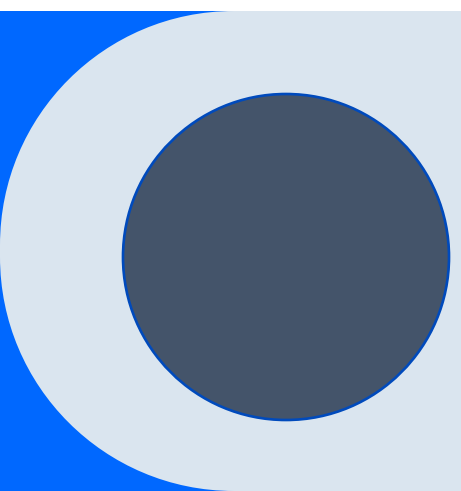



Analysis and Summary of San Antonio 311 – Customer Service



Author: Michael Woods
Date: 3/29/2024



Outline:

Executive Summary

Introduction

Methodology

Results

- Visualizations

- Tableau Dashboard

Findings and Implications

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Executive Summary:

- District with Most Customer Service Cases: **District 1**
- Category with Most Customer Service Cases : **Information**
- Department with Most Customer Service Cases: **311**
- Sub-Category with Most Customer Service Cases: **Cust. Serv.(Complaint)**
- Source of Most Customer Service 311 Cases: **Constituent Call**
- The majority of SLA dates are NOT made by their deadline.
- Can the new Integrated Community Safety Office (ICSO) help in finding answers to data questions and assist in inter-department communication to find lasting answers?



Introduction:

The analysis of this dataset provides a comprehensive **summary of 311 cases directed to Customer Service**, including information on districts, categories, sub-categories, **source reporting methods**, cases statuses and SLA dates. It also offers insights into the reasons behind **constituents' use of 311**. Additionally, this dataset provides a glimpse into the **response time** of Customer Service to constituents' queries.



Methodology:

The entire dataset was downloaded as a .csv file, accompanied by a spreadsheet that details its contents. The spreadsheet underwent reformatting to enhance its informativeness and readability. Additionally, spelling errors were rectified, dead hyperlinks were replaced with active ones, and further details were incorporated into the comments section.

The initial analysis of the 311 dataset in .csv format was loaded into a Pandas dataframe, akin to Excel, using the Python programming language within a JupyterLab Notebook. The coordinate system present in the dataset was converted from NAD(1986) to latitude and longitude coordinates for utilization in the Tableau visualization software. Various data cleaning methods were applied and tested before generating a new .csv file, which was subsequently exported to Tableau.

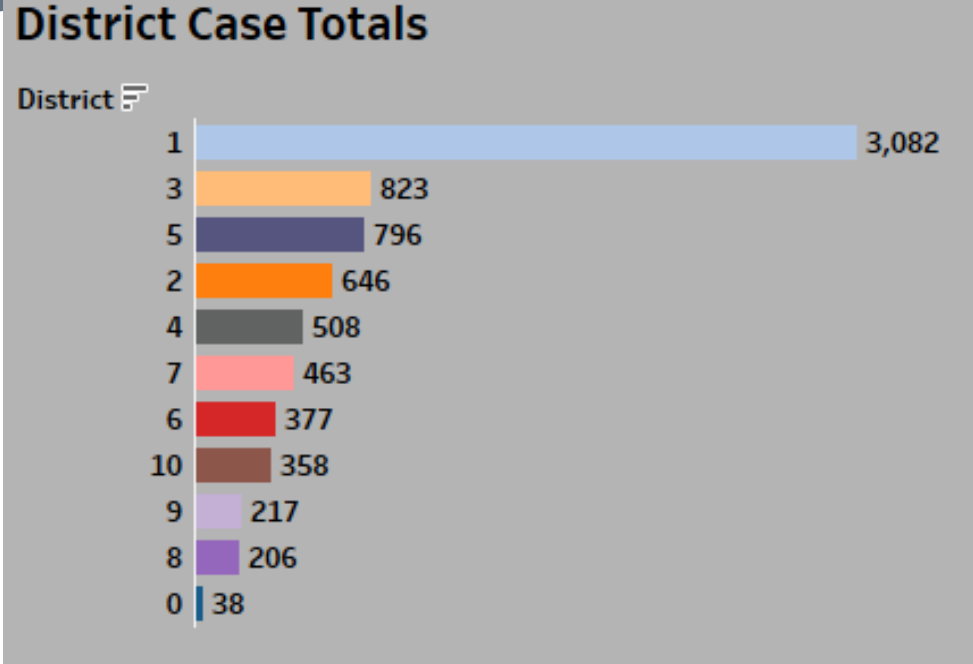
The data was then manipulated into a Tableau Dashboard that summarizes the data and filters on any of the filters in the legend such as District, Source etc. . .

Additionally, various calculations and charts were programmed using Python in JupyterLab and the Tableau Dashboard.

