Introduction

This guide is designed to give KDOT employees instructions and tips for using the Cyclomedia Street Smart viewer, KanPlan Web Maps, and extracted data from the 2023 mobile LiDAR data collection of the Kansas State Highway System.

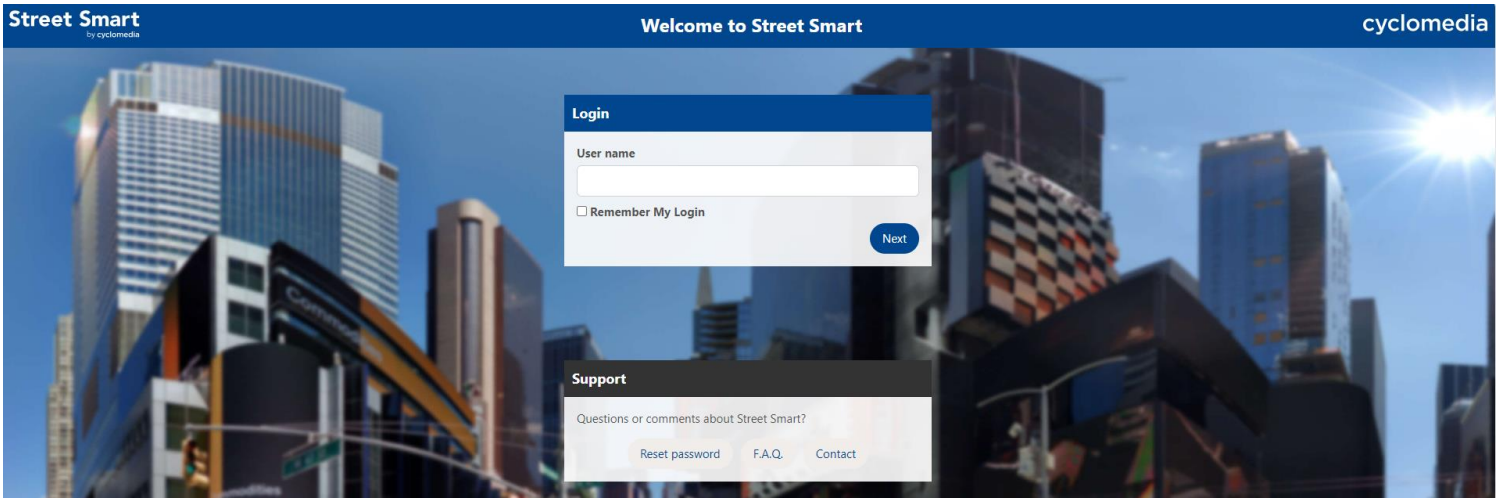
The document is organized in the following sections:

Cyclomedia Street Smart

Log In

Street Smart™ is Cyclomedia's browser-based viewer for high-resolution, 360° GeoCyclorama images and provides an intuitive, map-centric interface and a robust collection of measuring tools.

Go to https://streetsmart.cyclomedia.com/ and log in using your KDOT user ID (first.last@kdot.ks.gov). Single Sign On (SSO) should automatically sign you in without requesting a password.



External Account Access

Email KDOT#StreetSmartRequest@ks.gov to request Cyclomedia access for a contractor or consultant. To save time in processing your request, please provide the following information:

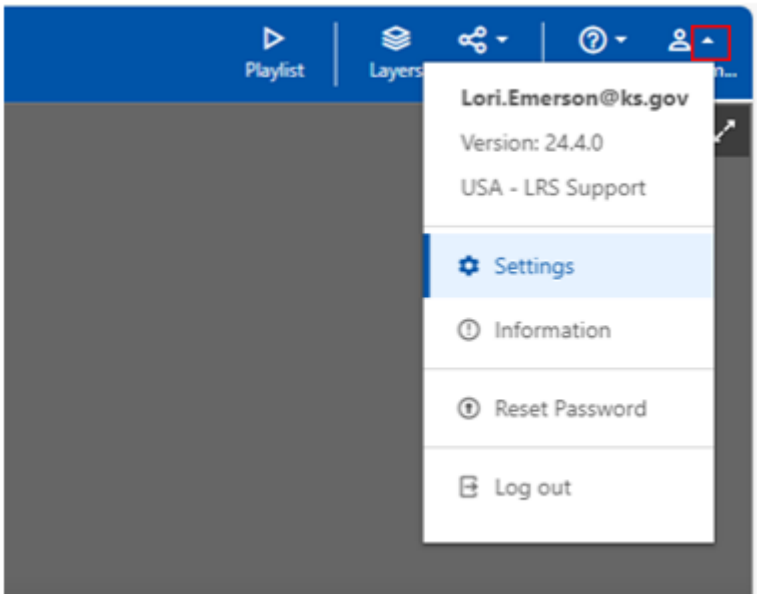
- Company Name:
- Company Point of Contact:
- Point of Contact Email Address:
- Company Address of Point of Contact:
- Company Phone Number of Point of Contact:
- KDOT Contact:
- Purpose of Access:
- Access Expiration Date:

Training Links

- https://streetsmarthelp.cyclomedia.com/en - Street Smart™ help portal
- https://www.youtube.com/watch?v=rDoGizTvhl4 – 2-hour KDOT training from 2024-05-13 Intro to Street Smart.
- https://www.youtube.com/watch?v=g_CqHZ-oPqA – 2-hour KDOT training from 2024-05-14 Data Focused Street Smart Training.
- https://www.ksdot.gov/bureaus/burTransPlan/lidar/videos.asp -- short instructional videos

Settings

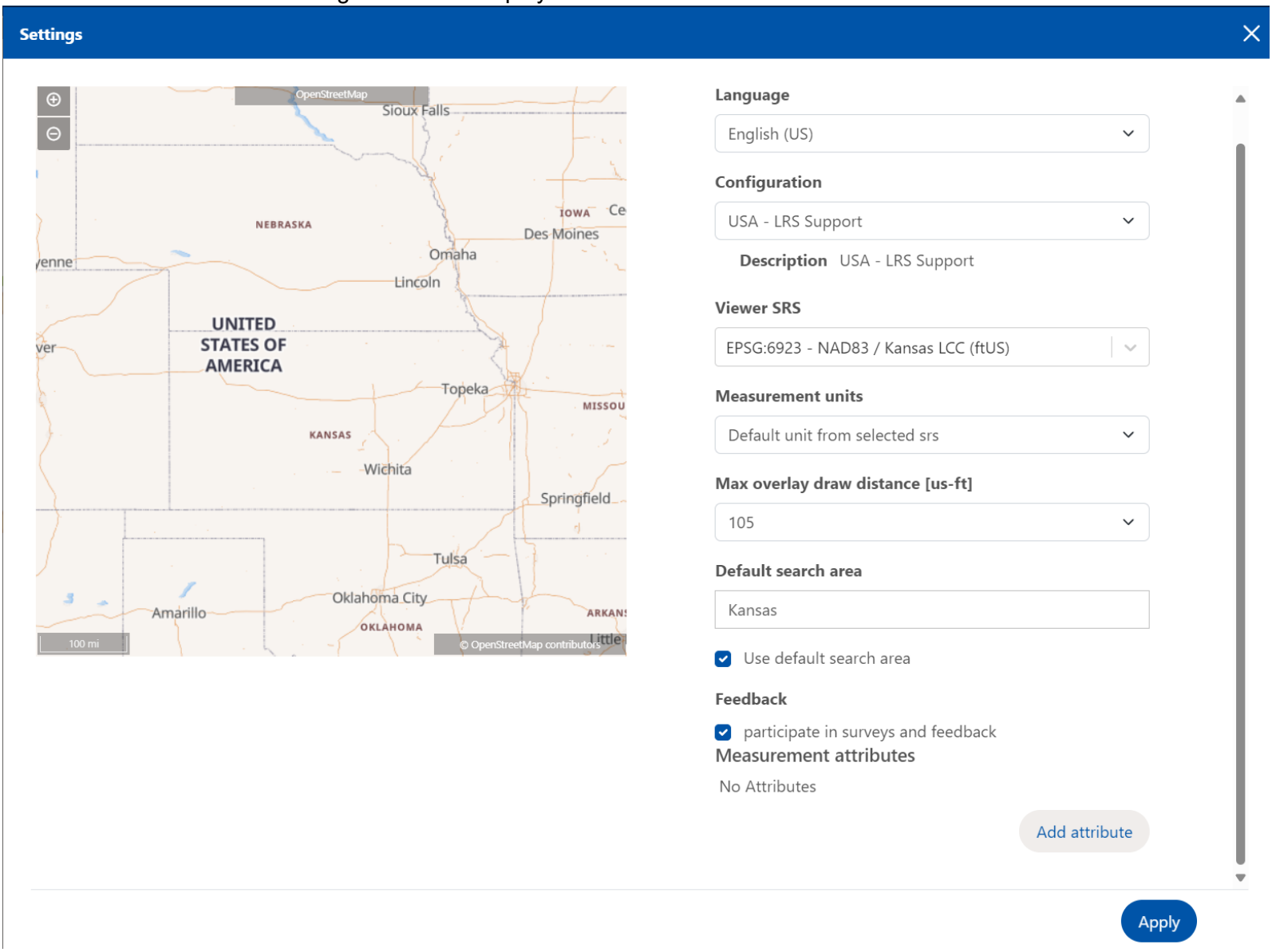
This section illustrates & explains the default settings that should be used by KDOT employees or those working on behalf of KDOT.



Opening User Settings:

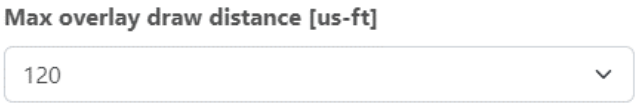
Click on the down arrow next to the username. This will open the options available. Select “Settings”

Default User Street Smart Settings for KDOT employees.



1. Language – Chooses the language used
2. Configuration
   - USA – LRS Support (default): choose this for the ability to use “Cruise Control” on the image, which drives down the route. <u>KDOT Employees and those representing KDOT should be using this configuration.</u>
   - USA – All Elevation: removes the “cruise” menu on the image.
3. Viewer SRS (Spatial Reference System)
   - EPSG: 6923 – NAD83 / Kansas ICC (ftUS): KDOT’s GIS data is all projected in Kansas Lambert Conformal Conic and GIS shape lengths and areas are in US feet.
4. Measurement units
   - Default unit will be selected based on the chosen SRS.
   - The default units will be US feet. Changing to Meters converts US Feet to Meters when measuring.

5. Max overlay draw distance [us-ft]
    - This determines how many recording points (green circles on the viewer) that can be seen at one time

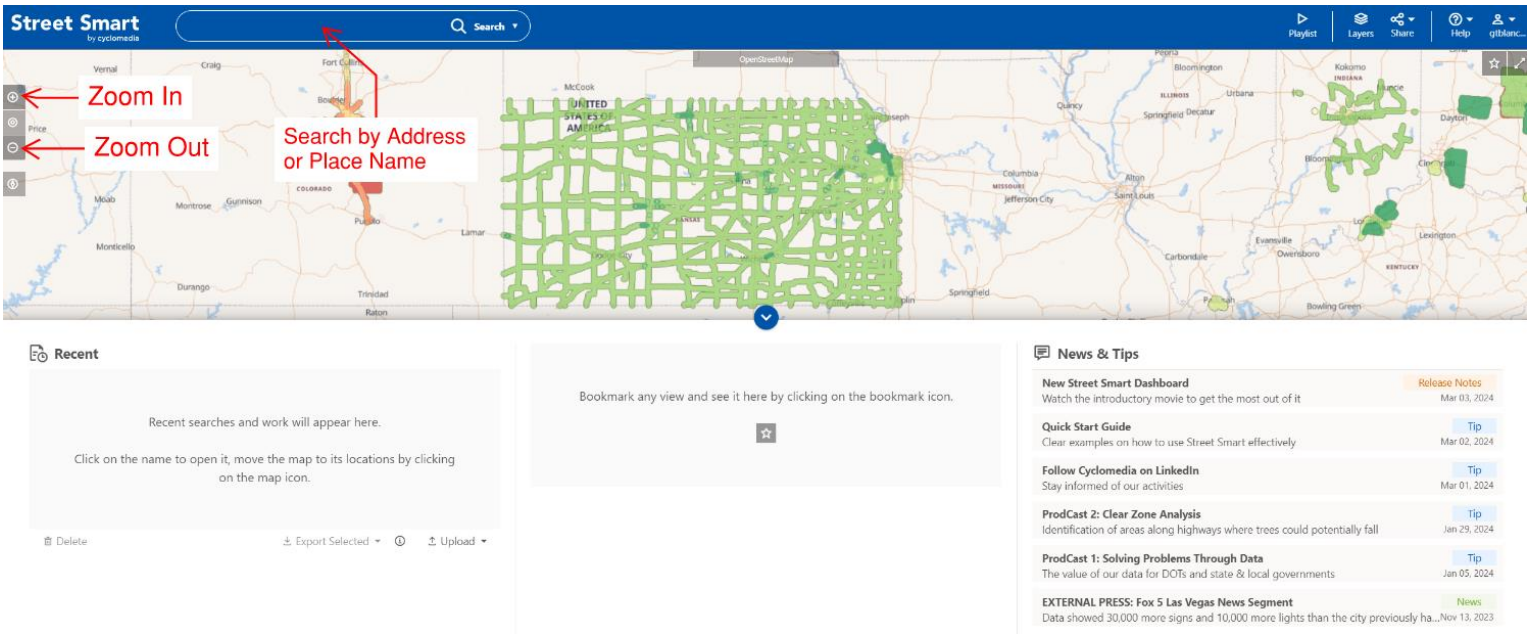
Example: 

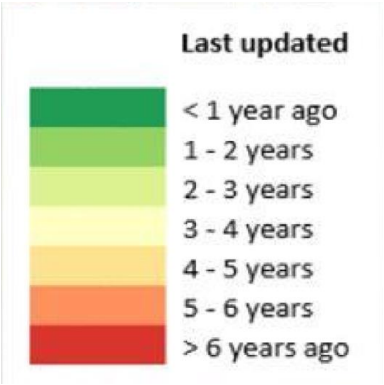
The user will zoom to see 120 recording points (green circles) in their viewer. Increasing the number will zoom out to see more recording points. To see fewer recording points, decrease this number.

Navigation

Navigation covers the use of the Map view and features associated with it. This will also cover Cyclomedia recording points and their uses.

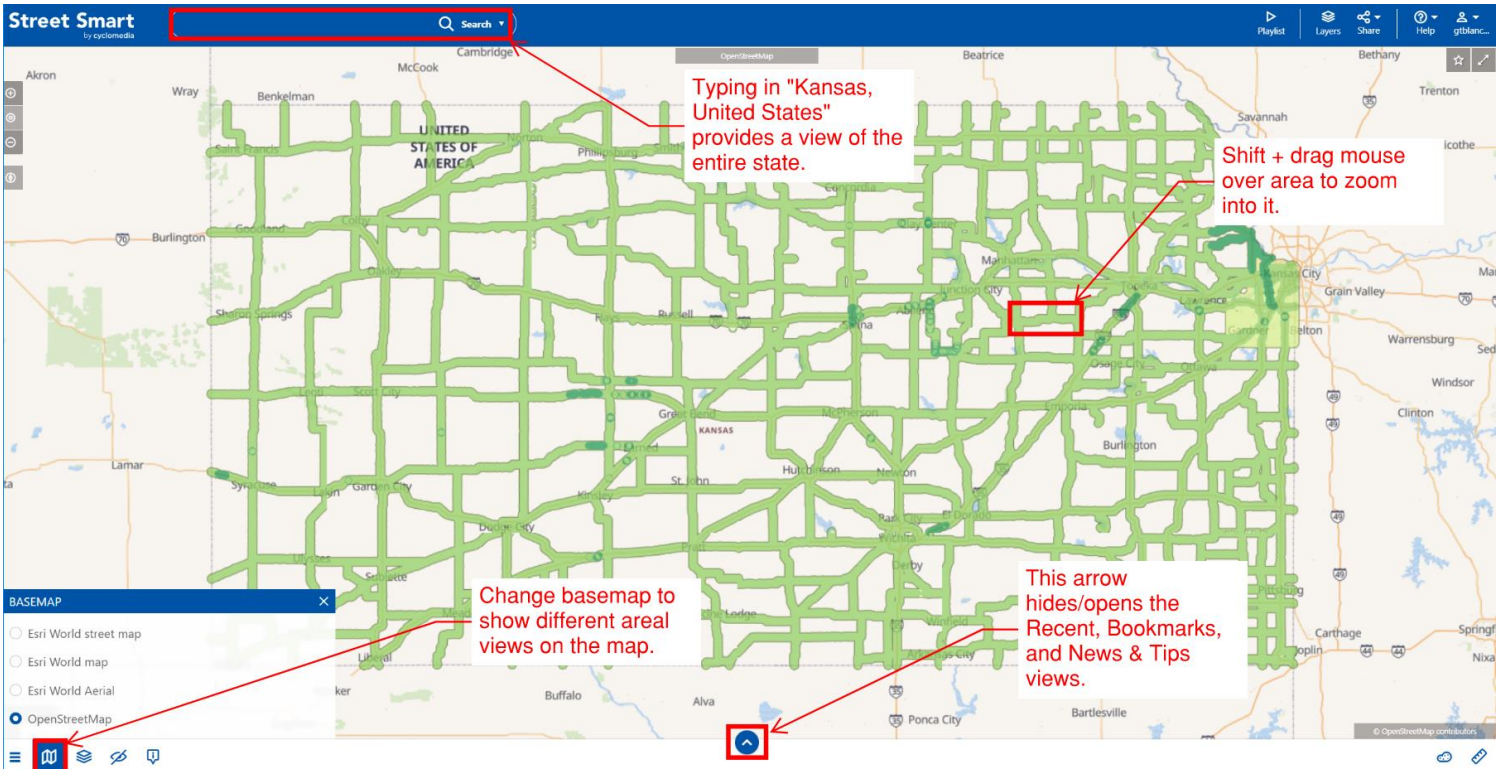
Initial Street Smart™ Landing Page when logged in. The green lines on the map show locations where Cyclomedia has captured data.



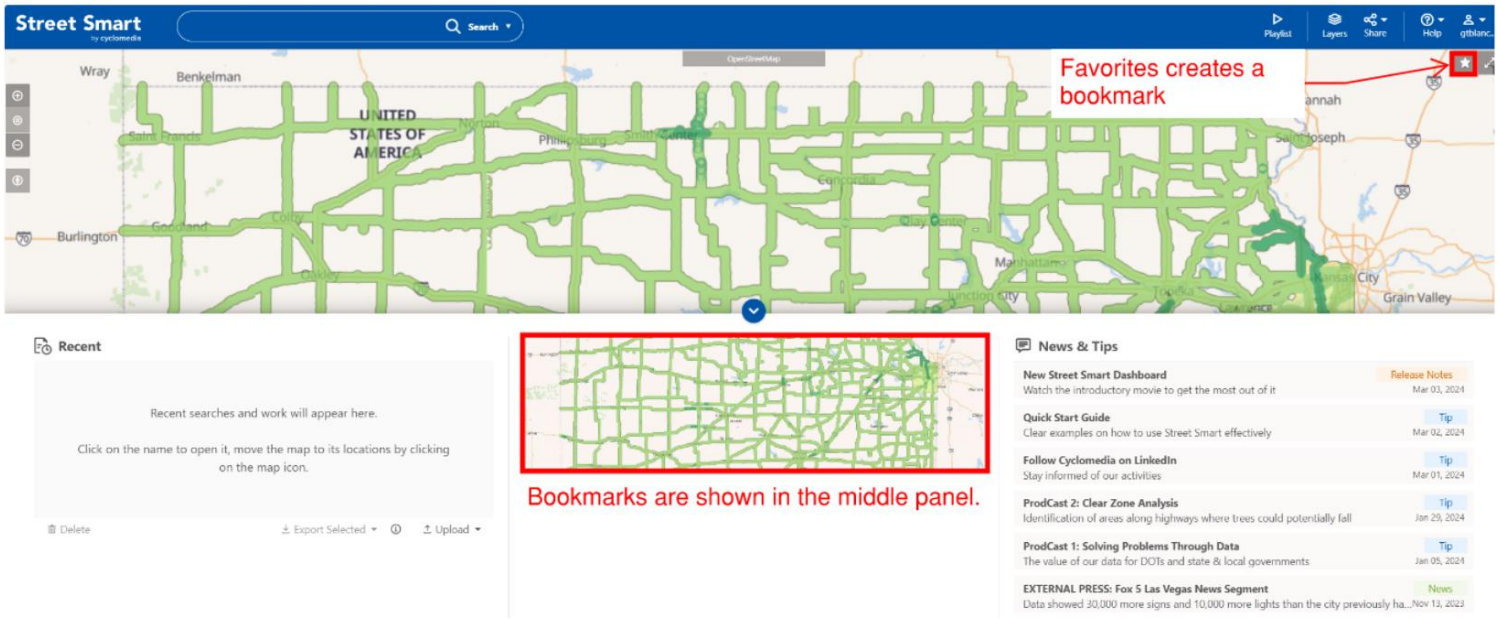


Legend for Mobile LiDAR collection date. Green means more recent.

