Impulse Geophysics

Online Roadshow Instruction Manual

June 2025

Rev 3

Specialists in high-speed, non-destructive surveying of transport networks.

With emphasis on Impulse Radar and Digital Video Technique

Quality Information

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Revision History

Revision	Revision Date	Details	Authorised	Name	Position
1	15/03/24	1st Edition	DB	Dan Bridgman	Project Manager
2	07/08/24	Version 2	DB	Dan Bridgman	Project Manager
3	01/06/2025	Socotec Branding Added	DB	Dan Bridgman	Project Manager

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Table of Contents

1. Introduction

Impulse Geophysics Limited has been a leading supplier of Video and GPR to the transport sector for over 25 years.

As times have evolved Impulse Geophysics has listened to the needs of its clients and developed an online, easy access and convenient tool for displaying and querying their data.

2. Getting Started

Impulse Geophysics Online Roadshow has been designed so that it can be accessed by anyone, anywhere.

Compatibility

Online Roadshow is supported by the following browsers:

- Google Chrome
- Apple Safari
- Microsoft Edge

*Microsoft Edge is recommended.

The above list applies to Desktop and Mobile versions.

Please not the Mobile Versions may be not include the full list of features.

Opening a Survey

You will have been provided with the following:

- URL
- Username
- Password

1) Open your chosen browser and type in the provided URL into the address bar.
2) Once loaded you will be greeted by a login screen. You will see the Project name and also two blank boxes for Username and Password. *The Username is not case sensitive, but the password is*.
3) Once you have entered the Username and Password click “Log in”
4) You will then be greeted by an Overview map of your survey.

3. Overview Map

Navigating the Map

The Overview map provides a view of the entire survey and the associated background mapping.

Resetting the Map

You can reset the map at any time by clicking the “Reset” button at the top of the Map window. The button looks like this:

Scrolling and navigating

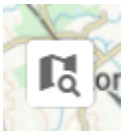
This is done by a Left-Click and hold and then physically dragging the map.

Zooming in and Out

This can be done using the zoom tools in the top left of the map window or my using the scroll wheel on your mouse.

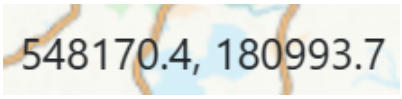
The zoom buttons on the map window can be seen below:

You can also Zoom all the way out to the full map extents by pressing the button in the top left of the map window. Button shown below:



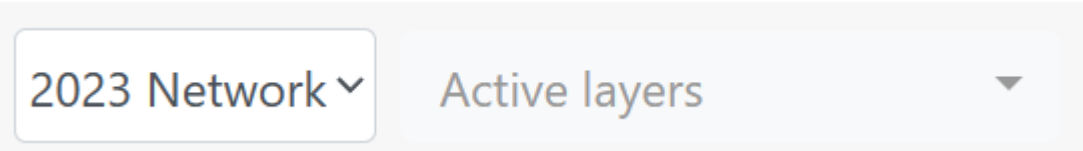
Eastings and Northing

This can be seen in the top right corner of the map and changes as you move around

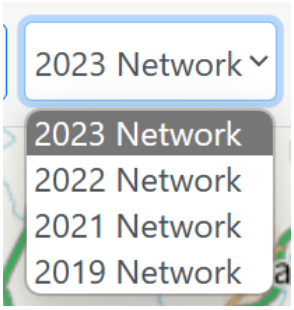


Survey Layers and Active Layers

In the top corner of the Map element you have a series of dropdowns.

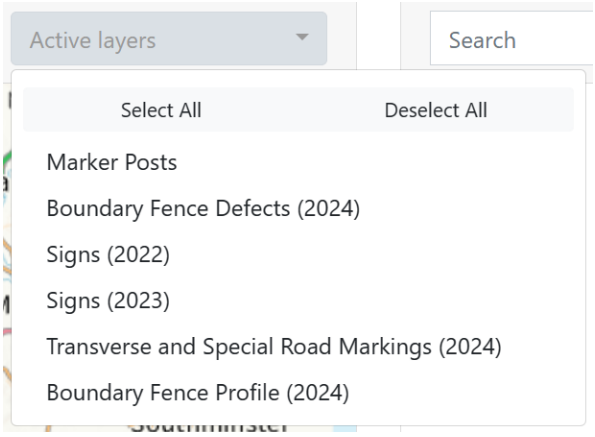


The Left dropdown list is to switch between the base shapefiles used for that particular survey/year. By default the latest layer available is selected. For example:



Note: there may only be one option here. This is due to the overall shapefile not changing or there has been no repeat survey.

The Right dropdown is to view any geospatial asset layers that have been loaded into the survey. For example:



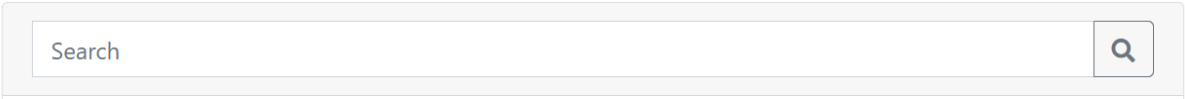
These are asset layer which are project and user specific.

To toggle these “On” and “Off” you can Left-Click on the applicable layer. A tick will show when a layer is enabled and no tick when disabled.

By default all layers are disabled once a page is loaded for performance reasons.

Search Function

In the top right corner there is a search bar.



This can be used to search for the following:

- HAPMS or and Section Referencing. Eg "0100M1/100"
- Easting and Northing Coordinates (Comma separated 6 figure). Eg "000000, 000000"
- Asset ID. Eg "MP100/1A" You must have the layer turned "On" to make features searchable.

Asset ID's vary from dataset to dataset so it will need to match exactly what is in the original data.

Once a successful search is complete it will highlight the item on the map.

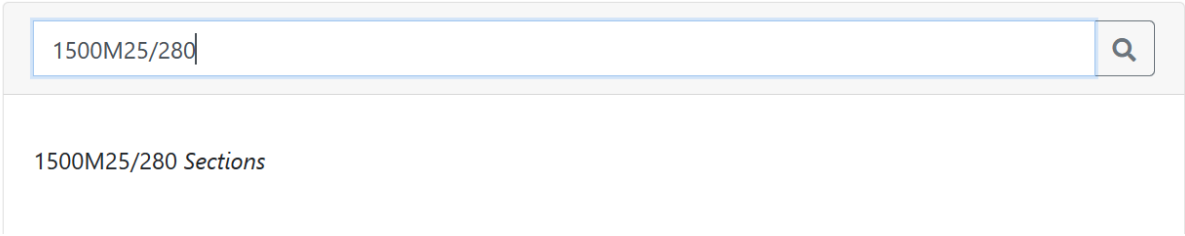
HAPMS or and Section Referencing will appear Grey on the Map

Coordinates will appear as a black cross and then a Yellow Dot once selected

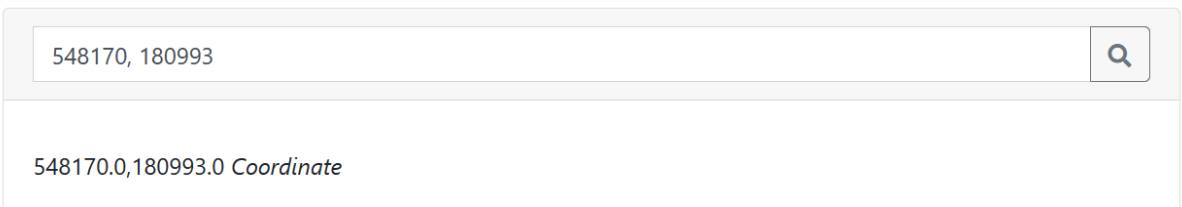
Asset ID's will appear as a black cross and then a Yellow Dot once selected.

