

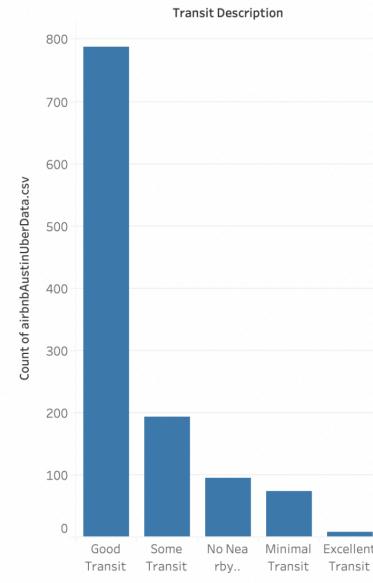
46885-A3 Data Exploration and Visualization - Homework 4
Team 12 Write-up

Question 1: Explore accessibility of properties in our dataset.

a)

Number of properties for each Transit Description level

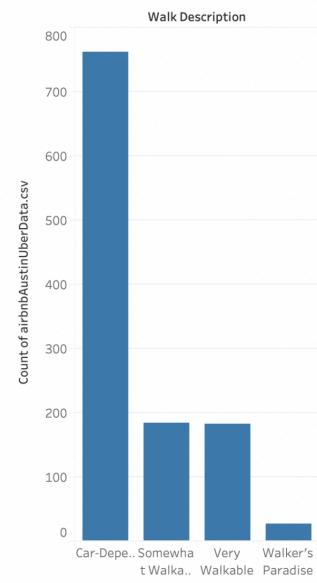
We can observe that a vast majority of properties have good transitivity (almost 800). With less transit availability we can see less properties being available with the exception of excellent transit properties which are very few.



b)

Number of properties for each Walk Score Description level

We can observe that a vast majority of properties are in car-dependent locations. Significantly fewer properties are either somewhat or very walkable. Properties categorized as walker's paradise are very few.

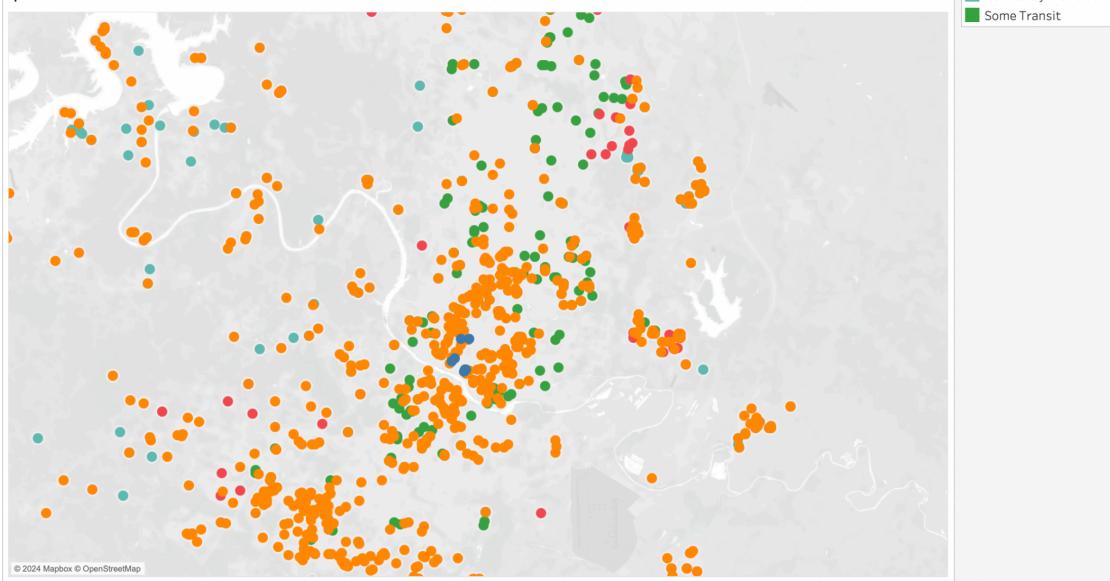


Question 2: Use maps to visualize where properties with different Transit/Walk Descriptions are located.

a)

