TRANSPORTATION TRANSFORMED

NEW REGULATIONS AND NEW ENPHASES ON SAFETY AND MULTIMODALITY ARE RESHAPING THE PARAMETERS OF CEQA TRANSPORTATION ANALYSES



AEP STATE CONFERENCE , SAN FRANCISCO

SPEAKERS

- Fernando Sotelo, PE, PTP Senior Associate, PlaceWorks
- Meghan Macias, PE Transportation Planning Manager, TranspoGroup
- Wade Wietgrefe, AICP Senior Planner, City of San Francisco
- Mike Bagheri, PE, TE Transportation Manager, City of Pasadena

OVERVIEW

- CHANGING ENVIRONMENT, LEGISLATION UPDATES
- NEW TOOLS AND METHODS
- TRENDS AND TIA REQUIREMENTS
- COMPLETE STREETS AND SAFETY
- PASADENA'S VMT EXPERIENCE
- SAN FRANCISCO CASE STUDIES
- Q&A

CHANGING ENVIRONMENT

- URBANIZATION
- INCREASED PUBLIC
 INVOLVEMENT
- SMART GROWTH AND MULTI-MODAL TRANSPORTATION
- SPOTLIGHT ON
 SUSTAINABILITY







LEGISLATION, PLANS AND GUIDELINES

- SB 743
 - VMT metrics
 - o Safety



- Induced Travel
- COMPLETE STREETS ACT (AB 1358)
- LONG RANGE PLANS
- TRANSPORTATION **STUDY GUIDELINES UPDATES**





Prosperous Economy

EMERGING TOPICS

- SAFETY
 - Safe Routes to Schools
 - o Vision Zero
- NEIGHBORHOOD TRAFFIC
- MaaS/ TNC
- AUTONOMOUS VEHICLES







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IMPROVED TOOLBOX

- ITE Trip Generation Manual Update
- Trip Generation for Mixed Uses
- Manuals and Guidelines Constantly Evolving
- More Sophisticated Traffic Models:
 - Trip Based to Activity-Based Models
 - Advanced mode choice components -bike, pedestrian, transit boardings

PEDESTRIAN EVALUATIONS

- Normally an Afterthought
- Qualitative Analyses
- Tools Available:
 - o MMLOS
 - o PEQI
 - o HCM





PEQI

Key Indicators:

- Intersection Safety
- Traffic Volume
- Street Design
- Land Use
- Perceived Safety

Provensi Sen Francisco Demostrate Demostrate Audits under the set of the set

Source: San Francisco Department of Public Health



HCM 2010

PEDESTRIAN LOS-URBAN STREETS

- Pedestrian Space
- Pedestrian Speed
- Travel Environment

Pedestrian		LOS by Average Pedestrian Space (ft ² / p)					
LOS Score ¹	>60	>40-60	>24-40	>15-24	>8.0-15	≤ 8.0	
≤ 2.00	A	В	С	D	E	F	
> 2.00-2.75	В	В	С	D	E	F	
> 2.75-3.50	С	С	С	D	E	F	
> 3.50-4.25	D	D	D	D	E	F	
> 4.25-5.00	Е	E	E	E	E	F	
> 5.00	F	F	F	F	F	F	
Note:							
1 Pedestrian LOS scores are determined using mathematical equations modeling pedestrian perceptions of sidewalk operations. A lower pedestrian LOS score represents a "better" quality of service.							

Source: Transportation Research Board, 2010 Highway Capacity Manual (Washington, D.C., 2010) p16-8



MULTI-MODAL EXAMPLE

- Vehicular Levels of Service:
 - Intersection
 - Roadway Segments
 - Freeway Ramps
 - Freeway Mainline
- VMT

- Mode Share
- Pedestrian LOS
- Bicycle LOS
- Transit LOS

Summary	of	Metri	ics	Tabl	e

	Existing	2030			
Comparative Metric	Conditions	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Mode Share					
% Drive Alone	61.5%	59.9%	60.0%	59.7%	58.5%
Transit Use					
Number of Transit Trips	29,494	44,503	41,659	43,820	51,975
Vehicle Miles Travelled (VMT)					
Total Palo Alto VMT	5,320,931	5,914,158	5,741,393	5,853,201	5,788,497
VMT Per Capita					
Palo Alto VMT per capita	33.0	32.5	32.3	32.1	30.9
Intersection Level of Service					
Number of Impacted Intersections		6	3	4	5

Source: Hexagon Transportation Consultants, Inc.,

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A new era of advancing transportation solutions



PRESENTATION OUTLINE

- 1. Overview of changes to Transportation Impact Studies
- 2. Define minimum requirements

- 3. Discuss the importance of thresholds.
- 4. Share how complete streets can address safety and reduce vehicle travel



How have studies changed?

