



# Getting Started with Geo Analysis in SAS® Visual Analytics

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# SAS® Visual Analytics



# SAS<sup>®</sup> Visual Analytics



Points of Interest/Geo Selection



Clustering



Routing



Geocode/Geo-enrich



Layers



Custom Shapes

# SAS<sup>®</sup> Visual Analytics



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Geo Analytics Demo

# SAS<sup>®</sup> Visual Analytics

Geo Analytics Example Reports

# NYC CABS

Source: New York City Taxi and Limousine Commission (TLC) Trip Record Data, <https://opendata.cityofnewyork.us>  
 Design: Felix Schulze@sas.com  
 Product: SAS Visual Analytics, SAS Viya

Average Trip Duration  
**0:15:46**

Busiest day (number of trips)  
**256K**  
 Feb/14/2020

Day with highest total miles traveled  
**713K**  
 Feb/27/2020

Trips made by New York City's iconic yellow taxis are recorded and provided to the TLC between **January and June 2020**. Yellow taxis are traditionally hailed by signaling to a driver who is on duty and seeking a passenger (street hail), but now they may also be hailed using an e-hail app like Curb or Arm.

Yellow taxis are the only vehicles permitted to respond to a street hail from a passenger in all five boroughs.

Manhattan's Top 10 busiest Pickup TLC Taxi Zones



Where do people travel to after arriving at JFK Airport?



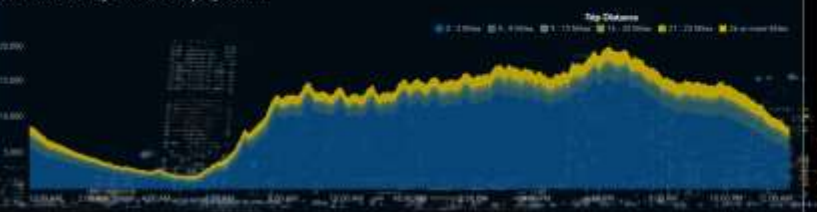
More than 70% of all trips carry 1 or 2 passengers



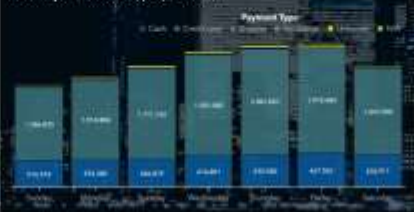
Number of passengers by Pickup TLC Taxi Zone



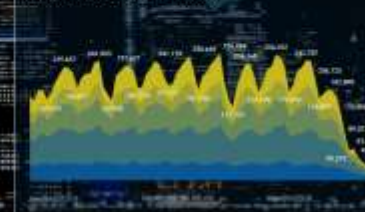
What time of the day and how far do people travel?



What day of the week do people travel?



Are some months busier than others?



According to a recent report of the Taxi and Limousine Commission (TLC), yellow cabs operating in New York City went from 31,435 in January to a low point of 2,193 at the height of the pandemic in April.



# MAPPING CRIMES Washington D.C.

Data: DC Metropolitan Police Department (MPD), <https://dcatlas.dcpis.dc.gov/orismecards>  
Design: Falko.Schulz@sas.com, 2021  
Product: SAS Visual Analytics on SAS Viya

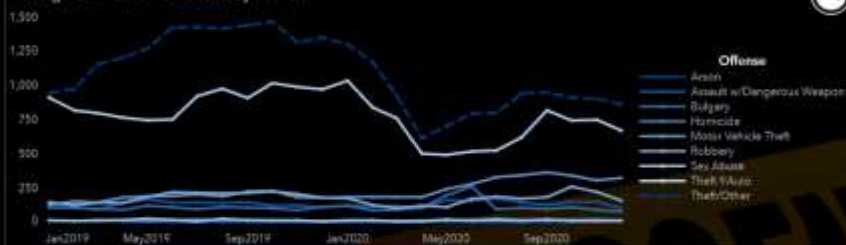
When do crimes occur?  
**44%**  
MPD Shift: evening