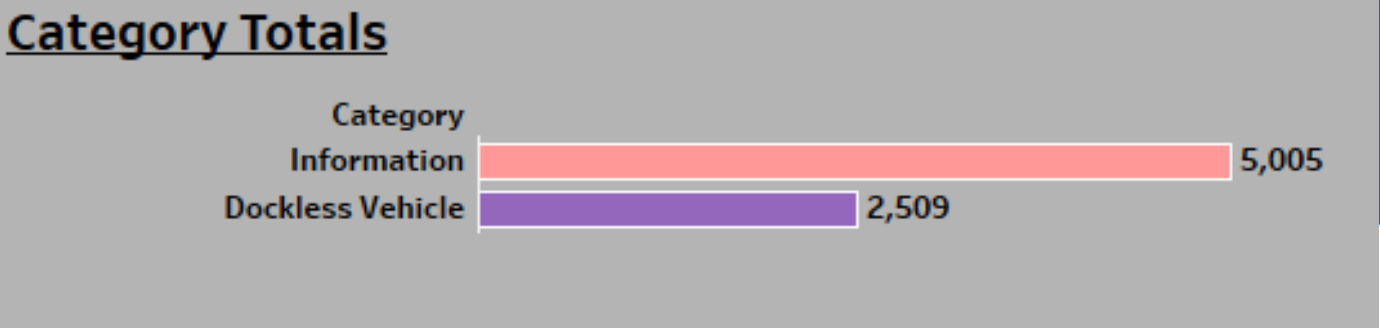
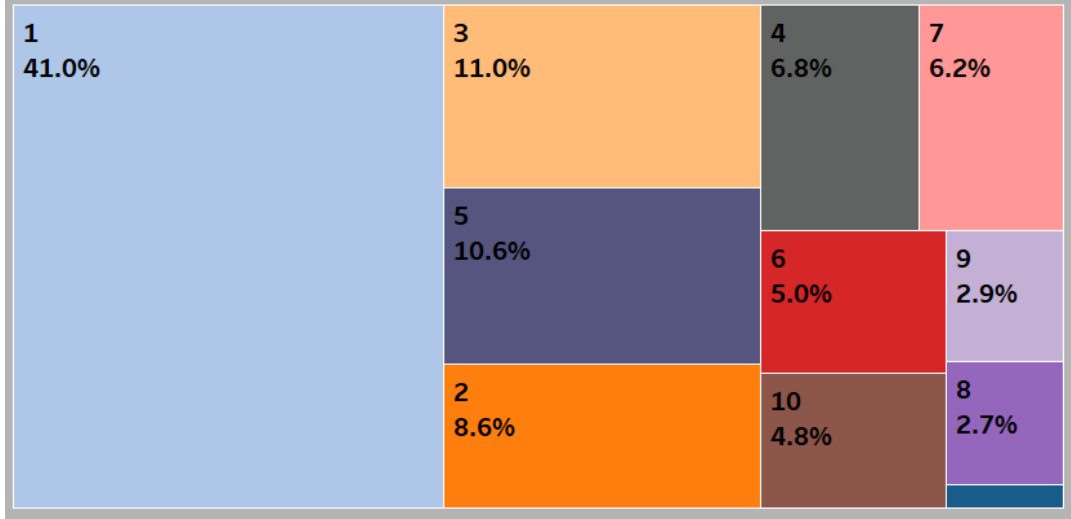
Results:

1. The districts that use 311 Customer Service the most, in order are **1, 3, 5, 2, 4, 7, 6, 10, 9, 8, 0.**
2. The Only Departments for Customer Service 311 use in order are **311, Solid Waste Management, Public Works, Animal Care Services and Parks & Recreation.**
3. The Only Categories for Customer Service 311 use are **Information and Dockless Vehicles.**
4. When using Customer Service 311 constituents use **"Constituent Call" 73.4%** of the time, "Code Proactive Calls" 0.0% and the **"311 Mobile App" 26.6%.**
5. The majority of Customer Service Cases **do NOT meet** the deadlines outlined in their respective Service Level Agreement **(SLA) dates(63.0%)** even though the **Cases are Closed at a rate of 76.2%.**