Some example searched can be seen below:

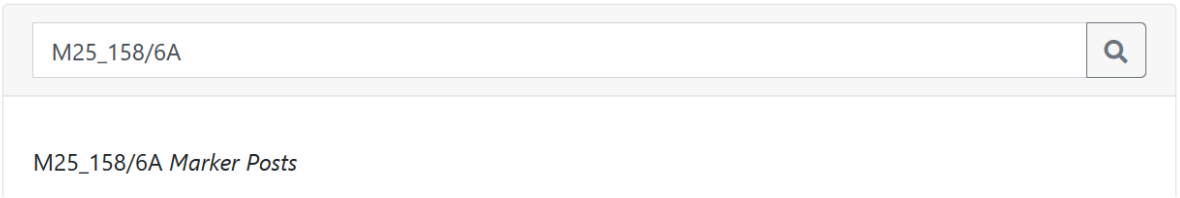
HAPMS Section:



Coordinates:



Asset (Markerposts):



Note: The asset you are searching for has to have had its features enabled in the database that allow dynamic searching. If the phrase you are searching for returns no result get in touch with Impulse Geophysics and we can assist you by getting it enabled.

4. Opening a Video

Choosing a Video to open

There are two ways to open a video.

Video Launched from the Map

Top open a video from the maps you will need to physically navigate to the section you are looking for. See Page 7 for navigating the overview map.

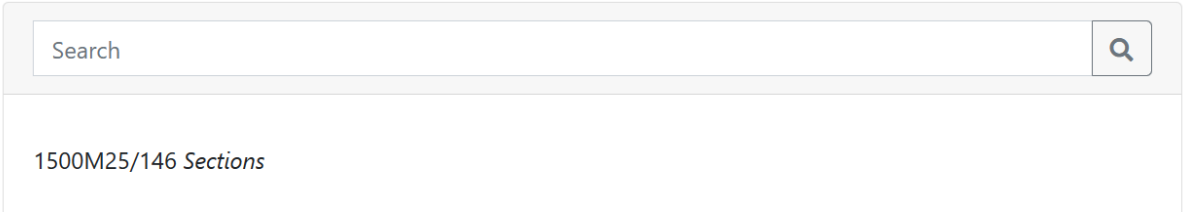
Once you find the section you require Left-Click on the shape on the map.

This will then load the selected section into the Search window on the right.

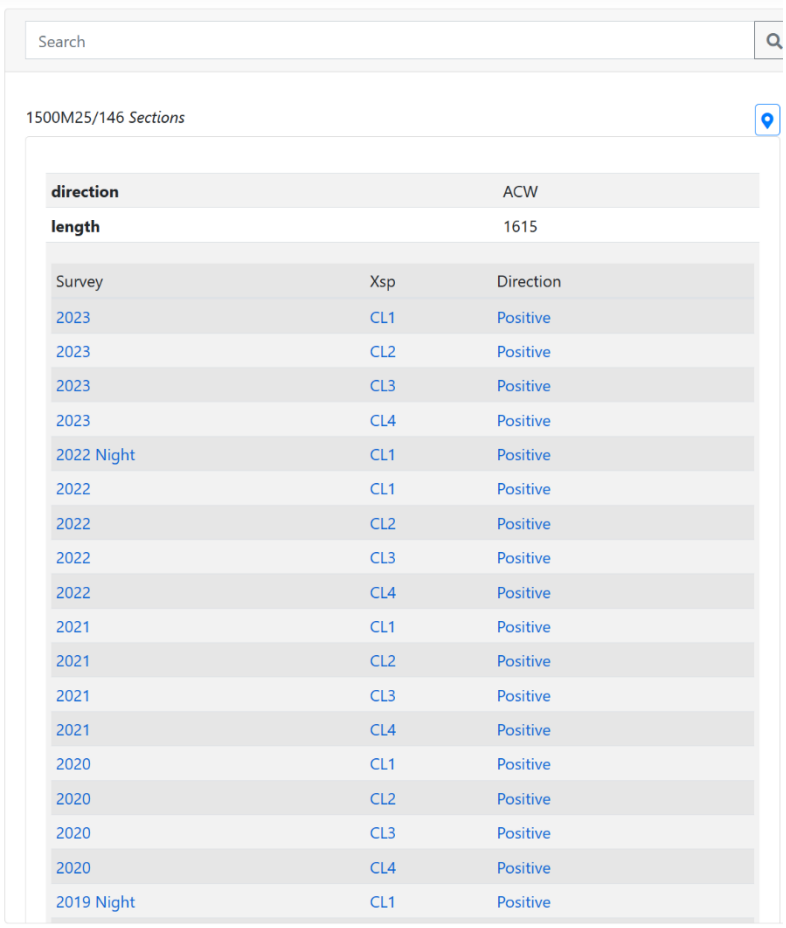
Video Launched from the Search Function

You can search for a particular section in the search box and this will have the same effect as above.

Once you have used either of the above methods for opening a video the Section will appear in the Search Window as seen below:



Left-Clicking on the section will open the list of available video for the section. This is in order or most recent to least recent. See example below:



Left-Click on the required video and it will load into the Video player.

5. Video Player

Playback Tools

In the bottom left corner of the Video window there are playback tools which look like the following:

1 - Play Backwards
2 - Stop
3 - Play Forwards
4 - Backward Frame
5 - Forward Frame
6 - Playback Speed (Frames Per Second)

There is also a slider to the left of the tools which will allow you to move through the video quicker.

Scrolling and Zooming

In the Video window you are able to scroll and zoom in on the image to see items in more detail.

Scrolling

This is done by a left-clicking and hold and then physically dragging the map.

Zooming

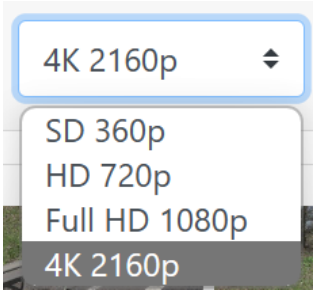
This can be done using the zoom tools in the bottom of the video window or my using the scroll wheel on your mouse.

The zoom buttons on the video window can be seen below:

Switching Resolutions

All of our surveys are captured in 4K and then we create lower resolutions from this for performance reasons.

You can switch between the available resolutions using the drop-down as seen below:

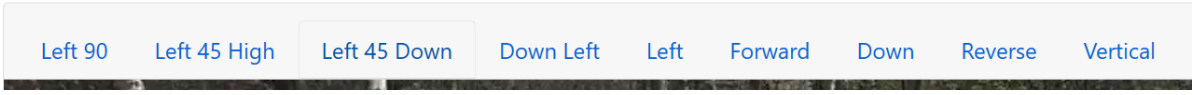


Note: Some views may not be available in 4K if not required or specified by the client.

Camera Views

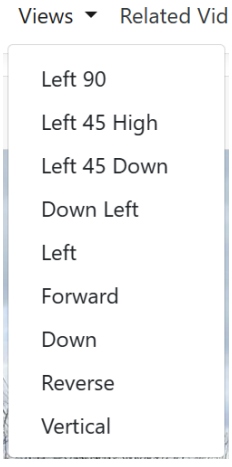
There are multiple camera views collected for most Video Surveys and these are all available in the Online Roadshow.

You will see a list of the available camera views for that particular video in the top of the Video Window.



To switch camera view left-click on the view you require. This will then load that view into the main window.

You can also switch views from the dropdown in the top toolbar as seen below:



Thumbnails

Thumbnails can be found at the bottom-left of the Vide Player. There is a thumbnail for each camera view that is available for that specific video. They will look like this:

You can Left-Click on any of these to load that particular view into the main Video Window.

Map Window

On the right-hand side there is a large Map Window.

This displays the current position, current section and background mapping.

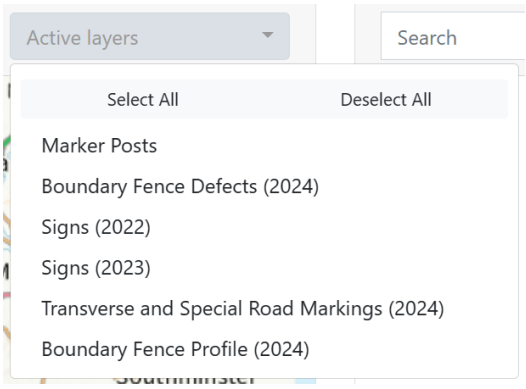
The current position is dictated by a Green Kite Logo. This can be seen below:

This map is navigated exactly the same as the Overview Map. Details of how to do this can be found on Page 7.

