Presented to:
The Florida Model Task Force

BUILDING AN INTEGRATED FSUTMS/LAND USE MODEL FRAMEWORK

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Presented by:
Whitehouse Group Inc.

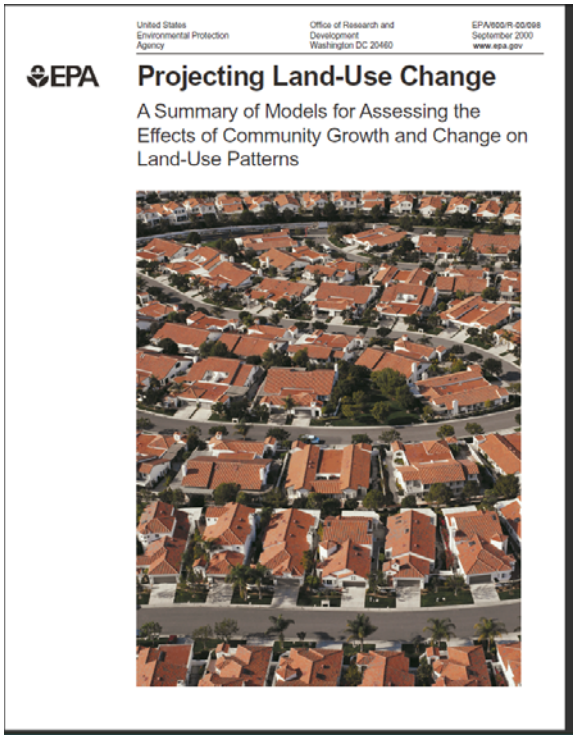
Impetus for the Project

- FSUTMS users identified the need for an integrated forecast process as one of the top 3 priorities
- Why?
  - Land use and transportation interact
  - Some transport goals can only be achieved with land use policies
  - The process to realistically forecast this dynamic is inadequate

Common Reasons Agencies Revisit this Topic

- Recognition that transport & land use interactions are complex and vary with major investment type
- Policy makers want to know what effect transport investments decisions will have on urban form, greenhouse gas emissions, etc.
- Redevelopment becoming more of an issue
- Giving these answers requires ever more detailed analyses

Objectives of the Proposed Work Order



- Provide a Baseline for Discussion
- Avoid Reinventing the Wheel
- Benefit from the Experiences in Florida and Elsewhere
- Sort Out What is Important to the MTF and What is Not
- Build a Framework for Advancing Through
  - Technical & staff requirements
  - Schedule & production constraints
  - Political constraints & opportunities

Work Order Subtasks

- Develop Documentation and Materials to Support the MTF Decision Making Process
- Document MTF Recommendations and Identify Strategies
- Develop Implementation Plan
- Provide Ongoing Support for Integrated FSUTMS/Land Use Model Development

		2009		2010								
Task	Description	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Documentation and Materials to Support MTF											
2	Document MTF Recommendations											
3	Develop Implementation Plan											
4	Provide Ongoing Support											

Step 1- Assess Current Practice

- FDOT/UF Survey of Agencies (as of October 5)
  - Total surveys: 36
    - FDOT: 10
    - MPO: 26
  - Responses: 23 (completed: 19)
    - FDOT: 8
    - MPO: 15
- Results still coming in …

Findings- Current Sources of Land Use Data

- 90% Local Member Planning Agencies
- 55% Site Plan, Plats, DRI Reports, etc.
- 35% Mathematical Land Use Models
- 30% Expert Opinion, Consensus, Delphi
- 25% Other (custom-designed software, FLAUM, etc.)
- 10% Integrated Transportation & Land Use Models

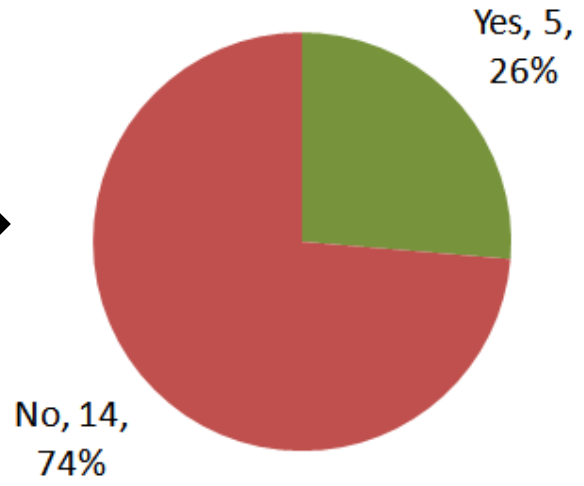
Findings- Resources & Experience

- FTE Staff Positions

FTE	0	0-0.5	0.5-1.0	1.0- 1.5	1.5- 2.0	2.0- 3.0	3.0- 4.0	Over 4
Land Use	8	4	4	1	1	0	1	0
Transportation	2	2	6	6	1	0	1	0

- Consultant resources used for:
  - Land Use Forecasting (14/19=74%)
  - Transportation Forecasting (16/19=84%)

- Does your agency have staff with land use model experience?