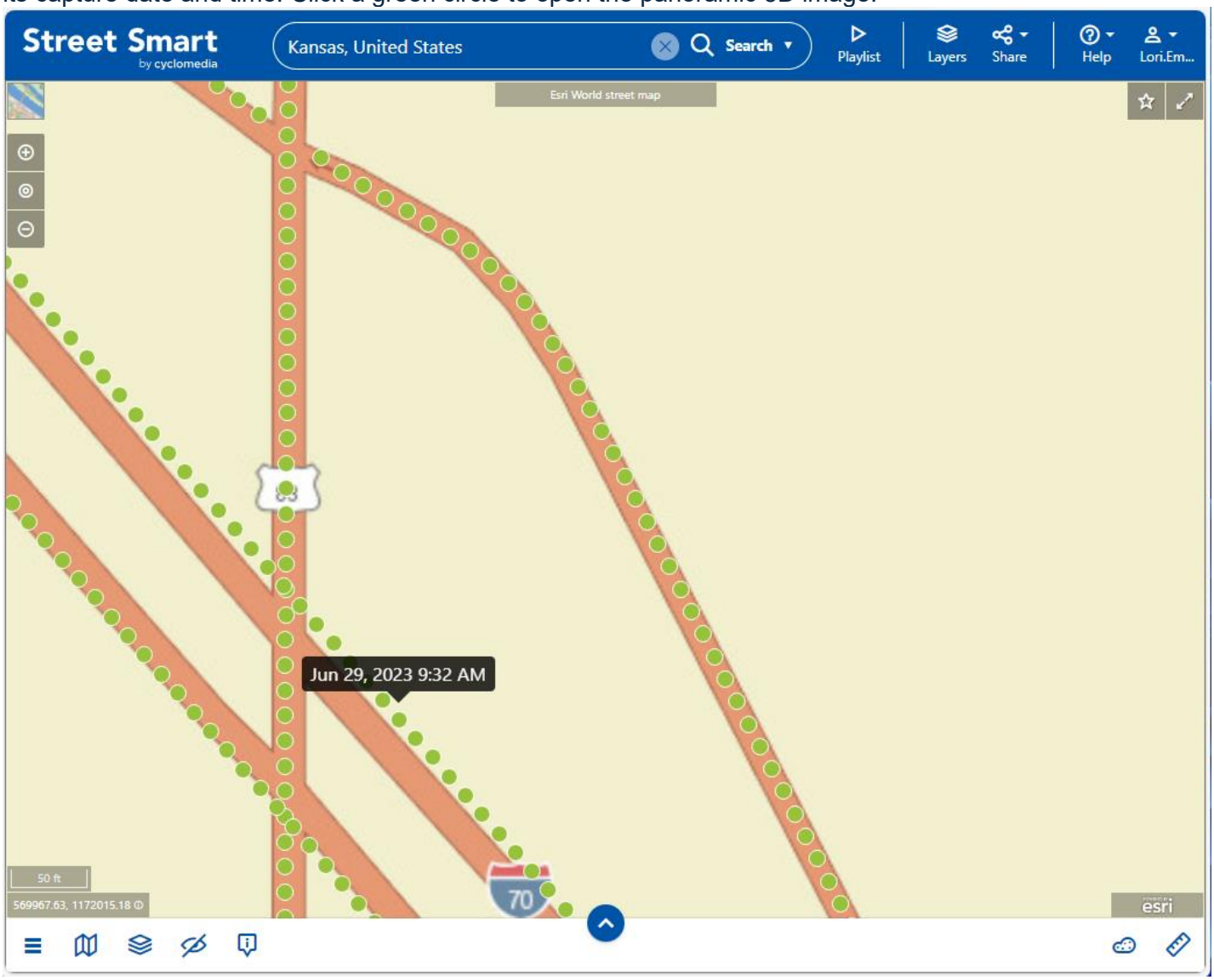
Map View:



Creating a Bookmark:



Green circles indicate 3D imagery and measuring tools are available. Hover over a green circle to see its capture date and time. Click a green circle to open the panoramic 3D image.



Selecting or Rotating an Image:

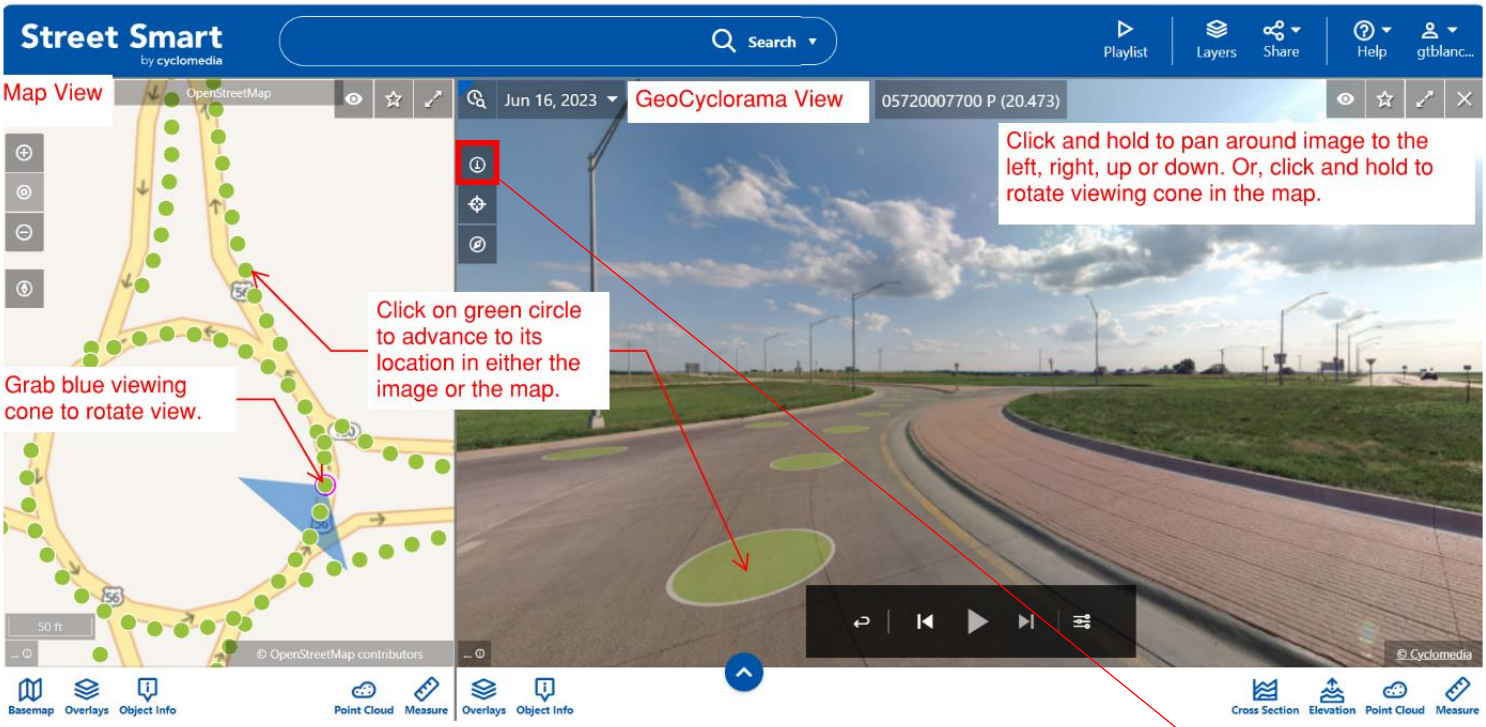


Image Details

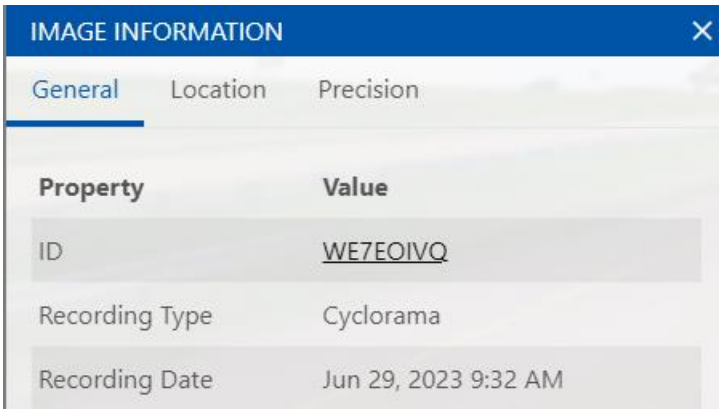


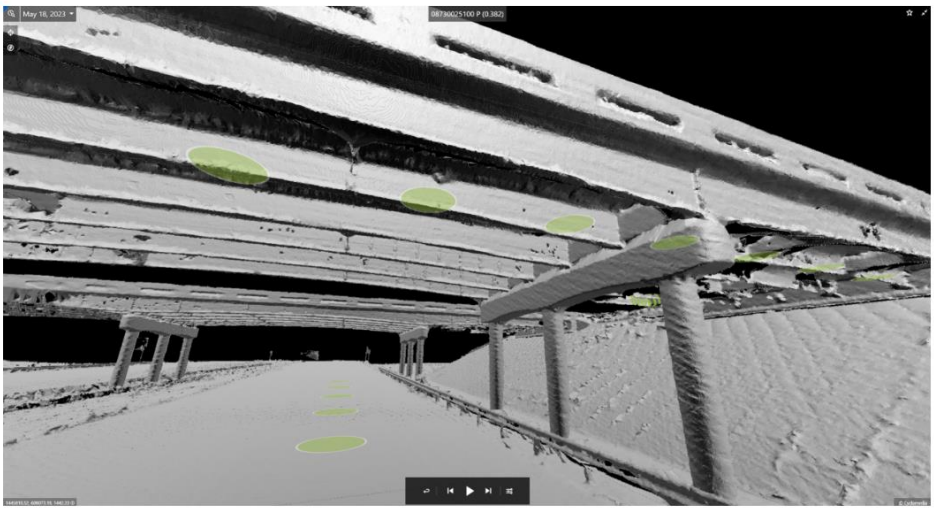
Image Details may be found by clicking the information icon in the lower right-hand corner of Street Smart™.

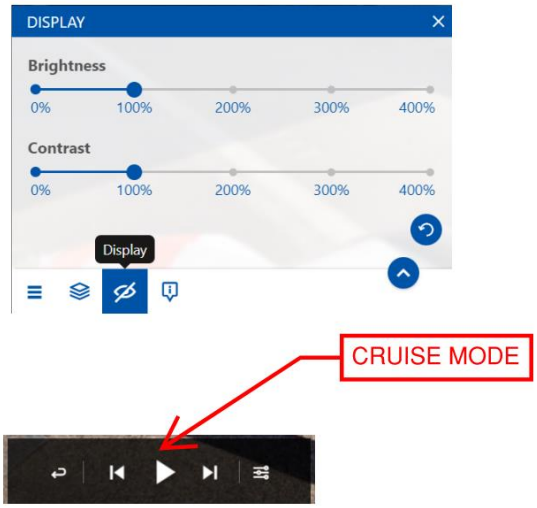
Historical Images: Select the icon in the top left corner of the street view and choose the year you would like to view. This can be useful in determining changes along the road over time.

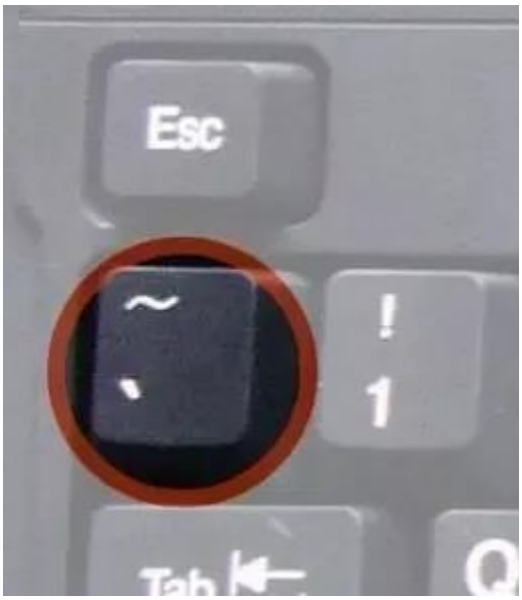
- Historic Imagery

3D Depth Surface

The 3D depth surface is the view of the actual LiDAR scan which was completed on the roadway. The white points seen in this view represent structures which were recorded by the LiDAR scan (these are the structures that measurement tools will measure from), while the black parts are areas which were either outside of the scan or do not have a surface. Click "~" to display 3D depth surface. When the cruise mode is selected, the Geocyclorama view will automatically jump from recording point to recording point.

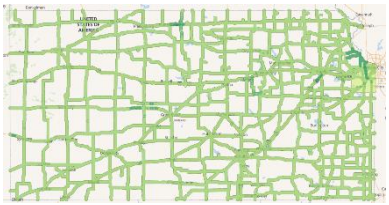






Select the Tilde (~) key to view the 3D depth surface.

Keyboard Shortcuts



Shortcut	Map	GeoCyclorama	Pointcloud
Ctrl + Alt + c	copy position coordinates	copy position coordinates	
Shift + click on recording dot	Open an extra GeoCyclorama viewer	Open an extra GeoCyclorama viewer	
X		Close this viewer	
Alt + X		Close all other GeoCyclorama viewers	
Shift + X	Close all GeoCyclorama viewers	Close all GeoCyclorama viewers	Close all GeoCyclorama viewers
~		Switch between 3D Depth Surface and Red, Green, Blue (RGB) photo	
V		View this location on the map	
I		Zoom in	
O		Zoom out	
Mousewheel + scroll	Zoom in/out	Zoom in/out	Zoom in/out
Double click	Zoom in		Zoom in
Shift + Leftclick + drag	Zoom to area		
S			Move back
W			Move forward
A			Move left
D			Move right
Q			Move down
E			Move up
F			Focus on mouse cursor
H			Home, go back to selected image id
Leftclick + move			rotate

Searching

Choose from a variety of different methods to search for a specific location in the Search bar at the top of the Street Smart interface.

Street Smart Search Function

All: Will allow users to search everything; addresses, coordinates, routes, and even Geocyclorama IDs.

Address: Search by street address, place name, highway name, city name, county name.

Coordinates Global: Latitude (y) and Longitude (x) in decimal degrees. Longitude will be negative.

Coordinates Local: y and x in projection units.

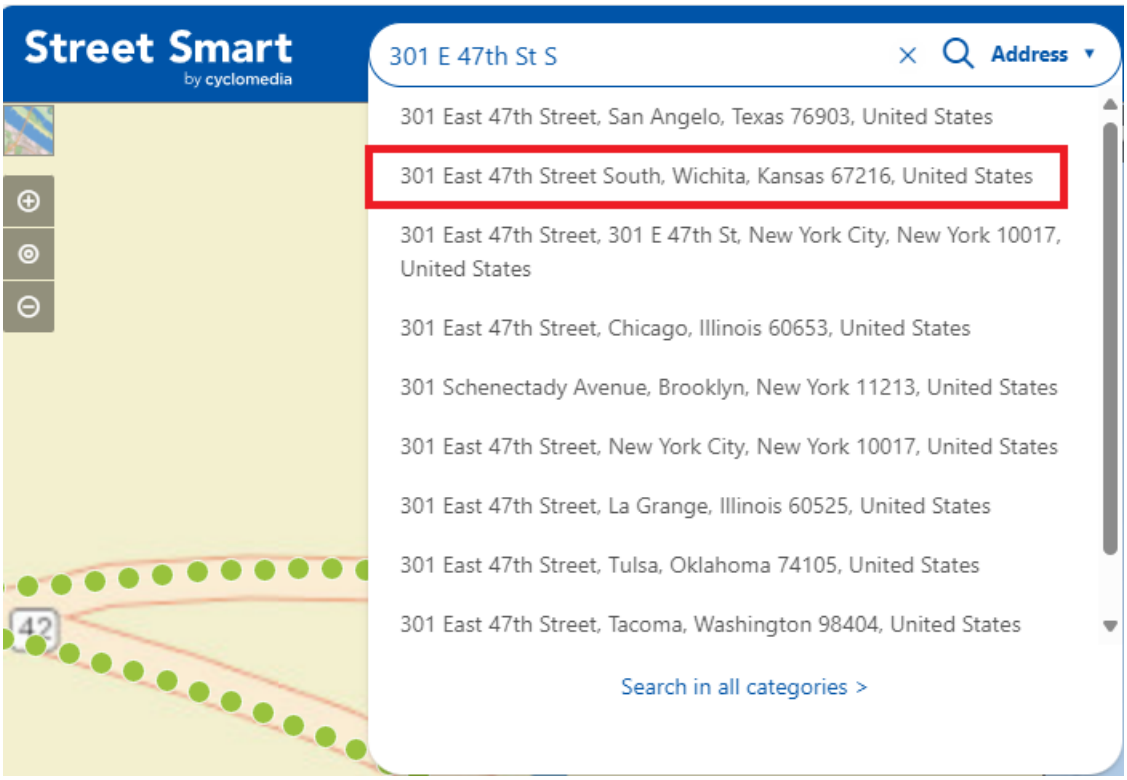
Routes: by RouteID using KDOT's Linear Referencing System ID, and mile.

Search by Address:

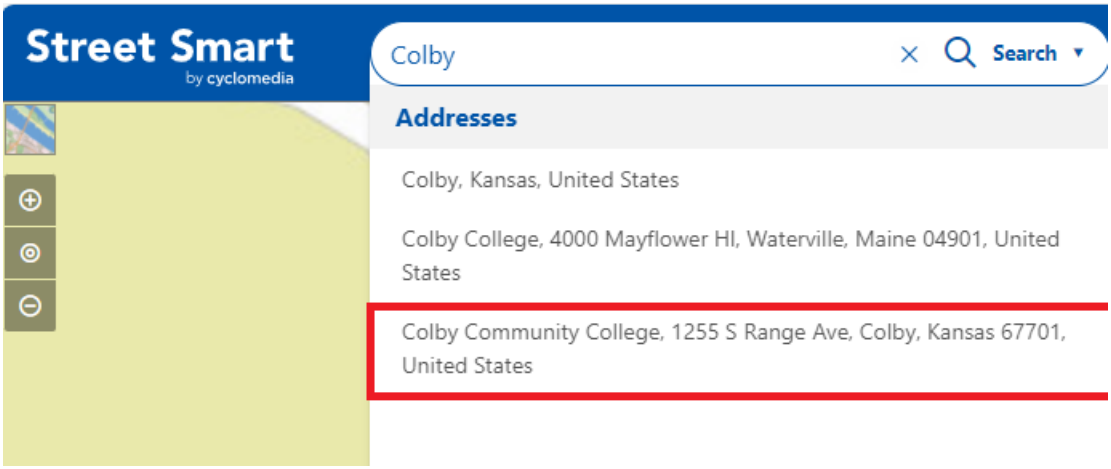
Street Address: **will zoom to map and Cyclorama Image***

*If address is on state highway system that was captured by Cyclomedia.

Select "Address" as the search type and enter part of street address to get a list of potential matches until the one you want is listed. Choose the item in the list and the map will zoom to that location and the Cyclorama image will point to the location if the address is on a captured route.

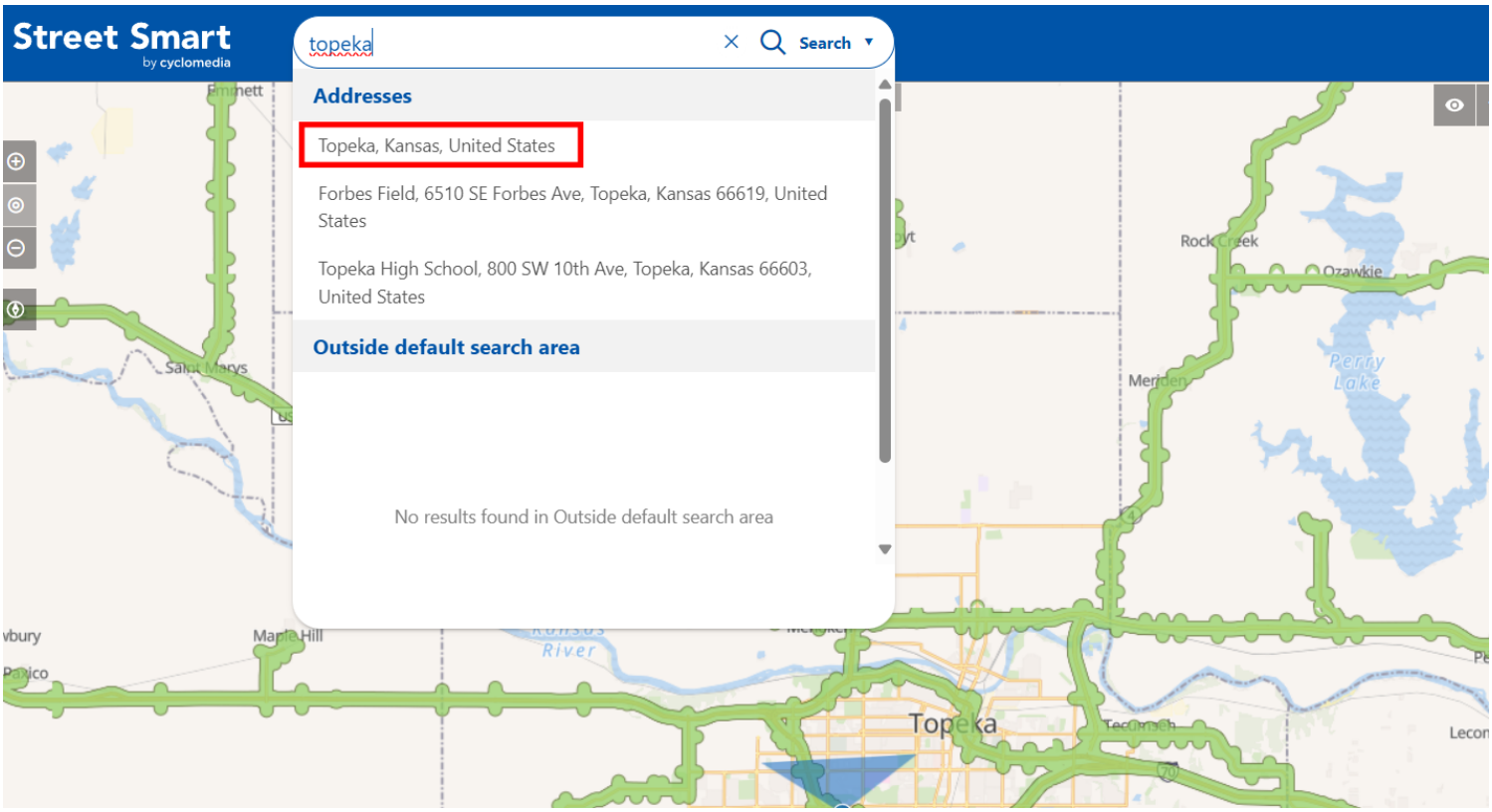


Place Name: will zoom to Map (not Cyclorama image)



Search by Address with Place Name. Select "Address" as the search type and enter part of the place name to get a list of potential matches. Click an item in the list, and the map will zoom to the location. You may need to click a nearby green circle in the map for the Cyclorama image to refresh to the same location.

