



Transit Analysis

December 3, 2019

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Data Landscape

(Rides requests in NYC from Oct 14 - 27, 2019)

Requests

- Origin/Destination
- Proposed Trip Distance/Duration
- Price
- ETA
- Pickup Walking Distance/Duration
- Time

Google Maps

- Transit Trip Distance/Duration
- Transit Walking Distance/Duration
- Vehicle Type

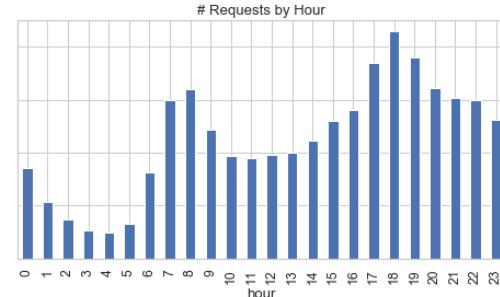
Weather

- Location
- (Apparent) Temperature
- Precipitation Intensity (mm/hr)
- Precipitation Probability
- Wind Speed
- Time

request_id	request_datetime	origin	destination	proposed_via_duration	proposed_transit_duration	apparent_temp	
75971	132441037	2019-10-18 01:02:53	Crown Heights	East Flatbush Erasmus Prospect-Lefferts Gardens	13.5195	15.5	53.456

How do we think about analyzing rides?

- Shift
 - AM Commute, Midday, PM Commute, Late Night, Overnight, Weekend Premium/Non-Premium
- Route
 - 5 Boroughs
 - 100+ Neighborhoods



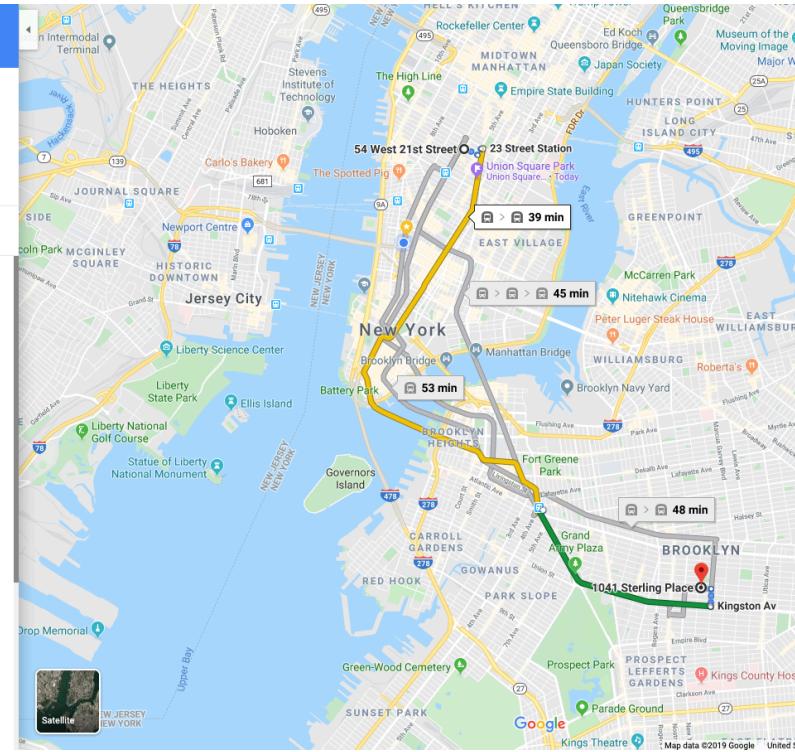
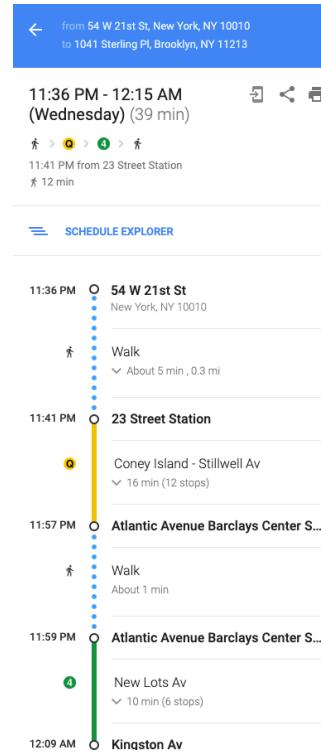
Google Maps Example

