



Simple Visuals in the Power BI

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International Association Crime Analysts

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INSTRUCTOR



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Additional Information

Conclusion and QA

WHAT IS VISUALIZATION

Visualization refers to the process of creating visual representations or graphical depictions of data, information, or concepts.

It **involves** transforming abstract or complex data into visual forms that are easier to understand, interpret, and analyze.

The **goal of visualization** is to enable people to gain insights, identify patterns, and make informed decisions by presenting information in a visually appealing and intuitive manner.

WHAT IS VISUALIZATION

Visualization techniques can vary widely, ranging from simple charts and graphs to complex interactive visualizations.

Common forms of visualization include

- bar charts
- line graphs
- pie charts
- scatter plots
- Heatmaps/ maps

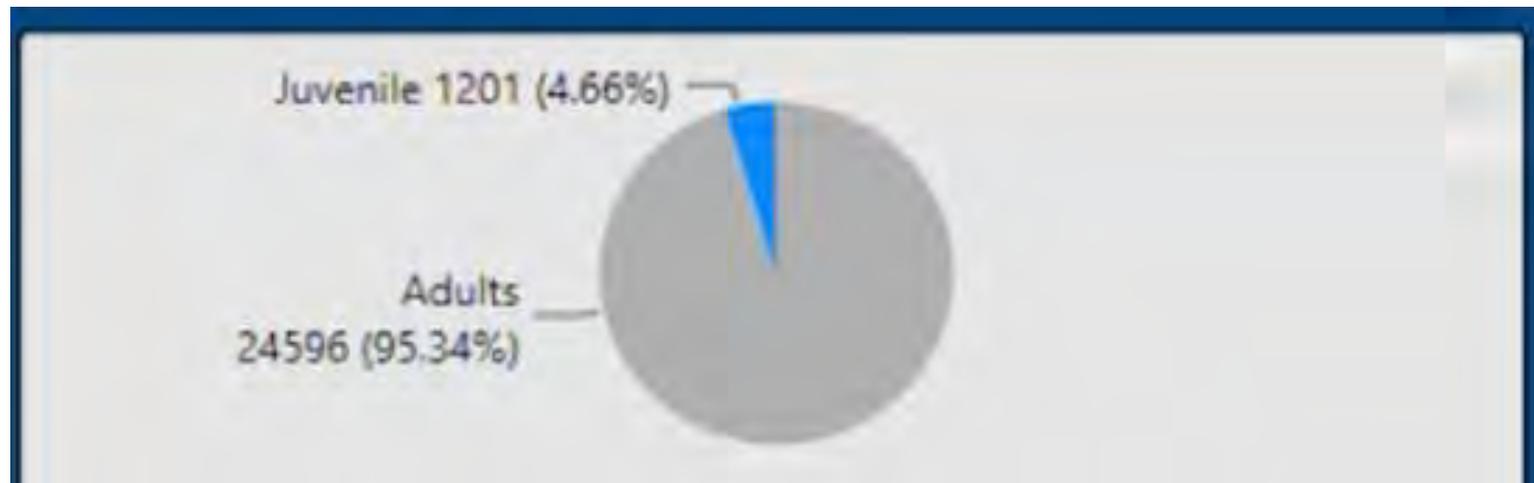
These visual representations use different types of visual elements, such as shapes, colors, sizes, and positions to convey information effectively.

WHAT IS PIE CHART - DEFINITION

A **pie chart** is a circular statistical graph that is used to represent data as **proportions** or **percentages** of a whole.

The chart is divided into slices, each representing a **specific category**.

The size of each slice is **proportional to the value** it represents in relation to the total.



WHAT IS PIE CHART – CHARACTERISTICS

The key characteristics:

1. Circular Shape
2. Slices
3. Labels
4. Legend

WHAT IS PIE CHART - APPLICATION

Pie charts allow for a quick and intuitive understanding of the **relative sizes** of the categories and **enable easy comparison between different slices**.

However, it's important to note that pie charts are **unsuitable for displaying large amounts of data** or comparing precise.

WHAT IS PIE CHART - APPLICATION

Pie charts allow for a quick and intuitive understanding of the **relative sizes** of the categories and **enable easy comparison between different slices**.

However, it's important to note that pie charts are **unsuitable for displaying large amounts of data** or comparing precise.

If you can avoid a pie chart, do it.

WHAT IS BAR CHART - DEFINITION

A **bar chart** is a type of chart that uses rectangular bars to represent and compare categorical data.

It provides a visual representation of the data's distribution, relationships, or trends.

Each bar in the chart corresponds to a specific category, and the length or height of the bar represents the quantity, value, or frequency associated with that category.



WHAT IS BAR CHART – CHARACTERISTICS

The key characteristics:

1. Rectangular Bars
2. Axes
3. Bar Length/Height
4. Labels
5. Scale

WHAT IS BAR CHART - APPLICATION

Bar charts commonly display and compare **categorical data** or **discrete values**.

They effectively illustrate **patterns, trends, or comparisons** between different groups or categories.

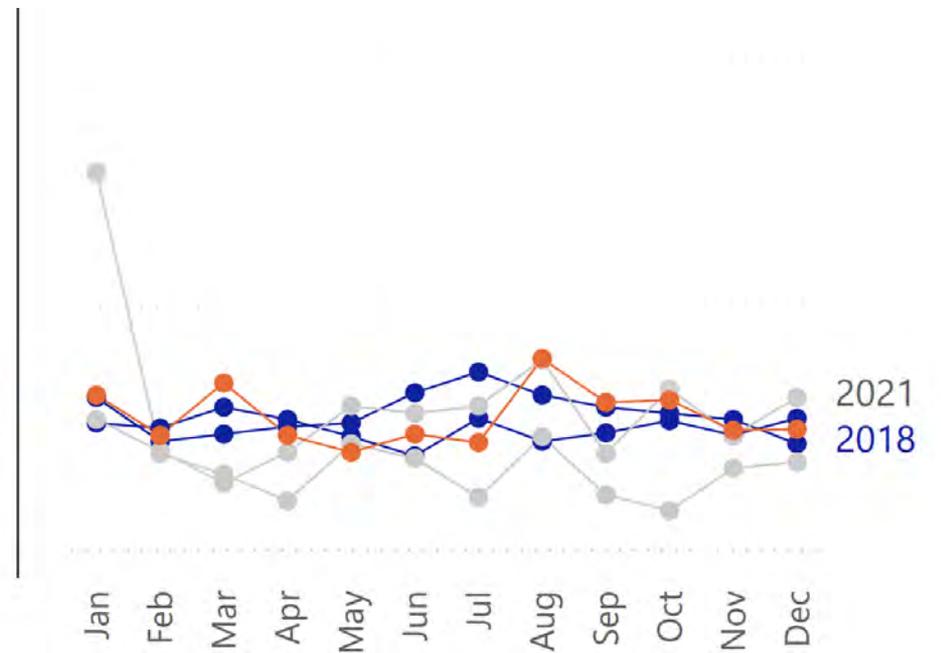
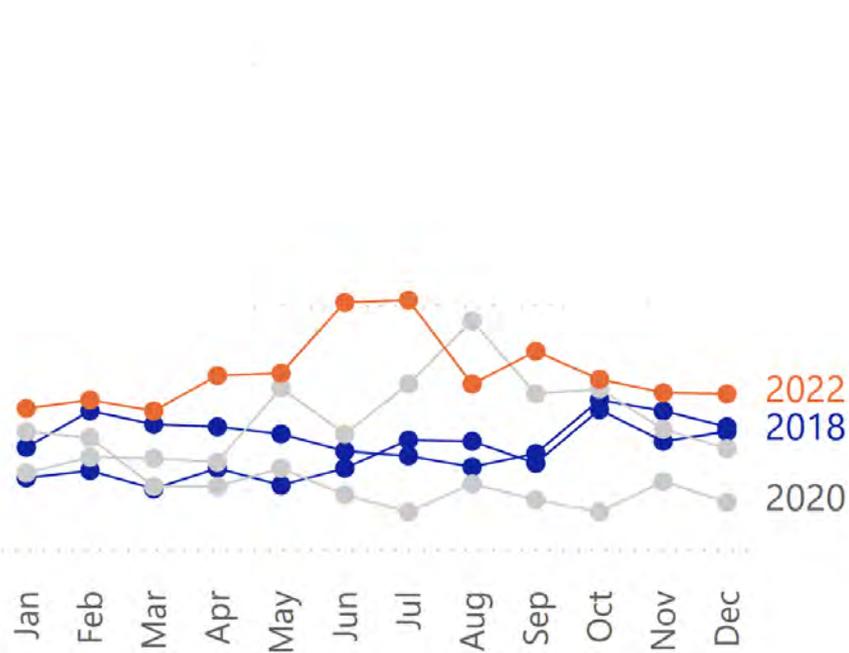
By visualizing data in the form of bars, a bar chart allows for **quick and straightforward interpretation**.

It facilitates **easy comparisons** between categories and helps **identify the largest or smallest values**.

WHAT IS GRAPH CHART - DEFINITION

A **graph chart** is a type of chart that uses lines or curves to represent and display data points connected by line segments.

It is commonly used to visualize and analyze trends, patterns, or relationships between variables **over a continuous period or interval.**



WHAT GRAPH CHART – CHARACTERISTICS

The key characteristics:

1. Axes
2. Data Points
3. Lines/Curves
4. Scale and Gridlines
5. Labels

WHAT GRAPH CHART - APPLICATION

Graph charts are commonly used in various fields to analyze data over time to identify

- trends
- patterns
- relationships

Visualizing data using lines or curves in a graph chart

- makes it **easier to interpret and compare data points**
- helps **understand** the overall **trend or relationship** between variables.

POWER BI – LET'S START

File H

Power BI Desktop

Power BI has recovered files that you might want to keep

Show recovered files

Get data

Recent sources

sample.pbix
C: » Users » svetl » Desktop » CCIAA

SFPD_2018_20201127.pbix
C: » Users » svetl » Desktop » PO...

Open other reports

Search

Svetlana Gubin

Svetlana Gubin

WHAT'S NEW

Take a look at what's new and improved in Power BI in this month's update.

FORUMS

Visit the Power BI Forum to ask questions or interact with other users in the Power BI community.

POWER BI BLOG

Keep up to date with the latest news, resources, and updates from the Power BI team.

TUTORIALS

Ready to learn more about Power BI?

- Get started with Power BI Desktop
- Download a sample
- Watch our training videos
- See what others have built
- All guided learning

VIEW ALL VIDEOS

✓ Show this screen on startup

Page 1 of 1

63%

POWER BI – PAGE FORMAT

The image shows the Power BI Desktop interface. The top ribbon is set to 'View', which includes options for 'Page view', 'Mobile layout', 'Gridlines', 'Snap to grid', 'Lock objects', 'Filters', and 'Pane switcher'. The main workspace displays a 'Add data to your report' prompt with options to import data from Excel, SQL Server, or a sample dataset. On the right, the 'Format' pane is open, showing 'Canvas settings' with a 'Type' dropdown menu highlighted by a red circle, currently set to '16:9'. Other settings in the pane include 'Height' (720 px), 'Width' (1280 px), and 'Vertical alignment' (Top).

File Home Insert Modeling **View** Optimize Help External tools

Themes

Page view Mobile layout Scale to fit Mobile

Gridlines Snap to grid Lock objects Page options

Filters Pane switcher

Data Selection Build a visual

Format Performance analyzer

Bookmarks Sync slicers Show panes

Add data to your report
Once loaded, your data will appear in the Data pane.

Import data from Excel Import data from SQL Server Paste data into a blank table Try a sample dataset

Get data from another source →

Format

Search

Page information

Canvas settings

Type 16:9

Height 720 px

Width 1280 px

Vertical alignment Top

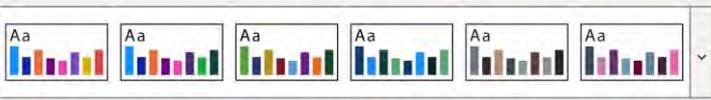
Reset to default

Canvas background

Page 1

POWER BI – LETTER

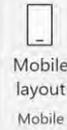
File Home Insert Modeling View Optimize Help External tools



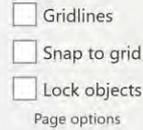
Themes



Page view



Mobile layout



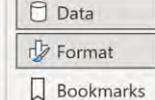
Page options



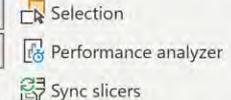
Filters



Pane switcher



Data
Format
Bookmarks



Selection
Performance analyzer
Sync slicers

Build a visual

Show panes

Format

Search

Page information

Canvas settings

Type

16:9

16:9

4:3

Letter

Tooltip

Custom

Vertical alignment

Top

Reset to default

Canvas background

Wallpaper

Add data to your report

Once loaded, your data will appear in the Data pane.



Import data into a blank table Try a sample dataset

Other source

Type

Letter

Height

1056 px

Width

816 px

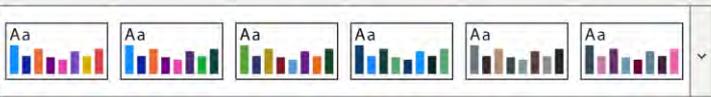
Vertical alignment

Top

Page 1

POWER BI – VERTICAL

File Home Insert Modeling View Optimize Help External tools



Themes

Page view
Scale to fit

Mobile layout
Mobile

Gridlines
 Snap to grid
 Lock objects
Page options

Filters

Pane switcher

Data
Format
Bookmarks

Selection
Performance analyzer
Sync slicers

Build a visual

Show panes

Add data to your report

Once loaded, your data will appear in the Data pane.



Canvas settings

Type
Custom

Height
816 px

Width
1056 px

Vertical alignment
Top

Reset to default

Format

Search

Page information

Canvas settings

Type
16:9
16:9
4:3
Letter
Tooltip
Custom
vertical alignment
Top

Reset to default

Canvas background

Wallpaper

POWER BI – PAGE VIEW

File Home Insert Modeling **View** Optimize Help External tools

Themes

Page view Mobile layout

Gridlines
Snap to grid
Lock objects

Filters Pane switcher

Data Selection
Format Performance analyzer
Bookmarks Sync slicers

Show panes

Build a visual

Fit to page
Fit to width
Actual size

Add data to your report
(Once loaded, your data will appear in the Data pane.)

From Data Hub From a table in your data source From a table in your data source From a table in your data source

Get data from another source

Format

Search

Page information

Canvas settings

Type
Letter

Height
1056 px

Width
816 px

Vertical alignment
Top

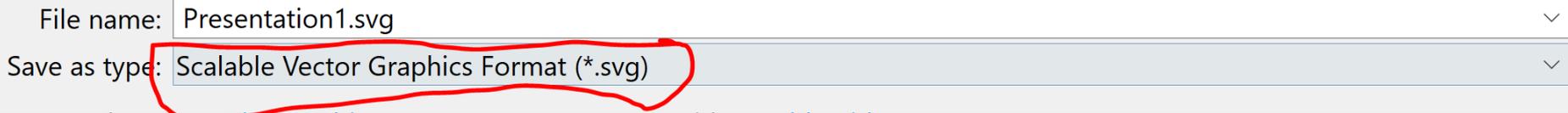
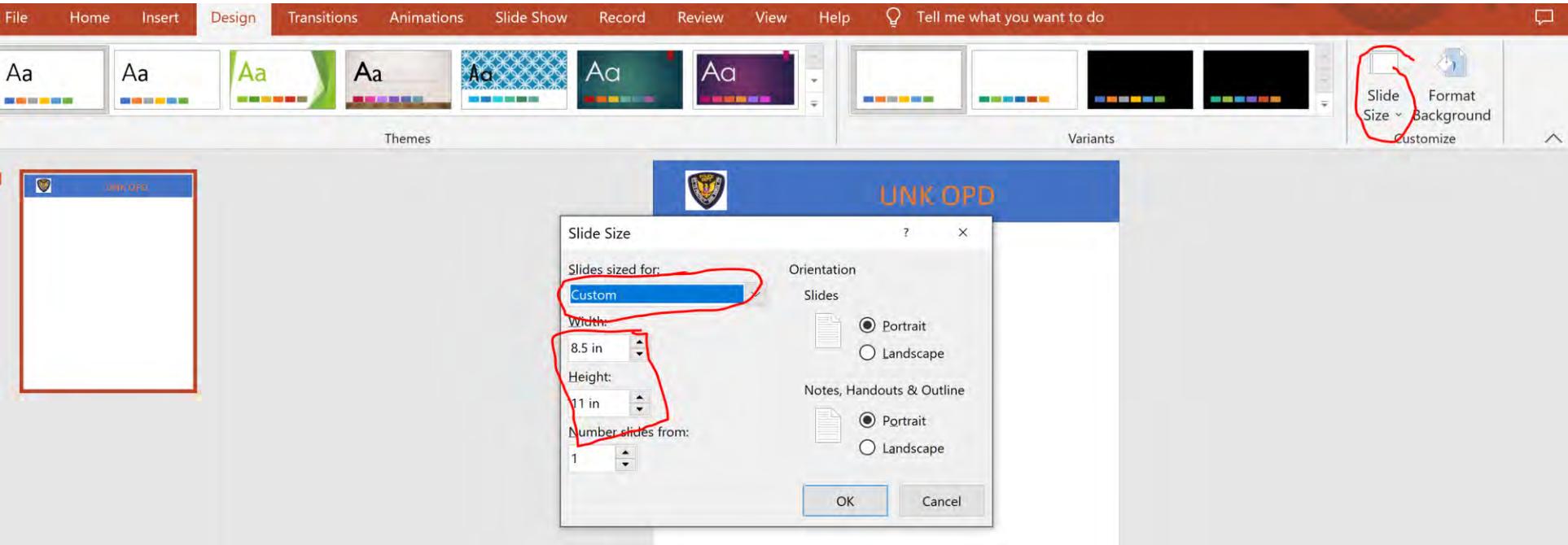
Reset to default

