



**Operational Manual for the
MapRoad Mobile Application for Android
Version 3.0**

Contents

1. Introduction	5
1.1 Differences between Tab 2 v Tab 3 for use with MapRoad Mobile	5
2. Installation & Configuration	9
2.1 Installation	9
2.1.1 Upgrading Existing Application	9
2.2 Adding Local Authority Road Schedule.....	11
2.2.1 Adding a Training Loop	11
2.3 Connecting External GPS Device (Optional)	12
2.3.1 Supported Device.....	12
2.3.2 Supported Application	12
2.3.3 Connection and Configuration.....	13
2.3.4 Operating Instructions	15
3. Using the MapRoad Mobile App (MRM).....	16
3.1 Opening the MapRoad Mobile App.....	16
3.2 Accessing the MapRoad Mobile App Main Menu	17
3.3 Create a Project	17
3.4 Capturing Data	21
3.4.1 PSCI Surveys	21
3.4.2 Surface Type Surveys	25
3.5 Uploading a Project	27
3.5.1 Uploading a Saved Project	29
3.6 Data Review	30
4. Operating Instructions	33
4.1 Tablet	33
4.2 Battery and Pre-Check of Tablet and App	35
4.3 Health and Safety – Driving	35
Appendix	36
Roads Act, 1993 Extract	36

Purpose of this Document

The purpose of this document is to demonstrate the use of the MapRoad Mobile application in the capture of Pavement Surface Condition Index (PSCI) Survey data. This document is a reference document.

Revision History

Version	Description	Author	Date
1	Authored for MRM v2.4	W French	24/02/2014
1.1	Section for configuring external GPS for use with application.	W French	08/04/2014
1.2	Fully Reviewed with some minor edits.	K Dowling	22/04/2014
2.0	Updated for MRM v3.0	W French	22/08/2014

Acronyms and Abbreviations

MRM	MapRoad Mobile
PMS	Pavement Management System
PSCI	Pavement Surface Condition Index
GPS	Global Positioning System
LA	Local Authority
CI	Compass Informatics
URL	Uniform Resource Locator (Web address)
RTC	Regional Training Centre (5 Nationwide)
Tab 2	<i>Refers to Samsung Galaxy Tab 2 10.1</i>
Tab 3	<i>Refers to Samsung Galaxy Tab 3 10.1</i>

1. Introduction

This document outlines the installation and operation of the MapRoad Mobile App v2.4.

MapRoad Mobile (MRM) is an Android app that is currently supported for the **Samsung Galaxy Tab 1 and 2 10.1** and **Samsung Galaxy Tab 3 10.1** tablets only.

Where relevant the functionality and options that differ between Tab 2 and Tab 3 are described.

This document assumes that the user has administrative rights on the tablet, and the tablet device is not encrypted. If your device is encrypted, please contact your IT administrator to install the MRM App.

It is important to note which tablet you are using, as instructions and guidelines on functionality may differ slightly depending on the tablet being used.

1.1 Differences between Tab 2 v Tab 3 for use with MapRoad Mobile

There are a number of differences between the two tablets supported for use with the MRM App as described above. Those differences affecting the use of MRM are noted here.

Location of main navigation buttons:

Tab 2

Located on the bottom left of the screen, in order from left to right; Back, Home (Return to home screen), Application Manager and Screenshot.



Tab 3

Located on the device, 3 centre buttons below the screen on the verge of the device. Menu (left button), Multi-functional (centre button), and Back (right button). The multi-functional button has three separate uses; short single press returns to the Home screen, long single press starts the Application Manager and fast double press brings up voice command (not of use for MapRoad Mobile App).



Quick access to the settings menu:

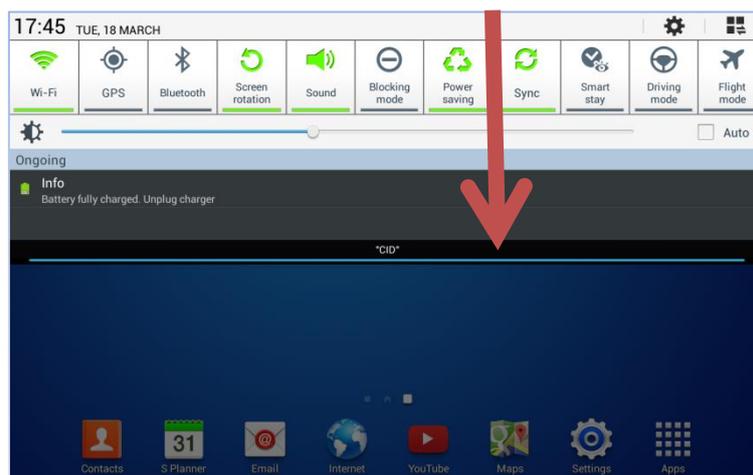
Tab 2

Touch the clock in the bottom right corner of the screen, a menu will pop-up with the clock now at the top.



Tab 3

Touch anywhere at the very top of the screen and drag downward along the screen. A new menu will appear over the whole screen.



Checking Wi-Fi/Mobile Data network connectivity:

When attempting to connect to the Internet while out in the field, Data Network (Mobile Data) must be enabled.

Enabling Mobile Data:

Tab 2

Touch the clock in the bottom right corner of the screen, a menu appears with the clock now at the top. Mobile data is enabled, i.e. highlighted in green.

Tab 3

Touch anywhere at the very top of the screen and drag downward along the screen. A new menu will appear over the whole screen. Ensure Mobile data is enabled, i.e. highlighted in green.

WiFi:

Although Wi-Fi may be highlighted in green, if you do not also have a WiFi symbol displayed beside the clock (see below), you are not connected to a local network and thus are not connected to the internet.

Tab 2



Tab 3



To verify network connection for either WiFi or Mobile Data, open a web browser and type 'google.com' in the address bar. If a message appears stating that 'Web page not available', there is a further issue with connectivity. Please contact your IT administrator.

Checking GPS Signal:

Tab 2

Touch the clock in the bottom right corner of the screen, a menu appears with the clock now at the top. Ensure GPS is enabled, i.e. highlighted in green.

Tab 3

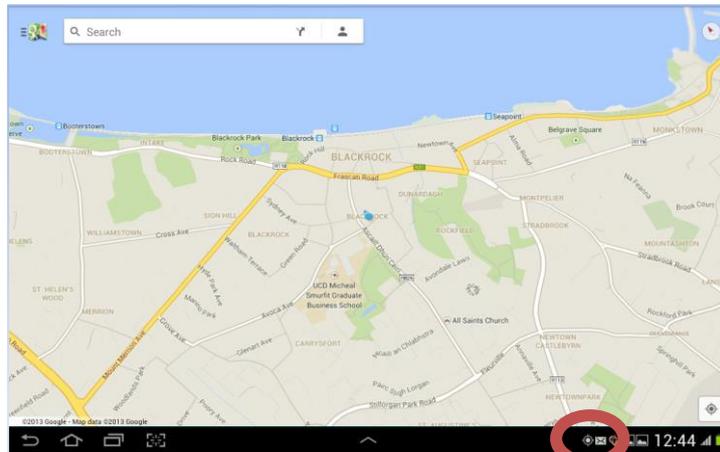
Touch anywhere at the very top of the screen and drag downward along the screen. A new menu will appear over the whole screen. Ensure GPS is enabled, i.e. highlighted in green.

To verify GPS is correctly enabled, open the Maps application. When enabled, a flashing location icon will appear illustrating that the signal is being acquired. Once location has been determined the icon will stop flashing. The GPS icon will appear as something similar to the icon on the right for both Tab 2 and Tab 3.

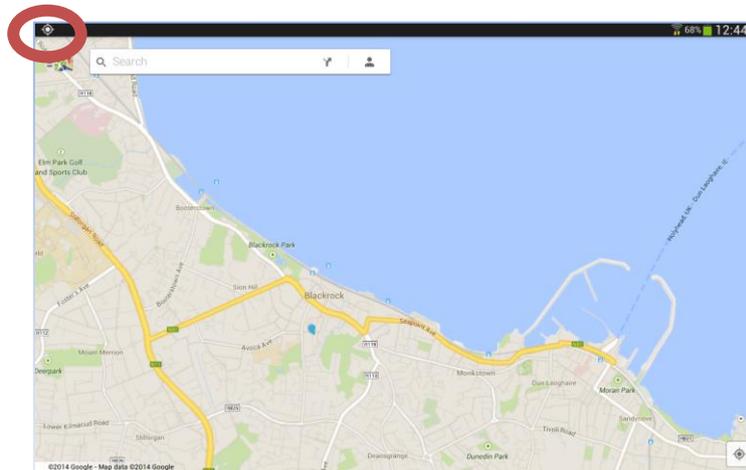


The GPS icon appears in different locations depending on which tablet is being used.

Tab 2



Tab 3



If the location information within the MapRoad Mobile App is inaccurate then the GPS on the tablet may be turned off.

2. Installation & Configuration

This sections details the installation of MRM, how to; upgrade the app from an existing installation, add a road schedule, add an external GPS device and how to operate the tablet appropriately.

2.1 Installation

If a version of MRM has not been previously installed on the tablet, follow the instructions in this section. To upgrade an existing MRM installation, go to section 2.1.1.

An internet connection is required to download the application installation file to the tablet. With the tablet connected to Wi-Fi or Mobile Data network, open a web browser and navigate to the following URL;

<http://www.compass.ie/download/MapRoad/MaproadMobile/Compass.Mobile.Grasp.apk>

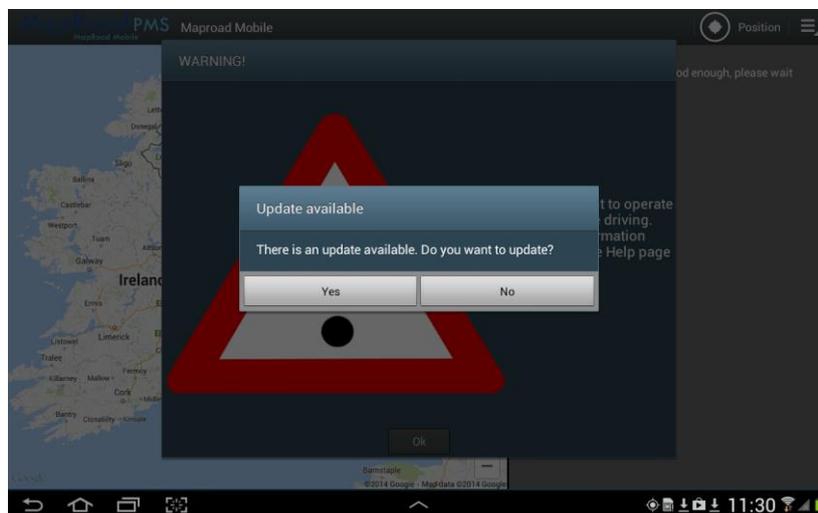
PLEASE NOTE THE ADDRESS ABOVE IS CASE SENSITIVE

The file size is relatively small but if the Mobile Data network connection is slow, it will take a number of minutes to download. It is recommended that this download be completed while connected to a Wi-Fi network.

Once the file starts to download you will get a message on the screen (briefly) that states Download starting. Shortly afterwards, a message will appear stating the file has completed downloading. Click on the link to install MapRoad Mobile (selecting all the defaults).