Change compared to last year  
**-5.7K**  
Crime Year: 2020

## Weekday distribution



## Change over time - Offenses by month



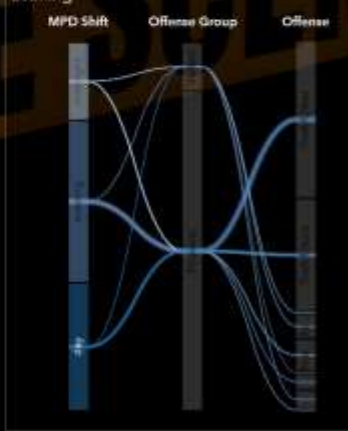
## Violent Crimes

	2020	
	Crime Count	Difference Last Year
Assault w/Dangerous Weapon	1,625	76
Homicide	185	29
Robbery	1,993	-232
Sex Abuse	156	26

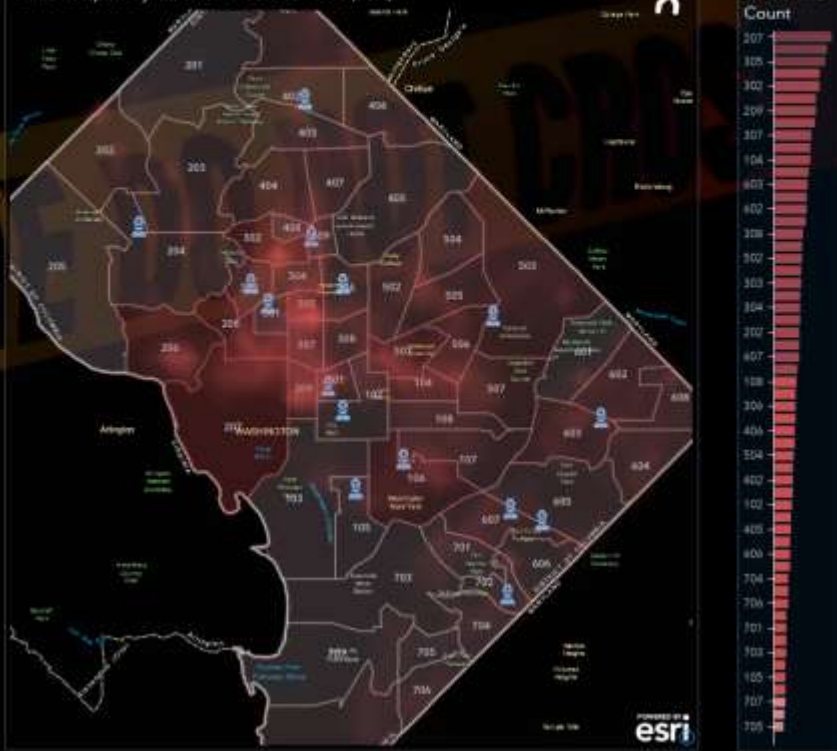
## Property Crimes

	2020	
	Crime Count	Difference Last Year
Arson	13	5
Burglary	1,439	385
Motor Vehicle Theft	3,264	1,068
Theft V/Auto	8,261	2,297
Theft/Other	10,854	-4,507

