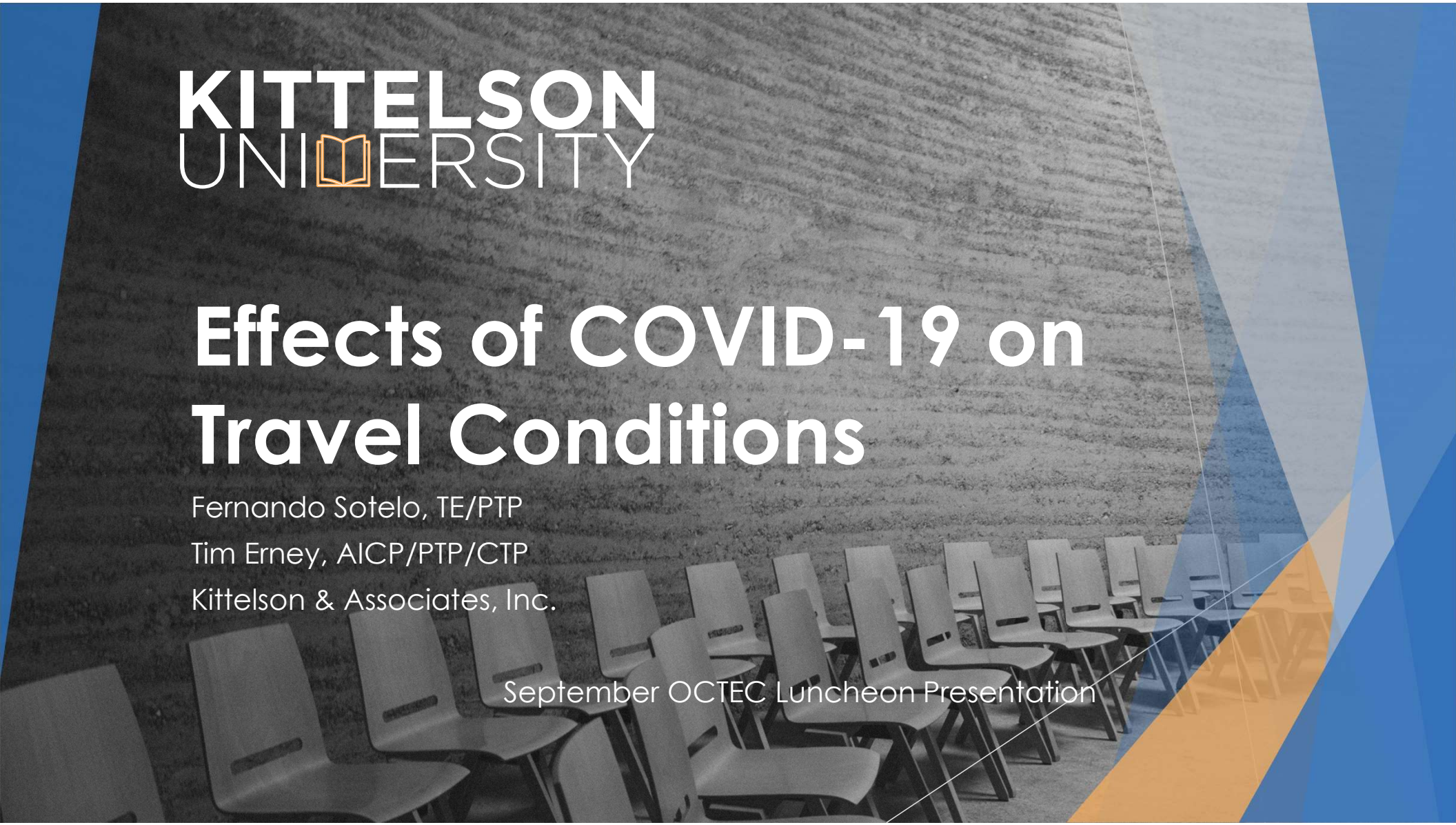

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Effects of COVID-19 on Travel Conditions

Fernando Sotelo, TE/PTP
Tim Erney, AICP/PTP/CTP
Kittelson & Associates, Inc.