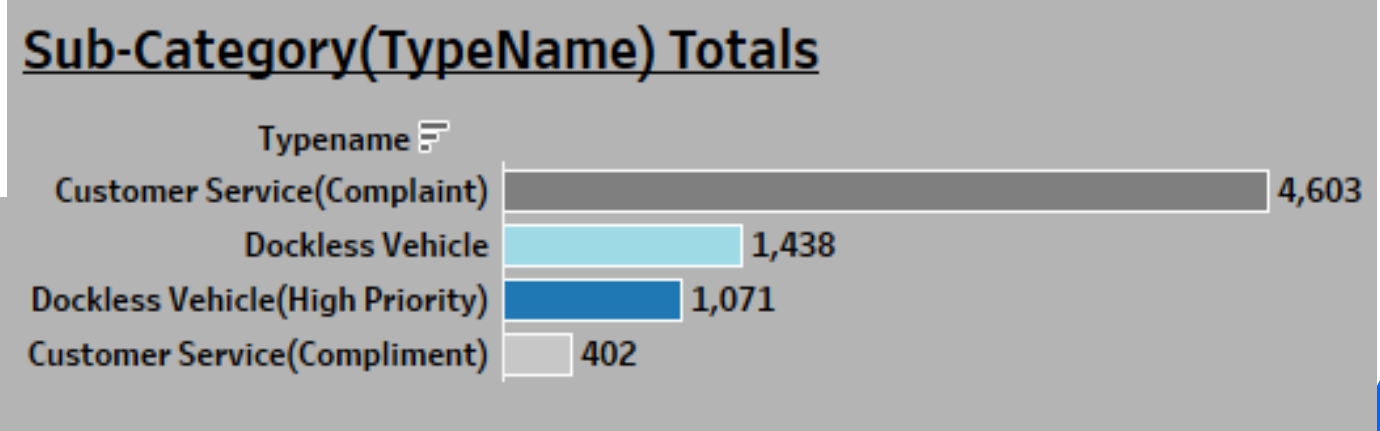
District Case Totals | Category Totals



Case Totals By District

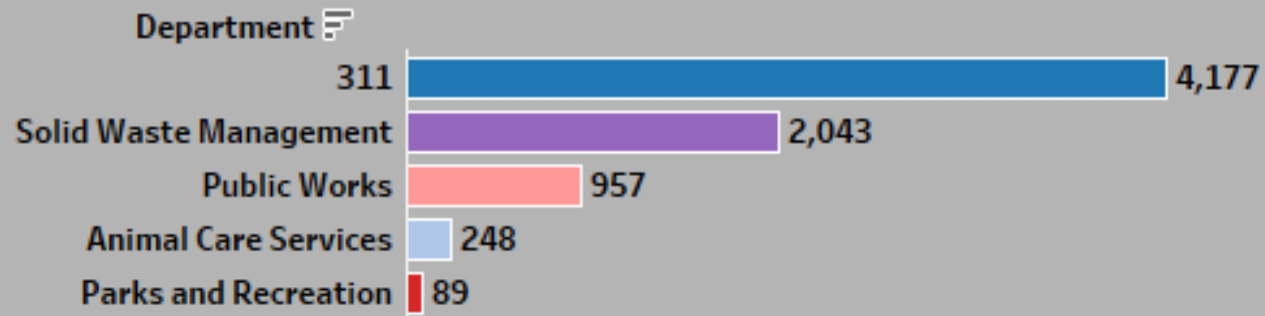


Sub-Category(TypeName) Totals



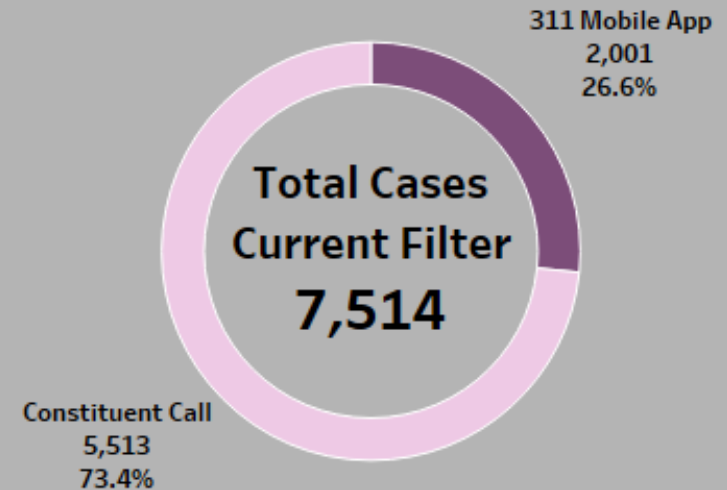
Department Totals

Department Totals



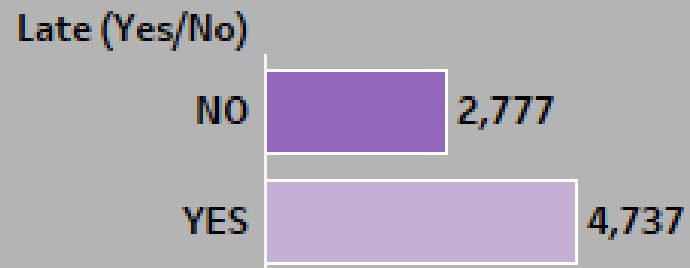
Source Totals

Total Cases and Source Totals



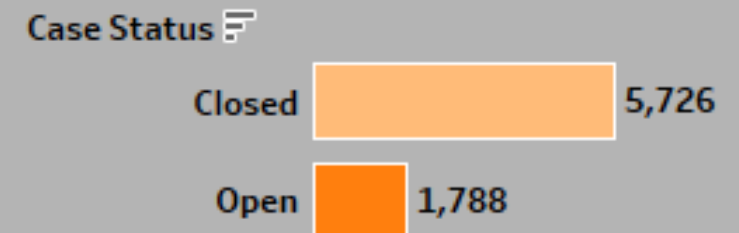
SLA Case Resolution

SLA Case Resolution Late



Case Status Totals

Case Status Totals



Findings and Implications

Findings:

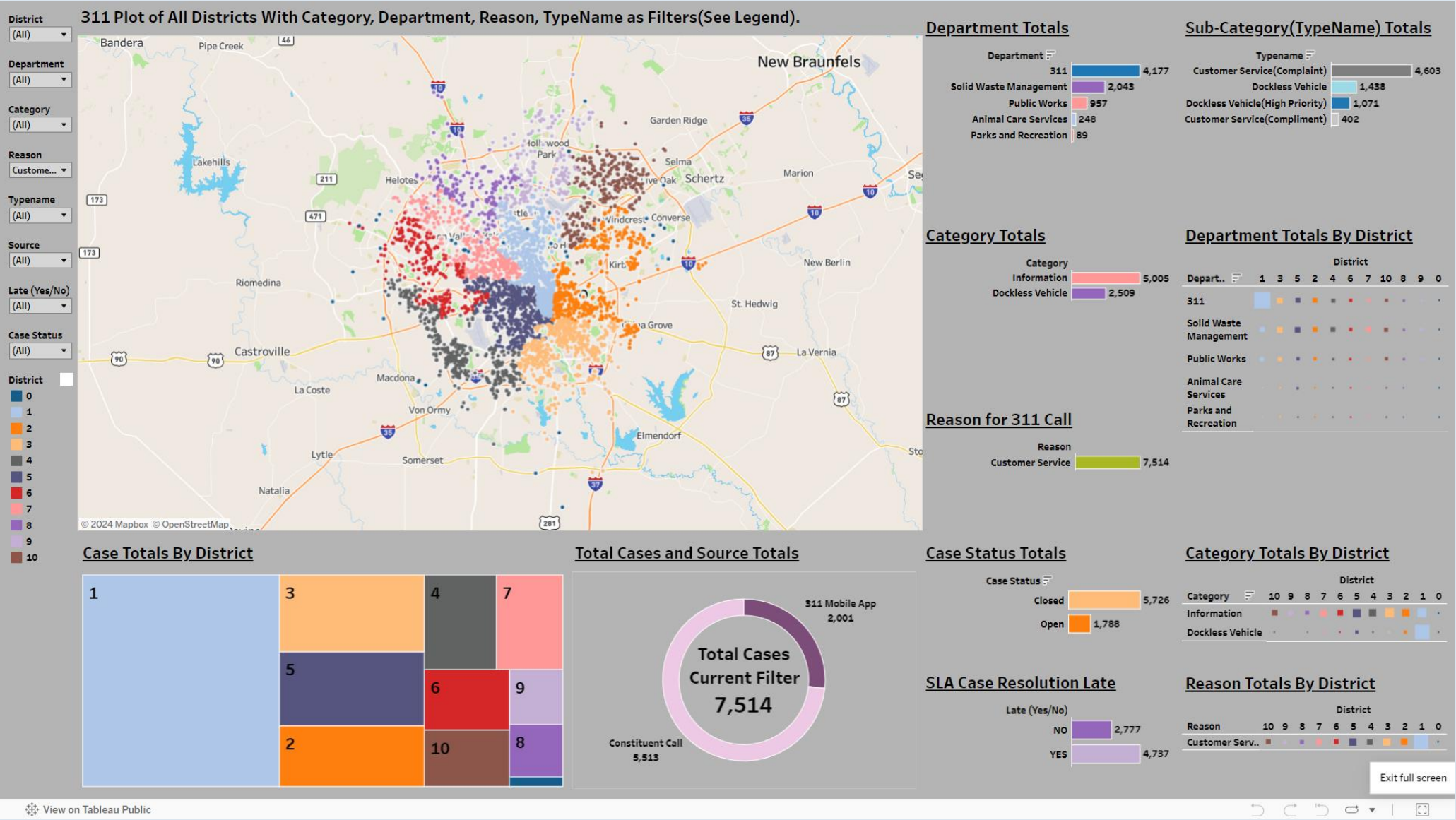
1. The 311 Mobile App was extensively utilized to report dockless vehicle cases, with nearly 80% of all such cases being reported via the app.
2. Dockless vehicle cases exhibit a notably higher closure rate (97%) compared to other Customer Service categories. In contrast, cases related to Information have a lower closure rate of 66%.
3. While Customer Service shows a high rate of case closure, it often fails to meet SLA due dates.
4. District 1 demonstrates significantly higher utilization of Customer Service, accounting for 41% of all cases.
5. Customer Service inquiries related to Information are solely accessed via 'Constituent Call', with no utilization through the 311 Mobile App.
6. The dataset also includes dates dating back to 2019(2017 in the entire 311 dataset), with the average closure time for a Customer Service case being 355 days. Specifically, dockless vehicle case closure averages 669 days.

These findings highlight the predominant use of the 311 Mobile App for dockless vehicle reports, variations in closure rates across different service categories, challenges in meeting SLA deadlines, and the disparity in Customer Service utilization among districts.

Implications:

1. Understanding constituents' preference for reporting dockless vehicles through the 311 Mobile App can provide insights into the app's user experience and effectiveness compared to other reporting methods.
2. Investigating why dockless vehicle cases are closed at a high rate but after their SLA due dates may reveal underlying inefficiencies or challenges in meeting service level agreement requirements.
3. Exploring why cases are closed at a high rate just after their SLA due dates can uncover factors influencing case management practices or SLA enforcement procedures.
4. Understanding the reasons behind the higher utilization of Customer Service in District 1, such as tourism or specific community needs, can inform targeted service improvement strategies and resource allocation decisions.
5. Investigating the availability of an information option on the 311 Mobile App and exploring the feasibility of adding a chatbot specifically for Customer Service inquiries could potentially enhance user experience, optimize resource utilization, and reduce costs within the city's customer service operations.
6. The data also suggests possible issues with the software backend and database infrastructure, as evidenced by reporting dates going back to 2019(2017 for entire dataset). Additionally, the average case closure time is exceptionally long, particularly on dockless vehicles, despite a high rate of case closure.

