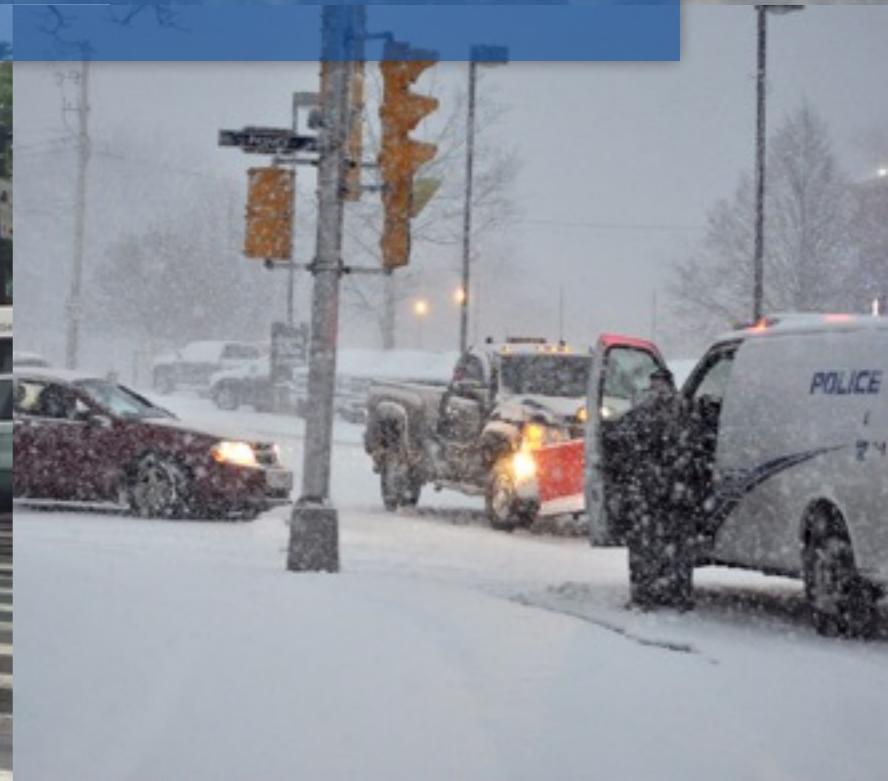
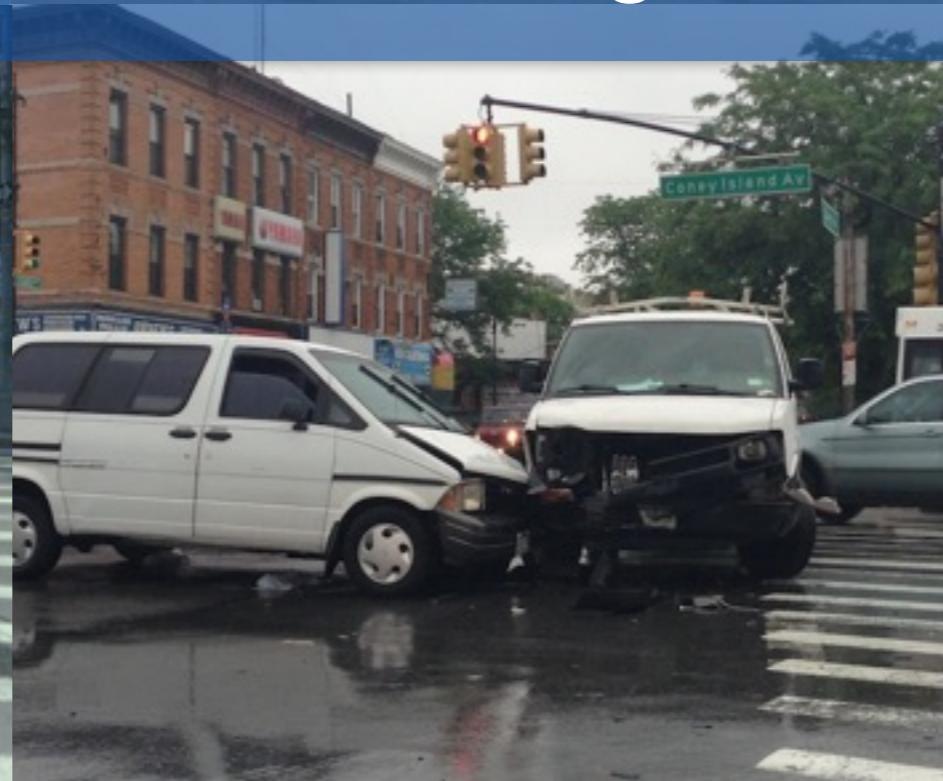




NYC vehicle collision Worst Location and Weather

Tohei Yokogawa



There were 205,913 vehicle collisions in NYC in 2014

How can we reduce this number?

