-93	-48	-24	-101	-4	-461
New Orleans	-26	-14	-16	-14	0	0	-7	-29	-95	-50	-12	24	4	-235
New York	15	2	1	-1	0	0	-25	-21	-27	87	-77	26	-26	-46
Philadelphia	12	-14	-13	-25	0	0	-17	-35	-56	49	-81	-51	14	-217
Pittsburgh	13	-26	-14	-20	11	-66	-2	-35	-83	-50	1	-110	4	-377
Portland	59	28	56	15	-65	-50	-37	-71	-90	-25	-31	29	-30	-212
Sacramento	48	19	24	4	-13	-71	-24	-13	-90	-40	-28	-20	-35	-239
Salt Lake City	3	-32	26	4	-2	0	-17	-45	-88	-66	-28	-1	2	-244
San Diego	51	19	9	1	0	0	-28	-40	-83	35	-74	18	-68	-160
San Francisco	5	-2	7	1	-33	-49	-32	-35	-93	-39	-50	14	-86	-392
San Jose	23	0	15	17	-32	0	-21	-37	-93	-39	-23	-147	-70	-407
Seattle	30	6	31	11	-88	0	-31	-39	-97	-61	0	0	-6	-244
St. Louis	22	-17	-12	-18	-45	0	-12	-86	-90	35	8	24	16	-175
Washington	3	-9	-30	-13	-83	-28	-25	-35	-91	-23	150	8	17	-159

*Rider growth* is the percent change in ridership from 1990 to 2000.

*Travel share* is the percent change in transit's share of motorized travel from 1990 to 2000.

*Commuter growth* is the percent growth in transit commuting from 1990 to 2000.

*Commuter share* is the percent change in transit's share of commuters from 1990 to 2000.

*Cost overrun* is the percent difference between the actual construction cost and the cost estimate at the time the decision was made to build.

*Ridership shortfall* is the percent difference between actual ridership and ridership projected at the time the decision was made to build. This and the previous measure are only applied to regions that built most of their rail systems since 1970; some systems are too new for ridership data.

*TTI growth* is the percent growth in the travel time index, a measure of congestion, from 1982 to 2001 (minus means congestion growth).

*VMT/Cap Growth* is the percentage growth in per capita driving from 1982 to 2001 (minus means per capita driving growth).

*Cost Effective v. Fwys* and *v. Buses* is the cost effectiveness of rail vs. freeways and buses. Minus 90 means rail is one-tenth as cost effective as other modes.

*Safety* is the number of lives saved (or killed) between 1992 and 2001 by rail transit relative to autos and buses per 10 million people.

*Energy* is the percent difference in 2002 energy consumption per passenger mile compared with passenger autos (minus means rails consume more).

*Land use* represents 2002 housing affordability relative to the national average as a proxy for the effect of transit-oriented land-use planning.