Each Section is displayed as a different coloured line on the map.

On this mapping you are able to scroll around and Left-Click on any other Section and the Video will jump to that point.

In the Map window we can also view any geospatial asset layers that have been loaded into the survey. For example:

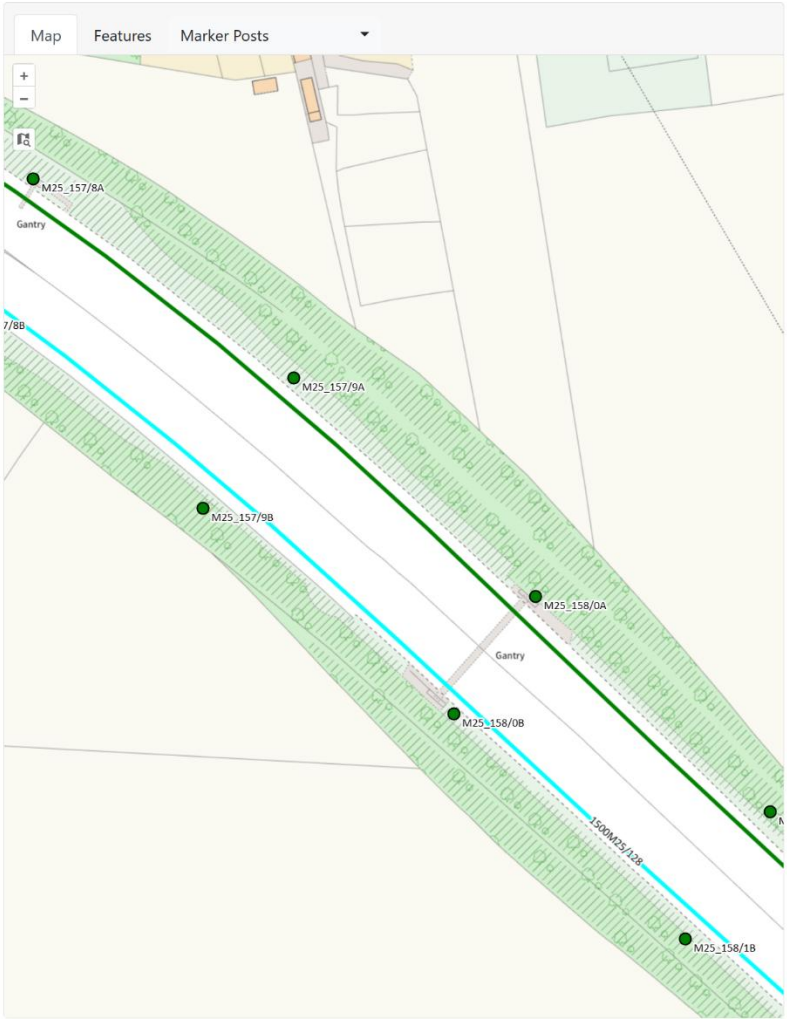


These are asset layer which are project and user specific.

To toggle these “On” and “Off” you can Left-Click on the applicable layer. A tick will show when a layer is enabled and no tick when disabled.

By default all layers are disabled once a page is loaded for performance reasons.

See an example below of the Map window with a Markerpost layer turned on:



Properties Window

The Properties Windows can be found in the bottom right of the Video Player. This is where all the details of the survey can be found. It will look like the image below:

Properties

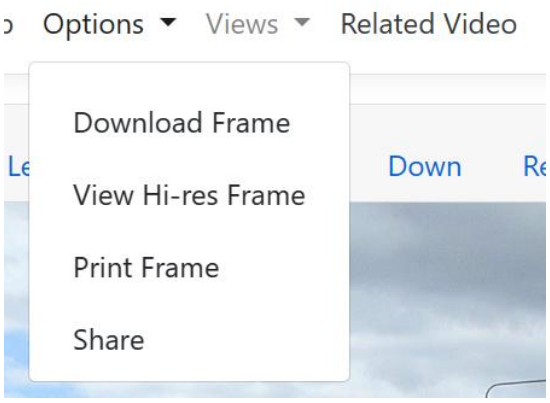
Section Name	1500M25/127
Section Chainage	982.8 m
XSP	CL1
Section Length	1164 m
Section Direction	Positive
Frame	12459
Chainage	24537.3 m
Location	545822.936, 200426.267
Survey Name	M25 File8
Survey Date	2023-03-27
Survey Length	120498.2 m
Frame Separation	2.0 m
Frame Count	61179

From the top:

1 - Current Section Name
2 - Current Section Chainage
3 - Current Section XSP
4 - Total Section Length
5 - Section Direction
6 - Impulse Geophysics Video File Frame
7 - Impulse Geophysics Video File Chainage
8 - Current GPS Location
9 - Impulse Geophysics Internal File Name
10 - Video Capture Date
11 - Impulse Geophysics Video File Total Chainage
12 - Video Frame Separation
13 - Impulse Geophysics Video File Total Frame Count

6. Video Options

These can be accessed from the Toolbar at the top of the Video Player.



Download Frame

This is a feature that allows the user to download the specific frame they are looking at.

Left-Click on “Download Frame” and it will automatically download to the folder that is set in your browser settings.

View Hi-Res Frame

This is a feature that allows the user to load the highest resolution frame in a new window.

Left-Click on “View Hi-res Frame” button and it will open the Hi-Res frae in a new browser tab

Print Frame

This is a feature that allows the user to print the current window including Map and Properties..

Left-Click on “Print Frame” button and it will open up the Print Wizard where you can configure it to your requirements.

Share

This is a feature that allows the user to copy the current URL for sharing with another user.

The URL is total unique and will allow the user its shared with to jump to that exact video file and frame.

Left-Click on “Share” button and it will open a small window with the URL link.

Related Video

This feature allows you to switch to any other video related to that section at that specific location.

Left-Click on “Related Video” and it will pop-up a window like the one below:

This is a list of all the video available for that section at that location.

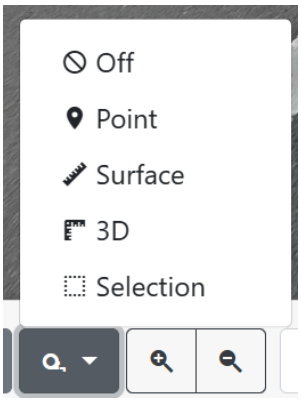
This is especially useful for looking at multiple XSP’s of a section and flicking between them.

It is also useful for checking an identical location from previous years.

7. Video Tools

These are a set of tools that are available to allow the user to query the Video.

These tools can be found on the toolbar below the Video Window (just to the right of the playback controls). There is a Tape Measure Icon and once Left-Clicked opens a small sub-menu that looks like this:



Note: Currently the Point, Surface and 3D are only available on the Forward View.

Point

The Point Locator allows the user to place a pin anywhere on the video frame (within the red area) to calculate the exact position of something.

Once enabled it will look like below:

You can move the point locator by a Left-Click and hold and then physically dragging it around the image.

