

Bringing the Dashboard Out of the Vehicle

Creating Dashboards at ODOT

Oklahoma Department of Transportation

Gwen Johnson and Devin Hargus



► About ODOT

GIS at ODOT

- ▶ Road Inventory
 - ▶ Maintain statewide roadway network
 - ▶ Report to Federal Highway Administration
 - ▶ Report to Oklahoma Tax Commission
- ▶ GIS Management
 - ▶ Maintains all other statewide data
 - ▶ Mapping Requests

Map & Data Portal

ODOT Oklahoma Department of Transportation

AADT Traffic Counts

Current 8-Year Work Plan (2019-2026)

Current Construction Updates

Master Roadway & Bridge Data Viewer

Search by Subject Area

Roadway Characteristics Functional class, pavement, traffic, geometrics, and other roadway data	Bridge Characteristics Design, ratings, condition, and other bridge data	Public Information Flooding, road closure, live traffic, and other ODOT information	Local Government COG, CED, Bicycle/Pedestrian, and other local government data
Rail Programs Division Rail crossing, network, and safety improvement information	Environmental Division Environmental programs and cultural resource information	Other Subjects ODOT Right-of-Way, Billboards, and other subjects.	Mobile Apps Maps and applications optimized for mobile devices

Search by Maintenance Division

Division 1 Adair, Cherokee, Haskell, McIntosh, Muskogee, Okmulgee, Sequoyah, and Wagoner Counties	Division 2 Azoka, Bryan, Choctaw, Latimer, LeFlore, Marshall, McCurtain, Pittsburg, and Pushmataha Counties	Division 3 Cleveland, Coal, Garvin, Hughes, Johnston, Lincoln, McClain, Okfuskee, Pontotoc, Pottawatomie, and Seminole Counties	Division 4 Canadian, Garfield, Grant, Kay, Kingfisher, Logan, Noble, Oklahoma, and Payne Counties
Division 5 Beckham, Blaine, Custer, Dewey, Greer, Harmon, Jackson, Kiowa, Roger Mills, Tillman, and Washita Counties	Division 6 Alfalfa, Beaver, Cimarron, Ellis, Harper, Major, Texas, Woods, and Woodward Counties	Division 7 Caddo, Carter, Comanche, Cotton, Grady, Jefferson, Love, Murray, and Stephens Counties	Division 8 Craig, Creek, Delaware, Mayes, Nowata, Osage, Ottawa, Pawnee, Rogers, Tulsa, and Washington Counties

Other Maps

State Highway Map Current Oklahoma State Highway Map	State Railroad Map Current Oklahoma State Railroad Map	Map Archives Historic and specialty maps	AADT Maps Average Annual Daily Traffic (AADT) maps
County Maps General County Maps	City Maps Incorporated City Maps	RFC Maps Rural Functional Classification (RFC) Maps	UFC Maps Urban Functional Classification (UFC) Maps
Bridge Maps Bridge Load Postings & Other Maps	Open Data Portal Query and download ODOT GIS data	ArcGIS Online Data ODOT GIS data published on ArcGIS Online	REST Services REST Services for direct linking to ODOT GIS data

Oklahoma Department of Transportation - GIS Management Branch

All data contained herein is intended for reference purposes only and is subject to change at any time.

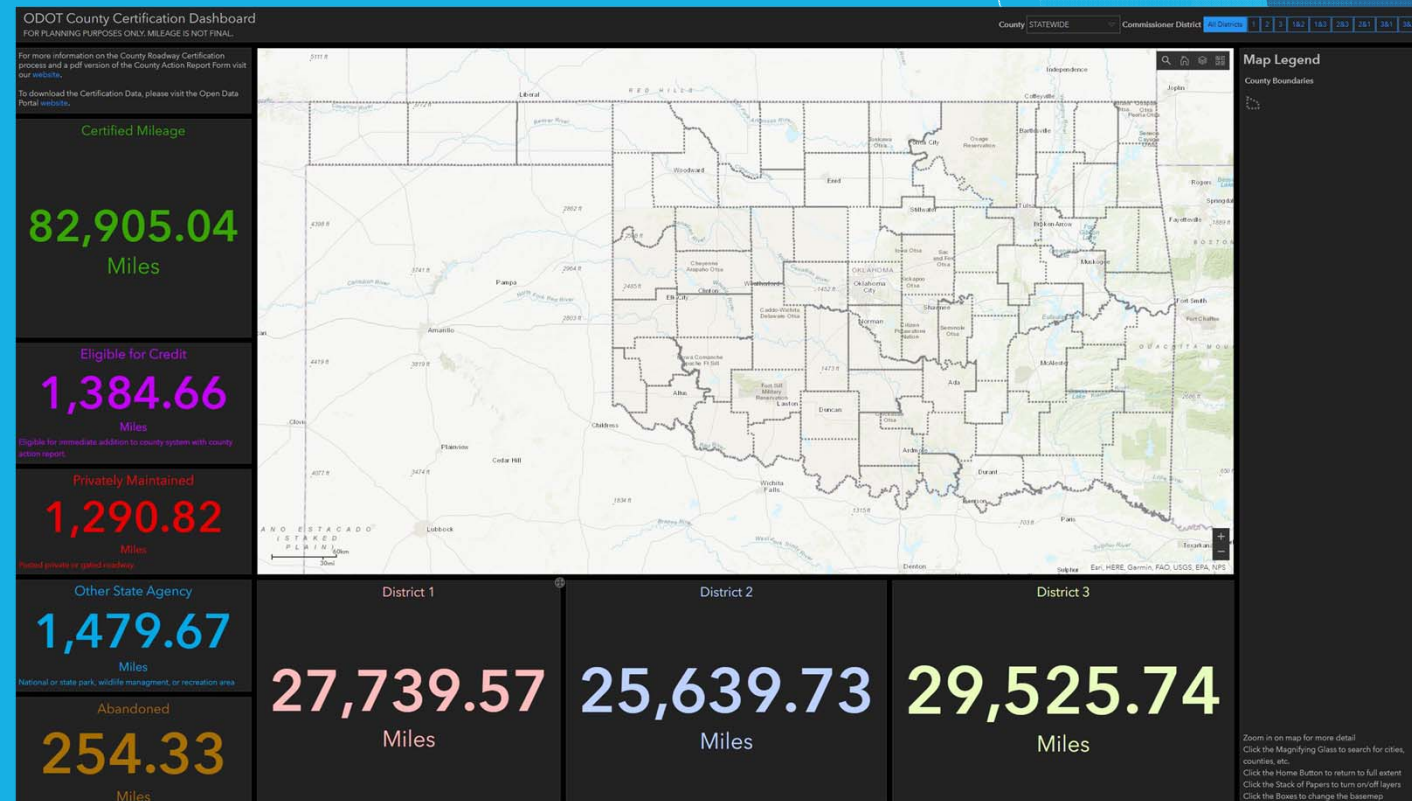
Any official use permissions must be obtained via Oklahoma Department of Transportation open records request.

