Technology Transfer Program
Institute of Transportation Studies
University of California, Berkeley

Multimodal Transportation Impact Analysis (TE-42)

COURSE OUTLINE

DAY 1

8 - 10 AM Module 1 *(Colman)*

Introduction to Multimodal Transportation Impact Concepts

- Course overview
- Transportation Impact Studies: purpose and uses; thresholds, scope of work, data requirements, study area
- Developing alternatives for CEQA & other analyses
- Estimating trip generation: person and vehicle
- Methods for Vehicle Miles Traveled (VMT) calculation
- Introduction to VMT: paradigm shift and emerging role in SB 743
- Introduction to Level of Service (LOS): traditional, multi-modal, and their relation to SB 743
- Understanding the uses of LOS under current and future legislative environments
- New Caltrans Interim Guidance on Implementing SB 743
- *Interactive Engagement:* Estimating trip generation from a land use (site) development Project

10 AM - 12 NN Module 2 *(Kamhi)*

CEQA Criteria for Determining the Significance of Transportation Impacts of Projects within Transit Priority Areas (TPAs)

- Existing requirements (2013-2014) and reasons for change
- San Francisco's automobile trips generated and CEQA measures/mitigations
- Alternatives to the Highway Capacity Manual (HCM) and its application to CEQA
- Requirements of SB 743, SB 266, and SB 375
- Metrics (air pollution, greenhouse gases, system efficiency, traffic intrusion, noise, safety, VMT)
- Roadway user impacts--impact of the project on transit and non-motorized travel and the safety of all travelers
- Criteria for analyzing transportation impacts (VMT, induced travel, local safety)
- Environmental justice as impact measure, *CalEnviroScreen* as an impact analysis tool and implications for mitigations projects in California, discussion on how to apply the concepts to local projects
- Mitigations (trip and travel diversion, provision of alternative modes, and most importantly, defendable and feasible mechanisms to implement the non-roadway mitigations)
- Methods to quantify the impacts of government actions on VMT
- *Interactive Engagement:* Case study/analysis of existing EIR transportation section see how it compares with OPR concept. Possible quick team effort to run a simple model of alternative land uses and mitigations.

12 NN - 1 PM Lunch (on your own)

1 - 3 PM Module 3 *(Colman)*

Multimodal Level of Service Applications

- California statutory requirements and the General Plan
- Applications to site impact studies
- Applications to new development and design standards
- Relationship to sustainable transportation indicators
- Applications to Travel Demand Management and Transportation System Management (TSM/TDM) Programs and Mitigations
- Applications in project mitigation, target LOS, & thresholds of significance
- HCM and non-HCM methods for addressing ped, bike, and transit LOS
- Multimodal level of service and its malcontents
- *Interactive Engagement:* Applying mitigation measures in a site impact study

3 - 5 PM Module 4 *(Kamhi)*

Determining Transit Capacity and Quality of Service

- How to increase transit ridership as a share of the regional VMT through local/regional projects
- Transit availability as a function of resources--brief overview of transit funding
- Bike and pedestrian facilities as a function of resources--brief overview of funding and other support activities
- Methods for determining capacity of transit services
- Impacts of transit service quality on transit use
- Future transit mitigations and linkage to transit service provision
- *Interactive Engagement:* Team/student group analysis of potential bus capacity in large central city using TCRP Report 165 (Transit Capacity and Quality of Service Manual) calculation example--chapter 6). Provided with the steps and a copy of the charts from the chapter, students go through the steps, thereafter discuss/debate results.
- Day 1 wrap up/summary, course evaluation

DAY 2

8 - 10 AM Module 5 *(Cisco)*

Analytical Techniques for Automobile and Bicycle Modes

- Evaluating automobile delays, queuing, and LOS, and uses in an EIR
- Calculating bicycle LOS
- Cross modal impacts
- *Interactive Engagement:* Numeric problems interpreting automobile and bicycle LOS analysis results

10 AM – 12 NN Module 6 *(Colman)*

Analytical Techniques for Pedestrians and Transit Modes

- Techniques for collecting bicycle and pedestrian data
- Calculating pedestrian LOS
- Calculating transit LOS
- Cross-modal impacts
- Presentation of results: Dashboards, graphics, and more
- *Interactive Engagement:* Numeric problems interpreting pedestrian and transit LOS results

12 NN - 1 PM Lunch (on your own)

1 – 3 PM Module 7 *(Colman)*

Assessing Induced Travel

- What is 'induced travel' and how is it defined?
- How increasing (or decreasing) capacity affects travel behavior
- Defining and using elasticities
- How will agencies evaluate induced travel in CEQA
- Case studies in increased highway capacity
- The role of speed in emissions, energy use, and safety
- *Interactive Engagement:* Applying a demand elasticity and interpreting analytical results for induced travel on a lane addition project

3 - 5 PM Module 8 *(Cisco)*

Use of Analytical and Simulation Tools

- Exploration of available software tools for various analysis tasks
- Capabilities, strengths and weaknesses
- Using the right tool for the job
- *Interactive Engagement:* Software analysis demonstrations and resources
- Day 2 wrap up/summary, course evaluation