



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

---

# **ARMP software**

## **(Version 2.2, 2017)**

# **User's Manual**

**May, 2017**



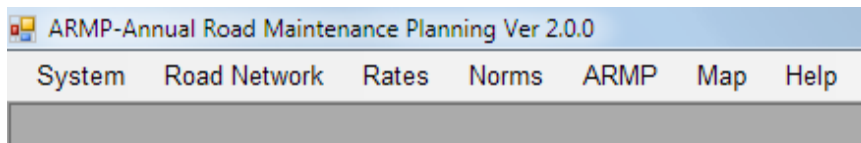
254 Shree Ekata Marga, New Baneshore, Kathmandu-34, Nepal  
Phone 977-1-4104307, 4104319  
Fax 977-1-4104307  
Email [support@softwel.com.np](mailto:support@softwel.com.np), [Http www.softwel.com.np](http://www.softwel.com.np)

## Table of Content

<b>1. Menu Bar.....</b>	<b>1</b>
<b>2. System Menu .....</b>	<b>2</b>
2.1 Login Screen .....	2
2.2 User Management.....	2
2.3 Change Password .....	3
2.4 View Users (For Admin Only).....	3
2.5 Add Users Sub Menu(For Admin Only).....	3
2.6 View User Log (For Admin Only).....	4
<b>3. Road Network .....</b>	<b>5</b>
3.1 Edit Network Data .....	5
3.2 Upload Road Network .....	6
3.3 Pavement .....	7
<b>4. Rates Menu .....</b>	<b>8</b>
4.1 Routine Labour Rates (For Admin Only).....	8
4.2 Recurrent Maintenance Rates.....	9
4.3 ARMP Budgetary Items (Admin Only).....	9
4.4 ARMP Budgetary Rates .....	10
<b>5. Norms Menu .....</b>	<b>11</b>
5.1 View Routine Norms.....	11
5.2 View Recurrent Norms Sub Menu .....	12
<b>6. ARMP Menu .....</b>	<b>13</b>
6.1 Road Register .....	13
6.1.1 Division wise Road Register.....	13
6.1.2 District wise Road Register .....	14
6.2 Routine Maintenance .....	15
6.3 Recurrent Maintenance .....	16
6.3.1 Select Typical Roads.....	16
6.3.2 Prepare Typical Analysis.....	17
6.3.3 Prepare Summary .....	17
6.4 Periodic Maintenance.....	18
6.5 Periodic Maintenance With IRI .....	19
6.6 Specific Maintenance .....	22
6.6.1 Select Links .....	22
6.6.2 Prepare Details.....	23
6.6.3 View Summary .....	23
6.7 Rehabilitation.....	24
6.7.1 Select Links .....	24
6.7.2 Prepare Details.....	25
6.7.3 View Summary .....	25
6.8 Reconstruction .....	26

6.8.1	Select Links .....	26
6.8.2	Prepare Details.....	26
6.8.3	View Summary .....	27
6.9	Upgrading .....	28
6.9.1	Select Links .....	28
6.9.2	Prepare Details.....	28
6.9.3	View Summary .....	29
6.10	Bridge Maintenance .....	30
6.10.1	Prepare Bridge Routine Details.....	30
6.10.2	View Routine Summary.....	30
6.10.3	Select Bridge For Minor Maintenance .....	31
6.10.4	Minor Maintenance Details.....	32
6.10.5	View Minor Maintenance Summary.....	32
6.11	Miscellaneous Maintenance .....	33
6.11.1	Bio-Engineering Works.....	33
6.11.2	Emergency Maintenance Works.....	33
6.11.3	Road Safety Works .....	34
6.11.4	Road Inventory/Register.....	34
6.12	Summary Sub Menu.....	35
6.12.1	Division Summary .....	35
6.12.2	Regional Summary.....	36
6.12.3	National Summary.....	37
6.13	Map .....	38
6.14	Help Sub Menu ( About).....	39

## 1. Menu Bar



**System** Allows users to create new user, change password, view users, login and logout/quit.

**Road Network** Allows admin users to update the road network including dynamic segmentation using pavement data (width, last resurface etc)

**Rates** Allows users to view routine labour rates, work item and recurrent maintenance rates.

**Norms** Allows users to view routine and recurrent norms.

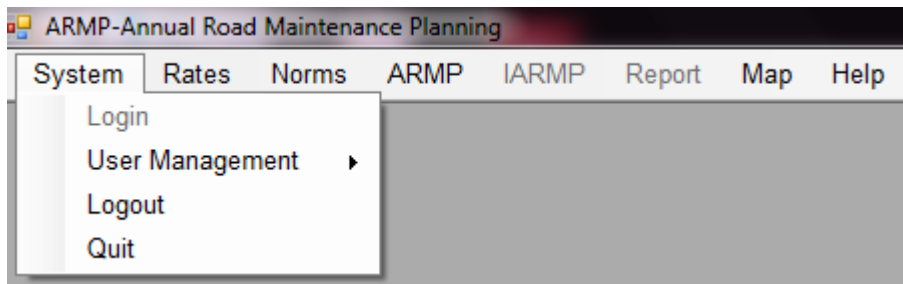
**ARMP** Provides users to perform the following

- To view road register
- To view details related to routine maintenance cost estimate and recurrent maintenance/periodic maintenance/specific maintenance
- To view details related to rehabilitation/reconstruction and upgradation of selected roads
- To view bridge routine details
- Select bridge for routine maintenance cost calculation, minor bridge maintenance details and its summary
- To view details related to bio-engineering, emergency maintenance , road safety and road inventory
- To view Annual Road Maintenance Summary taking into consideration a particular region/division/nation.

**Map** Allows users to view map of the assessed data.

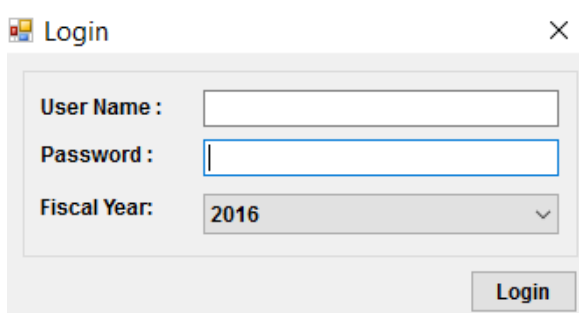
**Help** Provides brief detail about the software like version number etc.

## 2. System Menu



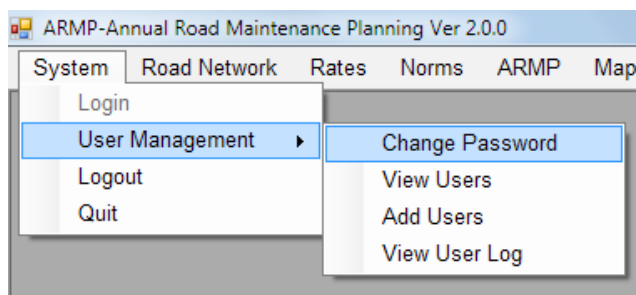
Within the system menu, users are provided with the option to login into the tool. Further, within the option of user management, one can change his/her login password. For users who login as 'Admin', they are able to view/add users. Logout/Quit options are also provided in this menu.

### 2.1 Login Screen



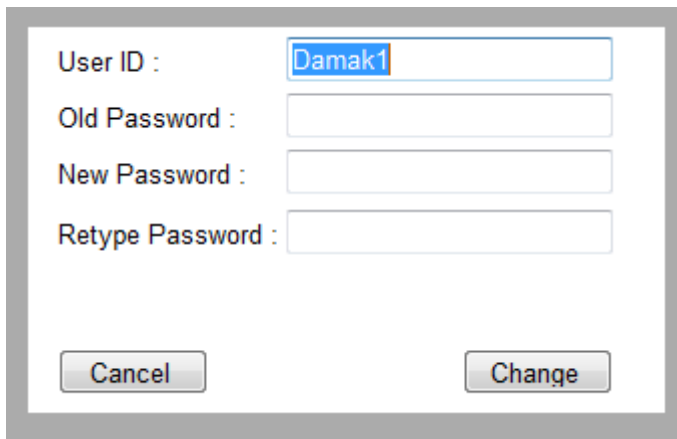
So as to prevent unauthorized access to the tool, users are supposed to login using a proper username and password. They can also choose the fiscal year, e.g. 2012 or 2013 for which the details are to be viewed.

### 2.2 User Management



By clicking on the user management sub menu, the user is provided with four options- change password, view users, add users and view user log.

## 2.3 Change Password



A dialog box titled 'Change Password' with four input fields and two buttons. The 'User ID' field contains 'Damak1'. The 'Old Password', 'New Password', and 'Retype Password' fields are empty. The 'Cancel' button is on the left and the 'Change' button is on the right.

User ID :	Damak1
Old Password :	
New Password :	
Retype Password :	

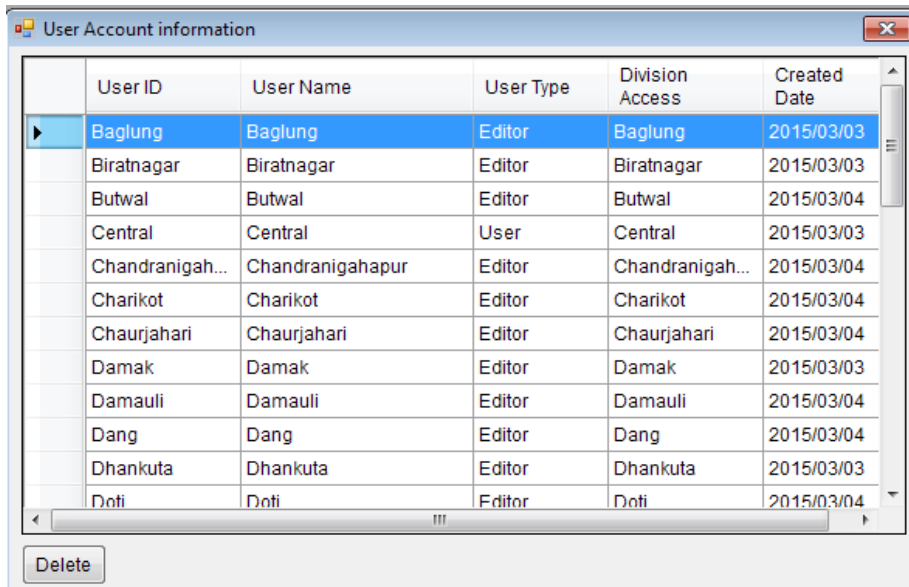
Buttons: Cancel, Change

To change the password, details such as user id, old password and new password are to be entered and 'Change' button is to be pressed for successfully changing the password.

## 2.4 View Users (For Admin Only)

For users with 'Admin' rights, it is possible to view all the users who are currently using the system. To view the same, view users' option within the user management sub-menu is to be selected.

Admin users are able to view details such as name of the user, user id, login type (Editor/Admin/User) and the date on which the account was created.



A window titled 'User Account information' displaying a table of user accounts. The table has six columns: User ID, User Name, User Type, Division Access, and Created Date. The first row is highlighted in blue. A 'Delete' button is located at the bottom left of the window.

User ID	User Name	User Type	Division Access	Created Date
Baglung	Baglung	Editor	Baglung	2015/03/03
Biratnagar	Biratnagar	Editor	Biratnagar	2015/03/03
Butwal	Butwal	Editor	Butwal	2015/03/04
Central	Central	User	Central	2015/03/03
Chandranigah...	Chandranigahapur	Editor	Chandranigah...	2015/03/04
Charikot	Charikot	Editor	Charikot	2015/03/04
Chaurjahari	Chaurjahari	Editor	Chaurjahari	2015/03/04
Damak	Damak	Editor	Damak	2015/03/03
Damauli	Damauli	Editor	Damauli	2015/03/04
Dang	Dang	Editor	Dang	2015/03/04
Dhankuta	Dhankuta	Editor	Dhankuta	2015/03/03
Doti	Doti	Editor	Doti	2015/03/04

Buttons: Delete

## 2.5 Add Users Sub Menu(For Admin Only)

Admin users are able to add new users by selecting the 'Add Users' option within the user management sub menu.

The 'Login Detail' form contains the following fields and controls:

- User Name:** A text input field.
- User ID:** A text input field.
- Division:** A dropdown menu.
- Account Type:** A dropdown menu.
- Password:** A text input field.
- Retype Password:** A text input field.
- Year:** A text input field.
- Create:** A button to save the new user.
- Cancel:** A button to cancel the operation.

To add new users, a number of details are to be provided such as user name, user id, division (Eastern/Central/Western/Mid-Western/Bhaktapur/Dhankuta etc), account type (user/admin/editor), password and the current year.

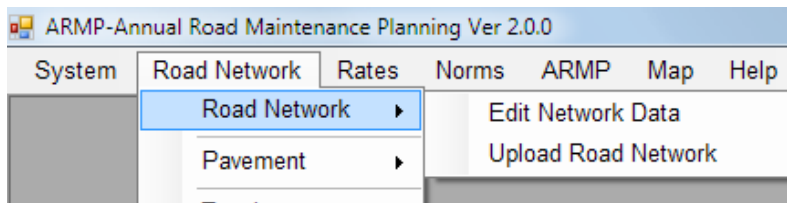
## 2.6 View User Log (For Admin Only)

For users with 'Admin' rights, it is possible to view log of all the users including login time, logout time and the user's IP address using the system.