County Certification

- ▶ Dashboard

County Certification Dashboard

- ▶ History
 - ▶ Phone Calls
- ▶ Webmap
 - ▶ Informative
 - ▶ Too confusing for non-GIS Users
 - ▶ Not able to single out individual counties
 - ▶ Wanted some mileage summaries
- ▶ Association of County Commissioners of Oklahoma (ACCO) Conference
 - ▶ Realizing a need for a Dashboard
 - ▶ A one stop shop for the County Commissioners
- ▶ Final
 - ▶ Dashboard
 - ▶ [Link](#)

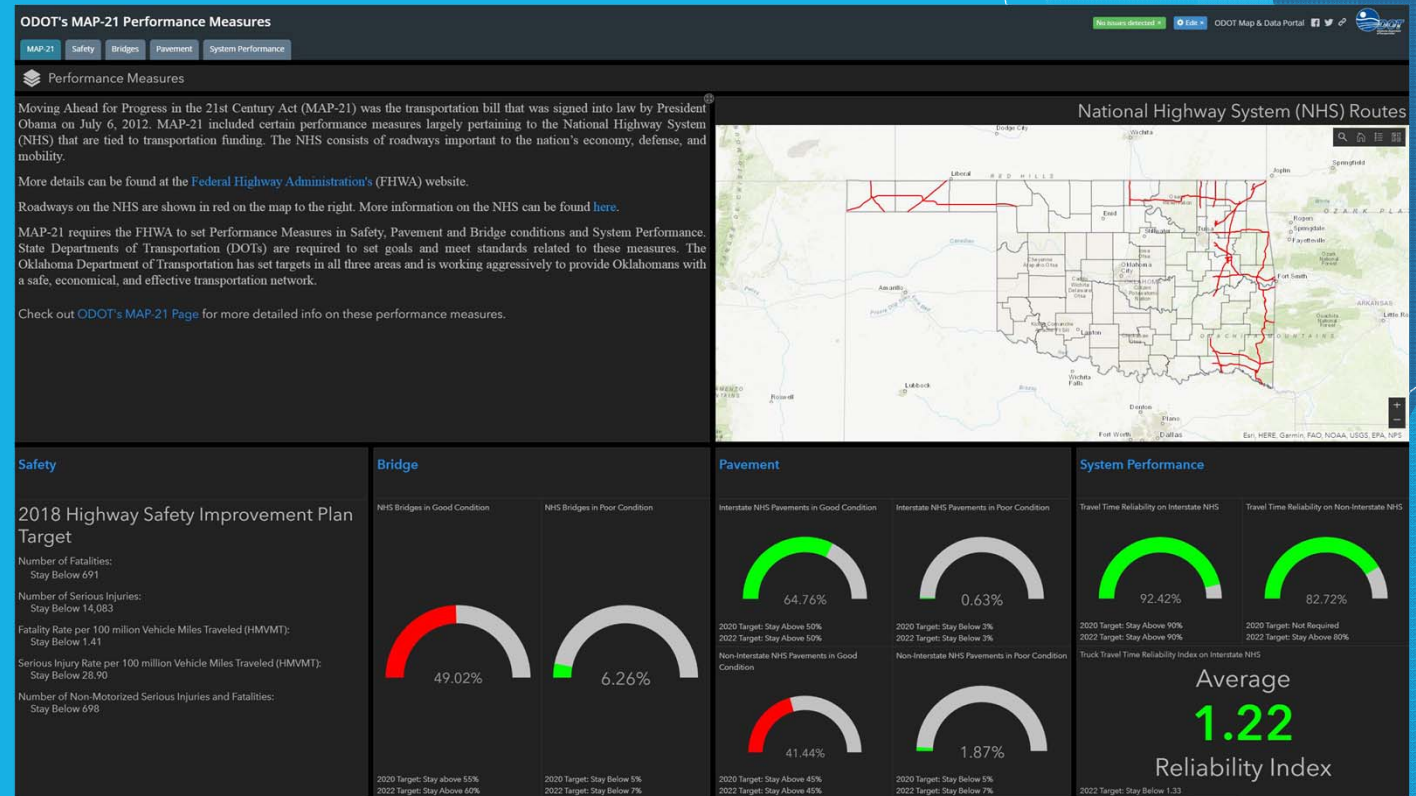


MAPS-21 Performance

- ▶ Measures Dashboards

MAPS-21 Performance Measures Dashboards

- ▶ History
 - ▶ 6-page report of targets
- ▶ Research
 - ▶ How are other states showing their Performance Measures?
 - ▶ Virginia, Alaska, Minnesota, Washington State, Kane County, IL
 - ▶ Oklahoma Department Public Safety
- ▶ Final
 - ▶ Dashboard
 - ▶ Story Map
 - ▶ Website
 - ▶ [Link](#)