- 1. Worst location**
- 2. Worst weather**

600,000 collisions + hourly weather data for 3 years

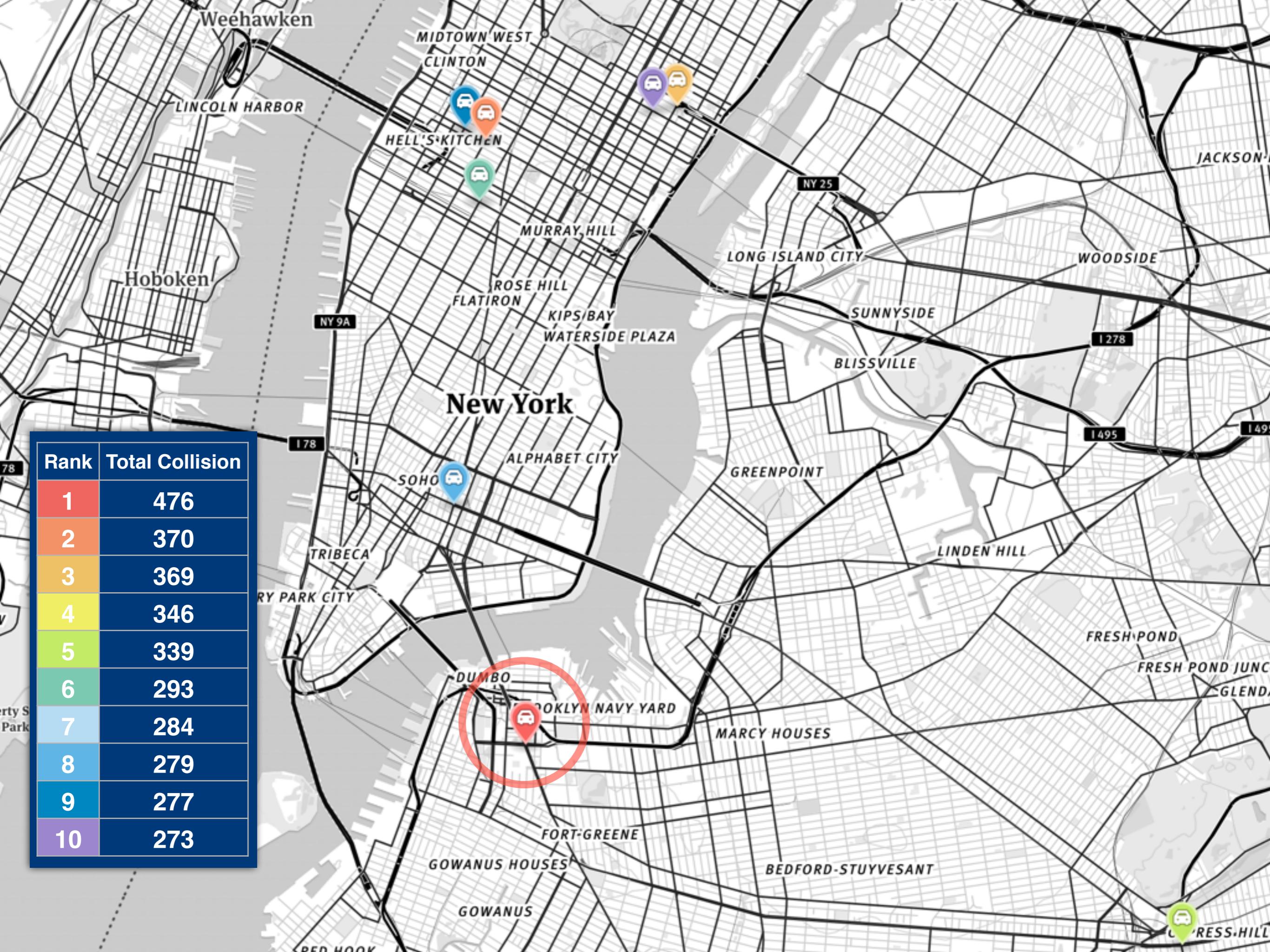
NYC Collision data:

