BRIDGE MANAGEMENT SYSTEM(BMS)

User Manual

Version 1.0.0

Powered by Streams Tech Limited

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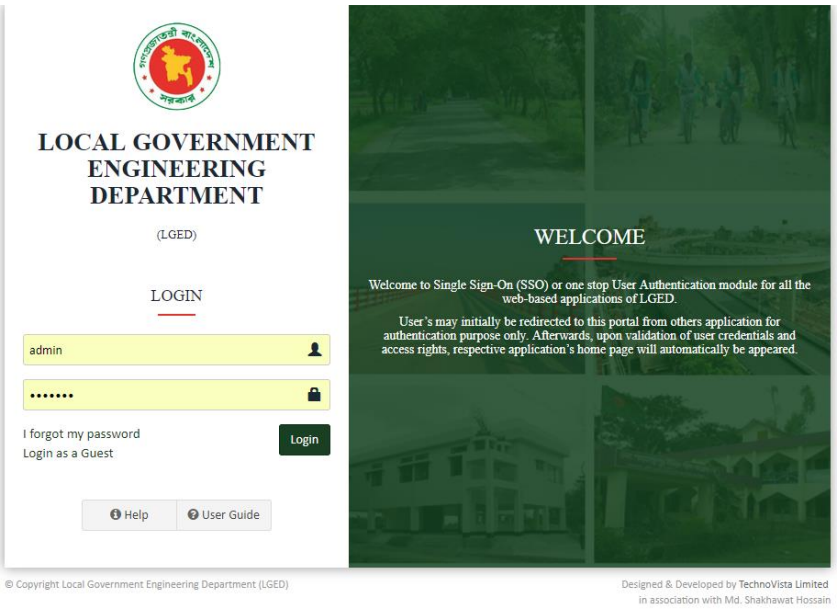
Introduction:

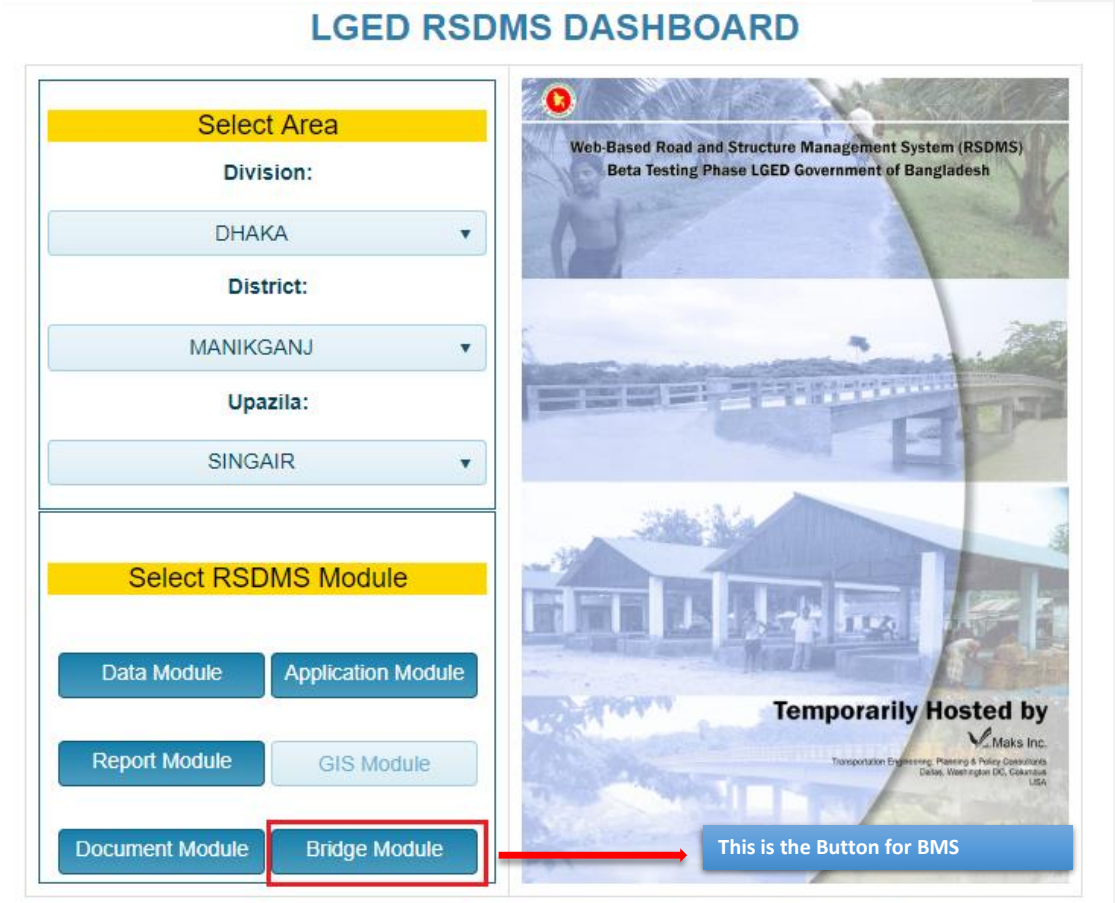
BMS is made for **Local Government Engineering Department (LGED)**, Bangladesh. It's a standalone Dashboard for managing Bridges all over the Bangladesh. A user can manage entirely everything of a Bridge. This web application starts with a Login Page which is managed by LGED Central Authentication System.