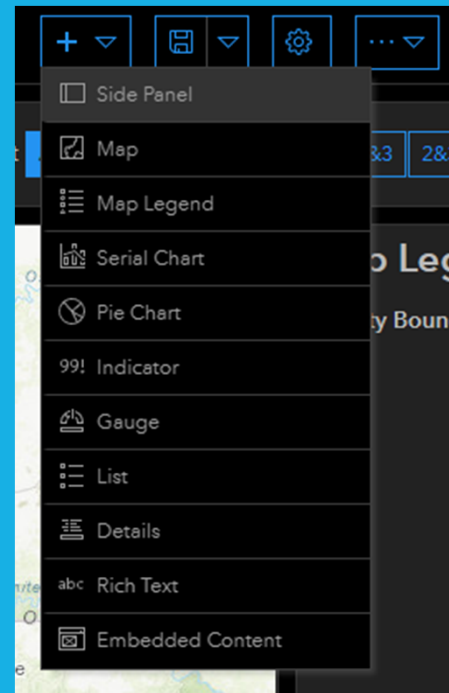


Elements of a

- ▶ Dashboard

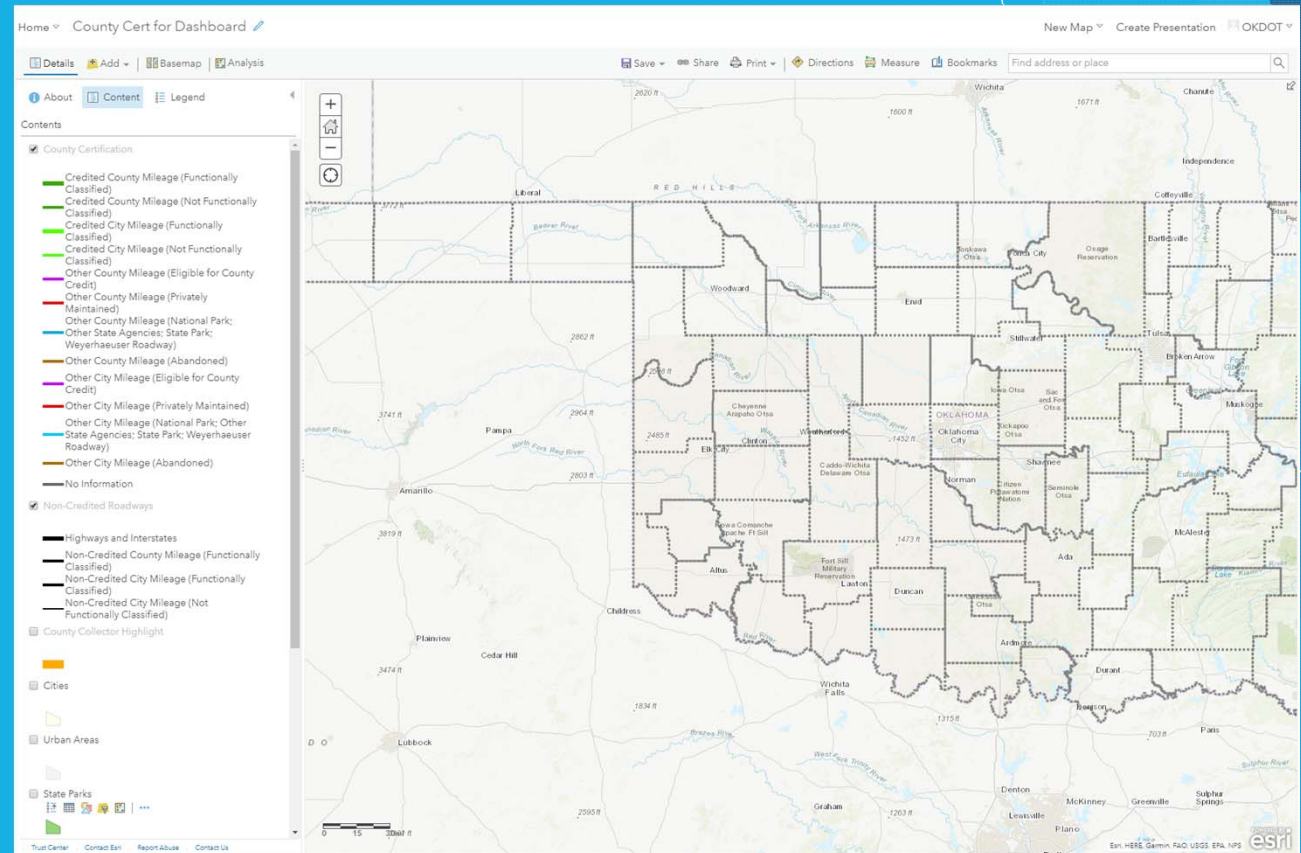
Elements of a Dashboard

- ▶ Webmap Setup
- ▶ Header
- ▶ Side Panel
- ▶ Legend
- ▶ Charts and Graphs
 - ▶ Serial
 - ▶ Pie
 - ▶ Gauge
- ▶ Indicator
- ▶ List
- ▶ Details
- ▶ Rich Text
- ▶ Embedded Content



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Header Panel