The 'User Log' window displays a table of user login and logout records. The table has the following columns: S.No, Log In Date Time, Log Out Date Time, and Log In IP. The 'Select User' dropdown is set to 'Hetauda', and the 'Load User' button is visible. The 'Total Records' is 25. The 'Limit 25 Records' radio button is selected.

S.No	Log In Date Time	Log Out Date Time	Log In IP
1	2016-05-27 11:25:09	2016-05-27 15:46:19	192.168.2.3
2	2016-05-23 13:54:18	2016-05-23 15:03:08	192.168.2.19
3	2016-05-19 10:13:56		192.168.1.115
4	2016-05-18 14:37:33	2016-05-18 18:26:47	192.168.1.114
5	2016-05-18 08:31:31	2016-05-18 10:21:00	192.168.2.13
6	2016-05-17 13:34:08	2016-05-17 13:41:18	192.168.2.13
7	2016-05-17 11:29:25		192.168.2.19
8	2016-05-16 22:00:40	2016-05-16 23:08:02	192.168.2.104
9	2016-05-16 19:29:12	2016-05-16 19:37:43	192.168.1.141
10	2016-05-16 16:08:45	2016-05-16 19:04:30	192.168.2.19
11	2016-05-16 09:07:19	2016-05-16 09:41:45	192.168.2.104
12	2016-05-15 08:48:24	2016-05-15 10:01:36	192.168.10.7
13	2016-05-13 18:59:39	2016-05-13 21:27:46	192.168.2.102

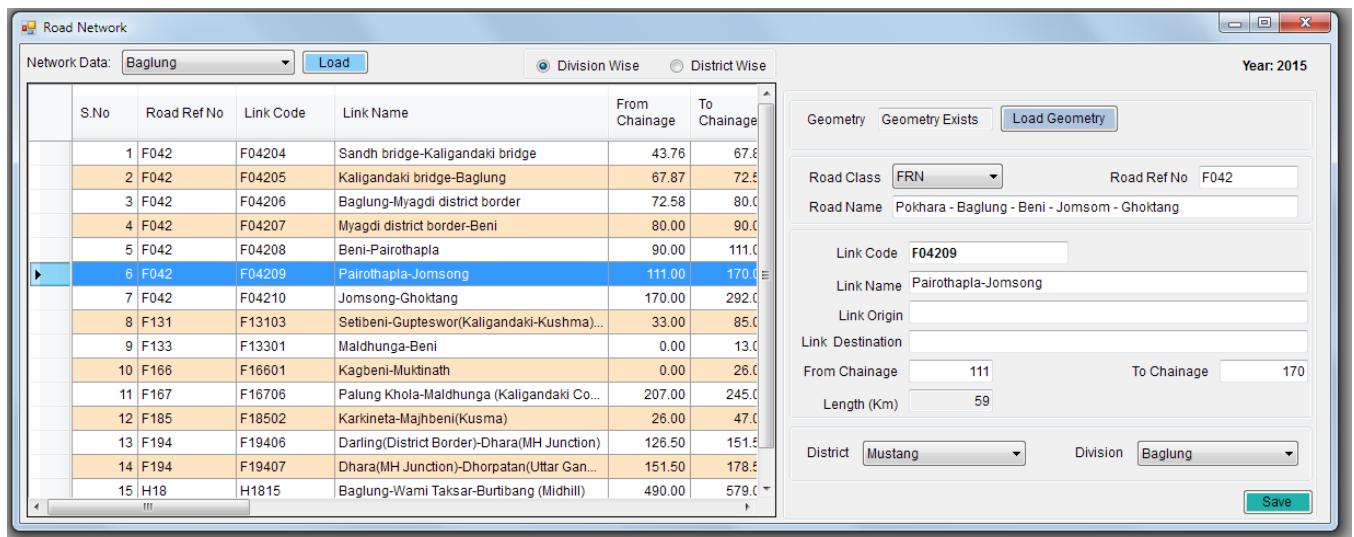
### 3. Road Network



The road network menu provides access to edit the network data including uploading of the road geometry using shape files. It also provides tools for creating sections within link with chainages for the various pavement types, resurfacing/construction dates and the road condition (IRI, SDI) and the traffic data.

#### 3.1 Edit Network Data

The Basic road network data can be edited or even road link deleted using this tool. Once deleted the road link is also deleted from the map.





### 3.2 Upload Road Network

The geometry of the road network can be uploaded using this tool. Basic attribute mapping is essential to uniquely identify the road (e.g road code etc..). The geometry should be UTM Zone 44N coordinate system.

The screenshot shows a software window titled "Upload Road Network". It contains the following elements:

- Shapefile Path:** A text input field with a file explorer icon to its right.
- Attribute Mapping:** A large, empty rectangular area for mapping attributes.
- Options:**
  - Two radio buttons: "Replace All" (unselected) and "Append Data" (selected).
  - A "Data Year" dropdown menu currently showing "2015".
- Message:** A green text box stating "The shapefile should be in UTM 44N WGS84 Coordinate system."
- Upload:** A button at the bottom right of the main area.

### 3.3 Pavement

The pavement information tool for dynamic segmentation of the road links by various parameters. Links sections can be defined using 'From' and 'To' Chainages and various parameters can be provided and the software will break the links accordingly.

**Pavement Information**

Select Road Ref No:

Select Link:

Link Name:

Link Start Ch:  Link End Ch:  Link Length:

	From Chainage	To Chainage	Pavement Type	Pavement Width (m)	Last Resurface Year	SDI	IRI
▶	94.85	99.63	STGB	3.85	2014	1	-1

**Entry Type**  
☒ Chainage ☐ Longitude/Latitude

From Chainage:  To Chainage:   
 Longitude:  Longitude:   
 Latitude:  Latitude:

Pavement Type:  Thickness:   
 Base Thickness:  Sub-base Thickness:   
 Pavement Width:  Formation Width:   
 No of Lanes:  Sub-grade Soil:

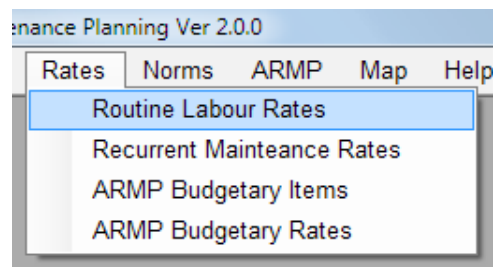
Left Shoulder Width:  Right Shoulder Width:   
 Left Shoulder Type:  Right Shoulder Type:

Last Update:  Inventory Year:   
 Update Notes:   
 Program/Project:

Construction Year:  Last Resurface Year:

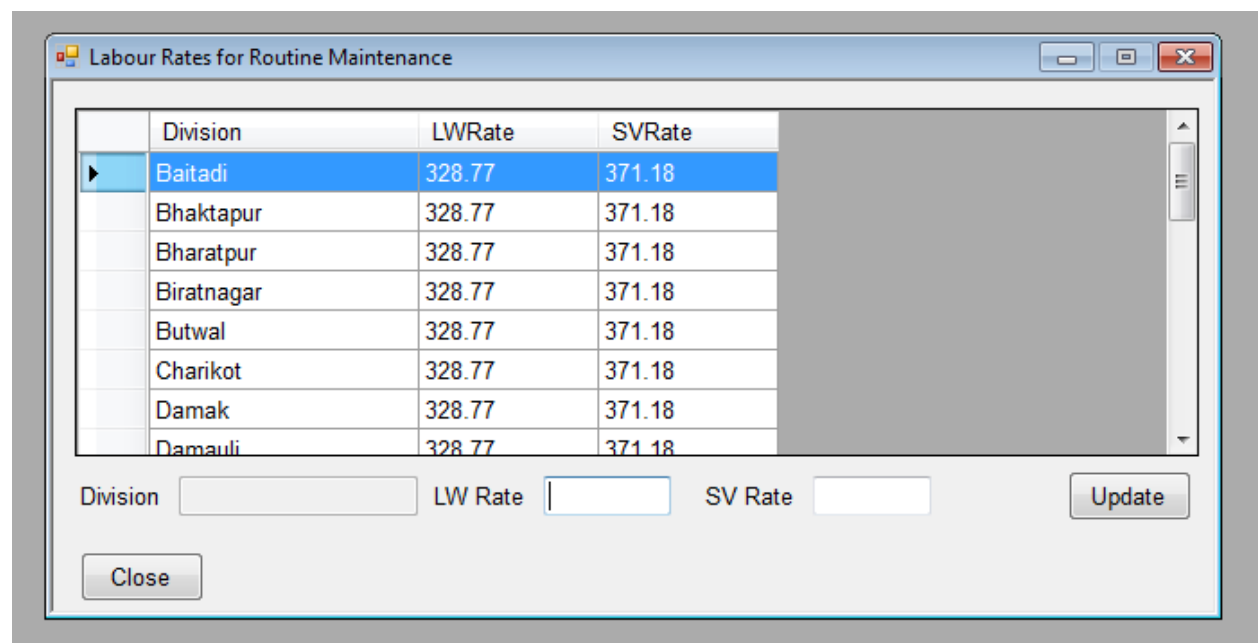
SDI Value:  IRI Value:   
 AADT Value:

#### 4. Rates Menu



Within the rates menu, users are able to view the routine labour rates (For Admin only). Work item and recurrent maintenance rates can also be viewed within the menu.

##### 4.1 Routine Labour Rates (For Admin Only)



Admin users are able to view the routine labour rates for various divisions of the country and are also able to update the corresponding LWRate/SVRate.

## 4.2 Recurrent Maintenance Rates

Rates for the common items for recurrent maintenance work can be provided using this tool.

Recurrent Rate Entry

Division: Damak

S.No	Work Description	Rate	Unit
1a	<b>Blacktop Surface: Pothole/Patch/Edge Repair Works</b>		
1a.1	Asphalt Concrete Surface	4,000.00	m2
1a.2	Surface Dressing/Premix	1,250.00	m2
1a.3	Penetration Macadam	1,600.00	m2
1b	<b>Blacktop Surface: Crack Sealing</b>		
1b.1	Asphalt Concrete Surface	0.00	m2
1b.2	Surface Dressing/Premix	1,250.00	m2
1b.3	Penetration Macadam	0.00	m2
2	<b>Shoulder: Reshaping, Levelling and Compacting of GR Shoulder</b>		
2.1	In Single Lane Road	450.00	m2
2.2	In Double Lane Road	0.00	m2
2.3	Sealing of prime coat, SBST or BT macadam shoulder	0.00	m2
3	<b>Access Road Repair Works</b>		
3.1	Gravel Access Pot Hole Repair	0.00	m2
3.2	Bitumen Access Pot Hole Repair	1,200.00	m2
4	<b>Culvert: Damaged Headwall/Wingwall/Catchpit/Abutment/Check dam/Scour Protection</b>		
4.1	Minor repairs on Masonry Works	0.00	m3

## 4.3 ARMP Budgetary Items (Admin Only)

These are standard items defined for entire ARMP. Editing of items are only available for the admin users.

ARMP Budget Items

**ARMP Budgetary Items**

Activity No.	Short Description	Unit
1.01	Specific-Road Surface Repair Work/AC	Sqm
1.02	Specific-Road Surface Repair Work/SD	Sqm
1.03	Specific-Road Surface Repair Work/Otta/Premix	Sqm
1.04	Specific-Repair of Ret. Wall/Gabion	Cum
1.05	Specific-Repair of Ret. Wall/Masonry	Cum
1.06	Specific-Repair of Ret. Wall/ PCC/RCC/other	Cum
1.07	Specific-Repair of Culvert/Pipe	No
1.08	Specific-Repair of Culvert/Box/Slab	No
1.09	Specific-Repair of Causeway	No
1.10	Specific-Repair of Side Drain/Masonry	Rm
1.11	Specific-Repair of Side Drain/PCC/RCC	Rm
1.12	Specific-Lining of Drain surface	Rm
1.13	Specific-Repair of Pavement support Structure	Rm
1.14	Specific-Road Furniture Works	No
1.15	Rehab-Road Surface/AC	Km

Activity No. 1.04

Short Desc. Specific-Repair of Ret. Wall/Gabion

Unit Cum

#### 4.4 ARMP Budgetary Rates

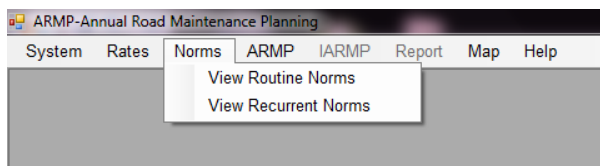
The rates for standard items defined for entire ARMP can be entered using this tool. Each division should provide the rates applicable to the entire division.

