Working Paper

CEQA Streamlining and Travel Forecasting
Regional Transit-Oriented Development Strategy
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Prepared for:
San Diego Association of Governments (SANDAG)

Authors:
Yara Fisher, AICP (AECOM)

Contributors:
Tim Palermo, AICP (AECOM)
Ashutosh Kumar (AECOM)
Bob Leiter, FAICP
San Diego Association of Governments (SANDAG)

Editors:
Bill Anderson, FAICP (AECOM)
Matt Gelbman, AICP (AECOM)
A series of Working Papers has been prepared for SANDAG as part of its efforts to develop a Regional TOD Strategy for the San Diego Region. The Working Papers focus on issues associated with implementing TODs in the San Diego region, drawing upon the experience and lessons learned from other metropolitan areas in their attempts to address similar issues. The Working Papers address the following topic areas:

- Urban Form, Density and Land Use
- Financing Infrastructure and Community Facilities
- Housing Choices and Affordability
- CEQA Streamlining and Travel Forecasting
- Connections: Travel Options, Mobility Management and Access Enhancements
- Readiness Criteria: Metrics for Transit-Oriented Districts

“TOD” is typically an acronym for “Transit-Oriented Development.” This definition focuses on real estate development projects next to transit stations, often as public/private partnerships; however, this definition is narrow and does not reflect the importance of the relationship between transit stations and the surrounding community.

The Working Papers approach the “D” in TODs as “District,” an area, neighborhood or community that is conveniently accessible to transit. The size of a district will vary by location, topography, community characteristics, the pattern and concentration of residential and employment, and other unique factors. Districts are larger areas where some people are close enough to walk to a station, others are close enough to bike to a station or be dropped off by a friend or family member who is driving, or even use a car-sharing service. Thinking of the district in this larger context enables more opportunities to find sites for various types of development that are feasible – small lot housing and town homes, low-rise and loft housing, flats and, residential towers, or main-street type of commercial, urban flex and campus space, institutional facilities, and taller office buildings – all within mixed-use environments that are walkable. TOD is important to the San Diego region’s future and is expected to contribute significantly to meeting the projected demand for new housing and employment growth that SANDAG estimates will occur in the future.

The Working Papers are focused on how to implement TODs. They describe the challenges, some of which are not unique to San Diego. They mention examples of how other metropolitan areas around the country are trying to address these challenges and conclude by suggesting some ideas for consideration. The ideas for consideration are meant to stimulate thought, questions, and possible solutions.

The Working Papers are being published prior to a TOD Implementation Forum (January 27 and 28, 2015) that SANDAG is holding to get input that inform the development of SANDAG’s Regional TOD Strategy. As such, the Working Papers are drafts that will be augmented by the input received during the TOD Implementation Forum, and will be used to support the preparation of the Regional TOD Strategy and an agenda for success.
Introduction

Recently adopted statewide legislation, including Senate Bill (SB) 375, SB 743 and SB 226, substantially build upon the linkage between land use and transportation planning by requiring integration of regional housing, land use, and transportation plans. Aspects of this legislation also have the potential to streamline the environmental review process for projects in Transit-Oriented Districts (TOD). One result of this legislation is an evolving methodology for assessing transportation impacts – one that moves away from using traditional automobile traffic congestion and delay-based impacts (i.e., vehicle level of service [LOS]) to criteria that focus on a broad suite of factors including vehicle miles traveled (VMT), greenhouse gas (GHG) emissions, safety, and alternative modes of travel.

This Working Paper explores the relationship between regional travel demand models and the review of transit-supportive development projects, and highlights ways in which SANDAG can support its member agencies with implementing non-LOS-based transportation impact review as one means of providing defensible and streamlined environmental review consistent with recent legislation and the California Environmental Quality Act (CEQA).

SB 375

SB 375 legislation requires that each Metropolitan Planning Organization (MPO) prepare a Sustainable Community Strategy (SCS) to determine how a region intends to achieve the GHG reductions mandated in California’s historically significant climate change statutes. SANDAG was the first MPO to prepare an SCS, which was included as an element of its 2050 Regional Transportation Plan adopted in 2011, and is currently being updated with San Diego Forward: The Regional Plan.