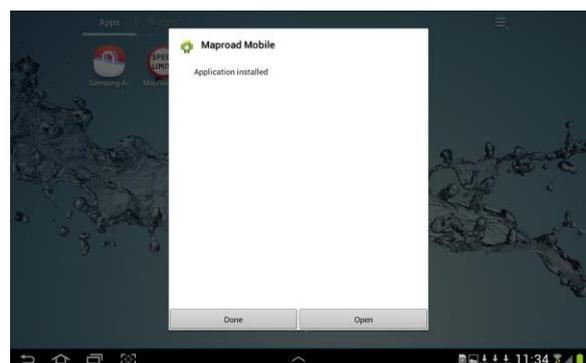
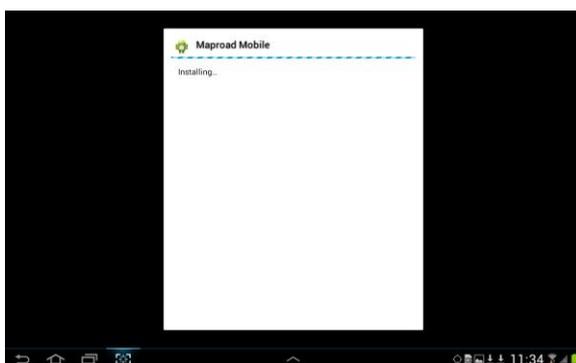
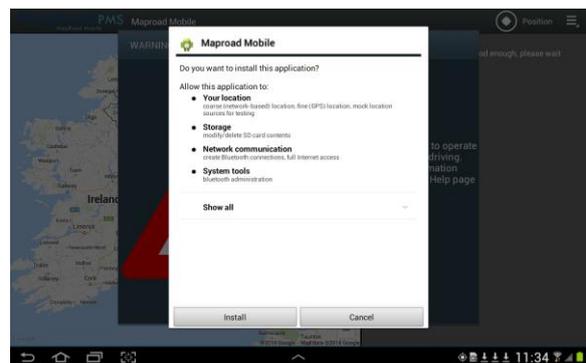
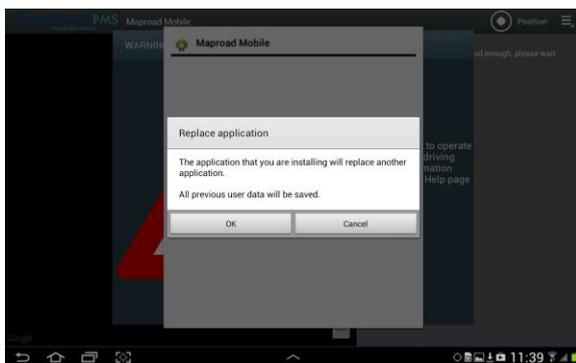
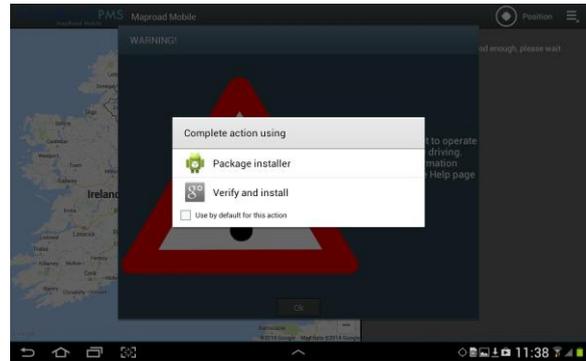
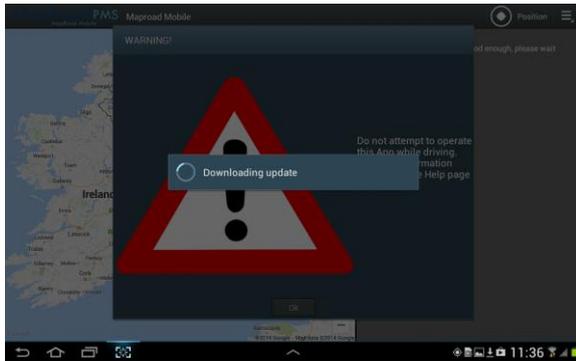
2.1.1 Upgrading Existing Application

On opening the application, if a new update is available the user is prompted to update automatically. See image below.



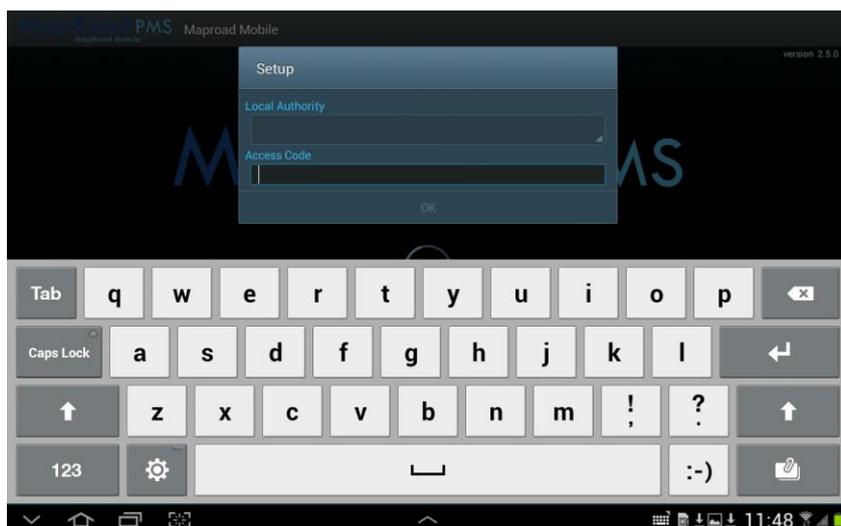
Alternatively, the user can select the 'Check for updates' option from the main menu.

- Once 'Yes' is selected from the update options, a message will appear prompting the user that the update is being downloaded.
- If prompted for 'Complete action using', select 'Package Installer'.
- In the 'Replace application' dialog, select OK.
- Select Install on next option
- Once installed select Open.



If upgrading from MRM v2.4, a prompt will appear to enter the Local Authority where MRM will be used, and the Access Code. The access code is available from the LA GIS officer, or senior Roads' staff. If MRM v2.5 was the previous version installed on the tablet, this step will not be required. The Access code can be changed by selecting the 'Settings' option in the main menu.

When installing a new installation of MRM, i.e. v3.0 the Local Authority and Access Code details must be entered.



2.2 Adding Local Authority Road Schedule

Once the app has been installed, **contact Compass Informatics (CI) to receive a copy of your Local Authority (LA) Road Schedule vector file (Shapefile)**. The MRM App will not work until you have added a road schedule. To request a copy of your Local Authority's shapefile, submit a request using the MapRoad PMS - Ticket Tracker, <http://support.maproadpms.ie/>.

When the shapefile is received, it will include 4 files (.shp, .shx, .prj and .dbf). Transfer all files into the **GRASP** folder on the tablet by connecting the tablet to a PC/laptop using the USB cable that came with the tablet.

The app is now ready for use.

2.2.1 Adding a Training Loop

To complete a test loop following completion of a training course, an examination loop will also be required to be included on the tablet.

Contact Compass Informatics to get a copy of a training loop shapefile. Add this training loop to the GRASP folder following the same procedure as adding a Local Authority road schedule, as described in the previous section.

Once the training loop has been added to the GRASP folder, it will be available in the MRM App. To complete a test loop remember to select the test loop shapefile when creating a new MapRoad Mobile project.

Note: Ensure the user's Local Authority is selected when creating the test loop project, not the Local Authority where the training loop is taking place.

2.3 Connecting External GPS Device (Optional)

The MapRoad Mobile App (MRM) uses the internal GPS device on the tablet to acquire location by default.

While the accuracy of the internal device is within acceptable standards for use in the capture of PSCI Survey data, improved accuracy can be achieved with the use of an external GPS device connected to the tablet via Bluetooth. Typical location accuracy with the internal GPS device is 5-10m. However the external Bluetooth device can improve this accuracy to 2-3m and below 2m accuracy in optimal conditions.

A freely downloadable android app is required in order to use an external GPS device with the MapRoad Mobile App.

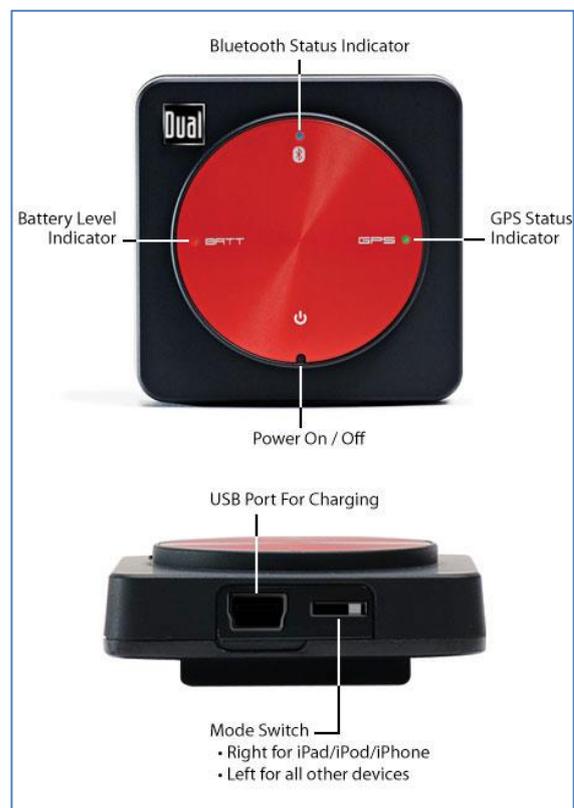
2.3.1 Supported Device

Currently the only external GPS device tested for use with MRM is the Dual XGPS150A Universal Bluetooth GPS Receiver. This can be purchased directly from amazon.co.uk or similar for approximately €100.

Accuracy: +/- 2.5m
Bluetooth: 10m range
Battery: c. 8.5 Hours of continuous use
Cost: c. €100 (Available online)

Ensure that the Mode Switch has been set to the left (See Image on right).

This is a requirement when using the GPS receiver with an android device.



Dual XGPS150A Universal Bluetooth GPS Receiver

If an alternative external GPS receiver is available in your local authority, please contact Compass Informatics to investigate the use of this device with MRM.

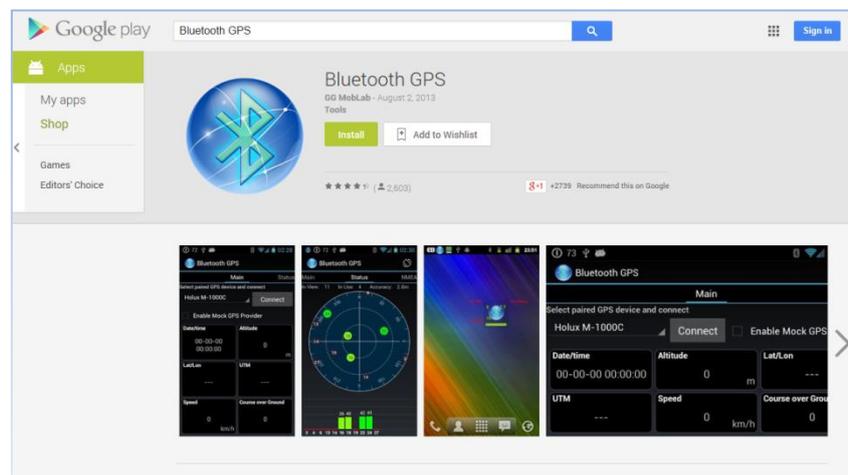
2.3.2 Supported Application

Currently the only application supported for use with MapRoad Mobile is **Bluetooth GPS**, developed by GG MOBLAB.

Bluetooth GPS is an android app which is available to download and install for free from the Google Play Store. The Bluetooth GPS app supports most NMEA compatible GPS device.

The Bluetooth GPS app includes a Mock Provider that allows other android apps (such as MapRoad Mobile) to access and use the GPS data.

To download and install the app, go to the Google Play Store and search for **Bluetooth GPS**. Ensure that the app downloaded is developed by GG MOBLAB.



Installation of the Bluetooth GPS app is required before proceeding to the next section.

2.3.3 Connection and Configuration

This section outlines how to connect the supported external GPS device to the tablet and how to configure it for use with the MapRoad Mobile App.

Ensure that the GPS Device is fully charged before use and that the tablet is sufficiently charged to allow for c. 15 minutes of continuous use.

Pair the GPS device with the tablet;

1. Turn on the GPS receiver by holding the power button for a couple of seconds. Once the device is on, the green GPS light to the right will flash along with the blue Bluetooth light at the top.
2. Turn on Bluetooth on the tablet. Access the Quick Settings menu and ensure that the Bluetooth button is enabled (Green, not greyed out).
3. If not given the option to pair the tablet with the GPS device, go to the Bluetooth settings in the Settings menu.
4. In the list of available devices, a device starting with 'XGPS150-' will be visible. This is the external GPS device. Select this device and it will pair with the tablet.
5. *Optional:* Select the Settings option for this device in the Bluetooth settings menu and it can be renamed. Rename the device to something that is easier to recognise for future users.

The GPS device is now paired with the tablet. Unless the GPS device is unpaired from the tablet, it will automatically connect to the tablet any time it is turned on within range of the tablet (assuming Bluetooth is turned on, on the tablet).

In order to use the external GPS device, the Developer options must be enabled on the tablet. The tablet must also be configured to allow mock locations.

*If the version of Android running on your tablet is older than Android 4.1 - or you are using **Tab 2**, Developer Options may already be enabled on your device. If this is the case, skip to next configuration step.*

Accessing Developer options:

1. Go to the Settings page, scroll down to and select **About device**.
2. Scroll down to find the **Build number** information (greyed out).
3. Tap on the Build number 7 times.

The **Developer options** will now be visible above the **About device** option.

Enabling 'Allow mock locations' in Settings:

1. Select **Developer options** on the Settings page.
2. Scroll to the **Debugging** section and select the check box next to 'Allow mock locations'.

Allow mock locations is now enabled.