ARMP Budget Rates

Division:

Activity No.	Short Description	Unit	Rate
1.01	Specific-Road Surface Repair Work/AC	Sqm	500.00
1.02	Specific-Road Surface Repair Work/SD	Sqm	700.00
1.03	Specific-Road Surface Repair Work/Otta/Premix	Sqm	0.00
1.04	Specific-Repair of Ret. Wall/Gabion	Cum	3,700.00
1.05	Specific-Repair of Ret. Wall/Masonry	Cum	8,000.00
1.06	Specific-Repair of Ret. Wall/ PCC/RCC/other	Cum	13,000.00
1.07	Specific-Repair of Culvert/Pipe	No	0.00
1.08	Specific-Repair of Culvert/Box/Slab	No	0.00
1.09	Specific-Repair of Causeway	No	0.00
1.10	Specific-Repair of Side Drain/Masonry	Rm	0.00
1.11	Specific-Repair of Side Drain/PCC/RCC	Rm	0.00
1.12	Specific-Lining of Drain surface	Rm	0.00
1.13	specific-Repair of Pavement support Structure	Rm	0.00
1.14	Specific-Road Furniture Works	No	0.00
1.15	Rehab-/Road Surface/AC	Km	0.00
1.16	Rehab-Road Surface/STGB	Km	0.00
1.17	Rehab-Road Structure	Rm	0.00
1.18	Rehab-Side Drain/Masonry/PCC/RCC	Rm	2,000.00
1.19	Reconst-Road Surface/AC	Km	0.00
1.20	Reconst-Road Surface/SD	Km	0.00

## 5. Norms Menu



### 5.1 View Routine Norms

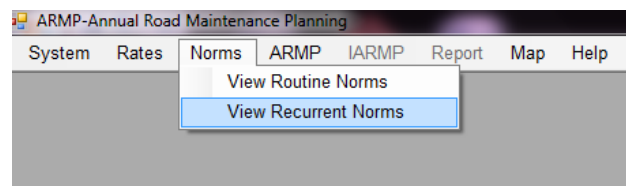
Provides the details of the labour based routine maintenance works/

The 'Routine Norms' dialog box is shown with the 'Fiscal Year : 2013' and 'Input Type: Lengthman' dropdown. It contains a table with the following data:

	Surface Type	Terrain	Unit ( Km)	Monsoon (120 days)	Other Season (245 days)
▶	BT	H	3	1	1
	BT	P	5	1	1
	GR	P	5	1	1
	GR	H	2	1	1
	ER	H	2	0	0
	ER	P	5	0	0
	U	U	1	0.5	0.5
	BT	R	5	1	1
	GR	R	5	1	1

At the bottom of the dialog box are 'Save' and 'Close' buttons.

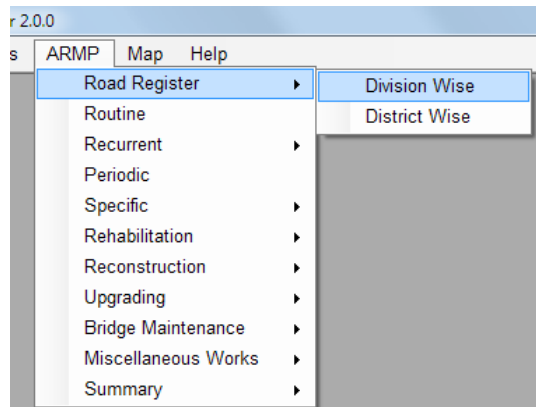
## 5.2 View Recurrent Norms Sub Menu



Recurrent Norms				
	S.N.	Road Element	Work Description	Norms
▶	1	Black top surface	Pot hole/Patch/Edge Repair	
			Crack Sealing	
	2	Shoulder	Reshaping, levelling and Compacting of GR sho...	
			Asphalt Concrete Surface	0% - 0.2% of paved surface area
			Surface Dressing / Premix	0% - 0.75% of paved surface area
			Penetration Macadam	0% - 0.3% of paved surface area
			Asphalt Concrete Surface	0% - 0.3% of paved surface area
			Surface Dressing / Premix	0% - 0.2% of paved surface area
			Penetration Macadam	0% - 0.1% of paved surface area
			Shoulder Repairing for Single Lane Road	0% - 0.5% of shoulder surface area
			Shoulder Repairing for Double Lane Road	0% - 0.2% of shoulder surface area
			Sealing of prime coat,SBST or BT macadam sh...	0% - 0.15% of shoulder surface area
	3	Access Road	Gravel Access Pot Hole Repair	0% - 0.4% of shoulder surface area
			Bitumen Access Pot Hole Repair	0% - 0.3% of shoulder surface area
	4	Culverts	Damaged Headwall/Wingwall/Catchpit/Abutment...	0 - 0.1 m3 per Culvert
	5.a	Gabion Wall	Damaged Dry Wall/Gabion Wall(Minor Repairs o...	0 - 1 m3 per 1000m Length
	5.b	Masonry Wall	Damaged Masonry Wall(Minor Repairs on Maso...	0 - 0.5 m3 per 1000m Length
	6.a	Earthen Drain	Reshaping (Earthwork)	0 - 5 m3 per 100m Length
	6.b	Masonry Drain	Damaged Masonry work and water Proofing Bas...	0 - 2 m3 per 1000m length
	6.c	Concrete Cover Drain	Replace Concrete Cover	0 - 0.25 m3 per 100m length
	7.a	Embankment	Filling Rain Cuts and eroded Slopes	0 - 2% of embankment area
	7.b		Turfing	0 - 1% of embankment area

## 6. ARMP Menu

### 6.1 Road Register



#### 6.1.1 Division wise Road Register

Provides the road register by division. It also includes the sub-links and the activities e.g. last resurfacing, pavement status and project notes for each of the links and sub-links.

Road Register

Division:   Year : 2016

	Road Ref No	Link Code	Link Name	Link From	Link To	Link Length	BT	GR	ER	UC	PL	Terrain	Link Section	Section From	Section To	Se Le
▶	35SUR0...	35SUR00...	Campus Chowk-TCN Chowk	0.00	1.20	1.20	1.20	0.00	0.00	0.00	0.00	U	35SUR00101-A	0.00	1.20	
	35SUR0...	35SUR00...	Bharatpur-Cancer Hospital	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	U	35SUR00201-A	0.00	2.50	
	35SUR0...	35SUR00...	Chubiskothei-Malpot Chowk	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	U	35SUR00301-A	0.00	1.00	
	35SUR0...	35SUR00...	Gaurigunj-Hakimchowk(MRM)-Hospital	0.00	7.00	7.00	7.00	0.00	0.00	0.00	0.00	U	35SUR00401-A	0.00	7.00	
	35SUR0...	35SUR00...	Yajnapuri-Lanku-Belchok - sahidchok	0.00	7.00	7.00	7.00	0.00	0.00	0.00	0.00	U	35SUR00501-A	0.00	7.00	
	F034	F03401	Malekhu-Dhading Besi	0.00	17.50	17.50	17.50	0.00	0.00	0.00	0.00	R	F03401-A	0.00	17.50	
	F037	F03701	Bharatpur Bypass Road	0.00	4.49	4.49	4.49	0.00	0.00	0.00	0.00	P	F03701-A	0.00	1.20	
													F03701-B	1.20	4.49	
	F069	F06901	Galchhi (PRM)-Baghmara	0.00	3.00	3.00	3.00	0.00	0.00	0.00	0.00	H	F06901-A	0.00	3.00	
	F075	F07504	Bhimdhunga-Dharke	10.10	33.10	23.00	0.00	0.00	0.00	0.00	23.00	R	F07504-A	10.10	33.10	
	F123	F12301	Dhading Besi-Aarughat	0.00	35.00	35.00	0.00	35.00	0.00	0.00	0.00	H	F12301-A	0.00	20.00	
													F12301-B	20.00	35.00	
	F124	F12401	Tandi, Ratnagar (MRM)-Sauraha	0.00	7.00	7.00	7.00	0.00	0.00	0.00	0.00	P	F12401-A	0.00	7.00	
	F125	F12501	Bharatpur-Meghauli Airport	0.00	25.00	25.00	25.00	0.00	0.00	0.00	0.00	P	F12501-A	0.00	16.00	
													F12501-B	16.00	25.00	
	F125	F12502	Meghauli Airport-Dhruwa(PR)	25.00	33.00	8.00	0.00	0.00	8.00	0.00	0.00	P	F12502-A	25.00	33.00	
	F126	F12601	Aauptari (H05)-Devghat	0.00	4.00	4.00	4.00	0.00	0.00	0.00	0.00	R	F12601-A	0.00	1.50	
													F12601-B	1.50	4.00	
	F161	F16101	Bhandara-Bumetar(Chepang Marg)	0.00	5.00	5.00	1.50	3.50	0.00	0.00	0.00	R	F16101-A	0.00	1.50	



### 6.1.2 District wise Road Register

Provides the road register by district. It also includes the sub-links and the activities e.g. last resurfacing, pavement status and project notes for each of the links and sub-links.

Road Register District Wise

District

Achham

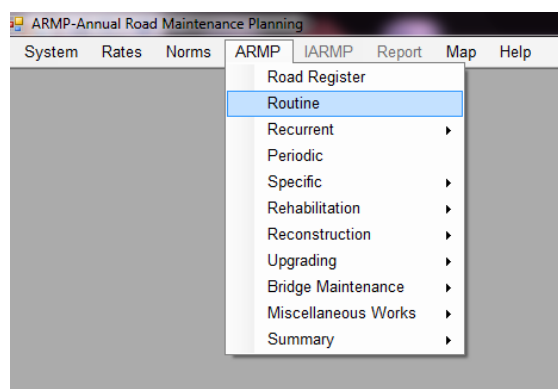
Load

Road Register (District Wise)

Year : 2015

	Road Ref No	Link Code	Link Name	Link From	Link To	Link Length	BT	GR	ER	UC	PL	Terrain	Link Section	Section From	Section To
▶	F051	F05102	Chaukhutte Bajar-Sanfebagar	41.00	67.00	26.00	26.00	0.00	0.00	0.00	0.00	H	F05102-A	41.00	51.00
													F05102-B	51.00	67.00
	F146	F14601	Sanphebagar-Rakse	0.00	14.00	14.00	14.00	0.00	0.00	0.00	0.00	H	F14601-A	0.00	14.00
	F195	F19504	Selli-Seti R(District Border)-Saphe Ba...	100.00	123.00	23.00	10.00	0.00	13.00	0.00	0.00	P	F19504-A	100.00	110.00
													F19504-B	110.00	123.00
	H18	H1824	Rakam(Belkhet)-Mangalsen (Midhill)	945.00	993.00	48.00	0.00	0.00	48.00	0.00	0.00	H	H1824-A	945.00	993.00
	H18	H1825	Mangalsen-Safebagar (Midhill)	993.00	1,032...	39.00	35.00	0.00	4.00	0.00	0.00	H	H1825-A	993.00	997.00
													H1825-B	997.00	1,032...
		Total				150.00	85.00	0.00	65.00	0.00	0.00				

## 6.2 Routine Maintenance



### Routine Screen

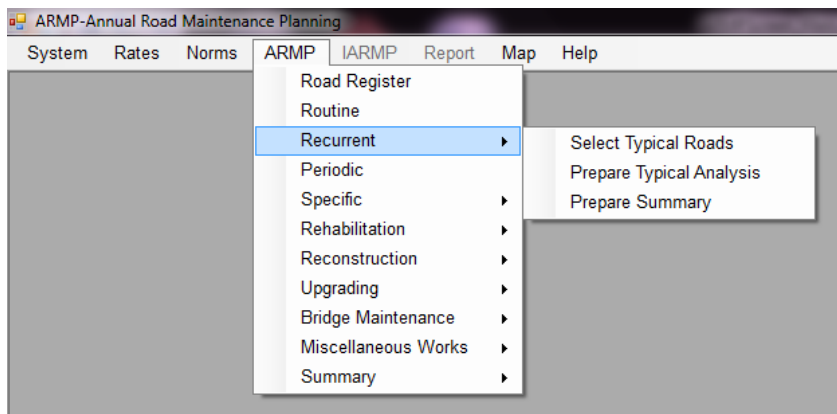
Routine Maintenance Cost Estimate

Division: Baglung  Year: 2015

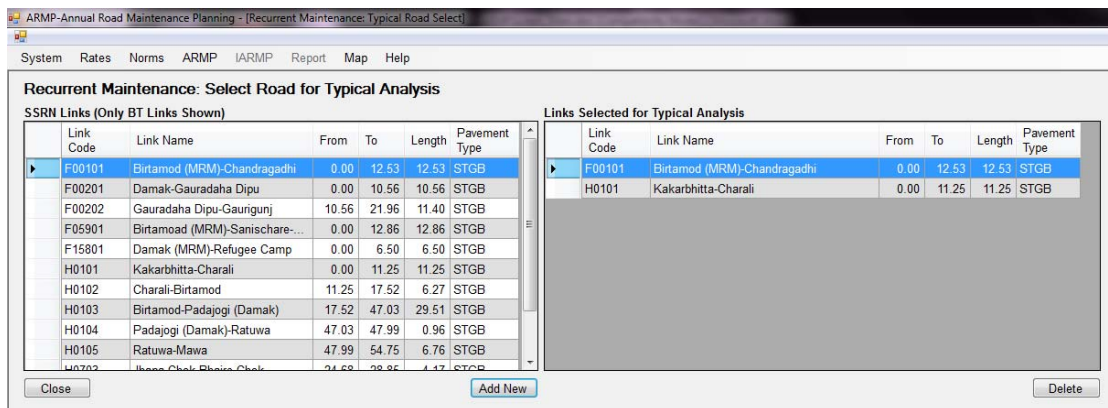
Road Ref No	Link Code	Link Name	Link From	Link To	Link Length	BT	GR	ER	UC	PL	Link Section	Section From	Section To	Section Length
F042	F04204	Sandh bridge-Kaligandaki bridge	43.76	67.87	24.11	24.11	0.00	0.00	0.00	0.00	F04204-A	43.76	67.87	24.11
F042	F04205	Kaligandaki bridge-Baglung	67.87	72.58	4.71	4.71	0.00	0.00	0.00	0.00	F04205-A	67.87	72.58	4.71
F042	F04206	Baglung-Myagdi district border	72.58	80.00	7.42	5.00	2.42	0.00	0.00	0.00	F04206-A	72.58	74.21	1.63
											F04206-B	74.21	77.58	3.37
											F04206-C	77.58	80.00	2.42
F042	F04207	Myagdi district border-Beni	80.00	90.00	10.00	0.00	10.00	0.00	0.00	0.00	F04207-A	80.00	90.00	10.00
F042	F04208	Beni-Pairothapla	90.00	111.00	21.00	0.00	0.00	21.00	0.00	0.00	F04208-A	90.00	111.00	21.00
F042	F04209	Pairothapla-Jomsong	111.00	170.00	59.00	0.00	0.00	59.00	0.00	0.00	F04209-A	111.00	170.00	59.00
F042	F04210	Jomsong-Ghoktang	170.00	292.00	122.00	0.00	0.00	122.00	0.00	0.00	F04210-A	170.00	292.00	122.00
F131	F13103	Settbeni-Gupteswor(Kaligandaki-Kus...	33.00	85.00	52.00	0.00	0.00	48.50	0.00	3.50	F13103-A	33.00	36.50	3.50
											F13103-B	36.50	85.00	48.50
F133	F13301	Maldhunga-Beni	0.00	13.00	13.00	13.00	0.00	0.00	0.00	0.00	F13301-A	0.00	13.00	13.00
F166	F16601	Kagbeni-Mukdinath	0.00	26.00	26.00	0.00	0.00	26.00	0.00	0.00	F16601-A	0.00	26.00	26.00
F167	F16706	Palung Khola-Maldhunga (Kaligandak...	207.00	245.00	38.00	0.00	0.00	34.00	0.00	4.00	F16706-A	207.00	211.00	4.00
											F16706-B	211.00	245.00	34.00

