Multimodal Transportation Impact Assessment for Site Development
An ITE Recommended Practice Update
Purpose and Need – August 9, 2017 DRAFT

This article describes the purpose and need for updating the ITE Recommended Practice on Transportation Impact Analyses for Site Development. The article proposes the evolution of the document to address emerging industry considerations which include both alternative approaches for public and private sector contributions to planned transportation infrastructure and services as well as a greater focus on multimodal measures of effectiveness. This article serves as an introduction to the topic for conversations at the ITE 2017 Annual Meeting and is intended to help raise ITE member awareness of the project. The following paragraphs answer several questions that ITE members and the communities they serve may ask about the state of the art in transportation impact analyses for site development and ITE's role in providing guidance on the topic.

1) Why should we update ITE's recommended practice on transportation impact analyses?

The past decade has fostered changes in how many communities are approaching economic development and the coordination between public sector and private sector partnership in providing transportation system capacity, mobility, accessibility, and safety. The first two editions of the ITE Recommended Practice on Transportation Impact Analyses(TIASD) in 1996 and 2010 focused on describing details within the traditional "bread and butter" transportation impact analysis approach commonly used throughout the USA and Canada (the 2010 recommended practice was based on a review of some 200 jurisdictions; a similar effort supported the 1996 edition).

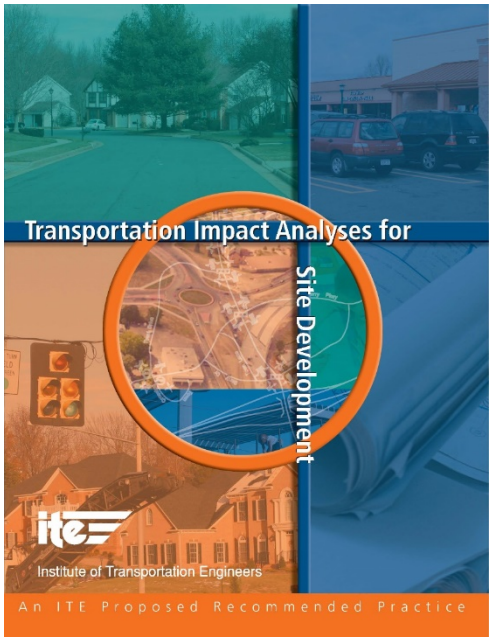

Figure 1. Significant changes in market conditions and community objectives are driving the need to update the current Recommended Practice.

ITE members consistently provide feedback to leadership that guidance documents such as Recommended Practices are among the most valuable products for providing both pragmatic and peer-reviewed "how to" guides as well as for promoting progressive, state-of-the-practices approaches and techniques.

Interest in innovative approaches to assessing the effects of new development on transportation systems, and the ways in which communities should address those changes, has increased for several reasons:

- A shift in many communities from predominantly greenfield development to an increasing share of infill development due to both market forces and growth management policies (particularly relating to fiscal costs of growth outwards from centers of transportation system investment and other community infrastructure)
- An increasing understanding of differences in travel behavior across a variety of land use types and contexts from urban to rural
- An interest in measures of effectiveness beyond traditional auto Level of Service (LOS) developed at federal, regional, state, and local policies
- A recognition that traditional level of service measures based on roadway capacity thresholds often result in "free rider" or "last-in" concerns that affect the equitability and predictability of the transportation system exaction process

Communities and practitioners alike are seeking guidance on how to evaluate the opportunities and constraints with innovative approaches to rethinking traditional TIASD approaches. The timing is therefore appropriate for a new Multimodal Transportation Impact Assessment (MTIA) Recommended Practice to update, and replace, the TIASD. The MTIA should achieve the following key objectives:

- Broaden the understanding of TIASD strategies to help practitioners and decisonmakers assess the pros and cons of a variety of approaches for addressing the relationship between the approval of new development and the maintenance of transportation system performance.
- Reflect current and emerging technologies in both measuring transportation system
- Promote context-sensitive solutions from policy and planning perspectives
- Support strategies for implementing transportation systems across all modes

2) How should a community select a multimodal transportation impact assessment approach?

The updated MTIA will recognize that there is not a "one size fits all" approach towards assessing the benefits and impacts that private-sector economic development has on the need for, and provision of, multimodal transportation systems.

