Basic Charts and Graphs in Excel

IACA Excel Series 2017

About the presenter

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- Previous – National Center for Missing & Exploited Children
- Note – Actual PowerPoint is relatively short. I tend to use real time examples to go through. If this is inconvenient, please provide that feedback and I'll be happy to adjust upcoming classes.

Making Sense of Excel Data Review

- Sorting Data
    - Data → Sort
    - Allows you to group items by a type. You can also order items in ascending/descending or alphabetical order
- Filtering Data
    - Data → Filter
    - Allows you to temporarily hide data that is not currently of use to you.
    - Data remains in the Excel spreadsheet even though it is hidden for future access
- Conditional Formatting
    - Home → Conditional Formatting
    - Allows you to change the appearance of your data to call out specific items of interest.
    - Can use as a heat map for frequency of item.
    - Remember – Calls for Service hot spots by day of week and time of day
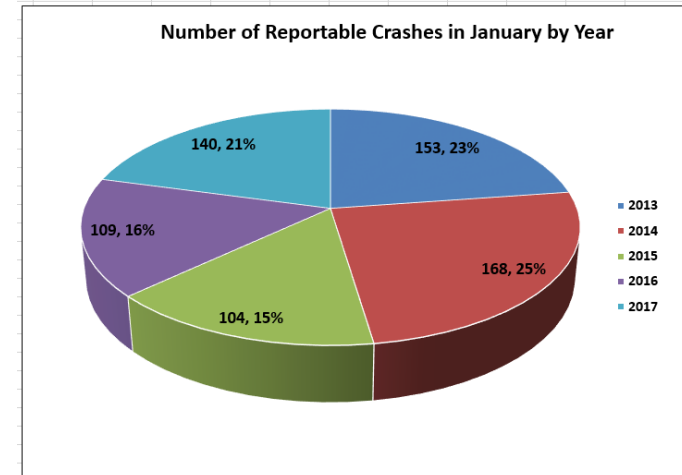
Discussion for Today

▶ Type of Graphs/Charts in Excel

▶ Appropriate Use of Each Type

▶ Creating a Simple Chart

▶ Discussion of the Elements in a Chart

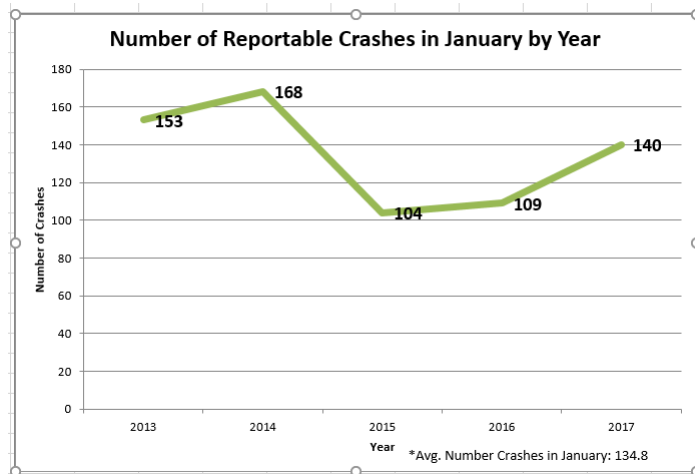▶ Moving Your Chart to Word
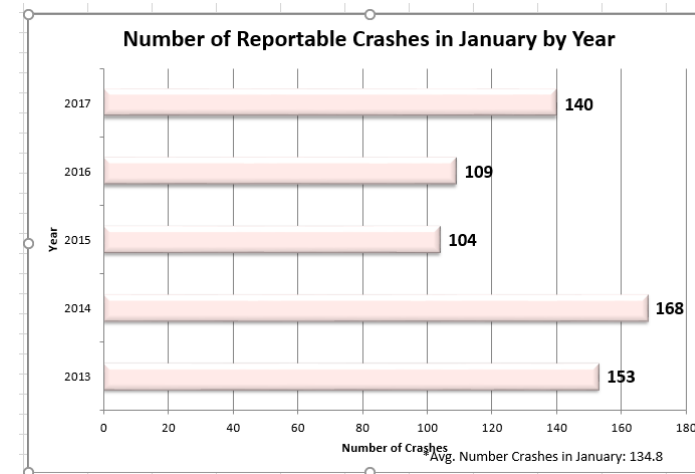
# Most Common Types of Charts and Graphs