Short answer: Not much



TIA REQUIREMENTS

CEQA Guidelines Appendix G (Transportation/Traffic)

Would the project:

- Conflict with an applicable *plan, ordinance or policy establishing measures of* <u>*effectiveness*</u> for the performance of the circulation system...
- Conflict with an applicable *congestion management program*...
- Result in a change in air traffic patterns...
- Substantially increase hazards due to a design feature...
- Result in inadequate emergency access?
- Conflict with *adopted policies, plans, or programs* regarding public transit, bicycle, or pedestrian facilities...



TIA REQUIREMENTS

CEQA Guidelines 15064.7

- (a) Each public agency is encouraged to develop and publish thresholds of significance...
- (a) A Threshold of significance is an identifiable, quantitative, qualitative or performance level of a particular environmental effect...
- (b) Thresholds of significance...must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence.

CHANGES COMING WITH SB743

New Appendix G Checklist Questions

- a) Conflict with a plan, ordinance or policy addressing the safety or performance of the circulation system, including transit, roadways, bicycle lanes and pedestrian paths (except for automobile level of service)?
- b) Cause substantial additional vehicle miles traveled (per capita, per service population, or other appropriate efficiency measure)?
- c) Substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e. by adding new mixed-flow lanes) or by adding new roadways to the network?
- d) Result in inadequate emergency access?

WHAT DOES OPR RECOMMEND

Technical Advisory on Evaluating Transportation Impacts in CEQA:

- Emphasis on evaluating safety
- Departs from traditional emphasis on streamlining automobile flow and accommodating driver error.
- Updated approach focuses on three strategies:
 - Reduce speed and increase driver attention
 - Protect vulnerable road users
 - Reduce overall VMT and sprawl



How do Complete Streets Contribute to Safety

- Implement design features that shelter pedestrians
- Encourages safer bicycling behavior
- Reduces speed



Source: Smart Growth America, National Complete Streets Coalition



SPEED AND SAFETY



CALIFORNIA TRAFFIC FATALITIES

According to NHTSA:

- There were 3,176 total traffic fatalities in California in 2015
- Of these 742 fatalities were pedestrians and 129 were bicyclists
- Pedestrians and bicyclists make up a disproportionate share of fatalities
- Low income and people of color are affected at higher rates



SAFETY AND EQUITY

Children Killed While Walking



Dangerous by Design, 2011 © 2015 Safe Routes to School National Partnership





SAFETY AND EQUITY

Communities with Sidewalks



Bridging the Gap, Income Disparities in Street Features that Encourage Walking, 2012

© 2015 Safe Routes to School National Partnership



Photo: ADOT



SAFETY AND EQUITY

Pedestrian deaths by race/ethnicity relative to U.S. population, 2005-2014



Source: Smart Growth America, National Complete Streets Coalition

WHY IS SAFETY IMPORTANT



A PERSONAL PERSPECTIVE ON SAFETY





A PERSONAL PERSPECTIVE ON SAFETY







Source: Smart Growth America National Complete Streets Coalition



Source: Smart Growth America National Complete Streets Coalition



Source: Smart Growth America National Complete Streets Coalition

COMPLETE STREETS IMPLEMENTATION AND CEQA







Source: Model Design Manual for Living Streets, 2011

What types of project elements are affected by project improvements?

- Intersection Crossing Distance (mitigation at intersections)
- Access Management
- Interface with roadway network
- Roadway network design (subdivions, Master Plans, etc.)



COMPLETE STREETS IMPLEMENTATION AND CEQA

Practical Ways to Include Safety into a TIA?