City Name: will zoom to Map (not Cyclorama image)

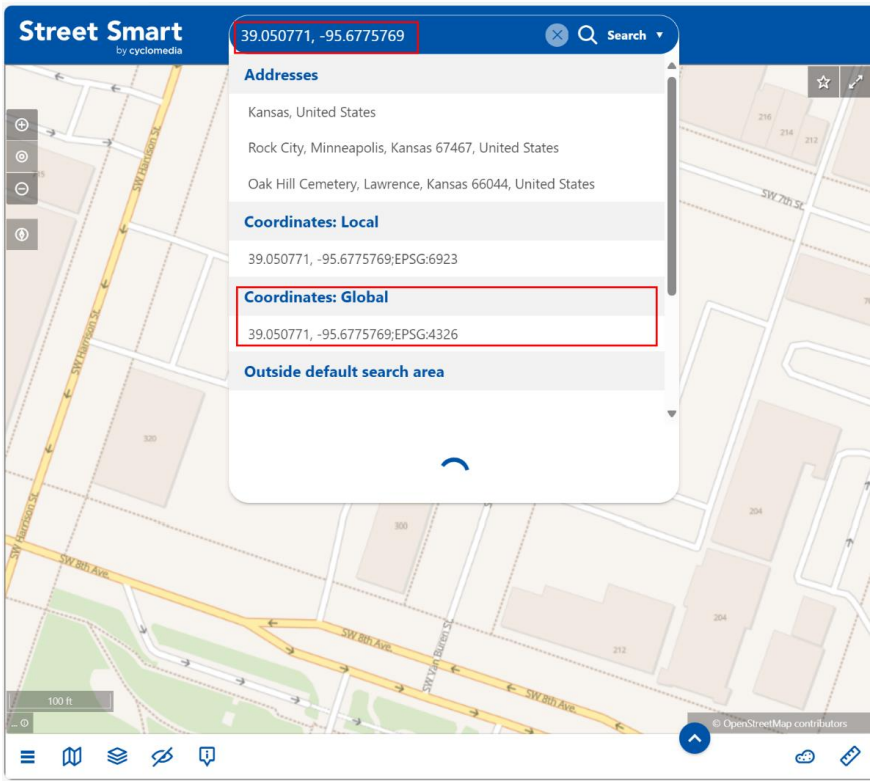


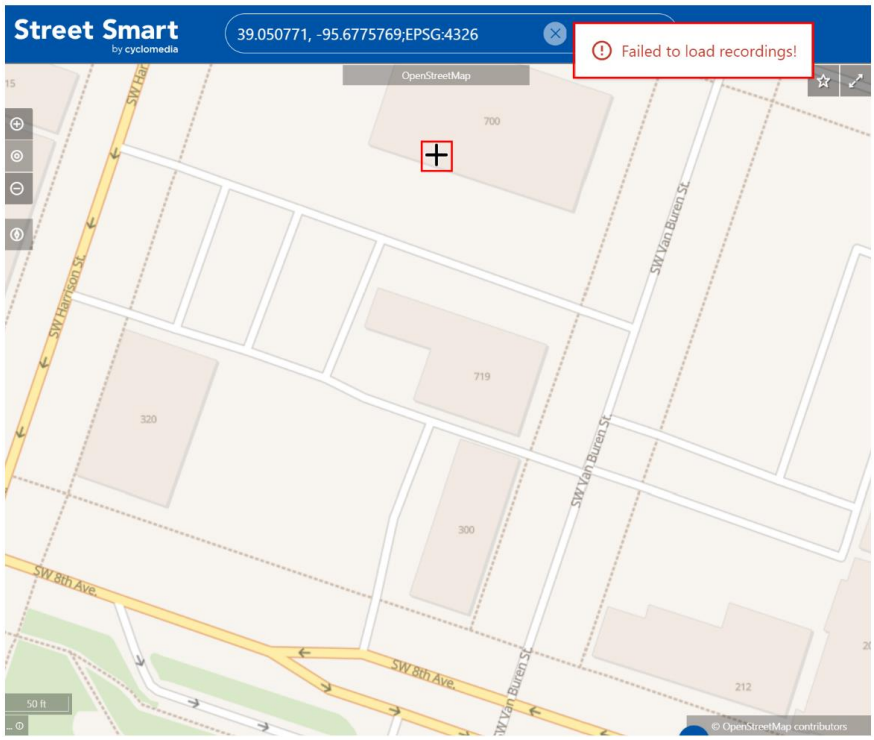
Same function as search by Place Name, just select city name instead.

Search by Coordinates:

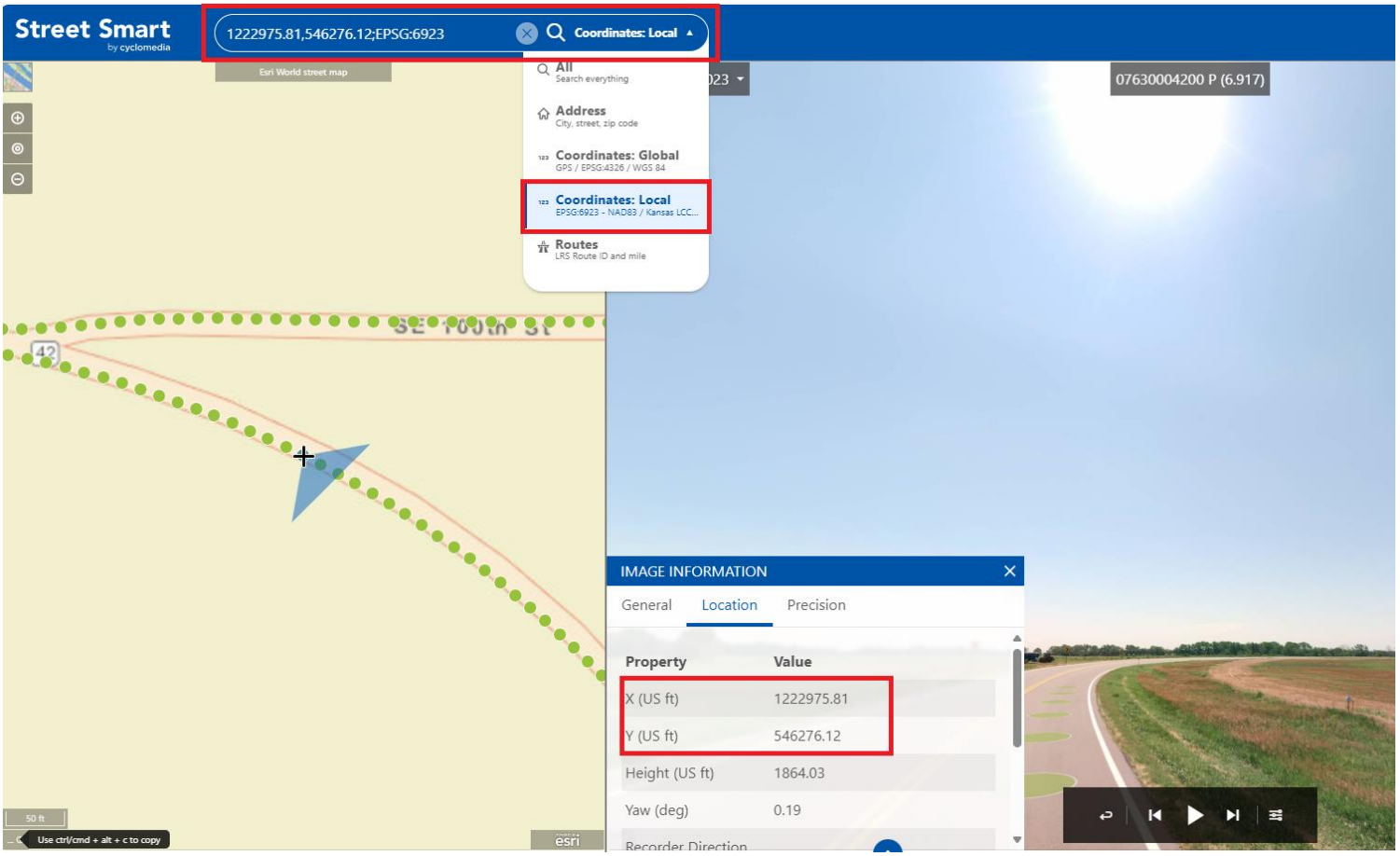
Coordinates (Global) – Latitude (y) and Longitude (x)

Enter Latitude, Longitude then select “Coordinates: Global” option in the search bar. If the location of the coordinate is not shown on street view, StreetSmart will give you a “Failed to load recordings” prompt, but it will still show the location entered on the map view.





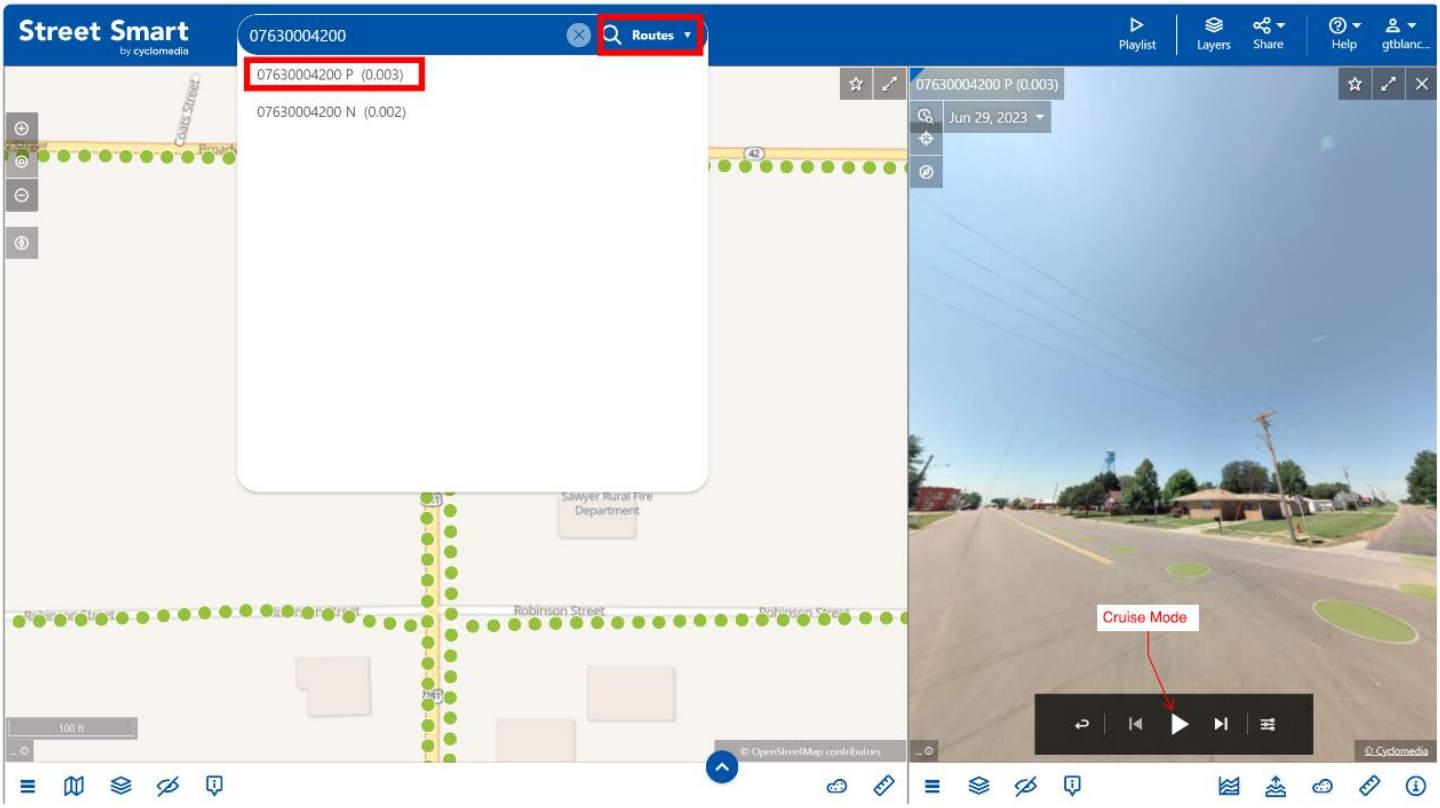
Coordinates: Local



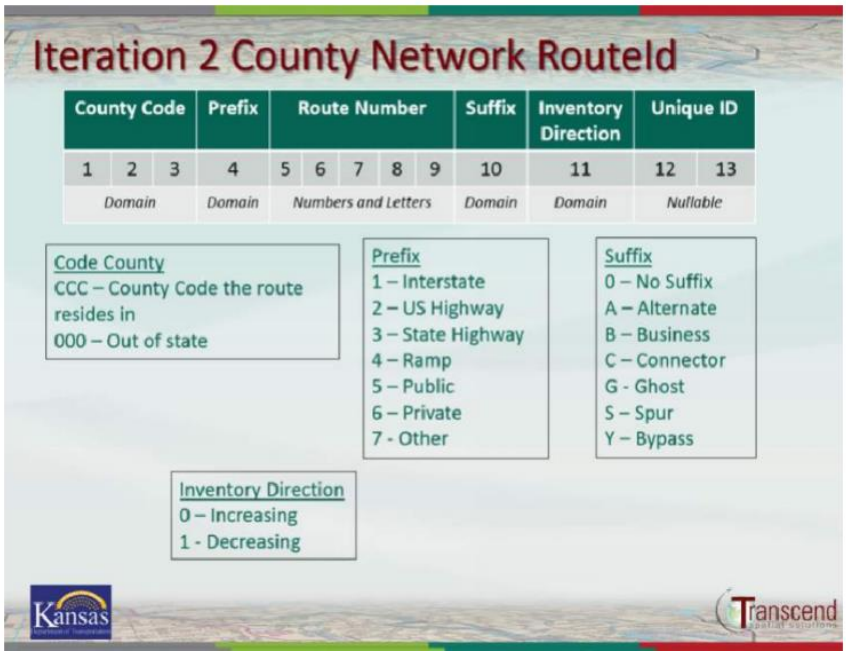
Rather than longitude (x) and latitude (y), it's using a local projection. Enter X, Y for Coordinates:Local followed by ":ESPG:6923" as shown below because Local is using projection coordinates which are for Kansas Lambert Conformal Conic.

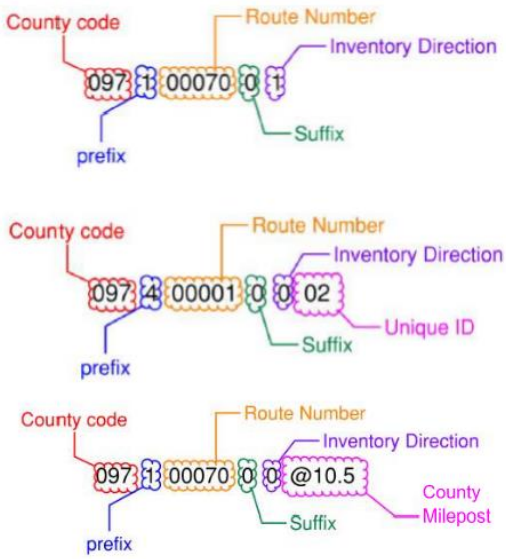
Search by Route ID and Milepost (LRS)

Route ID is the road identification system which KDOT uses to designate specific areas based on county, direction, type of route, and other unique identifiers. Enter RouteID and milepost then wait for search options to load. Make sure that “Routes” is selected for the search type. Play cruise mode (in Settings set Configuration to with "LRS Support" and not "LRS Elevation"). If the option does not load, then try to just enter in the RouteID.



LRS Codes and examples

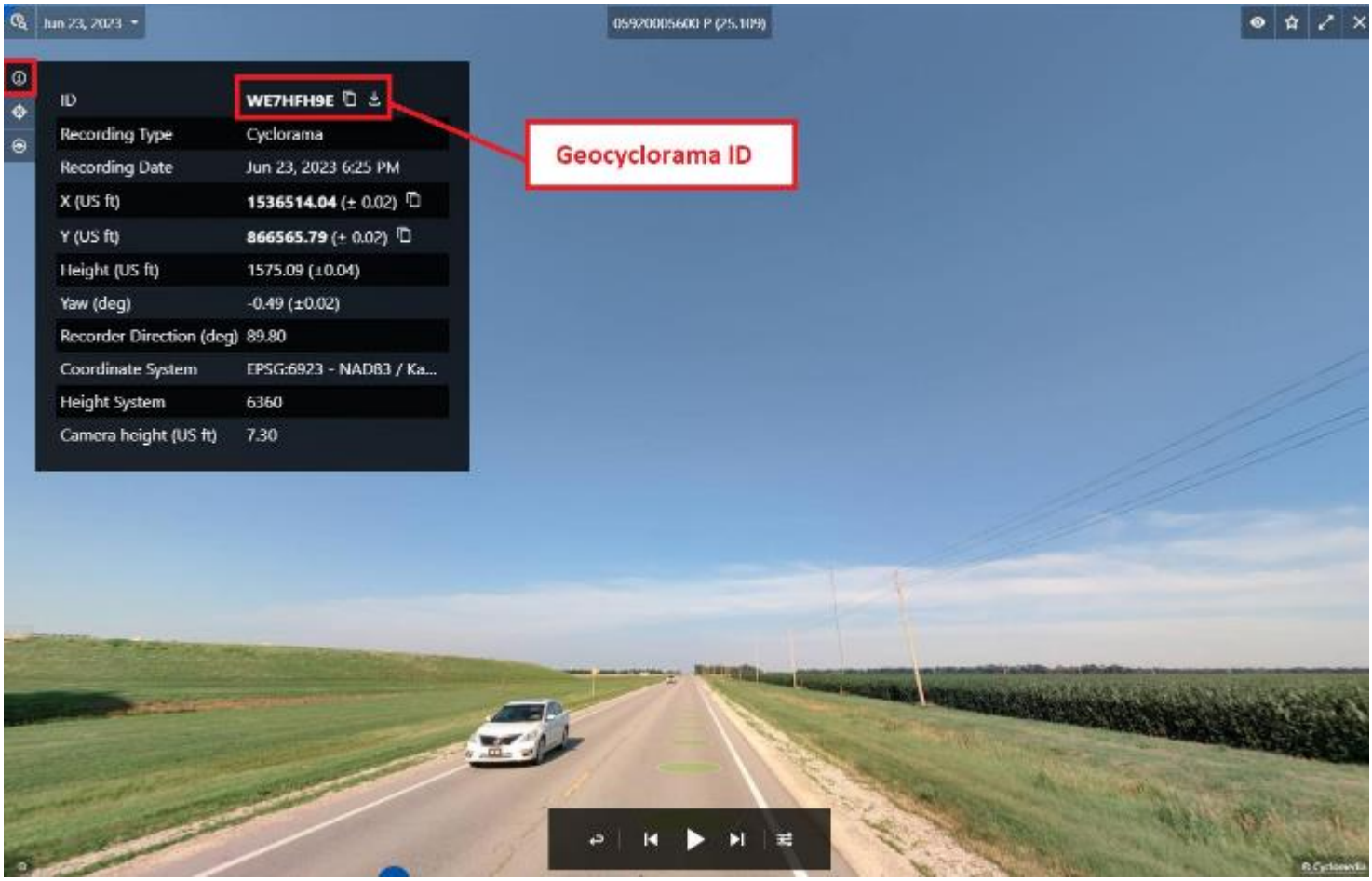




1. First example is I-70 in Thomas county (county code 97) in inventory direction.
2. Second example is a ramp in non-inventory direction.
3. Third example is I-70 in Thomas county in non-inventory direction at milepost 10.5.

Geocyclorama ID

The Geocyclorama ID is a unique ID for each recording point that is assigned by Street Smart. These IDs can be copied and shared with others to go to that exact location in Street Smart. See the “Share Function” section for more information.



https://streetsmart.cyclomedia.com/streetsmart/?q=WE2HHLMC (example of custom Street Smart URL to share with others).

Adding Feature Layers

A layer in StreetSmart provides a custom line or point for specific features that are included in each LiDAR scan. These lines and points can be viewed in the Map and Geocyclorama views. A complete list of features that were scanned can be seen below.

For further information and links to the layers, users can access the LiDAR Project Home Page: https://www.ksdot.gov/bureaus/burTransPlan/Lidar/home.asp. Select the desired layer to navigate to its home page. From there, click on the Web Map (on KanPlan) to access information about the layer.

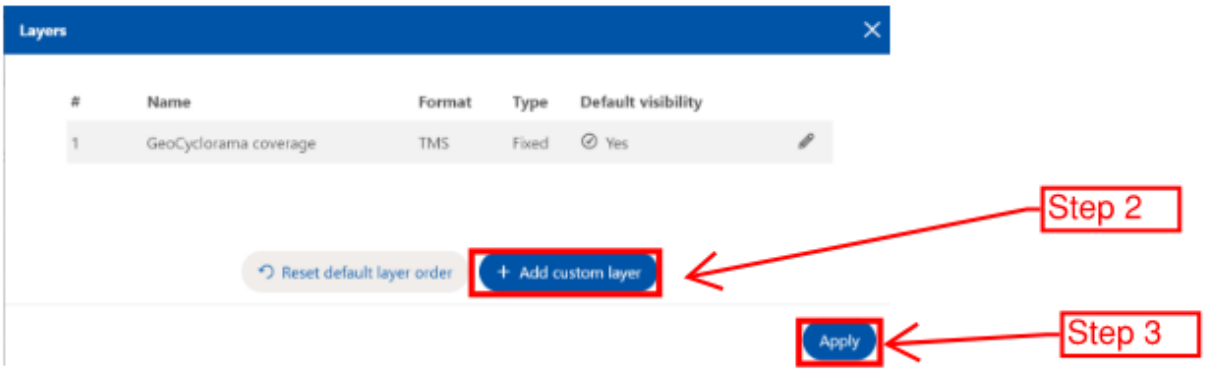
Layer Name	Description	Feature Style	Esri File Link
Approach	These features each represent a "leg" of an intersection and are each tied via attributes to a single Intersection feature.	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Approaches_2023/FeatureServer
Billboard Faces	These features each represent one face of a billboard along (or detectable from) the State Highway System.	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Billboard_Faces_2023/FeatureServer
Guardrail	Locations and extents of guardrails and other similar roadway barriers that are found along shoulders and medians.	Line	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Guardrails_2023/FeatureServer
Intersection	These point features represent places where State Highway System roads, or ramps associated with them, meet "at grade" with other public roads of any type (including other State Highway System roads).	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/arcgis/rest/services/Intersections_2023/FeatureServer