Visualize where properties are with different Transit Descriptions are located

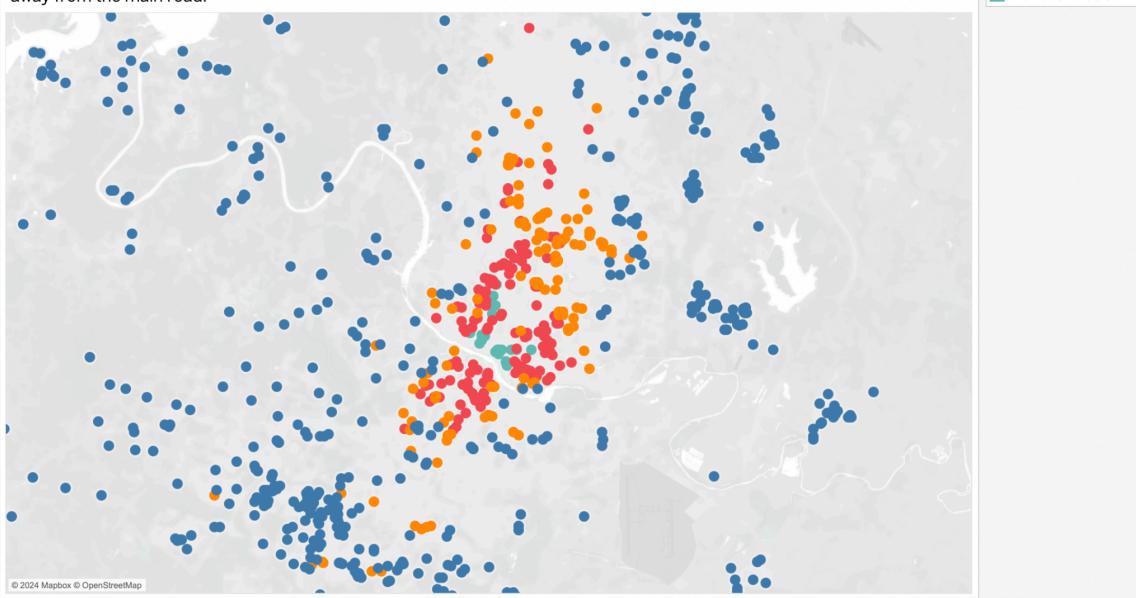
We can observe that excellent transit and good transit properties are clustered very close to the mainroad. On the other hand, properties with some, minimal or no nearby transit are further inland - much further away from the road



b)

Visualize where properties are with different Walk Descriptions are located

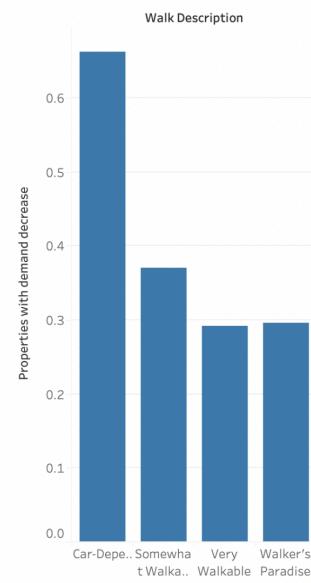
We can observe that properties categorized as walker's paradise, very walkable and even somewhat walkable are clustered around the main road. On the other hand, car dependent properties are much more spreadout inland - significantly further away from the main road.