Appearance

Size:

Title:

Subtitle:

Logo Type:

Logo Image URL:

Logo URL:

Text Color:

Background Color:

Header Margin: ☒

Background Image:

URL:

Sizing:

Placement:

Menu Links:

Sign Out: ☐

Header Panel Preview:

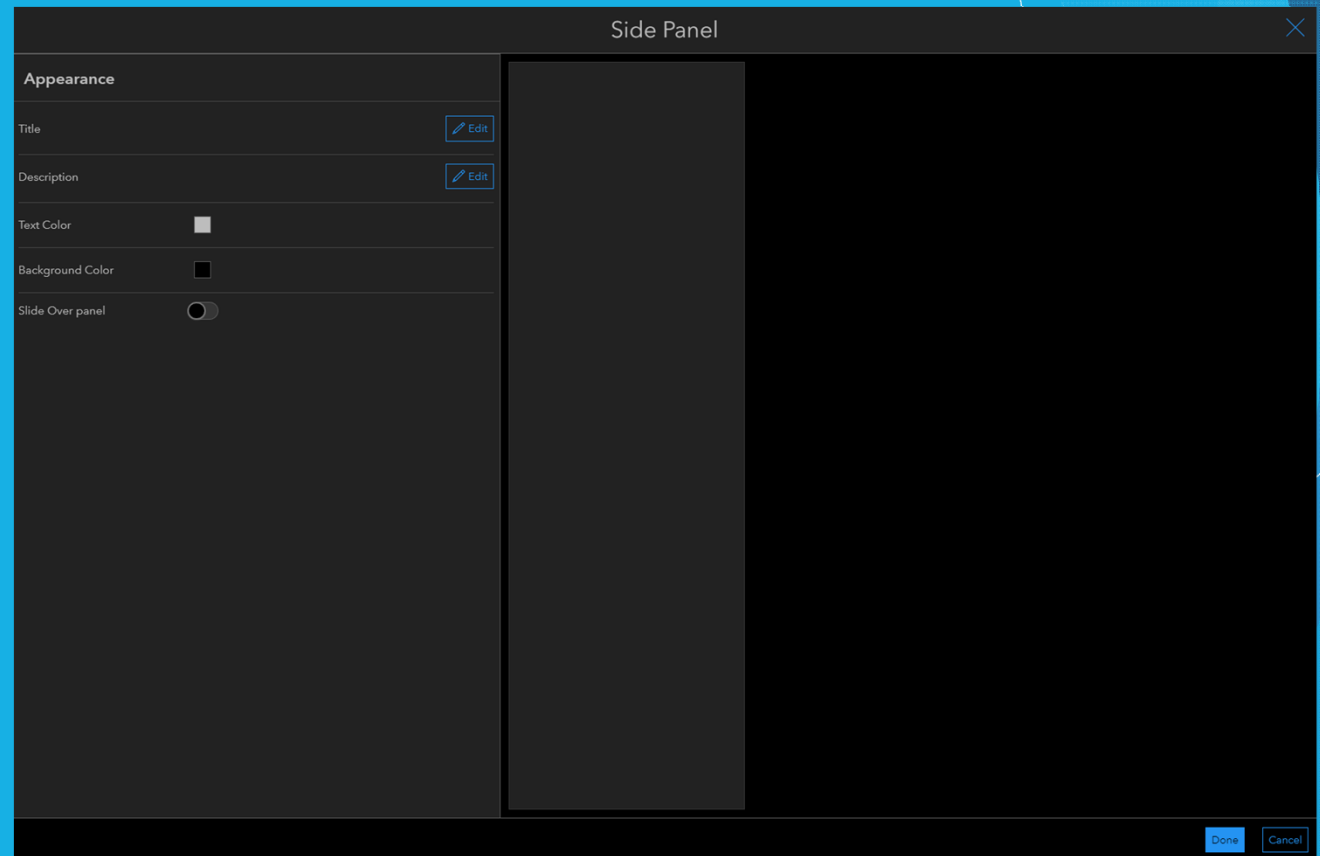
ODOT County Certification ... County: STATEWIDE Commissioner District: All Districts

FOR PLANNING PURPOSES ONLY. MILEAGE IS N...