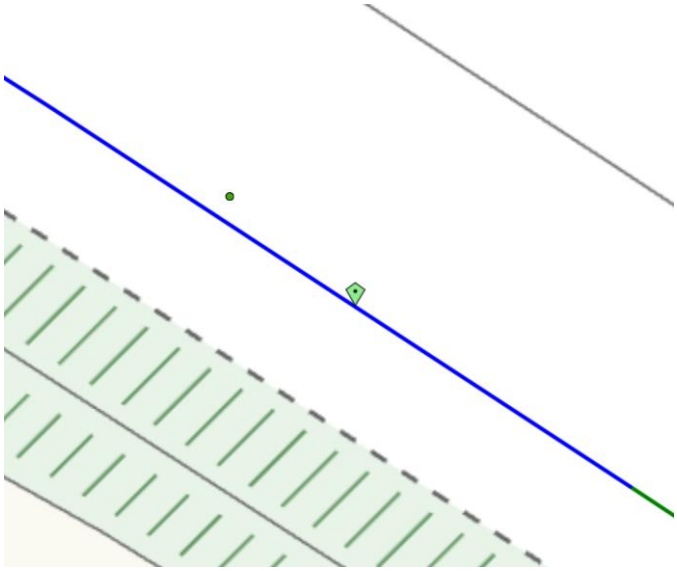
The information it displays is:

- GPS Location
- Section
- Section XSP
- Section Chainage

You are also able to change the colour and rename the Point to user preference.

This Point Locator is also translated onto the Map Window.

You will see a small dynamic dot on the Map that corresponds to the same location on the Video. This will look like the example below:

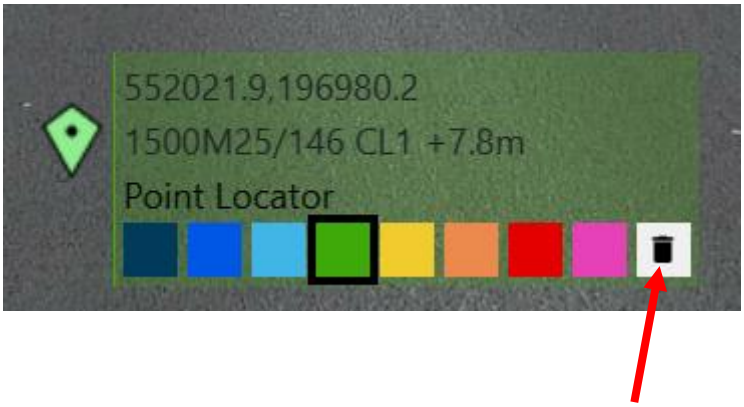


Once Point is enabled you will see another button appear on the toolbar

This will allow the user to add multiple Point Locators to the same window.

These can be customised with different Colours and Names.

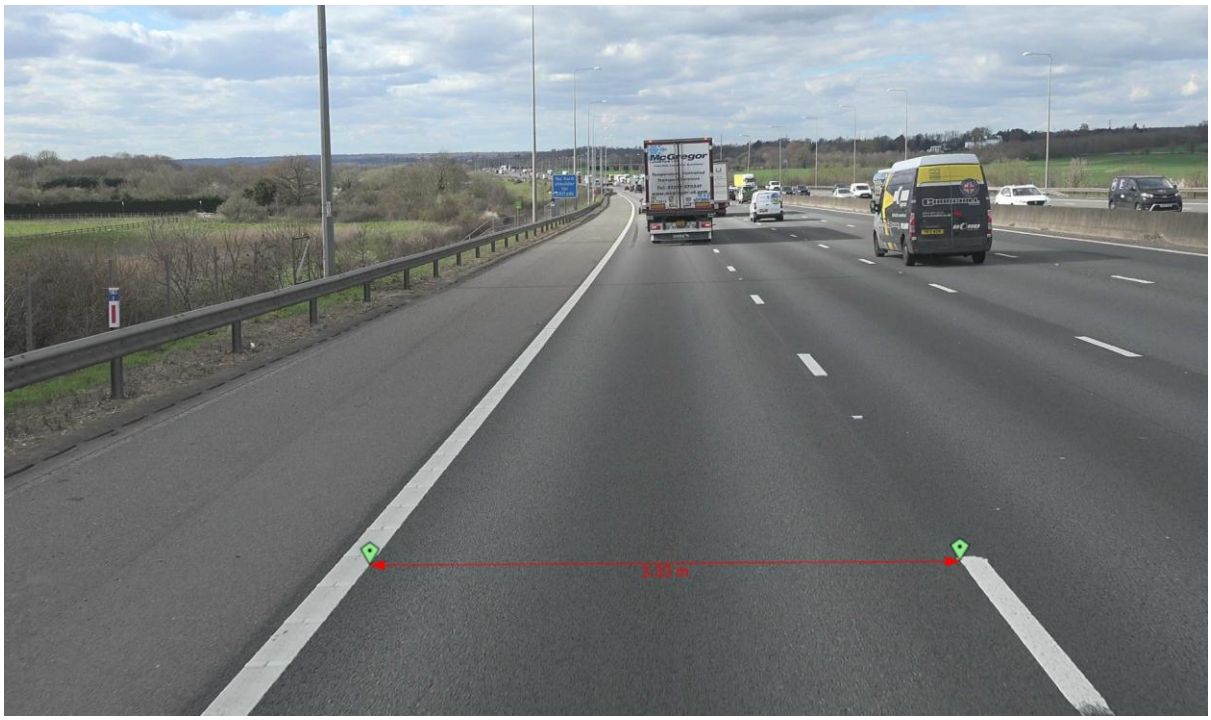
If you want to remove any additional Points you can click on the bin icon as shown below.



Surface

The Surface tool allows the user to measure anything on the pavement surface (within the red area) to calculate the length between two points.

It will provide you with 2 Point Locators and a measurement between the two. This will look something like below:



These can also be customised with different Colours and Names.

These two points will also be shown on the map as like the Point Locators.

This is a great tool for measuring things such as Carriageway Width.

It is also useful for measuring Road Markings and Symbols.

3D

The 3D tool allows the user to measure anything that is on the Vertical Axis such as Sign Posts.

Once you Left-Click the “3D” button a green depth bar will appear on the Video Window.

How to measure an item:

1) Set the Green Depth Bar to the location that is perfectly 90 degrees to the base of the asset if you were to stand perfectly in the middle of the frame. Like the example below:

This is important to get accurate measurements.

If the asset is up or down a cutting the user will need to take this into consideration.

The easiest way to visualise is place yourself in the middle of the carriageway facing the direction of travel. If you were to perfectly turn 90 degrees to the left or the right would the centre of the asset, be directly in front of you.

2) You can now Left-Click and Hold to drag the measurement bar from one side of the target to the other. The depth will then be displayed dynamically.

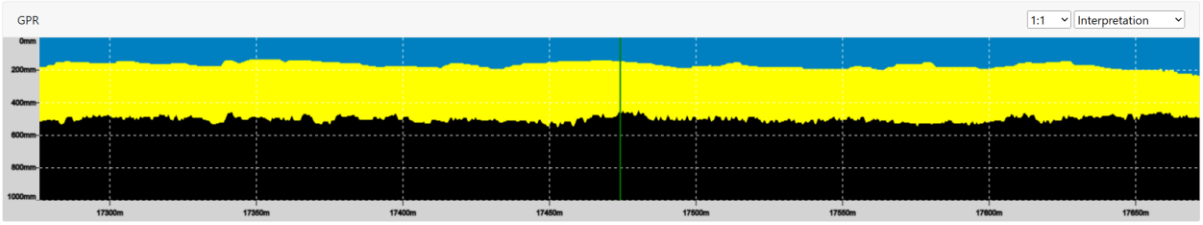
Note: There are limitations to the 3D measure tool that prevents the measurement of larger items such as Bridge Height.

8. GPR (Ground Penetrating Radar)

If GPR was chosen as part of the survey this will be displayed.

The GPR to accompany your Video can be found directly underneath the Video Window.

See an example below:



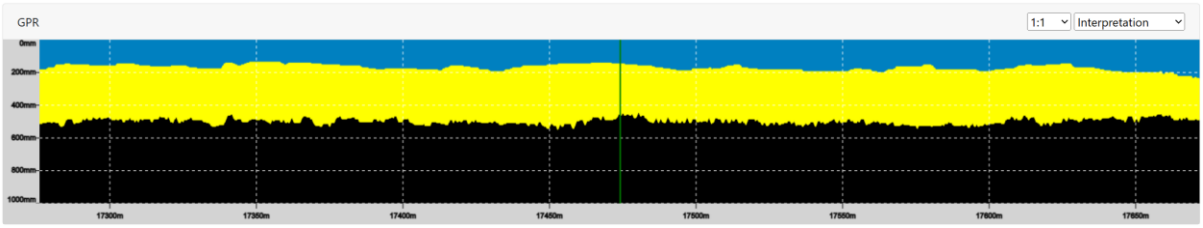
The Green Vertical Line on the GPR is the current position at the centre of the Vertical Camera View.

