

Addendum to the EIA for Shendra Mega Industrial Park, Aurangabad Maharashtra

1. Background

The Government of India (GoI) has proposed the development of a Dedicated Freight Corridor (DFC) between Delhi and Mumbai covering a total length of 1483 km and passing through six states. To tap the development potential of the proposed freight corridor, a band spanning 150 kilometers on both sides of the freight corridor has been identified as the Influence Region and is proposed to be developed as Delhi-Mumbai Industrial Corridor (DMIC). Twenty Four (24) industrial nodes comprising of Investment Regions (IR) and Industrial Areas (IA) have been identified along the length of this corridor. In line with this development strategy, the Delhi Mumbai Industrial Corridor Development Corporation Limited (DMICDC), a SPV formed under Ministry of Commerce and Industry (MoCI), Government of India, is undertaking the development of Shendra Mega Industrial Park in district Aurangabad, Maharashtra in partnership with the State Government. The Maharashtra Industrial Development Corporation (MIDC) is the nodal agency responsible for implementation of Shendra Mega Industrial Park (MIP) in Maharashtra.

The proposed Shendra MIP is spread over an area of 845.38 hectares (ha), covering three villages-of Ladgaon, Karmad and Kumbephal and primarily includes rural hinterland, comprising of agricultural lands and scrub lands. The land for the project is under possession with MIDC and was acquired under the Maharashtra Industrial Development Act 1961.

The project has been accorded Environmental Clearance vide letter No. 21-1/2013-IA.III dated 18th June, 2015.

About 50% of the total area has been demarcated for industrial land use, 8.4% for residential land use, 8.4% for transportation, 9.75% for commercial and 7.18% for public/semi-public uses, About 10.22% is earmarked for parks and open spaces. The waste water generation from the Shendra MIP from non-industrial areas will be 10 MLD while Industrial area will contribute 11 MLD of waste water. The wastewater from industries and sewage from residential area will be treated separately in a Common Effluent Treatment Plant (CETP-12 MLD) and Sewage Treatment Plant (STP-10MLD) respectively. The project will encourage energy conservation, purchase of energy conservation certificates and solar assisted heating in Institutional buildings.

2. Reason for the Addendum

The Environmental clearance obtained was based on the conceptual plan prepared for the development of Shendra Mega Industrial Park (MIP), which was prepared by M/s Design Point Consult Private Limited and was “in-principle” approved by Maharashtra Industrial Development Corporation (MIDC) in April 2014.

The Plan has now been revised keeping the same overall concept based on site survey, additional information and more detailed calculations instead of the broad estimates. However, it is to be noted that the project boundary remains the same and there is no change in the area of the project.

The purpose of this addendum report is to provide a comparative profile of the revised plan with respect to the conceptual plan submitted earlier and to re-assess the change in environmental impacts due to the changes in the Plan.

3. Changes proposed in the Plan

The proposed changes in the plan are detailed out in the following sub sections

3.1. Land-use Breakup

The **Table 3.1** is the detailed land use breakup with percentages which has been calculated on the basis of UDPFI guidelines

Table 3.1: Comparative Land use statement reflecting the changes

	Land Use Statement	Area in Ha.	% of total	Area in Ha.	% of total	Change
		Concept Plan		Revised Plan		
1	Industrial- Total	380.16	44.9%	417.09	49.34%	+4.44%
A	Industrial	305	36.0%	259.18	30.66%	
B	Industrial (PAP)		-	157.91	18.68%	
C	Logistic Park	75.16	8.89%			
2	Commercial-Total	75.69	8.95	82.41	9.75%	0.8%
A	Commercial	55.3	6.54%	61.98	7.33%	0.79%
B	Central Business District	20.39	2.41%	20.43	2.42%	0.00%
5	Residential-Total	53.46	6.32%	71.13	8.41%	+2.09%
6	Public-Semi Public (PSP) – Institutional Total	68.4	8.09%	60.66	7.18%	-0.92%
A	PSP	68.4	8.09%	40.65	4.81%	-3.28%
B	Utilities	0	0.00%	20.01	2.37%	2.37%
7	Green open space-Total	105.99	12.54%	86.4	10.22%	-2.32%
A	Open Spaces/Green	57.08	6.75%			
B	Water Bodies	48.91	5.79%			
8	Transport-Total	161.56	19.11%	127.69	15.10%	-4.01%
A	Roads			120.66	14.27%	
B	Truck terminus			7.03	0.83%	
	Total	845.26		845.38		