Districts: 1, 2, 3, 1&2, 1&3, 2&3, 2&1, 3&1, 3&2

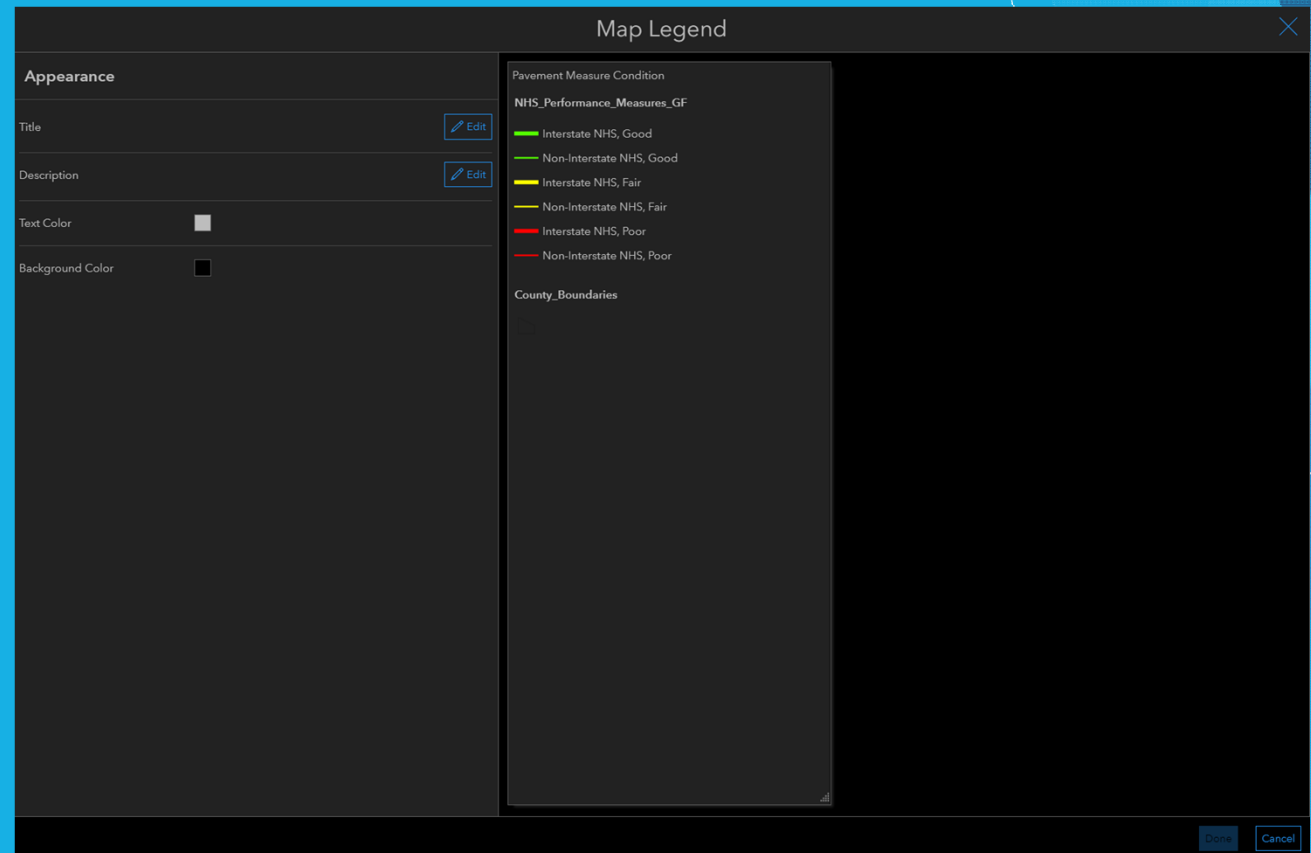
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