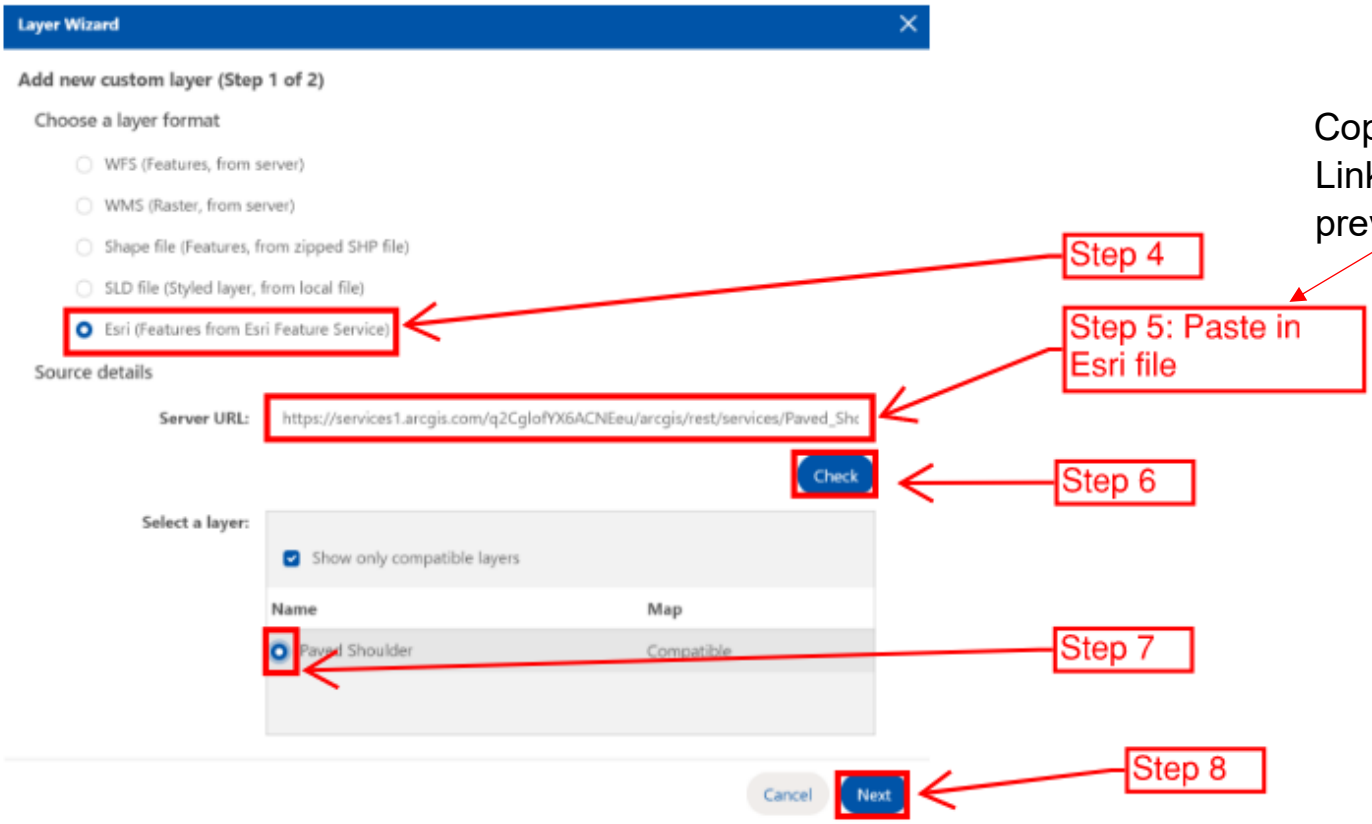
Lane	Each feature represents the extent of a lane on the State Highway System or a related ramp.	Line	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Lanes_2023/FeatureServer
Lane Count	Each feature represents all lanes of traffic flowing in the same direction along a roadway, with seamless breaks between features where the number of lanes changes.	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Lane_Count_2023/FeatureServer
Median	Each feature represents a stretch of the State Highway System and describes whether a median exists there and, if so, what type it is.	Line	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Median_2023/FeatureServer
Noise Wall	Each linear feature represents a noise wall. These linear features are placed on the top of walls and generally follow continuous walls for their full extent.	Line	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Noise_Wall_2023/FeatureServer
Pavement Message	Each polygon feature shows the location and extent of a painted message or symbol.	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Pavement_Message_2023/FeatureServer
Pavement Striping	location and extent of continuous, painted lane striping along roads.	Line	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Pavement_Striping_2023/FeatureServer

Pavement Striping Quantities	This layer provides the total length of each type of paint stripe extracted in the Pavement Striping layer within a 1/10th-mile extent of the State Highway System (SHS).	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Pavement_Striping_Quantity_2023/FeatureServer
Pavement Width	This layer provides the average width of paved surfaces on the State Highway System. It includes system-to-system ramps but not ramps joining the State Highway System to roads off the State Highway System.	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Pavement_Width_2023/FeatureServer
Railroad Crossings	These point features represent the locations of railroad crossings that intersect the State Highway System.	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Railroad_Crossings_2023_view/FeatureServer
Retaining Wall	Each linear feature represents a retaining wall that follows or is detectable from the State Highway System. These linear features are placed on the top of walls and generally follow continuous walls for their full extent.	Line	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Retaining_Wall_2023/FeatureServer
Sidewalks	This layer depicts the location and extent of sidewalks that follow or run perpendicular to the State Highway System.	Line	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Sidewalks_2023/FeatureServer

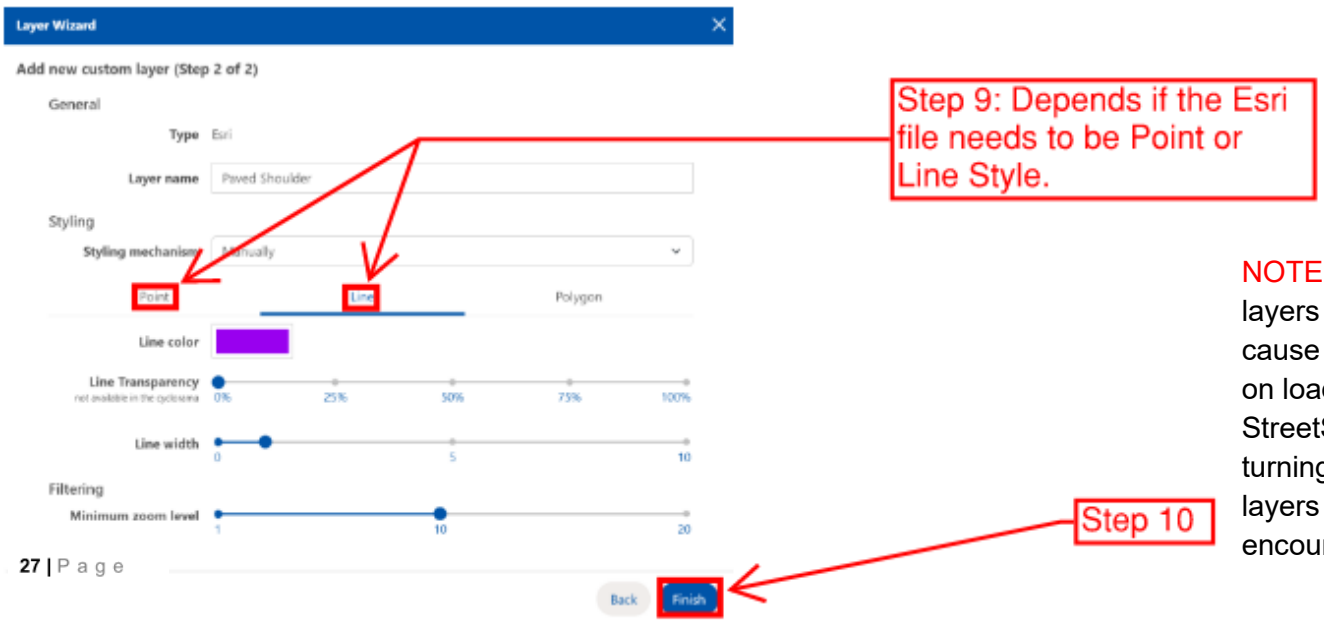
Paved Shoulder	This layer represents the portions of paved roadway surfaces that are not intended for travel.	Line	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Paved_Shoulders_2023/FeatureServer
Sign Faces	Each point GIS feature represents an individual sign face.	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Sign_Faces_2023/FeatureServer
Vertical Clearance	These point features represent locations where a State Highway System route passes below a bridge or other structure.	Point	https://services1.arcgis.com/q2CglofYX6ACNEeu/ArcGIS/rest/services/Vertical_Clearances_2023/FeatureServer

Adding Layers into Street Smart: Follow the below steps to add layers:



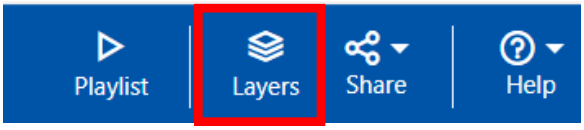


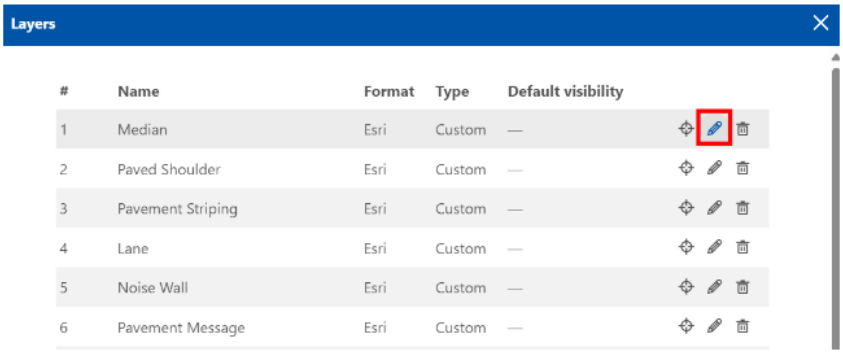
Copy ESRI Link from previous table

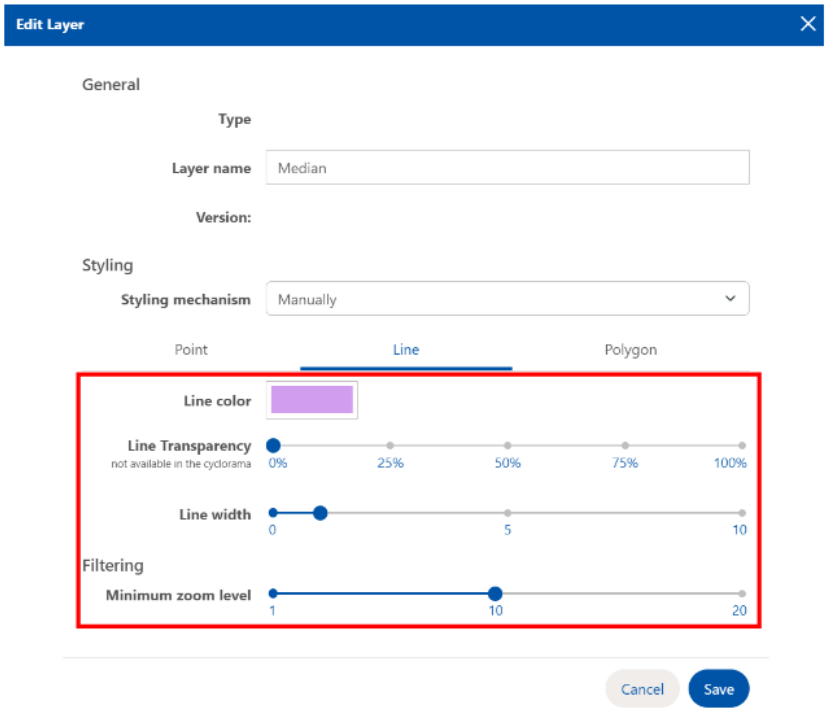


NOTE: Having too many layers on at one time can cause significant delays on loading times for StreetSmart. Consider turning off unnecessary layers when you encounter loading issues.

Editing and Existing Layer:

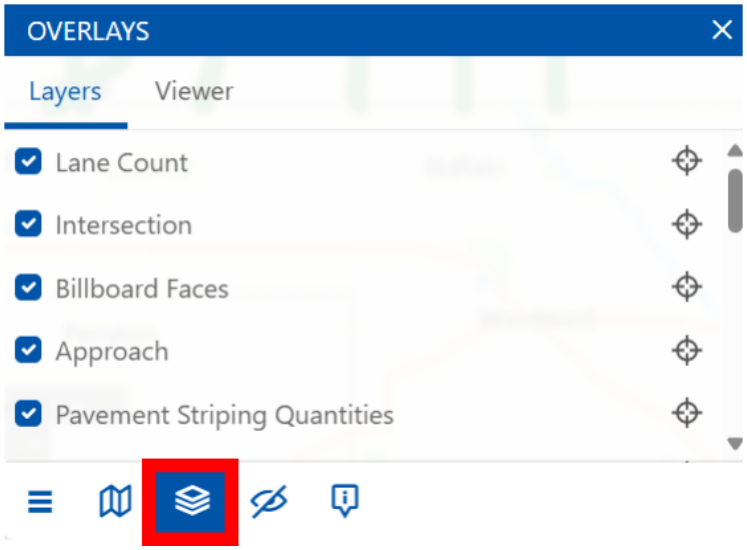


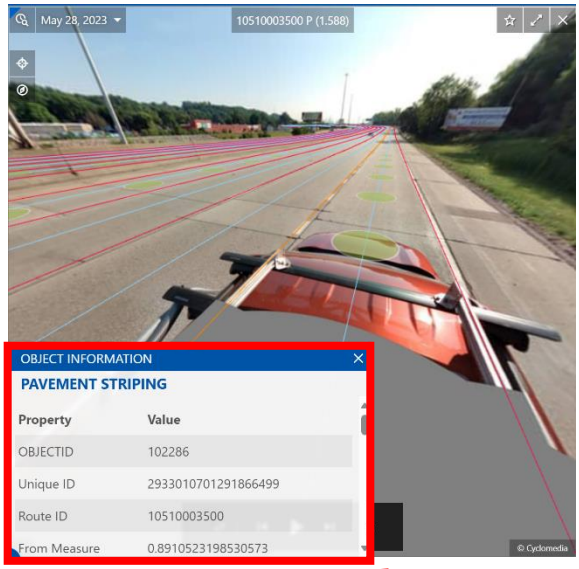




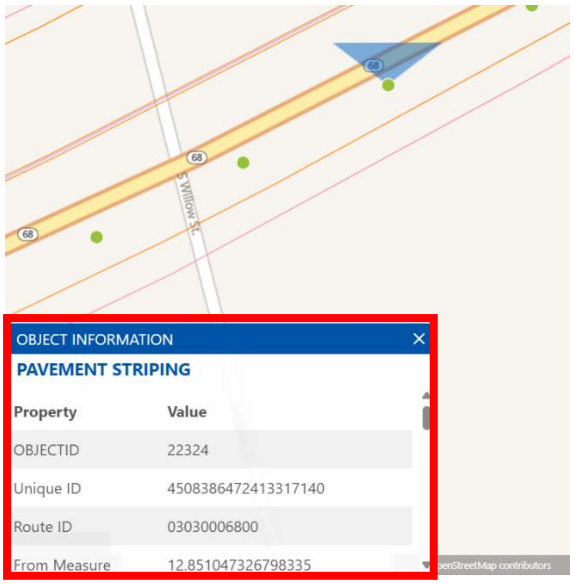
Edit color & shape of each layer from the legend settings

Then in the map and image, you can display certain layers. Select Overlays toggle box. Select layers that are meant to show on the map.



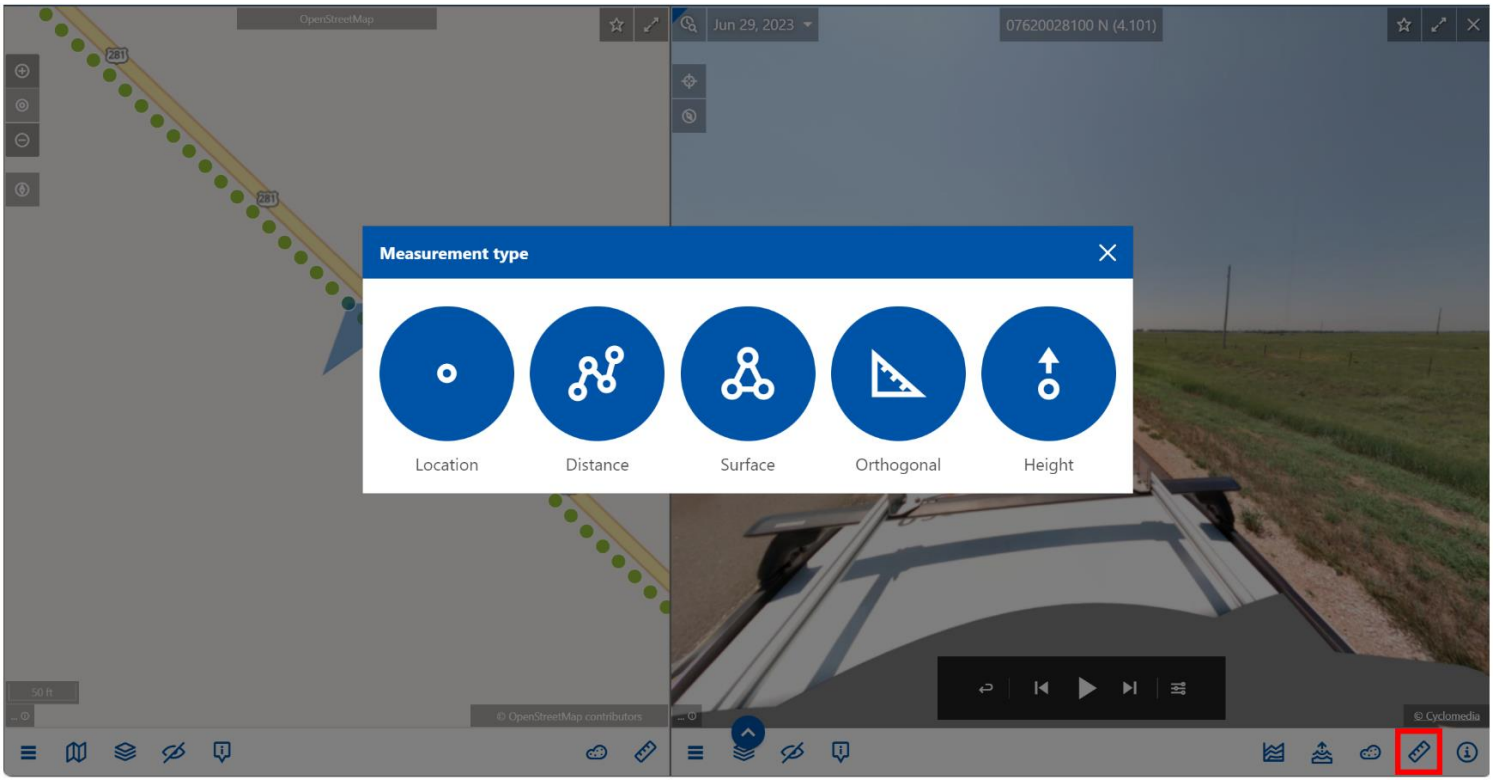


Examples of layers turned on



When a layer line/point is selected, object information appears in the corner.

Measurements



Location (Point) – Allows user to capture the precise X, Y and Z coordinates for a clicked location.

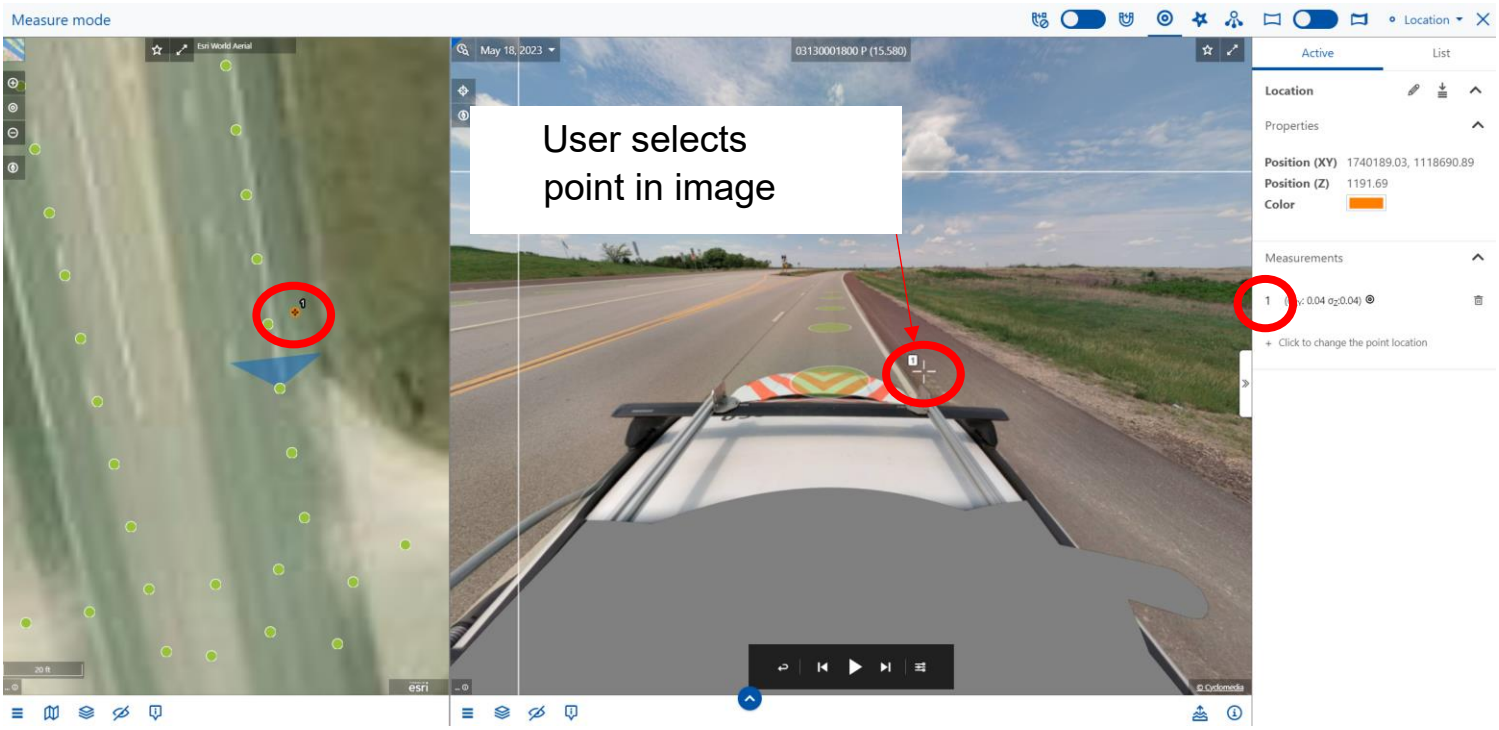
Distance (Line) – Measures the distance between two or more clicked points. In addition to the length, a slope angle and percentage are also calculated for the linear distance.

Surface (Polygon) – Measures the area and perimeter of a drawn polygon.

