

Integrated Conceptual Framework of Draft Development Plans, MDP-2031, JoDA and MP-2042 for JPMIA

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Abstract: This research present an integrated framework of development plans to protect rural areas from nature blind developments. As per MP-2042 for JPMIA, The JPM Region comprises two Districts of Rajasthan, one of which, Pali District, contains the DFC Station that will serve Jodhpur-Pali-Marwar Industrial Area , namely Marwar Junction and the other, Jodhpur District, contains Jodhpur City, and is adjacent to Pali District. As per Draft Jodhpur Master Development plan 2031, the Jodhpur region covers 395 revenue villages and describes existing as well as proposed land uses. The purpose of this study is to present an integrated framework of two major plans of Jodhpur region for economic growth, balance development, easy access and faster movement with higher attention to safeguard environment. Their integration is most important before execution of proposals to identify applicability level of plans.

Keywords: Master Plan, Development Plan, Region, Land-uses, Integrated

1. Introduction

Today we are running to catch smart ideas to achieve smart developments and we know India need lots of improvements in urban sector for economic development. In this context development plans are basic tool to implement strategic ideas for plan economic growth of regions. Process of planning is very important it starts with an idea and stops with ground implementation. And the fact is, at every stage of planning this process needs higher degree of attention. Master development plan is bringing land use proposals for 395 of JoDA and 9 revenue villages of JPMIA plan. MP-2042 for JPMIA is central government program and aims to develop new industrial cities as "Smart Cities". During the last two decades large numbers of small and medium industries have come up in Jodhpur due to the various incentives provided for the growth of industrial activity. This trend is likely to continue in future also. Draft Master Development plan- 2031 draws potential industrial pockets in form of Industrial proposals. At present Jodhpur region is having two broad master development plans MDP-2031 and MP-2042, JPMIA in which first one describes existing and proposed planning in Jodhpur region context and another one limits with particular aspect of region but it influences directly and effects highly. Both plans could be linked together to better plan implementation. Integrated study of

these plans must require for the development of various nodes or growth centers of industrial production wherein the synergies between the node and the region can act as catalysts for the equitable regional development.

2. Overview of Regions

The approved location for JPMIA is at Rohat, one of nine Tehsils in Pali District. The Rohat Tehsil is composed of 10 villages and the notified area of the IA covers 9 of those villages, including Danasani, Dhundhli, Doodali, Dungarpur, Dalpatgarh, NimbliPatelan, NimbliBrahmnan, Rohat, and Singari. The notified region of Jodhpur Development Authority comprises of 395 revenue villages with the total area of 436056.53 hectare. The region is subdivided into 5 tehsils that is Jodhpur, Luni, Balesar, Tiwari and Baori. The proposed Industrial Area is in the west of the Aravalli mountain range, within the Districts of Jodhpur and Pali. The region is named after the two districts and the characteristic and traditional name of the region being Marwar. It is noted that JPM IA is also situated at a highly strategic position in the middle of the six districts of the Jodhpur Division: 60% of the Division is within a radius of 150km, and 90% is within a 300km radius. The location of the proposed Notified Areas is presented in the map below.