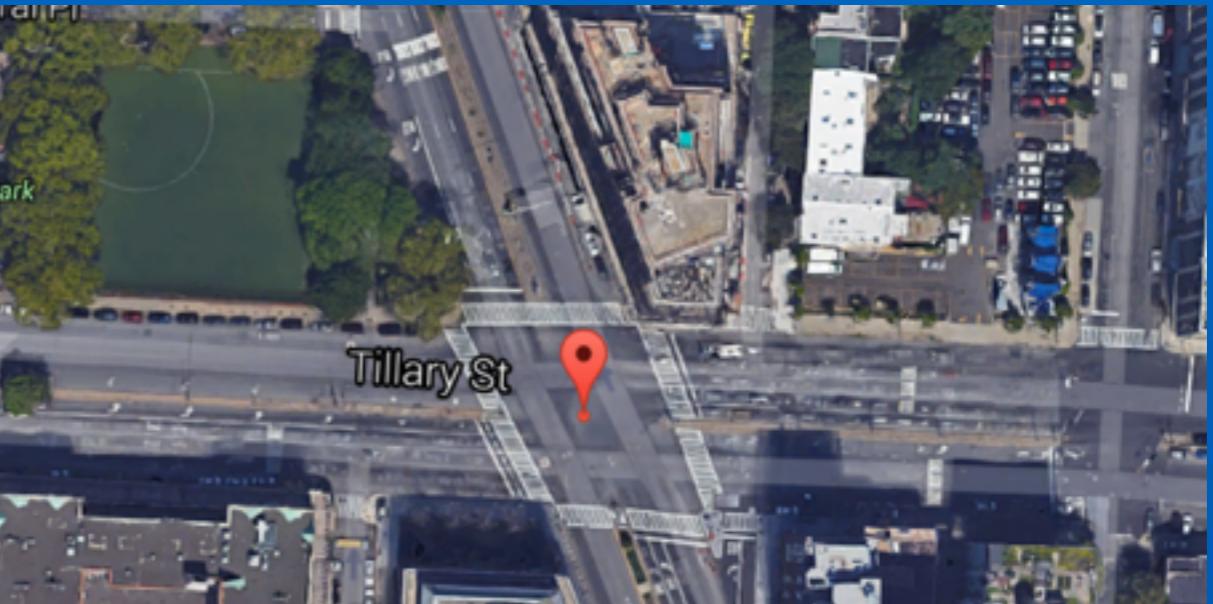
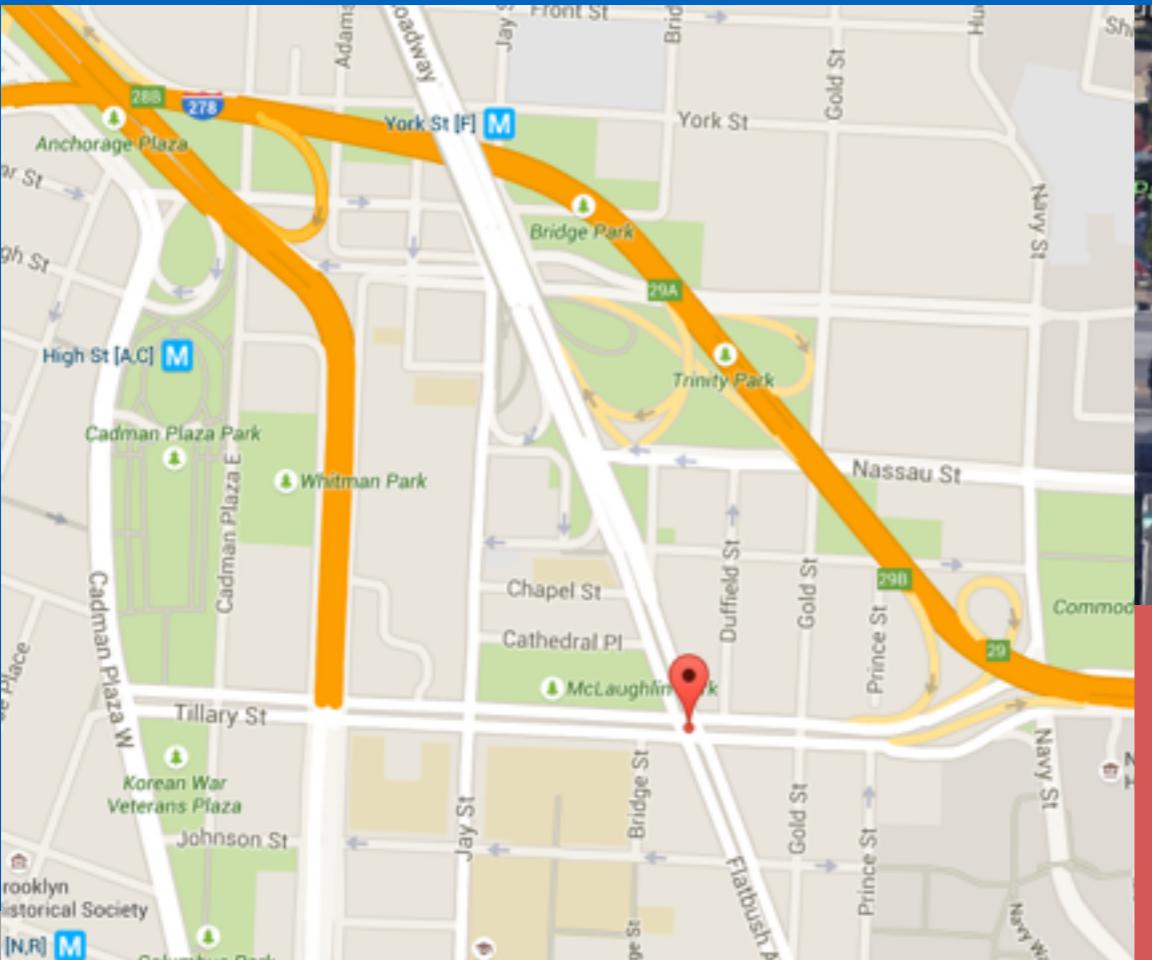


NYC Weather data:



<https://data.cityofnewyork.us>
www.wunderground.com

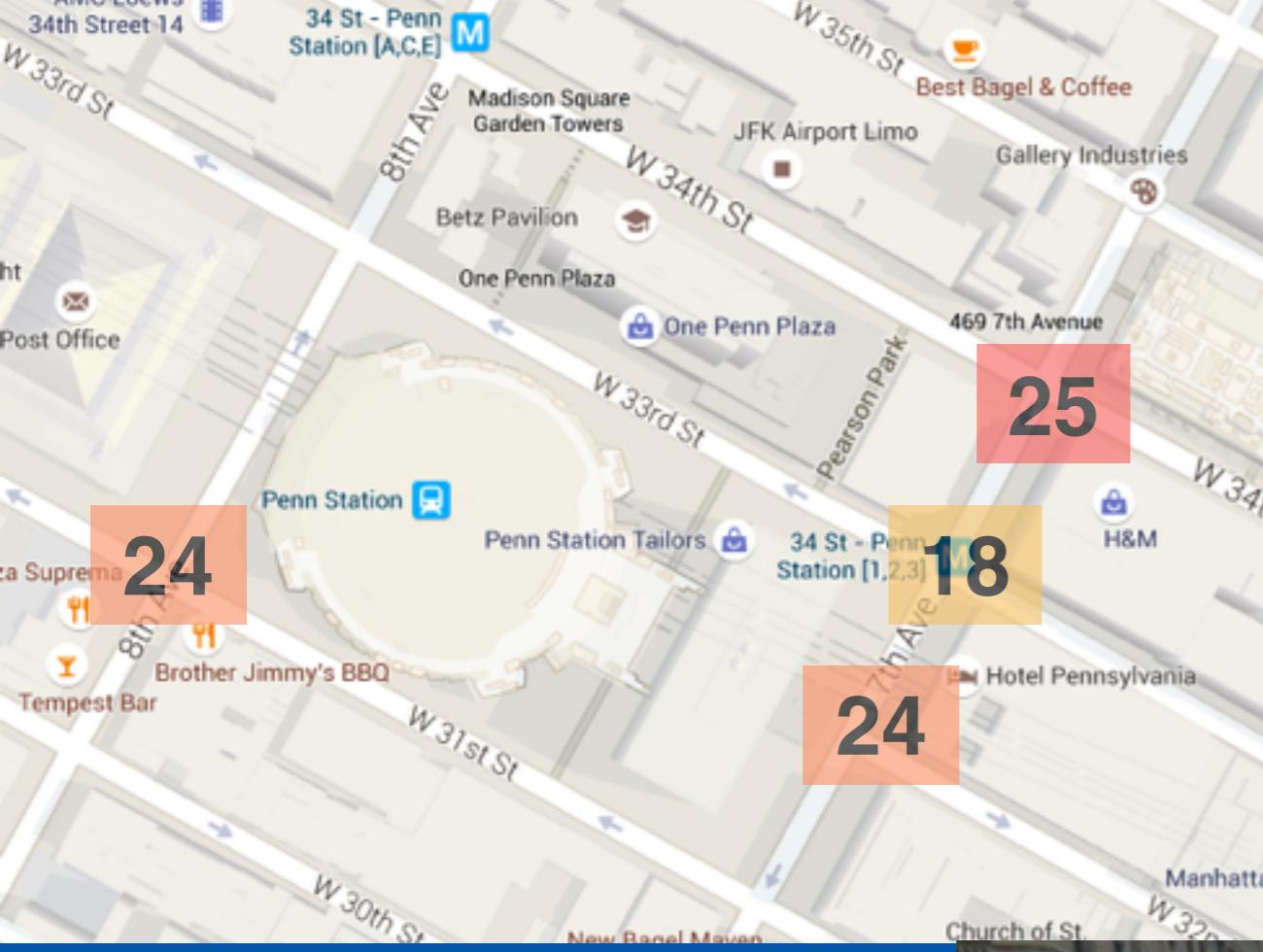




163.2 collision per year
13.6 collision per month
3.2 collision per week



Flatbush Ave (connecting to Manhattan Bridge) and Tillary Street (connecting to I-278)