► Column
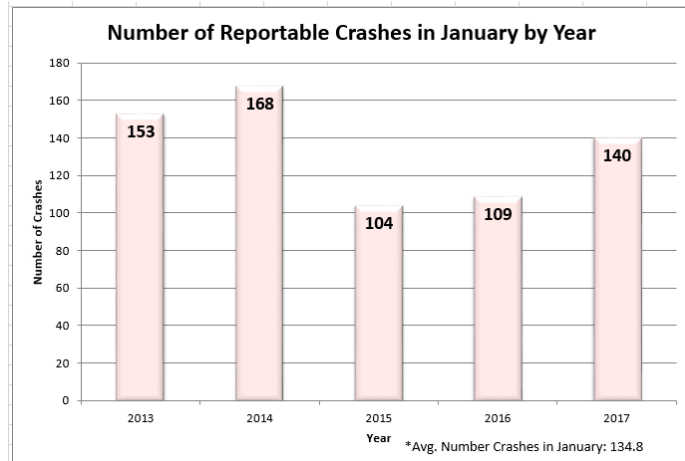
► Pie

► Line



► Bar

Column/Bar Chart

► Use this chart to visually compare values across a few categories

► Ex: Comparing number of incidents by year

► Ex: Compare number of part one crimes by location (sector/beat/etc.)

► In Excel, can have 2D or 3D

► Can do clustered (see above) or stacked.

    ► Clustered = each bar represents the entirety of a category

    ► Stacked = each bar is separated into two different colors to represent not only the whole category but differentiate subcategories.

    ► Ex. Stacked: Ethnicity. Our system does not list Hispanic as a race but rather an ethnicity. Bar will show the total arrests and have the arrests separated by Hispanic vs. Non-Hispanic
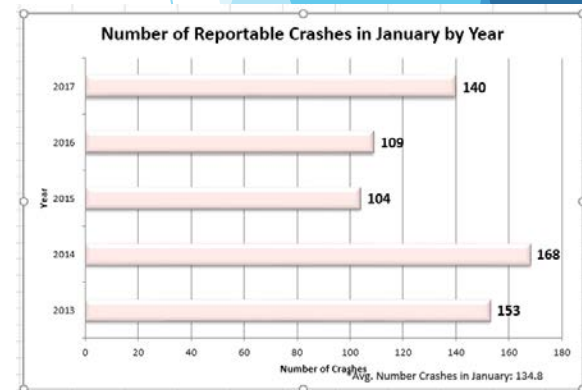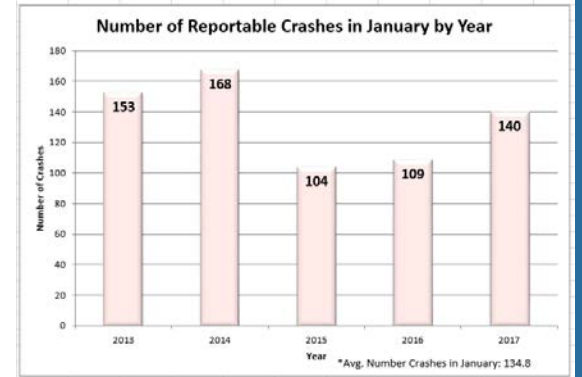
Column/Bar Chart