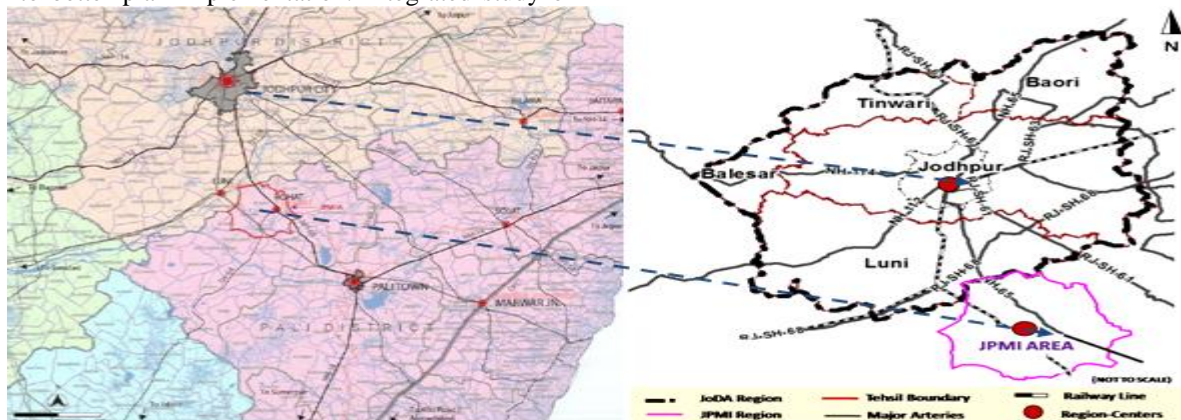


Figure 1: Location of the proposed notified area within Pali district and Jodhpur Region

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Jodhpur is regional centre for almost all economic activities in western Rajasthan, importance of trade and commerce, industry, transportation etc. National Highway 65, and 114 crosses the city. Jodhpur district is bound by Bikaner district in the North, Nagaur district in the East, Barmer and Pali districts in the South and Jaisalmer district in the West, has emerge as the most vibrant and important business centre of Rajasthan. Jodhpur is 90km from Marwar Junction, connected through an almost straight SH-61. Marwar Junction's strategic location will be greatly enhanced with the arrival of the DFC. Almost 200km of the 1484 km-long high speed rail link will pass through Pali district.

Jodhpur and Pali are major trade centres and the respective district headquarters. Pali is a small industrial town strategically located at the intersection of NH65 and NH14. The city has a good industrial base in the dyeing industry, textiles, henna, handicrafts and building materials. NH-14 connects Pali to Bar, Beawar, Ajmer and Jaipur in the north and Sumerpur, Udaipur in the south. Marwar Junction is a small but important railway node located 40km by road east from Pali Town and is the proposed DFC station for the region. A major objective of these planned developments will be to achieve balanced regional development and to eradicate the disparities between the Western and other parts of the State.

3. Demographic Profiles

In 2011, the population of Jodhpur was 1.03 million reporting an annual growth rate of 2.05 percent. Jodhpur Municipal Corporation comprises 81.7 percent of the total urban population of Jodhpur district in 2011. The municipal corporation covers an area of 78.6 sq kms with a density of 13,438 persons per square kilometer. The working population of Jodhpur comprises of 32.55 percent of the total population, of which 89.46 percent of the workers constitutes main workers whereas the rest fall under marginal workers category.

As per Census 2011, the population of Pali district and that of delineated project area was 2037573 and 16866 respectively. Pali district is characterized by predominantly rural setting with around 77.5% of the population in the district residing in rural areas. The recorded decadal growth rate (2001-2011) for Pali district is 11.99%, which is one of the lowest in the state (21.44%). The 9 revenue villages forming the delineated JPMIA together have experienced a growth rate of 22.8% during 2001-2011. The average population density in the delineated JPMIA area works out to 106 persons per sq km compared to the Pali district average of 165 persons per sq. km.

4. Existing Industrial land-use:

Most of the large and medium scale industries are located in the industrial area and industrial estate towards the south. Industrial land use spread over an area of 2356.15 hectare of land which is 15.58% of developed area. There are 4726 industrial plots exists and most of industrial development is by RIICO in Jodhpur.