September OCTEC Luncheon Presentation

INTRODUCTIONS

- Speakers:
  - Fernando Sotelo, Associate Engineer
  - Tim Erney, Senior Principal/West Region Business Development Leader
- Topic:
  - Effects of COVID-19 on Travel Conditions
- Presentations:
  - Changes to Travel Patterns and Mode Choice
  - Means to Assess Baseline Conditions

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CHANGES TO TRAVEL PATTERNS AND MODE CHOICE

- Why is this important:
  - Data is used to determine "existing" conditions for traffic volumes, transit ridership, parking occupancy, and other elements
  - Used for funding, grant applications, environmental review
  - Inputs into trip generation studies, travel demand models
  - Potential effects to long-term programming and implementation of major infrastructure projects
  - Changes to peak and off-peak usage and resulting right-of-way needs
  - New vision of public streets
  - Reductions in GHG and emissions

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Telecommuting

- Spring:
  - Most professional services switched to telecommuting model
  - New online services developed (e.g., tele-doc)
  - Closure of shared-work spaces (e.g., WeWork)
- Now:
  - Limited returns to offices
  - Distance learning and part-time school attendance
- Future:
  - Continue to work from home if/when possible
  - Variable work hours/days commonplace
  - Reduction in traditional commute activities

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Driving

- Spring:
  - Significantly lower volumes, especially during peak commute hours
  - Widespread closure of schools, workplaces, commercial establishments
  - Common to see 50–75% reduction in volumes
- Now:
  - Volumes have rebounded, but still 25% lower than last year
  - Increased weekend activity
- Future:
  - Volumes continue to be lower until full reopening
  - Potential decrease due to more telecommuting
  - Potential increase due to decreased transit usage and air travel

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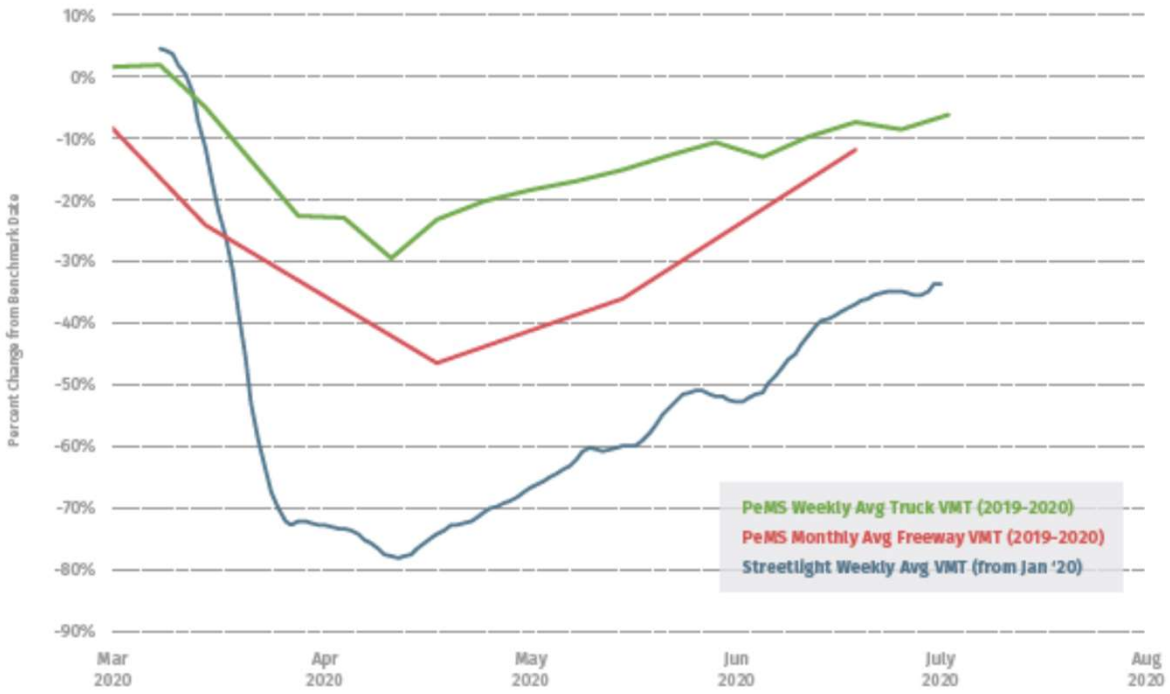
Driving Data

