



# Bridge Site Monitoring APP User Manual

## Version 3.0.0

Training Date: 21 Nov 2019 - 22 Nov 2019

Location: Dhulikhel Mountain Resort



**Government of Nepal**  
Ministry of Physical Infrastructure and  
Transport  
**Department of Roads**

**BELONGS TO:**

---

*(Write your name)*

**GETTING**

**STARTED**

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# BSM WEB APPLICATION

# **PART I**

## **BSM Mobile App**

# 1. Login

- (i) First of all, the account has to be setup (to fill forms for New monitoring, Edit monitoring, Upload or Sync data from or to the server) else you will get following error message.

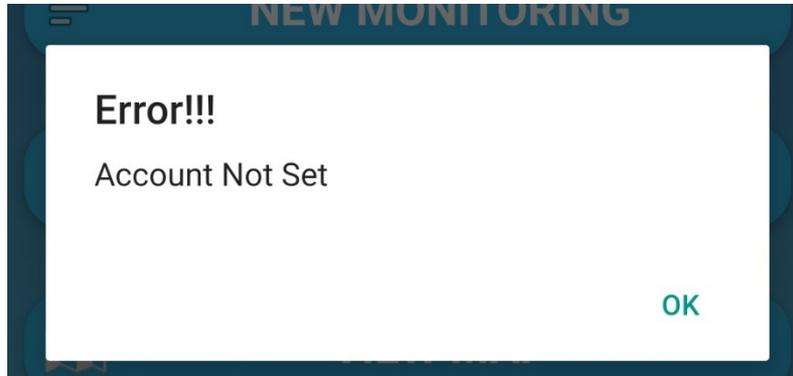


Figure 1.1: Error message for Account not set

- (ii) To set account click  (profile) icon at top right corner of the app as shown in Figure 1.2

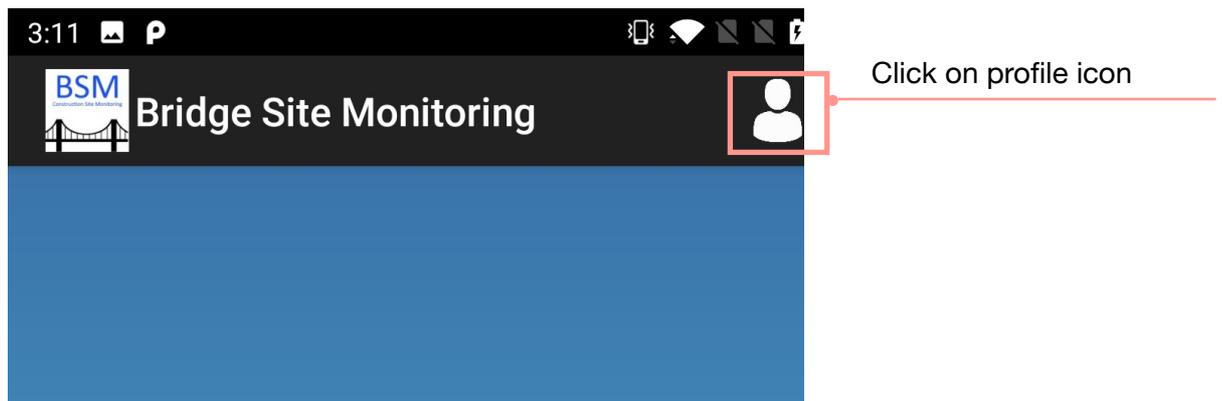


Figure 1.2: Set account icon

- (iii) Click on the profile icon displays following screen as shown in Figure 1.3. Type Username which is your Email ID and Password and press "Set" button to setup you account.

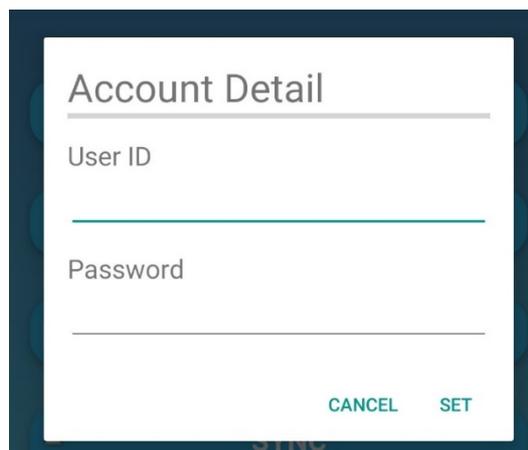


Figure 1.3: Set Account form

## 2. Home

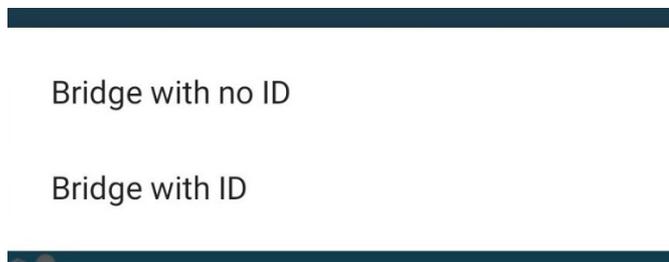


Figure 2.1: Main Screen

Figure 2.1 shows the main screen of the BSM application. This app allows to record new site observations and events, upload photo, audio, video for the respective observations and events, edit the existing observations and events, plot location of bridges in map and uploads the observation data in the server accessible online.

### 3. New Monitoring

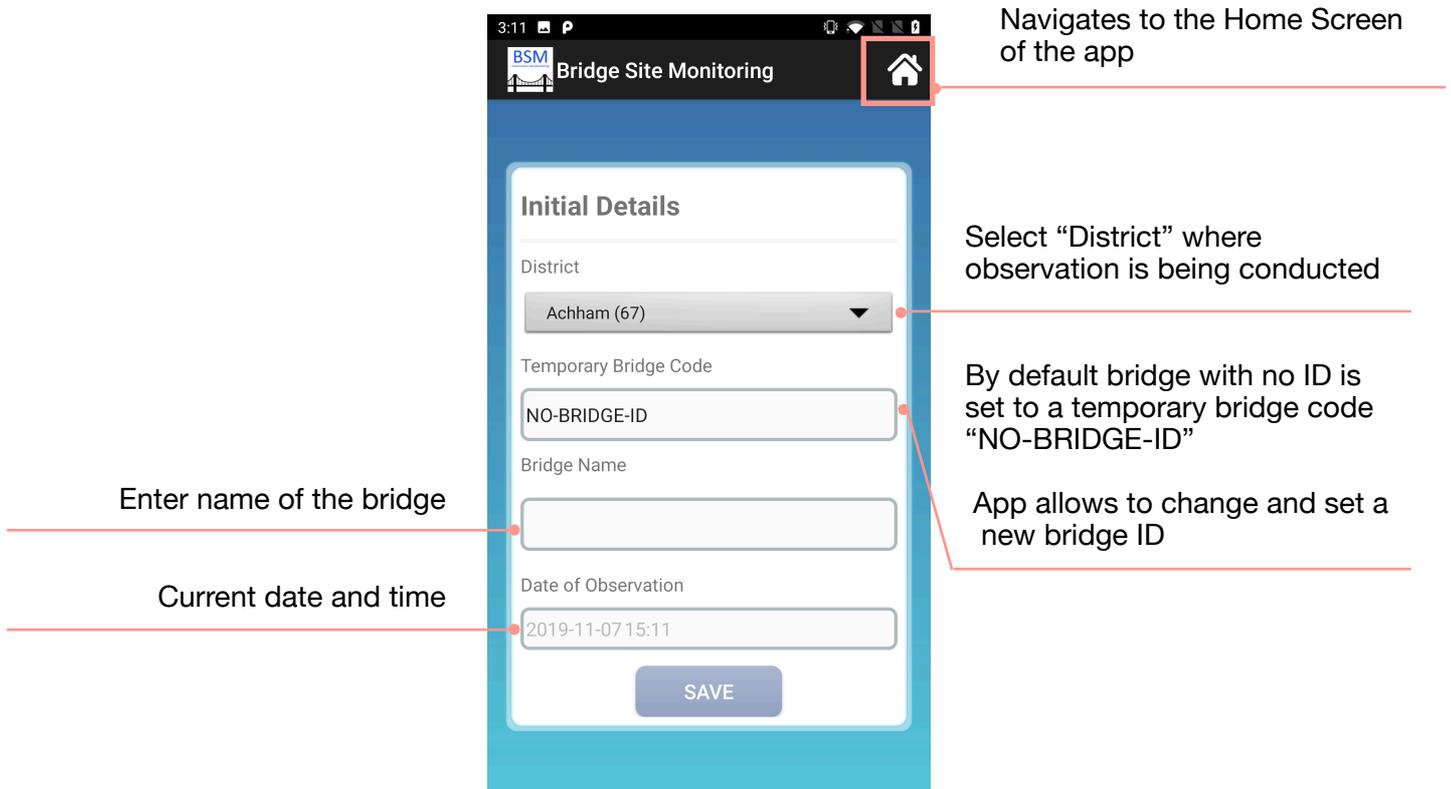
When **New Monitoring** button of the main screen is clicked a dialog box pop ups with two options as shown in *Figure 3.1*