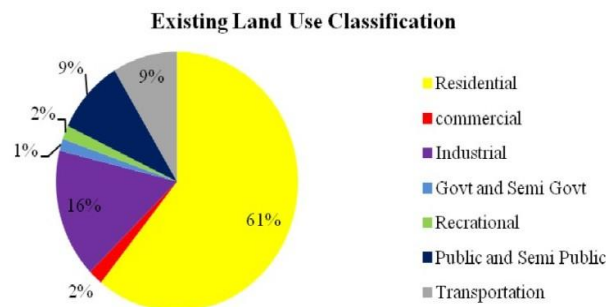


Figure 2: Existing Land use classification

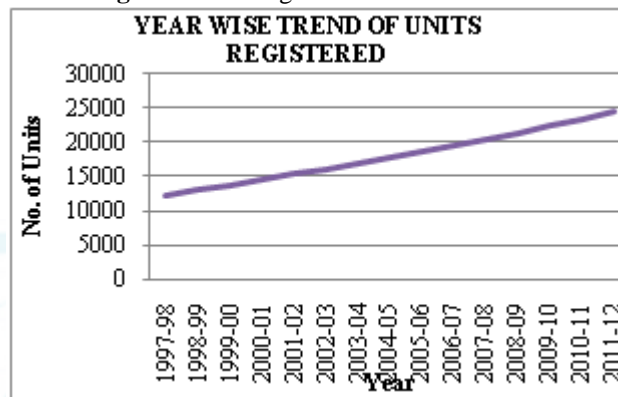


Figure 3: Industrial units registration trend

There are 5433 engineering unit, 2054 agricultural resources, 1300 chemical units, 3688 livestock based and 1268 building material related micro and small enterprises and artisan units exists in Jodhpur district.

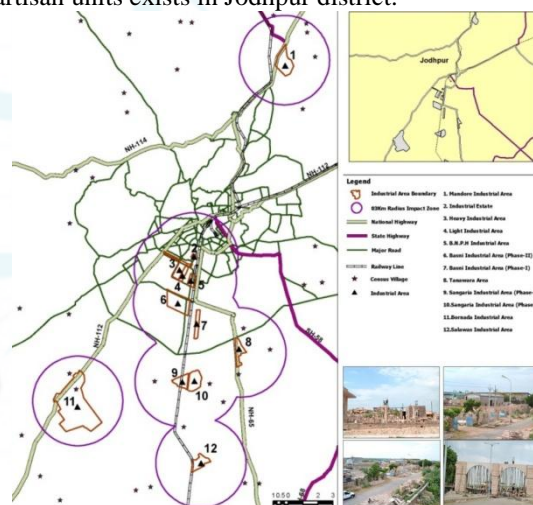


Figure 4: Location map of Jodhpur industries

Industrial clusters of Jodhpur (ranked 23rd), Pali (ranked 31st), and Jaipur (ranked 58th) have figured in the list published by the Central Pollution Control Board. These clusters need to have long term comprehensive environmental management plans to improve their environmental performance.

5. Proposed land-uses of study area:

As per Master development plan (2013-2031), 13739.78 hectare land is proposed for industrial purposes. Southern major industrial land has been proposed in Boranada, Sangariya, Tanawara, Salawar, Nandwan, Sar, Sarencha, Nimblasar, Basnijutha, Chakbadliya, Karninagar, Jatiyasani,

Rohilabhandu, Thumbli, Chawandokidhani, Katarda, Bhandukalan, Bhandukhurd, and Heerkherarevenue villages. There is one more industrial proposal of MDP-2031 on north-east direction of JMIPA notified area. It spread over an area of 1408 hectares.

