

User's Guide

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- Mr. Shahid Ashraf Tarar
- Mr. Salman Rashid
- Mr. Ijaz Jaffer

For focusing on its need and playing a key role in *Institutional strengthening*



Good luck!

Management Information System (MIS) User Manual

Before getting started...

It's time to operate Management Information System in National Highway Authority. Wait! It's much easier and simpler than you think. You don't need to roll up your sleeves, to stressout yourself or get nervous.

This manual will guide you systematically through the system to offer a gentle approach on how to operate, work and deal with the four core softwares of MIS.

- Human Resource Management Information System (HRMIS)
- Project Management Information System (PMIS)
- Finance Management Information System (FMIS)
- Revenue Management Information System (RMIS)

This manual will walk you step-by-step through all the features of the version 1.0 of **Management Information System** at first.

If you are a first-time user of **MIS** and have no prior experience with it, Chapter 1 is the best place to start with. It offers you helpful information on what actually is MIS? It's core Softwares, modules, Objectives and advantages.

By the time you finish the manual, even if you are completely new to the system. You will be able to master in terms of dealing with the system.



This chapter introduces the User to the basics of MIS. It's need. Technology specifications required for accessing the system. It's core Softwares and their modules. Advantages and objectives

CHAPTER 1



Chapter 1: Introduction to MIS

- MIS stands for Management Information System. It is a computer-based system that provides mangers with the tools to organize, evaluate, and efficiently manage departments within an organization.
- It continuously gathers relevant data through data entry forms both from inside and outside an organization. This data is then processed, integrated, and stored in a centralized database where it is constantly updated and made available to all those who have the authority to access it, in a form that suites their purpose.
- The system needs to be reviewed with time to ensure it meets the expanding needs. However, no unnecessary amendments should be made to the software unless until required.
- Changes to be approved by the Chairman only.

What to Choose?

ERP/SAP deployment:

- The cost of ERP/SAP software, planning, customization, configuration, testing, implementation etc. Is too high.
- ERP/SAP deployments are highly time consuming. It may take 1-3 years to get completed and fully functional.
- ERP would have required high level of customization to be compatible with NHA. Which further slows down the project.
- Integrating ERP with the existing Softwares is too hard. It may consume a lot of time and resources and give no results.

In- house MIS development:

- MIS software has been developed in house, making it less costly, customizable and resource friendly.
- The MIS section in the assigned time frame has developed it. And is currently working on making the amendments suggested by different sections\departments.
- It is exactly as per the need of the NHA and depicts the information in an understandable form to the higher management.

Objectives:

- MIS is very useful for efficient and effective planning and control functions of the management.
- Reports give an idea about the performance of individuals, materials, machinery, money and management. Reports throw light on the utilization of resources.
- MIS is helpful in controlling costs by giving information about idle time, labor turnover, wastages and losses and surplus capacity.
- By making comparison of actual performance with the standard and budgeted performance, variances are brought to the notice of the management by MIS, which can be corrected by taking remedial steps.
- MIS brings to the notice of the management strength (i.e., strong points) of the organization, to take advantage of the opportunities available.



Advantages:

- It facilitates planning: by providing relevant information for sound decision making.
- It Minimizes information overload: MIS change the larger amount of data in to summarized form and there by avoids the confusion which may arise when management is flooded with detailed facts.
- MIS measuring performance: MIS is successfully used for measuring performance and making necessary change in the organizational plans and procedures.
- It brings Co ordination: MIS facilities integration of specialized activities by keeping each department aware of the problem and requirements of other departments. It connects all decision centers in the organization.
- It makes control easier: MIS serves as a link between managerial planning and control. It improves the ability of management to evaluate and improve performance. MIS assembles, process, stores, Retrieves, evaluates and disseminates the information.

Technology Specification:

- Front end: includes forms. PHP 5*6 has been used for its programming
- Backend: includes Database, made in oracle
- Server: Apache
- Browser requirement: software is compatible with all browsers

Hardware Categories

- Server HP 9G
- UPS
- Backup Server

Core Softwares of MIS and its modules:

- MIS section has developed these 4 core Softwares and modules.
 - Project Management Information System (PMIS)
 - Finance Management Information System (FMIS)
 - Revenue Management Information System (RMIS)
 - Human Resource Management Information System (HRMIS)
- Each module plays a vital role in:
 - a) Centralizing information related to Employees & Projects.
 - b) Avoiding duplication of data making reconciliation of easier.
 - c) Building up of more reliable information easing decision-making regarding employees.



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These Softwares produce regular reports on 'Need-to-know' basis for:

- EIS-Executive Information System (Chairman & NHA members)
- **DSS**-Decision Support System (GM's & Directors)
- TPS Transaction Processing System (DD's & AD's)
- Only the relevant authorities can access the data on mobile, tabs and laptops through assigned user name and password eliminating the risks of information mishandling.
- As per the current situation. The software is ready to deploy. Covering all the sections and modules. However, The success still lies in the use of MIS with all the departments. Only development/deployment won't help.



CHAPTER 2

Introduces the user to PMIS and its Dashboards.