The change in land use is marginal for most of the aspects except the Industrial Area, which has been increased by about 4.44%. The land-use break-up for the site is based on the draft regulations for the Integrated Industrial Area (IIA) Clause 14.7 as per the draft Development Control Regulations (DCR) which indicates that the Planning Authority (in this case, MIDC) shall broadly allocate industrial

and related support activities in a proportion of 60% and 40% respectively (Please refer to the Revised Plan placed at **Annexure 'A'**).

- There is marginal increase in residential land use (about 2%), additional residential area is earmarked to promote housing facilities for the industrial workers within the Industrial area. This will help in curbing unauthorised development of slums around Industrial park.
- The green open space is reduced by (2.3%); this is because green open space as on both sides of high tension line is not required, as the high tension wires will be laid below the ground. This has not only improved the circulation pattern and transport network but also better utilisation of the land.
- The area under roads has also been reduced (about 4%), this is because the width of the spine road has been reduced from 90m to 60m based on the IRC guidelines and DCR requirements.
- The Industrial and Commercial areas has been increased by 4.44% and because area saved by laying underground HT Line and improvement of road network. This has improved the financial viability of the project.

3.2. Road Network

The revised plan has made changes to the road network which was proposed in the draft plan. The changes and the reason for changes are provided as below:

Structure for Road Network: In the Concept plan, the location of high tension lines determined the proposed road network. The spine road was aligned to the high tension line causing the turns and bends in the road network. It is now proposed to bury the high tension lines, which has resulted in the road being aligned in a straight line with regularly spaced intersections.

Road Width: The a Right-of-way (RoW) for the spine road considered in the EIA report was 90m, however, the width of spine road is revised to 60 meters because there is no more a need for the HT line corridor to be maintained. At the next level of hierarchy, 30 meter wide RoW and 45 meter wide RoW roads are planned as collector and sub-arterial roads respectively. Internal roads are planned to be two lane roads with a Right-of-way of minimum 15 meters. These will be used as access roads. The widths of planned roads conform to the requirements of Development Control Rules (DCR). Besides this, the traffic capacities of the two lane roads are estimated to be as per IRC guidelines.

Intersection spacing: Intersection spacing for secondary roads emerging from the spine road were irregular in the conceptual plan used in the EIA report, however, intersection spacing for secondary roads is revised to about 650 meters at regular intervals. The Secondary loop roads are also modified and provided in a simpler alignment to provide necessary access to industrial and residential areas to the north of the spine.

3.3. Site features

Water bodies: In the Concept Plan, water bodies were reshaped to allow the road structure to fit the site. Additional storm water holding ponds were created for storm water management. However, as per the revised plan, key water bodies are being retained in their original form particularly the ones in the western part of the site which are connected with a natural stream that flows down from the hill to the north of the site. The stream has a natural buffer of 15 meters on each side which will be

planted with local shrubs and grasses to prevent soil erosion and to allow percolation of surface storm water that flows into it.

Other water bodies have been retained in their original location, but have been modified slightly to allow them to have better percolation characteristics. These will be lined with gravel and stone on the banks with natural planting of local shrubs and grasses along the buffer areas to these water bodies. Storm water design strategies take in to account best management practices for retention and detention of water to allow groundwater recharge.

3.4. Green Open spaces

A 30 m wide buffer for Over-head high tension line was planned along the main spine and about 50 ha of park and green areas were proposed in the concept plan. The EC conditions also required a green belt of minimum width of 20m to be developed all around the project boundary.