Findings- Need & Commitment

- Would you like to see FDOT develop an integrated tool to forecast land use and transportation model?
  - Yes: 95% (18: MPO 13, FDOT 5)
  - No: 5% (1: MPO 0, FDOT 1)

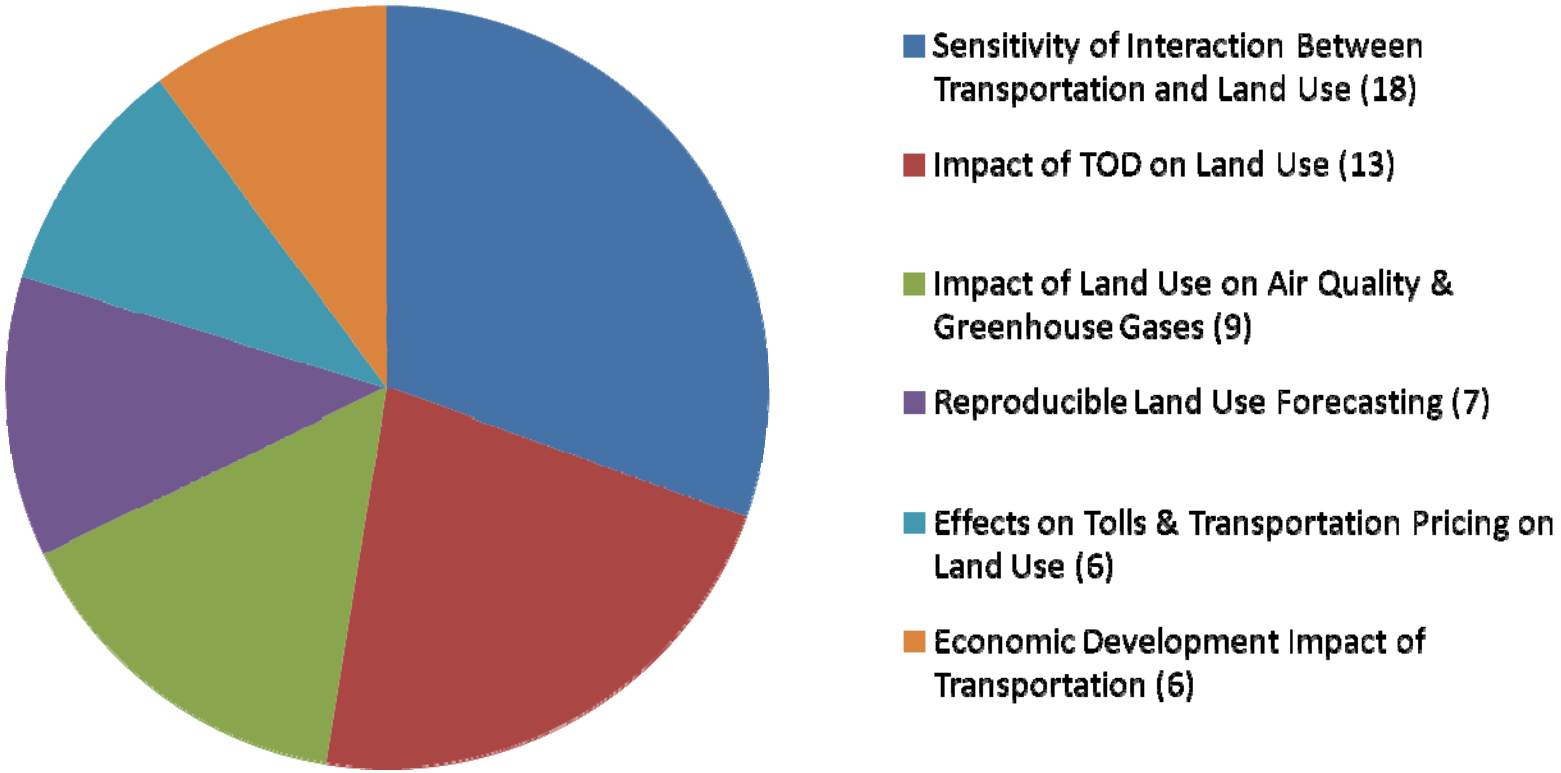
- Would you be willing to participate on in a land use model advisory committee?
  - Yes: 69% (11: MPO 9, FDOT 2)
  - No: 31% (5: MPO 2, FDOT 3)

- Would you be willing to participate in a land use model pilot program?
  - Yes: 87% (13: MPO 10, FDOT 3)
  - No: 13% (2: MPO 0, FDOT 2)

Findings- The Issues

What are the most important items in land use forecasting?