Midtown South > Bedford Stuyvesant

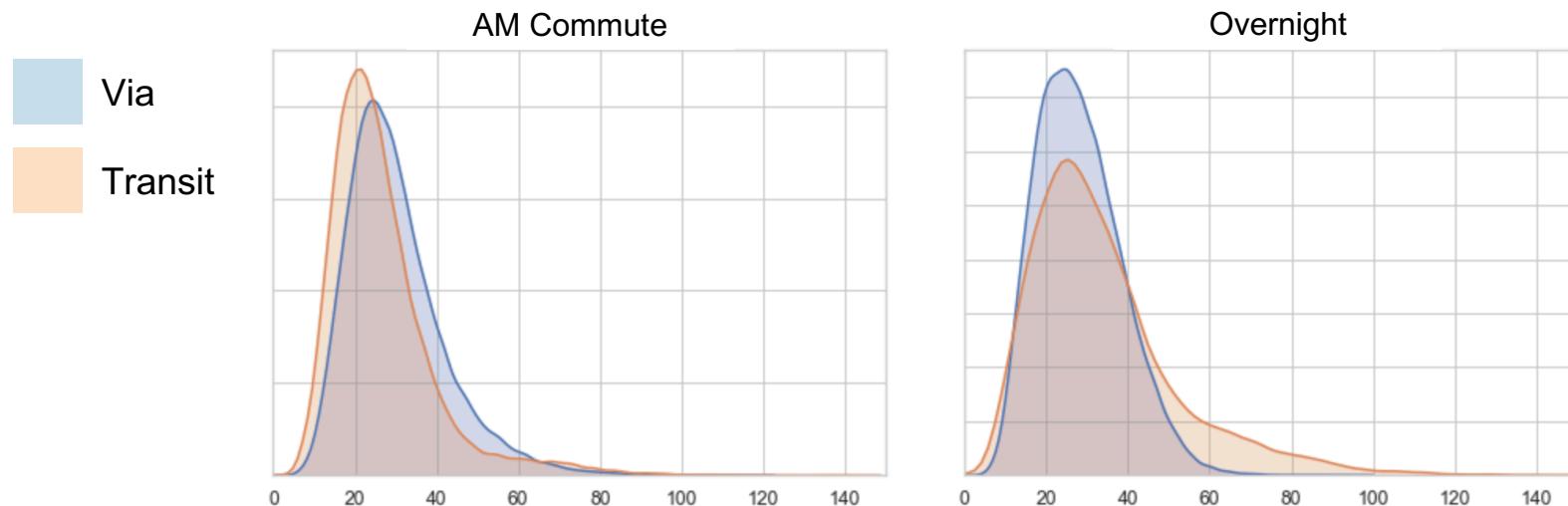
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 "start_address": "54 W 21st St, New York, NY 10010, USA",  
 "start_location": {"lat": 40.7413944, "lng": -73.9931168},
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Step 1

```
({"distance": {"text": "4.6 mi", "value": 7355},  
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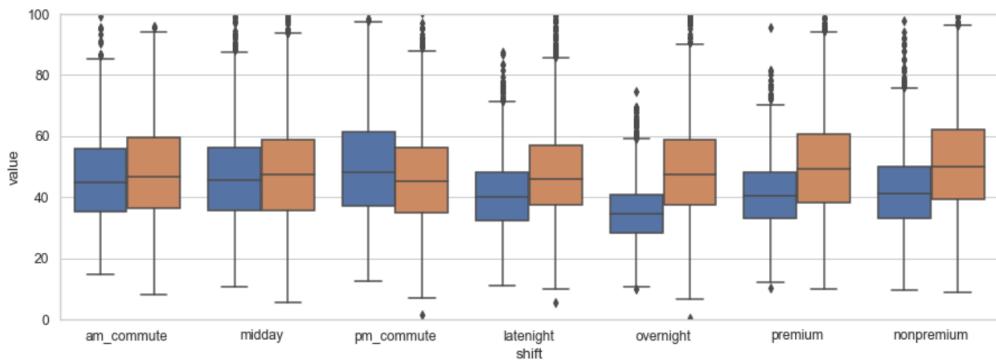
Trip Duration by Shift: All Routes



