

EXECUTIVE SUMMARY

Cost-Effective GHG Reductions through Smart Growth & Improved Transportation Choices *An economic case for strategic investment of cap-and-trade revenues*

The Need to Connect Transportation and Climate Change Policies

Nearly one third of greenhouse gas (GHG) emissions in the U.S. come from the transportation sector, making it the nation's largest end-use source of emissions. Moreover, transportation is the fastest growing source of U.S. emissions, accounting for almost half of the net increase in total U.S. emissions between 1990 and 2007.¹ Transportation GHG emissions are a result of three drivers — vehicle fuel efficiency, fuel emissions and how much people drive, as measured in vehicle miles traveled (VMT). In 2007, Congress addressed the first two drivers by improving Corporate Average Fuel Economy (CAFE) standards and mandating reduced GHG intensity of motor fuels. However, Congress has not put the same effort into improving travel choices to address how much people drive. Historically, U.S. transportation policy and infrastructure investments tend to encourage more driving. If we do not change how we invest in transportation, driving will continue to increase, effectively offsetting the emissions savings expected from the recently improved fuel efficiency and low carbon fuels requirements.

Cap-And-Trade Models Ignore Smart Growth and Transportation GHG Reductions

The price signal from a cap-and-trade system will not be effective in reducing VMT, due to market imperfections and limited transportation choices in many parts of the country.² Typical GHG reduction analyses miss the emissions reductions and economic benefits of improved transportation choices and assume a high “cost per ton” for these reductions. They also overlook broader benefits of smart growth and transportation pricing including lower infrastructure costs, consumer fuel cost savings, time saved, lower insurance costs and increased local tax revenues.

Smart Growth and Transportation Choices Reduce Emissions and Save Money

In this report, the Center for Clean Air Policy (CCAP) analyzes the benefits of reducing GHG emissions through smart growth, improved transportation choices, and transportation pricing. With input from Transportation for America, Smart Growth America, Natural Resources Defense Council, Environmental Defense Fund, and HDR Inc., we estimate that comprehensive **application of best practices could reduce VMT per capita by 10 percent** and reduce annual GHG emissions 145 MMTCO₂ in 2030 — equivalent to the annual emissions of some 30 million cars or 35 large coal plants.³ These GHG reductions total approximately 6 percent of the 2030

¹ Energy Information Administration, Office of Integrated Analysis and Forecasting, U.S. Department of Energy. “Emissions of Greenhouse Gases in the United States 2007,”
<ftp://ftp.eia.doe.gov/pub/oiaf/1605/cdrom/pdf/ggrpt/057307.pdf>

² Winkelman, Steve, Tim Hargrave, and Christine Vanderlan. “Transportation and Domestic Greenhouse Gas Emissions Trading.” Center for Clean Air Policy, April 2000.
[http://www.ccap.org/docs/resources/558/Transportation20&20GHG20Trading20\(CCAP%202000\).pdf](http://www.ccap.org/docs/resources/558/Transportation20&20GHG20Trading20(CCAP%202000).pdf).

³ Our calculations assume 55 mpg CAFE standards in 2030 and a 15 percent reduction in fuel GHG intensity. GHG savings from VMT reduction would be higher if we had assumed lower mpg or fuel GHG savings. Coal plant and car estimates based on current US averages for a 600 MW coal plant and on-road light duty vehicle fleet.

GHG reduction goal proposed in the American Clean Energy and Security Act.⁴ **Our analysis indicates that these reductions can be achieved profitably**, when factoring in avoided infrastructure costs, consumer savings and projected tax revenue growth. When viewed holistically, many transportation-related emissions reductions are not only cheaper than reductions in the utility and petroleum sectors, but also would help ease the cost of compliance on those sectors.

According to our review of the economic impacts of smart growth, integrated planning can:

- **Reduce infrastructure costs** by approximately 25 percent or more;
- **Attract private investment**, increasing municipal revenues through real estate taxes;
- **Reduce household costs**, freeing up disposable income, especially for working families;
- **Improve energy security** by reducing dependency on oil; and
- **Increase walking and bicycling, improve public health** and reduce medical costs.

The report contains case studies at the local, regional, state and national level, which include:

- The **Sacramento** region's smart growth plan is projected to reduce emissions by 7.2 MMTCO₂ through 2050. CCAP calculates a net economic *benefit* of \$198 per ton CO₂ saved through \$9 billion dollars savings on infrastructure and consumer fuel savings.
- In **Atlanta**, CCAP calculates that the Atlantic Station project will reduce CO₂ by a total of 0.63 MMTCO₂ over 50 years at a net cost savings, because municipal tax revenues from the project will be greater than what is required to pay back the initial project loan.
- A McKinsey analysis for **Georgia** concludes that strategic investments in transit, demand management, and freight could yield net economic benefits of over \$400 billion over 30 years. CCAP calculates associated transportation GHG savings of 18 MMTCO₂.
- Rails-to-Trails calculates that **Portland, Oregon's** investment in bicycle infrastructure will cut 0.7 MMTCO₂ with net economic *benefits* of more than \$1,000 per ton CO₂. The Center for Transit Oriented Development reports that \$73 million invested in the Portland Streetcar helped attract \$2.3 billion in private investment within two blocks of the line.
- A Brookings Institution study shows that shifting to per-mile car insurance **pricing** could cut VMT and related GHGs by 8 percent yielding insurance cost savings for two thirds of households, averaging \$270/vehicle/year and annual societal savings of \$50-60 billion.

Conclusion

Smart growth is not only cost-effective compared to other mitigation measures, it can be profitable. If we ignore the full economic benefits of smart growth and improved transportation choices, we miss inexpensive GHG reductions that also provide additional community benefits and reduce the burden on other sectors to reduce their emissions. Dedicating a meaningful portion of allowance value to smart growth planning would be a cost-effective investment that can lower economy-wide GHG mitigation costs. For a more in-depth look of these issues, look for our forthcoming report, "Growing Wealthier: The Economic Benefits of Smart Growth."

⁴ 145 MMTCO₂ is 5.8 percent of the 2030 savings from covered sources or 4.8 percent of economy-wide GHG reductions in House Report 111-137: [http://thomas.loc.gov/cgi-bin/cpquery/R?cp111:FLD010:@1\(hr137\)](http://thomas.loc.gov/cgi-bin/cpquery/R?cp111:FLD010:@1(hr137)).