

Designing Impactful ArcGIS Dashboards

Dave Nyenhuis
Priscilla Kim



Agenda

Six Lessons on Dashboard Best Practices

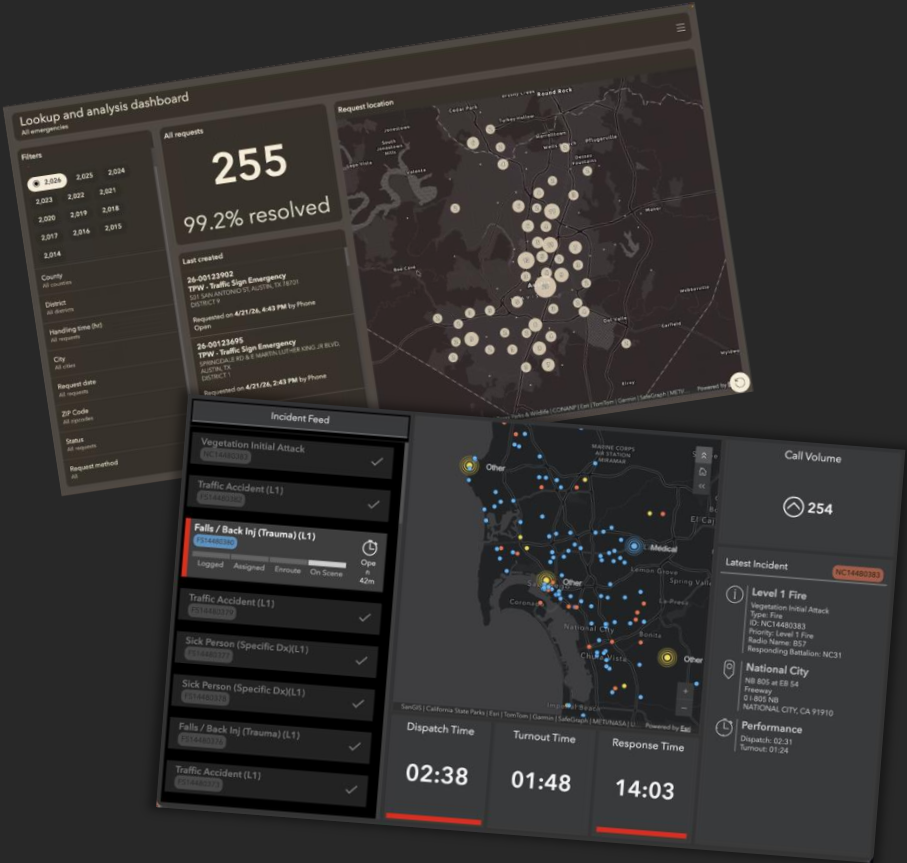
1. Why Dashboard Design Matters
2. Build Consistency
3. Design for Clarity
4. Create Visual Hierarchy
5. Add Context
6. Build Better Data for Better Dashboards

Designing Impactful ArcGIS Dashboards

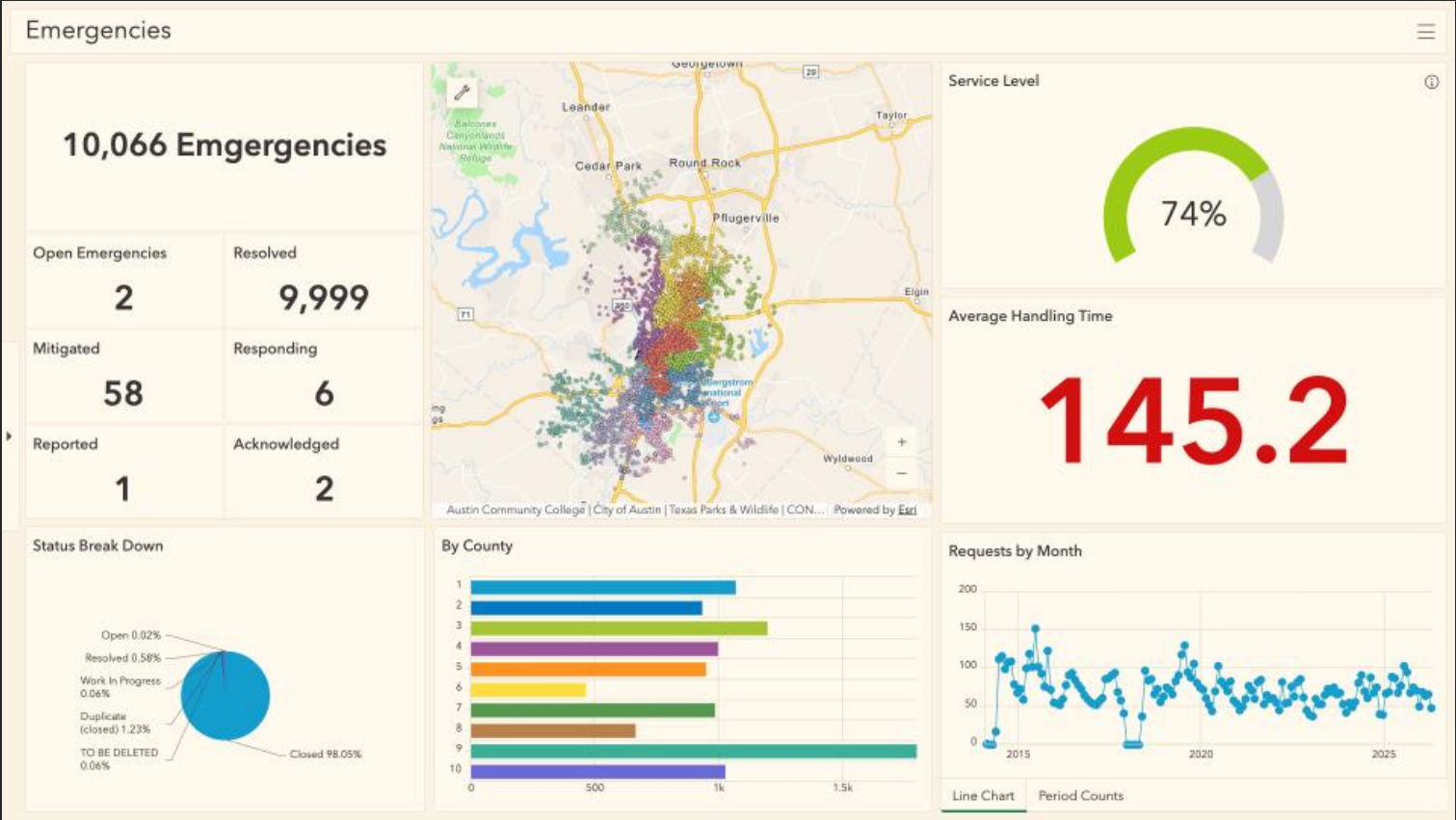
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Lesson 1

Why Dashboard Design Matters



How do I see just the open emergencies on the map?