Total Proposed Trip Duration Via (min) = ETA + Pickup Walking Duration + Dropoff Walking Duration + Ride Duration
Total Proposed Trip Duration Transit (min) = Walking Duration + Ride Duration

Trip Duration by Shift: Manhattan To/From Outer Borough

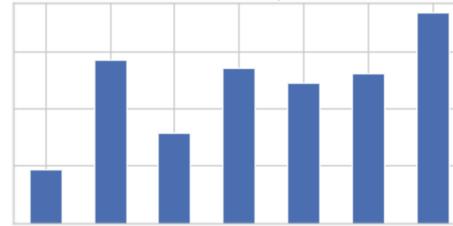
Proposed Trip Duration by Shift



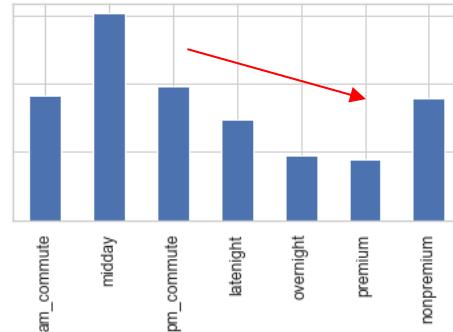
Via Trip Duration

Transit Trip Duration

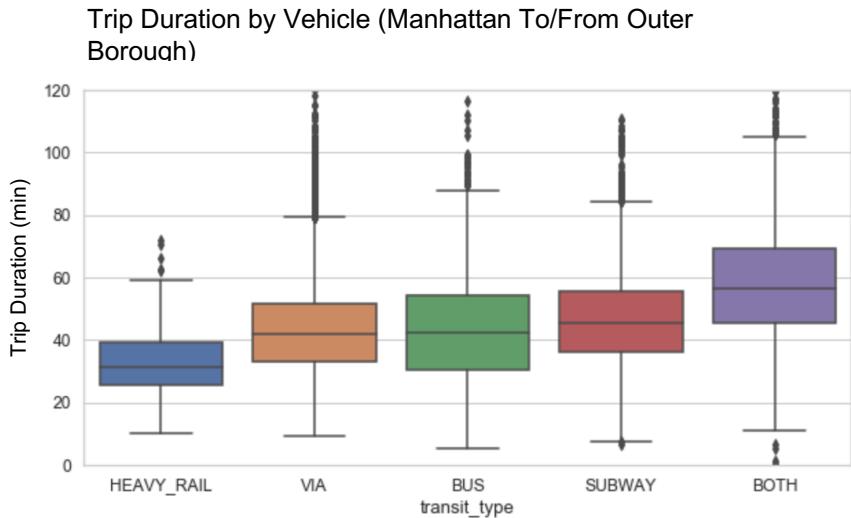
Requests (Manhattan To/From Outer Borough)



Requests (Within Manhattan)