Rank	Total Collision
1	25
2	24
3	24
4	18
5	17
6	16
7	15
8	15
9	15
10	15

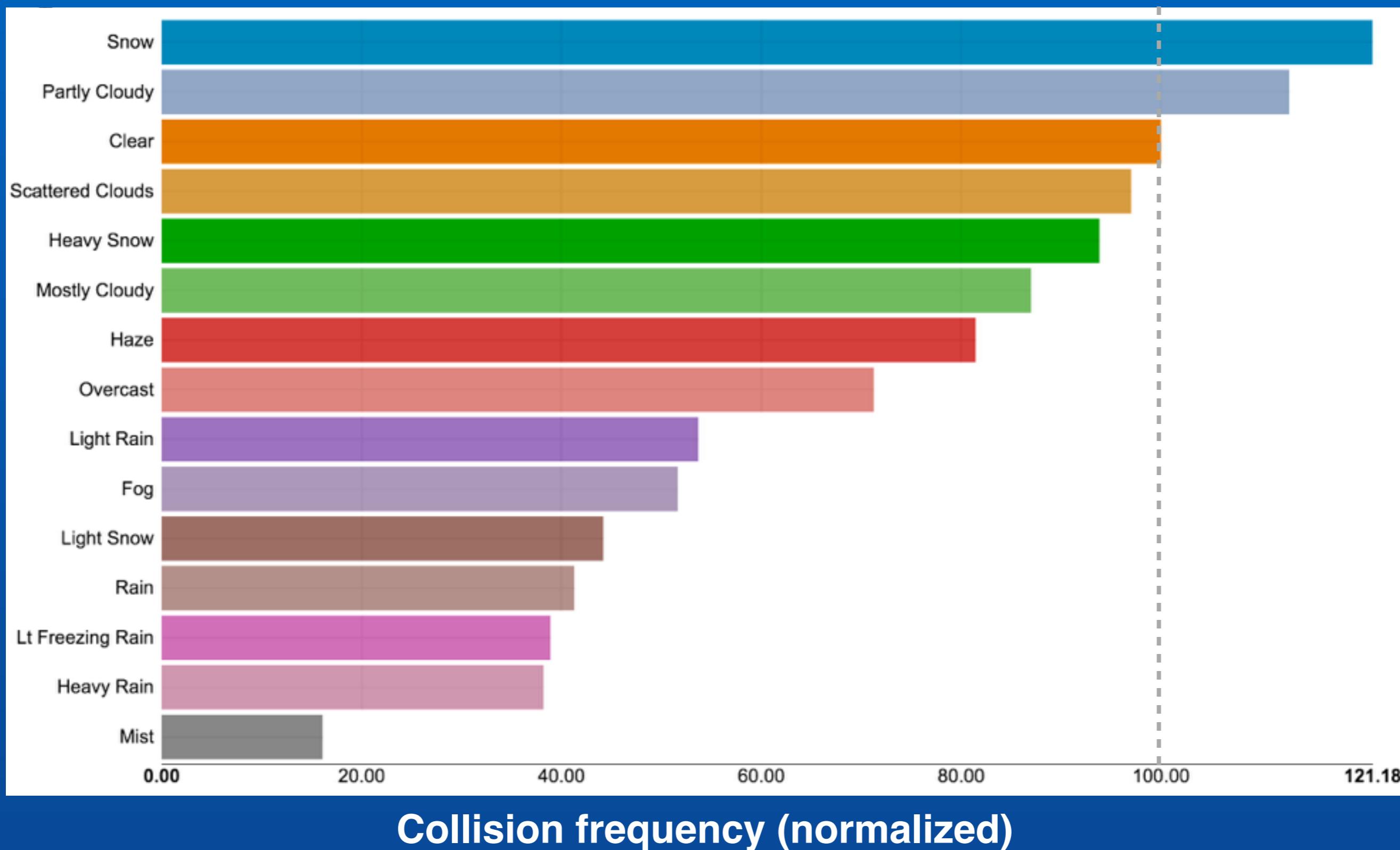
Worst taxi-taxi collision location

(Drop off and pick up
confusion?)