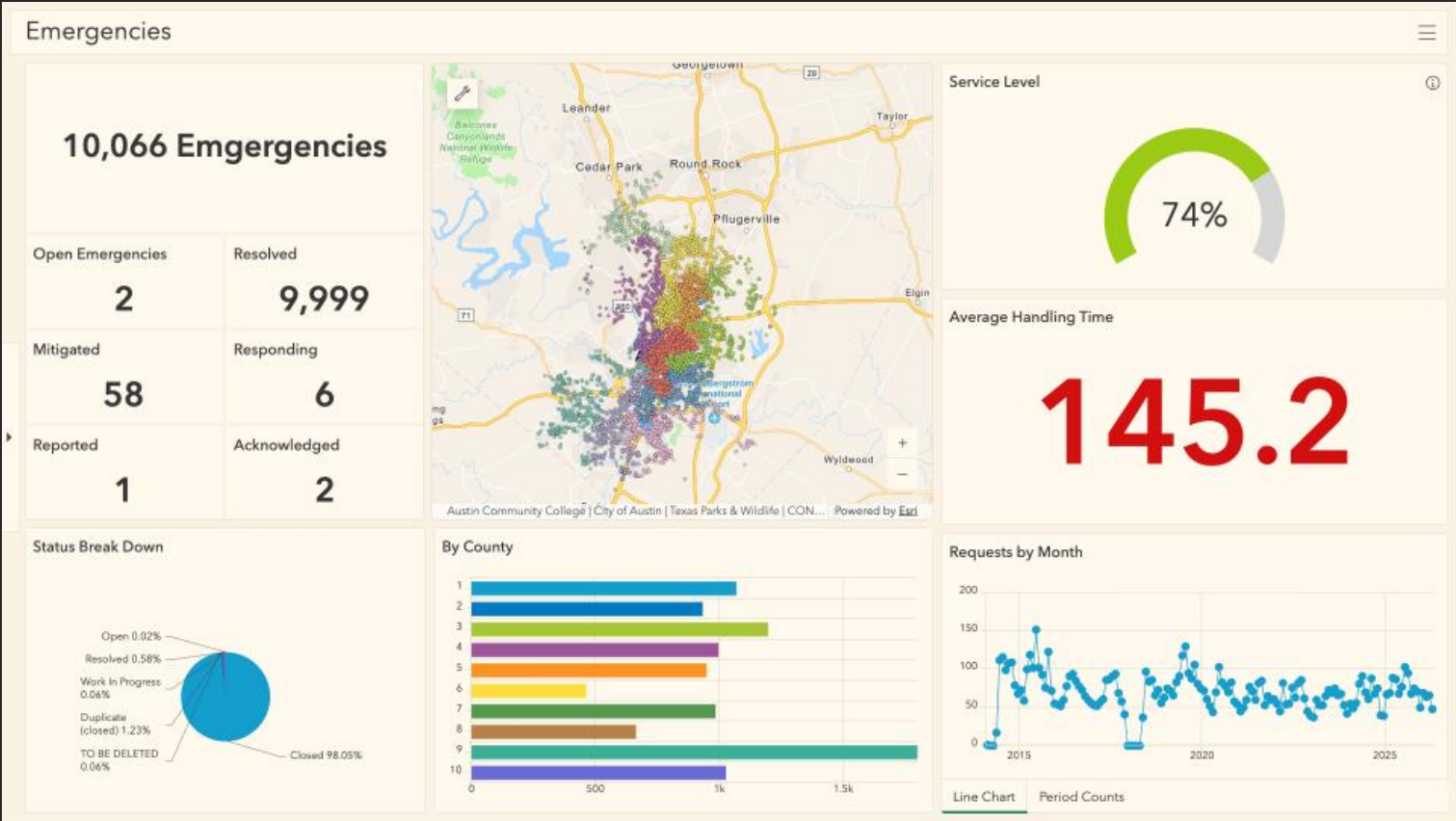


Do the colors mean the same thing across charts and the map?

What handling time are we supposed to stay within?

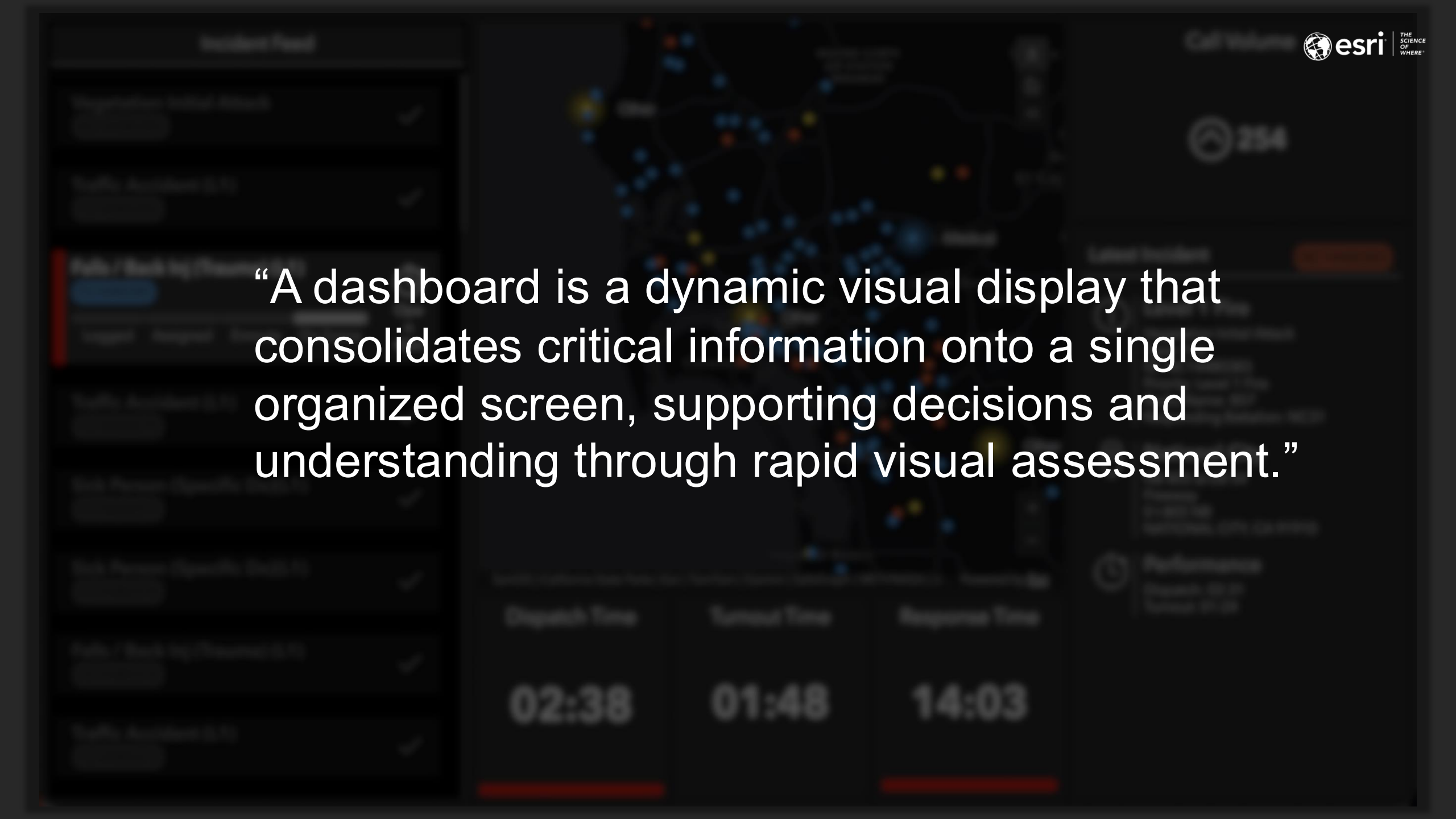
What time period is this for?

Information does not equal Understanding





What is a dashboard?