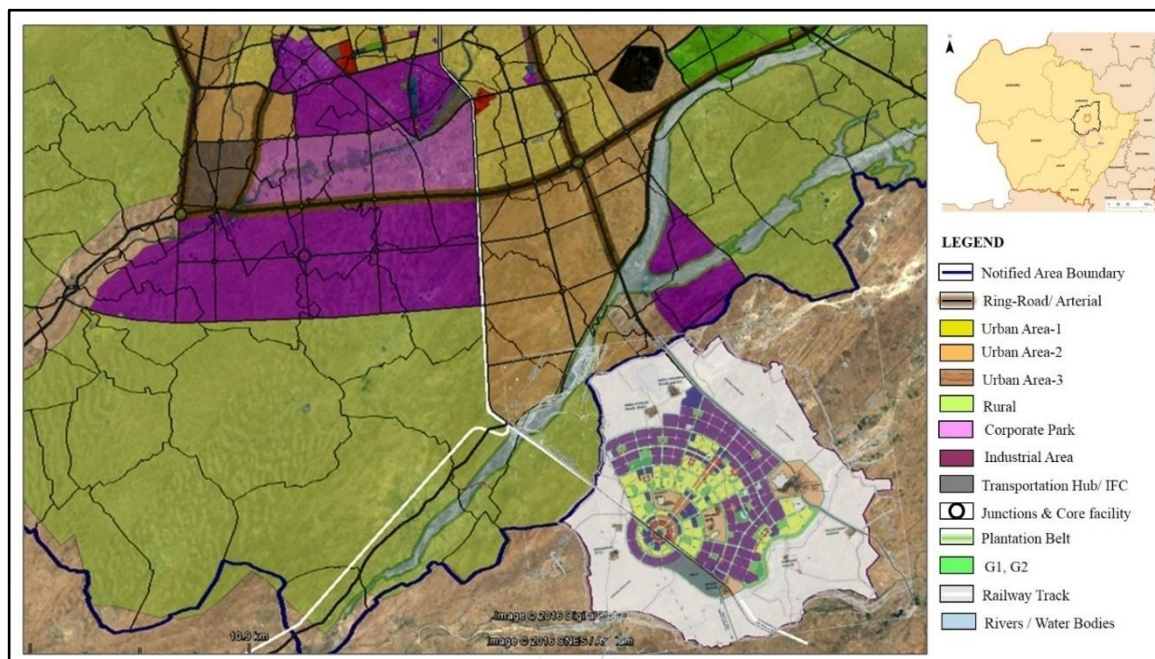


Figure 5: Integration of Two broad Industrial proposal plans

Land utilization: Master development plan-2031 has been drawn up with the reference to the 4 policy zones. Urban area-1 includes existing developed area, proposed urban area of Master Plan-2023, Commitments, and Proposed planning areas/zones such as southern industrial area, Transportation hub, Integrated Freight complex and Corporate park.

Urban area -2 is basically the immediate influence area, nearest geographical boundary and buffer zone of U1. As per study area limits, examined area proposed between the Railway track and Luni River. Total area of the said chunk is 343 hectare.

Urban Area-3 or Highway Corridor is proposed after the Luni River on NH-65. After the distance of 3.2 Km this arterial enters in JPMIA region as National Highway. This corridor consists of 655.65 hectare of land exists JoDA limits boundary.

Rural Area define as the areas, other than U1, U2, U3 and special area zones, have been included in rural area. Permissible land uses taken from zoning regulations will be approved including the land uses allowed by the district. The economy of these villages will be agrarian basically. Natural growth will be allowed based on demand of the villages. Abadi expansion/natural growth of villages in 500m radius of 'gram panchayat' villages and 200m radius of other villages will be permitted.

Corporate Park: This Park with area of 3180.85 hectare will be developed to encourage construction of various workspaces. Activities like corporate offices, I.T. parks, bio-technology parks, research and development centres, exhibition centres, luxurious hotels etc. will be developed.

This area is located between NH 112 and Jodhpur-Pali railway line on the southern side of Boranada industrial area. The impact of various central and state govt. programs like Pachpadra oil refinery, Delhi-Mumbai Industrial Corridor and Dedicated Freight Corridor will directly be on Jodhpur for establishment of corporate offices of multinational and other big companies.

Transport Nagar: There is proposal of Transport hub on National highway 112, Barmer road. It is located on west side of proposed Corporate park. The total area of said hub is 751.78 hectare. As per MDP-2031 plan, Transport hub is planned on the prime location which would have potential for the Development of high-tech transport nagar for improved logistics and warehousing solutions in regional context.