Number of Arrests by Race and Ethnicity in January

Line Chart

Number of Reportable Crashes in January by Year
*Avg. Number Crashes in January: 134.8
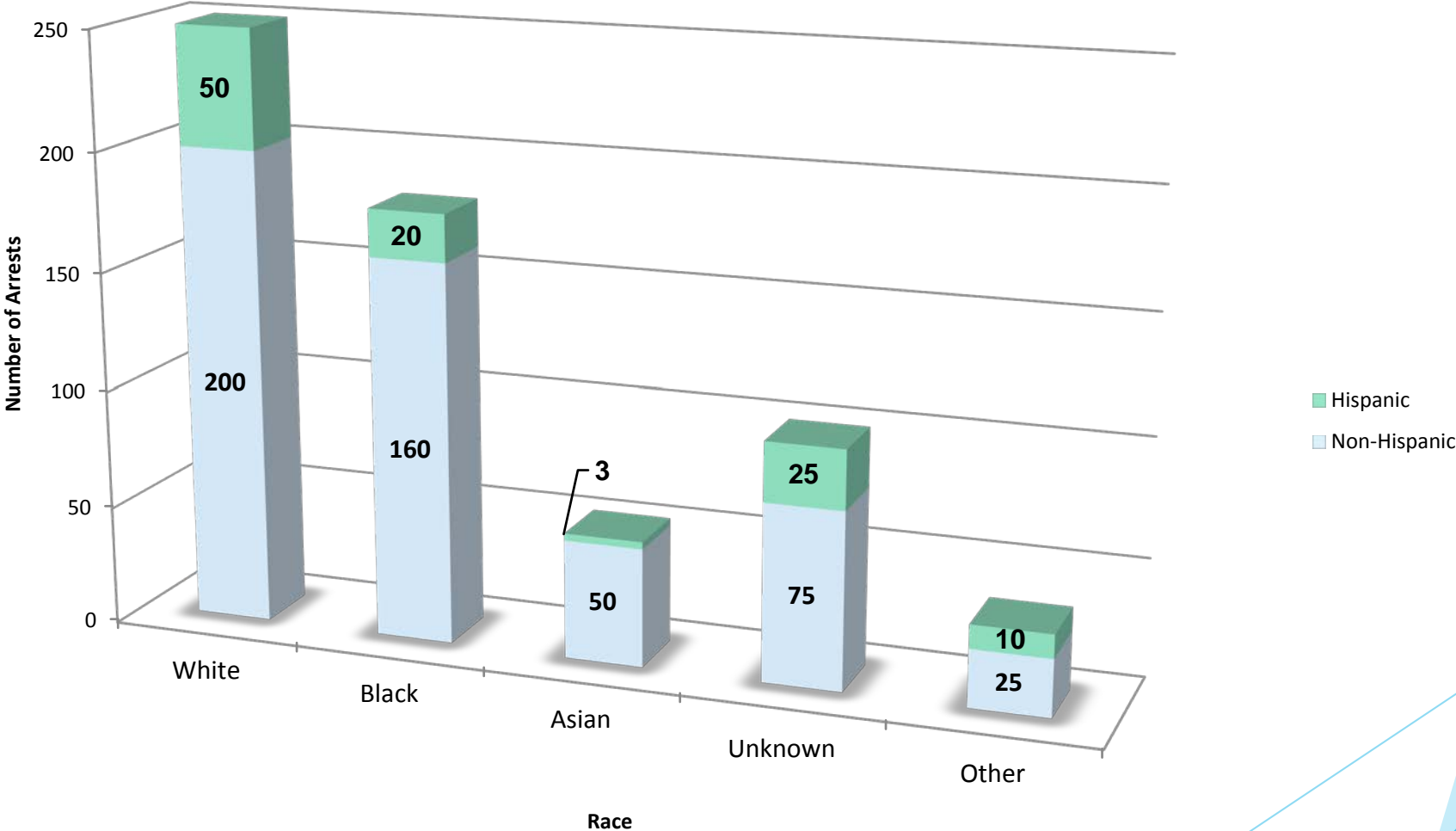
- Use this chart to show trends over time or categories

- Example provide shows number of crashes by year

- Effective in demonstrating a trend. Can add a trend line to bar/column charts, but line charts look cleaner.

- Can add multiple lines to demonstrate comparable trends.

- We use these mostly for our response time statistics. We include a "goal line" for our response time. This line remains constant. The actual data fluctuates around that goal line to demonstrate success or failure at meeting our response time goals.