FIGURE 2 SCAG Region Percent Change in VMT from Benchmark by Week/Month (2019-2020)



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Public Transit

- Spring:
  - Significantly lower ridership, typically over 75% decrease
  - Also hurt by closures of businesses and school
  - Corresponding cuts in service (hours and frequency); closure of small systems
- Now:
  - Struggle to provide right level of service
  - Funding gaps due to reduced farebox recovery
- Future:
  - May take years to recover lost ridership
  - Change in business models (e.g., Metro may eliminate fares)
  - May also be affected by telecommuting increases and staggered shifts

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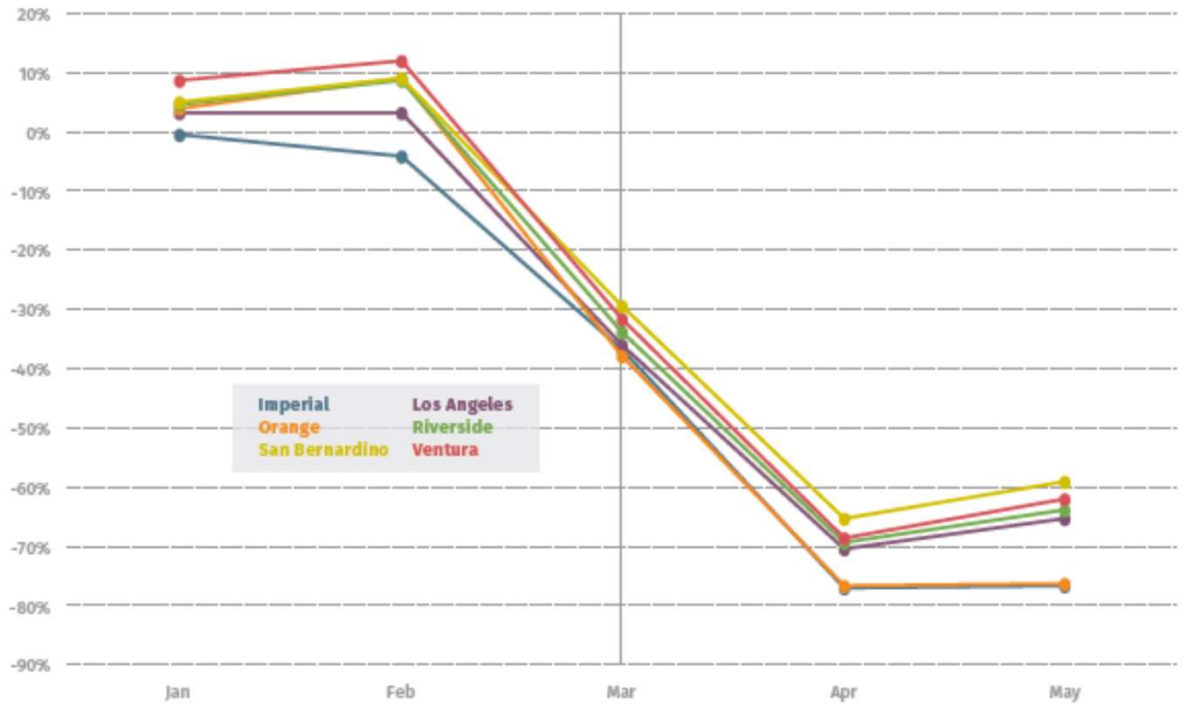
Transit Data