Proposed Roads and Junctions:

Salawas-Tanwara Road: it starts from AIIMS road, basni planning zone. This zone is situated between residency road, pal road, PWD bypass, basni road and the road near Jai Narayan Vyas University. After the interval of 4 km (approx.) dangiyawas bypass (inner ringroad) crosses the road. Which connects NH-112 and NH-65. This roads moving towards the proposed corporate park and merge with Boranada –Salawas road at proposed IFC.

Proposed 30 Metres roads along the Railway Track: These Significant roads are proposed parallel to the railway track. As per proposal it starts from dangiyawas bypass at Vivekvihar scheme as 30 metres wide single road on right side the track. At outer ring road in Sangariya village 30 metres wide roads are proposed both side of the track. After

the industrial proposal it remains on one side (right side) and crosses the Luni River at 24 km distance from origin point.

Major junctions of the city which crosses between national highways coming from different major cities and the proposed bypass roads will be developed as circles. These circles will be developed according to the cultural, historical and existing form of the destination city. Barmer and Pali circles of the study area will be developed in same way. The junctions made by proposed roads will be developed as core facility area. In this area, minimum 30% areas will be park, open space, sports ground, Children Park and other facility areas. Minimum 10% area will reserved for plantation. Remaining 60% area will contain shopping centre, hospital/dispensary, school (primary/middle) and other community facilities. Other facilities will be decided during the preparation of sector plans.

Table 3: Number of Junctions and core facility area with major proposals

S No.	Name of Proposed site	No. of Junctions / Core facility area
1.	Transportation Hub	2
2.	Corporate Park	3
3	Proposed industrial area between Pali and Barmer circle.	5

National highway-65: This highway connects Jodhpur to pali district. The proposed right of way for NH-65 is 60m in MDP-2031 and 180m in JPMIA. As per JPMIA proposal 180 m width will be capable of accommodating 6-lane carriageway and 6m each side service road. The 180m wide corridor allows for a provision of a Bus Rapid Transit (BRT) within the ROW. Integration of both plans shows higher level of difference in proposed right of way.

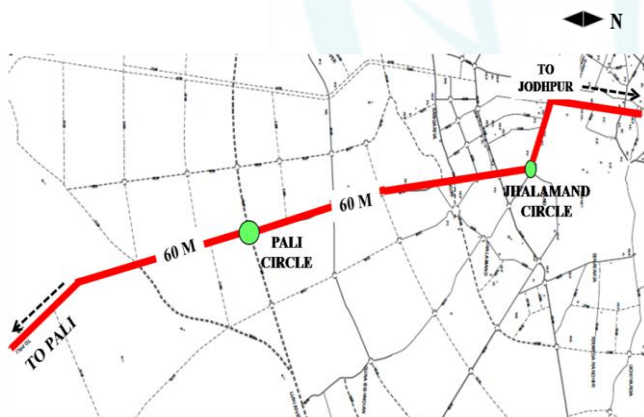


Figure 6: Location of Proposed NH-65 60 M ROW, JoDA Region

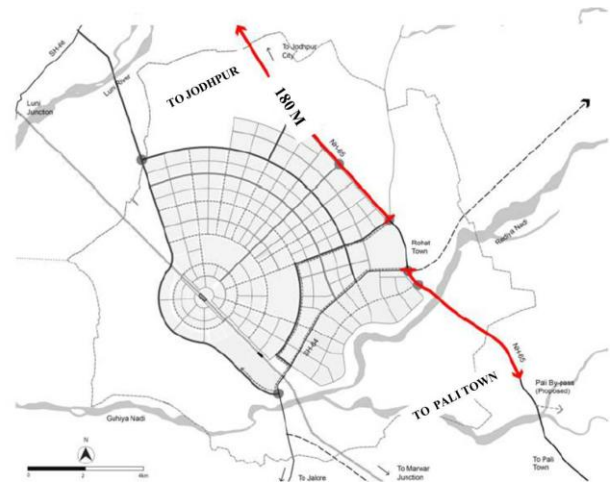


Figure 7: Location of Proposed NH-65 180 M ROW, JPMIA

Mix Landuse: it has been proposed on National Highway-65 and ring roads. As per illustrated picture 5. There is proposal of mix land use on both side of the National Highway, Ring-road as Artirial of region.

