

Bicycle Commuting in Vermont: Weather and Seasonal Factors

From 2009 through 2010, the UVM Office of Health Promotion and the Transportation Research Center conducted a survey of self-identified bicycle commuters in Vermont to categorize factors influencing bicycle commuting rates to and from work. The study included individuals from the Burlington, Brattleboro, Montpelier, St. Albans, and Rutland areas. All 185 participants lived between two and 30 miles from their work place. Each participant reported the travel mode or modes s/he used to commute each day for one randomly assigned week each season. Information on a total of 2,500 person-days was collected. Several key results from the survey are summarized below.

Table 1. Commonly Cited Barriers to Bicycle Commuting On a Given Day

REASON	DAYS PROBLEM WAS CITED
Roads were too snowy/icy or snow was forecast	27%
Too cold	25%
Schedule didn't allow	25%
Not enough daylight	25%
Roads were wet or rain was forecast	10%
Had to transport a passenger or something that couldn't be carried on a bicycle	14%
Didn't have the energy	4%
Other (e.g., needed car for errands no bike lanes on route, bike not working)	29%

WEATHER

Weather was an important predictor for bicycle trips. For every 1° F increase in temperature, the likelihood of bicycle commuting on a given morning increased by 3%, while any morning precipitation decreased the likelihood by 50%.

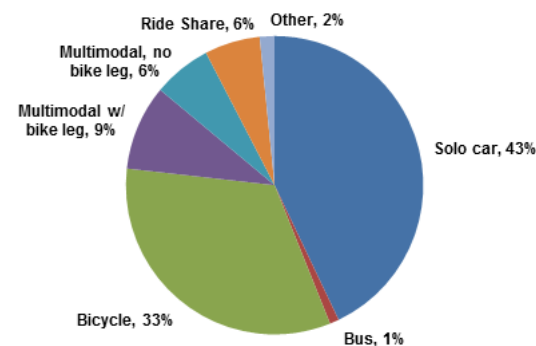
Table 2. Significant Factors Affecting the Decision to Bike Commute

FACTOR	EFFECT ON LIKELIHOOD OF BIKE COMMUTING
Increase of 1°F	+3%
Increase of 1 mph wind speed	- 5%
Precipitation (any type)	-50%
Additional inch snowfall	-10%
Additional mile to work	-8%

MULTIMODALISM

Survey participants bicycled to and from work approximately a third of time. On 20% of the days that participants biked to work, they returned home by vehicle or bus.

Figure 1. Mode to and from work on designated survey days



DISTANCE

The maximum reported commuting distance was 30 miles and nearly half (44%) of respondents lived within five miles of their work place. Individuals with longer commutes were less like to bicycle to work than individuals with shorter commutes. Each additional mile decreased bicycle commuting likelihood by 8%. On average, participants traveled 7.8 miles to work.

The full results of this study are forthcoming in: Flynn, B., G. Dana, J. Sears, L. Aultman-Hall. Weather Factor Impacts on Commuting to Work by Bicycle. Preventive Medicine(in press).

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