FIGURE 3 Year-Over-Year Bus Ridership Change, Summarized by County (2019 vs. 2020)



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TNC/Rideshare

- Spring:
  - Significantly lower usage, including suspension of shared-rides
  - Also hurt by closures of businesses and entertainment
  - Between 70–80% decrease in rides
- Now:
  - Safety measures for workers and riders established
  - Branching out to other services (e.g., UberEats)
- Future:
  - Ridership remain lower until full reopening
  - Uncertain effect of Assembly Bill (AB) 5 on long-term viability in California
  - May capture a higher percentage of transit riders

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Cycling and Scootering

- Spring:
  - 50-100% increases in activities, especially for recreational purposes
  - Pauses in activities for bike- and scooter-share companies
  - Replacement of trips on transit and reduced conflicts with vehicles
- Now:
  - Continued high bicycle usage levels
  - Installation of bike lanes/slow streets to accommodate increased demand
  - Reopening of shared vehicles, with increased safety measures
- Future:
  - Likely keep some gains in activity
  - Directly correlated to transit, telecommuting, TNC trends

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Deliveries

- Spring:
  - Surge in on-line shopping
  - Increase in grocery/food deliveries (>50% increases)
  - Directly related to "contactless" experiences
- Now:
  - Continued levels of deliveries as retail sector still not fully open
  - Leveling-off of grocery/food deliveries
- Future:
  - Struggles of retail sector will continue on-line shopping trends
  - Need for better planning of curb space and parking areas for deliveries and queuing
  - Accelerated implementation of autonomous deliveries

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Estimation of Potential Effects

- Kittelson conducted travel survey, including 1,000+ commuters and 25+ industries across 40+ states
- Telecommuting:
  - 60% of employees would like to work from home frequently/all the time (only 15% not at all)
  - 75% of employers would be willing to accommodate employees who wanted to telecommute
  - Varies significantly by industry
- Mode of travel:
  - 22% of employees planned to change their mode of travel when returning to work
    - Slight increase in auto (66% to 70%)
    - Big decrease in transit (20% to 11%)
    - Increase in walk/bike (14% to 19%)

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MEANS TO ACCESS BASELINE CONDITIONS

- Why is this important:
  - Key data for transportation studies:
    - Design
    - Planning
    - Traffic Impact Studies
  - Long time to return to normal
  - New equilibrium?

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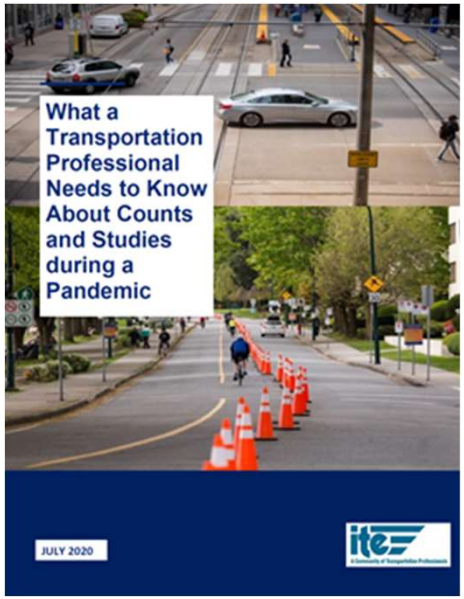
Resources




WHITE PAPER

ESTIMATING TRAFFIC VOLUMES UNDER COVID-19 PANDEMIC CONDITIONS

APRIL 2, 2020

Introduction: There's No Traffic!

We recently shared our view that the progression of transportation projects should not be stymied by an inability to collect field data representative of normal conditions. We offered broad ideas responding to a question on the minds of many practitioners: How can important projects that rely on field-collected volume data continue?

How can important projects that rely on field-collected volume data continue?

This white paper expands on the themes and ideas shared in that article, identifying tools, resources, and methods for practitioners to consider in developing reasonable estimates of existing and future travel demand.

