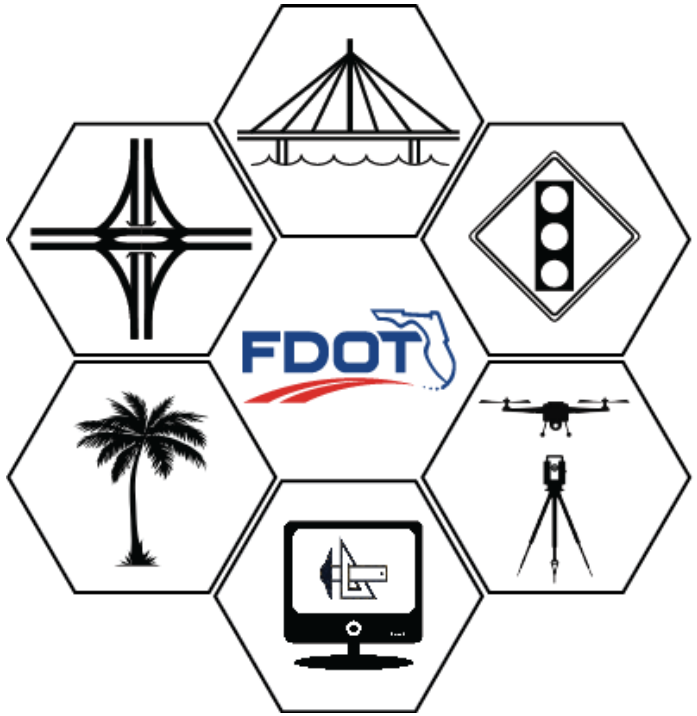

FDOT TRANSPORTATION SYMPOSIUM 2019

A Primer for Traffic Forecasting for Project Managers

Jason Learned

Introduction & Overview

About Me

- 10 years at FDOT
- Currently work in District 5 Systems Planning (part of PLEMO)
- Manage design traffic, ESAL reports, travel demand model

Goals of This Presentation

- Target Audience: Project Managers – In House & Consultant
- Discuss forecasting for various traffic-related reports for different project types
- Inform of rules/regulations/policies/practices

Outline of Topics

- Tools Used for Forecasts & Applications
- Report Types & Applications
- Which Report Do I Need
- Unusual/Special Projects
- Rules, Regulations, Policies, Practices
- Question & Answers

Tools Used for Forecasts

- **Travel Demand Models**
  - Primary source of forecasts
  - Intricate process of calculating and distributing trips
  - Mathematical equations
  - Variables: population, jobs, network, trip generation rates, etc.
  - Calibrated & validated on two levels
- **Applications**
  - Regionwide vs. Project-specific
  - Differences
  - Types of Reports

Tools Used for Forecasts

- **Forecasting Using Trends**
  - Area not covered by travel demand model
  - Less complex
  - Uses historic traffic volumes to forecast future volumes
  - Is history indicative of future?
- **Applications**
  - Project-specific
  - Types of Reports

Report Types & Applications

- **Two Primary Types of Reports**
  - Project Traffic Analysis Report (PTAR)
  - Equivalent Single-Axle Loading Report (ESAL)
- **Other Types of Reports – Not Covered Here**
  - Planning-Level Traffic
  - Operation analysis
  - Interchange Access Request
  - Intersection Control Evaluation (ICE)
  - Traffic Noise Reports*

* Related to PTARs

Project Traffic Analysis Report (PTAR)

- **Formerly known as a Design Traffic Technical Memorandum (DTTM)**
  - Required document for a roadway-related Project Development & Environmental (PD&E) study
  - Highly detailed
  - Traffic volumes – existing & future forecasted
  - Uses travel demand model for forecasts
  - 20 year span – Opening through Design year
  - Measures effectiveness of project through various metrics
  - Forecasted volumes → design of roadway (number of through lanes, intersection geometries, etc.)

Equivalent Single-Axle Loading Report (ESAL)

- Used for pavement design
- Determines thickness of pavement based on volumes & damage from vehicles over lifespan of pavement
- 20 year span – Opening through Design year
- Can use travel demand model or forecasted trends
- Needs current data – traffic volumes, % heavy trucks
- ESAL Analysis Tool – Excel Spreadsheet
  - Simple inputs and outputs

Differences – PTAR & ESAL

- Use & intent of reports - purpose of projects
- How traffic volumes are forecasted
- Differences in volumes
- Model volumes ≠ Design volumes!

Which Report Do I Need?

- Capacity-added projects – PTAR
- PD&E reports - PTAR
- RRR – ESAL
- Other Types

Unusual & Special Projects

- Lane reductions
- Lane utilization – heavy trucks
- Queuing on roadway
- Field observations
  - Very important – communicate!

Rules, Regulations, Policies & Practices

- **525-030-120 - Project Traffic Forecasting**
- **525-030-020 - Capacity Improvement Alternatives**
- **000-525-006 - Level of Service Targets for the SHS**

https://fms.fdot.gov

Rules, Regulations, Policies & Practices

- **For Traffic Practitioners**
  - FDOT Traffic Forecasting Handbook – 2014
  - FDOT Traffic Analysis Handbook - 2014
  - FDOT PD&E Manual – January 2019
    - *Part 2, Chapter 2: Traffic Analysis*
  - FDOT Interchange Access Request (IAR) Users Guide - 2018
  - FDOT Manual on Intersection Control Evaluation (ICE) - 2017

Rules, Regulations, Policies & Practices

- **Lifespan of a Traffic Report**

  FHWA - "Pavements shall be designed to accommodate current and predicted traffic needs in a safe, durable, and cost-effective manner"

  - No definitive answer
  - Florida – generally 2 year shelf life
  - Context and location

Resources

- https://www.fdot.gov/planning/systems/programs/sm/ptf/default.shtm

Project Traffic Forecasting – Computer-Based Training

- http://wbt.dot.state.fl.us/ois/ProjectTrafficForecasting/Traffic101_Fundamentals_Intro.htm


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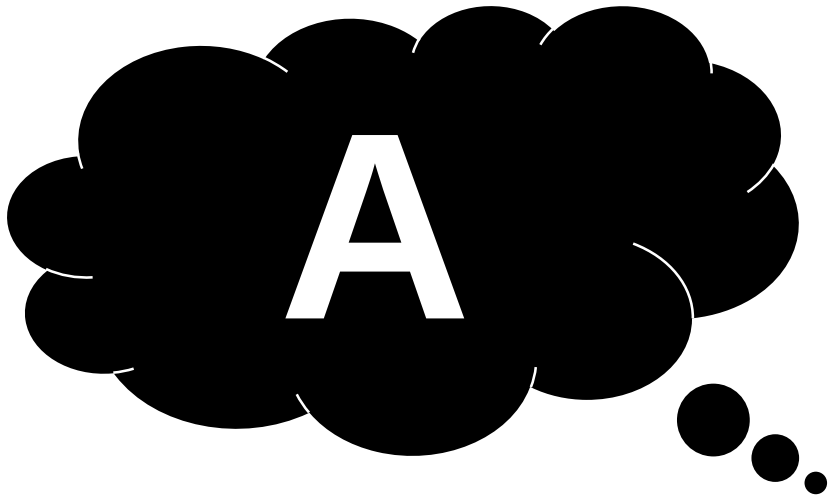
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Thank You!

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