आज़ादी का अमृत महोत्सव

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Additional Secretary, MoRD
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राष्ट्रीय ग्रामीण अवसंरचना विकास एजेंसी
(ग्रामीण विकास मंत्रालय, भारत सरकार)

National Rural Infrastructure Development Agency
(Ministry of Rural Development, Govt. of India)
5th Floor, 15-NBCC Tower, Bhikaji Cama Place, New Delhi-110066

DO No. NRRDA-P-17025/4/2017/Dir(P-I)/182 06 February 2023

Sub: GIS mapping of PMGSY roads on Geo Sadak.

Dear Madam/Sir,

This is in reference to the Government of India's initiative of updating all infrastructure assets on Gati-Shakti. In the context of PMGSY, there is a need to upload GIS mapping of all PMGSY roads on Geo-Sadak which consists of several layers of DRRP roads, facilities, habitations, and other facilities.

2. As on date, **6,76,188 kms** road length is completed/ in progress in PMGSY-I, II and RCPLWEA. In addition, under PMGSY-III, **96,950 kms** of roads are already sanctioned and available on Geo-Sadak. Further, there are **7,551 nos**. of LSBs in PMGSY I, II & RCPLWEA and **1,448 nos**. in PMGSY-III.

3. While PMGSY-III proposals are already mapped in Geo-Sadak, there is an urgent need for GIS mapping of PMGSY-I, II, and RCPLWEA roads and LSBs in Geo-Sadak which will eventually be shared with the Gati Shakti. The GIS mapping of the majority of roads is already available in NRSC/eMARG & therefore, only a small percentage of roads/LSBs are remaining to be mapped, which needs to be GIS mapped by the existing GIS cell of the State. Thus, out of the total 7,73,138 kms of roads and 8,999 nos. of LSBs, GIS mapping is to be carried out for **1,29,752 kms of roads** and **6,070 nos. of LSBs** by the state GIS cells as per the table below:-

Table 1: PMGSY works completed/ in-progress

S. No	Scheme	Road Length Constructed (km)	No. of LSBs
1	PMGSY-I	621,111	6,625
2	PMGSY-II	48,377	680
3	RCPLWEA	6,700	246
4	PMGSY-III Road Proposals sanctioned	96,950	1,448
	Total:	**7,73,138**	**8,999**

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Table 2: GIS Mapping of PMGSY works on Geo Sadak

S.No	GIS Mapping Resource	GIS Mapping (KMs)	No. of LSBs	Action Plan
1	Through NRSC readily available	303,774	1,072	Action by CDAC and NRSC, to be completed by 28 Feb 2023
2	Through NRSC after corrections by states	144,815	409	To be done by the states/ NRSC by 31 March 2023
3	Through e-MARG	97,847		Action by CDAC and NIC Bhopal, to be completed by 28 Feb 2023
4	PMGSY-III proposals available in Geo Sadak	96,950	1,448	Already Available in Geo Sadak, data is to be ported to Gati Shakti by CDAC-ICT team NRIDA immediately.
5	GIS Mapping to be carried out by states for works in progress PMGSY1 and II, RCPLWEA	19,373		States to immediately start. The methodology is attached. To be completed by 15 March 2023
6	GIS mapping to be carried out by states for balance Completed works	110,379	6,070	States to immediately start. The methodology is attached. To be completed by 15 April 2023
	Total :	**773,138**	**8,999**	

4. The State-specific data/ identification of roads to be GIS mapped on the ground which is available with the respective States/UTs. The SoP/ detailed process of mapping of PMGSY roads by the State is attached as **Annexure-I**. It is requested that GIS mapping of roads on Geo-Sadak may please be carried out as per the timelines indicated in above table-2 (S.No. 2, 5, and 6).

5. All concerned may please be suitably instructed.

Encl: As above

With regards,

Yours sincerely,

6/2/23

(Dr. Ashish Kumar Goel)

To:

The Additional Chief Secretaries/ Principal Secretaries/ Secretaries in Charge of Pradhan Mantri Gram Sadak Yojana (PMGSY)/RCPLWEA of all the States/UTs.

Copy to: CEOs/ E-in-Cs/ Chief Engineers of SRRDAs and RCPLWEA.

NRRDA-P017(23)/3/2023-Dir(P-I)

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Annexure -I

1. All the States should follow this GIS data standard to capture the GIS alignments of PMGSY-I, PMGSY-II and RCPLW road proposals and LSB that have been sanctioned but not constructed fully or partially.
2. Following GIS layer in shapefile format, along with attribute shall be captured on GIS platform. The naming convention of each file name should be as given in the table.