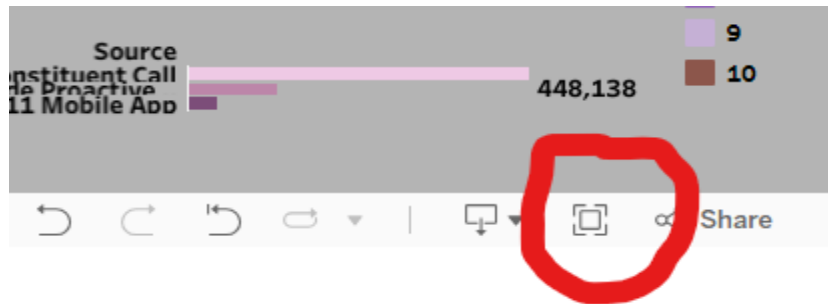
Snapshot of Interactive Tableau Dashboard



See the next slide for details on accessing and using the Interactive dashboard.

A Couple Notes About The Dashboard

- This dashboard is filtered on the entire 311 dataset, 600,000+ Rows and can be filter on any of the filters on the side. This also means that the dashboard can quickly be filtered for another department, director or used to compare and analyze data from those other departments.
- (If not already filtered) For the Customer Service Dashboard go to the filters and select 'Reason' and then select 'Customer Service' in the drop down menu.
- Make sure to put the dashboard in full screen mode
- To do this, Click on the icon that is circled in red below. The icon is located at the bottom right hand corner of the screen.



- The dashboard will also filter on any individual or combination of filters in the legend. This will filter the entire dashboard via the user specifications.
- The Geo-Spatial map is also interactive.

[Link To The Tableau Dashboard](#)

Conclusion

Usage Patterns:

District 1 exhibits the highest utilization of Customer Service, potentially due to tourism. Constituent Calls and the 311 Mobile App are the primary channels, with most dockless vehicle reports submitted via the app.

Case Resolution:

While dockless vehicle cases are reported and closed, many cases fail to meet SLA deadlines. This indicates potential inefficiencies in case management despite a high closure rate.

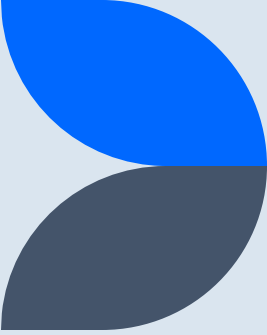
Potential Improvements:

Implementing features like an Information option on the 311 Mobile App or a chatbot for Customer Service inquiries could streamline processes and reduce costs.

Interdepartmental Collaboration:

The Integrated Community Safety Office (ICSO) could enhance data sharing and communication between departments, facilitating informed decision-making and sustainable solutions.

Overall, optimizing service delivery and fostering interdepartmental collaboration are crucial for improving efficiency and responsiveness in governance.



Questions for Further Analysis:

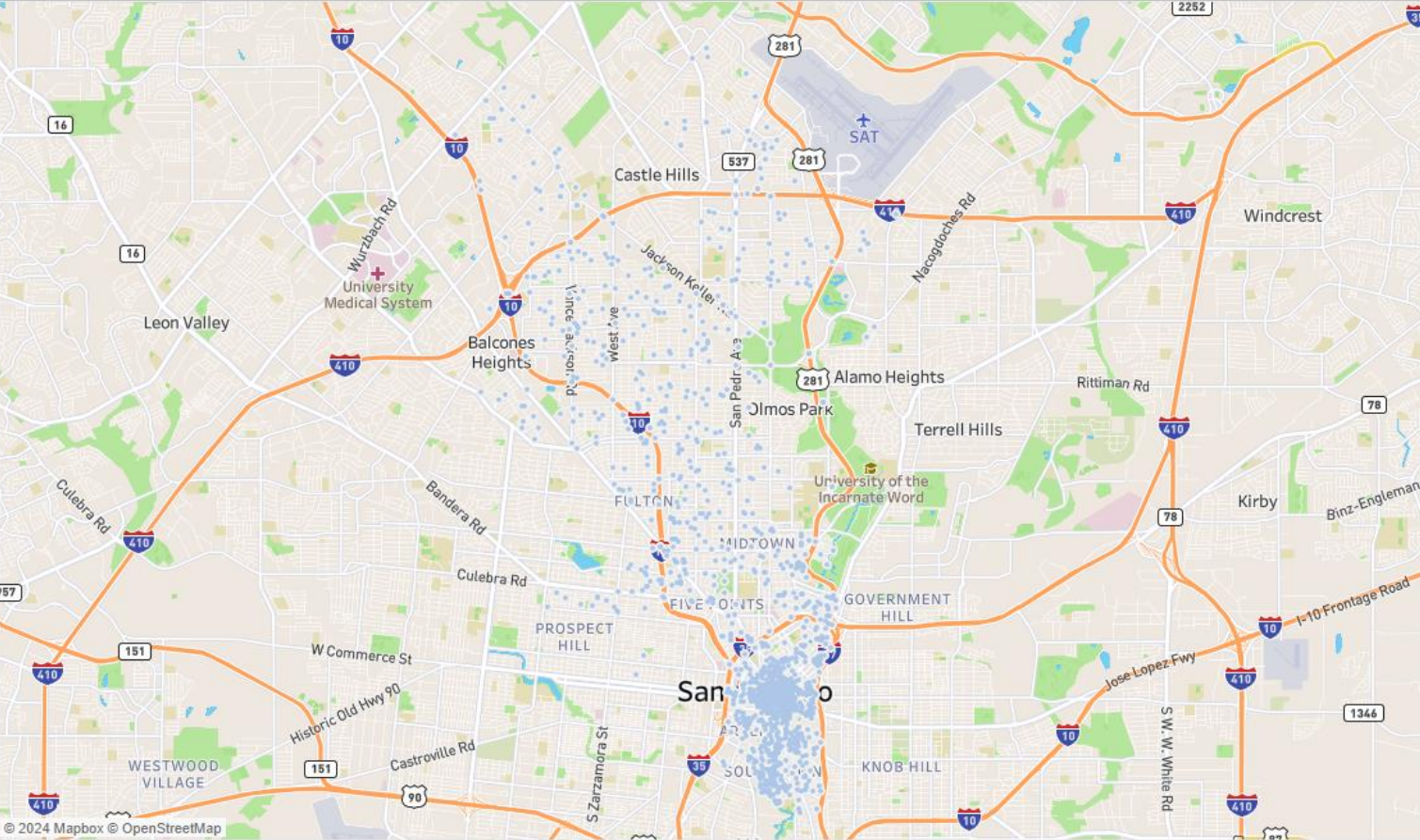
1. Why are there much higher cases of Customer Service use in D1?
2. What departments & districts get the most customer service complaints and compliments?
3. Why are there cases from 2017 in the dataset?
4. How does the City of San Antonio compare to other major metropolitan areas on Constituents use of 311?
5. Why are dockless vehicles not meeting SLA Resolution Dates?
6. Why is the average resolution time for customer service 355 days compared to 24 days of average resolution time for whole the dataset(600,000+ cases)?
7. Juxtapose other datasets against the 311 dataset to find more substantial correlations and causations.