*Figure 3.1: New Monitoring dialog box options*

If you know the bridge id select **“Bridge with ID”** else select **“Bridge with no ID”**. This navigates to the respective initial details page.

#### 3.1 Initial detail with “Bridge with no ID”



*Figure 3.1.1: Initial Details with “Bridge with no ID”*

## STEPS:

All the fields in this form are mandatory

- (i) Choose **District** from the dropdown list
- (ii) Enter any temporary **Bridge Code** or just leave the default value “NO-BRIDGE-ID”
- (iii) Enter the **Bridge Name**
- (iv) By default the app shows the current date and time when observation is taken. App does not allow to change or enter the date and time
- (v) Once the form is completed, press “Save” button, you will be directed to [Observation List](#) page where you can add new observations

### 3.2 Initial detail with “Bridge with ID”

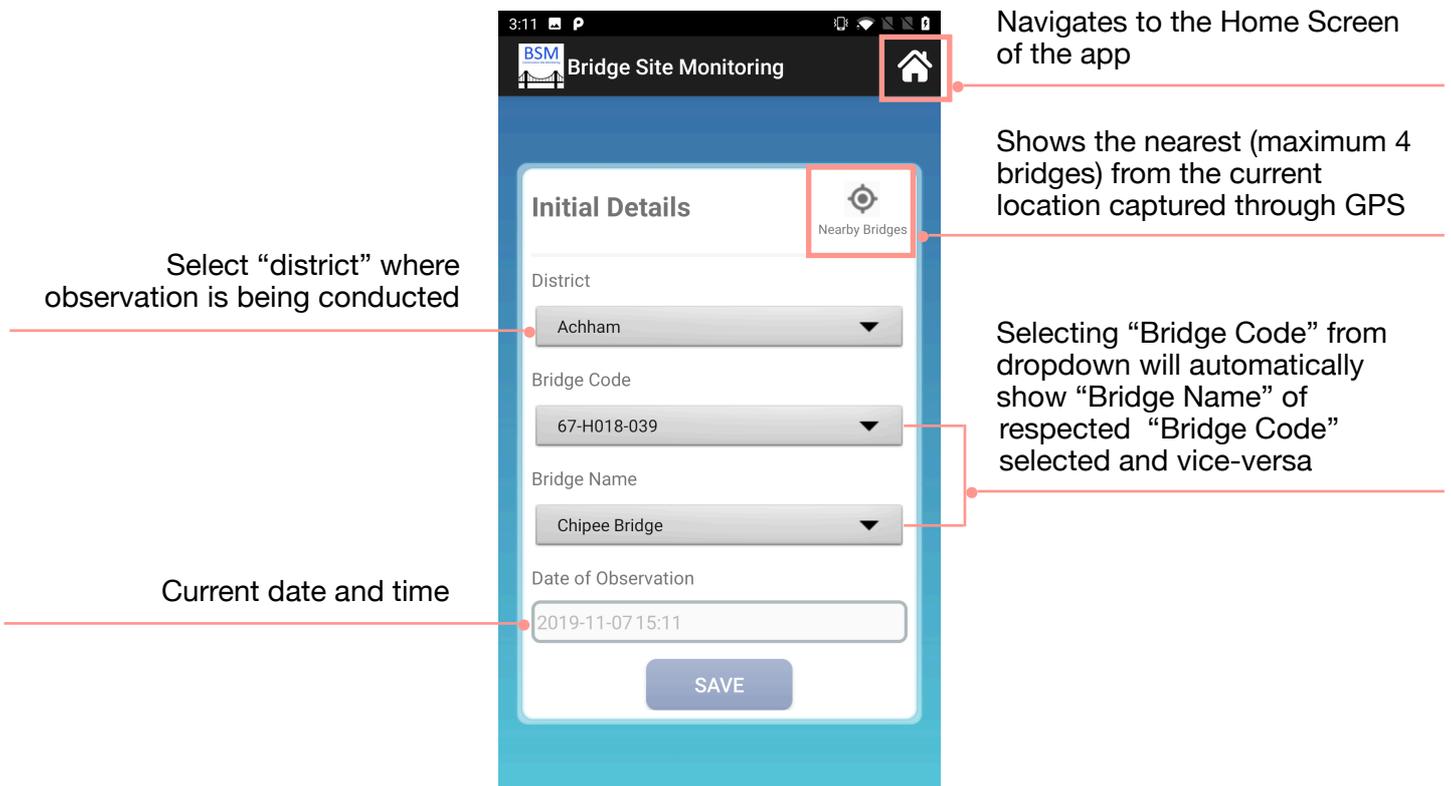


Figure 3.2.1: Initial Details with “Bridge with ID”

## STEPS:

All the fields in this form are mandatory

- (i) Choose **District** from the dropdown list

- (ii) Choose the **Bridge Code** from the dropdown list, this sets the **Bridge Name** corresponding to the **Bridge Code**. (Or, alternately you can choose the **Bridge Name** which sets the corresponding **Bridge Code** for the **Bridge Name** chosen).
- (iii) By default the app shows the current date and time when observation is taken. App does not allow to change or enter the date and time
- (iv) Once the form is completed, press “Save” button, you will be directed to [Observation List](#) page where you can add new observations

