Green Highways

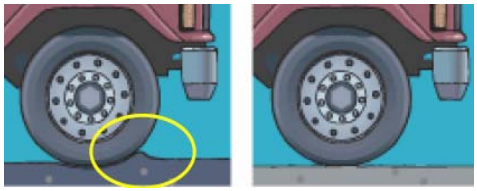
Fuel savings and reduced emissions translate into real opportunities for greening our highway infrastructure

US 301 - Waldorf, Maryland

An approximately 13-mile long corridor along US Route 301 in Waldorf, Maryland has been selected as the first potential Green Highway under the Green Highways Partnership (GHP). The GHP was created to promote innovative environmental streamlining and market-based approaches toward sustainable solutions for transportation and environmental improvements.

Fuel Efficiency & Green Highways

Highway agencies can realize significant economic and environmental benefits for the public during highway improvements with concrete pavements. Concrete's low rolling resistance reduces truck fuel consumption rates compared to asphalt surfaces. These reduced consumption rates translate into direct dollar savings as well as reductions in various engine pollutants.



Flexible Asphalt Absorbs Energy – Rigid Concrete Doesn't

The results for US Route 301 (shown on right) present a compelling case for the Green Highway program. The charts show a range of potential annual fuel savings and reductions in pollutant emissions that could be achieved if the US 301 corridor was paved with concrete rather than asphalt. The case study is based on results from a study performed by the National Research Council of Canada (NRC) - Centre for Surface Transportation Technology (CSTT) in January 2006. The research concluded that trucks use on average 3.85% less fuel on rigid concrete pavements when compared to flexible asphalt pavements, due to concrete's lower rolling resistance.

The annual savings/reductions presented below are based on a traffic volume of 82,000 vehicles per day with 12% trucks, truck fuel mileage of 5.5 miles/gallon, and a local fuel price of $2.80/gallon.

Fuel Savings (gal/yr)

Dollar Savings ($/yr)

CO_2 Reductions (tons/yr)

NOx Reductions (tons/yr)

SO_2 Reductions (tons/yr)

Sources

Maryland SHA, 301 Waldorf Area Transportation Improvements Brochure, March 2007
EPA 420-F-05-001, February 2005
NRC-Canada, CSTT-HVC-TR-068, Taylor and Patten, January 2006

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