- Include pedestrian and bicycle counts
- Evaluate pedestrians and bicycles when evaluating intersection LOS
- Look for opportunities to improve the site plan
- Consolidate driveways where possible





THRESHOLDS ARE IMPORTANT

Agencies with thresholds that support Complete Streets:

- Pasadena
- San Francisco
- San Marcos
- Oakland
- San Luis Obispo
- Berkeley









City of Pasadena

City of Pasadena's Transportation Impact Analysis Guidelines-VMT Experience

Mike Bagheri, P.E. Transportation Manager





City of Pasadena Department of Transportation



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City of Pasadena Department of Transportation

Guiding Principles

- Growth Will Be Targeted to Serve Community Needs and Enhance the Quality of Life,
- Change Will Be Harmonized to Preserve Pasadena's Historic Character and Environment,
- Economic Vitality Will Be Promoted To Provide Jobs, Services, Revenues And Opportunities,
- Pasadena Will Be Promoted as a Healthy Family Community,
- Pasadena Will Be A City Where People Can Circulate Without Cars,
- Pasadena Will Be Promoted as a Cultural, Scientific, Corporate, Entertainment and Educational Center for the Region,
- Community Participation Will Be A Permanent Part Of Achieving A Greater City.

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Aligning Metrics and Policies

City of Pasadena Department of Transportation

Decreasing Emphasis

- Evaluating only street operations and traffic volume changes
 - Individual intersection performance
 - Level of Service
- Mitigating only impacts to auto travel
 - > Adding vehicular capacity via street widening

Increasing Emphasis

- Reduce Greenhouse Gas
 - > Vehicle Miles of Travel metrics
- Elevating priorities for transit, pedestrian and bicycle travel
 - Enhance conditions for vulnerable users
- Network performance
 - > Travel time reliability
 - > Speed management
 - PAJADENA



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- 2010 Highway Capacity Manual Multi-Modal Level of Service (MMLOS) approach was used to assess new development projects
- Smoother transition to SB743



General Plan 2015

City of Pasadena Department of Transportation

Guiding Principles

- Target growth to Central District and transit/neighborhood villages
- Preserve historic character and environment
- Promote economic vitality
- A healthy family community
- A city where people can circulate without cars
- Cultural, scientific, corporate, entertainment and educational center for the region
- Community participation
- Commitment to public education

Mobility Elem. Objectives

- Enhance livability
- Encourage walking, biking, transit, and other alternatives to motor vehicles
- Create a supportive climate for economic viability



Pasadena's New Metrics

City of Pasadena Department of Transportation

Accessibility and Environmental Performance

- VMT per capita
- Vehicle Trips (VT) per capita
- Service population is residents + employees
- Thresholds are existing citywide levels

Promote Pedestrian, Bicycle and Transit Mobility

- Pedestrian access to destinations
- Access to Transit routes (by frequency)
- Access to Bike facilities (by type)
- Thresholds are ¼ mile to quality facilities

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Adopted Metrics with CEQA Thresholds

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METRIC		DESCRIPTION	IMPACT THRESHOLD	
1.	VMT Per Capita	Vehicle Miles Traveled (VMT) in the City of Pasadena per service population (population + jobs).	CEQA Threshold: An increase over existing Citywide VMT per Capita of 22.6	
2.	VT Per Capita	Vehicle Trips (VT) in the City of Pasadena per service population (population + jobs).	CEQA Threshold: An increase over existing Citywide VT per Capita of 2.8	
3.	Proximity and Quality of Bicycle Network	Percent of service population (population + jobs) within a quarter mile of each of bicycle facility types	CEQA Threshold: Any decrease in existing citywide 31.7% of service population (population + jobs) within a quarter mile of Level 1 or 2 Bike Facilities.	
4.	Proximity and Quality of Transit Network	Percent of service population (population + jobs) located within a quarter mile of transit facility types.	CEQA Threshold: Any decrease in existing citywide 66.6% of service population (population + jobs) within a quarter mile of Level 1 or 2 Transit Facilities.	
5.	Pedestrian Accessibility	The Pedestrian Accessibility Score uses the mix of destinations, and a network-based walk shed to evaluate walkability	CEQA Threshold: Any decrease in the Citywide Pedestrian Accessibility Score	

Transportation Impact Analysis Guidelines

City of Pasadena Department of Transportation



TRANSPORTATION IMPACT ANALYSIS CURRENT PRACTICE & GUIDELINES

Prepared by:

Transportation Complete Streets Division Department of Transportation

20150120

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- Threshold for requiring
 Transportation Analysis
- Adopted CEQA Metrics & Thresholds
- Project Review Metrics & Caps (Approval Conditions)
 - > Auto Level of Service (LOS)
 - > Street Segment Analysis
 - Pedestrian Environmental Quality Index (PEQI)
 - Bicycle Environmental Quality Index (BEQI)