- Select the Division and press 'Load'
- A decision has to be made to include or exclude the link from the routine maintenance based on the on-going project information. Reason for the excluding should be mentioned. The roads with PL or UC status are shown in red color and are automatically excluded.
- The routine maintenance of the earthen road is estimated at NRs 20,000 per km which also includes the recurrent maintenance. This is automatically calculated.
- After making changes, press save to record the changes.
- Right click on the grid to export the data to Excel

## 6.3 Recurrent Maintenance



### 6.3.1 Select Typical Roads



In order to carry out the typical analysis for the recurrent maintenance works, road should be selected. No need to select all the roads in the division but a typical road should be selected to compute the per kilometer cost. The division can also use its own measurement or judgment for particular roads to arrive at the recurrent maintenance cost.

### 6.3.2 Prepare Typical Analysis

Typical analysis for recurrent maintenance can be done using this tool. Provide the representative quantities for the selected road for each of the recurrent work items and the cost per Kilometer is computed which can be used to compute the total recurrent maintenance cost of the same road and also use it to for other roads. Right click on the grid to export the data to Excel.

ARMP Annual Road Maintenance Planning - Recurrent Maintenance

System Rates Norms ARMP IARMP Report Map Help

Recurrent Maintenance Budget Estimates For Typical Road for Two Cycles

Division: Damak Load

Typical Link Name: Birtamod (MRM)-Chandragadhi F00101-0-12.53 Total Km: 12.53 Class: FRN Pavement Type: STGB Width: 5.8 SDI: 1.76 Export to Excel

S.N.	Road Element	Work Description	Norms	Quantity relevant for calculation as per assessment	Total Quantity as per actual or road inventory	Unit	Multiplication factor according to Norms	Total Quantity as per Norms	Unit	Rate (NRs / Unit)	Total (NRs)
1	Back top surface	Pot hole/Patch/Edge Repair	0% - 0.2% of paved surface area			m2					
		Asphalt Concrete Surface	0% - 0.75% of paved surface area		72,674.00	m2	0.0075	545.06	m2	1,250.00	681,516.75
		Surface Dressing / Premix	0% - 0.3% of paved surface area			m2					
		Crack Sealing	0% - 0.2% of paved surface area			m2					
		Asphalt Concrete Surface	0% - 0.2% of paved surface area			m2					
		Surface Dressing / Premix	0% - 0.1% of paved surface area			m2					
2	Shoulder	Reshaping, leveling and Compacting of GR shoulder	0% - 0.5% of shoulder surface area			m2					
		Shoulder Repairing for Single Lane Road	0% - 0.2% of shoulder surface area		72,674.00	m2	0.002	145.35	NA	0.00	0.00
		Sealing of prime coat, SBSIT or BT macadam shoulder in Shoulder	0% - 0.15% of shoulder surface area			m2					
3	Access Road	Gravel/Access Pot Hole Repair	0% - 0.4% of shoulder surface area		72,674.00	m2	0.004	290.70	NA	0.00	0.00
		Blumen Access Pot Hole Repair	0% - 0.3% of shoulder surface area			m2					
4	Culverts	Damaged Headwall/Wingwall/Catchpit/Abutment (Minor repairs on Masonry Works)	0 - 0.1 m3 per Culvert		80.00	m3	0.01	0.80	NA	0.00	0.00
		Damaged Check dam and Scur Protection (Minor repairs on Masonry Works)	0 - 1 m3 per 1000m Length		12.53	1000m	1	12.53	m3	3,600.00	45,108.00
5.a	Gabion Wall	Damaged Masonry Wall	0 - 0.5 m3 per 1000m Length		12.53	1000m	0.5	6.27	NA	0.00	0.00

User: Damak1 Division: Damak Year: 2013

### 6.3.3 Prepare Summary

A summary of recurrent maintenance can be prepared using this tool. The recurrent maintenance of the gravel road is automatically assigned to NRs 30,000 and for the BT roads, rates per kilometer from the typical analysis has to be provided.

ARMP Annual Road Maintenance Planning - Recurrent Maintenance Summary

System Rates Norms ARMP IARMP Report Map Help

Division: Damak Load

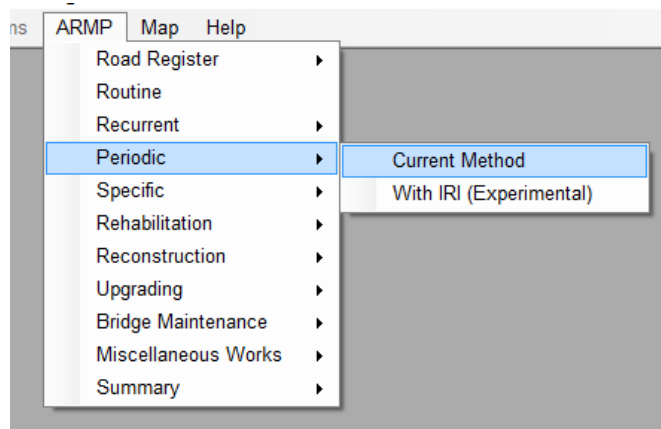
RECURRENT SUMMARY (Only BT & GR Links are Shown)

Export

Road Class	Link Code	Link Name	From	To	Road Length (km)	Pavement Type	Length Under RM (km)	Recurrent Maintenance Rate (NRs/km)	Recurrent Maintenance Total (NRs 1000)	Remarks
FRN	F00101	Birtamod (MRM)-Chandragadhi	0.00	12.53	12.53	STGB	12.53	48,000.00	601.44	
FRN	F00201	Damak-Gauradaha Dipu	0.00	10.56	10.56	STGB	10.56	45,000.00	475.20	
FRN	F00202	Gauradaha Dipu-Gaungun	10.56	21.95	11.40	STGB	11.40	45,000.00	513.00	
FRN	F05901	Birtamod (MRM)-Sanischara-Bu...	0.00	12.86	12.86	STGB	12.86	50,000.00	771.60	
FRN	F15801	Damak (MRM)-Refugee Camp	0.00	6.50	6.50	STGB	6.50	35,000.00	227.50	
NH	H0101	Kakarbhita-Charali	0.00	11.25	11.25	STGB	11.25	42,178.67	485.76	
NH	H0102	Charali-Birtamod	11.25	17.52	6.27	STGB	6.27	63,000.00	395.01	
NH	H0103	Birtamod-Padajogi (Damak)	17.52	47.03	29.51	STGB	29.51	63,000.00	1,859.13	
NH	H0104	Padajogi (Damak)-Ratuwa	47.03	47.99	0.96	STGB	0.96	0.00	0.00	
NH	H0105	Ratuwa-Mawa	47.99	54.75	6.76	STGB	6.76	63,000.00	425.88	
NH	H0701	Kedna (B)-Kedna village	0.00	3.00	3.00	GR	0.00	0.00	0.00	
NH	H0702	Kedna village-Jhapa Chok	3.00	24.68	21.68	GR	0.00	0.00	0.00	
NH	H0703	Jhapa Chok-Bhairs Chok	24.68	28.85	4.17	STGB	0.00	0.00	0.00	
NH	H0704	Bhairs Chok-Charali	28.85	39.22	10.37	STGB	0.00	0.00	0.00	
NH	H0705	Charali-Chihamedanda	39.22	56.00	16.78	STGB	16.78	84,000.00	1,409.52	
PR	H1701	Bhadrapur-Ratuwa(Postal)	0.00	15.00	15.00	GR	0.00	0.00	0.00	
					179.63		126.42		7,164.04	

User: Damak1 Division: Damak Year: 2013

## 6.4 Periodic Maintenance



Periodic maintenance requirement (Yes/No) is computed automatically based on the last year of resurface, traffic, SDI values. The current method is the one which is in practice in the DoR. The ARMP is already updated with the recent data on the pavement condition, traffic data and last re-surface year and also updated with the 2016 periodic plan. Decision can be made to include the road under periodic maintenance even the calculation shows "No" based on observation by the division. Right click on the grid to export the data to Excel

ARMP-Annual Road Maintenance Planning - [Periodic Maintenance]

System Rates Norms ARMP IARMP Report Map Help

Division: Damak Load

Periodic Maintenance Worksheet Periodic Screening Periodic Ranking Rolling Plans

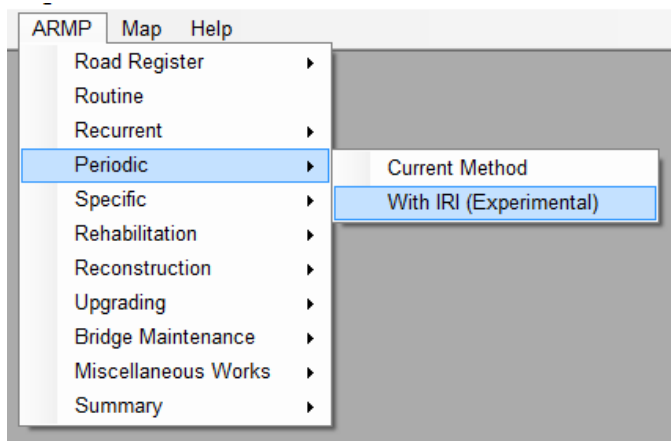
Export To Excel

Link No	Link/road Name	From	To	Length KM	Surface Type	Pavement Type	Status of Pavement	Section from km	Section to km	Link or section length km	Traffic Volume Group	Year of Last surfacing	A-Age of surfacing in years as at	Road Condition	T-maint cycle	ACF-Age Corrector Factor	Time for resealing years	Need resealing now?	Rate (NRs '000 /Km)	Total Estimated Cost (NRs '000)	Remarks
F00101	Bitamo...	0	12.53	12.53	BT	STGB	RSDP Completed ADB TPPF PHASE I				High	2012	1	Fair	6	0	5	No			
F00201	Damak...	0	10.56	10.56	BT	STGB	RNDP Completed				Moderate	2008	5	Good	7	2	2	No			
F00202	Gaurd...	10.56	21.96	11.40	BT	STGB	RNDP Completed				Moderate	2008	5	Good	7	2	2	No			
F05901	Bitamo...	0	12.86	12.86	BT	STGB	RSDP 2011-12 SYPM				Low	2013	0	Fair	8	0	8	No			
F15801	Damak...	0	6.5	6.50	BT	STGB	RSDP 2012-13 TYPM				Moderate	2013	0	Fair	7	0	7	No			
H0101	Kakarb...	0	11.25	11.25	BT	STGB	RSDP 2008-09 First Year KM				High	2010	3	Good	6	2	3	No			
H0102	Charali...	11.25	17.52	6.27	BT	STGB	RSDP 2008-09 First Year KM				High	2010	3	Good	6	2	3	No			
H0103	Bitamo...	17.52	47.03	29.51	BT	STGB	8.51km completed in 2010, 21 km on ...				High	2010	3	Good	6	2	3	No			
H0104	Padajo...	47.03	47.99	0.96	BT	STGB	RSDP 2008-09 First Year KM				High	2010	3	Good	6	2	3	No			
H0105	Ratuw...	47.99	54.75	6.76	BT	STGB	RSDP 2008-09 First Year KM				High	2010	3	Good	6	2	3	No			
H0703	Jhapa ...	24.68	28.85	4.17	BT	STGB	Postal Highway Project Phase I				Moderate	2013	0	Poor	7	-2	7	No			
H0704	Bhaire ...	28.85	39.22	10.37	BT	STGB	Postal Highway Project Phase I				Moderate	2013	0	Poor	7	-2	7	No			
H0705	Charali...	39.22	56	16.78	BT	STGB	RSDP Completed				High	2012	1	Good	6	2	5	No			
Total											0.00									0.00	

User: Damak1 Division: Damak Year: 2013

Save Close

## 6.5 Periodic Maintenance With IRI



The present periodic maintenance approach takes into consideration of the SDI (Surface Distress Index), Traffic age of pavement. It does not take into account of the IRI (International Roughness Index) even though the IRI data are collected for the paved roads. IRI improvement is one of the key element of the road maintenance works such that the investment can be justified with the reduced vehicle operating cost.