SB 375 emphasizes TODs. In particular, the legislation provides special accommodation and incentives for Transit Priority Projects (TPP) that achieve the following conditions:

- Contains at least 50 percent residential use. If the project contains 26 percent to 50 percent non-residential use, the floor area ratio must be at least 0.75;
- Have a minimum net density of twenty units per acre; and
- Be located within 0.5 mile of a major transit stop or high-quality transit corridor included in the Regional Transportation Plan.¹

SB 743

SB 743 calls for the Office of Planning and Research (OPR) to develop traffic guidelines that promote a reduction in GHG emissions, rather than a reduction in traffic congestion. Once the guidelines are certified, increase in traffic congestion cannot be considered a significant environmental impact under CEQA within transit priority areas.

OPR released preliminary discussion draft of updates to the CEQA Guidelines for implementing SB 743 on August 4, 2014. SB 743 did not authorize OPR to set thresholds, but it did direct OPR to develop guidelines “for determining the significance of transportation impacts of projects.” OPR proposes to add a new section 15064.3

¹ http://www.leginfo.ca.gov/pub/07-08/bill/sen/sb_0351-0400/sb_375_bill_20080930_chaptered.pdf
to the CEQA Guidelines to provide new methods of measuring transportation impacts. The proposed new section 15064.3 contains several subdivisions addressing (1) VMT and land use projects, (2) induced travel and transportation projects, (3) local safety, and (4) lead agency evaluation methodology. The following briefly summarizes these subdivisions.

1. Vehicle Miles Traveled

A project that results in VMT that is greater than the regional average might be considered to have a significant impact.² Average in this case could be measured using an efficiency metric such as per capita, per employee, etc. Projects that are shown to decrease VMT or result in VMT less than the regional average, as compared to existing conditions, may be considered to have a less than significant impact. This assumes that projects that decrease overall VMT would have to divert more existing trips to shorter routes or alternative modes than the VMT associated with the incremental automobile trips generated by development.

2. Induced Travel and Transportation Projects

While subdivision (b)(1) addresses VMT associated with land use projects, subdivision (b)(2) focuses on impacts that result from certain transportation projects. This section would therefore require lead agencies that add new physical roadway capacity in congested areas to consider these potential growth-inducing impacts. Subdivision (b)(2) also clarifies that not all transportation projects would be expected to cause increases in VMT. For example, projects that are primarily designed to improve safety or operations would not typically be expected to create significant impacts. The same is true of pedestrian, bicycle and public transit projects, including those that require reallocation or removal of motor vehicle lanes.

3. Local Safety

Subdivision (b)(3) clarifies that lead agencies should consider whether a project may cause substantially unsafe conditions for various roadway users. The potential safety concern must be one that affects many people, not just an individual. Further, the potential safety concern must relate to actual project conditions. Subdivision (b)(3) includes a non-exclusive list of potential factors that might affect the safety of different roadway users, including:

- Increase exposure of bicyclists and pedestrians in vehicle conflict areas (i.e., remove pedestrian and bicycle facilities, increase roadway crossing times or distances, etc.).
- Contribute to queuing on freeway off-ramps where queues extend onto the mainline.
- Contribute to speed differentials of greater than 15 miles per hour between adjacent travel lanes.
- Increase motor vehicle speeds.
- Increase distance between pedestrian or bicycle crossings.

² Note: Public comments on the draft guidance raise potential issues with using a regional average, instead of identifying the need for more refined and/or subregional averages to be used for comparison purposes.
4. Lead Agency Evaluation Methodology

A lead agency may use models to estimate a project’s VMT, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate VMT and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.

In addition to tasking OPR with developing revised traffic guidelines consistent with the above, SB 743 provides additional specific CEQA streamlining guidance as follows:

1. Aesthetic and parking impacts of a project are not considered significant under CEQA if the project is a residential, mixed-use residential, or an employment center project, and is located on an infill site within a transit priority area. Additionally, for certain infill projects, impacts such as increased glare or diminished view of public spaces cannot be considered significant environmental impacts.

