

The Greenness of a Path in Traffic

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Introduction

- Vehicular pollution adversely affects public health (Annual Energy Review 2009).
- How can you travel the least polluting path when driving from a starting point to ending point in traffic?

Project Summary

- Use graph theory to identify the most green route in a path.
- Develop algorithm to measure the greenness of a path.

Greenness and Pollution

- How do we define greenness?
- Consider Greenness as minimization of the parameters that affect pollution $P(x_n)$.
- Parameters include: travel time, lane capacity, traffic regulations, weather conditions, GPS system function.

Measuring Greenness

- $G \propto \min P(x_n)$
- $G = k \min P(x_n)$

New Technologies

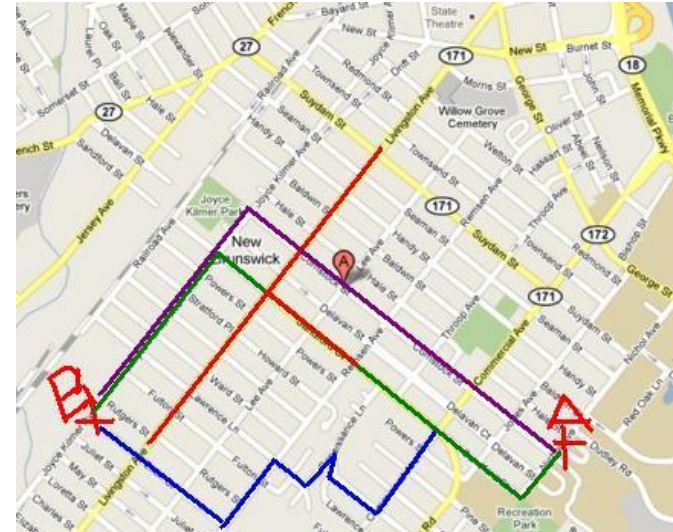
- GPS
- Communication
- Flow



Graph Theory

- Flow
- Algorithms

Path	Cost(Gas)	Time
1)Green	\$0.14	15 mins
2)Purple	\$0.14	7 mins
3)Blue	\$0.10	9 mins



Application

- Communication
- Independent vs. Dependent System
- Single unit vs. multiple units