Presented to:
Florida Model Task Force

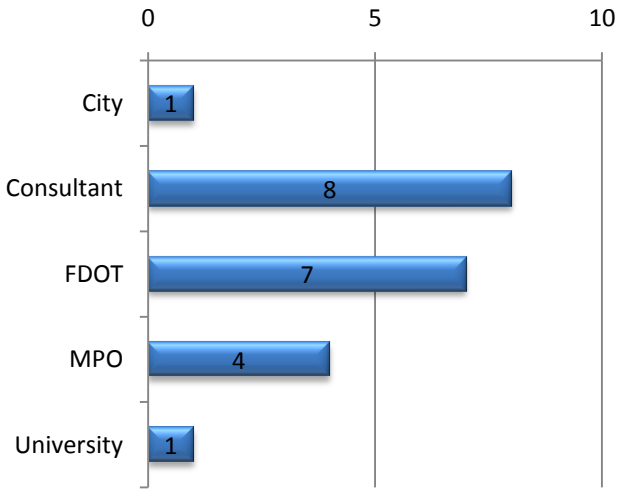
Building an Integrated FSUTMS/Land Use Model Framework




Wade L. White
December 1, 2010

Working Group Members

LU Working Group



Name	Agency Type	Email
Allara Gutcher	City	agutcher@pcgov.org
Colby Brown	Consultant	cbrown@citilabs.com
Danny Lamb	FDOT	Daniel.lamb@dot.state.fl.us
Diana Fields	FDOT	Diana.fields@dot.state.fl.us
Elaine Martino	Consultant	Elaine.martino@dot.state.fl.us
Gary Kramer	MPO	gary.kramer@wfrpc.org
Krishnan Viswanathan	Consultant	kviswanathan@camsys.com
Li Jin	Consultant	ljin@kittelson.com
Lina Kulikowski	MPO	lkulikowski@broward.org
Mary Stallings	Consultant	mstallings@gc-inc.com
Neelam Fatima	MPO	fatiman@stlucieco.org
Patricia Tice	Consultant	Patricia.Tice@aecom.com
Rob Magee	FDOT	Robert.Magee@dot.state.fl.us
Terrence Corkery	FDOT	Terrence.corkery@dot.state.fl.us
Thomas Hill	FDOT	Thomas.Hill@dot.state.fl.us
Vidya Mysore	FDOT	Vidya.Mysore@dot.state.fl.us
Vladimir Majano	FDOT	Vladimir.Majano@dot.state.fl.us
Whit Blanton	Consultant	wblanton@citiesthatwork.com
William Roll	Consultant	wroll@tindaleoliver.com
Wilson Fernandez	MPO	Wilson@miamidade.gov
Zhong-Ren Peng	University	zpeng@dcp.ufl.edu

Working Sessions

- *Basic Approaches to Land Use Models Employed throughout the US* (February 19, 2010): Dr. Zhong-Ren Peng of the University of Florida and Dr. Michael Clay of Auburn University
- *Data Development and Maintenance* (March 19, 2010): Mary Stallings of Grimail, Crawford & Associates and Wade White of Whitehouse Group
- *Transport Accessibility and Other Measures* (March 26, 2010): Wade White of Whitehouse Group
- *Feedback- Concepts & Implications* (April 16, 2010): Wade White of Whitehouse Group
- *Real-world Experiences in Policy Evaluation* (April 30, 2010): Gordon Garry of the Sacramento Area Council of Governments (SACOG) and Becky Knudson of the Oregon DOT

Working Sessions

- *Policy Sensitivities* (May 7, 2010): Kathleen Neill of the FDOT Office of Policy Planning with representatives from the Florida Department of Environmental Protection and Department of Community Affairs in attendance
- *The roles, data and applicability of rule-based land use models in practice* (May 14, 2010): Dr. Richard Klosterman of "What if" Inc. and Dr. Paul VanBuskirk of VanBuskirk, Ryffel and Associates, Inc.
- *Developing Recommendations*
  - Resources, scheduling and how this might fit into the overall planning program (June 18, 2010)
  - Relative costs/benefits of various approaches used elsewhere and how well each might fit Florida's needs (July 9, 2010)
  - Recommendations for a specification and approach (July 16, 2010)

The Group Considered

- Frameworks
- Degree of Integration
- Policy Considerations
- Costs
  - New Data Collection & Processing
  - Time to Develop & Implement
  - Staff Time and Training
  - Run time
  - Initial & Recurring Costs
- Implementation Schedule

