MEMORANDUM

To: Christina Ferracane, City of Oakland

From: Nelson\Nygaard Team

Date: November 13, 2015

Subject: Summary of Best Practices

INTRODUCTION

The Nelson\Nygaard team has completed an extensive review of current transportation impact review (TIR) best practices in California cities and in other states with recent transportation review updates and alternatives to traffic-focused level of service (LOS) evaluation metrics. These best practices provide examples of approaches to implementing updates to CEQA metrics, evaluating project impact on the transportation system outside CEQA, and determining developer obligations with non-LOS metrics.

Examples were selected to illustrate how non-LOS evaluation is applied in other cities. Some cities utilize LOS-based analysis and achieve their desired development by applying exemptions on a project-by-project basis, and these are not considered among the best practices. Rather, this review focuses on implementing new approaches to CEQA evaluation, and on non-LOS evaluation metrics to identify project impacts and management strategies.

The following California cities provide two examples of new or emerging approaches to CEQA evaluation:

- Pasadena, CA
- San Francisco, CA

The following jurisdictions provide examples of transportation impact evaluation metrics, generally included as codes or as part of transportation demand management ordinances:

- Cambridge, MA
- Rockville, MD
- Yolo and Sacramento Counties, CA
- Alexandria, VA
- Brookline, MA

Example transportation review metrics from each of these jurisdictions that may be applicable in Oakland are summarized in the table below.

Table 1: Example Review Metrics, Triggers and Applications

Jurisdiction	Review Metric	Trigger/ Application
Pasadena, CA	Vehicle miles traveled (VMT)	Primary impact to mitigate; may be used in with impact fees to support public amenities and non-auto infrastructure investments
San Francisco, CA	VMT	Specific to project type, measures against regional average VMT and focuses on net decrease; requires mitigation with implementation of TDM plan
Cambridge, MA	Parking thresholds	TDM strategies are required depending on the number of parking spaces produced for a project; large projects require a Parking and Transportation Demand Management Plan to be developed and approved by City staff
Rockville, MD	Trip generation	Analysis and trip mitigation strategies vary depending on trip generation estimates; large projects require a traffic analysis, trip reduction plan, traffic counts for tracking, and Transportation Improvement Fee or proportional Transportation Improvement Contribution
Yolo and Sacramento Counties, CA	TBD	Both counties have adopted VMT thresholds; Yolo County has modified LOS policies to allow LOS E and F in many areas targeted for growth, while requiring LOS C in rural and agricultural areas to limit growth
Alexandria, VA	Development size	TDM requirements are based on where a development falls within the tiered size categories, based on number of units for residential, and square feet for commercial; requirements range from contributing to a fund for area TDM strategies, teaming with adjacent transportation management plans, and enacting and monitoring a new TDM plan
Brookline, MA	Development size, use change or expansion	Developments are categorized by size, location and accessibility to create context-specific TDM plans with target trip-reduction scores

The reviews are focused on methods for updating or adopting a new TIR process in response to CEQA reform, innovations and new approaches to TIR practices, and specific metrics to address multimodal operations and safety issues.

CEQA REFORM IMPLEMENTATION

Pasadena, CA

In 2004, the City of Pasadena adopted a development plan that favors increasing density in the city's urban core. In 2008, the City began the process of updating the land use and mobility

elements of the general plan, which called for a new approach to CEQA impact review in order to be consistent with the 2004 development plans. This process was accompanied by a community engagement effort as part of the General Plan update. The City drafted new metrics based on vehicle miles traveled (VMT) associated with development projects, which was encouraged under SB 375 and technically allowed under CEQA but not required at the time. When SB 743 was signed into law, this provided a clear direction from the State to California Cities to move away from LOS-based analysis. The City Council adopted the new VMT metrics in November 2014, and Pasadena became the first city in California to adopt VMT as an impact metric. In addition to VMT as a metric, Pasadena is also using vehicle trips per capita, the proximity and quality of the local bicycle network, the proximity and quality of the transit network, and pedestrian accessibility as measurements when assessing new developments.[i]

Pasadena's use of VMT as the primary transportation impact evaluation metric is consistent with the city's previous direction, with long range plans calling for a majority of infill development and no road widening projects. This metric allows the city to focus on strategies for managing congestion, traffic volumes and signal operations, whereas, mitigating LOS impacts with additional road capacity would not be feasible within the built-out road network as there is no additional right-of-way available within areas designated for development.