### 3.3 Observation List

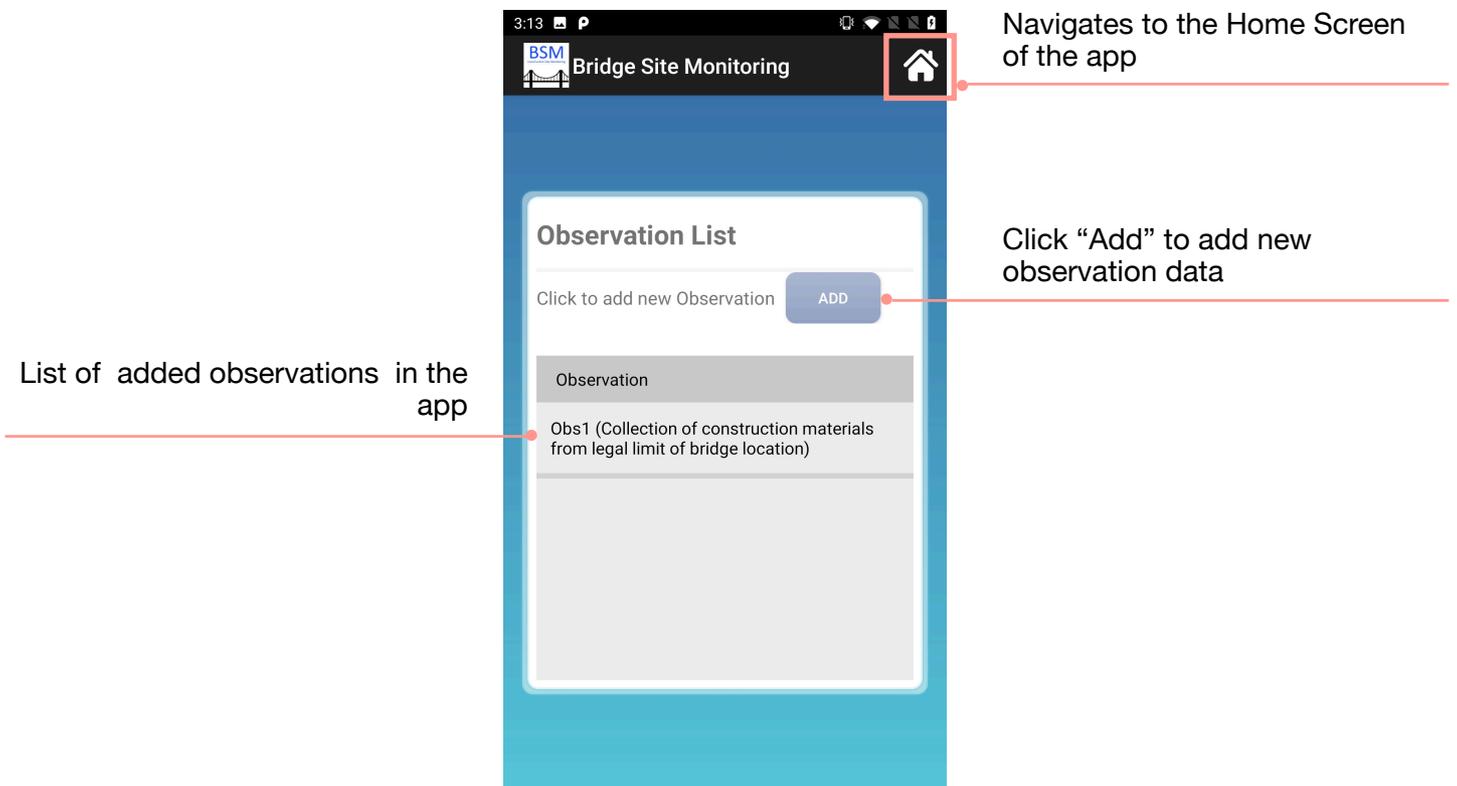


Figure 3.3.1: Observation List

#### STEPS:

- (i) Click on “**Add**” button shows [Observation Form](#) to add new observation data
- (ii) The list of observations added are shown in a list as shown in *Figure 3.3.1*
- (iii) Click on the list item shows the dialog box to **Edit** or **Delete** as shown in *Figure 3.3.2*

#### 3.3.2

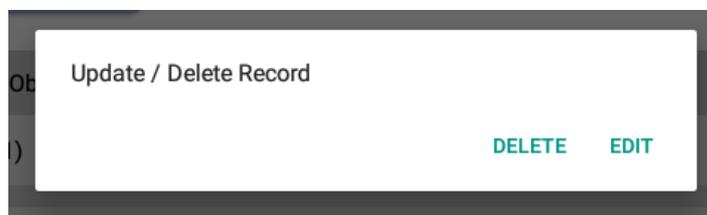
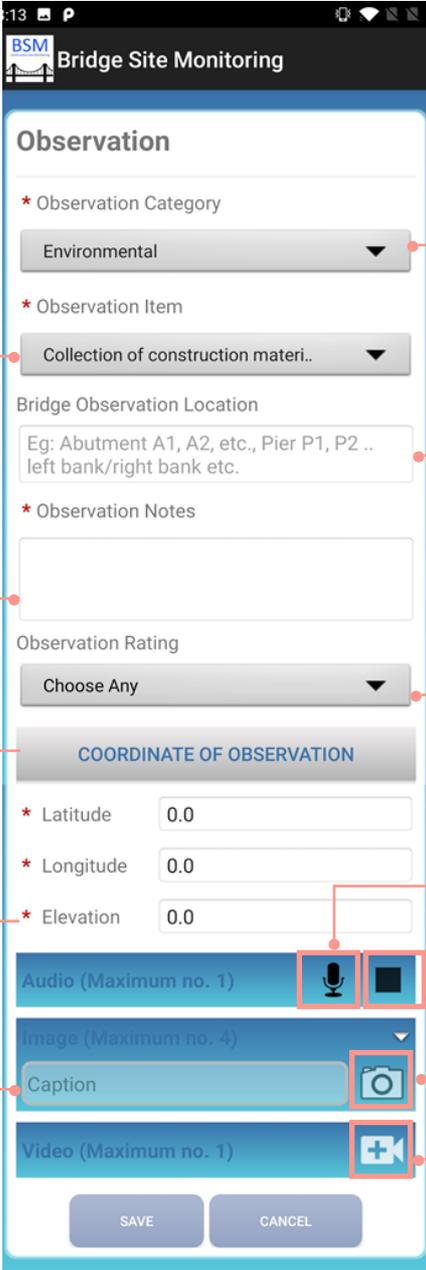


Figure 3.3.2: Dialog box for editing and deleting observation

- (iv) To edit observation details press **Edit** button, [Observation Form](#) along with the saved details will be loaded and you can edit the details if any changes are required
- (v) To delete observations press **Delete** button. If you choose to delete the observation all its details, photos, audio and video taken for the observation will be deleted
- (vi) To return to **Home Screen (main menu)** press the menu  icon at top right corner of screen.

### 3.4 Observation Form



The screenshot shows the 'Observation' form in the Bridge Site Monitoring app. The form includes the following fields and controls:

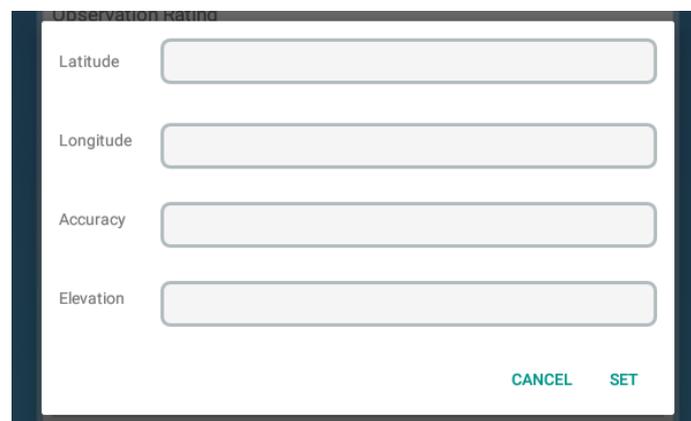
- Observation Category:** A dropdown menu currently set to 'Environmental'. *Shows the observation types E.g: Technical, Events, etc*
- Observation Item:** A dropdown menu currently set to 'Collection of construction materi..'. *Shows the observation item for selected observation category*
- Bridge Observation Location:** A text input field with a placeholder: 'Eg: Abutment A1, A2, etc., Pier P1, P2 .. left bank/right bank etc.'. *Location of the bridge*
- Observation Notes:** A large text area for notes. *Write notes for the bridge observation E.g: what you saw, problems, etc*
- Observation Rating:** A dropdown menu currently set to 'Choose Any'. *Shows the observation rating for selected observation item*
- COORDINATE OF OBSERVATION:** A button that, when clicked, provides real-time GPS location data.
- Latitude, Longitude, Elevation:** Three input fields, each with a value of 0.0. *Click on "Coordinate of observation" gives real-time GPS location*
- Audio (Maximum no. 1):** A section containing a microphone icon (to start recording) and a square stop icon (to stop recording). *Starts audio recording* and *Stops audio recording*
- Image (Maximum no. 4):** A section containing a camera icon (to take a photo) and a caption input field. *Take photo of observation* and *Write caption for the photo (image) captured*
- Video (Maximum no. 1):** A section containing a video camera icon (to record a video). *Record video of observation*

At the bottom of the form are 'SAVE' and 'CANCEL' buttons.