Ensure that the Bluetooth GPS app has been installed as outlined in the previous section.

Configuring the GPS device for use with the tablet:

1. Open the Bluetooth GPS app.
2. In the main tab of the Bluetooth GPS app;
'Select paired GPS device and connect', select drop-down list to see all devices that are paired with the tablet.
3. Select the external GPS device. (XGPS150-XXXXXX if name unchanged).
4. Ensure that the 'Enable Mock GPS Provider' option is checked.
5. Select Connect.

Verify tablet is configured correctly to use the external GPS device:

1. Disable GPS, Wi-Fi and Mobile Data from the Quick Access Settings menu.
2. In the Bluetooth GPS app, scroll across to the NMEA tab.
3. Select View Log.
4. Once selected, the log will output GPS data to the screen. Close the app.

The GPS device is now ready to use with the MapRoad Mobile App. Open MRM and verify that the GPS Status is OK.

2.3.4 Operating Instructions

The main advantage of connecting an external GPS device is improved location accuracy. This means that the points will be dropped and snapped to the Road Schedule with greater accuracy.

Another advantage in using the external device is that the requirement for the tablet to be held close to windows or the windscreen in order to guarantee best location accuracy is removed.

As the internal tablet GPS device is not being used to capture the location, the tablet can be held more comfortably by the operator well within the cabin of the vehicle, without having to worry about obstructing the view of satellites.



A very useful accessory included with the recommended external GPS device is a non-slip holder for the main unit, which can be used to rest it safely on the dashboard.

The external GPS device can be positioned on the dashboard of the car underneath the windscreen to achieve best field of access to GPS satellites.

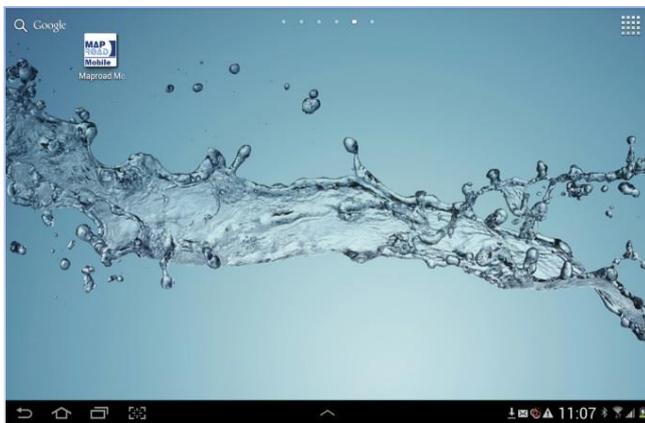
3. Using the MapRoad Mobile App (MRM)

This section outlines the functionality of the MapRoad Mobile App; how to create projects, capture data and upload surveys.

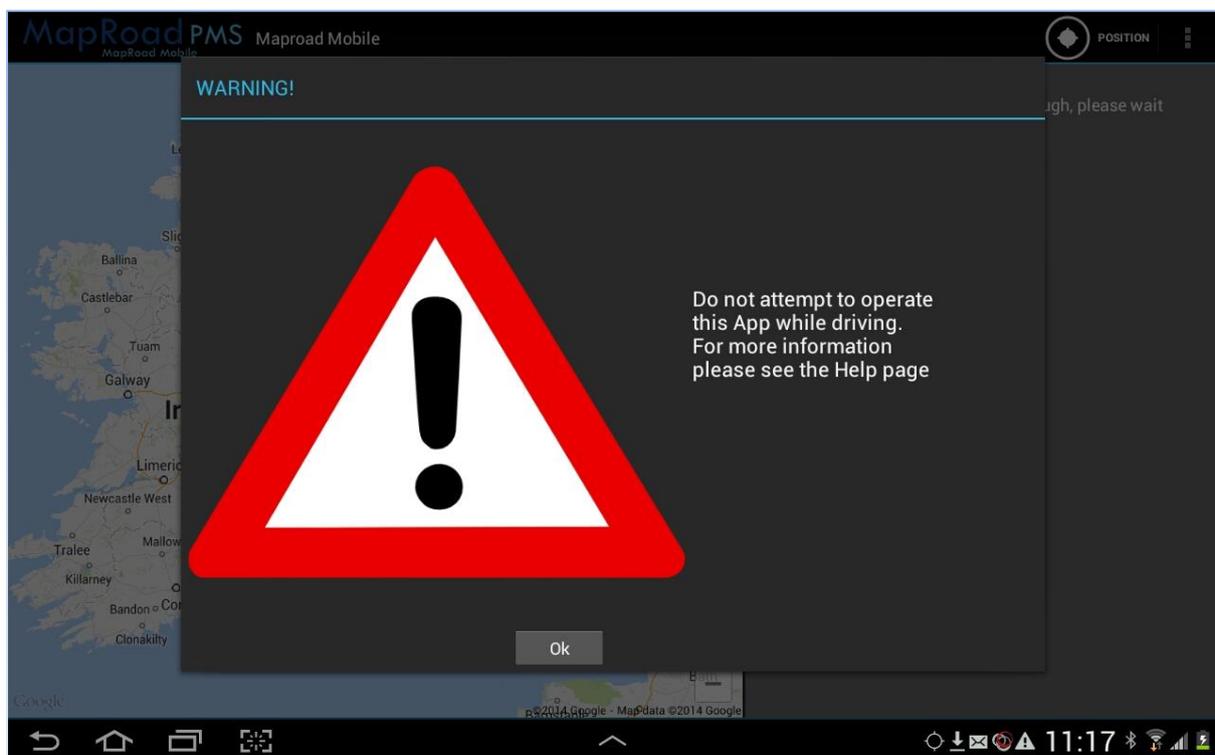
Unless stated, the screenshots included in this section are from Tab 2. Where alternative operations for Tab 3 exist, they are described.

3.1 Opening the MapRoad Mobile App

Open the MRM App by pressing on the MRM icon on the applications page.



Please note the warning message!



NOTE: The MapRoad Mobile App must not be operated by the driver while capturing Pavement Surface Condition Index (PSCI) data. The MapRoad Mobile App should be operated by the passenger seat driver.

While observations and discussion on the pavement surface condition is encouraged between the driver and tablet operator, the driver should not be charged with operating the tablet at any point.

3.2 Accessing the MapRoad Mobile App Main Menu

Once the MapRoad Mobile App is open, the main menu is accessed differently depending on which tablet is being used;

Tab 2

In the top right corner, expand the main menu by selecting the three vertical square dots.

Tab 3

Select the left menu button on the device.

3.3 Create a Project

Select **New project**.

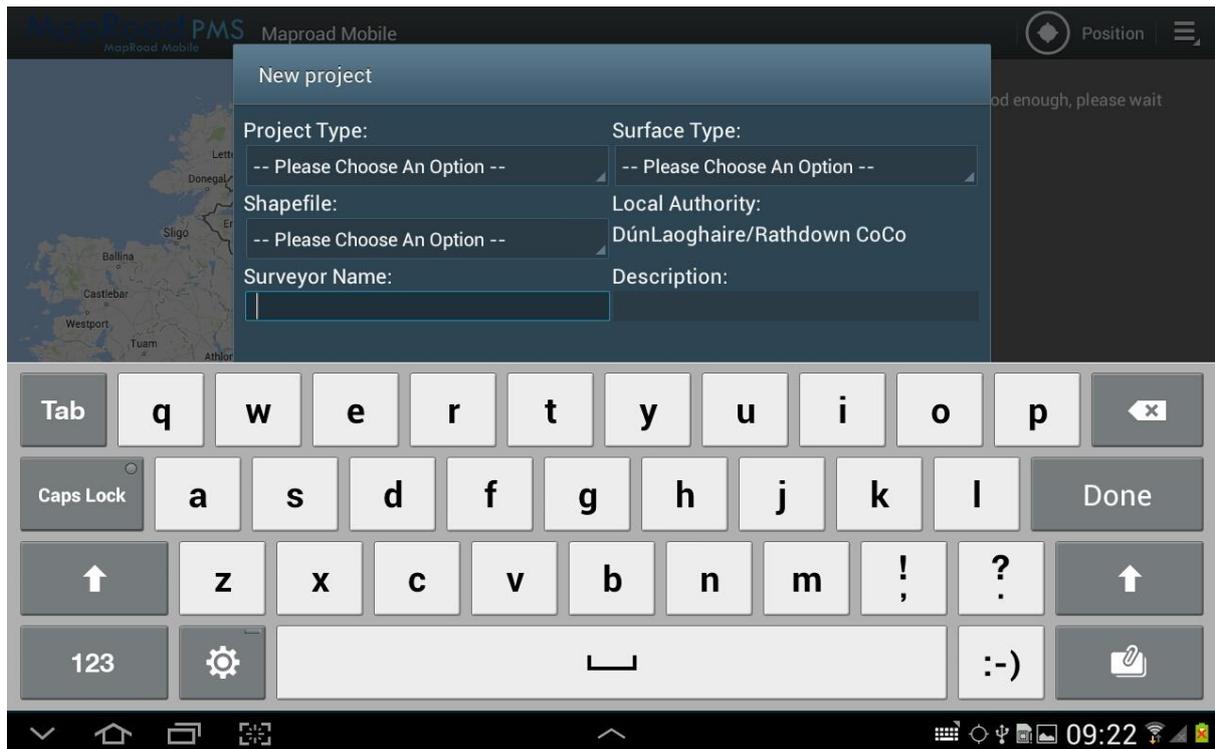
The 'New project' options will appear. Note also, that the virtual keyboard will appear. To remove the keyboard from the screen;

Tab 2

Select the down direction icon in the bottom left of the screen.

Tab 3

Press the Back button on the device.



Entries for all fields are required, except for the description which is optional.
Note that the Local Authority is not selectable, as this is configured during installation.

Project Type: Select PSCI - Rural, PSCI – Urban or Surface Type.

- PSCI - Urban** *Select this option if all (or the majority) of the survey is to be completed in large urban areas.*
- PSCI - Rural** *Select this option if the survey is to be completed in rural areas. It is acceptable to use the rural option for small towns and villages.*
- Surface Type** *Select this option if the survey is to record the surface type of the road. This is not a visual inspection of the quality of the road surface; this survey allows the user to record the wearing course that has been applied.*

Surface Type: Dependent on the **Project Type** selected initially.

- For PSCI - Urban** *Select Flexible or Concrete.*
- For PSCI - Rural** *Flexible is the only available option.*
- For Surface Type** *Select Urban or Rural.*

Shapefile: Select your Local Authority Road Schedule (shapefile) from the drop down menu. If the project you are creating is a training survey, select the relevant test loop shapefile.

Local Authority: This is auto-populated from the initial selection when installing or upgrading MRM and cannot be changed.

Surveyor Name: Surveyors Full Name. Please avoid using initials.

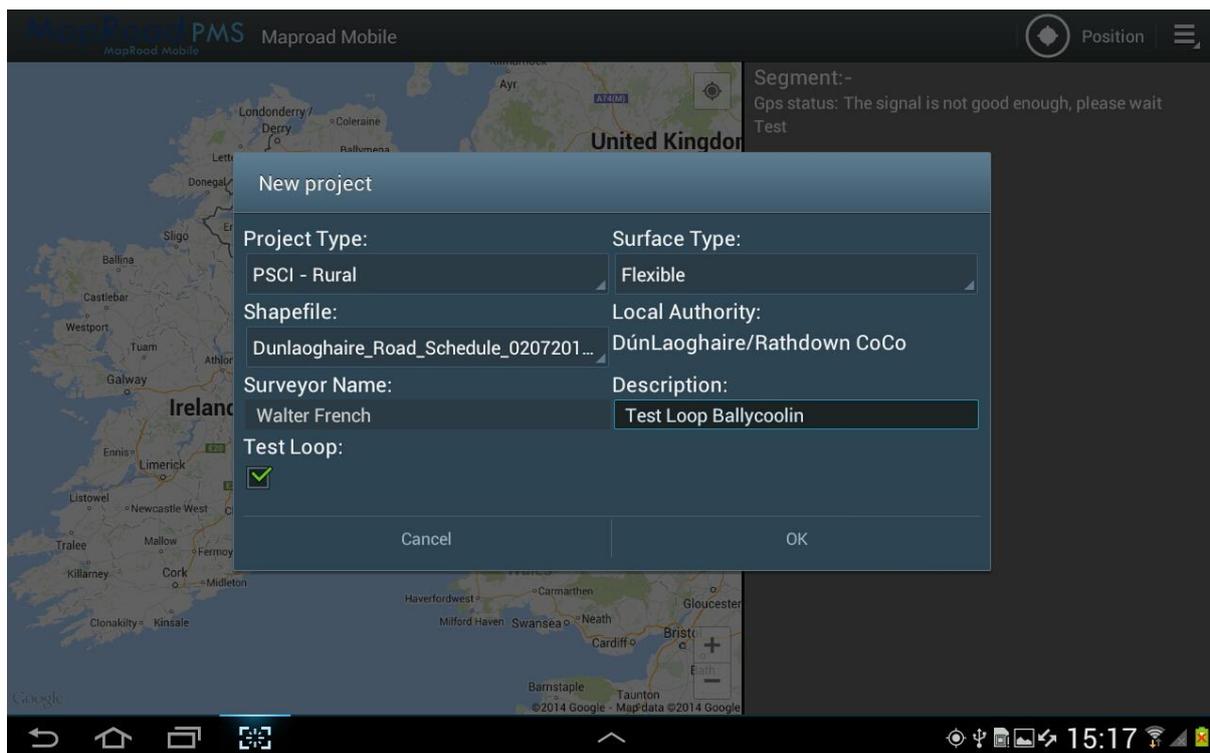
Description: Any relevant information (Optional).