However, in the revised plan, the High tension lines is to be buried and therefore buffer on the both sides of the HT Line is not required. The total Open space planned within the Shendra Industrial Park is 86.4 ha, of which:

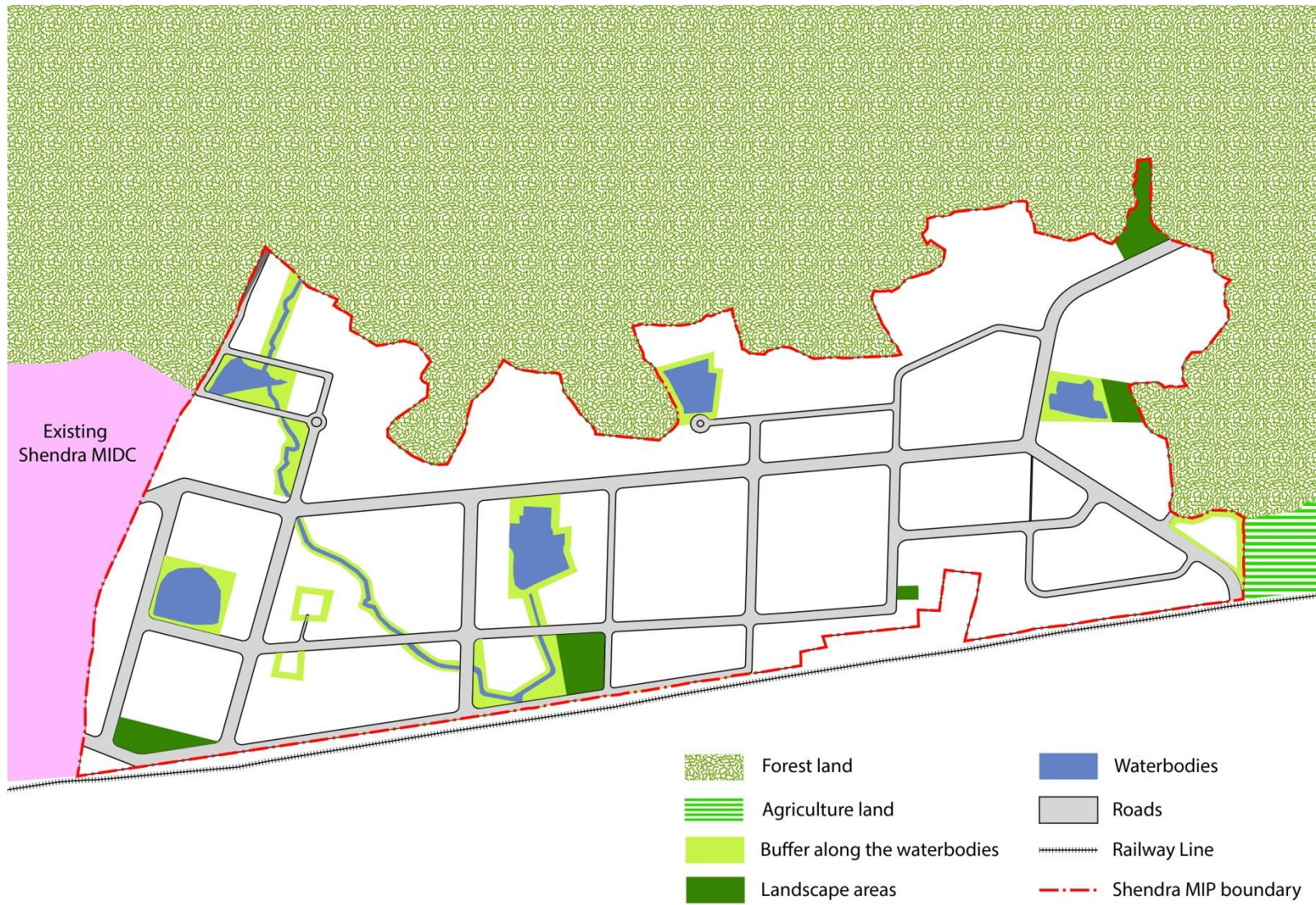
- Area under green belts is : 37.31ha
- Area under parks and landscaped areas is : 17.77 ha
- Area under water bodies is : 31.35ha