Chapter 2: Project Management Information system (PMIS)

Introduction:

PMIS is a set of procedures, equipment, and other resources for collecting, analyzing, storing, and reporting information that describes project performance. Project-management information system (PMIS) has been designed to track and monitor the progress of **on-going** and **upcoming** NHA projects in respect of '**Achieved vs. planned**' status, based on real activities/developments in each office/section in HQ/zone/region and in the project sites for in-time completion and a perfect "Project Management" at each level of the organization. It provides online information at three levels on "Need-to-know" basis through a logged record in the system:

- Executive Information System EIS.
- Decision Support System **DSS**.
- Transaction Processing System **TPS**

The projects are initiated by planning section. And pass through Design, Procurement, Land and Construction. The PMIS covers 'Project status" in each section encompassed with a key control link of Finance-MIS and HR-MIS.

The construction progress of each project is compiled as per real data source of accepted "Check Requests/ISQ's" at site. The accepted CRs are then entered in the PMIS by DD/AD (project), against the "work schedules/clause-14 program " in future, exact synchronization with "BOQ items" in accordance with "Financial Progress" entered in MB's and IPC's

Components:

The PMIS defines the projects: cost, time, scope and quality. It defines the team: people, organizations and their roles. It helps manage agreements: contracts, permits, approvals and commitments. It manages documents. Produces standard and custom reports and presents vital signs on dashboards.

Values Of PMIS:

The PMIS has enabled NHA to centralize the information so the team has a common understanding of the facts, a prerequisite for collaboration. And it's the most reliable way to host information because many eyes scrutinize

Centralized data and mistakes are more likely to be found and corrected. PMIS is expected to improve project performance, as it measures it.

Challenges of implementation:

The startup was bumpy. It was hard to collect all the previous data and enter it into the software accurately as it being extensive. But once the database has been made it is now much easier to update it at all levels. Moreover, Employees are taking a while accepting change. But once they understand its importance and have hands on it, it will improve their acceptability and efficiency of work. Overall management of the projects at different levels will become easier.



PMIS User Categorization

PMIS User is classified into Super Admin, Admin and Data entry Operators based on authority levels. This limits access of the confidential data to the authorized people only.

Super Admin:

- Super Admin has the highest level of Authority.
- There is only one Super Admin for PMIS that operates from the Head Quarters.
- He\ She creates and manages User classifications and their authority levels through permission form.
- Super Admin can assign projects to admin.

Admin:

- Super Admin creates Admin for each section.
- Can only see and manage assigned projects\packages.
- Can assign packages to data entry operators.
- Can't create a User or manage permissions to existing users.

Data Entry Operator:

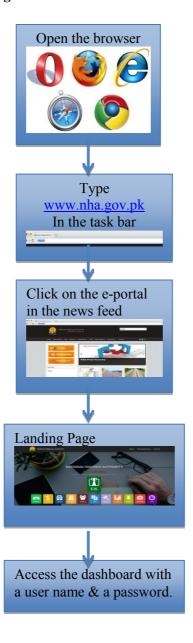
- Has the least level of authority.
- He\She is responsible only for entering data in the forms of which they have been given access to their Admin.



PMIS Dashboards

Dashboard" is another name for "progress report" or "report." The "dashboard" is displayed on a web page and is linked to a database, which allows the report to be constantly made and updated. It provides progress and monitoring on major upcoming and ongoing projects. The programmers have made the dashboard "an easy to read" Single page, real-time user interface, showing a graphical presentation of the current status of different projects that enables instantaneous and informed decisions to be made at a glance. Each project can be clicked on to see the packages involved and progress of each package.

Getting started:





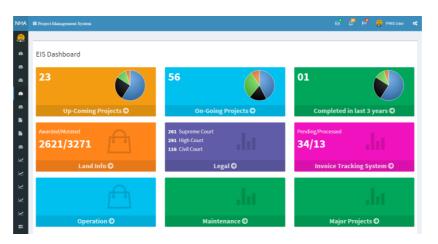
Project Management EIS Dashboard:

Menu Path: For chairman & members: EIS\PMIS

For Others: www.nha.gov.pk NHA news, ePortal\PMIS

Purpose: It gives an overview of: Upcoming projects, on-going projects, projects completed in last 3 years, land information, legal issues, invoice tracking system, operations, maintenance and of major projects that need frequent attention of the higher management.

Snapshot:

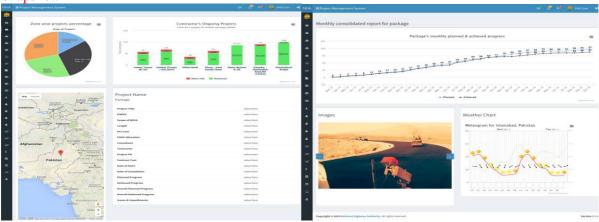


Up-coming Projects DSS Dashboard:

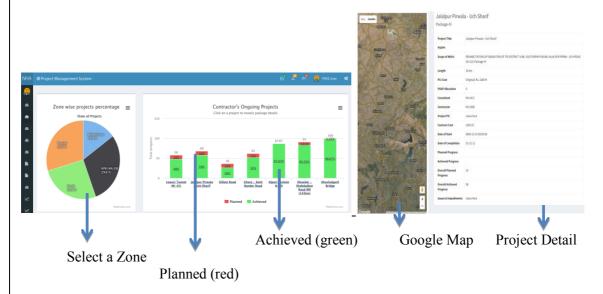
Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\Up-coming projects. Purpose: Enables the user to view:

- The ongoing and upcoming projects zone wise.
- Projects' actual vs. planned progress.
- Packages involved in each project.
- Monthly package progress report.