While important to slow the spread of the COVID-19 pandemic, a prolonged period of social distancing gives rise to several challenges for transportation professionals:

- Important field-based data collection activities such as road tube counts, intersection turning movement counts, and origin-destination surveys will not yield usable estimates of non-pandemic traffic conditions during this period of disruption.
- At least some amount of permanent travel demand/pattern change seems likely to remain after the pandemic has run its course. Both individuals and institutions have opportunities and incentives to learn from the distance learning and remote work experiences that have been forced upon them by the pandemic. Both groups can be expected to try to minimize their future risks by implementing some permanent behavioral changes with respect to when, where, why, and how they travel. Initial anecdotal commentary seems to support this prediction.
- The pandemic has already been so disruptive to the national and world economies that a recession of some duration is expected. Recessions as well as overheated economies probably have little effect on 20-year forecasts, but they can significantly affect travel demand forecasts within the 0-5 year timeframe.

Despite these issues, compelling safety, health, and economic reasons remain for transportation agencies to continue moving forward on planning, design and operations projects to every extent possible. Even where "shelter in place" and "stay at home" orders have been issued, transportation is recognized as an essential service that must be maintained. Thus, continuing forward progress is necessary even on projects that rely on field-collected volume data and short-term volume forecasts.

Credible and reproducible methods and procedures are needed that will allow transportation professional to achieve this objective. When time is of the essence, the innovative use of already-available tools and resources is usually the most effective path to achieve such an objective. This approach is also a hallmark of how the transportation profession has addressed unexpected issues in the past. It therefore represents an opportunity to once again meet community and public needs in a timely manner.

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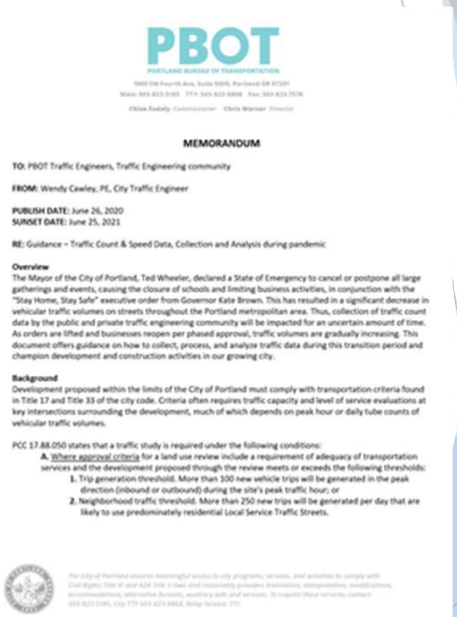
PBOT

PORTLAND BUREAU OF TRANSPORTATION

MEMORANDUM

TO: PBOT Traffic Engineers, Traffic Engineering community

FROM: Wendy Cawley, PE, City Traffic Engineer

PUBLISH DATE: June 26, 2020
SUNSET DATE: June 25, 2021

RE: Guidance – Traffic Count & Speed Data, Collection and Analysis during pandemic

Overview
The Mayor of the City of Portland, Ted Wheeler, declared a State of Emergency to cancel or postpone all large gatherings and events, causing the closure of schools and limiting business activities, in conjunction with the "Stay Home, Stay Safe" executive order from Governor Kate Brown. This has resulted in a significant decrease in vehicular traffic volumes on streets throughout the Portland metropolitan area. Thus, collection of traffic count data by the public and private traffic engineering community will be impacted for an uncertain amount of time. As orders are lifted and businesses reopen per phased approval, traffic volumes are gradually increasing. This document offers guidance on how to collect, process, and analyze traffic data during this transition period and champion development and construction activities in our growing city.

Background
Development proposed within the limits of the City of Portland must comply with transportation criteria found in Title 17 and Title 33 of the city code. Criteria often requires traffic capacity and level of service evaluations at key intersections surrounding the development, much of which depends on peak hour or daily tube counts of vehicular traffic volumes.