2. Except for specified circumstances, SB 743 exempts from CEQA residential, employment center, and mixed-use development projects meeting all of the following specified criteria:
   
   a. The project is proposed within a transit priority area, as defined in subdivision (a) of Section 21099.

   b. The project is undertaken to implement and is consistent with a specific plan for which an environmental impact report (EIR) has been certified.

   c. The project is consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a Sustainable Communities Strategy or an Alternative Planning Strategy for which the State Air Resources Board, pursuant to subparagraph (H) of paragraph (2) of subdivision (b) of Section 65080 of the Government Code, has accepted a metropolitan planning organization’s determination that the Sustainable Communities Strategy or the Alternative Planning Strategy would, if implemented, achieve the GHG emissions reduction targets.

Further environmental review shall be conducted only if any of the events specified in Section 21166 have occurred. Section 21166 states that “when an environmental impact report has been prepared for a project pursuant to this division, no subsequent or supplemental environmental impact report (EIR) shall be required by the lead agency or by any responsible agency, unless one or more of the following events occurs:

   a. Substantial changes are proposed in the project which will require major revisions of the EIR.

   b. Substantial changes occur with respect to the circumstances under which the project is being undertaken which will require major revisions in the EIR.

   c. New information, which was not known and could not have been known at the time the EIR was certified as complete, becomes available.

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1 Transit priority areas are located within 0.5 mile of existing rail stations, ferry terminals, and major bus routes.
3. It is the intent of the Legislature to balance the need for LOS standards for traffic with the need to build infill housing and mixed-use commercial developments within walking distance of mass transit facilities, downtowns, and town centers and to provide greater flexibility to local governments to balance these sometimes competing needs.

Notwithstanding any other provision of law, LOS standards described in Section 65089 shall not apply to the streets and highways within an infill opportunity zone.¹

A city or county may designate an infill opportunity zone by adopting a resolution after determining that the infill opportunity zone is consistent with the general plan and any applicable specific plan, and is a transit priority area within a Sustainable Communities Strategy or Alternative Planning Strategy adopted by the applicable MPO.

SB 226

SB 226, as put into effect by CEQA Guideline Section 15183.3, lays out opportunities for CEQA streamlining for infill projects consistent with the following:

1. This bill limits the application of CEQA in the case of the approval of an infill project if an infill project satisfies the established guidelines, and if an EIR was certified for a planning level decision.⁵ The lead agency determines if the project is exempt, which therefore makes this a state-mandated local program.

   a. An infill project is defined as a project that: (1) consists of one or more of the following uses: residential, retail/commercial (no more than ½ of the project area is used for parking), transit station, school and public office building, and (2) is located within an urban area and is on a site that has been previously developed, or on a vacant site where at least 75 percent of the perimeter of the site adjoins parcels that are developed with qualified urban uses.

   b. Limited CEQA review for infill projects will resemble the tiering process. If an EIR was certified for the enactment or amendment of a city or council general plan, community plan, specific plan or zoning code, CEQA review is limited to: (1) environmental effects that are specific to the project or project site and were not addressed as significant effects in the prior EIR, or (2) substantial new information showing that environmental effects will be more significant than described in the EIR. Limited CEQA review must be supported by substantial evidence. If the lead agency determines that uniformly applicable policies or standards would apply to the qualifying infill project and would substantially mitigate an environmental effect of the project, that effect would not be considered a project-specific effect, a new environmental effect, or a more severe environmental effect triggering preparation of an EIR within the context of limited CEQA review pursuant to SB 226.