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Thresholds for Determining Level of Transportation Review of Projects

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	CEQA Analysis		
TYPE OF PROJECT	EXEMPTION SIGNIFICANC		Category 2: COMMUNITYWIDE SIGNIFICANCE
Residential (Net # of units)	10 units or less	11 – 49 units	50+ units
Non- Residential use(Net)	10,000 Sq. Ft or less than 300 daily trips	10,001 to 49,999 Sq. Ft	50,000+ Sq. Ft

Pasadena Travel Demand Model

City of Pasadena Department of Transportation

- Built on Southern California Association of Government's (SCAG) regional model using TransCAD
- On average, 10 Pasadena TAZs within 1 SCAG's TAZ
- 349 TAZs covering Pasadena and 139 TAZ's covering sounding areas
- 25 land-use types used in the model
- Eight trip purposes used in the model

• Staff uses the model for transportation impact analysis

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Recent EIRs Based on Modified Metrics

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- General Plan Land Use Element and Mobility Element Update FEIR (approved)
- Rose Bowl Music and Arts Festival FEIR (approved)
- 500-room Hotel near Pasadena City College FEIR (PC recommend approval by Council)
 - > Bike Impact mitigated through fair share contribution to planned bicycle facility
- 150-room Hotel near Civic Center DEIR (approved)

Case Study - Medical Offices Project

City of Pasadena Department of Transportation

Proposed Medical Offices in the East Pasadena

- 224K Sq. Ft Medical Offices
- VMT of 32.3 > 22.6 Impact
- VT 3.0 > 2.8 Impact
- Pedestrian Accessibility Impact

Recommended Mix of Land uses to eliminate impacts

 200 Senior Citizen Housing and 200K Sq. Ft of Medical Offices

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- Relatively high thresholds for study limits the burden on small projects
- Streamlines the CEQA process for urban infill and TOD projects
- Shifts the focus of analysis from traffic congestion to more holistic environmental impacts (air quality/GHG emission, urban sprawl considerations, etc.)
- Allows for congestion to be considered outside the confines of CEQA

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Challenges - General

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- Learning curve/lack of practical experience
- Unfamiliar to community and decision makers
- Limited mitigation options
- CMP still requires LOS analysis for certain facilities
- People are still concerned with traffic congestion

🚳 Challenges – Technical

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- Model output contains limited information
- Static baseline that requires regular updating
- Existing land use in model doesn't always match what is on the ground
- Can be difficult to predict outcomes (reducing project scale does not always reduce impacts)



Lessons Learned

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Good Fit for Pasadena

- Built-out City with In-Fill Opportunities
- Metrics Support General Plan Goals and Policies
 - Emphasis on getting around without cars

Notes on Implementation

- Transportation Impact Fee already in place
 - > Updating to include bicycle and walking network
- Investment in forecasting model platform/process
 - Linked to Land Management System
 - Staff development to operate and update

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Notes on Implementation

- Worked with Caltrans to incorporate state highway concerns into analytics
 - > Aligned with project circulation review
- Modified metrics for project circulation review
 - > Traffic intrusion
 - > Traffic operations
 - > Pedestrian/Bicycle conditions





City of Pasadena Department of Transportation

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What Matters



ConnectSF



Sustainable San Francisco

Transportation Review



Association of Environmental Professionals

2017 CEQA

California Environmental Quality Act





Statute and Guidelines

VEHICLE MILES TRAVELED (VMT)



CEQA Transportation Review



Walking

Hazards



Bicycling

Hazards



Transit



Loading Hazards

Cumulative for all topics

CEQA Transportation Review (Continued)



Emergency Vehicles

Accessibility



Traffic

Hazards



Construction

Interference and accessibility that leads to hazards



Parking (sort of)

Substantial parking deficit that leads to hazards

Cumulative for all topics

Travel Demand





Fury, the SF-CHAMP Mascot

Development Example – 1500 Mission Street



Development Example – 1500 Mission Street



Infrastructure Example – Safer Market Street



Transit vehicles, bicycles, taxis, and licensed commercial vehicles exempt from restrictions



Area Plan Example – Central SoMa



Sustainable San Francisco

Transportation Impact Analysis Guidelines Updates Underway





Capacity?











THANK YOU



Planning

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NOVOGRADAC

1.65%

III State

- Same

ALC: NO.

QUESTIONS?

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