No.	File Name	Map Layers	Type
1	Road_Package	Package of Road. (Entire proposed length as in ommas)	Line
2	Work_Status	Road Work completed so far as on the date of drawing.	Line
3	LSB	Proposed and completed LSB.	Line

3. GIS alignment drawing work shall be done by GIS analyst with the help of concern PIU.
4. The GIS Layer should be in accordance with "PMGSY GIS guideline_V5". Guideline is given herewith as an annexure for your reference.
5. Formulated spatial data should be a seamless mosaic of all blocks/districts. In other words, there cannot have more than one layer of same map layer (eg, only one proposal layer on the mosaic).
6. Table structure: the spatial layers should have standard fields as given below and attributes as entered in OMMAS2.

Road_Package

Field Name	Type	
PACKAGE_ID	Integer	PACKAGE_ID Package Id as in OMMAS
STATE_CODE	string	State Id as in OMMAS
STATE_NAME	Integer	State name as in OMMAS
DIST_CODE	Integer	Id as in OMMAS
DIST_NAME	String	District name as in OMMAS
PMGSY_SCHEME	String	PMGSY-I/ PMGSY-II / RCPLW
BLOCK_CODE	Integer	Id as in OMMAS
BLOCK_NAME	String	Block name as in OMMAS

YEAR	Integer	Year of sanction of proposal
BATCH	Integer	Number of batch(for example 1/2/3)
SANC_LENGTH	float	Length of proposal as in OMMAS

Work_Status

Field Name	Type	
PACKAGE_ID	Integer	PACKAGE_ID Package Id as in OMMAS
STATE_CODE	string	State Id as in OMMAS
STATE_NAME	Integer	State name as in OMMAS
DIST_CODE	Integer	Id as in OMMAS
DIST_NAME	String	District name as in OMMAS
PMGSY_SCHEME	String	PMGSY-I/ PMGSY-II / RCPLW
BLOCK_CODE	Integer	Id as in OMMAS
BLOCK_NAME	String	Block name as in OMMAS
YEAR	Integer	Year of sanction of proposal
BATCH	Integer	Number of batch(for example 1/2/3)
SANC_LENGTH	float	Length of proposal as in OMMAS
STATUS	float	Completed Length of proposal.

LSB

Field Name	Type	
PACKAGE_ID	Integer	PACKAGE_ID Package Id as in OMMAS
STATE_CODE	string	State Id as in OMMAS
STATE_NAME	Integer	State name as in OMMAS
DIST_CODE	Integer	Id as in OMMAS
DIST_NAME	String	District name as in OMMAS
PMGSY_SCHEME	String	PMGSY-I/ PMGSY-II / RCPLW

BLOCK_CODE	Integer	Id as in OMMAS
BLOCK_NAME	String	Block name as in OMMAS
YEAR	Integer	Year of sanction of proposal
BATCH	Integer	Number of batch(for example 1/2/3)
SANC_LENGTH	float	Length of LSB proposal as in OMMAS
LSB_STATUS	String	Completed / Not Completed.

7. The States can capture the proposals using the opensource software and satellite imagery and share with the NRIDA to accommodate on the Geosadak.

PMGSY National GIS

GIS DATA STANDARD

(Version 5)

(Compared to the previous document version, additional explanations incorporated)

All the States should follow this GIS data standard.

For the spatial data creation/updating, the States may choose the methodologies in SRS (pmgsy.nic.in/circulars/GIS_SRS_29052015.pdf) or adopt any methodologies convenient to them.

1. GIS EXPERT

Hire GIS person (in case not available with the State) for managing the activity of spatial data generation throughout the project duration.

2. DATA FORMAT

GIS layers should be provided in shape (.shp) format.

3. PROJECTION

All GIS layers should be in **WGS84** datum and **lat-long** coordinates. No map projection.

4. DATA VALIDATION/ACCURACY/QUALITY

All spatial features should be finally captured to the WGS84 datum and should be verifiable as per GPS. This means **the accuracy should be verifiable on the ground as per GPS and not directly as per SoI toposheets**. Therefore, any corrections on the data required should be carried out by the States.

