



城市改变中国——2008 “CPN中国周”

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A Missing Linkage between Land Use
and Transportation:
The Case of California's Debate on
Reducing Greenhouse Gas Emissions

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How land use and transportation decisions influence each other

- Land use influences transportation:
 - ✓ Determines distances which commuters, shoppers, tourists, students, etc., must travel
 - ✓ Impact on choice of transportation mode
 - ✓ Different impacts of homogeneous versus heterogeneous mixes of land uses

How land use and transportation decisions influence each other

- Transportation influences land use:
 - ✓ Demand for urban space
 - o Parking (car storage)
 - o Road and highway space
 - o Bus or other transit dedicated rights-of-way
 - o Block length
 - o Street and sidewalk widths
 - ✓ Transportation infrastructure can make specific land uses feasible or unfeasible
 - o Access to development
 - o Affordability of travel
 - o Impact on construction budget

What happens when land use and transportation decisions are not linked

- Land use decisions may have unintended transportation consequences
 - ✓ Traffic congestion
 - ✓ Increased dependency on auto use
- Transportation investments may fail to achieve goals
 - ✓ Transit ridership falling below projections
 - ✓ Freeway widenings failing to provide long-term improvements in traffic flow

If urban planners believed in an
afterlife,

Heaven would be
a state of linkage between land use
and transportation decision-making

Growing awareness of climate change could become a powerful new factor disrupting “planning-as-usual”

[The Case of California]

The Case of California

- Legislature enacts and Governor Schwarzenegger signs Assembly Bill 32 (Pavley) mandating reduction of greenhouse gas emissions to 1990 levels by the year 2020
- California Air Resources Board given the lead role to adopt implementation plan

The Case of California

- CARB releases Draft AB 32 Scoping Plan in June 2008 setting sector targets for emission reductions (in MMTs)
 - ✓ Clean car standards 31.7
 - ✓ Energy efficiency, appliances, green bldgs. 27.4
 - ✓ Utilities switch to more renewable energy 21.2
 - ✓ Low-carbon fuel standard 16.5
 - ✓ Measures to control high-warming gases 16.2
 - ✓ Sustainable forests 5.0
 - ✓ Vehicle efficiency measures 4.8
 - ✓ Goods movement, including port restrictions 3.7
 - ✓ Heavy/medium-duty vehicles 2.5
 - ✓ California solar program 2.1
 - ✓ **LOCAL GOV'T AND LAND USE** 2.0
 - ✓ High-speed rail 1.0
 - ✓ Landfill methane control 1.0
 - ✓ Additional reductions from cap-and-trade 35.2
 - TOTAL 169.0

The Case of California

- If transportation is California's largest single source of greenhouse gas emissions (41.2% in 2004), why does the Draft AB 32 Scoping Plan set such a low target for GHG emission reductions from local gov't and land use?
 - ✓ Staff skeptical about scientific basis for impact of VMT reductions
 - ✓ Opposition from building industry and local government associations

The Case of California

- Unresolved issues
 - ✓ Can VMT actually be reduced?
 - ✓ Do VMT reductions actually reduce greenhouse gas emissions?
 - ✓ Can local government take steps which actually would reduce VMT?
 - ✓ How much of the burden of greenhouse gas reduction can local government be expected to bear?
 - ✓ How would the State monitor local VMT reduction activities and enforce accountability?

From California to China

Is climate change relevant only to decadent, affluent Americans and Europeans? China may be affected by:

- Rising sea levels
- Unpredictable extremes of weather
 - ✓ Flooding
 - ✓ Drought/desertification
 - ✓ Declining water supply
 - ✓ Impact on agriculture (minimizing food imports)
- Emerging global consensus (impact upon China's ability to compete globally)