Line Chart

ALBEMARLE COUNTY POLICE DEPARTMENT

Developed Areas / Rural Area Percentage of Calls in Which the Response Time Goal Was Met

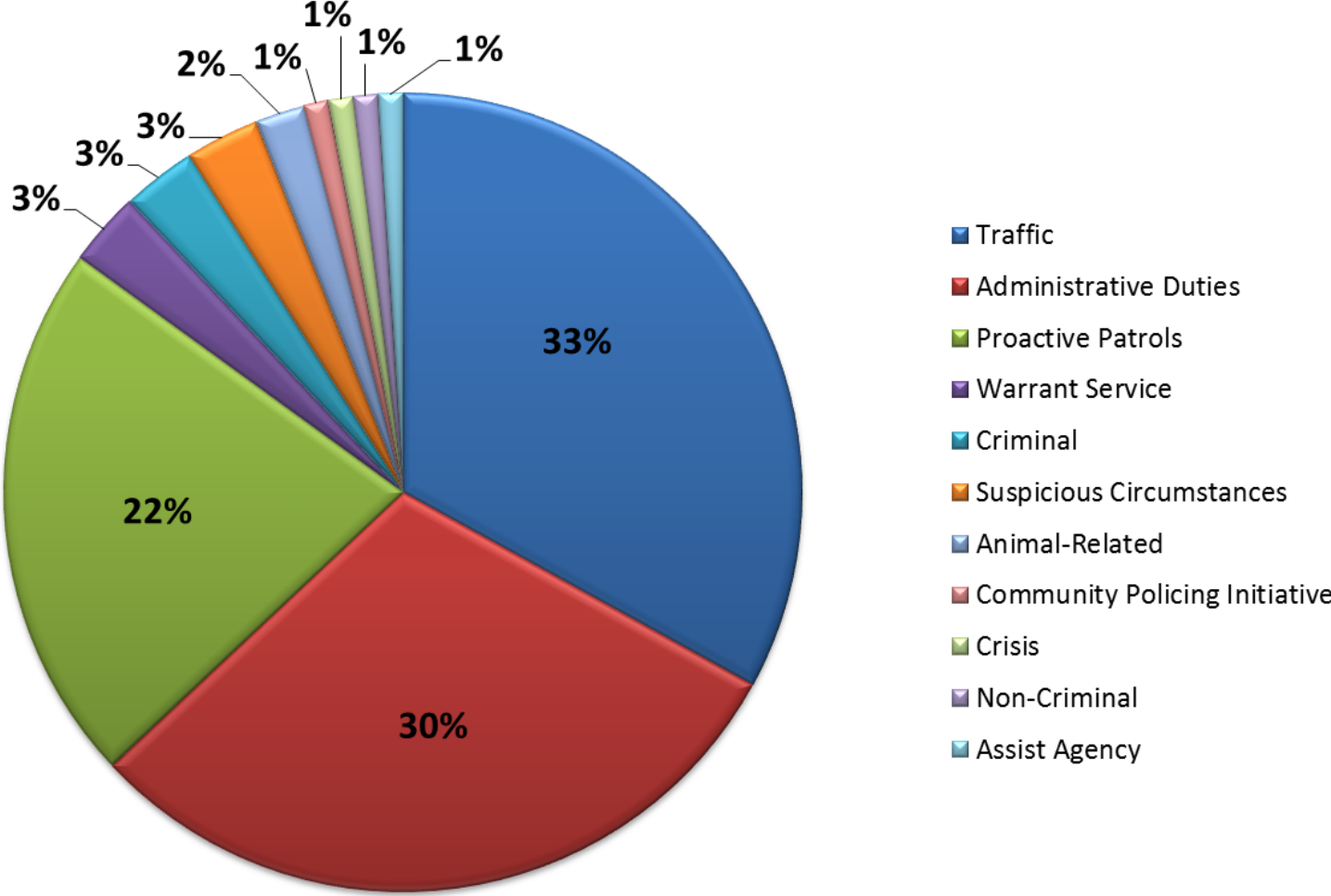|	12/15	01/16	02/16	03/16	04/16	05/16	06/16	07/16	08/16	09/16	10/16	11/16	12/16
Devel 5m	58%	78%	80%	88%	80%	75%	33%	90%	67%	29%	83%	80%	56%
Rural 10m	63%	60%	50%	50%	33%	80%	80%	0%	0%	67%	67%	0%	0%
GOAL	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%

