

2019

City of Tacoma

Public Works- Traffic

**[24 - HOUR TRAFFIC COUNTS ANALYTICS
APPLICATION]**

Acronyms and Abbreviations

HV – Heavy Vehicle

PHF – Peak Hour Factor

MVT – Movement

EB – Eastbound

WB – Westbound

NB – Northbound

SB – Southbound

EL – East Leg

WL – West Leg

NL – North Leg

SL – South Leg

VPH – Vehicles per hour

#/hr – Counts per hour

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1. INTRODUCTION

The *24 - Hour Traffic Count Analytics* tool is an online traffic data portal which allows users to obtain and access average daily traffic (ADT) counts analytics to support traffic operations and planning exercises. This online traffic data portal contains the field collected 24 - hour traffic volumes, vehicle classifications, and speed data.

The following sections introduce the major functions and provide a step-by-step guide to access your cities traffic count analytics.

2. SELECTING THE TYPE OF DATA

Three (3) TABS Volume (V), Classification, © and Speed (S) are available at the top left of the online traffic data portal.

- The Volume TAB populates the map with the location markers where 24-HR traffic volumes data are available.
- The Classification TAB populates the map with the location markers where 24-HR vehicle classification data are available.
- The Speed TAB populates the map with the location markers where 24-HR speed data are available.

A user will be able to view data in the pop-up (i.e., pop-up is triggered by clicking the location markers available on the map) corresponding to each of these three (3) TABS on the map.

Please see *Figure 1: Volume, Classification and Speed Data TABs*

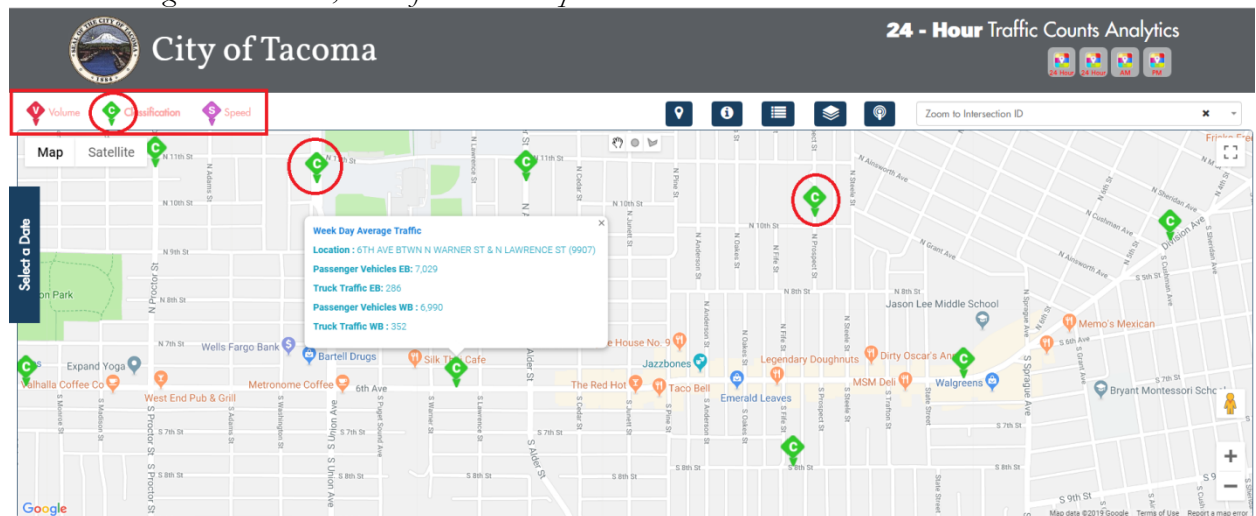


Figure 1: Volume, Classification and Speed Data TABs

3. GETTING TRAFFIC COUNT DATA FOR A LOCATION

STEP 1: SEARCHING FOR A SPECIFIC LOCATION

Two (2) ways to search traffic volumes, classification, and speed data for a specific location.

OPTION 1: SEARCHING BY LOCATION NAME

A drop-down menu and search engine contains all the available traffic count locations and is located at the top right of the online traffic data portal. It includes the count location ID and the location's name. To search for a location, select a location listed in the drop-down menu or type in the keywords, ex: Pacific Ave. *Please see Figure 2: Search for a Location*

Zoning prefix or a suffix such as North/South/East/West is recommended to exclude from the keywords as the prefixes might be abbreviated as N/S/E/W. For example, to search “South Tacoma Way”, the keyword “Tacoma Way” is highly recommended.