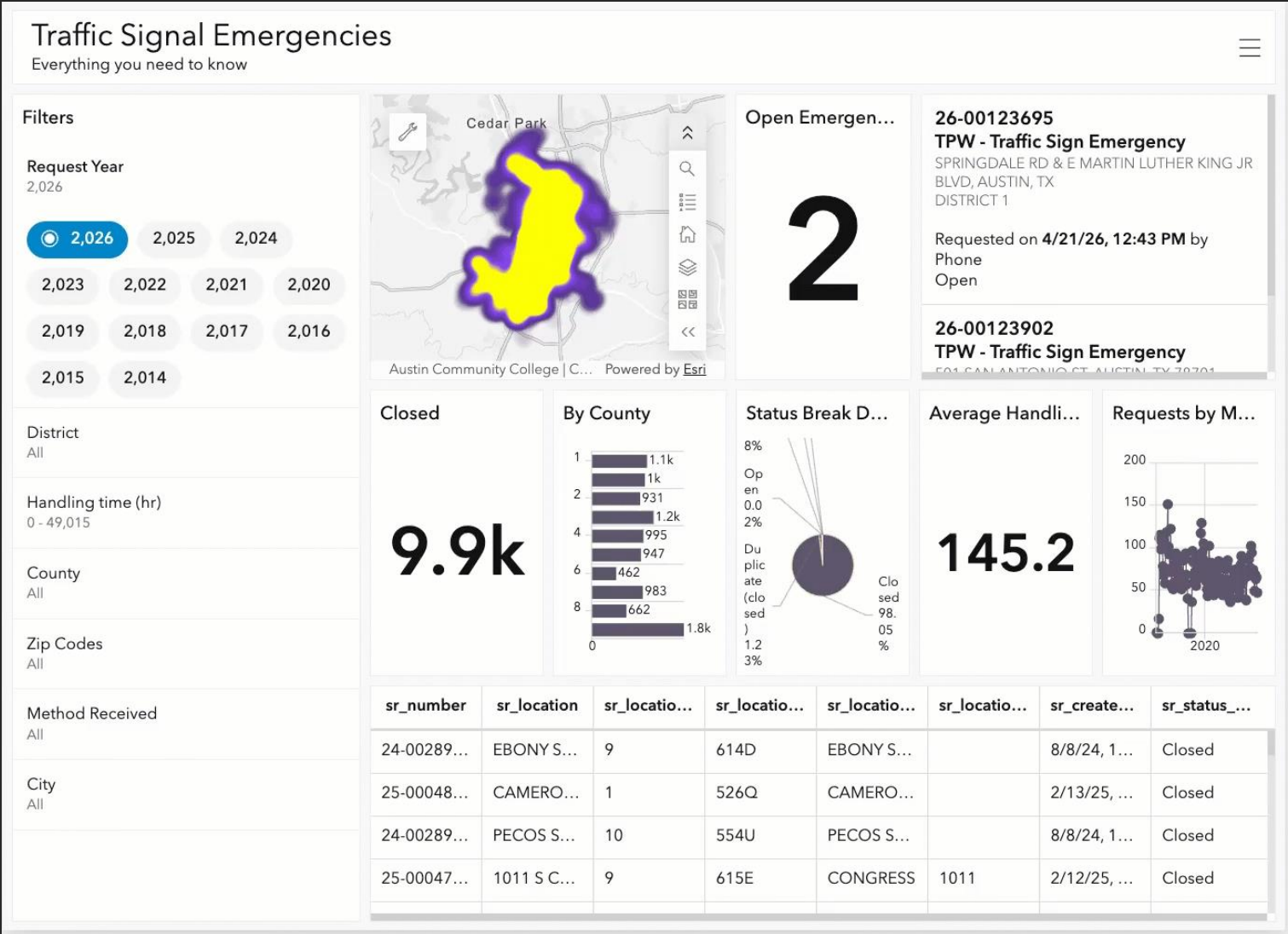


“A dashboard is a dynamic visual display that consolidates critical information onto a single organized screen, supporting decisions and understanding through rapid visual assessment.”



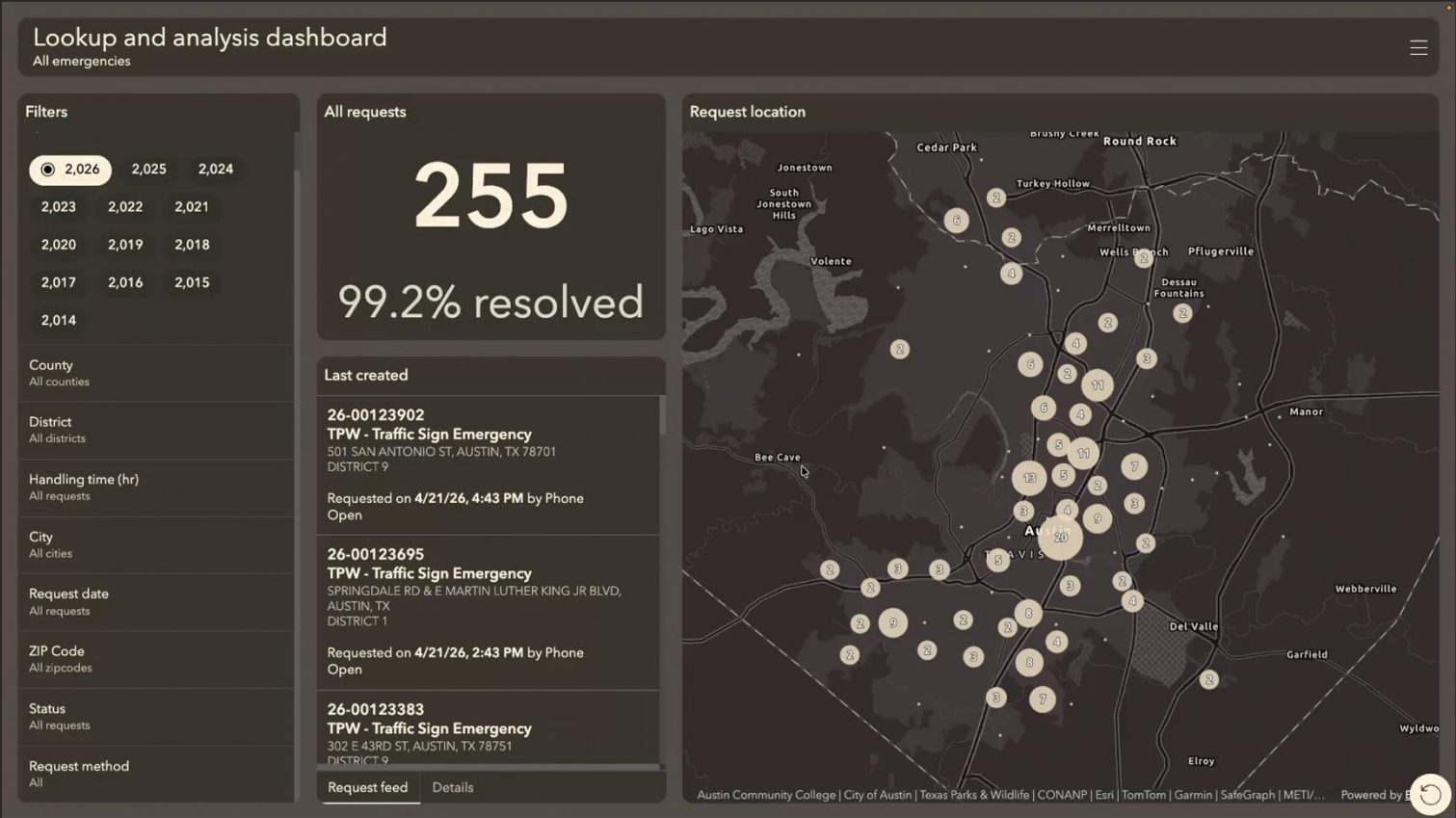
What does dashboard design entail?

Design is not simply decoration



Design is

style
 visual layout
 choice of visualizations
 spatial and temporal scope
 interactivity
 information hierarchy
 highlights