Snapshot:







Zone Wise project percentage: User can select a zone in the pie chart to see the ongoing projects in that specific zone.

<u>Contractors' Ongoing Projects</u>: Shows the **planned** vs. **achieved** progress of on-going projects in the selected zone in form of a **bar chart**. Each project(bar) can be clicked on to see the packages involved and progress of each package. This **drill down** capability of the dashboard enables the higher management to identify the packages hampering progress.

<u>Project Name</u>: lists the project information. The project is valued on the factors given under the title of project.

<u>Google Map:</u> Programmers have embedded a web-based service in the upcoming project dashboard to give information about project regions and sites. It offers Ariel and satellite view.

<u>Monthly package progress report</u>: Clicking on to the package gives it's planned vs. achieved monthly-consolidated report. This report can be downloaded, saved and printed.

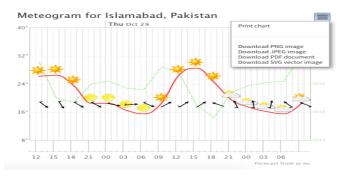




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Furthermore, the programmers have taken the programming a step ahead and have also enabled the User to see the past weather on specific dates. Making it easier to eliminate the excuse of weather for delays by contractor. Thus, improving the efficiency of work.

Weather Chart

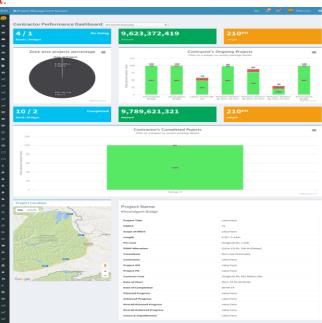


Contractor's Performance DSS Dashboard:

Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\Contractor's performance.

Purpose: Contains contractors list, detail of their ongoing and completed projects. Projects/packages planned vs. actual progress in form of a bar chart. Along with monthly consolidated report for each package.

Snapshot:



User can select a contractor from a drop down box to see the performance of projects under him.



Admin Forms

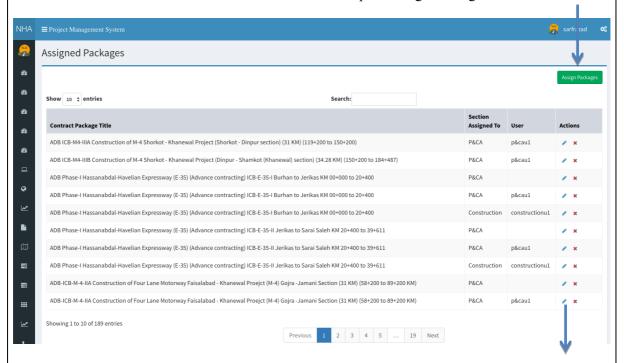
Assign Package Form:

Menu Path: www.nha.gov.pk NHA news, ePortal\PMIS\Admin forms\Assign packages form.

Purpose: Lists contract packages and gives a link for 'assign package to section form'. Super Admin or Admin can assign packages as per the requirement.

Snapshot:

Click to open 'Assign Packages' to sections form



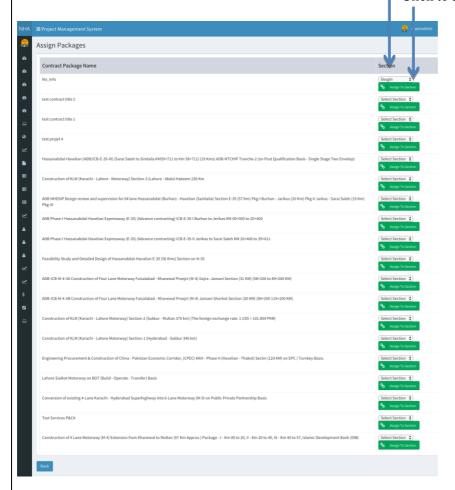
Click to open 'Edit Assigned Contract Package Form'



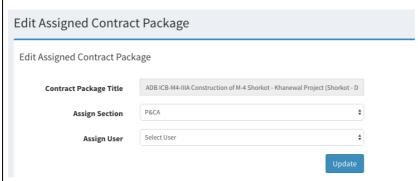
Assign Packages

Select 'Section' from the drop down box to assign contract package

Click to assign to section



Edit Assigned Package Form:



- Click 'Edit' against the contract package user would want to update.
- Click update to incorporate changes