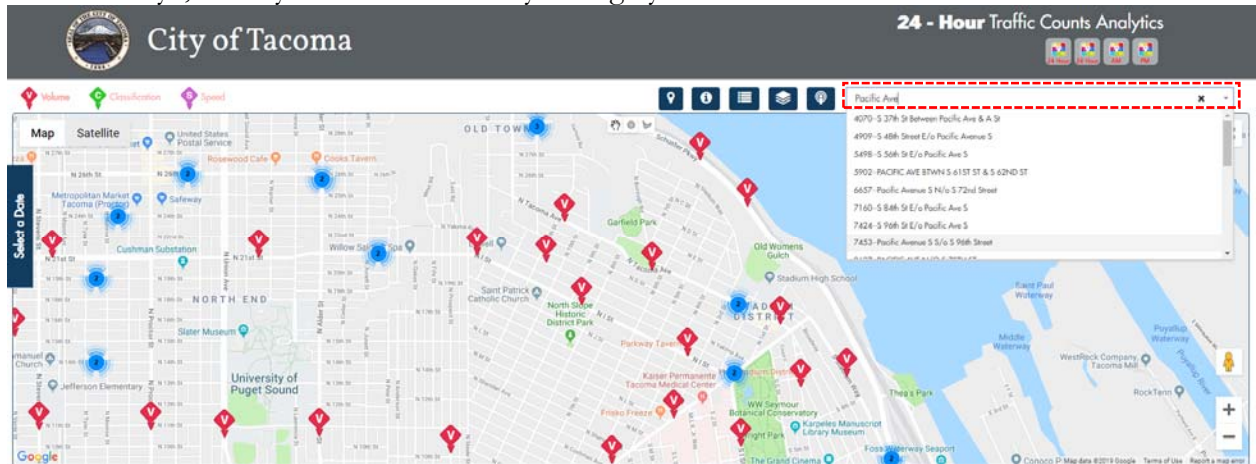


Figure 2: Search for a Location

OPTION 2: NAVIGATE ON THE MAP

An interactive map is available to navigate a desire location. Initially, multiple clusters are displayed on the map. The numerical value displayed on a cluster is the number of traffic counts locations associated with this cluster. *Please see Figure 3: Navigate on the Map*

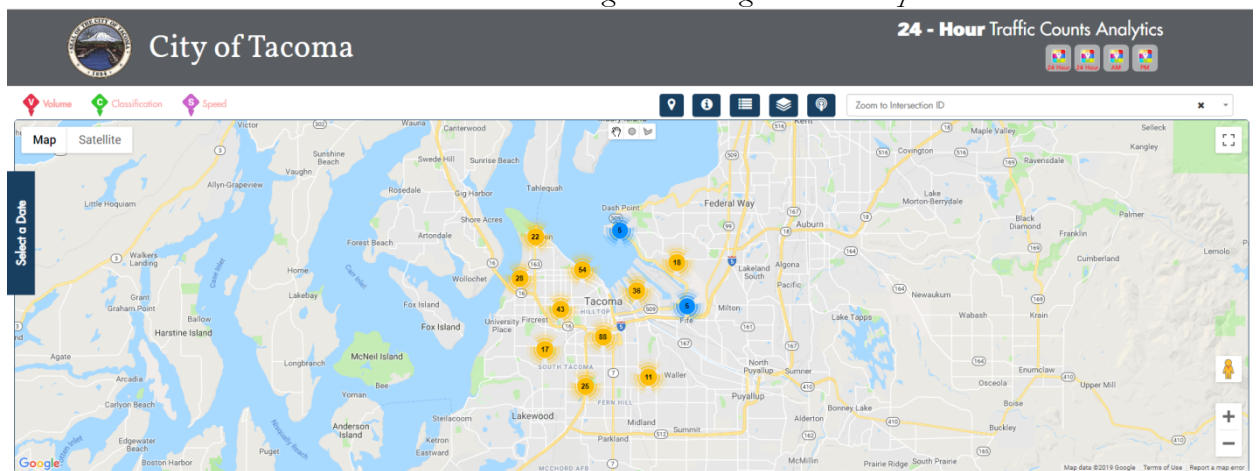


Figure 3: Navigate on the Map

After zooming in, the location markers will appear. “V” represents traffic volumes, “C” represents vehicle classifications and ‘S’ represents speed data. Click a location marker (V, C or S) and the associated traffic data with location description will be displayed on a pop-up. Please see *Figure 4; Location Marker with Pop-up Window*