Trip Duration and Acceptance Rate by Vehicle: Manhattan and Outer Boroughs



Within Manhattan

Vehicle Type	Acceptance Rate Rank
Bus	1
Subway + Bus	2
Subway	3
Walking	4

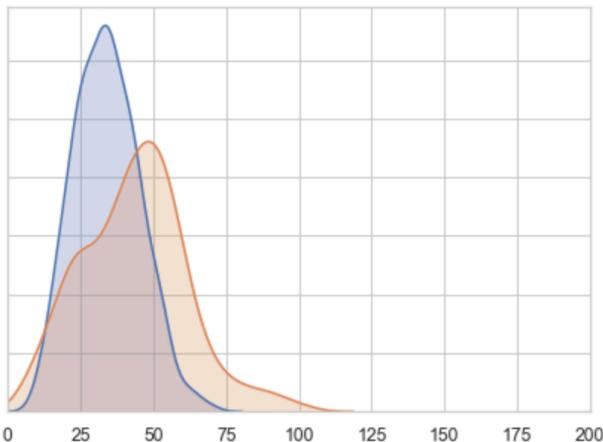
Within Outer Borough

Vehicle Type	Acceptance Rate Rank
Walking	1
Bus	2
Subway	3
Subway + Bus	4

Outer Borough Destination Example

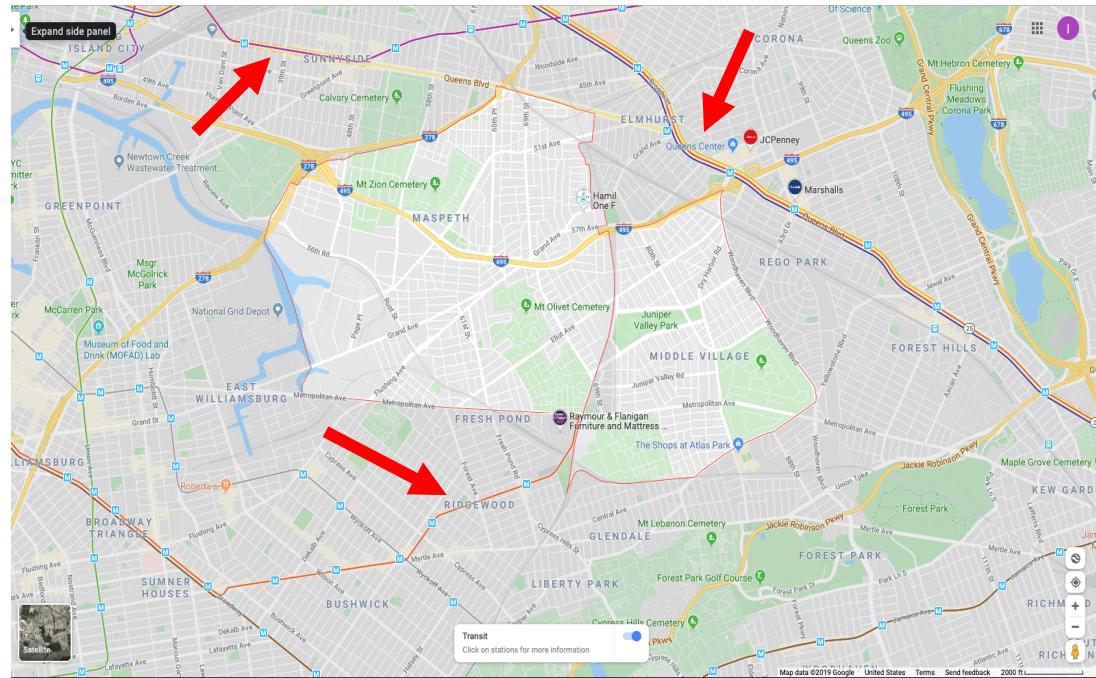
Trips to Middle Village/Maspeth, Queens

Distribution of Trip Duration

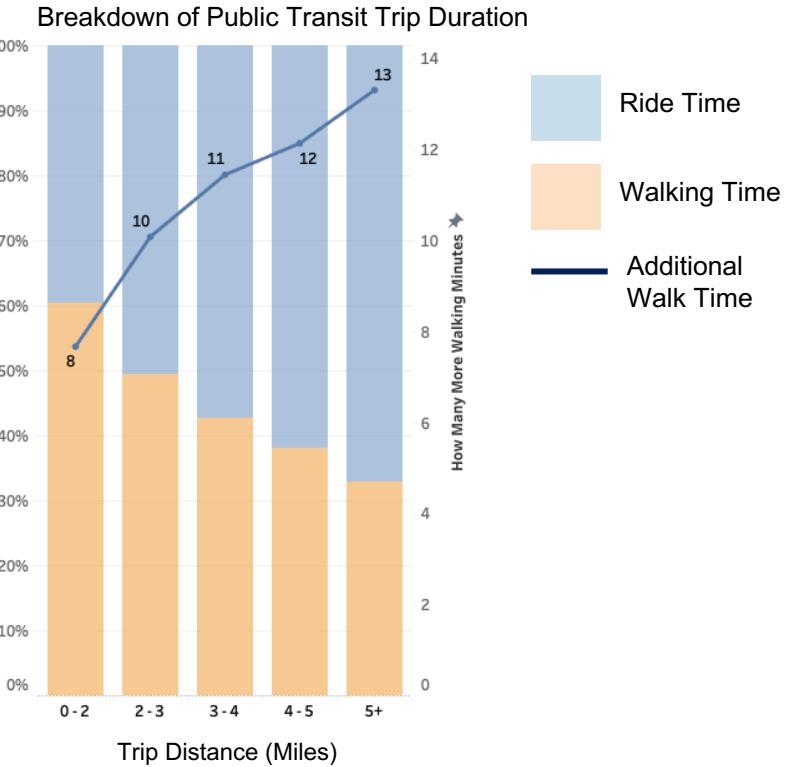
