

“The Trip Not Taken”

Reducing Your Carbon Footprint through Integrated Transit and Land Use Planning

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“The Trip Not Taken”

- Attracting households to areas with mixed land use and good transit service reduces vehicle miles traveled (VMT).



The Challenge: VMT → GHG

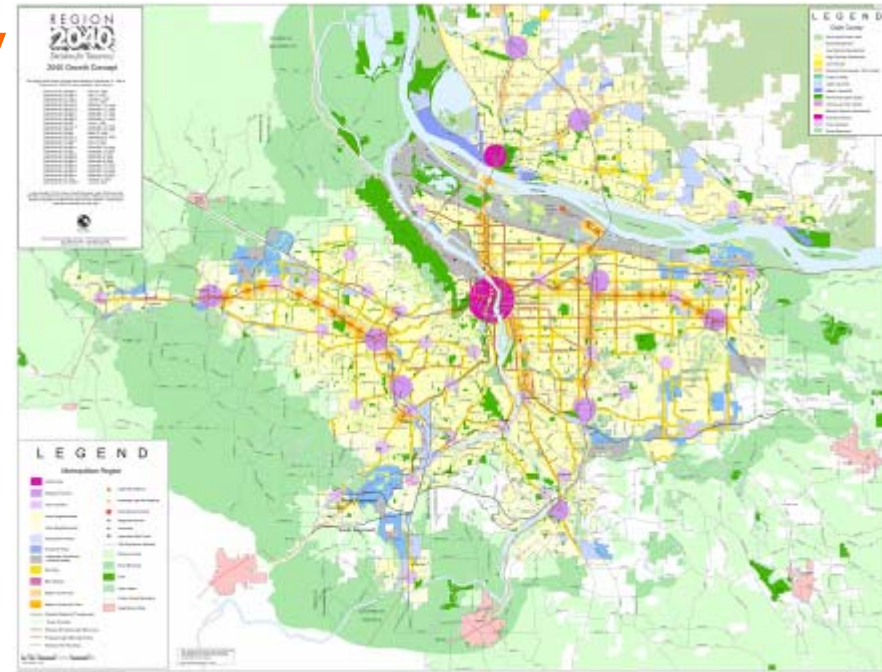
- **Transportation GHG is a “three-legged stool”:**
 - Vehicle Efficiency (MPG)
 - Greenhouse Gas (GHG) Profile of Fuel
 - Vehicle Miles Traveled (VMT)
- **Even w/ Low-Carbon Fuel and Vehicles (2030):**
 - VMT up 60%
 - GHG up 40%
 - **2030 Goal for Climate Stabilization: 40% DOWN**

The Opportunity: The “Trip Not Taken”

- **Integrating transit with land use reduces VMT by:**
 - Shifting modes (from SOV to transit/bike/pedestrian)
 - Reducing trips (in frequency and distance)
- **Can we measure and capture the carbon benefits?**
 - Additionality (Did it happen because of GHG policy?)
 - Verifiability (Can everyone achieve the same result?)

2040 Growth Concept

- Urban growth boundary
- Focused on centers
- High capacity transit connections between centers
- Multi-modal and coordinated



Streetcar in 2040 Growth Concept

Portland Streetcar acts as:

- circulator (11.3 mile loop)
- shaper of high-density land use
- economic development tool
- connector to regional light rail



TOD and The Trip Not Taken

- Convenient travel options (transit/bike/pedestrian)
- Mix of destinations within walking or streetcar range
- Active environments enhance interest and safety, reinforcing use of travel options
- Benefits aren't captured by traditional travel forecast models