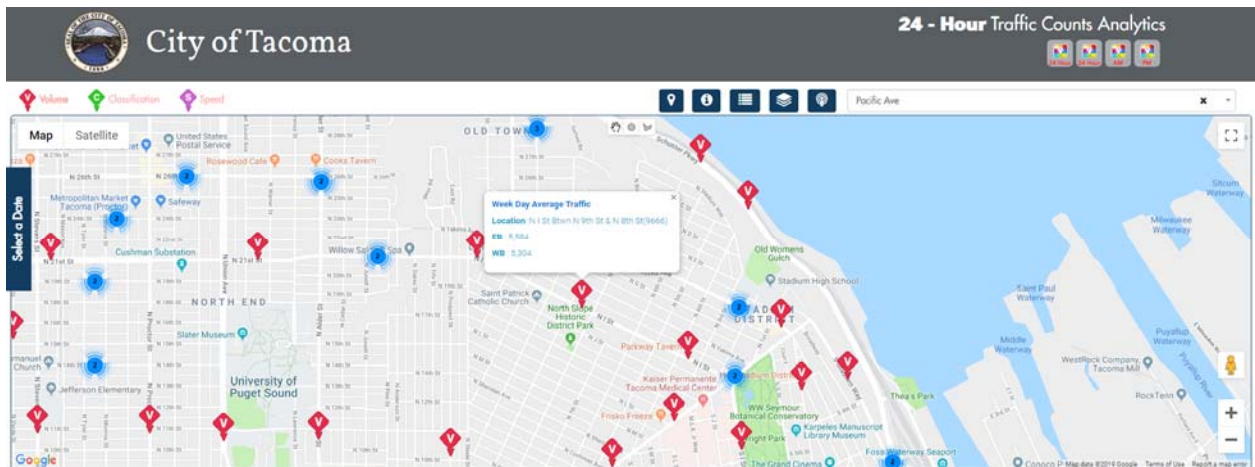


Figure 4; Location Marker with Pop-up Window

STEP 2: CHOOSE A TRAFFIC DATA COLLECTION DATE

Click a location marker (V, C or S) and the most recent traffic data for the selected location will be displayed on a pop-up. “Select a Date” TAB located on the left side of the map provides a list of dates for a given year when the traffic data was collected for the selected location. A user will be able to view the traffic data by selecting a specific date listed in the “Select a Date” Tab. *Please see Figure 5: Choose a Traffic Data Collection Date*

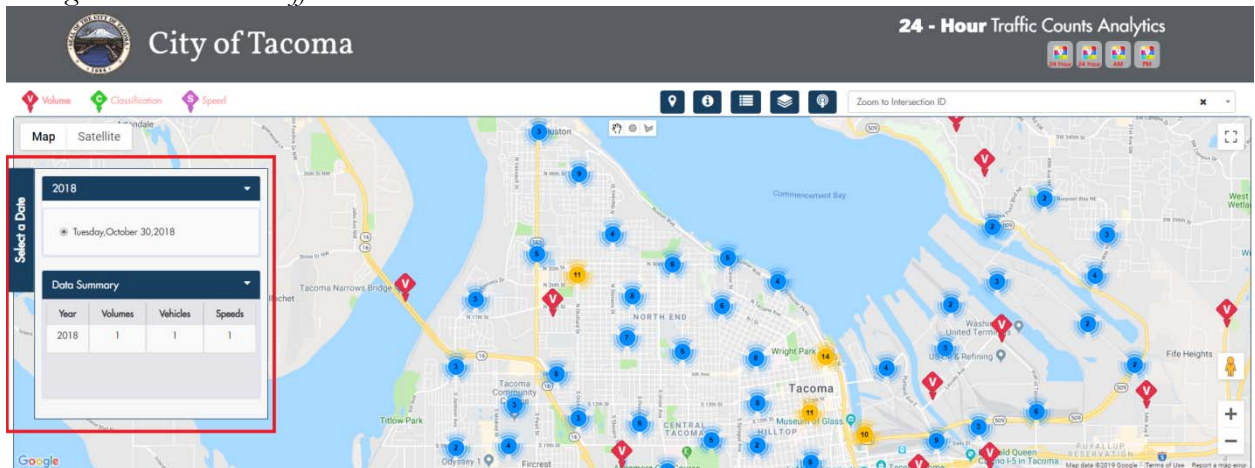


Figure 5: Choose a Traffic Data Collection Date

STEP 3: ADDITIONAL FUNCTIONS

Five (5) different functions are available just above the map section. *Please see Figure 6: Additional Functions*

- A. Filtering Data
- B. Information
- C. Data Summary
- D. GIS Layers
- E. Legend

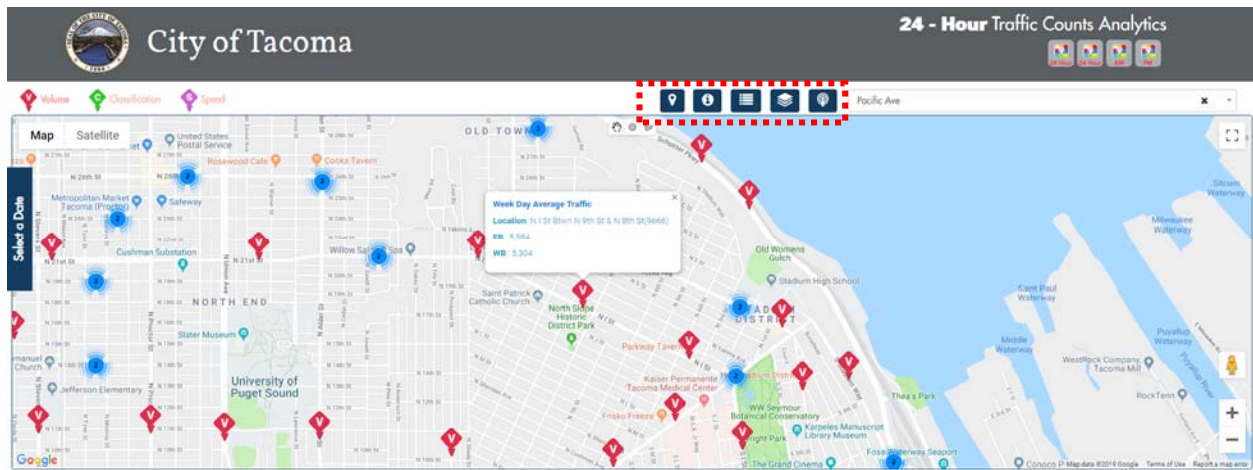


Figure 6: Additional Functions

- a. **Filtering Data** – The data filtering option will allow a user to view the traffic data available for the selected year. Example: if a user selects the year “2010” the map will be populated with location markers where traffic data was collected in 2010. *Please see Figure 7: Filtering Data*