The 20m buffer around the project boundary will not be required and hence it is requested to be removed. The reason for the same is:

- The northern boundary of the site is forest land and this entire length of 11.01 km is a natural green buffer with no development potential.
- The southern boundary of the plot is adjacent to a rail corridor and the right of way of the rail corridor will also act as a buffer to any development on the other side of the rail line.
- The western edge of the proposed site is adjacent to the existing Shendra MIDC so the uses are similar and there is no requirement for a buffer on the western side.
- In addition to the above, each of the allotted plots for industrial, residential etc. will have to maintain compulsory open space/green space within their plots as per the DC rules.
- However green belt/ buffer of adequate width will be provided between Industrial and Residential areas while preparing the detailed layout plans of different Zones.

The **Figure 3-1** provides details of green areas, as provided in the revised Plan

Figure 3-1: Green Areas - Revised



4. Evaluation of Impact

The key changes in the revised Plan are:

- Change in land use
- Change in alignment and width of roads
- Green Area and buffer area

4.1. Change in Land use

Impact

The revised land use has resulted in increase of industrial area by about 4.44%, this will result in increase in Industrial activities as well as increase in incremental pollution loads to the ambient environment. Although the Industry mix will be same as the broad categories envisaged as part of the EIA report. The Industrial area will comprise of all categories of Industries i.e. Red, Orange and Green as per classification of the Maharashtra Pollution Control Board, although initially it was considered that red category projects may not be included.

The overall consumption of water and waste water generation is envisaged to have an increase of 1-2 MLD for which the proposed STP (10 MLD) and CETP (12MLD) will modified to accommodate the additional volume of waste water.

The removal of Logistic Park will reduce the volume of trucks and associated vehicles movements to and from the Industrial Park. This will also result in decrease in vehicular emissions, traffic congestion along the Jalna Road, and water consumption for vehicle wash etc. This would also reduce the quantity of packaging waste and hazardous waste generated from the logistic facility and vehicle maintenance facility. The overall generation of solid waste will therefore will remain in the same range even after increase in industrial area.

There will be an increase in Municipal Waste generated due to increase in working population and total residential population.

Mitigation

- The Project intends to include Red category Industries as defined by Maharashtra Pollution Control Board. The Industrial Park has already obtained clearance from MoEF under Category A as it envisaged the possibility of Red category Industries.
- The size of STP and CETP will be increased to accommodate the additional sewage and industrial waste water envisaged. The treated wastewater will be reused for meeting non potable water requirements.
- The municipal waste will be sent for composting (with landfill) during the Phase I and industrial waste will be sent for incineration (along with landfill).

4.2. Change in Alignment and Width of Roads

Impact

The change in alignment of road has resulted in straighter roads with lesser loops. Secondary loop roads are provided in a simpler alignment to provide necessary access to industrial and residential areas to the north of the spine. Intersection spacing for secondary roads is planned as regular at about 650 meters. This will have positive impact as movement of traffic will be smoother and will further diminish the potential for traffic congestion.

The reduction in RoW of the spine road from 90m to 60 m is mainly because there is no buffer area requirement now as per the revised plan where it has been proposed to bury the high tension cable. The burial of high tension cables will reduce the potential hazards of Electro Magnetic Field; the electric fields will usually be negligible because they are screened by soil, concrete, sand etc. Also, the EMFs fall off more rapidly than those from overhead wires because the cables are closer together and they cancel out each other's effects more effectively. The width of roads overall were reconsidered as the traffic volumes will decrease due to removal of logistics park.

The internal roads are now planned with 15m width, which is proportionate to smaller plot areas which are planned along these roads.

Thus the change in size of spine road (RoW) and internal road will not have any significant impact on the project.