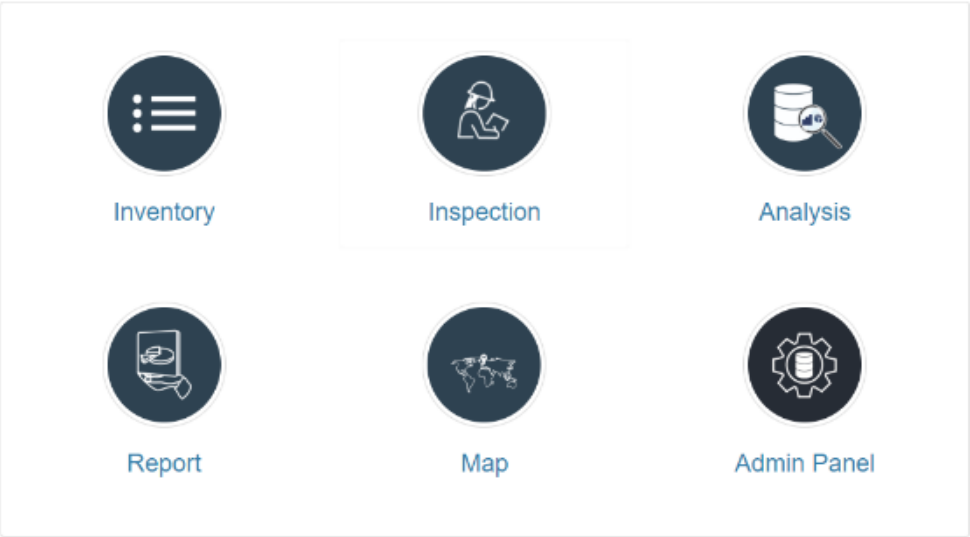
Main Sections of BMS is Mainteining a Bridge or existing GAP. There are couple of Modules within this Application.This manual highlightes how to use those Modules etc.

Short Descriptions of Dashboard:

After logging in, from the RSDMS Homepage,there is a Button for entering BMS.



After entering into BMS,it will show the main Dashboard of BMS.All the Modules of BMS are there.



There are 6 Modules of BMS.All of those has individual sections along with differenent management types.Below are listed Modules with there functionalities.

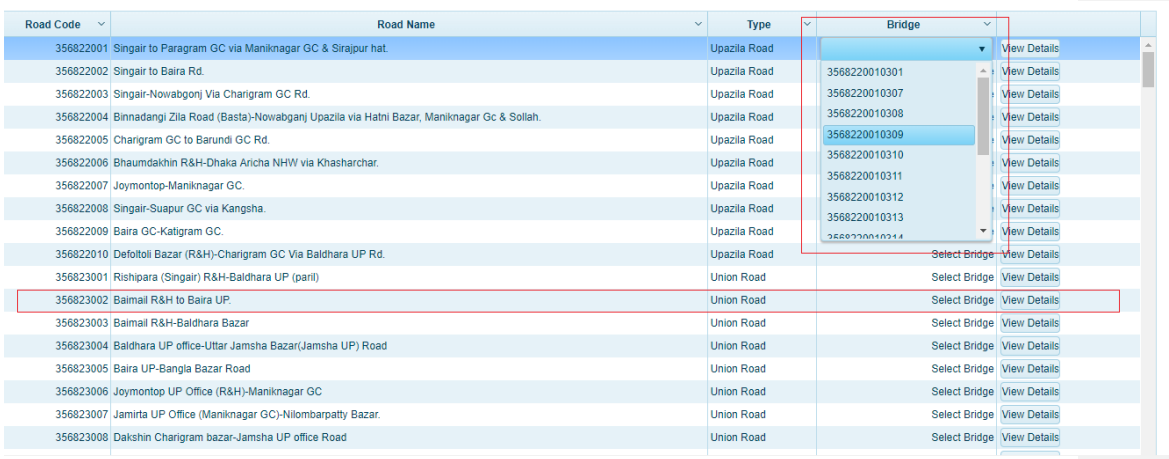
Inventory:

Click on the **Inventory** Button to enter into Inventory Module.