Canvas background

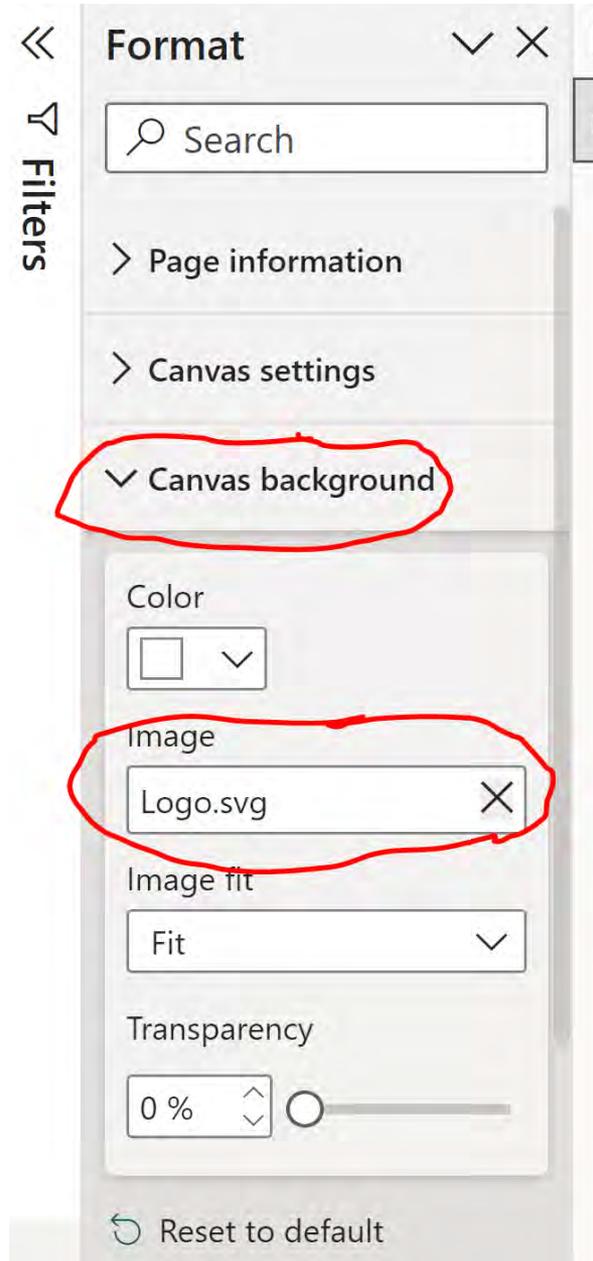
Wallpaper

Page 1 +

POWER BI - LOGO



POWER BI - LOGO



POWER BI – DATA SET

Source:

<https://data.oaklandca.gov/PublicSafety/CrimeWatch-Data/ppgh-7dqv>

CrimeWatch Data

Public Safety

View Data

Visualize ▾

Export

API

⋮

A full dataset of CrimeWatch data.

The Oakland Police Department provides crime data to the public through the City of Oakland's Crime Watch web site. This site presents the data in a geographic format, which allows users of

[More](#)

Updated

February 7, 2023

Data Provided by

Oakland Police Department

About this Dataset

Mute Dataset

Updated

February 7, 2023

Data Last Updated

February 7, 2023

Metadata Last Updated

February 7, 2023

Topics

Category

Public Safety

Tags

crime

Date Created

June 17, 2021

POWER BI – GET DATA

The screenshot displays the Microsoft Power BI Desktop application interface. At the top, the title bar reads "Untitled - Power BI Desktop" and includes a search bar and the user name "Svetlana Gubin". The ribbon menu is set to "Home" and contains several tabs: "File", "Home", "Insert", "Modeling", "View", "Optimize", "Help", and "External tools". The "Get data" group on the ribbon is highlighted with a blue box and includes icons for "Excel workbook", "Data hub", "SQL Server", "Enter data", "Dataverse", and "Recent sources".

In the center of the workspace, a rounded rectangular panel titled "Add data to your report" is highlighted with a blue border. It contains the text "Once loaded, your data will appear in the Data pane." and four data source options: "Import data from Excel", "Import data from SQL Server", "Paste data into a blank table", and "Try a sample dataset". Below these options is a link that says "Get data from another source →".

On the right side of the interface, the "Visualizations" pane is open, showing a grid of visualization icons and a "Filters" section. The "Data" pane is also visible on the far right. At the bottom left, the "Page 1" tab is active, and at the bottom right, the zoom level is set to 63%.

POWER BI – TEXT/CSV

The image shows the Microsoft Power BI Desktop interface. The top ribbon includes 'File', 'Home', 'Insert', 'Modeling', 'View', 'Optimize', 'Help', and 'External tools'. The 'Home' ribbon is active, showing the 'Get data' button circled in red. Below the ribbon, the 'Common data sources' list is visible, with 'Text/CSV' also circled in red. The main workspace displays the 'Add data to your report' screen, which includes the text: 'Once loaded, your data will appear in the Data pane.' and four options: 'Import data from Excel', 'Import data from SQL Server', 'Paste data into a blank table', and 'Try a sample dataset'. Below these options is a link: 'Get data from another source →'. On the right side, the 'Data' pane is visible, featuring a search bar and a message: 'You haven't loaded any data yet. Get data'. The bottom status bar shows 'Page 1' and a zoom level of 63%.

POWER BI – DATA

Open

This PC > Desktop > IACA Webinar 2023 > 7_Simple Visuals

Search 7_Simple Visuals

Organize · New folder

| Name | Date modified | Type | Size |
|---------------------|-------------------|---------------|-------|
| CrimeWatch_2023.txt | 6/14/2023 7:26 PM | Text Document | 80 KB |

File name: Text Files (*.txt;*.csv;*.prn)

Open Cancel

POWER BI – LOAD DATA

The screenshot displays the Power BI 'Get Data' window for a text file named 'CrimeType_2023.txt'. The window is titled 'CrimeType_2023.txt' and shows the following configuration:

- File Origin: 1252: Western European (Windows)
- Delimiter: Tab
- Data Type Detection: Based on first 200 rows

The data table is as follows:

| Address | CaseNumber | City | CrimeType | DateTime | Description | Pc |
|-----------------|------------|---------|---------------------|-----------------------|---|----|
| 1300 MADISON ST | 12-004282 | Oakland | TOWED VEHICLE | 1/25/2023 11:30:00 AM | BURGLARY-AUTO | 03 |
| 1400 JACKSON ST | 22-000412 | Oakland | STOLEN VEHICLE | 1/2/2023 8:00:00 PM | VEHICLE THEFT - AUTO | 04 |
| 400 23RD ST | 22-002001 | Oakland | BURG - AUTO | 1/12/2023 12:37:00 PM | BURGLARY-AUTO | 08 |
| 800 ISABELLA ST | 23-000003 | Oakland | ROBBERY | 1/1/2023 12:37:00 AM | CARJACKING - STRONGARM | 07 |
| 1500 MADISON ST | 23-000024 | Oakland | BURG - COMMERCIAL | 1/1/2023 3:28:00 AM | BURGLARY-FORCIBLE ENTRY | 04 |
| 800 MILTON ST | 23-000033 | Oakland | MISDEMEANOR ASSAULT | 1/1/2023 3:00:00 AM | BATTERY | 07 |
| 2900 MCCLURE ST | 23-000036 | Oakland | OTHER | 1/1/2023 4:15:00 AM | SC UNEXPLAINED DEATH | 08 |
| 400 7TH ST | 23-000038 | Oakland | OTHER | 1/1/2023 7:55:00 AM | VIOLATION CUSTODY DECREE | 03 |
| 500 39TH ST | 23-000055 | Oakland | THREATS | 1/1/2023 8:36:00 AM | CRIMINAL THREATS THREATENED CRIME W/INTENT TO TE... | 08 |
| 500 39TH ST | 23-000055 | Oakland | THREATS | 1/1/2023 8:36:00 AM | EXHIBIT F/ARM THRTNG MANR | 08 |
| 1400 JACKSON ST | 23-000073 | Oakland | DOMESTIC VIOLENCE | 1/1/2023 11:40:00 AM | BATTERY:SPOUSE/EX SPOUSE/DATE/ETC | 04 |
| 1400 JACKSON ST | 23-000073 | Oakland | DOMESTIC VIOLENCE | 1/1/2023 11:40:00 AM | KIDNAPPING | 04 |
| 400 6TH ST | 23-000074 | Oakland | ROBBERY | 1/1/2023 12:02:00 PM | ROBBERY-FIREARM | 03 |
| 3400 ADELINE ST | 23-000154 | Oakland | STOLEN VEHICLE | 1/1/2023 5:49:00 PM | VEHICLE THEFT - AUTO | 07 |
| 600 23RD ST | 23-000159 | Oakland | VANDALISM | 1/1/2023 4:00:00 PM | VANDALISM:DEFACE PROPERTY | 06 |
| 100 14TH ST | 23-000183 | Oakland | MISDEMEANOR ASSAULT | 1/1/2023 2:43:00 AM | FORCE/ADW-OTHER DANGEROUS WEAPON:GBI | 04 |
| 1000 CLAY ST | 23-000190 | Oakland | BURG - COMMERCIAL | 1/2/2023 4:38:00 AM | BURGLARY-FORCIBLE ENTRY | 03 |
| 100 13TH ST | 23-000193 | Oakland | HOMICIDE | 1/2/2023 7:16:00 AM | SC UNEXPLAINED DEATH | 03 |
| 200 29TH ST | 23-000195 | Oakland | STOLEN VEHICLE | 1/2/2023 7:34:00 AM | VEHICLE THEFT - AUTO | 08 |
| 400 7TH ST | 23-000200 | Oakland | STOLEN VEHICLE | 1/2/2023 8:52:00 AM | VEHICLE THEFT - AUTO | 03 |

At the bottom of the window, there are three buttons: 'Extract Table Using Examples', 'Load', and 'Transform Data'. The 'Load' button is highlighted in green. The background shows the Power BI interface with the 'Data' pane on the right and the 'Home' ribbon on the left.

POWER BI – POWER QUERY

The screenshot shows the Power BI Power Query Editor interface. The 'Add Column' tab is selected in the ribbon, and the 'Date' dropdown menu is open. The 'Year' option is highlighted and circled in red. A tooltip for the 'Year' option is visible, stating: 'Create a new column containing the year corresponding to each Date/Time value in the selected column.' The data table below shows a list of crime incidents with columns for 'IncidentType', 'Description', and 'Location'. A new 'Year' column has been added to the table, with the value '2019' for the first row. The 'Date' dropdown menu is also circled in red.

| IncidentType | Description | Year | Time | Location |
|--------------|--|------------|-------------|-----------------------------|
| 1 | JSM VANDALISM | 2019 | 2:00:00 PM | POINT (-122.27486 37.79349) |
| 2 | VEHICLE VEHICLE THEFT - AUTO | | 1:30:00 AM | POINT (-122.25971 37.79638) |
| 3 | TIC VIOLENCE | | 8:30:00 AM | POINT (-122.25971 37.79638) |
| 4 | TIC VIOLENCE | | 8:30:00 AM | POINT (-122.25971 37.79638) |
| 5 | TIC VIOLENCE | | 1:28:00 PM | POINT (-122.25971 37.79638) |
| 6 | S BATTERY | | 2:20:00 AM | POINT (-122.25971 37.79638) |
| 7 | S CRIMINAL THREATS THREATED CRIME W/INTENT TO | | 2:20:00 AM | POINT (-122.25971 37.79638) |
| 8 | S BATTERY | | 0:49:00 PM | POINT (-122.25971 37.79638) |
| 9 | S THREAT CRIME:INT:TERRORIZE | | 0:49:00 PM | POINT (-122.25971 37.79638) |
| 10 | VEHICLE VEHICLE THEFT - AUTO | | 9:00:00 PM | POINT (-122.25971 37.79638) |
| 11 | Y ROBBERY-FIREARM | | 8:38:00 PM | POINT (-122.25971 37.79638) |
| 12 | VEHICLE VEHICLE THEFT - AUTO | 11/14/2019 | 10:30:00 PM | POINT (-122.25971 37.79638) |
| 13 | AUTO BURGLARY-AUTO | 12/12/2019 | 12:40:00 PM | POINT (-122.25971 37.79638) |
| 14 | TIC VIOLENCE FORCE/ADW-OTHER DANGEROUS WEAPON:GBI | 12/15/2019 | 10:15:00 AM | POINT (-122.25971 37.79638) |
| 15 | TIC VIOLENCE INFLECT CORPORAL INJURY ON SPOUSE/COHABITANT | 12/15/2019 | 10:15:00 AM | POINT (-122.25971 37.79638) |
| 16 | TIC VIOLENCE CRIMINAL THREATS THREATED CRIME W/INTENT TO TERRORIZE | 2/22/2020 | 12:06:00 AM | POINT (-122.25971 37.79638) |
| 17 | S THREAT CRIME:INT:TERRORIZE | 4/10/2020 | 1:02:00 AM | POINT (-122.25971 37.79638) |
| 18 | TIC VIOLENCE BATTERY:SPOUSE/ETC | 8/26/2020 | 8:30:00 AM | POINT (-122.25971 37.79638) |
| 19 | MAL SET/ETC FIRE PROP/ETC | 3/2/2021 | 5:30:00 AM | POINT (-122.25971 37.79638) |
| 20 | ERLY CONDUCT CONTEMPT OF COURT:DISOBEY COURT ORDER/ETC | 8/31/2021 | 7:46:00 PM | POINT (-122.25971 37.79638) |
| 21 | TIC VIOLENCE CONTEMPT OF COURT:VIOLATE PROTECTIVE ORDER/ETC | 9/5/2021 | 3:58:00 PM | POINT (-122.25971 37.79638) |
| 22 | S CRIMINAL THREATS THREATED CRIME W/INTENT TO TERRORIZE | 9/25/2021 | 3:49:00 PM | POINT (-122.25971 37.79638) |

POWER BI – QUERY

The screenshot displays the Power BI Desktop interface. The 'Add Column' ribbon is active, with the 'Date' dropdown menu open. The 'Date' menu is circled in red, and its options are also circled in red. The data table below shows a 'DateTime' column with various dates. The 'Query Settings' pane on the right shows the 'Applied Steps' section with 'Inserted Year' selected.

| Description | DateTime |
|--|------------------------|
| 1 JSM | 9/23/202 |
| 2 THEFT - AUTO | 4/15/201 |
| 3 Y:SPOUSE/EX SPOUSE/DATE/ETC | 12/9/20 |
| 4 CRIME:INT:TERRORIZE | 12/9/20 |
| 5 Y:SPOUSE/EX SPOUSE/DATE/ETC | 2/12/20 |
| 6 Y | Day |
| 7 AL THREATS THREATED CRIME W/INTENT TO TERRO | Day of Week |
| 8 Y | Day of Year |
| 9 CRIME:INT:TERRORIZE | Start of Day |
| 10 THEFT - AUTO | End of Day |
| 11 Y-FIREARM | Name of Day |
| 12 THEFT - AUTO | 12/12/2019 10:30:00 PM |
| 13 Y-AUTO | 12/12/2019 12:40:00 PM |
| 14 ADW-OTHER DANGEROUS WEAPON:GBI | 12/15/2019 10:15:00 AM |
| 15 CORPORAL INJURY ON SPOUSE/COHABITANT | 12/15/2019 10:15:00 AM |
| 16 AL THREATS THREATED CRIME W/INTENT TO TERRORIZE | 2/22/2020 12:06:00 AM |
| 17 CRIME:INT:TERRORIZE | 4/10/2020 1:02:00 AM |
| 18 Y:SPOUSE/ETC | 8/26/2020 8:30:00 AM |
| 19 T/ETC FIRE PROP/ETC | 3/2/2021 5:30:00 AM |
| 20 MPT OF COURT:DISOBEY COURT ORDER/ETC | 8/31/2021 7:46:00 PM |
| 21 MPT OF COURT:VIOLATE PROTECTIVE ORDER/ETC | 9/5/2021 3:58:00 PM |
| 22 AL THREATS THREATED CRIME W/INTENT TO TERRORIZE | 9/25/2021 3:49:00 PM |
| 23 | |

POWER BI – QUERY

| 1 ² 3 Day of Week | A ^B C Day Name |
|------------------------------|---------------------------|
| 2 | 5 Friday |
| 3 | 0 Sunday |
| 3 | 0 Sunday |
| 3 | 0 Sunday |
| 3 | 2 Tuesday |
| 3 | 3 Wednesday |
| 3 | 3 Wednesday |
| 3 | 5 Friday |
| 3 | 5 Friday |
| 3 | 4 Thursday |
| 3 | 5 Friday |
| 3 | 4 Thursday |
| 3 | 4 Thursday |

POWER BI – REPORT VIEW

Untitled - Power BI Desktop

Search

Sign in

File Home Insert Modeling View Optimize Help External tools

Paste

Clipboard

Get data

Excel workbook

OneLake data hub

SQL Server

Enter data

Dataverse

Recent sources

Transform data

Refresh data

New visual

Insert

Text box

More visuals

New measure

Quick measure

Sensitivity

Publish

Share

Build visuals with your data

Select or drag fields from the Data pane onto the report canvas.