Pasadena has historically used impact fees to support public amenities like parks, and this tool will be crucial for successful impact mitigation with VMT metrics. The City is in the process of updating its Traffic Reduction and Transportation impact fee so that its revenues can be used to support transit service, bicycle infrastructure, pedestrian plans, and other projects that may offset VMT increases but would not have registered as improvements under the old LOS-based evaluation.

San Francisco

The City of San Francisco has recently conducted a cross-agency process to study, select, and refine transportation impact metrics[ii], which will be followed by a legislative approval process following state action on SB 743. This has been driven by a recognition that the existing LOS-based review is counter to implementing City goals and policies, such as Transit First and Complete Streets, and by San Francisco's recognition that it needs to take a comprehensive approach to address jobs and housing growth within the city[iii]. While the City has been discussing new approaches since 2003, the current efforts are also consistent with state-level guidance to update CEQA review. The City has developed a new Transportation Sustainability Program as part of its multi-pronged approach. This will change how the City analyzes the impacts of new development on the transportation system under CEQA, establish transportation demand management (TDM) measures for new development projects, and establish a citywide Transportation Sustainability Fee (TSF) to fund improvements to transit, bicycle and pedestrian infrastructure and capacity.

San Francisco's new CEQA evaluation metrics address the limitations and vehicle centric analysis of LOS and support infill development and other City goals and policies such as Vision Zero (elimination of pedestrian deaths and severe injuries due to vehicle collisions) and Transit First. In response to the state's likely support for establishing vehicle miles traveled (VMT) as a new metric, San Francisco has proposed VMT-based guidelines, which measure the total distance of vehicle travel induced by a project, and count single occupancy vehicle trips as having a greater impact than transit trips. The following thresholds are set to determine whether the City will require a TDM plan and TSF from certain types of plans and projects:

- Land use projects

    o If project VMT is more than the regional average VMT

    o If project is inconsistent with city policies

- Land use plans

    o If plan is inconsistent with Plan Bay Area or similar VMT reduction strategy

- Transportation projects

    o If project fails to improve safety and/or operations, including transit operations

    o If physical roadway capacity increases for autos

    o NOTE: All pedestrian, bicycle and transit projects lead to a net decrease in VMT even if they require reallocation or removal of vehicle lanes , and are considered to have a "less than significant" impact

Because of San Francisco's urban nature, most projects in the City would perform better than the regional average for VMT per trip generated, and would be considered to have a "less than significant" impact. Land use plans that are either consistent with a sustainable communities strategy or achieve an equivalent reduction in VMT as projected to result from implementation of a sustainable communities strategy will also result in a "less than significant" impact. Examples of mitigation measures include limiting parking supply, providing car and/or bike sharing or ride sharing programs, and providing transit passes.

In addition to the streamlined transportation review approach, which will be more supportive of environmentally beneficial development and allow for more efficient implementation of transportation projects, the City is developing a TDM program. This TDM program will standardize implementation and improve predictability during the entitlement process, providing developers with an outward facing tool to understand how TDM strategies affect their projects' mode split. A number of TDM toolkit elements are provided as a menu of potential measures for developers to choose from, and developers will be asked to partner with the City to achieve the VMT reduction.

Developers will also have to contribute financially to the TSF to pay their fair share for transportation impacts from new trips. This fee will replace the existing Transit Impact Development Fee (TIDF) and includes market-rate residential development and major institutions.

