

# Planning for Sustainable Development in California

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# Sustainable Development Planning

- Don't harm future generations. Long-range view.
- Objectives:
  - Economic Welfare
  - Social Equity
  - Environmental Quality
- "It is better to be roughly right than exactly wrong."  
**Long-range comprehensive planning.**
- MPOs now do short-range planning for narrow objectives. So, they are "Exactly wrong."

# Global and U.S. Progress on Sustainable Development Planning

- Global: Aggregate income up; income disparity worse, more starvation; greenhouse gases worse, fisheries crashing, habitats destroyed.
- U.S.: Income up; income disparity worse; greenhouse gases worse, AQ better, WQ same or worse, habitats destroyed.
- **So, need emphasis on Social Equity and Environmental Quality.**

# Role of MPOs in SD Planning

- National Governments do hard policies on:  
population, immigration, religion, debt relief,  
war, income taxation, infrastructure, monetary  
policy, property rights, women's rights, energy and  
pollution pricing, welfare/health care/retirement, etc.
  - State Governments do:  
rail and freeways, state habitat plans, land use laws, local finance,  
school finance, etc.
  - MPOs do:  
transportation planning and advisory land use planning.
- But, transportation systems affect everything. Need accounting.**

# Calif. Demonstrations: Small MPO

- Merced Co. Assoc. of Govts.
- 211,000 pop. in 2000. San Joaquin Valley. Severe AQ nonattainment. Worsening.
- USEPA and FHWA Partnership for Integrated Planning demonstration. Caltrans supports.
- All Fed., St., and local agencies together, doing RTP using land use and travel models.
- Selected UPlan, my simple GIS land use allocation model, iterated with their 3-step travel model. Land uses are allocated in 50m cells.

# Merced Co., cont'd

- Attention to effects of urban growth on habitats and ag. lands. Univ. of Calif. Campus. HSR. UPlan can also forecast erosion and water pollution. Models done. Application in FY 03.
- Travel model will give mobile emissions and energy use in vehicles.
- Will add mode choice to travel model. Then, could get traveler surplus (Small-Rosen) by household income class. Partial economic welfare & social equity measures.
- **Fed. and St. agencies finding Env. Planning hard to do. Used to regulating. Ex: How much habitat is enough?**

# Calif. Demonstrations: Large MPO

- Sacramento MPO. 1.9 M pop. 2000.
- May not show AQ conformity in next MTP round, due to new St. emissions inventory.
- Three new freeways in MTP. Will induce sprawl onto ag. lands and habitats. Lawsuits.
- Advanced 5-step travel model. LRT. TODs planned by Sacramento City and Co. The Co. has a UGB, but sprawl in outer counties. **Transit with sprawl is costly.**
- MPO starting to do long-range scenarios this Fall.

# Sacramento, cont'd

- UC Davis and U. of Calgary team has applied MEPLAN for several years. Studies for UC Transportation Ctr., EPA, and Mineta Fdn. Independent of MPO.
- May go to PECAS in 2003 and Oregon2, later. Could get aggregate economic welfare measure and social equity measures, such as:
  - economic welfare for households by income
  - housing costs for households by income
  - economic welfare for firms by type by zone