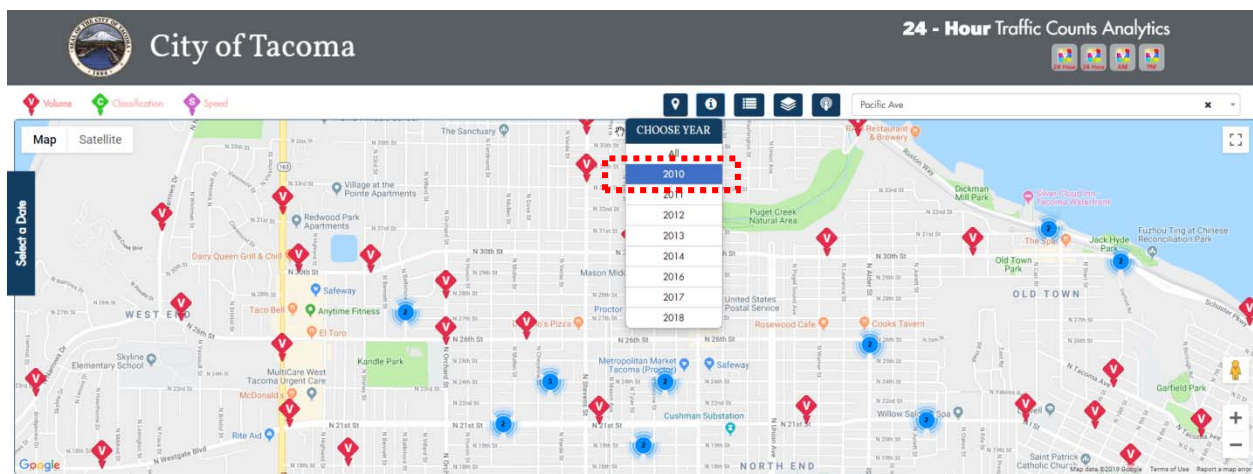


Figure 7: Filtering Data

- b. **Information** – The information TAB takes you to a quick start guide (QSG) which is, in essence, a shortened version of a manual. It is meant to provide the basic structure and functionalities of the application so that a user can access the available traffic data immediately. *Please see Figure 8: A Quick Start Guide*

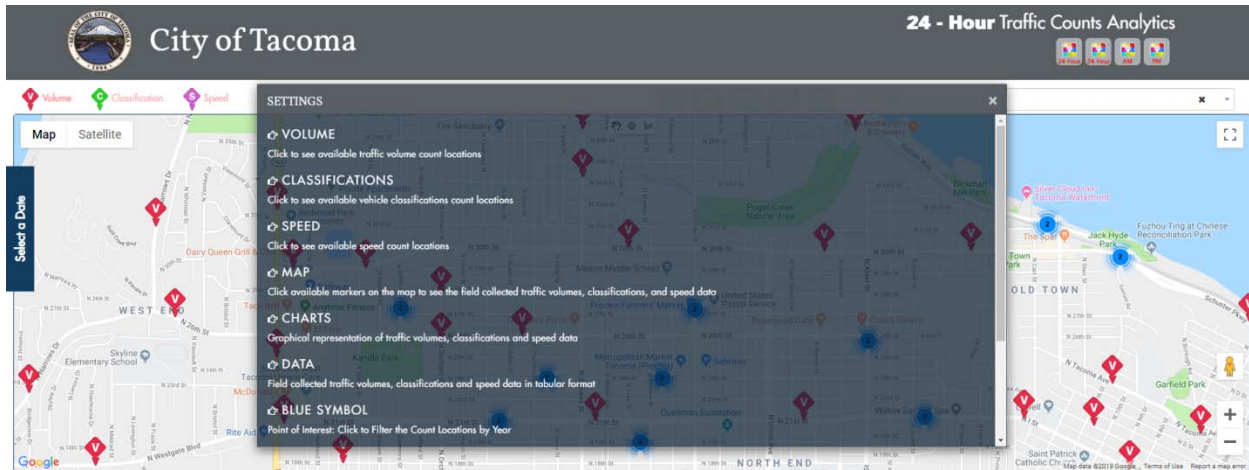


Figure 8: A Quick Start Guide

- c. **Data Summary** – The data summary TAB is an exhibit of a list of available traffic data by data types and timestamp of each data type. Bulk Data Download (i.e., Bulk DWN) and Download (i.e., DWN) options available in the data summary TAB allow a user to download field collected traffic in multiple formats for further traffic planning and operational analysis. *Please see Figure 9: Data Summary*