Data

Search

CrimeWatch_2023

Page 1

Page 1 of 1

63%

POWER BI – DATA VIEW

File Home Help External tools **Table tools**

Name

Structure Calendars Relationships Calculations

Mark as date table
Manage relationships
New measure
Quick measure
New column
New table

Address City State PoliceBeat CaseNumber CrimeType Description DateTime Location

| Address | City | State | PoliceBeat | CaseNumber | CrimeType | Description | DateTime | Location |
|------------------------|---------|-------|------------|------------|----------------|----------------------|------------------------|----------------------------|
| 100 E 12TH ST | Oakland | CA | 19X | 20-033252 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 7/7/2020 5:38:00 PM | POINT (-122.25808 37.798) |
| 100 INTERNATIONAL BLVD | Oakland | CA | 19X | 20-021909 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 5/30/2020 5:30:00 PM | POINT (-122.25683 37.7984) |
| 100 INTERNATIONAL BLVD | Oakland | CA | 19X | 20-052672 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 10/25/2020 11:15:00 AM | POINT (-122.25683 37.7984) |
| 1000 22ND AV | Oakland | CA | 19X | 20-027455 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 5/21/2020 12:30:00 AM | POINT (-122.24009 37.7820: |
| 1000 22ND AV | Oakland | CA | 19X | 20-031356 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 6/26/2020 7:30:00 PM | POINT (-122.24009 37.7820: |
| 1000 4TH AV | Oakland | CA | 19X | 20-000441 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 1/2/2020 5:30:00 PM | POINT (-122.2574 37.79457) |
| 1000 4TH AV | Oakland | CA | 19X | 20-028743 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 6/11/2020 8:30:00 PM | POINT (-122.2574 37.79457) |
| 1000 4TH AV | Oakland | CA | 19X | 20-042405 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 8/23/2020 5:00:00 PM | POINT (-122.2574 37.79457) |
| 1000 5TH AV | Oakland | CA | 19X | 20-017362 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 4/1/2020 3:00:00 PM | POINT (-122.25656 37.7938) |
| 1000 5TH AV | Oakland | CA | 19X | 20-027512 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 6/4/2020 9:00:00 AM | POINT (-122.25656 37.7938) |
| 1000 8TH AV | Oakland | CA | 19X | 20-005607 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 1/29/2020 1:00:00 PM | POINT (-122.25403 37.7916: |
| 1000 9TH AV | Oakland | CA | 19X | 20-009786 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 2/18/2020 10:00:00 PM | POINT (-122.25322 37.7909: |
| 1000 COTTON ST | Oakland | CA | 19X | 20-012500 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 3/3/2020 5:00:00 PM | POINT (-122.23919 37.7796: |
| 1000 COTTON ST | Oakland | CA | 19X | 20-069444 | STOLEN VEHICLE | VEHICLE THEFT - AUTO | 12/2/2020 5:00:00 PM | POINT (-122.23919 37.7796: |

Data

Search

> CrimeWatch_2023

POWER BI – MODEL VIEW

File **Home** **Help** **External tools**

Data
Get data **Excel workbook** **OneLake data hub** **SQL Server** **Enter data** **Dataverse** **Recent sources**

Queries
Transform data **Refresh data**

Relationships
Manage relationships

Calculations
New measure **New column** **New table**

Security
Manage roles **View as**

Q&A
Q&A setup **Language** **Linguistic schema**

Sensitivity
Sensitivity

Share
Publish

CrimeWatch_2023

- Address
- CaseNumber
- City
- CrimeType
- DateTime
- Day Name
- Day of Week
- Description
- Location
- Collapse

Properties **Data**

Search

CrimeWatch_2023

Cards

Show the database in the header when applicable
No

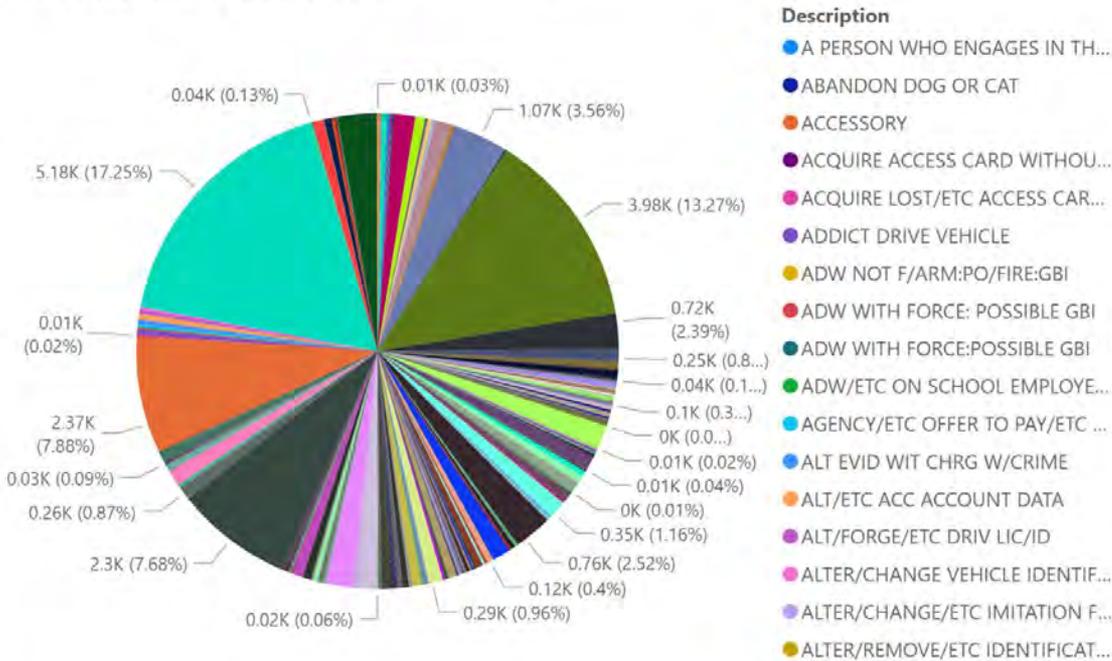
Show related fields when card is collapsed
Yes

Pin related fields to top of card
No

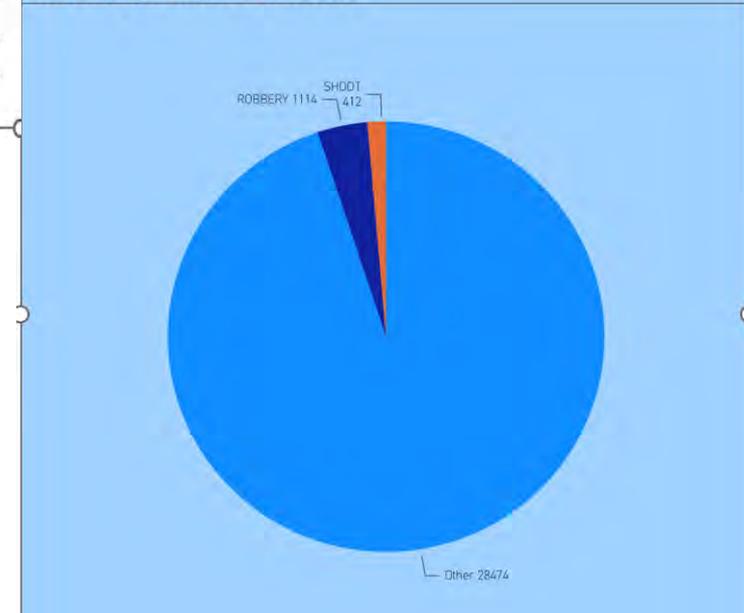
All tables + 100%

POWER BI – PIE CHART

Count of CaseNumber by Description

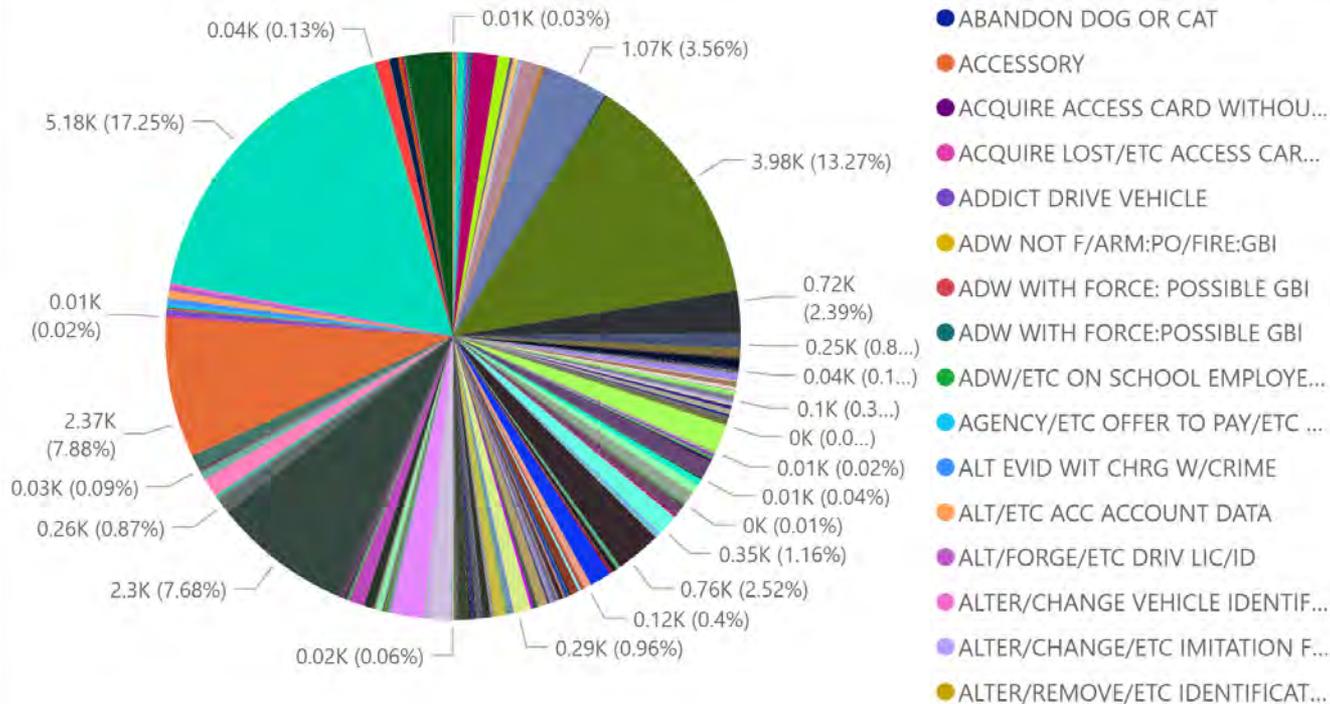


Count of Case Number



POWER BI – PIE CHART

Count of CaseNumber by Description



Add to your visual

- Title
- Legend
- Detail labels

More options



POWER BI – PIE CHART FORMAT

Format ∨ × 



Visual Properties ...

- > Size and style
- > Title On
- > Legend On
- > Slices
- > Detail labels On
- > Rotation



∨ Size and style

- > Size and position
- > Padding
- > Background On
- > Visual border Off
- > Shadow Off

 Reset to default

POWER BI – PIE CHART FORMAT

Format ∨ × 



Visual Properties ...

- > Size and style
- > Title
- > Legend
- > Slices
- > Detail labels
- > Rotation



- > Title
- > Subtitle Off
- > Divider On
- > Spacing

POWER BI – PIE CHART FORMAT

Format ∨ × 

 Search

Visual Properties ...

> Size and style

> Title On

> Legend 

> Slices

> Detail labels On

> Rotation

∨ Legend On

> Options

> Text

> Title On

 Reset to default

POWER BI – PIE CHART FORMAT

Format ∨ × 



Visual Properties ...

> Size and style

> Title On

> Legend On

> Slices

> Detail labels On

> Rotation



∨ Slices

> Colors

↶ Reset to default

POWER BI – PIE CHART FORMAT

Format ∨ × 

 Search

Visual Properties ...

> Size and style

> Title On

> Legend On

> Slices

> Detail labels

> Rotation



∨ Detail labels On

> Options

> Values

POWER BI – PIE CHART FORMAT

Format ∨ × 



Visual Properties ...

> Size and style

> Title On

> Legend On

> Slices

> Detail labels On

> Rotation



∨ Rotation

Rotation

∧ ∨

 Reset to default

POWER BI – GROUPING DATA

The image shows the 'Build a visual' pane in Power BI. The 'Legend' section contains a field named 'Description'. A context menu is open over this field, listing several actions: 'Remove field', 'Rename for this visual', 'Move to', 'New quick measure', 'Show items with no data', and 'New group'. The 'Show items with no data' option is circled in red. The 'Values' section below contains a field named 'Count of Cas...' and another 'New group' option is also circled in red. The 'Details' section at the bottom has a '+Add data' button.

Build a visual

Visual types

Suggest a type

Legend

- Description
 - Remove field
 - Rename for this visual
 - Move to >
 - New quick measure
 - Show items with no data
 - New group
- +Add data

Values

- Count of Cas...
 - New group
- +Add data

Details

- +Add data

POWER BI – GROUPING DATA

Groups



Name *

Description (groups)

Field

Description

Group type

List

Ungrouped values

PROBATION REVOKED/ETC
PROHIBITED BY COURT ORDER: PURCHASE/ETC FIREARM
PROHIBITED POSSESS AMMUNITION OR RELOADED AMM...
PURCHASE OR RECEIVE FIREARM (EXCEPT ANTIQUE) WITH...
RAPE BY FORCE/FEAR/ETC
RECEIVE/ETC KNOWN STOLEN PROPERTY
RECEIVE/ETC KNOWN STOLEN PROPERTY [\$400 OR LESS]
RECEIVING/CONCEALING STOLEN PROPERTY NOT MORE T...
RELEASED FROM CUSTODY ON BAIL OR ON HIS OR HER O...
REMOVE/ALTER/ETC SERIAL NUMBER/ID MARK ON TEAR G...
RUNAWAY JUVENILE
SC ADW - FIREARM

Groups and members

- ▾ ROBBERY - STRONG ARM (HANDS, FISTS, FEET, ETC.) & ...
 - ROBBERY - STRONG ARM (HANDS, FISTS, FEET, ETC.)
 - ROBBERY/ATM - FIREARM
 - ROBBERY/ATM - STRONGARM (HANDS, FISTS, FEET)
 - ROBBERY/INHABITED DWELLING - FIREARM
 - ROBBERY/INHABITED DWELLING - KNIFE OR CUTTING I...
 - ROBBERY/INHABITED DWELLING - OTHER DANGEROUS I...
 - ROBBERY/INHABITED DWELLING - STRONGARM (HAND...
 - ROBBERY-FIREARM
 - ROBBERY-KNIFE OR CUTTING INSTRUMENT
 - ROBBERY-OTHER DANGEROUS WEAPON