Appendix:

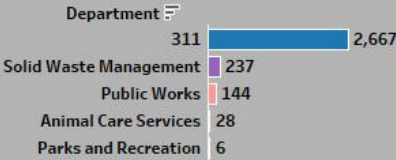
- Github Links to Jupyter Notebooks:
- [Jupyter_NoteBook_1](#)
- [Jupyter_Notebook_2](#)

Columns	Description	Data Type	Comment
_id	The number for the respective case on the spreadsheet, automatically assigned by the export.	Text	
Category	This general category was developed to place 311 services in a high level category, Different than their respective department.	Text	There are eleven categories: 'Animals', 'Historic Preservation', 'Streets & Infrastructure', 'Dockless Vehicle', 'Traffic Signals and Signs', 'Information', 'Property Maintenance', 'Graffiti', 'Parks', 'Health & Sanitation', 'Solid Waste Services'
CASEID	The unique case reference number is assigned by the 311 Lagan customer relationship Management system.	10 numeric characters	
OPENEDDATETIME	The date and time that a case was submitted.	mm/dd/yyyy hh:mm:ss AM/PM	
SLA_Date	Every service request type has a due date assigned to the request, based on the request type name. The SLA Date is the due date and time for the request type based on the service level agreement (SLA). Each service request Type has a timeframe in which it is scheduled to be addressed.	mm/dd/yyyy hh:mm:ss AM/PM	
CLOSEDDATETIME	The date and time that the case/request was closed. If blank, the request Has not been closed as of the Report Ending Date.	mm/dd/yyyy hh:mm:ss AM/PM	If there is no closed date, the case is still open as of the Reporting Ending Date.
Late (Yes/No)	This indicates whether the case has surpassed its Service Level Agreement due date for the specific service request.	YES/NO	
Dept	The City department to whom the case is assigned.	Text	There are Nine Departments: 'Animal Care Services', 'Office of Historic Preservation', 'Public Works', '311', 'Development Services', 'Parks and Recreation', 'Human Services', 'Solid Waste Management', 'Metro Health'
REASONNAME	The department division within the City department to whom the case is assigned.	Text	Department Division within City Department: 'Signals', 'Waste Collection', 'Traffic Engineering Design', 'Signs and Markings', 'Storm Water Engineering', 'Field Operations', 'Historic Preservation', 'Traffic Operations', 'Trades', 'Customer Service', 'Streets', 'Code Enforcement', 'Land Development', 'Stormwater', 'Homeless Services', 'Natural Resources', 'Solid Waste', 'Park Projects', 'Urban Forestry', 'Miscellaneous', 'Food Establishments', 'Clean and Green', 'Facility License', 'Vector', 'General Sanitation', 'Brush'
TYPENAME	The service request type name for the issue being reported. Examples include stray animals, Potholes, overgrown yards, junk vehicles, traffic signal malfunctions, etc.	Text	
CaseStatus	The status of a case which is either open or closed.	Open/Closed	
SourceID	The source id is the method of input from which the case was received.	Text	Sources for service requests: 'Constituent Call', '311 Mobile App', 'Proactive Calls'
OBJECTDESC	The location address or intersection for the reported case/service requested.	Text	
Council District	The Council District number from where the issue was reported.	Numeric (0-10)	Council District Map Link:https://www.sanantonio.gov/Portals/0/Files/GIS/PoliticalMaps/CCD_8.5x11.pdf NAD(1983)State Plane Texas South Central FIPS 4204 Feet
XCOORD	The X coordinate of the case reported.	8 numeric character	Link to NOAA Coordinate Converter https://www.ngs.noaa.gov/NCAT/
YCOORD	The Y coordinate of the case reported.	8 numeric character	NAD(1983)State Plane Texas South Central FIPS 4204 Feet Link to NOAA Coordinate Converterhttps://www.ngs.noaa.gov/NCAT/

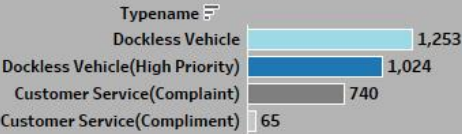
311 Plot of All Districts With Category, Department, Reason, TypeName as Filters(See Legend).