Test Loop: Allows the user to identify whether the survey type is a test loop survey or not.

- For PSCI - Urban** Check box is survey is a Training Loop survey. *
- For PSCI - Rural** Check box is survey is a Training Loop survey. *
- For Surface Type** Option is not available for **Surface Type** project.

* The test loop option allows the user to select if the survey project is to be recorded as valid PSCI Survey data for import into the web-based PMS application - **Unchecked**, or if the PSCI Survey is a test survey for the purposes of training following the completion of the PSCI Surveyor’s course completed by the user at one of the 5 RTCs – **Checked**.

The screenshot below illustrates an example of a survey project created to complete a Training Loop in the Ballycoolin RTC. Once the project is uploaded, it is sent to PMS Ltd. for review and grading.



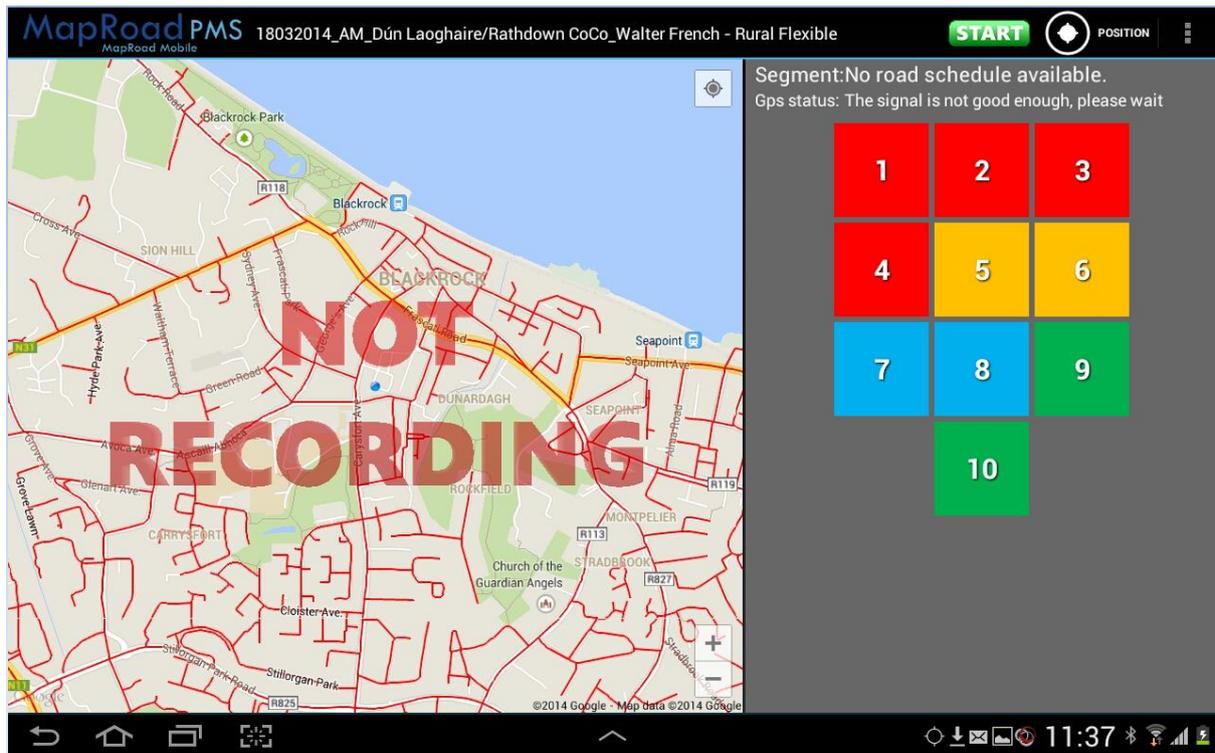
Once all the required fields have been entered, select **OK**.

Tab 3

Note that the **OK** button may not be visible if the virtual keyboard is still displayed. Press the **Back** button on the device to remove the keyboard which then allows access to the **OK** button.

Note the loading bar that appears confirms that a new project has been created successfully. If all the required options are not selected, a new project cannot be created.

Once a new project has been created, the MapRoad Mobile App will display a ratings keypad on the right of the screen, with a map panel on the left showing the Local Authority Road Schedule in red and a pale blue dot identifying the geographic location of the tablet.



Check **Segment** and **GPS status**:

Above the ratings keypad, note that there are two lines of information about Segment and GPS status.

Segment:

Displays the road segment where the user/tablet is currently located. The segment number is displayed whether the road is being surveyed or not.

If 'No road schedule available' is displayed then the user is currently not located on the Local Authority Road Network.

GPS status:

This displays GPS accuracy information which is typically between 5 and 20m. If 'The signal is not good enough, please wait' is displayed, a better GPS signal is required in order to locate the user and drop points successfully. If the message persists, make sure the GPS on the tablet is turned on.

When surveying, ensure the tablet is held towards the windscreen – resting on the dashboard of the vehicle if possible. Holding the tablet on the surveyors lap may restrict GPS satellite visibility.

3.4 Capturing Data

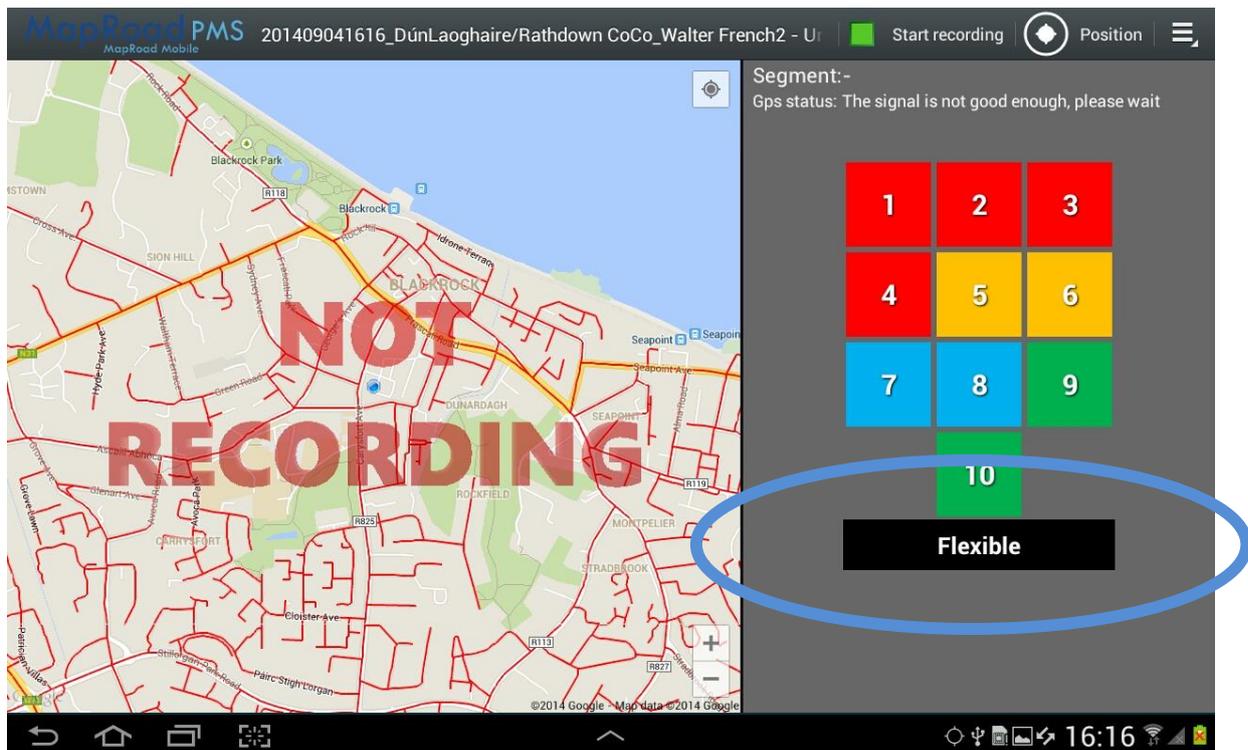
This section describes capturing PSCI and Surface Type data.

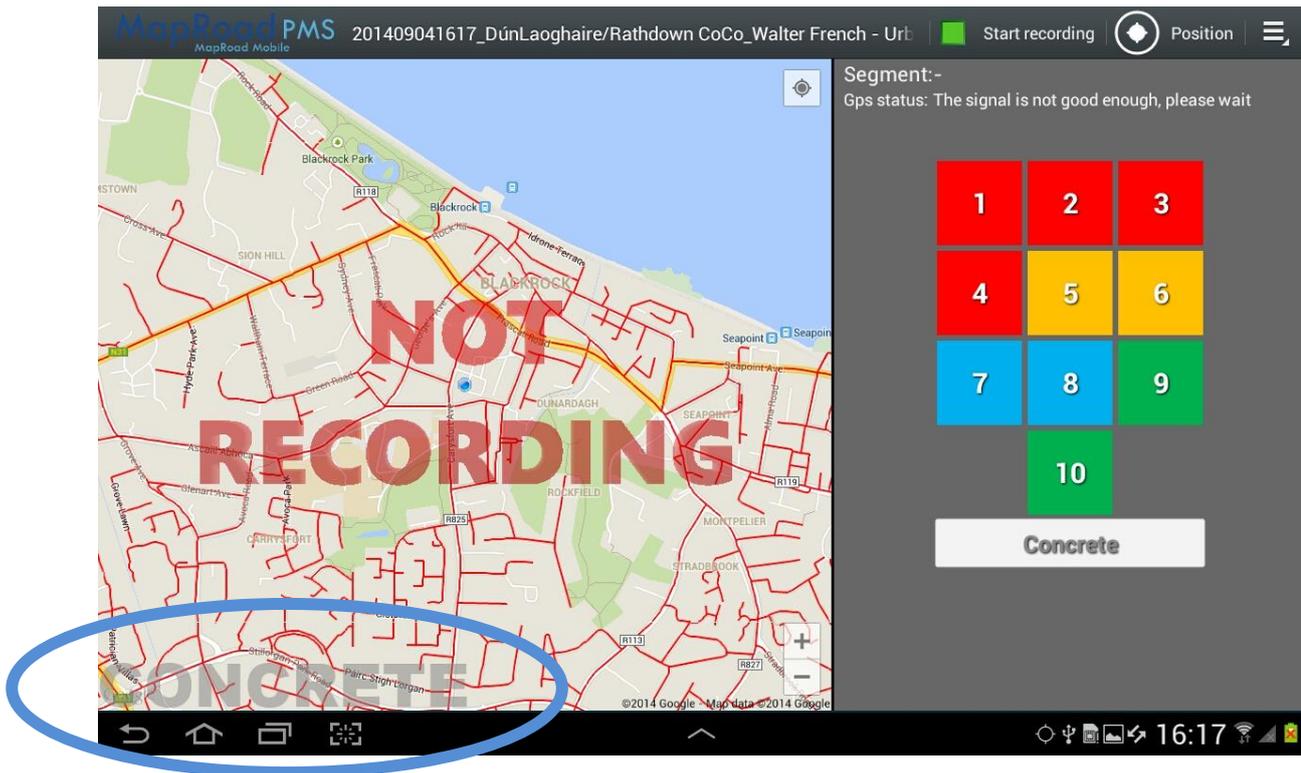
3.4.1 PSCI Surveys

Once a new project has been created (and the Local Authority Road Schedule is displayed), Pavement Surface Condition Index (PSCI) rating data can now be captured. The process for recording PSCI – Urban and PSCI – Rural project types are almost identical.