Inventory module can help you to manage identification, traffic, channel etc. properties of a Bridge. User can add/remove Bridges from here and also all the basic information placed here. This module is divided by some segment. We will show how to navigate those sections step by step

Road / Bridge Selection:

The very first page of Inventory Module is for selecting the specefic Road or selecting the specific Bridge of Specific Road.For all Bridges of a specific Road,user need to click the button “View Details” of the corresponding row of the grid.If you need to jump into a specific Bridge,then click the dropdown “Select Bridge”.It will show the list of all Bridges of that road.Then selecting one of them will jump into the specific Bridge Section.

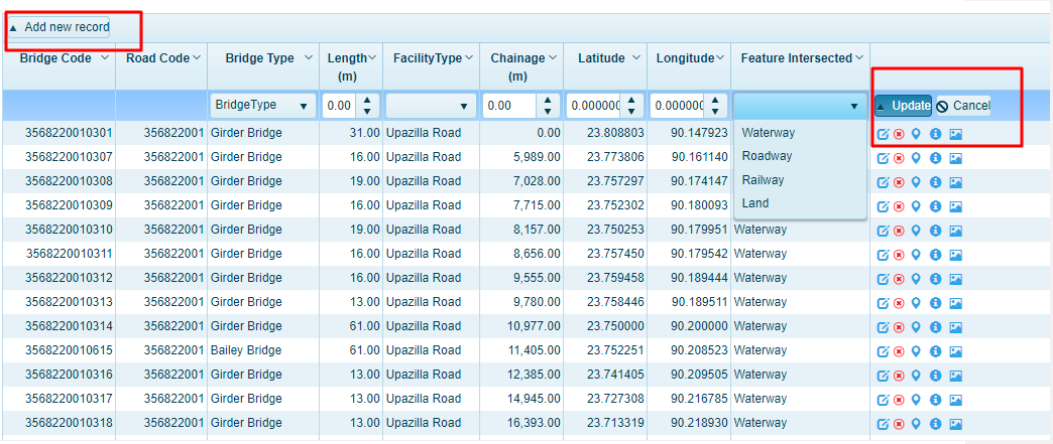


Bridge List:

At the Bridge List page, all the bridges of that specific Road will shown as a Grid.Each row denotes a Bridge with the basic information.There are 5 buttons into each row.Those are:

- Edit Bridge
- Remove Bridge
- Show MAP for that Bridge
- Basic Information at a glance
- Images

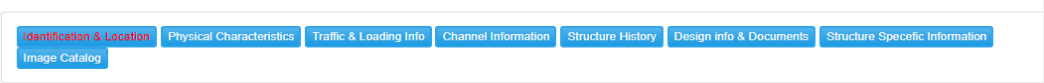
Also there is a “Add new record” button for adding new Bridge into the system.



You can also edit the information of an existing bridge by clicking edit button.It will open the specefic row as edit mode and there will show 2 buttons for Update and Cancel.

Specefic Bridge Menu:

There is a menu list at the top of the page for a specificc Bridge.Initially this menu list is disabled.After selecting one specefic Bridge.This menus will redirect to different sections of a Bridge.



There are many individual sections denotes as menu into the list.Those are:

- Identification and Location: Basic information of a Bridge.
- Physical Characteristics: Physical information of a Bridge.
- Traffic & Loading info: This section shows the information of Bridge Traffic and Loading capabilities.
- Channel Information: Shows Bridge Channel Information.
- Structure History:Shows Bridge Basic structure information.It inclues Construction history.
- Design Inf & Documents:Shows design info and documents.User can upload different documents for different part of a Bridge.
- Structure Specefic Information:Shows different Bridge Specefic information as segmented.This portion shows different types of information depends on Bridge Type.
- Image catalog:Shows all images of a bridge.

