

Paper Title:

Emerging Land Use and Transportation Modeling with Uplan and Emme in China

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Abstract: 250 words maximum. Use 12 point Arial font, single space.

SB 375, a new Senator Bill established in California, requires the integration of the land use and transportation developments together in the urban planning process so that the vehicle mile traveled and the emissions will be reduced. Since its inception, there have been several counties that engaged in the process with an Uplan modeling process, which includes Kern County, California. In addition, this process in fact has become more and more important in China, since China is the largest greenhouse gas generator due to the repaid economic development. In this presentation, we will describe an implementable modeling procedure to support the integration between the land use and transportation based on the ArcGI Uplan land use model and any transportation modeling systems such as Emme. The basic data would include the regional/city general plan, the regional development priorities, attractors of the region including the origin and destination based transportation accessibilities, closeness to the transit stations and highway access. There are some discouragement factors that can be considered. These factors may consist of the traffic congestions in certain areas. If certain areas are more congested, then the developments for residential, industrial and retail may be reduced due to the transportation congestions. Based on these principles, we iterate land use allocations and the transportation assignments to reflect the transportation accessibilities and congestions and ensure that the process will reach a meaningful equilibrium. The results of this application in City of Lou He of a population of 500,000 in China are reported with lessons learnt and potential applications of this approach in the US are mentioned.