DATA SUMMARY													
Year	Data Type	SU	M	T	W	TH	F	S	WKD	WKND	7Day	Bulk DWN	DWN
2018	Volume	0	0	105	38	72	0	0	215	0	0		
	Classification	0	0	105	38	72	0	0	215	0	0	↓	↓
	Speed	0	0	122	38	79	0	0	239	0	0		
2017	Volume	0	0	34	17	1	0	0	52	0	0		
	Classification	0	0	25	17	1	0	0	43	0	0	↓	↓
	Speed	0	0	30	16	1	0	0	47	0	0		
2016	Volume	0	0	12	1	7	0	0	20	0	0		
	Classification	0	0	12	1	7	0	0	20	0	0	↓	↓
	Speed	0	0	12	1	7	0	0	20	0	0		
2014	Volume	0	0	4	0	1	0	0	4	0	1		
	Classification	0	0	0	0	0	0	0	0	0	0	↓	↓
	Speed	0	0	0	0	0	0	0	0	0	0		
2015	Volume	0	1	37	0	13	0	0	51	0	0		

Figure 9: Data Summary

- d. **GIS Layers:** GIS layers allow any user to overlay additional layers which would assist in analyzing citywide traffic flow, growth, and patterns in connection with other transportation planning components such as land uses, priority networks, etc. *Please see Figure 10: GIS Layers*

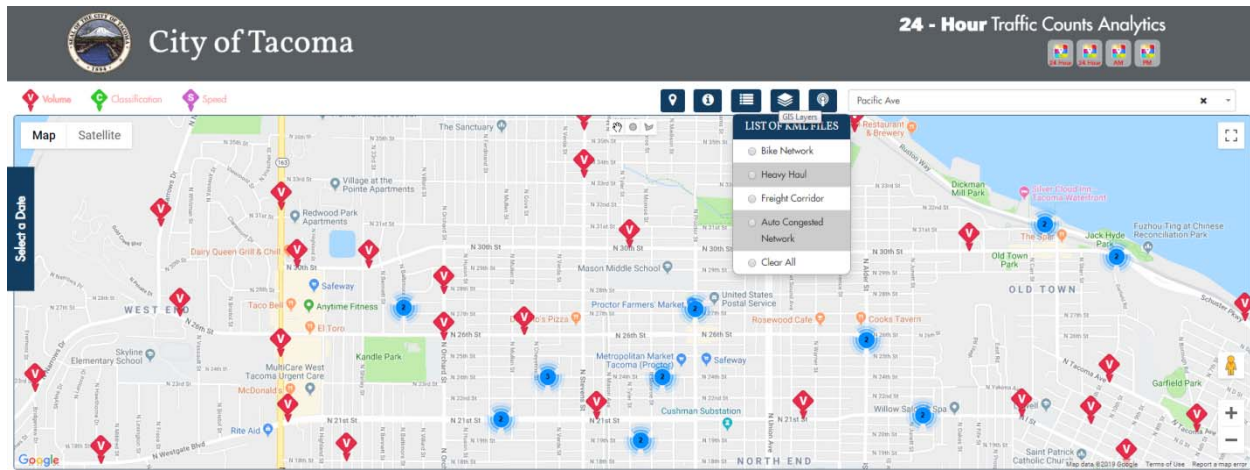


Figure 10: GIS Layers

- e. **Legend:** Finally, the LEGEND TAB demonstrates how data collected on multiple days has been grouped into three (3) categories, 7 Day average, Weekday average and Weekend Average. Please see Figure 11: Legend

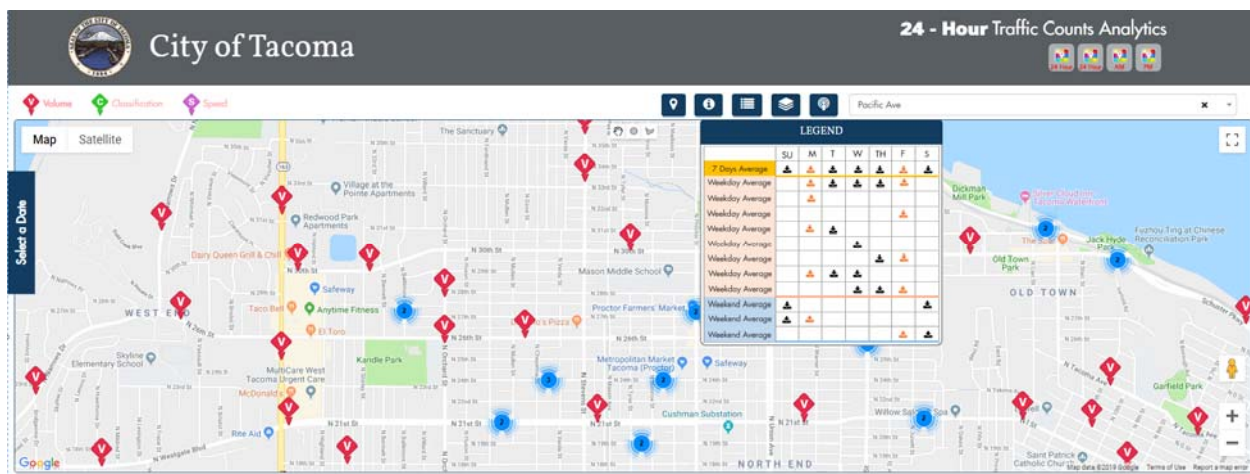


Figure 11: Legend

4. TRAFFIC DATA VISUALIZATION

An interactive map is available to navigate any desired location. After zooming in, the location markers will appear. Click a location marker (V, C or S) and the associated traffic data with the location description will be displayed on a pop-up. The graphical representation of 24-HR traffic variations for the selected location will be displayed in the CHART section just below the Google Map. Please see Figure 12: CHART Section