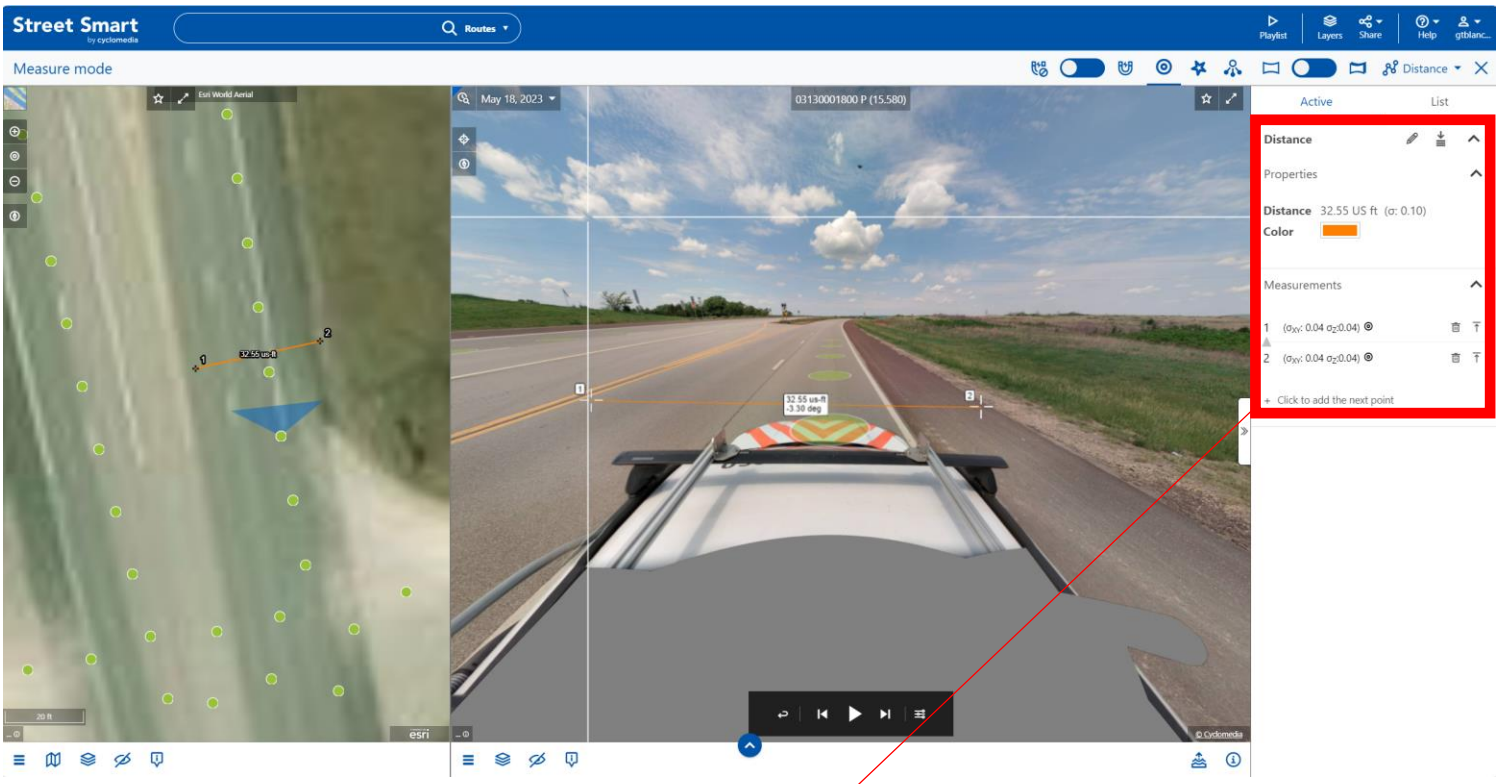
Orthogonal (Line) – Distance measurement which allows users to enter two points for a base line, then a third point to measure the distance at 90˚ from the base line. This is useful for ensuring straight measurements for distances such as lane and shoulder widths.

Height (Line) – Measures the vertical distance between two objects by only changing the z value. This is useful for determining the height of an overhead sign or traffic light.

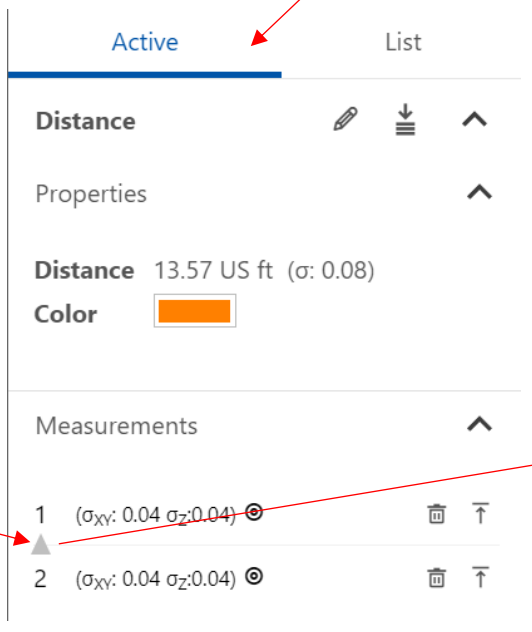
Location (Point) - A location measurement is a simple point. When a user clicks on the image, the coordinate (X, Y, and Z) for each clicked location is captured from the surface. The values are displayed in the side panel using the units for the current coordinate system. Each time the user clicks, the active location information is updated. For a location measurement, the positional coordinates will always display using the default units for the current SRS.



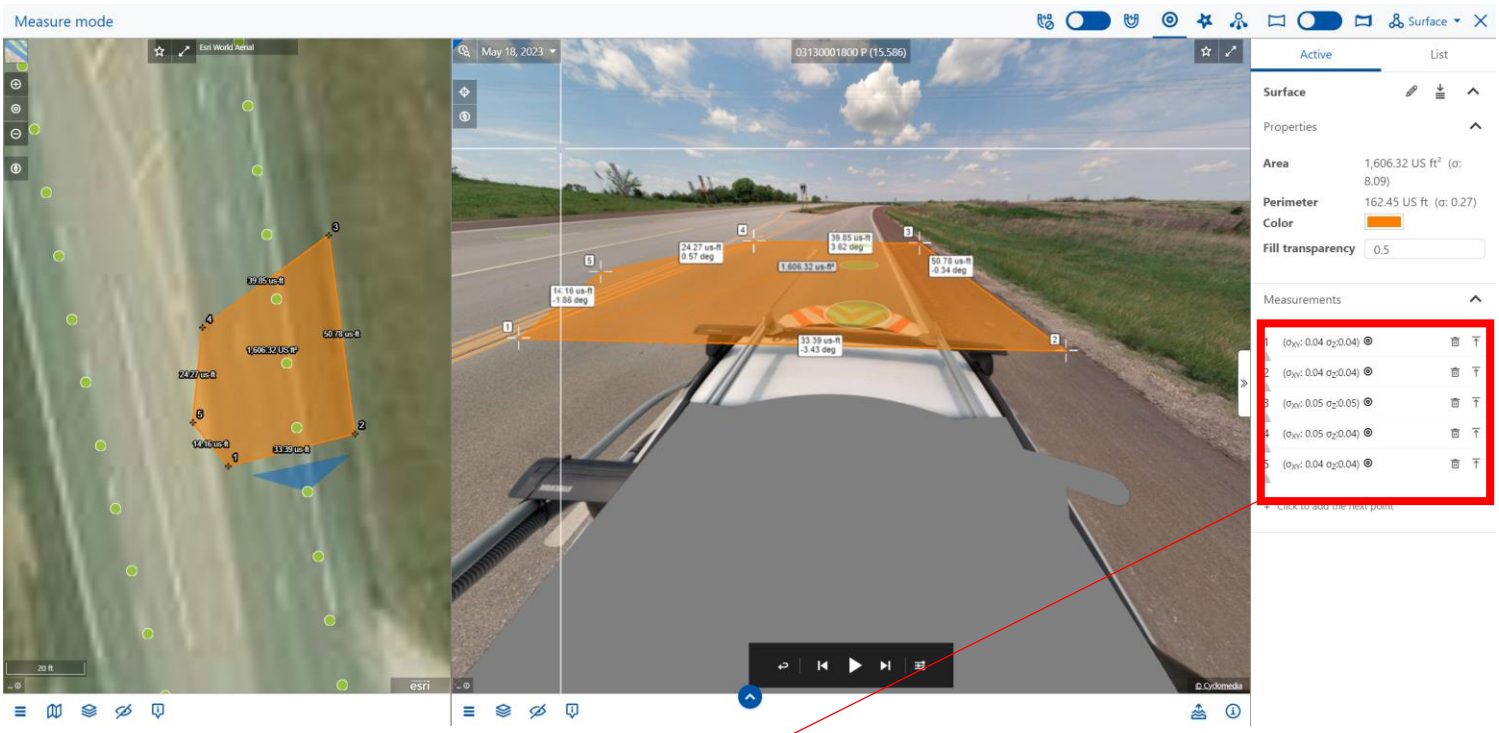
Distance (Line) – The Distance option performs a linear measurement using two or more clicks. Beginning after the second click, the length is displayed in the side panel. This measurement type supports both a simple line and a polyline measurement. As the user continues clicking to extend the polyline, the length will continue to update. Each clicked location is displayed in the side panel for the user, along with the total length. By hovering over the triangle between two clicked points in the side panel, a tooltip will display additional details about the segment between the two points, including the change in XY, change in Z and slope calculations.

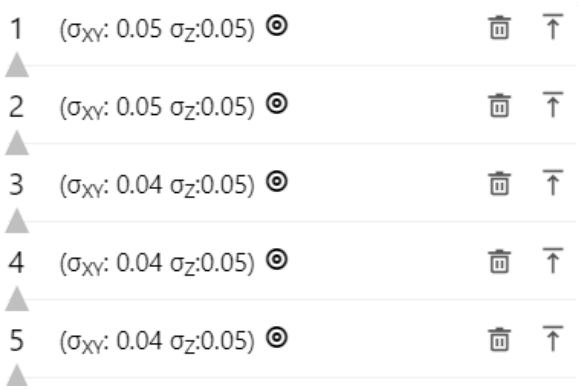


Select this symbol for additional details about the segment

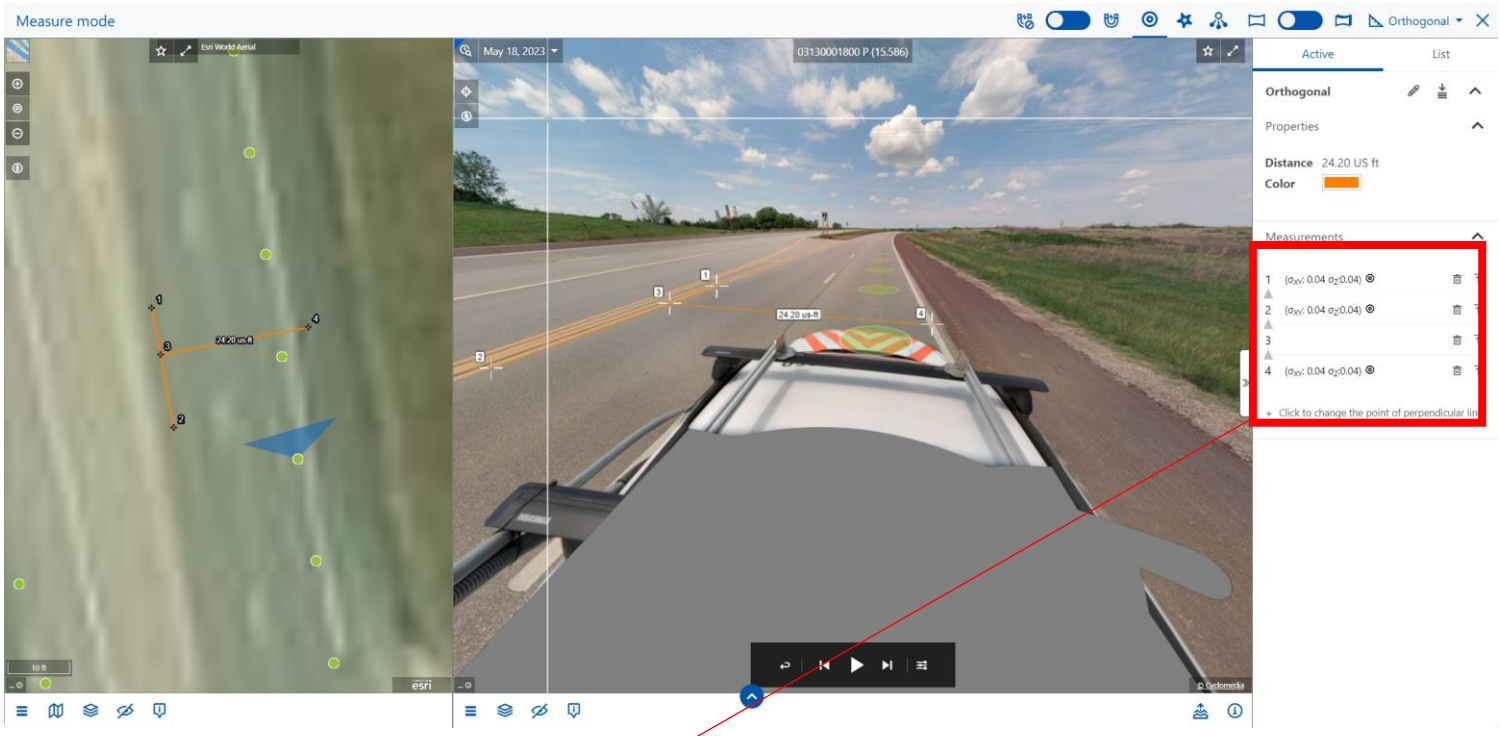


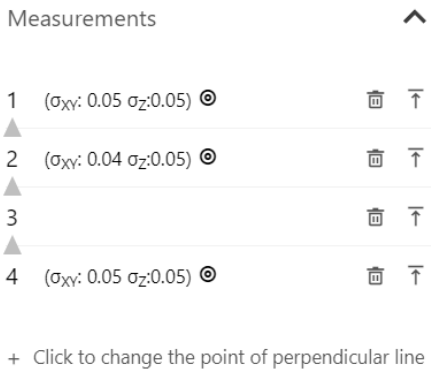
Surface (Polygon) – The Surface measurement type is used to measure a polygon. In the side panel, each clicked point is recorded, and the area and perimeter are displayed as the polygon is drawn. The distance between clicked locations is displayed on the image. Users may delete points when needed to correct mistakes, by selecting the icon.



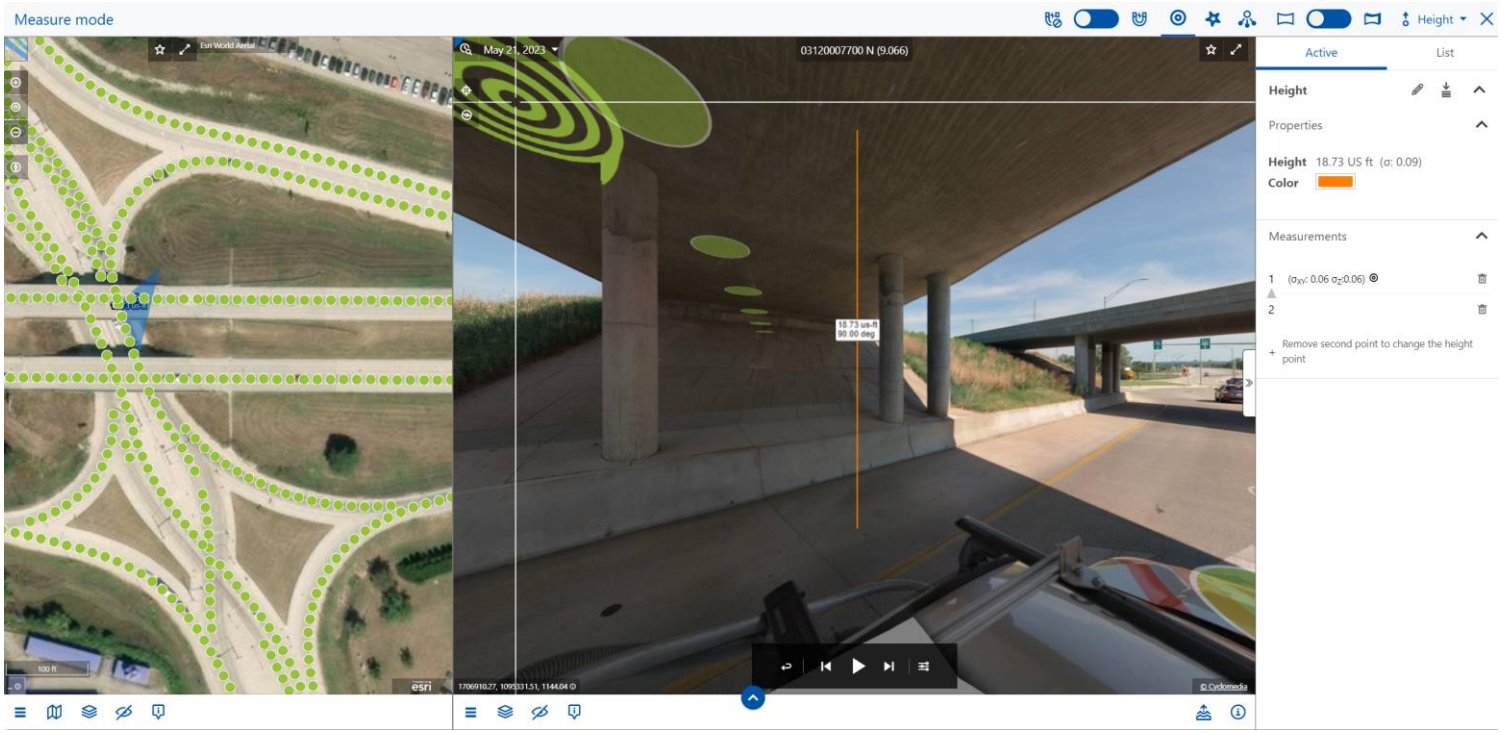


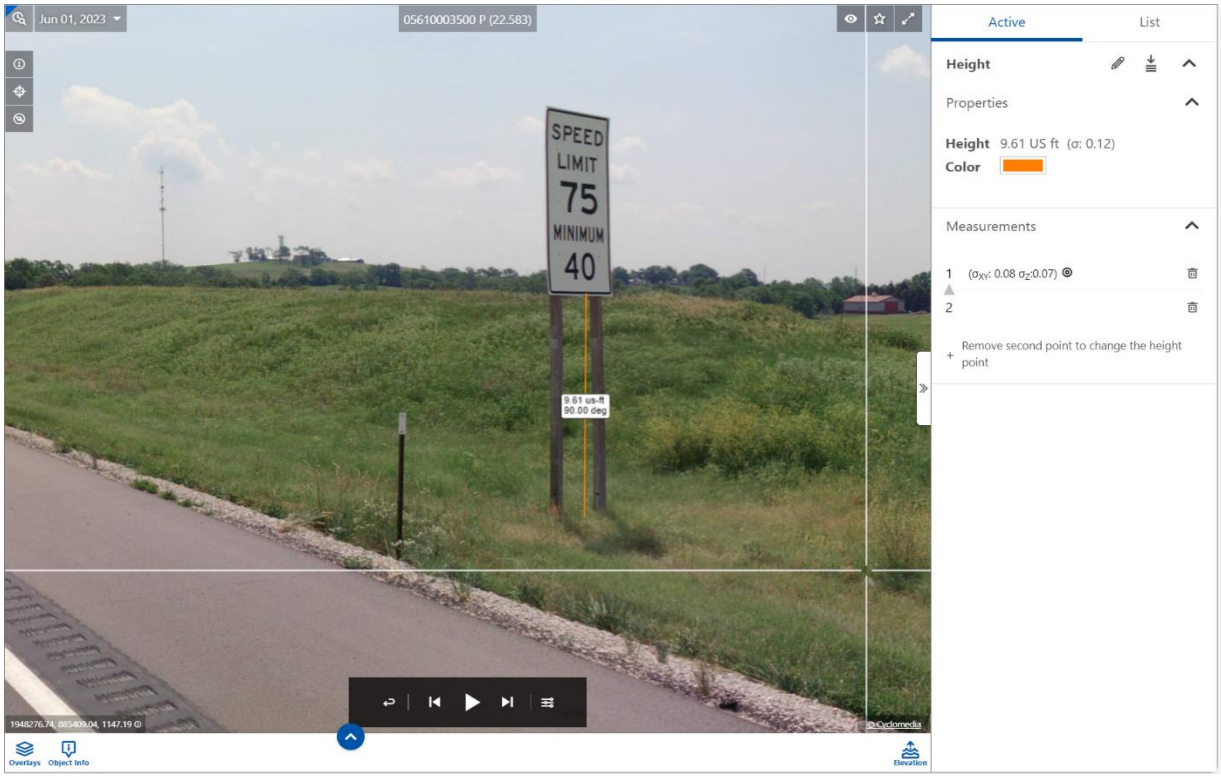
Orthogonal (Line) – Distance measurement which allows users to enter two points for a base line, then a third point to measure the distance at 90° from the base line. This is useful for ensuring straight measurements for distances such as lane and shoulder widths.





Height (Line) – The Height measurement is also a linear type of measurement which helps users accurately measure a height distance by only allowing the Z value to change between the first click and second click.

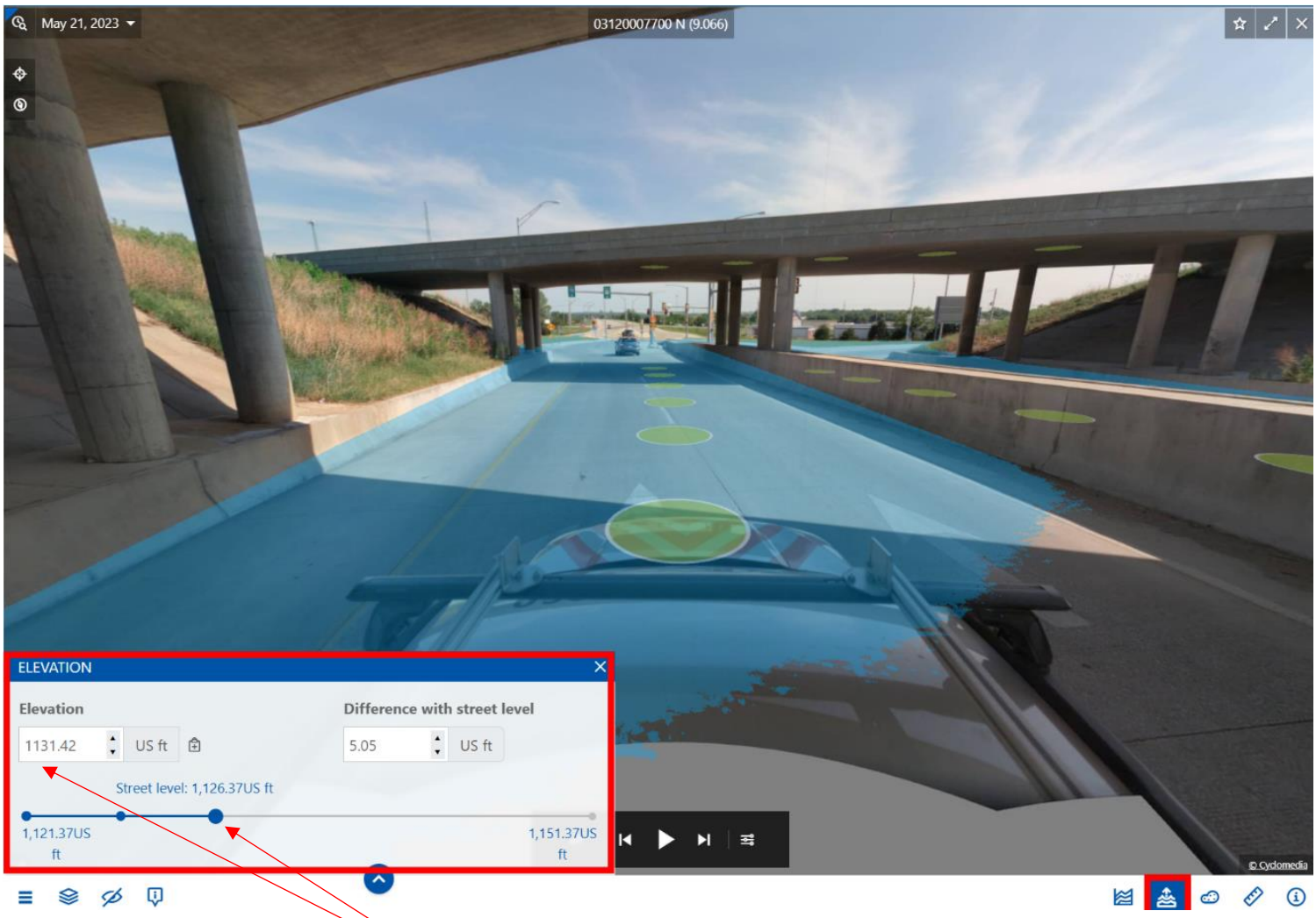




To measure a sign height, select the ground level and then select the sign.

