



# IOWA STANDARDIZED MODEL STRUCTURE

MPO Director's Meeting  
December 6, 2016



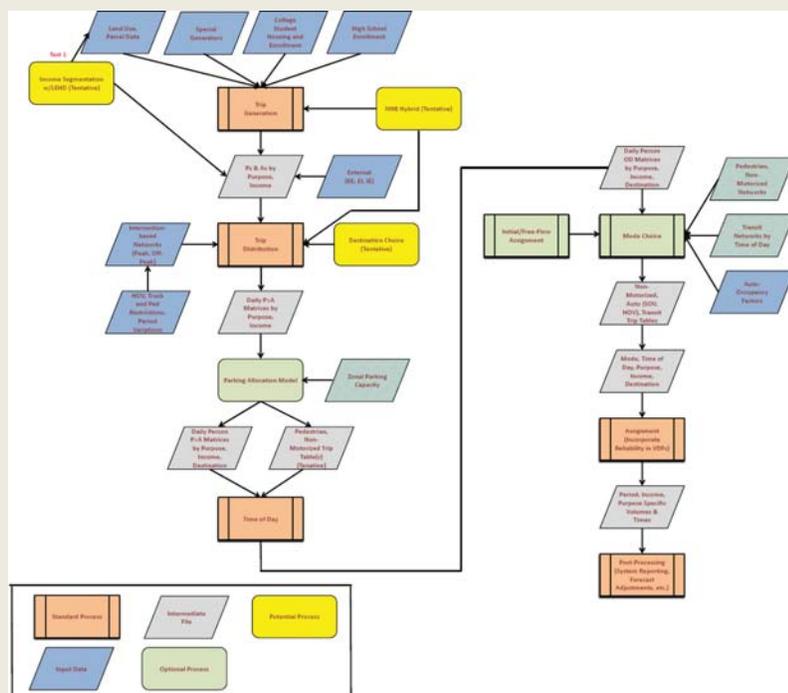
## Agenda

- Brief Review of ISMS
- Where are we now?
- What have we done?
- When does ISMS go live?
- What will ISMS look like?
- How will I get my model to ISMS architecture?

# What is ISMS?

- A standardized model structure to promote a certain level of consistency while allowing for flexibility
- Not all MPOs are the same; even in Iowa
- Consistency leads to enhanced credibility
- Provision of continuing model development, training and application support
- Many states are enacting this approach to modeling to ensure model credibility and consistency

## Model Flow Process Chart



# Mission Statement

- Provide a **consistent**, comprehensive and **standardized** framework of **best practices** for the development and application of travel demand modeling and traffic forecasting tools. The tools will facilitate **collaborative** use in planning and designing transportation systems and facilities for the State of Iowa, promote sharing, and encourage continuing cooperation and **good practice** across the state.

# Who's Been Involved?

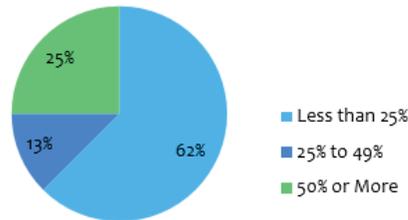
- We are embracing the 3C Planning Process
- We've included:
  - Midwest Travel Model User Group
  - Iowa DOT Modeling Team
  - HNTB Consulting Engineers
    - Michael Baker International
    - Howard R. Green
  - MPO Director's Meeting Presentations

# MTMUG Modeler Survey

- We developed a survey for all Iowa MPO modelers, DOT staff and consultants

## 2. Portion of time allocated to TDM?

Percent of MPOs by Staff  
Time Spent Modeling



\* DOT has 4 staff at nearly 100%

## Why are we doing this?

- Facilitate the development and use of consistent practices to further travel model credibility and defensibility.
- Enhance the knowledge of the model developer/user community in Iowa
- Avoid a Wisconsin Story

# Status

- Working for just over a year
- Completion date is end of February
- Early spring for Architecture Document roll out
- MTMUG meeting to look at architecture in detail
- As MPO models are updated the new architecture will be applied
- Some model updates are already seeing some ISMS improvements

# Goals of ISMS

Based on current and best practices and Iowa TDM user Survey:

1. Institutionalize the use of TDM's in the MPO planning and prioritization processes;
2. Increase technical capabilities and understanding of MPO staff with respect to TDM development and application;
3. Develop clear guidance and expectations with respect to the roles and responsibilities of travel demand modelers;
4. Achieve a consistent approach to travel demand modeling across the state of Iowa's 9 MPOs; and
5. Implement ongoing development and maintenance practices to ensure continual readiness and currency of MPO TDM's.