Jojarri River: flows from North East to South west of Jodhpur. It is a none perennial river but due to extension of water supply and sewerage system of Jodhpur city, strom water as well as waste water flows into the river. The length of the river in study area is 25 km.

JPMIA proposed land use:below mentioned table Shows a Land use distribution as per the three broad phases of development.

Table 4: Proposed land use area breakdown

S. No	Land Use	Total Gross Area (ha)	Total Percentage (%)
1	Residential	930	14.48
2	Commercial	139	2.17
3	Mixed Use	77	1.20
4	Industrial	1945	30.27
5	Public/Semi Public	339	5.27
6	Utilities & Supporting Uses	58	0.91
7	Green Buffer	507	7.89
8	Major Parks/Public Open Space	599	9.32
9	Transportation Facilities	28	0.44
10	Circulation	867	13.50
11	Abadi Development Areas	635	9.88
12	Railway Corridor	50	0.78
13	MMLH	220	3.42

Green Buffer or Plantation Belt of JoDA& JPMIA Plans:Green buffer occurs along main roads and Rivers to mitigate pollution, and to protect and secure adjoin landuses, especially existing settlements and sensitive landscape areas. Therefore, as per JPMIA report green buffers have been categorized into two categories namely G1 (along the water bodies) and road side green buffer (G2), which may also have an ecological function with respect to the proposed sustainable drainage system. MDP-2031 report used a common term "Plantation Belt" for green buffer of road side, water bodies and existing settlements.

Table 5: Proposed Green buffer description

Green Buffer Type	Description and Typical functions
Plantation Belt	Buffering belt along water bodies, Roads (Ring-roads, Highways, Bypasses), Aabadi areas, Corridors to protect the environment from pollutions.
G1	Buffering belt along water bodies to mitigate noise and pollution, May contain 'green infrastructure' such as flood storage areas / storm water conveyance devices such as swales, bio retention, etc.
G2	Buffering belt along main roads to mitigate noise and pollution, May contain 'green infrastructure' such as flood storage areas / storm water conveyance devices such as swales, bio retention, etc. May also contain roads for circulation and area for parking, etc.

An important special function of green buffers/plantation belt is to provide for 'green infrastructure', as part of an sustainable drainage management system. It is recognized

that a successful and integrated monsoon rainwater harvesting system is of critical importance to the long term sustainability and prosperity of both regions.

6. Environmental Conservation and Plantation

To conserve Jojr river, 30 meter area on both sides will be preserved. Commitment and abadi areas coming under this area will be merged with it. Part of Luniriver coming under JoDA area will have 100 meter area on both sides conserved. Any programs made by central or state govt, for Luni and Jojri will also be used in the master plan. Major ponds coming under JDA area will be conserved by providing 30 meter plantation buffer. Commitment areas coming under this area will be merged. Detailed conservation plan for Kailana, Balsamand, Lalsagar, Fatehsagaretc lakes will be prepared including pollution prevention. Proposed green buffers or Plantation belt setbacks of both plans shown on below mentioned table.