Elevation

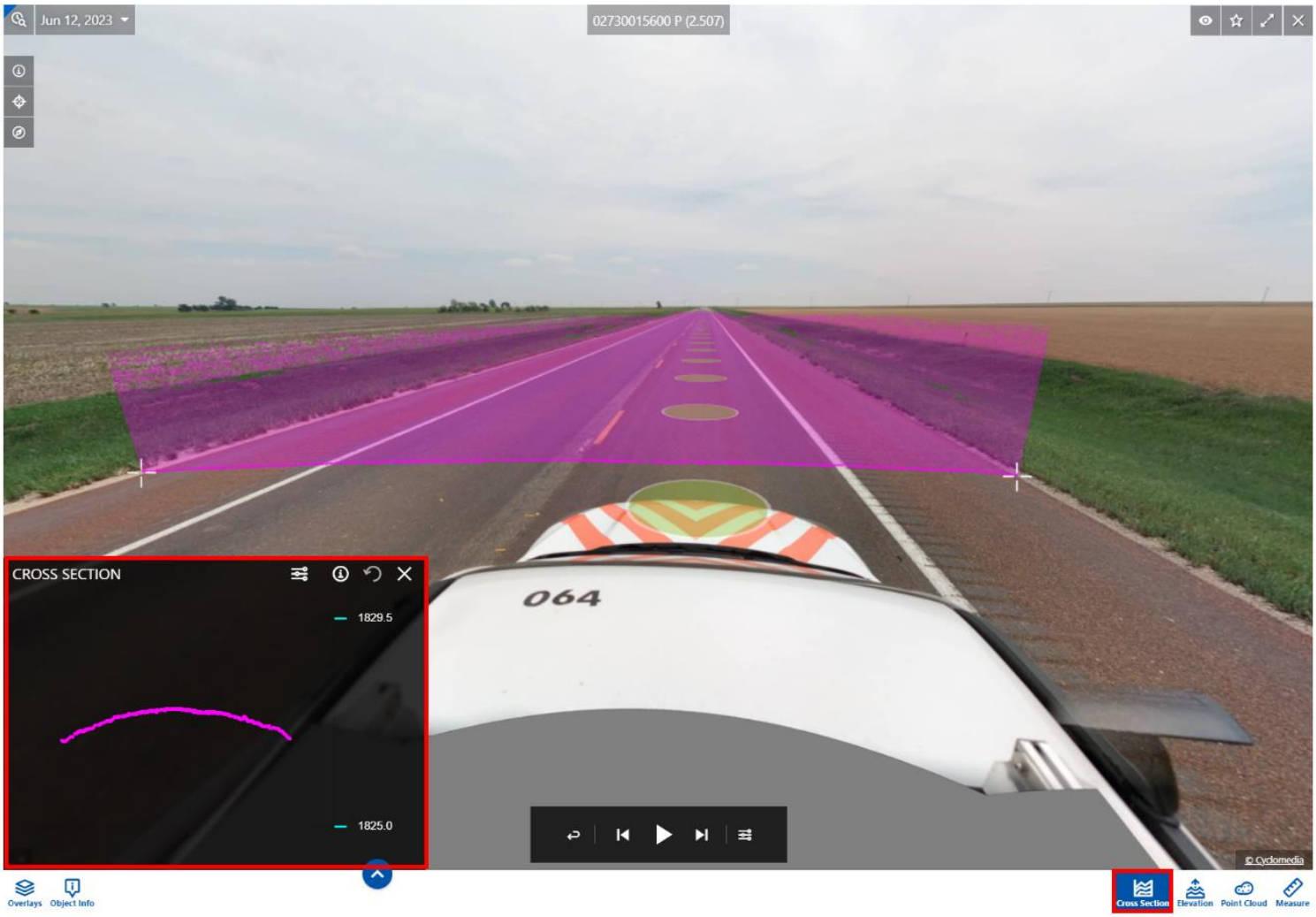
The Elevation Visibility tool, sometimes called the “flood” tool, lets you visualize different elevations and heights using color shading and a slider. When the Elevation icon is selected, a panel displays showing the current elevation and controls for the user to modify the elevation level. The slider allows the user to change the Difference with street level value. This is helpful for identifying low spots on the road where ponding may occur. The slider begins at street level at the camera location for the current image, and areas shaded in blue are below street level at the camera’s coordinate location. As the slider is moved, the difference with street level value increases or decreases with the slider. The elevation and distance values are displayed in the units configured on the Settings tab.



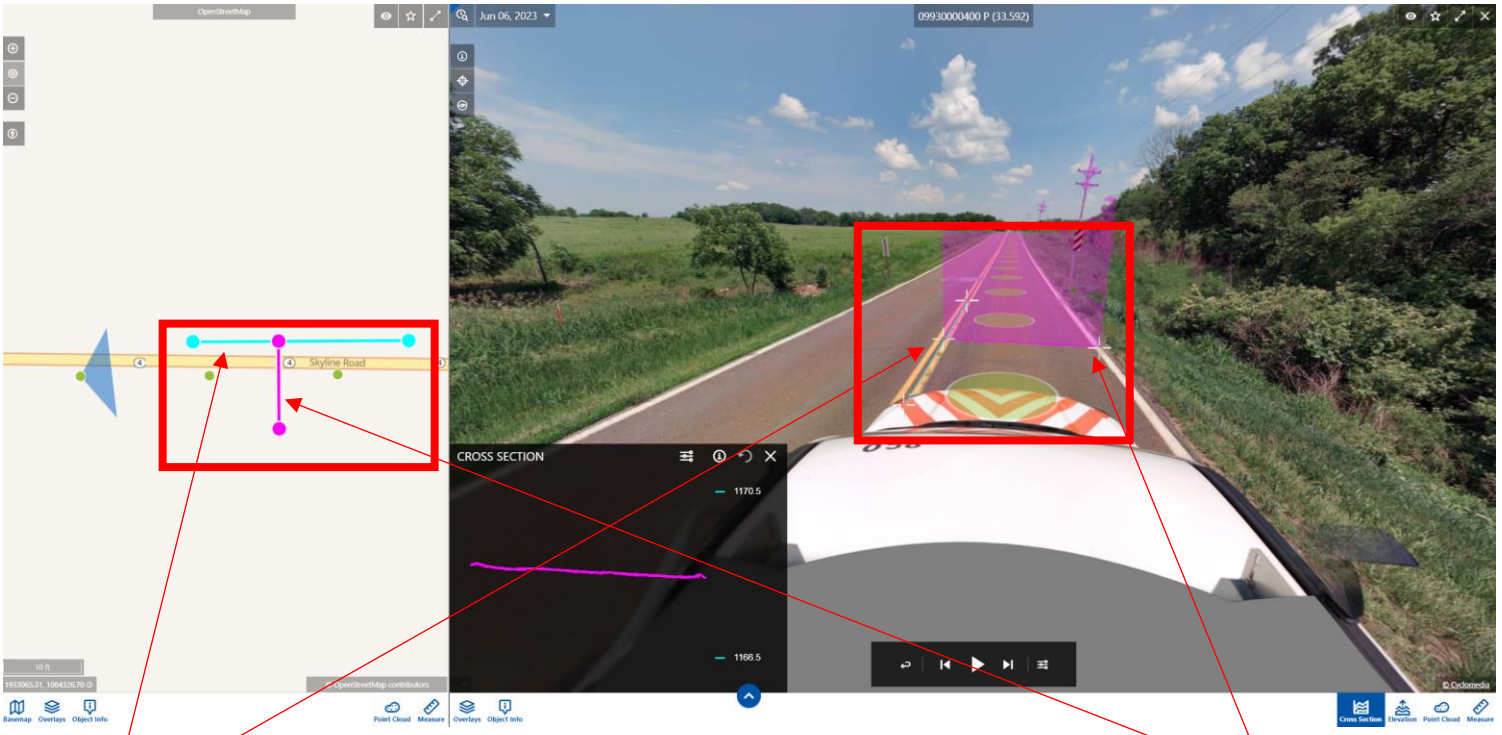
The user can control the elevation flooded below by typing in the elevation or using the slider.

Cross Sections

The Cross Section Tool allows users to select two points on the road, then visualize the elevation cross-section of a roadway within a GeoCyclorama view.



Users can turn on the “Perpendicular” setting to get specific measurements that are perpendicular to lines along the road. Select two points along the line that the cross section is going to be perpendicular to, then select the point where the cross section is measuring to.



The blue line is the perpendicular section. This should be created first.

The pink line is the cross section. This should be created second.

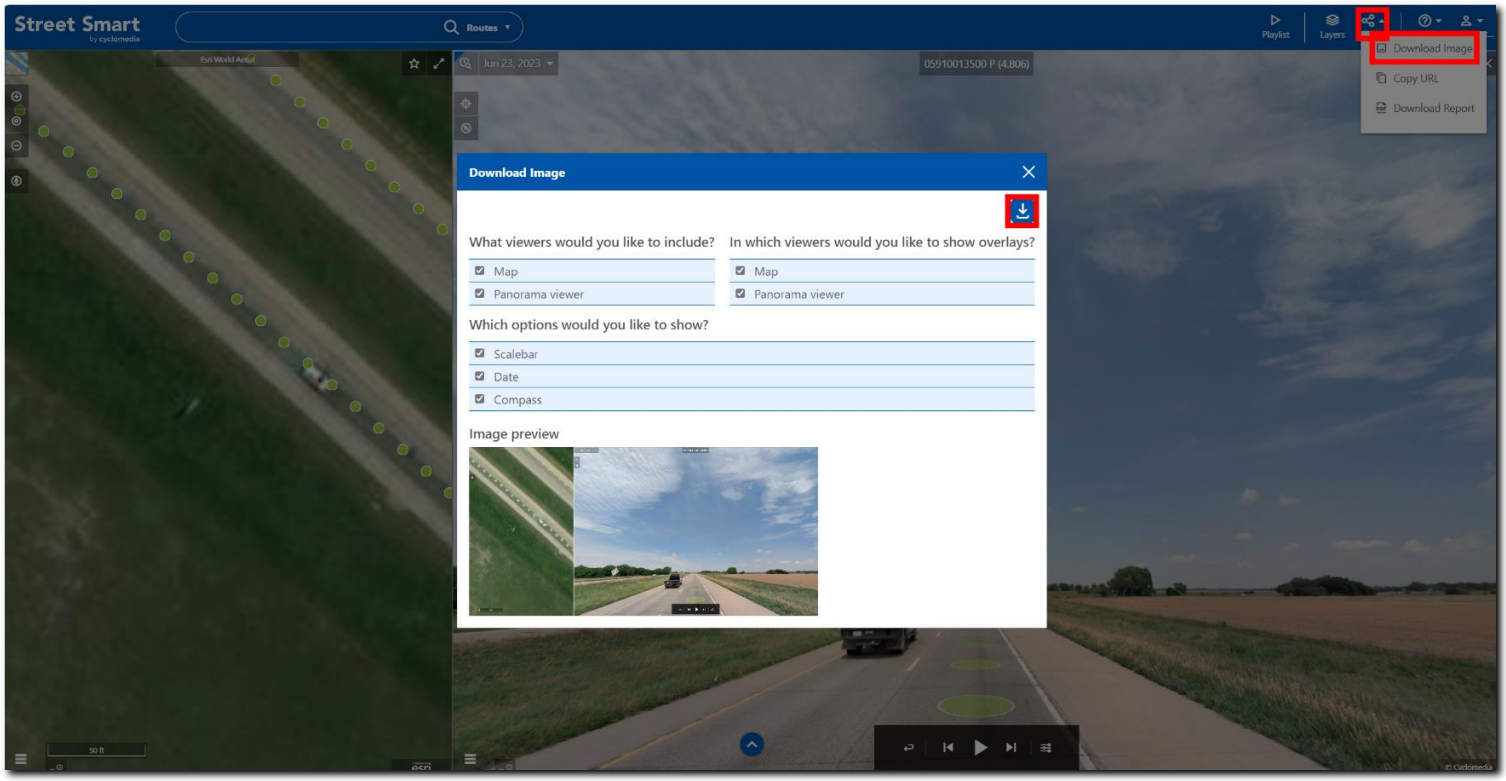
Users can click inside of the cross section to check distance, slope grade, and height difference between points. To show the slope %, select the “Slope in %” icon in the cross-section settings.

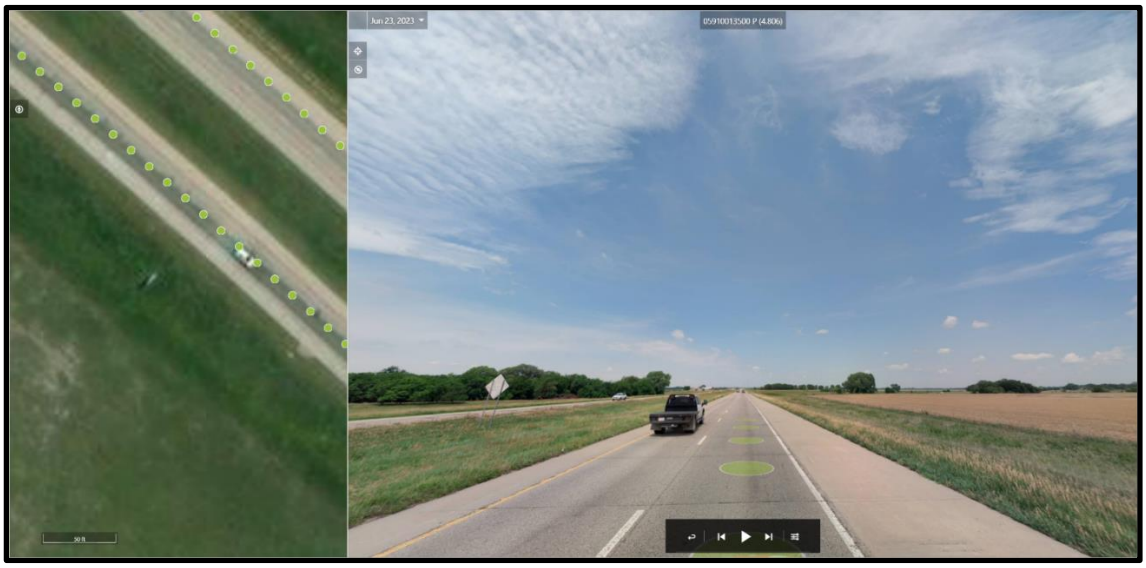

CROSS SECTION
1170.5
∠ = 3.11%
Δwidth = 6.25 US ft
Δheight = 0.10 US ft
1168.61
1166.5

Share Function

Download Image

To download an image of the current Street Smart™ screen, click Share, then “Download Image”.

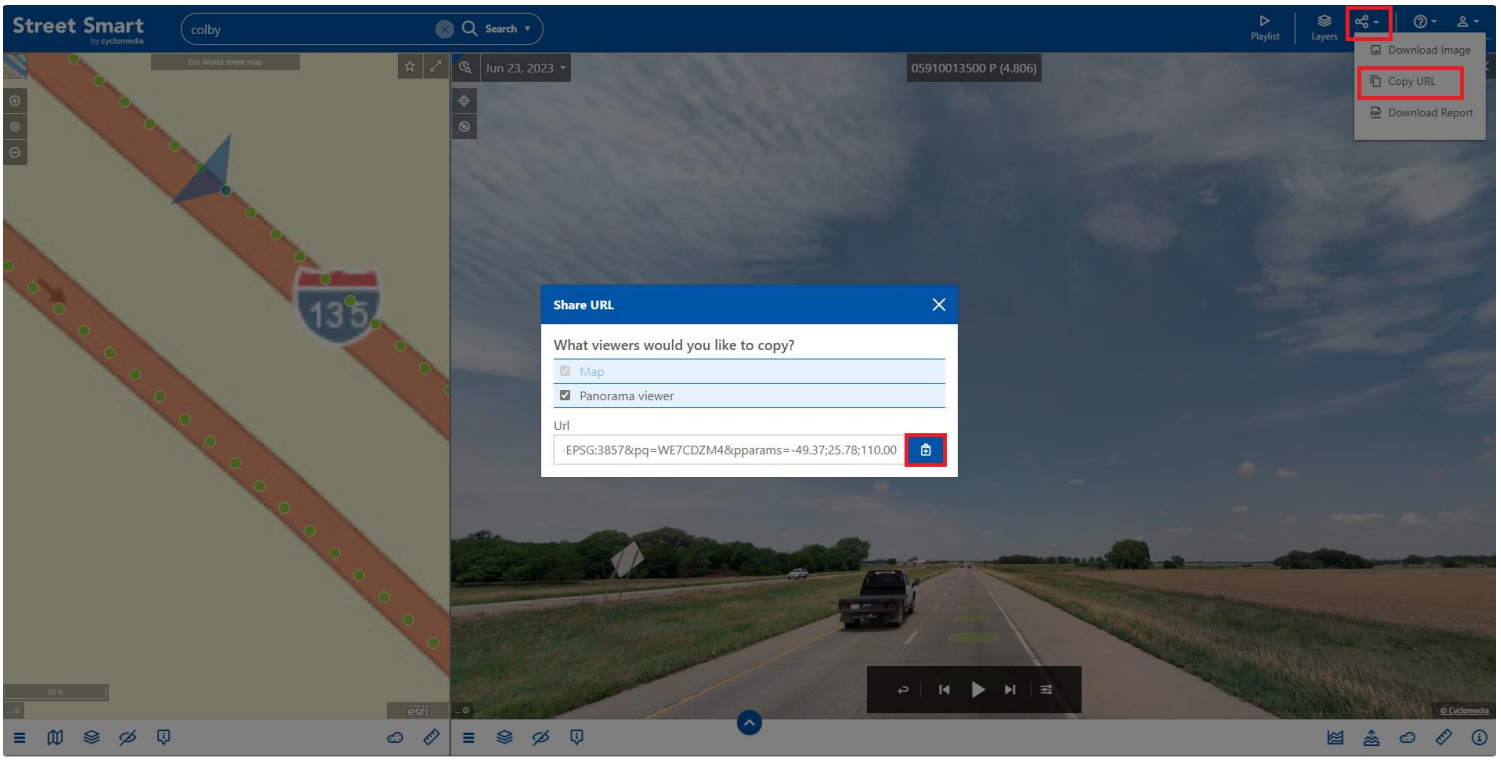




Downloaded Image

Copy URL

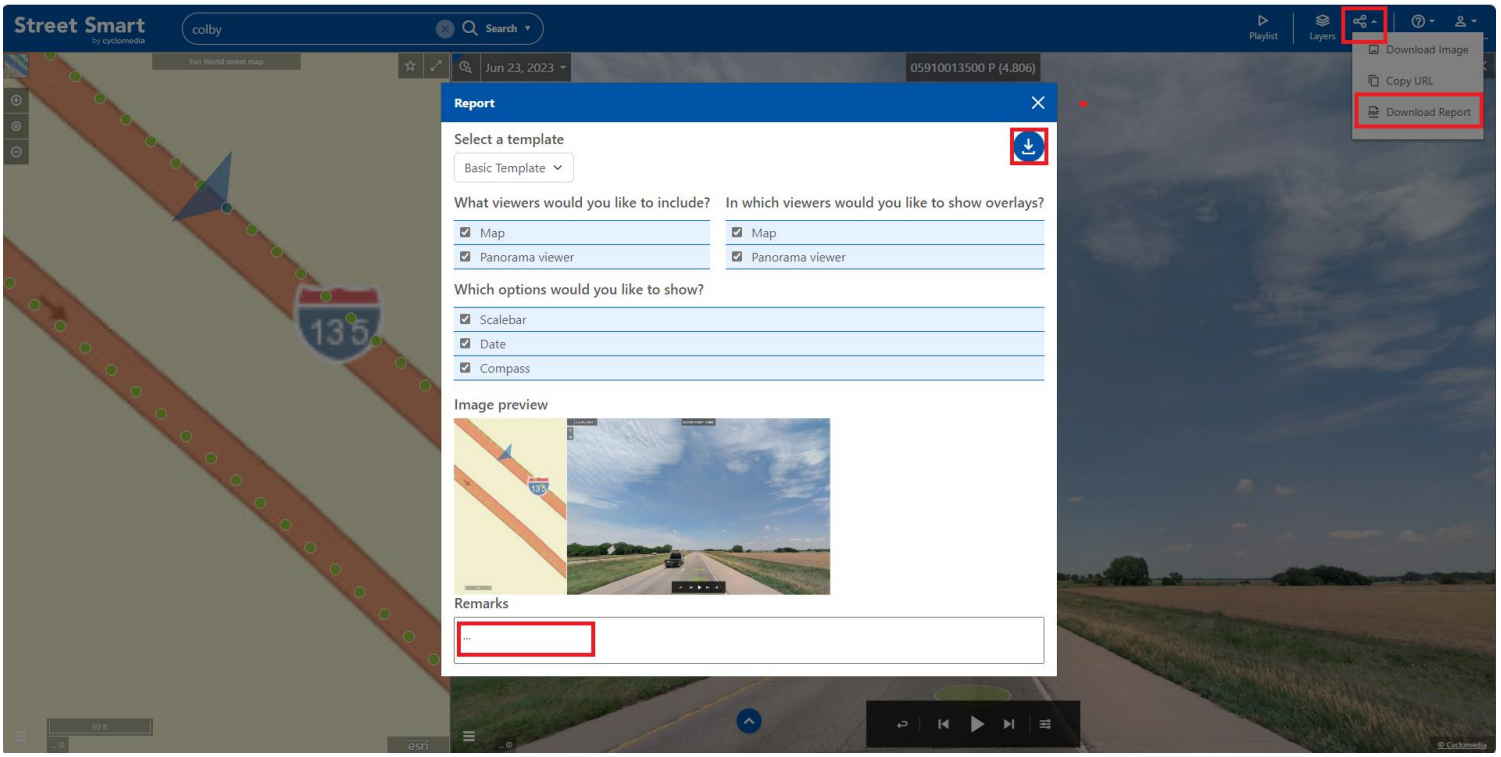
Copied URLs for Geocyclorama IDs can be shared to other users to show a specific area on Street Smart. Click the copy icon next to the Geocyclorama ID to copy to Clipboard; paste into an email or MS Teams to share with other users who can then copy and paste into the Street Smart™ Search. After selecting “Enter”, the user will go to this exact location in Street Smart™.



