HOW THE ALAMO AREA MPO IS LEVERAGING ESRI’S INSIGHTS
GIS TEAM

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INSIGHTS is analysis software that fuses location analytics with open data science and business intelligence workflows. It answers questions you didn’t know to ask.
Exploratory Data Analysis refers to the critical process of performing initial investigations on data so as to discover patterns, to spot anomalies, to test hypotheses and to check assumptions with the help of summary statistics and graphical representations.
AAMPO’s Crash Dashboard

2015-2019 Serious Injury & Fatality Crashes in AAMPO Region

Overview Map

Serious Injury/Fatality Crash Breakdown

Crashes Per Time of Day/Day of Week

Crashes Per Month

Number of Persons

Light Conditions

Weather Conditions

Surface Conditions

TxDOT’s Crash Records Information System (CRIS)
**INSIGHTS**

**Workflow integration Continues to grow**

- Living Atlas
- Marketplace
- AppStudio
- Dev
- Hub
- Dashboards
- StoryMaps
- Survey123
- Workforce
- Insights
- QuickCapture
- ArcGIS Online
- Beta
- Map Viewer Beta
- Experience Builder
- Dashboards Beta

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**Change:** process through which something becomes different, often over time

- A bar graph uses either horizontal or vertical bars to show comparisons among categories. They are valuable to identify broad differences between categories at a glance.
- A heat chart shows total frequency in a matrix. Using a temporal axis values, each cell of the rectangular grid are symbolized into classes over time.
- Bubble charts with three numeric variables are multivariate charts that show the relationship between two values while a third value is shown by the circle area.
- Graduated symbol maps show a quantitative difference between mapped features by varying symbol size. Data are classified with a symbol assigned to each range.
- A Density/Heat map calculates spatial concentrations of events or values enabling the distribution to be visualized as a continuous surface.
- A Data clock creates a circular chart of temporal data, commonly used to see the number of events at different periods of time.
- Line graphs visualize a sequence of continuous numeric values and are used primarily for trends over time. They show overall trends and changes from one value to the next.
- A combo chart combines two graphs where they share common information on the x-axis. They allow relationships between two datasets to be shown.

**Interaction:** flow of information, products or goods between places

- A chord diagram visualizes the inter-relationships between categories and allows comparison of similarities within a dataset or, between different groups of data.
- Scatterplots allow you to look at relationships between two numeric variables with both scales showing quantitative variables. The level of correlation can also be quantified.
- Spider lines, also termed desire lines, show paths between origins and destinations. They show connections and flow between places.

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**Part-to-whole:** relative proportions or percentages of categories, showing the relationship between parts and whole

- Donut charts are used to show the proportions of categorical data, with the size of each piece representing the proportion of each category.
- A treemap shows both the hierarchical data as a proportion of a whole and, the structure of data. The proportion of categories can easily be compared by their size.

**Distribution:** the arrangement of phenomena, could be numerically or spatially

- Histograms show the distribution of a numeric variable. The bar represents the range of the class bin with the height showing the number of data points in the class bin.
- A box plot displays data distribution showing the median, upper and lower quartiles, min and max values and, outliers. Distributions between many groups can be compared.
- A choropleth map allows quantitative values to be mapped by area. They should show normalized values not counts collected over unequal areas or populations.
- Graduated symbol maps show a quantitative difference between mapped features by varying symbol size. Data are classified with a symbol assigned to each range.
- A Density/Heat map calculates spatial concentrations of events or values enabling the distribution to be visualized as a continuous surface.
- A unique symbol map (areas or points) allows descriptive (qualitative) information to be shown by location. Areas have different fills and points can be geometric or pictorial.

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**Acknowledgement**

INSIGHTS

Seamless Workflow

Insights

ArcGIS Online

Websites

Story maps

Survey123

Living Atlas
INSIGHTS

Intuitive drag and drop
Sharing pages
INSIGHTS
Link maps (aka graph analysis)

- **Spider lines/Desire lines**
  - A desire line map shows straight lines connecting the origins and the destinations
  - Shows the shortest line between origin and destination

- **Flow maps**
  - Shows movement of people, goods, transport etc.
  - Displays direction of movement and can also show volume
CASE STUDY

OVERLAND

Survey123

Insights

Websites

Alamo Commutes encourages commuters to make smart, multimodal transportation choices.

SIGN UP FOR A FREE CONSULTATION TODAY

DOWNLOAD OUR MOBILE APP

NEED AN EMERGENCY RIDE HOME?

Rethink your commute.

Save money. Reduce stress. Clean the air.

Bike to work, meetings, and anywhere else you can think of! Bicycle commuters benefit from improved health, reduced stress, and financial savings. With nearly 400 miles of on and off-street bicycle facilities in Bexar County, bicycling is both a safe and convenient form of transportation.
In order to better gauge employees’ commute patterns and motivations, Alamo Commutes coordinated with Overland Partners to initiate an employee survey. On June 17, 2019, the survey was sent to all 76 employees that worked out of the San Antonio office. After a month, the survey closed with a total of 48 responses, approximately 63% of Overland employees.
Employee Survey

Dear staff,

We are working with Alamo Commutes to identify opportunities to improve your commute to work. To do so, we need to first gain a better understanding of your transportation patterns and needs. Please take 5-7 minutes to complete this survey. The survey will help us identify what services or programs we can offer as an employer to help improve your commute. Your responses are confidential and will not be shared with any third parties.

Commuter Patterns

Please select which days you COMMUTE to work.

- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday

Commuter Patterns - continued

When you DRIVE ALONE, what time do you TYPICALLY arrive at Work?

- Please Select

When you DRIVE ALONE, what time do you TYPICALLY arrive at Home?

- Please Select

Commute Motivations - continued

If you usually drive alone, which of the following commute alternatives would you consider using at least one day per week if able? Please check all that apply.

- Carpool
- Vanpool
- Bus
- Walk
- Bike
- None

Tip: This question will try to guide your location. Press to continue...
DATA ANALYSIS

ArcGIS Insights
Executive Summary

Recommendations

OVERLAND PARTNERS

Recommendations

Alternative Work Schedules
- Many employees indicated that they would be interested in telecommuting more.
- A formal telecommuting policy, enforced by management, could improve employee satisfaction and reduce commuting trips.

Biking & Walking
- OVERLAND PARTNERS can invest in additional amenities - locker rooms with showers, internal bicycle storage and an on-site maintenance kit.
- Alamo Commutes can help employees plan a safe route and identify possible commuting groups.

Carpool
- OVERLAND PARTNERS can promote carpool matching and allow employees to have a more flexible schedule.
- Alamo Commutes can identify potential carpooling groups and provide free Emergency Ride Home.

Public Transit
LESSONS LEARNED

- SETUP YOUR SCHEME CORRECTLY TO AVOID DATA CLEAN UP
- ONLY ADD QUESTIONS YOU PLAN TO USE
LIVE DEMO
Thank You!

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