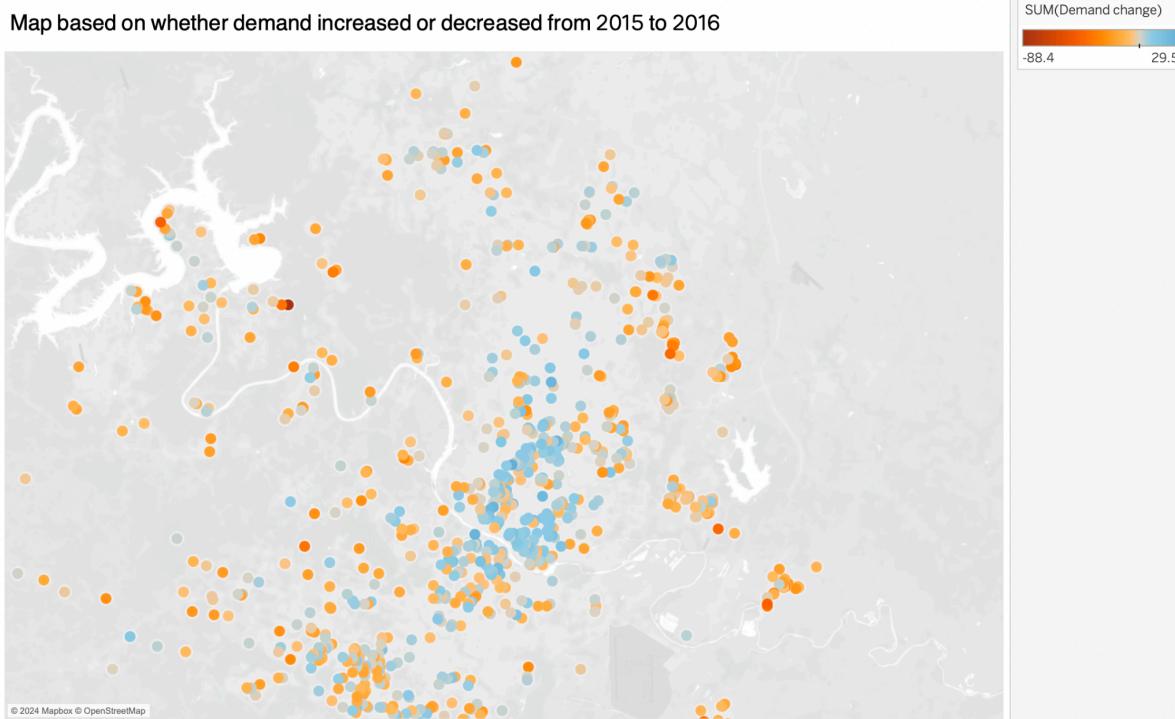
Question 3: For the next several questions, we will look at properties' demand change (from 2015 to 2016) and its relationship with Walk Description.

Fraction of properties which saw a demand decrease from 2015 to 2016

We can observe that car dependent properties saw the largest decrease in demand from 2015 to 2016 - as expected considering the context of the uber ban. Properties categorized as very walkable or walker's paradise saw the least demand decrease.



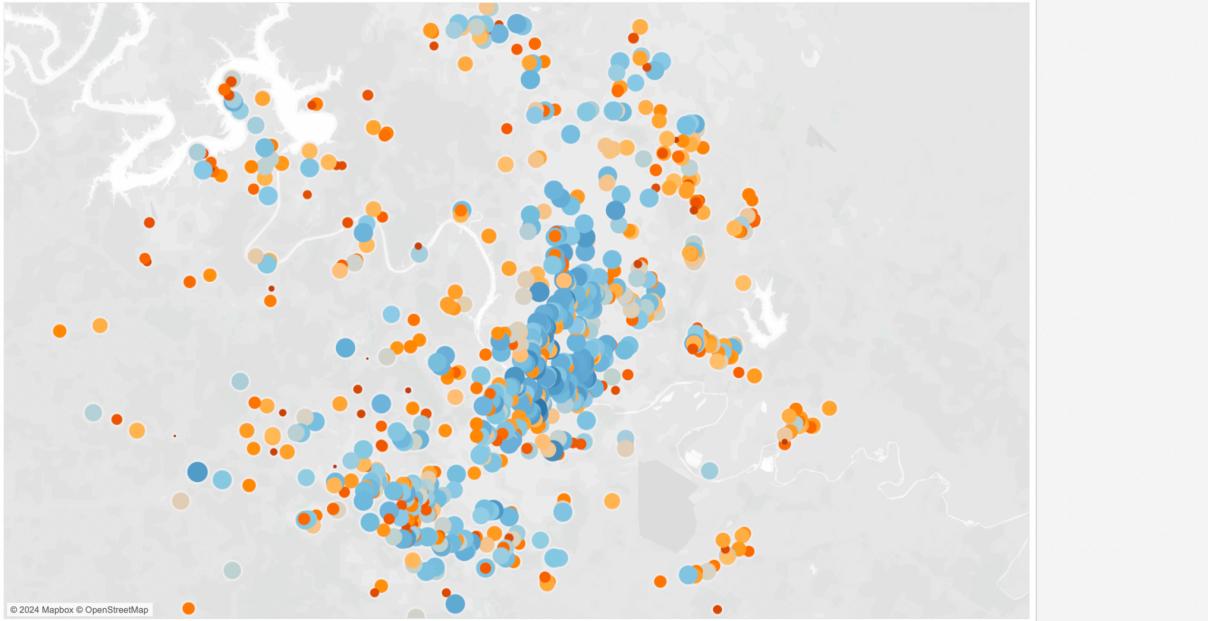
Question 4: Draw a map of properties and color the map based on whether demand increased or decreased from 2015 to 2016.