Structure Specefic Information:

This section implies different segment as Bridge wise.Each section has individual grid of information and user can edit those information as the same way we saw in previous section.

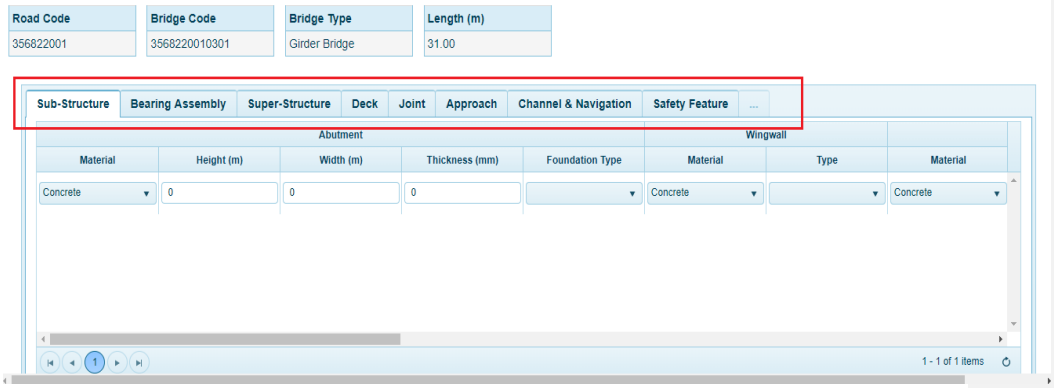
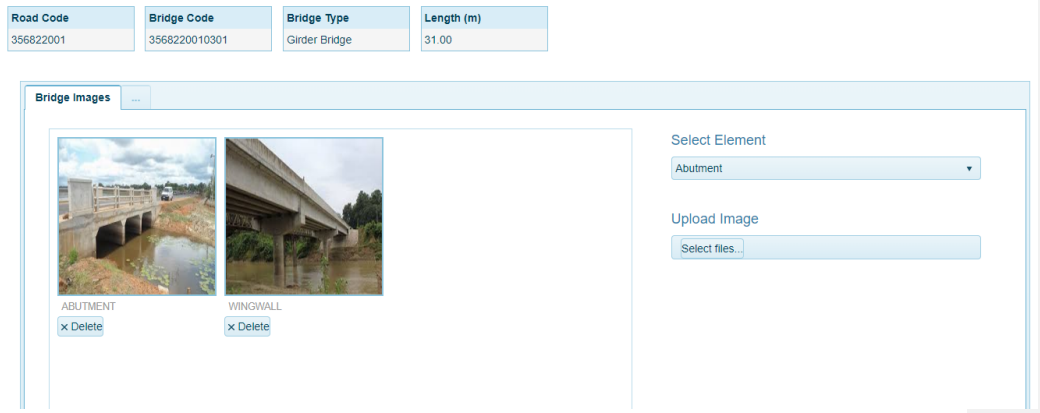


Image catalog:

In this section,user can show/upload new images as Bridge Element wise.

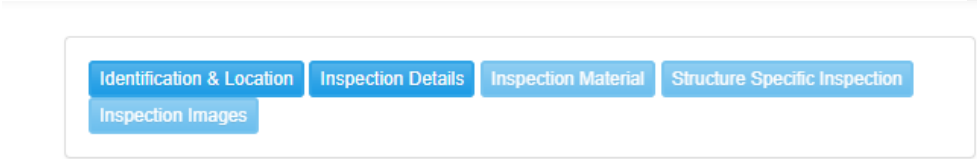


Inspection:

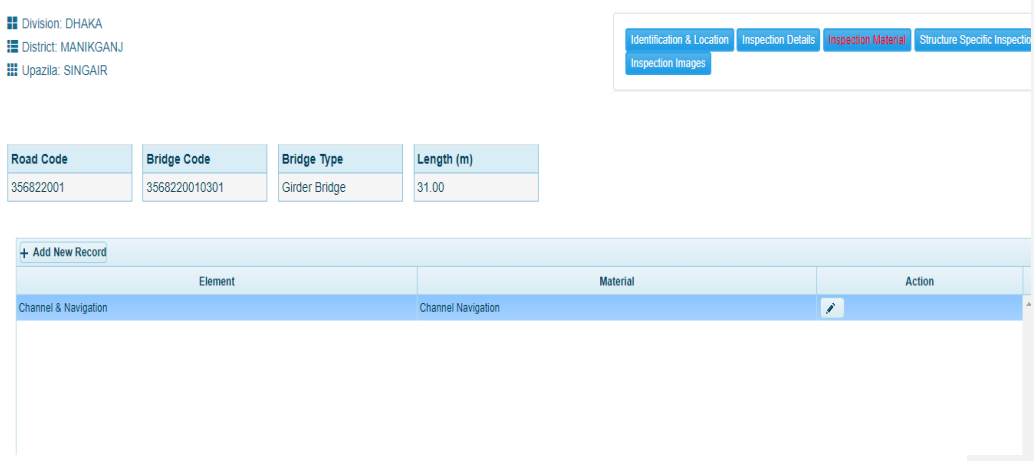
Inspection Module is one of the Major Module of BMS.User can insert / update Survey/inspection data of a Bridge here. This module also starts from Bridge/Road list same as Inventory Module.