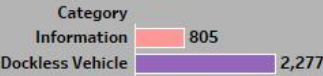
Department Totals



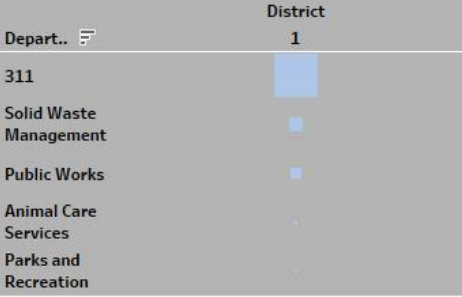
Sub-Category(TypeName) Totals



Category Totals



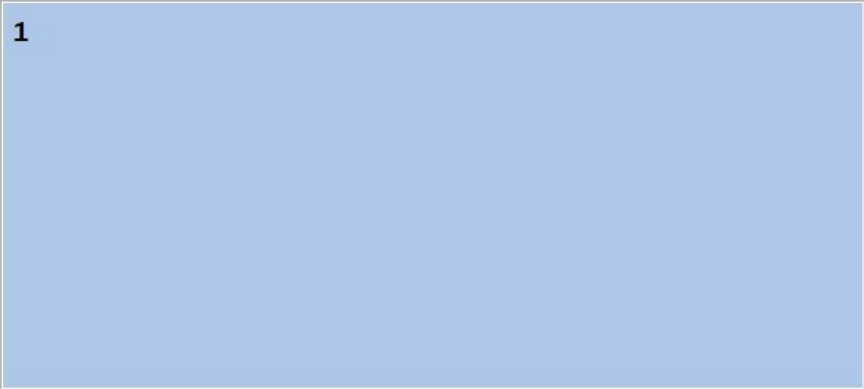
Department Totals By District



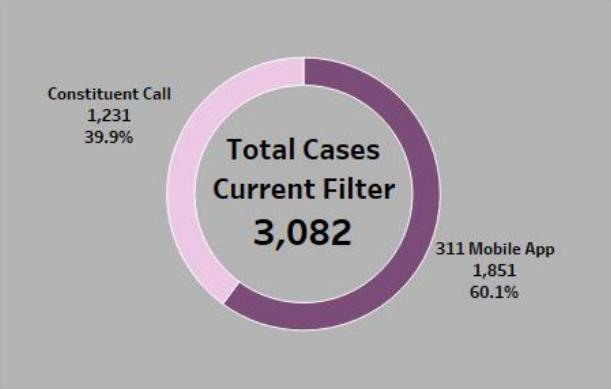
Reason for 311 Call



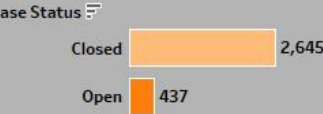
Case Totals By District



Total Cases and Source Totals



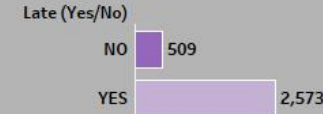
Case Status Totals



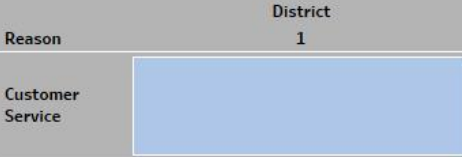
Category Totals By District



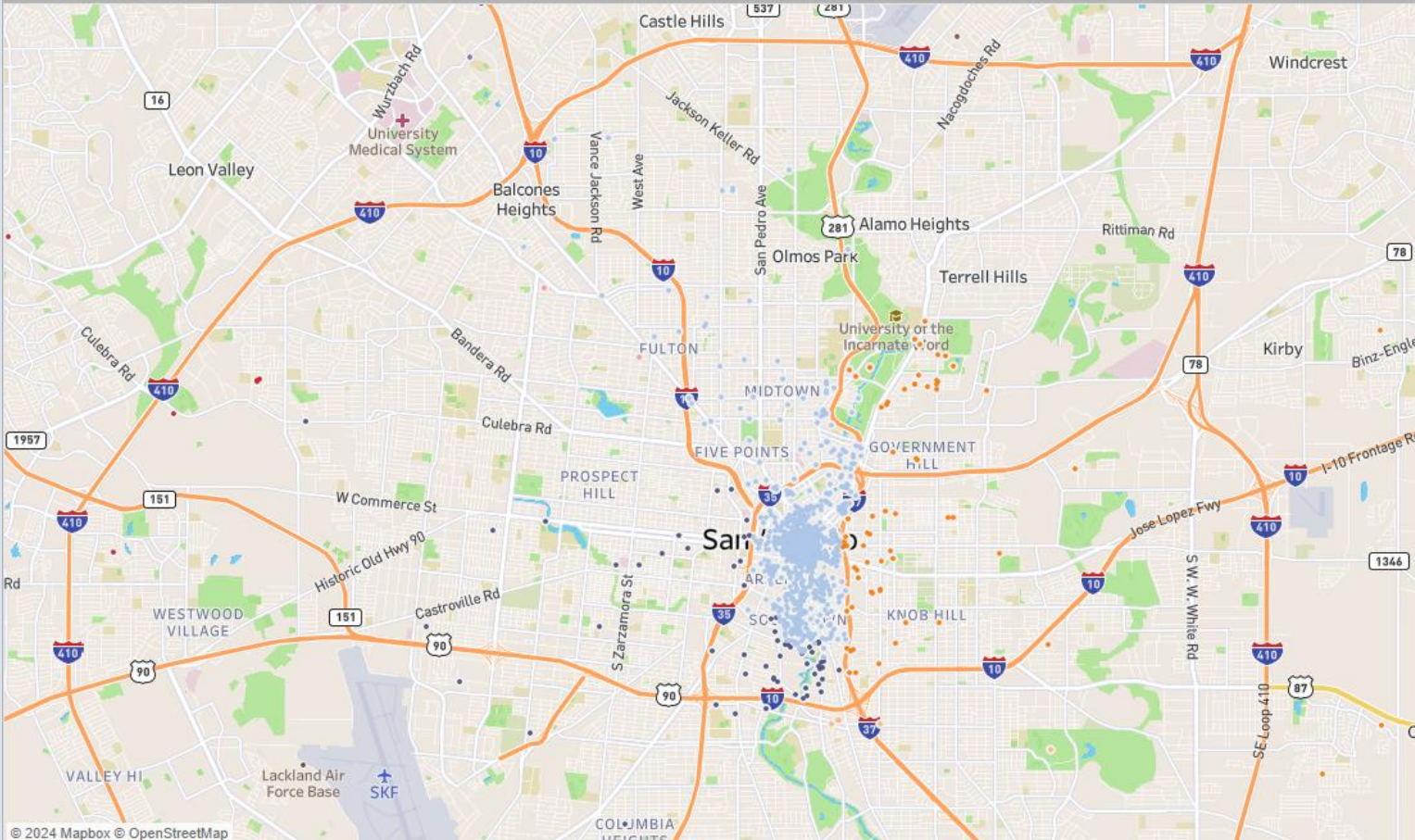
SLA Case Resolution Late



Reason Totals By District



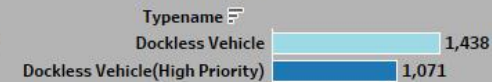
311 Plot of All Districts With Category, Department, Reason, TypeName as Filters(See Legend).



Department Totals



Sub-Category(TypeName) Totals



Category Totals



Department Totals By District



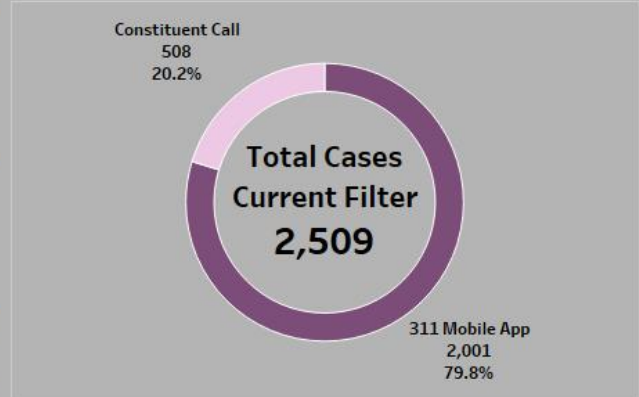
Reason for 311 Call



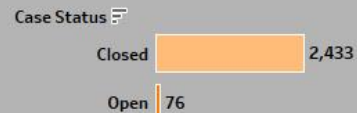
Case Totals By District



Total Cases and Source Totals



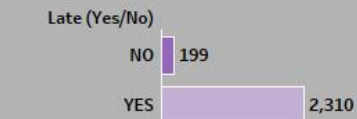
Case Status Totals



Category Totals By District

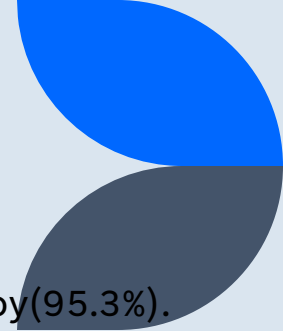


SLA Case Resolution Late