The MTIA will include a detailed discussion on how communities might consider developing new policies, or adapting existing policies, in the event they find that their current TIASD approaches aren't right-sized for their current needs. The MTIA will help communities ask some key questions to tailor their development review approach to meet their needs.

a) *What's right for my community?*

The selection of a MTIA approach and the development of parameters for that approach, depend on how detailed a community's vision for both public sector and private sector investment is over time, and the degree to which the achievement of that vision is being measured, or might be measured. A diagnosis of the roles of both community vision and the MTIA role in helping achieve the vision might include exploring the following questions:

i. What is the community vision for economic development? Are the levels and types of desired land use changes clearly documented in adopted planning and policy statements? Are the transportation system needs similarly well-defined? Is the current implementation of those plans proceeding with an appropriate balance of precision (so that the infrastructure and services are implemented) and flexibility (so that detailed designs and operations can be approached in a context-sensitive manner)?

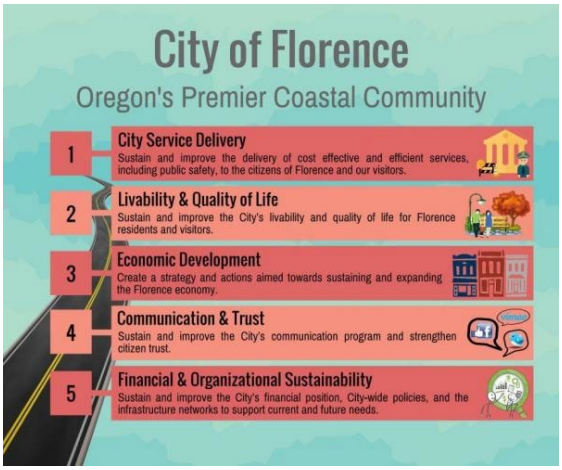

Figure 2. Transportation system performance objectives should dovetail with broader outcome-based community vision and goals.

ii. How is success of the vision being measured? Are there adopted measures of effectiveness that include transportation goals and objectives, and are they current? Does the community consider auto congestion the primary concern of residents, businesses, and visitors? How does the concern regarding auto congestion compare to other concerns regarding community character, accessibility, safety, walkability, bikability, transit service, equity, sense of place, and economic development?

iii. What role does the community see for land development or redevelopment in achieving their goals and objectives? How much of the success should be attributable to new development as contrasted with existing businesses, residents, and visitors? How might that assessment vary across life-cycle costs of transportation system investment from implementation to operation to replacement? What is the relationship between the transportation impact assessment and other development needs assessments or cost/benefit analyses?

iv. Is the community experiencing or anticipating unintended consequences of traditional TIASD approaches, such as:

1) A "free rider" or "last-in" effect of the "lumpiness" of many traditional development exaction approaches, wherein the first developer to provide a significant infrastructure element utilizes only some of its capacity; a second developer can be a "free rider" who utilizes remaining capacity without

providing additional capacity, and a third developer caught by being "last in" may generate just enough demand to cross a legislative threshold triggering significant investment disproportionate to the need.

2) A concern that community design may be suffering from the phenomenon of only "managing what's measured". For instance, if the community vision stresses walkability but the TIASD process only measures auto congestion, the process is not designed to deliver walkability.

v. Finally, there are many parameters that might typically be included in an MTIA process which are far more subtly related to a community vision. Examples include horizon year (is the community vison for ten years or 25, and how does that relate to the expected life cycle of the proposed development and its contributions to the transportation system?) and partnerships (what is the role of the state, region, and adjacent communities in contributing to vision achievement)?

b) What might be considered a meaningful impact that warrants requiring private-sector participation?

The establishment of community visions and measurable objectives, in conjunction with the role of new development in achieving those objectives, should help define the conditions under which new development should participate in either:

- Proactive: contributing to the provision of the planned system and/or
- Reactive: mitigating adverse impacts that would inhibit the achievement of the vision.

Many communities in the US have, at least implicitly, viewed these two approaches as separate, but connected steps. Impact fees or taxes are commonly assessed as essentially "hook-up" fees so that new development pays a portion of the cost to develop a planned community-wide transportation system, typically measured in terms of roadway lane-miles. The TIASD process has been viewed as a means for requiring specific design details in the vicinity of a site to customize those lane-miles to function according to adopted measures of effectiveness, typically for intersection or roadway segment operations for development that generates a certain threshold of travel (such as 50 peak hour vehicle trips).