An IRI based method for periodic maintenance is suggested and put as experimental in the system. It clearly shows a different level of interventions requiring additional funding. Once this method is approved, it will be as standard in coming ARMPs.

### Traffic Class

0 – 150: Very Low

150-450: Low

450-1500: Moderate

>1500: High

### Maintenance Cycle (Years)

Terrain	Pavement Type	Traffic Class			
		Very Low	Low	Moderate	High
Plain (P)	AC	-	-	8	7
	SD	6	5	4	-
Rolling & Hill	AC	-	-	7	5
	SD	5	4	3	-

**Age Correction Factor**

Good	Fair	Poor
+1	0	-1

**Road Condition Matrix****a) High Traffic (>1500 AADT)**

SDI/IRI	0 - 4	4 - 7	7 - 10	>10
0 - 1.7	Good	Fair	Fair	Poor
1.7 - 3	-	Fair	Poor	Poor
< 3	-	-	Poor	Poor

**b) Low Traffic (<1500 AADT)**

SDI/IRI	0 - 4	4 - 7	7 - 10	>10
0 - 1.7	Good	Good	Fair	Poor
1.7 - 3	-	Fair	Fair	Poor
< 3	-	-	Poor	Poor

**Intervention****a) High Traffic (>1500 AADT)**

SDI/IRI	0 - 4	4 - 7	7 - 10	>10
0 - 1.7	Good	Fair	Fair	Poor (Rehab)
1.7 - 3	-	Fair	Poor	Poor (Rehab)
< 3	-	-	Poor (Rehab)	Poor (Rehab)

**b) Low Traffic (<1500 AADT)**

SDI/IRI	0 - 4	4 - 7	7 - 10	>10
0 - 1.7	Good	Good	Fair	Poor
1.7 - 3	-	Fair	Fair	Poor
< 3	-	-	Poor (Rehab)	Poor (Rehab)

Reseal  
SD: SBS  
AC: 25mm AC

Rehab  
SD: DBSD + Base  
AC: AC Overlay (Design?)

Periodic Maintenance with IRI Consideration (Experimental)

Division: Charikot

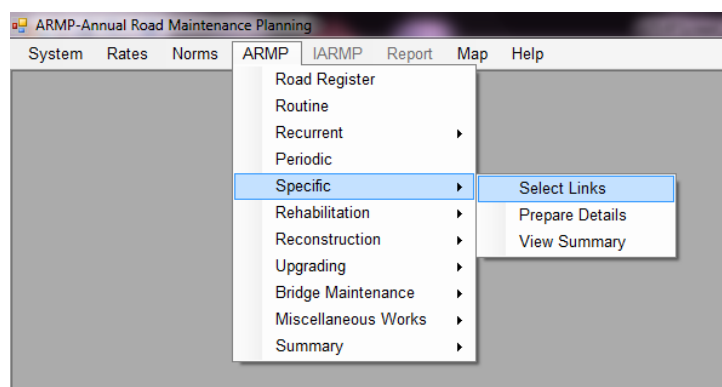
Periodic Maintenance Worksheet

Link No	Link/road Name	From	To	Length (Km)	Pavement Type	Status of Pavement	Section from km	Section to km	link or section length km	Year of Last surfacing	Age of surfacing in years	Terrain	Traffic (AADT)	SDI	IRI	Traffic Class
F02604	Bhotechaur-Chhapeli(Juncti...	25.43	35.85	10.42	STGB	RIP to DRO for ARMP 071-72	0.00	0.00	0.00	2013	3	H	80	3.80	6.11	Very I
F02605	Chhapeli(Junction To Sindh...	35.85	48.45	12.60	STGB	RIP to DRO for ARMP 071-72	0.00	0.00	0.00	2013	3	H	61	1.00	-1.00	Very I
F03002	Dhad Khola-Melanchi	10.66	22.50	11.84	STGB	Under Melanchi W/S Project	0.00	0.00	0.00	2013	3	H	1470	4.08	8.72	Mode
F03101	Dolalghat-Chautara	0.00	25.11	25.11	STGB	RBN 2014/015 (5th Yr)	0.00	0.00	0.00	2015	1	H	331	2.38	7.29	Low
F03201	Lamosangu-Ningaledanda	0.00	28.27	28.27	STGB	RSDPAF 2011-12 SYPM Completed a...	0.00	0.00	0.00	2012	4	H	258	2.89	12.12	Low
F03202	Ningaledanda-Charikot	28.27	53.72	25.45	STGB	RSDPAF 2011-12 SYPM Completed, ...	0.00	0.00	0.00	2011	5	H	258	2.26	9.20	Low
F03203	Charikot-Tamakoshi (Juncti...	53.72	71.92	18.20	STGB	ADB/Connectivity-S1 to DRO for ARM...	0.00	0.00	0.00	2015	1	H	258	3.37	10.98	Low
F03204	Tamakoshi-Miti Khola	71.92	91.92	20.00	STGB	ADB/Connectivity-S1 to DRO for ARM...	0.00	0.00	0.00	2011	5	H	694	2.84	6.95	Mode
F03301	Tamakoshi-Jiri	0.00	20.00	20.00	STGB	RSDPO 2009-10 STYPM Completed, ...	0.00	0.00	0.00	2015	1	H	550	2.23	16.50	Mode
F03301	Tamakoshi-Jiri	20.00	38.00	18.00	STGB	RSDPO 2009-10 STYPM Completed, ...	0.00	0.00	0.00	2011	5	H	1069	2.23	16.50	Mode
F10601	Charikot-Dolakha	0.00	0.50	0.50	STGB	RBN 2015/016 (8th Yr)	0.00	0.00	0.00	2016	0	H	129	3.50	4.64	Very I
F10601	Charikot-Dolakha	0.50	5.00	4.50	STGB		0.00	0.00	0.00	2000	16	H	129	3.50	4.64	Very I
H0313	Dolalghat-Lamosangu	56.90	72.00	15.10	STGB	RBN 2014/015 (5th Yr)	0.00	0.00	0.00	2015	1	H	2619	2.08	7.00	High

Periodic maintenance requirement (Yes/No) is computed automatically based on the last year of resurface, traffic, SDI/IRI values. The ARMP is already updated with the recent data on the pavement condition (SDI & IRI), traffic data and last re-surface year and also updated with the 2016 periodic plan. Right click on the grid to export the data to Excel

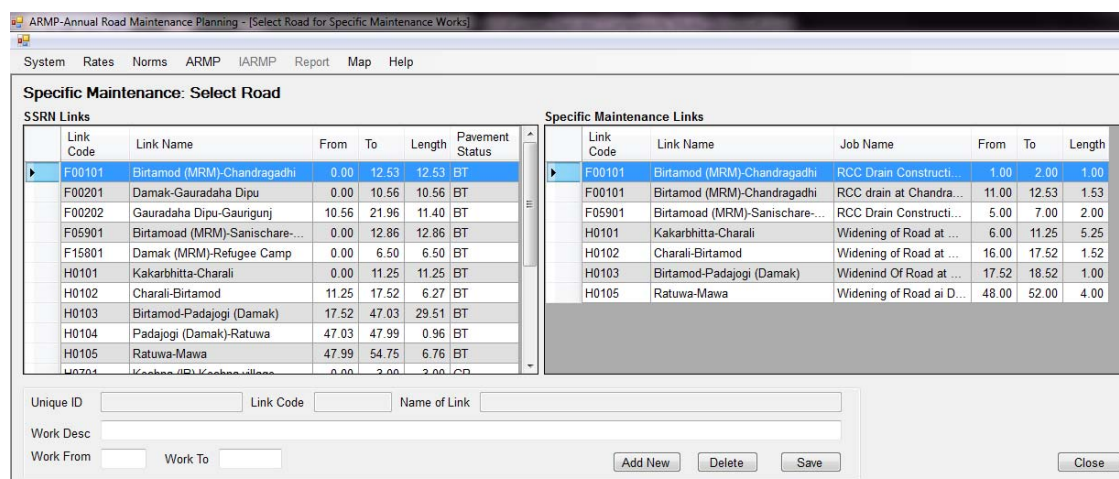


## 6.6 Specific Maintenance



### 6.6.1 Select Links

Links requiring specific maintenance should be selected using this tool. The work description should be provided and should not be repeated for the same link. It is better to mention specific works e.g "Wall Construction" etc. rather than putting generic description. The length of the section should also be provided.



## 6.6.2 Prepare Details

Under each of the selected link and the work description, details should be prepared. Standard items will be available and quantities should be provided. The total cost is automatically computed. Right click on the grid to export entire details data to Excel

**Specific Maintenance Works: Details**

Division: Damak

Name of Road: Birtamod (MRM)-Chandragadhi : F00101-0-12.53 Name of Job: RCC Drain Construction Work in Birtabazar

Work From: 1 To: 2

Activity Group	Activity No.	Description of Work	Unit	Quantity	Rate	Amount
100 : Users	100.17	RCC Drain Construction	rm	500	5000	2500000.00

Activity Group: 100 : Users Norm Activity No: 100.1:Earth work Excavation

Work Desc: Earth work Excavation

Unit: m3 Quantity: Rate: 350 Amount: 0.00

Sub-Total	2,500,000.00
Contingencies 5%	125,000.00
Total with Contingencies	2,625,000.00
VAT 13%	341,250.00
Total (With VAT & Contingencies)	2,966,250.00

User : Damak1 Division : Damak Year : 2013

## 6.6.3 View Summary

Provides the summary of the specific maintenance works. Right click on the grid to export the data to Excel

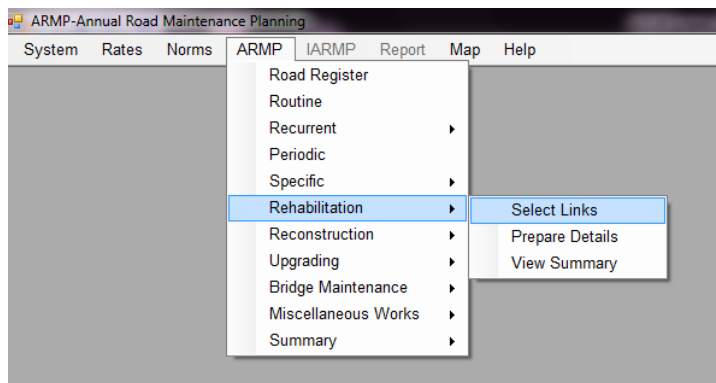
**Specific Maintenance Summary** Year: 2013

Division: Damak

Link Code	Link Name	From	To	Length	Specific Work Description	Work From	Work To	Work Length	Total Cost
F00101	Birtamod (MRM)-Chandragadhi	0	12.53	12.53	RCC Drain Construction Work	1.00	2.00	1.00	2,966,250.00
F00101	Birtamod (MRM)-Chandragadhi	0	12.53	12.53	RCC drain at Chandragadhi	11.00	12.53	1.53	4,746,000.00
F05001	Birtamod (MRM)-Sanischara-Budhbari	0	12.86	12.86	RCC Drain Construction at Sa...	5.00	7.00	2.00	22,780,800.00
H0101	Kakarbhitta-Charali	0	11.25	11.25	Widening of Road at Dhulabari ...	6.00	11.25	5.25	15,187,200.00
H0102	Charali-Birtamod	11.25	17.52	6.27	Widening of Road at Birtamod B...	16.00	17.52	1.52	15,187,200.00
H0103	Birtamod-Padajogi (Damak)	17.52	47.03	29.51	Widening of Road at Birtamod ...	17.52	18.52	1.00	15,187,200.00
H0105	Ratuwa-Mawa	47.99	54.75	6.76	Widening of Road at Damak B...	48.00	52.00	4.00	22,780,800.00
Total									96,835,450.00

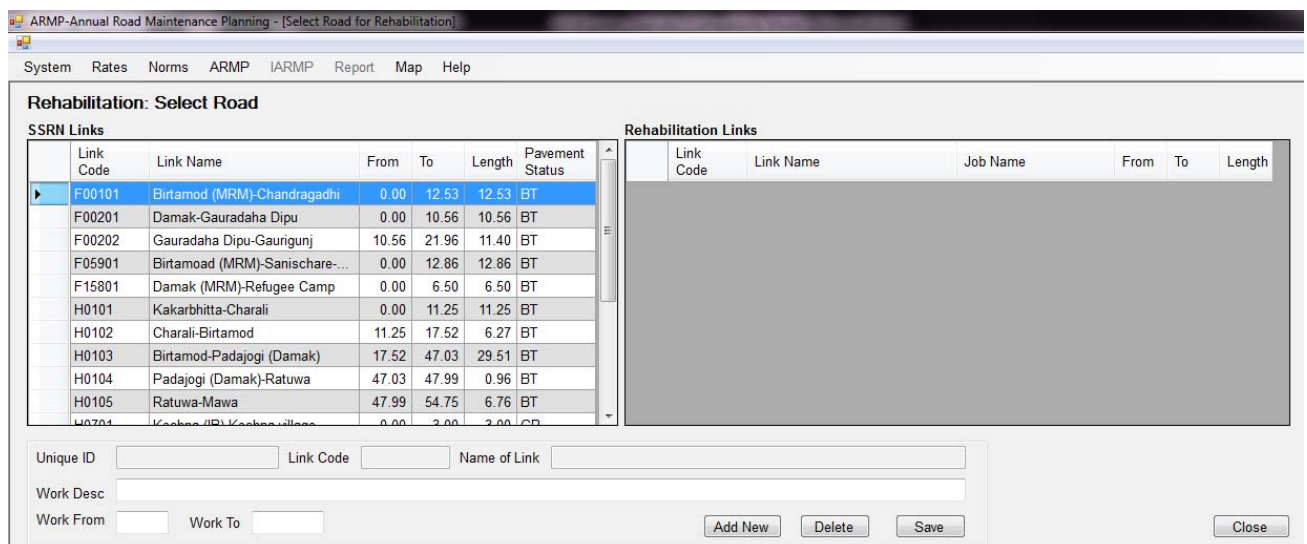
User : Damak1 Division : Damak Year : 2013

## 6.7 Rehabilitation



### 6.7.1 Select Links

Links requiring rehabilitation should be selected using this tool. The work description should be provided and should not be repeated for the same link. The length of the section should also be provided.



