Statewide Integrated Land Use/Economic/Transportation Model Study
(Caltrans-funded Effort)

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What is an Integrated model?

- A land use forecasting model using economic and physical indicators to forecast where development will go.

- These are coupled with a travel model because *travel access is extremely important in forecasting development* -- and *development is extremely important in forecasting travel demand*. 
Land Use Affects Travel Demand + Travel Facilities Affect Land Use
Statewide Integrated Model*

*current Caltrans-funded feasibility study and demonstration effort
Statewide Integrated Model* 

(Caltrans-funded feasibility study/demonstration)
The “PECAS” Micro-Economic/Land Use Model

- **Uses “Real” Economic Chains**
  - Production location to exchange location; to consumption location; for all goods, services, residences and labor

- **Uses Real Market Mechanisms**
  - To Predict Commercial and Residential Space Development
Economic Interactions: Production - Exchange - Consumption
Hypothetical California Interregional Example of Potential Statewide Model Use
“PECAS” Zones
“PECAS” Zones - with Existing Roads
Introduction: Hypothetical Capacity Expansion

Proposed capacity-expanding project *Rail; new highway; HOV or HOT lanes, (or other example)
Without Project in 2050: Economic Activity per Zone % Increase
With Project in 2050: Economic Activity per Zone % Increase
PECAS Analysis - No Project - 2050: Land Use
PECAS Analysis - With Project 2050: Land Use
PECAS Uses “Real” Economic Chains

- Production location to exchange location; to consumption location; for all goods, services, residences and labor

& Uses Real Market Mechanisms

- To predict impact on households by income class, industries by type and building by location

“The Bottom Line”
# What Travel Models Can and Can’t Do*

<table>
<thead>
<tr>
<th>What Types of Analyses and Functions does each Type of Model Perform? - a few examples:</th>
<th>Travel Models (Alone)</th>
<th>“Integrated” Land Use/Transportation Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g., Land Use Analysis:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Land use/transportation interactions</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>• Economic development</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>• Smart Growth strategies</td>
<td>Poorly</td>
<td>Yes</td>
</tr>
<tr>
<td>• Jobs/Housing Balance</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>• Effects of Planning &amp; Policy</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>• Housing affordability</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* Report published by UC Davis in 2006: “Assessment of Integrated Transportation/Land Use Models” (Mike McCoy & Bob Johnston)
A wide range of modeling reports, papers and other information is available at:

www.ice.ucdavis.edu/um

Including 2006 report:
“Assessment of Integrated Transportation/Land Use Models”
(click on “Final Report”)