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¹ “Infill opportunity zone” means a specific area designated by a city or county, pursuant to subdivision (c) of Section 65088.4, that is within 0.5 mile of a major transit stop or high-quality transit corridor included in a regional transportation plan. A major transit stop is as defined in Section 21064.3 of the Public Resources Code, except that, for purposes of this section, it also includes major transit stops that are included in the applicable regional transportation plan. For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

⁵ “Planning level decision” means the enactment or amendment of a general plan or any general plan element, community plan, specific plan, or zoning code
c. If the lead agency determined that an infill project would result in significant project- or site-specific effects, or if significant effects of the infill project were not addressed in the prior EIR or are more significant than the effects addressed in the prior EIR (and if a mitigated negative declaration or sustainable communities environmental assessment could not be otherwise adopted), an EIR would need to be prepared for the project. However, the EIR would not need to consider alternative locations, densities, and building intensities for the project, or growth-inducing impacts of the project.

d. Limited CEQA review is available for an infill project located within an MPO if the project has a residential density of at least 20 units per acre or a floor area ratio of at least 7.5, and satisfies all applicable statewide performance standards, prior to the adoption of an SCS.

e. After an SCS has been adopted, limited CEQA review can be used if the project is consistent with the SCS (general use designation, density, building intensity, etc.) and satisfies all applicable statewide performance standards.

f. Limited CEQA review can be obtained for an infill project that is not within the MPO Boundaries if the project is a “small walkable community project”, meaning: the project area is approximately 0.25 mile in diameter of contiguous land within incorporated city boundaries, includes residential area adjacent to retail downtown area, and has a density of at least eight dwellings per acre, or a floor area ratio for retail or commercial use of no less than 0.5. Additionally, the small walkable community project must satisfy all applicable statewide performance standards.

Although a substantial amount of state legislation intended to help streamline infill and transit oriented projects has been passed, many local governments are not able to fully implement the benefits of the above legislation because their comprehensive planning documents, traffic impact review procedures, and locally adopted CEQA guidance have not been updated to reflect these changes in state law. This Working Paper identifies strategies for SANDAG and its member agencies to consider overcoming this potential hurdle to desirable TOD.

**Evolving Methodology**

The legislation described above is intended to influence how transportation impacts are measured - away from conventional trip generation/roadway LOS analyses and toward more substantive approaches that incorporate a project trip’s length, duration, quality and purpose. Although there is debate as to what drives the other, most planners and elected officials acknowledge the interwoven relationship between transportation and land use. LOS-based performance standards recognize this relationship, but have long functioned to influence decision making solely based on vehicular impacts – often resulting in vehicle-based transportation investments and improvements.

LOS standards only ration existing roadway capacity. Consequently, roadway widening and improvements become the recommended mitigation; creating an increasingly unsustainable development cycle where multi-modal mobility and environmental standards are not always considered. With the passage of recent legislation, VMT has become one recommended method for measuring transportation impacts. With VMT as a new metric, projects such as bike lanes, transit-oriented development, and transit may be easier to permit compared to when LOS was used as the primary evaluation metric.
By nature, mixed-use development is likely to slow down vehicular traffic thereby increasing the attractiveness of active travel modes and overall livability. Unlike other performance measures, VMT is sensitive to the balance of and proximity between residential and non-residential land uses. When the balance between jobs and housing is increased, home-based work trips are generally shorter thereby decreasing overall VMT. This evolving methodology recognizes that travel demands associated with TODs are generally internal, fewer, shorter, linked and human powered.

Travel demand models in many areas around the country have also evolved in this regard; away from trip-based, “four-step” modeling procedures based on balancing residential productions and non-residential attractions and towards robust Activity Based Models (ABM) that incorporate the rich behavioral complexity associated with the “how” and “why” of individual travel decisions that link activities and locations. Typical four-step models do not have the sufficient level of detail to forecast impacts of location-specific mixed-use compact growth improvements such as TODs.

Activity-based models utilize population datasets that have a much higher degree of demographic detail than conventional models. This additional detail and the ability to synthesize future populations based upon generational, educational, and geographic characteristics enable ABMs to provide a more detailed level of understanding of the travel demands associated with TOD.

**SANDAG’s Activity-Based Model and Transit-Oriented Development**

SANDAG is currently in the process of implementing an ABM as the major forecasting tool for its long-range planning model. The model is based on the Coordinated Travel -- Regional Activity-Based Model Program (CT-RAMP) family of ABMs. Other cities using CT-RAMP include Columbus, Lake Tahoe, Atlanta, Phoenix, and Chicago. It is expected that SANDAG’s ABM should be able to not only better estimate internal trips but also passer-by, linked and diverted trips and therefore should produce sub-regional and project VMT estimates that are generally congruent with real-world conditions.

