**PROJECT : TRAFFIC BOT**

**TEAM:** **STREPROGEN**

**Dave Kreitzer, Xander, Jeff Olson, James Jiang**

**PROJECT DESCRIPTION / OUTLINE:**

Downloading and visualizing real time traffic data for the Twin Cities area.

* Download an xml file
* Extract detector data from the xml file in to Pandas data frame
* Use the Pandas data frame to create a map
* Visualize the maps
* Tweet results
* Traffic warning

**RESEARCH QUESTIONS TO ANSWER:**

1. What streets to avoid at high traffic times?
2. When are the high traffic times in a particular radius on the map.

**DATA SETS TO BE USED:**

M DOT Data Definitions:

* <http://www.dot.state.mn.us/tmc/trafficinfo/data_definitions.html>
* <http://www.dot.state.mn.us/tmc/trafficinfo/developers.html>
* https://www.google.com/search?q=openweathermap&oq=openwea&aqs=chrome.0.0j69i57j0l4.7603j0j7&sourceid=chrome&ie=UTF-8
* map of traffic sensors <http://www.dot.state.mn.us/tmc/trafficinfo/downloads/adr.pdf>

**ROUGH BREAKDOWN OF TASKS:**

* **Xander : xml file updates**
* **Dave : heroku**
* <http://www.dot.state.mn.us/tmc/trafficinfo/data_definitions.html>

**Volume**  
Volume = the number of vehicles passing the detector during the 30 second sample period.

**Occupancy**  
Occupancy = the percentage of time, during the 30 second sample period, that the detector sensed a vehicle.

**Flow**  
Flow = the volume, normalized to an hour ( volume \* 120 ).

**Speed**  
Speed = the average speed of all vehicles passing the detector during the 30 second sample period.

*2018 Minnesota Department of Transportation  
395 John Ireland Blvd, St. Paul, MN 55155-1899  
651-296-3000 Toll-free 800-657-3774*

* <http://www.dot.state.mn.us/tmc/trafficinfo/developers.html>

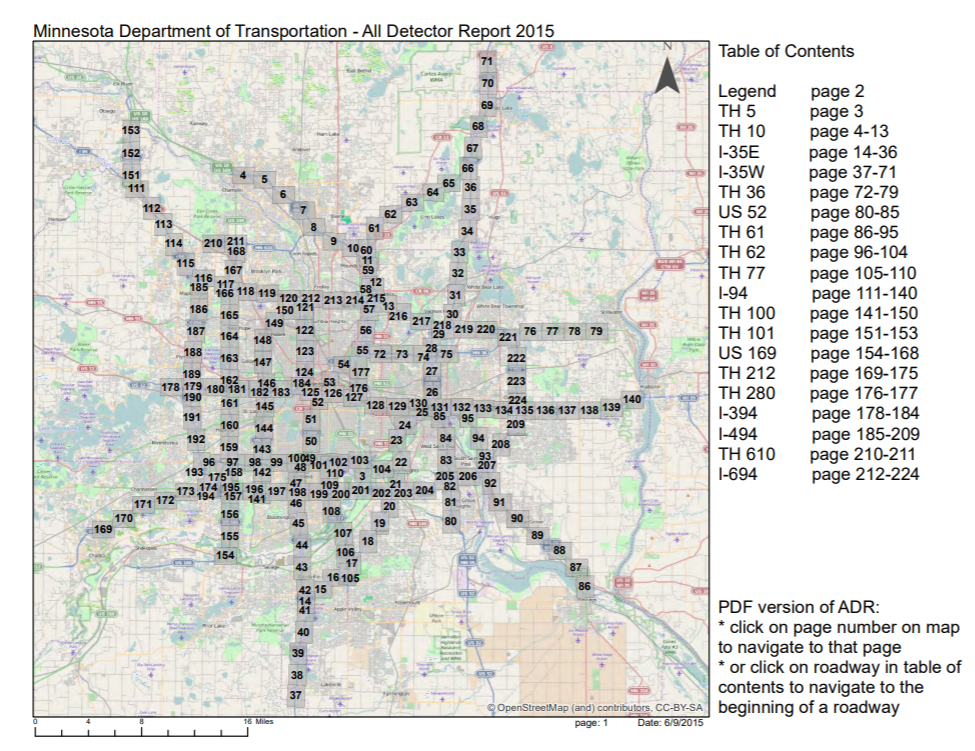
The Minnesota Department of Transportation collects traffic data on the freeway system throughout the Twin Cities Metro area. This data is made public via XML files. There are two types of data; detector and incident.