Observations from Other Areas …

- Not a "one shot" deal
- Still evolving
- Costs are decreasing and benefits are increasing
- Experience is expanding
- Pretty much "a given" that some process is necessary
  - AMPO
  - TRB
  - Legislative Mandates

To Finalize the Program

- When?
  - ASAP?
  - Census Coordination
  - Long-term vs. Short-term Approaches
- How?
  - Pilot
  - Full-bore
- Where?
  - Geographic Resolution Goal
  - Pilot
- Other Coordination
  - DOR/DCA/Local

Conclusions & Recommendations

- Go/No Go
  - 100% concurrence that an integrated modeling platform should be a part of FSUTMS
- Full Integration with FSUTMS
  - Just sharing common data between the land use and transportation forecasts or whether the process should be fully automated was about equally split
  - Any process evaluated should be adaptable to either approach

Conclusions & Recommendations

- Theoretical Framework
  - A sound framework is a critical item in the overall specification of the integrated model
  - The case of one framework vs. any other not convincing in and of itself- i.e. one was not inherently better than another
  - Framework(s) should be sensitive to local differences
    - Should be supported empirically on a case-by-case basis until the case is made that a single theoretical framework would be appropriate for all areas in Florida
- Policy Adherence
  - Critical element of the framework
  - How strictly the model assesses policies should be adjustable so that it could be adjusted to meet different needs
  - Should be able to evaluate:
    - Transport
      - Automobile / Road
      - Transit
      - Freight
    - Land Use
      - Households
      - Economic Development
      - Job Locations
    - Impact Assessment
  - Should be able to address small or large scale public visioning evaluations

Conclusions & Recommendations

- Relative Ease of Use
  - Three areas should be addressed important to its overall success:
    - Calibration
    - Testing
    - Visioning
  - Must be easy use for charrettes
- GIS Integration
  - GIS integration is a critical
  - Working with enterprise GIS data is critical and any proposed platform should also support enterprise GIS data for both input and for output analyses
- Adaptability
  - A critical feature of any integrated modeling platform
- Comprehensibility
  - Zonal Data
  - Other Inputs and Outputs
  - Good Error Reporting and Diagnostics
  - Ability to Communicate Results to the Public and Elected Officials
  - Ability to compare different alternatives
  - Of the desirable features, only the ability to produce 3-D animations was ranked as "low" importance- can be post-processed

Conclusions & Recommendations

- Available Support
  - Formal software developer support is critical
  - An "open source"-styled user community supported was ranked as relatively unattractive
  - Support should not be "contract-to-contract" but be managed at a statewide level
  - Complicated framework as less useful and less viable in the long-run
- Data Reliance
  - Should be built on publically available data but be able to be tailored based on locally collected data to reflect local anomalies
  - Coordinating development of the model with other statewide data development efforts is important
  - FDOT should coordinate with the Department of Revenue (DOR) to develop a consistent set of standards for data and formats that could be applied to existing and future land use data