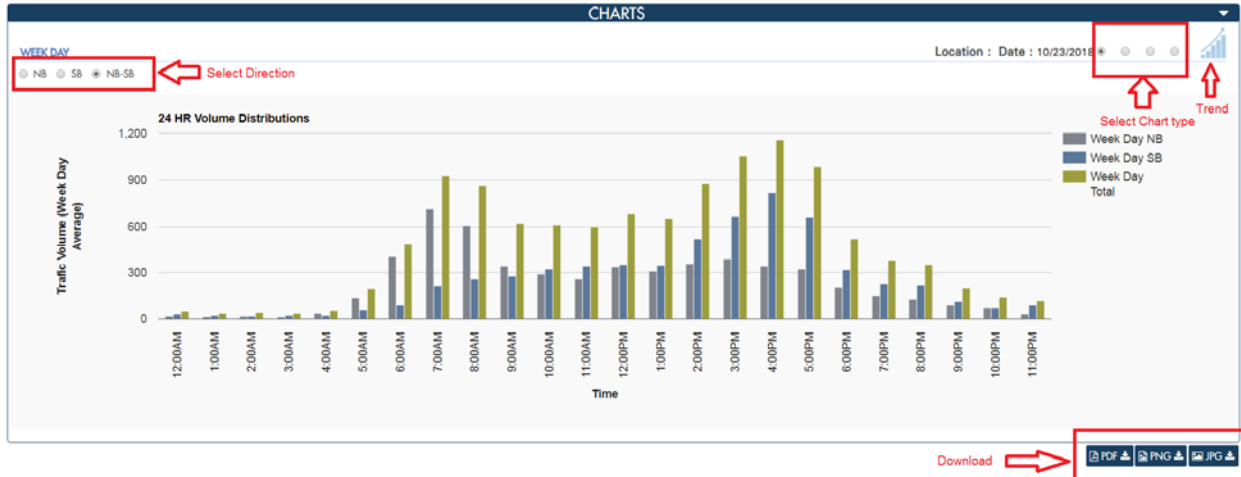


Figure 12: CHART Section

Several functions are available in the chart section which allows a user to generate a chart to meet his/her specific needs. The option available at the top left side allows a user to choose directions of traffic to include in the graph. The option available at the top right allows a user to choose a desired chart type such as bar chart vs. line charts. The trends icon will provide several key statistics. A user will also be able to download the charts in different formats using the options available at the lower right of the chart section. *Please see Figure 12: CHART Section and Figure 13: Statistics*

Statistics					
Record Id : VOL_NB-SB_L1_D1-1267		Date : 10/23/2018		Direction : NB-SB	
Location Id : LOC_3955		No. of Lanes : 1		Data Type : VOLUME	
No. of Days : 1					
Week Day Average - Volume					
Peak Hour and Period Identification		Estimated Statistics			
		NB		SB	
AM Peak Hour	7:00-8:00	716	13%	213	4%
AM Peak Period	7:00-10:00	1666	30%	746	13%
PM Peak Hour	4:00-5:00	339	6%	818	13%
PM Peak Period	3:00-6:00	1045	19%	2149	39%
Daily Average By Direction		5572	48%	6085	52%
Total Daily Average		11657			

Figure 13: Statistics

5. DOWNLOAD MAP DATA AND TRAFFIC COUNT FILE

DOWNLOAD TRAFFIC COUNT FILES FOR A LOCATION

The field collected traffic data (i.e., Volumes, Classifications and Speed) for the selected location is presented in a tabular format in the DATA section. The data filtering option available at the top left side allows a user to choose the directions of the traffic to display in the data table available in the DATA section. The “Download KML File” option available at the lower left allows a user to download traffic data in KML format. A user can download the field collected data and the original traffic data file using the option available at the lower right of the DATA section. Each traffic count file is associated with a specific location, year, period (i.e., AM, PM or MIDDAY). If no PDF or MS

Excel file symbols are available for a selected location, it means no traffic counts files are available and/or no traffic counts are available for that selected intersection or a combination of the location, year, and period. Please see *Figure 14: Traffic Count File for a Location*

Time	Week Day Average		
	NB	SB	Total
6:00 AM	403	89	492
7:00 AM	716	213	929
8:00 AM	607	256	863
9:00 AM	343	277	620
10:00 AM	289	324	613
11:00 AM	257	341	598
12:00 PM	334	350	684
1:00 PM	308	346	654
2:00 PM	355	521	876
3:00 PM	386	668	1054
4:00 PM	339	818	1157
5:00 PM	320	663	983
6:00 PM	207	318	525
7:00 PM	149	231	380
8:00 PM	128	220	348
9:00 PM	89	113	202