Figure 3.4.1: Observation form details

## STEPS:

- (i) Choose the **Observation Category** from the dropdown menu. Observation category shows different observation types such as “Environmental”, “Events”, “Social and Safeguard”, and “Technical”
- (ii) Choose the **Observation Item** from the dropdown menu for the selected **Observation Category**. In case “**Others**” is selected from the dropdown menu, app displays a textbox where you can write down the title for observation item not available in the dropdown options
- (iii) Write or note down the exact location in the bridge for which the observation has been noted such as “Abutment A1, A2”, “Piers P1, P2” etc in **Bridge Observation Location**
- (iv) Choose the **Observation Rating** for the selected Observation Item such as “good”, “excellent” etc for Environmental, Social and Safeguard, and Technical or “High risk”, "Medium risk” and “Low risk” for the Events
- (v) Click on **Coordinate of Observation** button displays dialog box as shown in *Figure 3.4.2*. Wait for the *GPS* to get the location. After *Latitude* and *Longitude* is displayed press “**Set**” to set the location.



The image shows a dialog box titled "Observation Rating". It contains four text input fields labeled "Latitude", "Longitude", "Accuracy", and "Elevation". At the bottom right of the dialog, there are two buttons: "CANCEL" and "SET".

*Figure 3.4.2: Location setting dialog*

- (vi) Click  (**Camera**) icon to take the photo of the observation location or situation. Type the description in Caption textbox before taking an image. On pressing **Camera icon** displays a dialog box as shown in Figure 3.4.3. When GPS is captured you can click “**TAKE PHOTO**” button to take image.

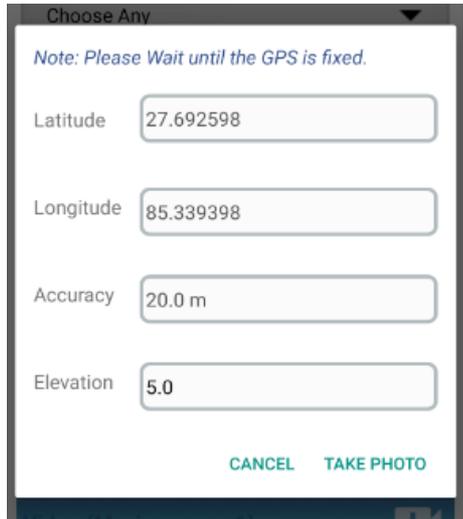


Figure 3.4.3: Alert Dialog to capture location where image is being

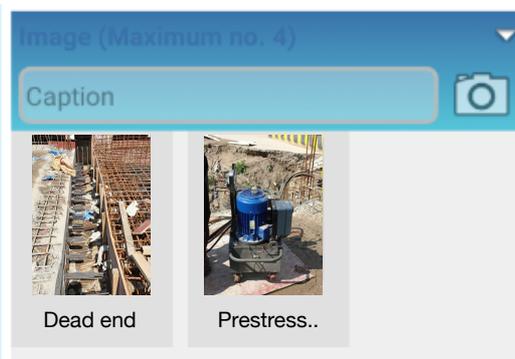


Figure 3.4.4: Images taken shown in grid along with captions

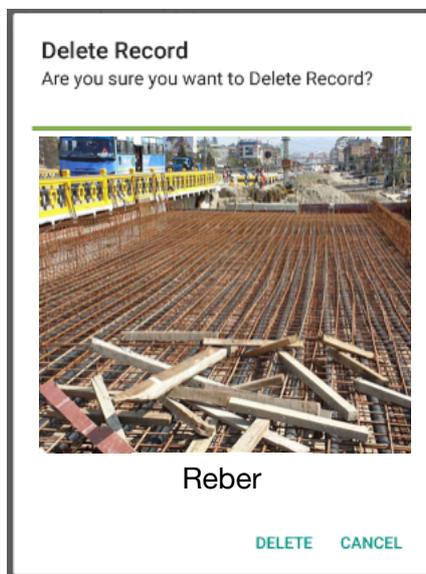
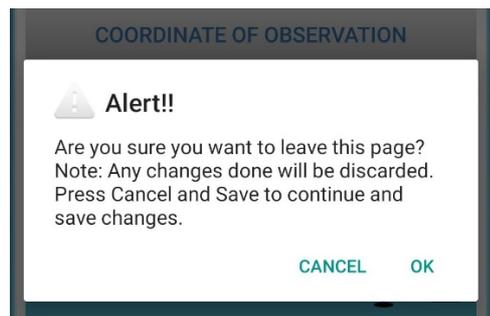


Figure 3.4.5: Alert Dialog viewing the selected image from the list shown in

- (vii) Press on  (**Video**) icon to take video. For further details see **section 3.4.1** on Video Recording
- (viii) Fill all the required details, once the form is completed click Save button to save the changes
- (ix) If you click “**Cancel**” button an alert dialog box appears as shown in *Figure 3.4.6*. If you press **OK** button the filled observation information will be discarded along with the media files and navigates you to the **Observation List** page



*Figure 3.4.6: Alert dialog to discarding the report*

### 3.4.1 Video Recording

#### STEPS:

- (i) Click  (**Video**) icon allows to take the video (Video Recording feature can be found on **Observation Form**). The *Figure 3.4.1.1* shows the Video Recording page

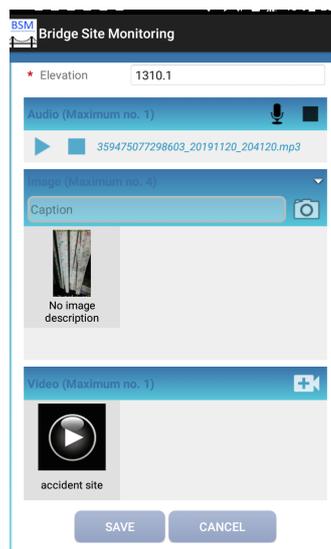


*Figure 3.4.1.1: Record Video*

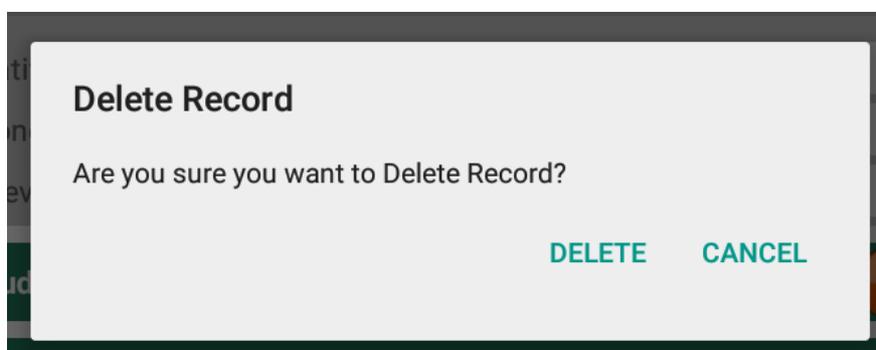
- (ii) Type the short description of the video on the **Description** textbox
- (iii) Press “**REC**” button to start video recording
- (iv) To save the recorded video press “**STOP**” button. This navigates the screen back to the **Observation Form**

**Note:** Maximum time limit for video recording is 1 minute and maximum file size is 5MB. If this limit exceeds a message pops up at the bottom of the screen. Again click “**STOP**” button to save the recorded video.

- (v) If you press  (back) icon from your phone, and if the recording has already been started the video will be saved and navigates back to the Observation Form. In case recording has not yet started it navigates to the Observation Form.
- (vi) Click on the video thumbnail on the Observation Form see *Figure 3.4.1.1* shows the dialogue box see *Figure 3.4.1.2* to delete and take new video.



*Figure 3.4.1.1: Delete Video Dialog box*



*Figure 3.4.1.2: Delete video dialog box*

## 4. Edit Monitoring

STEPS:

- (i) Click **Edit Monitoring** from Main Menu on **Home** page to edit the reports. A dialog with two tabs - **NOT UPLOADED** and **UPLOADED** appears as shown in the Figure 4.1.