Group

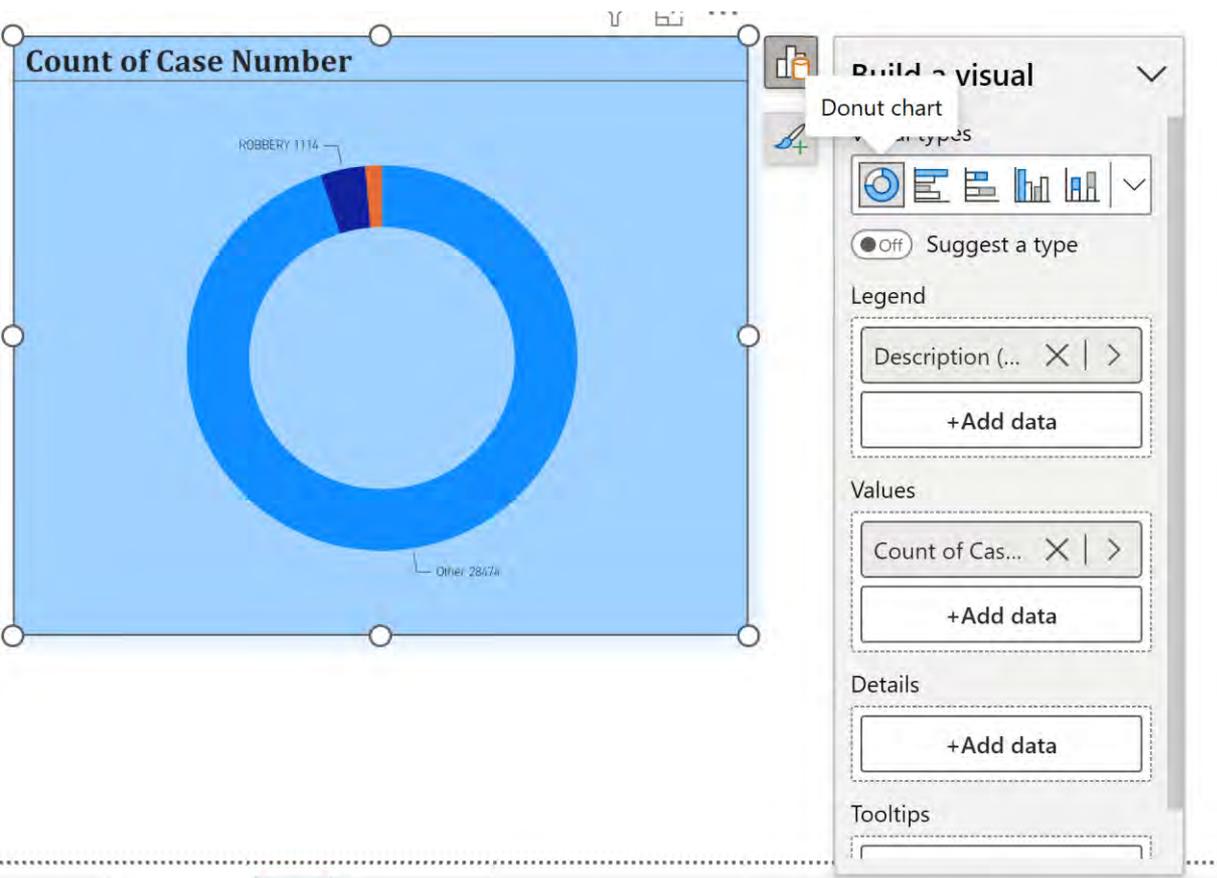
Ungroup

Include Other group ⓘ

OK

Cancel

POWER BI – DONUTS



> Colors

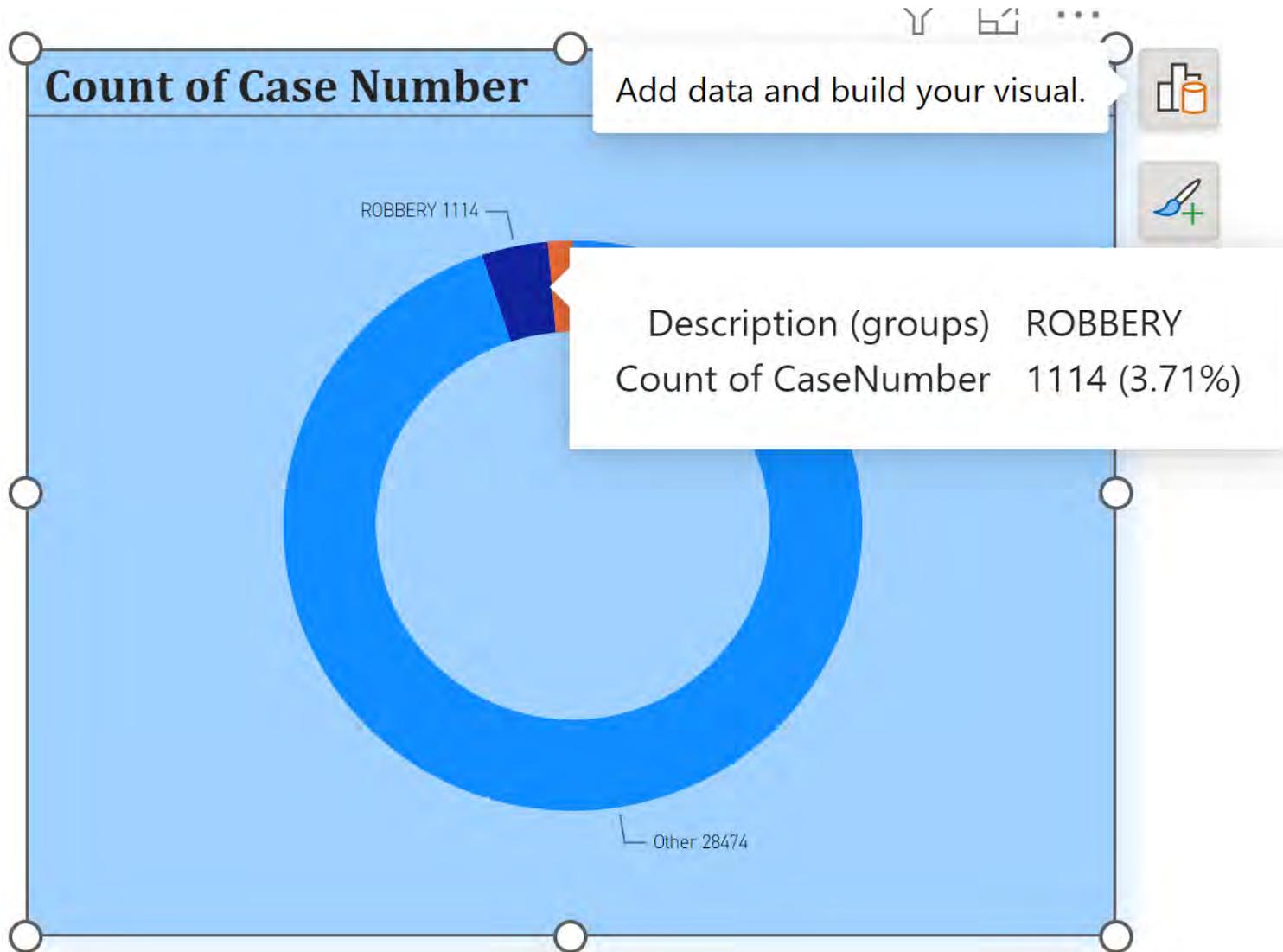
▼ Spacing

Inner radius

54 %

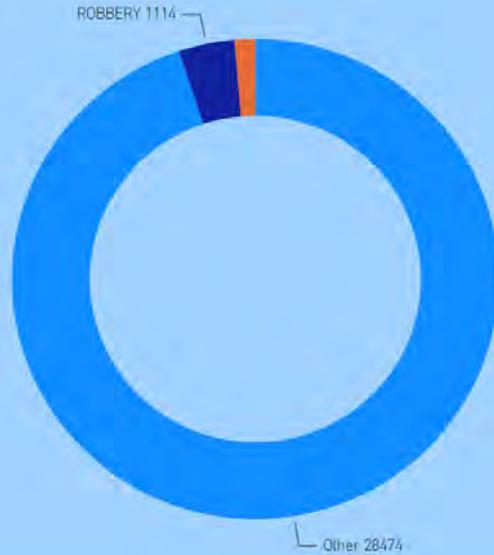
Reset to default

POWER BI – TOOLTIPS

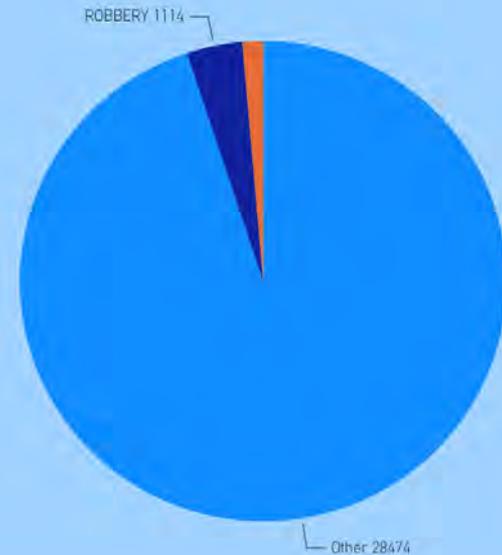


POWER BI – DONUTS VS PIE CHART

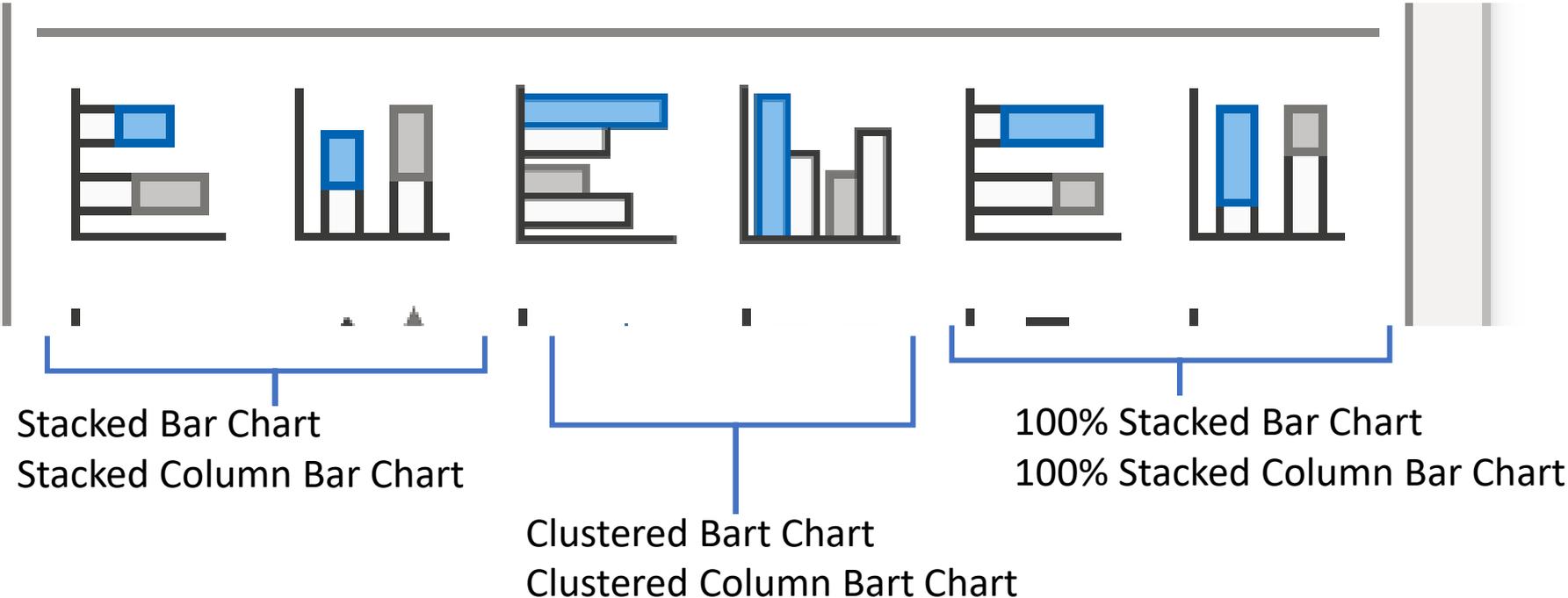
Count of Case Number



Count of Case Number



POWER BI – BAR CHARTS



Stacked Bar Chart

Stacked Column Bar Chart

Clustered Bar Chart

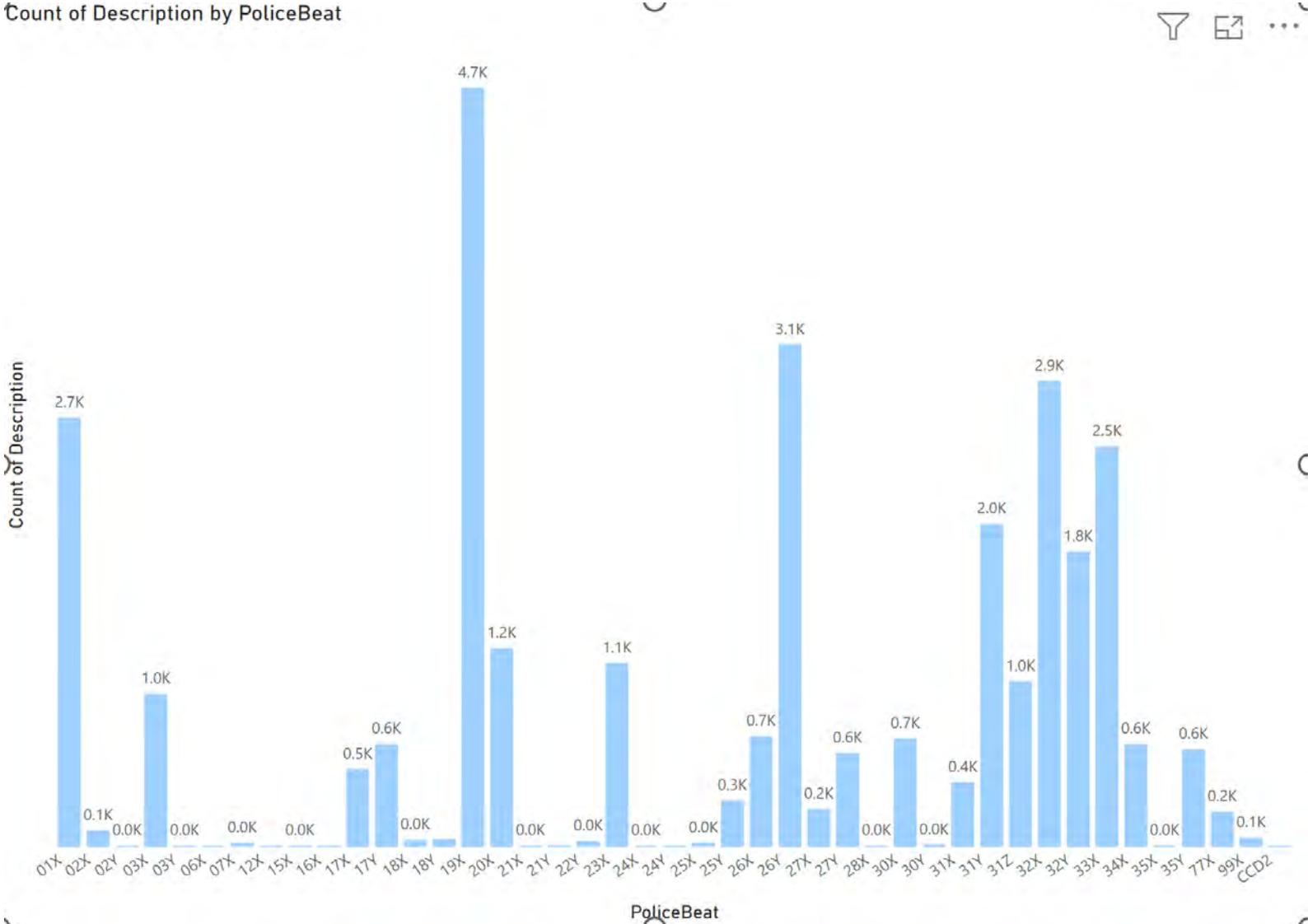
Clustered Column Bar Chart

100% Stacked Bar Chart

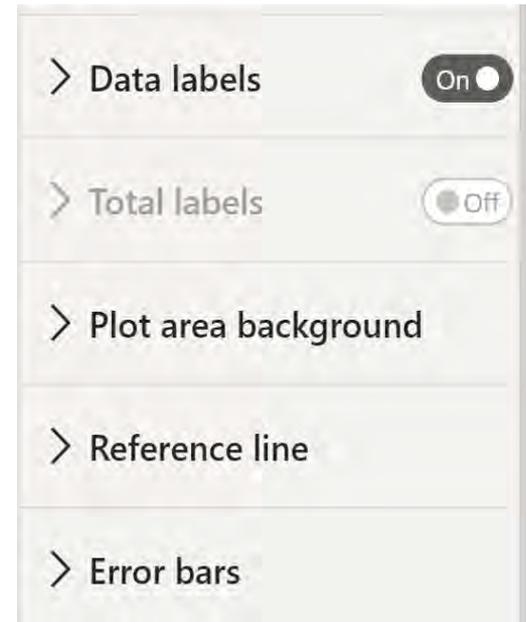
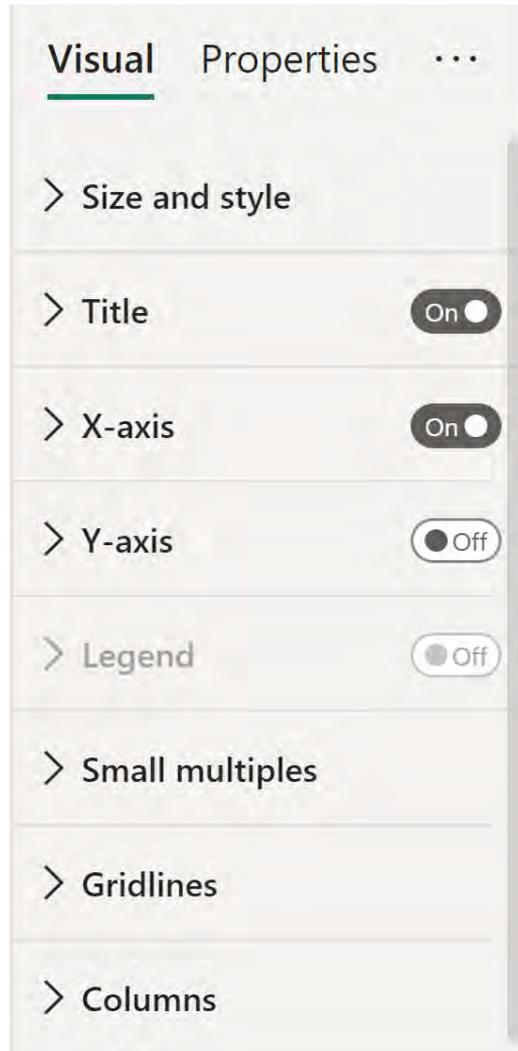
100% Stacked Column Bar Chart

POWER BI – BAR CHART

Count of Description by PoliceBeat



POWER BI – BAR CHART FORMAT



POWER BI – BAR CHART FORMAT

Visual Properties ...

- > Size and style
- > Title On
- > X-axis On
- > Y-axis Off
- > Legend Off
- > Small multiples
- > Gridlines
- > Columns



▼ Title On

- > Title
- > Subtitle Off
- > Divider On
- > Spacing

↶ Reset to default

POWER BI – BAR CHART FORMAT

Visual Properties ...

- > Size and style
- > Title On
- > X-axis On
- > Y-axis Off
- > Legend Off
- > Small multiples
- > Gridlines
- > Columns



∨ X-axis On

- > Values
- > Title Off

↶ Reset to default

POWER BI – BAR CHART FORMAT

Visual Properties ...

- > Size and style
- > Title On
- > X-axis On
- > Y-axis Off
- > Legend Off
- > Small multiples
- > Gridlines
- > Columns



Y-axis Off

- > Range
- > Values
- > Title Off

Reset to default

POWER BI – BAR CHART FORMAT

Visual Properties ...

- > Size and style
- > Title On
- > X-axis On
- > Y-axis Off
- > Legend Off
- > Small multiples
- > Gridlines
- > Columns



Legend On

- > Options
- > Text
- > Title On

POWER BI – BAR CHART FORMAT

Visual Properties ...