After selecting specefic Bridge,Inspection module starts with some menu intems.There are couple of menus.Those are:

- Identification & Location:Bridge basic information of a Bridge
- Inspection Details:Details inspection information of a Bridge
- Inspection material:Shows the material information of Bridge Inspection.User can change material type of an inspection.Into the next step,Informations shows as segmented which is dependent into this material type.
- Structure Specefic Information: Shows specefic information as structure wise.
- Inspection Images: shows images of an inspection.

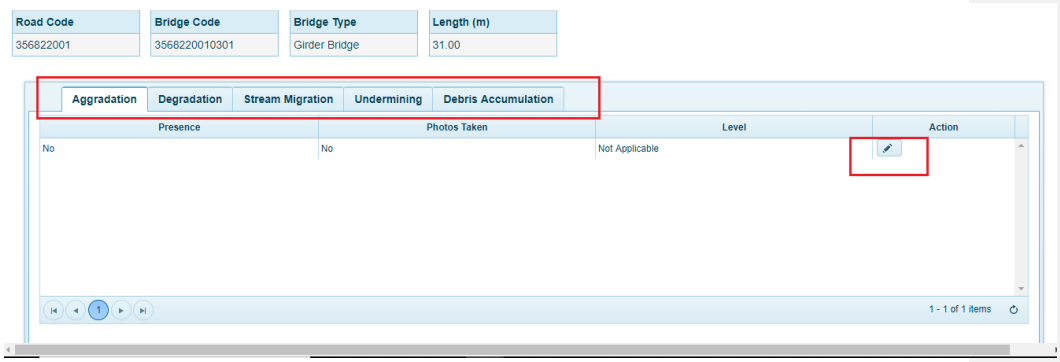


Inspection Material:



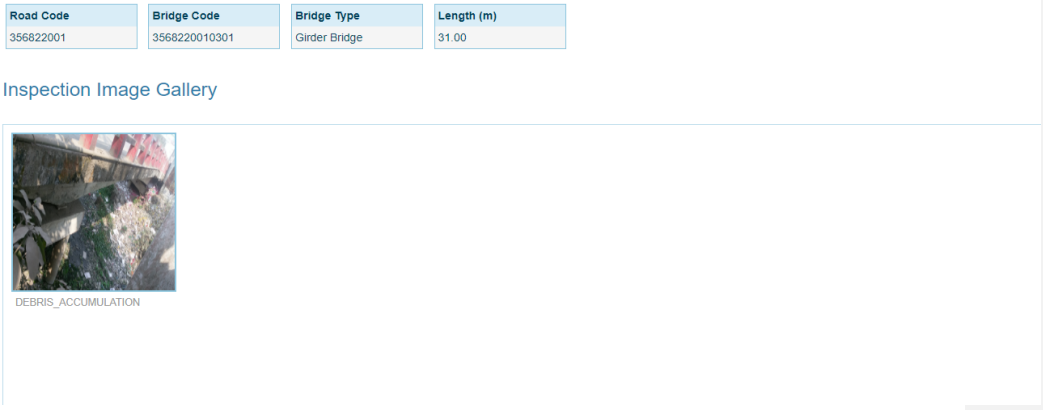
Structure Specefic Inspection:

This section shows structure wise inspection information.It depends on Bridge type and Material Type.There are different segments for insert/update information.