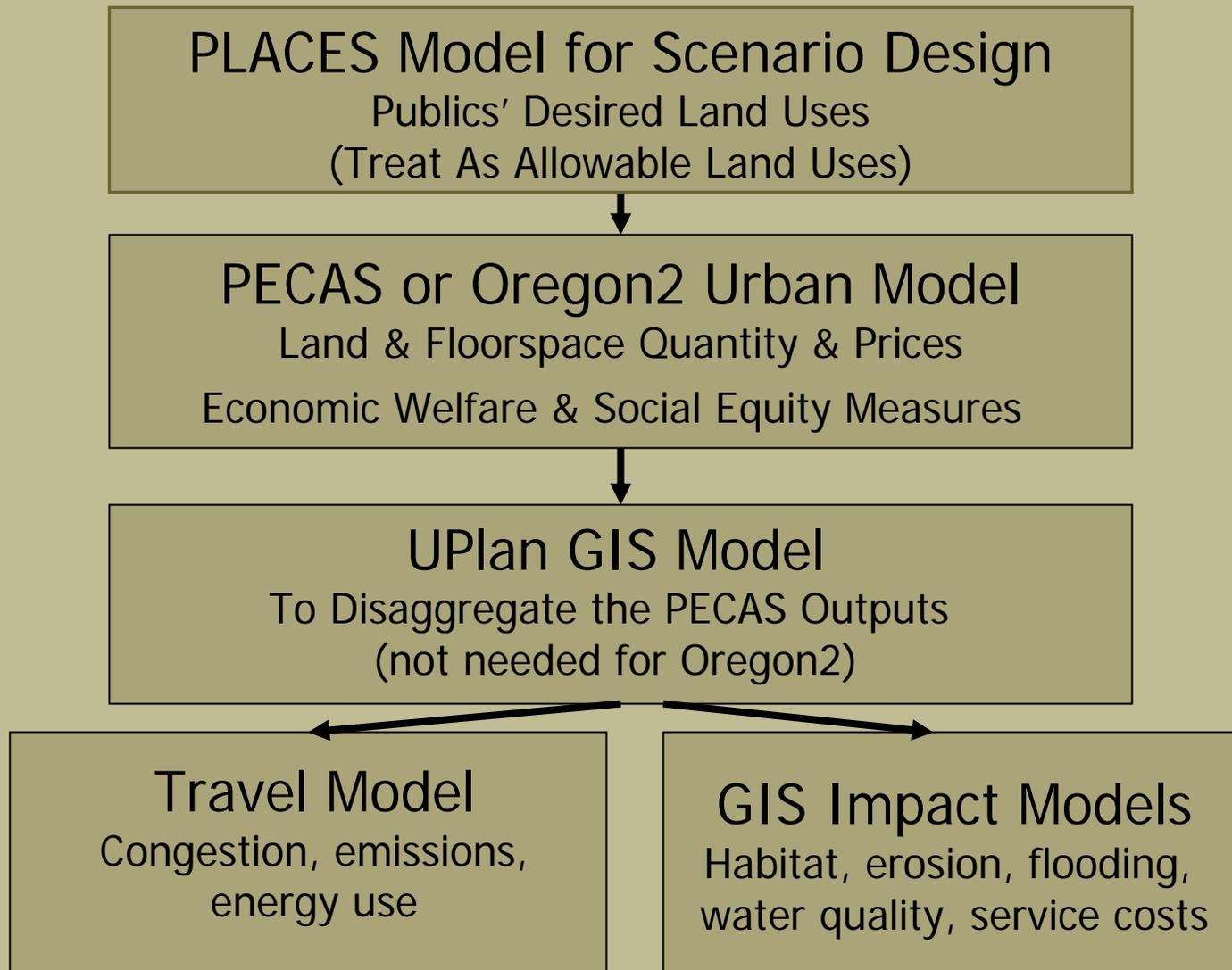
# Sacramento, cont'd

- Will disaggregate PECAS land consumption from 160 subdistricts to 1,000 zones, using UPlan GIS model. Have parcel data for region.
- Then, will run MPO travel model, to get mobile emissions and energy use.
- With UPlan (or Oregon2) footprint, can run GIS impact models for habitat damage, erosion, WQ, loss of ag. lands, local service costs, costs from flooding, costs from wildfires, etc.

# Sacramento, cont'd

- The scenario generation will be done by the MPO with the PLACES model. Freeware. Public workshops.
- Neighborhoods are planned with parcels, communities and counties with planning districts. Evaluation spreadsheets.
- We'll take the charette land uses into PECAS (or Oregon2) as changes in allowable land uses. This allows them to represent the land market properly.
- Together, the models will give all the SD Planning measures.

# MOE: The Model of Everything



# Other California Programs

- SANDAG doing compact growth scenarios, to protect habitat lands. PLUM/EMPAL plus GIS.
- ABAG doing compact growth scenarios, to reduce service costs, travel, and emissions, using PLACES model and travel model.
- SCAG counties doing habitat plans. Big nonpoint WQ problems. May do land use model.
- California High Speed Rail Commission may fund a statewide PECAS model.
- PLACES on Web. Landis' CURBA model on Web.
- Irvine Fdn. will support Sacramento and S. Diego regions for SD Planning, for 3-5 years.

# Conclusions

- SD Planning requires models that can measure Economic Welfare, Social Equity, and Environmental Quality.
- With PECAS (zones) or Oregon2 (cells), we can now do the first two. Thank you, Oregon DOT.
- GIS and other conventional models can measure various aspects of Environmental Quality, local service costs, etc.
- Can now do 40-year scenarios and **look at the big tradeoffs**. UGB v. housing costs. Freeways and sprawl v. transit and jobs for the poor. Get it “Roughly right.”
- Can we increase Social Equity and Env. Quality, and Economic Efficiency? (Hint: transit, TODs, and pricing.)

# What Next?

- Make the process **relevant** to the public with maps, birdseye oblique drawings or 3-D GIS, and narratives. Issues: Traffic, housing costs, open space.
- Develop model feedbacks from Env. Quality to Economic Welfare. Ex: open space affects property values.
- Develop model feedbacks from Social Equity to Economic Welfare. Ex: high income disparity causes? low regional growth rate.

# What's Next, cont'd

- **Identify problems** for State and Federal governments to fix. Ex: population growth, local finance.
- Validate models carefully with historical forecasts, sensitivity testing, and heuristic use.
- Get academic units to also run models, advise MPOs, and train students.
- **Need USDOT to require alternatives in MTPs.** Need USEPA to fund more integrated planning exercises. Need state DOTs to fund MPOs to do alternatives analyses.