- > Size and style
- > Title On
- > X-axis On
- > Y-axis Off
- > Legend Off
- > Small multiples
- > Gridlines
- > Columns

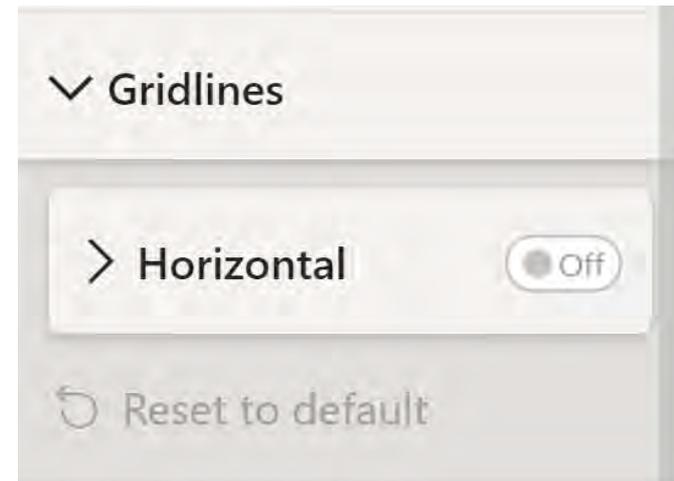
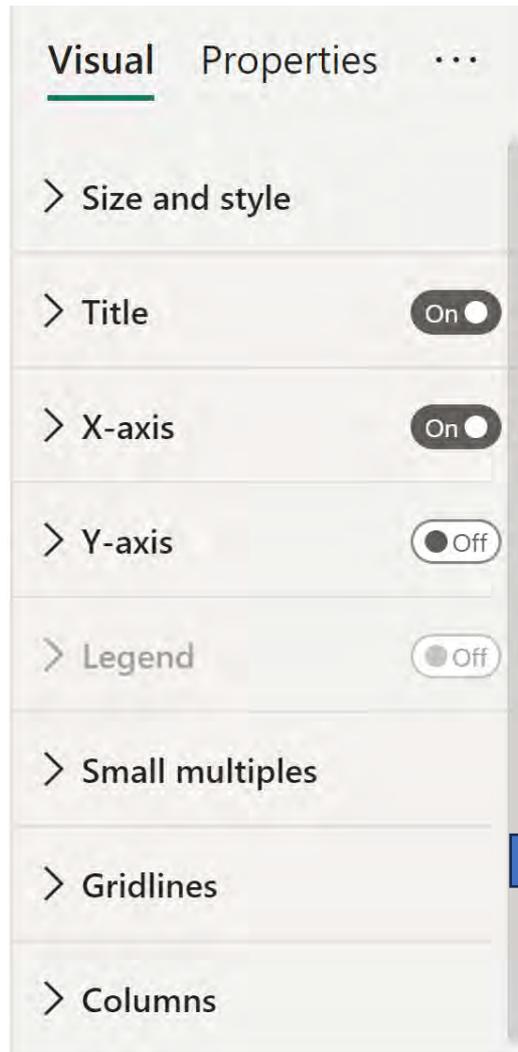


Small multiples

- > Layout
- > Border
- > Title On
- > Background

Reset to default

POWER BI – BAR CHART FORMAT



POWER BI – BAR CHART FORMAT

Visual Properties ...

- > Size and style
- > Title On
- > X-axis On
- > Y-axis Off
- > Legend Off
- > Small multiples
- > Gridlines
- > Columns



Columns

- > Colors
- > Spacing
- ↻ Reset to default

POWER BI – BAR CHART FORMAT

- > Zoom slider Off
- > Data labels On
- > Total labels Off
- > Plot area background
- > Reference line
- > Error bars

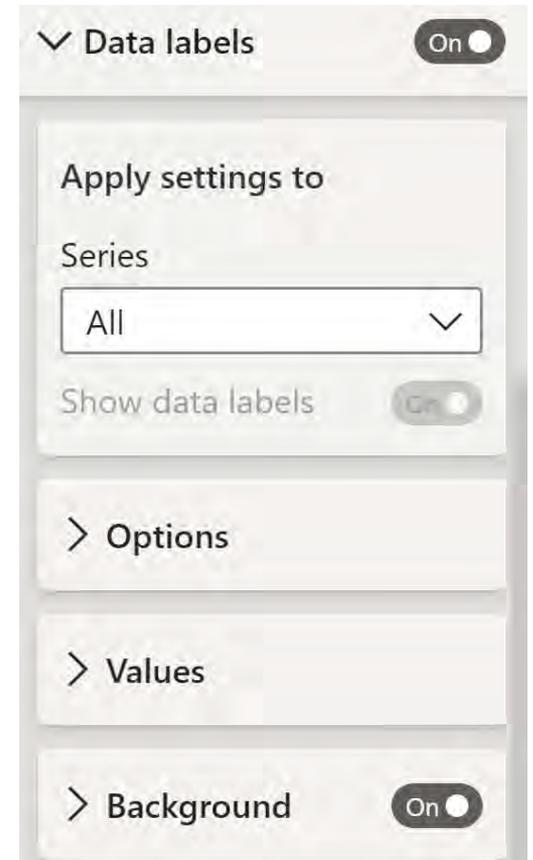
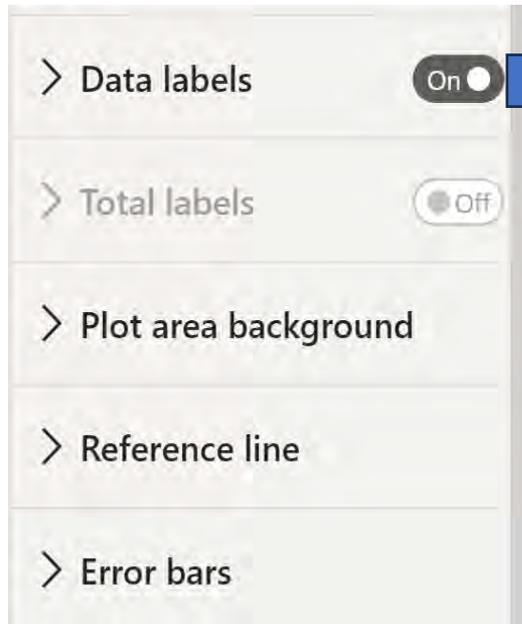


∨ Zoom slider On

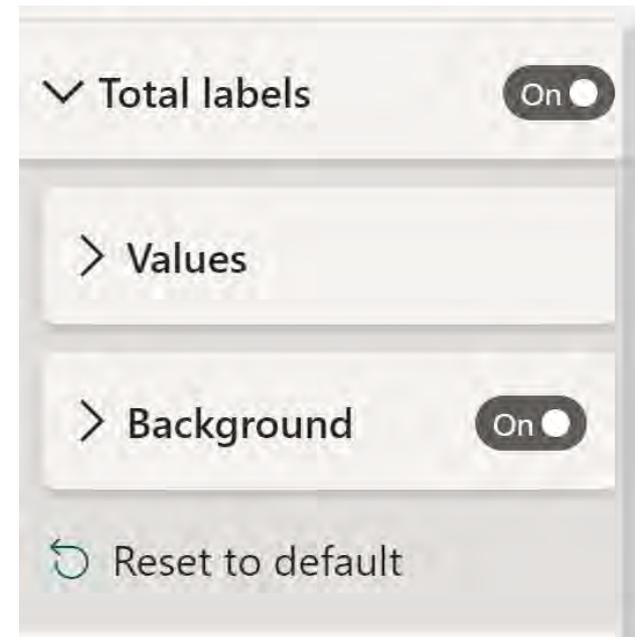
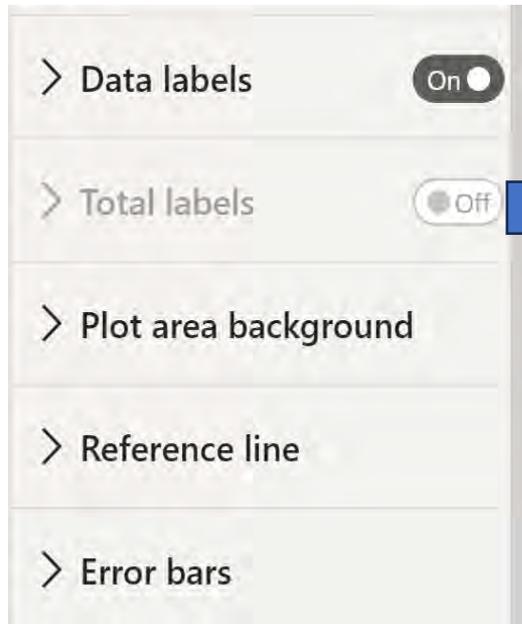
- Y-axis On
- Slider labels Off
- Slider tooltips Off

↶ Reset to default

POWER BI – BAR CHART FORMAT



POWER BI – BAR CHART FORMAT



POWER BI – BAR CHART FORMAT

- > Data labels On
- > Total labels Off
- > Plot area background
- > Reference line
- > Error bars



Plot area background

Browse... 

Image fit

Normal 

Transparency

0 %   

 Reset to default

POWER BI – BAR CHART FORMAT

- > Data labels On
- > Total labels Off
- > Plot area background
- > Reference line
- > Error bars



▼ Reference line

Apply settings to
[+ Add line](#)

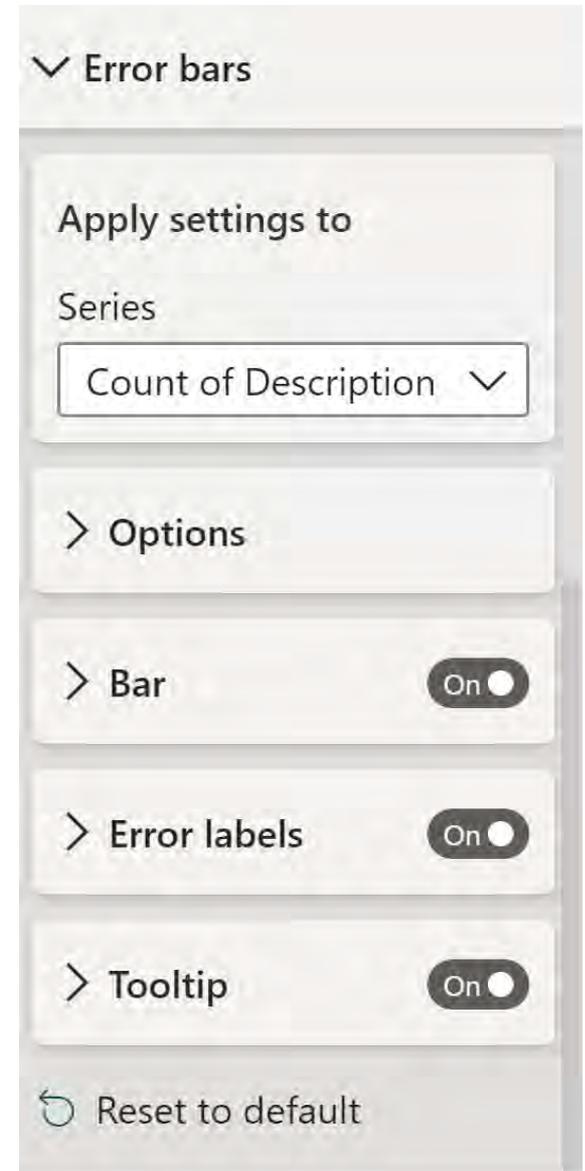
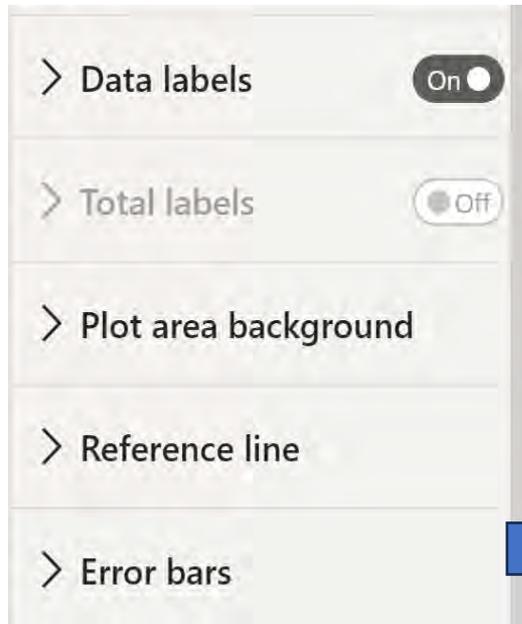
Type
Choose a type ▼