SANDAG’s ABM is expected to provide the necessary details to build a travel demand modeling platform that is suitable for estimating traffic, trip generation and modal shift impacts unique to TOD. An ABM model will be able to provide details on trip patterns of individual persons and their specific and demographic characteristics. The SANDAG ABM model will have the following features generally not included in traditional four-step models as related to TOD evaluation:

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8 2050 Regional Transportation Plan, Technical Appendix 15 – SANDAG Travel Demand Model Documentation.
REGIONAL TOD STRATEGY

- Improved representation of region’s geography through the use of SANDAG Master-Geographic Reference Area (MGRA) zone system and Traffic Analysis Zonal (TAZ) structure for TOD;
- Detailed socio-economic and demographic variable inputs;
- Detailed employment categories in ABM enabling proper linkage of where people live with type and location of jobs;
- Improved highway and transit network fidelity;
- Explicit modeling of non-transit mode choices such as pedestrian and bicycle modes;
- Higher degree of time-of-day resolution and improved modeling of peak spreading phenomenon;
- Detailed model outputs that can be fed into traffic micro-simulation software to estimate engineering-level analysis of intersection, TOD and corridor design;
- Improved representation of walk-to-transit access connections; and
- Improved representation of non-work travel.

Local governments, transportation project sponsors, and project applicants rely on SANDAG’s expertise in applying the regional model as a tool for evaluating the transportation impacts of new development. External project trip reductions associated with internal capture and transit use were historically calculated “off-model” using the Institute of Transportation Engineers (ITE) internal capture procedures or SANDAG’s spreadsheet-based Mixed-Use Trip Generation Model. Upon implementation of SANDAG ABM, internal capture and trip reductions attributable to transit and active transportation should be reflected in the model results. Nevertheless, the model results should be validated against off-model procedures and known characteristics of similar projects as described in more detail in the Strategies for Consideration section below.

Local Government Review of TOD Projects

Traffic analyses and the environmental review process as a whole can be one of the most time consuming, riskiest, and costliest aspects of the planning and development review processes. Local governments, SANDAG, and transportation project sponsors, such as the San Diego Metropolitan Transportation System (MTS), North County Transportation District (NCTD) and Caltrans will continue to serve as lead agencies for the review of projects within the region. Each agency has the opportunity to facilitate transit-oriented development and infrastructure projects by creating more streamlined and certain transportation analysis criteria and environmental review processes.

Although many agencies throughout California have adopted Complete Streets Elements addressing multimodal accessibility, few have adopted revised criteria for analyzing transportation-related impacts. Most recently, the City of Pasadena adopted alternative standards to LOS, which include criteria such as VMT per capita, pedestrian accessibility, and modified LOS and street segment analysis requirements for areas within transit

In July 2012, the Sacramento Area Council of Governments (SACOG) developed a Consistency Worksheet for use by its member agencies. The “Determination of MTP/SCS Consistency Worksheet” is a checklist to help lead agencies determine if their project is eligible for CEQA Streamlining under SB 375. The worksheet breaks down the requirements for both TPPs and Residential or Mixed-Use Residential Projects. If the proposed project qualifies, the worksheet includes a third section to determine if the project is consistent with individual components of the SCS.
priority areas and infill opportunity zones.\(^9\) Locally, the City of Carlsbad released a draft Mobility Element that establishes a multimodal level of service (MMLOS). The transit MMLOS method evaluates headways, on-time performance, transfer to a Coaster station, bus stop seating and lighting, transit priority, capacity, bus connectivity, bicycle parking, and on-board bike racks.\(^10\)

When the City of San Marcos adopted their Mobility Element in 2013, it also included MMLOS and allowed for flexible LOS where warranted based on location, feasibility, and other city-wide goals, particularly in its Urban Core.\(^11\) The city has also committed to continuously update the list of protected locations where flexible LOS is warranted.