# What will Architecture Manual look like?

Architecture Manual defines for each step:

- Step Overview
- Recommended Arch
- Data Use/Development
- MPO Role/Responsibility
- DOT Role/Responsibility
- TransCAD Application
- Cal/Val Standards
- Documentation Standards
- QA/QC

## Ames Prototype

- Test model developed using the Ames model
- TransCAD platform
- Includes
  - Time of day specific
  - Transit if desired
  - Parcel Based Trip Generation
    - Income stratification
    - Land use specific
  - ? Destination Choice to replace Gravity Model
    - Intersection control specific
    - Work tours
    - Parking allocation

# Defining Roles and Responsibilities

MPO staff responsibilities include:

- Data collection, processing, formatting
- Review/confirmation of DOT deliverables

MPO work plan impacts include:

- Anticipated need for DOT coordination
- Staff/FTE needs
- Schedule/duration

## MPO Tasks with ISMS

MPO staff will lead the development of:

- Parcel data collection and processing
- List of potential projects
- Documentation

MPO staff heavily involved with:

- TAZ development
- Model network development including intersection details

MPO conducts quality and reasonableness checks on all model steps

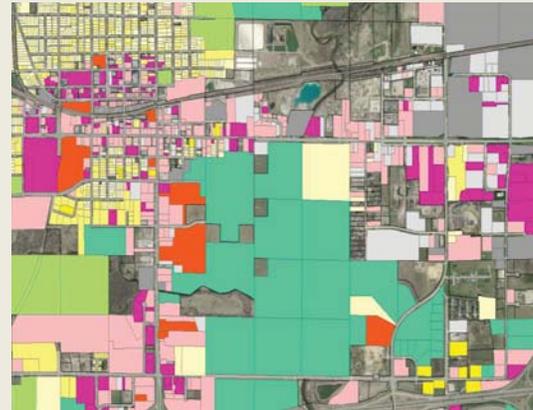
# Parcel File

GIS layer with data pertaining to size and use of buildings on parcel.

Characteristics of each land use explicitly modeled including trip rates, income splits, time of day.

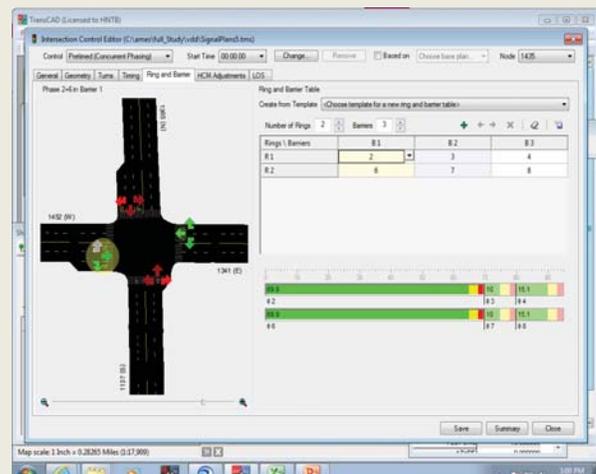
Used in lieu of employment data.

Will require coordinated effort with local government(s).



# Network Development

- DOT's RAMS data provides basis for link data.
- MPO staff to review data for accuracy.
- Intersection delay included in model
  - Optional detailed Intersection analysis available



# MPO Staff Skill Sets

MPO staff skills needed for ISMS implementation:

- GIS (portions can be conducted within ESRI)
- Data processing (Excel and TransCAD primarily)
- Reasonableness checks on TDM elements
- Investigative skills (why am I getting this result?)
- Understanding of transportation planning process
- Technical writing (narrative of unique inputs and findings, impacts to LRTP)

Skills NOT needed:

- Advanced travel demand modeling expertise
- Advanced TransCAD and programming expertise

# DOT Support to MPO's

DOT staff support is flexible and dependent upon MPO need. Mostly focus on:

- Programmatic and technical guidance on ISMS steps
- Access to and analysis support of DOT data sets
- DOT to lead efforts on select technical modeling steps
- Validation of all modeling steps
- TransCAD technical assistance