Pie Chart

Number of Reportable Crashes in January by Year
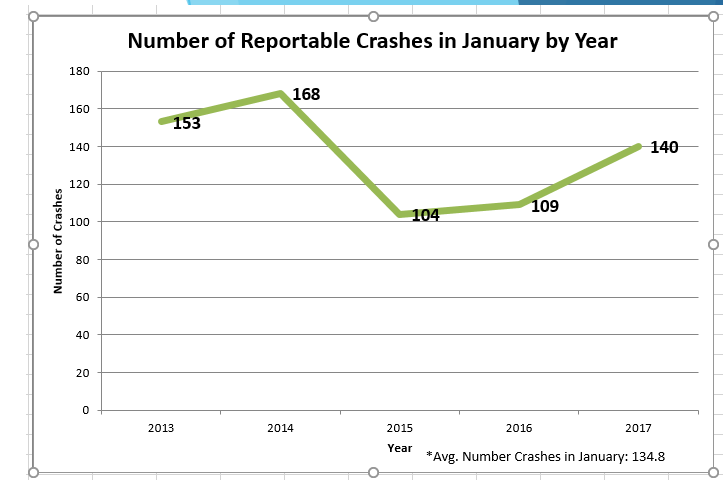
- Use this chart to show proportion of the whole.

- Use this when your numbers equal 100%

- Ex.: Number of traffic summonses written by your traffic unit as compared to number written by the remainder of patrol.

- Ex.: How patrolman spends his day

- Ex.: Breakdown of Part One Crimes by Type
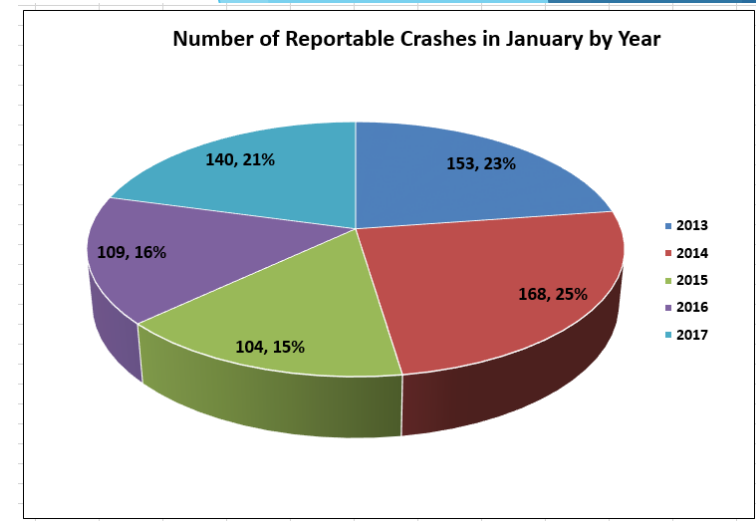
Pie Chart

Albemarle County Officer-Initiated Activity by Disposition 2015

- Traffic — 33%
- Administrative Duties — 30%
- Proactive Patrols — 22%
- Warrant Service — 3%
- Criminal — 3%
- Suspicious Circumstances — 2%
- Animal-Related — 1%
- Community Policing Initiative — 1%
- Crisis — 1%
- Non-Criminal — 1%
- Assist Agency — 1%

