



## Gettysburg Inner Loop

### Gettysburg Inner Loop Benefits Projection

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**A. Here is a realistic scenario for local Gettysburg area residents** A 190 pound person rides his bicycle for work, school, church and errands etc. for 30 weeks per year (May through Nov.) for 5 days per week at 10 miles per day for these various trips. That takes into account bad weather days. Then that person uses their bicycle for 1,500 miles per year for daily living, not including pleasure trips.

Weight loss: 345 calories/hour X 150 hours = 51,750 calories or 14.79 pounds/ year. (actual weight loss depends on personal eating habits)

Gasoline savings if car gets 25mpg = 60 gallons or 2.14 barrels of crude oil per year

Money savings: @ \$3 gallon of gas = \$180

Carbon Dioxide reduction: 60 gal. X 19.564 pounds/gal = 1,174 pounds CO<sub>2</sub>/year

Plus, immeasurable convenient, hassle free transportation

Suppose about 10% (\*see footnote) of the Gettysburg area (or 1,000 people) did that... then:

Gasoline saved if car gets 25mpg = 60,000 gallons of gasoline/year

Crude oil saved per year = 2,143 barrels of crude oil

Carbon Dioxide reduction = 1,173,840 pounds of CO<sub>2</sub>/year

**B. Here is a scenario for tourists impacting Gettysburg roads and the environment:**

Suppose Gettysburg has 2,100,000 tourists per year and 80% (1,680,000) come between May and November.... They average 3 people per car load. Then, that's 560,000 car loads of tourists from May to Nov. If 5% see Gettysburg on bicycle, averaging 20 miles per day for only one day on their Gettysburg stay..... here is the annual savings:

Reduced cars on Gettysburg Streets May through November = 28,000 less cars

Gasoline savings @ 25mpg = 22,400 gallons of gas annually

Reduced carbon dioxide emissions = 438,234 pounds

**C. Combined gasoline, crude oil and CO<sub>2</sub> emissions saving** if 10% of locals and 5% of tourists used bicycles May through November, using the above A and B scenarios:

Gasoline savings: 22,400 + 60,000 = 82,400 gallons of gasoline (EQUALS: 10 large tanker trucks of gasoline)

Crude oil savings = 2,943 barrels (EQUALS: 15 large tanker trucks of crude oil)

Carbon Dioxide emissions reductions = 1,612,074 pounds or 731 metric tons

#### Sources:

1. Emissions: [www.earthlab.com/carbon-calculator.html](http://www.earthlab.com/carbon-calculator.html)

To calculate your personal auto emissions, for each car, the calculator divides the average number of miles driven in a year by the estimated fuel efficiency (mpg) of the vehicle type that is selected [Environmental Protection Agency Fuel Economy Guide, 2007] This amount is multiplied by 19.564 the amount of pounds of carbon dioxide that is emitted as a result of burning one gallon of gasoline. To calculate metric tons, this number is divided by 2,205.

2. Gasoline from crude oil: [www.newton.dep.anl.gov/askasci/eng99288.htm](http://www.newton.dep.anl.gov/askasci/eng99288.htm)

It depends upon the quality of the crude and the octane of the refined gasoline. Plus after the gasoline if refined, there are still usable bi products, such as heating oil. A generally acceptable figure from a web search is: 28 gallons of gasoline from one barrel of crude.

Note: one barrel of crude oil = 42 gallons

3. Calories burned: <http://www.nutristrategy.com/activitylist.htm> The calories burned per hour were calculated on a 190 pound person riding a bicycle at a causal pace of less than 10mph.

4. \*Using Boulder, CO as an example of bicycle trips frequency.... according to their transportation department, an estimated 8% to 20% of all trips are taken on bicycle, depending on when surveyed.