With the GPR you have a few options which can be found in the top corner of the GPR Window

Here you can change the scale and what is displayed from the GPR.

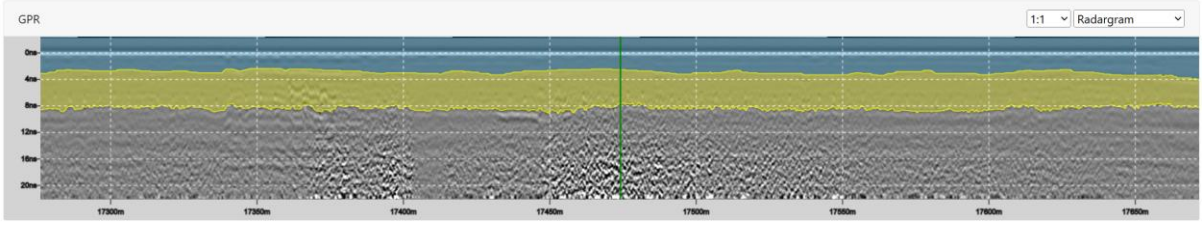
See examples of each below:

Interpretation



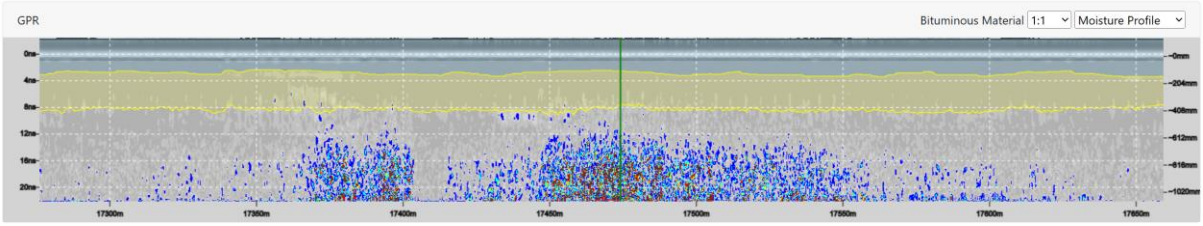
Depths shown in mm (Millimetres)

Radargram



Depths shown in ns (Nano Seconds)

Moisture Profile (if available)



Depths shown in mm (Millimetres) and ns (Nano Seconds)

The chainage displayed along the X-Axis is related to the Chainage in the Properties Window. See Page 17 Item 7.

9. Asset Management

Impulse Geophysics has developed an asset management system to sit right alongside its 4K video. This allows the user to physically view their asset and make engineering decisions as a result.

We are able to simply display the assets and their attributes on the map or we can configure a totally customisable editing tool (additional costs apply)

We are able to handle assets of the following types:

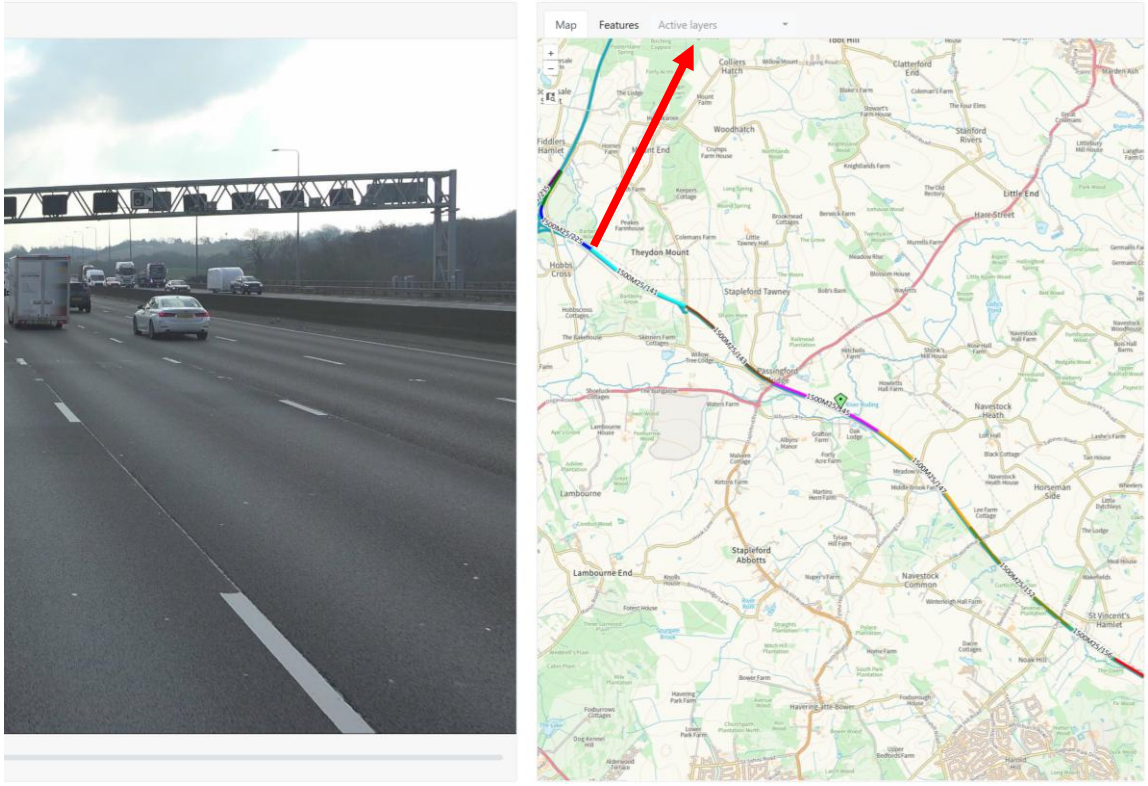
- Point
- Linear
- Area

Note: We will need to load in your Asset Layers manually. The preferred formats for this are .csv and .shp.

Loading Available Asset Layers

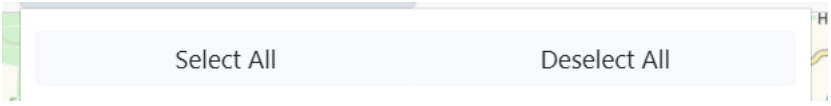
You can easily view the available layers from the “Active Layers” dropdown at the top of the overview map:

Or when you are in the Video player it can be accessed from the top of the Map window:



From these dropdowns you can toggle the required layers “On” or “Off” depending on what you need.

There is also a “Select All” or “Deselect All” function should you wish to use these to display multiple layers at once.

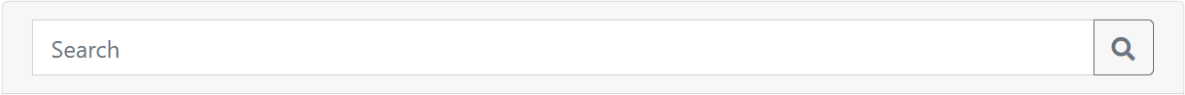


We recommend only loading a maximum of 5 layers at one time. Anymore than this and you may experience performance issues.

Note: When loading a new section of flicking between the Overview Map and the Video all of the Assets are turned off by default. So you will need to toggle your required layer back On.

Asset Search Function

On the Overview Map page you have the option to use the search function. This works in the same way as Sections and Coordinates (see Page 9)



For this to work you must have the appropriate layer for the asset turned on (see Page 27).

Within this function you can search for any attribute. This could be Asset ID, Road Name, etc.

