

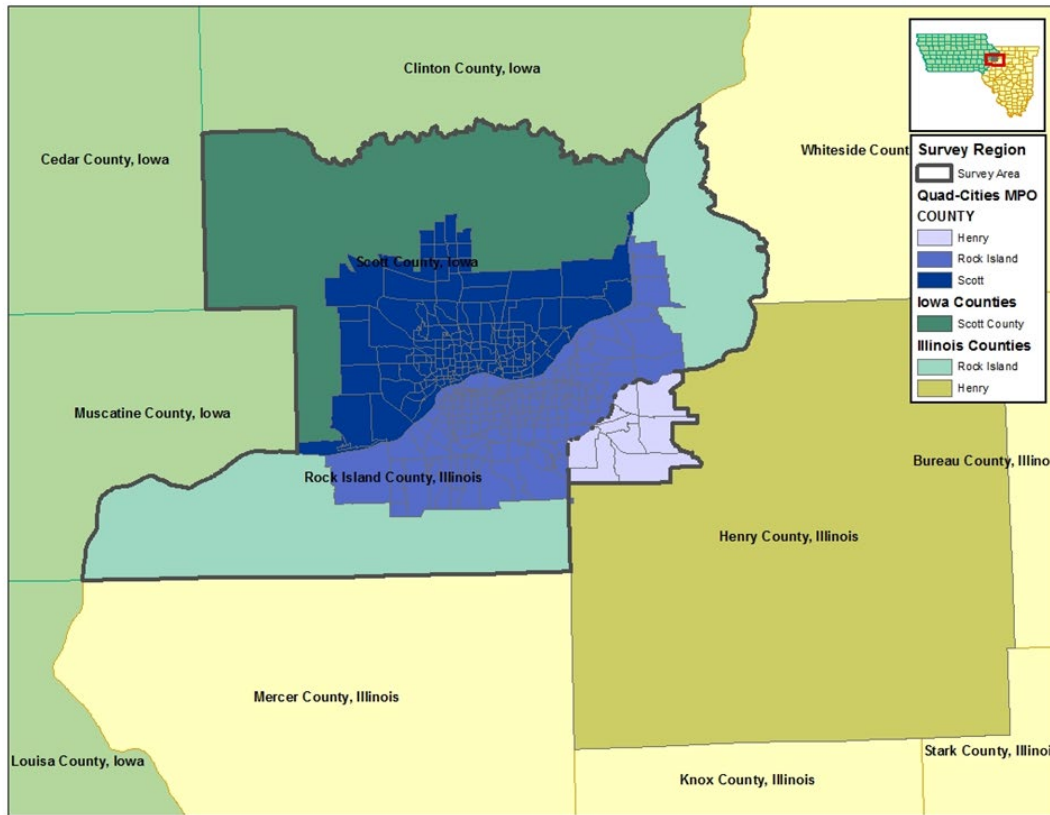
# Bi-State Regional 2050 TDM Trip Rate Calculation

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TIANZE MA

TRANSPORTATION ENGINEER

# Household Travel Survey



- October 2013 to January 2014
- Information such as start and end location, start and end time, trip purpose, and trip mode
- 1,793 households surveyed, 4,100 persons, 3,531 vehicles, and 13,790 trip locations

# NCHRP 716 - Productions

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Estimating a production rate for a specific zone is done by the following formula:

$$P = \sum Pratepk * h_{ki}$$

- Where
  - $P$  = Production rate
  - $Prate$  = The production trip rate for purpose p per household for category k
  - $H$  = The number of households in category K in zone I

The goal is to get a production rate based off time of day, trip purpose, and income

In Excel, this is most easily achieved with the following:

$$P = \left( \frac{\sum (Trp, \frac{WD}{WE})}{HU} \right) * \% (TmP, TrP) * \% (inc)$$

- Where
  - $P$  = Production Rate
  - $Trp$  = Trip Purpose
  - $Tmp$  = Time Period
  - $WD/WE$  = Weekday/Weekend
  - $HU$  = Value in Housing Unit field
  - $Inc$  = income bracket

# NCHRP 716 - Attractions

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Estimating an attraction rate for a specific zone is done by the following formula:

$$A = \sum A \text{ rate}_p k * V_k$$

where:

- $A$  = Attraction Rate
- $A \text{ rate}_p$  = Attraction of trip ends for purpose  $p$  per unit of variable  $K$
- $V$  = value of variable  $k$  in zone

The goal is to get an attraction rate based off time of day, trip purpose, and income

In Excel, this is most easily achieved with the following:

$$A = \left( \frac{\sum (Trp, \frac{WD}{WE})}{AMT} \right) * \% (TmP, TrP) * \% (inc)$$

where:

- $A$  = Attraction rate
- $Trp$  = Trip purpose
- $WD/WE$  = Weekday/Weekend
- $AMT$  = Value in AMT Field
- $TmP$  = Time period
- $Inc$  = income bracket

# Procedure

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1. Define the Origin & Destination, then ISMS trip purpose
2. Convert income level, time period and household size to ISMS standard
3. Tagging the parcel land use code & AMT (amount) field to each trip end
4. Multiply the weighs (it corresponds to a realistic picture of the model area)
5. Divided by household unit (income, size) / Amount

# Default P/A & Special Generator

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- Survey only included trips made during the week (Monday-Friday)
- Some purposes are not included in Survey ( Hotel, Airport)
- Use the result from 2013 Quad City Airport Traffic count study as input

# Bi-State 2050 TDM Trip Rate Calculation

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Questions?