> Line

> Data label Off

↻ Reset to default

POWER BI – BAR CHART FORMAT

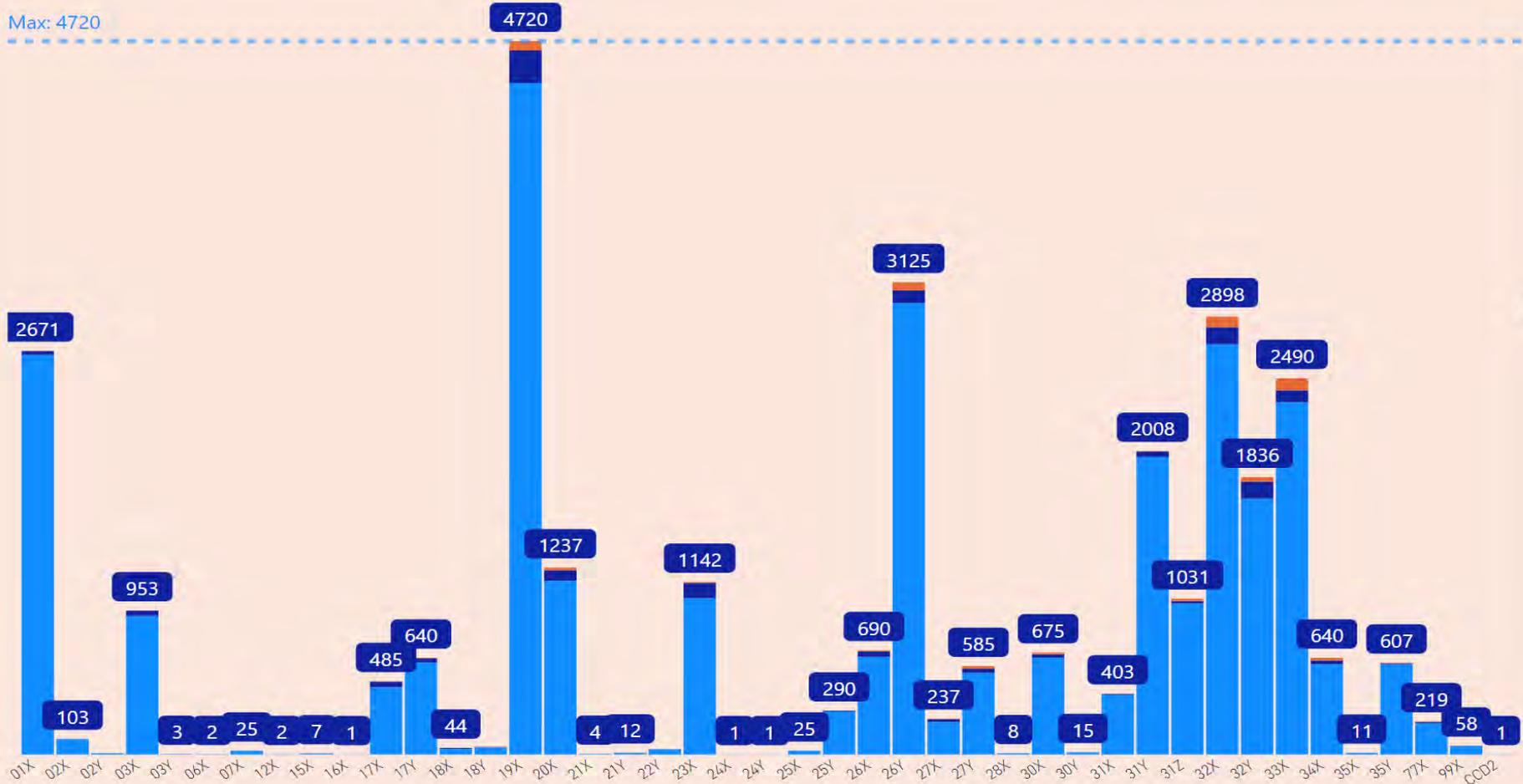


POWER BI – STACKED COLUMN BAR CHART

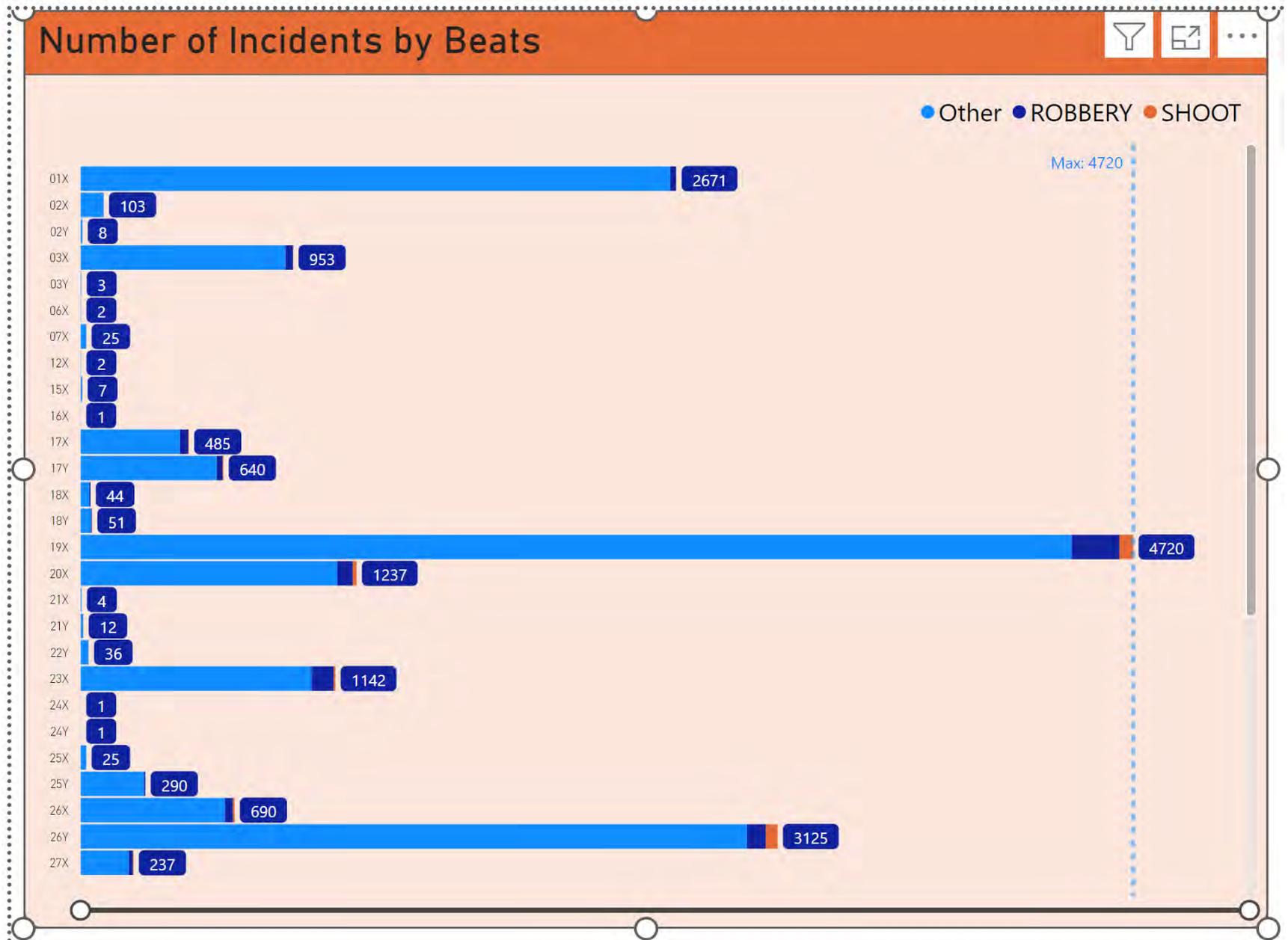
Number of Incidents by Beats

● Other ● ROBBERY ● SHOOT

Max: 4720



POWER BI – STACKED BAR CHART



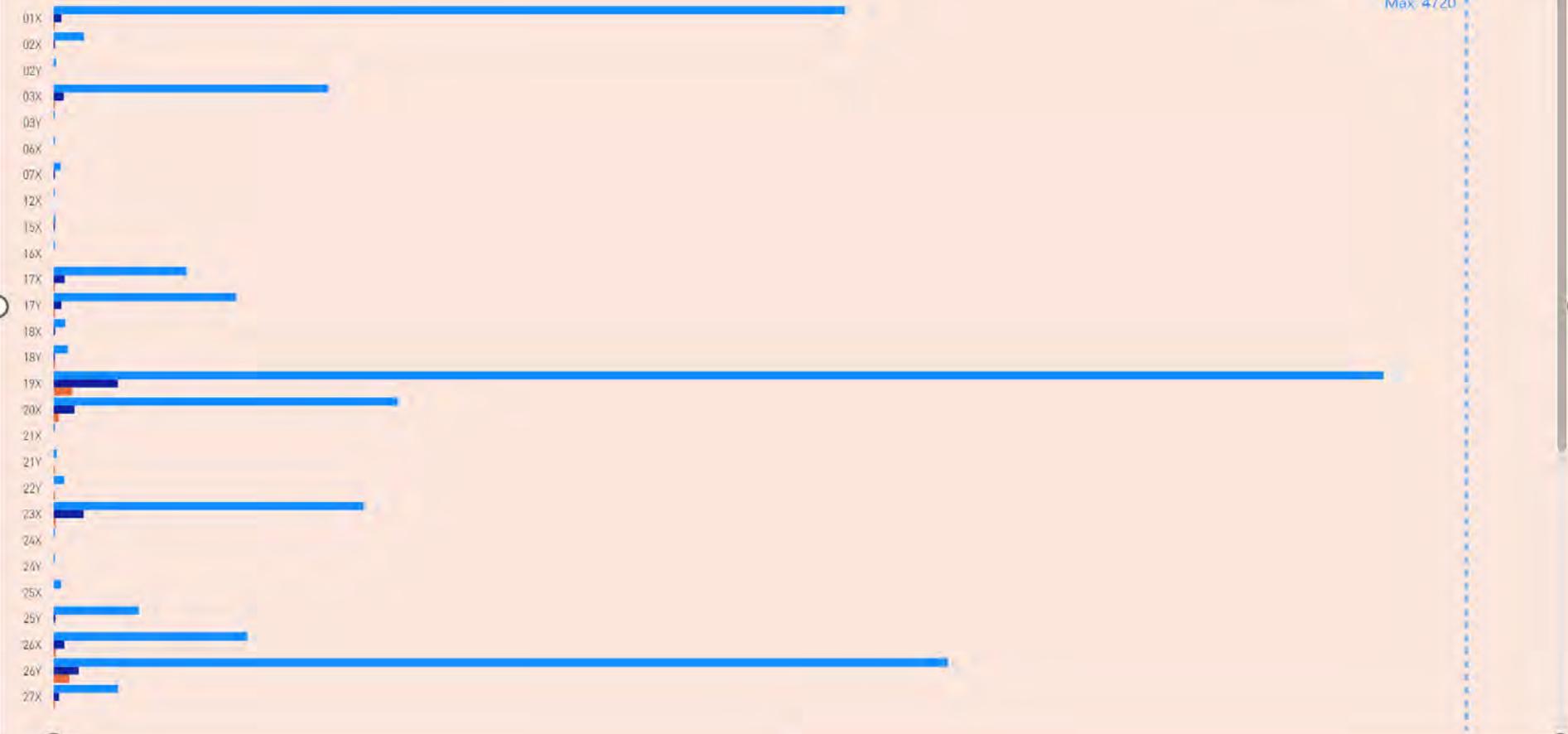
POWER BI – CLUSTERED BAR CHART

Number of Incidents by Beats



Other ROBBERY SHOOT

Max: 4720



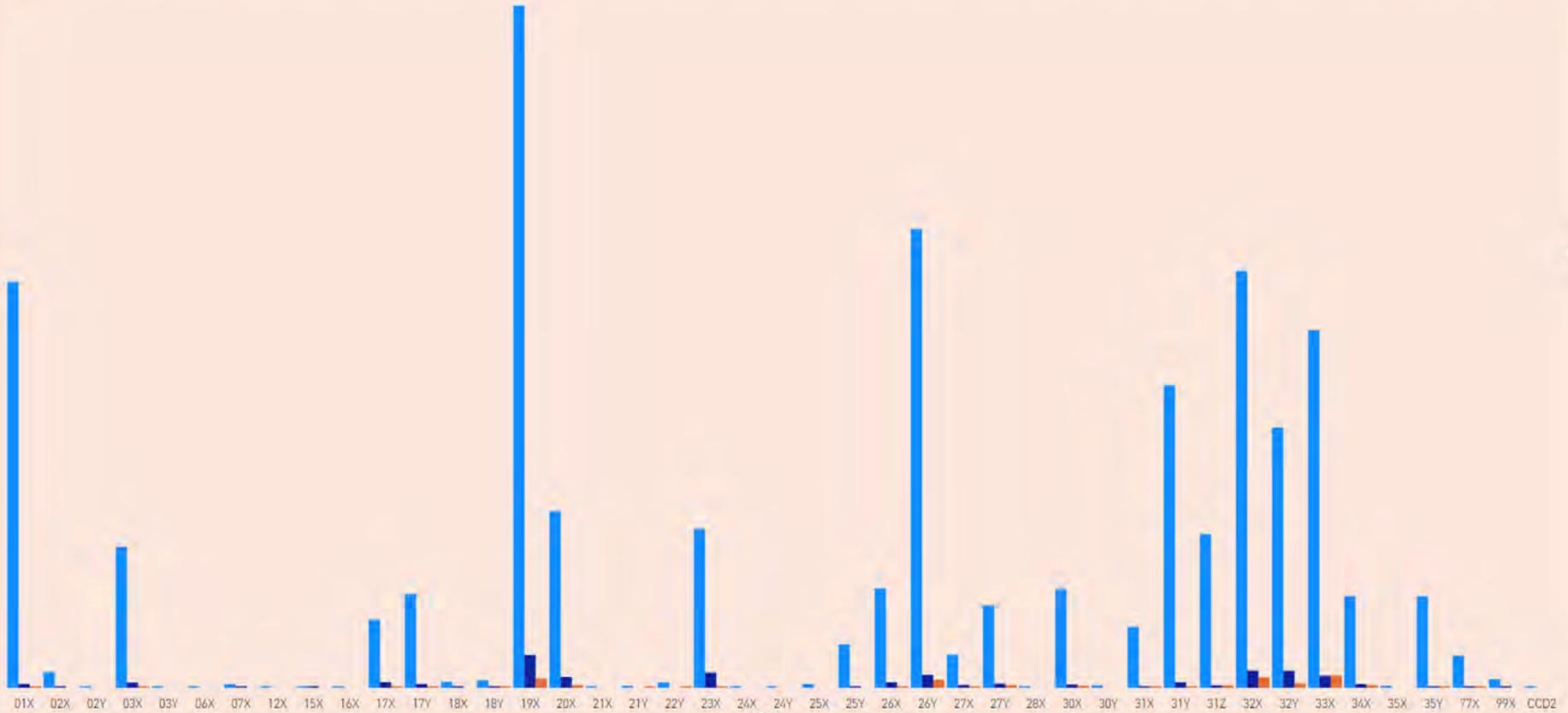
POWER BI – CLUSTERED COLUMN BAR CHART

Number of Incidents by Beats



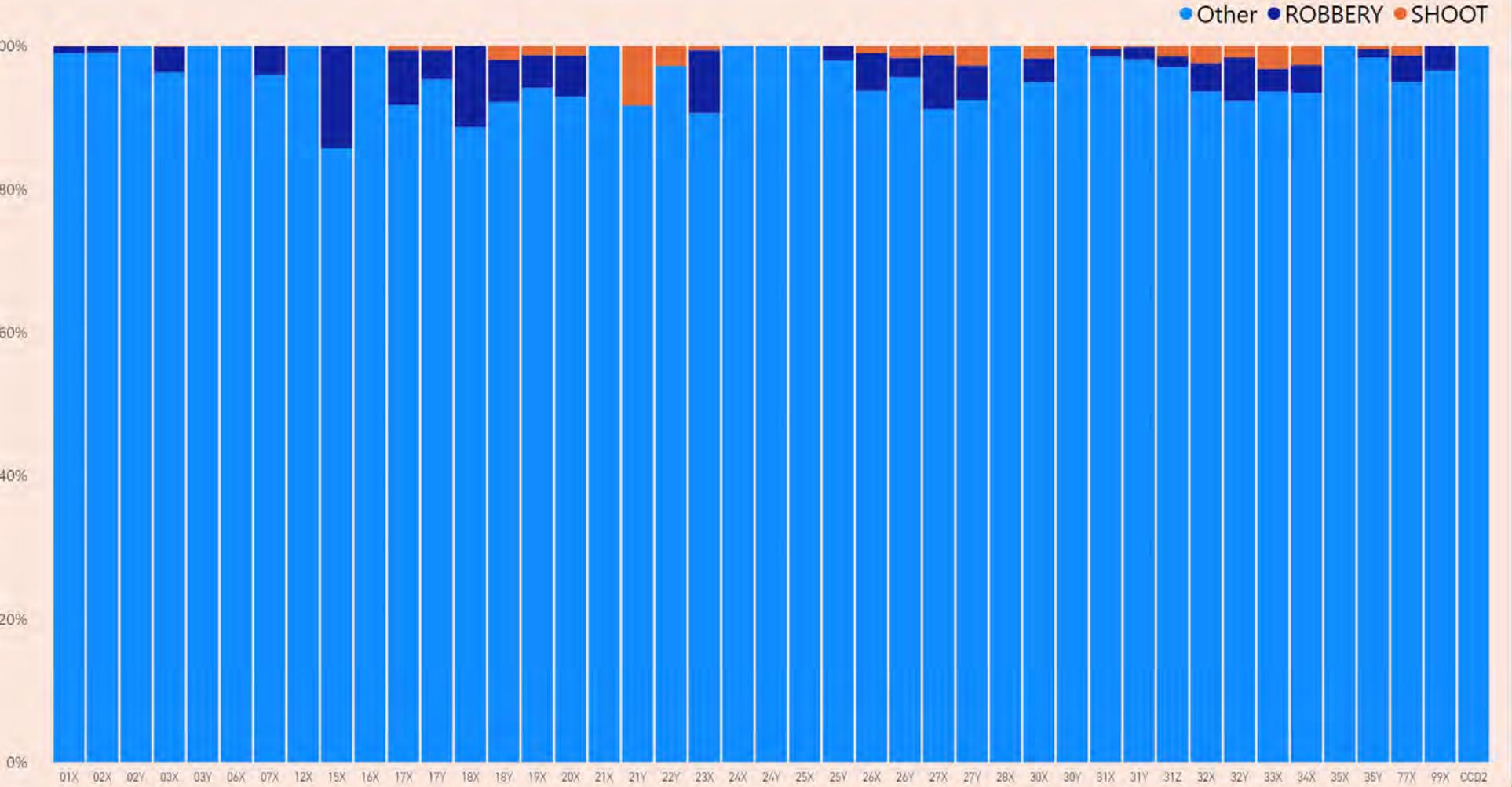
● Other ● ROBBERY ● SHOOT

Max: 4720

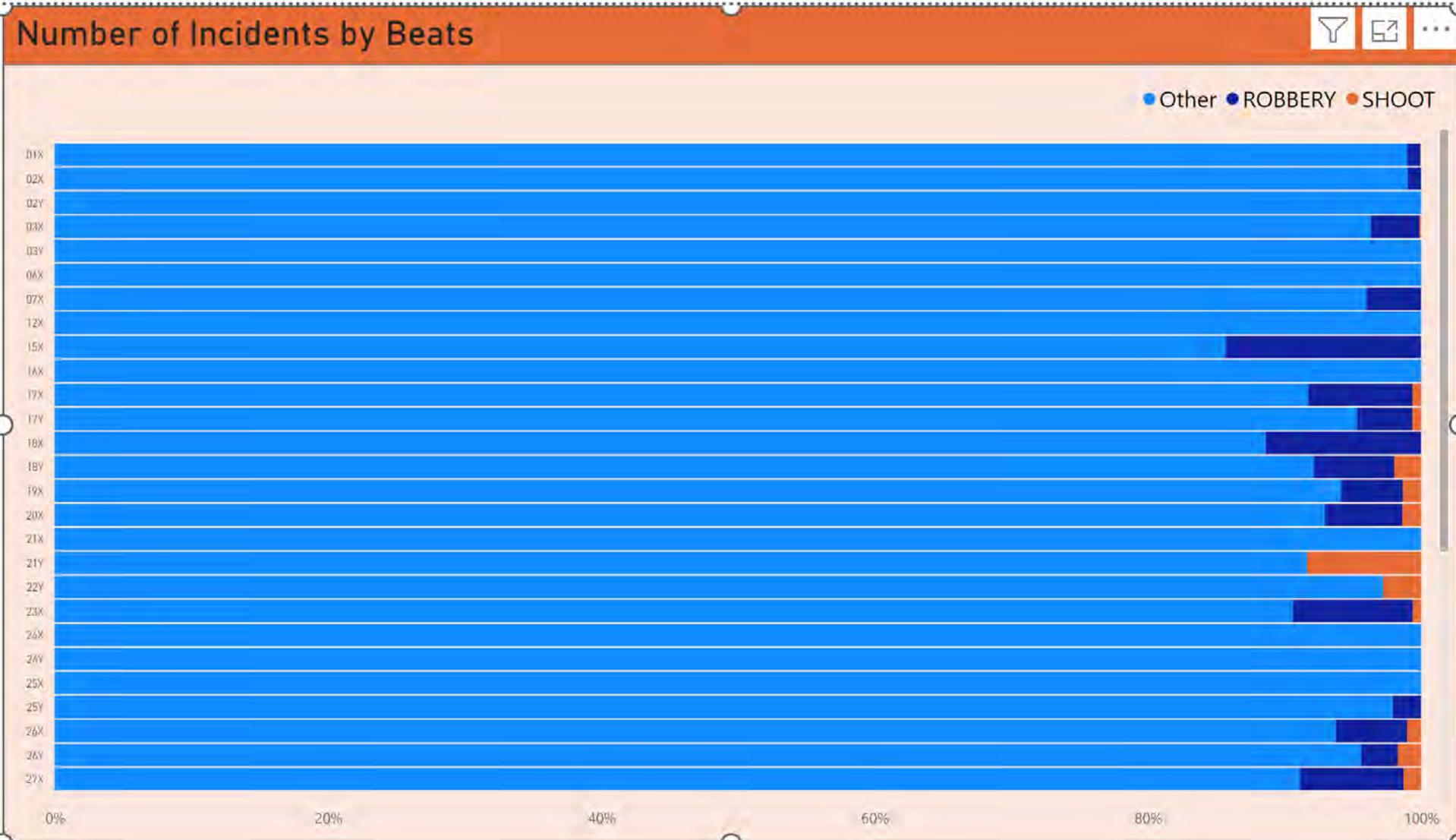


POWER BI – 100 % STACKED COLUMN BAR CHART

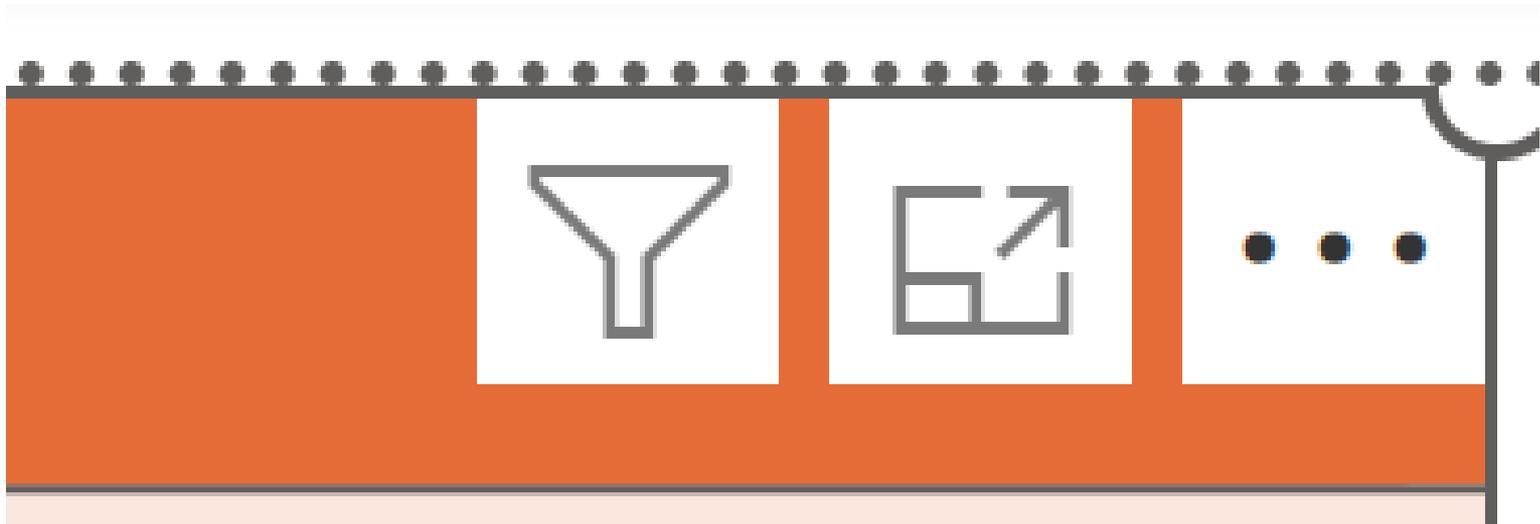
Number of Incidents by Beats



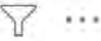
POWER BI – 100% STACKED BAR CHART



POWER BI – SPECIAL FEATURE



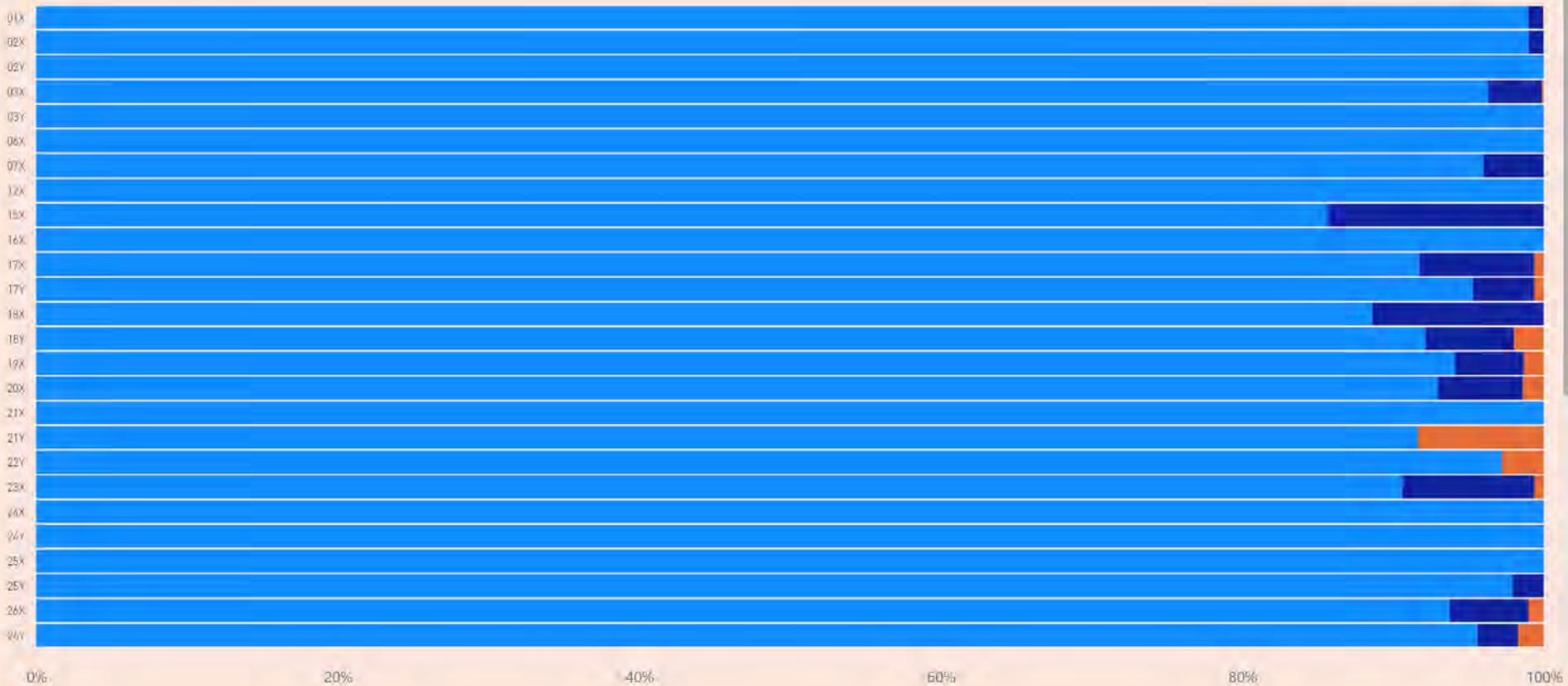
POWER BI – FOCUS MODE



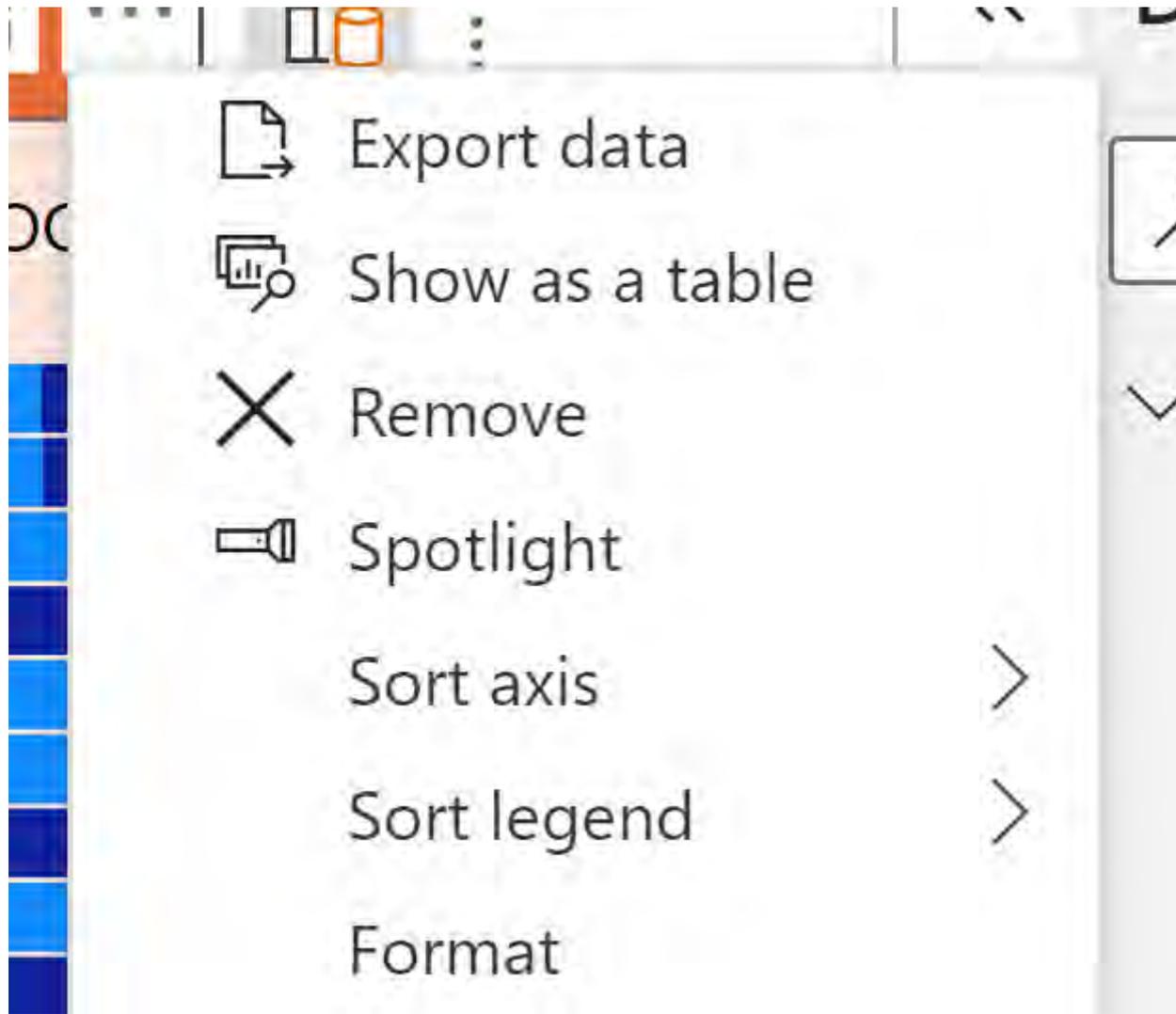
< Back to report

NUMBER OF INCIDENTS BY BEATS

Other ROBBERY SHOOT



POWER BI – MORE OPTIONS



POWER BI – GRAPH CHARTS

Line and area



Line Chart

Area Line Chart

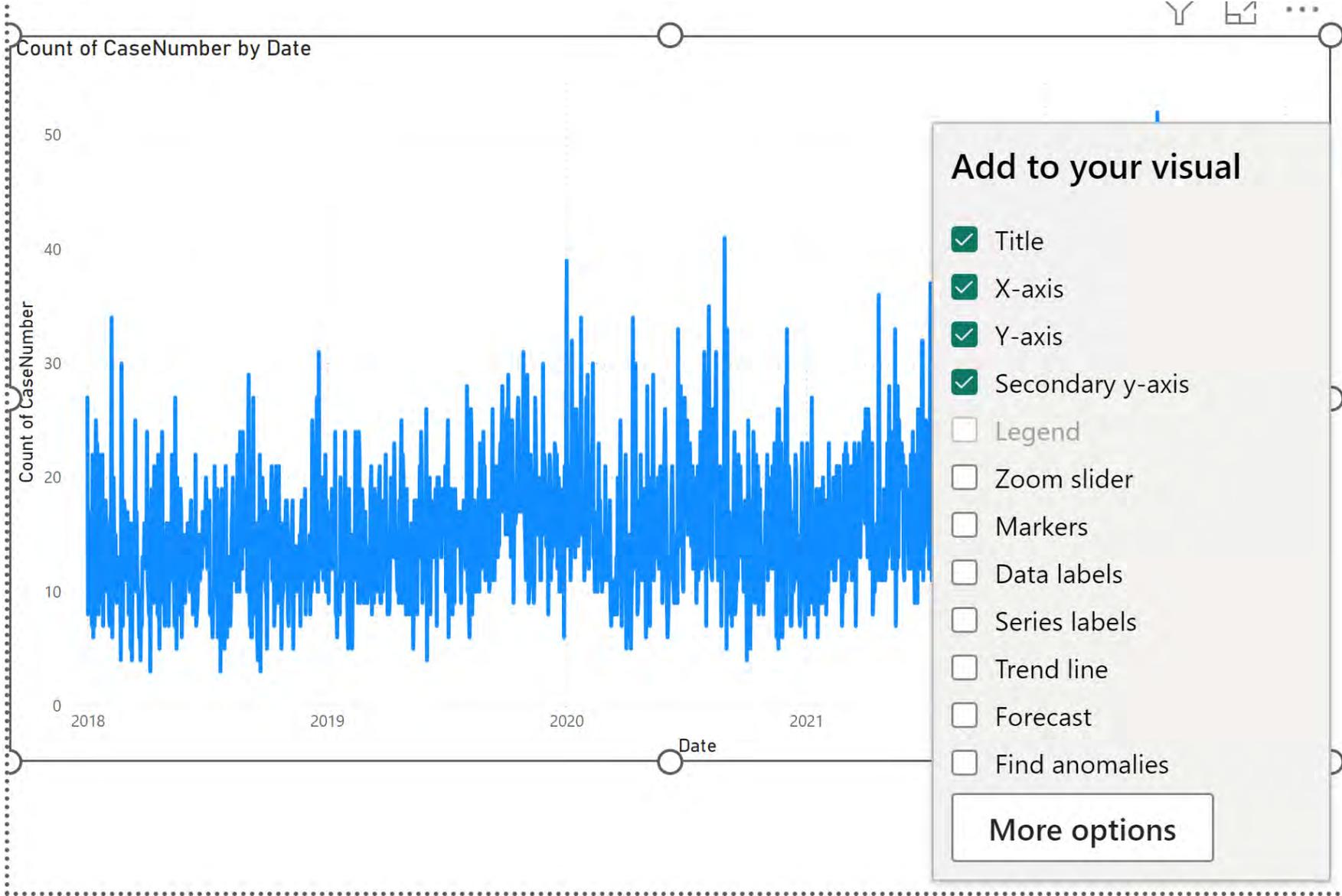
Stacked Area Chart