What areas should be studied more closely?



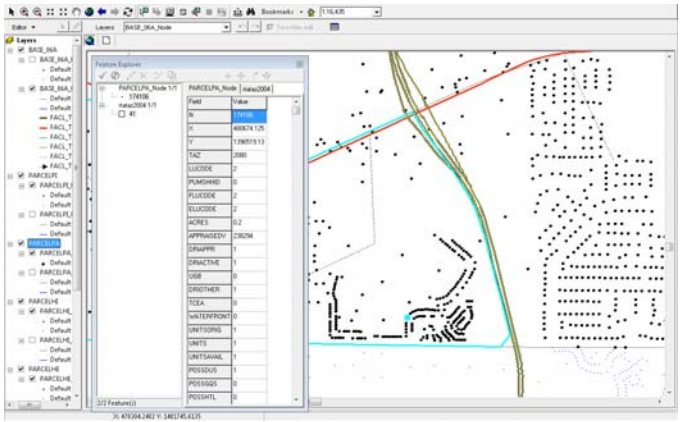
Findings- Desirable Model Features

- GIS-based Software (9.05)
- Land Use Forecasting at TAZ (8.89)
- User-friendly Software Interface (8.84)
- Training Program for Land Use (8.84)
- Land Use Impacts (8.58)
- Consistent Modeling Platform (8.50)
- TOD (8.11)
- DRI Assessment (7.61)
- Quick Land Use Model Run (6.94)
- Economic Impacting Forecasting (6.61)

Survey Conclusions

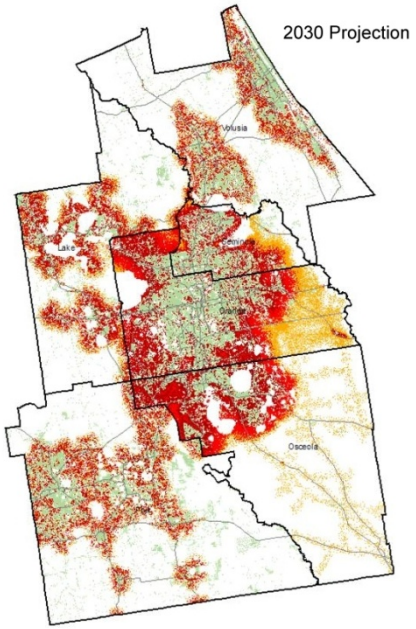
- The rationale for having an integrated model in FL is similar to that elsewhere
- Most agencies have no staff with experience with integrated models
- Both MPO and FDOT representatives would like to see integrated models
- Strong willingness to participate in advancing a new model exists
- Consultants are heavily relied upon for modeling

Other General Observations



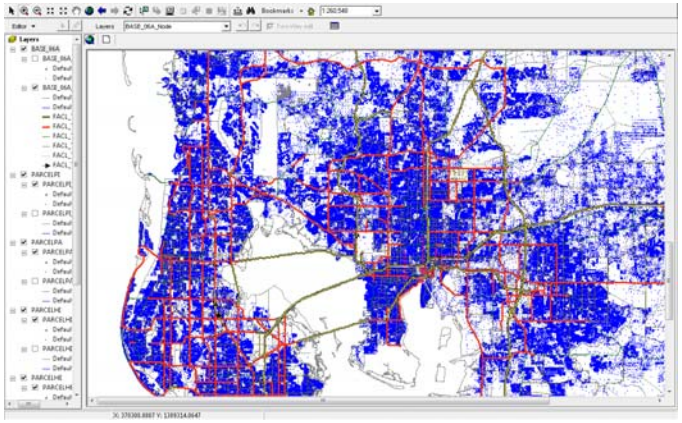
- The “State of the Practice” in developing these models continues to evolve rapidly (data & methods)
- The rationale for these models continues to evolve as well
- Budgets and staff constraints are real
- Much of the data behind these types of tools was not developed for this purpose