Differences;

- PSCI – Urban projects drop points every 15 metres or so, PCSI – Rural project points are dropped every 35 metres or so.
- PSCI – Urban Concrete projects include a **Flexible** option below the rating keypad.
- PSCI – Urban Flexible and PSCI – Rural Flexible projects include a **Concrete** option below the rating keypad.





When completing a PSCI - Urban Survey project of a particular surface type, i.e. Concrete or Flexible, if the surface type is different from the Project Surface Type, select the alternative option. E.g. If the survey being captured is a PSCI – Urban Flexible project and the surveyors begin to traverse along a segment of road that is concrete, select the Concrete option below the rating keypad. When the surface type being traversed is once again Flexible, select an appropriate rating for that surface on the keypad to exit concrete mode. When capturing Concrete surface type during a Flexible surface type project, Concrete will be displayed in the bottom left hand corner of the map panel as circled above. Similarly, when capturing Flexible surface type during a Concrete project type, Flexible will be displayed in the bottom left hand corner of the map panel.

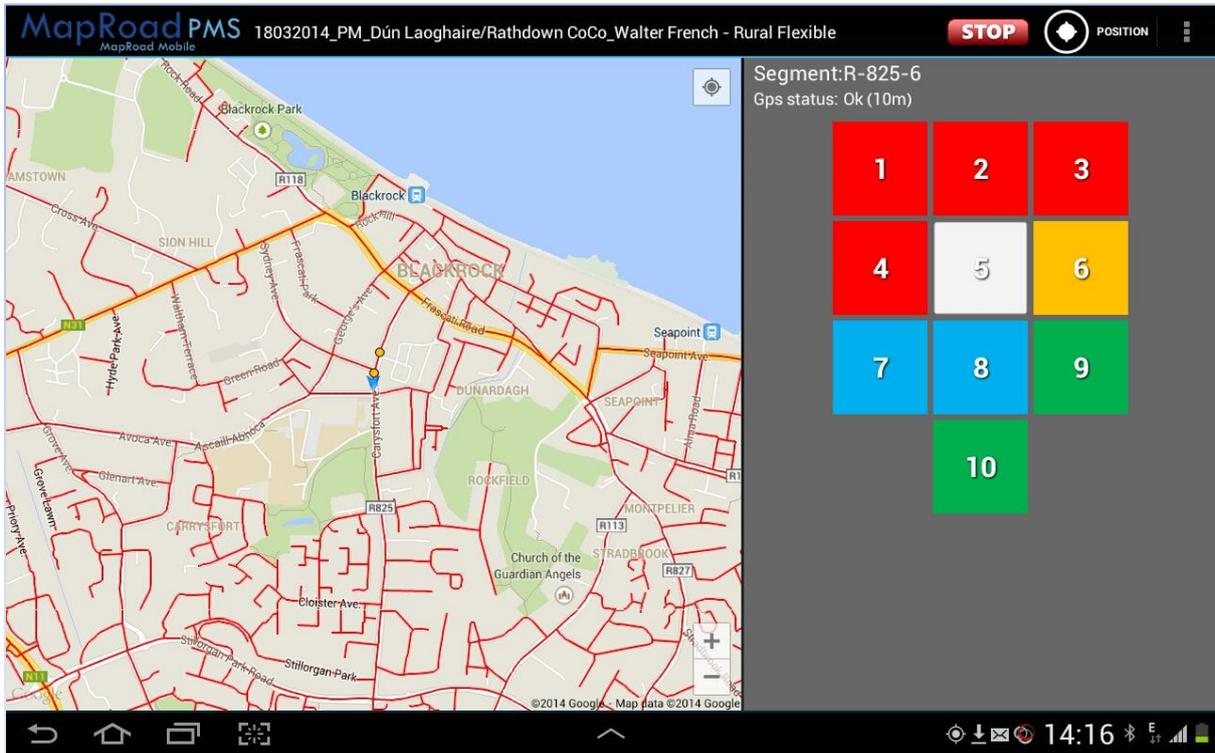
Recording Data;

Note that when a project is first created (or loaded) **NOT RECORDING** is drawn over the map panel.

To record data, select an initial rating from the ratings keypad. This rating should be appropriate for the condition of the pavement surface on the road segment where the survey will begin. Once selected, the colour rating will highlight in white.

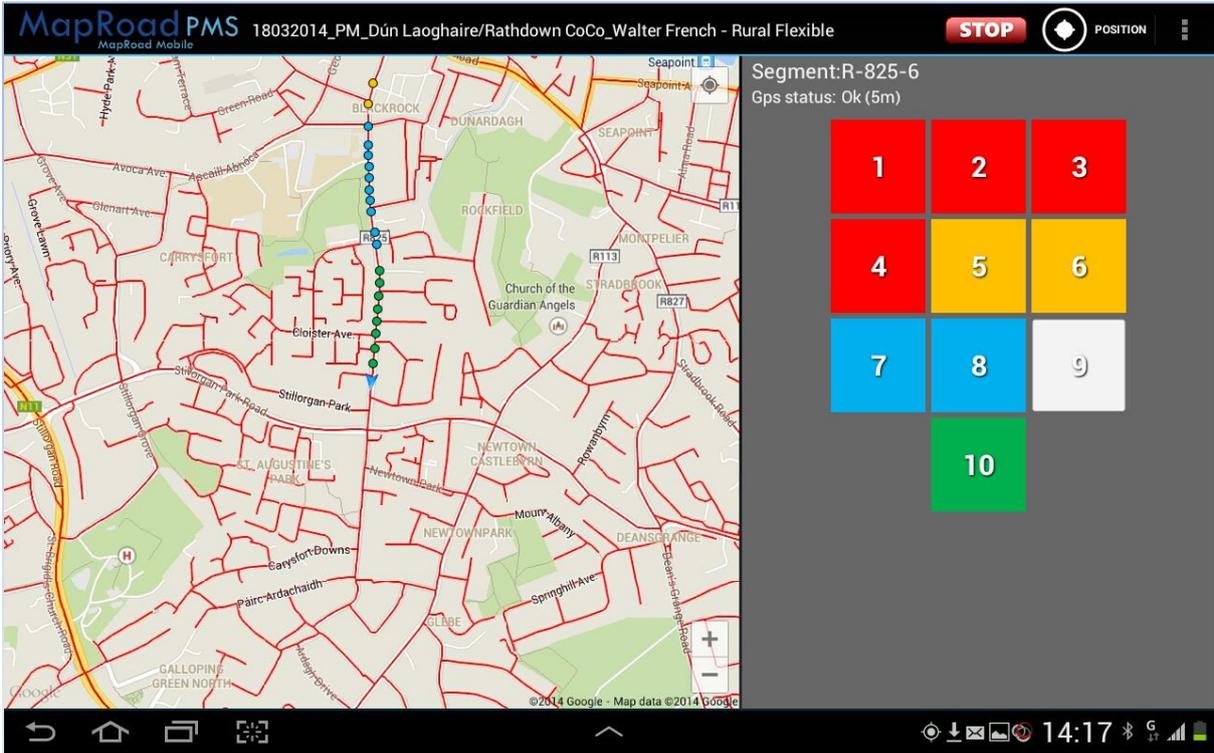
At the top right of the screen, note the green Start Recording button. Click Start Recording to begin recording. (Note that the green Start Recording button has now been replaced by a red Stop Recording button and that the **NOT RECORDING** text has been removed from the map panel).

Proceed to drive along the road network and note that the location (pale blue dot) changes as you drive. Also note that colour coded points are dropped along the route identifying the condition rating recorded at that location.

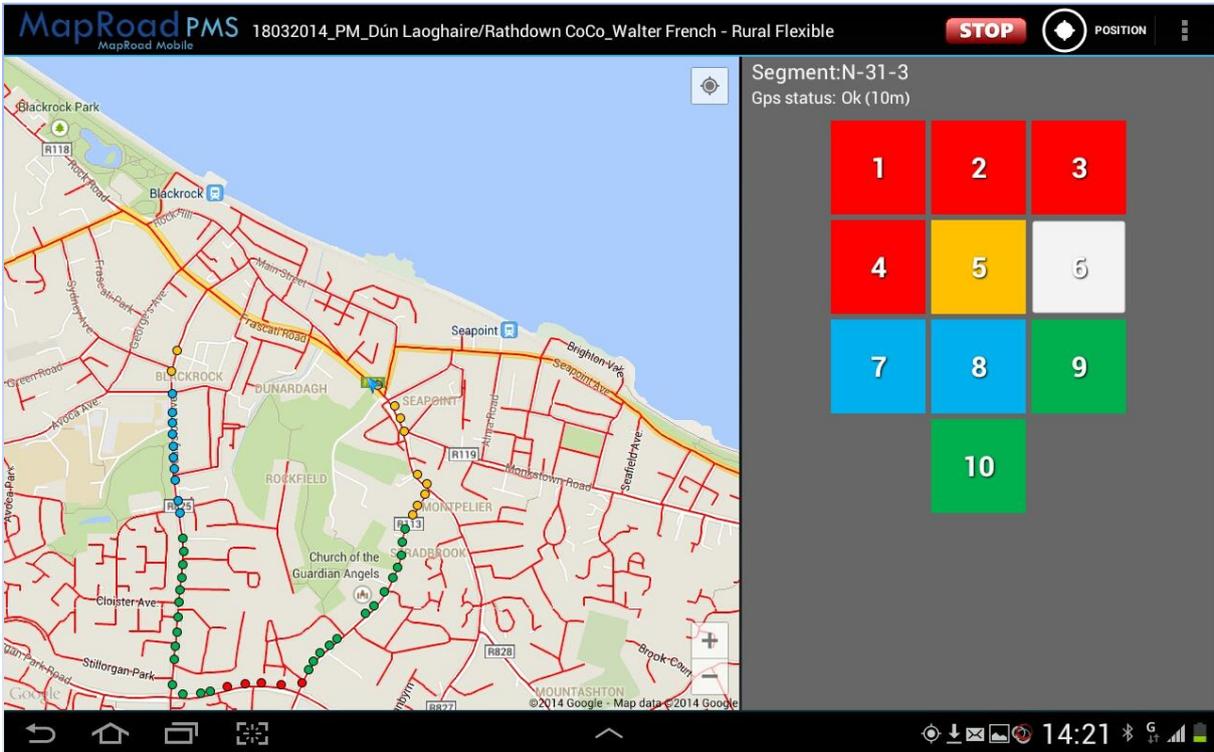


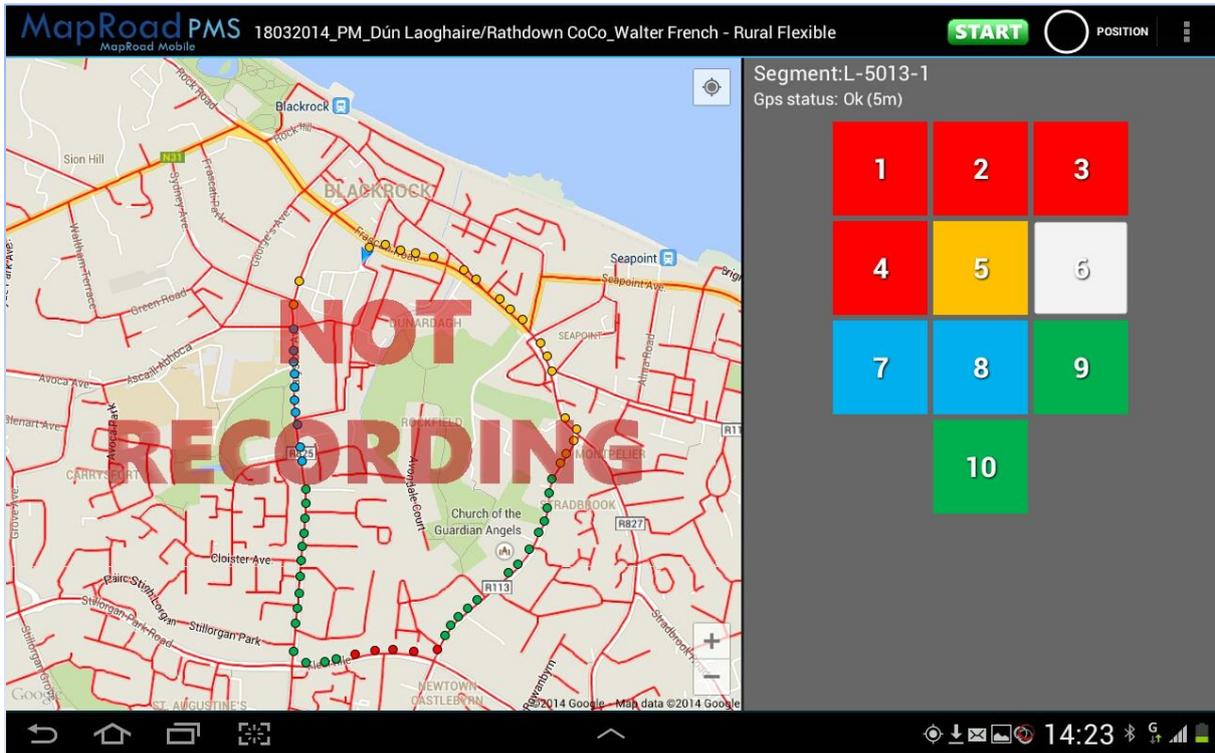
As the condition of the pavement surface changes, remember to choose the appropriate rating to reflect this change.