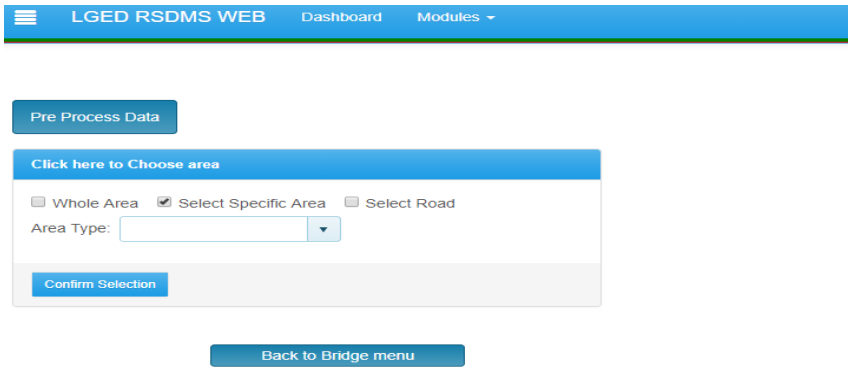
Inspection Images:

All the inspection images shows here.User can upload new images into specefic distress page of a Bridge.



Analysis :

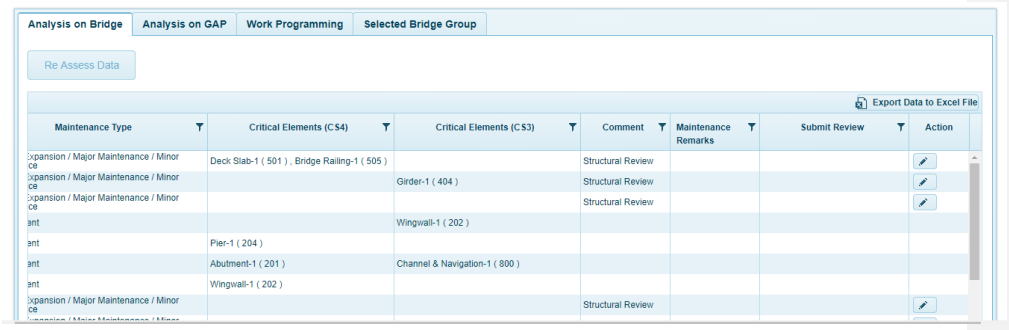
In this Module, user can do Analysis Bridge information and can see the result of them.There are one major algorithm delivered by LGED which do the analysis part.Basically thi analysis run the algorithm with specefic Bridge information.



There are some functionalities which helps to do the analysis.Those are:

- Pre Process Data: This button run the algorithm with all data.All the generated data stored into the database, and after selecting filter criteria, those data shows into a Grid.
- Area Filter: There are couple of sub filters here:
    - Whole Area: This will show analysis result of entire Bridge data from databse.
    - Select Specefic Area:User can choose are for which they want to see analysis result.
    - Select Road: User can select specefic road for seeing analysis result for those roads.

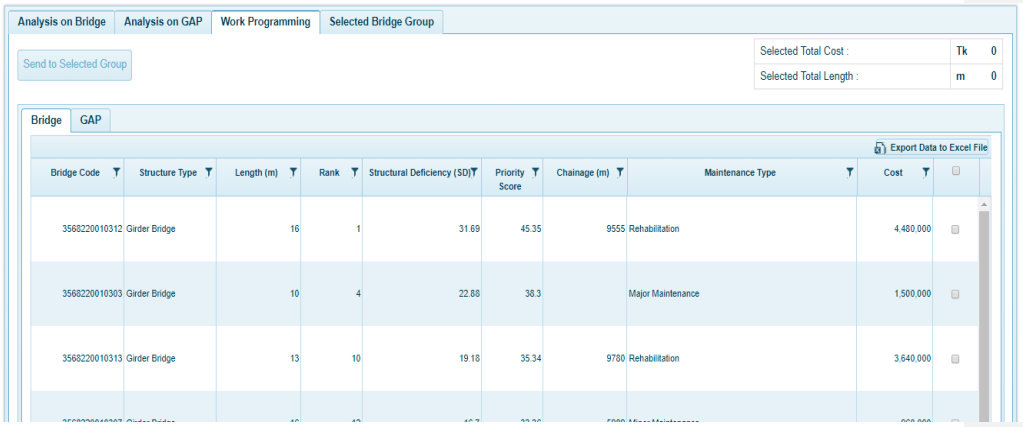
After Selecting filter criteria,Result will show into a grid.