Background- Examples of Florida Models



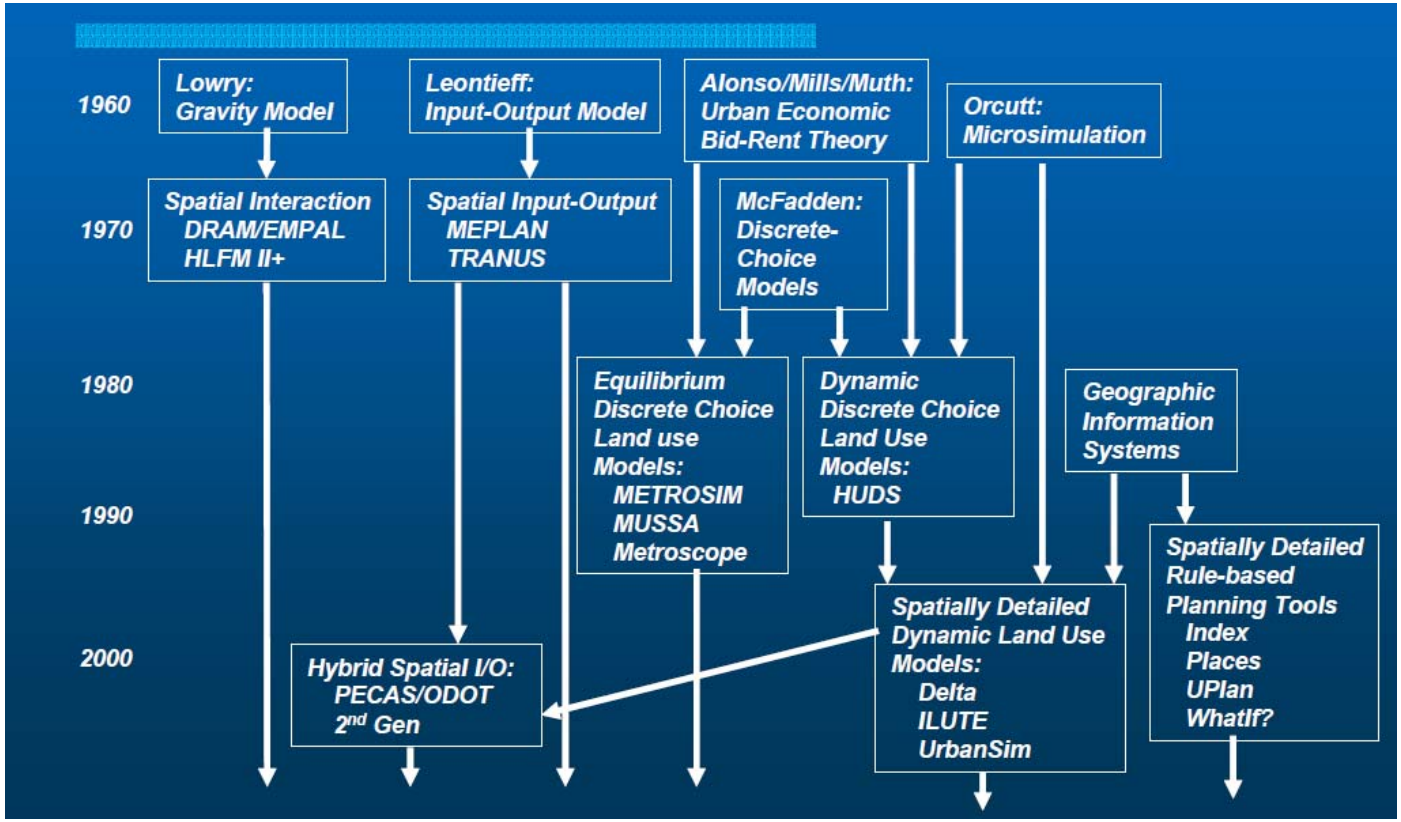
- SLAM
- DRAM/EMPAL
- TPS' ULAM
- Metroplan's Efforts
- Turnpike's Statewide
- Tampa Bay's DELTASIM

Background- Design Considerations



- Framework Selection
  - Delphi
  - Gaming
  - Gravity
  - Input/output
  - Bid rent
- Data Demands
- Geographic Detail
  - Region
  - TAZ
  - Grid cell
  - Parcel/sub-parcel
- Integration with Transport Model

Background- Land Use Modeling Frameworks



Waddell, TRB Workshop 162, January 2005

MTF Possible Discussion Topics

- What are the desirable characteristics for a FSUTMS-based land use modeling process?
- What are the "least common denominator" data requirements? Are the data available everywhere?
- What is the appropriate level of geography?
  - Parcel (DELTASIM)
  - Grid (URBANSIM- note moving towards parcel)
  - Zone (ULAM, Cube Land)
- What resources can/are agencies willing to commit to land use modeling?

MTF Possible Discussion Topics (continued)

- How does this effort compete with other priorities?
- What sort of "talent pool" is out there to estimate and calibrate such tools?
- What are the potential roles of the university researchers in the process?
- What sort of policies should the model be sensitive to?
- What is acceptable error in a land use model (hint: academic and practitioners have differing expectations)?
- Should it be designed with activity-based models in mind?
- How do you determine "success"?

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