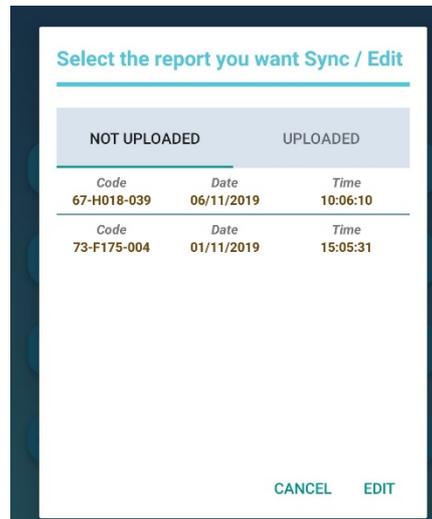


Figure 4.1: Edit Dialog box

- (ii) Select the observation i.e. a row from the list and press “**EDIT**” button
- (iii) Initial details will be loaded for the selected observation. Edit the initial details (if required) and click Continue to edit observation data. The process is similar to the process explained in [New Monitoring](#).
- (iv) If no report is selected an alert dialog appears as show in *Figure 4.2*

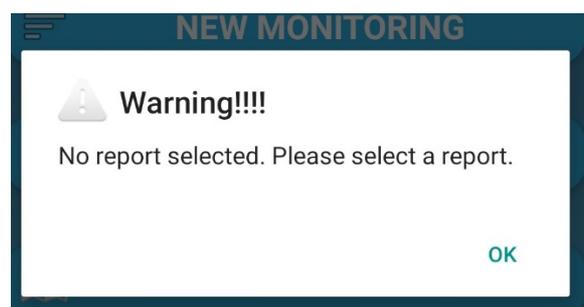
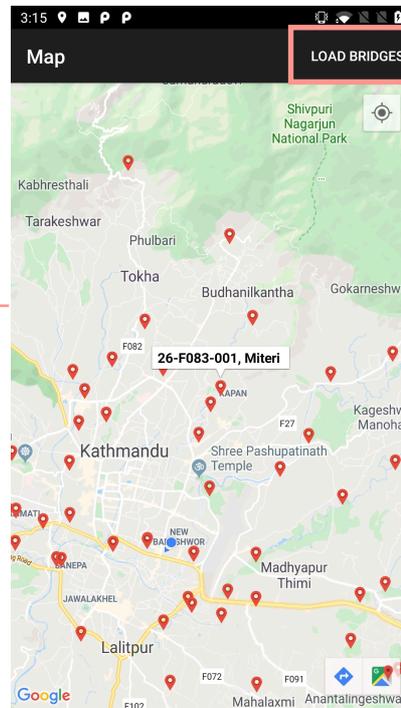


Figure 4.2: Select report warning message in alert

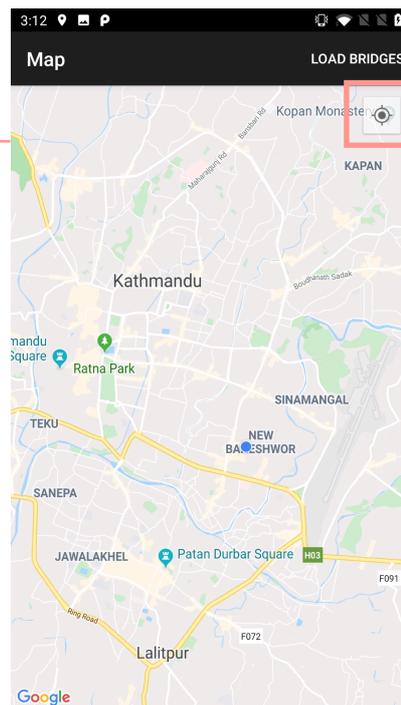
## 5. View Map

View Map has two options:

- Load all the bridges in Nepal
- Locate the real-time location of bridge for which the observation is being conducted



Loads all the bridge in Nepal available in database



Load on site bridge location

## 6. Upload the observation report to the server (Sync)

STEPS:

- (i) Click Upload to Server shows the list of saved observation report in two tabs i.e. **“Not Uploaded”** (observation report that are not synced or upload to the server) and **“Uploaded”** (observation report that has already been synced or upload to the server)

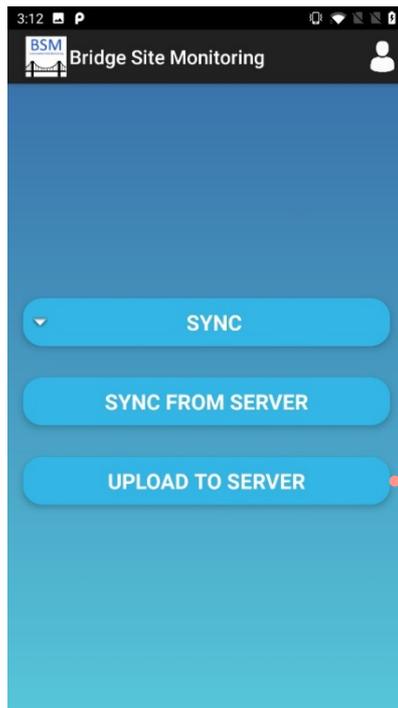


Figure 6.1: Sync options

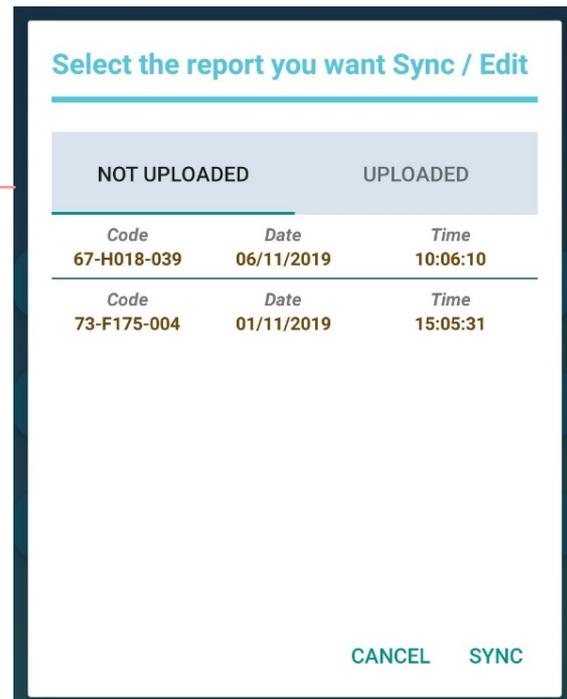


Figure 6.2: Upload Alert Dialog box

- (ii) Select any report you wish from either tabs to sync to server and press **“Sync”**
- (iii) After pressing **“Sync”** button an alert dialog appears confirming the sync process as shown in Figure 6.3. Press **“OK”** button to continue uploading process and press **“Cancel”** button to discard uploading process.

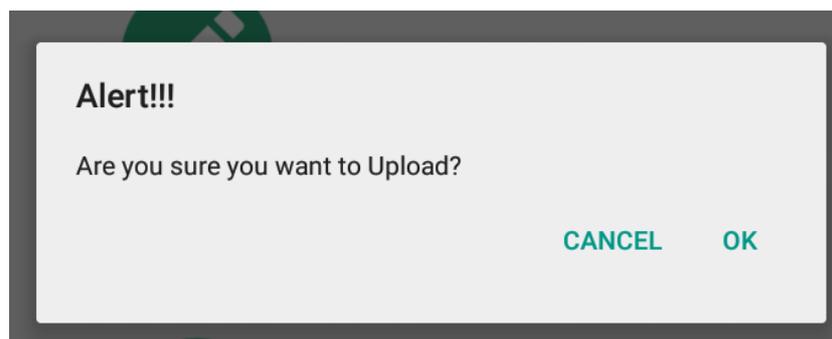
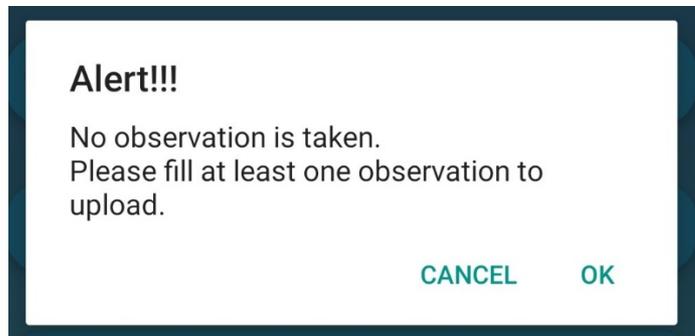