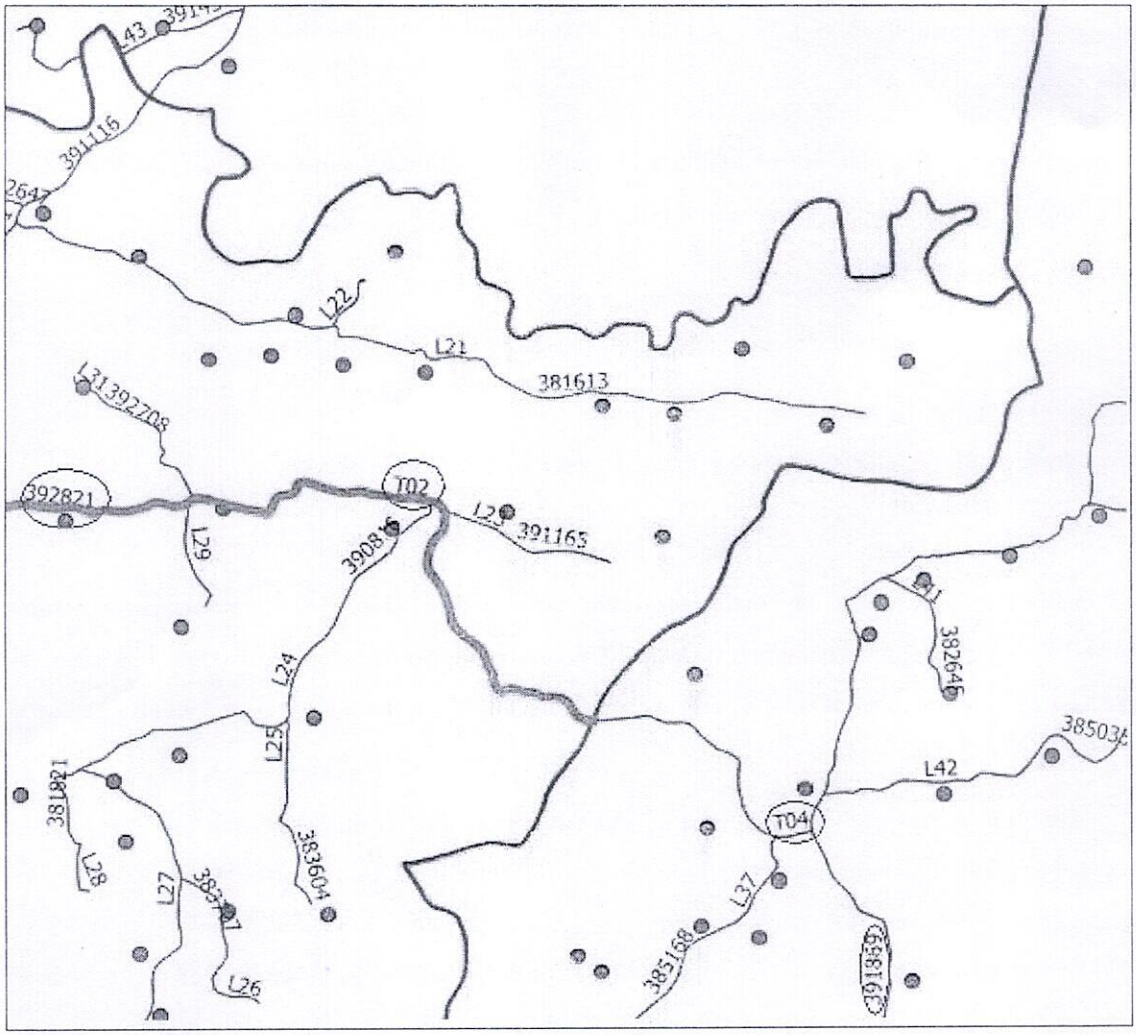
However, the States can initially capture the data from any available source and later update. Updating can be carried out over available map services from GoogleEarth, Bhuvan etc. In other words, the States need not carry out GPS survey to map the layers. GPS enabled mobiles can also be used for updating. GPS enabled mobile could be helpful in validation of the data on the ground, uploading photographs or any other visual information on to the database, etc.

5. GIS DATA MOSAIC

Provide spatial data as a seamless mosaic of all blocks/districts (stitching should not be done, as explained under the next heading). In other words, there cannot have more than one layer of same map layer (eg, only one Habitation layer on the mosaic). Once the spatial data of the adjoining States are completed, if any editing/shifting, on feature or feature boundary required, shall be carried out by the States.

6. UNIQUE ID TO FEATURES

As per PMGSY guidelines, features such as habitation and road have a unique Id within its Block. At the same time, as per OMMAS2, each habitation/road has unique ID across the country. For example, there is only one habitation with id 50 in the country. Same is the case with roads. All disconnected roads within a Block having same ids should be joined together.



Similarly all the roads should be disconnected at the Block boundary (i.e, start node and end node of road line within the block only). Figure shows a road passing through two blocks with old and new road IDs. The road having ID: 392821(Old Id: T02) is a single entity/feature within the block. The same road becomes a separate entity/feature with ID: 391869 (Old Id: T03) in the next Block. However, as per PMGSY-II, a road may be continuous across blocks within a district. The applicable States need to keep that road as single feature and assign id that is followed in OMMAS2.

7. GIS LAYERS AND NAMING CONVENTIONS

All the GIS layers should be created as per the PMGSY guidelines. For example, the name/location of habitation (OMMAS2) may not always match with that of the habitation from other sources such as toposheets. The naming convention of each layer should be as given in the table.