Figure 14: Traffic Count File for a Location

DOWNLOADING TRAFFIC COUNT FILES FOR MULTIPLE LOCATIONS

Please follow the step-by-step directions in section 6 (“Estimate and Average Traffic Volume”) to draw an area which will allow a user to select multiple locations. Click the “Files” TAB in the pop-up, and then click “Download All Files.” It will download traffic counts files for all the locations/intersections encompassed by the area which was drawn in the earlier step. Please see *Figure 15: Download Files for Multiple Locations*



Figure 15: Download Files for Multiple Locations

6. GET AVERAGE TRAFFIC VOLUME BY AREA

The 24 - hour traffic analytics application provides a function (*Figure 16: Tool to Calculate Average Traffic Volumes and Classifications*) to calculate the average traffic volume for the traffic volumes and classifications.

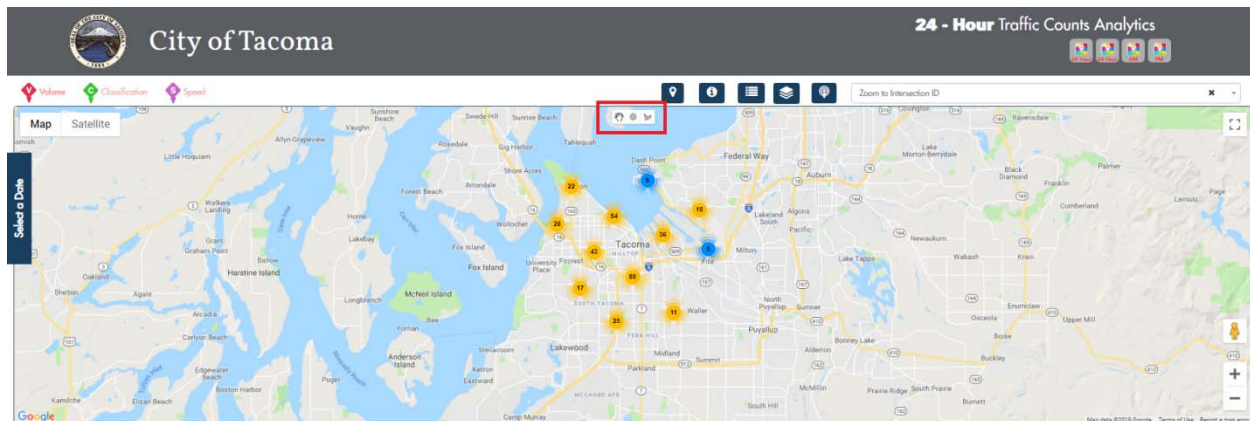


Figure 16: Tool to Calculate Average Traffic Volumes and Classifications

Three (3) options are available on the map: “Pan”, “Draw a Circle”, “Draw a Polygon”.

STEP 1: CHOOSE DATA TYPE

Choose a data Type (Figure 16: Tool to Calculate Average Traffic Volumes and Classifications) function located at the top left side of the Google Map. Additional directions are described in section 2 regarding “Choose a Data Type” function.

STEP 2: DRAW A SHAPE ON THE MAP

Click “Draw a Circle” or “Draw a Polygon” function to draw an area on the map that encompasses several intersections. The drawn area is represented by blue shade.

STEP 3: CLICK TO ENABLE THE POPUP

Click on the blue shape, a pop-up will display the average traffic volume of the selected intersections. Please see Figure 17: Estimated Average Traffic Counts *Error! Reference source not found.* for details.