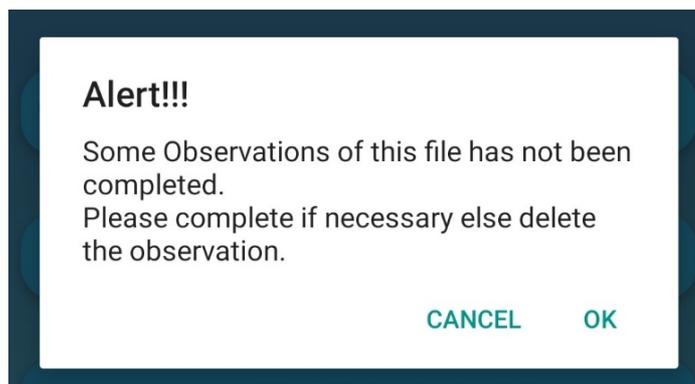
Figure 6.3: No observation taken warning before uploading report

- (iv) If only Initial Details has been filled but there is no observation details in observation form section in such case it is not possible to upload the observation report and app will show the following alert message



*Figure 6.4: No observation taken warning before uploading report*

- (v) In case of incomplete information in observation form app show following alter message



*Figure 6.5: Incomplete information in observation form warning before uploading report*

# **PART II**

## **BSM WEB APPLICATION**

<http://bsm.softwel.com.np>

## 7. Login to BSM Web Application

STEPS:

- (i) Enter your Username (which is your Email ID) and Password (same Username and Password used for BSM Mobile App) and click **Login**

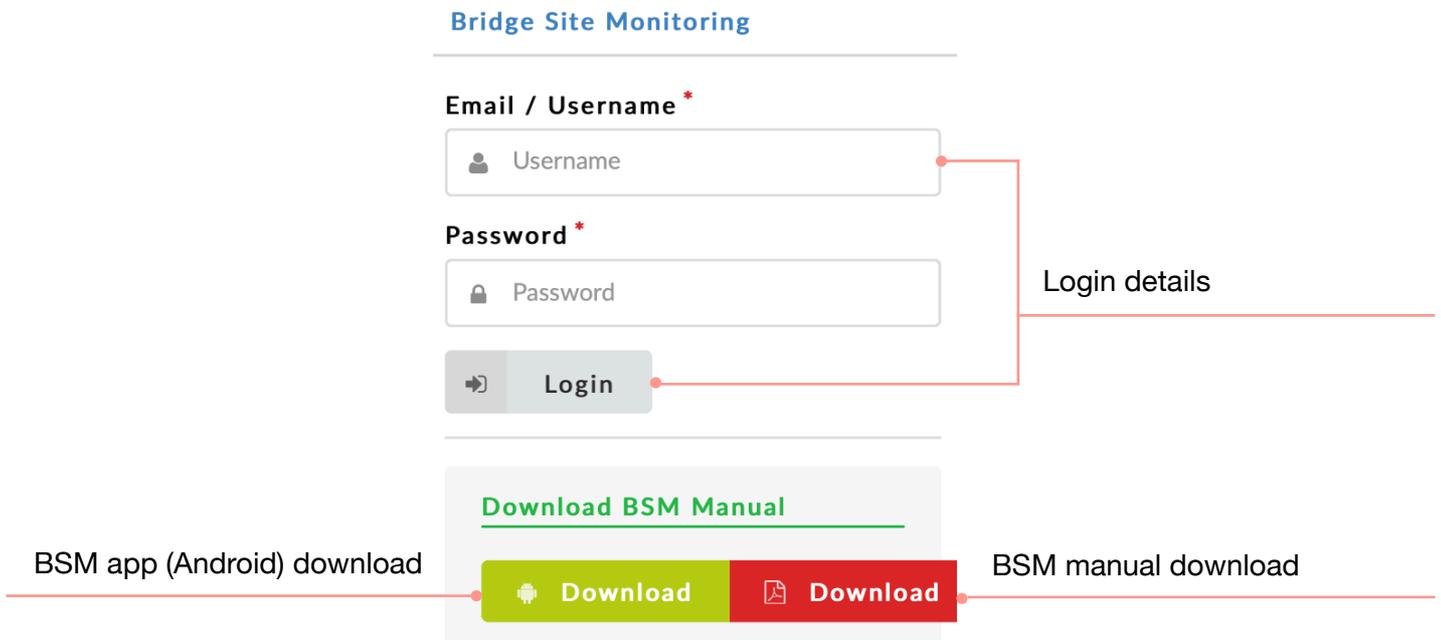


Figure 7.1: Login screen

- (ii) Download at the left side allows you to download the app file for BSM App installation
- (iii) Download at the right side allows you to download the PDF version of BSM user manual
- (iv) Once you **Login** to the BSM Web application shows the following screen with different view and edit options of the uploaded observations and events from the BSM app (synced to the server or database)

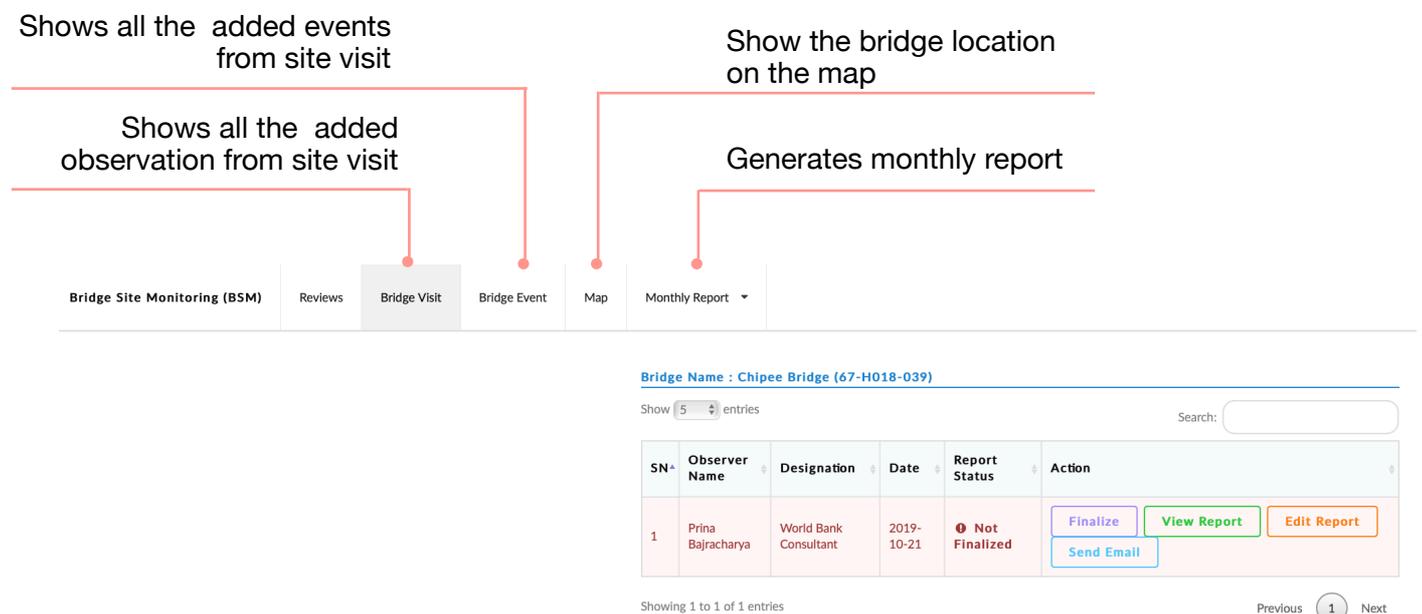


Figure 7.2: BSM web application main screen

## 8. Bridge Visit Menu

STEPS:

- (i) Click on the **Bridge Visit** menu lists all the observations report as shown in *Figure 8.1*.
- (ii) Click on **View All Visit** shows the details report of the select observation
  - If you select your own report you can “Finalize” (finalize the report), “View Report”, “Edit Report” and “Send Email” (send the report on email) see *Figure 8.2*.
  - In case, if you select report other than yours you can “View Report” and see the status of the report “Finalized or Not Finalized” see *Figure 8.3*

The screenshot shows the 'Bridge Visit' menu in the Bridge Site Monitoring (BSM) system. The menu is active, and a list of observation reports is displayed. The table has columns for SN, Bridge Code, Bridge Name, Date, and Action. The Action column contains 'View All Visit' buttons for each entry. A red box highlights the 'View All Visit' button for the first entry, with a line pointing to the text 'List of all the observation report'.