### 6.7.2 Prepare Details

Under each of the selected link and the work description, details should be prepared. Standard items will be available and quantities should be provided. The total cost is automatically computed. Right click on the grid to export entire details data to Excel

**Rehabilitation Maintenance Works Abstract of Cost**

Name of Road :  To :  Name of Job :

Work From :  To :

Activity Group	Activity No.	Description of Work	Unit	Quantity	Rate	Amount

Activity Group:  100 : Users Norm Activity No:  100.1:Earth work Excavation

Work Desc:  Earth work Excavation

Unit:  m3 Quantity:  Rate:  350 Amount:  0.00

Sub-Total:   
 Contingencies 5%:   
 Total with Contingencies:   
 VAT 13%:   
 Total (With VAT & Contingencies):

User : Damak1 Division : Damak Year : 2013

### 6.7.3 View Summary

Provides the summary of the rehabilitation works. Right click on the grid to export the data to Excel

**Rehabilitation Summary**

Year: 2013

Division:  Damak

Link Code	Link Name	From	To	Length	Specific Work Description	Work From	Work To	Work Length	Total Cost
▶	Total								0.00

## 6.8 Reconstruction

### 6.8.1 Select Links

Links requiring reconstruction should be selected using this tool. The work description should be provided and should not be repeated for the same link. The length of the section should also be provided.

**Reconstruction: Select Road**

**SSRN Links**

Link Code	Link Name	From	To	Length	Pavement Status
F00101	Birtamod (MRM)-Chandragadhi	0.00	12.53	12.53	BT
F00201	Damak-Gauradaha Dipu	0.00	10.56	10.56	BT
F00202	Gauradaha Dipu-Gaurigunj	10.56	21.96	11.40	BT
F05901	Birtamod (MRM)-Sanischare...	0.00	12.86	12.86	BT
F15801	Damak (MRM)-Refugee Camp	0.00	6.50	6.50	BT
H0101	Kakarbhitta-Charali	0.00	11.25	11.25	BT
H0102	Charali-Birtamod	11.25	17.52	6.27	BT
H0103	Birtamod-Padajogi (Damak)	17.52	47.03	29.51	BT
H0104	Padajogi (Damak)-Ratuwa	47.03	47.99	0.96	BT
H0105	Ratuwa-Mawa	47.99	54.75	6.76	BT
H0201	Kokosa (D)-Kokosa Village	0.00	3.00	3.00	BT

**Reconstruction Links**

Link Code	Link Name	Job Name	From	To	Length
-----------	-----------	----------	------	----	--------

Unique ID:  Link Code:  Name of Link:

Work Desc:

Work From:  Work To:

### 6.8.2 Prepare Details

Under each of the selected link and the work description, details should be prepared. Standard items will be available and quantities should be provided. The total cost is automatically computed. Right click on the grid to export entire details data to Excel

**Reconstruction Maintenance Works**

Name of Road:  Name of Job:

Work From:  To:

Activity Group	Activity No.	Description of Work	Unit	Quantity	Rate	Amount
----------------	--------------	---------------------	------	----------	------	--------

Activity Group:  Activity No.:

Work Desc:

Unit:  Quantity:  Rate:  Amount:

Sub-Total:

Contingencies 5%:

Total with Contingencies:

VAT 13%:

Total (With VAT & Contingencies):

### 6.8.3 View Summary

Provides the summary of the reconstruction works. Right click on the grid to export the data to Excel

ARMP-Annual Road Maintenance Planning - [Summary of Reconstruction Maintenance]

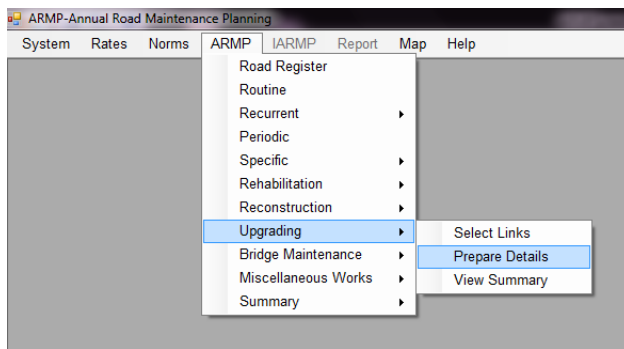
System Rates Norms ARMP IARMP Report Map Help

**Reconstruction Summary** Year: 2013

Division: Damak

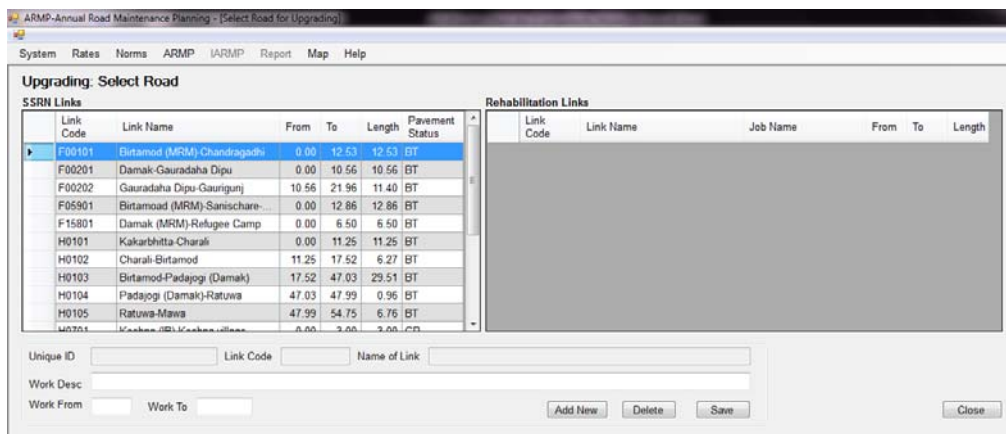
	Link Code	Link Name	From	To	Length	Specific Work Description	Work From	Work To	Work Length	Total Cost
▶	Total									0.00

## 6.9 Upgrading



### 6.9.1 Select Links

Links requiring upgrading should be selected using this tool. The work description should be provided and should not be repeated for the same link. The length of the section should also be provided.



### 6.9.2 Prepare Details

Under each of the selected link and the work description, details should be prepared. Standard items will be available and quantities should be provided. The total cost is automatically computed. Right click on the grid to export entire details data to Excel

ARMP-Annual Road Maintenance Planning - [Details of Upgrading]

System Rates Norms ARMP IARMP Report Map Help

**Upgrading Works: Abstract of Cost** Export to Excel

Name of Road :  Name of Job :

Work From :  To :

Activity Group	Activity No.	Description of Work	Unit	Quantity	Rate	Amount

Activity Group: 100 : Users Norm Activity No: 100.1:Earth work

Work Desc: Earth work Excavation

Unit: m3 Quantity:  Rate: 350 Amount: 0.00

Add New Delete Save Close

Sub-Total:

Contingencies 5%:

Total with Contingencies:

VAT 13%:

Total (With VAT & Contingencies):

User: Damak1 Division: Damak Year: 2013

### 6.9.3 View Summary

Provides the summary of the reconstruction works. Right click on the grid to export the data to Excel

ARMP-Annual Road Maintenance Planning - [Summary of Upgrading Works]

System Rates Norms ARMP IARMP Report Map Help

**Upgrading Works Summary** Year: 2013

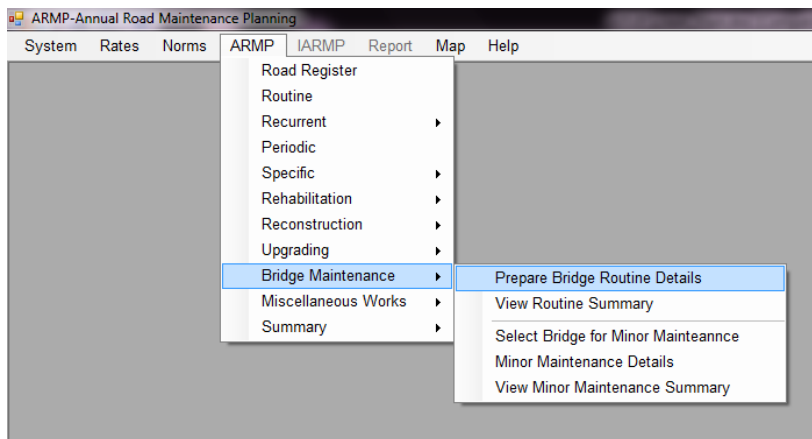
Division: Damak Load Export to Excel

Link Code	Link Name	From	To	Length	Specific Work Description	Work From	Work To	Work Length	Total Cost
Total									0.00

Close

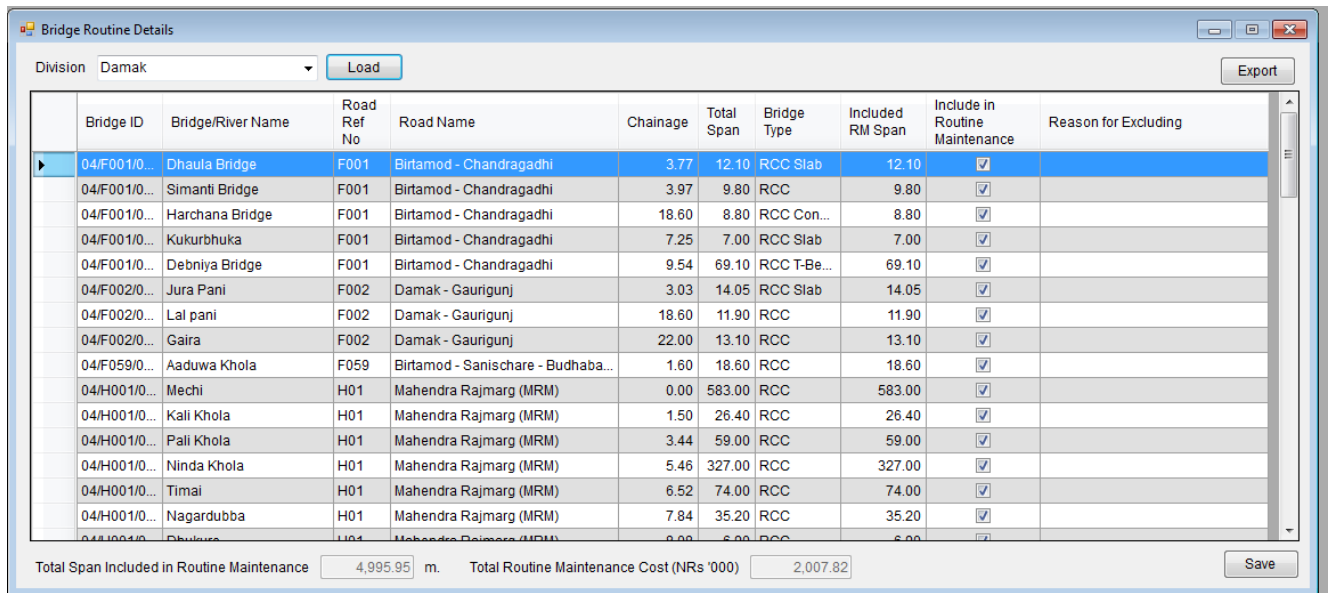


## 6.10 Bridge Maintenance

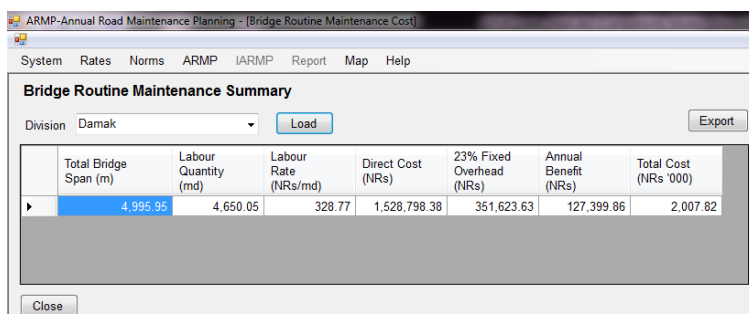


### 6.10.1 Prepare Bridge Routine Details

Select the bridge to include in the routine maintenance or not. Reason for exclusion also should be mentioned if the bridge is not included for routine maintenance.