Table 6: Proposed Green Buffer setback on landuses of JoDA and JPMIA region

	Land use	Green buffer setback	Rational
JoDA Region	Mixed land use Belt	30-30 M	<ul style="list-style-type: none"> To protect Abadi Development Areas from new urban development activities. To mitigate noise and pollution, and to protect and secure adjoining land uses, especially existing settlement and sensitive landscape areas. Provide safe, comfortable and convenient routes with appropriate planting for shading for pedestrians and slow vehicles.
	Arterials (Highways, Bypass ect. which is having 200 feet proposed road width)	100-100 feet	
	Jojari River	30-30 M	
	Luni River	100-100 M	
	Water bodies-lakes, ponds etc.	30 M	
	Hill conservation zone	50 M	
JPMIA Area	Sub-Arterial Roads adjoining Abadi Areas	50 M	
	Arterial Road and Sub-Arterial Roads	30 M	
	Restricted Traffic Arterial Roads (Spine Boulevard)	10 M	

7. Regional Connectivity

All planned roads, proposed bypasses, Rail corridor, Rail freight corridor, Dedicated freight corridor, DFC feeder rail line, Jodhpur-IA-Pali BRTS and other strategic proposed

roads of regions are categorized and superimposed in integrated manner as illustrated in fig.8 This consideration is not only to do with the functional efficiency of traffic flow, but also to ensure the safety, amenity and environmental quality of urban areas.

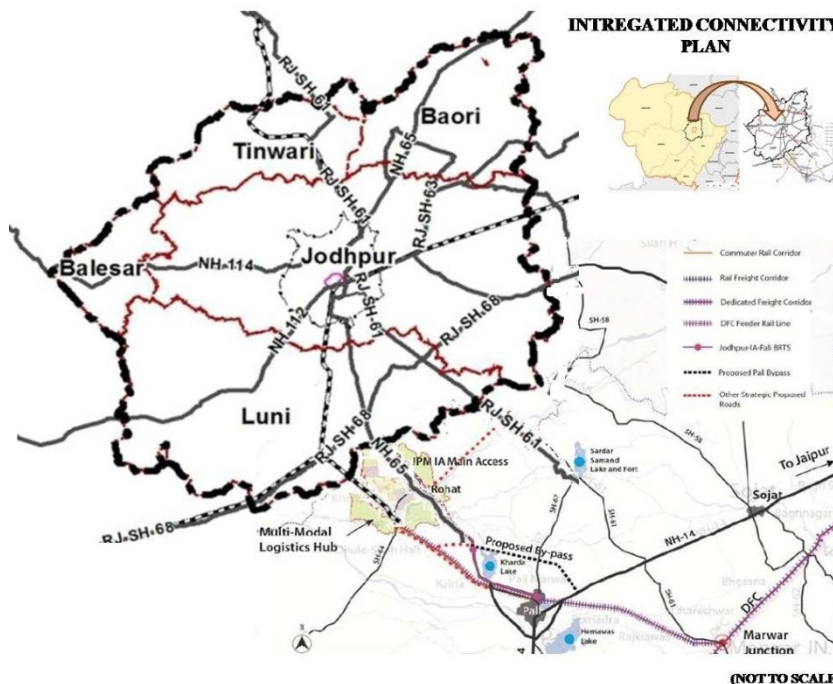


Figure 8: Proposed Strategic Roads and Rail Corridors for JoDA and JPM Region

8. Measures of Future Success

Some measures suggest below for future success of draft plan:

- Connections can be improved through multi-purpose paths and other opportunities along the corridors to implement a planned system of city. There should be a harmony in proposed road width to improve connections between the regions.
- Adding and maintaining landscaping is important to enhance the visual and spatial effect of city and to create more hospitable environment, including planting trees along the river, roads, and station platforms.
- Before finalizing draft plans one consideration should be given to what we have already that means identification of land ownership, government land

parcel are important in terms of better future planning. It is advantage if large government land parcels available in the region apart from the large private land parcels. This will reduce the land acquisition requirement and few numbers of potential land parcels would be required for acquisition. There should be land bank data base which comprises of all revenue villages. BhanduKallan has been taken as case study to describe Government owned land distribution in industrial proposal areas. Proposal of transport nagar, corporate park, industries and mix land uses denotes the local importance and significant location of bhandukalan village. This kind of study shows the reality of ground. It must be part of any comprehensive plan because it makes plan more authentic, reliable and suitable.