Penn Station / Madison square garden

**What weather conditions have
the worst collision rate in NYC?**

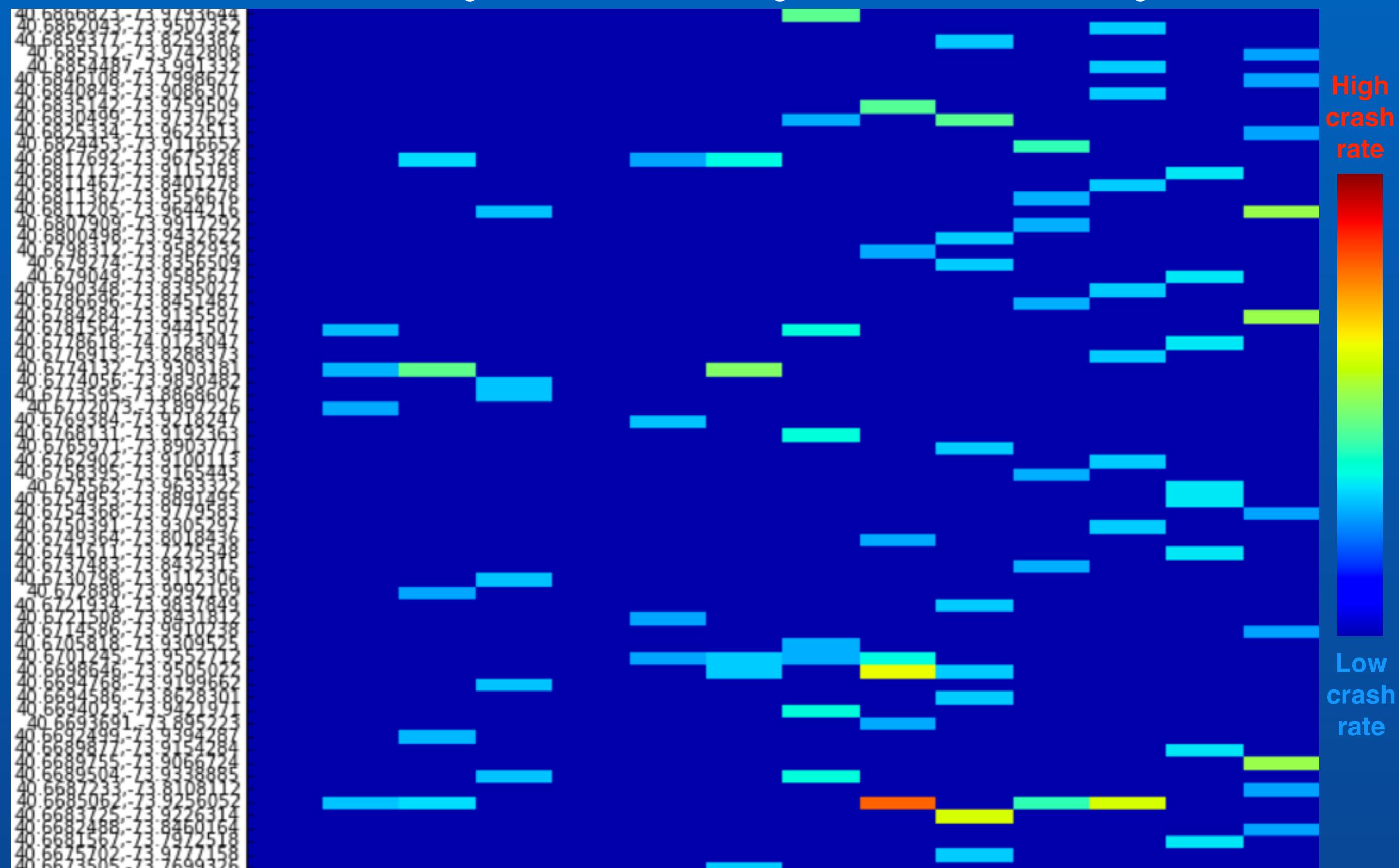


New tool to characterize location

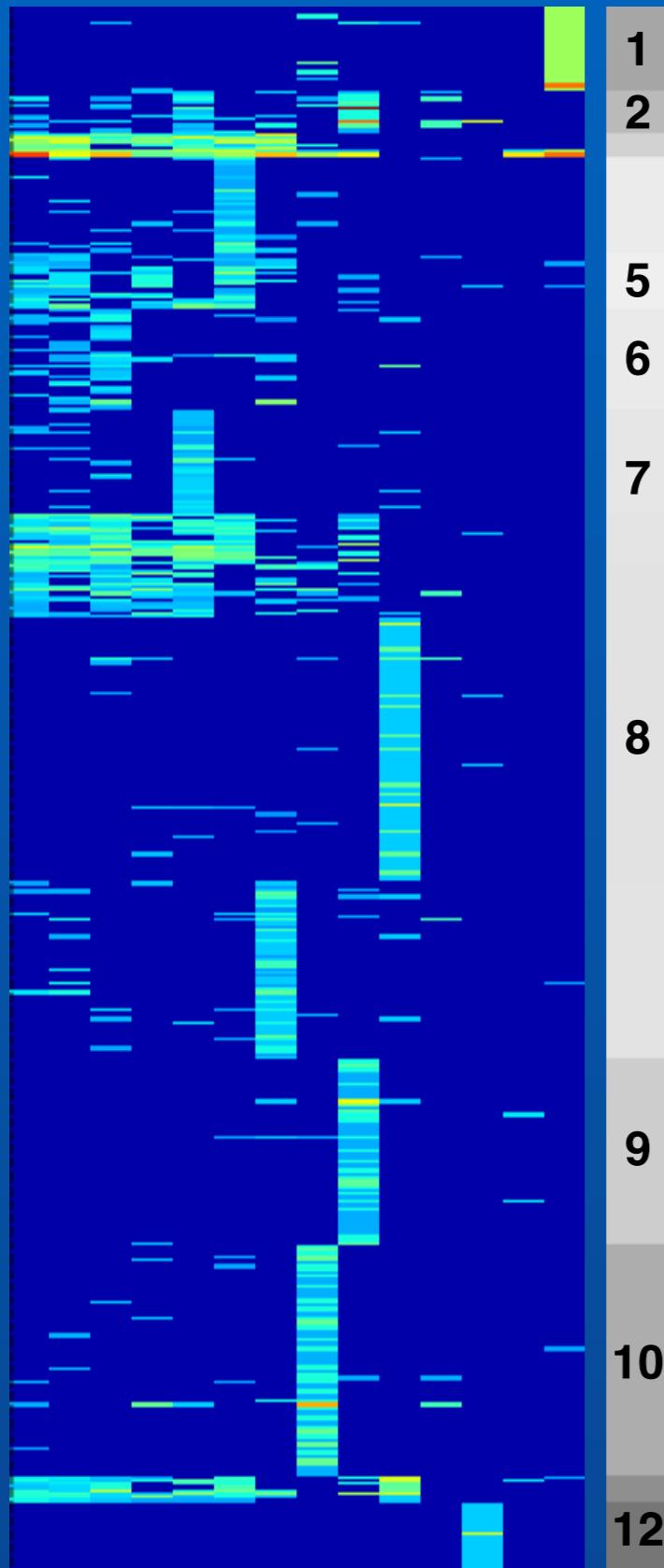
Location clustering with weather+collision