All requests

255

99.2% resolved

Last created

26-00123902

TPW - Traffic Sign Emergency

501 SAN ANTONIO ST, AUSTIN, TX 78701

DISTRICT 9

Requested on 4/21/26, 4:43 PM by Phone

Open

26-00123695

TPW - Traffic Sign Emergency

SPRINGDALE RD & E MARTIN LUTHER KING JR BLVD, AUSTIN, TX

DISTRICT 1

Requested on 4/21/26, 2:43 PM by Phone

Open

26-00123383

TPW - Traffic Sign Emergency

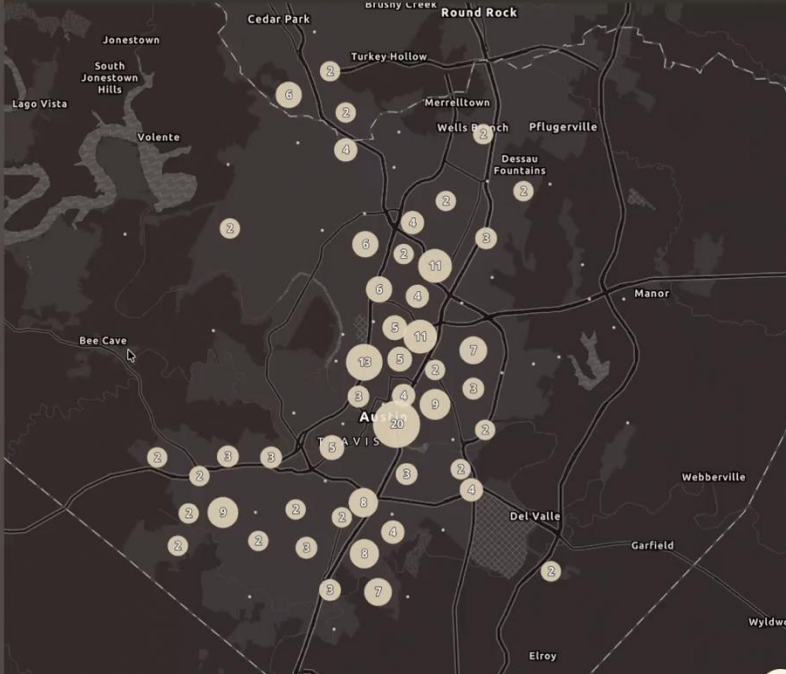
302 E 43RD ST, AUSTIN, TX 78751

DISTRICT 9

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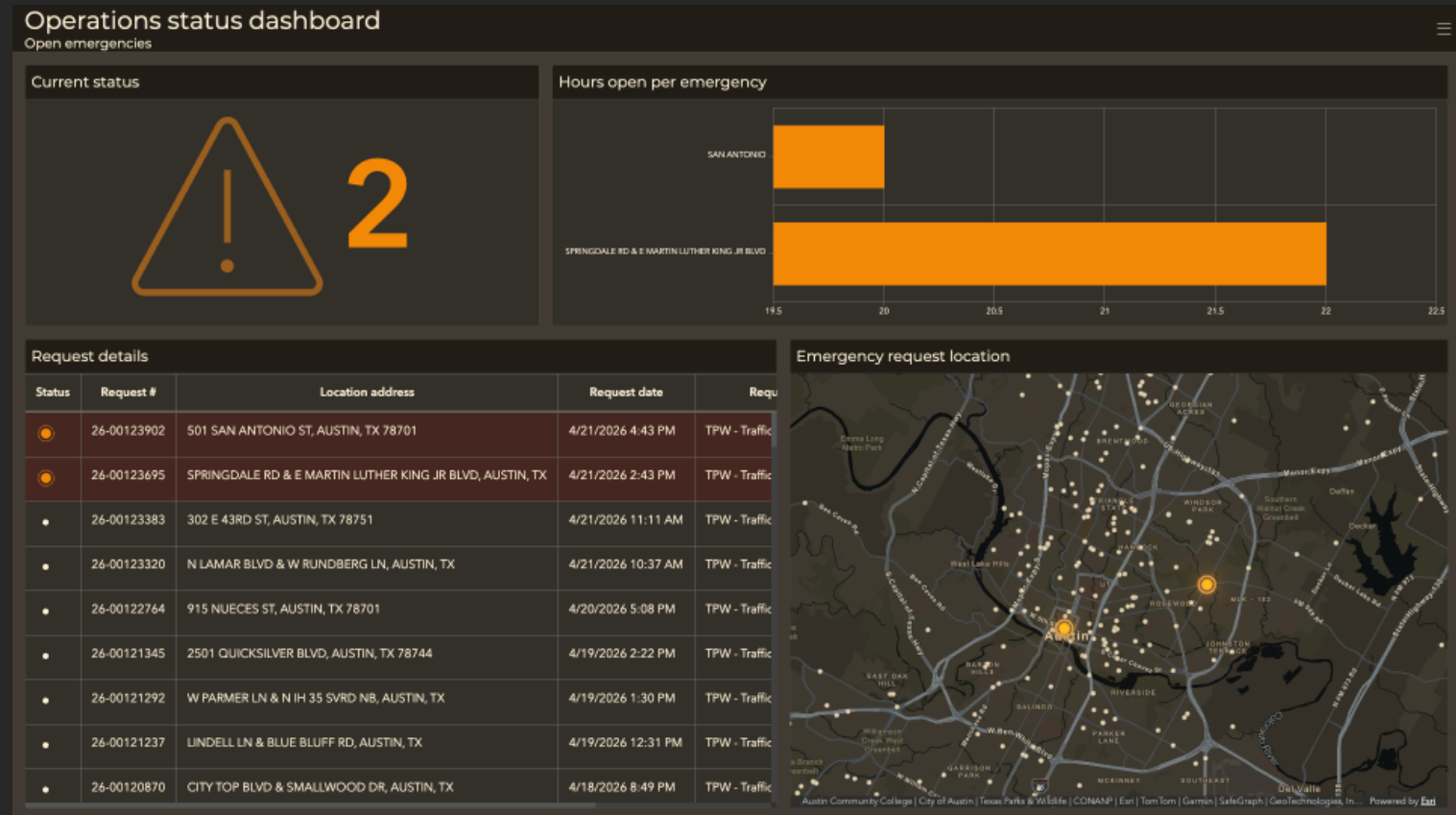
Open

Request location

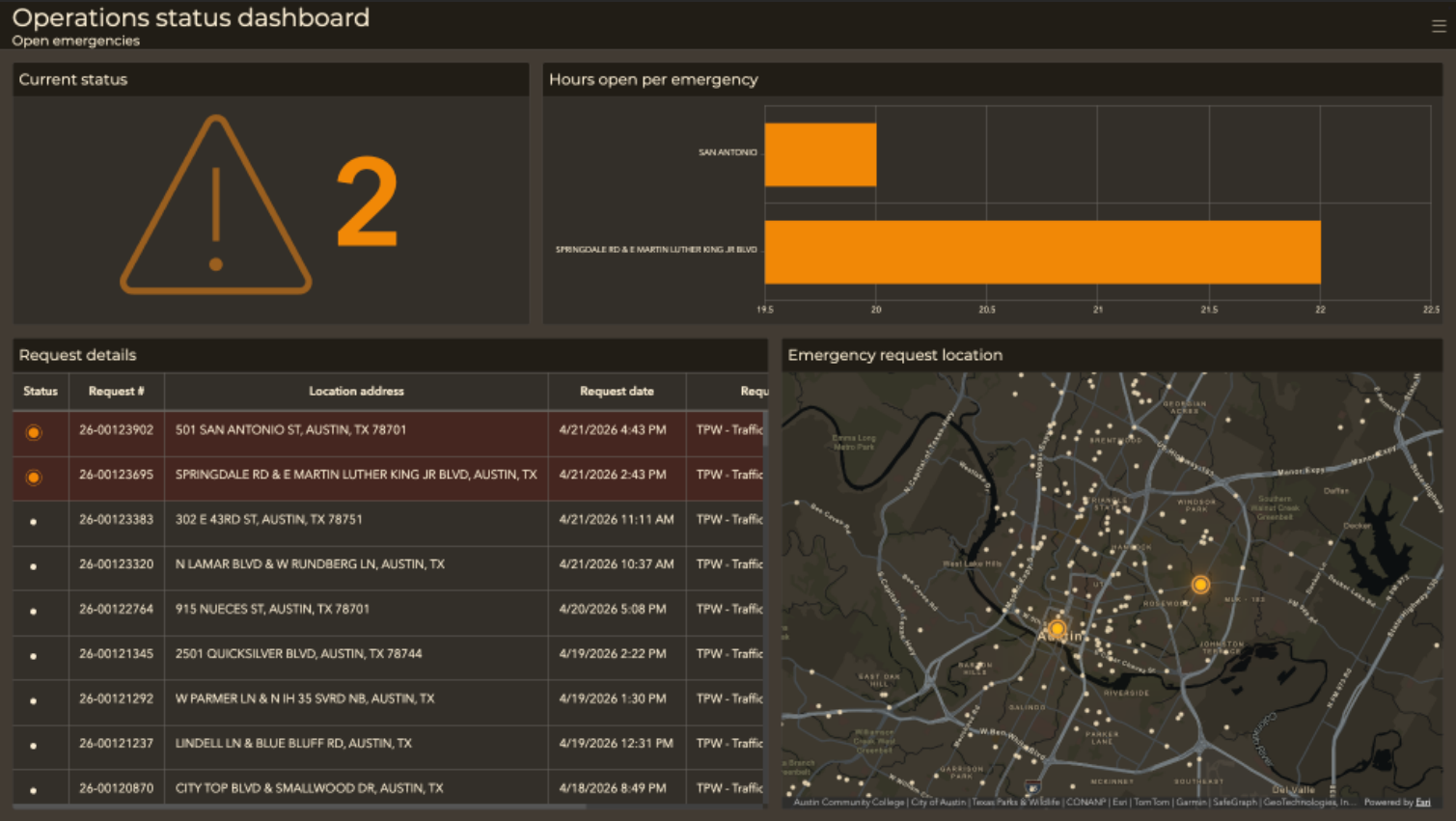


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Design for your audience



Design for a purpose



Design isn't just decoration.
It's the difference between showing data and
creating understanding.