Asset Styling

All Assets are fully customisable. The following customisations are available for each asset type:

Point Assets
- Colour
- Shape/Symbol
- Shape/Symbol Line Thickness

Linear Assets
- Colour
- Line Thickness
- Linetype (Dashed or Solid)

Area Assets
- Outline Colour
- Fill Colour
- Fill Texture
- Outline Line Thickness

Currently only Impulse Geophysics are able to change styling for your Assets.

Asset Positioning

For Asset Positioning we use both the Point Locator on the Video Images (see page 20) and the background mapping. This application is used for all types of asset.

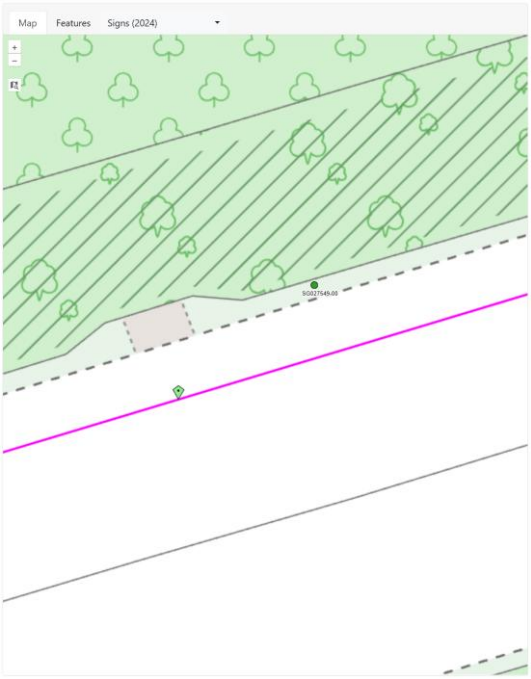
Note: Editing of Assets is only available in the Video Viewer Window and not from the Overview Map.

Point Assets

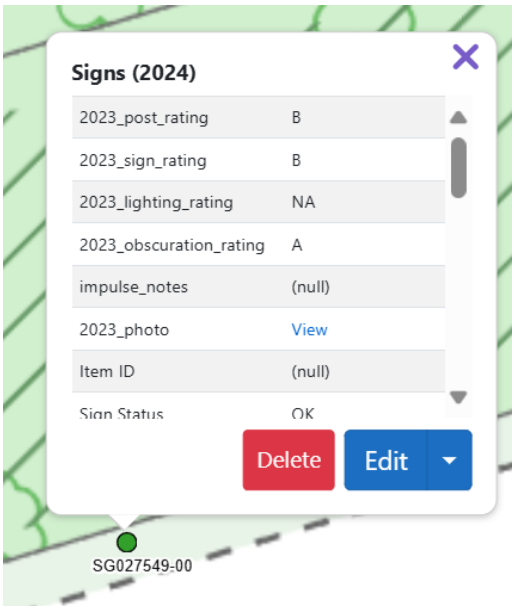
Point Assets are those that have a single GPS Coordinate. Common examples for this are Signs and Lighting Columns.

Using the video you can accurately position, or correct the position of your point assets.

Firstly you will need to locate the point asset in which you would like to verify or correct the position of. For this example we are going to use a Sign (SG) Asset.

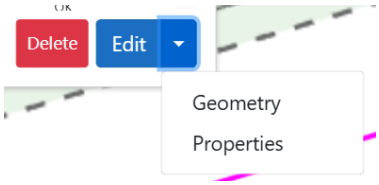


Once you have located you asset on the map left-click on it and you will see the following options:



Note: these will be specific fields for your asset

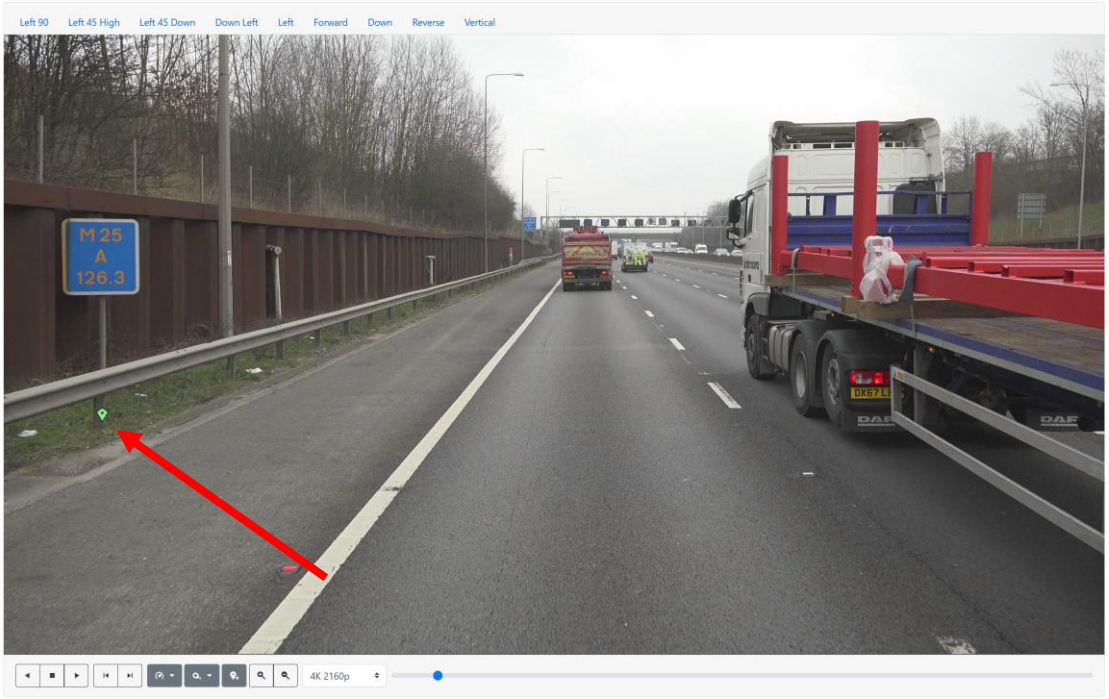
Clicking the down arrow to the right of the "Edit" button gives you the option to Edit the "Geometry" or "Properties". This can be seen below:



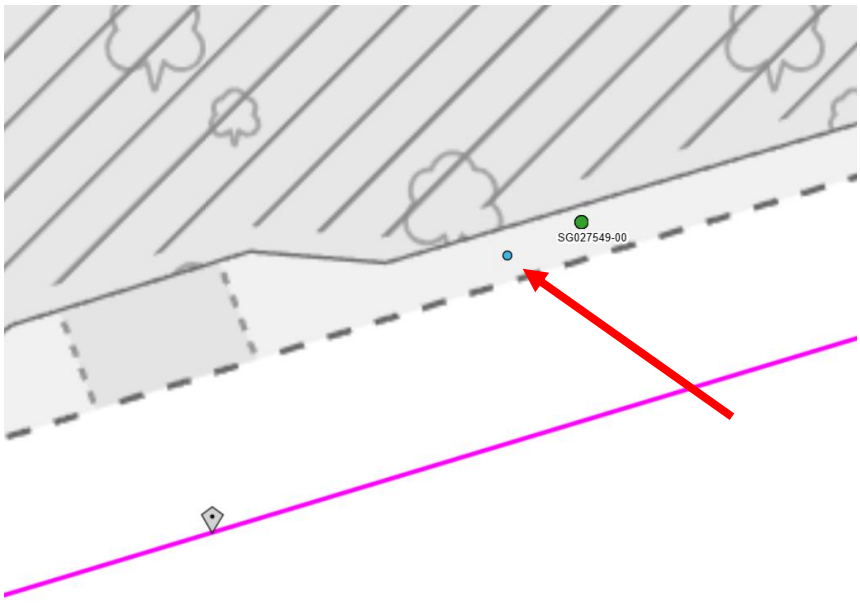
For simply re-positioning or checking it position we will left-click the "Geometry" option. Once this is selected the map will go into greyscale apart from the asset you are editing.

You can toggle between "Map" and "Properties" once editing the Asset by either left-clicking on "Map" or "Features" at the top of the Map Window.