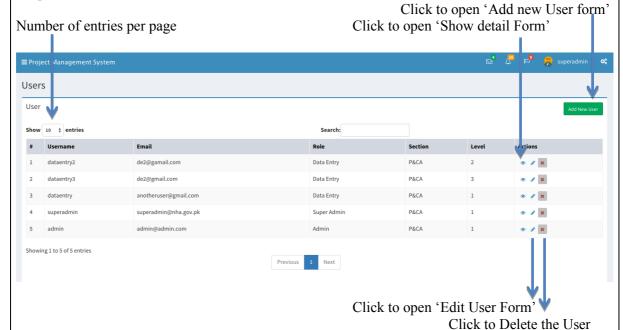


Manage Users:

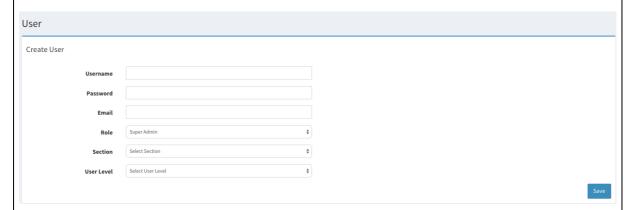
Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\Admin forms\Manage Users form.

Purpose: lists down authorized Users with their basic details. Super admin uses the form to view and manage (Edit, Update, Delete) Users to avoid security breech and overlapping of work.

Snapshot:



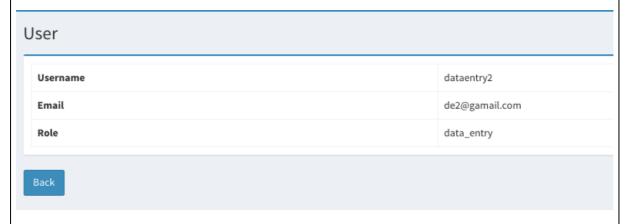
Add New User Form:



- Username: Of the new user to be added.
- Password: String of characters that will allow access to the software.
- Email: Email address of the User.
- Role: Select from the drop down box. Whether the user is going to be super admin, admin or data entry operator.
- Section: Select the section from the drop down box for which the User is going to work for.
- User level: Super Admin is the 'System administrator'. User level can be selected from the dropdown box. Level 1 is for headquarters, Level 2 is for regions and level 3 is for projects.



User Form:



• Displays User's Information.

Edit User Form:



Save

- Is used to update/modify existing User's information.
- Click 'Save' after updating the information.

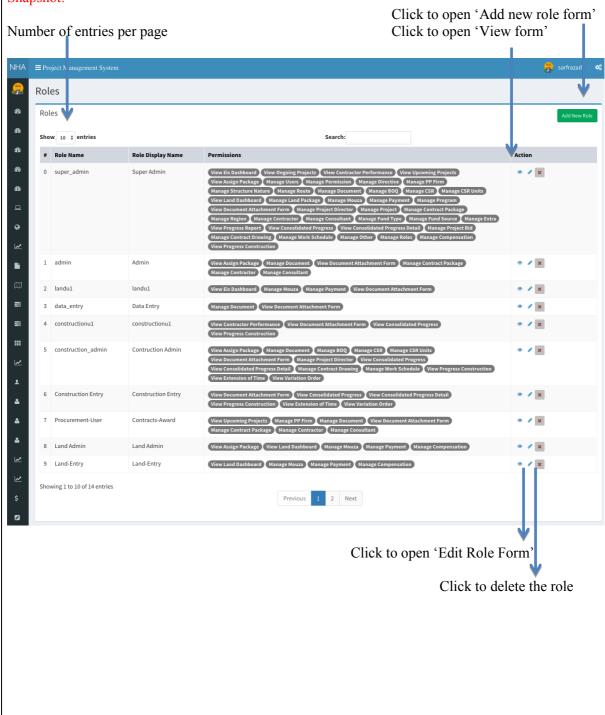


Manage Roles Form

Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\Admin forms\Manage roles form.

Purpose: Enables to add new role. View, Edit or delete existing roles.

Snapshot:



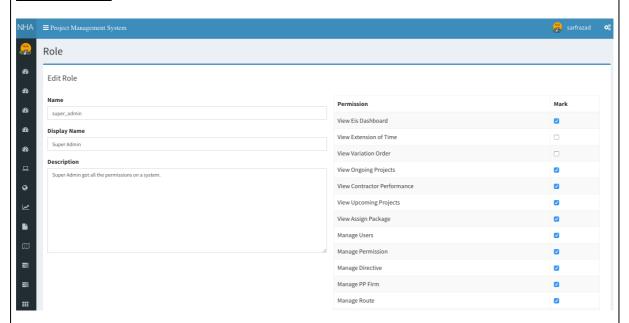


Role Form:

Role Name super_admin Role Display Name Super Admin Description Super Admin got all the permissions on a system.

Enables to view created roles.