Location

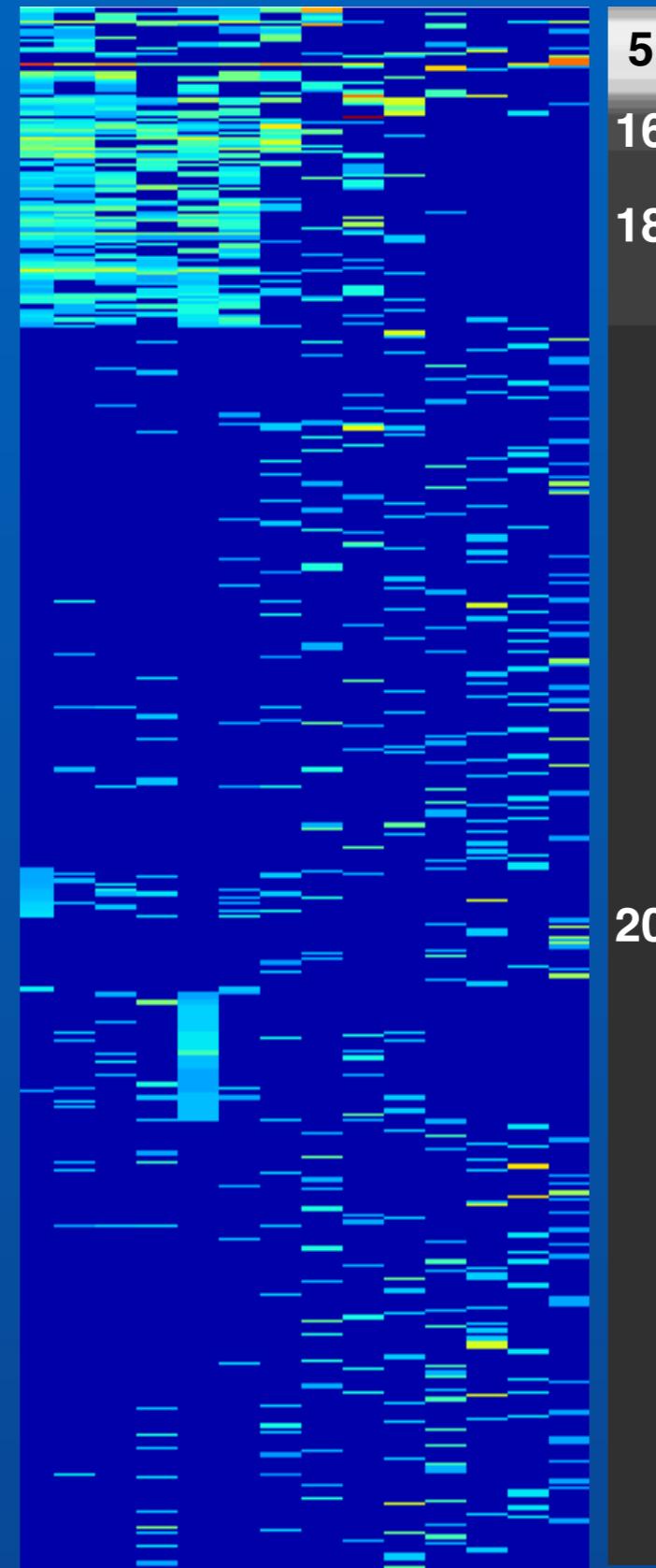
Clear Most cloud Part cloud Haze Rain Snow Light frez rain
 Overcast Light rain Scat cloud Light snow Hev rain Fog Hev snow