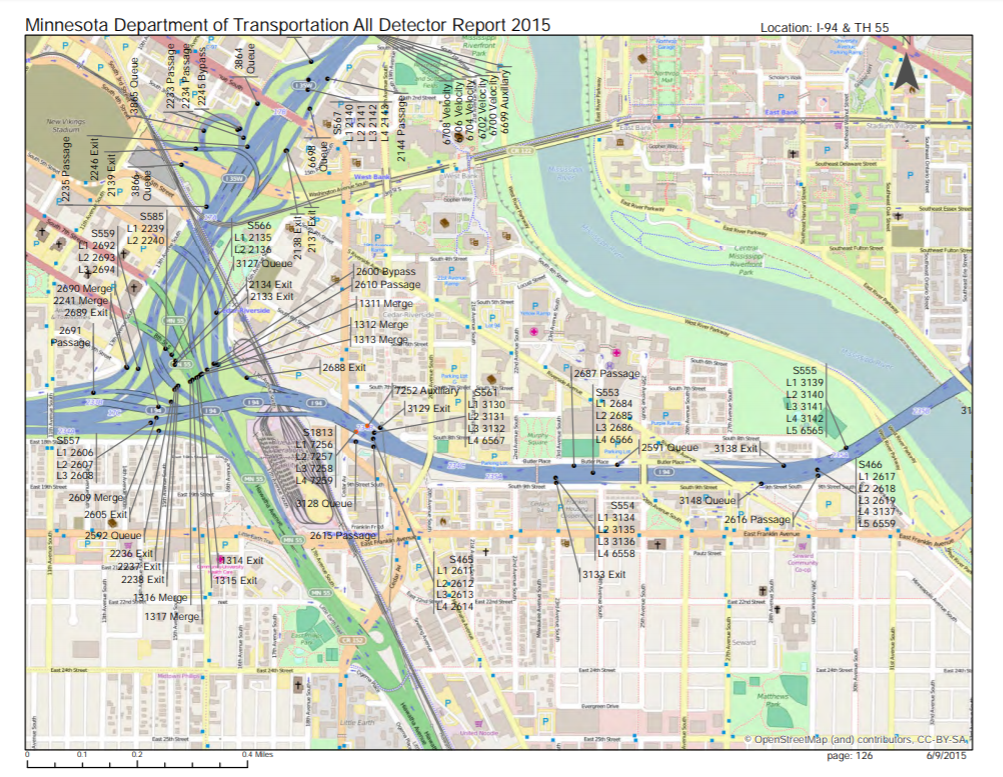
**Detector Data**  
[Real-Time Detector Data](http://data.dot.state.mn.us/iris_xml/det_sample.xml.gz) ( http://data.dot.state.mn.us/iris\_xml/det\_sample.xml.gz )  
This file is in XML format and is updated every 30 seconds. It contains [volume, occupancy, speed and flow](http://www.dot.state.mn.us/tmc/trafficinfo/data_definitions.html)data for each detector in the Twin Cities Metro area.  
[Real-Time Station Data](http://data.dot.state.mn.us/iris_xml/stat_sample.xml.gz) ( http://data.dot.state.mn.us/iris\_xml/stat\_sample.xml.gz )  
This file is in XML format and is updated every 30 seconds. It contains volume, occupancy, speed and flow data for each detector station in the Twin Cities Metro area.

**Incident Data**  
[Real-Time Incident Data](http://data.dot.state.mn.us/iris_xml/incident.xml.gz) ( http://data.dot.state.mn.us/iris\_xml/incident.xml.gz )

**Resources**  
The TMS configuration (corridors, stations and detectors) is defined in [metro\_config.xml.gz](http://data.dot.state.mn.us/iris_xml/metro_config.xml.gz)  
The [All Detector Report](http://www.dot.state.mn.us/tmc/trafficinfo/downloads/adr.pdf) can be used for locating detectors and stations.  
Mn/DOT has developed [data tools](http://data.dot.state.mn.us/datatools) for analysis of archived traffic data.  
Other files often used by developers can be found on our [TMS data site](http://data.dot.state.mn.us/iris_xml/)

<http://www.dot.state.mn.us/tmc/trafficinfo/downloads/adr.pdf>

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