Mitigation

- The roads in general to be designed to carry the maximum traffic loads with anticipated future development and on a par with IRC Standards and requirement of existing by-law. The RoW for the roads will be 60m, 45m and 30m. Internal roads will be 15m.
- The project proponent will ensure that the high tension transmission line is buried, so that no additional RoW is required along with the spine roads. Key roads in the Shendra MIP will include designated lanes to encourage cycling and improve the safety of cyclists.
- Comprehensive traffic and travel surveys shall be conducted every 5 years to monitor traffic characteristics and travel behaviour to develop strategies for effective transportation.

4.3. Change in Green Area and buffer area

Impact

The project proposes to seek exemption from the 20m wide greenbelt required around the proposed project boundary as required under the conditions of EC.

This will have no impact as the northern boundary of the site is forest land and this entire length of 11.01 km is a natural green buffer with no development potential. The southern boundary of the plot is adjacent to a rail corridor and the right of way of the rail corridor will also act as a buffer to any development on the other side of the rail line. The western edge of the proposed site is adjacent to the existing Shendra MIDC so the uses are similar and there is no requirement for a buffer on the western side.

MitigationThe project will ensure that adequate green and open areas as mentioned in the revised plan are provided.

- In addition to the above, each of the allotted plots for industrial, residential etc. will have to maintain compulsory open space/green space as per the DC rules and existing by laws
- The buffer for natural stream is planned as 15 meters which will be maintained. The project will also provide adequate buffer between Industrial and Residential land-uses as per the applicable by laws and requirements of the DCR.

5. Summary of Observations

Based on the mitigation measures suggested and the extent of changes observed in the land use pattern, it is concluded that there will be minimal change to the overall impact assessed in the EIA report on which the EC has been accorded to the project. It is also concluded that some of the conditions pertaining to green buffers and width of the roads are not applicable to the project with revised plan. The key changes in the revised plan and the associated mitigation measures are tabulated here consideration of the Appraisal Committee.

Table 5-1: Summary of Changes

	Aspect	Concern	Mitigation
1	Change in Land-use	Slight increase in Industrial area	The land use adopted is as per DC rules. No significant change in impact is envisaged as the increase is only 4.44% and primarily because the land marked under logistic park is now included under Industrial area, as the Logistic Park is removed.
		Inclusion of Red Category Industry	<p>The Industrial Park has already obtained clearance from MoEF under Category A as it envisaged the possibility of Red category Industries.</p> <p>However, since the details of industry type, size and technology are not available at the Master Plan stage and also as per the conditions of EC, all individual industry will obtain requisite approvals such as Consent to Establish/Consent to Operate as applicable.</p> <p>The project proponent intends to seek exemption from Individual clearance for Industries within the MIP as the overall clearance has been obtained.</p>
2	Change in Width of Spine Road	The size of Spine Road has been reduced from 90m RoW to 60m RoW	In the revised plan, it is proposed to bury the high tension cable and therefore, there is no need to establish a buffer area. Hence, the RoW of the spine road is revised to 60 m from the original 90 m This is as per the requirements of DCR and existing by-laws.

		Internal road with to be of 15m instead of 24m	<p>The roads are planned as per the DCR requirements and existing by-laws.</p> <p>The internal roads are now planned with 15m width;this is proportionate to the smaller plot size and as per the by-laws.</p>
3	Change in Green Buffer	Exemption from Green belt of 20m width around the entire Industrial Area	<p>The green belt of 20m around the Industrial area is not required for the following reasons:</p> <p>The southern boundary of the plot is adjacent to a rail corridor and the right of way of the rail corridor will also act as a buffer to any development on the other side of the rail line. The western edge of the proposed site is adjacent to the existing Shendra MIDC so the uses are similar and there is no requirement for a buffer on the western side.</p> <p>This would also reduce the sellable area significantly, thereby reducing the viability of the project. It is therefore requested to the remove the condition.</p>
		Change in buffer are between Industrial and Residential Area	<p>A 50-100m buffer between Industrial and Residential Area is not envisaged in the revised Plan.</p> <p>The project will also provide adequate buffer between Industrial and Residential land-uses as per the applicable by laws and requirements of the DCR.</p> <p>It is therefore, requested to remove the condition as another condition on adequate buffer is already mentioned in the EC.</p>