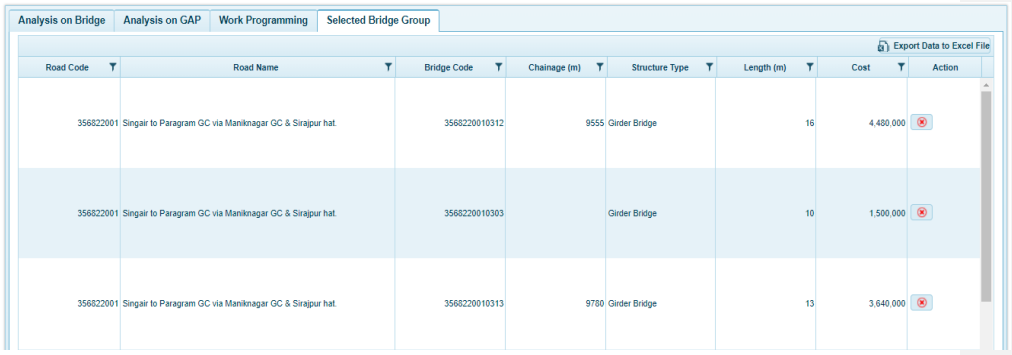


User can give manual review into the result and this review stores into the database.Also there are several types of filters into the grid.There are two tabs besides each other.One is for showing the result of Bridges.Another is for showing the results of GAPs.Those tabs are identical.User can re asses Bridge result by selecting the specefic bridge and press the Re Assess Button.Result will updated after reassessment of a Bridge.Also, if user gives Manual Maintenace,those data will go into Work Programming section for further process.

Work Programming and Selected Bridge Group:

Work programming is a section for calculating Bridge maintenance costing.This costing depends on Maintenance type and Bridge length.User can select some of the bridges and then can send those to Selected Bridge Group section.into the Selected bridge Group section,either user can progress with data or either user can remove data from there.Removed data will again restored into Work Programming section.

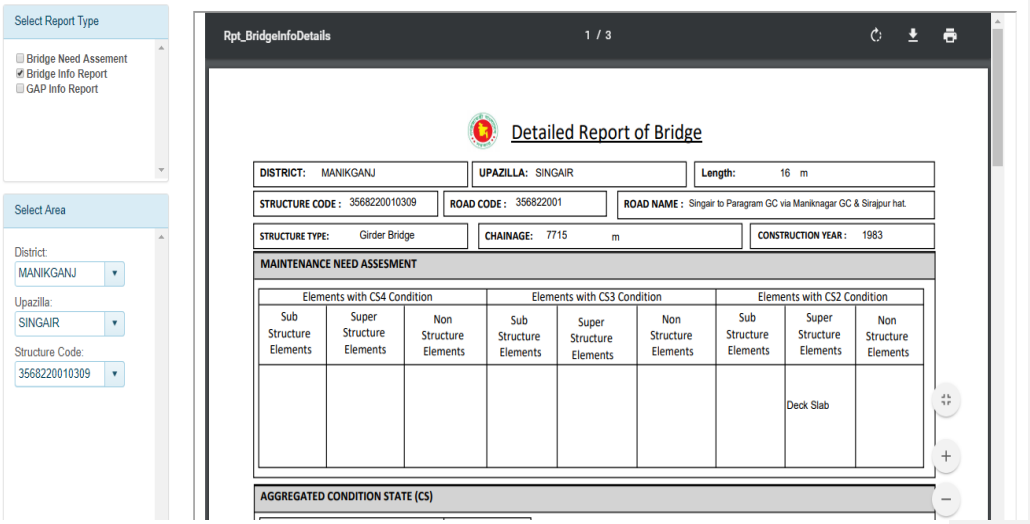




Report:

There are 3 basic reports into the Report Module. Those are:

- Bridge Need Assessment Report (By Road, By Upazilla, By District)
- Bridge Info Report
- GAP Info Report.