San Jose’s Envision San Jose 2040 includes transportation goals, policies and actions that are intended to achieve an initial VMT reduction of 10 percent, followed by a 20 percent reduction, and ultimately a 40 percent reduction by 2040. They further identify local and regional policies that may help achieve these reductions.\(^12\)

In August 2014, the City of Los Angeles also adopted updated Traffic Study Policies and Procedures.\(^13\) The Los Angeles Department of Transportation (LADOT) is evaluating other performance measures that can yield information related to other modes of travel. In addition, they are evaluating alternative methods of trip reduction credits as well as mitigation and recommending that project traffic consultants meet with LADOT to focus on “minimizing the demand for trips by single-occupant vehicles through trip reduction strategies or by encouraging other modes of travel like public transit and bicycling”.\(^14\)

In addition to facilitating the environmental review process by adopting non-LOS transportation analysis standards, agencies can implement CEQA streamlining through several means:

- Maximize the benefit provided by certified program-level EIRs. When overseeing the preparation of program-level EIRs for comprehensive planning activities, ensure the intended uses of the EIR for use with later activities is clearly laid out. Develop program-level mitigation that can be implemented at the project level to avoid foreseeable impacts of specific project developments. For projects found to be consistent with the assumptions of a program-level EIR, limit additional project-level CEQA review consistent with Section 15168(c)(2), which states “If the agency finds that pursuant to Section 15162, no new effects could occur or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required.” In many instances, a simple initial study-type form documenting the project’s consistency with the program-level EIR and why it does not meet any of the criteria of Section 15162 can be used for the later activity. Civic San Diego and other agencies throughout California have used this approach successfully for many years. With the additional streamlining benefits acknowledged in SB 375, SB 743, and SB 226, this approach is now even more defensible.

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\(^12\) City of San Jose, Envision San Jose 2014 General Plan. http://www.sanjoseca.gov/DocumentCenter/Home/View/474


REGIONAL TOD STRATEGY

- Update and/or adopt revised CEQA processing and significance criteria guidelines that reflect the most recent legislation related to streamlining and non-LOS criteria.

- Develop and implement an optional CEQA streamlining program, which allows for the prioritized and streamlined review of TOD project applications that are consistent with the existing general plan, zoning, and SCS. The City of San Diego has a Sustainable Buildings Expedite Program that could serve as an example to use with TOD projects.

In reaction to SB 743, many local jurisdictions across the state have offered concern about losing the nexus between CEQA impact analyses and the ability to require improvements to the local transportation system. San Francisco proposes introducing a Transportation Sustainability Fee to help establish a means by which development projects can mitigate their impacts on the system.

The proposed fee would supplement existing local transportation funding sources and would fund an expenditure program, over 20 years, shown to directly offset the impacts on the transportation system made by new development.

The Transportation Sustainability Fee (TSF) would replace or be a credit against payment of existing transit-related development fees in order to avoid double charging for transit impacts of new development. The TSF would apply to all land uses, except for single-family homes.

The TSP is the first program in San Francisco that integrates impact fees with the CEQA process such that paying the impact fee means that a project is mitigating its environmental impacts.


Ideas for Consideration

The “Ideas for Consideration” are provided as a starting point for developing recommendations as part of SANDAG’s Regional TOD Strategy. The “Ideas for Consideration” will continue to be refined, added to, and further evaluated.

Update Local CEQA Significance Criteria

Currently, local agencies rely on adopted project impact thresholds that are almost exclusively based on LOS standards (although some cities have adopted MMLOS or other supplemental thresholds). With SB 743, these thresholds will need to be re-evaluated with the focus shifting toward VMT-based thresholds. With this significant change, SANDAG should develop materials and an outreach program to inform local governments about the benefits associated with transitioning from conventional LOS-based performance standards to standards based up on the duration and quality of travel such as VMT, vehicle-hour of travel (VHT), average trip length, etc. In addition, SANDAG could also support local governments by developing sample sub-regional baseline and project performance VMT thresholds for generalized TOD and conventional projects. Perhaps, SANDAG’s TransNet Smart
Growth Incentive and Active Transportation Grant Programs could be used to help fund these local planning efforts.