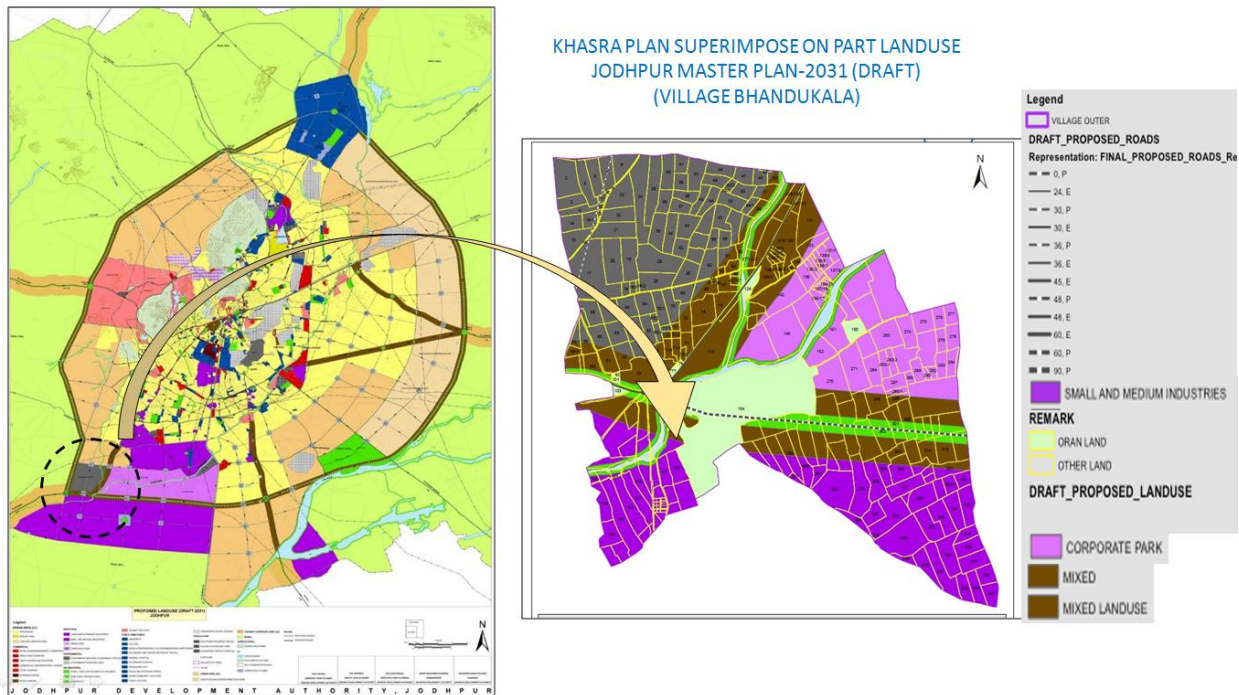


Figure 9: Jodhpur Master Development Plan-2031 and Superimposed map of land bank on LUP-2031, Bhandukalan village

9. Conclusion

Urban areas of metro cities like Jodhpur needs higher level of attention for planned development. In this context Master Development plans are tools to guide physical, economic, social development of towns through preparation of master plans. This paper presents an integrated framework by superimpose some aspects of two different draft plans with an aim of Organized Urban Development.

Draft plans, Master Development Plan-2031, Master plan-2042 for JPMIA describe various functional existing and proposed land uses. Which are supported by detailed guidelines. It includes implementation and phasing of the plan, Social impact assessment and environmental considerations. Transportation Network Plan provides detailed strategy for internal and regional linkages and circulation of various modes of traffics across different nodes in the area. But the focus of study is these plans should not only remain an instrument of control it should work as a tool to promoting an orderly development. This paper focuses on the performance of Jodhpur Master Plan

and MP-2042 for JPMIA and suggesting measures for its future success.

There is a general conclusion that in the process of planning either a new or reserve, consideration should be given to integration of projects with the adequate suitable land use planning.

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