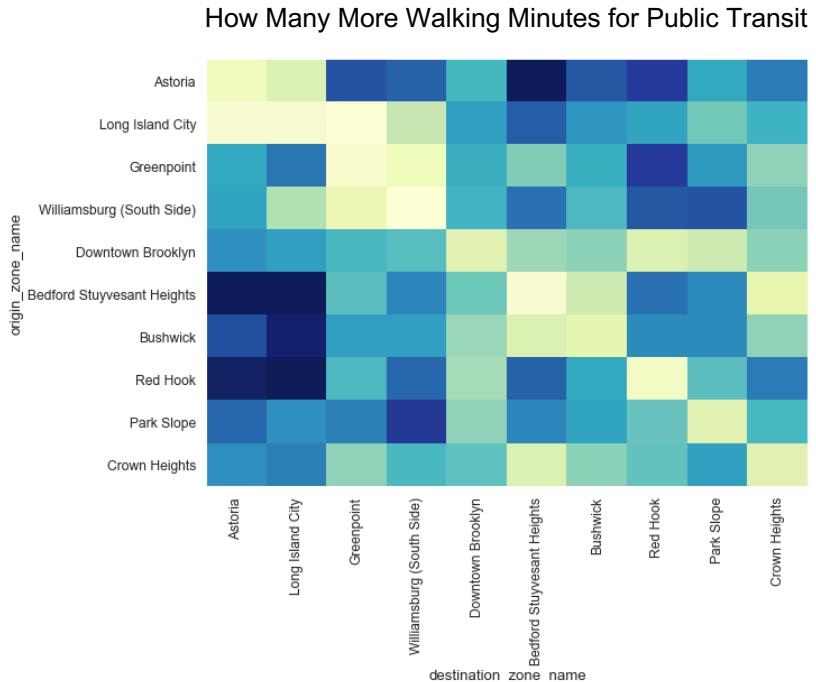


Via

Transit

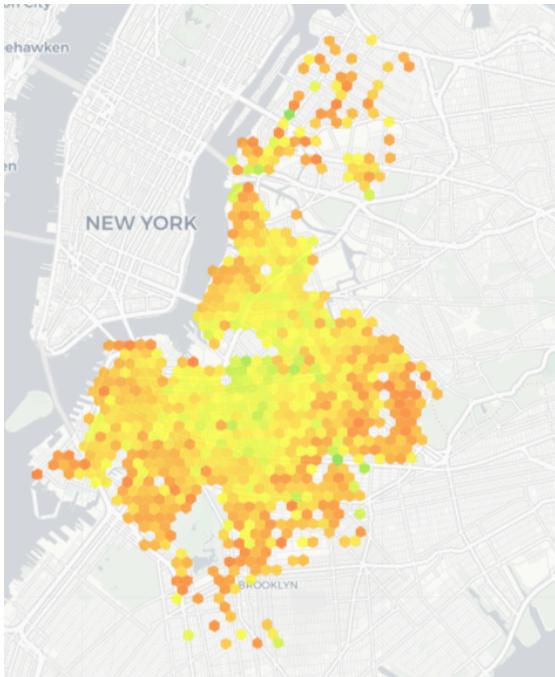


Walking Duration: Within High Density Neighborhoods Outside of Manhattan

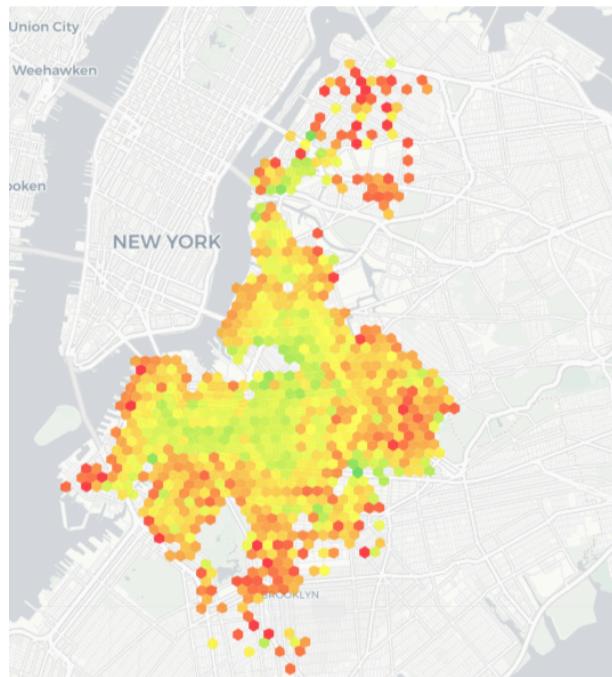


Trip Duration: Within High Density Neighborhoods Outside of Manhattan

Via Proposed Trip Duration



Public Transit Proposed Trip Duration

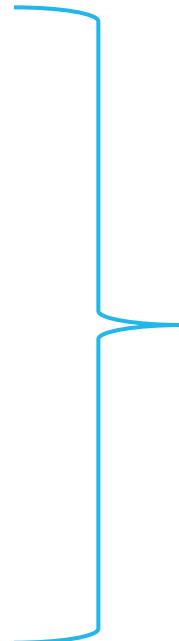


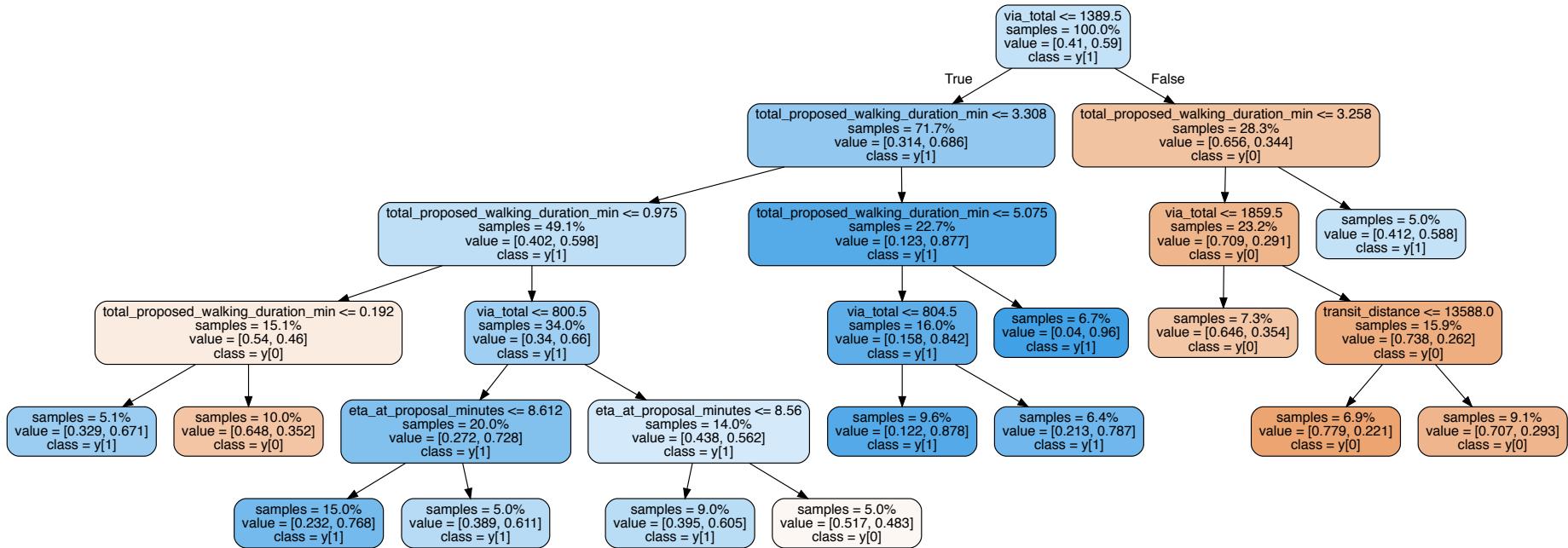
How does access to public transit options effect acceptance rate?

- Route
- Shift
- Proposed Trip Distance/Duration
- Proposed Walking Distance/Duration
- Price
- ETA

- Transit Proposed Walking Distance/Duration
- Transit Proposed Trip Distance/Duration

- Apparent Temperature
- Wind Speed
- Precipitation Intensity
- Precipitation Probability





Next Steps

- Expand analysis to greater time periods
- Look into the effects of weather (temperature, precipitation) during different seasons
- Real time transit monitoring (delays and track work)
- Customer use cases