Edit Role Form:



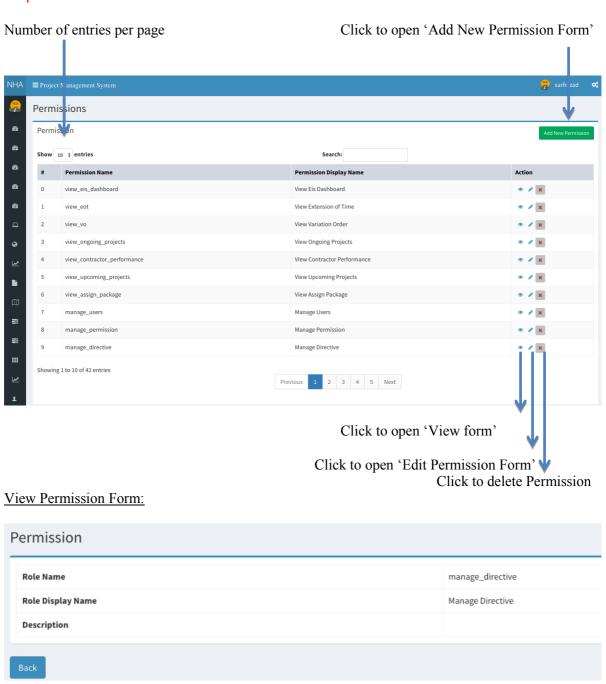
- Name: Role name. Super admin\Admin\Data entry etc.
- Display Name: Name of the role that the user wishes to display.
- Description: Role specifications.
- Permission: Extend of authorization granted to the role.
- Mark: If checked, permission is enabled. If unchecked, permission is disabled.



Manage Permissions

Menu Path: www.nha.gov.pk NHA news, ePortal\PMIS\Admin forms\Manage Permissions form. Purpose: Enables the user to manage role permissions. User can add a new permission. View, Edit or delete existing permissions as per requirement.

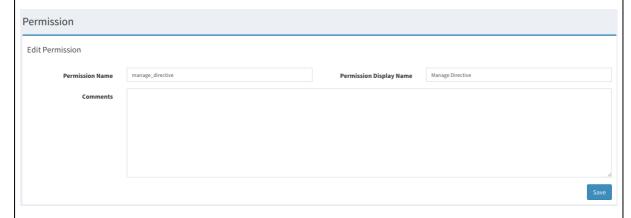
Snapshot:



• This form enables the user to view permission detail.

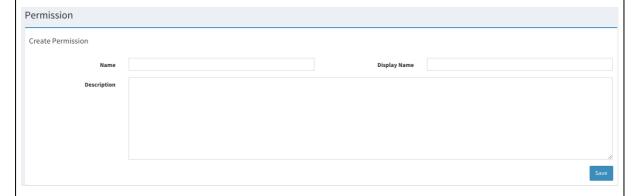


Edit Permission Form:



- Form enables the User to edit existing permissions.
- Clicks save to keep the changes. This will update the permission.
- Comments: If any.

Create\Add New Permission Form:



- Name: Name of the permission to be created.
- Display Name: Name to be displayed of the permission. Should be precise.
- Description: What the user will be able to do, if given this permission.

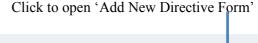


Directive:

Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\Admin forms\Directive.

Purpose: Enables the user to enter and keep record PM\Presidential Orders or orders issued by higher authorities under which the progress is made.

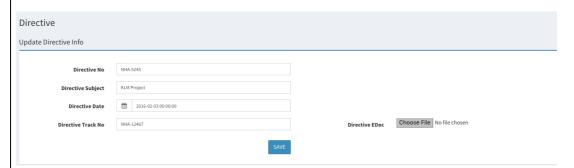
Snapshot:





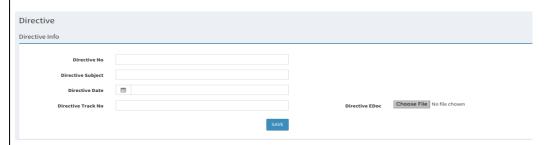
Click to open 'Update Directive Info'
Click to Delete Directive from the list

Edit\Update Directive Info Form:



- Directive No: serial number. Some directives are linked against that number.
- Directive Subject: Subject of directive.
- Directive Date: Date of issue.
- Directive Track No: Number by
- Choose File: 'Click' choose file to attached soft copy of the directive with the form.

Add New Directive Info Form:





- Directive No: serial number. Some directives are linked against that number.
- Directive Subject: Subject of directive.
- Directive Date: Date of issue.
- Directive Track No: Number by
- Choose File: 'Click' choose file to attached soft copy of the directive with the form.

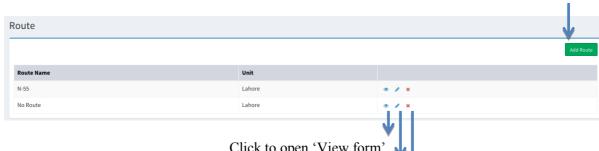
Route:

Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\Admin forms\Route.

Purpose: Enables the user to 'Add', 'View' & 'Edit' routes.