Why Dashboard Design Matters

Lesson 1

Designing Impactful ArcGIS Dashboards

Designing Impactful ArcGIS Dashboards

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Lesson 2

Build Consistency

Make it predictable



Principles of information architecture

Consistency

Make it predictable

Clarity

Remove unnecessary effort

Effective
Understanding

Hierarchy

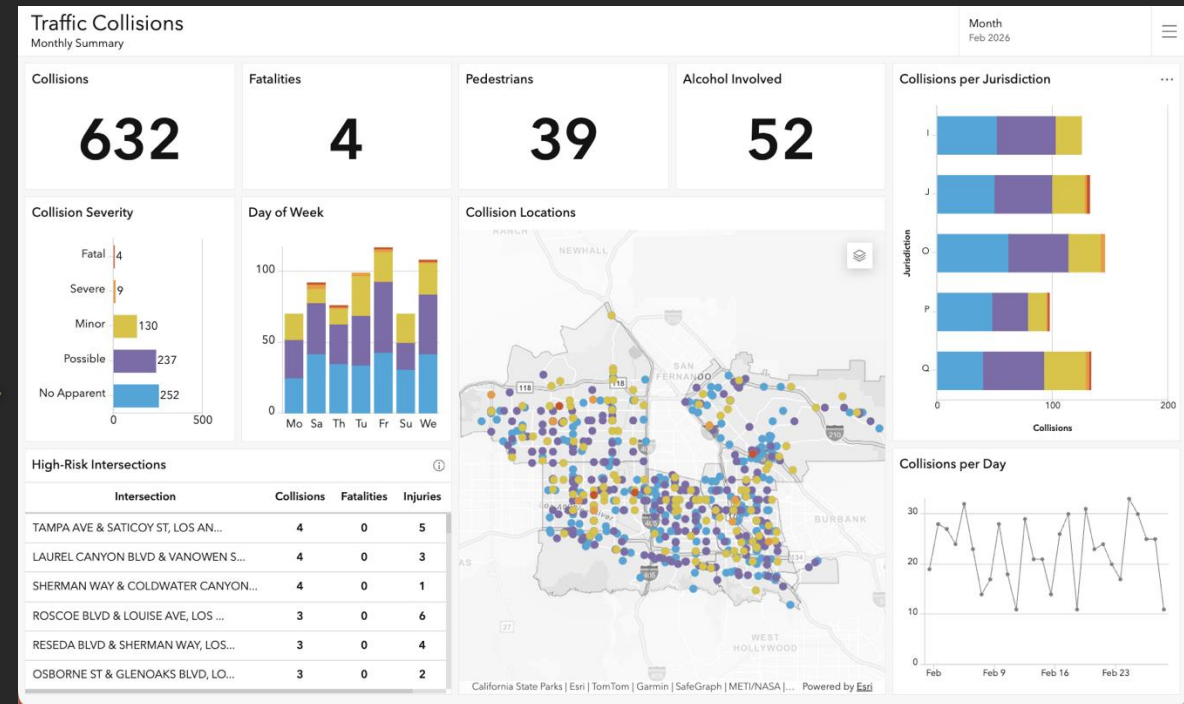
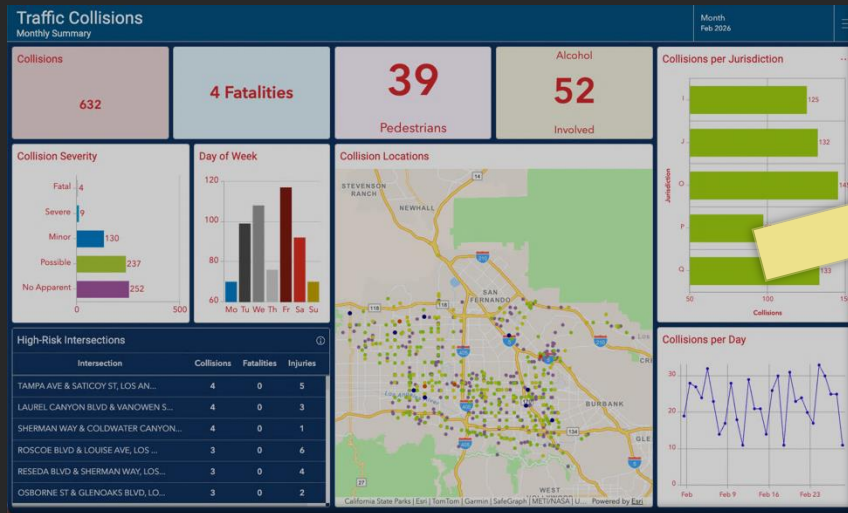
Guide attention to
what matters

Context

Give Numbers Meaning

Consistency

Make it predictable



- Replace competing colors with a unified theme
- Align colors across maps, charts, and indicators
- Make insights easier to recognize at a glance

Consistency reduces friction.
The less users must think about the dashboard,
the more they can focus on the data.

Build Consistency

Lesson 2

Designing Impactful ArcGIS Dashboards

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Lesson 3

Design for Clarity
Remove unnecessary effort



Principles of information architecture

Consistency

Make it predictable

Clarity

Remove unnecessary effort

Effective
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Hierarchy

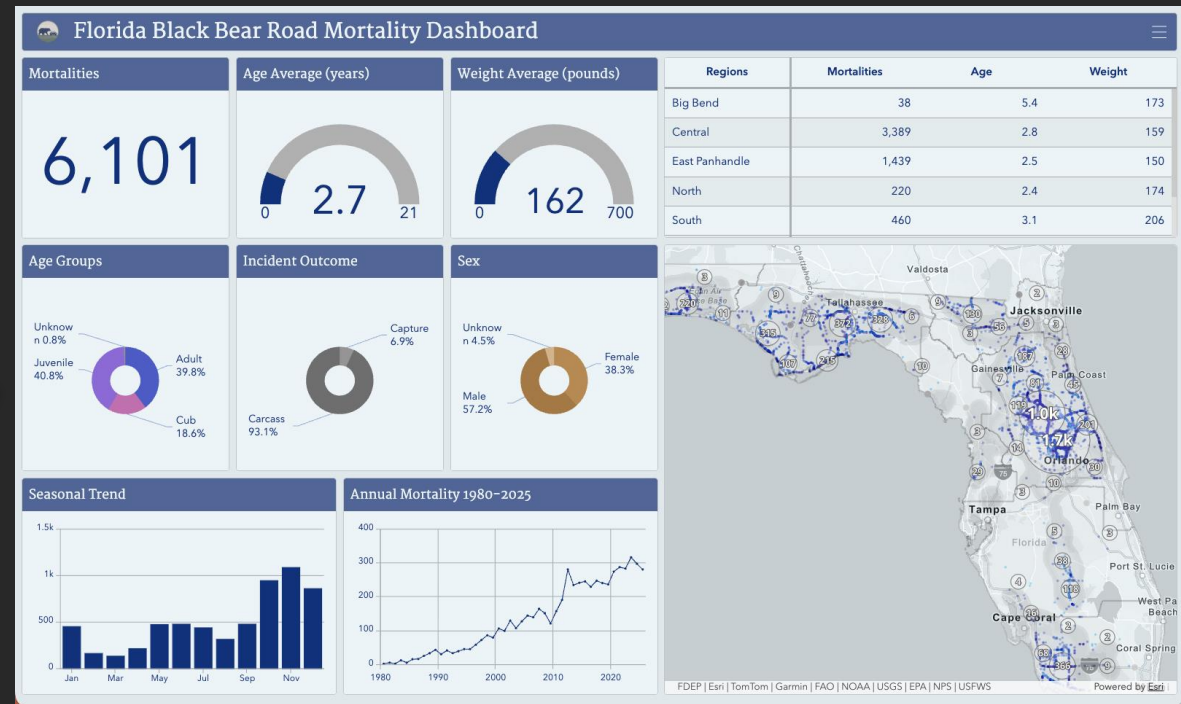
Guide attention to
what matters

Context

Give Numbers Meaning

Clarity

Remove unnecessary effort



- Replace guesswork with clear titles and readable values
- Sort information to match how people think and compare
- Surface spatial patterns so insights stand out naturally

Good dashboards are scannable
and make understanding effortless.