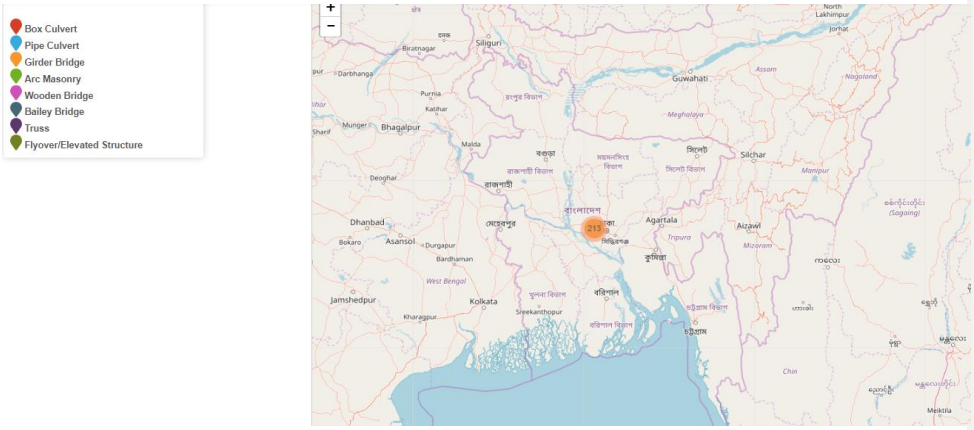


There are Filters for All Report Type. If user selects Bridge Assessment report, then three other options shows for selecting type (By Road, By Upazilla, By District). In all other report types, there are filter for selecting District, Upazilla and Structure Code.

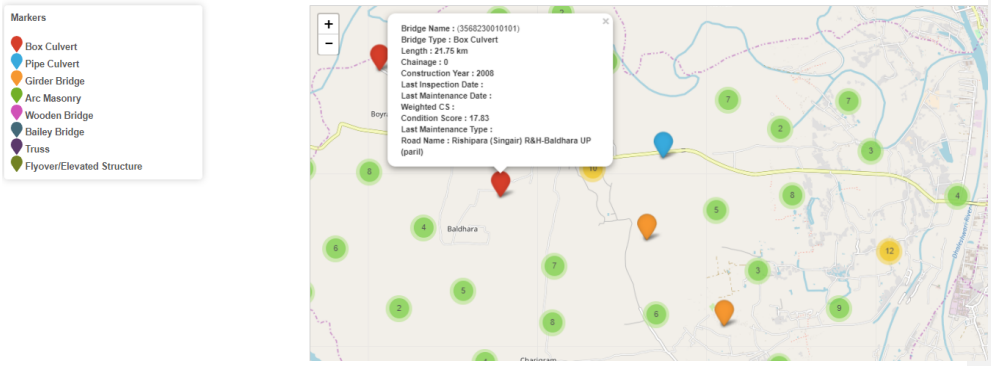
MAP:

In the MAP Module ,there is a wide varied MAP situated.This customized MAP shows the Bridge locations into corresponding location.Also each bridge shows with some basic information.

There are different types of icon denotes different types of Bridge.Also bridges icons shows with clustering.



Bridge MAP



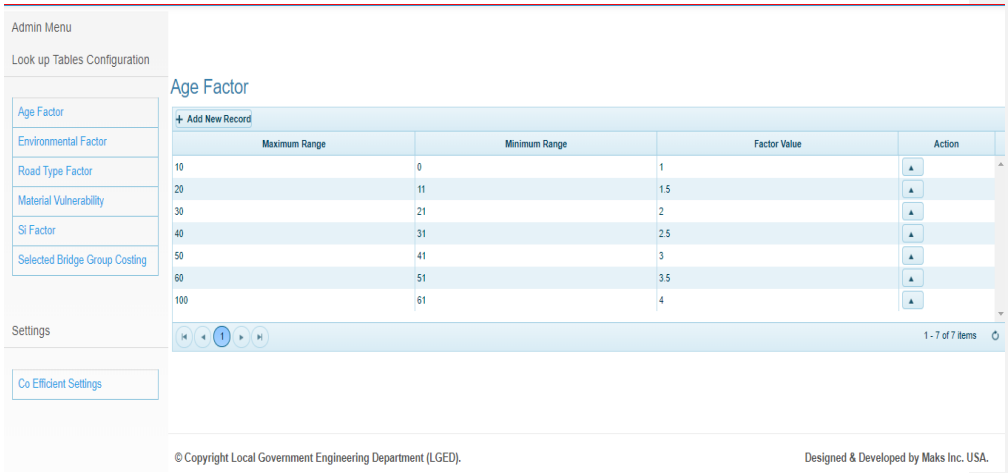
Admin Module:

In this module,admin can set configuration data for different settings. There are couple of config sections:

- Age Factor Settings
- Environmental Factor Settings
- Road Type Factor Settings
- Material vulnerability
- SI Factor
- Selected Bridge Group Costing
- Co Efficient Setting

All the sections come with data grid with necessary data which are editable by admin user.

These changes will take effect immediately after updating.



Conclusion:

BMS is a standalone system for managing entire Bridges / Structures by LGED. This is much user friendly and easily maintainable

Thank You

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