Idaho Statewide Travel Demand Model:
Readiness Assessment and Data Needs for Economic analysis

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presented by

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Overview

- Idaho transportation analysis needs
- Statewide model: opportunities and constraints
- Recommended model development strategy

Input Requirements for TREDIS

- Vehicle trips
- Vehicle miles traveled (VMT)
- Vehicle hours traveled (VHT)
- Origin-destination patterns

Workshops and Staff Interviews

- Two workshops
  - ITD executive staff
  - ITD technical staff, district engineers, and MPO planners
- Discuss the methods, resource requirements, model uses, benefits, and issues regarding the model
- Explore the types of projects and decision-making needs
- Model requirements driven by analysis needs

Planning Needs That Require a Statewide Model

- ITD Institutional Needs
  - Planning & Programming of Roadway Investment
  - Roadway Design
  - Roadway Maintenance Priorities
- Performance-Based Planning
- Economic Planning
- District and MPO planning

Data Availability

- No plans for extensive data collection
- Reliance on available GIS roadway data
  - Transportation Asset Management System (TAMS)
  - Milepoint Coded Segment to Agile Assets Linear Referencing System (LRS)
- Historical traffic count data on state highway system
- TRADAS software for traffic data
- Travel Time Studies
- 2010 Census

Previous Model Development Efforts

- Previous STDM development effort started in 1996
  - Effort led by University of Idaho
  - A research project using TransCAD
- Model performance
  - Good estimates of traffic for the rural state highway areas
  - Estimates in conflict with urban area model projections
- Statewide model files are not available

Five Idaho MPOs

- Bannock Planning Organization (BPO)
- Bonneville MPO (BMPO)
- Community Planning Association of Southwest Idaho (COMPASS)
- Kootenai MPO (KMPO)
- Lewis-Clark Valley MPO (LCVMPO)

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MPO Planning Areas Encompass

- 63% of Idaho's population
- 54% of Idaho's civilian jobs
- 815 lane miles of state roadways
- 6,814 lane miles of local roadways
- 32 cities
- 6 counties
- 9 highway districts

MPO Model Software

MPO	Software	Time of Day	Recent Update
BPO	TransCAD	Daily, PM Peak Hr	2010
BMPO	QRS II	Daily	2012
COMPASS	Cube	Daily, PM Peak Hr	2012
KMPO	VISUM	Daily, AM/PM Pk Hr	2009
LCVMPO	QRS II	Daily	2009

Available Network Data

- Highway Performance Monitoring System (HPMS)
- FHWA Freight Analysis Framework (FAF) network
- Canadian national network
- MPO travel model networks

Available Socio-Economic Data

- Zonal Data
  - 2000 Census Transportation Planning Package (CTPP)
  - 2005-2011 American Community Survey data
  - Public Use Micro Sample (PUMS) data
  - Longitudinal Employer-Household Dynamics (LEHD) data
  - 2010 Census
  - 2010 U.S. Bureau of Economic Analysis forecasts
- Survey data
  - 2009 National Household Travel Survey (NHTS)

Current ITD Traffic Projection Process

- **Strengths of existing system**
  - **Uses historically-based trend models**
  - **Forecasts 20-year design-hour volumes**
  - **Design and analysis of proposed roadway projects**
- **Weaknesses of existing system**
  - **Does not forecast system performance**
  - **Does not produce changes in travel behavior**
  - **Does not forecast changes in routing due to congestion**
  - **Cannot support performance-based planning (MAP21)**

STDM Development, Maintenance, and Applications Schedule and Costs

- Software platform
- Data acquisition
- Model development costs
- ITD staff time

Recommendations for Idaho

- "Quick Start" model procedures
  - ODME approach
  - Freight analysis
- Future enhancements
  - A policy sensitive model
  - Passenger and freight focus
  - Trip generation and distribution
  - Mode choice modeling (urban areas)

Questions or Comments

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ODME Based STDM

- **Base Year Model**
  - **Develop Networks**
  - **Develop TAZ Structure**
    - Internal Zones
    - External Zones
    - Fringe Area Zones
    - Outlying Area Zones
    - Small Urban Areas
  - **Passenger Trips Estimation**
  - **Truck Trips Estimation**
  - **Highway Assignment and Model Validation**
- **Future Year Models**