Almost half of the crimes occur in the evening



## Crime hotspots by MPD Police Service Areas (PSA)

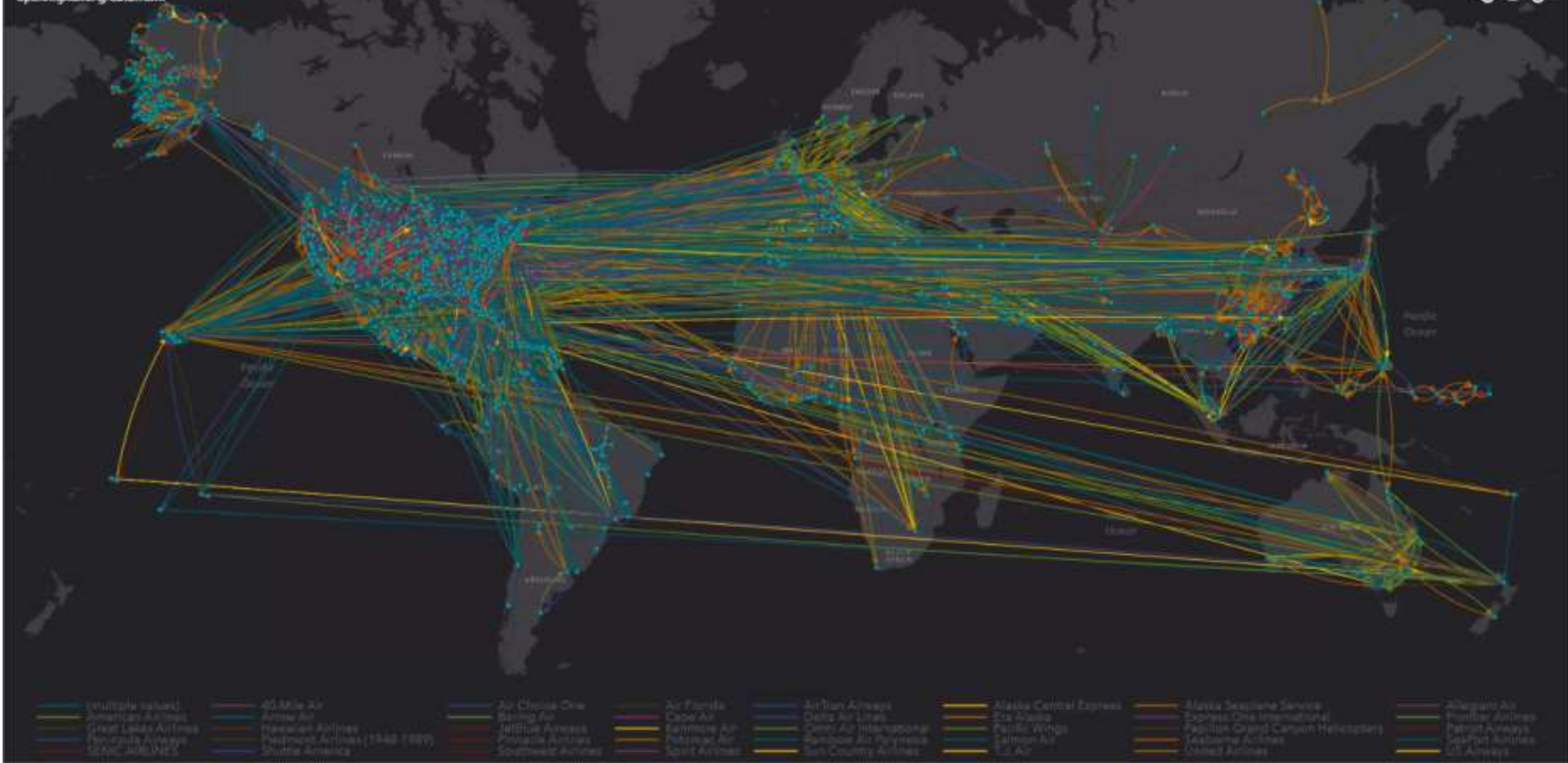




# US CARRIER GLOBAL CONNECTIONS

3,200 AIRPORTS

[openflights.org/data.html](http://openflights.org/data.html)