Line and Stacked Column Chart

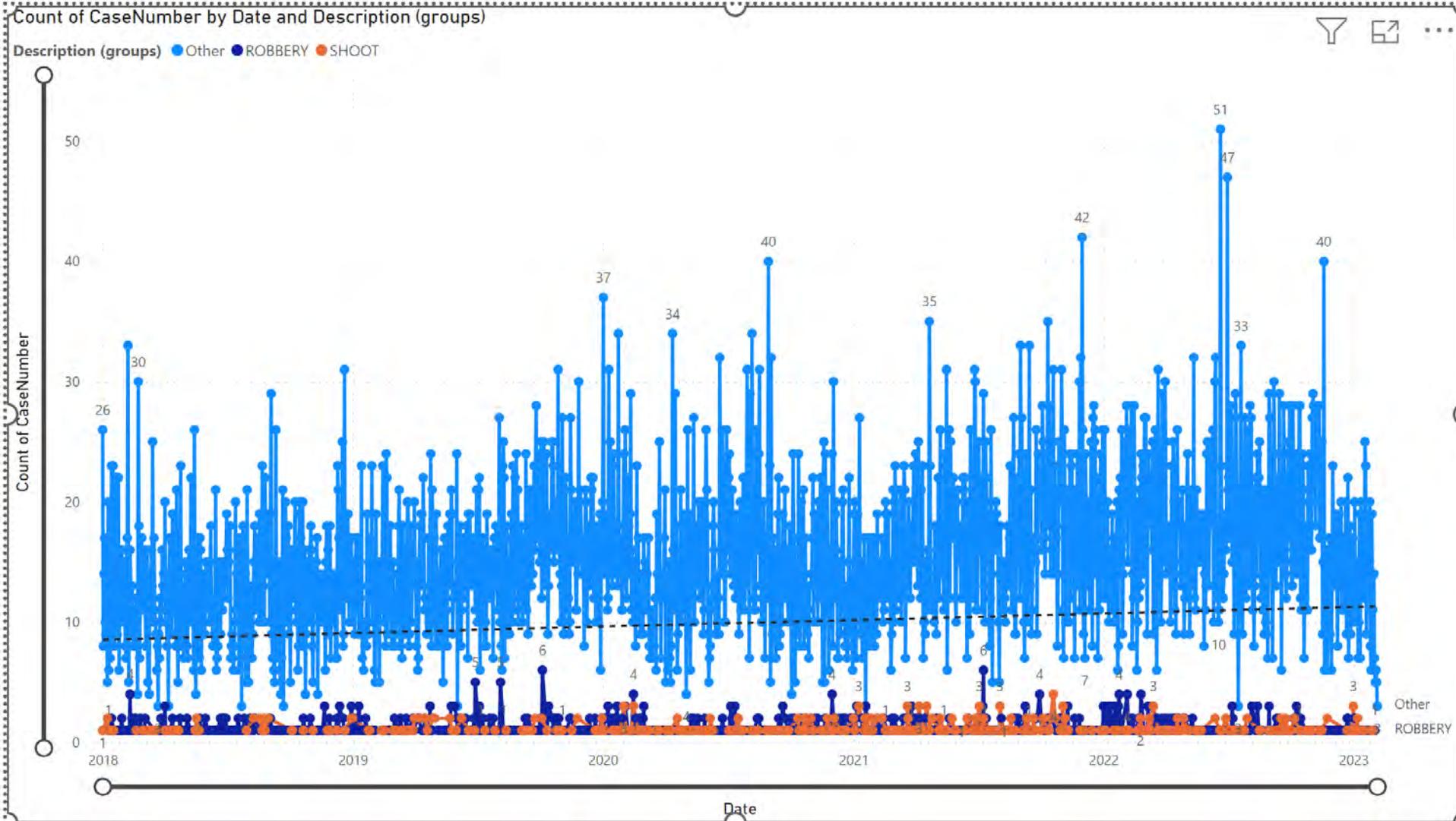
Line and Clustered Column Chart

Ribbon Chart

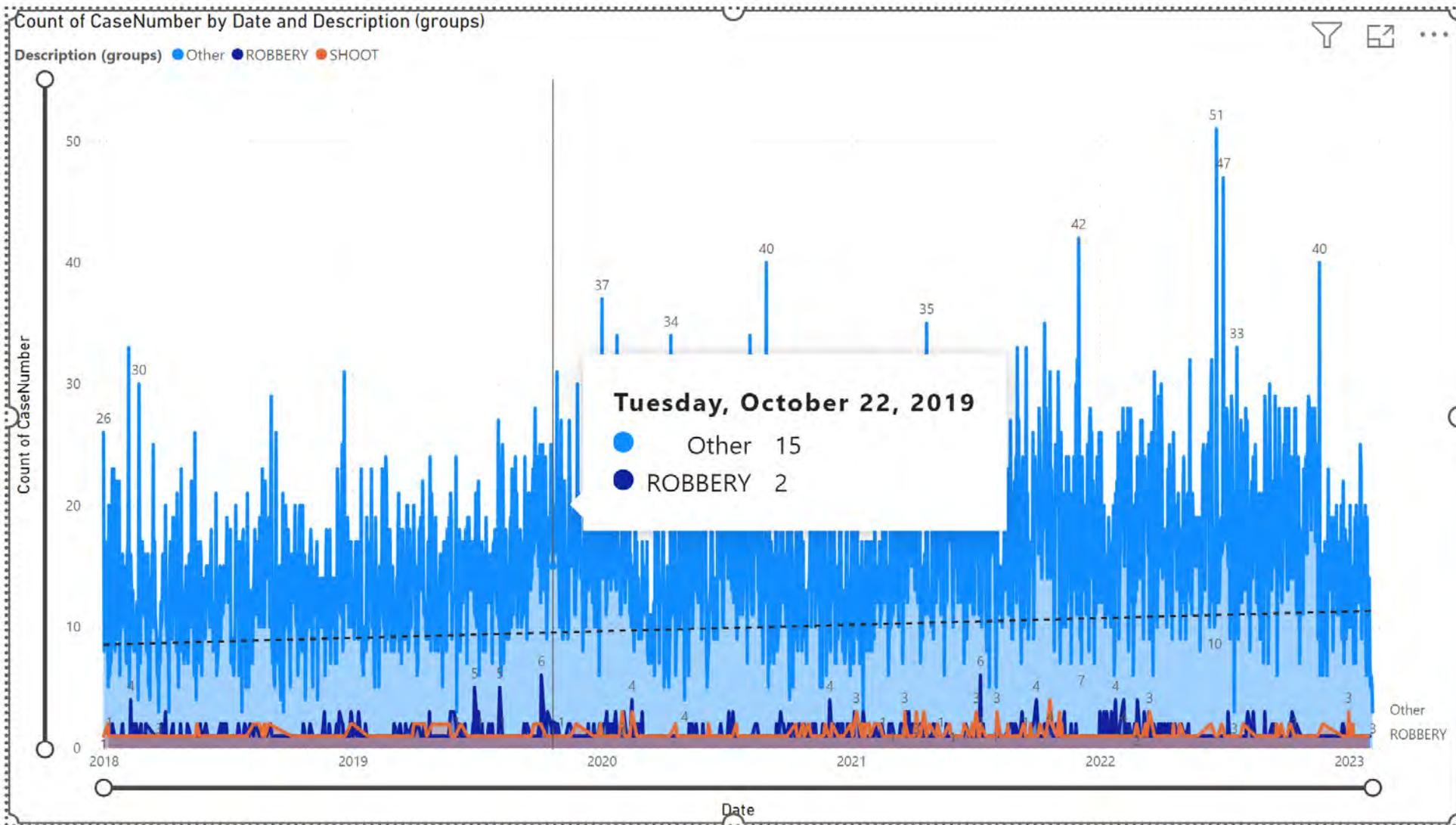
POWER BI – GRAPH CHARTS



POWER BI – GRAPH CHARTS



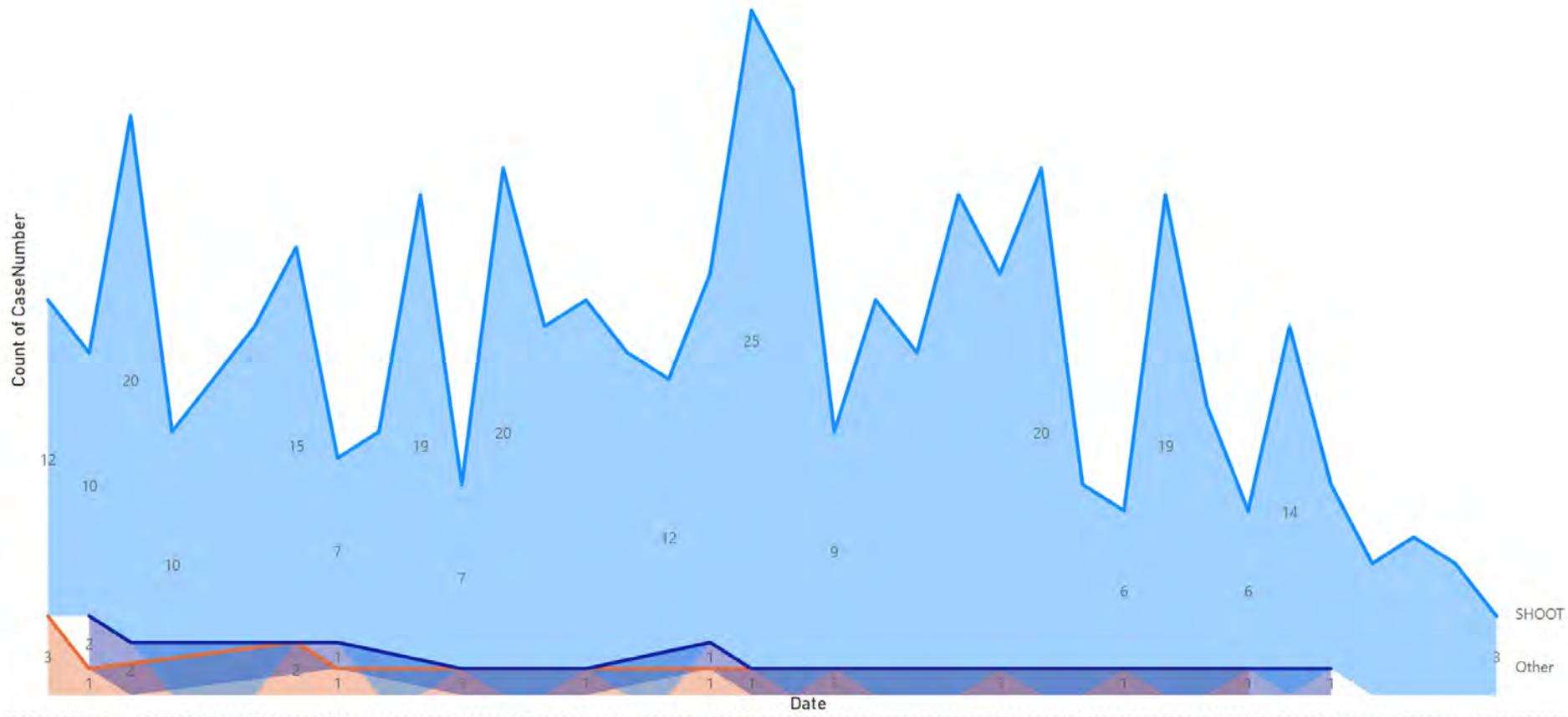
POWER BI – AREA LINE CHART



POWER BI – STACKED AREA CHART

Count of CaseNumber and Count of Location by Date and Description (groups)

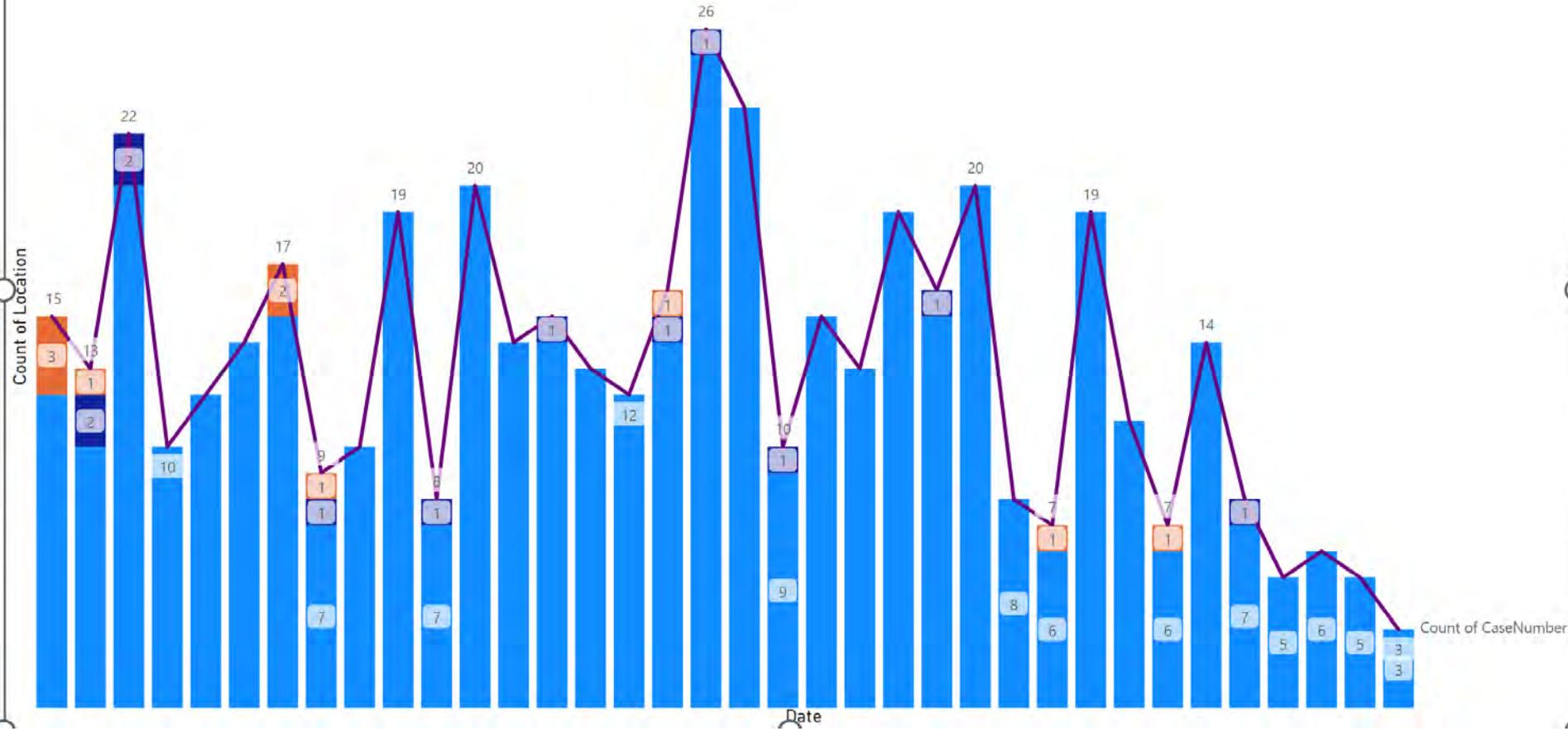
Description (groups) ● Other ● ROBBERY ● SHOOT



POWER BI – LINE AND STACKED COLUMN CHART

Count of Location and Count of CaseNumber by Date and Description (groups)

Description (groups) ● Other ● ROBBERY ● SHOOT ● Count of CaseNumber

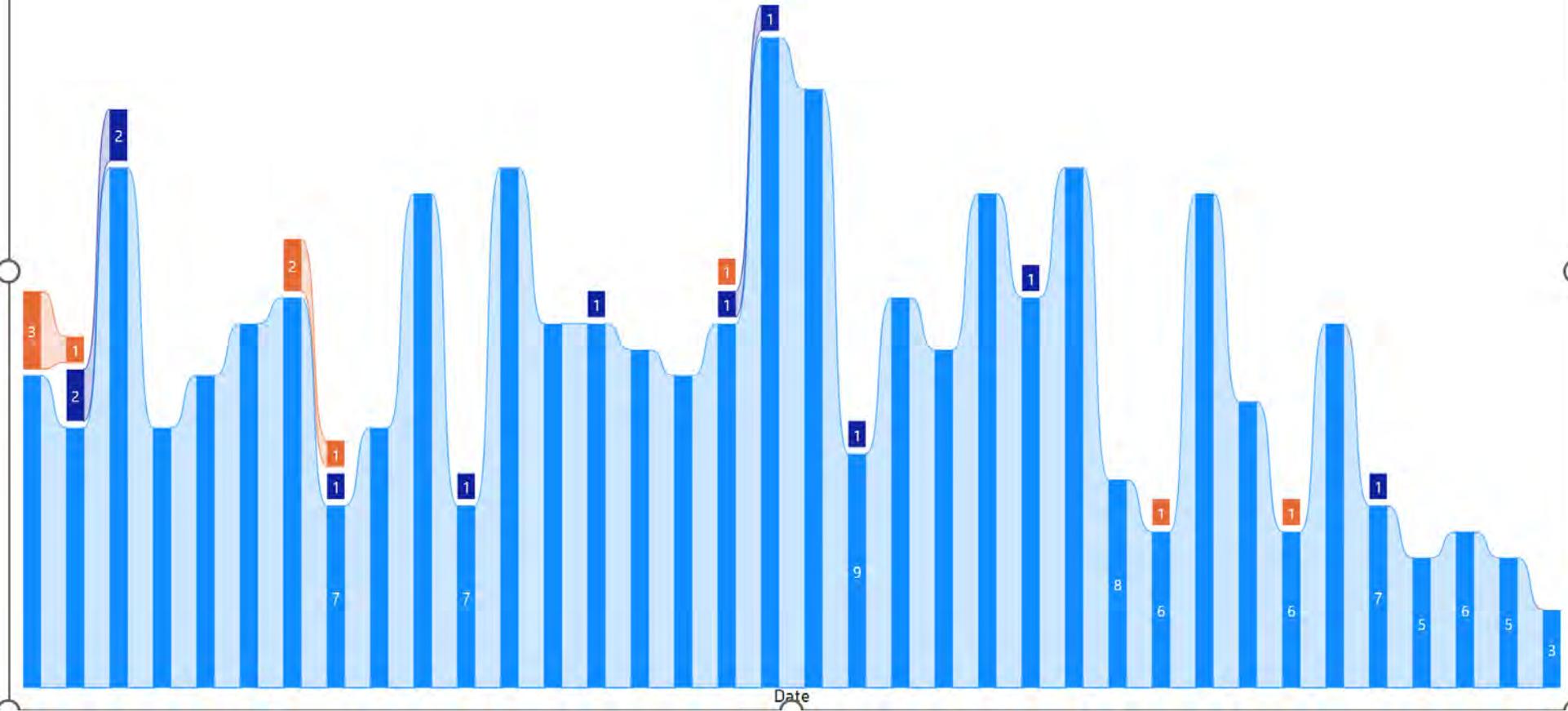


POWER BI – RIBBON CHART

Count of CaseNumber by Date and Description (groups)



Description (groups) ● Other ● ROBBERY ● SHOOT



POWER BI – REPORT PAGE



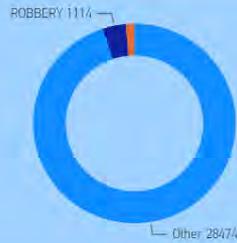
UNK POLICE DEPARTMENT

Count of CaseNumber by Date and Description (groups)

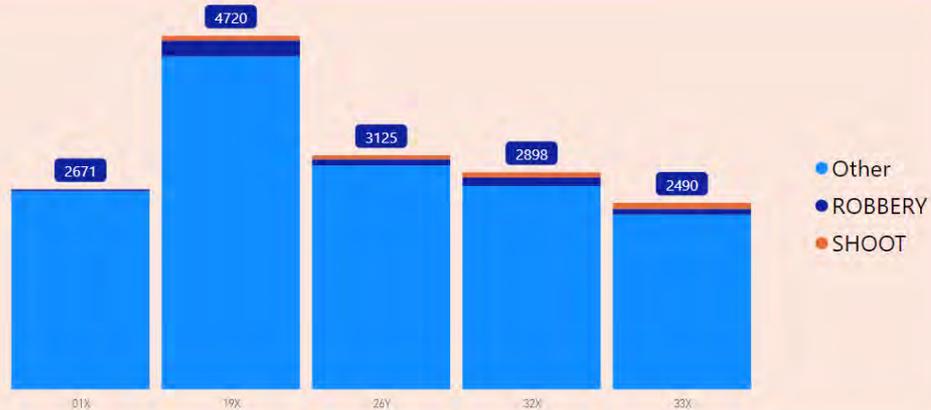
Description (groups) ● Other ● ROBBERY ● SHOOT



Count of Case Number



Number of Incidents by Beats



ADDITIONAL INFORMATION (BOOKS)

✓ **Power Query**

- ✓ *Collect, Combine, and Transform Data Using Power Query in Excel and Power BI* (2018) by Gil Raviv