Snapshot:

Click to open 'Add Route Form'



Click to open 'View form' Click to open 'Edit Route Form'

Click to Delete Route from the list



Project Documents:

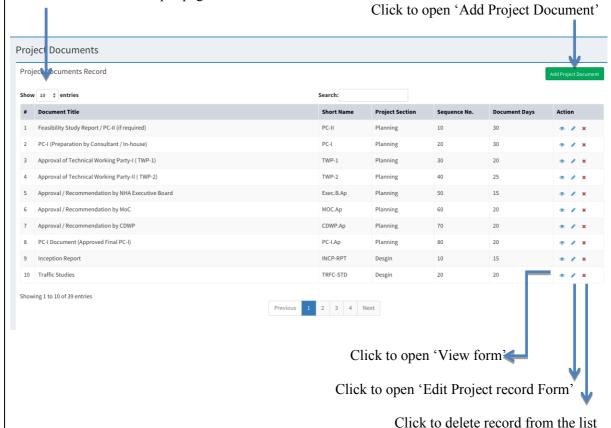
Menu Path: www.nha.gov.pk NHA news, ePortal\PMIS\Admin forms\Project Documents.

Purpose: Enables concerned sections to enter its standard as well as optional documents. Documents

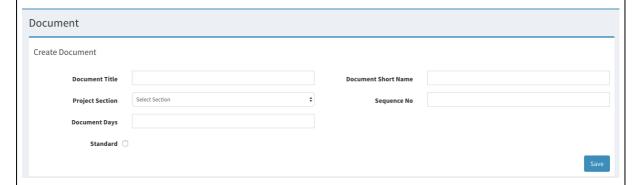
added here are used in the document attachment form (Load standard document).

Snapshot:

Select Number of entries per page



Add\Edit Project Document:



- Document Title: Full Name
- Document Short Name: Short name. Has to be relevant to the full name.
- Project Section: Select from the drop down box. Document is of which section.



 Sequence No. Serial num 	ber.
---------------------------------------------	------

- Document Days: Enter number of days the document will take for approval\finalization.
- Standard: Documents are standard as well as optional. Check box if section's document is a Standard one.

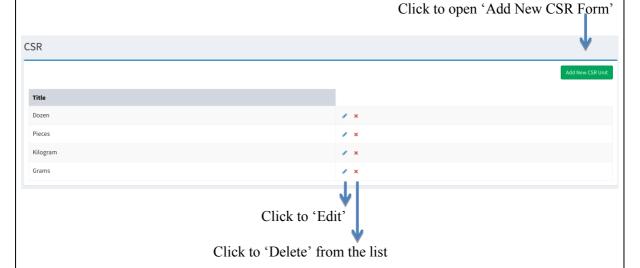


CSR Unit:

Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\Admin forms\CSR unit.

Purpose: Enables the User to 'Add', 'Delete' or 'Edit' CSR units. The units created here are shown in the drop down box of 'unit type' in CSR form as Items are defined in terms of the units that need to be created here.

Snapshot:



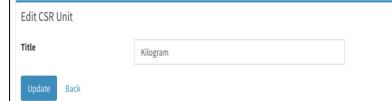
Add CSR Unit:



• Title: Enter Unit Name.

• Save: Click 'Save'

Edit\Update CSR Unit:



• 'Edit' title if required and 'click' update.



CSR:

Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\Admin forms\CSR.

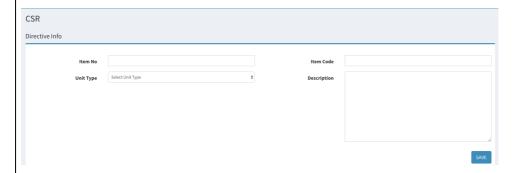
Purpose: Enables the user to Define\Add project\package items. CSR added here are depicted in the CSR dropdown box of BOQ.

Snapshot:

Click to 'Add New CSR'



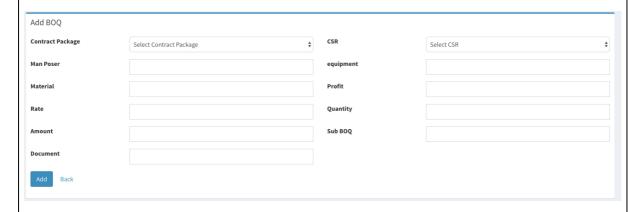
Edit\Add New CSR:



- Item No& Item code: Add both the codes.
- Unit Type: Select from drop down box.
- Description: Item detail.
- Save: click 'Save' to add item.

BOQ:

Menu Path: www.nha.gov.pk NHA news, ePortal\PMIS\Admin forms\Add BOQ. Purpose: Enables the user to add BOQ for the selected contract package. Snapshot:



- Fill in the details to add BOQ against selected contract package.
- Scan and attach supporting documents.



Project Management Phases

Phase 1: Pre-Construction\Upcoming Projects:

This phase involves Planning, Design & P&CA wing\sections.

- PMIS can only be accessed using assigned credentials, to avoid security breeches.
- Super Admin assigns credentials, only as per requirement.
- This phase starts as the Super Admin adds a new project\package. And assigns it to the concerned section's Admin Users.
- Section Admin then assigns the project\package to the Users to enter "planned Vs. Achieved" progress along with supporting documents against Project\Package title. (Project can have a single or multiple packages).