On the application interface, points are dropped every 35m for 'Rural' survey projects and every 15m for 'Urban' survey projects. **Do not travel at speeds exceeding 60km/h when capturing either rural or urban surveys.** It is difficult to accurately rate a road at speeds exceeding 60km/h. The recommended driving speed for capturing PSCI Survey data is between 40km/h and 50km/h. See Section 4.3 'Health and Safety – Driving' for additional information, and also the appendix section for extract from Roads Act 1993 concerning Health & Safety while driving.



Ratings should generally only change after 200 metres or more, where appropriate.





Once a survey has been completed, select the red Stop Recording button in the top right of the screen.

Note that the red Stop Recording button has now been replaced by the green Start Recording button and that the **NOT RECORDING** text is again drawn over the map panel. This is to remind the user that they have stopped rating. Dropping points can be resumed by clicking the Start button again.

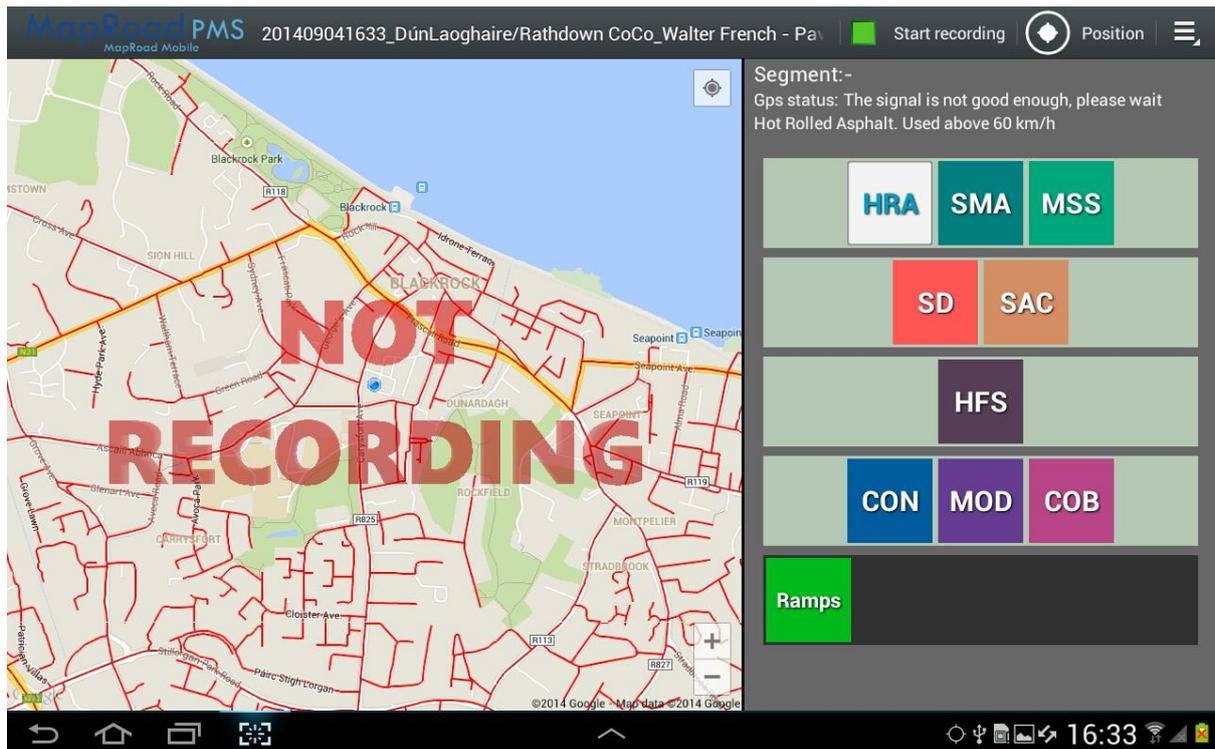
If the Stop Recording button is selected in error, press Start Recording again to continue recording within the existing project. There is no need to click Stop Recording and Start Recording when stopped at traffic lights or similar. The MapRoad Mobile App will know the user is stationary and thus will not drop any points.

When survey is complete, select the Stop Recording button. Once completed, the survey project can now be uploaded.

3.4.2 Surface Type Surveys

Surface Type projects record the wearing course of the road surface. They are not a visual inspection of the road surface condition.

The Surface Type project interface contains a surface type panel where abbreviations of surface types are included on the keypad. The full name of the surface type abbreviation is included below the 'GPS status' information above the keypad.



Surface Type projects also allow the user to record the location of Ramps along the road network. When traversing along the road network, select the 'Ramps' button on the keypad to record that ramp location; selecting the Ramps button does not affect the selection of the Surface Type – the surface type will continue to be recorded.

Recording Data;

Note that when a project is first created (or loaded) **NOT RECORDING** is drawn over the map panel.

To record data, select an initial surface type from the surface type keypad. This surface type should be appropriate for the pavement surface wearing type on the road segment where the survey will begin. Once selected, the surface type will highlight in white.

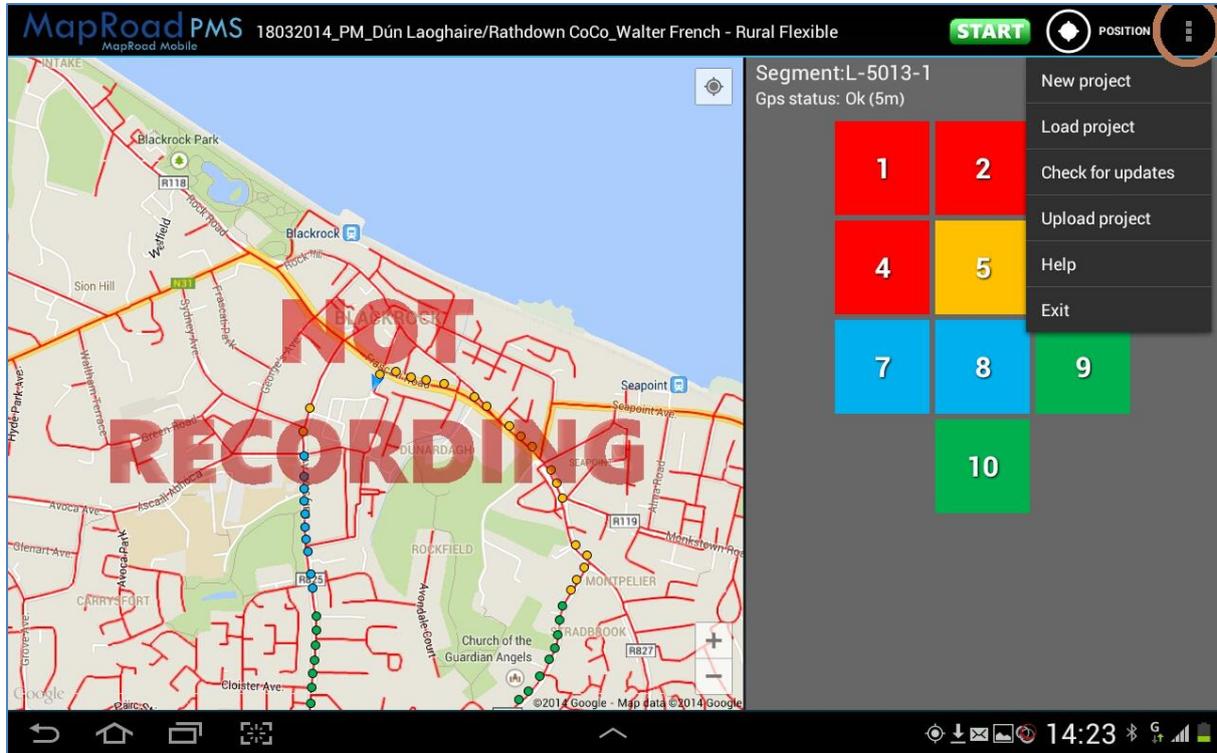
At the top right of the screen, note the green Start Recording button. Click Start Recording to begin recording. (Note that the green Start Recording button has now been replaced by a red Stop Recording button and that the **NOT RECORDING** text has been removed from the map panel).

Proceed to drive along the road network and note that the location (pale blue dot) changes as you drive. Also note that colour coded points are dropped along the route identifying the surface type recorded at that location.

When survey is complete, select the Stop Recording button. Once completed, the survey project can now be uploaded.

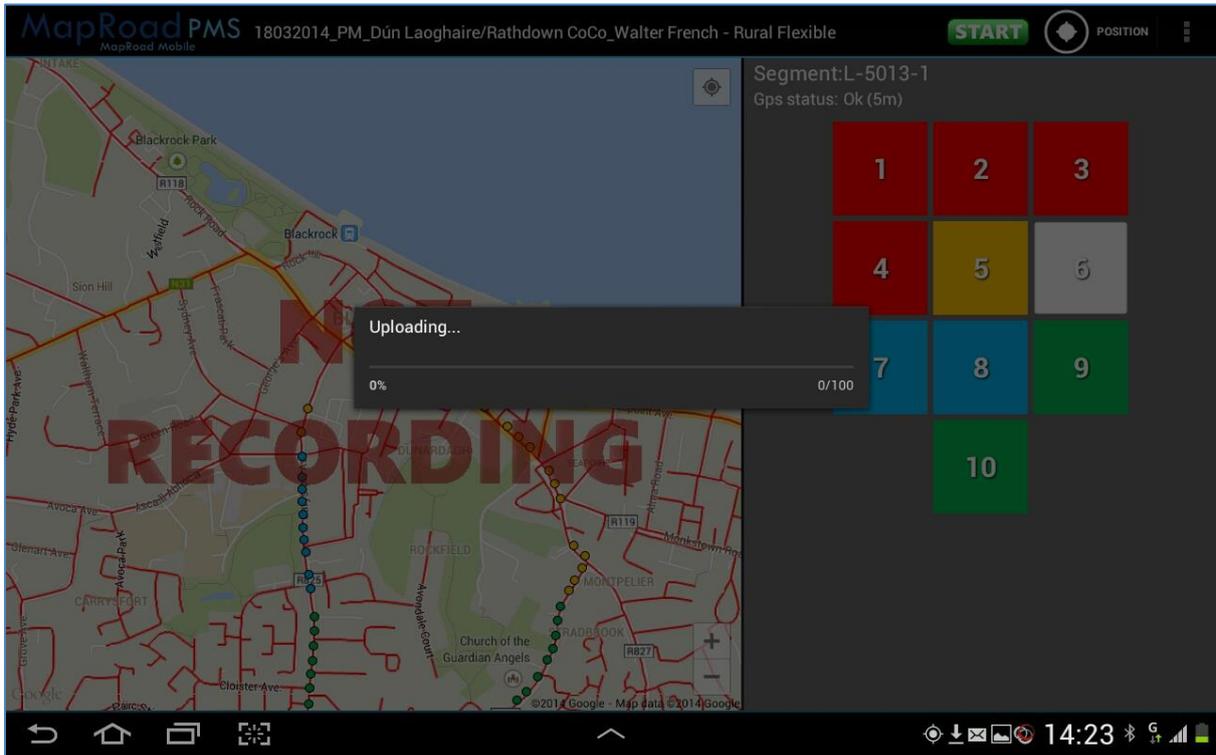
3.5 Uploading a Project

With the survey project open within the App, open the MapRoad Mobile main menu (See Section 3.2 above if you are unsure how to open the main menu).