SN	Bridge Code	Bridge Name	Date	Action
1	67-H018-039	Chipee Bridge	2019-10-21	View All Visit
2	67-NO-BRIDGE-ID	test bridge	2019-10-21	View All Visit
3	50-H018-027	Girngi Khola	2019-10-21	View All Visit
4	40-H004-050	Tishuli River Bridge	2019-09-22	View All Visit
5	24-H004-019	Khatauti	2019-09-22	View All Visit

Figure 8.1: Bridge Visit menu

The screenshot shows the 'Bridge Observation Report (Your own report)' for Chipee Bridge (67-H018-039). The report details are shown in a table with columns for SN, Observer Name, Designation, Date, Report Status, and Action. The Report Status is 'Not Finalized'. The Action column contains buttons for 'Finalize', 'View Report', 'Edit Report', and 'Send Email'. A red box highlights the 'View All Visit' button from Figure 8.1, with a line pointing to the 'View Report' button in this screenshot.

SN	Observer Name	Designation	Date	Report Status	Action
1	Prina Bajracharya	World Bank Consultant	2019-10-21	Not Finalized	Finalize, View Report, Edit Report, Send Email

Figure 8.2: Bridge Observation Report (Your own report)

The screenshot shows the 'Bridge observation report (Other members report)' for Thakra (24-H002-008). The report details are shown in a table with columns for SN, Observer Name, Designation, Date, Report Status, and Action. The Report Status is 'Not Finalized'. The Action column contains a 'Not Finalized' button.

SN	Observer Name	Designation	Date	Report Status	Action
1	Krishna Raj Adhikari	SDE	2019-06-10	Not Finalized	Not Finalized
2	Krishna Raj Adhikari	SDE	2019-09-19	Not Finalized	Not Finalized

Figure 8.3: Bridge observation report (Other members report)

## 8.1 View All Visit Option (View your own report)

Click on **View All Visits** show the following options for the select observation report:

- Finalize
- View Report
- Edit Report
- Send Email

### 8.1.1 Finalize

Once you finalize the report you no longer can edit the observation report. You can only view the report and send the finalized report via email

STEPS:

- (i) Click **Finalize** button in order to finalize the report see *Figure 8.1.1.1*

Bridge Name : Giringi khola (50-H018-027)

Show 5 entries Search:

SN	Observer Name	Designation	Date	Report Status	Action
1	Prina Bajracharya	World Bank Consultant	2019-10-21	<b>Not Finalized</b>	<a href="#">Finalize</a> <a href="#">View Report</a> <a href="#">Edit Report</a> <a href="#">Send Email</a>

Showing 1 to 1 of 1 entries Previous **1** Next

*Figure 8.1.1.1: Finalize option button*

- (ii) Once the Finalize button is click, system displays a confirmation dialog box as shown in *Figure 8.1.1.2*

Are you sure this is the final observation data??

[Cancel](#)   [OK](#)

*Figure 8.1.1.2 Confirmation dialog box for finalizing the observation report*

- (iii) Click **OK** to finalize the report. Once the report has been finalized you can only view the report and send final report via email see *Figure 8.1.1.3*. You can no longer edit the report

Bridge Name : Giringi khola (50-H018-027)

Show 5 entries

Search:

SN <sup>▲</sup>	Observer Name	Designation	Date	Report Status	Action
1	Prina Bajracharya	World Bank Consultant	2019-10-21	✓ Final Report	<a href="#">View Report</a> <a href="#">Send Email</a>

Showing 1 to 1 of 1 entries

Previous **1** Next

Figure 8.1.1.3 Report view status once the observation report is finalized

(iv) Click **Cancel** to discard the finalize report process

### 8.1.2 View Report

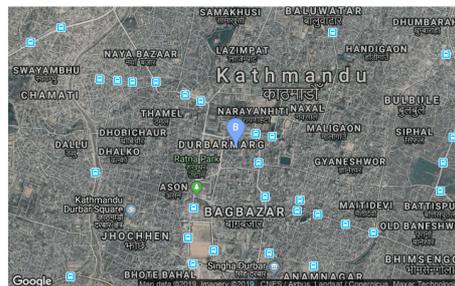
STEPS:

(i) Click **View Report** to view the observation report details see Figure 8.1.2.1

#### Bridge Site Visit Report

Observer Name: Prina Bajracharya      Date: 2019-10-21 16:48  
 Designation: World Bank Consultant  
 Bridge Code: 67-NO-BRIDGE-ID  
 Bridge Name: bagmati test bridge 1

#### Location Map



Click on the image thumbnail shows the enlarged image with date and time of observation and GPS location information



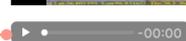
#### Observation 1

Observation Category: Technical  
 Observation Type: Approach Road  
 Location: a1 a2  
 Observation Notes: test  
 Observation Rating: Satisfactory  
 Co-ordinates (lat/long): 27.712076 / 85.319290  
 Elevation (m): 1,229.800

Click on video thumbnail plays recorded video



Click on audio plays recorded audio



site observation

#### Observation 2

Observation Category: Environmental  
 Observation Type: Collection of construction materials from legal limit of bridge location

Figure 8.1.2.1 View bridge site report details

### 8.1.3 Edit Report

STEPS:

- (i) Click **Edit Report** to edit the information of the saved observation see *Figure 8.1.3.1*

**Edit Bridge Site Visit Report**

**Initial Details**

Date	2019-10-21
Observer Name:	Prina Bajracharya
Designation:	World Bank Consultant
Bridge Code:	67-H018-039
Bridge Name:	Chipee Bridge

**Save**

**Observation 1**

Observation Category	Technical
Observation Type	Approach Road
Location	a1 a2
Observation Notes	test approach road location observation
Observation Rating	Satisfactory

**Save**

Date: 2019/08/30 10:40 Bridge Code: 14-805-018



movi3 1



**Edit Initial Details**

**Edit Observation**

**Edit the video caption  
Click blue tick to save the**

Figure 8.1.3.1 Edit bridge site report details

## 8.1.4 Send Email

### STEPS:

- (i) Click **Send Email** to send the selected report to an email-address see *Figure 8.1.4.1*

Bridge Name : **Chipee Bridge (67-H018-039)**

Show  entries Search:

SN	Observer Name	Designation	Date	Report Status	Action
1	Prina Bajracharya	World Bank Consultant	2019-10-21	<span style="color: red;">❗ Not Finalized</span>	<span>Finalize</span> <span>View Report</span> <span>Edit Report</span> <span>Send Email</span>

Showing 1 to 1 of 1 entries Previous 1 Next

*Figure 8.1.4.1: Send Email option*

- (ii) Select the email address from the dropdown menu from **Choose Email Address** and click send **Send Email** button to send the report see *Figure 8.1.4.2*
- (iii) Click Cancel button to cancel the sending process

**Send Email**

**Choose Email Address**

Select Email

Send Email

Cancel

*Figure 8.1.4.2: Send Email dialog box*

## 9. Bridge Event Menu

STEPS:

- (i) Click on the **Bridge Event** menu lists all the events report as shown in *Figure 9.1*.
- (ii) Click on **View Report** shows the details report of the selected event see *Figure 9.2*