Phase 2: Ongoing Projects

This phase involves Construction, Land & legal wing\sections.

Construction:

- Super Admin creates construction Admin.
- Super Admin assigns package to Construction Admin.
- Admin will then assign packages to its section\wing Users for data entry against Projects\Packages created\added.
- If the Users required are not available. Admin can request Super Admin to create new Users as required.
- Monthly Progress of each project\package is depicted in the progress report form.
- Form also indicates using color codes whether the progress is submitted in time Or\And if delayed, by how many days.

Land:

- Super Admin add packages and Affectees' affected items along with its categories\types [Trees (fruit bearing, non-fruit bearing etc.), Crops, Structures paid (tube well, house\buildings, khura etc.]
- Super Admin then assigns the created package to its concerned users.
- Users add Mouza, Affectees', Award document and other required information against project\package.
- Supporting\Relevant documents are scanned and attached with the online form (aks shajrah, Field book, Section 4,5,6,6-7,17,17-1, payment document).
- Against Award Document two parallel & independent processes initiate.
- First, Land to be mutated is marked and is to be done by the district Govt.
- Second, Payment to Affectees is done by NHA.

Legal:

- Super Admin;
 - ✓ Adds courts & counsels. Non-other then super admin can do this.
 - ✓ Deals the entire management information.
 - ✓ Creates Users for Data Entry.
- Users are primarily (ADs' & DDs') who are given credentials for entering case information.



Phase 3: Operations:

This phase involves Afforestation, RAM (Road Asset Management) & Maintenance Unit.

• Completed construction projects, Routes and roads are handed over to NHA for its repairing & maintenance. Which is done by Regional maintenance directorate\Maintenance Offices.

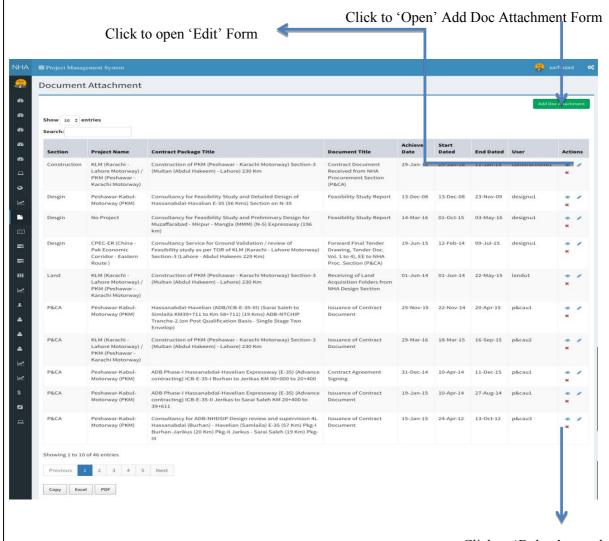
Phase 1:Upcoming Projects

Document Attachment Form:

Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\Document Attachment.

Purpose: Enables all the project relevant sections to assign section documents against contract package title and to create document cycle. Which enables the user to mark document activity and identify points of delay.

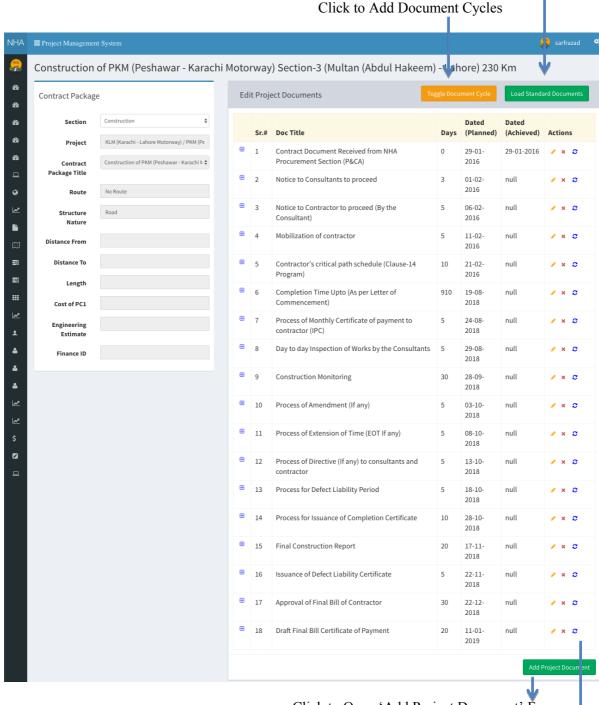
Snapshot:





Add\Edit Document Attachment Form:

Click to load section's Standard Documents



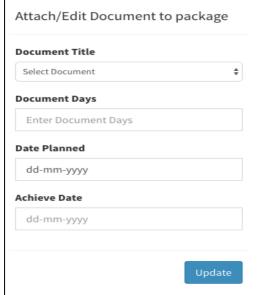
Click to Open 'Add Project Document' Form

Click to Open 'Add\Edit' Document cycle Form



- Section: Select the relevant section from the drop down box.
- Project: Select project from the drop down box. If not in the list contact super admin.
- Contract Package Title: Select contract package title against which the section will assign its document.
- Route: Enter Route; it defines the location of the project\package.
- Structure Nature: whether the project\package is a bridge, highway, motorway, underpass etc
- Distance From & To: Start & End point of the project\package in kilometers.
- Length: Length of project\package.
- Cost of PC1: Approved construction cost.
- Engineering Estimate: Estimated amount of construction.
- Finance ID: Each package has its unique Finance ID, which provides connectivity with FMIS.