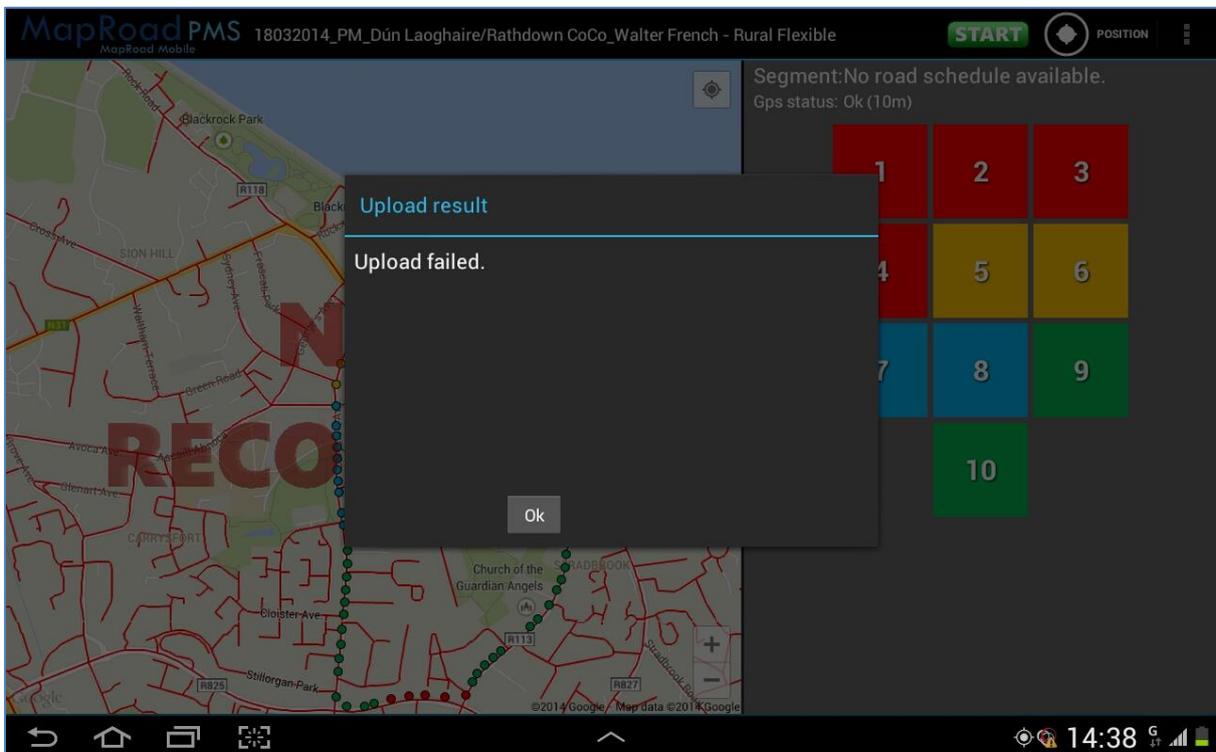


Select **Upload project**.

An uploading status bar will appear. For fast connection speeds this status bar may only appear briefly.



Once completed, a message will pop up confirming that the upload was successful. If data connectivity is slow or not present the upload will not succeed and an **Upload failed** message will appear.



When uploading data using the Mobile Data network, ensure that there is a **3G** or **H+** data signal available, otherwise the upload may not proceed successfully. If the upload continues

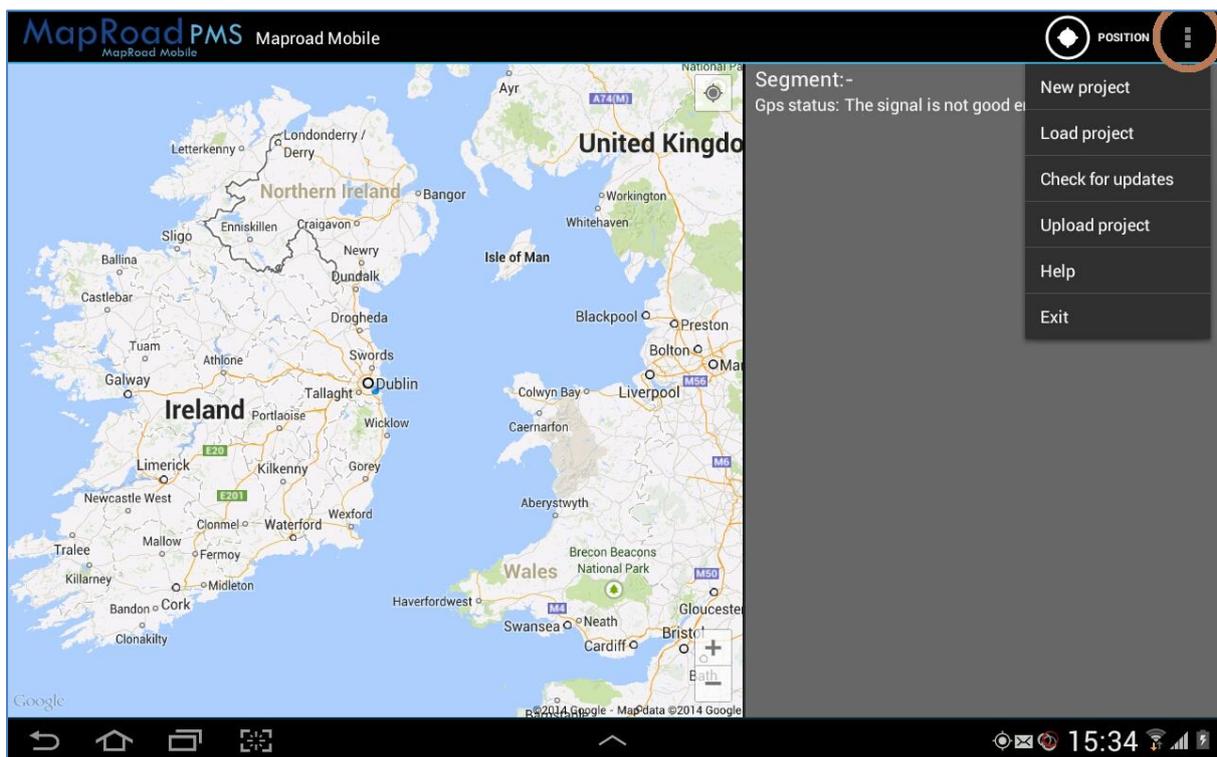
to fail check to ensure that the tablet has an internet connection. Simply open the browser on the tablet and try and load google or any known internet page. If the tablet is online but you continue to experience upload issues, please exit the MapRoad Mobile App and contact Compass Informatics.

You may continue to create new projects to capture more survey data. All created projects are stored automatically on the tablet. These projects can be reloaded and uploaded at a later time when a better Mobile Data network connection is available or the tablet is connected to Wi-Fi. However please remember that it's always best to upload the project file as soon as the survey has been completed. This helps to safeguard against any loss of data.

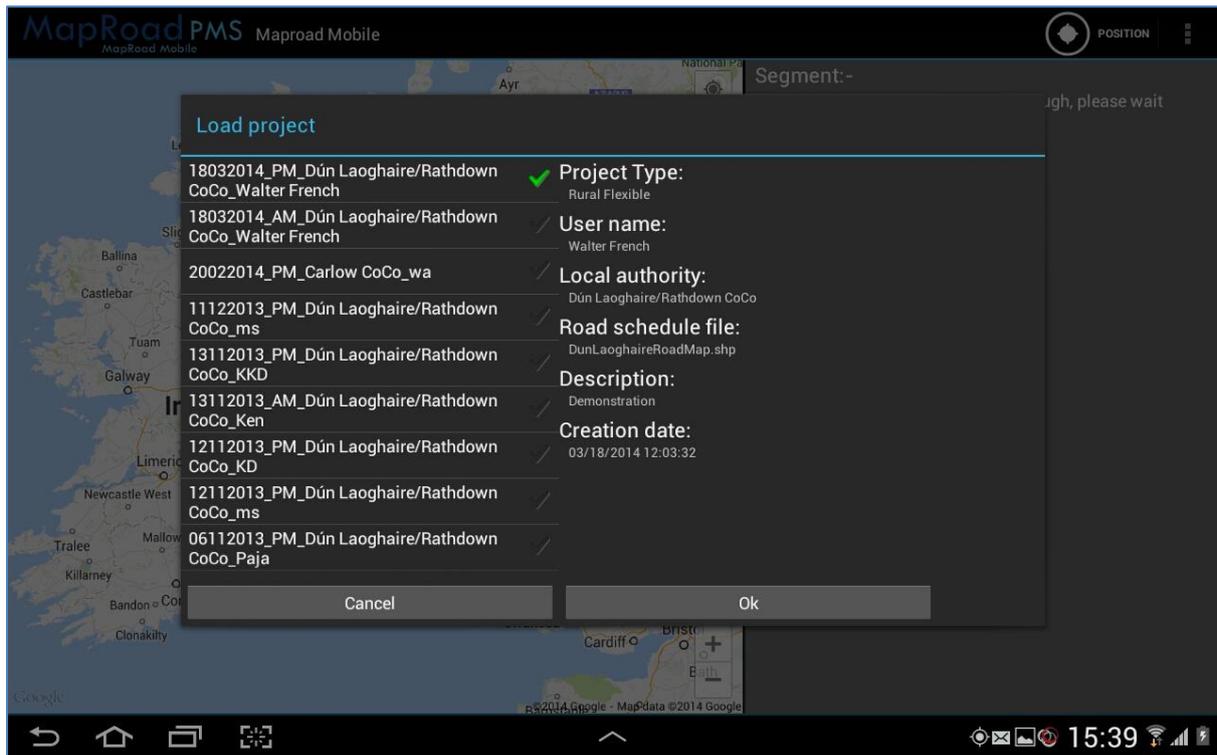
3.5.1 Uploading a Saved Project

Existing projects should only be opened for review or reference. **Please do not open and append to existing projects once they have been uploaded. Create a new project each time you survey.**

From the MapRoad Mobile menu, select **Load project**.



Select an existing project to upload. Only one project may be selected at a time. When selected, a green tick will appear beside the project name and projects details will display on the right of the 'Load project' screen.



Once a project has been opened, upload as described in the previous section by selecting 'Upload project' from the MapRoad Mobile menu. Repeat for any projects that have not been previously uploaded.