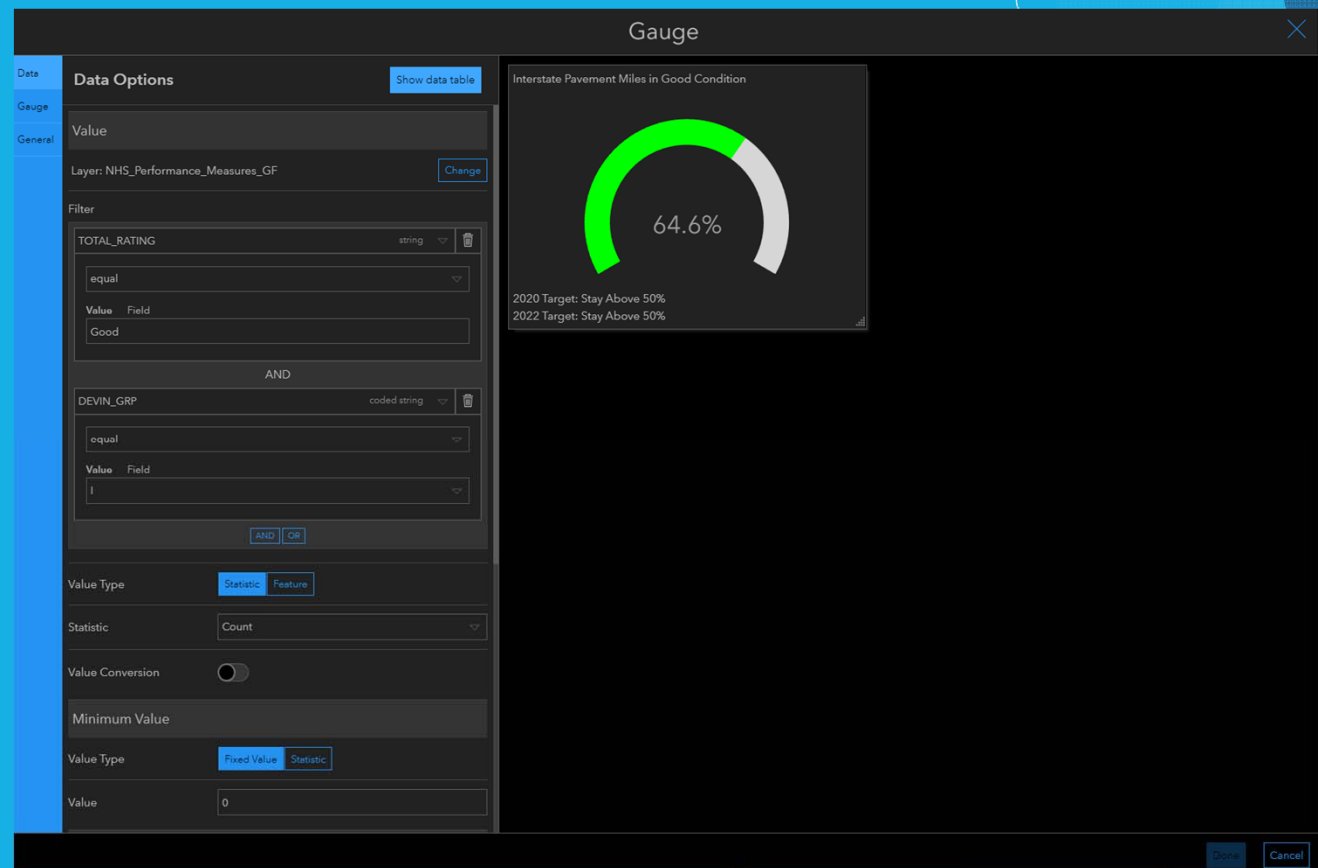
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Indicator