5.1. Changes in the EMP

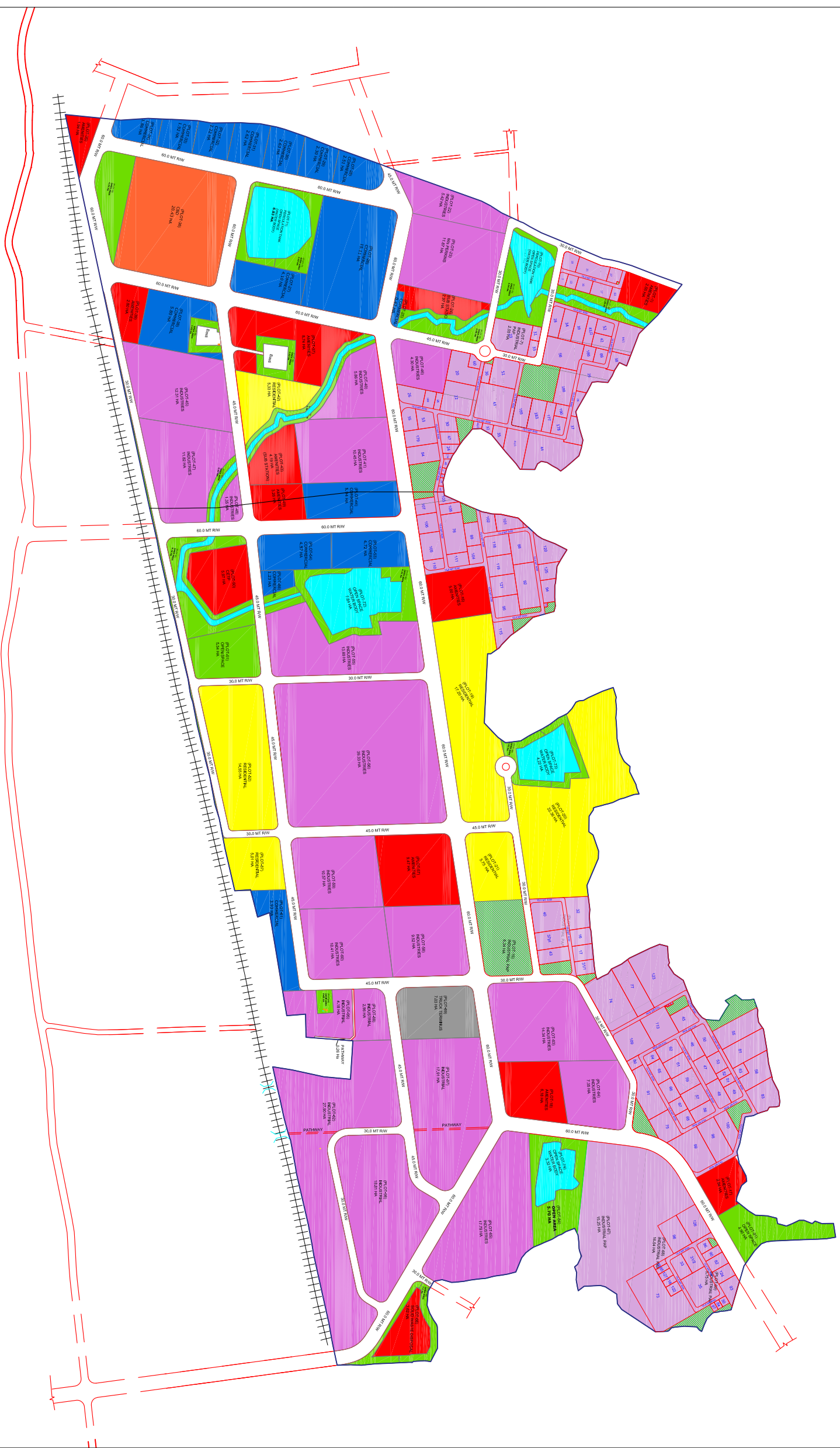
Besides the change in the conditions to the Environmental Clearance there are certain points in the **Environment Management Plan** (EMP), which may be removed or amended. The Table 5.2 provides the proposed changes to EMP.