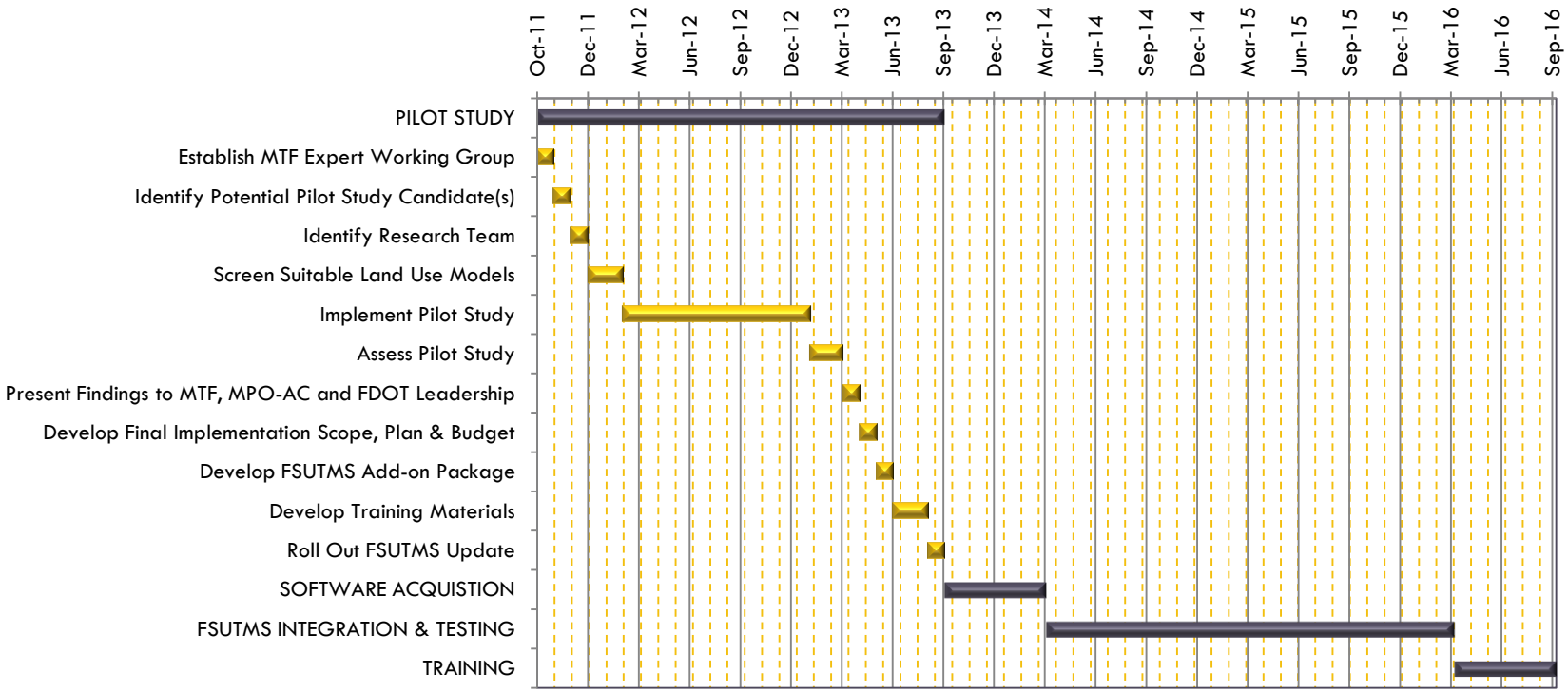
Conclusions & Recommendations

- Staff Time
  - The amount of time to build and implement an integrated model is not as important as the time necessary to train staff and maintain the model
- Price
  - Sensitive to the price of entry and maintenance of an integrated platform
  - Cost of development could likely be minimized through "borrowing" a model platform
- Time and Recurring Costs
  - "Reasonable" run times and cost important
  - Time and costs associated with developing and implementing less important
- Implementation Schedule
  - Full implementation by the next round of long-range plans is not critical for an analytical-based model
  - Having a model suitable to visioning would be very helpful

Basic Implementation Plan

- Conduct Pilot Study
  - Finalize MTF Expert Task Group
  - Identify Potential Pilot Study Candidate(s)
  - Identify Research Team
  - Screen Suitable Land Use Models
  - Implement Pilot Study
  - Assess Pilot Study
  - Present Pilot Study Findings to MTF, MPO-AC and FDOT Leadership
- Refine Implementation Plan & Budget
- Develop FSUTMS Add-on Package
  - Develop Training Materials
  - Roll Out FSUTMS Update

Schedule


Oct-11
Dec-11
Mar-12
Jun-12
Sep-12
Dec-12
Mar-13
Jun-13
Sep-13
Dec-13
Mar-14
Jun-14
Sep-14
Dec-14
Mar-15
Jun-15
Sep-15
Dec-15
Mar-16
Jun-16
Sep-16
PILOT STUDY
Establish MTF Expert Working Group
Identify Potential Pilot Study Candidate(s)
Identify Research Team
Screen Suitable Land Use Models
Implement Pilot Study
Assess Pilot Study
Present Findings to MTF, MPO-AC and FDOT Leadership
Develop Final Implementation Scope, Plan & Budget
Develop FSUTMS Add-on Package
Develop Training Materials
Roll Out FSUTMS Update
SOFTWARE ACQUISTION
FSUTMS INTEGRATION & TESTING
TRAINING

Budget & Funding Opportunities

- Budget
  - Pilot Study ~ $300k-$600k
  - Acquisition, Development, Integration, Testing, Training ~ $300k
- Leveraging Funding
  - Limited State & Local Funding
  - Approaches
    - Pursue Federal Funding
      - FHWA
      - EPA
      - HUD
    - Piggy-back on Other Efforts
      - MPO
      - RPC
      - FDOT Projects & Research

Next Steps

- MTF Concurrence to Move Forward on Phase II
  - Tasks
  - Budget
  - Schedule
- Identify
  - Funding & Piggyback Opportunities
  - Candidate Pilot Study Sites
  - Establish MTF Oversight Group