Note: **View Report** is similar to **View All Visits** option from **Bridge Visit Menu**

Bridge Event : (Seti Khola -> 39-H018-067)

Show  entries Search:

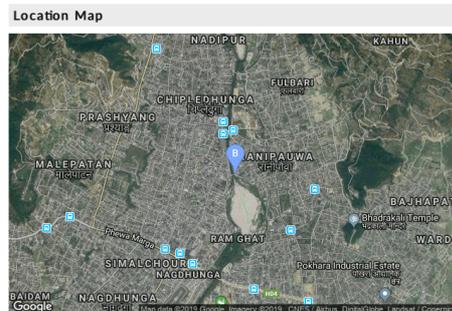
SN	Observer Name	Designation	Date	Action
1	Gajendra P Dev	Oversear	04-19-2019	<a href="#">View Report</a>
2	Gajendra P Dev	Oversear	04-20-2019	<a href="#">View Report</a>
3	Gajendra P Dev	Oversear	04-21-2019	<a href="#">View Report</a>
4	Gajendra P Dev	Oversear	04-22-2019	<a href="#">View Report</a>
5	Gajendra P Dev	Oversear	04-17-2019	<a href="#">View Report</a>

Showing 1 to 5 of 9 entries Previous 1 2 Next

*Figure 9.1 Bridge event menu*

### Bridge Event Report

Observer Name: Gajendra P Dev      Date: 04-20-2019 07:29  
 Designation: Oversear  
 Bridge Code: 39-H018-067



Observation 1

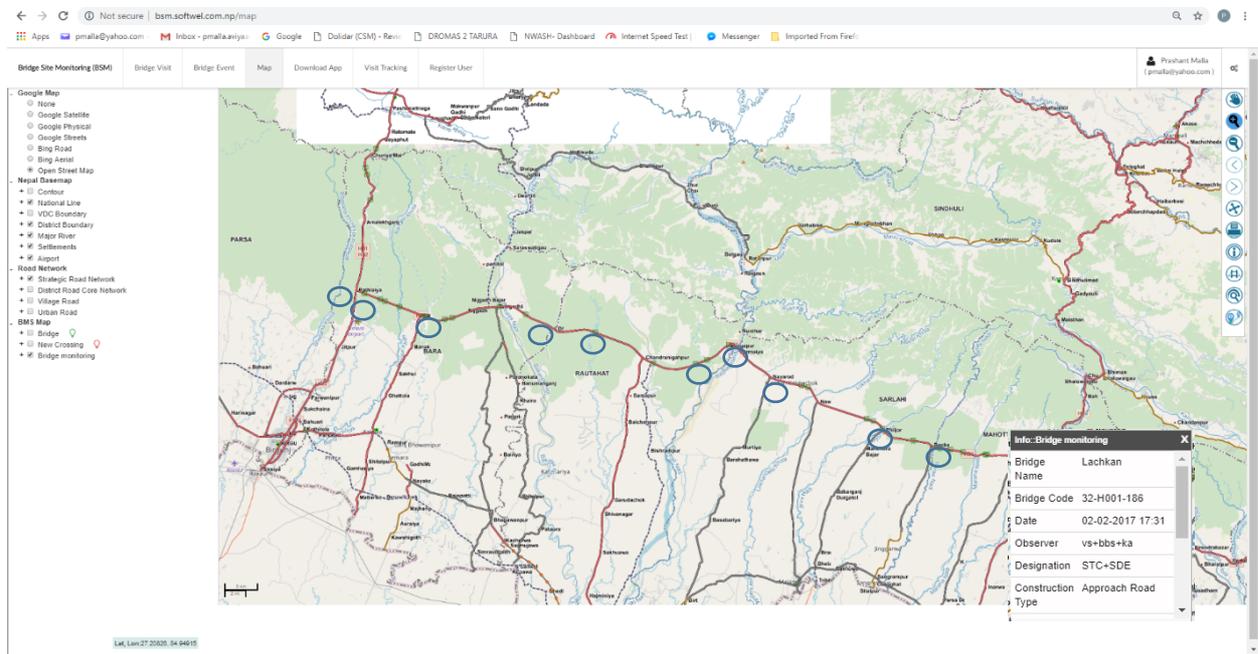
Co-ordinates (lat/long)      28.218558 / 83.992693  
 Division  
 Events      Geotechnical Investigation  
 Remarks      bh 2 left bank  
 Observation      soil taste work  
 Message Priority      Normal



*Figure 9.2 View Report*

## 10. Map Menu

Map menu shows the location of the bridge on the map see *Figure 10.1*

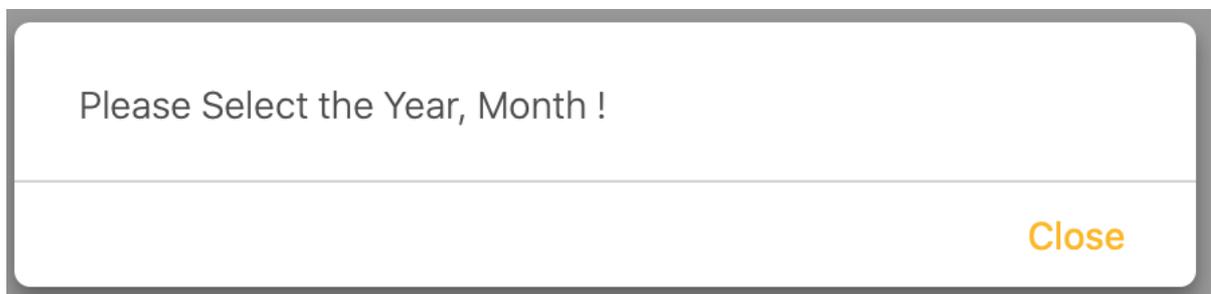


*Figure 10.1 Map menu*

## 11. Monthly Report Menu

Click on the **Monthly Report** allows you to filter the report by Year, Month, and Bridge Code. Year and Month options are mandatory where as Bridge Code is optional

In case if you do not select any option from filter such as year, month, or bridge code and click **Get Report**, system shows following alert dialog box see *Figure 11.1*



*Figure 11.1 Alert dialog box when none of the filter options are selected*

### 11.1 Generate Monthly Report

STEPS:

- (i) Select year from **Select Year** dropdown. Year is a mandatory field

- (ii) Select month from **Select Month** dropdown. Month is a mandatory field
- (iii) Select bridge code from **Select Bridge** dropdown. Select bridge is optional
- (iv) Click **Get Report** to generate the report for the selected option. In this case system generates all the report for February 2019 see *Figure 11.1.1*

**Monthly Report**

---

Select Year: 2019      Select Month: February      Select Bridge: Select Bridge      **Get Report**

---

**Bridge Site Visit Monthly Report**  
February, 2019

**1. Bridge Name: Seti khola pul**

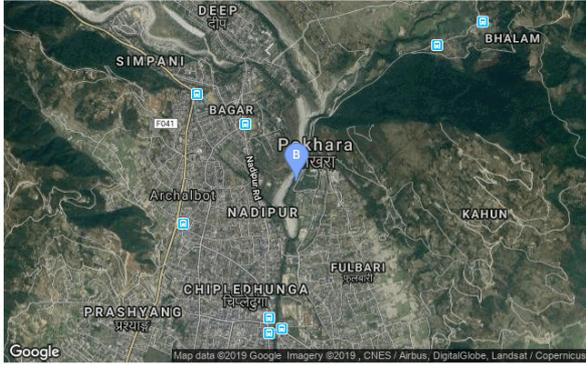
Bridge code: 39-H004-052

River Name: Seti khola pul

Road Name: Prithvi Highway

District: Kaski

**Location Map**



**Observation 1**

Observation Date	2019-02-15
Observation Type	Foundation
Location	manipal pokhara
	In manipal nokhara. at seti khola 20 m depth of core

*Figure 11.1.1 Monthly report generation*

## Notes

## Notes

## Notes