No.	File name	Map layers	Type
1	Habitation	Habitation	Point
2	Bound_District	District Boundary	Polygon
3	Bound_Block	Block Boundary	Polygon
4	Bound_MPConst	MP Constituency Boundary	Polygon
5	Bound_MLAConst	MLA Constituency Boundary	Polygon
6	PWD_Division	PWD Division Boundary	Polygon
7	PWD_Circle	PWD Circle Boundary	Polygon
8	Bound_Forest	Forest Boundary	Polygon
9	Bound_InterNational	International Boundary	Line
10	Road_DRRP	DRRP Road	Line
11	Road_CN	CN Road	Line
12	Road_Package*	Package of Road* (optional/Future layer)	Line
13	Bridge	Bridges	Point
14	LevelCrossing	Level crossing (Manned & Unmanned)	Point
15	Const_Material	Construction Material Sites	Point
16	Waste_Material	Waste Material Sites	Point
17	Market	Market Centre	Point
18	HQ_Administrative	Administrative HQ (Revenue,Block,District,Panchayat)	Point
19	WaterBody	Water body	Polygon
20	Tourist	Tourist Place	Point
21	Drainage_Line Drainage_Poly	Drainage	Line & Polygon
22	Railway	Railway	Line

Table: Naming conventions of spatial layers

[Mandatory layers: Habitation, Block Boundary, DRRP Road, CN Road. States should give priority to these 4 layers.]

8. TABLE STRUCTURE

All the spatial layers should have standard fields as given below and IDs as entered in OMMAS2. All the fields should be of **integer** type, if not specified.

1. ***Habitation***

Field Name	
HAB_ID	Habitation id (HAB_ID) is the Habitation system id in OMMAS

2. ***Bound_District***

Field Name	
DIST_ID	District Id in OMMAS

This layer can be created by *dissolving* Block boundary

3. ***Bound_Block***

Field Name	
BLOCK_ID	Block id in OMMAS

4. ***Bound_MPConst***

Field Name	
MP_CON_ID	MP Constituency id in OMMAS

5. ***Bound_MLAConst***

Field Name	
MLA_CON_ID	MLA Constituency id in OMMAS

6. ***PWD_Division***

Field Name	
DIV_ID	PWD Division Code. Not available in OMMAS. Can use serial number
DIV_NAME	PWD Division Name

7. ***PWD_Circle***

Field Name	
CIR_ID	PWD Circle Code. Not available in OMMAS. Can use serial number
CIR_NAME	PWD Circle Name

8. ***Bound_Forest***

Field Name	Type	Field Width	
FB_Type	String	1	Enter R/P (Reserved/Protected) for forest type

9. ***Bound_InterNational***

Field Name	Type	Field Width	
INTNAME	String	20	Name of Neighbour Country

10. Road_DRRP

Field Name	
ER _ID	Existing road system id in OMMAS

11. Road_CN

Field Name	
ER _ID	Existing road system id in OMMAS
PLAN_RD_ID	Core network system id in OMMAS

*12. Road_Package *(Optional, not used currently)*

Field Name	
PACKAGE_ID	Package Id as in OMMAS
ROAD_ID	Road Id as in OMMAS

13. Bridge

Field Name	
ER _ID	Existing road system id in OMMAS
BRIDGE_ID	**

**BRIDGE_ID is not incorporated in OMMAS and is not used in any of the queries. If the data is entered, it can be used for future implementations.

14. Level Crossing

Field Name	Type	Field width	
BLOCK_ID	Integer	-	Block id in OMMAS
LC_Type	String	1	M/U (Manned/Unmanned)

15. Construction Material

Field Name	Type	Field width	
BLOCK_ID	Integer	-	Block id in OMMAS
M_Type	String	1	Material Type
S_Name	String	20	Material Site Name

* Construction material list/details to be provided by NRRDA

16. Waste Material

Field Name	Type	Field width	
BLOCK_ID	Integer	-	Block id in OMMAS
W_Type	String	1	Material Type
S_Name	String	20	Material Site Name

* Waste material list/details to be provided by NRRDA

*17. **Market***

Field Name	Type	Field Width	
BLOCK_ID	Integer	-	Block id in OMMAS
MarketName	String	25	Name of market
MarketDays	Integer	1	Number of market days

*18. **HQ_Administrative***

Field Name	Type	Field Width	
AHQ_Type	String	1	AHQ Type (R/B/D/P)
AHQ_Name	String	25	Name of administrative headquarter

Administrative Headquarter Types are R/B/D/P (Revenue, Block, District, Panchayat)

*19. **WaterBody***

Field Name	Type	Field Width	
WB_Type	String	10	WB Type

*20. **Tourist***

Field Name	Type	Field Width	
BLOCK_ID	Integer		Block id in OMMAS
TP_Name	String	25	Name of tourist place

*21. **Drainage_Line /Drainage_Poly***

Field Name	Type	Field Width	
D_Name	String	20	Name (Major)

*22. **Railway***

Field Name	Type	Field Width	
blank			