✓ **Entry Level**

- ✓ *Learn Power BI: Step by Step Guide to Building Your Own Reports* (2022) by Derek Wilson
- ✓ *Power BI - Business Intelligence Clinic: Create and Learn* Paperback (2018) by Roger F. Silva
- ✓ *Microsoft Power BI Dashboards Step by Step* (2018) by Errin O'Connor

✓ **Advance Level**

- ✓ *Analyzing Data with Power BI and Power Pivot for Excel* (2017), Marco Russo and Alberto Ferrari
- ✓ *The Definitive Guide to DAX: Business Intelligence for Microsoft Power BI, SQL Server Analysis Services, and Excel* (2019) by Marco Russo and Alberto Ferrari

ADDITIONAL INFORMATION (LINKS)

- ✓ Websites, Blogs, and YouTube channels
 - ✓ Power Query documentation
<https://docs.microsoft.com/en-us/power-query>
 - ✓ Power BI documentation
<https://docs.microsoft.com/en-us/power-bi/>
 - ✓ Power BI Tips
<https://powerbi.tips/>
 - ✓ RADACAD
<https://radacad.com/>
 - ✓ SQLBI
<https://www.sqlbi.com/>
 - ✓ Guy in a Cube
<https://guyinacube.com/>
 - ✓ Curbal
<https://www.youtube.com/channel/UCJ7UhloHSA4wAqPzyi6TOkw>

NEXT WEBINAR

Power BI Visualization Continuing

- ✓ *Cards*
- ✓ *KPI*
- ✓ *Tables*
- ✓ *Matrix*

CONCLUSIONS & QUESTIONS

Svetlana Gubin, Oakland PD

Sgubin@OaklandCA.gov