The City of San Francisco has concluded the cross-agency planning process, and the Board of Supervisors unanimously approved the TSF ordinance on November 3, 2015. The City will continue with the legislative approval process following direction from the State on SB 743, and plans to introduce an ordinance to codify the TDM program; this will set a target reduction in VMT based on the regional transportation plan and will provide technical guidance and structure for monitoring and enforcement. The following steps remain:

- State OPR updates the official Environmental Review Standard

- Public hearing to introduce and adopt Sustainable Travel Legislation

NON-CEQA TRANSPORTATION EVALUATION METRICS

The following section summarizes transportation impact metrics for non-CEQA project evaluation. These are used variously to determine appropriate mitigation efforts, TDM triggers, parking requirements and restrictions, and impact fees. Many of these example jurisdictions still use LOS or conventional trip generation for part of their traffic impact and TDM analysis, and only the best practice elements of their analysis and mitigation are called out.

Cambridge, MA

 The city of Cambridge adopted a Parking and Transportation Demand Management (PTDM) Ordinance[iv] in 1998 (made permanent in 2006) that aims to support mode shift away from single occupancy vehicles and requires TDM measures to be part of new developments when parking is added above a specified threshold. If the development produces five to 19 parking spaces (i.e. a small project), three TDM strategies are required. These may include transit pass subsidies, bicycle parking, changing facilities, carpools/vanpools, or financial incentives not to drive alone. For larger projects with 20 or more parking spaces, a PTDM plan must be drafted by the developer and approved by the Cambridge PTDM office. Sample PTDM measures include providing a transit subsidy, emergency ride home, and hiring Cambridge residents. Large projects are also required to conduct annual monitoring of their PTDM plan reporting on mode share, garage counts, and TDM measure implementation status.

Project sponsors work with the City to set target mode splits and determine monitoring requirements. Project monitoring strategies include employee, resident, and customer surveys to determine mode splits, SOV rate, and parking occupancy. Strategies can also include an assessment of the status of TDM measures. To date, the city's research indicates that 62% of projects have achieved the target mode split[v], leading to a 24% overall reduction in VMT.[vi]

Rockville, MD

The city of Rockville adopted a TDM policy in 2011 to establish a long-term vision for TDM in the city[vii] while working with limited financial resources. Trip generation analysis is required of new developments to estimate a project's potential trip generation. Applicants use a web-based tool to answer a number of questions including the development site's transit and pedestrian accessibility, land use mix, and density. If any of the peak hour trips (AM peak, PM peak, and weekend peak) is over 30 trips, additional study and possibly mitigation is necessary. If all peak hour estimates are under 30 trips, a short onsite transportation report is the only requirement mandated by the city. At 30+ trips, a traffic analysis, on-site transportation report, and a Transportation Improvement Fee (funds multimodal improvements throughout the City) are required. At 125+ trips, a trip reduction plan is required with required annual traffic counts tracking progress. At 350+ trips, a proportional Transportation Improvement Contribution is required to correct multimodal connectivity and accessibility gaps around the development site. Although the city tracks payment of TDM fees, the City does not actively monitor the progress of individual trip reduction goals, leaving the results of the program difficult to conclude.

Yolo and Sacramento Counties, CA

Both Yolo and Sacramento Counties have defined VMT thresholds in their general plans, and have modified LOS policies to reflect local development goals. For example, Yolo County requires

LOS C in rural and agricultural areas to limit growth, while LOC E and F are accepted in many growth priority areas and on specific roadways.

This approach is applied to specific plan areas to support growth boundaries and local development goals. For example, Yolo County's Dunnigan Specific Plan requires that LOS shall not be allowed to worsen beyond LOS E except where specified, and calls for a maximum of VMT generated per household per weekday through implementation of TDM, land use, and jobs/housing match policies and programs[viii].

Alexandria, VA

In 1987, Alexandria enacted its original Transportation Management Plan (TMP) ordinance (updated most recently in 2014) to reduce the impact of large projects on automobile traffic throughout the city[ix]. A development's size (measurements depending on land use) triggers TDM requirements in the hope of increasing the city's non-auto mode share. If a development is of sufficient size (e.g. 20 dwelling units or more for residential developments, 10,000 or more square feet for office or retail), it is categorized as Tier 1, 2, or 3. Tier 1 requires developments to contribute to a transportation demand management fund, which allows the City to invest in various TDM strategies throughout the area. Larger developments in Tier 3 are required to enact and monitor a separate and individual transportation management plan or partner with an adjacent TMP, while Tier 2 projects can either contribute to the TDM plan or partner with an adjacent TMP. Each development with a TMP must complete annual surveys of residents or employees (depending on development type) to track the facility's progress.