1995



2005

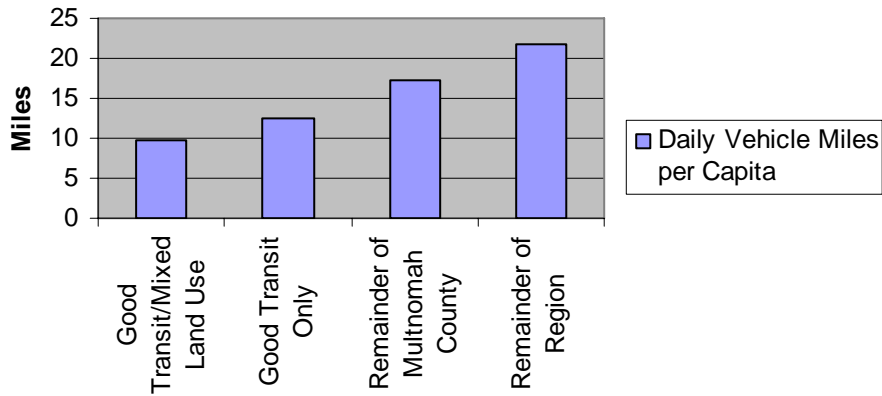


Light Rail and The Trip Not Taken

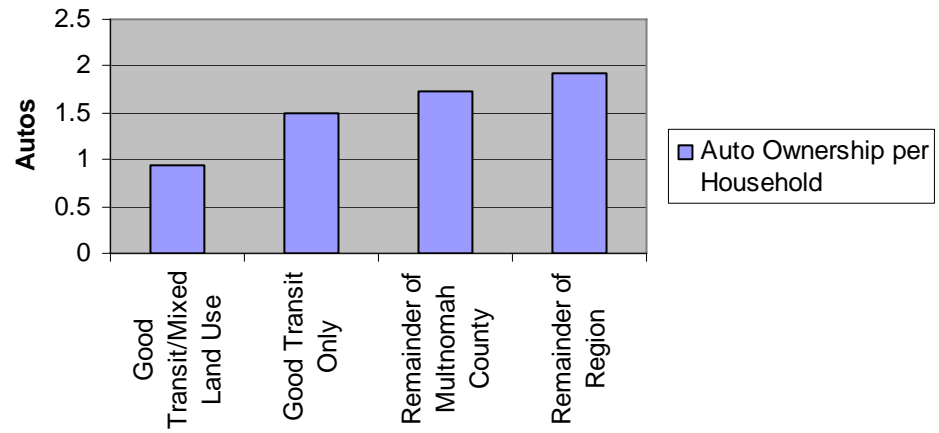


Survey says...

Integrated transit and land use reduces VMT...



...and reduces auto ownership.



Source: Metro Travel Survey '94-'95

Counting the “Trip Not Taken”

- Eastside Loop (3.3 mi) is expected to attract 3,432 more households by 2025 than without streetcar investment.
- From “Portland Streetcar Development Impacts” study by E.D. Hovee & Company (Nov. 2005)



VMT Savings

	High Density	Suburban
Daily Vehicle Miles	9.8	21.79
Annual Vehicle Miles	23,159,000	51,493,000
Vehicle Miles Saved	28,334,000	
% Savings	55%	

Trip Not Taken → GHG Reductions

Figure 14-1A Looking South onto the Project Area

- Measuring Eastside Loop carbon footprint
- Metrics recognize benefits of TOD on VMT



From the north end of the Lloyd District (approximately Broadway) with Rose Garden and Oregon Convention Center mid-photo and the Central Eastside District in the background.

Carbon Footprint

	High Density	Suburban
Transportation	14,883	33,050
Development	31,021	45,087
Combined	45,904	78,167
% Savings	41%	

“Cost Effectiveness” is Incomplete

- Transit investments can change land use and travel patterns
 - Reduces VMT and infrastructure costs
 - Real benefits are not captured
- FTA’s travel forecasting methods require identical land use for all alternatives
 - Level playing field for comparison
 - Does not reflect auto VMT reduction benefit

Next Steps

- Inform development of carbon footprint standards:
 - Industry benchmarking → reduction targets
 - Influence rulemaking:
 - Climate Policy
 - T-Bill
 - Regional