Reason Totals By District





Juxtapose Other Datasets against 311 for Further Analysis | Customer Service—Department Stats-Dates:

SAPD Bike Patrol Districts

SAPD SAFFE Zones

SAFD Areas

	Count
OPENEDDATETIME	
2017	0
2018	0
2019	1
2020	770
2021	1528
2022	1210
2023	3531
2024	474

Solid Waste Management:

Closed Cases(98.9%) and SLA dates are met by(95.3%).

Public Works:

Closed Cases(93.3%) and SLA dates are NOT met by(63.9%)

Animal Care Services:

Closed Cases(31.0%) and SLA dates are NOT met by(87.1%)

-LOTS OF OPEN CASES

Parks and Recreation:

Cases closed(100.0%) and SLA dates are met by(79.8%)

Average resolution time - Customer Service (excluding cases still open): 355 days 22:46:49.081383164
Number of cases still open: 1788

Average resolution time Entire 311 Data Set (excluding cases still open): 24 days 01:33:06.929547900
Number of cases still open: 57220

Dockless Vehicle Count by Customer Service and Year

OPENEDDATETIME	Count
2017	0
2018	0
2019	0
2020	484
2021	785
2022	618
2023	564
2024	58

Average resolution time - Customer Service (Dockless Vehicle category, excluding cases still open): 669 days 12:32:15.388409368
Number of cases still open (Dockless Vehicle category): 76