Design for Clarity

Lesson 3

Designing Impactful ArcGIS Dashboards

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Lesson 4

Create Visual Hierarchy

Guide attention to what matters



Principles of information architecture

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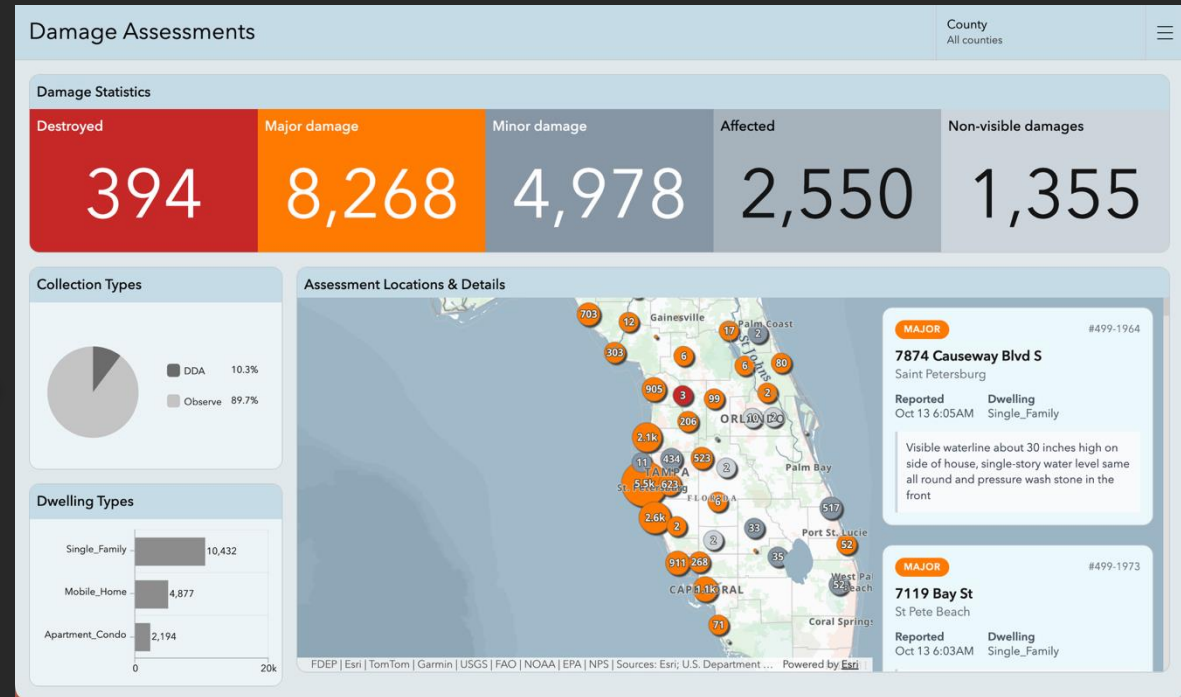
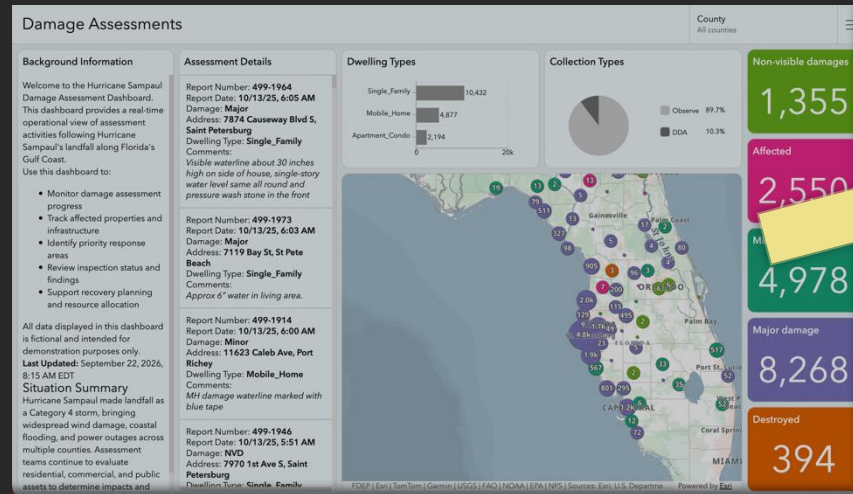
Guide attention to
what matters

Context

Give Numbers Meaning

Hierarchy

Guide attention to what matters



- Lead users to key insights through purposeful layout
- Organize similar information into meaningful sections
- Emphasize what matters most with visual weight and color

When everything is important, nothing is important.
Hierarchy helps users focus on what matters most.