Elements of a Chart – Column/Bar/Line

Number of Arrests by Race and Ethnicity in January
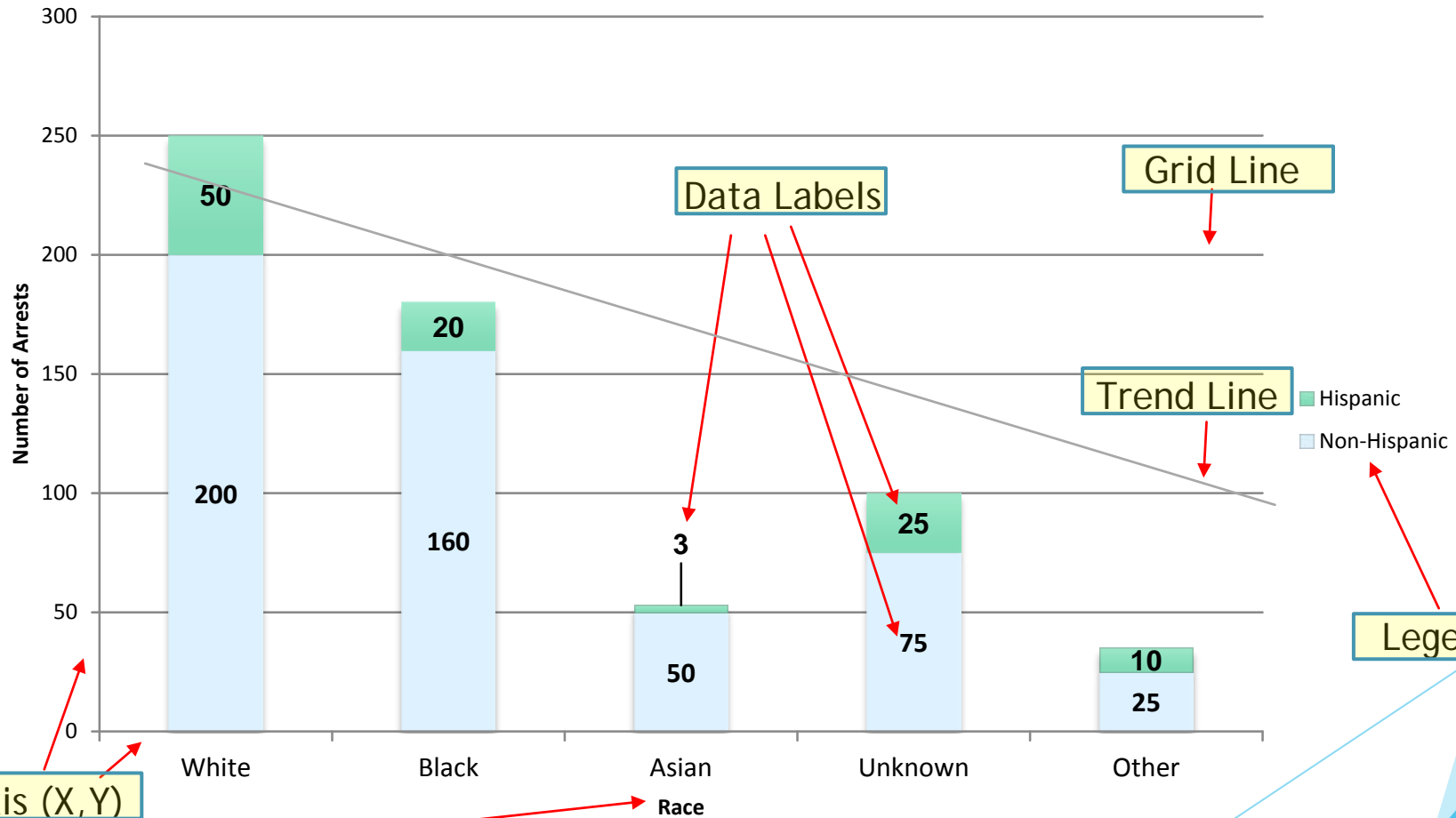
Elements of a Chart – Column/Bar/Line (Continued)