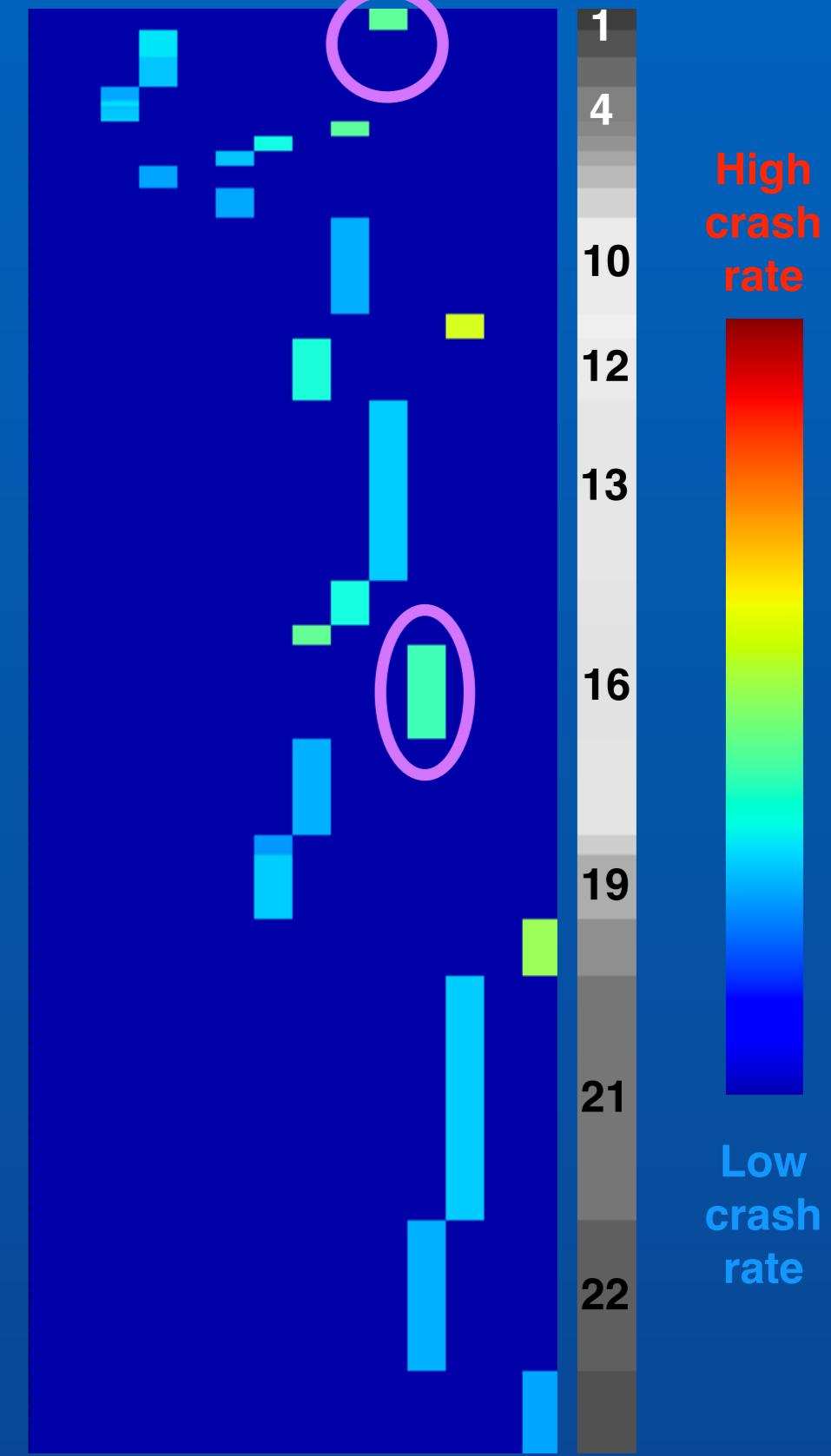
K-mean



Mean-Shift



DBSCAN

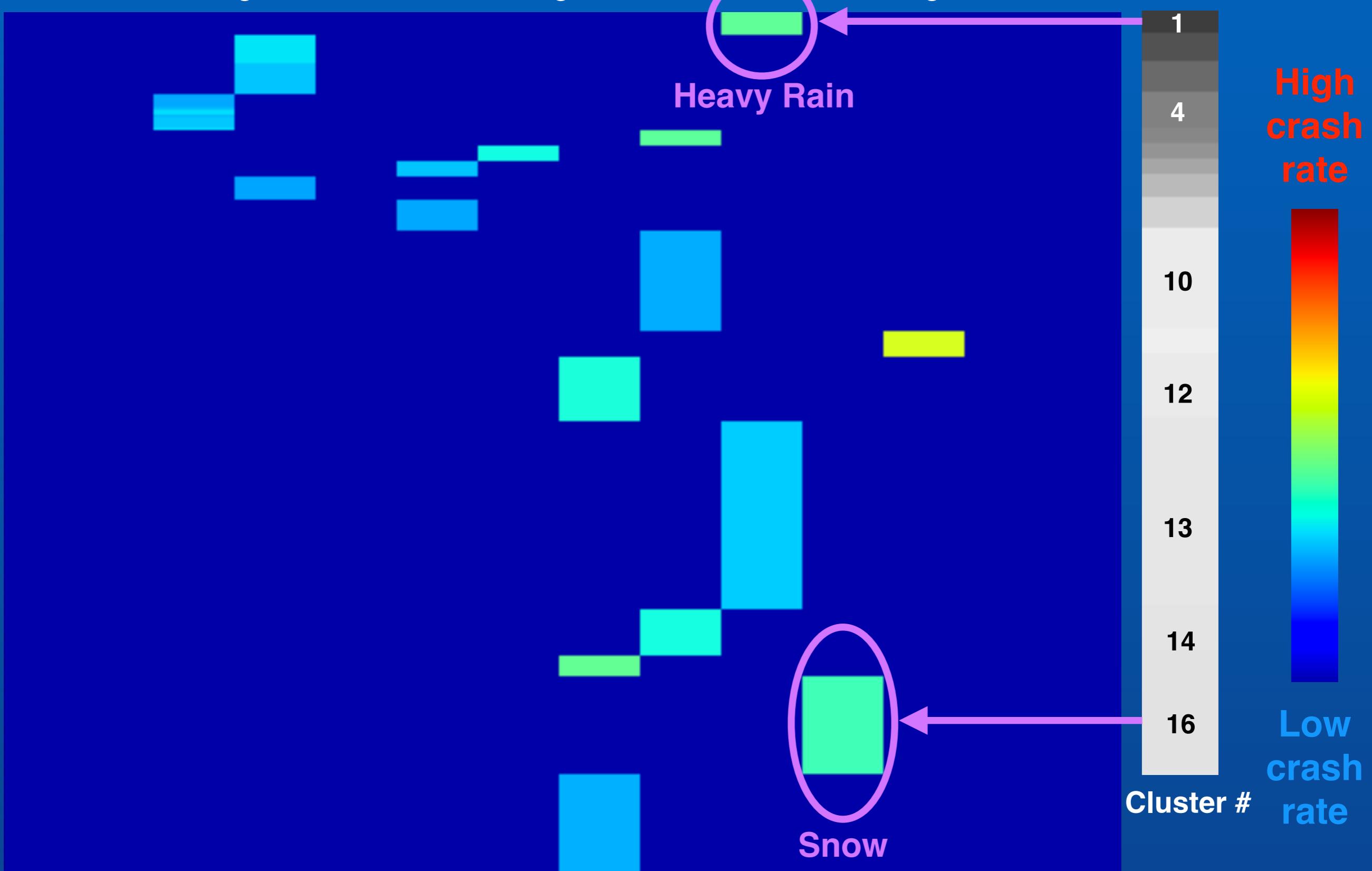


High
crash
rate

Low
crash
rate

DBSCAN

Clear Most cloud Part cloud Haze Rain Snow Light frez rain
Overcast Light rain Scat cloud Light snow Hev rain Fog Hev snow



Locations sensitive to **Heavy rain** (multi-lane, high average speed?)



Locations sensitive to **Snow** (slope road)



1. Worst location: Flatbush Ave and Tillary Street
2. Worst weather: Snow especially at slope road
3. Location clustering by weather-collision data is
new method to explore collision environments