Create Visual Hierarchy

Lesson 4

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Lesson 5

Add Context Give Numbers Meaning



Principles of information architecture

Consistency

Make it predictable

Clarity

Remove unnecessary effort

Effective
Understanding

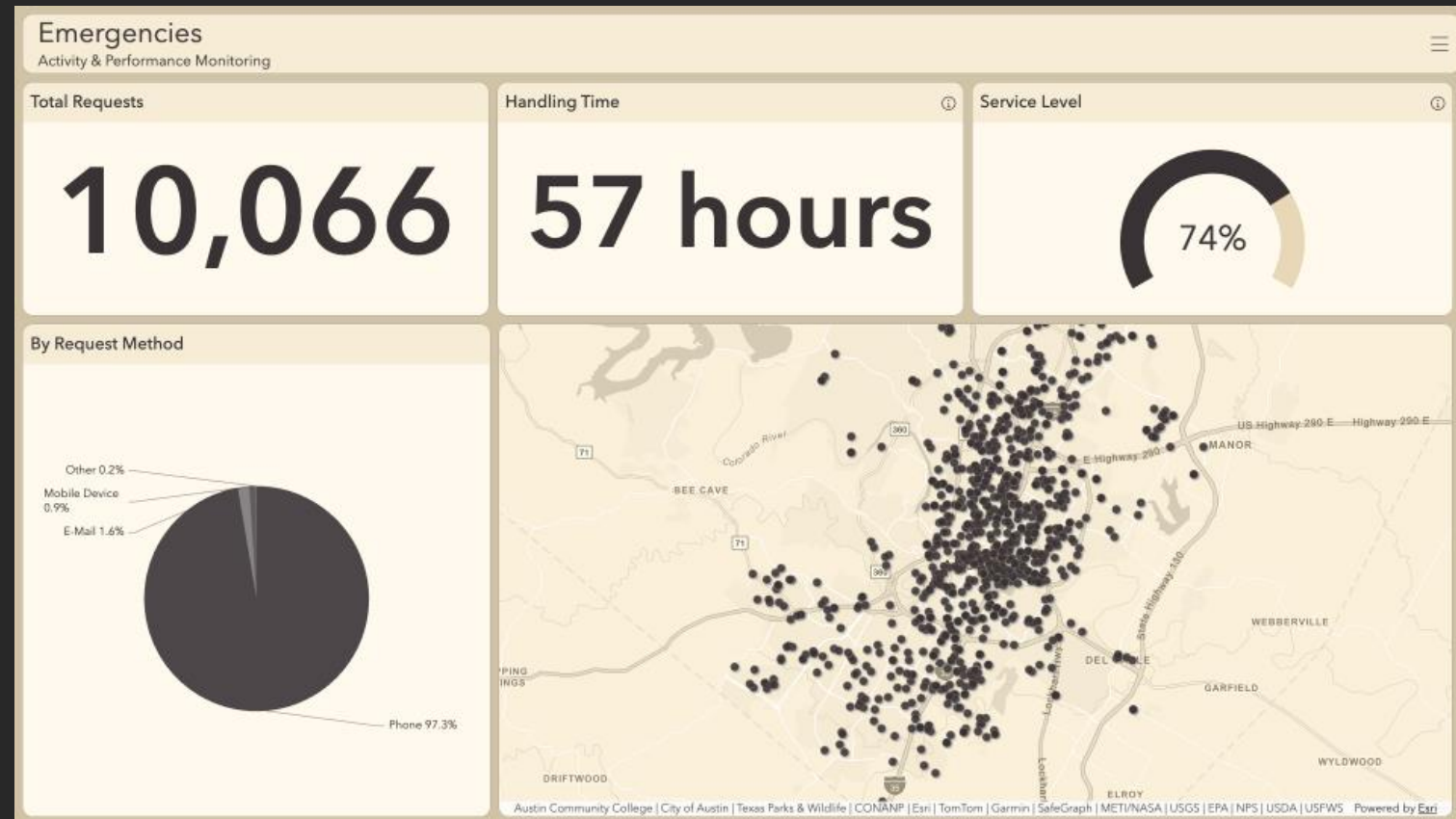
Hierarchy

Guide attention to
what matters

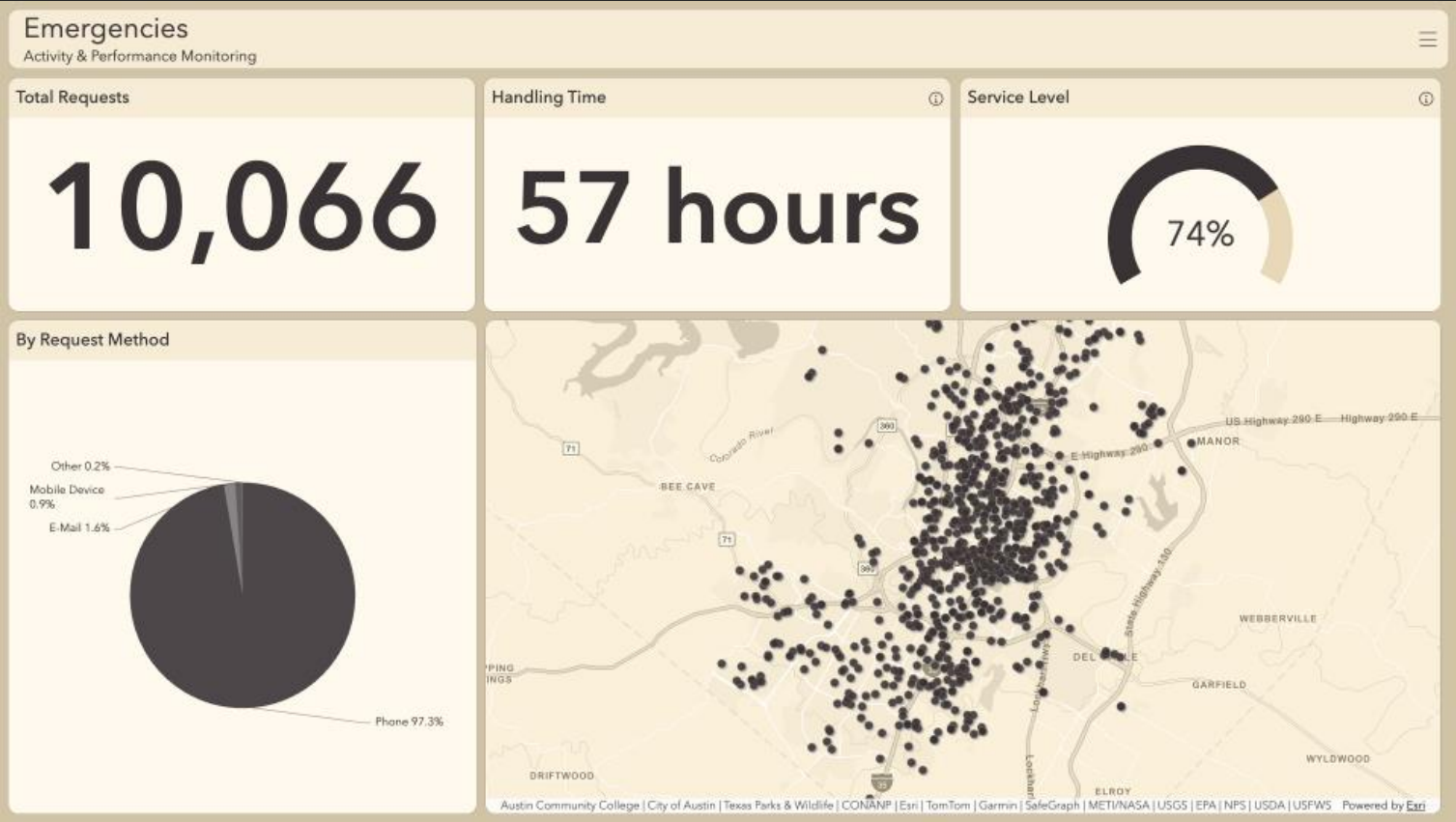
Context

Give Numbers Meaning

Numbers
without context
rely on past
experience
to gain
understanding



What time period is this for?



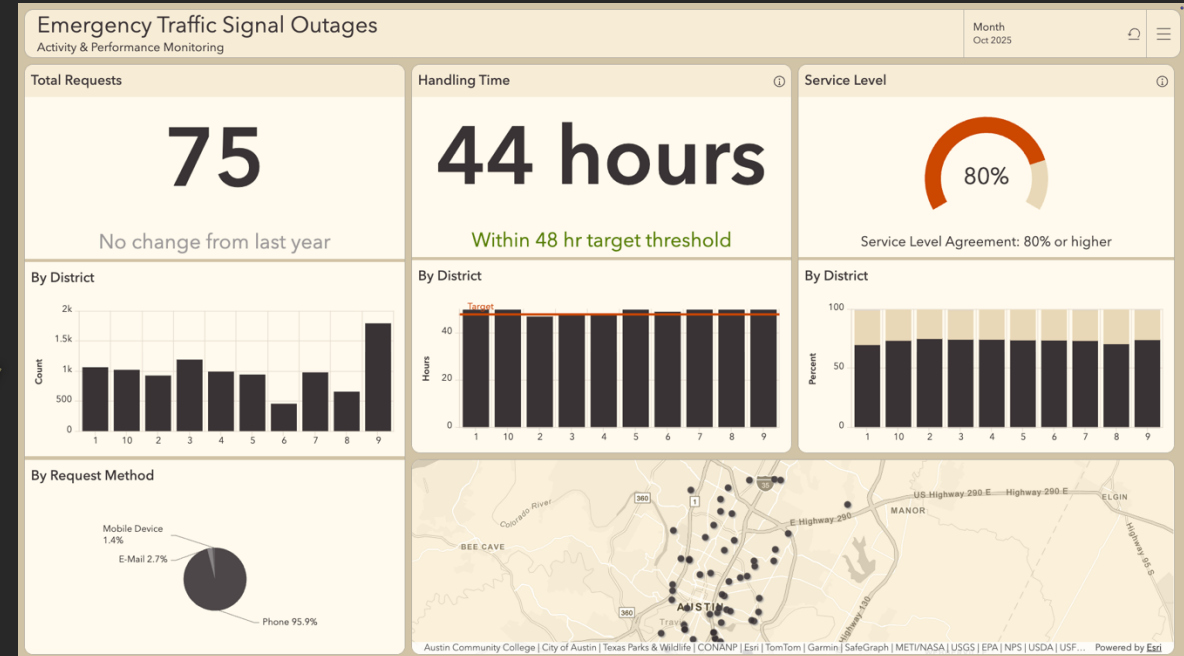
Is this activity level high?

Are these performance metrics good? Bad?

What are the spatial patterns?

Context

Make data meaningful



- Turns raw values into understanding
- Speeds up interpretation
- Enables informed decisions

Data tells us what happened.
Context tells us whether it matters.

