

Trip Generation: Overview and Updates

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Outline of Discussion

- Basic Procedure
- Updates to Land Uses
- Trip Distribution – Site
- Trip Distribution – Pass-By
- Example
- Common Mistakes
- Questions

Basic Procedure

- Two ways to generate trips
 - Use Equations and methodology from the Institute of Transportation Engineers' Trip Generation Manual
 - Current edition is the 10th edition
 - Recommended that all land development firms have access to this
 - Can buy an in-print copy or access to the online web app
 - Use rates developed from local data
 - Local data can be counts, verified information from the developer / business owner
 - Generally advised to use local data if the land use is not in the ITE manual

Updates to Land Uses

- 10th edition of the ITE Trip Generation Manual implemented many changes, but two are major:
 - Apartments / Townhouses
 - Used to be ITE Code 220 for Apartments, ITE Code 230 for Townhouses
 - Apartments and Townhouses are now lumped together under 3 codes:
 - ITE 220: Low-Rise – Building size is no greater than 2 floors
 - ITE 221: Mid-Rise – Building size is between 3 and 10 floors
 - ITE 222: High-Rise – Building size is more than 10 floors
 - Retail
 - ITE Code 826 used to exist for unique retail uses (farming supply, antique stores, etc.)
 - That code no longer exists; now ITE Code 820 is the catch-all

Trip Distribution: Site

- Site Trip Distribution is the percentage of vehicles that go to and from the site in a particular direction
 - Broken down into entering and exiting trips
 - Will always add up to 100% for the overall site
 - For the ADT, the overall trip generation will break down into 50% entering, 50% exiting
 - For the peak hours, the overall peak hour trip generation usually will not split exactly into 50% entering, 50% exiting
 - The ITE Trip Generation Manual provides guidance on the entering and exiting percentages per land use
 - The outlying trip distribution percentages (i.e., where the trips are going to and from) should make sense
 - Model-based distributions are better than engineering judgement based ones

Trip Distribution: Pass-By

- Pass-By Site Trip Distribution is the percentage of existing vehicles on the roadway that would stop at the site along their normal route
 - Commonly occurs at most retail uses
 - Duration of a pass-by trip is usually short
 - ITE Trip Generation Handbook outlines the procedure to generate pass-by trips
 - Come from the existing volume on the roadway
 - Will reduce the overall number of site trips
 - Will always add up to 100% for the overall site
 - Should be based on existing traffic data in the area of the proposed site entrance(s)
 - Can greatly affect intersection operations
 - While the net change of volume on the roadway is zero, traffic patterns are changed

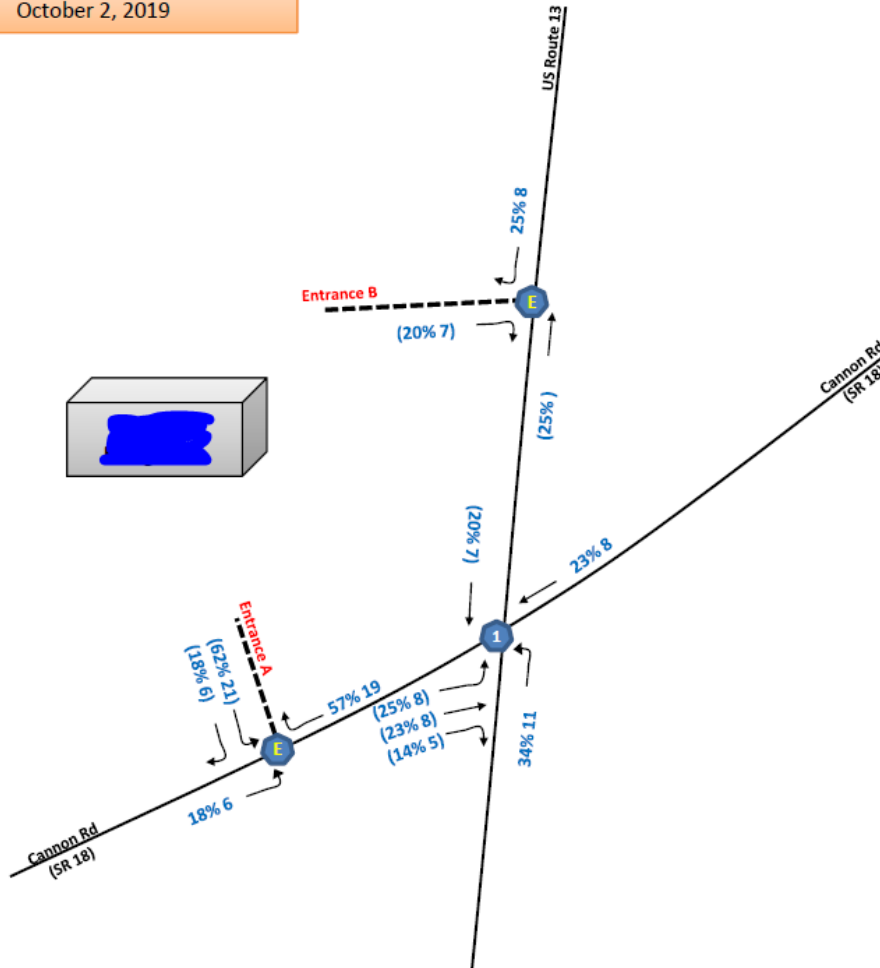
Example

PM Peak Distribution
October 2, 2019

4,063 SF Super Convenience Store (ITE 10th Ed. LUC 960)

Trip Generation

	Total	IN	OUT
ADT	3,403	1,701	1,702
PM	281	140	141
Pass-by (76%)	214	107	107
Primary Trips	67	33	34



Legend

- State-maintained road
- Site Entrance
- Traffic lost / gained before intersections
- ⊗ State-maintained Intersections
- ⊗ Inbound Trips
- (XX) Outbound Trips

Note: Figure Not Drawn to Scale

Common Mistakes

- Trip Distributions do not make sense (i.e., assigning 80% of the traffic to a long route in the middle of nowhere)
- Incorrect Land Use assumed
- Incorrect variables chosen
- Local data not reliable
- Average rate used instead of equation, and vice versa
- Pass-by procedure isn't followed correctly
- Errors in math

Questions?

Thank you!

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