3.6 Data Review

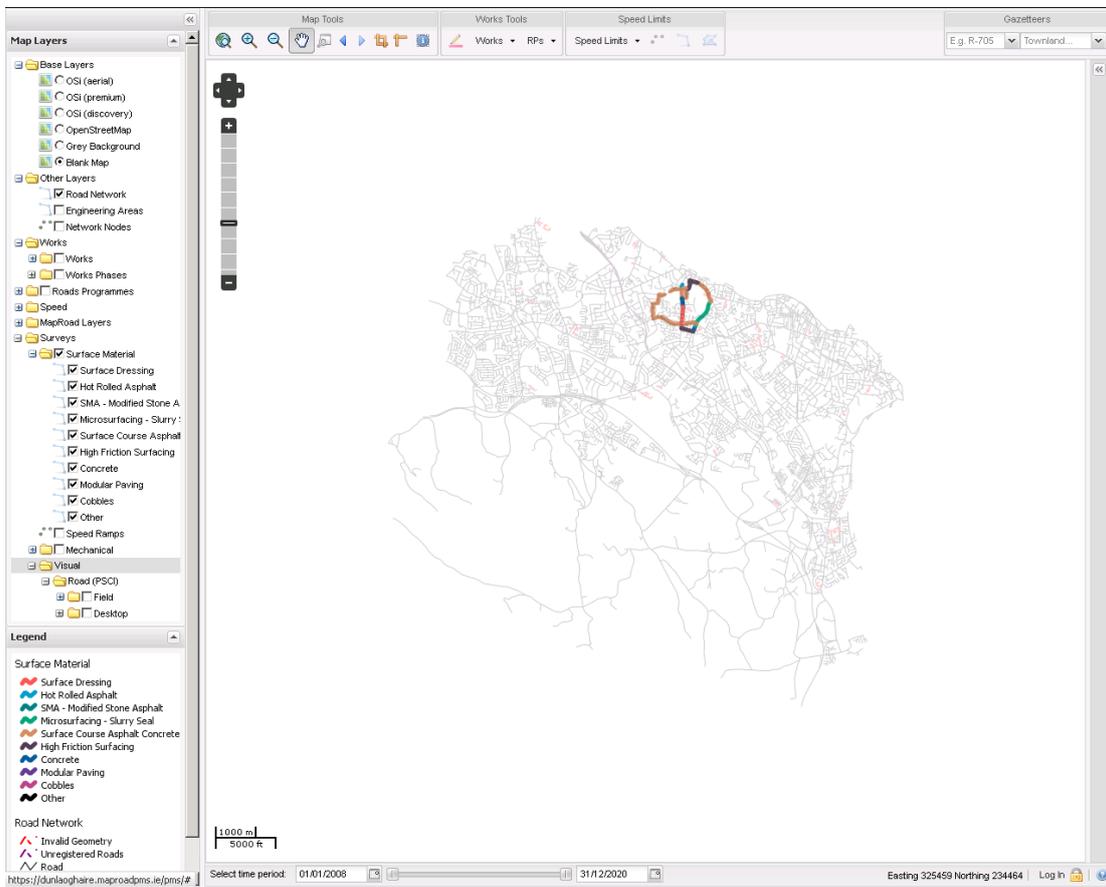
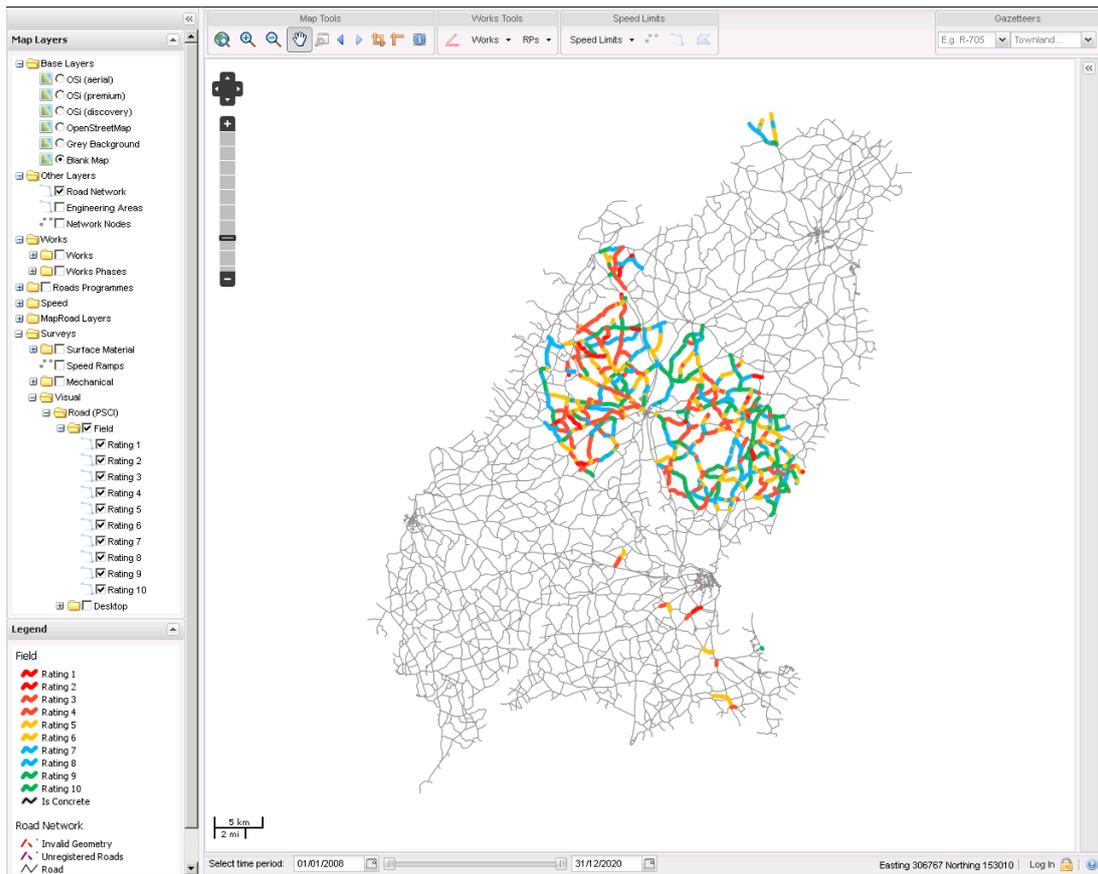
Following the release of MRM v2.5 to centralised LAs, any PSCI Survey data captured and successfully uploaded from the tablet is (almost) immediately available to view within PMS. MRM v3.0 includes Surface Type projects, and once these data are successfully uploaded from the tablet, they are also available (almost) immediately to view within PMS

To verify captured PSCI Survey data has imported correctly, open PMS from your LA office network, expand the **Surveys – Visual – Road (PSCI)** layer in the Map Layers panel and pan to the location where those data have been captured.

Surface Type survey data is accessible in the **Surveys – Surface Material** layer in PMS.

LA versions of PMS are available at <https://la.maproadpms.ie/pms> (where **la** is the local authority, e.g. <https://wexford.maproadpms.ie/pms>).

Examples of survey data displayed in PMS are shown below.



Note:

If PSCI or Surface Type Survey data have been captured and successfully uploaded (i.e. An Upload Successful message was displayed in the tablet), but data are not visible in PMS, log a ticket with the MapRoadPMS Ticket Tracker detailing location of survey, date and time.

4. Operating Instructions

This chapter outlines general operating suggestions while using the tablet to capture PSCI Survey data.

4.1 Tablet

1. The operator (user) should hold the tablet relatively high and as close to the windscreen as is comfortable to do so.

The tablet should not be resting on the user's lap.

Two reasons for this;

- i) The objective of the survey is to capture visual condition ratings. The tablet should be held in such a way that the user can easily switch between viewing the tablet and viewing the road.
- ii) The accuracy of the location displayed within the MapRoad Mobile App and thus the location recorded in the results depends on the GPS signal quality. Signal and accuracy is reduced if the tablet is located in (or close to) the centre of the vehicle cabin. Best accuracy is achieved by holding the tablet close to the windscreen and windows to minimise visual obstruction to GPS satellites.
If the external Bluetooth GPS device is connected, this point is irrelevant.

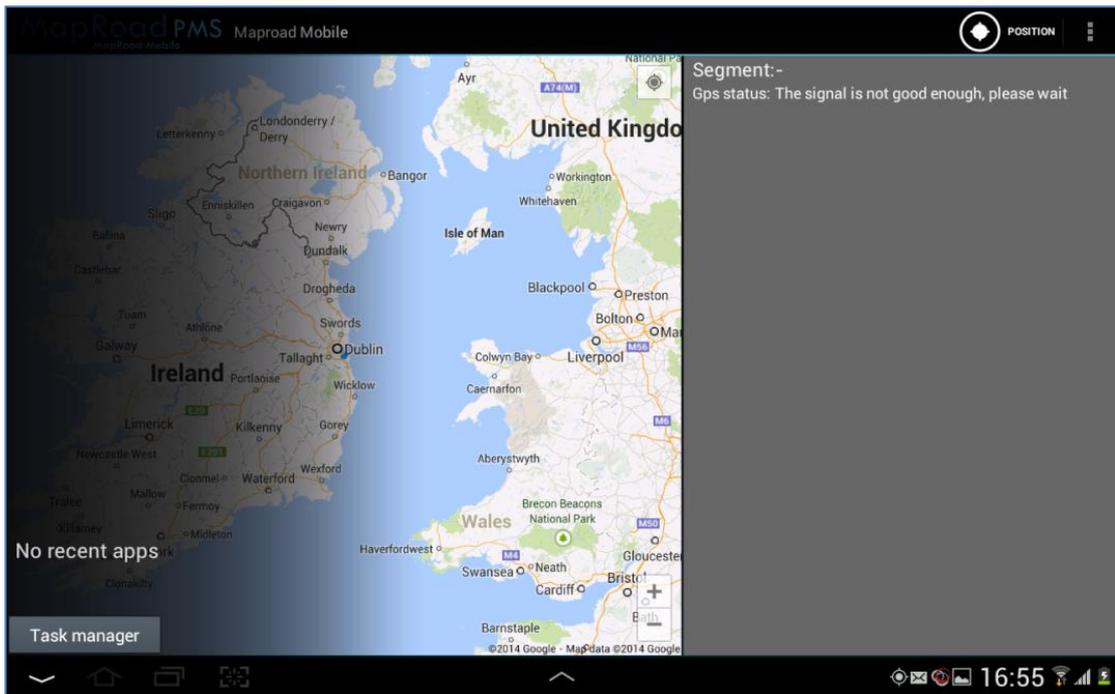
2. Ensure that all unnecessary apps are closed before beginning to capture PSCI Survey data. Open the **Application Manager** to see a list of all running apps.

Tab 2

Open the Application Manager and then swipe an application shortcut to the left or right to stop the application.

Tab 3

Open the Application Manager and then swipe an application shortcut up or down to stop the application.



It is recommended that the MapRoad Mobile App is the only one running when commencing a PSCI Survey i.e. there should be no application shortcuts available when opening the Application Manager, as shown above.

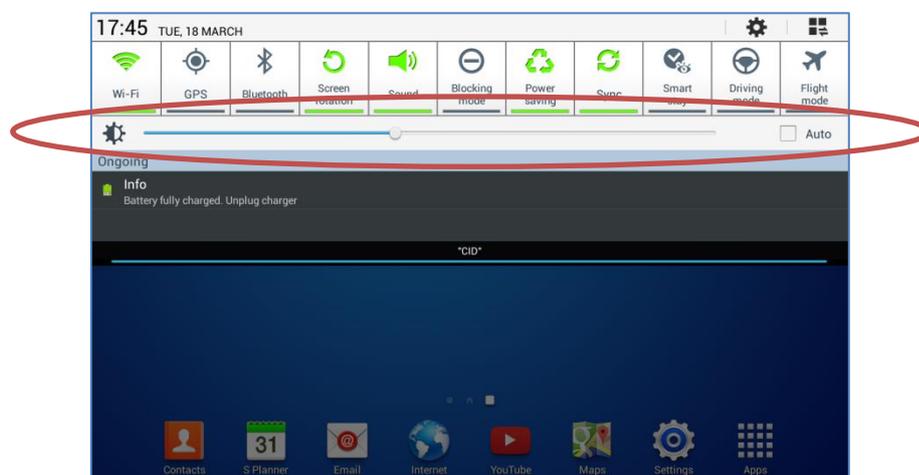
3. Adjust the screen brightness accordingly, depending on the ambient light. It is recommended that the screen be set to maximum brightness to avoid any confusion between selections of PSCI Ratings from the ratings panel.

Tab 2

To adjust screen brightness, access the brightness feature from the pop-up menu (tap in the bottom right corner) and increase or decrease the brightness using the horizontal slider.

Tab 3

To adjust screen brightness, access the brightness feature from the pull-down menu and increase or decrease the brightness using the horizontal slider.



Note: If the **Auto** check box beside the slider is unchecked, this will allow the maximum brightness to be selected by sliding all the way to the right.

4.2 Battery and Pre-Check of Tablet and App

It is prudent to check that the tablet and the MapRoad Mobile App are fully functioning before leaving the office to survey.

Ensure the tablet is fully charged before undertaking a survey. Data may be lost if the tablet loses power while surveying. The MapRoad Mobile App uses GPS and a Mobile data connection (when available) to capture and display data. This is known as assisted GPS. However the App will work fully offline i.e. without a data connection. The only requirement is for the tablet to see the sky so it can receive GPS data from the orbiting satellites. A Data connection is only required to download the background maps (which are nice to have but not necessary for the App to work) and to upload the project. However this upload could be done back in the office on Wi-Fi.

Powering the screen consumes a considerable proportion of the battery's resources. Surveys lasting a number of hours can quickly drain the battery so ensuring the battery is fully charged minimising the risk of data loss.

If you plan to record a survey, ensure that the tablet is fully charged overnight before the survey is due to take place.

It is also recommended that an in-car charger be used when capturing data with the tablet, particularly when surveys are expected to last all day

If there is a requirement to suspend data capture for a short time, the survey project can be paused by pressing the red Stop Recording button. Once ready to start surveying again, press the green Start Recording button. This will save battery life.

4.3 Health and Safety - Driving

Under no circumstances should the driver operate the vehicle and the tablet at the same time.

The recommended driving speed while performing a Pavement Surface Condition Index survey is between 40km/h and 50km/h, assuming optimal survey conditions. Operation of the tablet, visual inspection of the road surface, and consultation between the tablet user and the driver (if driver is certified/qualified to provide input on PSCI survey) on the condition of the road surface is not advisable at excessive speeds. The vehicle speed where surveys are been undertaken is the responsibility of the driver. The Appendix section at the end of this manual contains an extract from the Roads Act 1993, concerning health and safety while driving. Surveys should be carried out with the content of this extract in mind.

Appendix

Roads Act, 1993 Extract

- ❑ **Section 67 of the Roads Act, 1993** states the following:
- ❑ **67(1)** It shall be the duty of a person using a public road to take reasonable care for his own safety and for that of any other person using the public road.
- ❑ **67(2)** It shall be the duty of a person using a public road to take all reasonable measures to avoid
 - ❑ Injury to himself or to any other person using the public road,
 - ❑ Damage to property owned or used by him or by any other person using the public road.
- ❑ The driver must always **drive at an appropriate speed**. Judgement of the appropriate speed at all times is part of the skill of driving. The appropriate speed must take account of all possible factors (e.g., driver, vehicle and environment) and particularly all possible hazards (e.g., what can/cannot be seen, what can be reasonably expected to happen and what could happen in certain instants).