ALBEMARLE COUNTY POLICE DEPARTMENT
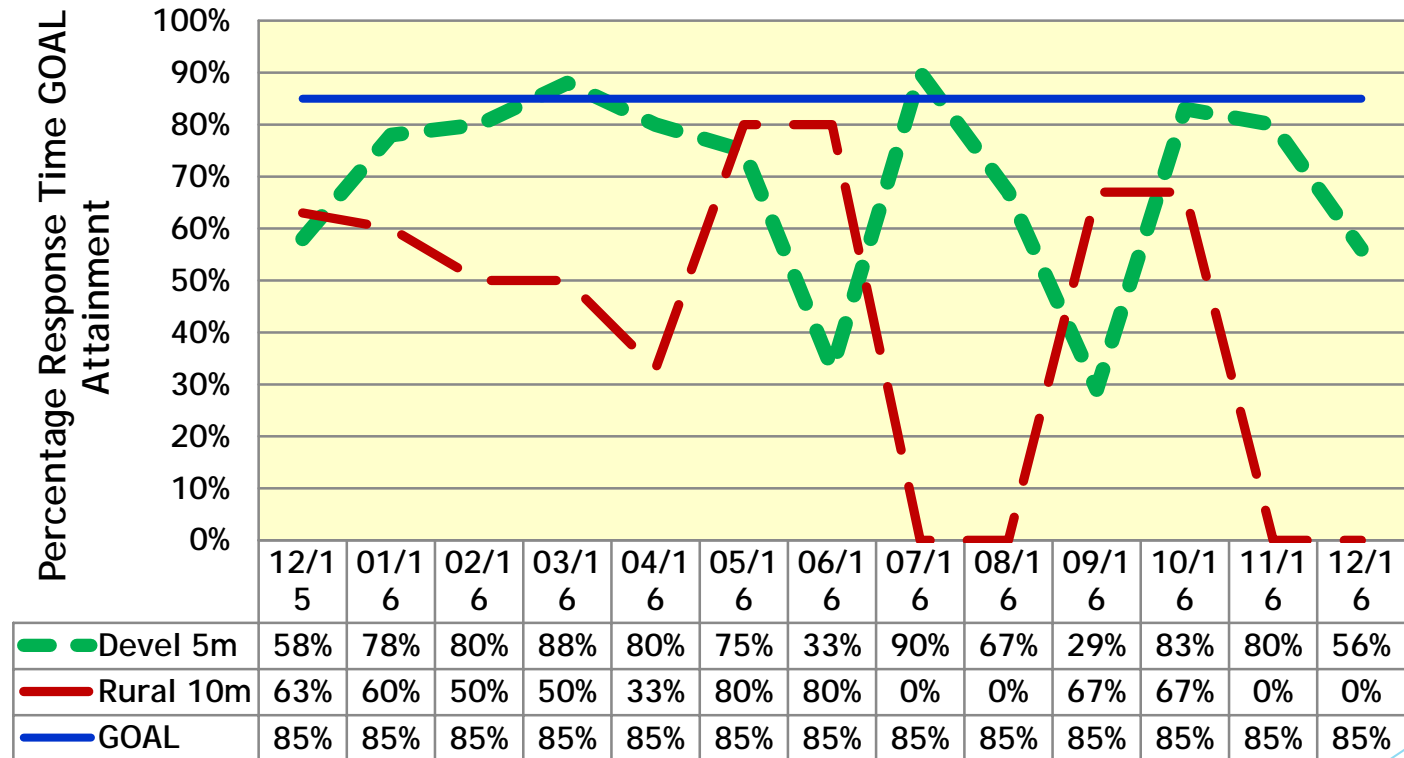**Developed Areas / Rural Area Percentage of Calls in Which the Response Time Goal Was Met**

Percentage Response Time GOAL Attainment

	12/15	01/16	02/16	03/16	04/16	05/16	06/16	07/16	08/16	09/16	10/16	11/16	12/16
Devel 5m	58%	78%	80%	88%	80%	75%	33%	90%	67%	29%	83%	80%	56%
Rural 10m	63%	60%	50%	50%	33%	80%	80%	0%	0%	67%	67%	0%	0%
GOAL	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%