The consideration of measures of effectiveness and impact thresholds can encompass a variety of measures. In evaluating potential measures, coordination between appropriate federal, regional, and locally adopted performance measures should be considered. Some evolving measures to be evaluated in the MTIA Recommended Practice include:

i. Multimodal Level of Service (LOS)and Quality of Service (QOS) metrics, including, but not limited, to techniques included in the Highway Capacity Manual or specific adaptations such as the Florida DOT Q/LOS Manual, with certain

measures and monitoring approaches such as described in ITE's Transit Impact Analysis Informational Report

ii. Vehicle miles of travel (VMT), such as promoted by the California Office of Policy Research (OPR) and explored within many jurisdictions as part of California's Senate Bill (SB) 375

iii. Accessibility metrics, including accessibility to multimodal services and access to jobs, housing, and other key destinations once those services are accessed.

iv. Connectivity indices, such as intersection density measures, Route Directness Index, or Level of Traffic Stress for assessing bicycle networks

v. Traveler safety across all modes

vi. Healthy community objectives, whether directly associated with elements such as transportation safety, or indirectly linked to outcomes such as obesity or equitable access to health care.

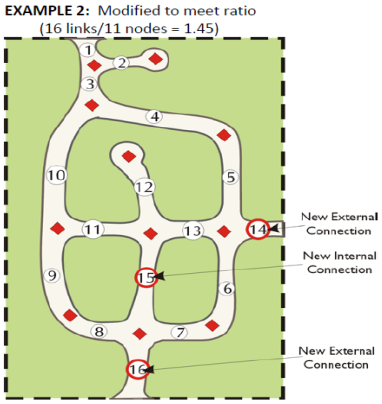

Figure 3. Connectivity is one of a variety of measures worthy of greater exploration.

c) What strategies provide appropriate private-sector participation in plan implementation?

The MTIA Recommended Practice will include a variety of private-sector participation approaches, including, but not limited to the following types:

i. Impact tax/fee. Many jurisdictions already use impact taxes and fees as part of the exaction process for new development. The 1996 and 2010

ii. Pro-rata share district concepts (as described further below)

iii. Multimodal transportation impact study. The 1996 and 2010 Recommended Practice focused on providing "how to" guides for each step of the impact assessment. The new Recommended Practice will retain this function, updated to reflect today's conditions and tomorrow's opportunities, as well as expanded to better incorporate information on multiple modes, such as described in the conclusions of the ITE Transit Impact Assessment Informational Report.

iv. Other approaches that may be defined during the Recommended Practice development process.

3) What is a Pro-rata Share District and how might it be appropriate?

A pro-rata share district leverages the private sector role towards implementing a comprehensive plan holistically, rather than incrementally. In a pro-rata share district, each development contributes resources (whether facility construction or funding) towards a well-defined set of projects with the contribution defined in proportion to the relative level of demand contributed by that development. The pro-rata share concept can be expressed as a fraction in which the numerator is the private sector

funding for total system supply and the denominator is the unit of development demand. Beyond this basic concept, the details of defining the numerator and denominator vary from place to place; they are dependent upon the physical, environmental, and political context.

The primary advantages of a pro-rata share district are to:

- Limit the "free rider" or "last in" problem associated with typical threshold-based TIA approaches in which exactions are based more on timing than impact (i.e., 95% of available or remaining system supply might be used by the free-riders with the full burden of improvement imposed upon the applicant using the last 5%),
- Focus exaction efforts on planned system improvements rather than identifying ad-hoc improvements (even though based logically on TIAs) that may not contribute to the desired end state, and
- Measure success more through implementation of both the planned private infrastructure (planned land development per zoning) and public infrastructure (a multimodal transportation network in a comprehensive plan) than by mitigation based on site-specific level of service (LOS) or quality of service (QOS) objectives.

The principal argument against a pro-rata share district is that its establishment and maintenance requires a significant amount of up-front collaboration among a variety of stakeholders to define how the contributions will be defined and administered over time. Successful pro-rata share districts share several common elements:

- A compact geographic area, generally several hundred acres in size, that is large enough to leverage participation among multiple property owners but small enough to focus administrative efforts on specific implementation objectives at a high level of detail
- An inventory of unbuilt transportation system needs and expected levels of private development that facilitates the definition of an appropriate relationship between future supply and demand

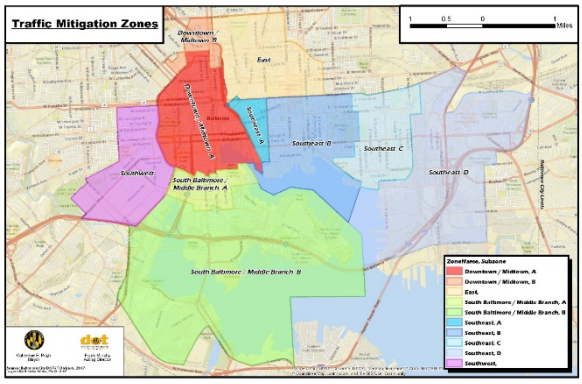

Figure 4. Pro-rata share districts are generally compact with well-defined objectives for public and private participation in transportation plan implementation.