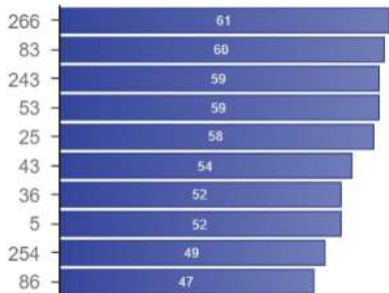


- |                      |                               |                    |                 |                         |                        |                                  |                   |
|----------------------|-------------------------------|--------------------|-----------------|-------------------------|------------------------|----------------------------------|-------------------|
| (Multiple carriers)  | 40 Mile Air                   | Air Canada One     | Air Florida     | AirTran Airways         | Alaska Central Express | Alaska Seaside Service           | Allegiant Air     |
| American Airlines    | Airwest Air                   | Baring Air         | Cape Air        | Delta Air Lines         | Eca Wings              | Express One International        | Frontier Airlines |
| Great Lakes Airlines | Hawaiian Airlines             | HUSK Air           | Kalbarne Air    | Delta Air International | Pacific Wings          | Express Grand Canyon Helicopters | Delta Air Lines   |
| Hawaiian Airlines    | Hawaiian Airlines (1942-1999) | Hawaiian Airlines  | Kona Air        | Hawaiian Air Partners   | Alamosa Air            | Hawaiian Airlines                | Hawaiian Airlines |
| Delta Air Lines      | Shuttle America               | Southwest Airlines | Spirit Airlines | Sun Country Airlines    | U.S. Air               | United Airlines                  | US Airways        |