Table 5.12: Changes in EMP

	As per EMP Submitted	Change Requested
1	A distance of 2km from the western and the northern boundary of project site to be designated	The project proponent will approach appropriate State agency to curb any

	as “Zero Development Zone”. Area of 10km around the project are will be regulated by DMICDC/MIDC to avoid any secondary development or unplanned development.	unplanned development around the Project site.
2	Area around Sukhna reservoir to be preserved in proposed MIP Development Plan	All key natural drainage channels in the Project area to be retained and provided with sufficient buffer.
3	A ‘Local Ecological Monitoring Group’ will be setup to monitor the environmental and ecological safeguard measures during construction phase.	To be removed, as it is not required
4	MIDC to ensure adequate stack heights and undertake continuous monitoring of stacks.	To be removed, as it will be monitored by State Pollution Control Board as part of compliance.
5	The SPV shall establish a Transport Authority for the region and the authority to ensure infrastructure for pollution checking.	To be removed, as it is not required
6	Degraded hillsides towards the centre and north of the development area recommended to be reforested as part of the proposed MIP Development Plan. These areas, may be labelled as ‘Ecological Restoration Zone’.	To be removed
7	No extra soil to be brought into the site from outside the project boundary for the construction activity	All efforts will be made to utilise the soil available within the project boundary. However if additional soil is required, it will be procured from approved quarries.

PROPOSED DRAFT DEVELOPMENT PLAN FOR SHENDRA-BIDKIN SMART INDUSTRIAL CITY (PART-I; SHENDRA)



Sr.No	PROPOSED AREA STATEMENT	Area (Sq. m)	Area (ha)	Percentage
1	Industrial	2591835.52	259.18	30.7%
2	Light Industrial & PAP Area (1)	1579060.00	157.91	18.7%
	Sub Total (Industries)		417.09	49.3%
3	Truck Turminus	70270.9172	7.03	0.8%
4	Commercial	619763.1929	61.98	7.3%
5	Residential Area	711323.5432	71.13	8.4%
6	Public & Semi Public	606620.6564	60.66	7.2%
7	Park & Open Space	550913.103	55.09	6.5%
8	Water Bodies	313118.498	31.31	3.7%
	Sub Total (Open Space)		86.40	10.2%
9	Road Network	1206572.15	120.66	14.3%
10	CBD	204313.83	20.43	2.4%
	GRAND TOTAL		845.38	100.0%

PROPOSED DRAFT DEVELOPMENT PLAN FOR SHENDRA-BIDKIN SMART INDUSTRIAL CITY (PART-I; SHENDRA) NOTIFIED UNDER MIDC ACT-1961

LEGEND

GENERAL	D.P. BOUNDARY	EXISTING CULVERT
VILLAGE BOUNDARY	PATHWAY	
CANAL	EXISTING ROAD	
RAIL LINE	WATER BODIES	
SHENDRA BOUNDARY		

PROPOSED TRANSPORTATION

ROAD NETWORK
LOGISTIC HUB INCLUDING RAILWAY SIDING AREA

PROPOSED LAND USE ZONE

ACQUIRED SHENDRA BOUNDARY
INDUSTRIAL
LIGHT INDUSTRY & 15% PAP AREA
RESIDENTIAL AREA
COMMERCIAL
PUBLIC SEMI PUBLIC
PARK AND OPEN SPACE
CBD

MODIFICATION DATE: 30/ 03/ 2015
SUBMISSION DATE: 00/ 00/ 0000

SCALE : 1 : 10000

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