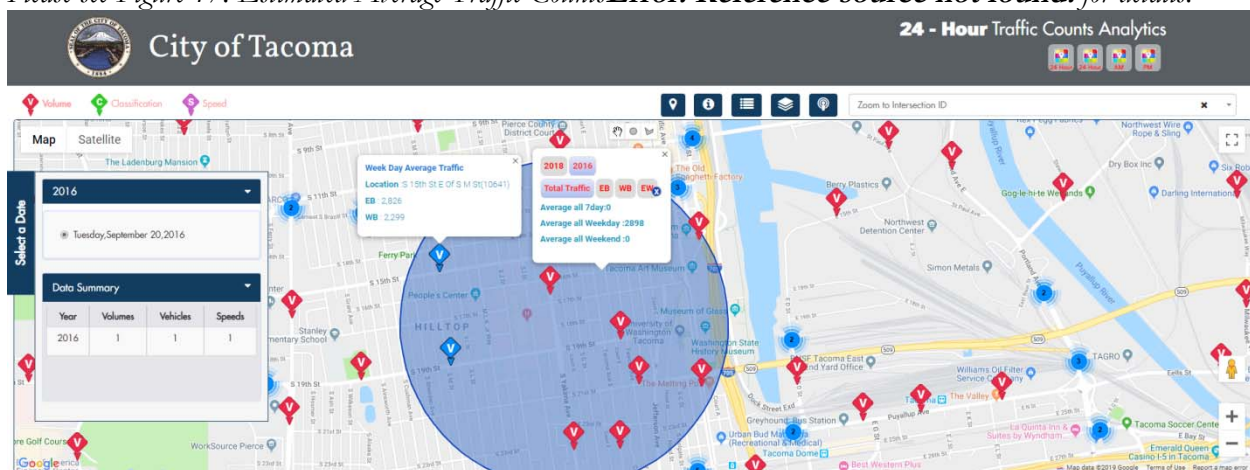


Figure 17: Estimated Average Traffic Counts

STEP 4: CHANGE THE YEAR AND DIRECTION OF THE POPUP

Choose a year on the pop-up TAB. The color of the location marker changes based on the data availability. Blue symbols means the intersections located within the blue shade have traffic counts for the selected year. Red symbols/Default colors means traffic counts are not available for the selected year.

7. VIEW TRAFFIC HEAT MAP

STEP 1: CLICK ON THE HEAT MAP SYMBOL

Four different “HeatMap” functions are available. Click the “HeatMap” symbol located on the top right of the page. Please see the Figure 18: HeatMap Function/Symbol for details.

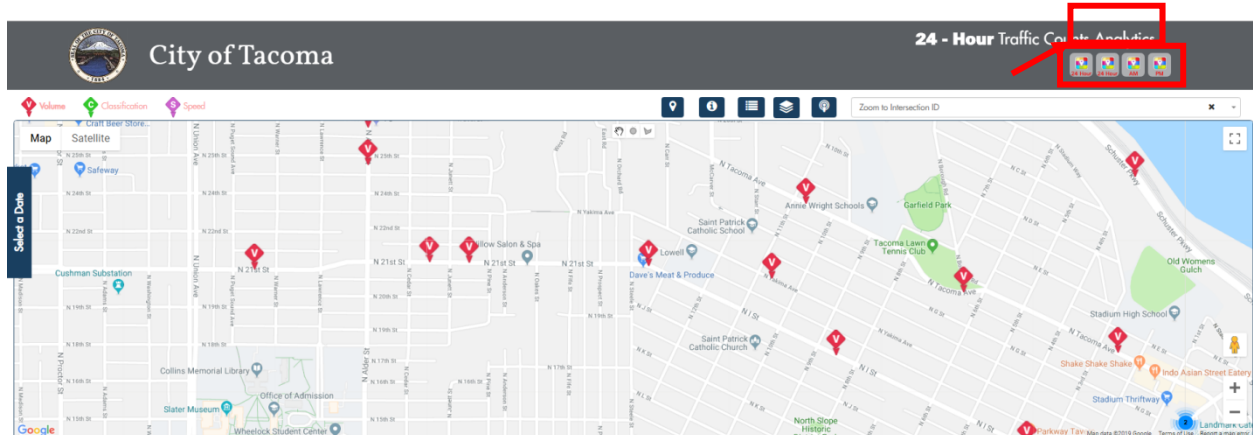


Figure 18: HeatMap Function/Symbol

The map will change to HeatMap mode based on the selected year. The size of the circle represents the volume of the traffic. Please see Figure 19: HeatMap

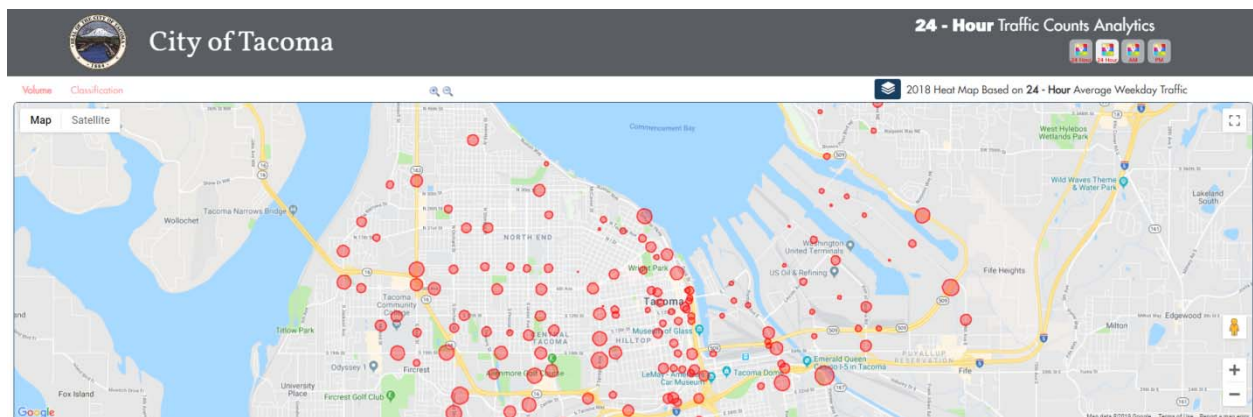


Figure 19: HeatMap

STEP 2: GO BACK TO THE NORMAL MODE

Click the *City of Tacoma* Symbol or press F5 to refresh the page, the traffic count application will be back to the websites original state To change the year and time period of the “HeatMap”, please go back to the normal mode first, and repeat the step 1-2.