PCC 17.88.050 states that a traffic study is required under the following conditions:

A. Where approval criteria for a land use review include a requirement of adequacy of transportation services and the development proposed through the review meets or exceeds the following thresholds:
   1. Trip generation threshold. More than 100 new vehicle trips will be generated in the peak direction (inbound or outbound) during the site's peak traffic hour; or
   2. Neighborhood traffic threshold. More than 250 new trips will be generated per day that are likely to use predominately residential Local Service Traffic Streets.

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Estimating Traffic Volumes Under COVID-19 Pandemic Conditions

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Context and Coordination with Agencies

- Establish Context and Data Needs
  - Type of Analyis and Risk
  - Type of Data
  - Critical Time Periods
- Coordinate with Agencies
  - Develop Methodology
  - Data Collection Policy
  - Validation Efforts
  - Explore Available Data

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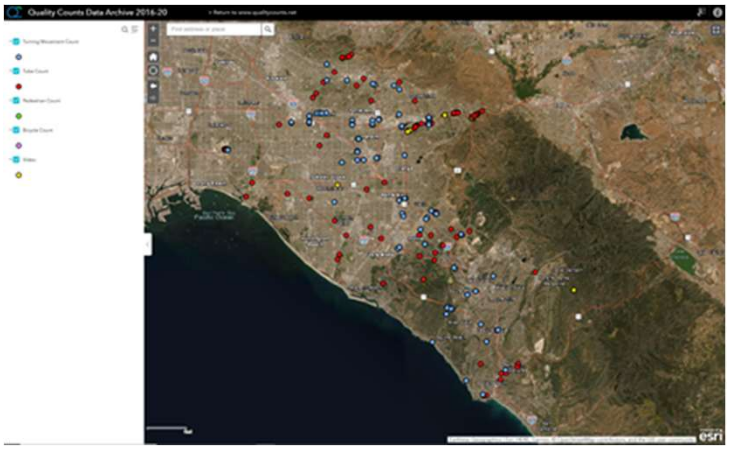
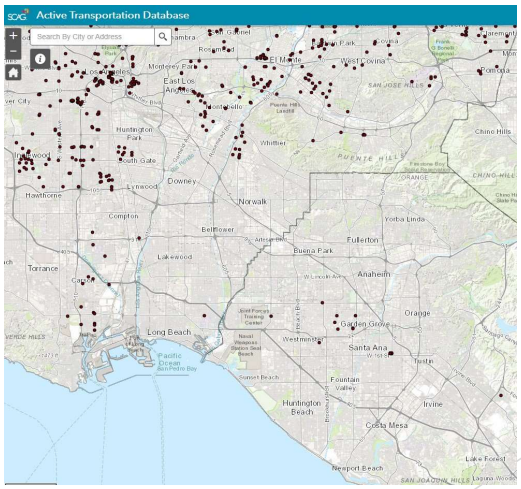
Data Resources

- Agency Data
  - Databases
  - Traffic Operations Centers
  - Count Programs
- External
  - Traffic Collection Firms
  - Plannnig Studies
  - Traffic Studies





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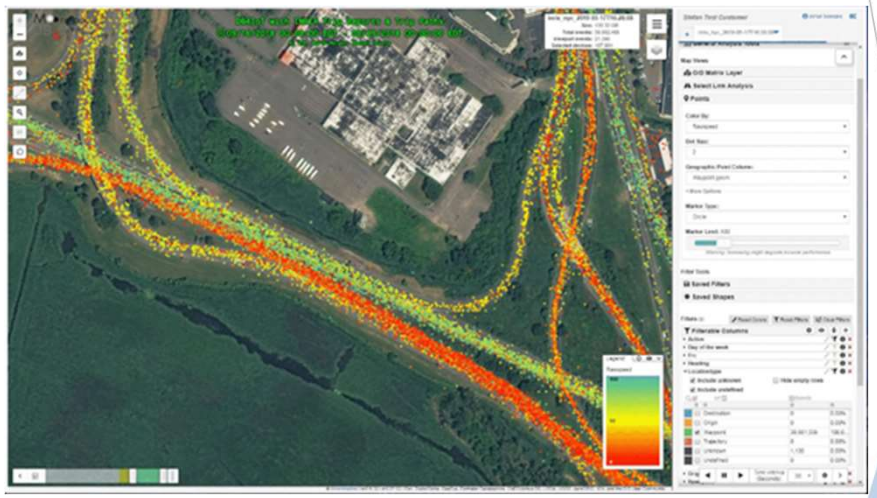
"Big Data"