### 6.10.2 View Routine Summary



### 6.10.3 Select Bridge For Minor Maintenance

Select the bridges for minor maintenance and also provide the work descriptions. If same bridge is used for different works, the work description should be different.

**Minor Bridge Maintenance: Select Bridge**

**SSRN Bridges**

Bridge ID	Bridge/River Name	Road Ref No	Road Name	Chainage
04/F001/001	Dhaura Bridge	F001	Birtamod - Chandragadhi	
04/F001/002	Simanti Bridge	F001	Birtamod - Chandragadhi	
04/F001/003	Harchana Bridge	F001	Birtamod - Chandragadhi	
04/F001/004	Kukurbhuka	F001	Birtamod - Chandragadhi	
04/F001/005	Debniya Bridge	F001	Birtamod - Chandragadhi	
04/F002/001	Jura Pani	F002	Damak - Gaurigunj	
04/F002/002	Lal pani	F002	Damak - Gaurigunj	
04/F002/003	Gaira	F002	Damak - Gaurigunj	
04/F059/001	Aaduwa Khola	F059	Birtamod - Sanischare - Budhabare	

**Selected Bridges**

Bridge ID	Bridge/River Name	Job Name	Road Ref No	Road Name
04/F001/005	Debniya Bridge	Foot Path Precast slab Maintenance	F001	Birtamod - Chandragadhi
04/H001/015	Biring	Railing Maintenance	H01	Birtamod - Chandragadhi
04/H007/012	Jhilmile Khola	Railing Maintenance	H07	Birtamod - Chandragadhi

Bridge ID:  Bridge Name:  Road Ref No:  Road Name:  Chainage:

Work Desc:  Bridge Type:  Total Span:

Right click on the bridge can bring bridge details from the condition assessment under the BMS. The view photographs option will take to the detailed photographs available for the bridge and other menus provides access to the bridge condition.

**Minor Bridge Maintenance: Select Bridge**

**SSRN Bridges**

Bridge ID	Bridge/River Name	Road Ref No	Road Name	Chainage
48-F042-033	Tangsara Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
48-F042-035	Boksi Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
48-F042-037	Tudke Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
48-F042-040	Kali	F042	Pokhara - Baglung - Beni - Jomsom - ...	
49-F042-019	Dhol	F042	Pokhara - Baglung - Beni - Jomsom - ...	
49-F042-020	Myagdi Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
49-F042-021	Galeshor Raganganga Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
49-F042-022	Beg Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	

**Selected Bridges**

Bridge ID	Bridge/River Name	Job Name	Road Ref No	Road Name
51-F042-013	Modi Khola (Dinuvu)	Minor Maintenance of Bridge	F042	Pokhara - Baglung - Beni - Jomsom - ...
51-F042-014	Pati Khola	Minor Maintenance of Bridge	F042	Pokhara - Baglung - Beni - Jomsom - ...
51-F042-016	Ambote Khola	Minor Maintenance of Bridge	F042	Pokhara - Baglung - Beni - Jomsom - ...
51-F042-018	Khahare Khola 2	Minor Maintenance of Bridge	F042	Pokhara - Baglung - Beni - Jomsom - ...

Bridge ID:  Bridge Name:  Road Ref No:

Work Desc:

**Minor Bridge Maintenance: Select Bridge**

Division:  Load

**SSRN Bridges**

Bridge ID	Bridge/River Name	Road Ref No	Road Name	Chainage
48-F042-035	Lete Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
48-F042-033	Tangsara Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
48-F042-035	Boksi Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
48-F042-037	Tudke Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
48-F042-040	Kalgendasi K	F042	Pokhara - Baglung - Beni - Jomsom - ...	
49-F042-019	Dhodens Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
49-F042-020	Myagdi Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	
49-F042-021	Galeshor Rag	F042	Pokhara - Baglung - Beni - Jomsom - ...	
49-F042-022	Beg Khola	F042	Pokhara - Baglung - Beni - Jomsom - ...	

**Selected Bridges**

Bridge ID	Bridge/River Name	Job Name	Road Ref No	Road Name
51-F042-013	Modi Khola (Dinuvu)	Minor Maintenance of Bridge	F042	Pokhara - Baglung - Beni - Jomsom - ...
51-F042-014	Pati Khola	Minor Maintenance of Bridge	F042	Pokhara - Baglung - Beni - Jomsom - ...
51-F042-016	Ambote Khola	Minor Maintenance of Bridge	F042	Pokhara - Baglung - Beni - Jomsom - ...
51-F042-018	Khahare Khola 2	Minor Maintenance of Bridge	F042	Pokhara - Baglung - Beni - Jomsom - ...

Bridge ID:  Bridge Name:  Road Ref No:

Work Desc:

### 6.10.4 Minor Maintenance Details

Under each of the selected bridges and the work description, details should be prepared. Standard items will be available and quantities should be provided. The total cost is automatically computed. Right click on the grid to export entire details data to Excel

ARMP-Annual Road Maintenance Planning - [Details of Bridge Minor Maintenance]

System Rates Norms ARMP IARMP Report Map Help

#### Bridge Minor Maintenance Cost

Bridge Selection

Bridge : Debniya Bridge : 04/F001/005 Job Description : Foot Path Precast slab Maintenance

Road Name : Birtamod - Chandragadhi Chainage : 9.54 Bridge Type : RCC T-Beam Total Span : 69.1 No of Span : 3

Export to Excel

Activity Group	Activity No.	Description of Work	Unit	Quantity	Rate	Amount
100 : Users Norm	100.15	Railing Work	m	50	1200	60000.00

Activity Group : 100 : Users Norm Activity No : 100.1 Earth work Excavation

Work Desc : Earth work Excavation

Unit : m3 Quantity : Rate : 350 Amount : 0.00

Add New Delete Save Close

Sub-Total : 60,000.00

Contingencies 5% : 3,000.00

Total with Contingencies : 63,000.00

VAT 13% : 8,190.00

Grand Total : 71,190.00

User : Damak1 Division : Damak Year : 2013

### 6.10.5 View Minor Maintenance Summary

Provides the summary of the minor bridge maintenance works by division. Right click on the grid to export the data to Excel

ARMP-Annual Road Maintenance Planning - [Bridge Minor Maintenance Summary]

System Rates Norms ARMP IARMP Report Map Help

#### Bridge Minor Maintenance Summary

Division : Damak Load

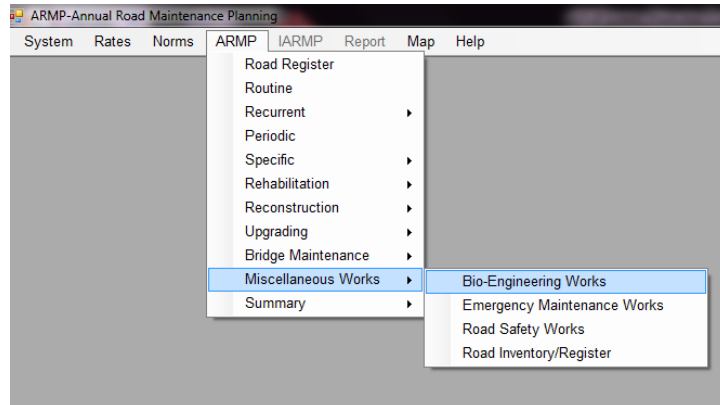
Export to Excel

Bridge ID	Bridge Name	Minor Work Description	Road Ref No	Road Name	Chainage	Total Cost
04/F001/005	Debniya Bridge	Foot Path Precast slab Maintenance	F001	Birtamod - Chandragadhi	9.54	71,190.00
04/H001/015	Biring	Railing Maintenance	H01	Mahendra Rajmarg (MRM)	22.95	71,190.00
04/H007/012	Jhilmile Khola	Railing Maintenance	H07	Mechi Rajmarg (MERM)	43.71	56,952.00
Total						199,332.00

Close

## 6.11 Miscellaneous Maintenance

It is similar to other maintenance works e.g. specific maintenance. First the required link should be selected and details prepared. The summary of the cost can be viewed using "View Summary". Right click on the grid to export the data to Excel



### 6.11.1 Bio-Engineering Works

ARMP - Annual Road Maintenance Planning - [Bio Engineering Works]

System Rates Norms ARMP IARMP Report Map Help

Division: Damak Year: 2013

Link Code	Link Name	From	To	Length	Pavement Status	Work Description	Total Cost (NRs x000)
F00101	Birtamod (MRM)-Chandragadhi	0.00	12.53	12.53	BT		0
F00201	Damak-Gauradaha Dipu	0.00	10.56	10.56	BT		0
F00202	Gauradaha Dipu-Gaurigunj	10.56	21.96	11.40	BT		0
F05901	Birtamod (MRM)-Sanishare-Budhbare	0.00	12.86	12.86	BT		0
F15801	Damak (MRM)-Refugee Camp	0.00	6.50	6.50	BT		0
H0101	Kakarbhitta-Charali	0.00	11.25	11.25	BT		0
H0102	Charali-Birtamod	11.25	17.52	6.27	BT		0
H0103	Birtamod-Padajogi (Damak)	17.52	47.03	29.51	BT	Plantation	1000
H0104	Padajogi (Damak)-Ratuwa	47.03	47.99	0.96	BT		0
H0105	Ratuwa-Mawa	47.99	54.75	6.76	BT		0
H0701	Kechna (B)-Kechna village	0.00	3.00	3.00	GR		0
H0702	Kechna village-Jhapa Chok	3.00	24.68	21.68	GR		0

Close Export to Excel Save Total Cost (NRs x000) 1,000.00

### 6.11.2 Emergency Maintenance Works

ARMP - Annual Road Maintenance Planning - [Emergency Maintenance Works]

System Rates Norms ARMP IARMP Report Map Help

Division: Damak Year: 2013

Link Code	Link Name	From	To	Length	Pavement Status	Work Description	Total Cost (NRs x000)
F00101	Birtamod (MRM)-Chandragadhi	0.00	12.53	12.53	BT	Emergency work	500
F00201	Damak-Gauradaha Dipu	0.00	10.56	10.56	BT		0
F00202	Gauradaha Dipu-Gaurigunj	10.56	21.96	11.40	BT		0
F05901	Birtamod (MRM)-Sanishare-Budhbare	0.00	12.86	12.86	BT		0
F15801	Damak (MRM)-Refugee Camp	0.00	6.50	6.50	BT		0
H0101	Kakarbhitta-Charali	0.00	11.25	11.25	BT		0
H0102	Charali-Birtamod	11.25	17.52	6.27	BT		0
H0103	Birtamod-Padajogi (Damak)	17.52	47.03	29.51	BT	Emergency work	500
H0104	Padajogi (Damak)-Ratuwa	47.03	47.99	0.96	BT		0
H0105	Ratuwa-Mawa	47.99	54.75	6.76	BT		0
H0701	Kechna (B)-Kechna village	0.00	3.00	3.00	GR		0
H0702	Kechna village-Jhapa Chok	3.00	24.68	21.68	GR		0
H0703	Jhapa Chok-Bhairs Chok	24.68	28.85	4.17	BT		0
H0704	Bhairs Chok-Charali	28.85	39.22	10.37	BT		0

Close Export to Excel Save Total Cost (NRs x000) 1,000.00

Right click on the grid to export the data to Excel

### 6.11.3 Road Safety Works

ARMP - Annual Road Maintenance Planning - [Road Safety Works]

System Rates Norms ARMP IARMP Report Map Help

**Road Safety Works**

Division: Damak  Year: 2013

Link Code	Link Name	From	To	Length	Pavement Status	Work Description	Total Cost (NRs x000)
F00101	Birtamod (MRM)-Chandragadhi	0.00	12.53	12.53	BT	Safety Barrier and Traffic sign	500
F00201	Damak-Gauradaha Dipu	0.00	10.56	10.56	BT		0
F00202	Gauradaha Dipu-Gaurigunj	10.56	21.96	11.40	BT		0
F05901	Birtamod (MRM)-Sanischare-Budhbare	0.00	12.86	12.86	BT		0
F15801	Damak (MRM)-Refugee Camp	0.00	6.50	6.50	BT		0
H0101	Kakarbhitta-Charali	0.00	11.25	11.25	BT	Safety Barriers and Traffic sign	500
H0102	Charali-Birtamod	11.25	17.52	6.27	BT	Safety Barriers and Traffic sign	500
H0103	Birtamod-Padajogi (Damak)	17.52	47.03	29.51	BT	Safety Barriers and Traffic sign	500
H0104	Padajogi (Damak)-Ratuwa	47.03	47.99	0.96	BT		0
H0105	Ratuwa-Mawa	47.99	54.75	6.76	BT	Safety Barriers and Traffic sign	500
H0701	Kechna (IB)-Kechna village	0.00	3.00	3.00	GR		0
H0702	Kechna village-Jhapa Chok	3.00	24.68	21.68	GR		0
H0703	Jhapa Chok-Bhaire Chok	24.68	28.85	4.17	BT		0
H0704	Bhaire Chok-Charali	28.85	39.22	10.37	BT		0
H0705	Charali-Chihanedanda	39.22	56.00	16.78	BT		0
H1701	Bhadrapur-Ratuwa(Postal)	0.00	15.00	15.00	GR		0

Total Cost (NRs x000) 2,500.00

### 6.11.4 Road Inventory/Register

ARMP - Annual Road Maintenance Planning - [Road Inventory / Register]