Data Options [Show data table](#)

Value

Layer: CountyCertTable - CountyCertTable_20190522 [Change](#)

Filter

COMM_DISTRICT decimal

equal

Value	Field
1	

AND OR

Value Type **Statistic** Feature

Statistic Sum

Field CERTIFIED_TOTAL decimal

Value Conversion ☐

Reference

Reference Type None

District 1

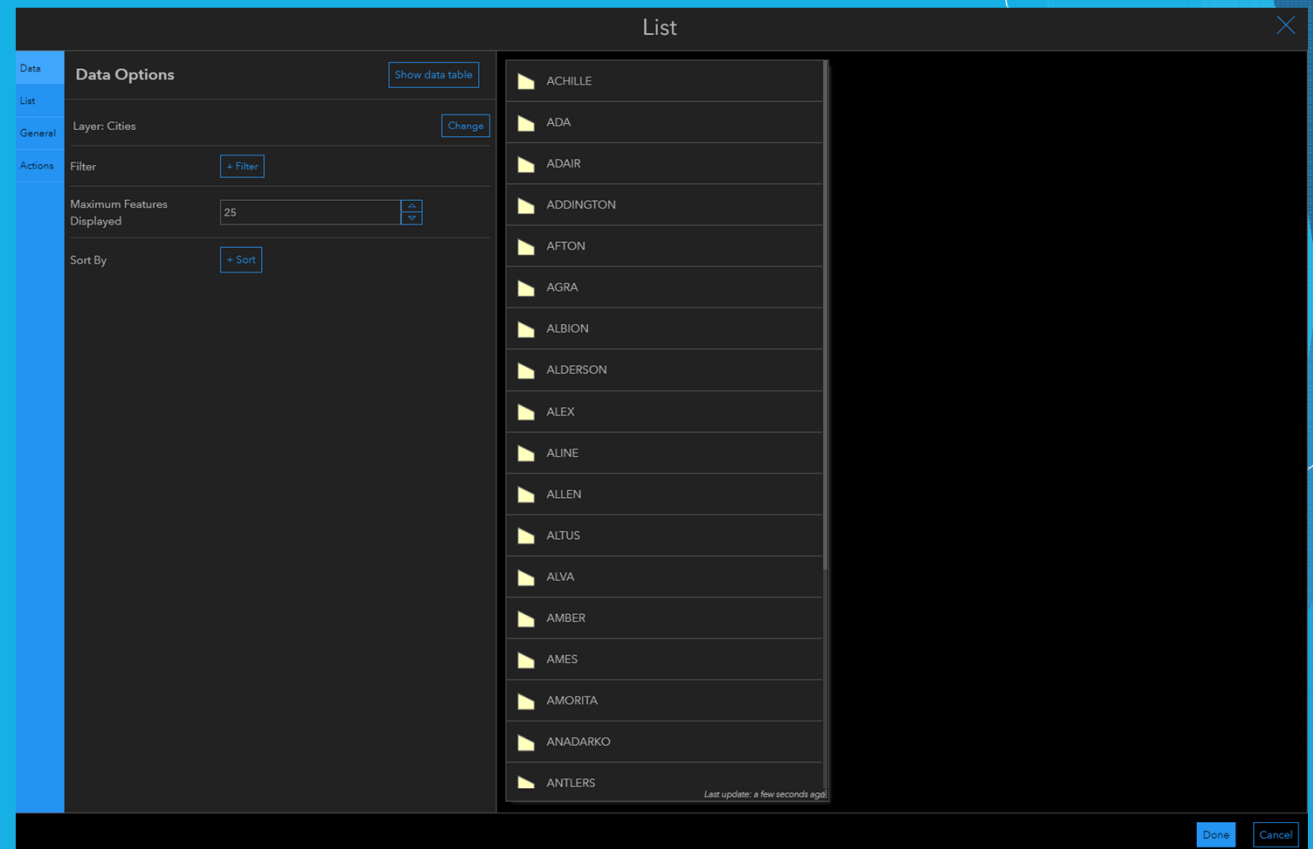
27,739.57

Miles

Done Cancel

Elements of a Dashboard

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Details

Data Options

Show data table

Layer: NHS_Bridge

Change

Filter

+ Filter

Maximum Features Displayed

50

Sort By

+ Sort

Bridge: 1

NBL_NO 6,572.00

STRUCTURE_ 4902R1465WX

CONTROL_NO 002

MILEPOINT 14650

FACILITY_C U.S. 69

FEATURE_IN PRYOR CREEK OFLOW

DIVISION 08

LOCATION 1.8 MI S JCT SH 20

SUFFICIENC 26.00

VERT_CL_IN 100.00

HORIZ_CL_I 24.00

YEAR_BUILT 1,938.00

ADT_TOTA 6,250.00

ADT_YEAR 1,999.00

DESIGN_LOA 4

SKEW 0.00

NO_MAIN_SP 6.00

ROADWIDTH 24.00

NO_LANES 2.00

LENGTH 241.00

DECKWIDTH 27.00

DECK_RATIN 4

SUPER_RATI 4

SUB_RATING 4

CHANRATING 6

CULVRATING N

STRUCT_RAT 4

SCHOOL_BUS _

POSTED_WEI NR

ADVANCED_W _

Last update: a few seconds ago!

Done Cancel

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Appearance

Text Color

Background Color

B I U

Format | Size | | Source

The bridge condition performance measures established by FHWA for State DOT's requires that bridges on the National Highway System (NHS) be rated according to the National Bridge Inventory (NBI) condition ratings for deck, superstructure, substructure, and culverts. Based on the lowest rating of these items, a bridge receives a rating of good, fair, or poor. If the lowest rating is greater than or equal to 7, the bridge is classified as "Good"; if it is less than or equal to 4, the bridge is classified as "Poor". Bridges rated below 7 but above 4 are classified as "Fair".

Of the 6,800 on-system bridges, roughly 3,200 are NHS bridges and are evaluated and reported on annually. At its peak, Oklahoma reported 1,168 of its 6,800 highway bridges as structurally deficient in 2004. Since then, an aggressive attack was launched with the implementation of the Rebuilding Oklahoma Access and Driver Safety (ROADS) fund to reduce these numbers. As a result, with the plan currently in place the number of Oklahoma's structurally deficient bridges stand at 132, an 89% drop since 2004. Bridges that receive a structurally deficient rating do not meet the minimum standards for condition and load-bearing capacity. In addition, they may experience significant deterioration of the deck, superstructure, and/or substructure elements. The rating assigned to these bridges are as described above.

The ratings set by the FHWA are based off of bridge deck area; so the rating of a bigger bridge can hurt or help a state's over all rating more than a smaller bridge.

Rich Text

The bridge condition performance measures established by FHWA for State DOT's requires that bridges on the National Highway System (NHS) be rated according to the National Bridge Inventory (NBI) condition ratings for deck, superstructure, substructure, and culverts. Based on the lowest rating of these items, a bridge receives a rating of good, fair, or poor. If the lowest rating is greater than or equal to 7, the bridge is classified as "Good"; if it is less than or equal to 4, the bridge is classified as "Poor". Bridges rated below 7 but above 4 are classified as "Fair".

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You can see a graph with the predicted trends [here](#).