Question 5: Better understand where we see more increased/decreased demand.

Map with rounded latitude and longitude and show the *average demand change* for each location

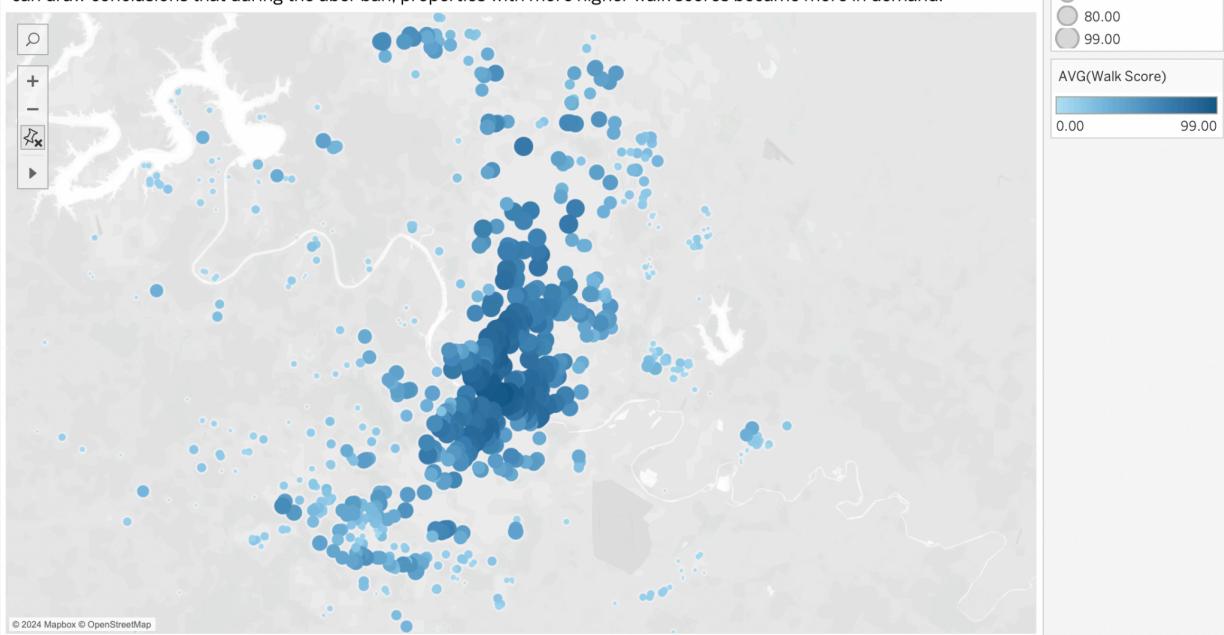
The colors range from blue to orange, where blue represents an increase in demand and orange a decrease. We can observe an increase in demand concentration around the main road while locations which are further inland (or further away from the epi center of the cluster) seem to be decreasing in demand.



Question 6: Plot the map with rounded latitude and longitude and show the *average Walk Score* for each location.

Map with rounded latitude and longitude and *average Walk Score* for each location

There's a very obvious connection to graph 5. We can observe high walk scores concentrated around the main road (ie. epicenter of the map) which correlates with the properties which has a highest demand increase from 2015 to 2016. We can draw conclusions that during the uber ban, properties with more higher walk scores became more in demand.



Question 7: Plot a map with rounded latitude and longitude. Using the average Walk score and Transit score, cluster these locations defined by the rounded latitude and Longitude. Come up with 3 clusters and color the dots based on clusters.

Map of clusters based on properties' average walk score and transit score

Cluster 1 has a moderate average transit score and a low average walk score, suggesting areas that are somewhat transit-friendly but not particularly walkable. Cluster 2 is similar in transit accessibility to Cluster 1 but has a much higher average walk score, indicating areas that are both transit-accessible and highly walkable. Cluster 3 has a low average transit score and a low average walk score, pointing to areas that are generally less accessible by either transit or on foot.