- A reflection of the needs and interests of constituents including public sector agencies, the residences and businesses they represent, and the development community
- Coordination with state, regional, and local implementers and operators, as the pro-rata share district will typically, but not necessarily, be designed to address facilities that are the responsibility of the local jurisdiction

- Regular monitoring and revision processes and schedules, typically on a regular four to six-year cycle that establishes a relative level of predictability for the development market yet is designed to incorporate changes to local and regional variables over time.

The MTIA Recommended Practice will describe several pro-rata share districts, including examples from Middletown, DE; Destin and Kissimmee, FL; Baltimore City and Montgomery County, MD; and Portland, OR.

4) Multimodal transportation assessment study approaches

The new sections in the MTIA Recommended Practice will help communities perform a development review diagnosis to evaluate whether changes to their exaction processes are desirable. For many communities, particularly where community visions rely on greenfield economic development at relatively low densities, the Multimodal Transportation Impact Assessment will likely remain a practical approach. While this purpose and need describes the value of including a variety of approaches in addition to the traditional site impact evaluation, the MTIA RP is expected to focus on:

a) Defining adequacy/concurrence, with consideration of local community objectives; enabling legislative authority granted by state, provincial, or federal entities; and the rational nexus test
b) Defining land use, with consideration to synthesizing efforts such as ITE's development of the 10th Edition of Trip Generation to emphasize land use context as well as update land use type descriptions
c) Defining and managing demand (TDM)
d) Site circulation and access by all modes, including consideration of last-mile access for transit trips and goods movement and parking / curbspace management strategies
e) Development staging, including strategies for synchronizing adequacy approaches with other development approvals to match the level of detail and precision associated with each step
f) Traditional four step processes for trip generation, trip distribution, modal split, and trip assignment, as well as alternatives such as leveraging the increasing availability of Activity-Based Models
g) Considering the degree of accuracy and precision in the forecasting process and how post-occupancy monitoring can help inform or refine the MTIA approach
h) Applying context-sensitivity throughout the process, so that jurisdictions with a wide range of development patterns may have different performance standards or thresholds depending on site location or development intensity

5) How should new trends or emerging interests be incorporated in the new recommended practice?

The transportation planning and engineering professions are experiencing a wave of new ideas and technologies that may affect the way in which new development generates travel demand and how communities may look to the private sector to help address that demand. These include:

a) Market trends for development: (emerging land uses, local contexts, and demographics)
b) Market trends for travel: (shared vehicle economy and automated vehicles)
c) Multimodal trip generation: (including the consideration of the production-consumption link within goods movement planning)
d) Transportation systems management and operations considerations, particularly regarding the potential for "big data" from both public sector and third-party providers to help measure and monitor existing conditions, forecast future conditions, and mitigate impacts.
e) Reliability, both regarding the appropriateness of data samples for performance measures and as a potential measure of effectiveness
f) Resiliency

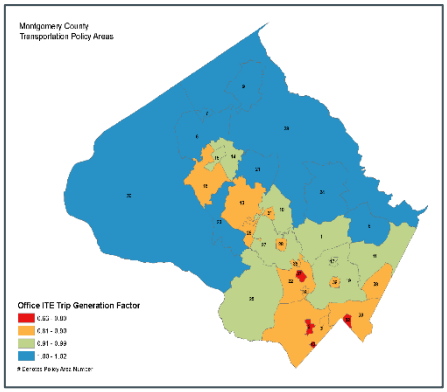

Figure 5. Trip generation resources are increasingly context-sensitive and multimodal.

ITE formally kicked off the development of the MTIA as part of the ITE Annual Meeting activities in August 2017. The process for developing and adopting a Recommended Practice has been streamlined so that a Proposed Recommended Practice should be ready for review and comment before the 2018 Annual Meeting. Stay tuned to ITE Community and other outreach tools for opportunities to get involved in, or just stay in touch with, the development of this updated Recommended Practice.