2018 Reported Data.

Done

Cancel

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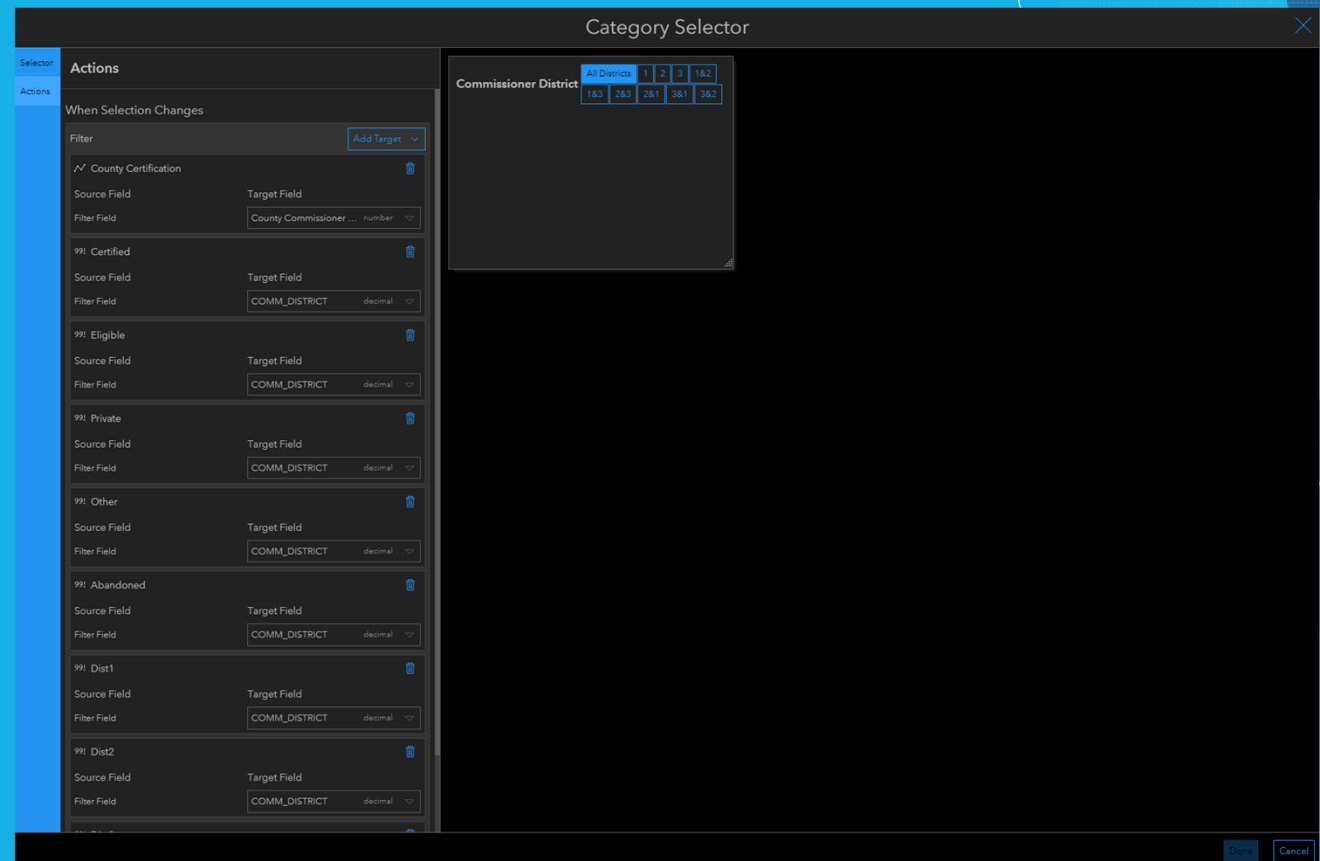
The screenshot shows a configuration window titled "Embedded Content" with a close button (X) in the top right corner. On the left is a sidebar with two tabs: "Data" and "General". The "General" tab is selected. The main area is titled "Data Options" and contains the following fields:

- Type:** Two buttons, "Static" (selected) and "Features".
- Content Type:** Three buttons, "Document" (selected), "Image", and "Video".
- URL:** A text input field containing the value "https://www.esri.com".

The right side of the window is a large dark gray area representing the content preview. It contains the text "Not fully configured" in the center. At the bottom right of the window are two buttons: "Done" and "Cancel".

Interactivity Options

- ▶ Actions
 - ▶ Map Extent
 - ▶ Selections on Elements
 - ▶ URL Parameters
- ▶ Selectors
 - ▶ Category
 - ▶ Number
 - ▶ Date



Lessons We Learned



Lessons We Learned

- ▶ Know your data
 - ▶ Everything hinges on how your data is set up
 - ▶ Field Types
 - ▶ Domains
- ▶ Start Small
 - ▶ DO a simple dashboard first
 - ▶ DON'T jump into a large project with multiple dashboards and data connections and a website
- ▶ Mess with the settings
 - ▶ Make duplicates to see what different settings do
- ▶ Ask for help
 - ▶ ArcGIS Help
 - ▶ Listserv Community



Questions?

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(405) 522-1036

ODOT's Map and Data Portal: <https://okdot.maps.arcgis.com>