Example link: https://streetsmart.cyclomedia.com/streetsmart/?mq=-10854568.65;4610904.35;-10854479.37;4611041.99&msrs=EPSG:3857&pq=WE7CDZM4&pparams=313.73;4.25;110.00

Download Report

To download a report of the current Street Smart™ screen, click Share, then Download Report. Optionally check or uncheck items in the Report pane and enter Remarks. The Image preview will illustrate what will be downloaded. Click the download arrow.



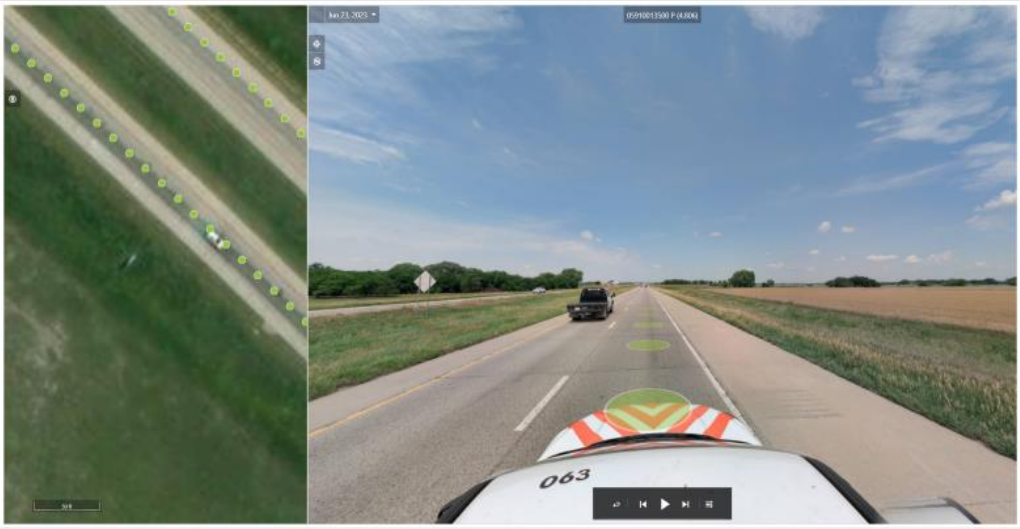
Generated Report from Street Smart™

cyclomedia

Created: Jul 10, 2024

Kansas Department of Transportation (KDOT)
gtblanchard@burnsmcd.com
Garrett Blanchard

Screen image



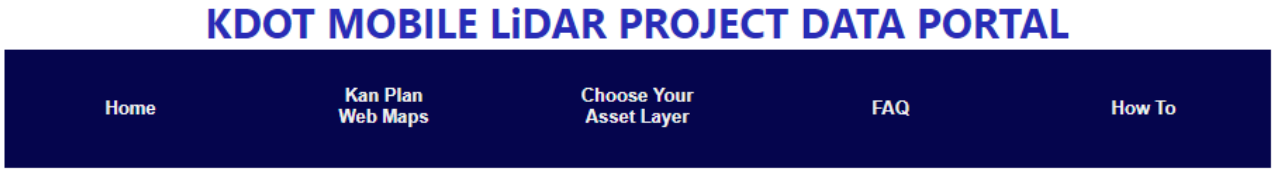
Panorama ID:
WE7CDZM4, Jun 23, 2023
Viewer link: Click here to open the link

Remarks

Test of Report Function

KDOT Mobile LiDAR Portal

The Portal Home Page is the starting point for accessing the web map, layers, dashboards, data dictionary, GIS and Spreadsheet downloads:https://www.ksdot.gov/bureaus/burTransPlan/Lidar/home.asp



LIDAR PROJECT HOME PAGE

The 2023 Kansas Department of Transportation (KDOT) Mobile LiDAR Project commissioned data collection of the Kansas State Highway System using vehicle-based LiDAR (Light Detection and Ranging) and photography. Following collection, these data were used to extract a list of deliverable geographic information systems (GIS) roadway asset datasets according to KDOT's specifications.

KDOT selected Cyclomedia to conduct the data collection and extraction, the same vendor responsible for the previous (2021) project. Data collection began on May 16th, 2023, and ended on August 27th, 2023. KDOT received the requested GIS datasets following the completion of data extraction and quality control in February 2024.

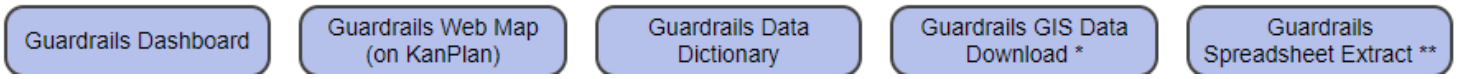
This site is devoted to making the GIS data extracts from the 2021 and 2023 projects available to KDOT staff and beyond. You can explore all the data in one place on KanPlan using the following link: KDOT Mobile LiDAR Project Web Map.

For layer-specific dashboards, web maps, feature layers, and data dictionaries, follow the links below for the applicable layer and project/year.

Asset Layer	2023 Collection Year	2021 Collection Year
Approaches	Approaches 2023 Home	Approaches 2021 Home
Billboard Faces	Billboard Faces 2023 Home	Not Collected in 2021
Gore Points	Not Collected in 2023	Gore Points 2021 Home
Guardrails	Guardrails 2023 Home	Guardrails 2021 Home
Intersections	Intersections 2023 Home	Intersections 2021 Home
Lanes and Counts	Lanes and Counts 2023 Home	Not Collected in 2021
Medians	Medians 2023 Home	Not Collected in 2021
Noise Walls	Noise Walls 2023 Home	Not Collected in 2021
Pavement Messages	Pavement Messages 2023 Home	Not Collected in 2021
Pavement Striping and Quantities	Pavement Striping and Quantities 2023 Home	Not Collected in 2021
Pavement Widths	Pavement Widths 2023 Home	Not Collected in 2021
Railroad Crossings	Railroad Crossings 2023 Home	Not Collected in 2021
Retaining Walls	Retaining Walls 2023 Home	Not Collected in 2021
Rumble Strips	Not Collected in 2023	Rumble Strips 2021 Home
Sidewalks	Sidewalks 2023 Home	Not Collected in 2021
Shoulders - Paved	Paved Shoulders 2023 Home	Shoulders (Paved and Unpaved) 2021 Home
Shoulders - Unpaved	Not Collected in 2023	Shoulders (Paved and Unpaved) 2021 Home
Sign Faces	Sign Faces 2023 Home	Sign Faces 2021 Home
Vertical Clearances	Vertical Clearances 2023 Home	Vertical Clearances 2021 Home

Please visit the How To page for instructional videos, a quick start guide, frequently asked questions (FAQ), instructions for downloading GIS data layers in common formats and links to spreadsheet/tabular extracts of the GIS data.

By selecting a layer name, users will be taken to that layer's home page. From that page, the user can learn more information about the layer as well as quick links.



Data Dictionary

The data dictionary in the Mobile LiDAR Portal provides further information regarding each feature that was collected. See the below list of data dictionaries for reference. Data Dictionaries can also be accessed through the Asset Layer pages on the Lidar Project Home Page:
https://www.ksdot.gov/bureaus/burTransPlan/Lidar/2023/Layers.asp

Example of Data Dictionary View

Guardrails Data Dictionary

- **Feature Type:** Polyline.
- See the home page for this layer for more information, including rules for feature placement. Guardrails Home Page

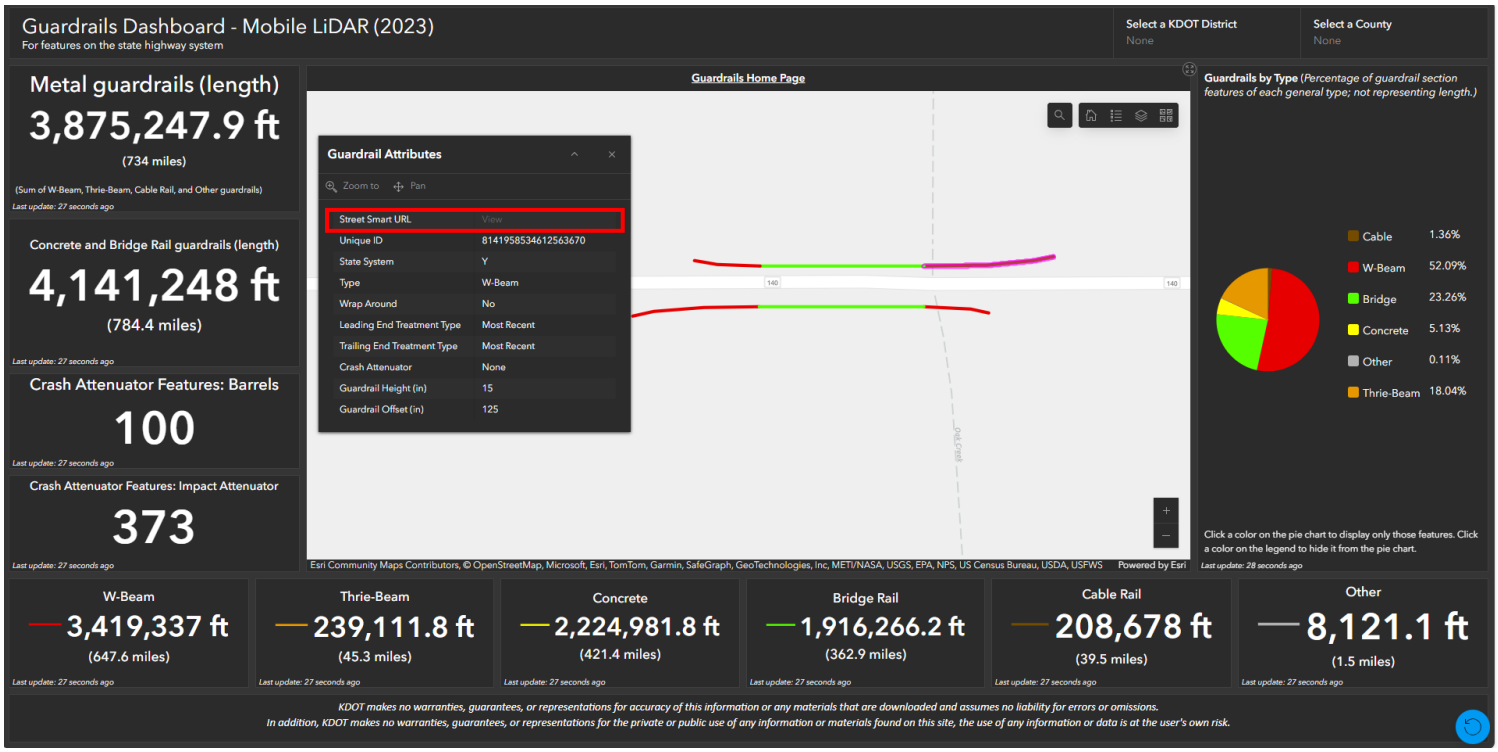
Field Name	Alias	Alias	Data Type	Domain Values	Description
UniqueID	Unique ID	text (255)			Unique ID for this feature type.
RouteID	Route ID	text (255)			KDOT's LRS route the guardrail feature is on.
FromMeasure	From Measure	double			From (beginning) measure based on KDOT's LRS Network.
ToMeasure	To Measure	double			To (ending) measure based on KDOT's LRS Network.
RouteDirection	Route Direction	short integer with domain		• Inventory (1) • Non-inventory (2)	*Intended for use by KDOT GIS Staff:* *Direction of travel for the guardrail feature.* *This field follows the same principles as the Exposure field that is delivered within Sign/Billboard Faces. See Diagram within Relative Position sheet.*
SideOfRoad	Side of Road	short integer with domain		• Left (1) • Right (2)	Side of road relative to Inventory direction for single carriageways and direction of travel for dual carriageways.

Dashboards

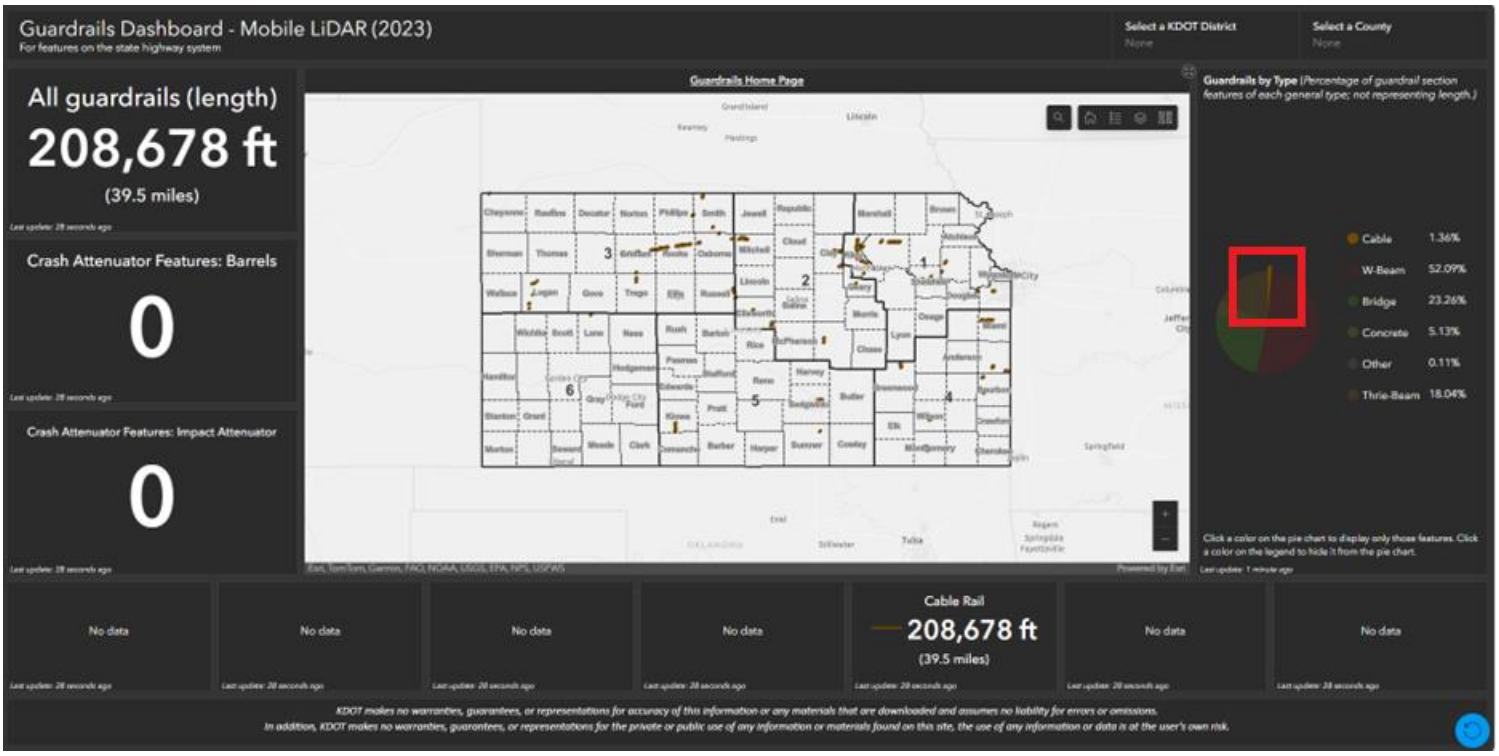
Dashboards are available for every Asset Layer and are accessible through the KDOT Mobile Lidar Project Data Portal page: LiDAR Home (ksdot.gov). Below is an example of the Dashboard for the Guardrails Layer.

https://ksdot.maps.arcgis.com/apps/dashboards/baadd3ebcefb4437b05475d3229c8768

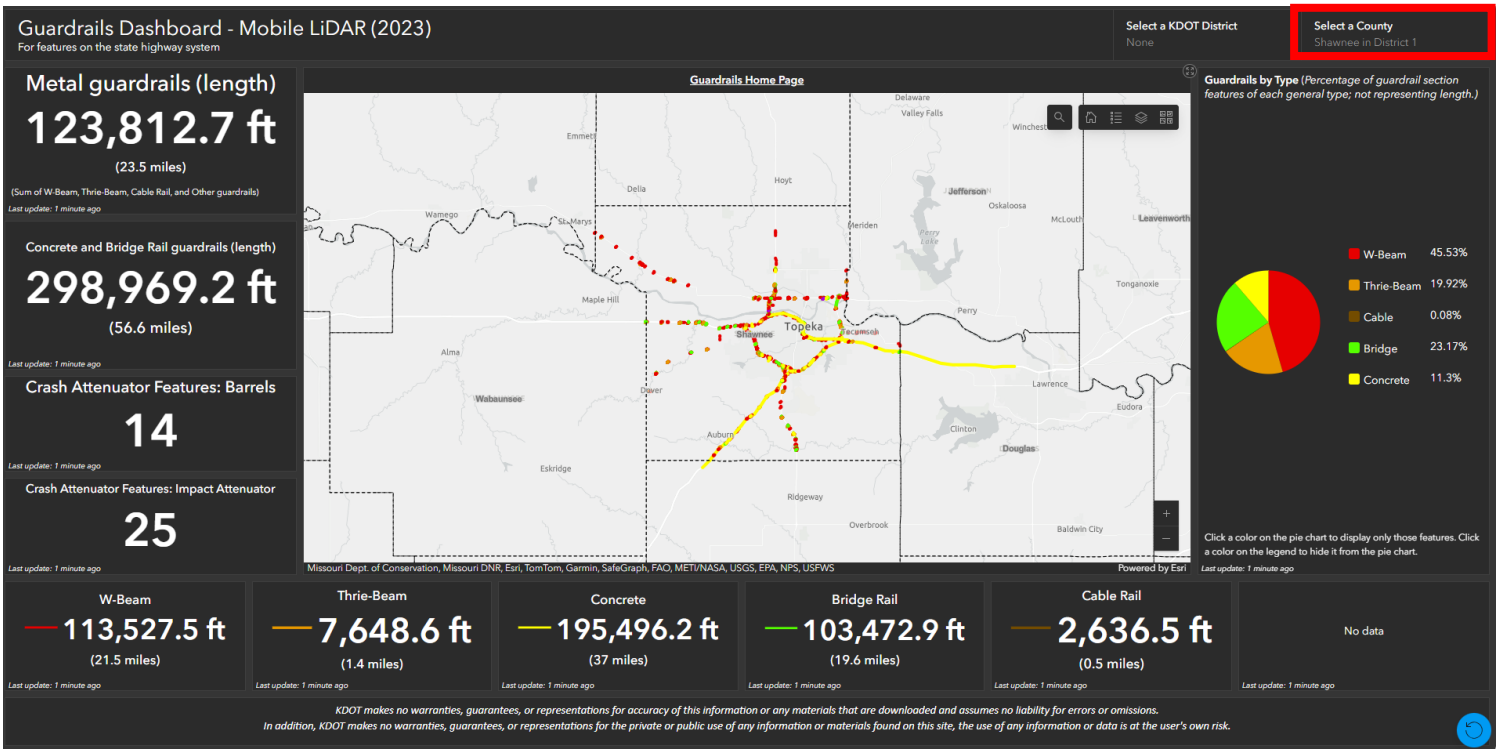
Screen shot of Guardrails Dashboard zoomed to a selected guardrail, with popup showing how to get to Street Smart location by clicking "View".

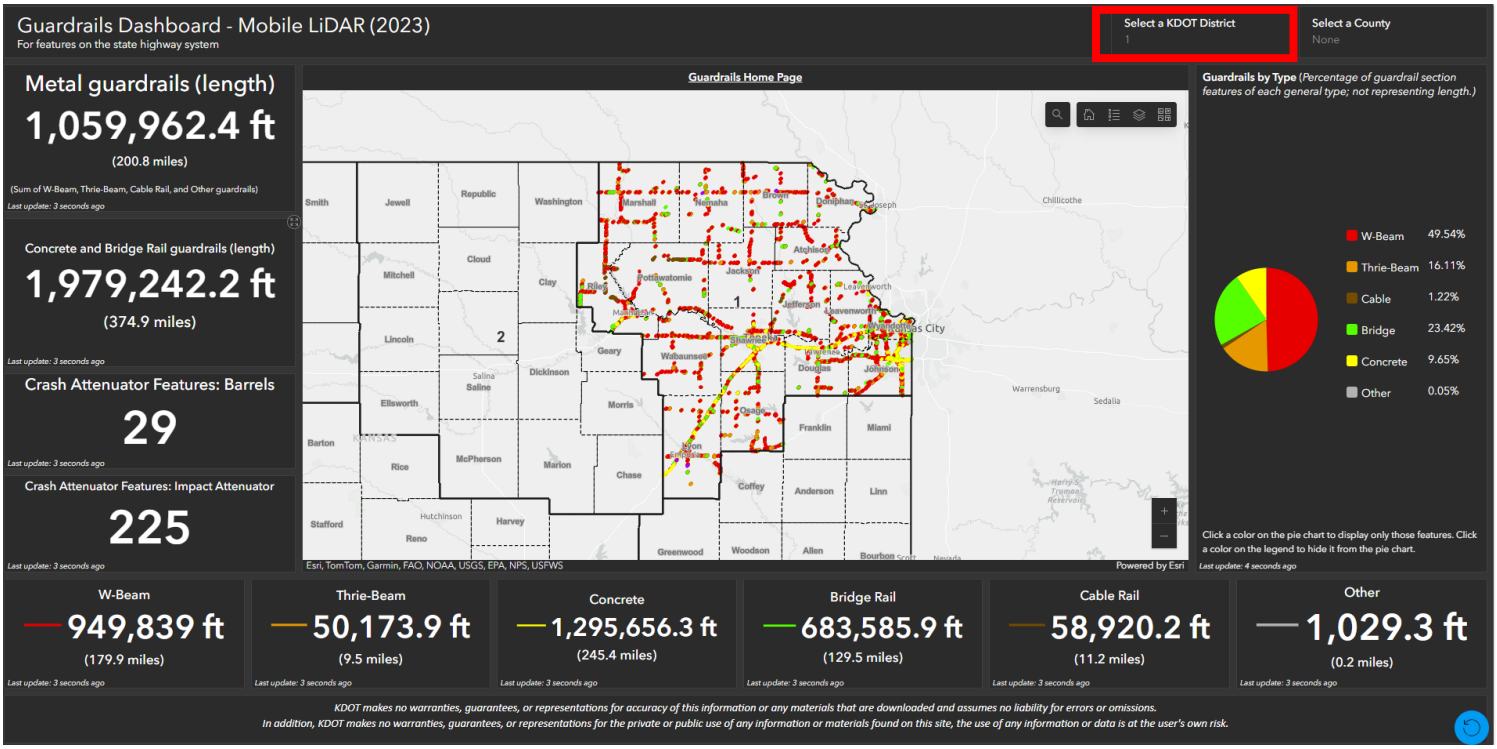


Screen shot of Guardrails Dashboard filtered by Cable guardrail type. To do this, select the pie chart section that you would want to see.