**Sample Updated Criteria Considerations**

The combination of the refined ABM tool and CEQA streamlining represent an ideal opportunity for SANDAG, transportation project sponsors, and local governments to revisit their transportation impact review procedures and/or adopted criteria. Procedures and criteria should reflect each community’s adopted comprehensive planning goals and objectives and may be updated to reflect:

- Safety;
- Congestion management, where applicable;
- Reduced GHG emissions;
- Non-Single-Occupancy Vehicle travel; and
- Accessibility.

The updates should be balanced between development and mobility characteristics. In addition to VMT, TOD-incentivizing standards incorporated into updated policies and TOD Readiness Criteria could include:

1. **Density/Intensity of Development:** Transit-accessible residential and employment density is a quantifiable performance standard for TOD review. Basic measurements of development density and intensity include population and employment density per acre within proximity to transit, floor area ratio, etc.

2. **Land Use Balance:** Land use balance is a measure of the diversity of land use within a project. A diverse mix of land uses is a characteristic of TOD development; however, many conventional projects can exhibit a similar diversity of uses, yet not yield any meaningful reduction in non-automotive travel. Therefore, this performance measure should only be used in concert with measures that take into account a project’s physical design.

3. **Connectivity Index:** There are several commonly used techniques for measuring the amount of connections, and therefore alternate routes, within a project.

4. **Travel Time Ratio:** The travel time ratio is the ratio of time it takes to travel from an origin to a destination by transit compared to the same trip by automobile. Projects with ratios closer to +/- 1.0 would be considered the most transit accessible and treated favorably.

**CEQA Streamlining Process**

Consistent with recent legislation, local agencies should consider updating and/or adopting local CEQA streamlining guidance and processes for TOD. Like SACOG’s Determination of MTP/SCS Consistency Worksheet, SANDAG could help develop a tool for local agencies to use to evaluate a project’s consistency with streamlining provisions and the SCS.

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ABM Model Validation

Most regional travel demand models, whether four-step models or ABMs, are estimated and validated at a regional level. Therefore, it is important to note that while ABMs are better suited for TOD evaluation, a subarea validation is essential to assess its forecasting reliability. To validate the model's suitability, several before-and-after TOD scenarios should be tested within the model stream before its application for estimating TOD impacts. The before-and-after validation will likely provide SANDAG an insight into any major “misses” in the model's estimation. Based on these findings, SANDAG could then explore the idea of adding TOD-specific variables and modeling procedures to improve the model’s estimation of TOD impacts.

In addition, SANDAG's is planning to conduct a household travel survey in the next few years with a focus on improving the performance of the ABM. It is recommended that the survey effort be coordinated with the team implementing TOD policies in the region so that their recommendations and concerns are incorporated in the survey plan.

It is also recommended that SANDAG develop documentation and materials to help local communities understand and defend the enhanced capabilities of the ABM specifically related to the analysis of TOD impacts. This documentation will help potential users provide recommendations for incorporating additional details in the model’s zonal structure (such as splitting zones to represent jobs and housing allocation) and/or to the highway and transit networks supporting the TODs. It will also help defend assumptions used in traffic analyses for projects within TOD areas.

Post-Processing Toolbox

SANDAG can also assist the local jurisdiction by developing a post-processing toolbox that takes the ABM outputs and reports performance measures geared towards TOD projects and its area of influence. Such performance measures provide decision makers a comprehensive picture of the benefits and impacts from TOD projects in order to evaluate them against their established thresholds. Although VMT remains the key indicator, additional performance measures such as VHT, vehicle hours of delay, average trip length, person throughput, modal shifts, traffic impacts, increase in carbon-free, non-motorized trips such as walking and biking etc. can also be generated as part of this comprehensive report based on the ABM outputs.

Transportation Sustainability Fee

Like San Francisco’s TSF, local agencies should consider evaluating alternative fee programs to fund a variety of transportation improvements consistent with adopted plans.