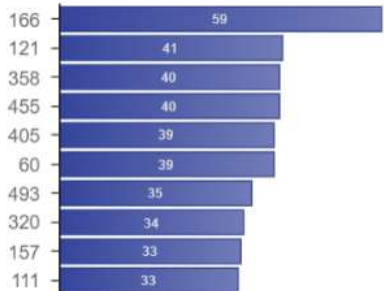




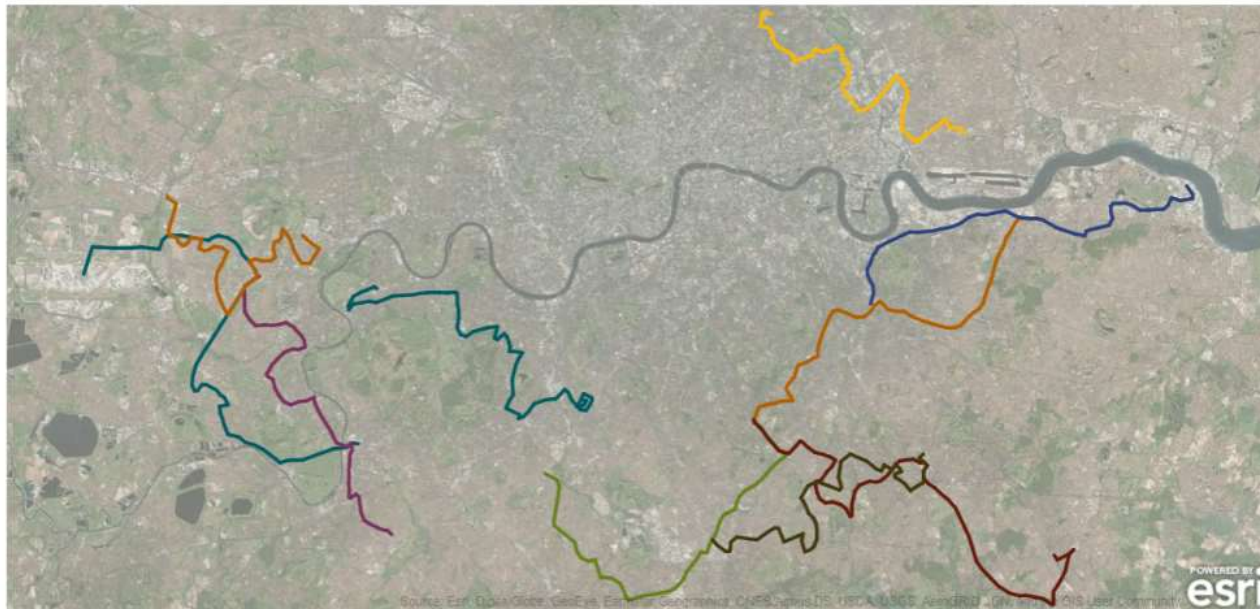
Most frequent



Most passengers

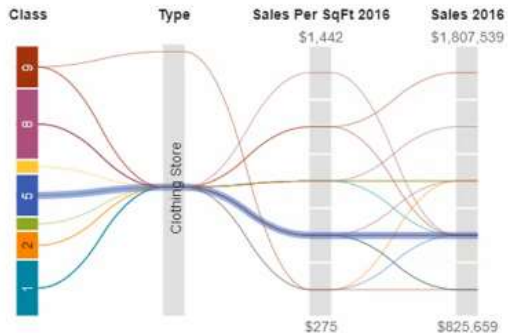


Bus Routes

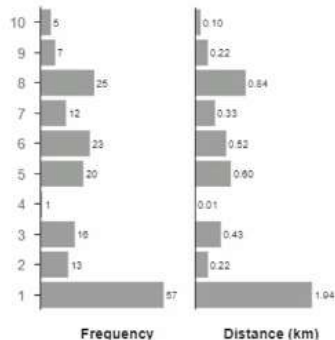


One of the largest bus networks in the world, with more than **9,300 vehicles** in the fleet. Our subsidiary company, London Bus Services Ltd, plans routes, specifies service levels and monitors service quality. It is also responsible for around **50 bus stations** and more than **19,000 bus stops**.

Store Performance by Type



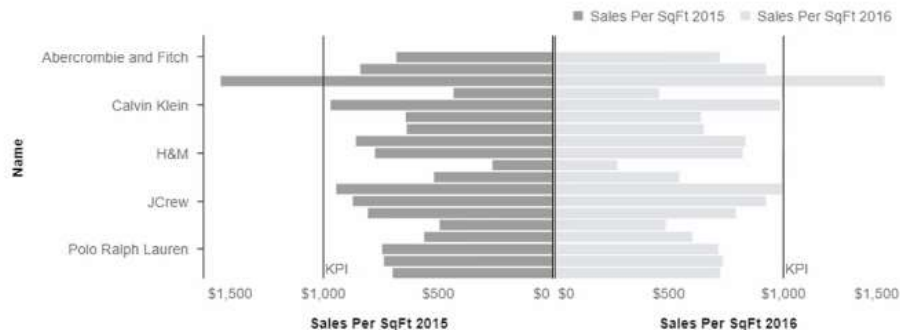
Number of stores and distance by class



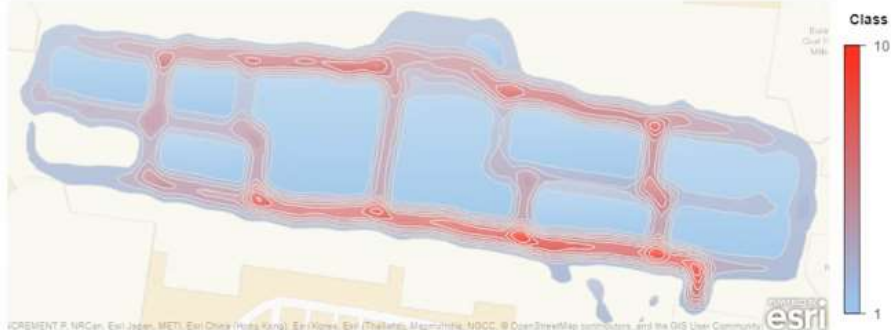
Shop Types



Sales Per Square Foot Performance



Customer Route Density



Ontario Mills®, California's largest outlet and value retail shopping destination, is an indoor climate-controlled mall providing the ultimate shopping experience with more than 200 stores boasting some of the biggest names in men's, women's and children's apparel, jewelry, sporting goods, footwear and more.

# SAS Visual Analytics Gallery



<https://communities.sas.com/t5/SAS-Visual-Analytics-Gallery/tkb-p/vagallery>  
or search for "Visual Analytics Gallery"

# Explore Helpful Resources

## [Ask the Expert](#)

View other user webinars that provide insights into using SAS products to make your job easier.

## [FREE Training](#)

Learn from home – free for 30 days. Get software labs to practice and online support if needed.

## [SAS Support Communities](#)

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An exclusive platform to collaborate, learn and share your expertise. Gain access to a diverse network to advance your career. Special rewards and recognition exclusively for SAS users.

## [SAS Users YouTube Channel](#)

A plethora of videos on hundreds of topics, just for SAS users.

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Meet local SAS users, network and exchange ideas – virtually.

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