Brookline, MA

In 2015, the Town of Brookline, MA commissioned a proposal to implement a revised TDM ordinance. The existing Brookline TDM ordinance uses developments of 100,000 square feet or larger to trigger but the proposal recommended a lower threshold to capture more projects and pointed out the limitations of square footage for residential projects. New proposed trigger minimums include a residential trigger of five units or more and a non-residential trigger of 5,000 square feet or greater. In addition, the proposal outlines other triggers including a change of use or expansion that meets the residential and non-residential requirements above.[x]

In addition to the current TDM ordinance trigger additions, the proposal outlines triggers based on the accessibility of the new development's location. Accessibility for bicycling, walking, and transit would be assessed throughout the city and neighborhoods or census tracts would be given a grade for each. Using a point system, developments could then be categorized by size and location to create TDM plans that are context-specific with a target trip-reduction score.

CONCLUSIONS

The City of Oakland is in an opportune position to capitalize on some of these best practices and strategies employed by the above examples, some of which have just recently been implemented. Below is a chart of the metrics that have been discussed in this memo, the cities that have implemented these metrics, and the associated advantages and disadvantages of each.

Table 2: Metrics to Consider in Oakland

Metric	Jurisdiction	Advantages	Limitations
Vehicle miles traveled (VMT)	Pasadena, CA San Francisco, CA	Measure based on local trip distance assumptions Aligns with potential state guidance Accounts for the range of impacts of trip generation Allows for assumption that all pedestrian and bicycle transportation projects lead to a net decrease in VMT	Expensive to implement Difficult to verify Complex
Proximity and quality of local bike and pedestrian networks	Pasadena, CA	Addresses impacts and access for non-motorized travel	Qualitative and may be difficult to apply uniformly
Parking thresholds	Cambridge, MA	Easy to measure Easy to verify Inexpensive to implement Objective trigger Effective impact on mode splits	Doesn't account for mode split Measures a symptom of SOVs, not actual trips
Trip generation	Rockville, MD	Inexpensive to implement Focused on direct impact of project (trips)	High potential for inaccurate reporting Difficult to verify Questionable measurement
VMT + Modified Level of Service (Los)	Yolo County, CA Sacramento County, CA	Flexible Context-sensitive (different metrics for different land uses) Partially aligns with potential state guidance Accounts for the range of impacts of trip generation	Complex Difficult to measure Expensive to Implement sss
Development size	Alexandria, VA	Easy to measure Easy to verify Inexpensive to implement Affects all land use types More equitable	Doesn't account for mode split Arbitrary tier thresholds
Development size, use change or expansion	Brookline, MA	Easy to measure Comprehensive Transparent Allows for flexibility	Complex

[i] Yamarone, Mark. *City of Pasadena Department of Transportation. Measuring Mobility In Pasadena Beyond Auto LOS* [PowerPoint slides]. 2015.

[ii] San Francisco County Transportation Authority (SFCTA). Interagency presentation on *Transportation Sustainability Program*, May 2015.

[iii] Nelson\Nygaard interview with SFCTA staff, January 2015.

[iv] Cambridge Community Development Department. *Parking and Transportation Demand Management Ordinance.* 2015. http://www.cambridgema.gov/CDD/Transportation/fordevelopers/ptdm.aspx.

[v] Groll, Stephanie. 2011 PTDM Monitoring. April 2012. http://www.cambridgema.gov/~/media/Files/CDD/Transportation/PTDM/ptdm_monitoring_report_20120409.pdf

[vi] S. Groll, personal communication, November 12, 2015.

[vii] City of Rockville. *Transportation Demand Management Plan.* 2011. http://www.rockvillemd.gov/documentcenter/view/591.

[viii] County of Yolo. 2030 Countywide General Plan. 2009.

[ix] City of Alexandria, Virginia. *Transportation Management Plans.* 2015. http://www.alexandriava.gov/tes/info/default.aspx?id=6556.

[x] Nelson\Nygaard. TDM Strategy Recommendations for the Town of Brookline. January 2015.