Traffic Counts and Reading Intersection Figures

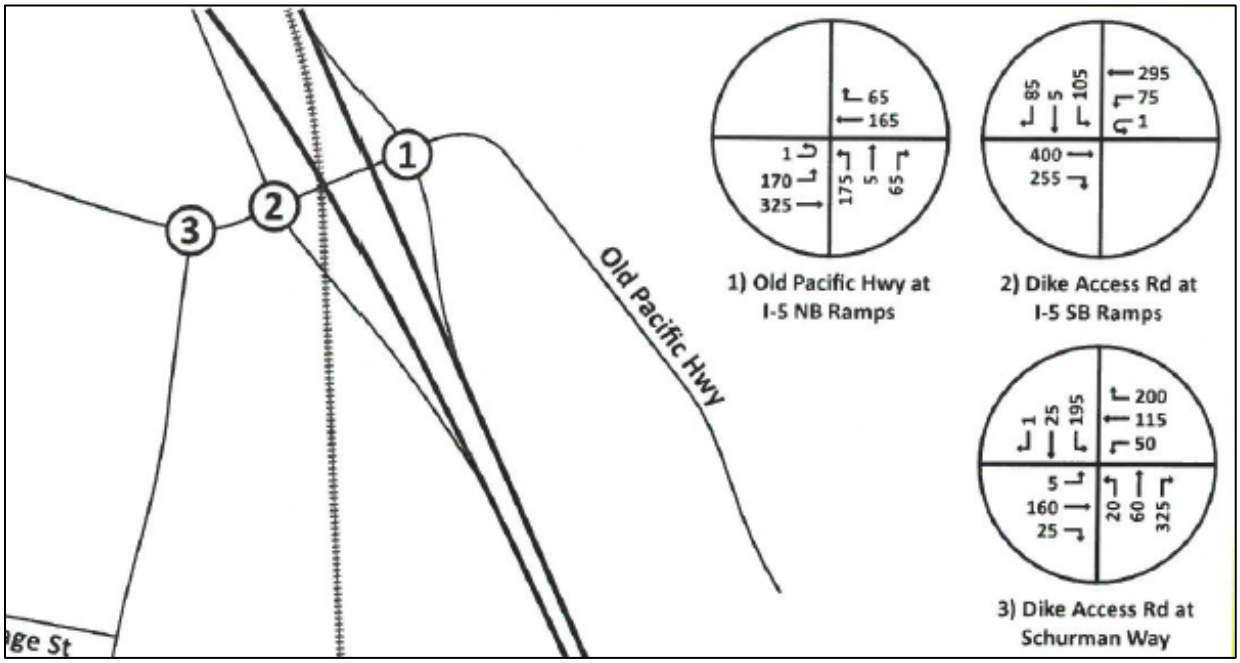
Traffic Counts…how do you know?

When a traffic study is done, often it requires a traffic count to be completed. A "Traffic Count" can be done several ways. Pneumatic tubes stretched across the road can help count cars, determine average speeds, and also monitor when vehicular traffic is occurring.

Traffic counts are also completed using technology (like cell phone data and vehicle GPS data) but historically they have been completed by parking a vehicle at or near an intersection and having a person track all the vehicle activity in the intersection. (Usually on a weekday evening rush hour.)

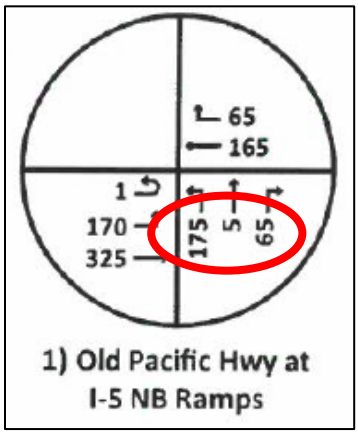
Reading Traffic Reports and Studies

Traffic reports have a map with corresponding figures for how vehicles behave at that intersection. Below is a snapshot of a 2017 map with three intersections and the figures for those intersections.



Intersection 1 is where Old Pacific Highway meets the Northbound I-5 ramps at Exit 22.
Intersection 2 is where Dike Access Road meets the Southbound I-5 Ramps.
To the right, each intersection has a figure with a set of arrows and numbers which represents how many vehicles made each turning movement when they used the intersection.

For example, at intersection 1, (shown below) the Northbound I-5 off ramp had 175 vehicles turn left and go under I-5, 5 vehicles that went through the roundabout and got back onto the I-5 (using the on-ramp going North), and 65 vehicles that turned right onto Old Pacific Highway.



1) Old Pacific Hwy at I-5 NB Ramps

Intersection Leg	Trips
Northbound I-5 Off-ramp	245
Dike Access Road going East	496
Old Pacific Highway going West	230
Northbound I-5 On-ramp	0
	971

By adding all the numbers in the figure, we know that 971 total vehicles used this intersection during the evening rush-hour (called the PM Peak Hour or PMPH) on the day the traffic surveyors were monitoring the intersection in 2017.

What does that information tell me?

Good question.

Traffic engineers use complex computer models to figure out how well an intersection is working by measuring what's called the Level of Service or LOS. (For more LOS information please see our LOS handout.) These computer models generally include most of the major intersections in the city, so that they can analyze how traffic is behaving in the larger street system.

By looking at the figure above, you can see that the largest number of vehicles is coming into the intersection from the West leg of the intersection. Vehicles come under I-5 and about a third of them (170) get onto I-5 Northbound and about two-thirds (325) keep going East and use Old Pacific Highway to go on their way. (1 car went around the roundabout and went back the way they came.)

Combining data about past driving habits and patterns, engineers can model the impacts from new development in a computer model and the engineer can form a pretty accurate picture of how those "new trips" are going to use the street system. They can also accurately analyze the model by connecting the traffic patterns of nearby intersections to make sure that impacts are reviewed across the larger street system.

For example, using the map above, a car traveling East from Woodland High School will first approach Intersection 3, then Intersection 2, and then Intersection 1. The model's data shows that 84% of the East bound traffic continues East to Intersection 2. At Intersection 2, 61% of the Eastbound traffic continues East to Intersection 1, and at Intersection 1, 65% continue East.

Engineers measure the LOS for each intersection for how traffic moves and how long vehicles might be delayed based upon the day of the week and the time a day the intersection is used.

The city also requires that each model include the traffic of other "proposed" or "approved" development projects when traffic is modeled. That way, the model includes not only today's traffic, but all the traffic that we can expect tomorrow as well.

Disclaimer: Only traffic from development within the city limits is modeled. Data for projects outside of the city may not be available for modeling.