System Rates Norms ARMP IARMP Report Map Help

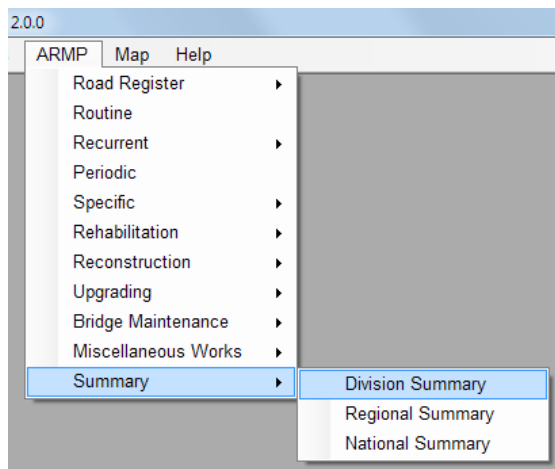
**Road Inventory/Register Works**

Division: Damak  Year: 2013

Link Code	Link Name	From	To	Length	Pavement Status	Work Description	Total Cost (NRs x000)
F00101	Birtamod (MRM)-Chandragadhi	0.00	12.53	12.53	BT		0
F00201	Damak-Gauradaha Dipu	0.00	10.56	10.56	BT		0
F00202	Gauradaha Dipu-Gaurigunj	10.56	21.96	11.40	BT		0
F05901	Birtamod (MRM)-Sanischare-Budhbare	0.00	12.86	12.86	BT		0
F15801	Damak (MRM)-Refugee Camp	0.00	6.50	6.50	BT		0
H0101	Kakarbhitta-Charali	0.00	11.25	11.25	BT		0
H0102	Charali-Birtamod	11.25	17.52	6.27	BT		0
H0103	Birtamod-Padajogi (Damak)	17.52	47.03	29.51	BT		0
H0104	Padajogi (Damak)-Ratuwa	47.03	47.99	0.96	BT		0
H0105	Ratuwa-Mawa	47.99	54.75	6.76	BT		0
H0701	Kechna (IB)-Kechna village	0.00	3.00	3.00	GR		0
H0702	Kechna village-Jhapa Chok	3.00	24.68	21.68	GR		0
H0703	Jhapa Chok-Bhaire Chok	24.68	28.85	4.17	BT		0
H0704	Bhaire Chok-Charali	28.85	39.22	10.37	BT		0
H0705	Charali-Chihanedanda	39.22	56.00	16.78	BT		0
H1701	Bhadrapur-Ratuwa(Postal)	0.00	15.00	15.00	GR		0

Total Cost (NRs x000) 0.00

## 6.12 Summary Sub Menu



### 6.12.1 Division Summary

Division: Damak Load Export

**Annual Road Maintenance Summary Sheet**

	Link Code	Link Name	From	To	Pavement Status	Routine Cost (NRs '000)	Recurrent Cost (NRs '000)	Periodic Length (Km)	Periodic Cost (NRs '000)	Specific Maintenance Cost (NRs '000)	Rehabilitation Cost (NRs '000)	Reconstruction Cost (NRs '000)	Upgrading Cost (NRs '000)	Emergency Maintenance (NRs '000)	Bio Engineering Cost (NRs '000)
▶	F00101	Bitamod (MRM)-Chandragadhi	0.00	12.53	BT	506.42	601.44	0.00	0.00	7,712.25	0.00	0.00	0.00	500.00	0.00
	F00201	Damak-Gauradaha Dipu	0.00	10.56	BT	426.80	475.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F00202	Gauradaha Dipu-Gaurigunj	10.56	21.96	BT	460.75	513.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F05901	Bitamod (MRM)-Sanischare-Budhibare	0.00	12.86	BT	519.76	771.60	0.00	0.00	22,780.80	0.00	0.00	0.00	0.00	0.00
	F15801	Damak (MRM)-Refugee Camp	0.00	6.50	BT	262.71	227.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H0101	Kakarbhitta-Charali	0.00	11.25	BT	454.69	485.76	0.00	0.00	15,187.20	0.00	0.00	0.00	0.00	0.00
	H0102	Charali-Bitamod	11.25	17.52	BT	253.41	395.01	0.00	0.00	15,187.20	0.00	0.00	0.00	0.00	0.00
	H0103	Bitamod-Padajogi (Damak)	17.52	47.03	BT	1,192.70	1,859.13	0.00	0.00	15,187.20	0.00	0.00	0.00	500.00	1,000.00
	H0104	Padajogi (Damak)-Ratuwa	47.03	47.99	BT	38.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H0105	Ratuwa-Mawa	47.99	54.75	BT	273.22	425.88	0.00	0.00	22,780.80	0.00	0.00	0.00	0.00	0.00
	H0701	Kechina (IB)-Kechina village	0.00	3.00	GR	112.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H0702	Kechina village-Jhapa Chok	3.00	24.68	GR	814.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H0703	Jhapa Chok-Bhaire Chok	24.68	28.85	BT	168.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H0704	Bhaire Chok-Charali	28.85	39.22	BT	419.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H0705	Charali-Chihanedanda	39.22	56.00	BT	678.19	1,409.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H1701	Bhadrapur-Ratuwa(Postal)	0.00	15.00	GR	563.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H1701	Bhadrapur-Ratuwa(Postal)	15.00	32.00	ER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H1701	Bhadrapur-Ratuwa(Postal)	32.00	42.00	UC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		<b>Division Total</b>				<b>7,145.89</b>	<b>7,164.04</b>	<b>0.00</b>	<b>0.00</b>	<b>98,835.45</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,000.00</b>	<b>1,000.00</b>

Right click on the grid to export the data to Excel

## 6.12.2 Regional Summary

Regional Summary

Region: Eastern Load

**Annual Road Maintenance Summary Sheet (Regional Summary)**

	Division	Total Length (Km)	Routine Length (Km)	Routine Cost (NRs '000)	Recurrent Length (Km)	Recurrent Cost (NRs '000)	Periodic Length (Km)	Periodic Cost (NRs '000)	Specific Length (Km)	Specific Maintenance Cost (NRs '000)	Rehabilitation Length (Km)	Rehabilitation Cost (NRs '000)	Reconstruction Length (Km)	Reconstruction Cost (NRs '000)
▶	Biratnagar	441.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Damak	212.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Dhankuta	260.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Harkhapur	445.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Ilam	622.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Lahan	634.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Tumlingtar	335.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>2,952.66</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Right click on the grid to export the data to Excel



### 6.12.3 National Summary

ARMP National Summary

National Summary  Annual Road Maintenance Summary Sheet (National Summary)

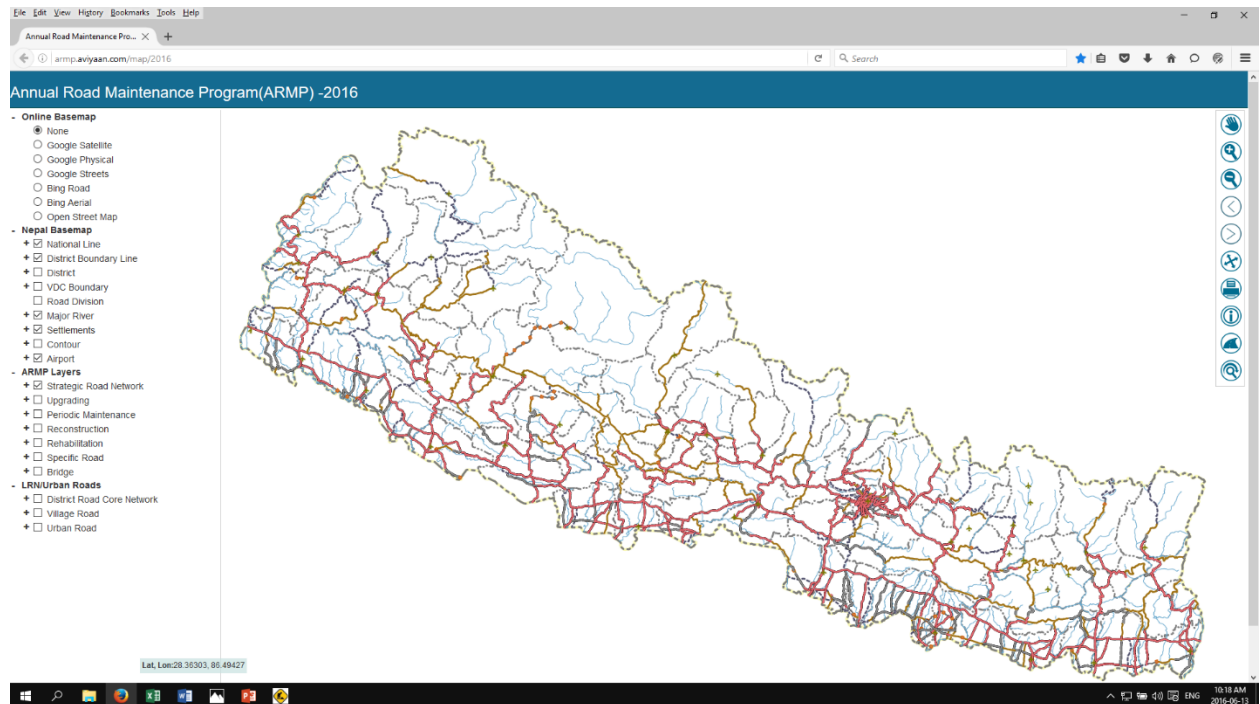
	Division	Total Length (Km)	Routine Length (Km)	Routine Cost (NRs '000)	Recurrent Length (Km)	Recurrent Cost (NRs '000)	Periodic Length (Km)	Periodic Cost (NRs '000)	Specific Length (Km)	Specific Maintenance Cost (NRs'000)	Rehabilitation Length (Km)	Rehabilitation Cost (NRs'000)	econstruction Length (Km)	econstruction Cost (NRs'000)
▶	Baitadi	474.12	354.12	22,891.45	285.05	20,278.70	135.74	244,332.00	4.60	23,907.98	0.00	0.00	0.00	0.00
	Bhaktapur	234.91	220.11	15,064.05	208.81	20,814.12	11.40	64,750.00	143.38	60,668.01	44.24	180,067.99	0.00	0.00
	Bharatpur	425.03	411.32	24,499.46	312.16	35,555.12	27.65	351,720.00	155.22	203,832.97	3.00	33,815.25	1.00	33,459.30
	Biratnagar	416.25	342.25	15,689.31	294.25	29,053.41	18.00	45,000.00	137.46	39,344.34	12.00	86,851.80	2.04	10,678.50
	Butwal	540.92	406.54	17,649.25	331.84	25,865.85	12.45	23,904.00	5.12	40,934.25	7.33	134,109.38	0.00	0.00
	Charikot	679.35	375.30	24,055.09	300.40	30,976.83	78.41	141,138.00	177.54	196,629.75	0.25	3,322.20	2.90	36,537.52
	Damak	212.60	196.60	8,879.62	106.35	7,869.22	21.96	35,136.00	65.72	102,157.65	0.00	0.00	0.00	0.00
	Damauli	566.77	305.37	13,882.14	183.42	15,918.11	22.06	44,840.00	272.68	101,697.29	48.00	68,342.40	0.00	0.00
	Dang	728.28	725.28	38,059.68	401.28	34,065.32	27.75	69,375.00	523.87	316,258.83	33.73	249,165.00	0.00	0.00
	Devasthan	406.84	244.84	13,503.29	138.86	13,388.60	30.00	55,500.00	205.84	144,112.73	0.33	8,097.86	0.00	0.00
	Dhankuta	604.45	294.95	18,864.64	238.55	12,584.95	47.70	93,260.00	42.65	36,128.92	13.47	185,094.00	0.00	0.00
	Doti	976.54	364.84	23,523.45	294.84	23,101.37	39.50	79,971.50	287.24	116,424.70	0.00	0.00	0.00	0.00
	DSBP	160.00	142.50	9,736.58	142.50	9,881.64	16.40	49,200.00	237.93	35,357.70	0.00	0.00	0.00	0.00
	Hetauda	953.73	495.73	26,529.01	463.97	33,561.40	34.50	84,697.50	70.77	50,147.41	43.38	144,278.40	0.00	0.00
	Ilam	616.71	335.81	20,357.18	249.31	25,492.10	78.72	165,312.00	361.70	80,351.56	4.50	119,518.28	0.00	0.00
	Janakpur	787.15	417.91	17,293.74	291.66	22,924.38	11.00	38,500.00	16.64	143,913.53	8.06	89,070.55	0.00	0.00
	Kathmandu	447.55	321.05	31,935.92	305.59	61,833.98	20.95	95,345.00	41.00	138,927.25	20.20	217,159.16	0.00	0.00
	Lahan	1,132.45	362.29	17,715.47	422.22	19,437.96	83.63	190,075.00	157.42	51,445.27	24.55	194,489.90	0.00	0.00

Right click on the grid to export the data to Excel



## 6.13 Map

A basic map interface is provided using web based mapping.



The map interface provides following facilities.

- a) View the SRN network
- b) Zoom to Divisions and highlight/Mask
- c) Export to PDF with various scales and paper size of A4/A3 in Portrait/Landscape orientation.
- d) Overlay Google maps (Satellite, Hybrid, street, Terrain etc)
- e) Search Roads using road code/link code
- f) Turn On/Off various layers (Base Map and ARMP layers)
- g) On screen Identification of various elements of the map.
- h) Clipping of the road division boundary.

The map loading may vary with the internet speed.

## 6.14 Help Sub Menu ( About)