- O-D, speeds, volumes
- Acquisition Cost
- Adjustments and Validation
- Less reliable in certain settings



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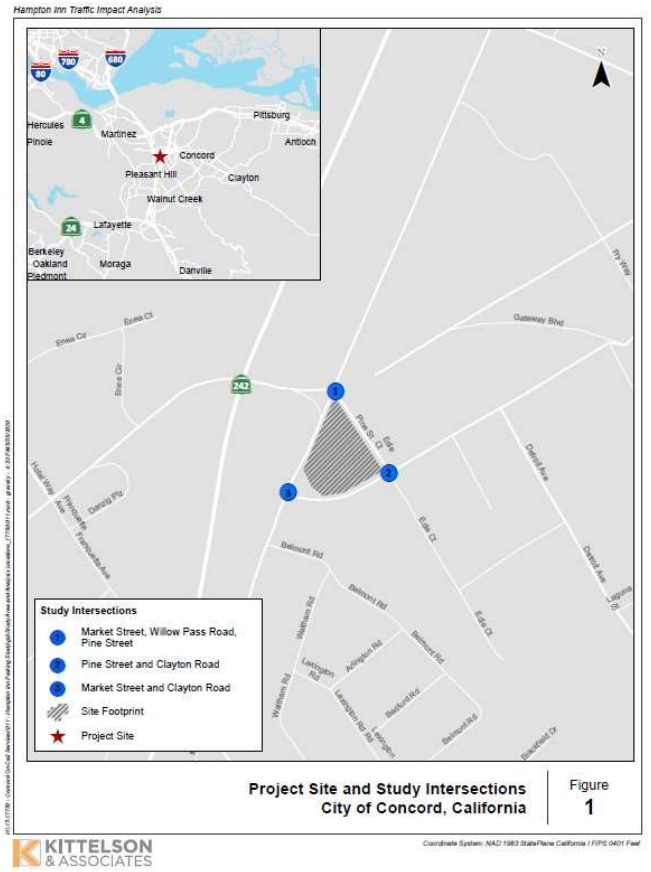
Case Study

- Context and Data Needs
  - Traffic Impact Study
  - Turn movement counts
- Agency Coordination
  - Data gathering and establish methodologies
- Data Sources
  - Lacked counts on minor intersection
- Data Adjustments



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Case Study

Figure 1: Traffic Estimate Methodology

Source: Kittelson & Associates, Inc. using base map from Stamen

Table 1: Calibration Factors for Movements

		Pine SB Approach			Clayton EB Approach			Movements traveling WB on Clayton		
		Pre	Post	%	Pre	Post	%	Pre	Post	%
AM Peak	Total	160	137	86%	916	273	30%	1026	637	62%
AM Peak	Cars	156	124	79%	908	260	29%	1008	615	61%
AM Peak	HT	4	13	325%	8	13	163%	18	22	122%
AM Peak	Bikes	0	0	0%	4	0	0%	2	1	50%
PM Peak	Total	276	246	89%	965	734	76%	1429	697	49%
PM Peak	Cars	270	242	90%	952	720	76%	1418	682	48%
PM Peak	HT	6	4	67%	13	14	108%	11	15	136%
PM Peak	Bikes	7	3	43%	2	8	400%	7	6	86%

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Questions and Discussion

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