Data-Driven Safety Training
Application Areas
Part 2 Traffic Impact Study

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Outline

1 Design Exception

2 Traffic Impact Study

       Policy and conditions

       Safety analysis methodology

3 Design Build

4 Safety Programming

Traffic Impacts Study

- Traffic impact study may be required of developers or cities/counties

  - seeking a new or modified access to the MoDOT system

- Specific content of a traffic impact study vary depending on the site and prevailing conditions.

- MoDOT epg 941.8 Traffic Impact Study Requirements

Traffic Impact Study

- Policy of discouraging increase in # of access points and conflict points
  - negative safety impacts
- Proper justification for MoDOT/state highway access
- Please see MoDOT Access Management policy
  - [Engineering Policy Guide Category:940 Access Management](#)

Traffic Impact Study

Examples of conditions for requiring TIS

- Development generates 100 or more trips per peak hour from development

- New approach to intersection operating at LOS "D" or worse ("C" for rural)

- New traffic signal

- Signal modifications (e.g. timing, hardware)

- Using existing TIS > 2 years old

Traffic Impact Study
Examples of scoping issues

- Coordination with impacted jurisdictions

- Intersections

- Locations and types of development planned

- Site-specific characteristics (e.g. directional distributions)

- Methodology for traffic demand estimation

Traffic Impact Study

Minimum study area and data

- Adjacent and boundary streets and/or natural barriers

- Nearest arterial/arterial intersections

- Access roads

- All current and potential major signalized intersections

  - project adds 10% traffic increase to any approach during critical time periods

Traffic Impact Study

- Additional demand generated by land use
  - estimate additional demand/traffic
    - e.g. ITE trip generation, demand modeling
    - developer data based on similar built-out developments
  - safety impacts due to increased exposure

Traffic Impact Study

- Safety analysis
  - adjacent roadways
  - intersections
  - determine study limits

Traffic Impact Study

- Safety analysis methodology tradeoffs

- Simple crash analysis
  - simple and readily available crash data
  - regression to the mean bias(RTM)
  - small sample size

- HSM-based
  - correct for regression to the mean bias
  - leverage national data and Missouri statewide calibration
  - requires training in HSM tools

Traffic Impact Study

- HSM-based comparison possible between
  - existing safety – no-build expected safety
  - safety with proposed development and access change
- Safety differences by
  - crash severity (e.g. FI)
  - type of crash (e.g. angle, rear end)
  - movement (e.g. left turn)
  - other contributory circumstances (e.g. alcohol-related)

Traffic Impact Study

- Large-scale development
    - analysis of safety mitigation strategies
    - comparison of alternative strategies
    - e.g. safety modeling of no-build, alternative 1, alternative 2