Data Table

Elements of a Pie Chart

Albemarle County Officer-Initiated Activity by Disposition 2015
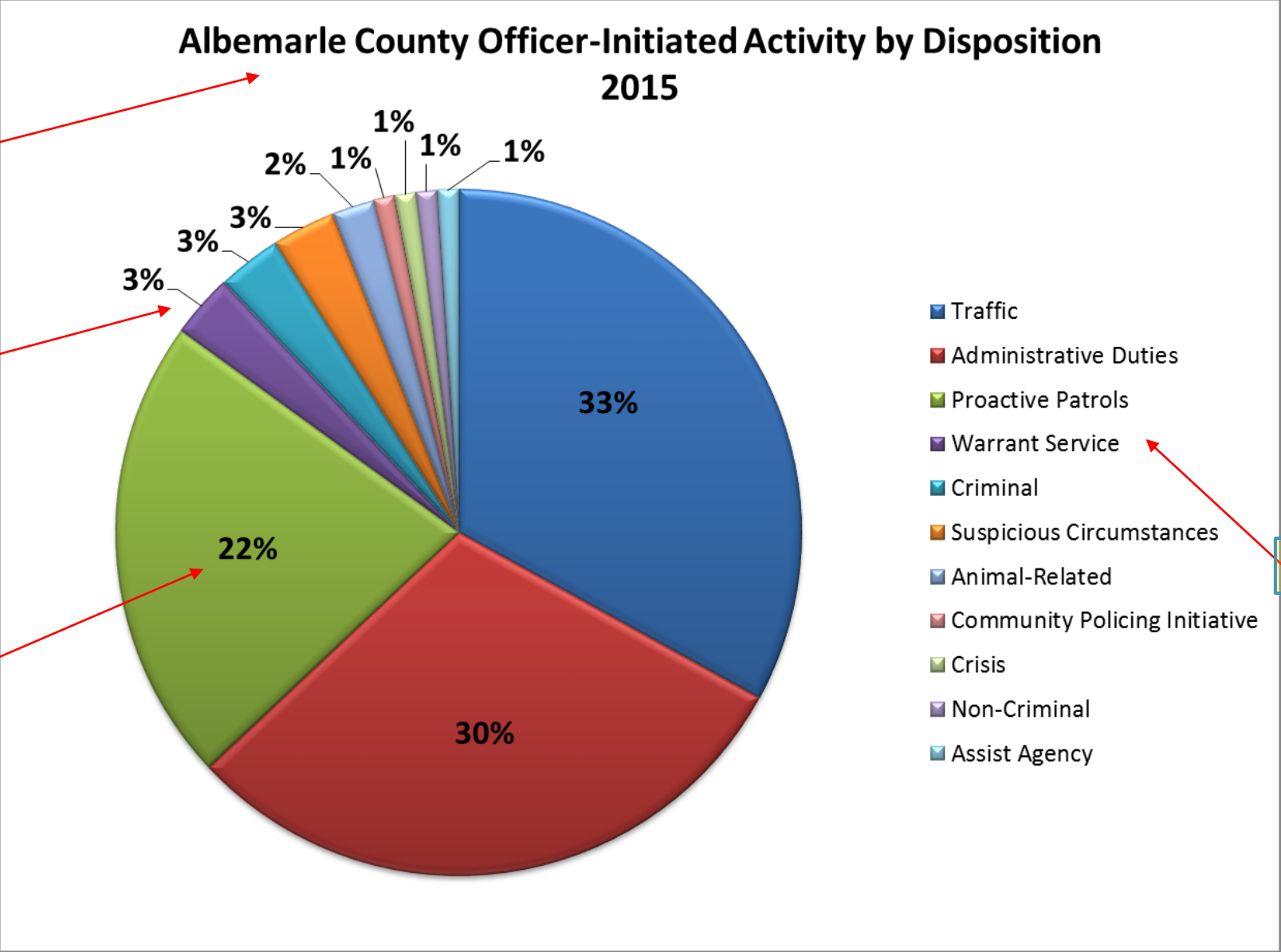
Chart Title

Leader Lines

Data Labels

Legend

33%
30%
22%
3%
3%
3%
2%
1%
1%
1%
1%
1%

- Traffic
- Administrative Duties
- Proactive Patrols
- Warrant Service
- Criminal
- Suspicious Circumstances
- Animal-Related
- Community Policing Initiative
- Crisis
- Non-Criminal
- Assist Agency

Creating a Chart

- Time to create your charts!
- Open Excel Data
- Select the data that you want to graph
- Insert → Chart
- Can have Excel recommend a chart or you can select the chart yourself

Tune in next time for…

▶ Changing Elements of the Chart

▶ Changing Colors/Fonts

▶ Switching Axes

▶ Adding pictures to your graphs

▶ Adding Text Boxes and Labeling

▶ Linking Charts in Powerpoint and Word

Questions?

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