Once we have opted for the Map window to edit Geometry. We can drag the Point Locator (See Page 20) to the base of the asset on the Video as show below:



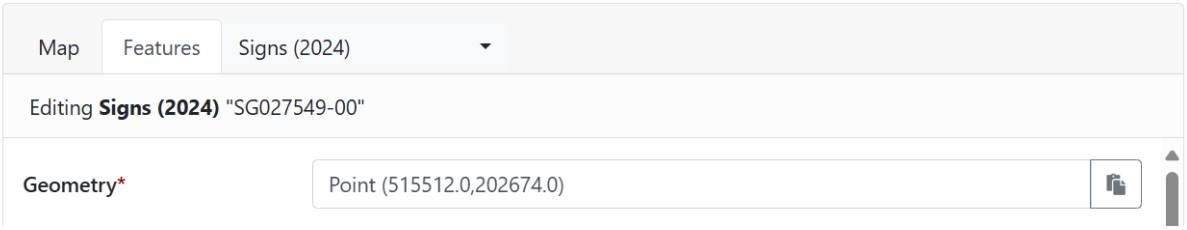
This point locator will then correspond to a dot on the Map. This is dynamic so wherever you move the Point Locator in the Video the dot will move to the corresponding coordinate on the Map. See below:



To correctly re-position the asset we can simply left-click drag it so that it snaps to the new location.

Once it is in the new location you can click “Save” to commit the changes to the database.

There is a second way to update the Geometry of a Point Asset and that's by switching to the "Properties" of the asset. Once you have done this you will see an "Geometry" option. This can be seen below:



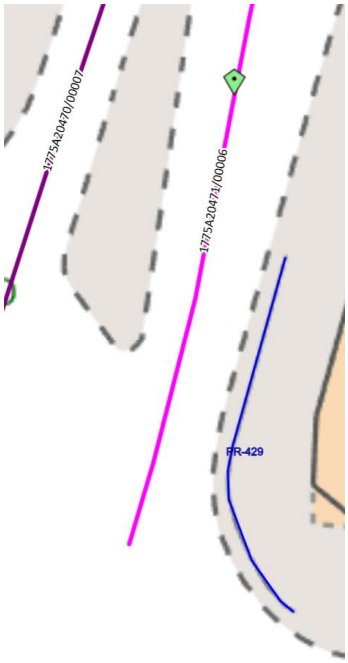
By clicking on the Paste icon on the right of this option it will automatically paste the coordinates from the Video point locator.

Linear Assets

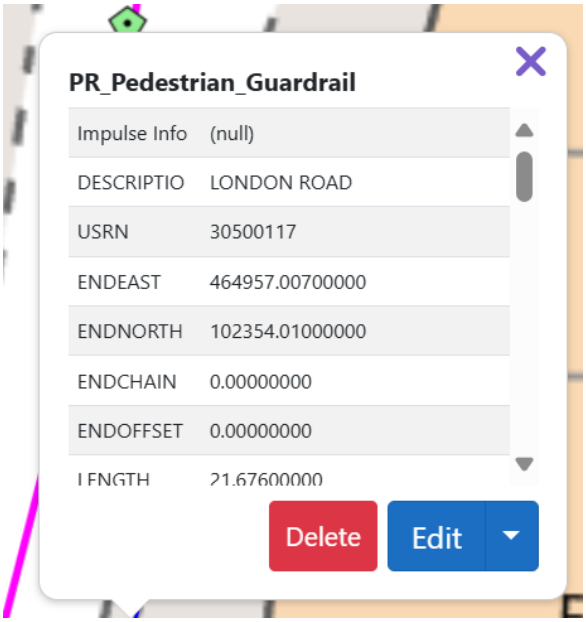
Linear Assets are those that have two or more GPS Coordinates. Common examples for this are Vehicle Restrain Systems (VRS) and Lane Line Markings. From these items you can generate Length of the asset.

Using the video you can accurately position, or correct the position of your linear assets.

Firstly you will need to locate the linear asset in which you would like to verify or correct the position of. For this example we are going to use a Pedestrian Guardrail (PG) Asset. See Blue Line on Map below:

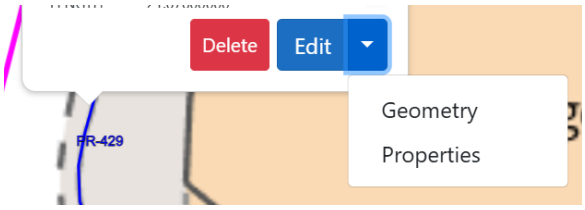


Once you have located you asset on the map left-click on it and you will see the following options:



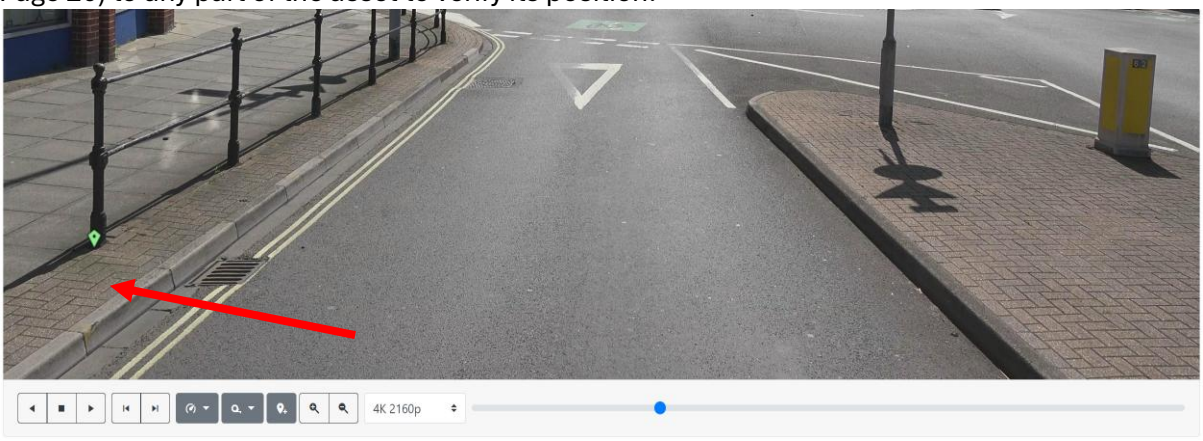
Note: these will be specific fields for your asset

Clicking the down arrow to the right of the "Edit" button gives you the option to Edit the "Geometry" or "Properties". This can be seen below:

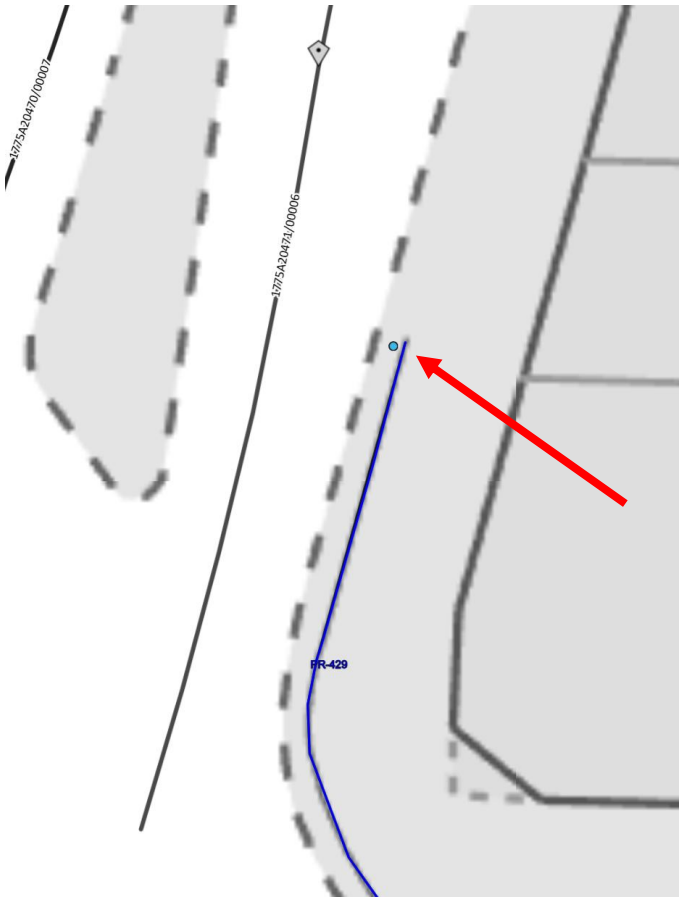


For simply re-positioning or checking it position we will left-click the “Geometry” option. Once this is selected the map will go into greyscale apart from the asset you are editing.