Add Project Document:



- Document Title: Document to be added against the project\package is to be selected from the drop down list. If the document required id not in the list, contact super admin.
- Document Days: Enter number of days the document will take to finalize.
- Date Planned: Enter planned date for its finalization. When a planned date is entered, the achieve date field stays blank until the document is Finalized. Later the same form is updated with achieved date.
- Achieve Date: Enter date on which the document is finalized.



Add\Edit Document Cycle:

Add/Edit Document Cycle

dd-mm-yyyy	
Concerned Officer	
Enter Concerned Officer	Designation
itatus	
Pending	

- This form is used to create a document cycle, which identifies the point of delays.
- The same form is used repetitively until the document status changes from Pending to Finalized.

Flow of the Document Attachment Form:

- This form currently caters Planning, Design, P&CA.
- Super Admin adds:
 - Sections that we see in the drop down box.
 - Projects\packages using project form.
 - Contract Package through contract package form.
 - Project\Package documents through Add project document form.
- Then Super Admin assigns packages to section admin.
- Section admin then can assign package to users of its own section.
- Users then assign\save documents against package title, create document cycles.
- Toggle document cycle button on click, expands\collapse all cycles.

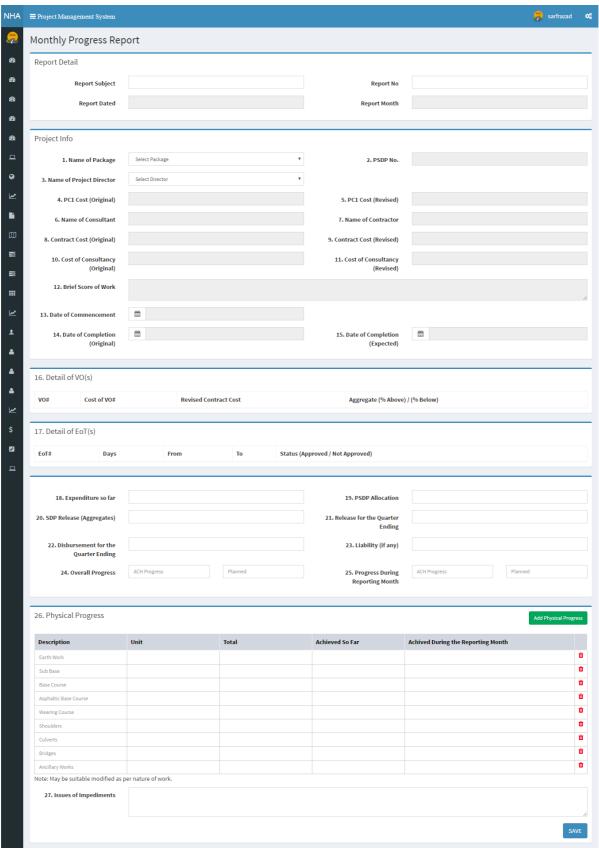
Phase 2: Ongoing Projects

Construction: Monthly Progress Report

Menu Path: www.nha.gov.pk\ NHA news, ePortal\PMIS\ Consolidated progress\Add new project. Purpose: Form gives the monthly Project\package progress. And whether the progress has been submitted on time or delayed.

Snapshot:







Steps to be followed by Construction Section Users to make project\package progress entries in the form:

Add Progress:

- 1) a) Monthly progress Report form has 5 parts.
 - b) Select Name of the project\package from the drop down box.
- 2) Selecting Project\Package name will fill in Fields from 2 till 17 automatically.
- 3) Next fill in Report detail part of the form: Fill only report month & report subject field.
- 4) The field construction users fill in the form from no.18 till no.27.
- 5) Click "Save". This will save the report on the User's desktop by default with a format title as (PackageID datemonthyear.Pdf). Date, Month & year is without space.
- 6) Saving the form makes it add up in the consolidated progress list too.
- 7) Take a print out of the saved report.

Edit:

- 8) Report is then to be signed by concerned authorities. Dispatch number and date is to be added manually.
- 9) Scan the signed document.
- 10) Then go to the consolidated progress list. Click 'Edit' sign against the package\project added or need to be edited.
- 11) Enter Report number & dated in the form same as entered on the scanned copy.
- 12) Scan & Upload monthly project\package progress pictures.
- 13) 'Click' on to 'Finalize button'. This will finalize the monthly progress. And the Finalize button disappears.
- 14) Once 'Finalized' it cannot be edited in future.

Add Physical Progress:

'Add physical progress' Icon on the form is used to add new construction heads if and when required.