Screenshots of Guardrails Dashboard filtered by Shawnee County in District 1. This can be filtered by clicking the KDOT District and County.




Guardrails Dashboard - Mobile LiDAR (2023)
For features on the state highway system
Select a KDOT District
1
Select a County
None
Metal guardrails (length)
1,059,962.4 ft
(200.8 miles)
(Sum of W-Beam, Thrie-Beam, Cable Rail, and Other guardrails)
Last update: 3 seconds ago
Concrete and Bridge Rail guardrails (length)
1,979,242.2 ft
(374.9 miles)
Last update: 3 seconds ago
Crash Attenuator Features: Barrels
29
Last update: 3 seconds ago
Crash Attenuator Features: Impact Attenuator
225
Last update: 3 seconds ago
Guardrails Home Page
Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USFWS
Powered by Esri
Guardrails by Type (Percentage of guardrail section features of each general type; not representing length.)
W-Beam 49.54%
Thrie-Beam 16.11%
Cable 1.22%
Bridge 23.42%
Concrete 9.65%
Other 0.05%
Click a color on the pie chart to display only those features. Click a color on the legend to hide it from the pie chart.
Last update: 4 seconds ago
W-Beam
949,839 ft
(179.9 miles)
Thrie-Beam
50,173.9 ft
(9.5 miles)
Concrete
1,295,656.3 ft
(245.4 miles)
Bridge Rail
683,585.9 ft
(129.5 miles)
Cable Rail
58,920.2 ft
(11.2 miles)
Other
1,029.3 ft
(0.2 miles)
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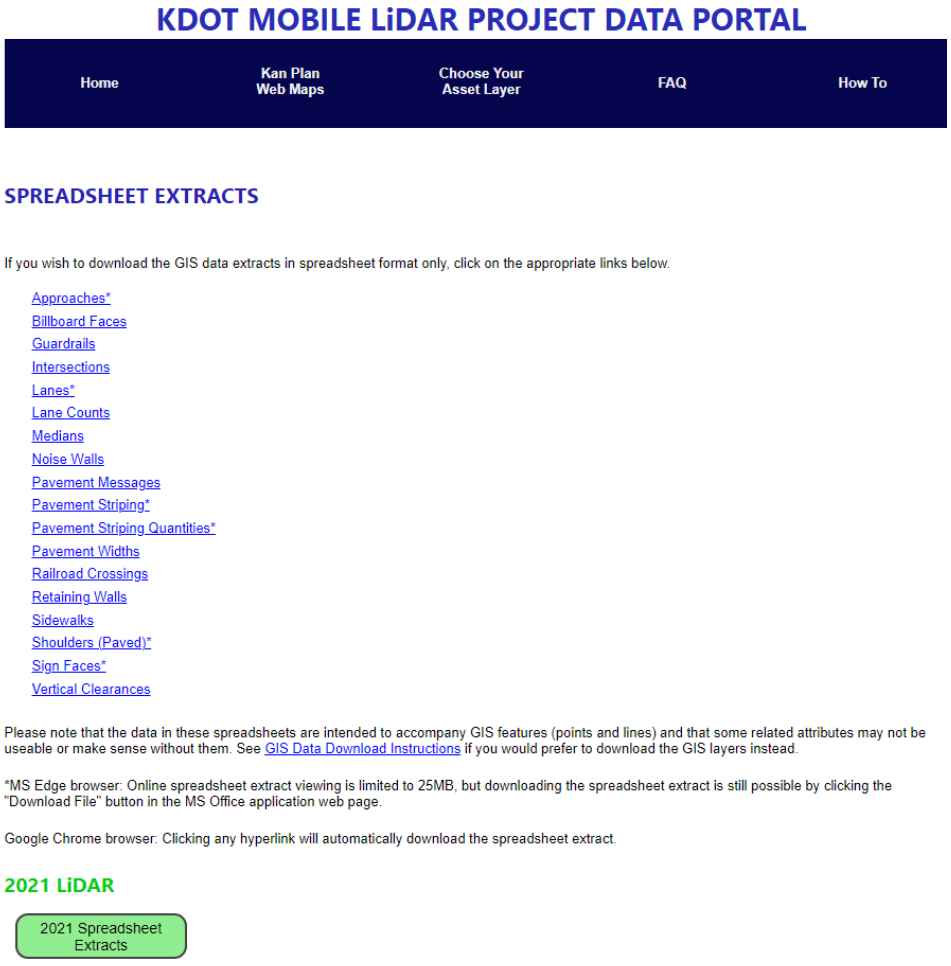
In addition, KDOT makes no warranties, guarantees, or representations for the private or public use of any information or materials found on this site, the use of any information or data is at the user's own risk.

Spreadsheet Extracts

Data extracted for each of the feature layers is also available in spreadsheet format. The spreadsheets can be accessed and downloaded from the Layer's Home Page or from the Spreadsheet Extracts Page: https://www.ksdot.gov/bureaus/burTransPlan/Lidar/2023/spreadsheets.asp



KDOT MOBILE LiDAR PROJECT DATA PORTAL

Home | Kan Plan Web Maps | Choose Your Asset Layer | FAQ | How To

SPREADSHEET EXTRACTS

If you wish to download the GIS data extracts in spreadsheet format only, click on the appropriate links below.

Approaches*
Billboard Faces
Guardrails
Intersections
Lanes*
Lane Counts
Medians
Noise Walls
Pavement Messages
Pavement Striping*
Pavement Striping Quantities*
Pavement Widths
Railroad Crossings
Retaining Walls
Sidewalks
Shoulders (Paved)*
Sign Faces*
Vertical Clearances

Please note that the data in these spreadsheets are intended to accompany GIS features (points and lines) and that some related attributes may not be useable or make sense without them. See GIS Data Download Instructions if you would prefer to download the GIS layers instead.

*MS Edge browser: Online spreadsheet extract viewing is limited to 25MB, but downloading the spreadsheet extract is still possible by clicking the "Download File" button in the MS Office application web page.

Google Chrome browser: Clicking any hyperlink will automatically download the spreadsheet extract.

2021 LiDAR

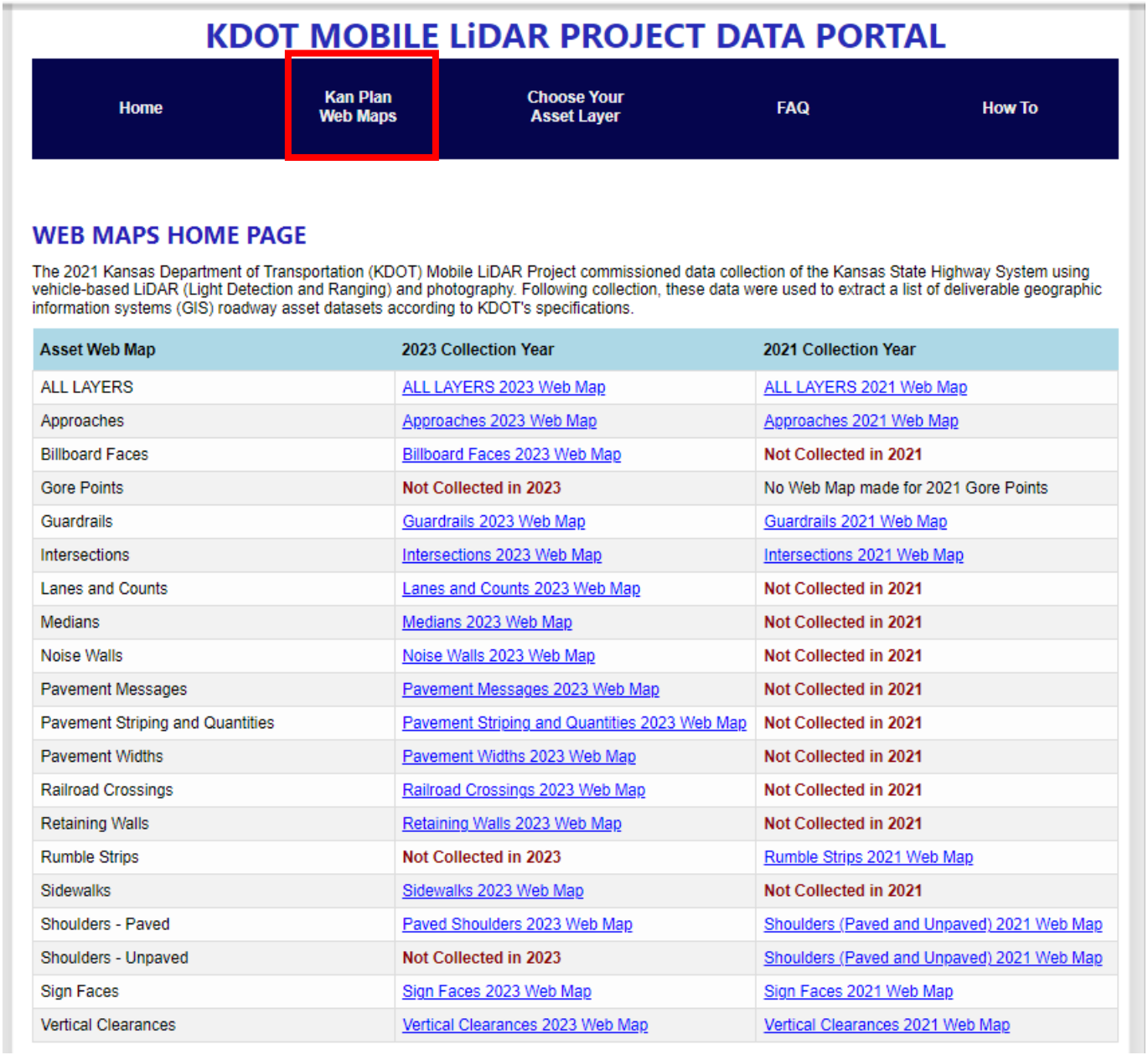
2021 Spreadsheet Extracts

Example of Spreadsheet Format

OBJECTI	Unique ID	Intersection Type	Location Identifier for Road 1 Crossing Point	Road 1 Name	Mile Measure for Road 1 Crossing Point	Location Identifier for Road 2 Crossing Point	Road 2 Name	Mile Measure for Road 2 Crossing Point	Location Identifier for Road 3 Crossing Point
1	1181912800917270514	Roadway/Roadway	08120002400		28.84673	08120002401		28.85226	08150382800
2	4762228325830516794	Roadway/Roadway	08120002400		28.98843	08120002401		28.99392	08150383000
3	4967020522917881608	Roadway/Roadway	08120002400		29.20125	08120002401		29.20685	08150382600
4	1284779827144811313	Roadway/Roadway	08120002400		29.28137	08120002401		29.28690	0816008030000
5	5118684700042597460	Roadway/Roadway	08120002400		29.46468	08120002401		29.47017	0816008030000
6	4463358087032955611	Roadway/Roadway	08120002400		29.69635	08120002401		29.70555	08150383300
7	7123566044485295358	Roadway/Roadway	08120002400		29.78988	0816006430000		0.00007	
8	5157751953950655277	Roadway/Roadway	08120002400		29.86632	08120002401		29.87413	08150382500
9	8556874326307315968	Roadway/Roadway	08120002400		30.17225	08120002401		30.18094	08150383100
10	5918521857135377864	Roadway/Roadway	08120002400		30.31708	08120002401		30.32522	08150382001
11	5376634816899188761	Roadway/Roadway	08120002400		30.48522	08120002401		30.49491	08150381400
12	6501022834960201626	Roadway/Roadway	08120002400		30.66549	0817011320003		0.01232	
13	990580001353665696	Roadway/Roadway	08120002400		30.84876	08120002401		30.85760	07550381000
14	5700482845742712448	Roadway/Roadway	07520002401		0.00000	08120002400		31.01923	08130017700
15	8524163933076398520	Roadway/Roadway	08130001801		11.27242	08130017701		7.97344	081300018C001
16	8948472514580386641	Roadway/Roadway	08130001800		11.08208	08130001801		11.09326	
17	4359732873585137620	Roadway/Roadway	08130001800		10.96367	0816000240002		0.56894	
18	4467521610688905557	Roadway/Roadway	08130001800		10.87517	08150382900		0.00068	0816000290004
19	8293787105263868567	Roadway/Roadway	08130001800		10.78816	0816000360002		0.35660	

KanPlan Web Map

Web maps for each or all layers can be access from the KanPlan Web Maps from the ribbon at the top of the LiDAR Portal Home page or from the following direct link:
https://www.ksdot.gov/bureaus/burTransPlan/Lidar/2023/WebMaps.asp



KDOT MOBILE LiDAR PROJECT DATA PORTAL

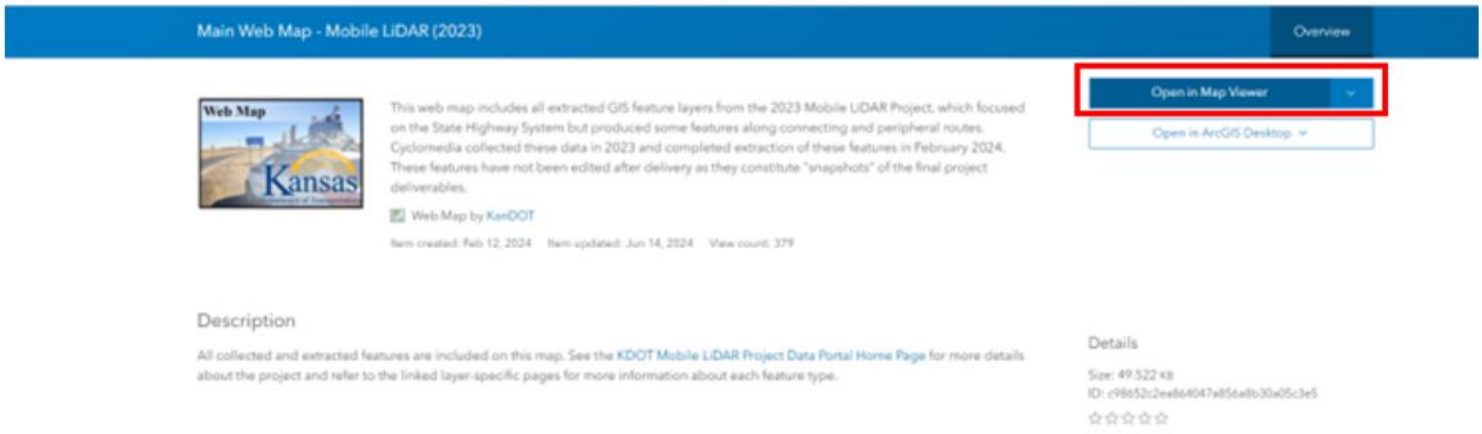
Home | Kan Plan Web Maps | Choose Your Asset Layer | FAQ | How To

WEB MAPS HOME PAGE

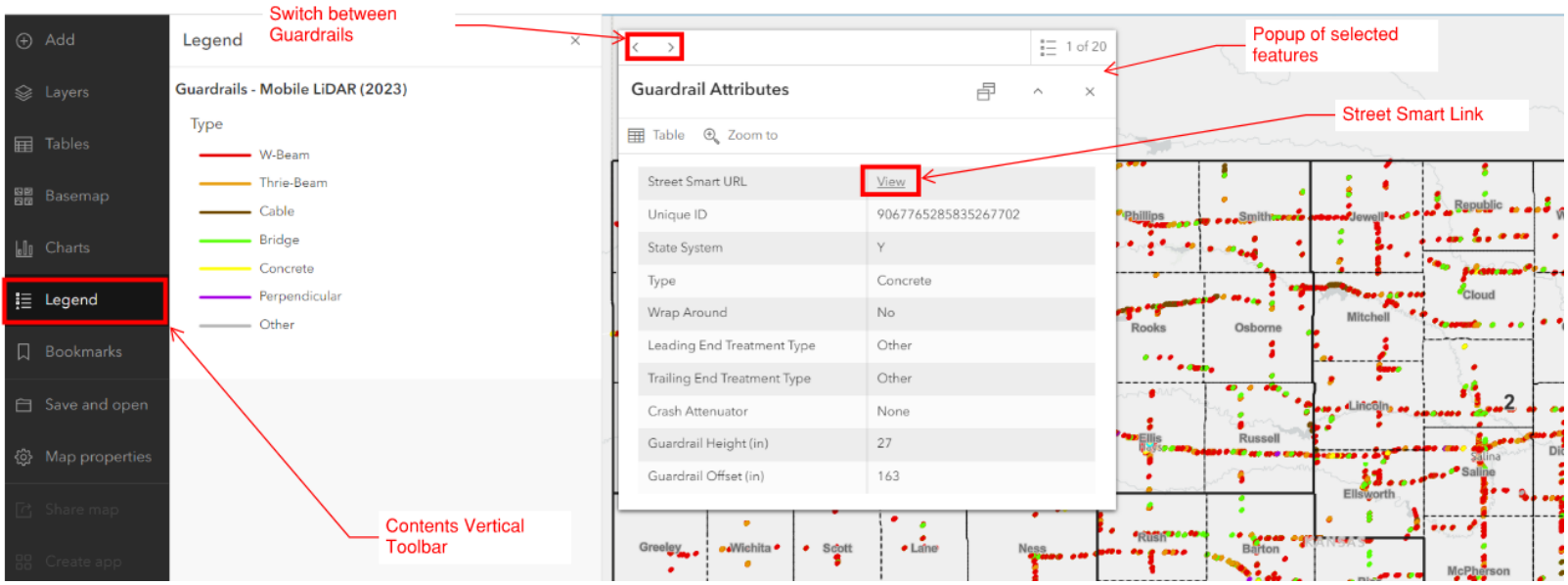
The 2021 Kansas Department of Transportation (KDOT) Mobile LiDAR Project commissioned data collection of the Kansas State Highway System using vehicle-based LiDAR (Light Detection and Ranging) and photography. Following collection, these data were used to extract a list of deliverable geographic information systems (GIS) roadway asset datasets according to KDOT's specifications.

Asset Web Map	2023 Collection Year	2021 Collection Year
ALL LAYERS	ALL LAYERS 2023 Web Map	ALL LAYERS 2021 Web Map
Approaches	Approaches 2023 Web Map	Approaches 2021 Web Map
Billboard Faces	Billboard Faces 2023 Web Map	Not Collected in 2021
Gore Points	Not Collected in 2023	No Web Map made for 2021 Gore Points
Guardrails	Guardrails 2023 Web Map	Guardrails 2021 Web Map
Intersections	Intersections 2023 Web Map	Intersections 2021 Web Map
Lanes and Counts	Lanes and Counts 2023 Web Map	Not Collected in 2021
Medians	Medians 2023 Web Map	Not Collected in 2021
Noise Walls	Noise Walls 2023 Web Map	Not Collected in 2021
Pavement Messages	Pavement Messages 2023 Web Map	Not Collected in 2021
Pavement Striping and Quantities	Pavement Striping and Quantities 2023 Web Map	Not Collected in 2021
Pavement Widths	Pavement Widths 2023 Web Map	Not Collected in 2021
Railroad Crossings	Railroad Crossings 2023 Web Map	Not Collected in 2021
Retaining Walls	Retaining Walls 2023 Web Map	Not Collected in 2021
Rumble Strips	Not Collected in 2023	Rumble Strips 2021 Web Map
Sidewalks	Sidewalks 2023 Web Map	Not Collected in 2021
Shoulders - Paved	Paved Shoulders 2023 Web Map	Shoulders (Paved and Unpaved) 2021 Web Map
Shoulders - Unpaved	Not Collected in 2023	Shoulders (Paved and Unpaved) 2021 Web Map
Sign Faces	Sign Faces 2023 Web Map	Sign Faces 2021 Web Map
Vertical Clearances	Vertical Clearances 2023 Web Map	Vertical Clearances 2021 Web Map

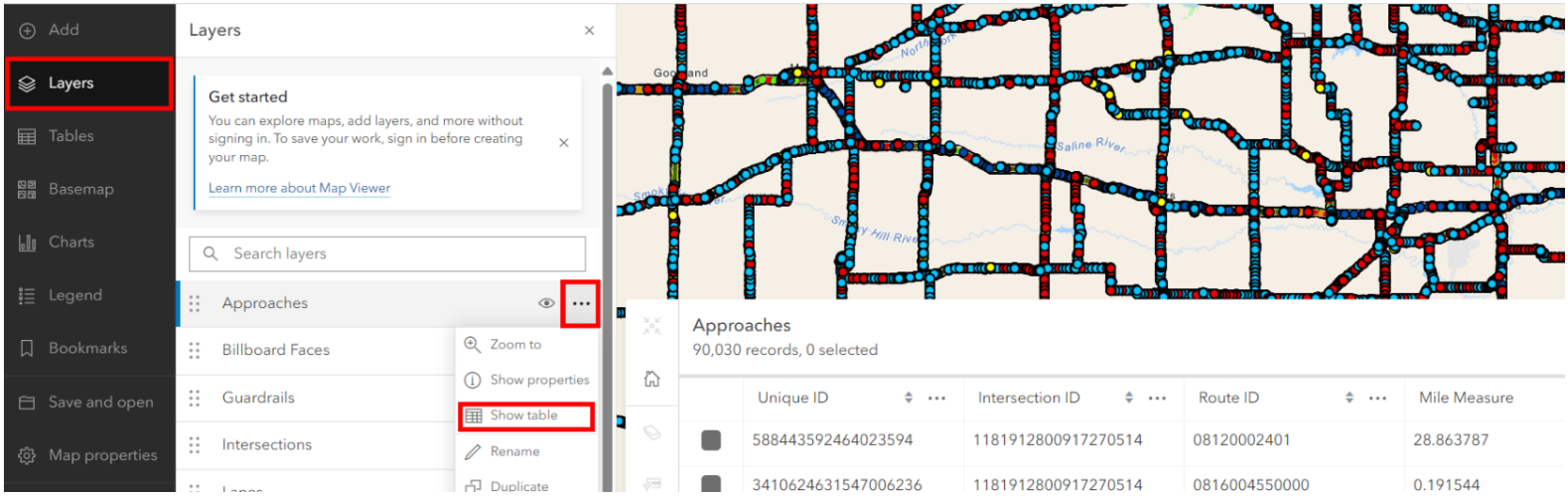
Screenshot of Main Web Map - Mobile LiDAR (2023) Information Page. Open in Map Viewer.



Web Map showing the Legend. Click on the map to get the feature Popup. "View" is the hyperlink to the Street Smart™ location. Scroll through the selected features using the < and > in the popup.



KanPlan Web Map with Layers selection and “Show Table” opened for Approaches. By adding checkmark in table row, the feature is highlighted in the map.



To apply a Filter in a Web Map, select the layer in the Layers Content list on the left. Then select the “Filter” tool in the Settings Toolbar on the right and click “Add expression.” The Expression dropdown lists will be catered for the layer chosen for Field list and Value list. Click “Save” to apply the filter. To remove the filter, click the garbage can next to “Remove Filter” and confirm in this Filter tool.