Once we have opted for the Map window to edit Geometry. We can drag the Point Locator (See Page 20) to any part of the asset to verify its position:



This point locator will then correspond to a dot on the Map. This is dynamic so wherever you move the Point Locator in the Video the dot will move to the corresponding coordinate on the Map. See below:



To correctly re-position the asset we can simply left-click drag it so that it snaps to the new location. In this example it is the start of the liner asset.

We can now repeat this process for multiple points of the asset to get its linear profile.

Note: For straight items you will need less points than those that are curved.

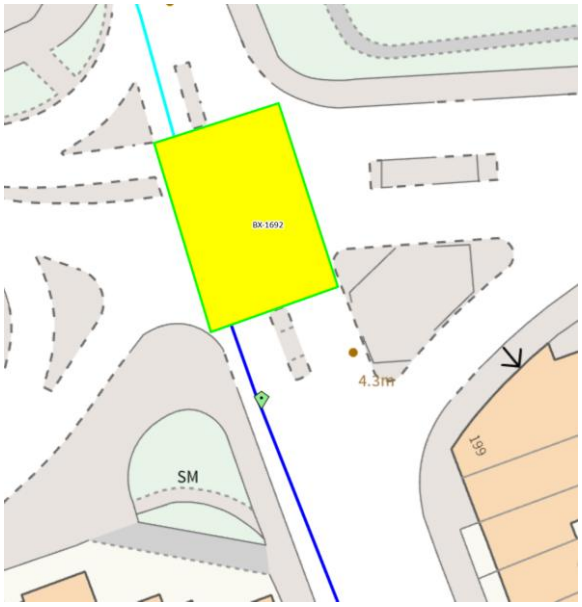
Once it has its new corrected geometry you can click “Save” to commit the changes to the database.

Area Assets

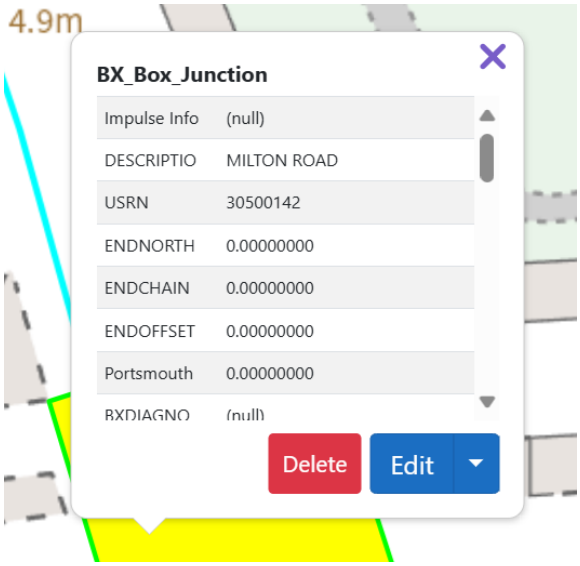
Area Assets are those that have three or more GPS Coordinates that border an area. Common examples for this are Box Junction Markings and Chevrons. From these items you can easily generate area and perimeter length.

Using the video you can accurately position, or correct the position of your linear asset nodes.

Firstly you will need to locate the area asset in which you would like to verify or correct the position of. For this example we are going to use a Box Junction Asset. See the yellow box with green border on Map below:

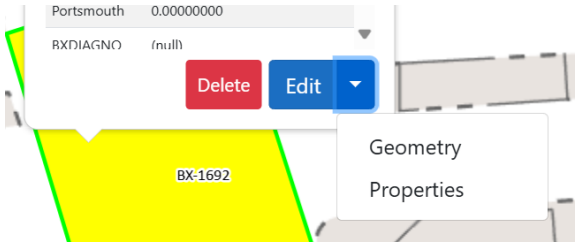


Once you have located you asset on the map left-click on it and you will see the following options:



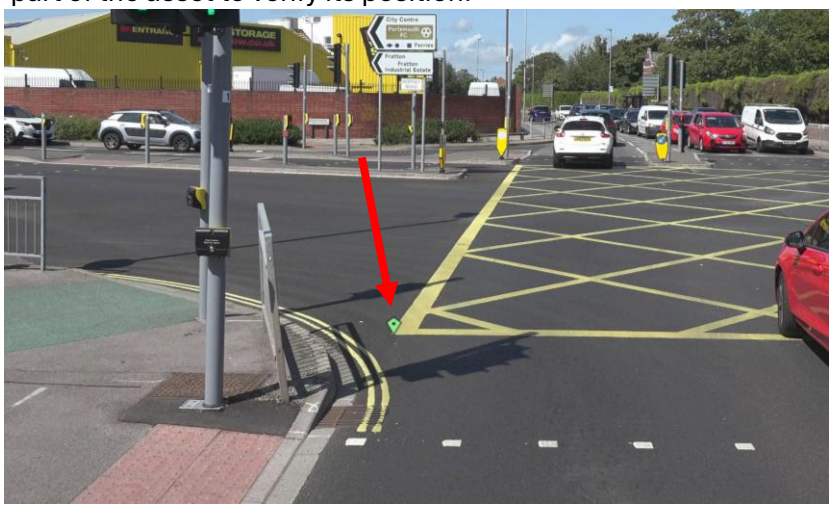
Note: these will be specific fields for your asset

Clicking the down arrow to the right of the "Edit" button gives you the option to Edit the "Geometry" or "Properties". This can be seen below:

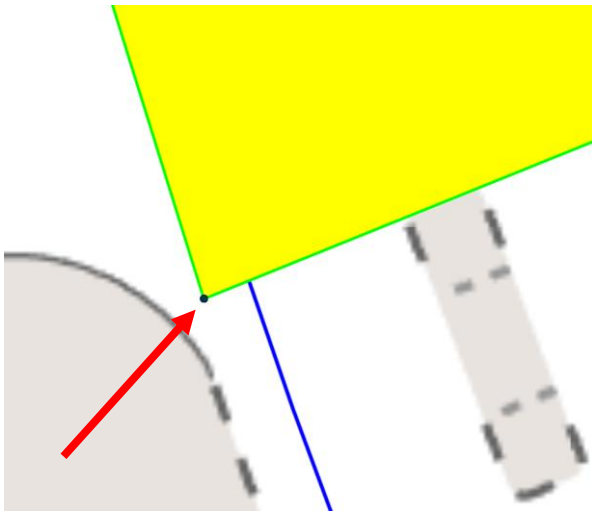


For simply re-positioning or checking it position we will left-click the "Geometry" option. Once this is selected the map will go into greyscale apart from the asset you are editing.

Once we have opted for the Map window to edit Geometry. We can drag the Point Locator (See Page 20) to any part of the asset to verify its position:



This point locator will then correspond to a dot on the Map. This is dynamic so wherever you move the Point Locator in the Video the dot will move to the corresponding coordinate on the Map. See below:



To correctly re-position the asset we can simply left-click drag it so that it snaps to the new location. In this example it is the first corner of the area asset.

We can now repeat this process for multiple points of the asset to get its linear profile.

For area items that span multiple lanes it is best to use all the video available to fully correct the asset. Use the “Related Video” element for this (See Page 19)

Note: For straight edged items you will need less points than those that are curved.

Once it has its new corrected geometry you can click “Save” to commit the changes to the database.