Give Numbers Meaning

Lesson 5

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Lesson 6

Build Better Data for Better Dashboards

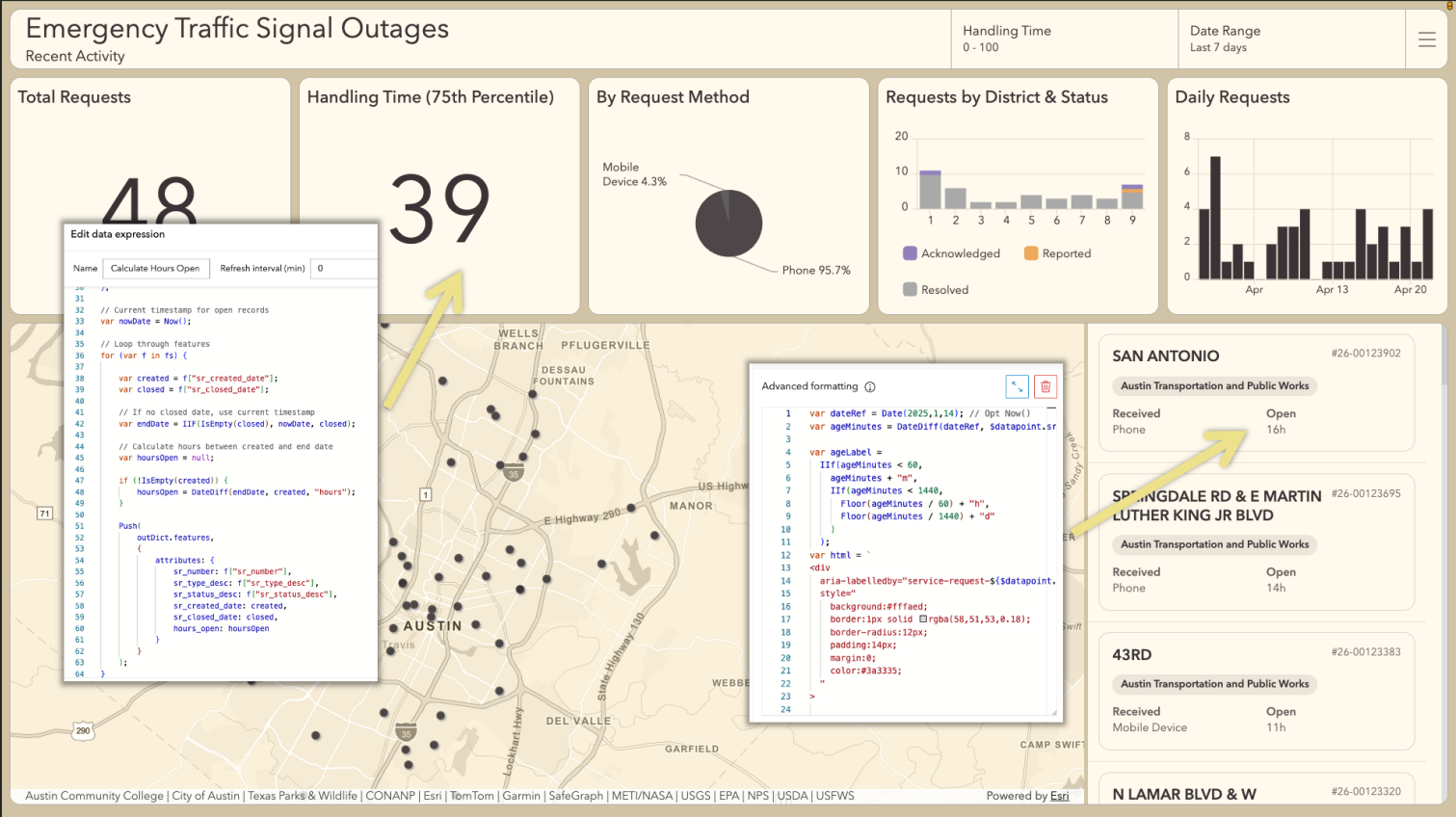
Wide Form

jurisdiction	phone_requests	web_requests	app_requests	average_days_to_complete
	42	58	35	64.8
North	37	74	49	42.6
Central	51	63	41	51.2
South	46	69	44	45.1
East		52	38	37.4
West	33			

Long Form

request_date	jurisdiction	request_origin	days_to_complete
2026-04-01	Central	App	44
2026-04-01	Central	Phone	62
2026-04-01	North	Phone	37
2026-04-01	South	Web	51
2026-04-02	Central	Web	44
2026-04-02	North	App	23
2026-04-02	West	Web	45
2026-04-02	South	App	65
2026-04-03	Central	Phone	53
2026-04-03	East	Web	38
2026-04-03	South	Phone	70

Design your Data for your Dashboard



Structure Matters

Shape data for flexibility

Calculate Early

Use throughout

Standardize Categories

Create Clarity

Design for Speed

Performance starts upstream

Build Better Data

For better dashboards

← Wide Form →

jurisdiction	phone_requests	web_requests	app_requests	average_days_to_complete
North	42	58	35	64.8
Central	37	74	49	42.6
South	51	63	41	51.2
East	46	69	44	45.1
West	33	52	38	37.4

request_date	jurisdiction	request_origin	days_to_complete
2026-04-01	Central	App	44
2026-04-01	Central	Phone	62
2026-04-01	North	Phone	37
2026-04-01	South	Web	51
2026-04-02	Central	Web	44
2026-04-02	North	App	23
2026-04-02	West	Web	45
2026-04-02	South	App	65
2026-04-03	Central	Phone	53
2026-04-03	East	Web	38
2026-04-03	South	Phone	70

Long Form

- Shape the data to do the aggregation & filtering in the dashboard
- Business logic and calculations are best in the source data
- Standardize categorical data
- Bring in only the data you need for performant loading

Better dashboards begin with
intentionally designed datasets.

Build Better Data for Better Dashboards

Lesson 6

Designing Impactful ArcGIS Dashboards

Six Takeaways

LESSON 1

Why Dashboard Design Matters

Design isn't just decoration. It's the difference between showing data and creating understanding.

LESSON 2

Build Consistency

Consistency reduces friction. The less users must think about the dashboard, the more they can focus on the data.

LESSON 3

Design for Clarity

Good dashboards are scannable and make understanding effortless.

LESSON 4

Create Visual Hierarchy

When everything is important, nothing is important. Hierarchy helps users focus on what matters most.

LESSON 5

Give Numbers Meaning

Data tells us what happened. Context tells us whether it matters.

LESSON 6

Build Better Data

Better dashboards begin with intentionally designed datasets.

Design Checklists

LESSON 1

Design Effectiveness

- ☐ Can users identify what's important within a few seconds?
- ☐ Does the dashboard serve a specific audience?
- ☐ Does every element support a clear purpose?
- ☐ Is the most important information easy to find?
- ☐ Does it help people move from data to understanding quickly?

LESSON 2

Building Consistency

- ☐ Are terminology and labels used consistently?
- ☐ Do colors have the same meaning everywhere?
- ☐ Do similar elements follow the same patterns?
- ☐ Are numbers, dates, and units formatted consistently?
- ☐ Do interactions behave predictably?

LESSON 3

Removing Unnecessary Effort

- ☐ Are titles, labels, and metrics clear and specific?
- ☐ Has unnecessary text or clutter been removed?
- ☐ Are units and value precision practical?
- ☐ Does the map surface spatial insights clearly?
- ☐ Does every element contribute to the dashboard's primary purpose?

LESSON 4

Creating Visual Hierarchy

- ☐ Is it obvious where users should look first?
- ☐ Does the most important information have the greatest visual emphasis?
- ☐ Are related elements grouped together?
- ☐ Is color and contrast used intentionally to direct attention?

LESSON 5

Giving Numbers Meaning

- ☐ What time period does this represent?
- ☐ How is spatial insight best communicated?
- ☐ What target, threshold, prior period, or benchmark makes it meaningful?
- ☐ Can the context be communicated visually instead of only with text?

LESSON 6

Flexible Datasets

- ☐ Is the data structured in long-form?
- ☐ Are categories standardized with domains?
- ☐ Are key fields required for aggregation, filtering, and labeling in the source data?
- ☐ Are you bringing in just the essential data?



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